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OFFICIAL GAZETTE

UNITED STATES PATENT OFFICE

VOL 72

NO 1 THRU 13

JUL-SEPT-1895

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

VOLUME **LXXII.**

JULY 2 TO SEPTEMBER 24, INCLUSIVE,

1895

WASHINGTON:
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1895.

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ERRATA.

541,209, page 125, in heading, residence of inventor, for "New York Mills, New York," read *New York, N. Y.*

542,248, page 152, in heading, name of assignee, for "Ions Graham Hervison" read *Ions Graham Hewison.*

542,399, page 208, fifth claim, line 4, for the word "position" read *portion.*

542,824, page 358, strike out claims 3 to 18, inclusive, and insert WITHDRAWN.

543,197, page 499, in heading, name of assignee, for "Celluloid Company, New York, N. Y." read *Celluloid Company, New York, N. Y., a corporation of New Jersey.*

543,432, page 572, in heading, second-named inventor, for "Frank W. Zuber" read *Frank W. Zuver.*

543,803, page 721, in heading, residence of inventor, for "Hanan" read *Hanau.*

544,073, page 827, in heading, name of assignee, for "the Automatic Track Company" read *The Automatic Track Sanding Company.*

544,113, page 839, in heading, second-named inventor, for "Frédéric de Cappet" read *Frédéric de Coppet.*

544,417, page 953, in heading, name of first-mentioned assignee, for "Daniel E. Waters" read *Daniel A. Waters.*

544,449, pages 969—970, strike out all after number—title, drawing, and claim—and insert WITHDRAWN.

544,793, pages 1107—1108, strike out all after number—title, drawing, and claims—and insert WITHDRAWN.

545,176, page 1257, in heading, residence of inventor, for "Owasso" read *Owosso.*

545,412, page 1331, in heading, after residence of inventor, insert *assignor of one-third to John D. Newbold, of same place.*

545,527, page 1385, in heading, title, for "Automatic-Changing Tablet for Post-Boxes, &c." read *Automatic-Changing Tablet on Post-Boxes, &c.*

546,360, page 1687, in heading, name of assignee, for "Celluloid Company, New York, N. Y.," read *Celluloid Company, New York, N. Y., a corporation of New Jersey.*

546,376, page 1692, in heading, second-named inventor, for "Michael L. Shaughnessy" read *Micheal L. Shaughnessy.*

546,410, page 1702, in heading, assignment, for "assignor to Maurice F. Rich, of same place," read *assignor, by mesne assignments, to Wilfrid Barr Rich.*

546,888, page 1866, in heading, residence of inventor, for "Washington, District of Columbia," read *the United States Navy.*

546,963, page 1889, first claim, strike out line 3.

26,808, (Trade-Mark,) page 284, in heading, name of registrant, for "William B. Riley & Co." read *Wm. B. Riley & Co.*

26,938, (Trade-Mark,) page 1041, in heading, title, for "Maccaroni" read *Macaroni.*

26,942, (Trade-Mark,) page 1041, in heading, residence of registrant, for "Salem, Ohio," read *Selma, Ohio.*

Commissioner's Decisions, page 420, second column, names of counsel, for "Kay, Totten & Cook" read *Kay, Totten & Cooke;* also insert *Mr. William L. Pierce for the defendants.*

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OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

JULY–SEPTEMBER, 1895.

THE OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 72.—No. 1. TUESDAY, JULY 2, 1895. PRICE—$5 per year.

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., June 22, 1895.

SIR: The Secretary of the Interior has ordered that John W. Martin and Oswell L. Martin, (doing business as J. W. & O. L. Martin,) of Zanesville, Ohio, be not recognized after this date as attorneys or agents in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,

E. WOMACK,
Chief Clerk.

The Commissioner of Patents.

Privileges of the Scientific Library.

Persons who are not employés of the Office may, under the supervision and direction of the Librarian, make extracts, in pencil, from descriptions and drawings contained in the Scientific Library, such extracts, when in the nature of copies, not to exceed one-third of the descriptions or drawings from which the copies are made. Violation of this order will subject all persons and parties concerned in the violation to exclusion from thereafter making any such extracts or copies whatever.

Withdrawal of Cases from Issue.

Hereafter all amendments proposed to allowed applications which involve a withdrawal from issue, and all petitions and requests relating thereto, shall be filed with the docket clerk, Mr. J. M. Emory, and transmitted by him to the Primary Examiner for report. If the Examiner shall report favorably to the admission of such amendment, the matter will be laid before the Commissioner for immediate determination. If the Examiner shall report unfavorably, the case will be docketed and will be heard and decided by the Commissioner in regular course, unless good reasons shall appear for immediate action.

The Official Gazette.

THE OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $10; single copies, 10 cents, if mailed to foreign countries 10 cents additional for postage; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Oaths of Applicants in Foreign Countries.

It is hereby directed that oaths accompanying applications for patents made within the following-named foreign countries must be taken before a minister, chargé d'affaires, consul, or commercial agent holding commission under the Government of the United States:

Austria-Hungary.	Netherlands.
Argentine Republic.	Norway.
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Brazil.	Portugal.
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Denmark.	San Salvador.
Haiti.	Servia.
Honduras.	Sweden.
Italy.	Switzerland.
Mexico.	

Applications filed in this Office presenting oaths not executed in compliance with this order will be treated as incomplete.

Indexes to Periodicals.

The following journals containing indexes to periodical literature may be found on file in the reading room of the scientific library:

Engineering Review, London, a monthly synoptical index of periodical literature in the English, French, and German languages, including hydraulic, railway, mechanical, electrical, mining, metallurgical, marine, military, and gas engineering.

Abstracts of all the principal articles on "Physics" published in the American and Continental journals since January 1, 1895, will be found in the *Proceedings of the Physical Society of London.*

Electrical World, New York, a weekly digest of electrical articles.

Journal of the Association of Engineering Societies, Chicago, a monthly synoptical index of civil-engineering literature, mostly American.

Engineering Magazine, New York, a monthly title-index of engineering articles in the English language only.

Publishers' Catalogues.

This Office would be pleased to receive from manufacturers and publishers such catalogues, circulars, price-lists, or other advertisements relating to the sciences and mechanical arts as are published by them for gratuitous distribution; but notice is hereby given such manufacturers or dealers who feel disposed to send their publications that not less than three copies should be forwarded in order that the subjects may be properly indexed, classified, and subclassified in the Scientific Library for convenient and ready reference.

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Montana	2	....	Total to citizens of the United States	404	37
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TO CITIZENS OF FOREIGN COUNTRIES.

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France	3	....	Sweden	....	....
Germany	5	1	Switzerland	1	....
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Guatemala	....	....	Victoria	1	....
Hawaii	....	....	West Australia	....	....
India	....	....			
Ireland	....	....	Total to citizens of foreign countries	26	2
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APPLICATIONS UNDER EXAMINATION.

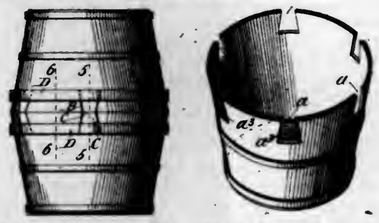
Condition at Close of Business June 25, 1895.

Division No.	Subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears.—Under one month.			
31	Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	June 3	June 24	61
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PATENTS

GRANTED JULY 2, 1895.

541,820. SHIPPING-PACKAGE. JESSE R. ALLIGER, Chattanooga, Tenn. Filed Oct. 20, 1894. Serial No. 526,469. (No model.)

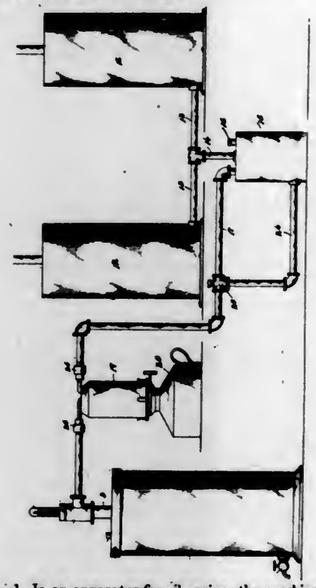


Claim.—1. A shipping package consisting of sections having dovetail mortises in the edges, wedges engaging these mortises having splayed edges, and shaped on the outer face to correspond with the inclination of the barrel sides, and a retaining device for the wedges.

2. A shipping package consisting of sections having dovetail mortises, wedges engaging them having doubly-inclined outer faces and splayed edges, and engaging the mortises, substantially as described.

3. The combination of the sections having dovetail recesses whose edges are inclined, the double dovetail wedges having doubly-inclined outer faces and splayed edges, and seated in the recesses, and a retaining hoop, substantially as described.

541,821. CHURN. ISAAC BARNETT, Princeton, Ind. Filed Dec. 4, 1894. Serial No. 530,801. (No model.)



Claim.—1. In an apparatus for churning, the combination of a churn body, an air distributer arranged therein, a supply pipe communicating with the air distributer at one end, a water containing receptacle located at the other end of the supply pipe, a tube depending from the top of the receptacle, means for introducing air under pressure into the depending tube, a water pipe extending from the bottom of the receptacle to the supply pipe, and a cock located at the point of connection of the water pipe to the supply pipe for closing the former, and also for establishing a communication between the water pipe and the supply pipe, whereby water from the receptacle may be forced through the supply pipe, substantially as described.

2. In an apparatus for churning the combination of a churn body, an air distributer arranged therein, a supply pipe communicating with the air distributer, a water receptacle located at one end of the supply pipe, a pump connected with the receptacle, the water pipe extending from the receptacle to the supply pipe, the coil connected with the supply pipe, and means for heating the coil, substantially as described.

541,822. RAILWAY-SWITCH. EBEN E. BAILEY, Lafayette, Ind. Filed Sept. 26, 1894. Serial No. 524,169. (No model.)



Claim.—1. A railway switch comprising the combination of two movable rail sections, a cable connected to the sections, a winding drum to which the cable is also connected, a spring for giving the drum a tendency to a normal position, an arm pivotally mounted adjacent to the drum, a spring also for giving the arm a tendency to a normal position, and means capable of connecting the arm and drum and operating to connect them only when the former is moving to operate the switch, whereby the arm will operate the switch when moved in one direction, and will not operate it when moving in the opposite direction, substantially as described.

2. A railway switch comprising the combination of two movable rail sections, a laterally-movable bar to which they are pivotally connected, two loops or eyes rigid on the roadbed, two hooks on the bar and adapted to alternately engage the loops or eyes upon moving the bar in its bed, cables connected to the hooks and arranged to disengage the engaged hook and loop, and to move the bar to which the hooks are attached, thus operating the switch, and means for drawing on the cables, whereby the switch is operated, substantially as described.

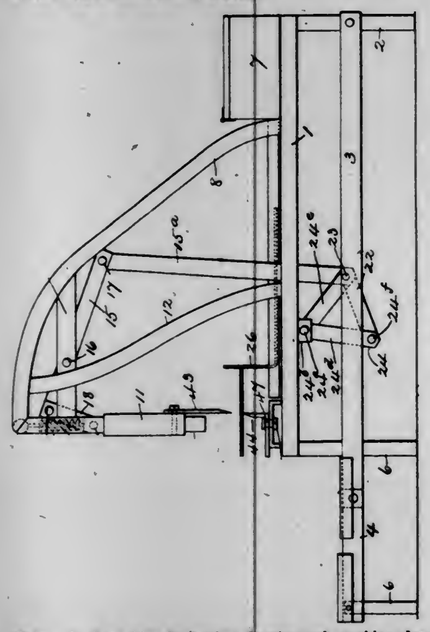
3. A railway switch comprising the combination of two movable rail sections, a laterally-movable bar pivotally connected to each, two eyes or loops rigid on the roadbed, two swinging hooks pivoted to the bar and adapted to alternately engage the loops whereby the

switch is locked in the desired position, actuating cables connected to the hooks, a drum over which each cable is wound, a spring for moving the drum back to its normal position after being operated, an arm adjacent to each of the drums, a spring operating with the arm and having a tendency to move the arm in a direction opposite to that of the drum spring, and means capable of connecting the arms and drums and operating to so connect them only when the former are moved to operate the switch, substantially as described.

4. A switch comprising the combination of two movable rail sections, cables connected thereto, whereby they are operated, drums, over one of which each of the cables is wound, a spiral spring arranged in each drum and operating to hold the drums in their normal positions, an arm pivoted above each of the drums and having a spiral spring located therein, whereby it is given a tendency to move in a direction opposite the tendency of the drum, and means capable of connecting the arm and drum and operating to connect them only when the former is moved to operate the switch, whereby the cables may be operated to move the switch and whereby the arms and drums will be returned to their normal positions, substantially as described.

5. In a railway switch, the combination of two movable rail sections, a cable connected thereto whereby they may be operated, a drum mounted on the bed of the track and over which the cable is wound, said drum having a lug projecting outwardly and upwardly from the same, a stop on the track with which the lower portion of the lug on the drum is engaged, an arm mounted above the drum and capable of engaging the lug thereof, and a spring or springs for returning the drum and arm to their normal positions, substantially as described.

541,823. SLATE PUNCHING AND DRESSING MACHINE. WINFIELD S. BAIR and SAMUEL M. THOMPSON, Huntingdon, Pa. Filed Mar. 7, 1894. Serial No. 502,682. (No model.)



Claim.—1. A machine for cutting, dressing and punching slate, consisting of a table or support, a skeleton frame consisting of forwardly-curved arms extending from the rear to the front of the table, a cross-bar connecting the front ends of said arms, vertical uprights connected at their lower ends to said table and at their upper ends to the top portions of said curved arms, tubular rods depending from the front ends of said curved arms and longitudinal bracing strips connecting and bracing said curved arms and depending tubular rods, a transverse shaft having bearing in said bracing strips, a walking-beam consisting of longitudinal arms having rocking bearing on said shaft and vertical arms connected at their upper ends to said longitudinal arms, a treadle rockingly suspended from the table and having rear connection with the lower ends of the vertical arms of the walking-beam, a plunger provided with tubular ends and having vertical reciprocation thereby on the tubular rods depending from the cross-bar, links pivotally connecting the plunger and the front ends of the longitudinal members of the walking-beam, cutting tools removably secured to said plunger and to a suitable support on the table, respectively, substantially as and for the purpose set forth.

2. A machine for cutting, dressing and punching slate, consisting of a table, a skeleton frame consisting of forwardly-curved, or arched, arms extending from the rear to the front of the table, a cross-bar connecting the front ends of said arms, tubular rods depending from the front ends of said arms, vertical bars connected at their lower ends to said table and at their upper ends to said curved bars, longitudinal brace-bars connecting and bracing said curved arms and the depending tubular rods, a transverse shaft having bearing in said brace-bars, a walking-beam consisting of longitudinal arms having rocking bearing on said shaft and vertical arms connected at their upper ends to said longitudinal arms, a treadle rockingly suspended from the table and having rear connection with the lower ends of the vertical arms of the walking-beam, a plunger having top and bottom cross pieces and an open space mediately thereof, a stop rod depending from the frame cross-bar and having a hooked lower end, said plunger being provided with tubular ends and having vertical reciprocation thereby on the tubular rods depending from the frame cross-bar, links pivotally connecting the plunger and the front ends of the longitudinal members of the walking-beam, springs connecting the plunger and the frame cross-bar, and cutting or dressing tools removably secured to said plunger and to a suitable support on the table, respectively, substantially as and for the purpose set forth.

3. A machine for cutting, dressing and punching slate, consisting of a table, an anvil transversely mounted thereon and consisting of an angle plate of substantially reversed U-shape in cross section and having a central longitudinal slot in its top face, cutters having at their front upwardly-extending knife edges and rearwardly-extending, slotted, horizontal flanges, bolts and nuts adapted to adjustably secure said knives on said anvils, a longitudinally-slotted gage guide mounted on said table and having upwardly-extending side flanges, a gage having a rearwardly-extending slotted flange and an upwardly-extending front lip, a frame consisting of upwardly and forwardly-arched bars extending from the rear to the front of the table, vertical and horizontal brace bars, a cross bar connecting the front ends of said arched bars and tubular rods depending from the front ends of said arched bars a plunger having eyed ends engaging said tubular rods and top and bottom cross bars, cutters having U-shaped upper portions to engage the lower cross bar of the plunger, vertical retracting-springs connecting the upper cross bar of the plunger and the cross bar of the frame, a treadle rockingly hung on the table, a walking-beam consisting of vertical rods connected at their lower ends with said treadle, horizontal rods centrally pivoted in the frame and having rear connection with said vertical rods, and links pivotally connecting the front ends of said horizontal rods and the plunger, substantially as and for the purpose set forth.

4. The combination with a table, of an anvil mounted transversely thereon and of reverse U-shape in cross-section, punch anvils having beveled and centrally-perforated top portions and depending vertical legs or flanges, a plunger having eyed ends and a lower cross-bar, punches having upwardly-extending lips or flanges adapted to straddle and grip the lower cross-bar of the plunger, a skeleton frame consisting of forwardly-arched rear bars, vertical and horizontal brace-bars and depending tubes forming vertical reciprocal bearing for the eyed ends of the plunger, a walking-beam having rocking bearing in said frame, pivot links connecting said walking-beam and plunger, and a treadle suspended from the table and connected with the lower portion of said walking-beam, substantially as and for the purpose set forth.

541,824. EAR-MUFF. DAVID RASCH, New York, N. Y. Filed Nov. 8, 1894. Serial No. 528,261. (No model.)



Claim.—1. In an ear-muff, the combination of a section of a head-frame having gudgeons formed on the end thereof, with an ear-frame and a sheet-metal hinge piece rigidly attached to said ear-frame, having a slot at right angles to the nearest adjacent edge of the ear-frame, and bearings for the gudgeons of the head piece in a line at right angles to said slot and doubled on itself over said gudgeons to secure the head piece in the hinge, substantially as described.

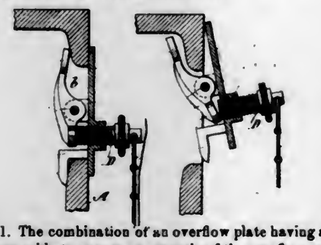
2. In an ear-muff, the combination of the ear-frame, and a section of a head-bar having its extremity bent substantially at right angles and having gudgeons formed thereon, with a T-shaped sheet-metal hinge piece having tubes to receive the ends of the ear-frame wire, a slot b^x to receive the end of the head-bar section, and bearings for the gudgeons at right angles to said slot, and doubled on itself over said gudgeons to secure the head piece in the hinge, substantially as described.

541,825. NUT-LOCK. GEORGE H. BEAUMONT, Quincy, Ill. Filed Dec. 24, 1894. Serial No. 532,843. (No model.)



Claim.—A nut lock for rail joints consisting of a reversible triangularly-shaped non-resilient washer-plate provided with a straight lower edge, and an elongated vertically disposed bolt slot or opening adapted to fit over a bolt and permitting an adjustment of the washer plate to bring the straight lower edge thereof against the flange of the fish plate of the rail joint, said reversible washer plate being further provided at both sides of its upper angle or apex with angular cut-away portions or notches forming opposite triangular side locking tongues or points, either of which tongues or points is adapted to be bent out from the plane of the plate against the side of the nut, substantially as set forth.

541,826. LAVATORY-OVERFLOW. THOMAS C. BEAUMONT, New York, N. Y., assignor to the Henry Huber Company, same place. Filed Dec. 27, 1894. Serial No. 533,039. (No model.)



Claim.—1. The combination of an overflow plate having a hook projecting on one side to engage one margin of the overflow opening, a lever pivoted to the rear of said plate and adapted to engage the opposite margin of the opening, and a screw passing through the plate and bearing against said lever.

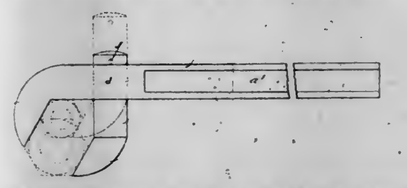
2. The combination of an overflow plate B having rearwardly projecting ings *h* and pivot pin *i*, clamping lever C pivoted on said pin, and screw D passing through said plate engaging a threaded hole therein, and bearing at its end against said lever.

3. The combination of an overflow plate B having hooks *g g* projecting rearwardly and outwardly to engage one margin of the overflow opening, centrally arranged lever C having a clamping arm or toe *k* projecting in the contrary direction to said hooks and adapted to engage the opposite margin of the opening, and a screw D passing through a threaded opening in said plate and adapted to bear against said lever.

4. The combination with an earthenware bowl A having an overflow opening *b*, of an overflow fixture consisting of a plate B having hooks *g* for engaging one margin of said overflow opening, and a clamping lever C having a toe *k* adapted to engage the opposite margin of said opening, and a clamping screw D engaging a threaded opening in said plate and bearing against said lever.

5. In a lavatory fixture, the combination with a clamping screw D, of a swivel pin *q* passing axially through said screw, free to turn therein, having a straight shank so as to be removable from said screw, and having a bead *q'* at its rear end adapted to prevent its pulling out from said screw, said head being recessed in the screw so that the pin is free to turn after the screw is tightened, and a ring *r* engaging its protruding front end, and a chain *p* attached to said ring.

541,827. WRENCH. CARL BECHER, Hagen, Germany. Filed Jan. 9, 1895. Serial No. 534,379. (No model.) Patented in Austria Nov. 2, 1894, No. 3,942, and in England Nov. 5, 1894, No. 21,231.



Claim.—1. The combination of a handle *a* having a projecting fixed jaw *b* and a transverse passage way *d* whose axis is in a plane at an acute angle to the plane of the face of jaw *b*, with a bar *c* having a cross section adapted to fill said passage way and adapted to slide therein in direction of the longitudinal axis of said bar only, and a jaw *e* on said bar *c* parallel to jaw *b* substantially as set forth.

2. The combination of a handle *a* having a projecting fixed jaw *b* at an angle of one hundred and twenty degrees to the side face of said handle and having a passage way *d* through said handle at right angles to the side face thereof, with a bar *c* adapted to slide in said passageway and a jaw *e* on said bar *c* having its face parallel to that of jaw *b* substantially as and for the purpose set forth.

541,828. TIRE-REGULATOR. WALTER A. BEEBE, King City, Cal. Filed Aug. 15, 1894. Serial No. 520,382. (No model.)



Claim.—1. The combination with a rim, and a tire mounted thereon and having its ends adjacent each other and provided with longitudinal slots having opposite toothed edges, of a locking head adapted to fit within the slots and provided at its sides with teeth for engaging those of the edges, and means for retaining said locking-head within the slots, substantially as specified.

2. The combination with a rim and a tire, the latter having its ends adjacent each other and slotted and the opposite edges of the slots provided with teeth, of a head fitting removably within the slots and provided at its opposite edges with teeth for engaging those of the slots and provided with a bolt extending therefrom through the rim beyond which it is nutted, substantially as specified.

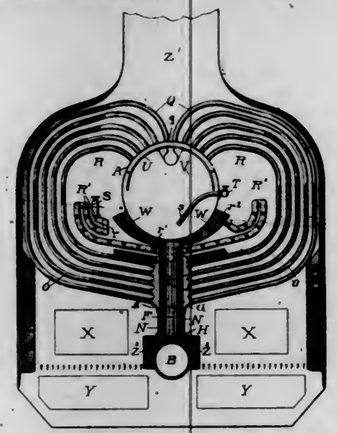
3. The combination with a rim, of a tire having its ends slotted and provided with teeth, and having in rear of the slots, openings adapted to be engaged by a clamp or straining device for drawing the ends of the tire together, and a toothed locking head engaging the teeth of the slots, substantially as described.

4. The combination with a rim having an opening, a tire mounted on the rim and having its ends terminating at opposite sides of the opening and provided with slots, the edges of said slots being provided with teeth inwardly disposed, of a locking-head fitting removably in the slots and connecting the ends of the tire and having its edges provided at opposite sides of its center with inwardly-inclined teeth for engaging those of the slots, and a bolt extending from the head through a perforation in the rim and provided with a nut, substantially as specified.

5. The combination with a rim having a groove in its exterior, a tire mounted on the rim and having its ends adjacent each other and provided at its ends with slots having teeth, cross-pieces connecting the slotted portions of the tire and provided with convexed faces for fitting the rim, of a locking-head having its opposite ends located in the slots and provided with teeth for engaging the teeth of the slots, a bolt extending from the locking-head through the rim, and a nut for the bolt, substantially as specified.

6. The combination with a rim having a pair of openings, and a groove, of a tire encircling the rim and having its adjacent ends slotted above the openings and provided at the edges of their slots with teeth, a locking-head fitting the slots and provided with teeth for engaging those of the slots, cross-pieces secured to the under side of the tire opposite the slots, and convexed to fit the rim, and provided with slots registering with those of the tire, a locking-head mounted removably in the slots of the tire and provided with teeth for engaging the same, and a pair of bolts depending from the head and extending through the slots of the cross-pieces and through the perforations in the rim beyond which they are nutted, substantially as specified.

541,829. TUBULOUS BOILER. PETER BENTZEN, Newport, R. I., and CHRISTIAN F. OLSEN, Attleborough, Mass. Filed Sept. 28, 1894. Serial No. 524,413. (No model.)



Claim.—1. A steam generator having a water vessel, a steam receptacle, and continuous bent generator tubes connected with said steam receptacle said tubes being detachable from and indirectly connected with said water vessel, substantially as set forth.

2. A steam generator having a water vessel, a steam receptacle, and continuous bent generator tubes connected with said steam receptacle, a series of upright manifolds connected only with said water vessel and with said generator tubes, and a connection formed between said tubes and said manifolds, thereby connecting the said steam receptacle, by means of the said tubes and said manifolds, with the said water vessel, substantially as set forth.

3. A steam generator having a water vessel and a steam receptacle, a plurality of bent generator tubes connected at one end in series with said steam receptacle, and connected at their other ends in series with a manifold, and a connection formed between said manifold and said water vessel said manifold having direct connection only with said generator tubes, and with said water vessel, substantially as set forth.

4. A steam generator having a water vessel and a steam receptacle, generator tubes connected with said receptacle, rows of manifolds connected with and supported by said water vessel, and a connection formed between the said generator tubes and the said water vessels, by means of said manifolds, said manifolds directly connected only with said generator tubes, and said water vessel, substantially as set forth.

5. A steam generator having a water vessel and a steam receptacle, generator tubes connected with said receptacle, rows of manifolds connected detachably with said water vessel, and a connection formed between said tubes and said water vessel, said manifolds connecting directly only with said generator tubes and said water vessel, substantially as set forth.

6. A steam generator having a water vessel and a steam receptacle, bent generator tubes secured in series to said receptacle, and manifolds connected with and projecting upwardly from the upper part of said water vessel, said manifolds having direct connections each only with a series of said generator tubes and with said water vessel, substantially as set forth.

7. A steam generator having a water vessel and a steam receptacle, generator tubes secured to said receptacle, manifolds connected with said water vessel and arranged in alternate rows upon same, and connections formed between said tubes and said manifolds, substantially as set forth.

8. A steam generator having a water vessel and a steam receptacle, generator tubes connected with said receptacle, manifolds connected with said water vessel, and a union nut joint for effecting such connection, the said tubes being connected with said manifolds, substantially as set forth.

9. In a steam generator having manifolds, tubes secured thereto, and a longitudinal aperture extending through said manifolds, lateral openings formed opposite the place of connection with said tubes, and screw plugs to fit detachably therein to close the said openings, substantially as set forth.

10. In a steam generator having manifolds, and tubes secured thereto, a longitudinal aperture extending through said manifolds, one end of said manifolds connecting with a water vessel, and the opposite end of said manifolds having an orifice and a screw plug detachably connected, to close said orifice, substantially as set forth.

11. In a steam generator having manifolds and tubes connected laterally therewith, a short tube connecting each of said manifolds directly with a water vessel placed adjacent to said generator tubes, the said water vessels supporting said manifolds, the said manifolds directly connecting only with said water vessel and said generator tubes, substantially as set forth.

12. A steam generator having an elongated water vessel and steam receptacle, generator tubes connected with said receptacle, manifolds connected with and located along the upper portion of said water vessel, the said generator tubes connected laterally with the said manifolds the said manifolds being detachably connected with water vessel, substantially as set forth.

13. A steam generator having an elongated water vessel and steam receptacle, the latter located above the former, generator tubes connected with the steam receptacle and passing in a partially curved form to and connected with the said water vessel, parallel water heater pipes connected with bended ends and located adjacent to the said steam receptacle and within arches or concavities formed by the said generator tubes, the said pipes connecting with a feed valve and with the said steam receptacle, and adapted to connect with an injector, substantially as set forth.

14. A steam generator having an elongated water vessel and steam receptacle, the latter located above the former, generator tubes connected with the steam receptacle and passing in a partially curved form to and connected with the said water vessel, parallel water heater pipes connected with bended ends and located adjacent to the said steam receptacle, on opposite sides thereof, and within arches or concavities formed by the said generator tubes, the said heater pipes connecting with a feed valve and with the said steam receptacle, and adapted to connect with an ejector, substantially as set forth.

15. In a steam generator a water vessel and a steam receptacle, generator tubes connected at one end with said receptacle and at their other ends with manifolds supported by and connected with said water vessel, and one or more return pipes connecting the said receptacle with the said water vessel, substantially as set forth.

16. In a steam generator having a steam receptacle and a water vessel and generator tubes connecting the said parts with each other, a steam and water separator made in the form of a plate placed and extending longitudinally within said receptacle, and conforming laterally to the upper semicircular curve of the said receptacle, the said plate being corrugated laterally, and located adjacent to the ends of the said generator tubes, substantially as set forth.

17. In a steam generator having a steam receptacle and a water vessel and generator tubes connected with said steam receptacle and by means of manifolds connecting with said water vessel, means located within said steam receptacle for separating the moisture from the steam entering same, substantially as set forth.

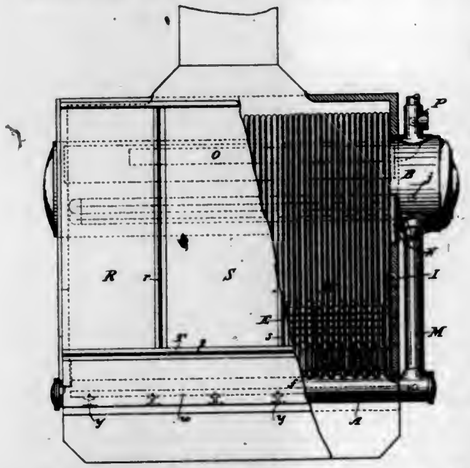
18. In a steam generator having a steam receptacle and a water vessel connected therewith by means of tubes, and having a water and steam separator, a steam pipe entering said receptacle and passing longitudinally within said receptacle, horizontally under said separator, the said steam pipe being slotted along its upper surface for a portion of its length, substantially as set forth.

19. In a steam generator having a steam receptacle and having a water vessel arranged in a horizontal line, manifolds extending in a row along the upper surface of said water vessel, continuous bent generator tubes connected with and running from said manifolds to and connecting with said steam receptacle, and the combination of a fire box formed and extending longitudinally each side of said water vessel and manifolds, substantially as set forth.

541,830. BOILER. PETER BENTZEN, Newport, and CHRISTIAN F. OLSEN, Bristol, R. I. Filed Feb. 4, 1895. Serial No. 537,177. (No model.)

Claim.—1. A steam generator having a plurality of water vessels and a steam receptacle, a plurality of bent generator tubes connected in two series, at one end with said steam receptacle, and each series connected at their other ends with a manifold, and a connection formed between each of said manifolds and said water vessels, said manifolds having direct connection only with said generator tubes, substantially as set forth.

2. A steam generator having a plurality of water vessels, a steam receptacle, generator tubes connected with said receptacle, rows of manifolds connected detachably with each of said water vessels, the said water vessels being independent of each other, and a connection formed between said tubes and said water vessels, the said manifolds connecting directly only with said generator tubes and with their respective water vessels, substantially as set forth.



3. A steam generator having a plurality of water vessels, and a steam receptacle, bent generator tubes, secured in series to said receptacle, and manifolds connected with, and projecting upwardly from, the upper part of each of said water vessels, said manifolds having direct connections each only with a series of said generator tubes and with their said respective water vessels, substantially as set forth.

4. A steam generator having a plurality of water vessels, and a steam receptacle, generator tubes connected with said receptacle, manifolds connected with each of said water vessels, and arranged in alternate rows upon same, and connection formed between said tubes and said manifolds, substantially as set forth.

5. A steam generator having a plurality of elongated water vessels, and a steam receptacle, the latter located above and between the former, generator tubes connected with the steam receptacle and passing in a partially curved form to, and connected with, the said water vessels, water heater pipes connected, and located adjacent to the said steam receptacle and within arches or concavities formed by the said generator tubes, the said pipes connecting with a feed valve and with the said steam receptacle, and adapted to connect with an injector, substantially as set forth.

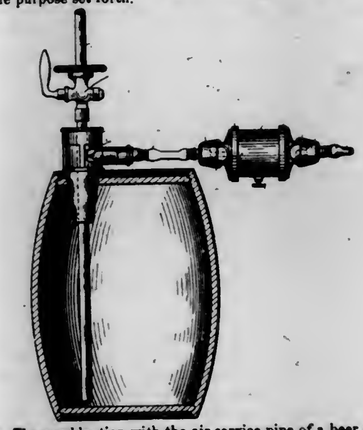
6. A steam generator having a plurality of elongated water vessels and a steam receptacle, the latter located above and between the former, generator tubes connected with the steam receptacle and passing in a partially curved form to, and connected with, the said water vessels, parallel water heater pipes connected with bended ends and located adjacent to the said steam receptacle, on opposite sides thereof, and within arches or concavities formed by the said generator tubes, the said heater pipes connecting with a feed valve and with the said steam receptacle, and adapted to connect with an injector, substantially as set forth.

7. A steam generator having two water vessels, the said water vessels being arranged each at approximately opposite sides of the said generator, rows of manifolds arranged along, and supported by, said water vessels, generator tubes connected in series with said manifolds and with a steam receptacle, one of the said manifolds, at each end of the aforesaid rows of manifolds, being raised above the other of said manifolds, the said generator tubes of the said outer manifolds being shorter and running through a different area than the generator tubes of the other manifolds, substantially as set forth.

8. In a steam generator having a water vessel, a steam receptacle, and generator tubes connecting the said parts, a removable fireproof casing effectually inclosing said generator, and means, consisting of elongated pieces, for overlapping the seams of, and for retaining in place the sections of said casings, substantially as set forth.

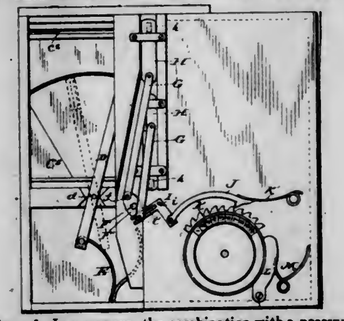
541,831. BEER-PUMP ATTACHMENT. JOHN F. BEYERLEIN, Chicago, Ill. Filed Apr. 9, 1895. Serial No. 545,077. (No model.)

Claim.—1. The combination with the air-service pipe of a beer pump, of a trap comprising the chambered body D, the induction nipple L, having the back pressure valve O, and the eduction nipple G, having the float controlled valve S, substantially as described and for the purpose set forth.



2. The combination with the air service pipe of a beer pump, of a trap comprising the chambered body D, the induction nipple L, and the eduction nipple G, having the float controlled valve S, substantially as described and for the purpose set forth.

541,832. MAGAZINE-CAMERA. MAX BOELTE, Los Angeles, Cal. Filed June 22, 1894. Serial No. 515,328. (No model.)



Claim.—1. In a camera, the combination with a pressure board, of stops for the plates, consisting of inwardly projecting pins secured to a pair of slides, and means for moving said slides simultaneously in opposite directions, substantially as described.

2. In a camera, the combination with a pressure board, of stops for the plates, consisting of inwardly projecting pins secured to a pair of slides, septums having notches in their edges forming wings at the four corners thereof, which wings project beyond the sides of the plates and are adapted to be engaged by said stops, and means for moving said slides simultaneously in opposite directions, whereby the said plates and said septums may be alternately engaged and disengaged from said slides, substantially as described.

3. The combination with a pressure board mounted to slide, having notches in its upper and lower edges, pins projecting inwardly from the lower notch and horns mounted to said pressure board at its upper corners, which pins and horns move in corresponding guides in the casing in which they are mounted, of a pressure frame acting against said board, and a spring acting upon said frame.

4. A septum having notches in its sides forming wings at the four corners thereof, which are adapted to project beyond the sides of the plates between which said septums are inserted, one of said notches adapted to co-operate with a guide, and the said septums being adapted to co-operate with a pair of oppositely movable slides having stops thereon, substantially as described.

5. A pressure board having horns at its upper corners, and a notch upon its lower edge with projections to engage in guides, as set forth.

6. The combination with a septum having notches in its sides forming wings at the four corners thereof, which are adapted to project beyond the sides of the plates between which said septums are inserted, one of said notches adapted to co-operate with a guide, of vertically movable slides having lateral stops thereon, and a spring-pressed pressure board, substantially as specified.

7. The combination with a septum having notches in its sides forming wings at the four corners thereof, which are adapted to project beyond the sides of the plates between which said septums are inserted, one of said notches adapted to co-operate with a guide, of vertically movable slides having lateral stops therein, and a spring-pressed pressure board, and means for simultaneously moving said slides in opposite directions to bring said stops in co-incident position with the notches of the septum, substantially as described.

8. The combination with a pressure board having projections thereon, which are adapted to fit corresponding guides in the casing in which the same is mounted, of slides in the forward part of the magazine, having inwardly projecting steps thereon, a shaft mounted for rotation and having crank arms at its opposite ends, rods connecting respectively the said slides and the said crank arm, whereby upon the rotation of said shaft the said slides are drawn toward or away from one another for the purpose described, a pressure frame connected to said pressure board, and a spring connected to said pressure frame for urging the same forward, substantially as specified.

9. The combination with a pressure board having projections thereon, which are adapted to fit corresponding guides in the casing in which the same is mounted, of slides in the forward part of the magazine, having inwardly projecting steps thereon, a shaft mounted for rotation and having crank arms at its opposite ends, rods connecting respectively the said slides and the said crank arms, whereby upon the rotation of said shaft the said slides are drawn toward or away from one another for the purpose described, a presser frame having its side bars connected with the edges of the said pressure board by a sliding connection, and a spring acting upon the cross bar of the said frame, substantially as specified.

10. The combination with the slides having lateral stops thereon, means for actuating them simultaneously in opposite directions, of a septum having notches in its edges forming projecting wings at the corners thereof, one of said notches co-operating with a guide therefor, a spring pressed pressure board having notches in its upper and lower edges, inwardly projecting pins in the lower notch, and projecting horns at the upper corner thereof, which pins and horns co-operate with corresponding guides, substantially as and for the purpose described.

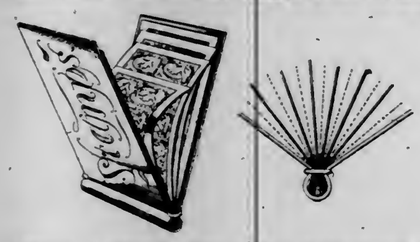
11. The combination with the slides with their stops, of the shaft with crank-arms, rods pivotally connecting said crank arms with the slides, and a lever detachably mounted on an extended end of said lever, as set forth.

12. In a camera, the combination of a pair of slides having inwardly projecting stops thereon, a shaft having crank arms on its ends, rods connecting the slides respectively and the opposite ends of said crank arms, a ratchet and indicator, a pawl engaging said ratchet, and an angle lever having one arm connected to said pawl and having a slot in its other arm, which is engaged by one of the crank arms on said shaft, substantially as and for the purpose described.

13. The combination with the slides and their stops, of the shaft with crank-arms connected with the slides, the ratchet and its pawl, and the angle lever pivoted at its angle and connected at one end with the said pawl and its other arm slotted to receive a pin on the end of one of the said crank-arms, substantially as specified.

14. The combination with the ratchet having a hub with indicator on its face, of the pawl engaging the teeth of the ratchet, a spring bearing on said pawl, a brake bearing against the periphery of the hub, and a spring acting upon the said brake, substantially as specified.

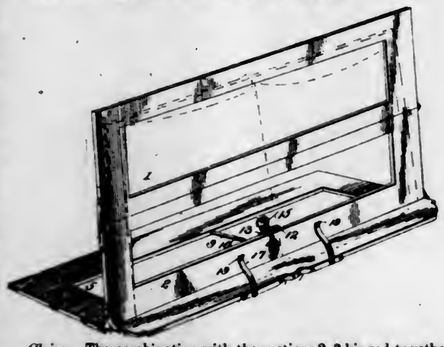
541,833. STAMP-HOLDING BOOK. ADDINGTON L. BRINCKLE, Philadelphia, Pa. Filed Dec. 7, 1894. Serial No. 531,110. (No model.)



Claim.—1. A temporary binding, leaves or sheets removably arranged therein and having an adhesive coating, an alternating series of non-adhesive protecting leaves or sheets suitably secured, a flexible back and elastic bands connecting the sides or lids of the cover, each band being attached to the cover at the junction of the back and sides, in a manner to retain the book open or closed, as specified.

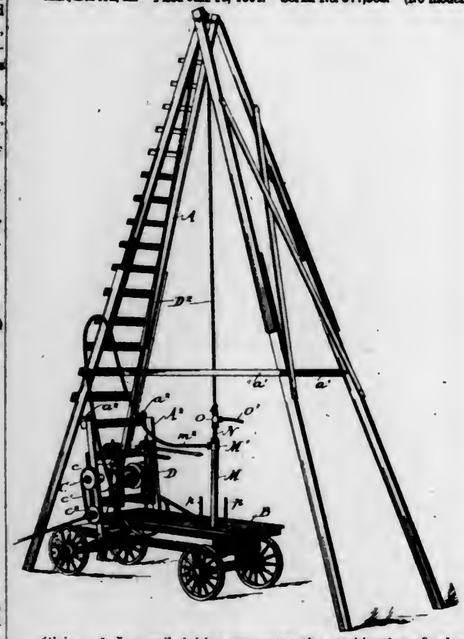
2. A book, consisting of a number of leaves having an adhesive coating, an alternating series of non-adhesive protecting sheets, a flexible back, and elastic bands connecting the sides of the cover, each band being attached at the junction of the back and sides, whereby the leaves or sheets will be retained opened or closed, as specified.

541,834. MUSIC-SUPPORT. AMOS R. BUCKLAND, Rochester, N. Y. Filed Oct. 6, 1894. Serial No. 525,135. (No model.)



Claim.—The combination with the sections 2, 3 hinged together at their adjacent longitudinal edges and being of approximately the same width, said section 3 being adapted to fold down upon the front face of section 2, the section 5 hinged to section 2 the foot-piece 7 hinged to the section 2, curved links pivotally connected at one end to the outer or lateral edge of the section 2 and at the opposite end to the like edge of the foot-piece, the curvature of the links being such as to permit the foot-piece to fold up and against the rear face of section 3 when the latter is folded down on section 2, a rod 9 secured to section 5 and notched, a plate 11 having a perforation at one end through which said rod 9 loosely passes and adapted to engage the notches, and the opposite end of the plate being bent over and having a projecting finger-operating portion 15 and a staple or loop secured to section 2 and engaging the bent portion of the plate, as described.

541,835. WELL-SINKING APPARATUS. MATTHEW T. CHAPMAN, Aurora, Ill. Filed Jan. 10, 1891. Serial No. 377,382. (No model.)



Claim.—1. In a well-sinking apparatus, the combination of a derrick consisting of two parts A, A' pivoted together at the top, a caster wheel detachably secured to the said pivot, and a wagon upon which one of said parts of the derrick is movably supported, whereby the derrick can be readily raised into operative position, and lowered into

position for transportation, the caster-wheel serving to support the pivoted end of said derrick, substantially as described.

2. In a well sinking apparatus, the combination with a derrick consisting of the parts A, A', pivoted together at their top portions, and provided at said pivotal end with a supporting caster-wheel, of a wheeled truck or wagon, standards mounted on said wagon, and supporting one part of the derrick intermediate its ends, pulleys secured to the lower ends of one of said parts, elongated hubs on the front wheels of the wagon, and suitably fastened elevating ropes passing over the pulleys and around the elongated hubs, and adapted to raise the derrick in an upright position when the hubs are revolved, substantially as described.

3. In a well sinking apparatus, the combination with a winding drum, of a rotating head, a laterally sliding latch carried by said drum, a relatively fixed wheel provided with a non-continuous cam-groove adapted to be engaged by said latch to release the drum on its forward rotation, and means for coupling the rotating head and drum after a partial backward rotation, substantially as described.

4. In a well sinking apparatus, the combination with a winding drum, and a rotating head, of a sliding latch, a relatively fixed wheel having a non-continuous cam groove in its hub adapted to be engaged by the sliding latch, substantially as and for the purpose specified.

5. In a well-sinking apparatus, the combination with a winding drum, and a rotating driving head d, of a sliding latch a relatively fixed wheel having a non-continuous cam-groove with a stop, as E^2, adapted to receive the return force of the drum, substantially as described.

6. In a well sinking apparatus, the combination with a winding drum, a rotating driving head and an operating latch, of a relatively fixed wheel having a cam groove adapted to operate said latch and a stop adapted to be engaged by the latch on the return of the drum, substantially as specified.

7. In a well sinking apparatus, the combination with a winding drum, a rotating driving head, and an operating latch, of an operating cam and a lock adapted to prevent the operation of said latch, substantially as and for the purpose specified.

8. In a well sinking apparatus, the combination with a winding drum and a rotating head, of a movable latch, a wheel provided with a cam-groove adapted to be engaged by said latch, and a lock to prevent the movement of the latch in said groove and the release of the winding drum whereby the winding drum may be continuously rotated when the wheel is free to rotate, substantially as specified.

9. In a well sinking apparatus, the combination with a winding drum and rotating head, of a movable latch, a wheel having a hub provided with a cam groove, a stop to limit the backward rotation of the winding drum, and a cushioned device for holding said wheel relatively fixed, substantially as specified.

10. In a well sinking apparatus, the combination with a winding drum, and a rotating head, of a movable latch, a wheel having an operating cam adapted to be engaged by said latch, worm gear adapted to engage with said wheel, a shaft upon which said worm gear can slide longitudinally, a cushion g on one side of said worm, and a spring g' on the opposite side of said worm, substantially as and for the purpose specified.

11. In a well sinking apparatus, the combination with a winding drum, and a rotating head, of a movable latch, a wheel having an operating cam adapted to be engaged by said latch, a sliding worm adapted to be engaged with said wheel, a shaft upon which said worm is supported and an eccentric for supporting one end of said shaft whereby the worm can be engaged with or disengaged from the wheel, substantially as specified.

12. In a well-sinking apparatus, the combination with a winding drum, a rotating head, a movable latch and devices for moving said latch for engaging and disengaging the winding drum, of a cylinder loosely mounted on the drum and devices for locking the cylinder and drum together, and a band-brake acting on the cylinder, whereby the backward rotation of the winding drum is retarded, substantially as described.

13. In a well sinking apparatus, the combination with a winding drum, a rotating head, a movable latch and devices for moving said latch to engage and disengage the winding drum, of a cylinder K, engaging cams l and k, a brake-band I', and a brake-lever I^3, substantially as specified.

14. In a well sinking apparatus, the combination with a winding drum, a rotating head, a movable latch, and devices for moving said latch to engage and disengage said winding drum, of a cylinder K, cams l, and k, a brake-band for said drum, said band being looped around the cylinder and having one end passing through the other end whereby an even tension without tendency to twist is given to the brake, substantially as specified.

15. In a well sinking apparatus, the combination with a winding drum, of a brake-band which is looped around the drum, and has one end passed through the other looped end, substantially as specified.

16. In a well sinking apparatus, the combination with a winding drum, and rotating head, of a movable latch, a wheel having a non-continuous cam-groove adapted to operate said latch, a weighted lever for moving said wheel longitudinally upon its shaft, and a spring H', substantially as and for the purpose specified.

17. In a well-sinking apparatus, the combination with a winding drum, rotating head and an operating latch, a wheel having a non-continuous cam-groove, adapted to operate the latch and engage a worm, said wheel having teeth approximately parallel with its axis and adapted to be moved longitudinally therewith, without disengaging the worm, substantially as described.

18. In a well sinking apparatus, the combination with a winding drum, and a rotating head and movable latch, of a wheel E having a cam adapted to operate said latch, a lock upon said wheel adapted to be locked in either operative or inoperative position, substantially as and for the purpose specified.

19. In a well sinking apparatus, the combination with a tube or tubing having a cutter on its lower end, of a rotatable plate, blocks P' supported upon said rotatable plate, rotatable clamping jaws R, and supporting plates Q for said jaws, adapted to be adjusted to bring the clamping jaws at any desired angle, substantially as specified.

20. In a well sinking apparatus, the combination with a tube or tubing, of a rotatable plate and rotatable clamping jaws supported upon said plate and adapted to be adjusted at an angle to the tube or tubing to cause said jaws to act to force said tube or tubing longitudinally when rotated by said clamping jaws, substantially as specified.

21. In a well-sinking apparatus, the combination of a wagon, and a winding drum mounted thereon, of a non-continuous grooved cam-wheel as E, lever H, spring H', or equivalent flexible mechanism for automatically holding the wheel E in action with the winding drum D, and sliding latch D', substantially as specified.

541,836. TRANSLUCENT PICTURE. ALFRED VON COTZHAUSEN, Milwaukee, Wis. Filed Sept. 13, 1894. Serial No. 522,904. (No specimens.)

Claim.—1. The method of making translucent picture-sheets herein described, which consists in producing a suitable design or picture, in color or colors, upon a suitable sheet, drying the same, passing it through a bath of turpentine and a volatile refrigerative, or color-spreading preventive solvent, again drying, then treating with a transparent varnish, and drying again, all substantially as set forth.

2. The method of making a picture, vivid in color, and of strong effect, by producing a design or picture, in color or colors, on a suitable sheet, then drying the sheet, then passing it through a bath of turpentine and a volatile refrigerative, or color-spreading preventive solvent, then drying it again and treating it with a transparent varnish and again drying, and then applying the sheet, in the nature of a film, to a plate served with turpentine, all substantially as described.

3. The method of making translucent picture-sheets herein described, which consists in producing a suitable design or picture, in color or colors, upon a suitable sheet, drying the same, passing it through a bath of turpentine and bi-sulphide of carbon, again drying, then treating with a transparent varnish, and drying again, all substantially as set forth.

4. The method of making a picture, vivid in color, and of strong effect, by producing a design or picture, in color or colors, on a suitable sheet, then drying the sheet, then passing it through a bath of turpentine and bisulphide of carbon, then drying it again and treating it with a transparent varnish, and again drying, and then applying the sheet, in the nature of a film, to a plate served with turpentine, all substantially as described.

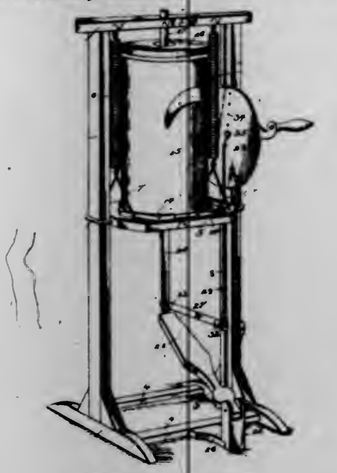
5. The crystalline sheet herein described, having the appearance and characteristics of color and color-effect set forth, clear and vivid to transmitted light as well as to reflected light, whereby it may be used either for window-decoration, for a wall or easel picture, or for an ornamental table-top, or the like, the same being a design in color or colors upon suitable material, such as the described paper, the material impregnated with bi-sulphide of carbon and containing a residue of sulphur and being translucent, and the color being embodied and brilliant, substantially as described.

6. The crystalline picture herein described, consisting of a sheet of suitable material bearing a design in color or colors, the material having the color embodied and this being impregnated with bi-sulphide of carbon, and containing a residue of sulphur, being rendered brilliant, and translucent, in combination with and intimately applied and fixed to a plate, substantially as and for the purpose set forth.

541,837. CHURN. JOHN M. CRITCHER, Bolivar, Mo., EDWARD B. WEBBER, Collierville, Tenn., and OLIVER H. FRANKLIN, Indianapolis, Ind. Filed Nov. 12, 1894. Serial No. 528,600. (No model.)

Claim.—In a churn, the combination of a supporting frame having opposite uprights provided at their inner faces with vertical grooves,

a platform arranged between the uprights and provided with projections or lugs for engaging the grooves thereof, springs for supporting the platform, the rectangular loops or keepers secured to the platform and receiving the uprights, one of the keepers being provided with a plate attached to the adjacent edge of the platform and carrying the adjacent lug or projection, and means for operating the platform including a pitman passing through the platform at the inner side of said plate, substaatially as described.



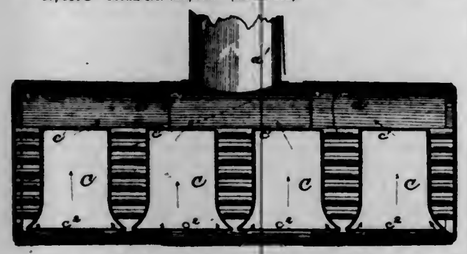
541,838. RAIL-BOND. PATRICK CUNNINGHAM, New Bedford, Mass., assignor of one-half to John W. Cornell, same place. Filed Apr. 1, 1895. Serial No. 543,941. (No model.)



Claim.—1. The combination with the rails of an electric railway, of a rail bond comprising eyeleted pins or rods inserted through holes in the rails and split or divided as described, and a tie wire inserted into the eyes of the eyeleted rods and secured therein, substantially as and for the purpose specified.

2. A rail bond for electric railways comprising eyeleted rods having divided or split shanks, and a tie wire having its ends extended through and projecting beyond the eyes of the said rods, substantially as described.

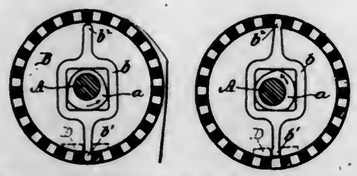
541,839. BOILER. OSSIAN C. DAVIS, Racine, Wis. Filed Oct. 19, 1894. Serial No. 526,354. (No model.)



Claim.—1. In a steam boiler the combination with the outer shell, of the return flues arranged on either side of the central part of the boiler, and the conducting passages located directly in the central portion of the boiler having wide flaring bottom portions above the bottom plate of the boiler and narrow conducting portions extending vertically in a straight line to the steam space between and out of engagement with said flues, whereby the water is conducted from the point of greatest heat, directly to the steam space without coming into contact with the said return flues, substantially as described.

2. In a steam boiler the combination with the outer shell, of the return flues arranged on either side of the central part of the boiler and the conducting passages located directly in the central portion of the boiler having wide flaring bottom portions extending over substantially the whole of the bottom of said boiler, said passages having vertical conducting portions extending vertically in a straight line from the said flaring portions to the steam space, located between and out of contact with the return flues and tapering toward their upper ends, whereby the water is conducted from the point of greatest heat directly to the steam space without coming in contact with said return flues, substantially as described.

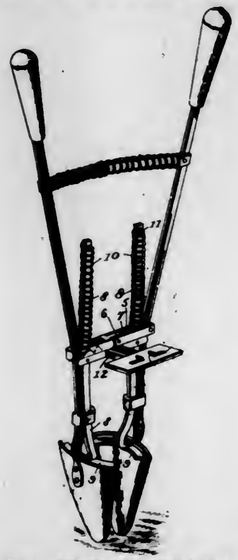
541,840. MECHANICAL MOVEMENT. PHILIP DIEHL, Elizabeth, N. J., assignor to The Singer Manufacturing Company, of New Jersey. Filed Mar. 18, 1895. Serial No. 542,112. (No model.)



Claim.—1. The combination with a continuously rotating shaft provided with a cam, of a sliding and vibrating lever-dog having a yoke embracing said cam, a wheel or device to be intermittingly rotated, and a fixed fulcrum piece or guide at one end of said lever-dog and which prevents said end from vibrating when its opposite end is to swing.

2. The combination with the shaft A having the cam *a*, of the wheel C to be intermittingly rotated, the lever-dog B comprising the yoke *b*, surrounding said cam, and the holding and operating ends or parts *b'* and *b³*, the said lever-dog being entirely within the periphery of said wheel, and the slotted fulcrum piece or guide D at one end of said lever-dog.

541,841. TRANSPLANTER. WILLIAM J. DOYLE, Penn, N. D. Filed Aug. 4, 1894. Serial No. 519,514. (No model.)

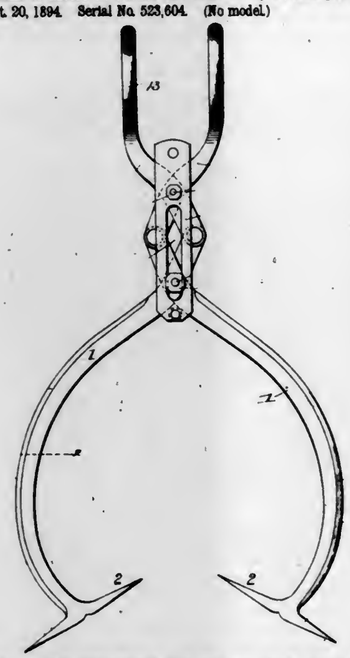


Claim.—1. In a transplanter, the combination of opposite shovels having pivotally connected handles, packers independently mounted to slide upon the handles of the shovels and having heads operating contiguous to and parallel with the inner or facing surfaces of the shovels, and connections between the packers whereby they may be simultaneously elevated or depressed independently of the swinging movement of the shovels, substantially as specified.

2. In a transplanter, the combination of shovels, pivotally connected handles carrying said shovels, packers having their stems respectively mounted to slide upon the handles and provided with heads operating in contact with the surfaces of the shovels, retracting springs for the packers, brackets secured to the stems of the packers, and a foot-rest having slotted connection with both brackets whereby the packers may be simultaneously depressed independently of the operation of the shovels, substantially as specified.

3. In a transplanter, the combination of concaved shovels, pivotally connected handles carrying said shovels, packers having their stems slidably mounted upon the handles and provided with segmental heads operating in the concave surfaces of the shovels, an actuating spring arranged between the handles to press the shovels toward each other, retracting springs for the packers, brackets affixed to the stems of the packers, and a slotted foot-rest supported by said brackets, studs on said brackets being engaged with the slot in the foot-rest to permit free movement of the handles, substantially as specified.

541,842. ICE-TONGS. JAMES R. FINLEY, Delphi, Ind., assignor of one-half to Albert H. Barnes and John H. Lytle, same place. Filed Sept. 20, 1894. Serial No. 523,604. (No model.)



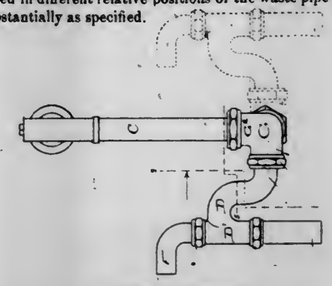
Claim.—1. The combination with the two plates connected together at their ends and provided with opposite slots, of the curved crossed legs pivotally connected together, and having oppositely projecting pointed arms at their free ends, the movable pivot pin connecting said legs, working in said slots, the crossed curved arms pivotally connected with said legs, and provided with handles, and the stationary pivot pin, substantially as described.

2. The combination with the two plates connected together at their ends, and provided with opposite slots, of the curved crossed legs pivotally connected together, and having oppositely projecting pointed arms at their free ends, and formed with knife edges intermediate their ends, the movable pivot pin connecting said legs, working in said slots, the crossed curved arms pivotally connected with said legs, and provided with handles and the stationary pivot pin; substantially as described.

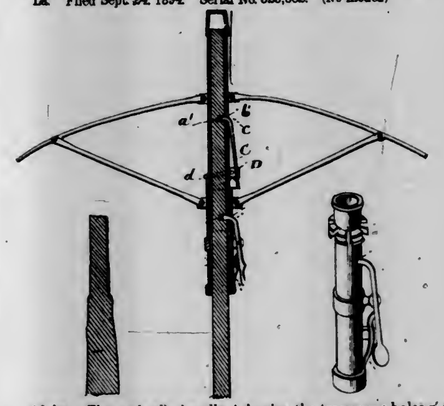
541,843. FIXTURE FOR BATH-TUBS. JOHN H. GAVIN, Chicago, Ill., assignor to the L. Wolff Manufacturing Company, same place. Filed Apr. 4, 1895. Serial No. 544,430. (No model.)

Claim.—1. The combination with a bath tub, its outlet pipe, overflow pipe, trap, waste pipe and vent pipe, of a three-way connection having one of its horizontal limbs connected to the trap, and its other two limbs furnished with slip joint connections and connected one with the overflow pipe and the other with the outlet pipe, a joint between the three-way connection and the trap to permit said three-way connection being turned in respect to the trap, the trap having a two-way connection for joining the same to the waste pipe, either one of the two slip-joint limbs of the three-way connection being adapted to be connected to either the vertical overflow pipe or the horizontal outlet pipe, thus enabling the fixture to be used in different relative positions of the waste pipe to the bath tub, substantially as specified.

2. The combination with a bath tub, its outlet pipe, overflow pipe, trap and waste pipe, of a three-way connection having one of its horizontal limbs connected to the trap and its other two limbs furnished with slip joint connections, and adjustably connected one with the overflow pipe and the other with the outlet pipe, there being a joint between said three-way connection and the trap to permit said connection to turn in respect to the trap, thus enabling the fixture to be used in different relative positions of the waste pipe to the bath tub, substantially as specified.

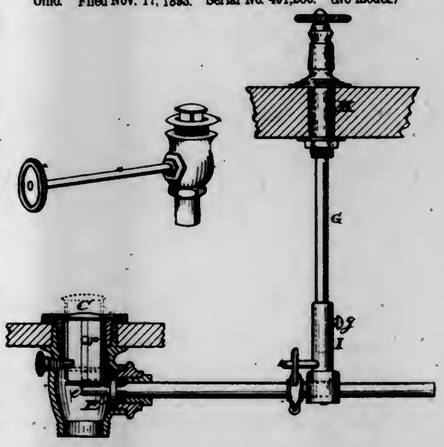


541,844. UMBRELLA AND CANE. EMILE C. GENEUX, Jeanerette, La. Filed Sept. 24, 1894. Serial No. 523,882. (No model.)



Claim.—The umbrella handle A having the transverse holes a' a^2 in the same longitudinal plane, the fixed rib-tube B having transverse holes b' b^3 in the same longitudinal plane, a lever C having a right-angle end *c* to enter holes b' a' and lock the handle A and tube B together, the sliding post D secured by a ring *d* on the tube B to raise and hold up the lever C, the runner tube E having the transverse hole c^3 and the thumb lever F spring-raised at the rear and having a right-angle front end to enter the holes a^2 b^2 c^2 and lock the said handle A and tubes B E together; whereby said handle may be attached to or detached from the tubes, to serve as a cane or umbrella handle.

541,845. BASIN-WASTE STOP. HENRY J. GILCHER, Cleveland, Ohio. Filed Nov. 17, 1893. Serial No. 491,286. (No model.)



Claim.—In a basin waste stop the combination of a vertical rod G, a sleeve H inserted in a hole in the slab and supporting the rod, a tube I on the lower end of said rod, a set-screw *g* for adjustably holding the tube on the rod, a swiveled head J on the lower end of said tube, a horizontal rod D, loosely supported in said swiveled head, a collar K on the rod D held by a set-screw, a loop arm L attached to said collar, a pin M attached to the tube I and extending through said loop arm, all constructed to operate substantially as described.

541,846. WELL-BUCKET. ELI J. GILPIN, Fowler, Ind., assignor of one-half to Charles Taylor and Henry Taylor, same place. Filed Apr. 25, 1895. Serial No. 547,168. (No model.)



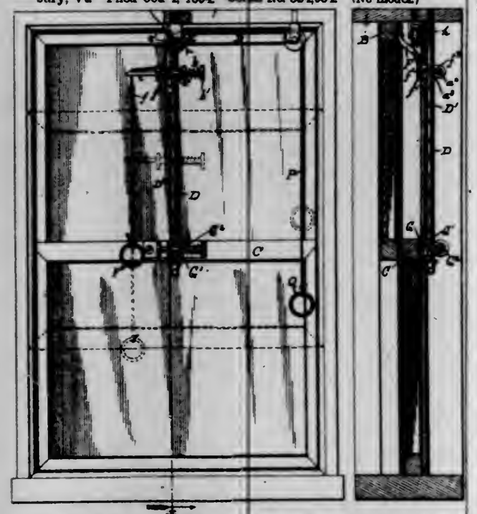
Claim.—1. A device for cleaning wells and collecting the sediment therein, the same comprising a hollow cylindrical or tubular case, an inner perforate tube arranged within said case and connected therewith at its lower edge, a hinged cap or valve for closing said inner tube, and a bail for lowering and raising the device, substantially as described.

2. A cleaning device for wells, the same comprising a hollow bucket having a suitable bail whereby the same is adapted to be lowered into or raised from its operative position, a hollow body or tube arranged within said bucket and connected therewith, said inner tube being provided with perforations leading from the interior of the inner tube to the space within the outer body or bucket proper, and means for preventing the sediment, &c., from passing downwardly through said inner tube, substantially as described.

3. In a device for cleaning tubular wells, an outer tubular case or bucket, in combination with an inner perforate tube connected with the outer case or bucket as described, wire gauze or cloth surrounding said inner tube and screening the perforations therein, and a cap or valve hinged to said inner tube and adapted to close the upper end thereof, substantially in the manner and for the purpose specified.

4. In a device for cleaning tubular wells, an outer tube or case comprising a sediment bucket, in combination with an inner tube having perforations therein, a wire gauze covering surrounding said inner tube and covering said perforations, the conical wall or sheet connecting the lower ends of the outer and inner tubes and forming a flaring mouth at the bottom of the bucket, the upper end of said inner tube being terminated below the corresponding end of the outer tube and provided with a hinged valve for closing said upper end of the inner tube, for the purpose and substantially as described.

541,847. WINDOW-SASH FASTENER. GEORGE W. GOSS, Roxbury, Vt. Filed Oct. 4, 1894. Serial No. 524,934. (No model.)

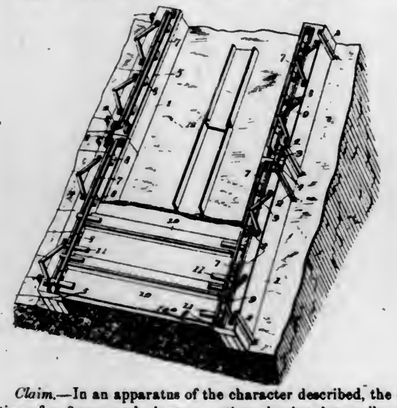


Claim.—1. A bracket E attached to a window sash and provided with ears and a perforated extension *c*, in combination with a spring-bolt mounted in the said ears, a pull-cord attached to the said bolt and passing through the said extension, and a stationary notched rod arranged to be engaged by the said bolt substantially as set forth.

2. A bracket E attached to a window-sash and provided with ears and a perforated extension *c*, in combination with a spring-bolt mounted in the said ears, a pull-cord attached to the said bolt and passing through the said extension, a stationary notched rod arranged to be engaged by the said bolt and a cord for raising the sash substantially as set forth.

3. In combination with the two sashes of a window, a stationary rod notched throughout its length, a spring-bolt on the lower sash, another spring-bolt moving with the upper-sash, a bracket on said upper sash having a perforated extension and raised ears, and a pull-cord which passes through the said extension and is attached to the spring-bolt of the upper sash, the latter bolt being mounted in the said ears and both bolts being adapted to engage the said rod substantially as set forth.

541,848. APPARATUS FOR LAYING CONCRETE ON INCLINED SURFACES. LEWIS GRANT and FRANK A. MOONEY, Philadelphia, Pa. Filed Feb. 13, 1895. Serial No. 538,230. (No model.)



Claim.—In an apparatus of the character described, the combination of a frame made in two sections, having internally projecting beveled edges, adapted to be placed laterally along an inclined surface and to be held from spreading by pegs driven into the earth along the sides thereof, and sectional lids or covers for said section, the said lids or covers being counter-sunk forming shoulders which engage the inner edges of the side sections and adjustable means for securing said lids in place, substantially as and for the purpose described.

541,849. RAILWAY-BRAKE. CHARLES F. GRATHER, New York, N. Y. Filed May 11, 1894. Serial No. 510,924. (No model.)

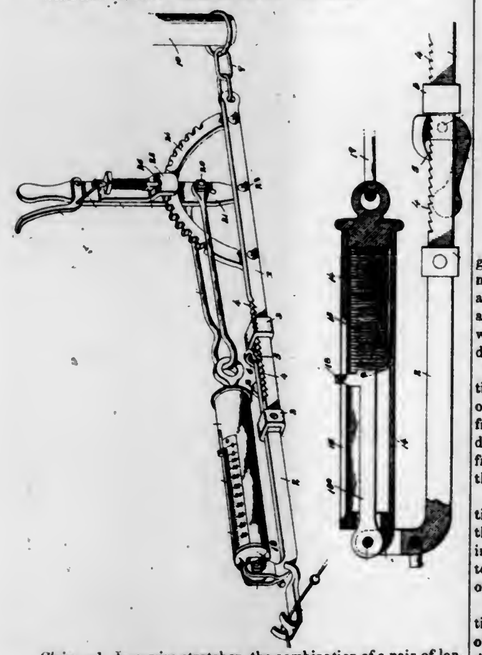


Claim.—1. The combination with a vehicle of a brake mechanism comprising a frame having brake-shoes and provided with elongated slots to receive the extremities of the vehicle axles and means for depressing the said frame and raising the axles in said slots on the frame as a fulcrum, to transmit the bearing of the axles from the wheels to the frame.

2. The combination with a vehicle of a brake mechanism comprising a frame having brake-shoes thereon and elongated slots adapted to receive the vehicle axles and in which they are adjustable, levers pivoted to portions of the said frame and toggle-links pivoted to the said levers and having connections with the vehicle axles whereby they may act to move the axles in the said slots of the frame to depress the latter.

3. The combination with a vehicle of a brake mechanism comprising a frame having brake-shoes thereon and elongated slots to receive the vehicle axles and in which they are adjustable, levers pivoted to portions of the said frame and toggle links pivoted to the said levers and having connections with the vehicle axles whereby they may act to move the axles in the said slots in the frame to depress the latter, said toggle-links being provided with cams adapted to travel under projections on the brake-frame to raise said frame when the vehicle axles have resumed their normal positions with respect to the road.

541,850. WIRE-STRETCHER. MANNIN GROSS, Burlington, Kans. Filed Nov. 30, 1894. Serial No. 530,418. (No model.)

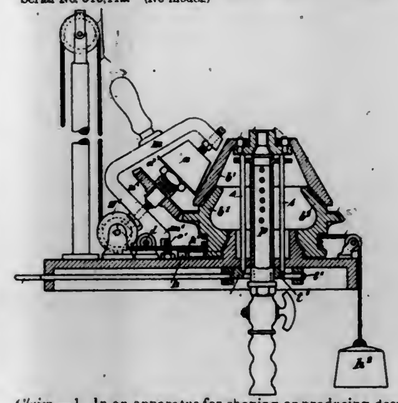


Claim.—1. In a wire stretcher, the combination of a pair of longitudinally disposed stretcher bars slidably connected together, one of said bars having a series of ratchet teeth in its upper edge, a gravity catch dog pivotally mounted on the other of said bars and adapted to normally engage said ratchet teeth, an adjusting lever mounted on one of the stretcher bars, and a spring scale connection between said adjusting lever and the other stretcher bar, substantially as set forth.

2. In a wire stretcher, a pair of longitudinally disposed stretcher bars, each provided at its inner end with a rectangular slide loop loosely embracing the other bar, one of said stretcher bars having near its inner end a series of ratchet teeth, a bell crank weighted gravity catch dog pivotally mounted at one side of one of the stretcher bars and provided with an angled catch point adapted to normally engage the ratchet teeth of the other stretcher bar, a bifurcated claw hook pivotally connected to the outer end of one stretcher bar, an anchor chain connected to the outer end of the other stretcher bar, an adjusting lever mounted on one of the stretcher bars, and a spring scale connection between said adjusting lever and the other stretcher bar, substantially as set forth.

3. In a wire stretcher, the combination of a pair of loosely connected sliding stretcher bars, one of which is provided in its upper edge with a series of ratchet teeth, and the other of which is provided with an upturned arm at its outer end, a gravity catch dog pivotally mounted at one side of one of the stretcher bars and normally engaging with the ratchet teeth of the other stretcher bar, a hook connected to the outer end of one of the stretcher bars, an anchor chain connected to the outer end of the other stretcher bar, a segmental rack bar attached to the stretcher bar with the ratchet teeth, an adjusting lever supported to work at one side of the segmental rack bar and carrying a spring actuated catch bolt adapted to engage with the teeth thereof, a connecting link pivotally connected at one end to said adjusting lever, and a spring scale, one member of which is pivotally connected to one end of said connecting link, and the other member of which is pivotally connected to the upturned arm of the other stretcher bar, substantially as set forth.

541,851. APPARATUS FOR SHAPING DESIGNS ON BLOWN GLASS. BERNHARD A. GRUHL, Dresden, Germany. Filed July 20, 1894. Serial No. 518,112. (No model.)



Claim.—1. In an apparatus for shaping or producing designs on glass articles, the combination of a main frame, a block-die revolubly mounted on said frame, a rack on the block-die, a supplemental frame at one side of the block-die, pivoted to the main frame and carrying a roller-die, and a pinion on the supplemental frame arranged to mesh with the rack on the block-die, and transmit motion to said roller-die from the block-die, substantially as and for the purpose set forth.

2. In an apparatus for shaping or producing designs on glass articles, the combination of a main frame, a block-die revolubly mounted on said frame and having an annular rack thereon, a supplemental frame pivoted to the main frame at one side of the block-die, a roller die carried by said supplemental frame, a pinion on the supplemental frame arranged to mesh with the said rack, and means for adjusting the roller-die in the frame, substantially as described.

3. In an apparatus for shaping or producing designs on glass articles, the combination of a main frame, a block-die revolubly mounted thereon, a supplemental frame pivoted to the main frame and carrying a roller die, a nose formed on the supplemental frame arranged to engage with a stop-pin in the main frame, and means for releasing or adjusting said stop-pin, substantially as described.

4. In an apparatus for shaping or producing designs on glass articles, the combination of a main frame, a hollow block-die mounted on said frame, a tubular shaft or core extending up through the block-die and having a series of openings in its upper end, an annular rack on the block-die, a supplemental frame pivoted to the main frame at one side of the block-die, a roller-die adjustably secured in the supplemental frame, a pinion arranged in the supplemental frame and adapted to engage the rack on the block-die, and means for regulating the pressure of the roller-die on the plastic mass on the block-die, substantially as described.

5. In an apparatus for shaping or producing designs on glass articles, the combination with a main frame, and a block-die mounted thereon of a roller-die adapted to operate on the block-die, and a series of pulleys mounted on said frame and arranged to be operated by a cord and weights to rotate the block die, substantially as described.

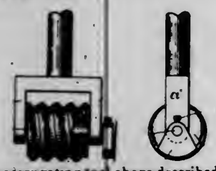
6. In an apparatus for shaping or producing designs on glass articles, a block-die having an integral lower portion and a segmental upper portion, the segments of the upper portion resting loosely on the lower portion, substantially as described.

7. In an apparatus for shaping or producing designs on glass articles, a block-die made in two portions, the upper portion comprising a series of segments resting loosely on the lower portion, and means for operating said segments so that the article may be readily removed from the block-die, substantially as described.

8. In an apparatus for shaping or producing designs on glass articles, a block-die having an integral lower portion and a segmental upper portion, a head carrying the segment of the upper portion, rods secured to said head and extending down through the block-die, and a lever having wedge shaped pieces or shoulders arranged to engage the lower ends of the rods and raise the same, substantially as described.

9. In an apparatus for shaping glass or producing designs on glass articles, the combination of a frame, a hollow block-die mounted thereon, the pin *i*, the piece *k* and the pins *k'*, k^2, substantially as and for the purpose described.

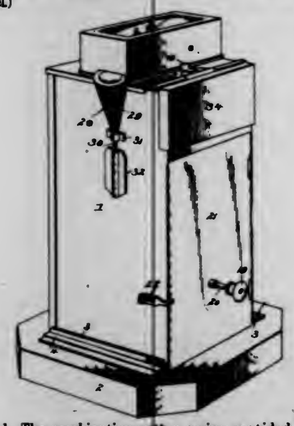
541,852. TOOL FOR USE IN CORRUGATING-MACHINES. BICKNELL HALL, Taunton, assignor to the Wainwright Manufacturing Company of Massachusetts, Boston, Mass. Filed Jan. 4, 1895. Serial No. 533,877. (No model.)



Claim.—1. The corrugating tool above described, in combination with means whereby when not in use, its position about its axis will be automatically adjusted to a uniform position, as and for the purposes set forth.

2. In combination with a corrugating tool and its shaft, the weight D adjustably mounted on said shaft, as and for the purposes set forth.

541,853. MATCH-SAFE. JOHN W. HART, Pittsburg, Kans., assignor to J. F. Lewis, same place. Filed May 11, 1894. Serial No. 510,918. (No model.)



Claim.—1. The combination with a casing provided with a slot, of a vertically reciprocable, spring-actuated match carriage provided in its upper end with a match-seat and adapted to project at said upper end through the slot in the casing, a hopper arranged near said slot and provided in its bottom with a slot through which the carriage operates, the walls of the hopper declining toward the slot in the bottom thereof, a friction block arranged between the limits of movement of the seat on the carriage and in the path of the head of a match arranged in said seat, and means for engaging and holding a match in the seat before the head of said match comes in contact with the friction block substantially as specified.

2. The combination with a casing provided with a slot, and a match-hopper arranged adjacent thereto, of a reciprocable spring-actuated match-carriage operating through said hopper and the slot in the casing, and an elastic holding-band arranged in the path of the carriage within the casing, substantially as specified.

3. The combination with a casing having a slot and provided with a match-hopper, of a match-carriage reciprocably mounted in the casing to operate through said hopper and provided at the end which operates in the hopper with a match-seat, means for igniting the match arranged in said seat, a contractile band secured at its terminals to the casing upon opposite sides of the plane of the carriage and bearing at an intermediate point against the inner end of the carriage, and means for retracting the carriage against the tension of said band, substantially as specified.

4. The combination with a casing having a slot and provided with a match-hopper, of a match-carriage reciprocably mounted in the casing to operate through said hopper and provided at one end with a match-seat, means for igniting the match arranged in said seat, a contractile band provided with terminal clips engaging keepers in the casing upon opposite sides of the plane of the carriage, and bearing at an intermediate point against the inner end of the carriage, and means for retracting the carriage against the tension of said band, substantially as specified.

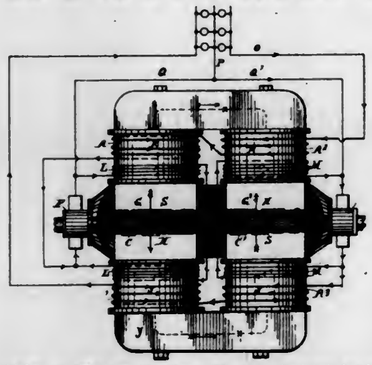
5. The combination with a casing having a slot and provided with a match-hopper, of a reciprocable match-carriage, arranged to operate through said hopper and slot, and provided with a match-seat, means for igniting a match arranged in said seat, means for advancing the carriage when released, a spring catch 16 for engaging a projection or handle 14 attached to the carriage and extending through a slot in the casing, to hold the carriage in a retracted position, a push button, and connections between the push-button and said spring catch, substantially as specified.

6. The combination with a casing having a slot and provided with a match-hopper, of a reciprocable match-carriage arranged to operate through said hopper and slot and provided with a match-seat which is beyond the wall of the casing and therefore outside of the same when the carriage is in its advanced position and is below the bottom and outside of the hopper when the carriage is in its retracted position, means for advancing the carriage when released, a spring catch for engaging and holding the carriage at an intermediate point of its movement, or between the limits thereof, when the match-seat is within the hopper and above the floor thereof, and means for releasing the carriage from said catch, substantially as specified.

7. The combination with a casing having a slot and provided with a match-hopper, a spring-actuated match-carriage, and means for operating the same, of an inverted conical friction-block having wire-gauze surfaces, and provided with means whereby it is adjustably secured with one side in the path of a match on the carriage, substantially as specified.

8. The combination with a casing having a slot and a match-hopper, and provided in its side, in communication with said slot with an opening, a spring-actuated match-carriage, and means for operating the same, of an inverted conical friction-block having roughened surfaces and provided with a stem fitting removably and revolubly in a socket on the side of the casing with one side of the block in said opening in the side of the casing, whereby it is in the path of a match carried by the match-carriage, substantially as specified.

541,854. DYNAMO-ELECTRIC MACHINE. THOMAS H. HICKS, Detroit, Mich. Filed Aug. 29, 1894. Serial No. 521,614. (No model.)



Claim.—1. The combination with a work-circuit having three main line conductors and translating devices arranged therein in multiple-series, of an electric-machine having two generating armature circuits mounted upon one shaft, each circuit terminating in a separate commutator, each commutator provided with two collecting brushes, a conductor connecting one brush of one commutator with one brush of the other commutator, and said conductor connected with one of the main line conductors of the work-circuit, two inductive fields-of-force for acting upon said two armature circuits, shunt field-magnet coils for primarily exciting the machine into generative action, and two sets of supplemental field-magnet coils, one of said sets being connected to one of said main line work-circuit-conductors, and the other set being connected to another of said main line work-circuit-conductors, substantially as described.

2. The combination with a work-circuit having three main line conductors and translating devices arranged therein in multiple-series, of an electric machine provided with two generating armature

circuits mounted upon one shaft, each circuit terminating in a separate commutator, each commutator provided with two collecting brushes, a conductor connecting one brush of one commutator with one brush of the other commutator and said conductor connected with one of the main line conductors of the work-circuit; two inductive fields-of-force for acting upon said two armature circuits, two sets of shunt field-magnet coils, one of said sets being supplied with current from one of said armature circuits and the other set being supplied with current from the other armature circuit, and two sets of supplemental field-magnet coils, one of said sets being connected to one of said main line work-circuit conductors and the other set being connected to another of said main line work-circuit conductors, substantially as described.

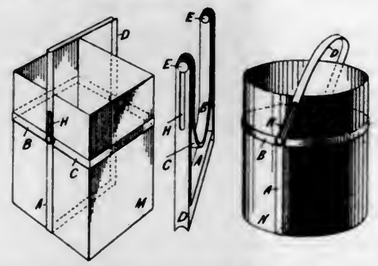
3. The combination in an electric machine, of two generating armature circuits mounted upon one shaft, and field magnets provided with two sets of shunt coils L, M, one of said sets being supplied with current from one of said armature circuits and the other set being supplied with current from the other armature circuit, substantially as described.

4. The combination with a work-circuit having three main line conductors and translating devices arranged therein in multiple-series, of an electric-machine provided with two generating armature circuits mounted upon one shaft, each circuit terminating in a separate commutator, each commutator provided with two collecting brushes, a conductor connecting one brush of one commutator with one brush of the other commutator, and said conductor connected with one of said main line work-circuit conductors, and field-magnets provided with two sets of supplemental coils, one of said sets being connected to one of said main line work-circuit conductors, and the other set being connected to another of said main line work-circuit conductors, substantially as described.

5. In combination, a work-circuit and an electric machine provided with field magnets having four sets of coils J, K, L, M, an armature having two circuits each terminating in its respective commutator, one set of said field coils being connected in shunt with one of said armatures, another of said field coils being connected in shunt with the other armature, said work-circuit provided with three conductors N, O, P, one of the conductors of the work-circuit being in series with one of said sets of field coils, another conductor of the work-circuit being in series with another set of field coils, and one of the three conductors of the work circuit being connected with each armature circuit, substantially as described.

6. In an electric machine, field magnets provided with two sets of exciting coils L, M, an armature provided with two circuits terminating in their respective commutators said two sets of field coils being each independently supplied with currents, one of said sets supplied with current from one of said armature circuits, and the other of said sets supplied with current from the other of said armature circuits, substantially as described.

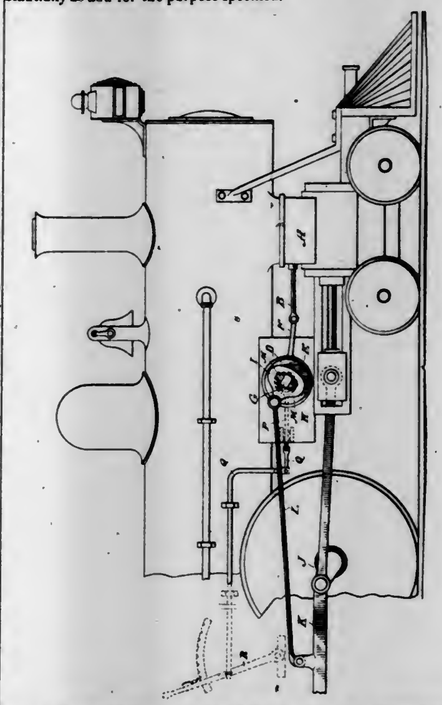
541,855. HANDLE. THEODORE W. HICKSON, Melbourne, Victoria. Filed Jan. 28, 1895. Serial No. 536,397. (No model.)



Claim.—A can frame holder, consisting of the combination of a band, passing around the can in a direction parallel to the plane of the base, and fitting snugly thereon, and carrying pivot pins on opposite sides thereof, the bands being in halves which are hinged together to said pins, a single supporting strip A, passing from one pivot to the other down opposite sides of the can and centrally under the base thereof, and a handle having slotted ends, in which fit said pins and passing over the top of the can, the said band, strip and handle being loosely connected together by the pins.

541,856. VALVE MECHANISM. FREDERICK P. HIGH, Pittsburg, Pa., assignor of one-half to Frank Burt, Mannington, W. Va. Filed Feb. 26, 1895. Serial No. 539,727. (No model.)

Claim.—1. An adjustable valve mechanism, consisting of a shaft G, journal G' journal support H, said shaft G being adapted to be revolved in keeping with the revolutions of the main shaft, a cam wheel supported on said shaft, and means for varying the lateral position of the said cam wheel with respect to the axial center of the shaft, substantially as and for the purpose specified.



2. An adjustable valve mechanism, consisting of a supplemental shaft G, journals G' fixedly secured to said shaft, journal supports H, a crank I fixed at the outer extremity of said shaft, with a cam-wheel D located between said journals G' and crank I, and with longitudinal adjustable wedges M M to give lateral adjustment to said cam wheel, and with means for rotating said supplemental shaft, and for shifting the position of the wedges M, substantially as and for the purpose specified.

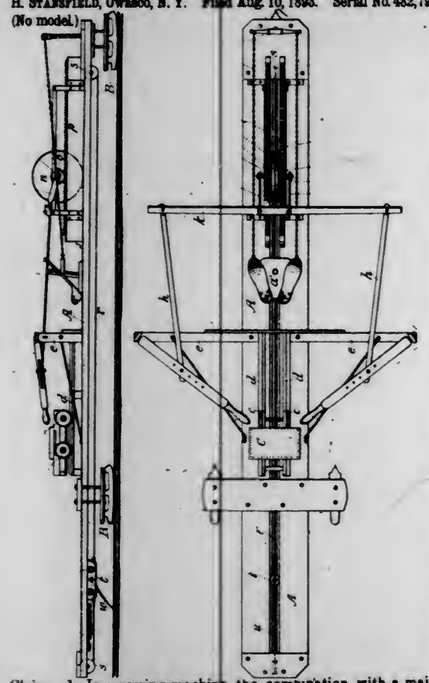
3. A variable cut-off mechanism, consisting of a supplemental revoluble shaft G, crank I and pitman L communicating with a connecting rod K, longitudinally adjustable wedges supported in channels toward the end of the shaft G, said wedges passing through a cam wheel, said cam wheel communicating with the valve-stem through the medium of an eccentric strap and rod and means for moving the wedges longitudinally to vary the lateral position of the cam wheel with respect to its position on the shaft, substantially as and for the purpose specified.

4. A supplemental shaft G, a cam-wheel D loosely mounted thereon, a crank I and a journal G' fixedly secured to the said shaft on each side of said cam-wheel, wedges M M each having inclined outer surfaces supporting the cam-wheel D, recess in the crank I and journal G' to permit longitudinal movement of the said wedges with means as described for revolving the shaft G and varying the longitudinal adjustment of the wheels, substantially as and for the purpose specified.

5. A variable cut-off mechanism consisting of a revoluble shaft G having squared channeled ends, longitudinally adjustable wedges carried in said channels, eccentric cam wheels adapted to fit over the square end of the shaft and wedges, said cam wheels transmitting motion to the valve-stem as described, a collar N loosely fitting on the shaft G, the bell crank P and connecting rod Q for moving the collar longitudinally upon the shaft to vary the position of the wedges and thereby the position of the cam wheel, substantially as described.

6. An adjustable valve mechanism, consisting of a shaft G having square ends, longitudinally adjustable wedges M M mounted thereon in channels, a ring N longitudinally movable on said shaft, and link O O connecting said ring with said wedges, and means for shifting the longitudinal position of the ring N, in combination with the eccentric cam-wheel D, and means for transmitting motion to the valve-stem, and with the crank I and journal G', recessed as shown to permit longitudinal adjustment of the wedges, substantially as and for the purpose specified.

541,857. ROWING-MACHINE. EDWARD C. HINTON and WILLIAM H. STANSFIELD, Owasco, N. Y. Filed Aug. 10, 1893. Serial No. 482,799. (No model.)



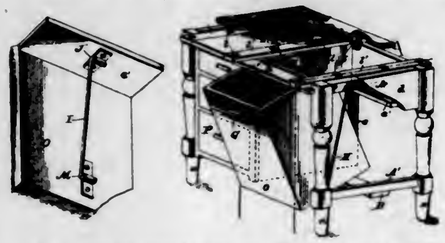
Claim.—1. In a rowing machine, the combination with a main frame, of supporting runners or shoes therefor, a cross-bar secured to said frame, oars jointed to said cross-bar, a reciprocating cross-bar connected with said oars, a wheel connected to said reciprocating cross-bar, means for rotating the said wheel as it is reciprocated, an endless belt encircling said wheel and running lengthwise the main frame, a driving spur reciprocated by said belt, and means for steering the machine, substantially as described.

2. In a rowing machine, the combination with a main frame slotted centrally nearly its entire length, supporting shoes or runners for said frame, a cross-bar rigidly secured to the frame midway its length and forming outriggers, oars pivoted to the ends of said cross-bar, a sliding seat mounted in guides in proximity to said oars, a reciprocating cross-bar near the front of said frame, connecting rods joining said oars and reciprocating cross-bar, a grooved wheel journaled in supports rigid with said reciprocating bar, driving pinions on the shaft of said wheel, racks on either side of the wheel, which racks are engaged by said pinions, to rotate the wheel as the reciprocating cross-bar is moved forward and backward by the oars, an endless belt running lengthwise the frame and encircling the said grooved wheel, a sliding block carrying a driving spur mounted in the central slot of the frame and connected with said endless belt, a pivoted foot rest mounted just in front of said sliding seat, and connections between said foot rest and the forward supporting shoe, whereby the position of the latter can be varied at will and the course of the machine controlled.

3. The combination in a rowing machine, with the frame A, having a central slot *u*, of supporting shoes B, the forward one of said shoes being mounted on a vertical pivot, the sliding seat C, the cross-bar *e* forming outriggers, the oars *f* jointed thereto, the reciprocating bar *k*, provided with rigid arms *l*, rods *h* connecting said oars with said reciprocating bar, the shaft *m* mounted in said arms, the grooved wheel *n*, carried by said shaft, pinions *o* on the said shaft, the racks *p* between which said wheel *n* travels and with which pinions *o* mesh, the endless belt *r* encircling said wheel, pulleys *s* at the opposite ends of the machine and over which said belt runs, the sliding block *t* reciprocated by said belt and having the driving spur *w*, the pivoted foot rest *a'*, the tiller bar rigid with the vertical pivot on which the forward supporting shoe is mounted, and the tiller chains *b'* connecting said foot rest and tiller bar.

541,858. KITCHEN-CABINET TABLE. FRANK B. INGER, Kansas City, Mo. Filed Jan. 11, 1895. Serial No. 534,598. (No model.)

Claim.—1. A kitchen cabinet table, comprising a suitable framework, a bin, a pair of swinging hangers pivotally connected at their lower ends to said bin and pivotally connected at their upper ends in the framework, a pivoted hanger, which performs the function alternately of a support and brace, connecting the bin and the framework and a turn button carried by the rear wall of the bin and adapted when in operative position to come in contact with a portion of the framework when the bin is tilted forwardly, substantially as set forth.



2. In a kitchen cabinet table, the combination with a suitable framework, having a longitudinally extending bar near its lower end as a part thereof, of a bin mounted near its lower end upon a pair of swinging hangers, and a hanger which alternately performs the function of a support and a brace, pivotally connecting the back-wall of the bin near its lower end with a part of the table framework, substantially as set forth.

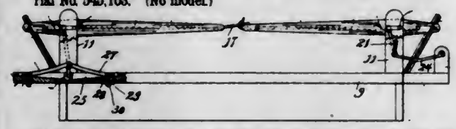
3. In a kitchen cabinet table, the combination with a suitable supporting framework divided by a vertical partition below the top of the table into two spaces, containing, respectively, a nest of drawers and a tilting bin, strips extending from front to rear, supported above the nest of drawers and tilting-bin, a table-top secured upon said strips, as hereinbefore described, and overhanging the margin of the table, and provided with an annular groove in its under side to protect the contents of the various drawers and bin from injury by water or other liquid, and a sliding board for slicing or kneading purposes, all arranged substantially as and for the purposes set forth.

541,859. NEW AMIDO BASE AND COLORS THEREFROM. RICHARD KOREFF, Prague, Austria-Hungary, assignor to Kinzlberger & Co., same place. Filed Apr. 17, 1894. Serial No. 507,903. (Specimens.) Patented in England Mar. 12, 1894, No. 5,143; in France Mar. 27, 1894, No. 237,358, and in Austria June 15, 1894, No. 44/2,468.

Claim.—1. The process of obtaining new primary amines, which consists in condensing a solution of an amine such as herein described, in concentrated sulfuric acid and formaldehyde.

2. New primary amines, the melting point of which is about 60° centigrade, consisting of a non-crystallizable condensation product of formaldehyde with an amine such as herein described said primary amines being soluble in ether, obtainable in the form of a white precipitate from acid solutions, and yielding readily soluble diazo and tetrazo compounds.

541,860. BRIDGE-GATE. AL LESNA, Oconomowoc, Wis., assignor of one-half to Ferdinand Meyer, same place. Filed Apr. 9, 1895. Serial No. 545,103. (No model.)



Claim.—1. The combination, of a movable contacting part, pivoted gate arms, one carrying a hook or catch, and the other an engaging loop, devices attached to the gate arms and adapted when operated to cause the turning of said arms upon their pivots, mechanism connected to said devices, and adapted, when acted upon in one way by the movable contacting part, to cause, through said devices, the down turning of the gate arms in such manner that the arm carrying the hook or catch will reach the limit of its down movement in advance of the other arm, and, when said mechanism is acted upon by the movable part in an opposite way, to cause the upturning of the gate arms, the initial movement of the gate arm carrying the engaging loop occurring slightly in advance of the initial movement of the arm carrying the hook or catch, substantially as set forth.

2. The combination, with swinging gate arms, of cables secured thereto, one of said cables provided at its inner end with a hook or catch, and the other with an engaging loop, substantially as set forth.

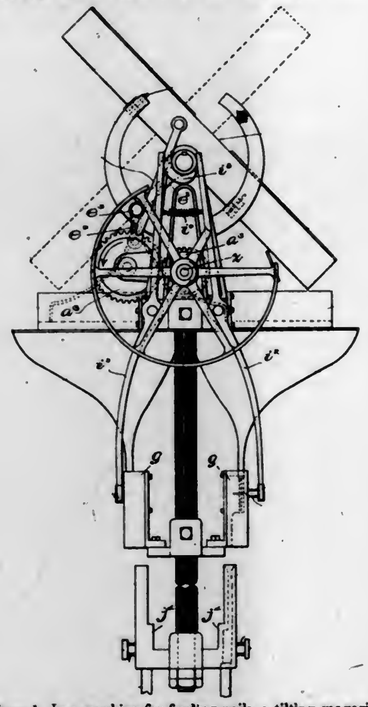
3. The combination, of swinging gate arms, hinged bars, a connection between said hinged bars and one of the gate arms, a doubly inclined cam surface, a connection between one end of this cam and the other gate arm, and means for operating, one in advance of the other, said hinged bars and the doubly inclined cam surface, substantially as set forth.

4. The combination, of swinging gate arms, hinged bars, a connection between said hinged bars and one of the gate arms, a doubly inclined cam surface, each incline thereof being of less length than the respective hinged bars, a connection between one end of this cam surface and the other gate arm, and a movable part carrying contacts adapted, respectively, to engage the hinged bars and the doubly inclined cam surface, substantially as set forth.

5. The combination, of crank shafts, gate bars mounted thereon, an abutment, hinged bars on said abutment, a link connecting said bars with the crank shaft of one of the gate arms, a doubly inclined cam surface, a link connecting this cam with the crank shaft of the other gate arm, and a swinging bridge carrying contacts adapted, respectively, to engage the hinged bars and the doubly inclined cam surface, substantially as set forth.

6. The combination of standards, one of the standards having a curved recess with a notched edge, the ends of said curved recess connected by a straight recess, gate-arms pivoted to the standards, a spring-controlled bell-crank lever pivoted to a gate arm, one of the members of said bell-crank lever provided with an extension fitting the curved recess, a rod connected to the end of the other member of the bell-crank lever, a pivoted hammer having its upper end connected to the inner end of the rod, and a gong adapted to be acted upon by the free end of the hammer, as the gate arm descends and the extension is jumped from one notch to another, substantially as set forth.

541,861. HEEL-NAIL-FEEDING MACHINE. JOSEPH R. LESURE, Somerville, assignor of one-fourth to Frank E. Reed, Medford, Mass. Filed May 14, 1894. Serial No. 511,077. (No model.)



Claim.—1. In a machine for feeding nails, a tilting magazine in the form of an elongated trough having a longitudinal outlet slot in the bottom extending obliquely from the upper to the under side thereof and toward the end of the trough; a movable cover exteoding over the said slot where it emerges from the upper side of the trough-bottom, and forming an abutment for a single nail lying in one end of the trough; and means for displacing the cover, when that end of the trough is elevated, permitting the arrested nail to gravitate into the oblique slot and lodge on one side thereof so that when the end of the trough is tilted downward the nail will slide out through the slot.

2. In a machine for feeding nails, a tilting magazine in the form of an elongated trough having a longitudinal nail-pocket in its bottom and a slot extending from said pocket obliquely through the bottom of the trough; a movable cover extending over the pocket and forming an abutment for a nail lying in one end of the trough; and means for displacing the said cover, when that end of the trough is elevated, permitting the arrested nail to gravitate into the pocket and lodge on one side of the oblique slot so that when the end of the trough is tilted downward the nail will slide out through the slot.

3. In a nail-feeding machine, a tilting magazine having inclined sides and an outlet opening in the bottom, a pivotal tongue extending over said opening and its free end arranged to present an abutment for a single nail in the end of the magazine, and means for moving the tongue away from the bottom of the channel to allow the arrested nail to pass under the tongue and into the outlet opening.

4. In a nail-feeding machine, a tilting centrally pivoted magazine having inclined sides and outlet openings in the bottom on opposite sides of the pivot, pivotal tongues extending over the outlet openings and the free ends of each arranged to lie close to the bottom of the magazine and arrest a single nail, and means for moving the said pivotal tongues away from the bottom of the magazine alternately when opposite ends of the magazine are elevated, substantially as described.

5. In a nail-feeding machine, a tilting magazine having inclined sides and an outlet opening in the bottom, a pivotal tongue extending over said opening and its free end arranged to present an abutment for a single nail in the end of the magazine, a bar arranged to act against the tongue and located at the inner end of the outlet opening and means for actuating said bar to move the tongue away from the bottom of the magazine and allow the arrested nail to pass under it and against the bar and into the outlet opening.

6. In a nail-feeding machine, a tilting magazine comprising a gang of troughs each having an outlet opening in its bottom, pivotal tongues over said openings, a bar extending under said tongues, and means for moving said bar to simultaneously lift the tongues, substantially as and for the purpose described.

7. In a nail-feeding machine, a tilting magazine comprising a gang of troughs each having an outlet opening in its bottom, pivotal tongues over said openings, a bar extending under said tongues, and having oblique slots, pins on the magazine engaging said slots, and segmental cam-strips controlling the bar, substantially as described.

8. In a nail-feeding machine, a tilting centrally pivoted magazine comprising a gang of troughs each having outlet openings in its bottom on opposite sides of the pivot, pivotal tongues covering said openings and whose ends are arranged to lie closely in the bottoms of the troughs and constitute abutments for nails, transverse bars extending under the tongues, and means for moving said bars alternately against the tongues, substantially as and for the purpose described.

9. In a nail-feeding machine, a trough having a nail-channel in its bottom extending out of each end and of a width and depth each less than the greatest width of the nail and greater than the thickness thereof, whereby a nail lodging in the channel edgewise or sidewise will have its large end projecting above the channel while said nail lies horizontally in the channel with its point end resting on the bottom of the same; and a reciprocating brush engaging the trough above the channel.

10. In a nail-feeding machine, a trough having a nail-channel in its bottom of a less width than the large end of the nail, a tilting magazine with provisions for emitting nails singly to the trough, and a brush connected with the tilting magazine and adapted to traverse the trough.

11. In a nail-feeding machine, a horizontal trough having a nail channel in its bottom of a width less than the large end of the nail, a chute below said trough and extending beyond each end of the same, a reciprocating brush arranged to traverse the trough, and means for delivering nails singly to the trough.

12. In a nail-feeding machine, the combination of a tilting magazine having provisions for emitting nails singly on opposite sides of its pivot, troughs under opposite ends of the magazine and each having a nail-channel of a width less than the large end of the nail, and brushes arranged to traverse said troughs respectively and connected with the tilting magazine from which they receive motion.

13. In a nail-feeding machine, a trough having a nail-channel in its bottom of a width and depth each less than the greatest width of the nail and greater than the thickness thereof, whereby a nail lodging in the channel edgewise or sidewise will have its large end projecting above the channel; and a reciprocating pivotal brush arranged to traverse the trough above the channel.

14. In a nail-feeding machine, the combination of a tilting magazine having provisions for delivering nails singly, a chute which receives the nails, pins between which the nails are arrested, a lever having provisions for dislodging a nail from between said pins, and a cam on the journal of the magazine for acting against said lever.

15. In a nail-feeding machine, the combination of a tilting magazine comprising a gang of troughs with provisions for singly delivering nails, arresting pins, a bar having provisions for dislodging the

arrested nails, levers connected with said bar, and a cam on the journal of the magazine to actuate said levers.

16. In a nail-feeding machine, the combination of a tilting magazine comprising a gang of troughs with provisions for singly delivering nails from opposite ends; arresting pins; bars having provisions for dislodging nails arrested by said pins; levers connected with said bars and arranged in pairs extending on opposite sides of the journal of the magazine and connected by springs; and cams on the said journal arranged to co-act with the levers, substantially as described.

17. In a nail-feeding machine, the combination of a nail-receiving chamber having provisions for arresting an entering nail, and having two outlets one below the arresting devices and one offset, and means for dislodging the nail from the arresting devices and carrying it over the offset outlet.

18. In a nail-feeding machine, a barrel constructed to hold a stack of nails in vertical position end to end, and having an enlarged chamber at its lower end with a ledge on which the point of the lowermost nail bears; a vertical tube having an open upper end at the edge of said ledge; and means for moving the said nail bodily off the ledge and over the tube, the enlarged chamber at the lower end of the barrel permitting such movement of the nail.

19. In a nail-feeding machine, the combination of a receiving chamber having provisions for detaining the nails delivered singly to it, and two outlets one below the detaining devices and the other offset, means for dislodging a nail from the detaining devices and carrying it above the offset outlet, a barrel below the latter and adapted to contain a stack of nails, said barrel having a shoulder or ledge upon which the lowermost nail rests, a tube communicating with the barrel, and means for moving the lowermost nail off the ledge and over said tube.

541,862. SHEEP-SHEARS. LEONARD J. LOHLEIN, Lusk, Wyo., assignor of one-half to James L. Rector, same place. Filed Feb. 16, 1893. Serial No. 462,549. (No model.)

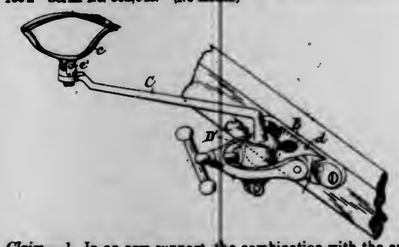


Claim.—1. The combination in sheep shears, of the hollow handle sections A with slotted lugs *a* and *b*, the blades C with shanks having notches *d'*, and the spring detent D substantially as shown and described.

2. The combination in sheep shears of the hollow handle sections A having the notches *c* in their ends and provided with the slotted lugs *a b*, the blades C provided with the shoulder *d* to enter the notches *c* and with the tapering shanks *c* having the notches *d'* and the spring detent D, substantially as described.

3. The combination with the hollow handle section A and the blades having notched shanks *c*; of a spring catch D having its ends *f f* arranged to grasp the shank substantially as shown and described.

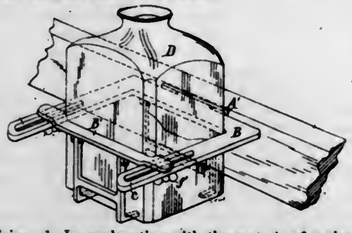
541,863. ARM-SUPPORT. HARRY T. LOOMIS, Oneida, N. Y., assignor to the National Casket Company, same place. Filed Dec. 22, 1894. Serial No. 532,648. (No model.)



Claim.—1. In an arm-support, the combination with the crank-shaped arm, of a curved piece mounted on the free end of the arm and provided with two pivots at an angle to each other, a ball on the opposite end of said arm, a socket for the ball, a pivoted link, and a screw passing through said link, as and for the purpose described.

2. In an arm-support, the combination with the crank-shaped arm, of a curved piece pivoted to the free end of the arm, a ball on the opposite end of the said arm, a divided socket for the ball, one part of which is pivoted and adapted to move toward and from the other part, a link pivoted to the stationary part of the socket, and a screw passing through the link and engaging the movable part of the socket, as set forth.

541,864. BOTTLE-SUPPORT. HARRY T. LOOMIS, Oneida, N. Y., assignor to the National Casket Company, same place. Filed Dec. 22, 1894. Serial No. 532,649. (No model.)

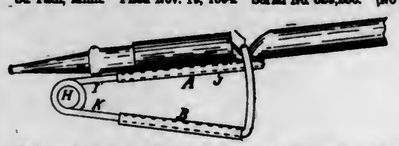


Claim.—1. In combination with the part, A, of a plate secured to said part, a frame secured to said plate by a dove-tailed tongue and groove, an adjustable side on the frame, and a pair of hangers pivoted to the lower side of the frame, one being pivoted to the adjustable side and the other to the opposite side of the frame, substantially as described and shown.

2. In a bottle-support or bracket, the combination with the part, A, of a plate secured permanently to said part and provided with a groove, a rectangular frame having a tongue adapted to enter said groove, an adjustable side on the frame movable toward and from the opposite side of the frame, hangers pivoted to opposite sides of the frame and depending therefrom when supporting the bottle, and means to clamp the movable side in position, substantially as described and shown.

3. In a bottle-support or bracket, the combination with the part A, of a plate secured permanently to said part and provided with a dove-tailed vertical groove, the stop, *a*, a rectangular frame having a dove-tailed tongue to enter said groove, a sliding side on the side of the frame opposite that having the tongue, screw threaded lugs on the ends of the movable side, slots, *c*, *c*, nuts, *f'*, *f'*, L shaped hangers pivoted to the lower side of the frame, one being pivoted to the movable side and the other to the opposite side, the hanger on the latter side being wider and lower than the other hanger, as set forth.

541,865. SHUT-OFF CLAMP FOR HOSE. ERIK M. LUNDHOLM, St. Paul, Minn. Filed Nov. 19, 1894. Serial No. 529,236. (No model.)



Claim.—1. A shut-off clamp for hose, consisting of two elongated plates or arms connected together at one end by springs the springs connecting the plates and tending to throw them apart, one of said plates having secured upon its outer side a substantially tubular hose guide, and the other plate having a hose closing bail embracing the first plate near by the hose guide, substantially as shown and described and for the purpose specified.

2. A shut-off clamp for hose, comprising the wire bail D, E, having the bars K, the springs H, and arms I, formed integral with the bail, the plate B, having its side edges embracing the bars K; the plate A, having its side edges secured upon the bars or arms I, and extending into the bail D, E, and a hose guide as C, P, secured upon the plate A, for guiding and guarding the hose, substantially as shown and described and for the purpose set forth.

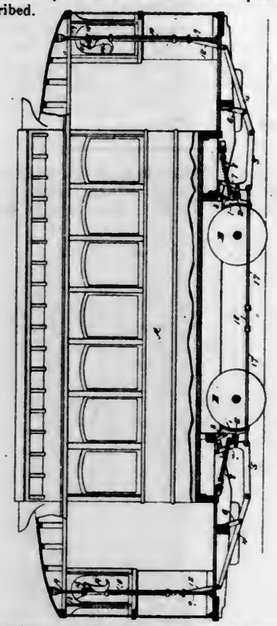
541,866. BRAKE FOR RAILWAY-CARS. WILLIAM MAIR, Brooklyn, N. Y. Filed Oct. 17, 1890. Serial No. 368,432. (No model.)

Claim.—1. The combination with brake shoes moving in opposite directions to apply the brake, of compound levers by which the respective brake shoes are operated having their pivots supported movably relatively to the body of the car, and connections between the brake mechanisms whereby the operation of either compound lever moves the brake shoes in opposite directions to apply both brakes, substantially as described.

2. The combination with a swinging brake shoe, of a compound lever operating said brake shoe, and a swinging member supporting said compound lever independently of the brake shoe, substantially as described.

3. The combination with a swinging brake shoe, of a compound lever operating said brake shoe to apply the brake, a swinging member supporting said compound lever independently of the brake shoe, and a spring or springs for returning said brake shoe and compound lever to their normal positions, substantially as described.

4. The combination with a swinging cross bar carrying brake shoes, of a compound lever connected to and operating said bar to apply the brake, a swinging member supporting said compound lever independently of the brake shoes, and a spring or springs for returning said bar and compound lever to their normal positions, substantially as described.



5. The combination with brake shoes moving in opposite directions to apply the brake, of compound levers by which the respective brake shoes are operated, swinging members supporting said compound levers, and connections between the brake mechanisms whereby the operation of either compound lever moves the brake shoes in opposite directions to apply both brakes, substantially as described.

6. The combination with brake shoes moving in opposite directions to apply the brake, of compound levers by which the respective brake shoes are operated, swinging members supporting said compound levers, and adjustable connections between the two brake mechanisms, whereby the brake shoes may be adjusted relatively to the wheel or wheels, substantially as described.

7. The combination with a brake mechanism, of a rod, a sleeve sliding on the rod, and connected to the brake mechanism for operating the same, and a ring clutch moving with said sleeve and engaging the rod to lock the brake, substantially as described.

8. The combination with a brake mechanism, of a vertical or substantially vertical rod, a sleeve sliding on said rod and operated by foot pressure to apply the brake, and a ring clutch moving with said sleeve and engaging the rod to lock the brake, substantially as described.

9. The combination with a brake mechanism operated by foot pressure to apply the brake, of a vertical or substantially vertical rod, and a ring clutch connected to and moving with the brake mechanism and engaging the rod to lock the brake, substantially as described.

10. The combination with a swinging cross bar carrying brake shoes, of a swinging compound lever operating said bar and operated by foot pressure, and a ring clutch device for locking the brake, substantially as described.

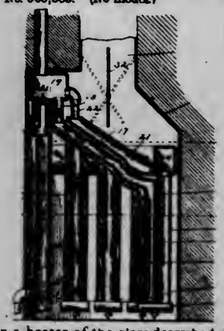
11. The combination with a swinging cross bar carrying brake shoes, of a swinging compound lever operating said bar to apply the brake, a vertical or substantially vertical rod, a sleeve sliding on said rod and actuated by foot pressure to operate the compound lever, a ring clutch moving with said sleeve and engaging the rod to lock the brake, and a spring or springs for returning the parts to their normal positions, substantially as described.

12. The combination with swinging cross bars carrying brake shoes and moving in opposite directions to apply the brake, of swinging compound levers operating said bars and operated from opposite ends of the car by foot pressure, connections between the compound levers, ring clutch devices at opposite ends of the car for locking the brake, and springs for returning the parts to their normal positions, substantially as described.

13. The combination with swinging cross bars carrying brake shoes and moving in opposite directions to apply the brake, of swinging compound levers operating said bars and operated from opposite ends of the car by foot pressure, adjustable connections between the compound levers, ring clutch devices at opposite ends of the car for locking the brake, and springs for returning the parts to their normal positions, substantially as described.

14. The combination with swinging cross bars carrying brake shoes and moving in opposite directions to apply the brake, of swinging compound levers operating said bars, connections between the compound levers, a vertical or substantially vertical rod at each end of the car, sleeves sliding on said rods and actuated by foot pressure to operate the compound levers, ring clutches moving with said sleeves and engaging the rods to lock the brake, and springs for returning the parts to their normal positions, substantially as described.

541,867. OPEN-FIREPLACE WATER-HEATING APPARATUS. SAMUEL H. MARTIN and WILLIAM H. JONES, Lincoln, Ill. Filed Mar. 31, 1894. Serial No. 505,883. (No model.)



Claim.—1. In a heater of the class described, a series of upright heating tubes adapted to be arranged within an open fireplace, a hot water box or reservoir adapted to be arranged within the top of an open fireplace and connected with the upper ends of said tubes, a rectangular water ring adapted to encircle said tubes and connected with the lower ends thereof, and return pipe connections with said water ring, substantially as set forth.

2. In a heater of the class described, the upright triangularly shaped heating tubes adapted to be arranged within an open fireplace and provided at their front and rear sides with longitudinal grooves, and circulating pipe connections with said tubes certain of said pipe connections being arranged in the rear grooves of said tubes, substantially as set forth.

3. In a heater of the class described, a series of vertical heating tubes adapted to be arranged at the back of an open fireplace and provided with forwardly and upwardly disposed crown portions or tubes an inclined heating box arranged over said crown portions or tubes, and circulating connections with the upper and lower ends of said heating tubes certain of which tubes are connected to said heating box, substantially as set forth.

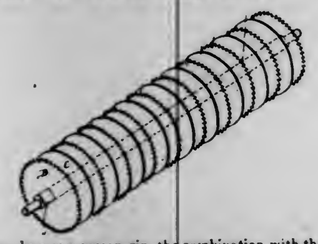
4. In a heater of the class described, a series of upright heating tubes adapted to be arranged at the sides and back of an open fireplace, the back series of tubes being provided with forwardly and upwardly disposed crown portions, an inclined heating box arranged directly over the top of said tube crown portions and connected at its opposite ends with the side series of heating tubes, a hot water box or reservoir, connections between the upper ends of the tube crown portions and the heating box and said hot water box or reservoir, and return pipe connections with the lower ends of the said heating tubes, substantially as set forth.

5. In a heater of the class described, a series of upright heating tubes adapted to be arranged within an open fire place and provided at the rear sides with longitudinal pipe grooves, flow connections with the upper ends of said tubes, a rectangular water ring adapted to be arranged withiu the fireplace and embracing said tubes, a series of vertical feed pipes connected to said water ring at their upper ends and at their lower ends to the lower ends of said heating tubes, said vertical feed pipes being arranged in the pipe grooves of the heating tubes, and return pipe connections with the opposite front ends of said water ring, substantially as set forth.

6. In a heater of the class described, the combination with the heating tubes adapted to be arranged around a grate and having flow connections with their upper ends, the feed pipes arranged at one side of the heating tubes, connecting basins connected to the lower ends of said feed pipes, and small coupling or connecting nipples connecting said basins with the lower ends of said heating tubes, substantially as set forth.

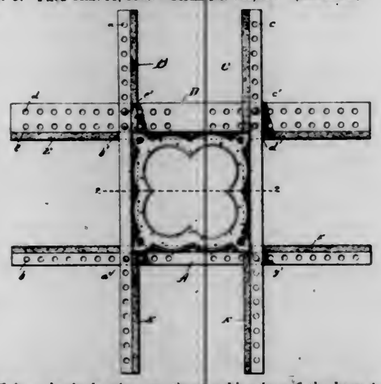
7. In a heater of the class described, the combination of a hot water box or reservoir adapted to be arranged within the top of an open fireplace the heating tubes connected therewith; a separate heating box connected with certain of said tubes, and a series of partitioned drop tubes connected by separate connections with the bottom of said hot water box or reservoir, substantially as set forth.

541,868. SAW COTTON-GIN. JOHN A. MAXWELL, Calvary, Ga. Filed Sept. 1, 1894. Serial No. 521,053. (No model.)



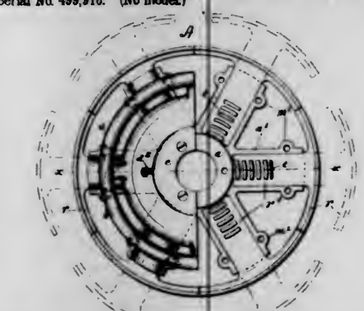
Claim.—In a saw cotton gin, the combination with the saw shaft having a series of circular continuously toothed saws thereon, of a series of circular untoothed disks one or more of which is located between each two adjacent saws, and which are each of substantially the same diameter as the saws, substantially as specified.

541,869. DRYING-FRAME. WILHELMINA MAYER, New York, N. Y. Filed Mar. 11, 1895. Serial No. 541,215. (No model.)



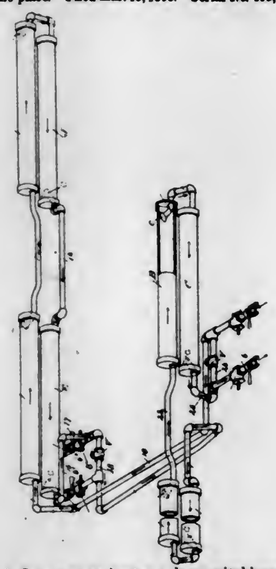
Claim.—In drying frames, the combination of the bars A, B, C and D, a recess in each of said bars in which is carried a strip of yielding material flush with the surface thereof, a row of perforations in the bars A, B, C, a double row of perforations in the bar D, pins at the intersection of the bars B, A and C, and a double row of pins at the intersection of the bars B, C, with the bar D, substantially as and for the purposes specified.

541,870. EXPANSION-PULLEY. JAMES MUIR, Providence, R. I., assignor to the Phenix Iron Foundry, same place. Filed Feb. 12, 1894. Serial No. 499,916. (No model.)



Claim.—As an improved article of manufacture, the expansion pulley A, hereinbefore described, the same consisting of the hub member *a* having a series of radiating spokes *a'* provided each with a correspondingly arranged seat, a series of independent rim-sectors *r* having arms *r'* slidably mounted in said spoke seats and having the front faces of said arms provided with sections of spiral threads *t*, a face-plate *d* mounted on and capable of being adjustably secured to said hub and having a spiral thread formed in its face in engagement with those of the sector-arms, caps *c* secured to the front outer end portions of the said spokes *a'* and exterior to the face-plate, and stop-pins or bolts *f* adjustably secured to the spokes, each pin having an end extending therethrough and in engagement with a slotted opening *f'* formed in the back of the corresponding sector-arm, substantially as shown and described.

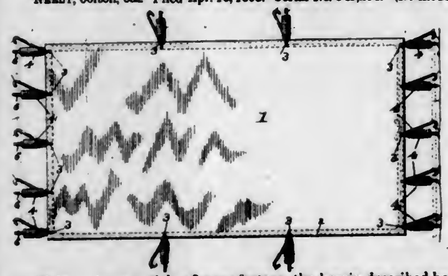
541,871. STORAGE-HEATER FOR STREET-CARS. JAMES F. MCELROY, Albany, N. Y., assignor to the Consolidated Car-Heating Company, same place. Filed Mar. 13, 1893. Serial No. 465,694. (No model.)



Claim.—1. In a storage heater, a drum suitably mounted, a pipe arranged to convey hot water into said drum at one end thereof, a pipe entering said drum at the opposite end thereof, a trap arranged within said drum in connection with last mentioned pipe, said trap opening into the drum near the top thereof, with an orifice in said trap near the bottom of said drum, substantially as described and for the purpose set forth.

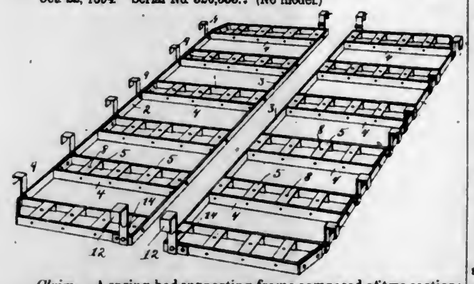
2. In a storage heater, one or more drums located on each side of a car suitably connected with piping, with a trap arranged in that end of each drum out of which the water passes, about midway between the ends of the car said trap communicating with the drum near the top thereof, with a vent within said pipe communicating with the drum near the bottom thereof, said piping provided with a check valve on each side of the car constructed in such a manner as to permit of the circulation of the water in but one direction, substantially as described and for the purpose set forth.

541,872. BOTTOM FOR COTS, HAMMOCKS, &c. BENJAMIN F. NEELY, Colton, Cal. Filed Apr. 10, 1895. Serial No. 545,231. (No model.)



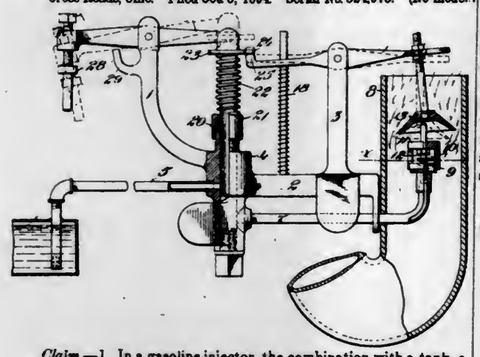
Claim.—As an article of manufacture, the herein described bottom for cots, hammocks and the like, consisting of a sheet of canvas or other suitable fabric cut to the proper shape and dimensions, binding cords secured to the outer edges of said canvas, and extending entirely around the outside thereof metallic loops fastened to said cords at intervals, springs and hooks secured to said loops, and a cord passing through the outer ends of said springs and hooks, substantially as and for the purpose described.

541,873. SPRING-BED. JAMES H. O'CONNOR, Boston, Mass. Filed Oct. 22, 1894. Serial No. 526,533. (No model.)



Claim.—A spring-bed supporting-frame composed of two sections extending lengthwise of the bed and each comprising outer longitudinal side-bars, inner longitudinal side-bars, cross-bars attached to the side-bars and adapted to support a spring bed, side hooks on the outer side-bars adapted to engage the side-rails of a bedstead, and end hooks connected by hinges to the ends of the sections at or near the inner corners thereof and arranged to engage the end-rails of the bedstead, said hinges enabling the end hooks to swing inwardly and avoid contact with the portions of the bedstead above the end-rails thereof.

541,874. GASOLINE-INJECTOR. JACOB M. OLINGER, Vienna Cross Roads, Ohio. Filed Oct. 5, 1894. Serial No. 524,973. (No model.)



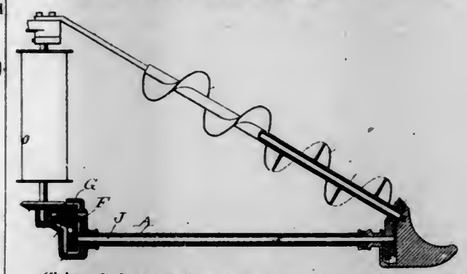
Claim.—1. In a gasoline injector, the combination with a tank, a cylinder and piston, a pipe from the tank entering the cylinder at a point intersected by the piston in its ejecting stroke, a mixing chamber adapted to take in air and to communicate with the engine cylinder, a pipe leading from the pump into said chamber, a valve in said pipe, and means to hold the valve closed but allow it to open when the piston intersects the tank-pipe opening, and means to actuate the piston.

2. In a gasoline injector, the combination with a tank, a cylinder and piston in a higher plane, a pipe from the tank entering the cylinder at a point intersected by the piston in its ejecting stroke, a mixing chamber adapted to take in air and to communicate with the engine cylinder, a pipe leading from the pump into said chamber, a valve in said pipe, and means to hold the valve closed but allow it to open when the piston intersects the tank-pipe opening, and means to actuate the piston.

3. In a gasoline injector, the combination with a tank, a cylinder and piston, a pipe from the tank to the cylinder crossed by the piston in its ejecting stroke, a spring to operate the piston in one direction, and a trip arm to operate it in the other, and a mixing chamber, a pipe leading from the cylinder into said chamber, a valve in said pipe and device to hold the valve seated, a lever to actuate said device and a projection on the piston to actuate the lever at the proper time.

4. In a gasoline injector, the combination with a cylinder, a piston, a spring to give the piston its out-stroke, a pivoted trip-arm to give it its in-stroke, and a projection on the piston, of a mixing chamber open at one end and adapted at the other to communicate with the engine explosion chest, a pipe leading from the cylinder into said chamber, a valve in said pipe, a yoke to limit its movement, a hood suspended within the chamber and adapted to normally hold the valve seated, a lever connected to the hood, a spring acting on the lever, the lever being adapted to be operated by the projection on the piston.

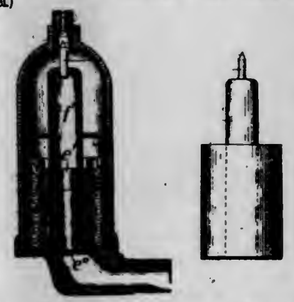
541,875. CORN-HARVESTER. GEORGE W. PACKER, Rock Falls, assignor to the Keystone Manufacturing Company, Sterling Ill. Filed Feb. 16, 1895. Serial No. 538,685. (No model.)



Claim.—1. In a corn harvester, the combination of a horizontal shaft J, provided with driving gear K at its forward end, and at its rear end with the pinion H, and journaled at its forward end in a shoe B, and at its rear end in a suitable portion of the frame of the machine, a suitable driving gear F adapted to engage the pinion H and rotate the shaft J, the diagonally placed pipe M provided with a spiral N, and suitably journaled at its lower and front end in the shoe B, and at its upper and rear end on the frame of the machine, and provided at its front end with the pinion L, adapted to be engaged and actuated by the gear K, substantially as shown and for the purpose specified.

2. In a corn harvester, the combination of a horizontal tube suitably attached at its rear end to the lower portion of the front end of the machine, and projected forwardly therefrom and attached at its front end to a shoe B, a rotating shaft seated in said tube and provided at its rear end with a pinion adapted to be engaged and actuated by a suitable gear carried on the frame of the machine, said shaft being further provided at its forward end with a driving gear, a rod suitably attached at its forward end to the shoe B above the tube aforesaid and projected diagonally upward and rearwardly therefrom and attached at its rear end to the frame of the machine, and the tube M provided with a spiral N, and loosely seated on said diagonal rod and provided at its lower end with a pinion adapted to be engaged and actuated by the adjacent gear on said horizontal rotating shaft, substantially as shown and for the purpose specified.

541,876. AIR-VALVE. CHARLES F. PAIGE and EVERETT P. ALLEN, Denver, Colo. Filed Sept. 4, 1894. Serial No. 522,073. (No model.)



Claim.—1. In a valve of the character described, the combination with a valve chamber having an outlet at the top thereof, and an inlet tube projecting upward from the bottom thereof and opening into said chamber at some distance from its base, the outer walls of said inlet tube and the inner walls of said valve chamber forming the sides of a basin adapted to hold liquid, a float open at the bottom and closed at the top, with an air chamber in the upper portion thereof, projecting down into said basin and extending above and over the top of said inlet tube, and means operated by said float for closing said outlet when said float rises, substantially as described.

2. In a valve of the character described, the combination with a valve chamber having an outlet at the top thereof, and an inlet tube projecting upward from the bottom thereof and opening into said chamber at some distance from its base, the outer walls of said inlet tube and the inner walls of the valve chamber forming the sides of a basin adapted to hold liquid, a partition surrounding said inlet tube

and dividing said basin into two separate liquid chambers, a float consisting of two inverted chambers inclosed one within the other and both open at the bottom and closed at the top, the walls of said float chambers penetrating into the said liquid chambers, and a valve operated by said float and closing said outlet when said float rises, substantially as described.

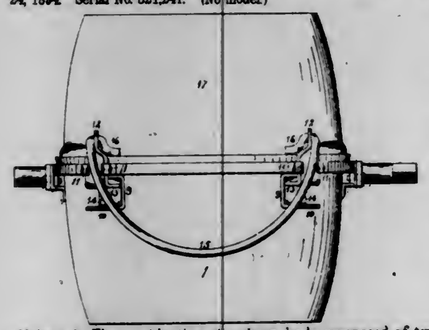
3. In a valve of the character described, the combination with a valve chamber having an outlet at the top thereof, and an inlet tube projecting upward from the bottom thereof and opening into said chamber at some distance from its base, the outer walls of said inlet tube and the inner walls of the valve chamber forming the sides of a basin adapted to hold liquid, a partition surrounding said inlet tube somewhat higher than the walls of said inlet tube, and dividing said basin into two separate liquid chambers, a float consisting of two inverted chambers inclosed one within the other and both open at the bottom and closed at the top, the walls of said float chambers penetrating into the said liquid chambers, and a valve operated by said float and closing said outlet when said float rises, substantially as described.

4. In a valve of the character described, the combination with a cylindrical valve chamber having an outlet at the top thereof, and an inlet tube projecting upward from the bottom thereof and opening into said chamber at some distance from its base, the periphery of said tube and the inner walls of said valve chamber forming the sides of an annular basin adapted to hold liquid, a cylindrical float open at the bottom, with an air chamber in the upper portion thereof, projecting down into said basin and extending above the top of said inlet and means operated by said float for closing said outlet when said float rises, and for closing said inlet when said valve falls, substantially as described.

5. A float for use in valves, comprising two shells open at the bottom and closed at the top, the one inclosed within the other and both connected together as shown, with a valve carried by the central shell, substantially as described.

6. A float F for use in valves, comprising a central tube f' closed at the top and carrying a valve, and an inclosing tube f^2, shorter than the central tube, and connected to the same near the center thereof by an air-tight plate or diaphragm, both of said tubes being open at the bottom, substantially as and for the purposes described.

541,877. CHURN. SAMUEL D. PALMER, Rockford, Ill. Filed Aug. 24, 1894. Serial No. 521,241. (No model.)



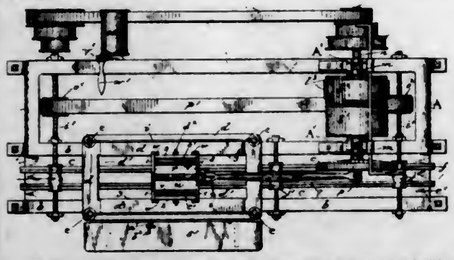
Claim.—1. The combination of a churn body composed of two sections one section having an annular recess at its open end forming a receptacle for a packing, the other section having a wedge shaped metal strip held in position in its open end, the strip having its smaller end rounded and its upper end flat, and lying in a plane transversely of the section, and means for joining the sections resting upon the flat upper surface of the strip.

2. A churn body composed of two sections joined together at their centers, one section having brackets secured at its open end, ears held in place by the brackets and means for adjusting the ears lengthwise, and fastening means connected to the ears.

541,878. SANDPAPERING-MACHINE. HENRY E. PAUK, Jr., St. Louis, Mo., assignor to the Henry Pauk & Sons Manufacturing Company, same place. Filed Oct. 8, 1894. Serial No. 525,240. (No model.)

Claim.—1. In a sand papering machine, a holder for the sand paper, comprising a box or frame, having two opposite inner plates held vertically by, and adapted to slide transversely within the frame, means for moving the said plates against an interposed block of flexible material projecting partly below the frame, two outerly plates intermediate, and parallel to, the inner plates and sides of the frame, respectively, and means for moving the outerly plates toward the inner plates, and against interposed portions of the sand paper, substantially as shown and described.

2. In a sand papering machine, a holder for the sand paper, comprising a box or frame having two opposite inner plates held vertically by, and adapted to slide transversely within the frame, means for moving the said plates against an interposed block of flexible material projecting partly below the frame, outerly plates, intermediate, and parallel to, the inner plates and sides of the frame, respectively, means for moving the outerly plates toward the inner plates and against interposed portions of the sand paper, a roller axially mounted above the frame, and means for winding and holding the sand paper around the said roller, substantially as shown and described.



3. In a sand papering machine, the combination with the holder, and the bed supporting the material to be sand papered, of a holder for the sand paper, composed of a box or frame carrying inner and outerly plates and means for moving the plates against an interposed block of flexible substance, and against interposed portions of the sand paper, respectively, the said holder being adapted to slide on a frame, and means for reciprocating the holder along the said frame, substantially as shown and described.

4. In a sandpapering machine, the combination with the table, and the bed supporting the material to be sandpapered, a vertically adjustable frame mounted upon said table, and provided with guides, springs bearing upon the frame, a holder for sand paper, composed of a box or frame carrying inner and outerly plates and means for moving the plates against an interposed block of flexible material and against interposed portions of the sand paper respectively, the said holder being adapted to slide on the said vertically adjustable frame, and means for reciprocating the holder along the said frame, substantially as shown and described.

5. In a sand papering machine, the combination with the framework, of a vertically adjustable frame provided with guides and adapted to carry the sand paper holder, springs bearing upon the frame, means for raising the frame against the pressure of the springs, and pivoted levers adapted to swing beneath and support the frame when raised, substantially as shown and described.

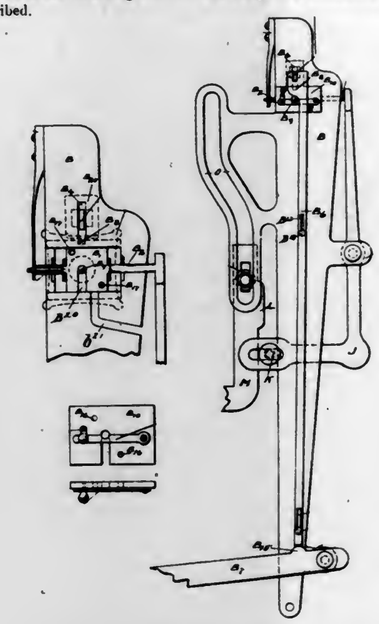
6. In a sand papering machine, the combination with the framework, and the bed supporting the material to be sand papered, of a vertically adjustable frame, provided with guides and adapted to carry the sand paper holder, screwed bolts bearing against the under side of the frame and working through worm wheels or nuts held in fixed brackets, the wheels or nuts being engaged by worms fixed on a shaft, and means for rotating the said shaft, substantially as shown and described.

541,879. JACQUARD MECHANISM FOR LOOMS. GIUSEPPE PAVIA, Paterson, N. J. Filed July 23, 1894. Serial No. 518,365. (No model.)

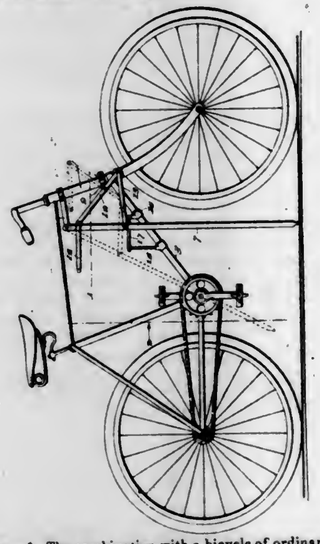
Claim.—1. In a Jacquard mechanism, the cradle, the pattern cylinder and the needles, the cradle being provided with openings adjacent to the ends of the pattern cylinder, in combination with a pair of sliding bearings supporting the pattern cylinder and moving in the said openings, means for vibrating the cradle and cylinder, each bearing having a prong at the front and also one at the rear, two right angled cam-operated levers acting on the prongs at one side of the bearings to give the cylinder an additional movement toward the needles, and two springs acting on the prongs at the other side of the bearings to reciprocate the movement of the angle levers, substantially as described.

2. In a Jacquard mechanism, the cradle, the pattern cylinder and the needles, the cradle being provided with openings adjacent to the ends of the pattern cylinder, in combination with a pair of sliding bearings supporting the pattern cylinder and moving in the said openings, means for vibrating the cradle and cylinder to and from the needles, the bearings for the pattern cylinder being notched at their top edges, vertically movable locking tongues sliding on said cradle and engaging the said notches, and means for moving said tongues into and out of engagement with the notches, substantially as described.

3. In a Jacquard mechanism, the cradle, the pattern cylinder and the needles, the cradle being provided with openings adjacent to the ends of the pattern cylinder, in combination with a pair of sliding bearings supporting the pattern cylinder and moving in the said openings, means for vibrating the cradle and cylinder, each bearing having a prong at the front and also one at the rear, two right angled cam-operated levers acting on the prongs at one side of the bearings to give the cylinder an additional movement toward the needles, and two springs acting on the prongs at the other side of the bearings to reciprocate the movement of the angle levers, the bearings for the cylinder being also notched at their top edges, vertically movable locking tongues sliding on said cradle and engaging said notches, two elevating rods for moving said tongues into and out of engagement with the notches, the horizontal motion bars, and two arc shaped projections thereon co-acting with the elevating rods, substantially as described.



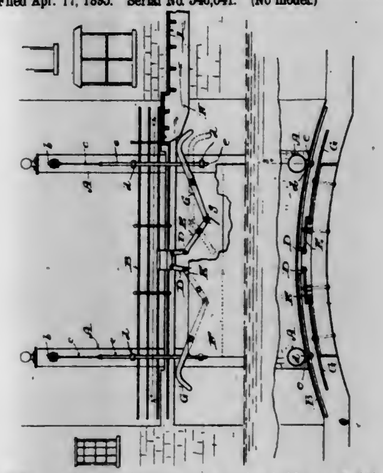
541,880. BICYCLE-SUPPORT. STEVE PENNINGTON, WILLIAM BAHEL, and EDWARD WEBER, Lake Charles, La. Filed Jan. 30, 1895. Serial No. 536,699. (No model.)



Claim.—1. The combination with a bicycle of ordinary construction, of means for supporting the same when at rest, consisting of a pair of legs pivoted to a bracket mounted on the front supporting bar of the bicycle frame, a lever having bifurcated lower ends pivoted to said front supporting bar, and having a handle for actuating the same, connecting bars between said bifurcated ends and said legs, and an angularly shaped guide bracket mounted on the cross brace of the bicycle frame, whereby upon actuating said handle in one direction the said legs are thrown forwardly and outwardly for the purpose of supporting the bicycle, and by the reverse movement of said handle the said legs are thrown back and drawn together, substantially as and for the purpose described.

2. The combination with a bicycle of ordinary construction, of means for supporting the same when at rest, consisting of a pair of legs pivoted to the outer ends of a shaft rotatably mounted in the ends of a bracket secured to the front supporting bar of the bicycle frame, springs connecting said legs at their upper ends, a collar secured to the said front supporting bar of the bicycle frame, having a rearward extension, a lever having bifurcated ends, mounted in said extension, and having a handle connected to its upper end, rods connecting the said bifurcated ends with said legs, and an angularly shaped guide bracket against which said legs are adapted to bear, substantially as and for the purpose described.

541,881. BRIDGE-GATE. FERDINAND RAASCH, Milwaukee, Wis. Filed Apr. 17, 1895. Serial No. 546,041. (No model.)



Claim.—1. The combination of a swing-bridge, a weight-controlled vertically moving gate, links depending from the center of the gate, other links connected with those aforesaid and pivoted intermediate of their extremities to a suitable support, and elbow-levers joined to the latter links, these levers being fulcrumed about midway of their length to said support in opposition to a depending part of the bridge.

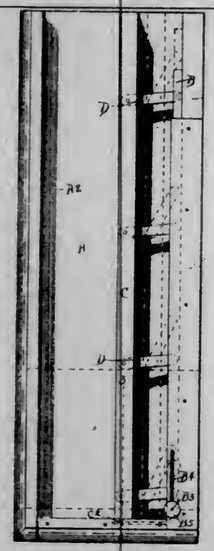
2. The combination of suitable posts provided with sheaves, chains or cables run on the sheaves, weights connected to ends of the chains or cables, a gate hung from the other ends of said chains or cables, elbow-levers fulcrumed intermediate of their ends to a suitable support, a link-connection between the levers and gate central of the latter, and a swing-bridge having parts thereof arranged to actuate said levers.

3. The combination of suitable posts provided with sheaves and guides, chains or cables run on the sheaves, weights connected to ends of the chains or cables, a gate hung from the other ends of said chains or cables and provided with vertical rods engaging the guides on the posts, elbow-levers fulcrumed intermediate of their ends to a suitable support, a link-connection between the levers and gate central of the latter, and a swing-bridge having parts thereof arranged to actuate said levers.

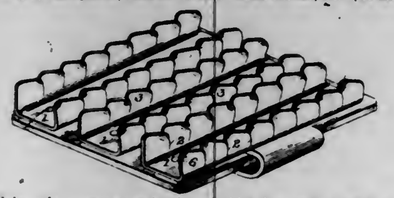
541,882. PRINTER'S GALLEY. WILLIAM W. REBUSCHATIS and JOHN F. COLLINS, Des Moines, Iowa. Filed Dec. 31, 1894. Serial No. 533,461. (No model.)

Claim.—An improved printer's galley, comprising a suitable galley a bar extended parallel with one side thereof, a sheet metal guide fixed to the side of the galley to overlap the said bar and having the slot in its top above the bar, a screw-threaded rod fixed in said bar and projected upwardly through said slot, a thumb nut in its top, a side stick extended parallel with the sides of the galley and slidingly connected with the head of the galley, and a series of levers pivoted to the bar and side stick, substantially as and for the purposes stated.

541,882.

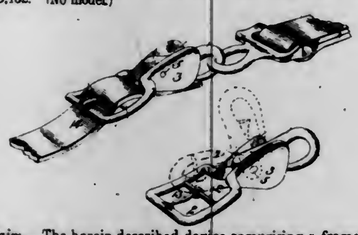


541,883. CURRYCOMB. HENRY T. RICHMOND, Malvern, Iowa, assignor of three-fourths to William M. Evans, T. D. Gibson, and J. P. Munger, same place. Filed Oct. 6, 1894. Serial No. 525,150. (No model.)



Claim.—In a curry-comb, the combination with a back of U shaped plates 1 having a series of vertical slits or kerfs 2 extending from the upper edges of the sides of the plates to a point near the lower ends of said sides whereby a series of independent spring or yielding teeth are formed, said teeth having rounded operating edges 4 as described, and each of said teeth being twisted whereby their adjacent edges are separated, for the purpose specified.

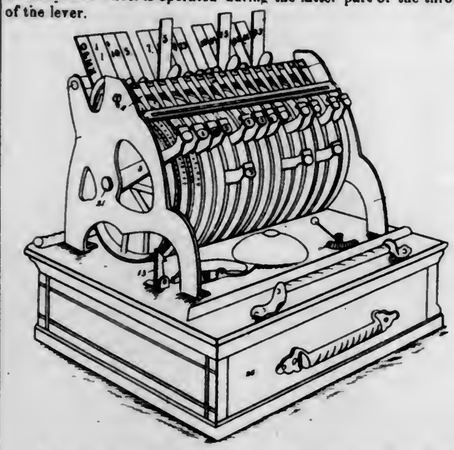
541,884. COMBINED HOOK AND BUCKLE. HENRY T. RICHMOND, Malvern, Iowa, assignor of three-fourths to William M. Evans, T. D. Gibson, and J. P. Munger, same place. Filed Oct. 6, 1894. Serial No. 525,152. (No model.)



Claim.—The herein described device comprising a frame having a buckle loop at one end, a pivoted tongue for said loop, the oval shaped parallel ears 3 integral with the sides of the buckle loop and the hook 6 having the shank portion 7, a pin passing through the ears and the said shank, the elongated rearwardly projecting curved point or tongue 8, and projecting point or lip 9 integral with the shank, the said pivotal pin for the hook passing eccentrically through the ears, for the purpose specified.

541,885. CASH REGISTER AND INDICATOR. FREDERICK H. SEYMOUR, Detroit, Mich., assignor to the Seymour Cash Register Company, Limited, same place. Filed July 23, 1894. Serial No. 518,300 (No model.)

Claim.—1. In a cash register, the combination of a ratchet wheel, a counterweighted key lever, a pawl carried thereby, a rocking detent adapted to throw the pawl into engagement with the wheel whereby said wheel is operated during the latter part of the throw of the lever.



2. In a cash register the combination of a ratchet wheel, a key lever, a pawl carried thereby, said pawl being normally out of engagement with the teeth of the ratchet wheel, a guide adapted to engage the pawl and bring it into engagement with the ratchet teeth, a detent adapted to engage the pawl and thereby prevent the backward motion of the lever, and means for disengaging the pawl and detent.

3. In a cash register, the combination of a key lever, carrying a tablet and a swinging pawl, a ratchet wheel mounted upon the shaft which forms the fulcrum for said key lever and actuated by said pawl, means for holding the pawl out of engagement with the wheel during a portion of its throw, and means for forcing the pawl and ratchet wheel into engagement during a portion of its throw.

4. In a cash register the combination of a ratchet register wheel, a swinging pawl carrying tablet bearing key lever, a rocking detent adapted to engage the pawl and thereby hold the key lever from backward movement, a swinging readjusting lever engaging with said detent and adapted to rock the same, substantially as described.

5. In a cash register the combination of a ratchet register wheel, a swinging tablet and pawl carrying key lever, a detent adapted to engage said pawl and first force it into engagement with the ratchet wheel and afterward hold the key lever with the tablet elevated, a holding pawl and means for adjusting the same to properly co-operate with the actuating pawl, substantially as described.

6. In a cash register in combination with a ratchet register wheel, a swinging pawl carrying key lever, a rocking detent adapted to engage with and detain said key lever, a radial arm on the rocking detent adapted to produce an initial backward impulse of the key lever, substantially as specified.

7. In a cash register in combination with a spring actuated drawer, a locking bolt, a tablet carrying swinging key lever a swinging pawl pinned to the tablet carrying lever, a rocking detent adapted to engage with said swinging pawl and hold said key lever, a swinging readjusting lever adapted to simultaneously rock the detent and release the drawer locking bolt, substantially as specified.

8. In a cash register in combination with a spring actuated drawer, a locking bolt, a tablet carrying swinging key lever, a rocking detent adapted to engage with and hold said key lever, a swinging readjusting lever adapted to simultaneously rock the detent and release the drawer locking bolt, a catch adapted to engage the readjusting lever and means actuated by the drawer for releasing the engagement between the catch and the readjusting lever, substantially as described.

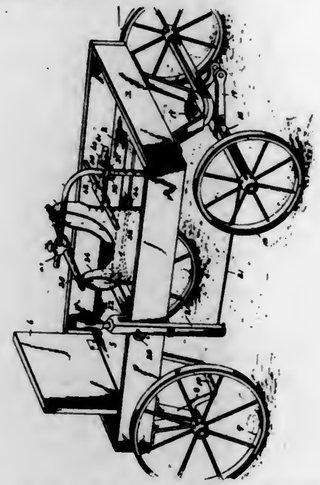
541,886. HOOK. ELEANOR A. SCHLEY, Milwaukee, Wis. Filed June 1, 1893. Serial No. 476,239. (No model.)



Claim.—As an article of manufacture, a hook for a dress shield, or analogous use, comprising a substantially straight shank, adapted to be secured to a shield, a bend, a bill having a free inwardly-turned

obliquely-disposed terminal point continuous of the bill, said bill adapted to engage the garment, and thereby secure the shield, or other article, thereto, and the point adapted to be passed entirely through the garment and retain the bill in said garment, and a guard at the extremity of the shank adapted to receive the contact of the terminal point, when the bill is moved laterally toward the shank, and thereby prevent the point from passing beyond or athwart of the guard, substantially as set forth.

541,887. COMBINED VELOCIPEDE BABY-WALKER, AND COACH. BENJAMIN F. SHULL, Osnaburg, Ohio. Filed Oct. 22, 1894. Serial No. 526,643. (No model.)



Claim.—1. In a vehicle, the combination with a body having an opening, and wheels for supporting said body, of a spring standard secured to the body and having an approximately horizontal portion, a cross bar adjustably secured to the said approximately horizontal portion of the standard, and a jacket or garment suspended from said cross bar, substantially as specified.

2. In a vehicle, the combination with a body and supporting wheels, of a spring standard removably stepped in a socket in the body and having an approximately horizontal upper portion, a jacket suspended from a cross bar attached to the extremity of said standard, and a handle bar secured to the standard and arranged in front of said jacket, substantially as specified.

3. In a vehicle, the combination with a body and supporting wheels, of a spring standard having the rearwardly extending approximately horizontal portion, a cross bar adjustably secured to the approximately horizontal portion of the standard, a jacket suspended from said cross bar, a clamp mounted upon a vertical portion of the standard, means for locking the clamp at the desired vertical adjustment, a handle bar having a stem adjustably fitted in a horizontal sleeve forming a part of said clamp, and means for locking said stem to hold the handle bar at the desired adjustment, substantially as set forth.

541,888. PROCESS OF PREPARING CLAY. PETER L. SIMPSON, Chicago, Ill. Filed Mar. 17, 1894. Serial No. 504,063. (No model.)

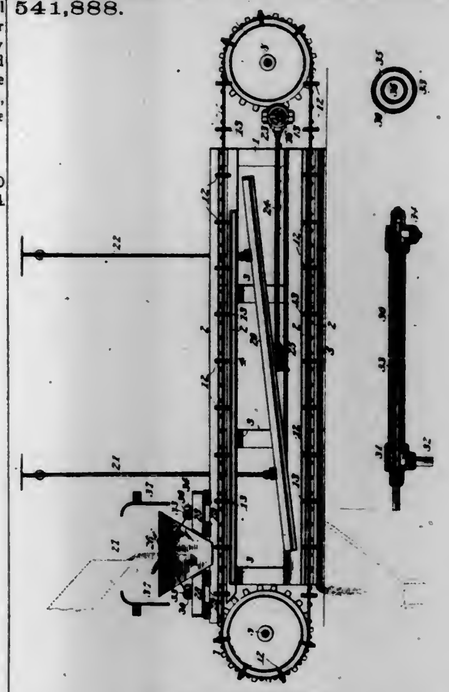
Claim.—1. The process of treating clay for the manufacture of brick, which consists in first saturating the clay with water and second in generating steam within the mass from the water previously supplied, thereby causing it to effectually permeate the entire mass, substantially as and for the purpose specified.

2. The combination with a frame, steam box, and clay driving mechanism, of a swinging screen carried under the steam box, substantially as specified.

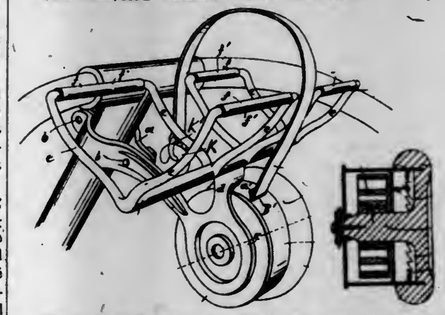
3. The combination with a frame, steam box and clay driving mechanism, of a shaft and sprocket wheels thereon, chains on the sprocket wheels, and flights carried on the chains, a driving shaft geared to one of the sprocket wheel shafts, a swinging screen under the steam box, a pitman connected therewith, and an eccentric on the driving shaft adapted to actuate the pitman, substantially as set forth.

4. The combination with a frame and oppositely discharging spray mechanism, of a steam box, and clay driving mechanism, substantially as set forth.

541,888.



541,889. LUGGAGE-CARRIER. JAMES H. STEEN, Canton, Ohio. Filed Oct. 3, 1894. Serial No. 524,789. (No model.)



Claim.—1. The combination of a frame or rack, the arm A, carrying the drum or cylinder B, provided with the teeth *k*, the knob D, having fixed thereto the toothed band H, provided with the teeth *k'*, the spindle E, having attached thereto a binding strap, the bearing G provided with the flange k^3, and the groove k^4, and the hook K, substantially as and for the purpose specified.

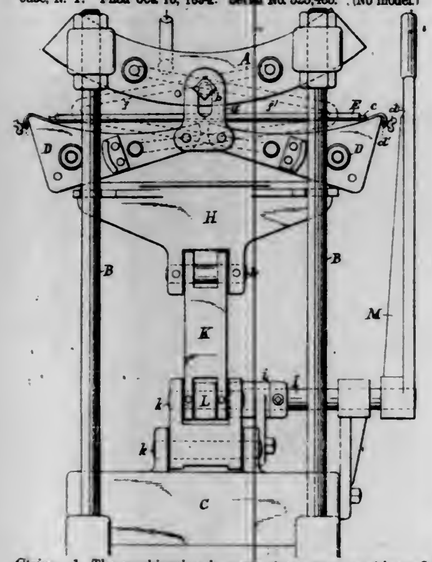
2. The combination of a supporting frame provided with an arm, having fixed thereto a drum provided with teeth, a knob provided with an annular flange and a toothed bar, a spindle secured to the knob and having fixed thereto a binding strap, provided with a ring or loop, a bearing located upon the spindle and provided upon its outer end with a flange or stop, a groove formed upon said bearing, and provided with an inclined bottom located adjacent to the flange or stop, the arm *d* carrying the bar C, provided with the diverging arms *e*, and a hook K, substantially as and for the purpose specified.

3. The combination of a luggage carrying frame or rack provided with an arm carrying a drum provided with teeth, a knob provided with a spindle, a binding strap, provided with the ring K' or its equivalent secured to the spindle, the bar H, provided with the tangs k^3, and the teeth *k'*, having inclined edges, the teeth *k*, provided with inclined edges, and the hook K or its equivalent, substantially as and for the purpose specified.

4. In a luggage carrier, the combination of a drum having located therein a rotating spindle, having secured thereto a binding strap, said spindle leading through the cylinder and movable long

tudinally to engage and disengage the teeth *k* and *k'*, a stop to limit the longitudinal movement of the spindle located upon the bearing G, and the groove L^4, to temporarily hold the teeth out of engagement and a hook, substantially as and for the purpose specified.

541,890. WOOD-BENDING MACHINE. GUSTAVE STICKLEY, Syracuse, N. Y. Filed Oct. 10, 1894. Serial No. 525,465. (No model.)



Claim.—1. The combination in a wood bending machine, of a convex die, a concave die divided centrally in two parts, said parts being pivoted together, each part being connected to the convex die and adapted to swing relatively to each other, and suitable means to move the said dies relatively to each other, as set forth.

2. The combination in a wood bending machine, of a stationary convex die, standards supporting said die horizontally, a concave die below the convex die and divided centrally and vertically in two rigid parts, the inner sides of the said parts being pivoted and connected together, and means to force the lower die toward the upper die, as set forth.

3. The combination in a wood bending machine, of a convex die, a concave die divided centrally and longitudinally in two rigid parts, each part being pivoted at both ends, means to hold the center of the lower die a given distance from the upper die while the dies are separated farther at their sides, and means also to force the dies together, as set forth.

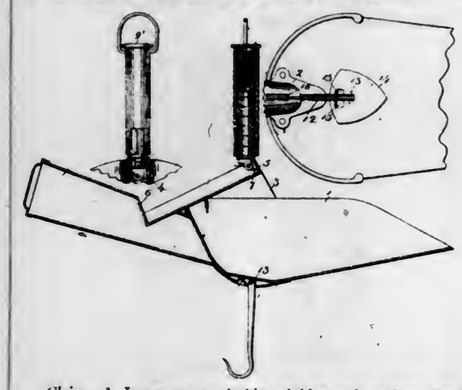
4. The combination in a wood bending machine, of a stationary horizontal die having its under side convexly formed, standards supporting said die, a movable horizontal die between the said standards below the first die and having a concave upper surface and divided vertically, centrally and longitudinally, a link secured to the stationary die at each end thereof pivots on the ends of the concave die near its inner sides entering the said links, and suitable means to swing the sections of the divided die on its pivots toward the upper or stationary die, as and for the purpose described.

5. The combination in a wood bending machine, of a stationary horizontal die having its under side convexly formed, standards supporting said die, a movable horizontal die between the said standards, below the first die, and having a concave upper surface and divided vertically, centrally and longitudinally, a link secured to the stationary die at each end thereof pivots on the ends of the concave die near its inner sides entering the said links, a base upon which the said standards are fixed, and a toggle mechanism mounted on the said base and supporting the sides of the lower die and adapted to raise and lower the same, as set forth.

6. The combination in a wood bending machine, of a stationary horizontal die having its under side convexly formed, standards supporting said die, a movable horizontal die between the said standards, below the first die, and having a concave upper surface and divided vertically, centrally and longitudinally, a link secured to the stationary die at each end thereof and pivoted to the ends of the concave die near its inner sides, a base upon which the said standards are fixed, toggle supports on the base, block H, connecting bars, L, L, rock-arms, J, J, shaft, I, and lever, M, substantially as shown and described.

7. The combination in a wood bending machine, of a convex die, hangers on the ends of the said die a concave die divided centrally and pivoted near its inner sides to said hangers, a plate to hold the work supported on the concave die and having its side edges bent down, screws passing through said edges and bearing against the sides of the concave die, and means to raise and lower the latter die, substantially as shown and described.

541,891. WEIGHING-SCOOP. HENRY G. STIEBEL, Jr., St. Louis, Mo. Filed Nov. 12, 1894. Serial No. 528,483. (No model.)

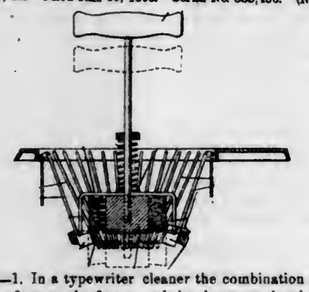


Claim.—1. In a scoop, a suitable weighing scale, a pivoted hook depending from the bottom of the scoop, and means for locking the free end of the hook to the body of the scoop, substantially as set forth.

2. A scoop having a body portion, an upper wall for the same, a suitable handle, a grooved depression in said wall in continuation of the general direction of the handle, a terminal wall for said groove at one end, and an abutting wall at the opposite end located in the path of the handle, a weighing scale pivoted at the terminal wall, and adapted to be folded into said groove and locked against movement against the abutting wall, substantially as set forth.

3. In a scoop, a suitable hook pivoted from the bottom of the scoop, a handle for said scoop, a slot in said handle, said hook being adapted to be folded into said slot, substantially as set forth.

541,892. TYPE-WRITER CLEANER. WALTER R. SWARTWOUT, Chicago, Ill. Filed Jan. 19, 1895. Serial No. 535,486. (No model.)



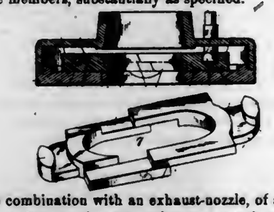
Claim.—1. In a typewriter cleaner the combination of a brush shaped to conform to the figure made by the type when in a position of rest, with a handle for moving such brush across the face of the type, and a guard rail which bears against the face of the type bars.

2. In a typewriter cleaner the combination of a brush of a shape to conform to the figure made by the type when at rest, with a guard rail elastically connected with the brush, and a handle adapted to move the brush back and forth while the guard rail is at rest against the type bars.

3. In a typewriter cleaner the combination of a brush of a shape to conform to the figure made by the type when at rest, with a guard-rail elastically connected with the brush, and a handle adapted to move the brush back and forth while the guard rail is at rest against the type bars, said guard rail lying in close proximity to the lower edge of the brush.

541,893. VARIABLE EXHAUST-NOZZLE. WILSON E. SYMONS, Raton, N. Mex. Filed Oct. 6, 1894. Serial No. 525,146. (No model.)

Claim.—1. The combination with an exhaust-nozzle, of a valve comprising oppositely disposed parts or members provided with overlapping side arms arranged to move in parallel planes with their contiguous surfaces in contact, those surfaces of each part or member upon which the arms of the other part or member slide being free from obstructions and extending to the outer extremity of the first-named part or member whereby the extremities of the arms of the other part or member operate to remove accumulations from the surfaces and allow the parts or members to assume their closed positions, and means for imparting simultaneous movement in opposite directions to the members, substantially as specified.

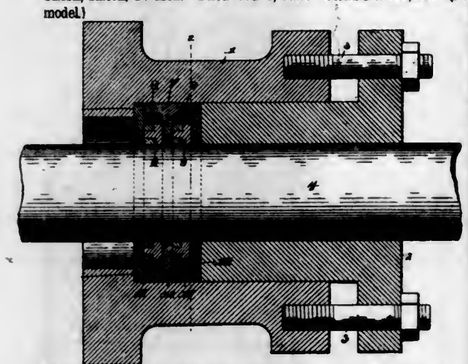


2. The combination with an exhaust-nozzle, of a valve comprising twin opposite complementary parts or members arranged with their lower surfaces in a common plane and provided with side arms which are halved or cut away to interlock, whereby the upper and lower sides of the side arms are flush with the upper and lower surfaces of both members, the cut-away portions of the arms extending to the outer extremities of the members whereby sediment accumulating upon the exposed surface of one member is removed by the extremities of the arms of the other member, and means for imparting simultaneous movement in opposite directions to the members, substantially as specified.

3. The combination with an exhaust-nozzle, of a valve having twin opposite parts or members provided with interlocking side arms and also provided at their outer extremities with pairs of contiguous convex bearing faces 9 and 10, cams arranged respectively between the contiguous bearing faces and fitting snugly in the interval between the opposite points thereof, spindles carrying said cams, and connections between the spindles whereby simultaneous motion in opposite directions may be imparted to the valve members, substantially as specified.

4. The combination with an exhaust-nozzle, of a valve having opposite slidable members, spindles provided with cams fitting between bearing-faces on the members, connections between the spindles, an operating-arm attached to one of the spindles, a crank-shaft having an arm arranged in operative relation with the operating-arm, and an operating rod connected to another arm of the said crank-shaft, substantially as specified.

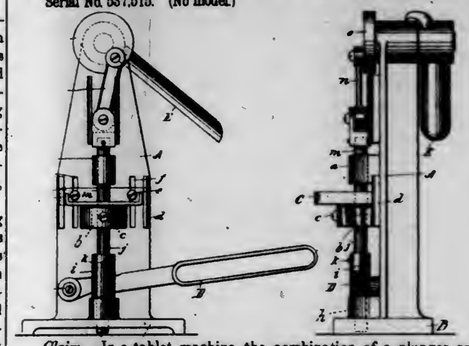
541,894. METALLIC PACKING. WILSON E. SYMONS and THOMAS SMITH, Raton, N. Mex. Filed Oct. 6, 1894. Serial No. 525,149. (No model.)



Claim.—1. A self-adjusting metallic packing comprising an annular cross-sectionally T-shaped frame having a shell 7 and an inwardly extending web 10, and adjustable packing rings less in depth than and fitting in the annular channels upon opposite sides of the web of the frame and comprising opposite relatively adjustable sections or members having straight interlocking extensions arranged parallel with tangents of the rod or stem extending through the packing, the outer surfaces of said rings being flush with the lateral edges of the shell, band springs arranged exteriorly upon the packing-rings to hold the inner surfaces of the sections or members thereof in steam-tight contact with the surface of the rod or stem, and covering plates bearing against the said flush surfaces of the packing-rings and shell, the inner peripheries of the web and covering plates being of greater diameter than the rod or stem, whereby said rod or stem with the packing-rings, which are held from movement in the direction of reciprocation of the rod or stem by the web and covering plates, are capable of radial movement, substantially as specified.

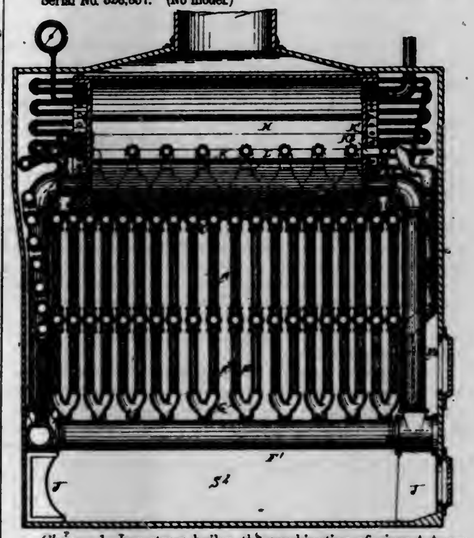
2. A self-adjusting metallic packing having packing-rings comprising opposite similar relatively adjustable sections or members, each consisting of a segmental or arc-shaped body portion provided with terminal parallel arms or extensions of half thickness arranged parallel with tangents of the rod or stem extending through the packing, the arms or extensions of one of said members being provided with longitudinal ribs 16^a to fit in longitudinal slots 16^b in the arms or extensions of the other member, and means for holding the sections or members in operative positions and pressing them inward to cause steam-tight contact of their inner peripheries with the surface of the rod or stem, substantially as specified.

541,895. TABLET-MACHINE. CHARLES A. TATUM, New York, N. Y., assignor to Whitall, Tatum & Co., same place. Filed Feb. 6, 1895. Serial No. 537,515. (No model.)



Claim.—In a tablet machine, the combination of a plunger or counter, a table C carrying a die into which the counter is entered, a slotted standard A, set-screws *c* serving to enter the slots and to secure the table C in its adjusted position, and a plunger entering the die and co-operating with the die and counter, substantially as described.

541,896. STEAM-BOILER. HARRISON H. TAYLOR, Detroit, Mich., assignor to the Detroit Screw Works, same place. Filed Nov. 15, 1894. Serial No. 528,857. (No model.)



Claim.—1. In a steam boiler, the combination of pipes A A one of which is provided with T-shaped couplings at both ends thereof, and the other of which pipes is provided with a T-shaped coupling at one end and with a cross shaped coupling at the opposite end, and interiorly revolable nipples uniting two adjacent couplings at both ends of said pipes, the adjacent ends of said couplings screwed together by the corresponding nipple having a screw threaded engagement therewithin, whereby the adjacent ends of said couplings are

brought snugly face to face at both ends of said pipes, and a pipe A united with said cross shaped coupling, substantially as set forth.

2. In a steam boiler, the combination of pipes A A one of which is provided with T-shaped couplings C at both ends thereof, and the other of which pipes is provided with a T-shaped coupling at one end and with a cross-shaped coupling at the opposite end, an additional pipe entering the cross-shaped coupling, and an interiorly revoluble nipple uniting two adjacent couplings at the top and bottom of said pipes, the adjacent ends of the couplings interiorly threaded the one with right hand screw threads and the other with left hand screw threads, and the two ends of the nipple exteriorly threaded the one end thereof with right hand screw threads and the other with left hand screw threads, said couplings screwed together by said interiorly revoluble nipple having a screw threaded engagement therewithin whereby the adjacent ends of said couplings will be brought snugly face to face at each end of said pipes, substantially as set forth.

3. In a steam boiler provided with a combustion chamber, the combination of a series of upright water pipes A located above the combustion chamber, a manifold above the combustion chamber uniting said water pipes at their lower ends, a manifold uniting the upper ends of said water pipes, and Y-shaped couplings uniting two adjacent manifolds, substantially as set forth.

4. In a steam boiler provided with a combustion chamber, the combination of a series of upright water pipes A arranged in rows above the combustion chamber, a manifold above the combustion chamber uniting the lower ends of each row of said water pipes, a manifold uniting the upper ends of each row of said water pipes, and Y-shaped couplings uniting two adjacent manifolds, substantially as set forth.

5. In a steam boiler provided with a combustion chamber, the combination of a series of upright water pipes A arranged in rows above the combustion chamber to form a "header," a manifold above the combustion chamber uniting the lower ends of each of said rows of water pipes, a manifold uniting the upper ends of each row of said water pipes, additional upright pipes extending downward from each of the lower of said manifolds at the sides of the combustion chamber, additional manifolds below said additional pipes, and Y-shaped couplings uniting two adjacent last mentioned pipes with the manifold adjacent to the lower end thereof, substantially as set forth.

6. In a steam boiler provided with a combustion chamber, the combination of upright water pipes arranged in vertical rows above the combustion chamber, manifolds V uniting the upper ends of the pipes of each of said rows, a dome, pipes K leading into the dome, and Y-shaped couplings uniting each of the pipes K leading into the dome with two adjacent manifolds V, substantially as set forth.

7. In a steam boiler provided with a combustion chamber, the combination of a series of upright water pipes arranged in rows above the combustion chamber having top and bottom manifolds V and Z at the extremities of said rows, and Y-shaped couplings connecting two adjacent manifolds, said upright pipes and their manifolds forming a "header" above the combustion chamber, substantially as set forth.

8. In a steam boiler provided with a combustion chamber, the combination of a dome, a series of upright water pipes arranged in rows above the combustion chamber to form a header thereabove, top and bottom manifolds V and Z for each of said rows, and a series of Y-shaped couplings each connecting two adjacent manifolds with the dome, substantially as set forth.

9. In a steam boiler the combination of a manifold, a series of vertical pipes arranged in rows, a T-shaped coupling connected with each extremity of said pipes, a nipple having an exterior threaded engagement within the ends of two adjacent T-shaped couplings, a Y-shaped coupling connecting the lower ends of each pair of said pipes with said manifold, and a "Y" connecting two adjacent rows of said pipes at their upper ends, said nipple threaded from end to end whereby the T-shaped couplings may be brought snugly face to face substantially as set forth.

10. In a steam boiler the combination of a series of water pipes, T-shaped couplings engaged with the extremities of said pipes and a baffle plate supported upon T-shaped couplings at the upper ends of said pipes substantially as and for the purpose specified.

11. In a steam boiler the combination of two manifolds provided with crosses C^3, of a Y-shaped coupling communicating with two adjacent manifolds, intervening pipes *l* connecting the two arms of the Y-shaped coupling with corresponding crosses, a nut upon each of the arms *l*, and a packing ring between the nut and the corresponding cross, substantially as set forth.

12. In a steam boiler the combination of water pipes, of crosses 8^3, a Y-shaped coupling L, a connecting pipe *l*, a nut M' and a metallic interiorly threaded packing ring intervening between said nut and the corresponding cross, substantially as set forth.

13. In a steam boiler the combination of a series of water pipes, T-shaped couplings connected with the extremities of said pipes, interior nipples connecting adjacent T-shaped couplings, crosses engaged with the outer pipes of said series, and plugs in said crosses, substantially as set forth.

14. In a steam boiler, the combination of a dome, a series of pipes provided with manifolds at their upper ends, Y-shaped couplings connecting two adjacent manifolds, and multiple up-flow pipes leading from said Y-shaped couplings to said dome, substantially as set forth.

15. In a steam boiler the combination of a series of pipes having manifolds at their lower ends and an additional manifold therebeneath, a Y-shaped coupling connected with the additional manifold and pipes connecting said Y-shaped couplings with two adjacent lower manifolds of the series, substantially as set forth.

16. In a steam boiler provided with a combustion chamber, the combination of upright water pipes A A arranged above the combustion chamber having manifolds at both ends thereof, and a Y-shaped coupling uniting two adjacent manifolds, said manifolds each extending above the combustion chamber the full width of the boiler, substantially as set forth.

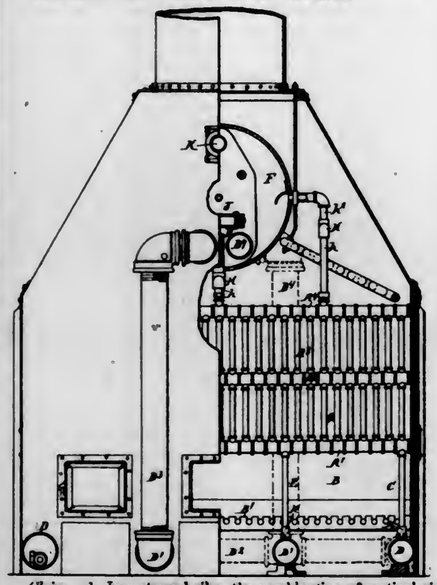
17. In a steam boiler, the combination of upright water pipes arranged in rows across the boiler, manifolds uniting the upper ends of each of said rows, a dome, and Y-shaped couplings located toward each end of the manifolds, each of said couplings connecting two adjacent manifolds with the dome, substantially as set forth.

18. In a steam boiler, the combination of plural manifolds at the base of the combustion chamber, a series of upright pipes A above the combustion chamber provided with manifolds Z at the lower ends of said upright pipes forming a "header" and multiple upflow pipes connecting the manifolds at the base of the combustion chamber with the manifolds Z of the header, substantially as set forth.

19. In a steam boiler the combination of the pipes A A provided with manifolds communicating therewith, said manifolds located at a wider distance apart at the center of the boiler, and arranged closer together toward the ends of the boiler, a baffle plate located toward the top of said pipes to compel the products of combustion to pass out of the combustion chamber at the ends of the boiler, substantially as set forth.

20. In a steam boiler, the combination of plural manifolds at the base of the combustion chamber, a series of upright pipes A provided with top and bottom manifolds V and Z to form a "header," a dome, and pipes connecting the upper manifolds V with the dome, substantially as set forth.

541,897. STEAM-BOILER. HARRISON H. TAYLOR, Detroit, Mich. Filed Mar. 11, 1895. Serial No. 541,246. (No model.)



Claim.—1. In a steam boiler, the combination of vertical pipes, and manifolds having a screw threaded connection with said pipes at the upper and lower ends thereof and communicating therewith, said manifolds located closely together forming a horizontal return draft flue therebetween, substantially as set forth.

2. In a steam boiler provided with a vertical flue at one end thereof, the combination of vertical pipes, and manifolds having a screw threaded connection with said pipes at the upper and lower ends thereof, and communicating therewith, said manifolds located closely together forming an intermediate horizontal draft flue communicating with said vertical flue, substantially as set forth.

3. In a steam boiler, a series of vertical pipes having manifolds at the extremities thereof constructed of T-shaped and cross-shaped couplings, the adjacent manifolds at the top and bottom of the pipes arranged in close proximity to compel the products of combustion to pass therebetween, substantially as set forth.

4. In a steam boiler, a series of vertical pipes A and A^2, a series of manifolds therebetween, and at the lower extremities of the pipes A and at the upper extremities of the pipes A^2, said manifolds made of T-shaped and cross-shaped couplings, the adjacent manifolds closed therebetween forming intermediate draft flues, substantially as set forth.

5. In a steam boiler, a series of vertical pipes having sets of manifolds at the upper and lower ends thereof, each set of manifolds located closely together and arranged to compel the products of combustion to pass about one set of said manifolds and to return under the other set of manifolds, substantially as set forth.

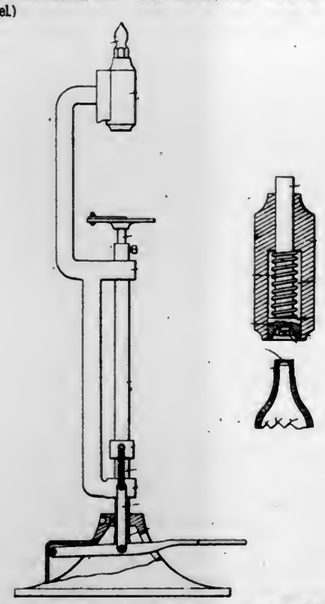
6. In a steam boiler, the combination of pipes A, sets of manifolds A' A^2 into which the extremities of said pipes are connected, a set of manifolds A^4, pipes A^2 connected into the manifolds A^2 A^4, said pipes and manifolds arranged to form a "header" above the combustion chamber of the boiler, each set of manifolds closed therebetween substantially as and for the purpose set forth.

7. In a steam boiler, the combination of pipes A, manifolds A' A^2 into which the extremities of said pipes are connected, a manifold A^4, pipes A^2 connected into the manifolds A^2 A^4, flues G G' toward the ends of the boiler, means to close said flues adjacent to the manifolds A^2 and a draft passage toward the middle of the boiler between the manifolds A^2, substantially as set forth.

8. In a steam boiler, a header above the combustion chamber, draft flues at the ends of the boiler, a draft passage centrally of the header, means to divert the draft from said flues through said draft passage, and thence outward, substantially as set forth.

9. In a steam boiler, the combination of pipes A A^2 above the combustion chamber, a set of manifolds intermediate the adjacent ends of said pipes, lower manifolds at the base of the pipes A, upper manifolds at the upper ends of the pipes A^2, manifolds below the combustion chamber, pipes connecting the manifolds above and below the combustion chamber, a dome, Y-shaped couplings connecting the upper manifolds into the steam dome, and the lower manifolds with the adjacent pipes, and pipes connecting the lower manifolds into the dome, said lower and upper manifolds closed therebetween, substantially as and for the purpose set forth.

541,898. MACHINE FOR STOPPLING BOTTLES. FREDERICK R. THATCHER, Providence, R. I. Filed Oct. 20, 1894. Serial No. 526,476. (No model.)



Claim.—1. In combination with a base piece, an upright standard, a frame supported on the standard, the yielding connection between the frame and the standard, a treadle pivoted to the base and connected to the lower part of the frame, a table adjustably secured to the top of the standard, a bottle guide borne on the table, a plunger supported in an overhanging part of the frame and bearing a plunger with a rocking face piece adapted to enter the mouth of a bottle supported on the table, all substantially as described.

2. In combination with a standard, an adjustable table supported on the top of the standard, a vertically reciprocating frame supported from the standard by means of springs and having an overhanging part bearing a plunger, means for reciprocating the frame on the standard, and a spring seated plunger borne in the head of the frame and having a rocking face piece adapted to enter the mouth of a bottle supported on the table, all substantially as described.

3. In a machine for stoppling bottles, a table, a reciprocating frame having a head overhanging the table, a spring seated plunger located in the head and having a rocking face piece adapted to enter the mouth of a bottle, all substantially as described.

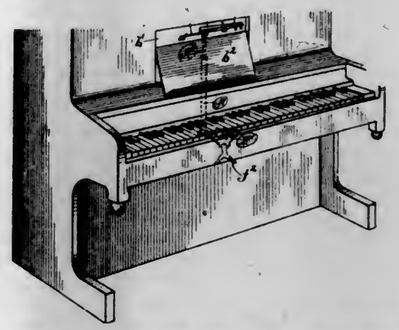
4. In a machine for stoppling bottles in combination, a table for supporting a bottle, a plunger located in the socket in an overhanging part of the frame, means for moving the bottle and head toward and from each other, a plunger cushion located within the plunger socket, and a rocking die or face borne on the lower end of the plunger and adapted to enter the mouth of a bottle, all substantially as described.

5. In combination with a base piece, an upright standard secured to the base, a reciprocating frame supported on the standard, a collar borne on the standard and having means for adjustably securing it to the standard, frame supporting springs connected to the collar and to the frame, a treadle pivoted to the base and connected to the lower part of the frame, a table secured to the top of the standard, a plunger supported in an overhanging part of the frame and bearing a plunger with a rocking face piece adapted to enter the mouth of a bottle supported on the table, all substantially as described.

541,899. PROCESS OF MAKING NITROPENTAERYTHRIT. BRUNO THIEME, Siegburg, Germany. Filed Nov. 13, 1894. Serial No. 528,694. (No specimens.)

Claim.—The method of producing a compound for use as or as an ingredient in explosives, termed nitropentaerythrit, by treatment of the pentaerythrit produced by condensation in the presence of lime of acetaldehyde and formaldehyde, with concentrated nitric and sulfuric acids.

541,900. MUSIC-LEAF TURNER. MAX THOMSEN and SAMUEL E. ALLERTON, Chicago, Ill. Filed Nov. 16, 1894. Serial No. 528,967. (No model.)



Claim.—1. In a leaf turner, the combination of the main standard or tube having its bearing in the piano or stand, with a horizontal adjustable arm at its top, provided on its lower surface with a fixed finger, an operating rod aligned with the main standard and extending into the said arm and provided with a crank shaft at its upper part, an adjustable and pivotally jointed rod or bar aligned with the adjustable arm, and pivotally secured to the crank shaft at one of its ends, a finger secured to the other end of said rod or bar and adapted to engage the sheet, and means at the bottom of the standard to turn the same and to revolve the operating rod, substantially as described.

2. In a leaf turner, the combination of the adjustable main standard or tube, with a horizontal adjustable arm at its top provided on its lower surface with a fixed finger, an operating rod within the said standard and extending into said arm and provided at its top with a crank shaft, an adjustable and pivotally jointed rod or bar pivoted to the crank shaft at one end, a finger having its bearings in the adjustable arm and secured to the other end of said rod or bar and adapted to engage the sheet, and means at the bottom of the standard to turn the same and to revolve the operating rod, substantially as described.

3. In a leaf turner the combination of the adjustable main standard or tube, with a hollow horizontal arm at its top provided on its lower surface with a fixed finger, an operating rod within the said standard and extending into said arm and provided at its top with a crank shaft, a jointed rod within said arm pivotally secured at one of its ends to the crank shaft, a finger having its bearings in the said arm and secured to the other end of the jointed rod and adapted to engage the sheet, and means at the bottom of the standard to turn the same and to revolve the operating rod, substantially as described.

4. In a leaf turner the combination of a main standard or tube, with a hollow horizontal arm at its top provided on its lower surface with a fixed finger, an operating rod within the said standard and extending into the said arm and provided at its top with a crank shaft, a jointed rod within said arm, pivoted to the crank shaft, a finger having its bearings in said arm and an elastic covering, secured to the other end of the jointed rod and adapted to engage the sheet, a collar loosely mounted on the upper part of the main standard and having horizontal arms provided with spring actuated catches to normally hold the sheets, and means for turning the standard and of revolving the operating rod, substantially as described.

5. In a leaf turner the combination of the standard A, with the tube A^3, adjustably secured thereto, the arm A^2, secured to the top of the tube A^3, and having the longitudinal slot a', the tube or arm A^4, having the slot b^2, in its upper surface and the slot b^4, provided with gear teeth b^7, and the finger H^2, in its lower surface, adjustably secured to the arm A^2, the rod B^2, pivoted at one end to the crank shaft and at its other end to the rod B^3, the rods B^3, and B^4, adjustably secured together within the arms A^4, and A^4, the finger H, having the elastic covering H', axis h, operating in the slots b^5, and b^6 and the gear h^2, on the axis h, and adapted to mesh with the teeth b^7, and means for turning the standard, and of revolving the operating rod, all constructed, arranged and operating substantially as and for the purpose set forth.

6. In a leaf turner the combination of the standard A, with the tube A^3, adjustably secured thereto, the arm A^2, secured to the top of the tube A^3, and having the longitudinal slot a', the tube or arm A^4, having the slot-b^3, in its upper surface and the slot b^4, provided with gear teeth b^7, and the finger H^2, in its lower surface, adjustably secured to the arm A^2, the rod B^2, pivoted at one end to the crank shaft, and at its other end to the rod B^3, the rods B^3, and B^4, adjustably secured together within the arms A^4, and A^4, the finger H, having the elastic covering H', axis h, operating in the slots b^5, and b^6, and the gear h^2, on the axis h, and adapted to mesh with the teeth b^7, the collar D, loosely mounted on the tube A^3, and provided with the arms D', the spring actuated catches D^2, secured on each end of the arms D', and means for turning the standard and of revolving the operating rod, all constructed, arranged, and operating substantially as and for the purpose set forth.

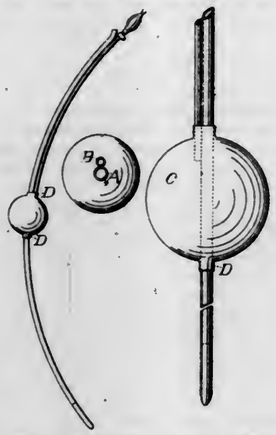
7. In a leaf turner the combination of the standard A, with the tube A^3, adjustably secured thereto, the arm A^2, secured to the top of the tube A^3, and having the longitudinal slot a', the tube or arm A^4, having the slot b^3, in its upper surface and the slot b^4, provided with gear teeth b^7, and the finger H^2, in its lower surface, adjustably secured to the arm A^2, the rod B^2, pivoted at one end to the crank shaft and at its other end to the rod B^3, the rods B^3, and B^4, adjustably secured together within the arms A^4, and A^4, the finger H, having the elastic covering H', axis h, operating in the slots b^5, and b^6, and the gear h^2, on the axis h, and adapted to mesh with the teeth b^7, the collar D, loosely mounted on the tube A^3, and provided with the arms D', the spring actuated catches D^2, secured on each end of the arms D', the segmental gear A', rigidly secured to the bottom of the main standard or tube, the gear E, fixed to the bottom of the operating rod and the segmental gear F, having on its face teeth in sections to mesh with the gears A', and E, and pivotally secured to the piano or stand, and having means to engage the knee or leg of the performer, all constructed, arranged, and operating substantially as and for the purpose set forth.

8. An arm or tube having a slot in its upper and lower surfaces and provided on its lower surface with a fixed finger, a rod within said tube adapted to be moved longitudinally therein, a finger having an elastic cover, secured to the outer end of said rod and adapted to operate in said slots, substantially as described.

9. An arm or tube having a slot in its upper and lower surfaces and provided on its lower surface with a fixed finger, a rod within said tube adapted to be moved longitudinally therein, a finger having an elastic cover, movably secured to the outer end of said rod and adapted to travel with a rotary motion in said slots, substantially as described.

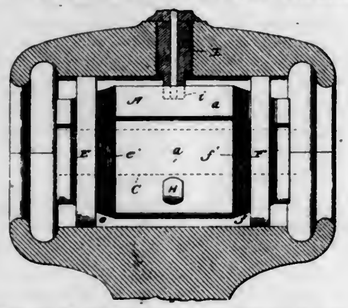
10. The arm or tube A^4, having the slot b^5, in its upper surface, and slot b^6, provided with the teeth b^7, and finger H^2, in its lower surface, the rod B^4, adapted to be moved longitudinally in said tube, and the finger H, secured to said rod and having the axis h, the gear h^2, on said axis to engage the teeth b^7, and the elastic cover H', substantially as described.

541,901. EMBALMING-INSTRUMENT. OWEN V. THORNTON, St. Joseph, Mo. Filed Feb. 4, 1895. Serial No. 537,255. (No model.)



Claim.—In an embalming instrument an inflatable bulb provided with a flexible tube with valve through which said bulb may be inflated with air to prevent the escape of air, gases or fluid through the esophagus, in combination with a flexible tube passing through said bulb and through which tube fluid may be injected into the body by the embalmer, substantially as described.

541,902. SHAFT-BEARING. WILLIAM H. TORSTRICK, Oyster Bay, N. Y. Filed Aug. 2, 1894. Serial No. 519,289. (No model.)



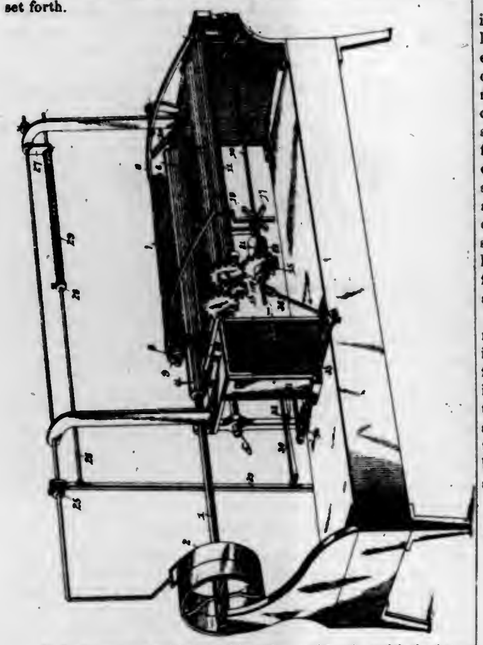
Claim.—1. The combination with an inclosing box or casing, of a sectional bearing fitted therein and provided with means for adjusting its segments radially with respect to the shaft, and adjustable devices which engage with said shaft bearing and with the box or casing to adjustably suspend the shaft bearing within the casing, substantially as and for the purposes described.

2. The combination of an inclosing box or casing having the seats, h, on its inner surface, the sectional bearings fitted in the box and provided with means for compressing its members, and adjustable stay bolts or pins connected to the bearing and fitted in the seats of said box, substantially as and for the purposes described.

3. A shaft bearing divided longitudinally on lines radial to the axis thereof and having its segments connected together by interlocking devices which admit of radial adjustment of the segments, combined with packings interposed between the abutting faces of the segments, and means for adjusting the segments toward the shaft, and compressing the packings between the abutting faces of said segments substantially as and for the purposes described.

541,903. STOP-MOTION FOR COTTON-COMBING MACHINES. GEORGE TOWNSEND, New Bedford, Mass., assignor of two-thirds to Samuel Higham and William A. Trask, Jr., same place. Filed June 15, 1894. Serial No. 514,689. (No model.)

Claim.—1. In a cotton combing machine, the combination with the intergeared lap supporting rolls, and the feed rolls, one of which feed rolls is vertically movable; of a stop shaft, a gear wheel connection directly between said stop shaft and one of the lap-supporting rolls, the gear wheel of said gear connection that is on the stop shaft being adapted to be automatically disengaged from the wheel meshing therewith by the stoppage of the stop shaft, a pivotally supported arm connected with the movable feed roll and adapted to suitably engage with the stop shaft when the movable feed roll is elevated to entirely check the rotation of the stop shaft, belt shifting mechanism and a suitable connection between the belt shifting mechanism and the movable gear of said gear connection, substantially as set forth.



2. In a cotton combing machine, the combination with the intergeared lap supporting rolls, and the feed rolls, one of which feed rolls is vertically movable; of a stop shaft carrying a fixed cam, a movable gear wheel loosely mounted on the stop shaft and meshing with the gear wheel of the adjacent lap-supporting roll, said movable gear wheel having a cam coacting with the fixed cam on the stop shaft, a pivotally supported arm connected with the movable feed roll and adapted to suitably engage with the stop shaft to entirely check the rotation thereof, belt shifting mechanism and a suitable connection between the belt shifting mechaniam and said movable gear wheel, substantially as set forth.

3. In a cotton comber, the combination with a main shaft carrying fast and loose pulleys, a spring actuated belt shifting rod, a stationary stop arm a latch connected with the belt shifting-rod and adapted to engage the stationary stop-arm to hold said rod in position to maintain the driving-belt in engagement with the fast pulley of the main shaft, and the combing machine feed-rolls, one of which is vertically movable, of a stop shaft, a spur wheel mounted on the stop shaft, an intermediately pivoted arm connected at one end to said movable feed-roll and provided at the other end with a stop-rod to engage the spur wheel upon said stop-shaft, co-acting fixed and loose cams arranged upon said stop shaft, and connections between the loose cam and said latch, substantially as specified.

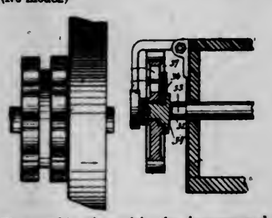
4. In a cotton comber, the combination with a main shaft carrying fast and loose belt pulleys, a spring actuated belt shifting-rod, a latch for holding said rod in position to maintain the belt in engagement with the fast pulley, and the combing machine feed-rolls, one of which feed rolls is movable, of a stop shaft, carrying a spur wheel an arm connected to said movable feed-roll and provided with a stop-rod to engage the spur wheel upon the stop shaft, a rock-shaft having an arm connected to the said latch, a cam slidably mounted upon the stop shaft, a trip-arm secured to the rock-shaft and arranged in operative relation with said movable cam, and a fixed cam carried by the stop shaft and co-operating with the movable cam, substantially as specified.

5. In a cotton comber, the combination with a main shaft carrying fast and loose belt-pulleys, a spring actuated belt shifting-rod, a lever connected at one end to the belt shifting rod, a stationary stop arm a latch pivotally connected to said lever and arranged to engage the stationary stop-arm to hold the belt shifting rod in position to maintain the belt in engagement with the fast pulley, and the combing machine feed-rolls, one of which is movable transversely, of a stop shaft, pivotal arms provided at one end with bearings for the trunnions for said movable feed-roll, and provided at the other end with stop-rods to engage with the stop shaft to check its rotation, springs for pressing the movable feed-roll toward the other feed-roll, co-acting cams mounted upon the stop shaft, one of said cams being longitudinally movable thereon, and connections between the movable cam and said latch, substantially as specified.

6. In a cotton comber, the combination with a main shaft carrying fast and loose belt-pulleys, a spring actuated belt shifting rod, a latch to hold the belt shifting-rod in position to maintain the belt in engagement with the fast pulley, the combing machine feed-rolls, one of which is movable transversely, lap supporting rolls, gearing connected to said lap supporting-rolls, a stop shaft, and a movable gear carried by the stop shaft and meshing with a gear on one of the lap supporting-rolls, of a pivotal arm connected at one end to the movable feed-roll and provided at the other end with a stop-rod to suitably engage with the stop shaft to check its rotation, a cam fixed to the stop shaft, a co-acting cam slidably mounted upon the stop shaft and arranged in operative relation with said gear carried thereby, and connections between the loose cam and said latch, whereby when the stop-rod engages and checks the movement of the stop shaft, the latch is released and the gear carried by said stop shaft is disengaged from the gear of one of the lap supporting-rolls, substantially as specified.

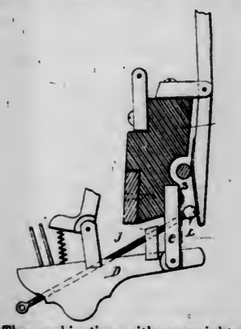
7. In a cotton combing machine, the combination with the feed rolls, one of which feed rolls is vertically movable; of a stop shaft, intermediately pivoted arms provided at one end with bearings that form the sole bearings for the trunnions of said movable feed roll, said intermediately pivoted arms being provided at their ends opposite the bearings with stop rods adapted to suitably engage with the stop shaft to check its rotation, springs connected with said pivoted arms to normally press the movable feed roll toward the other feed roll, belt shifting mechanism, and a suitable connection between said belt shifting mechanism and the stop shaft, substantially as set forth.

541,904. SEEDER ATTACHMENT FOR HARROWS. WILLIAM A. VAN DEUSEN, Sprout Brook, N. Y. Filed Apr. 9, 1895. Serial No. 545,044. (No model.)



Claim.—The combination with the harrow and its supporting frame mounted on wheels, of the grain seeder delivering in front of the harrow, the grass seeder delivering behind the harrow teeth, the double sprocket wheel on one of the main wheels, and drive chains extending from the double sprocket wheel to the grain and grass seeders, respectively, substantially as described.

541,905. PIANO-ACTION. HERMAN WAGNER, Stuttgart, Germany. Filed Apr. 17, 1894. Serial No. 507,838. (No model.)



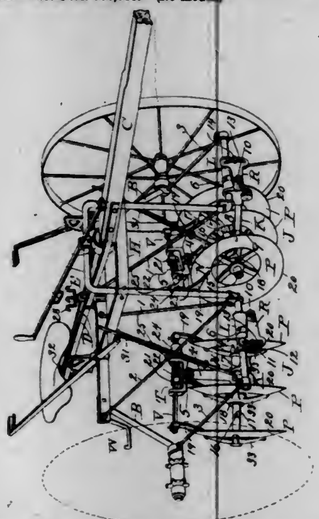
Claim.—1. The combination, with an upright-piano action, of a screw supported by the jack-bed, one end of the screw being located at the front of the jack-bed and the opposite end provided with a head arranged above the pivoted end of the jack-bed in close proximity thereto, and resting against a damper-lever, substantially as set forth.

2. The combination, with an upright-piano action, of a screw mounted in the jack-bed, one end of the screw being located at the

front of the jack-bed and the opposite end extending above the pivoted end of the jack-bed and resting against the damper-lever, substantially as set forth.

3. The combination, with an upright piano action, of screws for adjusting the lower ends of the damper-levers, which screws are mounted in inclined position in the jack-beds, the rear-ends of the screws extending above and in close proximity to the pivots of the jack-beds and resting against the lower ends of the damper-levers, substantially as set forth.

541,906. DISK CULTIVATOR. LEWIS E. WATERMAN, Moline, assignor to the Rock Island Plow Company, Rock Island, Ill. Filed Feb. 1, 1895. Serial No. 536,955. (No model.)



Claim.—1. The combination of the gangs J, axle B, supporting wheels A, pole C pivotally attached to said axle, arch G connected to said axle, beam K connecting said arch and said disk gangs, levers 27 attached to said pole at its forward end, and intermediately to said arch, and adapted to be locked in different positions to said axle B, whereby said wheels A and disk gangs J are coincidently deflected; substantially as shown, and for the purpose specified.

2. The combination of the arch G, cross head L seated thereon, beam K provided with nut 5, arm R seated on said beam, and projected laterally therefrom, and provided with corrugations 11, and segmental slot 13, bolt 14, adapted to optionally unite cross head L and the slotted end of arm R at various points in slot 13, and thereby adjust the inclination of said disk gangs laterally; substantially as shown, and for the purpose described.

3. The combination of the arch G, disk gangs J, box N seated thereon, and provided with collar 4, and corrugated projections 7, beam K provided with corrugations 9, and nut 5, and suitably connected at its forward end to said arch, whereby said disk gangs are adjustably held at any desired angle with the movement of the machine, and are readily removed and interchanged, substantially as shown, and for the purpose described.

4. In a disk cultivator, the combination of the suitably supported axle B, pole C pivotally attached thereto, arch G, truss rods 1, 2 and 3, connecting said arch with said axle B, disk gangs J beam K, connecting said arch and said disk gangs, and means, substantially as shown, for deflecting said arch, and thereby coincidently imparting a changed direction to said axle and disk gangs, for the purpose specified.

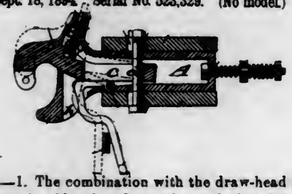
5. The combination of the arch G, the disk gangs J, placed in the rear of the horizontal portion of said arch, the beam K suitably attached at its forward end to said arch, and provided with longitudinal corrugations 9, the box N seated on said disk gang, and on the rear end of said beam, and provided with corrugations 8 adapted to engage said corrugations 9, and means, substantially as shown, for uniting said parts, for the purpose specified.

6. The combination of a suitably supported arch G, cross head L adjustably seated thereon, adjustable collar 6 seated within said cross head on said arch, beam K attached at its front end to said cross head, and the disk gang J, connected to the rear end of said beam, substantially as shown, and for the purpose described.

7. The combination of a suitably supported arch G, beam K adjustably attached, at its forward end, to said arch, and provided at its rear end with nut 5, disk gangs J and boxes N seated on said gangs, respectively, and provided with collar 4, whereby said gangs are readily removed and interchanged, for the purpose mentioned.

8. The combination of the bracket T provided with cam edge 23, bar V supported thereby, and provided with scrapers 19, collar 21 seated on said bar, spring 22 seated between said collar and said bracket, and semi-rotating collar 24 provided with spur 25, and cam edge 26; substantially as shown, and for the purpose described.

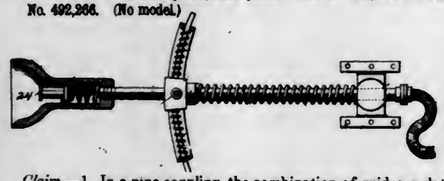
541,907. CAR-COUPLING. WILLIAM C. WATSON, Paterson, N. J. Filed Sept. 18, 1894. Serial No. 523,329. (No model.)



Claim.—1. The combination with the draw-head and the longitudinally slotted guides therefor on the car-body, of the transversely-slotted coupling-hook and the transverse bolt passing through the transverse slot of the coupling-hook, through the sides of the draw-head and through the longitudinal slots of said guides, substantially as herein set forth.

2. The combination with the car-body, the draw-head and the coupling hook arranged to swing laterally within the latter, of the lever fulcrumed to the draw-head at one side of the coupling-hook, the spring at the other side of the draw-head and coupling-hook and the stop attached to the car-body where the lever may be held against it by the spring or may pass under it, substantially as and for the purpose herein set forth.

541,908. PIPE-COUPLING. WILLIAM WEAVER, Norwalk, Conn., assignor of four-fifths to William A. Curtis, Dexter Hitchcock, Arthur C. Wheeler, and Charles Lapham, same place. Filed Nov. 28, 1893. Serial No. 492,266. (No model.)



Claim.—1. In a pipe coupling, the combination of guides, a slotted block adapted to slide laterally upon said guides, a coupler section projected through the slot in said block and adapted to move vertically and horizontally therein, substantially as described.

2. In a pipe coupling, the combination of guides, a slotted block adapted to move upon said guides, a coupler section having its forward end projected through the slot in said block and adapted to move vertically therein, and its rear end projected through a ball bearing, said coupler section being adapted to move horizontally in said slot and ball bearing substantially as and for the purpose set forth.

3. In a pipe coupling, the combination of the frame B, the slotted block 11 supported in and adapted to move laterally in said frame, the springs 14 and 15 arranged respectively upon each side of the block 11, to maintain it in its normal position, a coupler section supported at its rear end in the ball bearing 6 and projecting through the slot in the block 11, and the springs 17, 18 arranged vertically in said slot upon each side of the coupler section, substantially as shown and described.

4. In a pipe coupling, the combination of the frame B, the slotted block 11 supported in and adapted to move laterally in said frame, the springs 14, 15 arranged respectively upon each side of the block 11, to maintain it in its normal position, a coupler section provided with the shoulder 10, supported at its rear end in the ball bearing 6 and projecting through the slot in the block 11, the spring 9 interposed between the shoulder 10 and ball bearing 6, and the springs 17, 18 arranged vertically in the slot of the block 11 upon each side of the coupler section, substantially as described.

5. In a pipe coupling, the combination of two coupling sections in shape of a ball and socket respectively, valves arranged in said sections, each having a forwardly projecting stem adapted to be brought together when the sections are in engagement, suitable guides arranged to the forward ends of the coupler sections, and a slotted block adapted to move laterally upon said guides, the coupler sections being projected through the slots in said block and adapted to move vertically and horizontally therein, substantially as described.

6. In a pipe coupling, the combination of a coupler section supported at its forward end in a slotted block in which it is permitted

to move vertically, and at its rear end in a ball bearing through which it passes and is permitted to slide horizontally, and guides in which said slotted block is adapted to move laterally, substantially as described.

7. In a pipe coupling, the combination of two coupling sections in shape of a ball and socket respectively, valves arranged in said sections, each having a forwardly projecting stem adapted to be brought together when the coupling sections are in engagement, slotted blocks for supporting the forward ends of said coupling sections, guides in which said blocks are supported and ball bearings in which the rear ends, of the coupling sections are supported, substantially as described.

541,909. SMOKELESS POWDER. GARLAND N. WHISTLER, Fort Wadsworth, and HENRY C. ASPINWALL, West New Brighton, assignors, by mesne assignments, to Benjamin S. Harmon, New York, N. Y. Filed Oct. 23, 1894. Serial No. 526,734. (No specimens.)

Claim.—An explosive compound, composed of nitroglycerine, gun cotton, a nitrate, such for example as barium nitrate, petrolatum, and urea crystals, combined in the proportions substantially as set forth.

541,910. SMOKELESS GUNPOWDER. GARLAND N. WHISTLER, Fort Wadsworth, and HENRY C. ASPINWALL, West New Brighton, assignors, by mesne assignments, to Benjamin S. Harmon, New York, N. Y. Filed Oct. 23, 1894. Serial No. 526,735. (No specimens.)

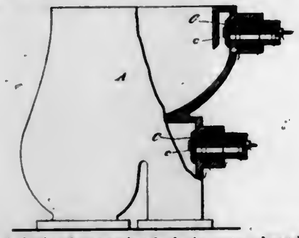
Claim.—A smokeless powder, composed of nitroglycerine, trinitrocellulose, a nitrate and a neutralizer of free acid, such for example as urea crystals, the proportion of nitrate to the trinitrocellulose being about forty-five parts of nitrate to one hundred parts of trinitrocellulose, so that the combustion of the gun cotton shall be substantially similar to that of the nitroglycerin, as set forth.

541,911. SMOKELESS POWDER. GARLAND N. WHISTLER, Fort Wadsworth, and HENRY C. ASPINWALL, West New Brighton, assignors, by mesne assignments, to Benjamin S. Harmon, New York, N. Y. Filed Oct. 23, 1894. Serial No. 526,736. (No specimens.)

Claim.—1. An explosive compound, composed of nitroglycerin, gun cotton, a nitrate, such for example as barium nitrate, a resin and urea crystals, substantially as set forth.

2. The fossilized or mineral gum kauri as a deterrent in a mixture containing nitroglycerin, gun cotton, and a nitrate, substantially as set forth.

541,912. RING, ROD, AND BAR FOR REPAIRING LEAKS IN WATER-CLOSET BOWLS. WILLIAM H. WHITMYER, Schenectady, N. Y. Filed Mar. 14, 1895. Serial No. 541,777. (No model.)

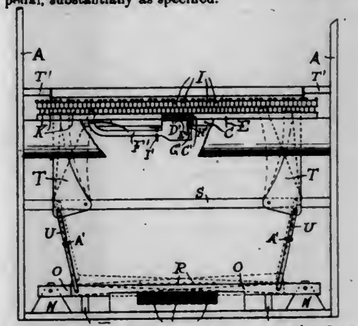


Claim.—A device for stopping leaks in water closet bowls, consisting of a plate with a tapered hole, a rod passed through said hole and having a threaded end, a spud upon said rod, packing rings upon opposite sides of said spud, a ring on the rod bearing against the outer packing ring, and a nut on the threaded end of the rod bearing against the outer ring, substantially as specified.

541,913. PIANO. ALFRED N. ADAMS, Stockton, assignor of one-third to Avery C. White, San Joaquin County, Cal. Filed Feb. 26, 1895. Serial No. 539,832. (No model.)

Claim.—1. In a piano or other key board instrument, the combination of an endwise-movable keyboard fulcrumed so as to enable it to rock in the direction of its width, an adjustable device for securing the key board against rocking or vertical movement, a device for securing the keyboard against endwise movement when it is secured against rocking movement, a device for raising the forward or outer edge of the key board when the same is released, so as to permit of said key board being moved endwise, and means for moving the key board endwise or in the direction of its length, substantially as and for the purpose specified.

2. In a piano or other key board instrument, the combination of an endwise movable key-board fulcrumed so as to enable it to rock in the direction of its width, an adjustable device for securing the key board against rocking or vertical movement, a device for securing the keyboard against endwise movement when it is secured against rocking movement, a device for raising the forward or outer edge of the key board when the same is released so as to permit of said key board being moved endwise, a pedal, and mechanism for moving the key board connected with and adapted to be actuated through the medium of the pedal, substantially as specified.

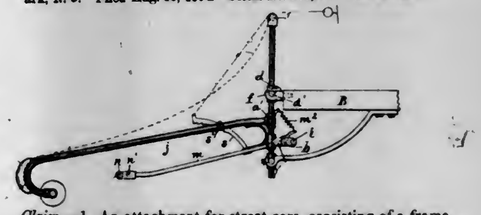


3. In a piano the combination with the case, string-frame, strings and piano-action of a frame suitably mounted on the front of the piano, such frame being provided with the groove D, the keyboard E, provided with the cleat F, mounted on such frame, the keys I suitably mounted on the key-board E, the levers M′ and O′, the bar N′, the lever I′, the spring S′, the guide plate C′ and the lever F′ pivotally attached to the frame C, all arranged and operating substantially as shown and described.

4. In a piano the combination with the strings, action and case of the frame C, suitably mounted on the front of the piano, such frame C being provided with the groove D, the key-board E suitably mounted on the frame C, suitable means for tilting such key-board E, the levers T adapted to engage the ends of the key-board E, such levers T being pivotally mounted on the bar S, the connecting rods U adapted to engage with the levers T and O, the levers O pivotally attached to the blocks N, such blocks N rigidly attached to the bottom of the piano, the pedals Q adapted to engage the levers O, and the adjusting screws R suitably inserted in the levers O, all arranged and operatiog substantially as shown and described.

5. In a piano the pin K′ adapted to engage the key-board, the levers M′ rigidly attached to the lower ends of the pins K′, the bar N′ flexibly attached to the outer ends of the levers M′, the levers O′, provided with the shoulder P′, the spring S′ adapted to engage the bar N′, the lever I′ provided with the lug J′, the guide frame C′, suitably attached to the frame C and the lever F′ pivotally attached to the frame C in combination with a suitable key-board, piano-action and strings all arranged and operating substantially as shown and described.

541,914. FENDER FOR STREET-CARS. GEORGE BERKLEY, Newark, N. J. Filed Aug. 16, 1894. Serial No. 520,433. (No model.)



Claim.—1. An attachment for street cars, consisting of a frame with pins at opposite sides to fit sockets at opposite ends of the car body, an upper fender pivoted thereon with rollers at its front end, and a latch attached to its axle, and a lower fender pivoted to the frame and supported by the said latch.

2. An attachment for street cars, consisting of a frame having the cross-bar A at the top, the tie-bar *i* at the bottom and the axles *a* and *b* pivoted therein, the fenders projected forward from the axles as set forth, and the latch upon the axle *a* to engage a shoulder upon the axle *b*.

3. An attachment for street cars, consisting of a frame having upper and lower fenders pivoted thereon with their axles in contiguity, and a cushion sustained between the fenders adjacent to the axles.

4. An attachment for street cars, consisting of the frame having the cross bar A at the top, the vertical bars *c* at the sides, and the tie bars *i* at the bottom, two fenders pivoted to the frame by the

axles *a* and *b* and projected forward from the axles as set forth, a latch connection between the axles to support the lower fender detachably, and the pins *d'* secured adjustably to the bars *c*, as herein set forth.

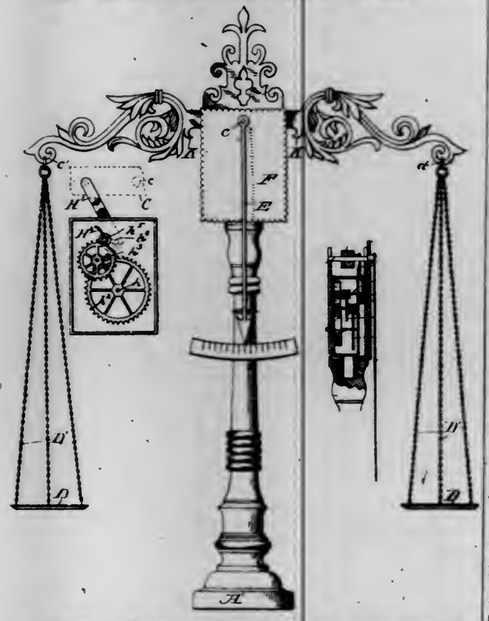
5. The combination, with the frame having side bars *c* with bearings therein, of the axle *a* journaled in said bearings, the fender bars *j* attached at their inner ends to the axle *a* and projected forward from the frame and at their front ends bent downward and backward, the cross bar *k* connecting the reflexed ends of the bars *j*, the wheels *k'* journaled thereon, and the cushion *l* extended between the front curves of the reflexed bars in advance of the wheels *k'* to partially guard the same, substantially as set forth.

6. An attachment for street cars, consisting of the frame having the cross bar *h* at the top, the tie bar *i* at the bottom, and the vertical bars *c* at the sides connected with the cross bars by pipe-fitting joints, two fenders pivoted to the frame by the axles *a* and *b* and projected forward from the axles, as set forth, a latch connection between the axles to support the lower fender detachably, and the sliders *d* fitted adjustably upon the bars *c* and provided with the pins *d'* and the set screws *g*, substantially as set forth.

7. The combination, with an upper fender movable upon an axle *a*, of a lower fender having an axle *b* below and in the rear of the axle *a*, a latch-bar projected downward from the axle *a*, and a shoulder *r'* upon the upper side of the axle *b* to contact with the latch-bar and thus lift the lower fender automatically as the upper fender is lowered, substantially as herein set forth.

8. The combination, with an upper fender movable upon an axle *a*, of a lower fender having an axle *b* below and in the rear of the axle *a*, a latch-bar projected downward from the axle *a* with the hook *q* at the bottom, and shoulders *r* and *r'* formed respectively upon the lower and upper corners of the axle *b*, and adapted to operate with the latch-bar, substantially as herein set forth.

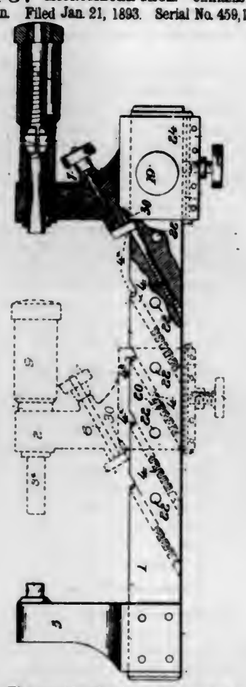
541,915. ADVERTISING DEVICE. JOSEPH F. BOHM, Evansville, Ind. Filed Apr. 10, 1895. Serial No. 545,198. (No model.)



Claim.—1. In an advertising device, the combination with a standard, of equal balance arms pivotally supported thereon, receptacles carried by the arms, a clock mechanism for rocking the arms, a link pivotally connected with the clock mechanism at one end and pivotally connected with the arms at a point beyond the pivotal center thereof, a pointer fixedly connected with the arms, and an advertising panel adjacent to the pointer, substantially as described.

2. In an advertising device the combination with a vertical standard having a shaft journaled in its upper end, a balance beam fixed on the shaft, a pointer fixed on the end of the shaft, receptacles carried by the arms, a clock mechanism carried by the standard, a crank actuated by the mechanism, a link connection between the crank and beam at one side of the shaft, and an advertising panel on the standard opposite the end of the pointer, substantially as described.

541,916. MICROMETER-GAGE. CHARLES F. BOWMAN, New Haven, Conn. Filed Jan. 21, 1893. Serial No. 459,145. (No model.)



Claim.—1. The combination in a micrometer gage with the beam carrying the gaging heads or uprights, one of which is fixed and the other movable thereon, of a series of adjustable locating stops on said beam for the location of the movable upright at certain predetermined distances from the fixed upright, means on said movable upright to engage with said stops.

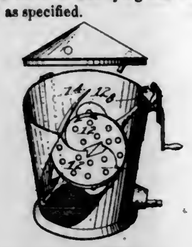
2. The combination in a micrometer gage with the beam carrying the fixed and movable gaging heads or uprights having the gaging points, of a series of angularly arranged threaded holes through said beam, a series of threaded pins adjustably engaging therewith, one end of each of said pins hardened and arranged to be located near the surface of the beam, means provided on the movable upright to readily engage with said stops or be disengaged therefrom, so that, by means of the adjustable feature of the said stops the movable upright can be accurately located with respect to its position on the beam and the stationary upright.

3. A micrometer gage comprising in combination, a beam having mounted thereon a fixed and a movable upright each carrying gaging points, adjustable stops for locating the movable upright in different positions on said beam and angularly arranged therein, means on such upright for engaging such stops, transverse holes through said beam, a hole through the said movable upright coinciding with the holes of the beam, a split pin arranged to pass through the same and locate said movable upright firmly against one of the before mentioned adjustable stops and the beam, combined with a tightening screw as shown.

4. A micrometer gage comprising in combination, a fixed standard a measuring screw supported therein, a threaded nut mounted on said screw and having a longitudinal opening in one side thereof, and beveled ends, a stationary beveled supporting seat in the said standard for one of such ends, an exteriorly threaded thimble surrounding said measuring screw and adjustably engaging with a threaded portion of the said standard, said thimble having also a beveled mouth to engage the outer beveled end of the before mentioned nut, so that, by this combined arrangement of the beveled ends of the nut, longitudinal opening; fixed beveled seat; and adjustable thimble the nut is closed upon the screw or released therefrom by the slightest movement of the said thimble, as set forth.

541,917. CHURN. WILLIAM W. BRIGG, Atlanta, Ga. Filed Sept. 21, 1894. Serial No. 523,728. (No model.)

Claim.—The combination of a revolving dasher, with a suitable receptacle, a tube on the outer side of said receptacle opening therein near its bottom, and a wing secured to the inner side of the receptacle near the periphery of the dasher, and lying substantially parallel to the axis thereof its lower end lying near the embouchure of the tube, substantially as specified.



541,918. TOOL FOR SHOEMAKING. EDWARD M. COLE, Chicago, Ill. Filed Nov. 3, 1894. Serial No. 527,822. (No model.)

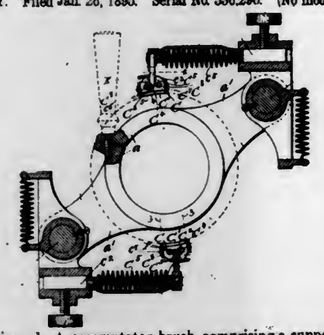


Claim.—1. In a tool for operating upon a cork-welt, a rotary cutter, a guiding disk for determining the location of the cut, and a burnishing device between said cutter and said disk.

2. In a tool for operating upon a cork-welt, a rotary cutter for grooving said cork-welt, a burnisher for polishing the face adjacent to said groove, and a shield between said cutter and said burnisher.

3. A rotary cutter for grooving a cork-welt, a shield adjacent to said cutter and serving to protect one edge of the cork-welt therefrom, a burnishing device for polishing the face of the cork-welt adjacent to the protected edge, and a guiding disk serving to locate the groove made by the cutter and the width of the burnished face.

541,919. COMMUTATOR-BRUSH. HERMAN B. COLLINS, Fulton, N. Y. Filed Jan. 26, 1895. Serial No. 536,290. (No model.)



Claim.—1. A commutator brush comprising a supporting body, and a contact piece provided with a concave bearing face for making contact with the commutator and connected to the body by a hinge-joint interposed between parallel planes extending through the projecting edges of the bearing face and substantially perpendicular to a plane projected through said edges, said hinge-joint being arranged substantially parallel with the projecting edges of the bearing face, substantially as and for the purpose specified.

2. A commutator brush comprising a supporting body, and a contact piece provided with a concave bearing face for making contact with the commutator and connected to the body by a hinge-joint interposed between parallel planes extending through the projecting edges of the bearing face, and substantially perpendicular to a plane projected through said edges, said hinge-joint being arranged substantially parallel with the projecting edges of the bearing face, and the face of said joint nearest said bearing face being arranged nearer its intermediate portion than its projecting edges substantially as and for the purpose set forth.

3. A commutator brush comprising a supporting body, and a contact piece provided with a concave bearing face for making contact with the commutator and connected to the body by a hinge joint interposed between parallel planes extending through the projecting edges of the bearing face and substantially perpendicular to a plane projected through said projecting edges, said hinge-joint being arranged substantially parallel with the projecting edges of the bearing face, and the face of said joint nearest said bearing face being arranged nearer its intermediate portion than its projecting edges, and a lock for normally securing the contact piece to the body, substantially as and for the purpose described.

4. A commutator brush comprising a supporting body, and a contact piece hinged to the body and having a bearing face for making contact with the commutator provided with projecting ribs extending between the front and rear edges of said face, substantially as and for the purpose specified.

5. A commutator brush comprising a supporting body, a contact piece hinged to the body and having a bearing face for making contact with the commutator provided with inclined projecting ribs formed with the front end of one rib in proximity to a transverse plane drawn through the rear end of the next adjacent rib, substantially as and for the purpose described.

6. A commutator brush comprising a supporting body provided with a bearing face formed rounding in cross section, and a contact piece having one side formed with a socket or groove for receiving the bearing face of the body and its opposite side provided with a concave bearing face for making contact with the commutator, and a lock for normally securing the contact piece to the body, substantially as and for the purpose set forth.

7. A commutator brush comprising a supporting body provided with a bearing face formed rounding in cross section, and a contact piece having one side formed with a socket or groove for receiving the bearing face of the body and its opposite side provided with a concave bearing face for making contact with the commutator, substantially as and for the purpose specified.

8. A commutator brush comprising a supporting body provided with a convex bearing face formed rounding in cross section, and a contact piece having one side formed with a socket or groove for receiving the bearing face of the body and its opposite side provided with a concave bearing face for making contact with the commutator, substantially as and for the purpose described.

9. A commutator brush comprising a supporting body, and a contact piece hinged to the body and consisting of separate sections arranged end to end, substantially as and for the purpose set forth.

10. A commutator brush comprising a supporting body, a contact piece hinged to the body and consisting of separate sections arranged end to end and provided with longitudinal apertures aligned with each other, and a spring arranged in said apertures and having its opposite ends secured to the sections, substantially as and for the purpose specified.

11. A commutator brush comprising a supporting body, and a hinged contact piece supported by the body and movable on axes arranged at substantially right angles with each other, substantially as and for the purpose described.

12. A commutator brush comprising a supporting body consisting of separate sections one of which is supported by the other and is movable independent thereof, and a contact piece hinged to the movable section, substantially as and for the purpose set forth.

13. A commutator brush comprising a supporting body consisting of separate sections one of which is supported by the other and is provided with a partially revoluble arm arranged at substantially right angles with the lengthwise plane of the body, and a contact piece provided with a bearing face for making contact with the commutator arranged substantially parallel with said arm and hinged thereto by a joint interposed between parallel planes extending through the projecting edges of the bearing face and substantially perpendicular to a plane projected through said edges, said hinge-joint being arranged substantially parallel with the projecting edges of the bearing face, substantially as and for the purpose specified.

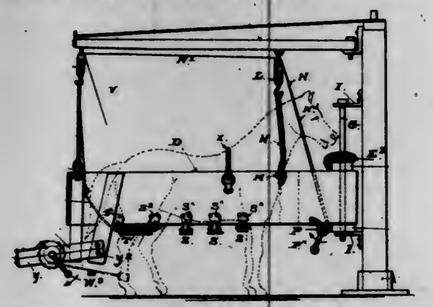
14. A commutator brush comprising a supporting body consisting of separate sections one of which is supported by the other and is movable independent thereof, a spring for holding the movable section in its normal position, and a contact piece hinged to the movable section, substantially as and for the purpose set forth.

15. A commutator brush comprising a supporting body consisting of separate sections one of which is supported by the other and is movable independent thereof, a spiral spring for holding the movable section in its normal position, a spring bar secured to one side of the spiral spring, and a contact piece hinged to the movable section, substantially as and for the purpose described.

16. A commutator brush comprising a supporting body consisting of separate sections one of which is supported by the other and is provided with a partially revoluble arm arranged at substantially right angles with the lengthwise plane of the body, a spiral spring for holding the movable section in its normal position, a spring bar secured to the outer side of the spiral spring, and a contact piece provided with a bearing face for making contact with the commutator arranged substantially parallel with said arm and hinged thereto by a joint interposed between parallel planes extending through the projecting edges of the bearing face and substantially perpendicular to a plane projected through said edges, said hinge-joint being arranged substantially parallel with the projecting edges of the bearing face, substantially as and for the purpose specified.

17. A commutator brush comprising a supporting body, and a contact piece hinged to the body and having an outer portion of its face formed of greater resistance than the next adjacent portion thereof, substantially as and for the purpose described.

541,920. HORSESHOEING-MACHINE. SAMUEL CUNNINGHAM, Sacramento, Cal., assignor of one-half to George H. Harter, same place. Filed Apr. 19, 1894. Serial No. 508,181. (No model.)



Claim.—1. The herein described apparatus to confine animals for shoeing and performing other operations comprising a stationary upright support, a frame composed of hinged sides movable vertically on said support to which they are hinged at one end to open outwardly at the opposite end of the frame, girths attached to the said sides beneath the animal and means for hoisting the said frame to raise the animal off its feet and for supporting the weight of the frame and the confined animal, substantially as hereinbefore set forth.

2. In an apparatus for confining and handling animals, the combination substantially as hereinbefore set forth with a fixed support, of the side-pieces hinged to said support at one end, and capable of vertical movement at said point of attachment, and of opening outwardly at the opposite end to let in the animal, the girths attached to the side-girths and extending under the body of the animal, the overhead tackle attached to said side-pieces for receiving and supporting the same and the confined animal clear of the ground and the windlass at the front for operating said tackle.

3. In a frame for confining and handling animals, the combination substantially as hereinbefore set forth, of the fixed upright support, the hinged side-pieces attached to said support and capable of vertical movement thereon, and of opening apart at the outer ends to let in the animal, the overhead tackle L L N N′ and windlass P for hoisting and supporting said side-pieces when closed upon the animal, the girths S S for supporting the animal, and the band T and the connection T′ and cord V as a means for elevating the rear end of the animal, and the windlass W W² W³ at the rear end of the frame for controlling the hind legs of the confined animal.

541,921. MANUFACTURE OF ELECTRICAL CONDUCTORS. LOUIS W. DOWNES, Providence, R. I. Filed Apr. 2, 1895. Serial No. 544,163. (No model.)



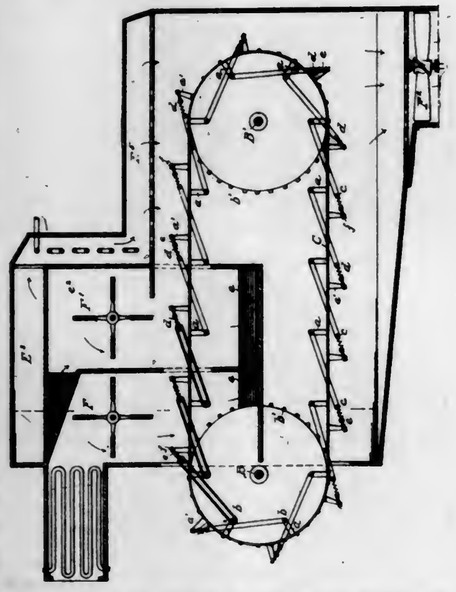
Claim.—1. The process of applying an insulating covering to an electric conductor, said process consisting in surrounding the core with a thin film of rubber, applying thereon a winding of asbestos-fiber, vulcanizing the rubber film, saturating the asbestos winding with silicate of soda or similar substance, applying a braided covering and coating the latter with incombustible cement, substantially as described.

2. An insulated electrical conductor comprising a wire, a continuous film of vulcanized rubber surrounding the same, a dense compact winding of asbestos fiber saturated with soluble glass, and an exterior braided asbestos covering coated with fire-proof cement, substantially as described.

3. An insulated electrical conductor comprising a wire, a fine fibrous covering coated with a film of rubber, a compact winding of asbestos fiber saturated with soluble glass, and an exterior braided asbestos covering coated with fire-proof cement, substantially as described.

541,922. APPARATUS FOR DRYING YARN. ORMEROD DUCKWORTH, Norristown, Pa. Filed Sept. 27, 1893. Serial No. 486,584. (No model.)

Claim.—1. In a yarn drying apparatus having a casing and passages for directing currents of air through the yarn, traversing chains and bearings, rollers provided upon lugs projecting from opposite sides of the traversing chains, and tension regulating mechanism adapted to maintain the hanks of yarn provided on the rollers in a taut condition, substantially as described.



2. In a yarn drying apparatus, the combination of the traversing chains, roller supports carried thereby, yarn carrying rollers adapted to said supports, and spring tension regulating mechanism acting to maintain the respective rollers of each pair at a given distance apart when the hanks of yarn are stretched upon the same and to maintain the yarn provided on the rollers in a taut condition as the distance between the outer ends of the supports of the rollers increases or decreases in the travel of the chains through the apparatus, substantially as described.

3. The combination in a yarn drying machine of two yarn reels or rolls for carrying hanks or skeins of yarn, chains for traveling said reels or rollers and springs connecting one of such reels or rollers to the chains.

4. In a yarn drying apparatus traverse chains, O, lugs, *a′*, rollers, *c*, and tension springs, *d*, securing the rollers to the outer end of the lugs, *a′*, substantially as described.

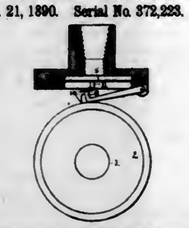
5. An apparatus for drying yarn comprising a single set of yarn traversing chains, reels or rollers secured to lugs projecting from opposite sides of the chain and adapted to carry the hanks of yarn to be dried and a casing having flues and passages for directing a current or currents of air through the hanks of yarn, substantially as specified.

6. The combination of the casing having flues or passages for directing or inducing air currents, transverse shafts mounted therein, sprocket wheels carried by such shafts, a single set of carrying chains adapted to said sprocket wheels, lugs provided upon said carrying chains and projecting from opposite sides thereof and sets of yarn carrying reels or rollers, the opposite reel of each set being attached to the lugs in such manner that the hank of yarn to be dried will extend across the line of travel of the chains and at an angle thereto, substantially as specified.

7. The combination of the casing having flues or passages for directing or inducing air currents, traversing chains, means for moving the same through said casing, a lug as *a*, projecting from one side of said chains, a yarn carrying reel adapted to such lug, lugs, as *a′*, projecting from the opposite sides of such chains, a second reel or roller and tension springs extending therefrom to the lugs, *a′*, substantially as specified.

8. The combination of a casing having flues or passages for directing or inducing the air currents, yarn carrying chains and means for moving the same through the casing, lugs, as *a*, projecting from one side of the chains and adapted to carry a reel or roller, lugs, *a′* projecting from the opposite sides of the chains, a second reel or roller, adjustable bolts carried by the lugs, *a′*, and tension springs extending from said bolts to such second reel or roller, substantially as described.

541,923. PHONOGRAPH. THOMAS A. EDISON, Llewellyn Park, N. J. Filed Nov. 21, 1890. Serial No. 372,223. (No model.)



Claim.—1. The combination of a phonograph diaphragm or vibrating body, a pivoted recorder or reproducer operatively connected to the diaphragm, a presser foot and a connection between the presser foot and the recorder or reproducer, substantially as described.

2. The combination, in a phonograph, of a diaphragm or vibrating body suitably supported, a phonogram blank or recording surface, a presser foot adapted to bear on said blank, and an operating point pivotally connected to said presser foot and operatively connected to the diaphragm, substantially as described.

3. The combination, in a phonograph, of a diaphragm suitably supported, a phonogram blank or recording surface, a presser foot pivoted to a support and having a bearing on the phonogram blank, and a yielding connection between the operating point and the diaphragm, substantially as described.

4. The combination, of a diaphragm suitably supported, a phonogram blank or recording surface, a presser foot pivoted to a support and having a bearing on the phonogram blank, an operating point, and a retarding device between the diaphragm and operating point, substantially as described.

5. The combination of a phonograph diaphragm, a phonogram blank, a presser foot adapted to rest thereon, a recorder or reproducer pivoted to the presser foot and tending to move toward the blank, and a dash-pot, one member of which is connected to the diaphragm, and one member of which is connected to the recorder or reproducer, substantially as described.

6. The combination with a phonograph diaphragm, a recorder or reproducer operatively connected to the diaphragm, a presser foot, and an elastic or yielding block between the presser foot and the recorder or reproducer, substantially as described.

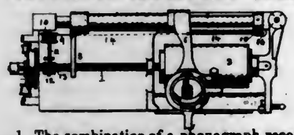
7. The combination of a phonograph diaphragm, a recorder or reproducer operatively connected to the diaphragm, a presser foot, and a block carried by the presser foot and bearing against the recorder or reproducer, substantially as described.

8. The combination of a phonograph diaphragm, a phonogram blank, a pivoted recorder or reproducer, an operating connection between the diaphragm and recorder or reproducer, and a pivoted presser foot adapted to rest on the phonogram blank, and a block between the recorder or reproducer, and the presser foot adapted to communicate motion from one to the other, substantially as described.

9. The combination, in a phonograph having a phonogram blank, with a phonograph diaphragm, of a presser foot connected to said diaphragm and resting on the surface of the phonogram blank, a recorder, and a recorder carrying arm one end of which is pivoted and one end of which is connected to said presser foot, substantially as described.

10. The combination of a phonograph diaphragm and support pivoted on one side, the presser foot extending from the opposite side, a recorder or reproducer connected to said presser foot, and to the diaphragm, substantially as described.

541,924. PHONOGRAPH. THOMAS A. EDISON, Llewellyn Park, N. J. Filed Dec. 3, 1890. Serial No. 373,410. (No model.)



Claim.—1. The combination of a phonograph recorder or reproducer, a drum, a wire on the drum and connected to the recorder or reproducer, and means for turning the drum at a speed corresponding to the speed desired for the recorder or reproducer, substantially as described.

2. The combination with a phonograph shaft, a recorder or reproducer and supporting device therefor, of a drum, a wire thereon and connected with the supporting device, and a gearing between the phonograph shaft and drum, substantially as described.

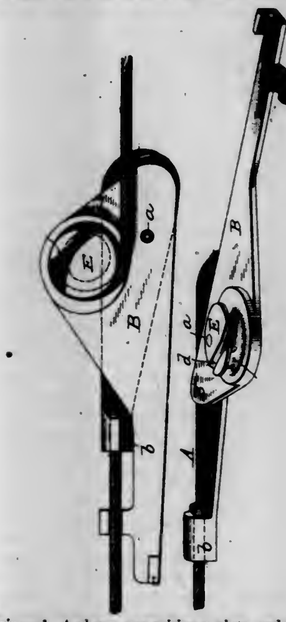
3. The combination with a phonograph shaft, a recorder or reproducer and supporting device therefor, of a drum, a wire thereon and connected with the supporting device, a gearing between the phonograph shaft and drum, and means for moving the recorder and reproducer as the wire is unwound from the drum, substantially as described.

4. The combination of a phonogram blank and means for moving the same, a drum driven with the blank, a wire wound on the drum, a movable recorder or reproducer to which the wire is connected, and means for moving the recorder or reproducer as the wire is unwound from the drum, substantially as described.

5. The combination of a phonograph shaft, a recorder or reproducer, a supporting arm and sleeve, a guide rod on which the sleeve is movable, a drum, a wire on the drum, and connected with the recorder or reproducer, and a connection between said drum and phonograph shaft, substantially as described.

6. The combination of a phonograph shaft, a recorder or reproducer, a supporting arm and sleeve, a guide rod on which the sleeve is movable, a drum, a wire on the drum, and connected with the recorder, or reproducer, a connection between said drum and phonograph shaft, and a weight or other motor tending to move the recorder or reproducer in one direction, substantially as described.

541,925. CLAMP. JOHN G. EMERY, Jr., Muskegon, Mich. Filed Apr. 20, 1895. Serial No. 546,570. (No model.)



Claim.—1. A clamp comprising a plate and a lever pivoted together; a band fastened to the plate, and means carried by the lever for holding the free end of the band and taking up the slack therein when the lever is turned upon the plate.

2. In a clamp, the combination of a plate having a band fastened thereto; a lever or arm pivoted to the plate; and means carried by the lever to clamp the free end of the band and take up the slack therein by the rotation of the lever.

3. A clamp comprising a plate having a band fastened thereto; a lever pivoted to the plate; and a winding post or stud carried by the lever.

4. A clamp comprising a plate having a band fastened thereto; a lever pivoted to the plate; a winding post or stud carried by the lever; and a lip also formed upon the lever.

5. A clamp comprising a plate, having a band securely fastened thereto, a lever pivoted to the plate; a winding post or stud carried by the lever, said post being provided with the circumferential groove *c* and cross groove or channel *d*.

6. In a clamp, the combination with a plate and a band attached thereto; of an arm or lever pivoted to the plate and provided with a band attaching stud to one side of the pivot.

7. In a clamp, the combination with a plate and a band attached thereto; of an arm or lever pivoted on the plate and having means for securing the free end of the band; and a projection carried by the lever to engage the rope when the ends of the rope are brought into line.

541,926. CALL-BELL. PAYN DE T. EVANS and HENRY B. TOMKIN, San Francisco, Cal. Filed Oct. 18, 1894. Serial No. 526,313. (No model.)

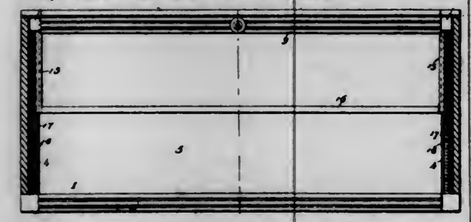


Claim.—1. A combination automatic burglar alarm and call bell consisting of the plate, A, forming the base or back of bell device; the plate, B, forming the outer or upper part of said device; the posts, *a a' a''*, inserted between said plates and separating them far enough apart to provide space between them for the spring, wheels, and other mechanism; the rocking arm, C, fastened in supports set in the base plates; the supports, *b b*, in which said arm is set; the bent lever, D, set upon movable arm for operating the same; the squared part of rocking arm, *v*, upon which a washer slides up against the end of said lever; the washer, *c*, fitting over the squared part of arm against the end of said lever; the screw or threaded end of arm, *d*; the thumb nut, E, which screws upon said threaded or screw end of the arm for tightening the end of the bent lever against the shoulder, K, on arm against which the lower end of nut is set upon said arm; the upright projection, F, on arm to which the end of horizontal lever is attached; the horizontal lever, G, connected at one end with upright projection on arm, and at the other end with axle of actuating wheel; the coil spring, *g*, about axle of actuating wheel acting upon wheel mechanism; the axles, *e*; the ratchet wheel, *f*; the hub, *d'*, of said ratchet wheel; the post, *a*, to which the outer end of coil spring is fastened; the pawl, *i*, on actuating wheel, engaging ratchet wheel; the spring, *k*, holding it in place; the pin, *l*, projecting from the hub of the ratchet wheel; the ear projections, *m*, on the outer end of horizontal lever acting against pin, *l*, to wind the coil the spring; the wheels, *n n n*, forming part of the mechanism; the spur wheels, *o o o*, forming part of the gearing; the revolving hammer, *p*, for striking upon bell; the bell, I, covering the mechanism; the bell support, *r*; the thumb screw, *s*; the right angled stop piece, *t*; the strap or plate, *u*, on the back of bell device; the points, *a'*, for fastening into the woodwork, and point, *b'*, on the opposite end of said plate piece—substantially as herein described and set forth.

2. In a combined automatic burglar alarm and call bell, the combination of the rocking arm, C; the bent lever, D, as attached to said arm; the upright projection, F, on said arm; and the horizontal lever, G, provided with slot, *c'*; with actuating toothed wheel, H; the ratchet wheel, *f*; the coil spring, *g*, operating the mechanism of wheels, *n n n*, and spur wheels, *o o o*, for ringing bell; the hammer, *u*; the right angled stop piece, *t*; the bell, I, as fastened to upper plate,—substantially as herein described and set forth.

3. In a combined automatic burglar alarm and call bell, the combination of the spring, *g*; with the ratchet wheel, *f*; the actuating toothed wheel, H; the pawl, *i*; the hub, *d'*, on ratchet wheel; the pin, *l*; the ear projections, *m*, on the outer end of horizontal lever, which engage and act against pin, *l*, when bent lever is pressed down causing arm, C, to act upon horizontal lever, G; the wheels, *n n n*; and spur wheels, *o o o*; the right angled stop piece, *t*; the hammer, *p*, and the bell, I, as fastened to upper plate,—substantially as herein described and set forth.

541,927. SHOW-TOP. HENRIETTA GOLDMAN, St. Louis, Mo. Filed Apr. 13, 1895. Serial No. 545,665. (No model.)



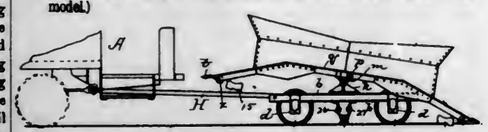
Claim.—1. A show top comprising a suitable frame, a cover for the same composed of a sliding and fixed portion, grooves in the sides of the frame, extensions for said grooves, an upper rail for the sliding cover, tongues projecting from the ends of the sliding rail and extending across the grooves and their extensions, springs confined within the extensions and adapted to support the tongues of the sliding rail, and an abutting strip for the sliding cover extending the length of the frame, substantially as set forth.

2. A show top comprising a suitable frame, a cover for the same composed of a sliding and fixed portion, grooves in the sides of the frame, enlarged extensions for said grooves, an upper rail for the sliding cover, tongues projecting from the ends of the sliding rail flush with the upper surface thereof across said grooves and their extensions and making a close joint with the former, resilient coiled springs loosely confined within the extensions and adapted to support the lower surfaces of the tongues of the sliding rail, and an abutting strip for said sliding cover substantially as set forth.

3. In a show top, a frame having lateral terminal bars, consecutive shoulders formed in the rear of the upper end of each bar, a right angled abutting strip having one member adapted to rest at its opposite ends on the lower shoulder of the side bar, a terminal reduced end on the other member of the abutting strip adapted to bear against the second or upper shoulder of the side bar, an offset at the base of the reduced end adapted to bear against the inner face of the upper end of the side bar, and suitable fastening devices for securing the abutting rail or strip to the side bars, substantially as set forth.

4. In a show top, a suitable frame, grooves at opposite ends of the same, a sliding cover having an upper rail, tongues for said rail adapted to slide within the grooves, a plate for said cover, lateral supporting strips for said plate embracing the opposite edges of the same, an expanded portion for each strip embracing the sides and the end of each tongue, and means for securing the strips to the tongue, substantially as set forth.

541,928. SNOW-PLOW FOR STREET-RAILWAYS. JOHN H. GRAHAM, Boston, Mass. Filed Jan. 7, 1895. Serial No. 534,065. (No model.)

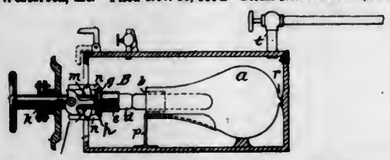


Claim.—1. In a rail-way snow plow a truck, a body pivoted centrally thereon to rock vertically, and a weight on said body movable longitudinally as the body is tilted, substantially as and for the purpose set forth.

2. In a railway snow plow, a truck, a body pivoted thereon to rock vertically; a liquid containing tank on said body and shares on the body adapted to engage the rails all being combined and arranged to operate substantially as specified.

3. In a rail-way snow plow a truck in combination with a body pivoted to rock vertically on said truck and bearing shares for engaging the road way in combination with a tank on said body for containing liquid and dispensing the weight thereof at corresponding sides of the pivot as said body is rocked.

541,929. INCANDESCENT ELECTRIC LAMP. ROBERT GREER, Westbrook, Me. Filed Nov. 10, 1894. Serial No. 528,364. (No model.)

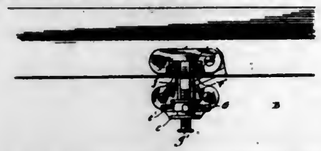


Claim.—1. The herein described method of making incandescent lamps which consists in placing wholly within a receiver upon suitable supports a glass bulb open at its lower end, and then inserting into the said receiver a plug consisting of a filament and its support the base of which is encircled with elastic material, then closing the receiver and exhausting the air therefrom, and then forcing the plug into the glass bulb, as set forth.

2. The herein described method of making incandescent lamps which consists in placing wholly within a receiver upon suitable supports a glass bulb open at its lower end, and then inserting into the said receiver a plug consisting of a filament and its support the base of which is encircled with elastic material, then closing the receiver and exhausting the air therefrom, and forcing the plug into the glass bulb, and then admitting air into the receiver, as set forth.

3. The herein described stopper incandescent lamp, consisting of a glass bulb provided with a straight cylindrical opening and an annular seat at its lower end; and a hollow plug to which the filament is secured provided with a stopper to fit the cylindrical opening of the bulb and with a base or flange having upon its upper face a ring of elastic material, the said flange having lugs extending from the opposite sides of its inner circumference upon which the filament wires are wound.

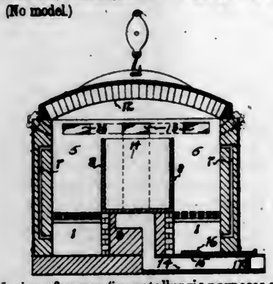
541,930. SASH-FASTENER. JAMES M. HARPER, Peoria, Ill. Filed Sept. 13, 1894. Serial No. 522,928. (No model.)



Claim.—1. The combination with the meeting rails of window sashes, of a slotted, vertical post attached to one of said rails, and having its outer face transversely corrugated, a casting attached to the other of said rails, a locking bolt movably seated in said casting and having a head arranged to engage the corrugations of said post, and a nut on said bolt confined between lugs or guides of said casting, substantially as specified.

2. In a sash and ventilating lock, the combination with the casting having the slotted, corrugated post C, of the casting D having the parallel lugs *e, e'*, and the lugs or flanges *f, f*, at right angles to said lugs, a locking bolt having a threaded shank passing loosely through perforations in the said lugs *e, e'*, a guide portion working between the flanges *f, f*, a head portion arranged to engage the corrugations of the post C, and a nut held on said bolt between the lugs *e, e'*, substantially as specified.

541,931. FURNACE FOR METALLURGICAL PURPOSES. SAMUEL P. HUTCHINSON, Philadelphia, Pa. Filed Nov. 10, 1894. Serial No. 528,436. (No model.)



Claim.—1. In a furnace for metallurgic purposes a fuel chamber, a heating chamber located in said fuel chamber, a grate, an ash-pit with means of excluding, admitting and regulating air supply thereto, and a concave refractory cover fitted to said fuel chamber, in combination with a flue leading from the upper part of said fuel chamber under said heating chamber, and dampers arranged to alternatively connect said flue with the ash-pit or with the chimney substantially as set forth.

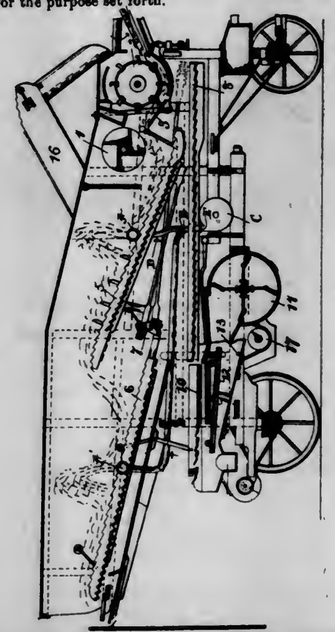
2. In a furnace for metallurgic purposes, a fuel chamber having refractory walls provided with channels leading from an ash-pit to the upper part of said fuel chamber, a grate, an ash-pit provided with means of regulating and excluding air-supply thereto, a refractory cover fitted to said fuel chamber, in combination with a heating chamber located within said fuel chamber, a flue leading from the upper part of said fuel chamber under said heating chamber to said ash-pit, and to a chimney, and dampers, arranged to close communication between said flue and said ash-pit and chimney, substantially as set forth.

541,932. STRAW-CARRIER. JOHN R. INGELS, Hiawatha, Kans. Filed Sept. 27, 1894. Serial No. 524,266. (No model.)

Claim.—1. In a straw carrier, the combination with a shaking straw table; of a single pipe resting permanently on and extending across the table at a point between its ends and having perforations in its upper face, one end of the pipe being closed, a flexible pipe communicating with the other end, a damper in said flexible pipe, and a fan for supplying a blast of air through the flexible pipe to the perforated pipe, as and for the purpose set forth.

2. In a straw carrier, the combination with a shaking straw table; of a single pipe permanently carried by and sunk into the table flush with its upper face and extending across the same at a point between its ends, said pipe having perforations in its upper face, and means for supplying a blast of air to this pipe, as and for the purpose set forth.

3. In a straw carrier, the combination with a vibratory table for carrying the straw, and a perforated pipe with closed ends resting permanently on and extending across said table at a point between its ends; of a fan for supplying a blast of air, and a feed pipe having jointed connections with one end of the perforated pipe and with the fan casing and having a joint in its body between said connections, as and for the purpose set forth.



541,933. MEDICINAL PREPARATION FROM BLOOD. EDUARD R. KOBERT, Dorpat, Russia. Filed Feb. 13, 1892. Serial No. 421,445. (Specimens.)

Claim.—1. A blood forming iron preparation derived from blood, consisting of a red brown to black brown powder readily absorbable by the digestive organs, and practically insoluble in water, having a less percentage of carbon than hæmoglobin or oxyhæmoglobin, the intimate mixture of such preparation with water not producing the absorption bands of hæmoglobin between the spectrum lines D and E, substantially as described.

2. The method of obtaining blood-forming iron preparations derived from blood, which consists in precipitating such substances out of blood by the action of a reducing agent which introduces into the precipitate foreign solid matters, separating the precipitate from the liquid and treating this precipitate with a solvent of the said iron preparation, such as with an aqueous solution of ammonium carbonate, thereby separating the iron preparations from the foreign solid matters, substantially as described.

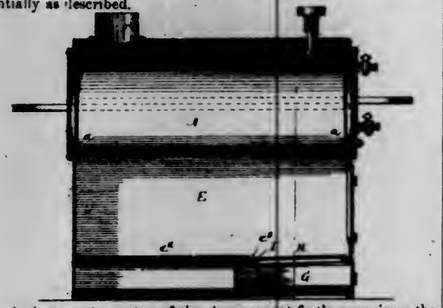
3. The method of obtaining blood-forming iron preparations derived from blood, which consists in precipitating such substances out of blood by the action of a reducing agent which introduces into the precipitate foreign solid matters, separating the precipitate from the liquid and treating this precipitate with a solvent of the said iron preparation, such as an aqueous solution of ammonium carbonate, thereby separating the iron-preparations from the foreign solid matters, precipitating the dissolved iron-preparation from the resulting solution preferably by neutralizing by means of an acid, and finally separating the precipitate, substantially as described.

541,934. STEAM-GENERATOR. ERNST H. KOENEMEYER, Higginsville, Mo. Filed May 22, 1894. Serial No. 512,099. (No model.)

Claim.—1. A steam generator of the character set forth, comprising the combination with a boiler A, of a casing inclosing said boiler and provided at its rear upper portion with the discharge flue for products of combustion and at its front lower portion with a fire-box, said casing being separated from said boiler to form the narrow passage ways at the sides for products of combustion and being separated from the upper part of said boiler to leave a space of greater area above the boiler for products of combustion, substantially as described.

2. A steam generator of the character set forth, comprising the combination with a boiler A having circumferential grooves or beads *a* at its ends, with an inclosing casing, the front and rear walls of which fit within said grooves at the ends of the boiler, substantially as described.

3. A steam generator of the character set forth, comprising the combination with a boiler A having circumferential grooves *a* at its ends and having the end flanges *b* and the heads *c* attached to the end flanges *b*, in combination with the casing, the front and rear walls of which set within the circumferential grooves of the boiler, substantially as described.



4. A steam generator of the character set forth, comprising the combination with a boiler A of the inclosing casing formed of the upper and lower sections E and E', said sections being connected to the angle bars L and L' that are secured together, said angle bars being extended at the front and rear of the boiler to form means whereby the apparatus can be lifted, substantially as described.

5. A steam generator of the character set forth, comprising the combination with a boiler, of a sheet metal casing inclosing said boiler, the lower part of said casing being provided with the angle bars *g* and *g'*, the plate *e* resting upon and secured to said angle bar *g*, a plate *f* secured to said angle bar *g'*, suitable grate bar supports I and I' in front of said plate *e* and grate bars H, substantially as described.

6. A steam generator of the character set forth, comprising the combination with a boiler and an inclosing sheet metal casing, of an angle bar *g* extending around the lower part of said inclosing casing, a cross bar or support I extending between the sides of said angle bar *g* and a series of grate bars resting upon the front portion of said angle bar *g* and upon said cross bar I, substantially as described.

541,935. MOP-WRINGER. ALFRED T. LAIDSON, Aurora, Nebr. Filed Oct. 16, 1894. Serial No. 526,082. (No model.)

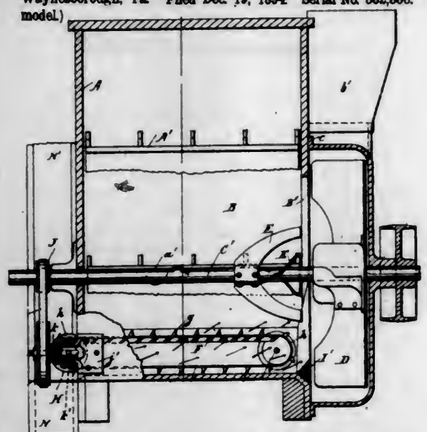


Claim.—1. In a mop wringer, a stationary bearing frame adapted be attached to the upper edge of a pail or tub, a roller mounted in said stationary bearing frame, a swinging bearing frame hinged at one end to the stationary frame and detachably connected at its other end to said stationary frame, and a roller mounted in said swinging bearing frame, substantially as set forth.

2. In a mop wringer, a stationary bearing frame adapted to be attached to a pail or tub, a roller mounted in said stationary frame, a swinging bearing frame having a hinged pivotal connection at one end with said stationary frame and a separable lock connection at its other end with said stationary frame, and a roller mounted in said swinging bearing frame, substantially as set forth.

3. In a mop wringer, opposite connected parallel bearing arms provided at one end with depending attaching straps, one of said bearing arms being further provided at its inner upper end with a curved or C-shaped combined hinge and catch hook, a roller supported for a fixed rotation between said bearing arms, a pivot joint block pivotally secured on the inner end of the bearing arm opposite the arm with the hook, opposite parallel bearing plates one of which is hinged to said pivot block and the other of which is provided at the top with a curved or C-shaped combined hinge and catch hook adapted to interlock with the similar hook of one of said bearing arms, a transverse combined connecting and rest plate connecting the opposite bearing plates, and a roller journaled between said bearing plates, substantially as set forth.

541,936. PNEUMATIC STRAW-STACKER. FRANK F. LANDIS, Waynesborough, Pa. Filed Dec. 19, 1894. Serial No. 532,338. (No model.)



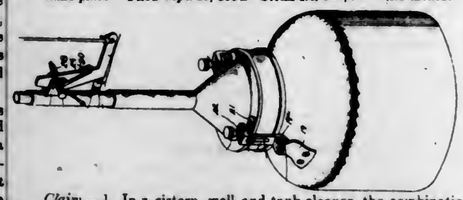
Claim.—1. The combination, with the rear end portion of a thrashing machine provided with a straw chamber having a grate at its bottom and communicating directly with the outer air through the said grate; of a pneumatic discharger having its inlet opening connected directly to the said straw chamber above the grate and operating to draw in a supply of air through the said grate without passing through the thrashing machine, said grate also affording an outlet for any grain separated from the straw in the straw chamber above the said grate, substantially as set forth.

2. The combination, with the rear end portion of a thrashing machine provided with a straw chamber having a grate at its bottom, the space above the grate communicating directly with the interior of the thrashing machine and the space below the grate communicating directly with the outer air; of a pneumatic discharger having its inlet opening connected directly to the space above the said grate and operating to draw in air and straw, the said straw being subjected to the action of the incoming air before it enters the discharger and any grain remaining in the straw being permitted to fall through the grate, substantially as set forth.

3. The combination, with the rear end portion of a thrashing machine provided with a straw chamber having a grate at its bottom, the space above the gate communicating directly with the interior of the thrashing machine and the space below the grate communicating directly with the outer air; of a pneumatic discharger having its inlet opening connected to the said straw chamber and operating to draw in air from the space below the said grate and straw from the space above it; and feeding devices arranged in the said chamber and operating to move the straw through the entering air and to assist it in entering the discharger, substantially as set forth.

4. In a pneumatic stacker, the combination, with a revoluble discharger, and its supporting shaft, of a casing for the discharger having on one side thereof two bearings for the discharger shaft and a chamber for lubricating material between the two bearings, the said bearings and chamber being formed integral with the said casing, substantially as set forth.

541,937. CISTERN, WELL, OR TANK CLEANER. WILLIAM A LATHAM, De Witt, Iowa, assignor of one-half to Charles A. Butterfield, same place. Filed Sept. 19, 1894. Serial No. 523,481. (No model.)



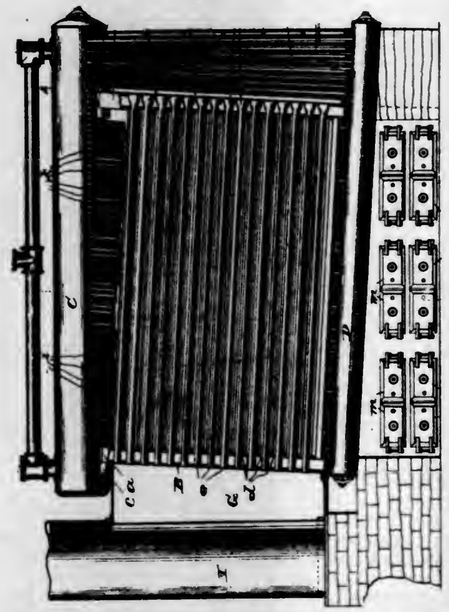
Claim.—1. In a cistern, well and tank cleaner, the combination of a hollow body portion having a valve-controlled opening in its bottom, engaging plates secured to opposite sides of the said body near its upper end, a top portion having a valve-controlled vent and removably fitted upon the upper end of the said hollow body, blocks secured to the said top portion at opposite points, slotted plates having their lower ends constructed to form connection with the said engaging plates and having their upper ends bent inward to extend over the said blocks, fastenings passing through the said slotted plates and having connection with the said blocks, and binding screws passing through the bent ends of the slotted plates and adapted to engage with the said blocks, substantially as described for the purpose set forth.

2. In a cistern cleaner, a main or body portion having an open upper end, a top portion fitted over the main or body portion and closing the upper end thereof, two hooks affixed to the outer side of the body portion and arranged oppositely thereon, two plates slidably mounted on the top portion and provided at their lower ends with projections respectively capable of engaging with the hooks on the body portion, and means for moving the plates upwardly on the top portion, whereby the said portion is clamped against the body, substantially as described.

3. The herein-specified cistern, well and tank cleaner, comprising a hollow body portion provided at its base with a valve-controlled inlet, and having its upper portion contracted, a movable cover for closing the contracted end of the hollow body, oppositely-disposed hooks attached to the sides of the hollow body, two plates adjustably connected with the cover and having outwardly-extending hooks at their lower ends to engage with the hooks on the sides of the hollow body, means for moving the plates upwardly on the cover, whereby the latter is clamped against the top edge of the hollow body, an operating pipe extending vertically from the cover and bracingly connected therewith at its lower end, and provided with a laterally extending nipple, said pipe being closed above the nipple, and a valve for closing against the nipple and provided with means for unseating the said valve, substantially as described for the purpose set forth.

4. A cistern, well and tank cleaner consisting of a body portion provided at its lower end with a valve, a pair of oppositely-arranged hooks on the exterior sides of the body portion, a top portion fitting over the open upper end of the body portion and having two oppositely-arranged facing plates thereon, a valve in the top portion, two longitudinally-slotted plates connected to the respective facing plates of the top by fastening devices passing through the slots of the plates, and provided at their lower ends with hooks capable of locking with those on the body portion, and a set-screw for each slotted plate and capable of moving the same up or down on the top portion, whereby said portion may be locked in place, substantially as described.

541,938. STEAM-GENERATOR. SAMUEL E. LIGHT, Lebanon, Pa. Filed Jan. 30, 1895. Serial No. 536,663. (No model.)



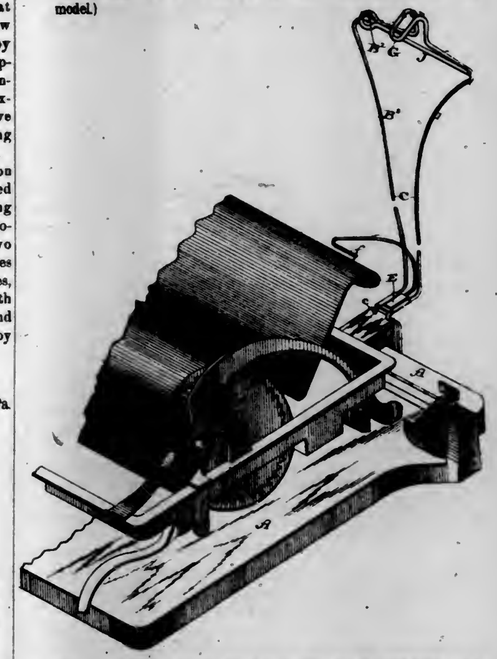
Claim.—1. In a steam generator, continuous and seamless headers the height and width of the generator, provided with contracted necks at their upper ends and with holes or openings in their inner and outer walls, in combination with concentric water and fire tubes, the latter expanded across one of the headers from the inner to the outer wall and to the diameter of the water tubes.

2. In a steam generator a header provided with tube openings of the same diameter in its inner and outer walls, in combination with concentric water and fire tubes, the latter of less diameter than the former and expanded across the header from the inner to the outer wall and to the diameter of the water tube.

3. In a steam generator, front and rear headers connected by longitudinal tubes, in combination with a steam drum or separator, water drums on each side of the generator and at the lower end thereof and vertical water tubes arranged in tiers on each side of the generator from the front end of the front uptake to the rear header and connecting the steam drum to the water drums.

4. In a steam generator, a steam drum, and water drums on each side of the generator, tubes connecting said drums and arranged in two tiers one overlapping the other, in combination with a coating of refractory material applied to and supported by the outer tier of pipes.

541,939. COPY-HOLDER FOR TYPE-WRITERS. EDWIN A. LYMAN, Ottumwa, Iowa. Filed Oct. 29, 1894. Serial No. 527,176. (No model.)



Claim.—1. A copy holder for type writers having combined with the frame of a type writer, the clamp B having sockets *c*, the standard composed of the wires B' and B², supported therein, their upper portions bent horizontally and fastened together, and one of the wires being extended and bent upon itself to form a clamp, substantially as and for the purpose set forth.

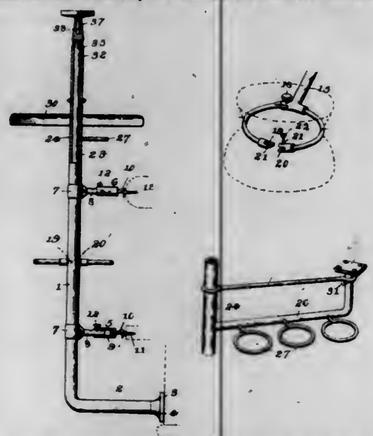
2. In a copy holder for type writers the combination of a clamp provided with a thumb screw for securing the same to the frame of a type writer, the wire frame C consisting of the two wires B' and B², removably held in sockets in the said clamp, one of the wires of the standard as B' bent upon itself in two directions to form the hook G, and the clamp arm J, substantially as shown and described.

3. A copy holder having in combination with the frame of a type writer, the clamp B provided with thumb screw, and having sockets for the reception of the two upright standards B' and B², clamp, for holding a note book, integral with one of the wires, the guide lever F the plate D designed to carry said guide lever F, as and for the purpose set forth.

4. A copy holder for type writers having in combination for use in connection with the frame of the type writer, the clamps B, wire standard C, the plate D rigidly secured to the said standard, a wire F, having the member E secured to one end thereof and designed to engage with plate D, the other end of the wire projecting forward, as and for the purpose set forth.

5. A copy holder for type writers having in combination with the clamp B, a standard composed of the wires B' and B², secured together at their upper ends, and a forwardly projecting balancing member G, substantially as shown and described.

541,940. DENTAL-CHAIR ATTACHMENT. ROBERT M. MAYES, San Antonio, Tex. Filed May 15, 1894. Serial No. 511,390. (No model.)



Claim.—1. The combination of a staff provided at its lower extremity with means for attachment to a dental chair, intermediate braces comprising collars secured to the staff, stems pivoted to said collars, barrels for the reception of said stems and having terminal hooks, and stationary eyes adapted to be secured to upper portions of the chair for engagement by said hooks, thumb-screws being mounted on the barrels for engaging the stems, a waste-bowl supporting-arm pivotally connected to the staff, a bracket swiveled upon the staff and carrying a lamp table and intermediate rests, and an instrument table swiveled upon the upper end of the staff, substantially as specified.

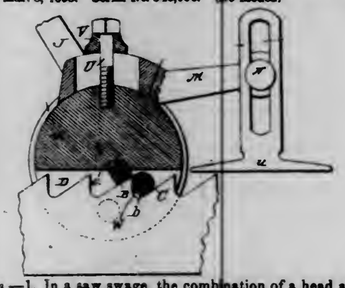
2. The combination with a staff, means for attaching the same to a dental chair, and a waste-bowl supporting arm connected to the staff, of a bracket swiveled upon a reduced upper portion of the staff and provided with a terminal lamp table and intermediate rests, a sleeve swiveled upon said reduced portion of the staff above the bracket and provided with lateral angle arms having upturned terminals, a conical nut threaded upon the extremity of the staff and fitting in a conical socket in the upper end of said sleeve, said nut having an extension provided with an axial socket, and an instrument table provided with a central plate having a depending stem mounted in said socket, and side plates having depending sockets to receive the upturned terminals of said angle arms, substantially as specified.

541,941. PROCESS OF FORMING STARCH INTO COHERENT MASSES. ARIEL MOFFATT, Indianapolis, Ind. Filed Oct. 18, 1894. Serial No. 526,294. (No specimens.)

Claim.—1. The process of manufacturing coherent masses of starch consisting in the application of pressure to starch containing not more than thirty per cent. nor less than sixteen per cent. of water, and subjected to a temperature in excess of 100° and less than 160° Fahrenheit conjointly with pressure, substantially as described.

2. The process of manufacturing coherent masses of starch, consisting in reducing the moisture in the starch until approximately only twenty per cent. of water remains, then subjecting the mass to a temperature of approximately 140° Fahrenheit conjointly with pressure.

541,942. SAW-SWAGE. RUDOLPH MORRELL, Winona, Minn. Filed Mar. 3, 1895. Serial No. 540,958. (No model.)



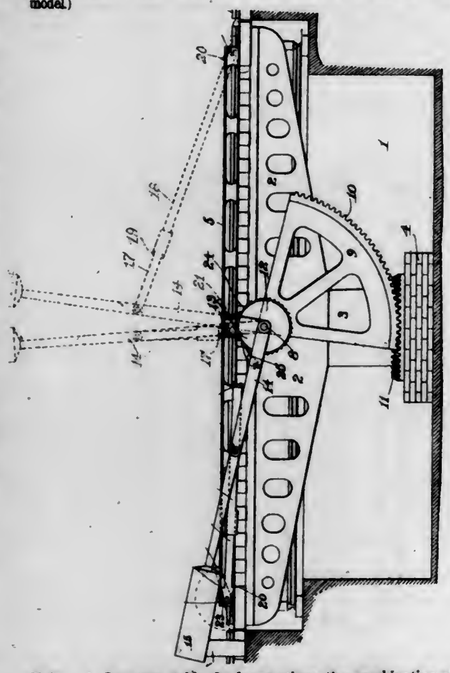
Claim.—1. In a saw swage, the combination of a head adapted to receive a saw blade, an anvil arranged transversely in the head, the endwise adjustable rotary swaging die arranged transversely in the head and having the longitudinal groove W, a hand lever arranged on the die, a key arranged in a recess of the hand lever and the groove W, of the die, a set screw taking through said lever and engaging the die, and means for preventing lateral movement of the hand lever and consequently endwise movement of the die with respect to the head, substantially as specified.

2. In a saw swage, the combination of the head slotted in its under side to receive a saw blade and grooved in its upper side, the slotted gage L, the arm M, adjustably connected with the gage L, by a bolt taking through the slot thereof and having the curved and slotted portion conforming to the curvature of the head and arranged in the groove thereof, and the headed bolt taking through the slot of the arm M, and into the head, substantially as specified.

3. A saw swage comprising the head adapted to receive a saw blade and grooved in its upper side, the slotted gage L, the arm M, adjustably connected with the gage L, by a bolt taking through the slot thereof and having the curved and slotted portion conforming to the curvature of the head and arranged in the groove thereof, the headed bolt taking through the slot of the arm M, and into the head, the anvil arranged transversely in the head, the die also arranged transversely in the head a bolt arranged transversely in the head and adapted to engage one side of a saw blade and a threaded bolt arranged transversely in the head and adapted to engage the opposite side of a saw blade and having its outer end of angular form in cross section, a lever mounted on said bolt, a lever adapted to turn the die, and means for adjustably holding said lever against lateral movement and the die against endwise movement, substantially as specified.

4. In a saw swage, the combination of a head adapted to receive a saw blade, of the anvil placed in said head, the swaging die, the handle secured to one end of said die, and provided with a slot *q*, the stop adapted to enter said slot in the lever, and a suitable means for securing the stop to the head, substantially as specified.

541,943. TURN-TABLE FOR LOCOMOTIVES. CHARLES R. OSBORNE, Danbury, Conn. Filed Nov. 23, 1894. Serial No. 529,736. (No model.)

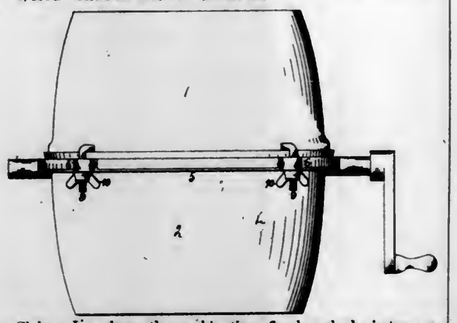


Claim.—1. In a turn table for locomotives, the combination of the rotatory stanchion carrying the table and having rigid therewith the bevel gear, the rock shaft journaled within said table and having rigid therewith the segmental gear meshing with said bevel gear, the recessed disks carried by said shaft and having reversely inclined ratchet teeth on their peripheries, the weighted levers loose around said shaft and having movements within the limits prescribed by the end walls of said recesses, the bail capable of sliding within suitable ways along the tracks on the table, and operative connections between said bail and levers whereby the sliding movements of said bail will effect the elevation of said levers, substantially as set forth.

2. In a turn table for locomotives, the combination of the rotatory stanchion having rigid therewith a bevel gear and carrying the table, the shaft journaled within said table, the segmental gear carried by said shaft and meshing with said bevel gear, the disks carried by said shaft and having on their peripheries reversely inclined ratchet teeth and provided in their outer faces with recesses, the weighted levers loosely pivoted around said shaft and carrying pawls adapted to engage with said teeth, the bail provided with rollers capable of traveling within suitable ways in the outer sides of the rails on the turn table, the links pivoted to said levers and provided at their free ends with sockets, and the bars extending loosely through said sockets and provided at their extremities with shoulders and having pivotal connections with said bail, substantially as set forth.

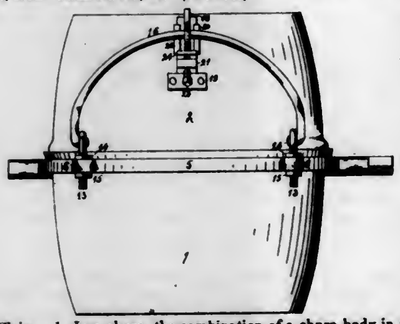
3. In a turn table for locomotives, the combination of the rotatory stanchion carrying the table and having rigid therewith the bevel gear, the rock shaft journaled within said table and extending therethrough from side to side, the segmental gear secured on said shaft and meshing with said bevel gear, recessed disks carried by said shaft, the weighted levers loosely pivoted around said shaft and having movements within the limits prescribed by the end walls of said recesses, the bail capable of sliding within suitable ways along the tracks on the table, operative connections between said bail and levers, whereby the sliding movements of the bail will effect the elevation of said levers, and means for holding said levers in elevation, substantially as set forth.

541,944. CHURN. SAMUEL D. PALMER, Rockford, Ill. Filed Sept. 7, 1894. Serial No. 522,403. (No model.)



Claim.—In a churn, the combination of a churn body, in two sections, the lower section having an annular recess at its open end formed from the material composing the section, the upper section having an annular ledge, a ring located beneath the recess supporting the lower section and provided with perforated ears, screw threaded hooks supported by the ears engaging the annular ledge, and thumb-nuts clamping the hooks in connection with the section.

541,945. CHURN. SAMUEL D. PALMER, Rockford, Ill. Filed Sept. 8, 1894. Serial No. 522,429. (No model.)



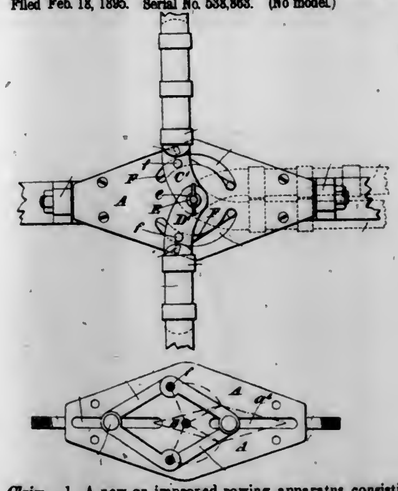
Claim.—1. In a churn, the combination of a churn body in two sections, one of the sections having the material of its open end bent back upon itself and thence substantially outward therefrom, a ring of angle iron having the horizontal bend of the section secured to the upper face of the horizontal portion of the angle iron, forming a receptacle for a packing, the ring having trunnions extending therefrom.

2. In a churn the combination of a churn body in two sections joined at their open ends, and means for connecting the sections consisting of a pair of bails having a pivotal connection with one of the sections, brackets secured to opposite sides of the other section, an adjustable shelf connected to each bracket, and a cam pivotally connected to each bail and adapted to engage the shelves.

3. In a churn, the combination of a churn body in two sections joined at their open ends, and means connecting the sections consisting of a pair of bails having a pivotal connection with one of the sections, brackets secured to opposite sides of the other section, nuts held in place by the brackets, a shelf having a slidable engagement with each bracket, a bolt connected to each nut and supporting its shelf, a cam pivotally connected to each bail and engaging its shelf.

4. In a churn, the combination of a body portion in two sections, an angle iron ring supporting one of the sections, eye bolts having a connection with the ring, bails having a pivotal connection with the eye bolts, a cam lever supported by each bail and means connected with the other section for receiving the cam levers, said means made adjustable.

541,946. BOW-FACING OAR. EDWARD PINK, Stanton, England. Filed Feb. 18, 1895. Serial No. 538,863. (No model.)



Claim.—1. A new or improved rowing apparatus consisting of rocking case fitted to the side of the boat carrying a jointed parallelogram and separate handle and oar pivoted at the center of the parallelogram, and connected to the opposite pin of the said parallelogram, substantially as and for the purposes specified.

2. In an improved rowing apparatus the combination with a separate handle and oar pivoted together, of a horizontal case rocking in bearings at each end, a jointed parallelogram carried by the said case and connected at opposite joints to the handle and oar and longitudinal slots in the case into which pins of the parallelogram take, substantially as and for the purposes specified.

3. In an improved rowing apparatus the combination with a separate handle and oar pivoted together, of a rocking case formed with a base plate and a cover, longitudinal slots in the said base plate circular slots in the cover a jointed parallelogram in the case connected with the handle and oar at opposite joints by pins passing through the circular slots and pins at the other joints sliding in the said longitudinal slots, substantially as described and shown and for the purposes specified.

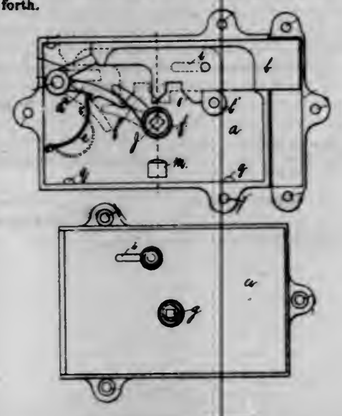
4. In an improved rowing apparatus, the combination with a rocking case longitudinal and circular slots in the case and a jointed parallelogram retained in the said case, with guiding pins passing through the longitudinal slots of arms pivoted to a central pin on the case and projecting in the opposite direction, connected to the jointed parallelogram by pins passing through the circular slots, oar and handle fitted to the opposite arms and rollers on the under side of the said arms bearing on the upper surface of the case, substantially as described and shown and for the purposes specified.

541,947. RIM-LOCK. HENRY J. PLEAU, Nashua, N. H. Filed Aug 20, 1894. Serial No. 520,773. (No model.)

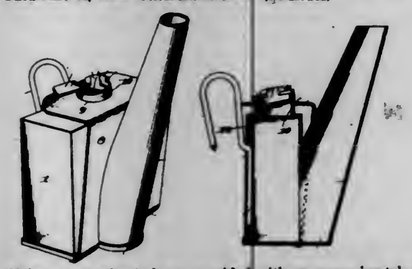
Claim.—1. The combination in a rim lock, of the bolt *b*, having the knob *h*, attached to said bolt *b*, and sliding in a groove in the body of said lock, with the member *f*, which has the socket *j*, arm *f'*, and the knob *g*, the member *d*, which has the arm d^2, and the trig d^3, and the spring *e*, all as and for the purpose set forth.

2. The combination in a rim lock, of the bolt *b*, having the knob *h*, attached to said bolt *b*, and sliding in a groove in the body of said

lock, the member *f*, which has the socket *j*, with a key having a straight shank, a hole extending longitudinally through said straight shank, a spindle fitting loosely in said hole in shank, one end of said spindle being provided with an enlarged irregular shaped portion adapted to fit into hole *j*, the socket *f*, having the arm *f'*, and the member *d*, provided with the members d^2 and d^3, as and for the purpose set forth.



541,948. MINER'S LAMP. WILLIAM G. PRICE, Frackville, Pa. Filed June 14, 1894. Serial No. 514,561. (No model.)



Claim.—1. A miner's lamp provided with an approximately L-shaped shield, extending over the front and top of the body of the lamp, and forming an intermediate air space between it and the front and top of the lamp, which space is open at the sides, said shield being detachable and interlocked with the lamp at the top and bottom thereof, substantially as described.

2. A miner's lamp provided at its top with an annular flange, combined with an approximately L-shaped shield having at the top a circular opening to receive the annular flange, and provided at its front with a bifurcation to receive the wick tube, and having at its lower edges at opposite sides of the wick tube, flanges engaging under the bottom of the lamp, substantially as described.

3. A miner's lamp having a filling opening and provided with a tapering tube secured at its lower end within the opening, combined with a dish-shaped cover hinged at one side to the tube and having the upper edge of its flange located within the tube below the upper edges thereof, substantially as described.

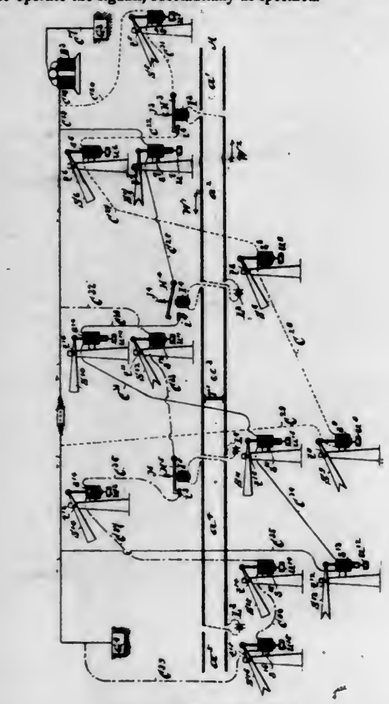
4. In a miner's lamp, the combination of a lamp body provided at the top with an opening, an inclined tapering tube secured in the opening of the lamp body and extending above the top of the same and having its front edge higher than the rear edge, and the tapering dish-shaped cover arranged at an inclination in the tube and hinged to one side thereof, substantially as described.

541,949. BLOCK-SIGNAL FOR RAILWAYS. WILLIAM G. ROOME, Jersey City, N. J. Filed Apr. 28, 1892. Serial No. 430,974. (No model.)

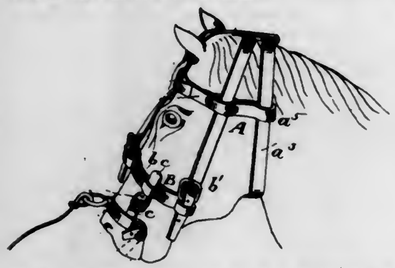
Claim.—1. A railway signal system comprising the combination of a dynamo electric machine, an electric circuit leading therefrom, signals or groups of signals serially arranged in said circuit, a series branch for each signal or group of signals, a track circuit and a track instrument controlling the signals, substantially as specified.

2. A railway signal system comprising the combination of a dynamo electric machine, an electric circuit leading therefrom, signals or groups of signals serially arranged in said circuit, a resistance for each signal or group of signals, a track circuit and a track instrument controlling the signals, substantially as specified.

3. A railway signal system comprising the combination of a dynamo electric machine, an electric circuit leading therefrom, signals or groups of signals serially arranged in said circuit, a series branch for each signal or group of signals, a track circuit comprising the rails of the block, and a track circuit relay arranged to shift the flow of current in one of the series branches to the other series branch so as to operate the signals, substantially as specified.



541,950. BRIDLE. JOHN G. SHAFTO, Dupont, N. J. Filed Mar. 2, 1895. Serial No. 540,305. (No model.)

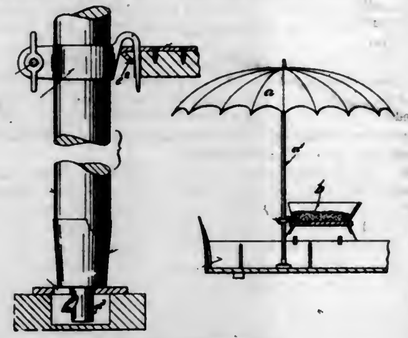


Claim.—A halter consisting of the three portions A, B, C, the portion A having the browband *a*, throat latch a^2 and straps a' a^3 a^3 connecting with buckles on portion B, the latter connected by buckles and straps with the portion C, and the portion C provided with a front halter ring D and a rear mouthpiece E, all substantially as shown and described.

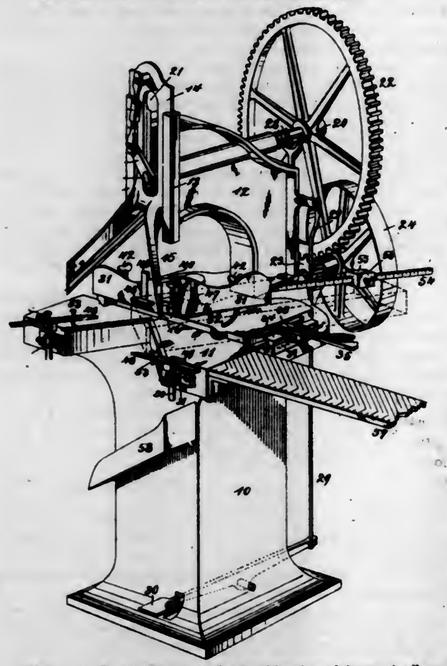
541,951. UMBRELLA-HOLDER. WILLIAM J. SLYDER, Troy, Ohio, assignor to Troy Carriage Sun Shade Co., same place. Filed Sept. 21, 1893. Serial No. 486,107. (No model.)

Claim.—1. In a fastening device for umbrellas, the combination with the standard, of a clamping collar having a hook-shaped projecting portion with beveled sides, as described, a plate having an opening adapted to be engaged by said hook-shaped portion, said plate being provided with a downwardly-extending projection to form an auxiliary bearing surface, substantially as specified.

2. The combination with an umbrella standard, of an open clamping collar having a clamping screw as described, and a hook-shaped projection formed integral with said collar and provided with beveled sides as described, a supporting plate provided with an opening adapted to be engaged by said hook-shaped projection, and means, as described, for detachably securing the lower end of said standard, substantially as specified.



541,952. JOINT-CUTTER. BERNARD J. SPILKER, Cincinnati, Ohio. Filed May 21, 1894. Serial No. 511,913. (No model.)

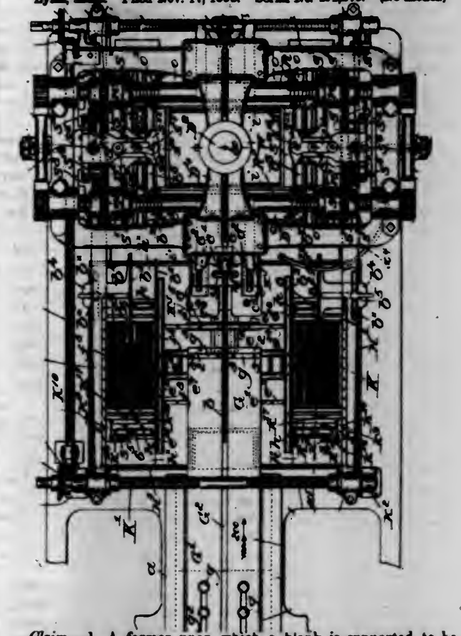


Claim.—1. In a joint-cutter, the combination of the vertically reciprocating knife-carrier and knives, the supporting table below, a sliding bed-plate 32, capable of linear adjustment toward or from the path of motion of the knives and in a plane at right angles to said path, a centerpost rising on said bed-plate, two fence-sections hinged thereto, and each section capable of radial adjustment toward or from this path of motion of the knives and in a plane at right angles to said path means to lock these fence-sections to the bed-plate after their adjustment, slides 33 on the sliding bed-plate and ways 34, whereby the latter is guided during adjustment, an operating lever 35, passing transversely below the bed-plate, engaging with the latter about midway, pivoted at one end and having its other end adapted to be locked in position, to hold all parts to their adjustment.

2. In a joint-cutter the combination of the vertically reciprocating knife-carrier and knives, the supporting table below, a fence for the purpose of placing the stuff in its proper angular position to the knives to produce the proper cut and supports 48 adjustably secured to the bed-plate to hold up undercut and rabbeted work, to prevent it from being broken down and splintered by the action of the knives and supporting screws 53 resting on the table to prevent supports 48 from springing or bending and breaking during the cutting-operation.

3. In a joint cutter, the combination of the vertically reciprocating knife-carrier and knives, the supporting table below, a fence for the purpose of placing the stuff in its proper angular position to the knives to produce the proper cut, a frame to support all these parts, brackets 51 secured thereto, boxes 49, vertically adjustable thereon, supports 48 horizontally adjustable within the latter and screws 53, to support the outer ends of supports 48 on the table to prevent the latter from being bent or broken down during the cutting operation of the knives.

541,953. PAPER-BOX-MAKING MACHINE. EUGENE H. TAYLOR, Lynn, Mass. Filed Nov. 17, 1893. Serial No. 491,273. (No model.)



Claim.—1. A former upon which a blank is supported to be shaped, and compound lip turners located adjacent the corners thereof, combined with actuating mechanism to automatically move the lip turners bodily toward the former and thereby turn projecting portions of a blank against some of the walls thereof continued operation of said mechanism turning a portion of each lip turner about the corners of said former while the other portions remain at rest, to bend the corner flaps of the blanks inwardly toward the ends of the former, substantially as described.

2. A former upon which a blank is supported to be shaped, compound lip turners located adjacent the corners thereof, and adjusting devices for and to regulate the distance between said lip turners, whereby they may be made to co-operate with formers of different sizes, combined with actuating mechanism to automatically move the lip turners bodily toward the former and thereby turn projecting portions of a blank against some of the walls thereof, continued operation of said mechanism turning a portion of each lip turner about the corners of said former while the other portions remain at rest, to bend the corner flaps of the blanks inwardly toward the ends of the former, substantially as described.

3. A former upon which a blank is supported to be shaped, compound lip turners located adjacent the corners thereof, and actuating mechanism to automatically move the lip turners bodily toward the former and thereby turn projecting portions of a blank against some of the walls thereof, continued operation of said mechanism turning a portion of each lip turner about the corners of said former while the other portions remain at rest, to bend the corner flaps of the blank inwardly against the ends of the former, combined with means to separate said former and lip turners while the latter remain folded, whereby the bent blank is withdrawn therefrom, substantially as described.

4. A reciprocating former, means to move it, and a follower to clamp a blank upon the former, combined with compound lip turners supported adjacent to the path of movement of the corners of said former, and actuating mechanism to move said lip turners against projecting portions of said clamped blank and turn them over upon the former, a portion of the lip turners being turned about the corners

and toward the ends of the former, to turn the corner flaps of the blank upon the ends thereof, substantially as described.

5. The combination, with a former, compound lip turners pivotally supported adjacent the corners thereof, rock-shafts to which portions of said lip turners are connected, and means to normally maintain the parts of the lip turners extended, of means to actuate said rock-shafts to move the extended lip turners toward the former, continued movement of said shafts turning the connected portions of the lip turners around the corners of said former, substantially as described.

6. In a box making machine, a former, compound lip turners adjacent the corners thereof, rock-shafts parallel to the sides of the former and extended loosely through hubs on portions of the lip turners, pivotal connections between the parts of each lip turner, and gearing intermediate said rock-shafts and other portions of the lip turners, combined with means to actuate the rock-shafts and thereby move the lip turners bodily toward the former, and thereafter to move portions of them about the corners and upon the ends of the former, substantially as described.

7. In a box making machine, a former, lip turners located adjacent the corners thereof and each consisting of wings or plates hinged together, and rock-shafts on which the lip turners are loosely supported, combined with engaging gears secured upon said shafts and to one wing or plate of each lip turner respectively, means to normally extend the parts of the lip turners, and actuating mechanism for the rock-shafts, to move the lip turners around the said shafts and also to move one plate or wing of each lip turner relatively to its fellow, substantially as described.

8. The combination, with a former, of rock-shafts parallel to the sides thereof, folding lip turners provided with hubs loosely embracing said shafts, whereby they are adapted to be adjusted longitudinally thereon, independent clamps to prevent longitudinal movement of the lip turners on the shafts, connections between the rock-shafts and a portion of each folding lip turner, and means to actuate the rock-shafts and the said former, substantially as described.

9. In a box making machine, a reciprocating former, and means to move it, a movable follower to co-operate therewith to clamp a blank; and end and side wiper plates, combined with compound lip turners supported by the side wiper plates and adjustable with relation thereto, and mechanism to actuate the lip turners to move them toward the sides of the former, portions of the lip turners being turned about the corners of and toward the ends of the former, whereby the sides and corner flaps of the blank are turned over and shaped upon the former, substantially as described.

10. The combination with the former, rock-shafts, bearings at the extremities of said rock-shafts, compound lip turners provided with hubs loosely embracing said shafts, and adjustable laterally thereon inside of said bearings for boxes of different size, and independent clamps on said shafts to hold said lip turners from longitudinal movement thereon, of connections between a part of each lip turner and said shafts, and mechanism to positively actuate said rock-shafts and cause the lip-turners to bend successively the sides and corner flaps of the blank about the former, substantially as described.

11. In a box making machine, the former, means to move it, a movable follower, and adjustable side wiper plates parallel to the sides of and adjacent the path of movement of the former, combined with rock-shafts supported at their extremities in bearings on the side wiper plates, compound folding lip turners pivotally supported on said shafts, connections between said shafts and portions of the lip turners, and means to actuate said rock-shafts, whereby the lip turners are moved bodily toward the sides of the former and a portion of each lip turner is thereafter folded about the corners thereof, substantially as described.

12. In a box making machine, a reciprocating former and means to move it, and a movable follower, combined with compound lip turners to turn the side flanges of a blank over upon the sides of the former, portions of each of said lip turners being thereafter moved with relation to the remaining portions to turn the corner flaps of the blank over upon the ends of the former, and end wiper plates to turn the end flaps of the blank down upon the corner flaps as the former is moved between said wiper plates, substantially as described.

13. A stationary central track, laterally adjustable side tracks, guides, auxiliary tracks thereon beyond the side tracks, and means to adjust said auxiliary tracks upon the guides, and cross shafts provided with right and left hand threads to engage bearings in the guides, combined with a connecting shaft, and gearing whereby the said guides are made adjustable simultaneously, substantially as described.

14. An adjustable side guide, a longitudinally adjustable block thereon, and a gage carrier pivoted to said block at the inner side of the guide, and means to turn said gage carrier on its pivot and maintain it in adjusted position, substantially as described.

15. In a box making machine, a former, adjustable pasting devices for the blank located at a distance from the former, a central track and outer tracks intermediate the said devices and said former to sustain the blank while being fed, and adjustable yielding track-like supports interposed between the back of the said former and the adjacent ends of the tracks, combined with rigid connections between said pasting devices and the outer tracks, whereby they are made adjustable simultaneously, the said outer tracks being located at the inner sides of and adjacent said pasting devices, substantially as described.

16. In a box making machine, a former, and means to feed the blanks thereto, one at a time, combined with tracks upon which the blank is supported while being fed, and adjustable yielding track-like supports interposed between the back of the said former and the adjacent ends of the tracks, whereby formers of different sizes may be used, substantially as described.

17. In a box making machine, a head, and an end gage vertically adjustable therein, combined with a presser-foot composed of a curved plate secured to the head, and a similarly curved co-operating plate adjustably supported by and longitudinally movable with relation to said head, the longitudinal downturned or separated edges of said plates resting on the upper surface of and maintaining the blank flat and preventing buckling thereof, substantially as described.

18. In a box making machine, a former, and a reciprocating feeder to present the blank thereto, combined with a presser-foot comprising co-operating curved plates, the longitudinal downturned edges thereof being adapted to bear upon the upper surface of the blank and maintain it flat when presented to the former, and a yielding stop secured to the under side of the plate of the presser-foot, nearest the said former to engage the rear edge of the blank as it leaves the presser and prevent its displacement by retrogression of the feeder, substantially as described.

19. In a box making machine, a former, and blank supporting tracks terminating some distance from said former, combined with filling plates at the rear of said former and adjustable toward and from it, and yielding track-like supports carried by the filling plates to sustain the blank between said former and the end of the tracks, substantially as described.

20. In a box making machine, tracks to support a blank, wetting devices to moisten said blank parallel to its front and rear edges, and wetting devices to moisten the blank parallel to its side edges, combined with a yoke, pasting devices laterally adjustable thereon, and a rigid connection between each track and the adjacent pasting and end wetting devices, whereby they are simultaneously movable laterally upon said yoke, substantially as described.

21. In a box making machine, a paste pan, pasters therein, a track movable with said pan, and an end wetter for the blank parallel to said track, combined with a reciprocating spindle extended through the paste pan to actuate the pasters, and a support for the end wetter rigidly connected to the spindle and adapted to move therewith laterally and vertically, substantially as described.

22. In a box making machine, a reciprocating yoke, a slide longitudinally adjustable thereon, and an upright and a spindle secured to said slide, combined with a laterally adjustable paste pan through which the spindle is extended, pasters attached to the spindle, and an end wetter supported upon the upright parallel to the inner sides of the paste pan, substantially as described.

23. The combination with a reciprocating former, of a follower adapted to be raised thereby, a slide-rod attached to the follower, a cylinder on the upper end of the rod, a piston movable therein, and its attached piston rod, and a latch to maintain the piston-rod, elevated, substantially as described.

24. In a box making machine, a former, a follower movable thereby, a slide-rod detachably secured thereto, and a cushioning device for the follower, combined with means to normally limit the descent of the follower, and a latch to permit the follower to drop into abnormal position to enable it to be detached from the slide-rod, substantially as described.

25. The combination with a reciprocating former, and means to move it, of a movable follower, a cushioning device therefor, including a cylinder and piston-rod to control the descent of the follower, and a latch for said rod, substantially as described.

26. In a box making machine, the threaded pressure screws, and the pressure head, combined with sleeves loosely mounted and rotatable in the said pressure head, substantially as described.

27. In a box making machine, the threaded pressure screws, and the pressure head, combined with sleeves loosely mounted and rotatable in the said pressure head, and with a rack and gearing to oscillate the said pressure screws, substantially as described.

28. The pressure head, and the sleeves loosely mounted thereon and provided with pinions, and the threaded pressure shafts, combined with the intermediate gears, substantially as described.

29. The pressure head, and the sleeves loosely mounted thereon and provided with pinions, and the threaded pressure shafts, combined with the intermediate gears, and with the worm gear and worm shaft to actuate one of the said intermediate gears, substantially as described.

30. In a box making machine, the threaded pressure screws, the pressure head, and sleeves loosely mounted and rotatable in the said head, combined with an end wiper plate supported by and adapted to rock with relation to the pressure head, and yielding supports to act upon the end wiper plate and maintain it in normal position, substantially as described.

31. In a box making machine, the threaded pressure screws, and the pressure head, combined with sleeves loosely mounted and rotatable in the said pressure head, a rocking block having a convex back to rest in a concavity in the head, an end wiper plate attached to said block, and a yielding support at each side of the concavity to bear against the back of said block, substantially as described.

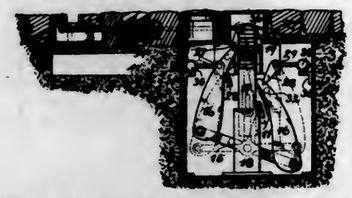
32. The pressure head having a vertical concavity therein, a rocking block having a convex back to rest in the concavity, and an attached end wiper plate, combined with yielding supports adapted to bear upon the back of the block at opposite sides of its center, and adjustable sleeves for the supports, substantially as described.

33. The pressure head, a rigid lug at the bottom and a movable locking lug at the top thereof, and a concavity in the head between them, combined with a convexed-back rocking-block to rest in said concavity, pivots secured to said block and held in place in said lugs, yielding supports between the pressure head and the block at opposite sides of its center, and the end wiper plate attached to the face of the block, substantially as described.

34. The pressure head, a rocking block pivoted thereon, an end wiper plate attached to the face of said block, and a locking device to hold said block in place, combined with spring supported shanks adapted to bear against the said block and position it and the attached wiper plate, substantially as described.

35. The pressure head having a projecting lug at the top and bottom thereof and a concavity between them, one of said lugs being fixed and the other movable, combined with a rocking block having a convex back to rest in said concavity, a pivot secured to said block and located at the center of the curve forming the convex back thereof, and pivoted in said lugs, means to lock the movable lug in position and thereby retain the block in place, and the end wiper plate attached to the face of said block, substantially as described.

541,954. SWITCH-MOVEMENT. JOHN R. TREMLER, Westwood, assignor of one-half to Joseph H. Moore, Cincinnati, Ohio. Filed Apr. 1, 1895. Serial No. 544,095. (No model.)



Claim.—1. In a device for operating rail-switches from cars, the combination of the switch, a vertically sustained angle-lever, having one member partly projecting above the street surface for operation from the car, the other member below being toothed and intermediate mechanism whereby this toothed member of the angle-lever transfers the effect of its operation onto the switch.

2. In a device for operating rail-switches from cars, the combination of the switch, a vertically sustained angle-lever having one member reaching through a slot and partly projecting above the street-surface for operation from the car, such member having a normal tendency to return after operation to its first position within that end of the slot from which it had been moved, its other member below being toothed and intermediate mechanism whereby this toothed member of the angle lever transfers the effects of its operation onto the switch.

3. In a device for operating rail-switches from cars, the combination of the switch, a vertically sustained angle-lever having one member partly projecting above the street-surface for operation from the car, a vertically movable member 17 with laterally projecting teeth 27, pawls 16 and a lever 15 by which they are carried, said pawls adapted to be alternately engaged by teeth 27 for the purpose of oscillating lever 15 and a rocking-rod, operatively connecting the latter to the switch, whereby the oscillations of lever 15 are transferred to the switch.

4. In a device for operating rail-switches from cars, the combination of the switch, a vertically sustained angle-lever having one member partly projecting above the street-surface for operation from the car, its other member being toothed at its end, a vertically movable rack 17 with laterally projecting teeth 27, pawls 16 and a lever 15 by which they are carried, said pawls adapted to be alternately engaged by teeth 27 for the purpose of oscillating lever 15, a weight or its equivalent to carry the angle-lever and rack 17 back to the position they occupied before operation and a rocking-rod operatively connecting lever 15 and the switch whereby the oscillations of the former are transferred to the latter.

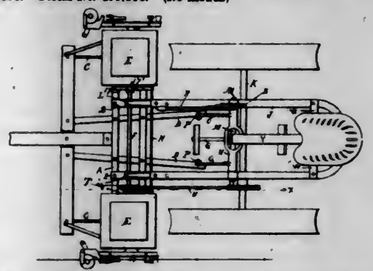
5. In a device for operating rail-switches from cars, the combination of the switch, a vertically sustained angle-lever having one member partly projecting above the street-surface for operation from the car, a vertically movable member 17 with laterally projecting teeth 27, pawls 16 and a lever 15 which carries them, said pawls adapted to be alternately engaged by teeth 27 for the purpose of oscillating lever 15, a weight or its equivalent to carry the angle-lever and rack 17 back to the position they occupied before operation, pivoted dogs 28 adapted to engage with the upper part of pawls 16, to guide them when rising in a manner to clear the descending teeth 27 and a rocking-rod operatively connected to lever 15 and to the switch whereby the oscillations of the former are transferred to the latter.

6. In a device for operating rail-switches from cars, the combination of the switch, a vertically sustained angle-lever having one member partly projecting above the street surface for operation from the car, a vertically movable member 17 with laterally projecting teeth 27, pawls 16 and a lever 15 by which they are carried, said pawls adapted to be alternately engaged by teeth 27 for the purpose of oscillating lever 15, a rocking-rod 13 with arm 12 connected to lever 15, a rocking-rod 10 with arms 11 and 9, connected to arm 12, and a link to connect arm 9 to the switch.

7. In a device for operating rail-switches from cars, the combination of the switch, a vertically sustained angle-lever having one member partly projecting above the street-surface for operation from the car, a vertically movable member 17 with laterally projecting teeth 27, pawls 16 and a lever 15 which carries them, said pawls adapted to be alternately engaged by teeth 27 for the purpose of oscillating lever 15, a weight or its equivalent to carry the angle-lever and rack 17 back to the position they occupied before operation, pivoted dogs 28, adapted to engage with the upper part of pawls 16 to guide them when rising, in a manner to clear the descending teeth 27, a rocking-rod 13 with arm 12, connected to lever 15, a rocking-rod 10 with arms 11 and 9 connected to arm 12, and a link to connect arm 9 to the switch.

8. In a device for operating rail-switches from cars, the combination of the switch, a vertically sustained angle-lever having one member 23 reaching through a slot and partly projecting above the street-surface for operation from the car, such member being in two parts adjustable on each other with a spring 33 between them and having a normal tendency to return after operation to its first position within that end of the slot from which it had been moved, and intermediate mechanism whereby this angle-lever transfers the effects of its operation onto the switch.

541,955. CORN-PLANTER. FRANK J. BECKER, Hamilton, Ohio, assignor to the H. P. Deuscher Company, same place. Filed Dec. 16, 1893. Serial No. 493,818. (No model.)



Claim.—1. In a planter, the hinge coupling consisting of two integral interlocking members the one of said members containing a curved seat or recess the other of said members being formed with a segment movable in the recess and a cap removably secured to one of said members to retain the other member in engagement therewith.

2. In a planter, the hinge coupling consisting of two integral interlocking members movably secured together by a removable cap, one of said members being formed on one of its sides with a recess, the other of said members terminating in a transverse bar, said bar being segmental in form and movable in said recess.

3. In a planter, the hinge coupling consisting of two integral interlocking members movably secured together by a cap, the one of said members being formed on one of its sides with a recess, and with a gap leading therefrom, the other of said members being formed with a curved neck movable in said gap and terminating in a transverse segmental bar, said bar being movable in said recess.

4. In a planter, the hinge coupling consisting of two interlocking members and means to secure them movably together, the one of said members being formed with a curved recess and with a gap leading therefrom, the top edge of said member adjacent to the gap being parallel in curvature to the top of the recess, the other of said members being formed with a segmental bar across one of its ends, and with a shoulder formed on one of its sides and perpendicular thereto, whereby said segmental bar is held movably against the top of the recess by means of the shoulder being movably seated on said curved edge.

5. In combination, a main frame mounted on ground wheels and an axle, a runner frame mounted on runners and provided with seed dropping mechanism, and segmental hinges wherein the relative movement of the members is limited within an arc of a circle and whereby said frames are movably coupled together.

6. In combination, a main frame mounted on ground wheels and an axle, a runner frame mounted on runners and provided with seed dropping mechanism, and segmental hinges formed with separable members the relative movement of said members being limited within an arc of a circle and whereby said frames are detachably coupled together.

7. In combination, a main frame mounted on ground wheels by a rotative axle, a runner frame mounted on runners and provided with seeding mechanism, segmental hinges limited in movement within an arc of a circle whereby said frames are coupled together, and a rotative operating shaft carried by the runner frame and journaled concentric to the movement of the hinges and driven by the traction of the ground wheels to actuate the seeding mechanism.

8. In combination, a main frame, a runner frame provided with seeding mechanism, segmental hinges formed of separable members that are movable only within a limited arc of a circle whereby said frames are detachably coupled together, and a rotative operating shaft carried by the runner frame and journaled concentric to the hinges, whereby said frames may be disconnected without disturbing the operating shaft.

9. In combination, a main frame mounted on ground wheels by a rotative axle, a runner frame mounted on runners and provided with seeding mechanism, hinges whereby said frames are coupled together, a rotative operating shaft on the runner frame and journaled concentric to the movement of the hinges, said hinges being adjustable on the main frame, whereby the distance between the seed shaft and the axle may be regulated.

10. In combination, a main frame mounted on ground wheels by a rotative axle and provided with a transverse stay bolt spanning the distance between the side bars thereof near to and parallel with the axle, a runner frame hinged to the main frame and provided with hounds, a sleeve supported on the stay bolt and extending between side bars, said sleeve being provided with lever mechanism and with pivotal connections to the hounds, whereby the runner frame may be raised or depressed, and locked in position, and the seat bow secured by one of its ends to the middle portion of the stay bolt and extended therefrom through a gap in the sleeve.

11. The combination with a runner frame and the seed spouts, of a rock shaft, slotted legs depending therefrom and valves pivotally secured within the spouts and movably engaging with the legs.

12. The combination with a runner frame and the seed spouts, of a rock shaft, slotted legs depending therefrom and valves pivotally secured within the spouts, slotted heels formed integral with the valves and extending without the spouts and at a vertical angle across the slotted portion of the legs, and pivots that movably engage the heels with the legs.

13. The combination with the runner frame and the seed spouts, of a rock shaft, slotted legs depending therefrom valves pivotally secured within the spouts and formed with slotted heels, and pivots adjustably secured to the heels and movably engaging with the legs through the slots therein.

14. The combination with a runner frame, the seed spouts, valves therein, and a rock shaft to actuate the valves, of a wrist pin on the rock shaft, and a toggle lever pivotally engaging by its respective ends with the wrist pin and with the runner frame, whereby the rock shaft may be axially oscillated to actuate the valves.

15. The combination, with a runner frame, of seed spouts thereon, valves within the spouts, a rock shaft for actuating the valves, a wrist pin secured to the rock shaft, a toggle lever engaged by its opposite ends with the wrist pin and with the runner frame, and a hand lever to move the middle portion of said toggle lever to rock said shaft, substantially as set forth.

16. The combination, with a runner frame provided with seed spouts and check valves, of a rock shaft for operating the valves, a crank arm on each end of the shaft, a vibrating lever pivotally secured to the frame for each arm, the upper end of which is provided with means for engaging with the check wire, a plunger and a spring secured to the lower end of the lever, above and below the pivotal point thereof, respectively, the free end of said plunger being provided with a stop for engaging with the crank arm and the opposite end of the spring being secured to the crank arm, whereby the crank arm is moved in one direction by the plunger and in the opposite direction by the spring, substantially as set forth.

17. In combination, a check head frame, a vertical standard having its middle portion hinged thereto and having its nether extremity formed with a notch in one side, a latch on the frame and removably held in the notch by a spring, and a guiding spool carried by the upper extremity of the standard, whereby the standard may be locked or unlocked by the latch to cause the guiding spool to retain or discharge the check wire.

18. In a corn planter, the combination, with the seed boxes, of a seed plate in each box, a shaft provided with means for engaging with and operating the seed plate, a clutch upon the shaft, a rock shaft, and means between the two shafts for rotating the first mentioned shaft, and with it the seed plate, backward a short distance, intermediate the rotation of the plates in depositing the seed, substantially as set forth.

19. In a corn planter, the combination, with an operating shaft, of a continuously moving wheel and an intermittingly moving clutch upon the shaft, said wheel and clutch lying in parallel planes adjacent to each other one face of the clutch being recessed, a tooth yieldingly seated within the recess and adapted to project beyond the face of the clutch and being engaged by the wheel, the tooth being adapted to rebound from the wheel when becoming disengaged therefrom.

20. In a corn planter, the combination, with an operating shaft, of a continuously moving wheel and an intermittingly moving clutch upon the shaft, one face of the clutch being recessed, a tooth pivotally secured within the recess, one end of the tooth being inclined, and adapted to be engaged by the wheel, a spring under the opposite end of the tooth, and means for moving the clutch toward and from the wheel.

21. In a corn planter, the combination, with an operating shaft, of a rock shaft, a wheel and a clutch on the operating shaft and a finger on the rock shaft for automatically disconnecting the clutch from the wheel.

22. In a corn planter, the combination, with an operating shaft, of a rock shaft, a continuously moving wheel and a spring actuated clutch upon the operating shaft, the clutch being provided with inclined cams or notches, and a finger upon the rock shaft for engaging with the cams of the clutch and automatically disconnecting the clutch from the wheel.

23. In a corn planter, the combination, with an operating shaft, of a rock shaft, a wheel and a spring actuated clutch upon the operating shaft, the clutch being provided with a tooth for engaging with the wheel, said clutch being also provided with a series of cams, and a finger upon the rock shaft, the end of which is curved and adapted to be moved tangentially to the periphery of the clutch and to engage with the cams thereon and disengage the clutch from the wheel and to move the operating shaft backward.

541,956. HORSESHOE-BAR. JOSEPH BENFIELD, Walsall, England. Filed Nov. 13, 1894. Serial No. 528,674. (No model.)



Claim.—The herein described improved rolled metal horse shoe bar made with nail crease *c* and with the beveled side *b* having short spikes or teeth *a'* rolled upon it, substantially as and for the purpose set forth.

541,957. NOSE-PIECE FOR EYEGLASSES. HENRY BORSCH, Chicago, Ill. Filed Apr. 13, 1894. Serial No. 507,416. (No model.)



Claim.—1. As an improved article of manufacture, a blank for nose-pieces for eye-glasses formed of one piece of wire and having an attaching eye at one end, a frame at the other end and a coiled spring formed between said attaching eye and said frame and forming an active part of said nose-piece, substantially as and for the purpose specified.

2. The combination with an eye-glass frame provided with a recessed jaw, of a nose-piece formed of a single piece of wire having an attaching eye at one end thereof, which eye is secured in said recessed jaw by a screw *a'*, a frame formed in the other end of said wire, a coiled spring formed between said attaching eye and said frame and forming an active part of said nose-piece, and a facing or cushion secured to said frame, substantially as described.

541,958. NOSE-PIECE FOR EYEGLASSES. HENRY BORSCH, Chicago, Ill. Filed Apr. 13, 1894. Serial No. 507,417. (No model.)



Claim.—1. As an improved article of manufacture, a blank for nose-pieces for eye-glasses, formed of one piece of wire with its central portion bent to form an attaching eye B, the wire being then bent outwardly from said eye and having a frame bent in each of the extremities of said wire, substantially as and for the purpose specified.

2. The combination with an eye-glass frame provided with the usual attaching jaw, of a nose-piece formed of a single piece of wire bent into an attaching eye at the central part thereof, which eye is secured in said jaw by a screw *a'*, and the ends of said wire being bent outwardly from said eye and formed to support independent facings thereon, said facings being secured directly to and by the ends of the one piece of wire, substantially as described.

541,959. NOSE-PIECE FOR EYEGLASSES. HENRY BORSCH, Chicago, Ill. Filed Apr. 13, 1894. Serial No. 507,418. (No model.)



Claim.—1. As an improved article of manufacture, a blank for nose-pieces for eye-glasses, formed of one piece of wire with its central portion bent to form an attaching eye B, the wire being then bent outwardly from said eye, and having arms substantially in line with each other, substantially as and for the purpose specified.

2. A nose piece for eye glasses, formed of spring wire and having a ring bent in its central part to form an attaching eye B therein, the ends of the said wire being bent outwardly from said eye and then into arms substantially in line with each other, and a facing or cushion slipped on each of said arms, substantially as described.

3. A nose piece for eye-glasses, formed of spring wire and having a ring bent in its central part to form an attaching eye B therein, which is secured to the frame by a screw *a'*, the ends of said wire extending outwardly from said eye, and then at right angles to said extension, the two arms being substantially in line with each other, a facing or cushion slipped on each of said arms, forming double independent nose pieces, and bends at the ends of said arms to retain the cushions or facings thereon, substantially as described.

541,960. NOSE-PIECE FOR EYEGLASSES. HENRY BORSCH, Chicago, Ill. Filed Apr. 13, 1894. Serial No. 507,419. (No model.)

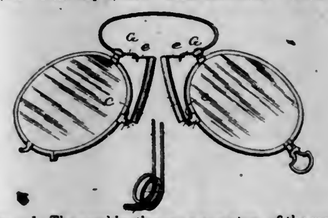


Claim.—1. A nose-piece for eye-glasses formed of one piece of spring wire and having an eye at one end, the wire being continued around and having a facing secured thereto, and having its other end arranged to slide back and forth through said eye, substantially as described.

2. A nose-piece for eye-glasses made of one piece of spring wire and having the eye *D'* for securing it to the eye-glass, said wire being bent upwardly from said eye and having an eye *c* thereon, the other end of said wire being bent downwardly from said eye *D'*, and thence bent upwardly, the end of the wire projecting through the eye *c*, and a facing secured to said wire, substantially as described.

3. In an eye-glass, a nose-piece made of one piece of spring wire and having an eye *D'* therein, by which the nose-piece is secured to the eye-glass frame, one end of the spring wire being bent upwardly and having an eye *c* thereon, and the other end of said wire being bent downwardly from said eye *D'*, an arm extending upwardly and having a facing slipped thereon, and the end of said arm projecting through said eye *c*, substantially as described.

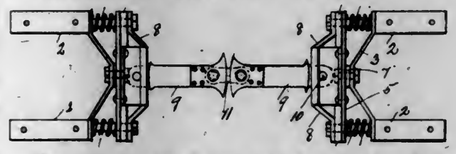
541,961. NOSE-PIECE FOR EYEGLASSES. HENRY BORSCH, Chicago, Ill. Filed May 5, 1894. Serial No. 510,190. (No model.)



Claim.—1. The combination in an eye-glass, of the metallic back E and the cushion F, with a spring C, having its upper portion inclosed between the back and the cushion, its lower portion connected to the rim of the lens, and a double coil between the cushion and lens, whereby great freedom of motion is allowed in one direction and comparatively little in the other, substantially as described.

2. The combination in an eye-glass and with a nose-piece having a metallic back and cushion, of the rim A having ears B, a coiled spring C set in the ears and secured by a pin D, said spring having a central loop bearing against the rim and its upper portion passing inside the metallic back at each side of the cushion, all substantially as shown and described.

541,962. CAR-COUPLING. JAMES R. CAMPBELL, Pittsburg, Pa. Filed Apr. 18, 1895. Serial No. 546,221. (No model.)



Claim.—A car coupling for street and other railway cars, having a removable draw bar 9, a draw head consisting of the plates 2 rigidly attached in position beneath the floor of the car, the bars 4 forming a part of the said plate the springs 6 arranged about said bars and between two plates 3—5 each of which is capable of a limited horizontal movement, the rubber washer 7 and bolt for connecting the said plates 3—5 together and the built up draw head 8 constructed as described, capable of being connected by a pin 10 to the draw bar 9, all combined for service substantially as described.

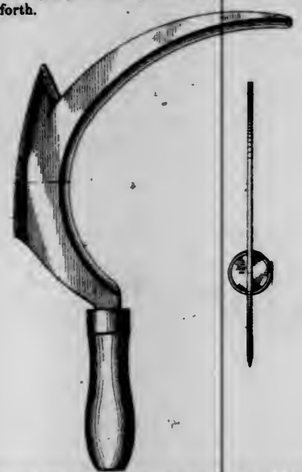
541,968. COMBINED CUTTING-TOOL. JAMES CARPENTER, Brooklyn, N. Y. Filed Sept. 28, 1894. Serial No. 524,415. (No model.)

Claim.—1. A combined cutting tool having a curved sickle edge at one side of the blade and having at the other side of the blade a projecting cutter tooth and a blunt edge in proximity to said cutter tooth, said cutter tooth extending forward so as to be operated by a forwardly thrusting movement of the tool said blunt edge forming a guide and guard to the said cutter tooth, substantially as set forth.

2. A combined cutting tool having a curved sickle edge at one side of the blade, and having at the other side of the blade a forwardly projecting cutter tooth and a blunt edge contiguous thereto, said blunt edge and the adjacent edge of the cutter tooth forming an acute angle with each other, substantially as set forth.

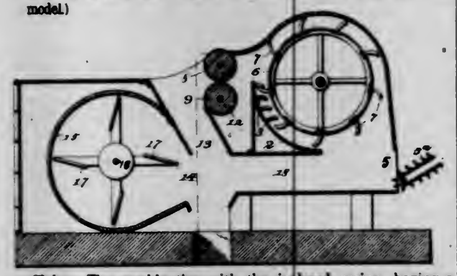
3. A combined cutting tool having a concavely curved sickle edge *c* at one side of the blade, and a substantially straight hatchet edge *d* at the other side of the blade, said hatchet edge projecting slightly from the unsharpened back of the blade at its inner end and projecting a considerable distance therefrom at its outer end and the outer end of said hatchet edge *d* being joined to the blunt back of the tool by an inclined cutting edge *e* making an acute angle with the hatchet edge and an acute angle with the blunt back edge *f* of the tool, substantially as set forth.

4. A cutting tool having a concavely curved sickle edge at one side of the blade and having at the other side of the blade a hatchet edge terminating outwardly in a cutter tooth, and having a blunt convexly curved edge beyond said cutter tooth, one edge of said cutter tooth being inclined at an acute angle to said blunt edge, and said blunt edge forming a guide and guard to said cutter tooth, substantially as set forth.



5. A cutting tool having a curved sickle edge at one side of the blade and a projecting cutter tooth at the other side of the blade, the edge of said blade being blunt at the side of the blade containing the cutter tooth from said cutter tooth to the outer end of the blade, substantially as set forth.

541,964. CORN-BREAKER AND CORNSTALK-SHREDDER. JOHN CARREY, De Soto, Mo. Filed Feb. 21, 1895. Serial No. 539,278. (No model.)



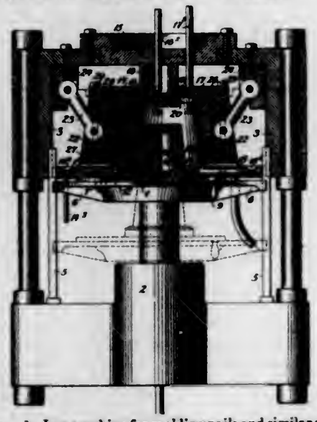
Claim.—The combination with the inclosed casing, having a chute 13 therein and a discharge opening below said chute, of the blast fan and the horizontal blast passage 18 leading to the discharge outlet 5, the feed rolls in the rear of the chute 13, and the thrashing mechanism whereby the ears snapped from the stalk are dropped through the blast while the stalks are shredded by the thrashing device and delivered to the discharge opening, substantially as and for the purpose described.

541,965. INK-WELL COVER. BARTHOLOMEW J. COUHIG, Youngstown, Ohio. Filed Apr. 20, 1895. Serial No. 546,475. (No model.)



Claim.—An ink-well cover that is in form, fully or approximately, the sector of a sphere, having two round projections from opposite points on its periphery that are on a horizontal plane above the greatest bulk of the cover, in combination with an ink-well having horizontal openings in the walls of the neck adapted to offer bearings to the projections from the periphery of the cover that has place therein, substantially as described and for the purpose expressed.

541,966. MACHINE FOR MOLDING HOLLOW WARE FROM PULP. MARK L. DEERING, Brooklyn, N. Y. Filed Feb. 29, 1892. Renewed Nov. 5, 1894. Serial No. 527,920. (No model.)



Claim.—1. In a machine for molding pails and similar vessels from pulp, the combination of the head, the vertically movable former, the system of movable sections arranged to surround the former, the sliding plate or collar mounted on the head and secured against the ends of the sections adjacent to the head, a plate secured against the opposite ends of the sections, means whereby the sections are forced inward and retracted, and suitable lifting mechanism, substantially as described.

2. In a machine for molding vessels from pulp, the combination of the head, the vertically movable platform, the former stationed thereon, the system of movable sections arranged to surround the former, the sliding plate or collar on the head secured against the ends of the sections adjacent to the head, a plate secured against the opposite ends of the sections, and provided with an opening wherein the former may be inserted, and means whereby the sections are forced inward and retracted, substantially as described.

3. In a machine for molding vessels from pulp, the combination of the head, the vertically movable platform, the former stationed thereon, the removable ring 11 fitted on the base of the former, the system of movable sections, the collar on the head secured against the ends of the sections adjacent to the head, a plate secured against the opposite ends of the sections, and provided with an opening wherein the former may be inserted, with the upper surface of the ring 11 flush with the upper surface of the plate, and means whereby the sections are forced inward and retracted, substantially as described.

4. In a machine for molding vessels from pulp, the combination of the head, the vertically movable platform, the former stationed thereon, the system of sections arranged to surround the former, the sliding plate or collar on the head in contact with the ends of the sections adjacent to the head, a plate in contact with the opposite ends of the sections, and provided with an opening wherein the former may be inserted, bolts extending from one plate to the other, and means whereby the sections are forced inward and retracted, substantially as described.

5. In a machine for molding vessels from pulp, the combination of the head, the vertically movable former, the system of movable sections arranged to surround the former, the collar mounted on the head and secured against the ends of the sections adjacent to the head, a plate secured against the opposite ends of the sections, guides whereon the sections slide, in or on these plates, means whereby the sections are forced inward and retracted, and suitable lifting mechanism, substantially as described.

6. In a machine for molding vessels from pulp, the combination of the frame or dome, the head secured therein, the vertically movable former, the series of sections 22 and the series of alternating sections 25, arranged to surround the former, the sliding plate or collar mounted on the head and secured against the ends of the sections adjacent to the head, a plate secured against the opposite ends of the sections, the series of links extending from the sections 22 to bearing blocks fixed against the walls of the dome, and suitable lifting mechanism connected with the former, substantially as described.

7. In a machine for molding vessels from pulp, the combination of the frame or dome, the head secured therein, the vertically movable former, the series of sections 22 and the series of alternating sections 25, arranged to surround the former, the vertically movable plates in contact with the ends of the sections, the series of adjustable bearing blocks fixed against the walls of the dome, the series of

links extending from these to the sections 22, and suitable lifting mechanism connected with the former, substantially as described.

8. In a machine for molding vessels from pulp, the combination with a contracting and expanding system of sections forming the outer lateral wall of the mold, a head, and a plate in contact with the ends of the sections adjacent to the head, of the plate in contact with the opposite ends of the sections and having an opening of greater diameter than that of the vessel to be molded, the vertically movable platform, the former mounted thereon and adapted to pass through the opening in the last mentioned plate, a flange at the base of the former adapted to enter and to close this opening, and operating mechanism, substantially as described.

9. In a machine for molding vessels from pulp, the combination with a contracting and expanding system of sections forming the outer lateral wall of the mold, a head, and a plate in contact with the ends of the sections adjacent to the head, of a plate in contact with the opposite ends of the sections and having an opening of greater diameter than that of the vessel to be molded, the vertically movable platform, a plate pivoted thereon and adapted to be swung outward, the former fixed on the pivoted plate and adapted to pass through the aforesaid opening, a flange at the base of the former adapted to enter and to close this opening, and operating mechanism, substantially as described.

10. In a machine for molding vessels from pulp, the combination of a contracting and expanding system of sections forming the outer lateral wall of the mold and adapted to be raised and lowered, means whereby the sections are forced inward when they are lifted, a bottom plate in contact with the lower ends of the sections and having an opening of greater diameter than that of the vessel to be molded, the vertically movable platform adapted to support the bottom plate, the former mounted on the platform and adapted to pass through the opening in the bottom plate, a flange at the base of the former adapted to enter and to close this opening, a top for the mold, and operating mechanism, substantially as described.

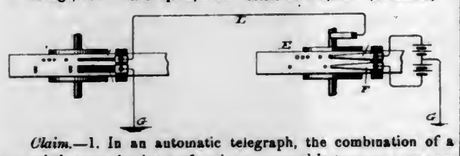
11. In a machine for molding vessels from pulp, the combination of a platform, a former stationed thereon, a plate surrounding the former above the platform, having a port or ports 14 therein for the introduction of pulp to the mold, a system of movable sections adapted to rest on this plate surrounding the former and to contract about it and recede from it, a top for the mold and mechanism whereby the sections are actuated, the ports 14 being so located as to be closed by the sections as they slide inward, substantially as described.

12. In a machine for molding vessels from pulp, the combination of the head, the vertically movable platform, the former stationed thereon, the system of movable sections arranged to surround the former and to be lifted with it, means whereby the sections are forced inward and retracted, the collar on the head in contact with the ends of the sections adjacent to the head, a series of bolts secured to the collar, and extending downward therefrom behind the sections, the bolts being stationary in the collar, and means in connection with the bolts whereby the sections are supported, substantially as described.

13. In a machine for molding vessels from pulp, the contracting and expanding mold having at its top an opening from which pulp may issue when the mold is full, with means for afterward closing the opening, substantially as described.

14. In a machine for molding vessels from pulp, the contracting and expanding mold having at its top an opening from which the pulp may issue when the mold is full, and which is arranged to be closed by the contracting walls of the mold, substantially as described.

541,967. AUTOMATIC TELEGRAPHY. PATRICK B. DELANY, South Orange, N. J. Filed Apr. 3, 1895. Serial No. 544,318. (No model.)



Claim.—1. In an automatic telegraph, the combination of a transmitting tape having perforations arranged in two rows, one row being for transmitting dots and the other row for transmitting dashes, current transmitting mechanism by which the perforations in one row representing dots transmit impulses of current of one polarity, and perforations in the other row representing dashes transmit current impulses of the opposite polarity, and a receiver having two styluses resting on a chemically prepared ribbon in different longitudinal plane vertical to the face of the ribbon, one of said styluses producing upon the ribbon dots, when current impulses of one polarity are received, and the other stylus producing dashes when current impulses of the opposite polarity are received, such dot and dash characters being in different longitudinal lines on the ribbon substantially as set forth.

2. An automatic telegraph chemical receiver having two recording styluses, one of which has a greater area of contact surface in a line transverse to the chemically prepared receiving ribbon than the other stylus, the styluses being arranged in different longitudinal planes vertical to the face of the ribbon, whereby the chemically produced characters are developed in independent longitudinal lines on the ribbon.

3. In an automatic telegraph, the combination with a transmitter adapted to be operated by a perforated tape to transmit currents either successively of the same or opposite polarity, and a chemical receiver having two recording styluses bearing upon the chemically prepared ribbon, one of said styluses having a greater area of surface contact than the other in a line transverse to the receiving ribbon.

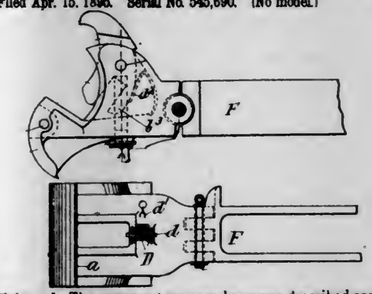
4. In an automatic telegraph, a chemical receiver having a dot recording stylus and a dash recording stylus, one of which consists of two electrically united parts arranged respectively on opposite sides of the other stylus, substantially as set forth.

5. In an automatic telegraph, the combination of the receiver operated by a perforated tape to send current impulses of one polarity representing dots, and current impulses of another polarity representing dashes, and a chemical receiver having two recording styluses resting upon the chemically prepared ribbon, one for recording dots and another for recording dashes, one of said styluses consisting of two electrically united parts arranged respectively on opposite sides of the other stylus, substantially as set forth.

6. In an automatic telegraph, the combination of a transmitter for transmitting current impulses representing dots and current impulses representing dashes, and a receiver having recording devices that record the characters of one kind in one line and the characters of the other kind in duplicate on opposite sides of the first named line of characters.

7. A received ribbon record having characters representing say dots in one line, and characters representing say dashes in duplicate on opposite sides of the line of dots.

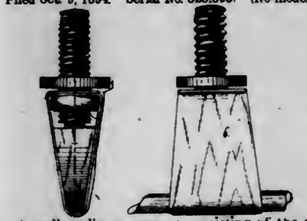
541,968. CAR-COUPLING. EDWARD B. GRIFFIN, Somerville, Mass. Filed Apr. 15, 1895. Serial No. 545,690. (No model.)



Claim.—1. The improved car coupler above described composed of two draw heads each having a dovetail jaw at one side, and a movable jaw at the other side; and means for locking the movable jaws; the inner face of each dovetail jaw and the movable jaw co-operating with it forming a dovetail recess for the companion dovetail jaw, and producing double locking substantially as set forth.

2. In a car coupler a draw head having at one side a dovetail jaw; a movable jaw at its other side; and means for locking the movable jaw whose inner face forms with the inner face of the dovetail jaw a dovetail recess for the companion dovetail jaw, all organized and operating substantially as described.

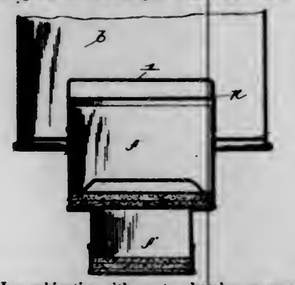
541,969. TROLLEY-WIRE CLIP. FRED W. HAEUSGEN, Buffalo, N. Y. Filed Oct. 9, 1894. Serial No. 525,393. (No model.)



Claim.—A trolley clip or support consisting of the elastic sheet metal support 6, 6, 7, its upper separate ends having apertured projections 8, 9, which register when the wire is in position and which can be pulled apart to admit the wire within the support, the remov-

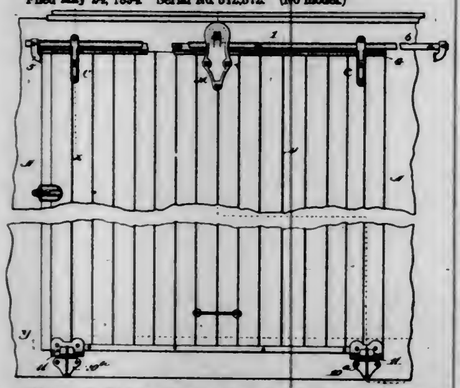
able wedge-shaped clamp 10 provided with the groove 12 in its lower side and the socket 13 in its upper portion the shank consisting of the upper, portion 1 adapted for screw-threaded engagement with the insulating bell or hanger the lower screw-threaded portion 2 with the downwardly extending projection 3 for engagement with the socket 13 in the clamp 10, the annular shoulder 4 between the two screw-threaded portions 1 and 2 and the elongated nut 14 all combined and operating substantially as shown and described.

541,970. DETACHABLE WATER-FILTERING BED. ARTHUR J. HARDER, Kingston, Pa. Filed Sept. 21, 1894. Serial No. 523,749. (No model.)



Claim.—In combination with a water chamber, an open ended cylinder extending through the bottom thereof, a perforated cap over the top of the cylinder, a filtering chamber removably connected to the lower part of said cylinder, a filtering chamber extending over the bottom of the first chamber, and a removable perforated cap covering the end of said cylinder, substantially as described.

541,971. SLIDING DOOR AND HANGER THEREFOR. WILLIAM W. HOLMES, Chicago, Ill., assignor to the Q and C Company, same place. Filed May 24, 1894. Serial No. 512,372. (No model.)



Claim.—1. The combination with a sliding door, of a hanger therefor said hanger off-set from the upper edge of the door to accommodate the downwardly projecting flange of the cap-strip, a track-rail, and a cap strip for the door interposed between the track rail and the top of the door, and having a downwardly projecting lip or flange arranged to house the top of the door, substantially as and for the purposes specified.

2. The combination with a sliding door, of a hanger having a housing for its wheel said hanger off-set from the upper edge of the door to accommodate the downwardly projecting flange of the cap-strip, a track rail, and a cap strip interposed between the track rail and top of the door and having a downwardly projecting flange which houses the top of the door; substantially as and for the purposes specified.

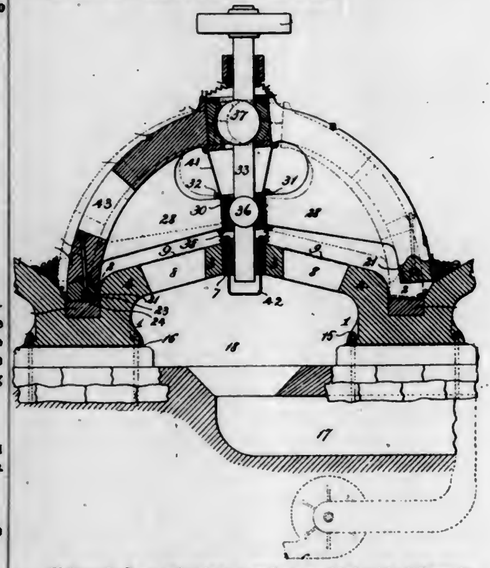
3. The combination with a sliding door and a track rail, of corner or supplemental hangers, and an intermediate fixed hanger having a main bearing or carrying wheel whose tread is in a lower plane than the wheels of the supplemental hangers, substantially as and for the purposes specified.

4. The combination with a sliding door and its flat steel track rail, of a curved stop secured to the free end of the track rail, and projecting therefrom in the plane of and opposite to the edge of said sliding door; substantially as and for the purposes specified.

5. The combination with a sliding door, and a bracket supported track rail therefor, of an arc shaped or curved stop secured to the bracket supported track rail at a point distant from the supporting bracket; substantially as and for the purposes specified.

6. The combination with a sliding door and its suspension hanger, of a bracket supported track rail having a wheel notch for the wheel of the suspension hanger, and a curved door-stop secured to the free end of the bracket supported track-rail adjacent to the wheel notch; substantially as and for the purposes specified.

541,972. PULVERIZER. GEORGE P. JAMES, Roselle, N. J. Filed Aug. 30, 1894. Serial No. 521,698. (No model.)



Claim.—1. In a pulverizer, a muller provided with differently disposed spherical bearings, and a shaft independent of the muller carrying spherical journals for said bearings, substantially as set forth.

2. The combination with a shaft, of a muller loose on said shaft and having a concentric and an eccentric bearing thereon, substantially as set forth.

3. The combination with a shaft having a concentric and an eccentric journal, of a muller having bearings engaging said journals, and an opposing grinding surface for said muller, substantially as set forth.

4. The combination with a mortar, of a muller having a grinding surface engaging the same, a concentric guiding bearing for the muller above said grinding surface, and an eccentric actuating bearing, substantially as set forth.

5. The combination of a mortar, a shaft vertically movable relative thereto, and having an eccentric bearing, a rolling muller actuated by said bearing, and a guiding bearing on the shaft and engaging the muller, substantially as set forth.

6. The combination of a mortar, a shaft free to move vertically and having a concentric and an eccentric journal, and a rolling muller engaging said journals, substantially as set forth.

7. A muller having above the level of its grinding face a concentric universal guiding bearing, and a shaft carrying a journal for said bearing and connected with the muller for actuating it, substantially as set forth.

8. The combination with a mortar and muller, of a shaft having spherical eccentric and concentric journals, and bearings on the muller engaging the same, substantially as set forth.

9. A hemispherical muller having an annular grinding periphery on its bottom face, and composed of wedge-shaped sections substantially as set forth.

10. A muller composed of wedge-shaped sections having inwardly extending arms, and bearings between said sections and at the inner ends of said arms, substantially as set forth.

11. The combination with the muller, and a shaft engaging the same by bearings as described, of a dust guard connecting the contiguous ends of said bearings and inclosing them, substantially as set forth.

12. The combination with the muller having an opening, of spherical bearings in said opening made in two or more parts, and inclosing plates 31, substantially as set forth.

13. The combination of the muller, and the base composed of wedge-shaped sections and having a mortar, a series of openings

formed between said sections, and a collecting chamber formed within the base with which said openings communicate, substantially as set forth.

14. The combination with the base having an annular mortar, and hopper around the same, of the plate 12 in said hopper, and having between it and the hopper a feeding space, substantially as set forth.

15. The pulverizer base composed of wedge-shaped sections extending inwardly, each formed with a channel, the channels of said sections constituting a mortar, substantially as set forth.

16. A muller base having an annular mortar composed of grooved sections, and a renewable grinding surface formed by a ring composed of a series of sections situated and held in proper relation to each other in said mortar, substantially as set forth.

541,973. METHOD OF AND APPARATUS FOR MAKING BRUSHES. PATRICK J. KANE, Boston, Mass., assignor to Charles P. Mooney, same place. Filed Apr. 24, 1894. Serial No. 508,870. (No model.)

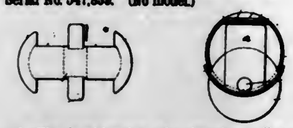


Claim.—1. The method of producing a brush which consists in assembling the bristles in successive layers, in disposing removable separating mediums between said layers, in clamping said bristles together for a portion of their length, in applying cement about the inner unclamped extremities, and finally in removing the separating mediums from between the bristles, substantially as explained.

2. In combination with a mold-box, a bristle-holder comprising a base, a cap, interconnecting clamping bolts, and sectional rings adapted to be interposed between the various masses of bristles, and means for forcing cement about and between the inner exposed ends of the bristles, substantially as stated.

3. The combination with a mold-box, and a plunger, a bristle-holder comprising a cap, a base, and a central core rod, a series of sectional rings, a series of radial fingers adapted to rest against the inner walls of the mold box, and a series of clamping bolts which pass through the various rings as likewise through the cap and base of the bristle holder, substantially as described.

541,974. RING. FRANK L. LATHROP and HARRY C. H. WALSH, Brooklyn, assignors to H. L. Judd & Co., New York, N. Y. Filed May 2, 1895. Serial No. 547,838. (No model.)

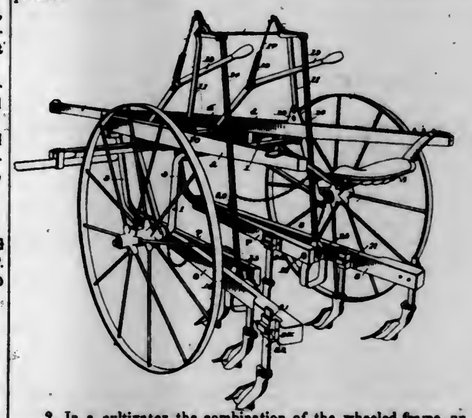


Claim.—1. The combination of a ring A, a roller and a supporting frame therefor consisting of substantially parallel cheeks *a a*, guards *b b*, extending laterally therefrom, a bridge *c* uniting the cheeks and clips *d d* projecting from the bridge and adapted to pass through holes *j j* in said ring A, substantially as described.

2. The combination of a ring, a roller supported therein by a frame, the said supporting frame consisting of a beat up sheet metal blank comprising substantially parallel cheeks *a a*, curved guards *b b* projecting laterally from the ends of the cheeks, clips *d d* adapted to pass through holes *j j* and a bridge *c* uniting the cheeks and the clips, substantially as described.

541,975. CULTIVATOR. AUGUST LINDGREN, Moline, Ill., assignor to the Moline Plow Company, of Illinois. Filed Mar. 11, 1895. Serial No. 541,327. (No model.)

Claim.—1. In a cultivator the combination with the frame of a beam jointed thereto, a standard pivoted at its lower end to the beam, a rocking lever sustained by the frame and jointed to the upper end of the standard, a hand lever pivoted to the frame, suitable connections between the hand lever and rocking lever, and a locking device for securing the hand lever to the standard when the former is depressed.

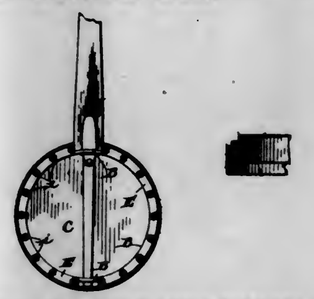


2. In a cultivator the combination of the wheeled frame, uprights rising therefrom, beams jointed to the frame, standards pivoted at their lower ends to the beams, elbow levers pivotally sustained by the uprights and jointed at their rear ends to the upper ends of the standards, hand levers pivoted to the frame on horizontal transverse axes, springs connecting the hand levers with the forward ends of the elbow levers and locking devices for securing the hand levers to the standards when the former are depressed.

3. In a cultivator the combination with the wheeled frame of beams pivoted thereto, standards pivoted at their lower ends to the beams, rocking levers sustained by the frame and pivoted to the upper ends of the standards, hand levers pivoted at their forward ends to the frame on horizontal transverse axes and bent upward between their ends, and springs connecting the rocking levers with the upwardly bent portions of the hand levers whereby when the beams are lowered the chains and springs will extend in a line with the forward portions of the hand levers, thereby yieldingly sustaining the beams.

4. In a wheeled cultivator the combination of the frame, beams jointed thereto, two uprights rising from the frame, a horizontal bar connecting the upper ends of the uprights, two elbow levers pivoted to said bar, standards jointed at their lower ends to the beams and at their upper ends to the rear ends of the elbow levers, hand levers pivoted at their forward ends on horizontal transverse axes, spiral springs connected to said hand levers between their ends, chains, connecting the springs with the forward ends of the elbow levers and locking devices for securing the hand levers to the standards when the former are depressed.

541,976. BANJO. NEIL MERRILL, Oshkosh, Wis., assignor to the Aluminum Musical Instrument Company, Pittsburg, Pa. Filed July 19, 1894. Serial No. 518,022. (No model.)

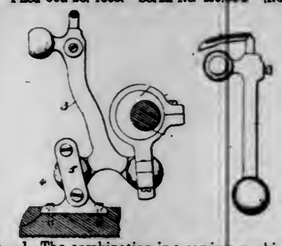


Claim.—1. As an improved article of manufacture, a head for a musical instrument comprising a horizontal diaphragm constructed of thin sounding metal and having a downwardly extending homogeneous rim portion which latter is provided with an annular projection which forms a permanent part of the rim, substantially as described.

2. As an improved article of manufacture, a banjo head made of thin sounding metal having a downwardly extending rim or side portion which latter is provided with a flesh hoop which forms a permanent part of the same, substantially as described.

3. A banjo comprising in its construction a head formed of thin sounding metal, and having a downwardly extending rim or side portion provided with a flesh hoop which forms a permanent part of the same, a rim proper provided with a horizontally extended perforated flange, an outer rim formed with an inwardly and upwardly extending flange forming a strainer hoop, said rim also being provided with bolt holes; and bolts and nuts for uniting the several parts, substantially as described.

541,977. SEWING-MACHINE. JOSEPH M. MERROW, Hartford, Conn. Filed Oct. 28, 1893. Serial No. 489,334. (No model.)

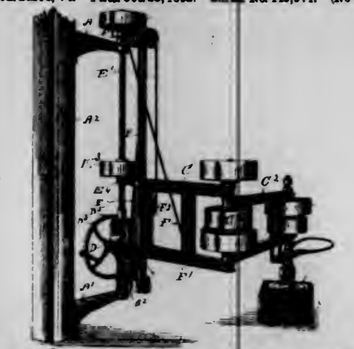


Claim.—1. The combination in a sewing machine, of an integral looper-carrier, provided with members of three universal joints, the opposite member of one of said joints constituting a fixed bearing for the looper-carrier upon which it is free to oscillate, the opposite member of another of said joints constituting a movable bearing, and the opposite member of the third of said joints forming the point of connection with the actuating devices for oscillating the looper carrier, in one direction, and actuating devices engaging the movable bearing; substantially as described.

2. The combination in a sewing machine of the integral looper-carrier provided with two spherical members forming parts of universal joints; a looper secured to the looper carrier on a line perpendicular to a line connecting said spherical members; a fixed bearing for one of said spherical members; a movable bearing for the other spherical member; actuating devices engaging said movable bearing, the latter being guided to move in a fixed plane; and actuating devices engaging the looper-carrier for oscillating the latter in a plane at right angles to the movement of the movable bearing; substantially as described.

3. The combination in a sewing machine of the looper carrier 3 provided with spherical members 4 and 4^a, the fixed bearing 5, the vertically reciprocating bearing 10 connected to and driven by the main shaft and the pitman 7 connected to the looper carrier above the plane of its pivotal members 4 and 4^a, with mechanism for actuating said pitman whereby the looper carrier is oscillated about the fixed bearing 5; substantially as described.

541,978. STONE-POLISHING MACHINE. ALLEN D. MOORE, Montpelier, assignor to James A. Smith, William E. Whitcomb, and Benjamin B. Cook, Barre, Vt. Filed Oct. 25, 1892. Serial No. 449,971. (No model.)



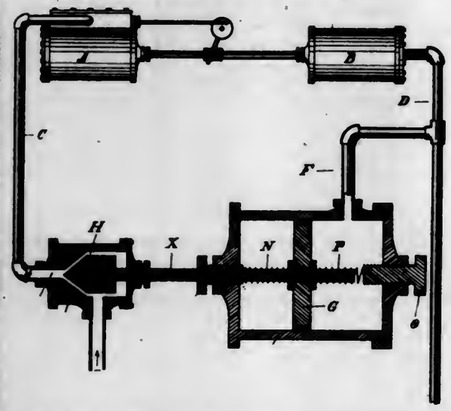
Claim.—1. In a stone polishing machine, the combination of the fixed brackets A and A', arms B and B^2 hinged upon said brackets, a shell D formed integrally with said arm B^2 and forming a housing for a winding mechanism, a winding mechanism held in said shell, a step bearing mounted upon the lower of said arms, a shaft E' supported by said step bearing and journaled in the arm B, a swinging arm carrying a polisher and a flexible connection between said swinging arm and said winding mechanism, substantially as described.

2. In a stone polishing machine, the combination of the fixed bracket A, arm B hinged to said bracket A, fixed bracket A', arm B^2 hinged to said bracket A', step E supported by the arm B^2, shaft E' resting in said step and journaled concentrically to the hinged joint between the arm B and the bracket A, bar B^3 uniting the arms B and B^2, frame C sliding on said bar B^3, a winding mechanism supported on said arm B^2 and a flexible connection between said winding mechanism and said sliding frame C, substantially as described.

3. In a stone polishing machine, the combination of the fixed brackets A and A', arms B and B^2 hinged upon said brackets, bar B^3, sliding frame C on said bar, step bearing mounted upon the lower of said arms, a shaft E' supported by said step bearing and journaled in the upper of said arms and concentrically with its hinged joint, substantially as described.

4. In a stone polishing machine, the combination of bracket A, arm B hinged upon said bracket, bracket A', adjustable step bearing held in said bracket, arm B^2 hinged in said step bearing, bar B^3 uniting said arms, step bearing E mounted upon said arm B^2, shaft E' journaled in said step bearing E and said arm B and concentrically with the axis of said arms, swinging arms C and C^2, said arm C^2 carrying a polisher, substantially as described.

541,979. AIR-COMPRESSOR. WILLIAM MOYER, Lykens, Pa. Filed July 19, 1894. Serial No. 518,049. (No model.)



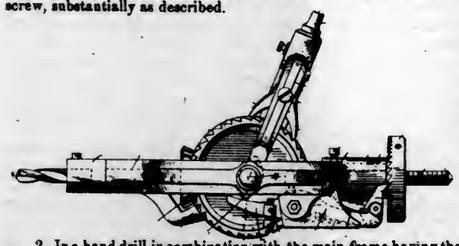
Claim.—1. In apparatus for maintaining a constant pressure of air, the combination with an air compressor, of a cylinder in communication with the compressed air supply, a piston reciprocating within said cylinder, an adjustable spring on each side of the piston for regulating the normal position of the piston, and means connected with the piston for controlling the supply of power to the compressor.

2. A fluid pressure regulator consisting of a cylinder E, in communication with the source of pressure, a piston G reciprocating therein, adjusting screws M and O oppositely disposed with reference to the piston, springs N and P interposed between said adjusting screws respectively and the piston, and means connected with the piston adapted to control the source of pressure.

3. In apparatus for maintaining a constant pressure of air, an air compressor actuated by water pressure, and a cut-off interposed between the water supply and the air delivery; said cut-off consisting of the cylinder E, in communication with the air delivery, the piston G reciprocating therein, the piston stem X terminating in the valve head H within the valve chamber I, said valve head H being adapted to close the water supply exit K; the adjusting sleeve M surrounding the piston stem X and adapted to screw into the forward head of the cylinder E, the spring N interposed between the sleeve M and the piston head G; the adjusting screw O adapted to screw into the rear head of the cylinder E, and the spring P interposed between said adjusting screw and the piston head, all substantially as shown and described.

541,980. METAL-DRILL. WILLIAM J. MCGEHE, Bushnell, Ill. Filed Sept. 10, 1894. Serial No. 522,565. (No model.)

Claim.—1. In a hand drill in combination with the main frame having the shaft extending transversely thereof, the beveled gears and toothed wheels formed integral, journaled on said shaft said gears meshing with a pinion secured on the drill spindle, a yoke extending over said gear wheels also journaled on said shaft, pivoted pawls under spring tension engaging said toothed wheels and carried by said yoke, a cam secured to one of said gear wheels and rotating therewith, a lever pivoted to an extension of the main frame actuated by said cam, a pawl pivoted on the end of said lever, and a toothed feed wheel for actuating a feed screw whereby the rotation of the gear wheel will rotate said cam and actuate said lever and operate the feed screw, substantially as described.



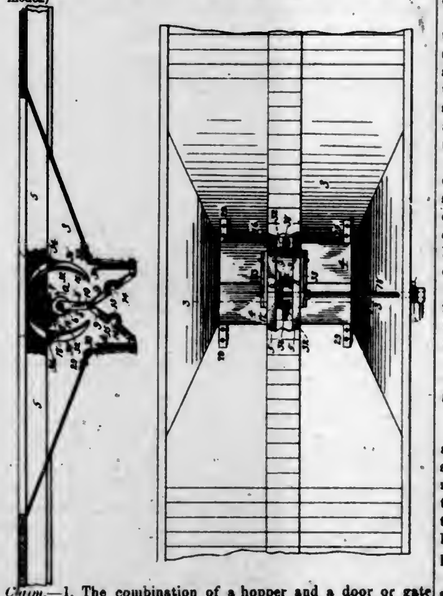
2. In a hand drill in combination with the main frame having the shaft extending transversely thereof, of the beveled gears and toothed wheels formed integral journaled on said shaft, said gears meshing with a pinion secured on the drill spindle, a yoke extending over said gear wheels also journaled on said shaft, pivoted pawls under spring tension engaging said toothed wheel and carried by said yoke, a cam secured to one of said gear wheels and rotating therewith, a lever pivoted to an extension of the main frame actuated by said cam, a pawl pivoted on the end of said lever, a toothed feed wheel for actuating a feed screw whereby the rotation of the gear wheel will rotate said cam and actuate said lever and operate the feed screw, and means secured to the lever for regulating the movement of the toothed wheel *e* and the feed screw, substantially as described.

3. In combination with a metal drill the supporting bracket therefor consisting of the plate *a*" having the longitudinal ribs extending at right angles from the sides thereof and its rear portion toothed, the vertical upright secured to the end of said plate to provide a bearing for the feed screw of the drill, the plate secured on said plate *a*" having forked arms for supporting the drill spindle and the movable bearing plate for the material to be bored having a rearwardly extending arm provided with a tooth on the end thereof for engaging with the teeth of the plate *a*", substantially as described.

4. In a drill in combination, the drill spindle, the gears for operating the same, the frame inclosing said gears and spindle and a flange depending from the under side of said frame said flange forming a side rest to take the side draft substantially as described.

5. In combination in a drill, the drill spindle, the mechanism for driving the same and the frame comprising the sides, the central brace having the depending tapered rear rest, and the depending side flange forming a side rest, substantially as described.

541,981. DUMPING-CAR-OPERATING MECHANISM. WILLIAM MCMAHON, Rahway, N. J. Filed Nov. 22, 1894. Serial No. 529,561. (No model.)



Claim.—1. The combination of a hopper and a door or gate hinged thereto with a crank-arm, means for pivotally supporting it, a link or bar directly pivoted to said arm and to said door or gate, and means for operating said crank-arm, substantially as described.

2. The combination of a hopper and a door or hinged body, with a link and crank-arm having three pivots, one of said pivots directly connecting said link and arm, substantially as described.

3. The combination of a pair of doors or gates, with a pair of links or bars pivotally connected with said doors, a crank-arm pivoted to both of said links and means for supporting and operating said crank-arm, substantially as described.

4. The combination of a door or gate, with a link pivotally connected therewith, said link having a shoulder, to act as a support for the link a crank-arm directly pivoted to said link, a shaft or pivot for said crank arm adapted to receive said shoulder upon it, and means for operating said crank arm, substantially as described.

5. The combination of a pair of hinged doors or gates, with a pair of links pivotally connected with said doors, each link having a shoulder on the corresponding side thereof, to act as a support for said links a crank arm pivotally connected with said links, a shaft or pivot for said crank arm arranged to receive and support said shoulders, and means for operating said crank arm, substantially as described.

6. The combination of a pair of doors or gates with a pair of links pivotally connected therewith, a pair of crank arms directly pivoted to said links, a shaft carrying said arms and means for operating said arms simultaneously, substantially as described.

7. The combination of a car, its hopper, a door or gate hinged thereto, and a truss or support extending across said hopper, with mechanism carried by said truss or support for operating and locking said door or gate, and comprising a link and crank-arm pivoted together, the link being pivoted to the door or gate substantially as described.

8. The combination of a car, its hopper, a door or gate hinged thereto, and a truss or support extending across said hopper, with mechanism carried by said truss or support for operating and locking said door or gate, and comprising a link and crank-arm pivoted together, the link being pivoted to the door or gate and means for protecting said mechanism from the material in said hopper, substantially as described.

9. The combination with a hopper bottom car having a hinged door or gate and a truss or support extending across the hopper, of a bracket or bearing carried by said truss, a shaft or pivot carried by said bracket or bearing, a crank arm carried by said shaft or pivot, and a link pivoted to said crank arm and to said door, substantially as described.

10. The combination with a hopper bottom car having a door hinged to said hopper and a truss or support extending across the hopper, of mechanism for operating said door consisting of a link and crank arm directly pivoted together and respectively pivotally connected with said door and with said truss, substantially as described.

11. The combination of a hopper-bottom car having a door hinged to the hopper and a truss extending over the latter, said truss consisting of two parallel beams having a space between them, of mechanism carried by said truss and connected with said door for operating the latter, and a casing to inclose said mechanism, said casing consisting of plates 32 having extensions 35 to pass between said beams, and plates 33 having extensions 37 to bear against said beams, and means for securing said plates to said truss, substantially as described.

12. The combination of a hopper bottom car having a hinged door and a truss extending over the hopper, of a bracket secured to said truss, a shaft journaled in said bracket and extending across the car, a pinion on said shaft, a shaft hung in said bracket, a gear wheel on said shaft meshing with said pinion, a crank arm to be operated by said wheel, and a link pivotally connecting said arm with said door, substantially as described.

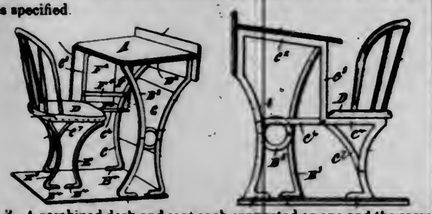
13. The combination of a door or gate with a strengthening frame consisting of side bars 23, 23, end bars 24, 24, and a cross brace 25, said frame being secured on one side of said door, substantially as described.

541,982. COMBINED DESK AND SEAT. MICHAEL D. NELON, Cincinnati, Ohio. Filed Jan. 2, 1895. Serial No. 533,556. (No model.)

Claim.—1. A combined desk and seat each supported on one and the same side by its own independent legs, and on the other side supported by the front leg C of the desk, rear leg C^3 of the seat, horizontal brace C^4 directly beneath the seat, and brace C^5 connected to the front end of brace C^4 and to the rear end of the upper part of the desk structure, and brace C^7 extending from the lower part of brace C^5 to the front part of brace C^4, substantially as and for the purposes specified.

2. A combined desk and seat each supported on one and the same side by its own independent legs, and on the other side supported by the front leg C of the desk, rear leg C^3 of the seat, horizontal brace

C^4 directly beneath the seat, and brace C^5 connected to the front end of brace C^4 and to the rear end of the upper part of the desk structure, and brace C^7 extending from the lower part of brace C^5 to the front part of brace C^4, and brace C^8, extending from the front end of brace C^4, across to front brace C, substantially as and for the purposes specified.



3. A combined desk and seat each supported on one and the same side by its own independent legs, and on the other side by the front leg of the desk, legs under the seat, and a cross piece C^9 connected rigidly to the seat support, and to the front leg of the seat, and the brace C^3, connected to the rear portion of the desk and to the cross brace C^4, substantially as and for the purposes specified.

4. A combined desk and seat each supported on one of the same sides by its own independent legs, and on the other side supported by the legs C^9, braces C^3, C^7 and C^5, and desk leg C substantially as and for the purposes specified.

5. A combined desk and seat each supported on one and the same side by its own independent legs and on the other side by the front desk leg C, desk cross brace C^3, upright brace C^5 and cross brace C^4 supported by the front desk leg, and the seat supporting leg whereby the rear portion of said cross brace C^4 is supported, substantially as and for the purposes specified.

6. A self supporting combined desk and seat, where on one side of the chair is supported on the leg C^9, the desk is supported on the leg C and intervening bracing consisting of the support as C^5 from the rear end of the desk to the front portion of the seat and a brace from the latter to the leg C^9, supported on suitable supports, substantially as and for the purposes specified.

7. In combination with the desk top A, leg C and braces C^3 and C^5, the receptacle at the side of the desk outside of said leg and braces consisting of the side F, and front F^3 and bottom F^4 connected substantially as described, as and for the purposes specified.

8. In combination with the desk top A, leg C and braces C^3 and C^5, the receptacle at the side of the desk outside of said leg and braces consisting of the side F, and front F^3 and bottom F^4 connected substantially as described, and the additional brace F^5 between leg C and brace C^3, substantially as and for the purposes specified.

9. The combination of the fixed desk and seat, one side suitably supported, and on the other supported on two legs only, one from the table and one from the seat, and an intervening horizontal brace crossing from the leg of the desk directly to the seat, and then from the seat downward to the leg of the latter, substantially as and for the purposes specified.

10. The combination of the fixed desk and seat, one side suitably supported, and on the other supported on two legs only, one from the table and one from the seat, and an intervening horizontal brace crossing from the leg of the desk directly to the seat, and then from the seat downward to the leg of the latter, and a vertical brace from this horizontal brace to the rear part of the desk, substantially as and for the purposes specified.

11. In a combination desk and seat, the combination at one side of the following pieces or braces, to wit: leg C forming the front leg of the desk, the desk having a top A, vertical brace C^5 supporting the rear portion of the top of the desk and connected to horizontal brace C^4 directly beneath the seat, the latter connected to the upright leg C^9 forming the leg of the seat, the pieces C^3, C^4, C^5, being integral, substantially as and for the purposes specified.

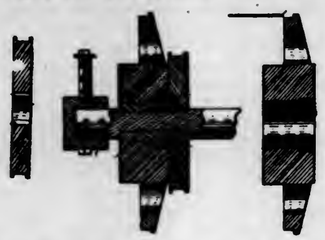
12. In a combination desk and seat, duly supported on one side, the combination on the other side of pieces or braces as follows, leg C forming the front leg of the desk, vertical brace C^5 supporting the rear portion of the top of the desk, horizontal brace C^4 directly beneath the seat and leg C^9, the pieces C^3, C^4, C^5, being integral, and horizontal brace C^6 extending from the leg C to the braces C^4, C^5, substantially as and for the purposes specified.

13. In a combination desk and seat, duly supported on one side, the combination on the other side of pieces or braces as follows, leg C forming the front leg of the desk, vertical brace C^5 supporting the rear portion of the top of the desk, horizontal brace C^4 directly beneath the seat, and brace C^3 forming a leg of the seat, the pieces C^3, C^4, C^5, being integral, and horizontal brace C^6 connected at its front end to the leg C and connected to braces C^4, C^5, and extending down into brace C^7, the latter in turn connected to the leg C^9, the pieces C^6 and C^7 being integral, substantially as and for the purposes specified.

14. In a combined desk and seat suitably supported on one side, the combination on the other of pieces or braces as follows, the front leg C supporting the front portion of the desk, rear leg C^9 supporting the rear portion of the seat, brace C^7 sprung from the lower portion of the brace C^3 extending diagonally forward to the front of the seat, vertical brace C^5 supporting the rear end of the seat and in conjunction with brace C^7 to which it is connected, and cross bracing between the seat D and the front leg C for preventing any tendency of the seat D to incline forward and spring out of position, substantially as and for the purposes specified.

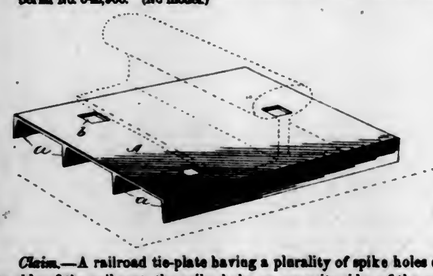
15. In a self-supporting combined desk and seat, the combination on one side of the leg B, cross brace B^3 and leg B^9, provided with feet B^4, in one continuous piece, braced by the brace B^5 for supporting one side of the desk top A, the chair provided with the leg E, cross brace E^3 and rear leg provided with feet B^4, all in one continuous piece for supporting the adjacent side of the chair seat D, and on the other side the front leg C, cross brace C^3 for supporting the other side of the desk top A, vertical brace C^5 from the rear end of the desk top to the forward portion of the chair, rearwardly extending brace C^4 under the chair seat and leg C^9 extending from the rear portion of the chair seat downwardly, the said legs C, C^9 being respectively provided with feet B^4, all made in one continuous piece, and the cross brace C^3 extending from the leg C to the foot of the brace C^5, there united to the leg, and then extending downward to the leg C^9 and there connected to the said leg, substantially as and for the purposes specified.

541,983. BRAKE FOR RAILWAY-CARS. ROBERT L. ORMISTON, Philadelphia, Pa., assignor to the J. G. Brill Company, same place. Filed July 26, 1894. Serial No. 518,536. (No model.)



Claim.—The combination with a car axle having a horizontal groove therein, the key consisting of a rectangular plate having a projecting rib, seated in said groove and projecting beyond the surface of the axle, the car wheel having the intersecting grooves, adapted to engage with the outer end of said key and with the rib thereof, the drum or disk having a groove engaging with the inner end of said key, and the securing bolts, substantially as described.

541,984. RAILROAD-TIE PLATE. BENJAMIN REECE, Chicago, Ill., assignor to the Q. and C Company, same place. Filed Mar. 23, 1895. Serial No. 542,960. (No model.)

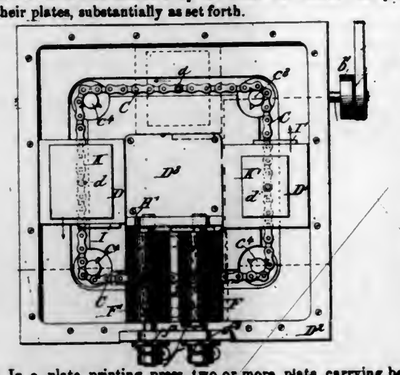


Claim.—A railroad tie-plate having a plurality of spike holes on one side of the rail seat, the spike holes on opposite sides of the rail seat staggered or dodged, and on one side of the plate a plurality of continuous flanges or ribs, not less than four, which ribs or flanges separate the inner spike holes and include the outer spike holes; substantially as and for the purposes specified.

541,985. PLATE-PRINTING PRESS. JUDAH T. ROBERTSON, New York, N. Y. Filed July 10, 1894. Serial No. 517,135. (No model.)

Claim.—1. In a plate printing press, a plurality of plate carrying bed-blocks adapted to travel in the same continuous path, in combination with a plurality of printing or impression rollers having a single printing or impression face, and means whereby each printing or impression roller shall be actuated only by certain of the bed-blocks and print only from the plate carried by said bed-blocks, substantially as set forth for the purpose specified.

2. In a plate printing press, two or more plate carrying bed-blocks adapted to travel over the same continuous path, in combination with two printing or impression rollers, and means whereby one of the printing or impression rollers will be actuated only by one of the bed-blocks and print from its plate and the other printing or impression rollers will be actuated by the other bed-blocks and print from their plates, substantially as set forth.



3. In a plate printing press, two or more plate carrying bed-blocks adapted to travel over the same continuous path, each roller being provided with differently disposed starting devices, in combination with two printing or impression rollers each provided with differently disposed engaging devices, the engaging device on one roller being adapted to be engaged by the starting device of certain of the bed-blocks and the roller actuated by said bed-blocks and the engaging device on the other roller being adapted to be engaged by the starting devices on the other bed-blocks and actuated thereby, substantially as set forth.

4. In a plate printing press, a plurality of plate carrying bed blocks adapted to travel in the same continuous path, in combination with a plurality of printing or impression rollers provided with a single printing or impression face, and adapted to have an intermittent movement, and means whereby each printing or impression roller shall be actuated only by certain of the bed blocks and print only from the plate carried by said bed-blocks, substantially as set forth.

5. In a plate printing press, a plurality of plate carrying bed-blocks adapted to travel in the same continuous path, in combination with a plurality of printing or impression rollers provided with a single printing or impression face and adapted to have an intermittent partial revolution, and means whereby each printing roller shall be actuated only by certain of the bed-blocks during their travel and print only from the plate carried by said bed-blocks, substantially as set forth.

6. In a plate printing press, a plurality of plate carrying bed-blocks adapted to travel in the same continuous path, in combination with a plurality of printing or impression rollers each provided with a single printing or impression face and adapted to have a partial intermittent revolution, means whereby each printing or impression roller will be actuated only by certain of the bed-blocks and print only from the plate carried by said bed-blocks, and means for returning said printing or impression roller to its normal position and hold its printing or impression face out of contact with the plates carried by the other bed-blocks, substantially as set forth.

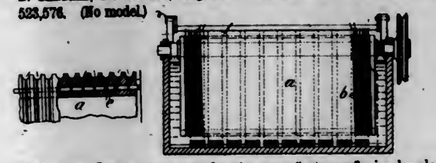
7. In a plate printing press, a plurality of plate carrying bed blocks adapted to travel in the same continuous path, in combination with a plurality of printing or impression rollers located over the path of travel of the bed-blocks and having a single printing or impression face, and adapted to have an intermittent partial revolution, means whereby each printing or impression roller will be actuated only by certain of the bed-blocks and print only from the plate carried by said bed-blocks, and means for returning said printing or impression roller to its normal position and hold its face out of contact with the plates carried by the other bed-blocks as they pass under said roller, substantially as set forth.

8. In a plate printing press, a single series of inking, wiping and polishing devices and a plurality of plate carrying bed-blocks adapted to travel over the same continuous path, in combination with a plurality of printing or impression rollers having a single printing or impression face, means whereby each printing or impression roller shall be actuated only by certain of the bed-blocks and print only from the plate carried by said bed-blocks, and means for returning the printing or impression roller to its normal position and hold its face out of contact with the plates of the other bed blocks, substantially as set forth.

9. In a plate printing press, the printing or impression rollers, each provided with a tappet, the tappet on one roller being arranged at the end opposite the tappet on the other roller, in combination with two or more plate carrying bed-blocks adapted to travel in the same continuous path, one or more of the bed-blocks being provided with a starting device or projection adapted to engage only the tappet of one of the rollers and actuate the said roller and the other bed blocks being provided with a starting device or projection adapted to engage only the tappets of the other roller and actuate the same, substantially as set forth.

10. In a plate printing press, the printing or impression rollers, cut away at their normally downward surfaces, and each provided with a tappet, the tappet on one roller being arranged at the end opposite the tappet on the other roller, in combination with two or more plate carrying bed-blocks adapted to travel in the same continuous path, one or more of the bed-blocks being provided with a starting device or projection adapted to engage only the tappet of one of the rollers and actuate said roller, and the other bed-blocks being provided with a starting device or projection adapted to engage only the tappets of the other roller and actuate the same, substantially as set forth.

541,986. APPARATUS FOR MANUFACTURE OF WIRE. RICHARD D. SANDERS, Eastbourne, England. Filed Sept. 20, 1894. Serial No. 523,576. (No model.)



Claim.—1. In an apparatus for the manufacture of wire by electro-deposition, the combination with a non-metallic cylinder having a spiral or suitable groove cut or formed therein, of a wire or strip inserted or laid at the bottom of the said groove, and the pins and conductor in electrical communication with such wire or strip, substantially as and for the purposes set forth.

2. In an apparatus for the manufacture of wire by electro deposition, the combination with a hollow non-metallic cylinder having a spiral or suitable groove cut or formed therein in its periphery and having a wire or strip inserted therein,—of the pins and conductor,—in electrical communication with such wire or strip and a shaft lying across the depositing tank and supporting the said cylinder with a portion of its surface above the liquid and serving to rotate as well as to support the said cylinder, the combination being and operating substantially as set forth.

541,987. CEMENT CISTERN. THOMAS F. WHITSIDE, Peru, Ind. Filed July 5, 1894. Serial No. 516,663. (No model.)



Claim.—1. A cistern composed of cement mortar or concrete molded into sections of different forms the crown and base sections so shaped that when properly abutted, joints open at the top and closed at the bottom will be formed substantially as set forth.

2. The crown blocks C. C. with joint G. open on top and opening F. for neck D as formed in molding.

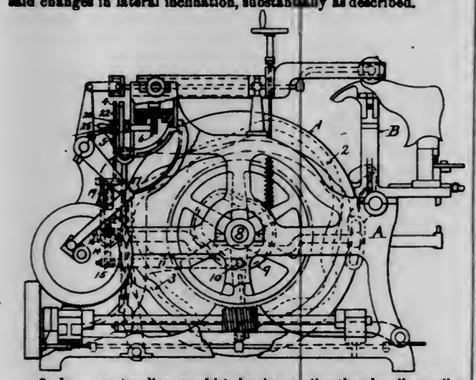
3. The bottom A Fig. 1. with shoulder A' and open joint A^3, bottom A. being made in four equal parts.

541,988. SOLE-LEVELING MACHINE. ERASTUS B. WINSLEY, Lynn, Mass. Filed Apr. 24, 1895. Serial No. 547,042. (No model.)

Claim.—1. In a sole leveling machine the combination of a vibrating leveling roll, a shoe supporting jack, connected mechanism for relatively actuating the roll and jack to level the sole of a shoe placed upon the jack, and an automatically operating adjusting device connected with said actuating mechanism whereby the same is operated to shape the shank and forepart of a sole independently of each other, substantially as described.

2. In a sole leveling machine the combination of a vibating leveling roll, a shoe supporting jack, a cam and connecting mechanism

for oscillating the jack under the roll, a cam and connecting mechanism for changing the relative lateral inclination of the roll and jack, and an auxiliary cam and connecting mechanism for adjusting said changes in lateral inclination, substantially as described.

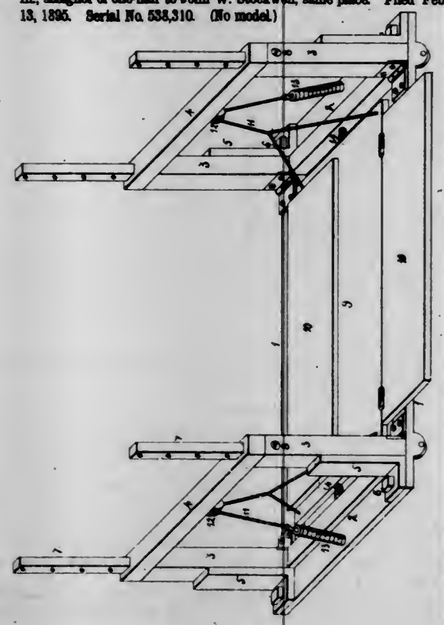


3. In a sole leveling machine having a vibrating leveling roll, a shoe supporting jack, and mechanism for changing the relative lateral inclination of the roll and jack, the combination of a rocking lever, independent means for actuating the same, and suitable connections between said lever and the mechanism for changing the relative lateral inclination of the roll and jack, arranged to modify the operation of said mechanism, substantially as described.

4. In a sole leveling machine having a leveling roll and shoe supporting jack, the combination, with mechanisms for changing the relative lateral inclination of the roll and jack, of means for adjusting said mechanism to regulate the amount of such change of inclination, and mechanism for automatically varying said adjustment during the operation of the machine, substantially as described.

5. In a sole leveling machine having a leveling roll and shoe supporting jack, the combination of a rocking bell lever mounted upon a suitable support, a circular adjustment way in said lever, a longitudinally reciprocating connecting rod provided with a longitudinal adjustment way and supported adjacent to said bell lever, a connecting rod connected with suitable mechanism for rocking the roll and provided with a shoulder extending through the adjustment way in the bell lever and into the adjustment way in the connecting rod and a device for locking said shoulder to said connecting rod, substantially as described.

541,989. KNOCKDOWN RACK. JOSEPH H. BOWLEY, Marengo, Ill., assignor of one-half to John W. Stockwell, same place. Filed Feb. 13, 1895. Serial No. 538,310. (No model.)

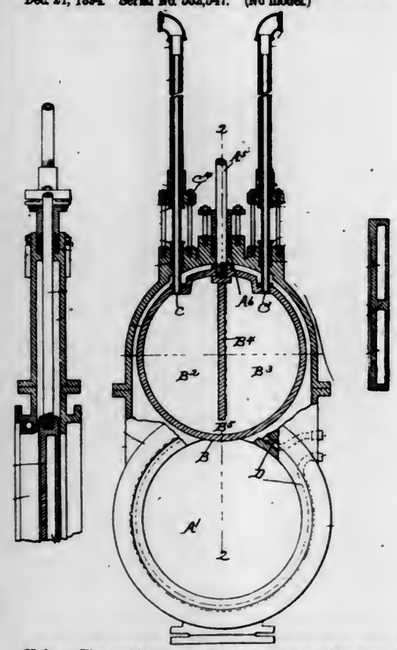


Claim.—I. A knock-down-rack, consisting of a base frame, hinged ends, and a platform, a sheave supported by each end, a spring connected to the base frame at each end, a flexible connection connecting the spring and platform passing over the sheave.

2. A knock-down-rack, consisting of a base frame, hinged ends, and a platform, the ends having vertical extensions and each extension having a series of openings, and means for securing the extension in connection with the hinged ends.

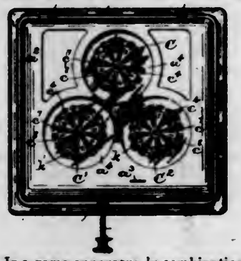
3. A knock down rack, consisting of a base frame, hinged ends and a platform having hinged leaves, a sheave supported by each end, a spring connected to the frame at each end, a flexible connection connecting the spring and platform passing over the sheave.

541,990. HOT-GAS VALVE. JOHN T. CHRISTIE, Troy, N. Y. Filed Dec. 21, 1894. Serial No. 532,547. (No model.)



Claim.—The combination of the chambered slide gate, the fixed valve case having stuffing boxes C^9, the stuffing boxes C^9 supported from the case by bolts C^{10}, the water-supply-and-discharge pipes connected to the stuffing boxes C^9 and fixed therein against either endwise or rotary motion and provided with couplings C^8, and the telescoping pipes C, C' fixed to the slide gate and moving freely through both stuffing boxes and within the said water-supply-and-discharge pipes beyond the boxes, substantially as set forth.

541,991. COIN-CONTROLLED GAME APPARATUS. CLEMENT C. CLAWSON, Newark, N. J. Filed Apr. 5, 1895. Serial No. 544,531. (No model.)



Claim.—1. In a game apparatus, in combination, revolving index disks or dials having annular rims or shoulders c^2, and marbles or balls loosely arranged on said disks or dials, each disk or dial having gear teeth c^3 a gear-mechanism for revolving said disks or dials, comprising therein, a toothed wheel i and gear wheel i^3, and means for operating said gear-mechanism, substantially as and for the purposes set forth.

2. In a game apparatus, in combination, revolving index disks or dials having annular rims or shoulders c^2, and marbles or balls loosely arranged on said disks or dials, each disk or dial having gear teeth c^3 a gear-mechanism for revolving said disks or dials, comprising therein, a toothed wheel i and gear wheel i^3 and means for operating said gear-mechanism, consisting essentially, of a slide or rack e, and a push-arm f for operating the same, substantially as and for the purposes set forth.

3. In a game apparatus, in combination, revolving index disks or dials, provided with gear teeth c^3, a gear wheel i^3 for revolving said disks or dials, a ratchet wheel i, and a pin i^2 on said wheel i^3, adapted to be engaged by said ratchet wheel to actuate said wheel i^3, and means for operating said ratchet wheel, substantially as and for the purposes set forth.

4. In a game apparatus, in combination, revolving index disks or dials, provided with gear teeth c^3, a gear wheel i^3 for revolving said disks or dials, a ratchet wheel i, and a pin i^2 on said wheel i^3, and means for operating said ratchet wheel, consisting essentially, of a slide or rack e, and a push-arm f for operating the same, substantially as and for the purposes set forth.

5. In a game apparatus, in combination, a casing, revolving index disks or dials, having annular rims or shoulders c^2 and marbles or balls loosely arranged on said disks or dials, each disk or dial having gear teeth c^3, a gear mechanism for revolving said disks or dials, comprising therein, a toothed wheel i and gear wheel i^3, means for operating said gear-mechanism, and a chute connected with said casing for depositing a playing disk and thereby bringing said means in operative engagement with said gear-mechanism, substantially as and for the purposes set forth.

6. In a game apparatus, in combination, a casing, revolving index disks or dials, having annular rims or shoulders c^2 and marbles or balls loosely arranged on said disks or dials, means for operating said gear-mechanism, consisting essentially, of a slide or rack e, and a push arm f having a guide f', and a chute connected with said casing for depositing a playing disk into said guide f' and thereby bringing said arm f and slide or rack e in operative engagement, substantially as and for the purposes set forth.

7. In a game apparatus, in combination, a casing, revolving index disks or dials, provided with gear teeth c^3, a gear wheel i^3 for revolving said disks or dials, a ratchet wheel i and a pin i^2 on said wheel i^3 adapted to be engaged by said ratchet wheel to actuate the wheel i^3, means for operating said ratchet wheel, and a chute connected with said casing for depositing a playing disk and thereby bringing said means in operative engagement with said ratchet wheel, substantially as and for the purposes set forth.

8. In a game apparatus, in combination, a casing, revolving index disks or dials, provided with gear teeth c^3, a gear wheel i^3 for revolving said disks or dials, a ratchet wheel i and a pin i^2 on said wheel i^3 adapted to be engaged by said ratchet wheel to actuate said wheel i^3, means for operating said ratchet wheel, consisting essentially, of a slide or rack e and a push-arm f having a guide f', and a chute connected with said casing for depositing a playing disk into said guide f' and thereby bringing said arm f and the slide or rack in operative engagement with said ratchet wheel, substantially as and for the purposes set forth.

9. In a game apparatus, in combination, with the index disks or dials, of mechanism for operating the same, consisting essentially, of a plate d having posts d^3 and d^4, a ratchet wheel i and gear wheel i^3 on said post d^3, said index dials or disks being rotatively arranged on said posts d^4 and provided with gear teeth c^3 meshing with said gear wheel i^3, and means for operating said ratchet wheel, i, substantially as and for the purposes set forth.

10. In a game apparatus, in combination, with the index disks or dials, of mechanism for operating the same, consisting essentially of a plate d having posts d^3 and d^4, a ratchet wheel i and gear wheel i^3 on said post d^3, said index dials or disks being rotatively arranged on said posts d^4 and provided with gear teeth c^3 meshing with said gear wheel i^3, a slide or rack e in operative engagement with said ratchet wheel, and means for operating said slide or rack, substantially as and for the purposes set forth.

11. In an apparatus of the class herein set forth, in combination, a supporting plate, having a guide-arm d^5, an arm d^6 thereon, a projection d^{11} and a piece g on said arm d^6, a slide or rack e movably arranged on said guide-arm having an arm e^5 and an extension e^6, a chute terminating directly above said arm e^5, and means for operating said slide or rack, substantially as and for the purposes set forth.

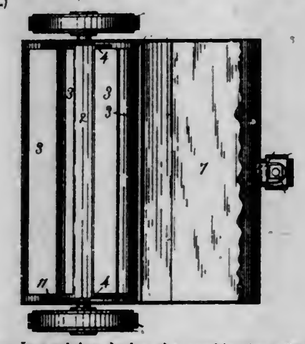
12. In an apparatus of the class herein set forth, in combination, a supporting plate, having a guide-arm d^5, an arm d^6 thereon, a projection d^{11} and a piece g on said arm d^6, a slide or rack e movably arranged on said guide-arm having an arm e^5 and an extension e^6, a chute terminating directly above said arm e^5, and a spring-actuated push-arm f having a guide portion f', substantially as and for the purposes set forth.

13. In an apparatus of the class herein set forth, in combination, a supporting plate, having a guide-arm d^5, an arm d^6 thereon, a projection d^{11} and a piece g detachably connected with said arm d^6, a slide or rack e movably arranged on said guide-arm having an arm e^5 and an extension e^6, a chute terminating directly above said arm e^5, and means for operating said slide or rack, substantially as and for the purposes set forth.

14. The herein described game apparatus, comprising therein, a casing having an opening a^3 and a chute, a plate d having posts d^3 and d^4, a ratchet wheel i and gear wheel i^3 on said post d^3, index disks or dials on said posts d^4 having gear teeth c^3 meshing with said gear wheel i^3, a guide-arm d^5 on said plate d, having an arm d^6 and a projection d^{11} and piece g, a slide or rack e movably arranged on said guide-arm, having an arm e^5 and extension e^6, and means for operating said rack, substantially as and for the purposes set forth.

15. The herein described game apparatus, comprising therein, a casing having an opening a^3 and a chute, a plate d having posts d^3 and d^4, a ratchet wheel i and gear wheel i^3 on said post d^3, index disks or dials on said post d^4 having gear teeth c^3 meshing with said gear wheel i^3, a guide-arm d^5 on said plate d, having arms d^6 and a projection d^{11} and piece g, a slide or rack e movably arranged on said guide-arm, having an arm e^5 and extension e^6 and a spring-actuated push arm f having a guide-portion f', substantially as and for the purposes set forth.

541,992. ROTARY WIPER. WILLIAM H. CLOUD and JOHN W. LAPPIN, Kokomo, Ind. Filed Oct. 15, 1894. Serial No. 525,882. (No model.)



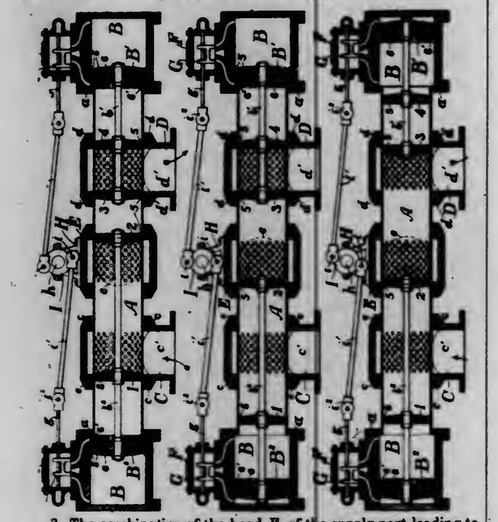
Claim.—In a wiping device, the combination of the revolvble shaft provided with a series of longitudinal, radially arranged, flexible wiping-ribs, the casing mounted upon said shaft and extending backward to form a reservoir behind the shaft, the cross-bar secured to said casing and carrying at its lower edge a flexible scraper which projects below the casing, the guard-plate secured to the casing opposite said scraper and projecting into the path of the wipers, as set forth, and the pair of driving-wheels arranged to support the casing and connected to the shaft so as to impart a rotary motion thereto, all arranged to co-operate substantially as set forth.

541,993. OPERATING-VALVE FOR HYDRAULIC ELEVATORS. JAMES H. CURRAN, Cincinnati, Ohio. Filed July 5, 1894. Serial No. 516,549. (No model.)

Claim.—1. In a valve operating device for hydraulic elevators, the combination of the supply pipe, the pipe leading to the elevator cylinder and the exhaust pipe, the central cylinder passing through the heads of said pipes, large cylinders at each end of said central cylinder, actuating pistons in said larger cylinders having rods extending into the ends of the central cylinder, pistons on one of said rods to cover or uncover a supply port leading to the elevator cylinder, and similar pistons upon the opposite rod to cover or uncover the exhaust port, slide valves mounted upon the end cylinders to control the movement of the pistons, the rock shaft mounted in bearings between the slide valves, a crosshead supported on said rock shaft, wrist pins projecting from said cross head, and the rods connecting said wrist pins with the slide valves, substantially as and for the purpose set forth.

2. The combination, of the piston cylinder for controlling the supply of water to and its exhaust from the elevator cylinder, larger cylinders at the ends of said cylinder, actuating pistons in each of said larger cylinders, each having a valve rod extending into the ends of the intermediate cylinder, actuating pistons secured upon the outer ends of said rods within the larger cylinders and having inwardly extended notched annular flanges to abut against the end of the inner cylinder and limit the inward motion of said pistons, pistons mounted upon one of said rods to cover or uncover the supply to the elevator cylinder, and upon the opposite rod to cover or uncover the exhaust

port, said pistons being provided with a cup leather packings, the valve chests, F, mounted upon the larger end cylinders, the slide valves and ports leading from the chests to the larger cylinders, the rock shaft mounted between said slide valves, cross head secured upon said rock shaft and having wrist pins projecting from it, the rods connecting the wrist pins and rods of the slide valves, said valves being connected in such manner that the ports leading to the larger cylinders are not completely covered by their slide valves in either position, substantially as shown and described.



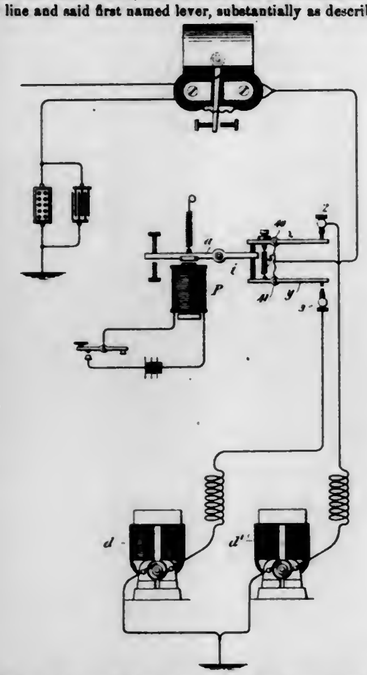
3. The combination of the head, E, of the supply port leading to the elevator cylinder, the heads of the supply and exhaust pipes, C and D, the cylinder, A, passing through said heads, the annular rings, *a*, in which the ends of said cylinder, A, are secured, the larger cylinders, B, secured against the ends of the annular rings, *a*, the slide valves mounted upon said cylinders, B, the actuating pistons, B' and B^3, fitted to slide within the cyunders, B, the said pistons having inwardly extended notched flanges to bear against the face of the rings, *a*, and limit the inward motion of said pistons, the piston rod, *b'*, secured in the actuating piston, B', the pistons, 3 and 4, secured upon said rod, the piston rod, b^3, secured centrally in the piston, B^3, and having the pistons 1 and 2 secured upon it, the pillow block or bearing, H, secured upon the head, E, the rock shaft mounted in said bearings, the cross head, I, secured upon said rock shaft, wrist pins, *i*, projecting from the face of said cross head upon opposite sides of the rock shaft, the valve rods, *g*, of the slide valves projecting in the direction of said cross head, and the pitman, *i'*, connecting the wrist pins and valve rods, substantially as shown and described.

4. The combination of the central cylinder, A, the larger cylinders, B, secured at each end of said cylinder, the actuating pistons, B' and B^3, having independent valve rods, *b'* and b^3, projecting from the said cylinder, A, the supply and exhaust pistons secured respectively upon said rods, valve chests mounted upon the cylinders of the actuating pistons, slide valves in said chests, and means such as shown for actuating said slide valves simultaneously in opposite directions, substantially as shown and described.

541,994. DUPLEX AND DIPLEX TELEGRAPHY. MINOR M. DAVIS, Brooklyn, N. Y. Filed Apr. 13, 1894. Serial No. 546,168. (No model.)

Claim.—1. In a duplex or diplex telegraph the combination at the receiving station of an electro-magnetic receiving instrument located in a main line, and at the transmitting station a transmitter located in said main line, composed of a fixed contact, a movable contact consisting of an unequally pivoted lever the longer arm of which is in position to engage with said fixed contact, an actuating lever mechanically connecting with the shorter arm of the first named lever, an electro-magnet and local circuit for controlling said actuating lever, a retractor for the unequally pivoted lever normally tending to hold it in engagement with said fixed contact, an electrical connection between the main line and one of said contacts and an electrical connection between the terminal of a grounded dynamo-electric machine and the other contact, all arranged and operating substantially as described.

2. In a duplex or diplex telegraph, at the transmitting station, a pole changing transmitter consisting of two fixed contact points connected with dynamo-electric generators or other suitable sources of electricity respectively, a movable contact consisting of an unequally pivoted lever, the longer arm of which is in position to contact with a fixed dynamo terminal or source of electricity, an electro-magnet, an armature therefor mechanically connecting with the shorter arm of the first named lever, and an electrical connection between the main line and said first named lever, substantially as described.



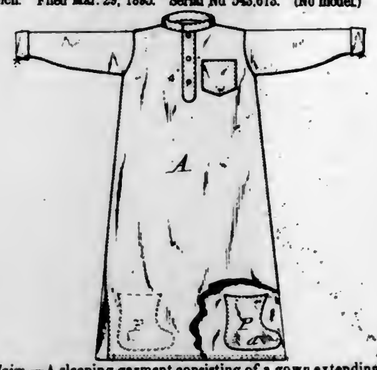
3. In a duplex or diplex telegraph, at the transmitting station, a transmitting device consisting of two fixed contact points, two movable contact points formed of two similar, unequally pivoted, spring retracted levers, an actuating lever mechanically connecting with the shorter arms of the two first named levers, electrical connections between the main line and one pair of contact points, between one of the second pair of contacts and a positive dynamo pole or source, and between the other contact of said pair and a negative dynamo pole or source, substantially as described.

4. In a duplex or diplex telegraph the combination of a polarized receiving instrument in the main line at the receiving station; and at the transmitting station a pole changing transmitter consisting of two fixed contact points forming respectively, the terminals of dynamos or sources of electricity of opposite polarity, a pair of similar, unequally pivoted, spring retracted levers electrically connected together and to the main line, the longer arms of said levers being in position to engage with said fixed contacts, respectively; an actuating lever mechanically connected with the shorter arms of said levers and means for operating said actuating lever, substantially as described.

5. In a diplex telegraph the combination, at the receiving station, of two receiving instruments in the main line, one responsive to variations in intensity, the other responsive to variations in polarity of the main line current; at the transmitting station, two dynamos or sources of electricity of high electro-motive-force and respectively opposite polarity, two dynamos or sources of electricity of low electro-motive-force and respectively opposite polarity, a pole changing transmitter consisting of two unequally pivoted, spring retracted levers and two fixed contacts in position to engage with the longer arms of said levers, respectively; an actuating lever mechanically connecting with the shorter arms of said levers, an electrical connection between one pair of said contacts and a contact point in an independent transmitter, an electrical connection between the other pair of contacts and the pair of dynamos or sources of high electro-motive force, respectively, a dependent pole changing transmitter consisting of a contact lever and two contact points with which said lever engages at or near its limit of movement, an electrical connection between two of said contacts and the terminals of the low electro-motive-force dynamos or sources, respectively, an electrical connection between the remaining one of the last named contacts and a contact point in said independent transmitter, and an electrical connection between a third

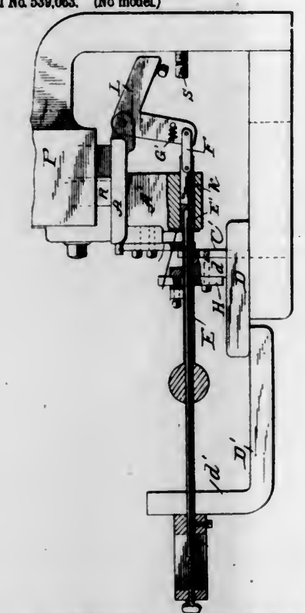
contact point in said independent transmitter, and the main line, the whole being so arranged that the operation of the pole changing transmitters reverses the polarity of the dynamos or sources of electricity of both pairs and the operation of the independent transmitter determines which pair of dynamos or sources of electricity shall be placed in connection with the main line, substantially as described.

541,995. SLEEPING-GARMENT. WHITLEY DENTON, Centreville, Mich. Filed Mar. 29, 1895. Serial No. 543,613. (No model.)



Claim.—A sleeping garment consisting of a gown extending from the neck to the feet of the wearer and having its lower portion provided with vertical slits forming a front and a rear flap, and a pocket for one of the feet secured on the inside of each flap near said slits as set forth and shown.

541,996. QUILL-CUTTER. WILLIAM R. FOX, Grand Rapids, Mich., assignor to the Fox Machine Company, same place. Filed Feb. 20, 1895. Serial No. 539,063. (No model.)



Claim.—1. In combination with the shear plates or cutters, a section or mandrel E', a mandrel E, meeting the same at the shearing point, said mandrels adapted to receive the tube to be cut, substantially as described.

2. In combination with shear plates or cutters, a section or mandrel E', a mandrel E meeting the same at the line of shear, said mandrels adapted to receive the tube to be cut and a plunger carrying said section E' and adapted to recede with said section to discharge the cut section of tube, substantially as described.

3. In combination with shear plates or cutters, a sectional mandrel for receiving the tube to be cut, the sections meeting at the line of shear, a plunger carrying one of said mandrels and means for operating said plunger automatically to allow of the discharge of the cut section, substantially as described.

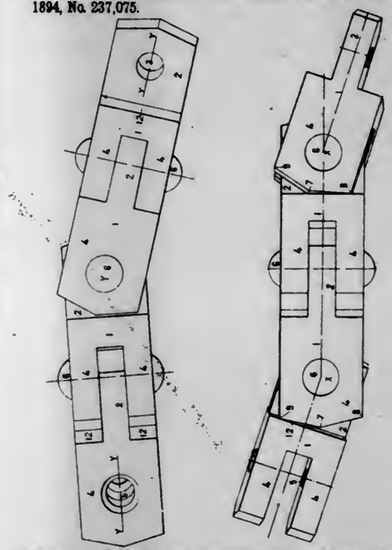
4. In combination with a lower shear plate or cutter, an upper shear plate, a movable support for the upper shear plate, a mandrel composed of two sections, the line of shear being the meeting point thereof one section being movable and carried by the support of the upper shear substantially as described.

5. In combination with the shears or cutters, a sectional mandrel, divided on the line of the shear a stop for the end of the tube to be cut and means for forcing both mandrel sections into position.

6. In combination with the shears or cutters, a sectional mandrel, divided on the line of the shear a stop for the end of the tube, beyond the line of shear and a pivoted yoke for forcing the mandrel into position, substantially as described.

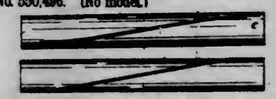
7. In combination with the shear plates, the abutment A', the plunger K, supported thereby the section E' secured thereto and the bell crank lever operating said plunger, substantially as described.

541,997. FLEXIBLE SHAFT FOR DRIVING MECHANISMS. CHARLES J. FRAVÉGA and ARMAND JANET, Toulon, France. Filed July 28, 1894. Serial No. 518,733. (No model.) Patented in France Mar. 20, 1894, No. 237,075.



Claim.—A flexible power-transmitting shaft composed of links hinged together with the hinge axes at different angles and said links provided with abutting or contact surfaces within the angles of flexure of said shaft, whereby the shaft has the degrees of flexure limited at the several hinges by the chain itself unrestrained by outside means such as non-rotating casings, substantially as described.

541,998. ELECTRIC-WIRE JOINT. ALFRED GARTNER, Newark, N. J., assignor to Charles H. McIntire, same place. Filed May 24, 1895. Serial No. 550,496. (No model.)



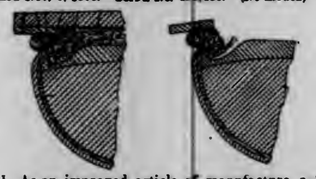
Claim.—1. A wire joint consisting of a tube, provided with a longitudinally and spirally arranged slot, said tube being adapted to be twisted with and around the inclosed wires, substantially as described.

2. A wire joint consisting of a tube, oblong in cross section and provided with a longitudinally and spirally arranged slot, said tube being adapted to be twisted with and around the inclosed wires, substantially as described.

3. A wire joint consisting of a tube, provided with a longitudinal slot extending to near the ends of the tube, the latter being adapted to be twisted with and around the inclosed wires, substantially as described.

4. A wire joint, oblong in cross section and provided with a spiral slot extending longitudinally to near the ends of the tube, the latter being adapted to be twisted with and around the inclosed wires, substantially as described.

541,999. CORK-SOLE SHOE. GEORGE H. GIFFORD, Brockton, Mass. Filed Nov. 9, 1893. Serial No. 490,410. (No model.)

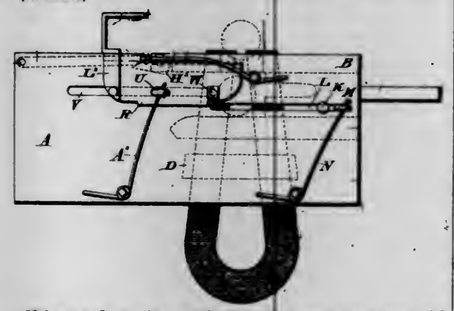


Claim.—1. As an improved article of manufacture, a boot or shoe having an insole, a welt, an interposed cork sole welt, and two inseams stitched in the same channel in the insole whereby the welt and cork sole welt are secured thereto, substantially as described.

2. The process of making cork sole boots or shoes consisting of stitching the finished cork sole welt to the lasted insole and upper, then stitching the welt through the cork sole welt to the lasted insole and upper, then stitching the outsole to the welt in the usual manner, substantially as described.

3. The process of making cork sole boots and shoes consisting of stitching the cork sole welt to a channel in the insole after the upper has been lasted thereto, then stitching the welt through the cork sole welt to the same channel in the insole, then stitching the outsole to the welt in the usual manner, substantially as described.

542,000. COIN-CONTROLLED VENDING APPARATUS. HENRY MATTES, Philadelphia, Pa. Filed June 13, 1894. Serial No. 514,414. (No model.)



Claim.—1. In a coin-controlled vending apparatus, a piece with guide ways thereon, a plunger movable between said guide ways, a traveler movable on said frame, a magnet supported on said frame, and a projecting pin on said traveler adapted to be engaged by a coin inserted between the same and the said plunger, a passage way between said pin and said magnet, said parts being combined substantially as described.

2. In a coin-controlled vending apparatus, a piece, a plunger with a forked end, a magnet supported on said piece, and a traveler having a projecting pin with a passage way between its head and the magnet, said parts being combined substantially as described.

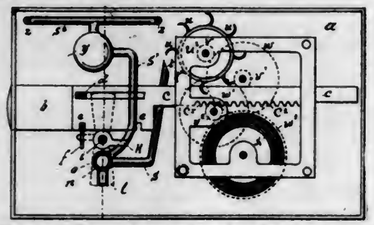
3. In a coin-controlled vending apparatus, a supporting piece, a plunger having a forked end guided thereon, a magnet on said piece, a traveler with a projecting pin adapted to be engaged by a coin inserted between the same and the said plunger, a rack on said traveler, a delivery device connected with the traveler, a pawl engaging said rack, and springs for resetting said plunger and traveler, said parts being combined substantially as described.

4. In a coin-controlled vending apparatus, a piece with slots therein, a plunger having a forked end and provided with an eye, a spring engaging said eye for re-setting said plunger, a magnet on said frame, a traveler having a rack and a projecting pin, the latter having a passage way for a metal blank between it and said magnet, and a detent device for said traveler released by engagement of the plunger therewith, said parts being combined substantially as described.

5. The side piece A, the strips B and C, the pusher G having an eye M and a spring N, a magnet suitably supported adjacent thereto, slot P, dog G', catch D', rack S having a pin T and eye U, and spring A', the above parts being combined substantially as described.

6. In a coin controlled apparatus, a traveler having a rack thereon, an arm for locking the same, a projection on said traveler, and a plunger, between which plunger and projection a coin is adapted to be inserted, in combination with a dog, the latter being adapted to be engaged by said plunger, and to also engage said arm, whereby the latter will be released from engagement with said rack, so that the traveler will be returned to its normal position, substantially as described.

542,001. LOCK. JOSEF MLOTKOWSKI, Pittsburg, Pa. Filed Nov. 24, 1894. Serial No. 529,861. (No model.)

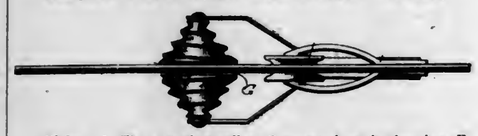


Claim.—1. The combination in a door lock having air tube S' connected with the reservoir, and discharge tubes *z z*, and tube S, operating in conjunction with the fan wheel and vanes, substantially as set forth.

2. In a door lock the combination of a bolt *b*, provided with a tail piece *c*, *c*, having a rack on its under side, meshing into a pinion, connected by intermediate gearing with the fan wheel w^2 and master wheel w^3, with a clock spring attached thereto, substantially as described.

3. The combination in a lock of the tubular key A, in combination with the air tubes leading to the fan wheel and reservoir *y*, substantially as set forth.

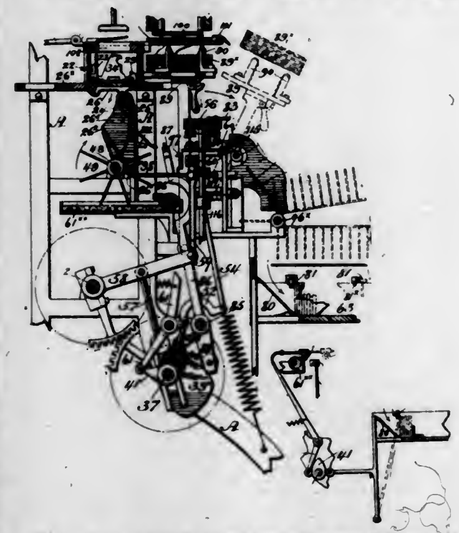
542,002. TROLLEY-RESTORING ATTACHMENT. WILLIAM D. MCDANIEL, Philadelphia, Pa., assignor of one-half to Luther S. Green, same place. Filed Oct. 29, 1894. Serial No. 527,267. (No model.)



Claim.—1. The restoring pulleys C mounted on the bearings E, independent of the bearings of a trolley wheel, and having a space at their inner ends, the diameters of said pulleys being greater than that of said wheel, and the parts combined substantially as described.

2. The arms E connected to the arm of a trolley wheel, the shaft D mounted on said arm E, and the spirally-grooved pulleys C on said shaft D, having an intervening space, said shaft D being in rear of said wheel, substantially as described.

542,003. MACHINE FOR MAKING AND GUMMING ENVELOPES. FRANCIS T. NICHOLSON, Philadelphia, Pa., assignor to Clarence Wolf, same place. Filed Mar. 5, 1892. Serial No. 423,853. (No model.)



Claim.—1. An organized machine for manufacturing flap-gummed envelopes, in combination with an organized machine for applying gum to the backs of the bodies of said envelopes, and a table between the two machines having an opening therein, said second named machine having a reel, a gripper, a table, said gripper being movable to and from said reel and table, an additional gummer and operative mechanism for applying gum to the bodies of envelopes, and an additional gripper for conveying the doubly-gummed envelope from the machine, the reel of the second named machine being below the opening in the intervening table of the two machines, substantially as described.

2. An enveloping-gumming machine having a reel, grippers, a table, and additional grippers aside of the latter, a gummer below said table, and a conveyer adjacent to the second named grippers, and means for opening and closing both sets of grippers and reciprocating the same, the first named grippers being movable between said reel and table, and the second named grippers being movable between said table and conveyer, said parts being combined substantially as described.

3. An organized machine for manufacturing flap-gummed envelopes, in combination with grippers, a table, a gummer, additional grippers and a conveyer, means for operating said grippers, gummer and conveyer, and a reel intermediate of the discharging portion of said machine and the first named grippers, the first named grippers being movable between said reel and table, and the second named grippers being movable between said table and conveyer, substantially as described.

4. The grippers 87 consisting of stationary and movable jaws, a spring bearing against the movable jaw for closing the same, a shouldered arm connected with the movable jaw and adapted to engage with the stationary jaw, an oscillating support carrying said jaws, and a pin connected with the movable jaw and projecting beyond the stationary jaw, in combination with an inclined finger with which said arm is adapted to engage, and a movable rod having a lip which is adapted to engage said pin, said finger being secured to the frame and said rod being guided on the frame, substantially as described.

5. The grippers 87 formed of stationary and movable jaws, with means for closing the movable jaw in combination with a pin which is pivoted to the movable jaw and projects freely through an opening in the stationary jaw, and a lip which is adapted to engage said pin and is carried by a reciprocating rod, substantially as described.

6. The rising and falling cross head 56, the rod 116 carrying said head and means for operating said rod, in combination with the gripper 87, the movable arm of which is provided with the tail 118, said rod being provided with the roller 117 for engagement with said tail, substantially as described.

7. The rising and falling cross head 56 having a spring-pressed button 84 depending therefrom, and a lip 83 projecting laterally therefrom, in combination with the envelope holding table 115 below said button and lip, and grippers, the movable jaw of the latter being provided with a pin 114 which rises from the same, and is adapted to be engaged by said lip, said parts being combined substantially as described.

8. The table 115 and the rising and falling cross head 56 having lips 83 thereon, in combination with the grippers 87 means for reciprocating the latter and pins 114 connected with the movable jaws thereof, said pins being adapted to be engaged by said lips in order to open said jaws, substantially as described.

9. The oscillating gripper 69 formed of the jaw 119 with the tail 122 continuous thereof, the plate $68^{\times}$ on which said jaw is mounted, the rock shaft 68 carrying said gripper, means for operating said shaft, and pins 120 and 123 on the frame, said plate $68^{\times}$ having an opening to receive the axial end of said jaw 119, the tail 122 and said jaw 119 being on opposite sides of said plate, substantially as described.

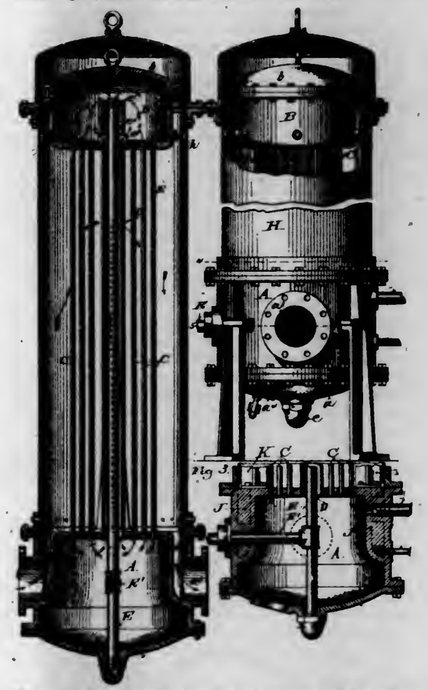
10. The gripper 69 consisting of the jaw 119 with the tail 122, the plate $68^{\times}$ intermediate of said jaw and tail, the rock shaft 68 with which said plate is secured, a spring on said rock shaft bearing against the back of said jaw, and pins on the frame with which said jaw and tail may contact, said parts being combined substantially as described.

11. The pins 120 and 123, in combination with a gripper formed of a jaw with a tail, a plate which supports said jaw, means for oscillating said plate, and a spring connected with the support of said plate, and bearing against the back of the jaw, the plate having an opening for the pivotal portion of the jaw and reception of said spring, the jaw and its tail being on opposite sides of said plate, and said parts being combined substantially as described.

12. An envelope machine having a reel 49, plates 26^3 on opposite sides of said reel, the separated guides 26' and 26^2 on the sides of said plates, and the rests 26^4 at the bottom thereof, said parts being combined substantially as described.

13. An envelope machine having a reel 49, plates 26^3 on opposite sides of said reel, the separated guides 26' and 26^2 on the sides of said plates, and the rests 26^4 at the bottom thereof, in combination with the gate 26 above said guides 26' and 26^2 and the gripper 87 aside of the reel, substantially as described.

542,004. FEED-WATER HEATER. BRUNO V. NORDBERG, Milwaukee, Wis., assignor to the Bruno Nordberg Company, same place. Filed Aug. 23, 1893. Serial No. 443,889. (No model.)



Claim.—1. In a water heater, the combination of a base having steam and water inlet and outlet connections and a jacket detachably secured to said base independent of all the external steam and water connections of the heater and removable therefrom without disturbing said connections, substantially as and for the purposes set forth.

2. In a water heater, the combination of a hollow base provided with steam inlet and outlet connections, a hollow head, tubes connecting said head with the base, water supply and discharge connections passing through the base and communicating, one with the water chamber therein and the other with the chamber in said hollow head, and a steam jacket surrounding said tubes, independent of all external steam and water connections of the heater, substantially as and for the purposes set forth.

3. In a water heater the combination of upper and lower chambers and tube heads, tubes connecting said heads and chambers and a return pipe passing through and secured on opposite sides of the upper and lower heads, substantially as and for the purposes set forth.

4. In a water heater the combination of a base having a water chamber and a steam space or belt around it with inlet and outlet connections, an upper head and chamber, tubes connecting said upper head and chamber with the chamber in the base, a jacket surrounding said tubes, and removable independently of all external connections of the heater and partitions in said steam belt and the space above it between the inlet and outlet steam connections, substantially as and for the purposes set forth.

5. In a water heater, the combination of a base having an inner water chamber and a steam space around it, said steam space having inlet and outlet connections on opposite sides and intermediate partitions, an upper tube head and chamber connected by tubes with the water chamber in the base, a supply pipe leading into the chamber in the base an outlet pipe leading from the upper part of the upper chamber out through the base, and a removable steam jacket surrounding said tubes independent of all external steam and water inlet and outlet connections of the heater substantially as and for the purposes set forth.

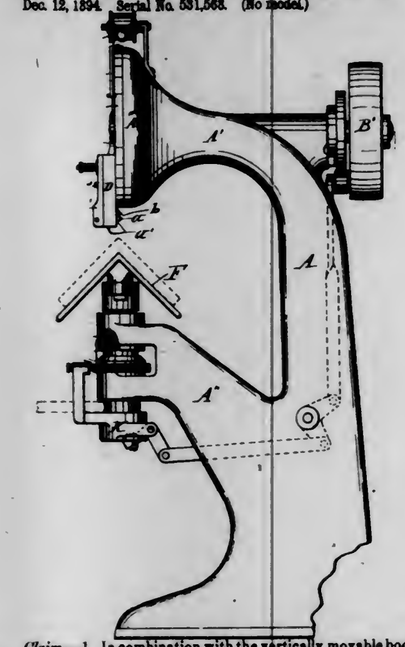
6. In a water heater, the combination of a base having an inner water chamber provided with a removable bottom and an annular steam belt around said chamber provided on opposite sides with inlet and outlet connections and intermediate partitions, an upper chamber connected by tubes with the chamber in the base and provided with a removable cover, a water supply or inlet pipe leading into the chamber in the base, a water outlet pipe leading from the upper part of the upper chamber through the lower chamber and secured

on the upper side of the upper tube head and on the under side of the bottom of the lower chamber and a branch pipe connected with said outlet pipe and leading laterally out through the base of the heater, substantially as and for the purposes set forth.

7. In a water heater, the combination of upper and lower tube heads and chambers, tubes connecting said chambers, an annular steam space or belt around the lower chamber provided on opposite sides with inlet and outlet openings, a steam jacket inclosing the upper chamber and communicating at the base with said annular steam belt, a water inlet or supply pipe leading into the lower chamber and a return outlet pipe leading out of the upper portion of the upper chamber through a larger tube into the lower chamber and out through the base of the heater, substantially as and for the purposes set forth.

8. In a water heater, the combination of the base having a chamber with a removable bottom, and a steam space or belt around said chambes provided on opposite sides with inlet and outlet openings and with intermediate partitions, an upper chamber provided with a removable cover, tubes connecting said chambers, a pipe passing through the central tube and the lower chamber and secured at its ends by nuts on the under side of the base and on the upper side of the upper tube head, a branch pipe connected with said pipe in the lower chamber and leading laterally out through the base, a water inlet or supply pipe leading into the upper part of the chamber in the base, and a steam jacket inclosing said tubes and the upper chamber and detachably secured to the base independently of the steam and water connections therewith, substantially as and for the purposes set forth.

542,005. WIRE-STITCHING MACHINE. WILLIAM A. PHILPOTT, Jr., Niagara Falls, N. Y., and THOMAS A. BRIGGS, Niagara, Canada. Filed Dec. 12, 1894. Serial No. 531,563. (No model.)



Claim.—1. In combination with the vertically movable book-supporting table, screw and nut for raising and lowering the same, anvil, staple-former and staple-driver over said table, wire-feeding mechanism, and a wire-cutter supported movably toward and from said anvil, a feed-regulating device controlling the feed mechanism, a graduated scale indicating the elevation of the aforesaid table, and a corresponding scale indicating the effective position of the aforesaid feed-regulating device as and for the purpose set forth.

2. In combination with the anvil, staple-former, staple-driver and their actuating wheel, wire-feeding rollers, a wire-cutter connected to a carrier sustained movably toward and from said anvil, a loosely mounted gear wheel receiving motion from the aforesaid actuating wheel, a ratchet-wheel fastened to the axis of one of the feeding-rollers, a pawl connected to the aforesaid gear-wheel, a stationary shield covering a portion of the periphery of the ratchet-wheel, a revoluble shield concentric to the ratchet-wheel, a lever secured to the axis of the revoluble shield to adjust the same to cover a greater or less number of ratchet-teeth, and a rod connecting said lever with the cutter-carrier to adjust the latter simultaneously with the aforesaid shield.

3. In combination with the anvil, staple-former, staple-driver and actuating wheel of said driver, wire-feeding rollers geared to rotate in unison, a ratchet-wheel fastened to the axis of one of said rollers, a shaft extending longitudinally through said roller-shaft and revoluble independently thereof, a rotary gear-wheel mounted loosely on said shaft, a pawl on said gear-wheel, a stationary shield covering a part of the periphery of the ratchet-wheel, a shield fastened to the aforesaid internal shaft and extending across a portion of the periphery of the ratchet-wheel, a lever fixed to the latter shaft, a graduated scale traversed by said lever and provided with locking devices for retaining the lever, a toothed segment turning with the lever, a cutter-carrier movable toward and from the anvil, and a rod connected at one end to the cutter-carrier and provided at the opposite end with a rack engaging the segment as set forth.

4. The combination with the face plate and feed-roller and guide-rollers pivoted to said plate, a supplemental plate connected to the edge of said face-plate adjustably toward and from the same, a co-operating feed-roller pivoted to the supplemental plate, a bracket mounted on the latter adjustably toward and from the aforesaid guide-rollers, and co-operating guide-rollers pivoted to said bracket as set forth.

5. In combination with the face-plate —A'''— wire-cutter —s— and wheel —B— respectively in front and rear of said plate and the wire-feeding mechanism, staple-former and staple-driver all actuated by said wheel, the cam —w— on the aforesaid wheel, and the tumbler —v— pivoted in the face-plate and provided with the lug —v'— in the path of the aforesaid cam and with the finger —v''— for depressing the cutter all combined to definitely operate in unison as set forth.

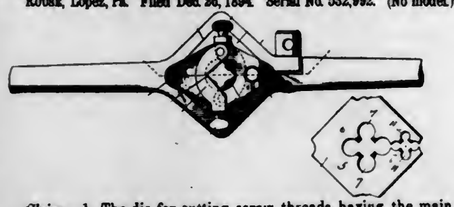
6. In combination with the face-plate and a rotary wheel, a cam fixed to said wheel, a carrier secured to the exterior of said face-plate, a wire-guide extending through the lower portion of the carrier, a stationary cutter in one end of said guide, a vertically movable plunger carried on the carrier, a cutter attached to said plunger, a spring sustaining the plunger in its elevated position, and a tumbler pivoted in the face-plate and provided at its inner end with a lug in the path of the aforesaid cam, and a finger projecting from the outer end of the tumbler and depressing the plunger by force derived from the engagement of the lug with the cam as set forth.

7. In combination with the book-supporting table, staple-former staple-driver and anvil swinging in a plane at right angles to the movement of said former and driver, vertically yielding stops connected to the staple-former and projecting normally beneath the same immediately back of the staple-guide of the driver to arrest at said guide the wire-blank thrust thereto by the swinging anvil as set forth.

8. In combination with the wire-feeding mechanism, wire-cutter, staple-former and staple-driver, a yielding detent in the path of the end of the wire to hold the opposite end of the severed wire-blank against the side of the cutter and in its central position in relation to the former and driver as set forth.

9. In combination with the staple-former and staple-driver, the case —D—, hanger —a''— pivoted to said case, anvil —a— formed on the lower end of said hanger, the arm —a''— hinged to the top of the case, the staple-supporter —a'— pivoted to the lower end of said arm, the springs —b''— —b'''— forcing respectively said staple-supporter and aforesaid arm toward the case, and the set-screw —c''— attached to said arm and passing through the case to push the anvil to a position to carry the wire-blank under the staple-former and driver as set forth.

542,006. DIE FOR CUTTING SCREW-THREADS. MICHAEL ROUSE, Lopez, Pa. Filed Dec. 26, 1894. Serial No. 532,992. (No model.)



Claim.—1. The die for cutting screw threads having the main thread cutter portion formed in the central portion of the die, and the auxiliary thread cutter portion formed in one corner of the die, the thread cutters of both portions extending from the top to the base of the die, the corner where the auxiliary cutter is located being split and formed with diverging sides and the opposite corner formed of spring metal to normally expand the die and having a recess at opposite corners adapted to receive the shanks of a guide, substantially as and for the purposes described.

2. In a die for cutting screw threads having the main thread cutter portion, and the auxiliary thread cutter portion of smaller diameter than the main cutter portion, the corner of the die where the auxiliary thread cutter portion is located being split and the opposite corner formed of spring metal whereby the die will normally stand expanded and admit of compression to regulate the gage of the cutter, and a screw fitted to the auxiliary cutter to close the same and limit the gage of the main cutter, substantially as and for the purposes described.

3. The combination with the die and the die stock, of the guide having its shanks lying between the die and the die stock and secured in place by means that clamps the die in place, substantially as and for the purposes described.

4. The combination with the die and the die stock, of the guide extending below the stock, swinging jaws pivoted opposite to each other on the guide, and means for securing said jaws, substantially as and for the purposes described.

5. The combination with the die stock and the guide, of the die having recesses formed at opposite corners to receive the shanks of the guide, one of said recesses having diverging or flaring sides at a split corner of the die, substantially as and for the purposes described.

542,007. WEATHER-STRIP FOR DOORS. HOLCOMBE RUDEBOOK, Newark, N. J. Filed Aug. 17, 1894. Serial No. 520,568. (No model.)



Claim.—1. In a weather strip for doors, the combination, of a strip, as *b*, adapted to be arranged along the lower edge and outside face of the door, a casing, as *c*, connected with the door, an arm or lever pivotally arranged in said casing, having a stop thereon, a spring-actuated holding plate adapted to engage with said stop, to bring the free end of said arm in lifting contact with said strip and to hold the same in its raised position when the door is opened, and mechanism connected with said pivoted arm for causing its disengagement from said spring-actuated holding plate and hence from its lifting contact with said strip, consisting essentially of a cam-shaped disk *g*, a trip post in said casing adapted to engage with said disk, and an incline on the saddle for the door, on which said post rides, while the door is being closed, substantially as and for the purposes set forth.

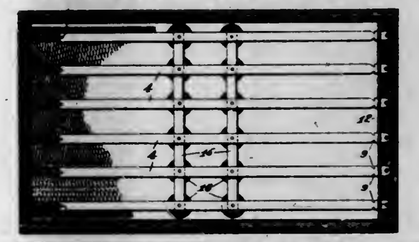
2. In a weather strip for doors, in combination, a casing, arranged in the lower portion and outside face of the door, a pin *f* in said casing, an arm *e* on said pin, provided with a stop *e'* and a lifting portion e^3, a pivotally arranged strip *b* on the bottom of the door with which said portion e^3 is adapted to engage to lift said strip, a spring-actuated stop-plate *h* adapted to engage with said stop *e'* on the arm *e* to hold it in its raised position, and mechanism connected with said arm *e* for causing its disengagement from said spring-actuated holding plate and hence from its lifting contact with said strip *b*, substantially as and for the purposes set forth.

3. In a weather strip for doors, in combination, a casing, arranged in the lower part and outside face of the door, a pin *f* in said casing, an arm *e* on said pin, provided with a stop *e'* and a lifting portion e^3, a pivotally arranged strip *b* on the bottom of the door with which said portion e^3 is adapted to be engaged to lift said strip, a spring-actuated stop-plate *h* adapted to engage with said stop *e'* on the arm *e* to hold it in its raised position, and mechanism connected with said arm *e* for causing its disengagement from said spring-actuated holding plate and hence from its lifting contact with said strip *b*, consisting essentially of a cam shaped disk *g*, a trip post in said casing adapted to engage with said disk, and an incline on the saddle for the door, on which said trip post rides while the door is being closed, substantially as and for the purposes set forth.

542,008. SPRING-BED. HENRY A. BACON and WILLIAM S. DUVALL, Washington, D. C., assignors to E. B. Stumph and C. H. Stumph, same place. Filed Dec. 15, 1894. Serial No. 531,935. (No model.)

Claim.—1. The combination with the rectangular bed-frame, its bottom arranged thereover, the transverse strip secured to the end-bar at one end of the frame and having its inner edge depressed to form a flange and provided with a series of T-shaped slots or openings, of a series of longitudinal slats connected at one end to the opposite end-bar of the frame, and at their opposite ends provided with opposite notched or shouldered edges adapted to engage with the T-shaped slots, and springs interposed between the slats and bottom, substantially as specified.

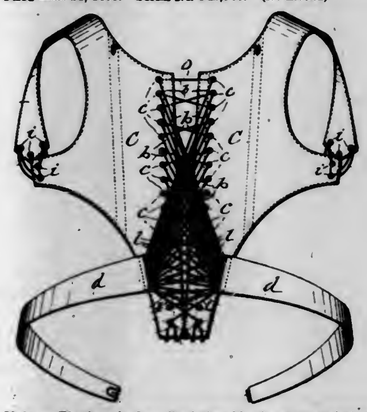
2. The combination with the rectangular bed frame and its bottom arranged thereover, of the transverse metal strap, secured to one of the end bars of the bed frame, and having a depending edge, provided with openings, each of which has a reduced portion and a series of longitudinal slats adapted to pass through the openings and to take into and removably engage with the edges of the reduced portions of said openings, substantially as specified.



3. The combination with the rectangular bed-frame, the bed-bottom thereon, the flanged strip having T-shaped openings, of the longitudinal slats having one of their corresponding ends perforated, depressed, tapered, and provided at their opposite edges with a plurality of pairs of V-shaped notches forming shoulders for engaging the T-shaped slots, the helical springs connected to the opposite ends of the slats and to the end-bar of the frame, the intermediate transverse slats connecting the longitudinal slats, and the coiled-springs interposed between the slats and the bed-bottom, substantially as specified.

4. The combination with the rectangular bed-frame, its bottom arranged thereon, and the depressed metal strip secured to the under side of one of the end-bars and provided with T-shaped slots, of the series of longitudinal slats connected yieldingly at one of their ends to one of the end-bars and at their opposite ends at their side edges provided with a plurality of pairs of V-shaped notches adapted to engage removably with the T-shaped slots, and springs interposed between the slats and the bed-bottom, substantially as specified.

542,009. SHOULDER-BRACE. FRANCES J. BIRNEY, Syracuse, N. Y. Filed Mar. 21, 1895. Serial No. 542,570. (No model.)

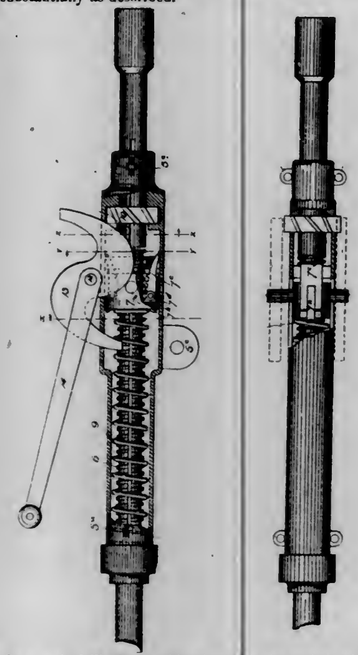


Claim.—The herein described shoulder brace, consisting of back stays provided with shoulder straps and having a series of eyelets at their adjacent edges, the lower ends of said stays being unyieldingly attached to each other; waist-bands located substantially opposite said lower ends of the stays; and the continuous lacing cord, the respective ends of which pass through successive separate pairs of eyelets alternately at opposite sides of the opening between the edges of said stays and are drawn out to form a prolonged loop between each pair of eyelets, said loops crossing said opening between the stays and being secured to said waist-band; substantially as described and for the purposes specified.

542,010. ROCK-DRILL. THERON W. CHAPMAN, Lakewood, Colo. Filed Aug. 27, 1894. Serial No. 521,362. (No model.)

Claim.—1. In a rock drill, the combination with the casing, of a longitudinally movable screw-threaded shaft 6 mounted on the casing and carrying a drill bit, a rotatable shaft 12 journaled in the casing and carrying cams, a keeper comprising a collar surrounding the shaft 6, and spring-actuated dogs or grippers pivoted on the collar

and threaded to engage the screw threads of the shaft whereby the keeper and shaft are normally locked together, the collar of the keeper having lateral projections lying in the path of the cam on shaft 12, stops located on the casing and adapted to engage the dogs and unlock the keeper while the shaft is making the forward movement, substantially as described.



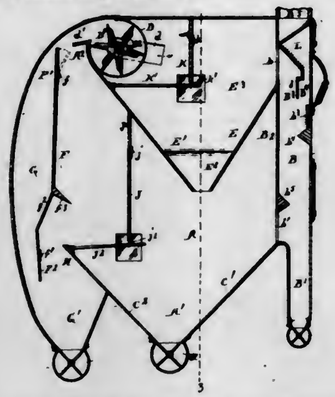
2. In a rock drill, the combination with the casing, of the longitudinally movable shaft 6 supported on the casing, a rotatable shaft 12 journaled in the casing and carrying an S-shaped cam, the keeper normally locked on the shaft and carrying a projection lying in the path of the cam, a collar surrounding the shaft and locked from longitudinal movement on the casing, the shaft and collar being connected by a spline on one part engaging a groove in the other part, the collar being provided with exterior projections all lying successively in the path of the cam, the casing being shaped to engage and unlock the keeper during the forward movement of the shaft 6, substantially as described.

3. In a rock drill, the combination with the casing, of a longitudinally movable screw threaded shaft 6 supported on the casing, the notched spring-actuated grippers engaging said shaft, a rotatable shaft 12 journaled in the casing and carrying a cam, a collar surrounding the shaft 6 and locked from longitudinal movement on the casing, the shaft 6 and the collar being connected by a spline on one part engaging a groove on the other part, the collar being provided with exterior projections all lying successively in the path of the cam, whereby as the shaft 12 is rotated, the partial rotation between strokes is imparted to the drill shaft 6, substantially as described.

542,011. PURIFIER, SEPARATOR, AND GRADER. DAVID J. DAVIDSON, Port Huron, Mich., assignor to the Davidson, Martin Manufacturing Company, same place. Filed Oct. 16, 1894. Serial No. 526,101. (No model.)

Claim.—1. A purifier, separator, and grader, provided with separating chambers A and E^3 located the one above the other, a partition F in one side of said chamber A, with adjustable diaphragms F^1 and F^2 at either end thereof adapted to control the air passing around said partition; a fan casing located in the chamber E^3 and communicating therewith and also communicating with the chambers A and G, and a vertical trunk communicating toward its base with the chamber A and toward its upper end with the chamber E^3, and a fan within said casing, substantially as set forth.

2. A purifier, separator and grader, provided with separating chambers A and E^3 located the one above the other, a settling chamber G communicating toward its lower end with the chamber A, a vertical partition F separating said chamber G from said chamber A, with adjustable diaphragms F^1 and F^2 at the top and bottom of said vertical partition; a fan casing located in the chamber E^3 and communicating therewith and communicating with the chambers A and G, and a vertical trunk communicating toward its base with the chamber A and toward its upper end with the chamber E^3, and a fan within said fan casing, and dependent diaphragms in the chambers A and E^3, substantially as set forth.



3. In a purifier, separator and grader, the combination of a casing forming a separating chamber, a partition F forming a settling chamber G communicating toward its base with said separating chamber, a fan discharging into said separating chamber and into said settling chamber, a vertical trunk communicating with said separating chamber and with the fan casing, said partition F provided at its upper and lower ends with adjustable diaphragms, substantially as set forth.

4. In a purifier, separator, and grader, the combination of separating chambers A, E^3, a vertical trunk having openings *b*, *b'* on the same side thereof communicating respectively with said chambers, a feeding device at the top of said vertical trunk, a vertical partition F, with adjustable diaphragms at each end thereof; settling chamber G separated by said partition from the chamber A, a fan having its casing communicating with the chambers E^3, A, G, and a sloping and a vertical scattering plate located in said vertical trunk, substantially as set forth.

542,012. PIPE-WRENCH. CHARLES I. DUNHAM, Centreview, Ohio, assignor of one-half to Cochran C. Stover, same place. Filed Apr. 19, 1895. Serial No. 546,438. (No model.)



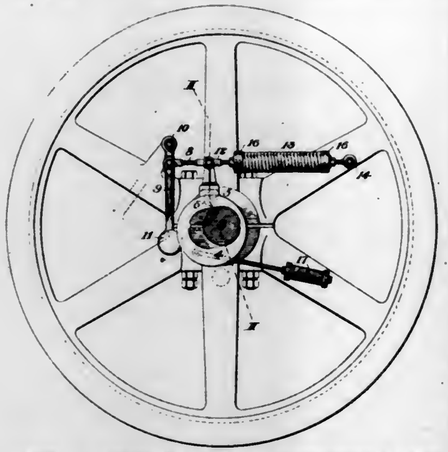
Claim.—1. A pipe tongs of the class described, having the jaw provided with the block-die or plate secured in position by a spring-actuated retaining-pin seated in the jaw and engaging the die, substantially as and for the purpose set forth.

2. A pipe tongs of the class described, having the jaw provided with projecting lugs or arms overhanging the die seat, the removable block-die or plate set in said seat under the projecting lugs or arms and provided with the opening or perforation, and a spring-actuated retaining-pin seated in an opening in the jaw and projecting upwardly therefrom and having its top end engaging the opening in the die, substantially as and for the purpose set forth.

3. A pipe tongs of the class described, having the jaw provided with the inwardly-projecting flanges or ears at the sides of the die-seat, said flanges or ears having the lugs or arms projecting over the die-seat, the block-die or plate set in its seat between the projecting side flanges or ears and under the arms or lugs thereon and having the opening or perforation, the retaining-pin seated in the opening or perforation in the jaw and projecting therefrom into engagement with the opening in the die, and the actuating spring housed in the opening in the jaw, substantially as and for the purpose set forth.

4. A pipe tongs of the class described, having the jaw provided with the die-seat and with the projecting lugs or arms overhanging the die-seat, the jaw being provided at the die-seat with an opening or perforation having an interior annular shoulder, the block-die or plate adapted to be set in the die-seat under the overhanging lugs or arms and provided with the opening or perforation, the retaining pin seated in the opening in the jaw and having its top end projecting threreform and engaging the opening in the die, said pin being provided with a circumferential flange or shoulder, and a coiled-spring mounted upon said retaining pin, substantially as and for the purpose set forth.

542,013. GOVERNOR. FREDERICK F. FISCHER, Pittsburg, Pa. Filed Oct. 11, 1892. Renewed Dec. 5, 1894. Serial No. 530,929. (No model.)



Claim.—1. In a contrifugal governor, the combination of a wheel or case, a valve eccentric pivoted to the wheel and fitting over the crank-shaft, a single weighted lever pivoted to the wheel, a link connecting lever to an extension of the eccentric outside its pivot, and a spring arranged to oppose the movement of the lever.

2. In a centrifugal governor, the combination of a wheel or case, a valve eccentric pivoted to the case and fitting over the crank-shaft, said eccentric having a projecting arm on its pivotal side, a weighted lever pivoted to the wheel, and a link connecting the eccentric arm to the lever; substantially as and for the purposes described.

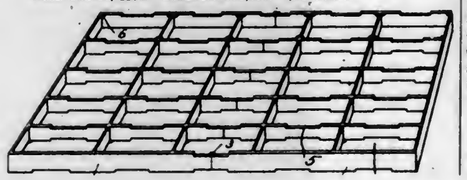
3. In a centrifugal governor, the combination of a wheel or case, a valve eccentric pivoted to the wheel and fitting over the crank-shaft, and having a projecting arm on its pivotal side, a weighted lever pivoted to the wheel, a link connecting the eccentric arm to the lever and a spring extending from the eccentric in the opposite direction to that of the link; substantially as and for the purposes described.

4. In a centrifugal governor, the combination of a wheel or case, a valve eccentric fitting over the crank-shaft, and having a projecting arm, a weighted lever pivoted to the wheel, a link connecting the eccentric arm to the lever, and a spring pivotally connected to the eccentric-arm and extending in the opposite direction to the link; substantially as and for the purposes described.

5. In a centrifugal governor, the combination of a wheel or case, a valve eccentric fitting over the crank-shaft, and having a projecting arm, a weighted lever pivoted to the wheel, a link connecting the eccentric arm to the lever, a spring connected to the eccentric arm and extending in the opposite direction to the link, and a dash-pot connected to the opposite side of the eccentric; substantially as and for the purposes described.

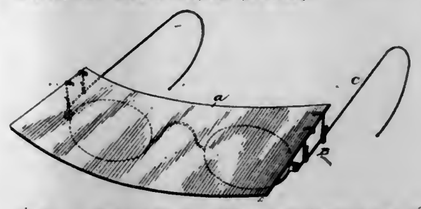
6. In a centrifugal governor, the combination of a wheel or case, a valve eccentric fitting over the crank-shaft and having a projecting arm, a weighted lever pivoted to the wheel, a link connecting the eccentric arm to the lever, and a spring connected to the eccentric arm and extending in the opposite direction to the link, said spring being pivoted to the wheel at its outer end; substantially as and for the purposes described.

542,014. CHECK-CASE. EDWARD A. GLAESER, Hamilton, Ohio. Filed Dec. 14, 1894. Serial No. 531,753. (No model.)



Claim.—In a check-case, the combination, substantially as set forth, of a pair of half cases hinged to fold together and having compartments divided by partitions and open above and below.

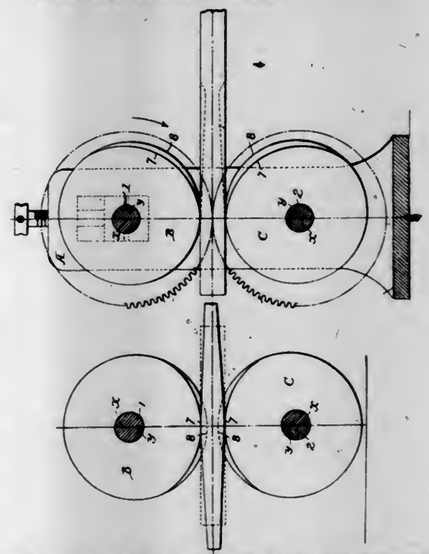
542,015. EYE-SHADE. ISADORE GOODMAN, Scranton, Pa. Filed Feb. 25, 1895. Serial No. 539,569. (No model.)



Claim.—1. The combination with a spectacle frame, of a shade composed of a sheet of suitable material of a length not less than the width of the frame, having its rear edge concave to fit the forehead of the wearer, and provided adjacent to each end with a double catch, one part being in front of the other, and each adapted to engage with the adjacent bow of the spectacle frame, so as to hold the shade in position independently of any other support, substantially as described.

2. The combination with a spectacle frame having bows C, of an eye shade composed of a sheet A of thin stiff material, having a concave rear edge *a* and in length not less than the space between the bows C, and provided near each end with catches B, each composed of a piece of wire having its middle portion *b* lying flat against the shade, and its legs *b'* passed through and bent to engage with the shade, their depending ends being bent up to form hooks b^3, one in front of the other, to engage with the bows C, substantially as described.

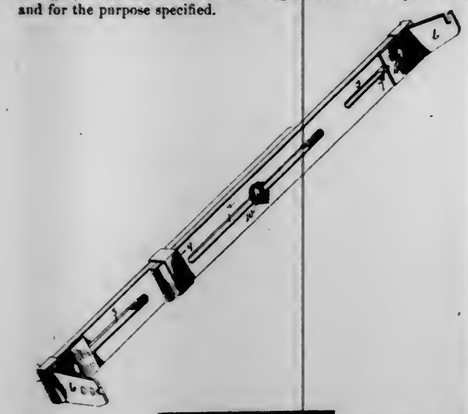
542,016. MILL FOR ROLLING METAL. ORLANDO C. HALL, Auburn, N. Y., assignor to Charles L. Sheldon, same place. Filed June 13, 1892. Serial No. 436,556. (No model.)
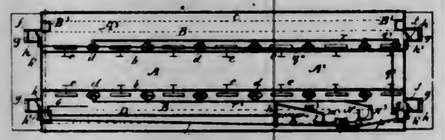


Claim.—In a mill for rolling bars that are spread or widened in one direction and reduced in thickness in the other direction toward the center, the combination of the two roll dies each having two eccentric die faces, as described, one pair of die faces formed to approach as the centers thereof are brought to the vertical plane of the axis of the rolls, and the other pair being formed to approach as their centers are carried to either side from said plane, said dies being open at and extending to the side of the roll for the introduction of the bar or blank, as set forth.

542,017. BRACKET FOR CURTAIN-ROLLERS. EDWARD C. HEIKES, Mechanicsburg, Pa. Filed Mar. 25, 1895. Serial No. 543,067. (No model.)

Claim.—A bracket support for window shades formed in duplicate sections, with end sockets and longitudinal slots to receive a securing bolt to attach the sections in combination with a loop slidable on the support, brackets provided with a base having inturned lugs riding in the slots and bolts for holding the brackets in position, as and for the purpose specified.



542,018. CAR-VENTILATING APPARATUS. CHARLES F. HIBT, Erie, Pa. Filed Nov. 2, 1894. Serial No. 527,739. (No model.)



Claim.—1. In combination with the body of a car having air chambers in its top and flues in the ends of said chambers, valves *h* in said flues, a series of wires D, pivoted levers uniting them, a spring retaining said wires under tension, and rods and levers uniting them with the valves *h* substantially as described.

2. The combination of the body of a car having an air chamber in its top and flues in the ends of said chamber, valves *g* and *h* in said flues, a series of wires D, pivoted levers uniting them, a spring retaining said wires under tension and rods and levers uniting them to the valves *h* substantially as described.

3. The combination of the body of a car having air chambers in its top and flues in the ends of said chambers, valves *h* in said flues, air registers in the side walls of said chambers, a series of wires D, pivoted levers uniting them, a spring retaining said wires under tension and rods and levers uniting said wires D with the valves *h* and with the air registers substantially as described.

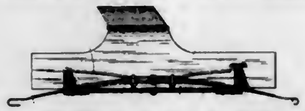
4. The combination of the body of a car having air chambers in its top, vertical flues B^3 from the ends of said chambers horizontal flues A^2 under the floor of the car and receiving the lower ends of the flues B^3, air flues *f* in the ends of the air chambers, valves *h* in said air flues *f*, a series of wires D in the air chamber, pivoted levers uniting said wires, a spring retaining said wires under tension, and rods and levers uniting the wires D with the valves *h* substantially as described.

5. The combination of the body of a car having air chambers in its top and flues in the ends of said chambers, valves *h* in said flues, a series of wires D, pivoted levers uniting them, a spring retaining said wires under tension, a pivoted lever *k* connected with the terminal wire of the series and with said spring, said lever being connected with one of said valves *h* substantially as described.

6. The combination of the body of a car having air chambers in its top and flues in the ends of said chambers, valves *h* in said flues, a series of wires D connected together, a spring retaining said wires under tension, a pivoted lever *k* connected with the terminal wire of the series and with said spring, a pipe leading air under pressure from the "train service pipe" into an air cylinder M, a cock upon said pipe, a connecting rod uniting the handle of said cock with the lever *k*, the piston and piston rod of said cylinder, and means for connecting said pison rod with the valves *h* substantially as described.

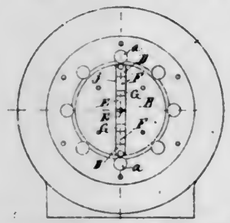
542,019. SIDE-SPRING VEHICLE. JOHIEL JACKSON, Columbus, Wis. Filed May 25, 1894. Serial No. 512,419. (No model.)

Claim.—1. The combination, of a vehicle body, springs arranged longitudinally of the outer sides of the vehicle body for the greater portion of the length of the body, said springs having leaves arranged above the lower edges of the sides of said body, and diagonal straps arranged beneath the vehicle body and intersecting each other centrally, and adapted to support the vehicle body, opposite ends of the respective straps, upon opposite sides of the body, being near the front and rear of said body, said ends formed or provided with upwardly turned portions adjacent to the outer sides of and forming seats for the vehicle body, the extremities of said upwardly-turned portions being connected to the ends of the leaves of the springs which lie above the lower edges of the sides of the body, substantially as set forth.



2. The combination, of a vehicle body, springs arranged longitudinally of the outer sides of the vehicle body, said springs having leaves which diverge from each other, the opposite ends of the lower sections of the divergent springs adapted to be secured to the hind axle and the front bolster, respectively, diagonal straps intersecting each other beneath the vehicle body, and connecting devices secured to the ends of the diagonal straps, and extending laterally beyond the sides of the vehicle body, each connecting device consisting of a lower inwardly-extending horizontal part connected to the end of a strap, a central member extending for a distance vertically of the outer side of the body, and an upper outwardly-extending horizontal member secured to the end of the upper section of a divergent spring, substantially as set forth.

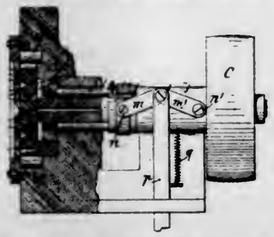
542,020. SWAGING-MACHINE. ANTOINE J. LANGELIER, Providence, R. I. Filed Oct. 13, 1894. Serial No. 525,827. (No model.)



Claim.—1. In a swaging machine, the combination of the beaters, the swaging dies, and the engaging die-blocks, with the angularly adjustable blocks, and means for changing the direction of the axes of the adjustable blocks while the machine is in operation, substantially as described.

2. In a swaging machine, the combination of the stationary head, and the beating rollers, with the rotary spindle provided with the engaging die-blocks, the swaging dies, the angularly adjustable blocks, the slidable shoes, and means for changing the direction of the axes of the adjustable blocks, while the machine is in operation, substantially as described.

542,021. SWAGING-MACHINE. ANTOINE J. LANGELIER, Providence, R. I. Filed Jan. 21, 1895. Serial No. 535,699. (No model.)



Claim.—1. In a swaging machine, the combination of the rotating head, the beaters, the swaging dies, and the engaging blocks, with the intermediate toggle-links, and means for changing the angle of the toggle-links while the machine is in operation, substantially as described.

2. In a swaging machine, the combination of the rotating head, the beaters, the swaging dies, and the engaging blocks, with the intermediate toggle-links, and the slidable heads for changing the angle of the toggle-links, while the machine is in operation, substantially as described.

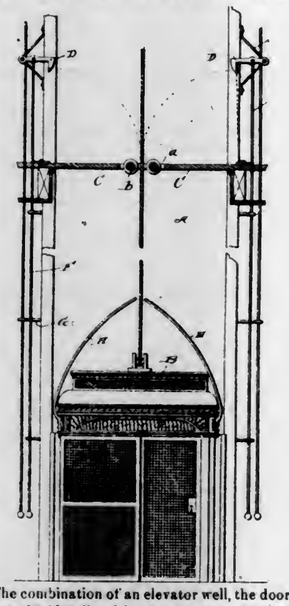
3. In a swaging machine, the combination of the rotating head, the beaters, the swaging dies, and the engaging-blocks with the toggle-links, provided at their central joints with the cylindrical pin, and the washers which engage with the sides of the toggle-links, substantially as described.

542,022. PROCESS OF DYEING. EDUARD LAUBER, Torre-Pellice, and LUIGI CARERTI, Messina, Italy, assignors to the Farbenfabriken, vormals Fr. Bayer & Co., Elberfeld, Germany. Filed Apr. 5, 1895. Serial No. 544,672. (No specimens.) Patented in Germany June 9, 1884, No. 79,802.

Claim.—1. The process of dyeing fabrics, which consists, in first treating such fabrics with beta naphthol and antimonious oxid in alkaline solution, and in finally treating the thus treated fabric with diazo compounds, substantially as described.

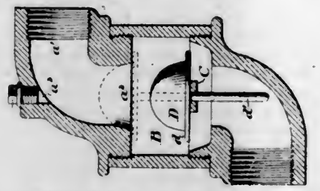
2. The new composition of matter hereinbefore described, consisting of a solution or mixture containing beta naphthol and antimonious oxid, substantially as described.

542,023. ELEVATOR-DOOR. GEORGE W. MORGAN, St. Thomas, Canada. Filed Feb. 27, 1895. Serial No. 539,886. (No model.)



Claim.—The combination of an elevator well, the doors C, hinged on opposite sides of said well and having the aligned recesses *a*, in the middles of their contiguous edges, the grooved anti-friction rollers *b*, arranged in the recesses *a*, of the doors and so that they will rest a slight distance apart when the doors are in a closed position, the car, the lifting cable connected to the car the two separate curved rods H, connected to opposite sides of the car and extending upwardly and inwardly from the same so as to enter the recesses *a*, between the rollers *b*, and engage said rollers and having their contiguous ends arranged on opposite sides of the lifting cable and a suitable means for engaging and holding the doors when they are raised substantially as specified.

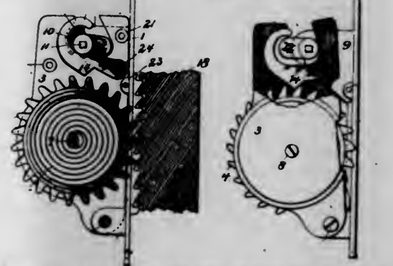
542,024. GAS-VALVE. JOHN D. MCILHENNY, Philadelphia, Pa., assignor to Helme & McIlhenny, same place. Filed Nov. 17, 1893. Serial No. 491,223. (No model.)



Claim.—1. The combination, to form a gas valve, of a casing embodying a valve chamber, a gas inlet leading into the lower portion of the casing, and a gas outlet leading out from the upper portion of the casing, the mouth of the outlet being above and substantially in line with the mouth of the inlet and fashioned into a valve seat, a valve head existing free for vertical movement within the valve chamber and adapted to said valve seat, means for normally supporting said valve head across the mouth of but a slight distance above the mouth of the inlet and for guiding the vertical movement of the valve head, and means for retaining the valve head in the valve seat, against the force of gravity and independently of fluid pressure, substantially as set forth.

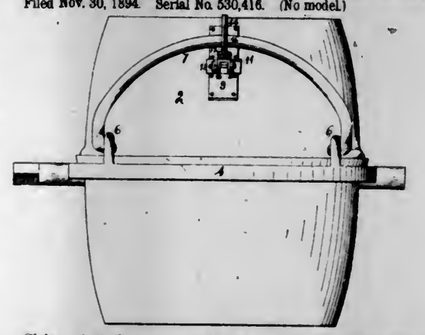
2. The combination, to form a gas valve, of a casing embodying a valve chamber, a gas inlet leading into the lower portion of the casing, and a gas outlet leading out from the upper portion of the casing, the mouth of the outlet being above and substantially in line with the mouth of the inlet and fashioned into a valve seat, a valve head existing free for vertical movement within the valve chamber and adapted to said valve seat, means for normally supporting said valve head across the mouth of but a slight distance above the mouth of the inlet and for guiding the vertical movement of the valve head, the valve head and valve seat being so conformed that said head is adapted to make a jam fit within said seat and to be self-retaining in position against the force of gravity and independently of fluid pressure, substantially as set forth.

542,025. SASH-BALANCE. ROBERT MCMILLEN, Pittsburg, Pa. Filed July 21, 1894. Serial No. 518,236. (No model.)



Claim.—The herein described sash balance and lock, consisting of the frame formed in sections and pivoted to the front plate as described, the toothed wheel and interior spring arranged in said frame, the key provided with a cam adapted to operate in openings formed in the sectional frame for the purpose of moving the teeth of the wheel out of mesh with the rack in the sash, and the pivoted hooked lever provided with a means for engaging with the teeth of the wheel to prevent turning of the same, and the eccentric formed on the said key for operating the same, as and for the purpose described.

542,026. METALLIC CHURN. SAMUEL D. PALMER, Rockford, Ill. Filed Nov. 30, 1894. Serial No. 530,416. (No model.)



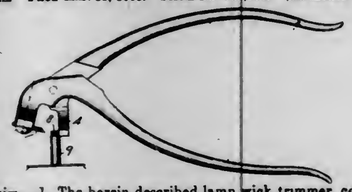
Claim.—1. A churn composed of two sections joined at their open ends, bails pivotally connected to one of the sections and a fastening device consisting of a lever having a pivotal connection with the other section provided with a projection supporting the center portion of the corresponding bail while being carried over the dead center of the lever.

2. A churn composed of two sections joined at their open ends, bails pivotally connected to one of the sections, and a fastening device consisting of a lever having a pivotal connection with the other section, provided with a projection supporting the center portion of the corresponding bail while being carried over the dead centers of the lever, the free end of the lever being in handle form.

3. A churn composed of two sections joined at their open ends, a bail pivotally connected to one of the sections, a base plate secured to the other section, lugs extending therefrom, a support having a pivotal connection with the lugs, a lever having a screw thread connection with the support and provided with a projection supporting the bail while being carried over the dead center of the lever, and a jam nut located upon the lever engaging the outer end of the support.

4. A churn composed of two sections an angle iron ring supporting one of the sections having ears integral therewith and rising therefrom, corresponding bails pivotally connected with the ears, and a pivoted fastening device secured to the other section engaging the center portion of the corresponding bails by means of which the bails are carried past the dead center of the fastening means.

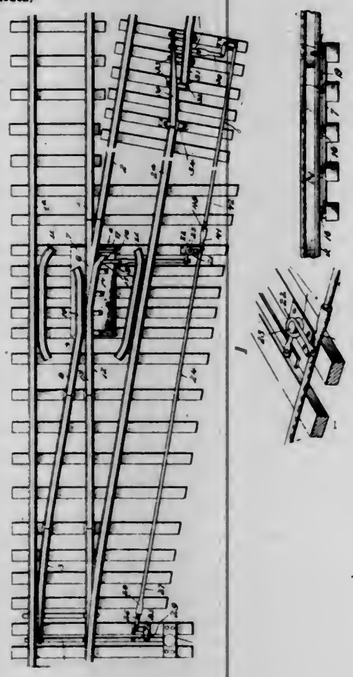
542,027. LAMP-WICK TRIMMER. JOHN L. PURINTON, Hartford, Conn. Filed Mar. 13, 1895. Serial No. 541,566. (No model.)



Claim.—1. The herein described lamp wick trimmer, consisting of the lever handles and jaws, one of which has a gaging face at its end extending transversely to the handle from side to side and a resisting face at one side, and the other jaw of which has the cutter for working against said resisting face, the edge of which cutter also extends transversely to the handle from side to side, whereby after raising the wick, the implement is adapted for use by placing the gaging face on the top end of the wick tube by one broad side of the wick, and holding it there while the handles are operated to cut the wick as described.

2. The herein described lamp wick trimmer consisting of the pivoted lever handles, one of which has a resisting face and a straight gaging face extending from side to side transversely to the handle, and the other of which has a concave end face and a cutter secured thereto on a single pivotal fastening, substantially as described and for the purpose specified.

542,028. DERAILING-SWITCH AND SAFETY-FROG. CHRISTIAN W. RAHBAR, Masaba, Minn. Filed Dec. 20, 1894. Serial No. 532,433. (No model.)

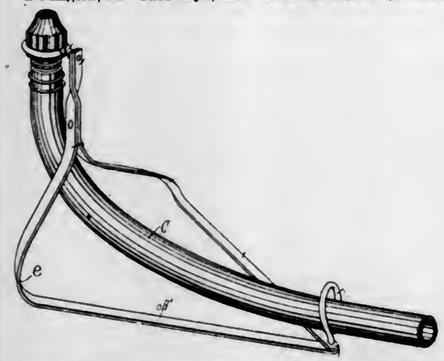


Claim.—1. The combination with switch-operating mechanism having an operating rod, of a movable rail, a yielding spring-metal bell-crank lever provided at its center with a spring coil of which the arms are extensions, one of such arms being connected to the operating rod, and connections between the other arm and the free end of said switch rail, substantially as specified.

2. The combination with inner and outer main and siding track-rails, switch-rails, and operating mechanism for the switch rails, of a fixed frog-point, a fixed frog-rail arranged in alignment with the inner siding track-rail and having a deflected arm arranged parallel with the inner main track-rail, a pivotal frog-rail adapted to have its main portion aligned with the inner main track-rail and having a deflected arm to lie parallel with the inner siding track-rail and terminating in an angularly disposed guide, for engagement by the flanges of the wheel a yielding spring metal bell crank-lever having one arm connected with the movable frog-rail, and connections between said bell-crank lever and the switch operating mechanism, substantially as specified.

3. The combination with inner and outer main and siding track-rails, switch-rails, a switch-bar connecting said switch-rails, operating mechanism for the switch-bar, a bell crank-lever, and a link connecting one arm of the bell crank-lever to said switch-bar, of a fixed frog-point, a fixed frog-rail having its body portion in alignment with the inner siding track-rail, a movable frog-rail having its body portion arranged in alignment with the inner main track-rail, a yielding spring metal bell-crank lever having one arm connected by interposed means with the free end of the movable frog-rail, a derailing or cut-out switch-point adapted to be aligned with a siding track-rail, stops to limit the deflection of said derailing switch-point, a bell-crank lever having one arm connected, by interposed means with said switch-point, and operating rods between the bell-crank lever which is connected to the switch-bar and the bell-crank lever which is connected to the movable frog-rail, and between the latter and the bell-crank lever which is connected to the switch-point, said operating rods comprising relatively adjustable sections to adapt the rods for longitudinal extension and contraction, substantially as specified.

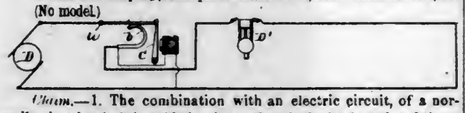
542,029. STAND FOR LAWN-SPRINKLERS. NICHOLAS L. RIGBY, Los Angeles, Cal. Filed July 5, 1893. Serial No. 479,568. (No model.)



Claim.—1. The lawn fountain stand set forth, comprising the two base members secured to each other at one end and arranged in cuneiform shape, having their outer ends bent upward and inward and secured together above the plane of the two base members and arranged extending upward above their point of contact to form an upright support, such support being provided with the horizontally arranged ring arranged projecting in front of such support and adapted to receive and hold a sprinkler or nozzle, a suitable vertically arranged hose securing ring arranged near the point of the cuneiform base to receive and hold the hose, the hose passed through the vertical ring and forward beneath the upright support and the nozzle secured to the hose and arranged in the horizontal ring.

2. The lawn fountain stand set forth formed of strap iron and comprising two base members secured to each other at one end and arranged in V-shape and each having its greatest width arranged horizontal to rest upon the ground, and each having its outer end curved upward and inward to form the two outer angles of the base and brought together flatwise midway between the two angles and secured by suitable means, such members extending upward from the point where they join and having their upper ends twisted to bring their greatest width in line with the two outer angles of the base; suitable means arranged upon the support to receive and hold a sprinkler or nozzle, and suitable means arranged at the apex of the V shaped base and adapted and arranged to receive and hold a hose.

542,030. AUTOMATIC SAFETY DEVICE FOR ELECTRIC CIRCUITS. LEWIS G. ROWAND, Camden, N. J., assignor to the Universal Fire Alarm Company, same place. Filed Feb. 6, 1895. Serial No. 537,444. (No model.)



Claim.—1. The combination with an electric circuit, of a normally closed switch in said circuit, an electric device in a closed shunt with said circuit and adapted to control said switch, the resistance of said device being greater than the resistance of the circuit, the arrangement being such that when the resistance of the circuit is unduly increased, said device is energized and said switch is opened.

2. The combination with an electric circuit of a normally closed switch at the commencement of said circuit, an electric device in a closed shunt with said circuit and adapted to control said switch, the resistance of said device being greater than the resistance of the circuit, the arrangement being such that when the resistance of the circuit is unduly increased, said device is energized and said switch is opened.

3. The combination with an electric circuit, of a plurality of switches in said circuit, each switch being controlled by an electric device in a closed shunt with said circuit, the resistance of which device is greater than the resistance of the circuit, the arrangement being such that when any device is energized its corresponding switch is operated to open the circuit at said switch.

4. In combination with multiple electric circuits, each being provided with a normally closed switch, an electric device in a closed shunt with its corresponding circuit and controlling its corresponding switch, the resistance of each of said devices being greater than the resistance of its corresponding circuit, the arrangement being such that when any of said devices is energized its corresponding switch is operated and its circuit broken.

5. In combination with multiple electric circuits each being provided at its commencement with a normally closed switch, an electric device in a closed shunt with its corresponding circuit, and controlling its corresponding switch, the resistance of each of said devices being greater than the resistance of its corresponding circuit, the arrangement being such that when any of said devices is energized its corresponding switch is operated and its circuit broken.

6. In combination with multiple electric circuits, a plurality of switches in each of said circuits, each switch being controlled by an electric device in a closed shunt with its corresponding circuit, the resistance of each of said devices being greater than the resistance of its corresponding circuit, the arrangement being such that when any device is energized its corresponding switch is operated to open its corresponding circuit at said switch.

7. In combination with an electric circuit, a normally closed switch in said circuit, an electric device in a closed shunt with said circuit, and adapted to control said switch, the resistance of said device being greater than the resistance of the circuit, the arrangement being such that when the resistance of the circuit is unduly increased, said device is energized and said switch is opened, a circuit independent of the first mentioned circuit, a signaling device in said circuit, adapted to be thrown into action when the electric device is energized and a receiving device in said circuit.

8. The combination with an electric circuit, of a plurality of switches in said circuit, each switch being controlled by an electric device in a closed shunt with said circuit, the resistance of which device being greater than the resistance of the circuit, the arrangement being such that when any device is energized its corresponding switch is operated to open the circuit at said switch, a circuit independent of the first mentioned circuit, signaling devices equal in number to said switches, and the corresponding signaling device being adapted to be thrown into action when its corresponding switch is opened, and a receiving device in said circuit.

9. In combination with multiple electric circuits, each being provided with a normally closed switch, an electric device in a closed shunt with its corresponding circuit and controlling its corresponding switch, the resistance of each of said devices being greater than the resistance of its corresponding circuit, the arrangement being such that when any of said devices is energized its corresponding switch is operated and its circuit broken, a circuit independent of the first mentioned circuits, signaling devices equal in number to said switches, and the corresponding signaling device being adapted to be thrown into action when its corresponding switch is opened, and a receiving device in said circuit.

10. In combination with multiple electric circuits, a plurality of switches in each of said circuits, each switch being controlled by an electric device in a closed shunt with its corresponding circuit, the resistance of each of said devices being greater than the resistance of its corresponding circuit, the arrangement being such that when any device is energized its corresponding switch is operated to open its corresponding circuit at said switch, a circuit independent of the first mentioned circuits, signaling devices equal in number to said switches and the corresponding signaling device being adapted to be thrown into action when its corresponding switch is opened, and a receiving device in said circuit.

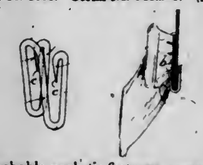
11. The combination with an electric circuit of a normally closed switch in said circuit, an electric device in a closed shunt with said circuit and adapted to control said switch, the resistance of said shunt circuit being greater than the resistance of the circuit, the arrangement being such that when the resistance of the circuit is unduly increased said device is energized and said switch is opened.

12. The combination with an electric circuit of a plurality of normally closed switches in said circuit, each switch being controlled by an electric device in a closed shunt with said circuit, the resistance of which shunt circuits being greater than the resistance of the circuit, the arrangement being such that when any device is energized its corresponding switch is operated to open the circuit at said switch.

13. In combination with an electric circuit, a normally closed switch in said circuit, an electric device in a closed shunt with said circuit and adapted to control said switch, the resistance of said shunt circuit being greater than the resistance of the circuit, the arrangement being such that when the resistance to the circuit is unduly increased said device is energized and said switch is opened, a circuit independent of the first mentioned circuit, a translating device in said circuit adapted to be thrown into action when the electric device is energized and a receiving device in said circuit.

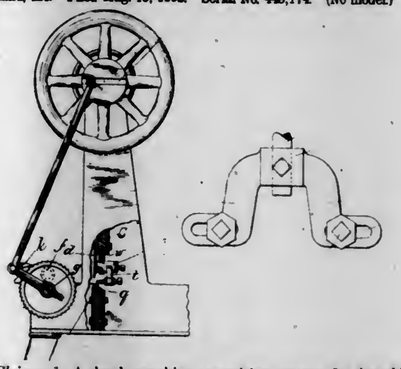
14. The combination with an electric circuit of a plurality of normally closed switches in said circuit, each switch being controlled by an electric device in a closed shunt with said circuit, the resistance of which shunt circuits being greater than the resistance of the circuit, the arrangement being such that when any device is energized its corresponding switch it operated to open the circuit at said switch, a circuit independent of the first mentioned circuit, translating devices equal in number to said switches, and the corresponding translating device being adapted to be thrown into action when its corresponding switch is opened, and a receiving device in said circuit.

542,031. NECKTIE-FASTENER. GEORGE H. RUSSELL, Milwaukee, Wis. Filed Mar. 11. 1895. Serial No. 541,253. (No model.)



Claim.—A detachable neck-tie fastener, comprising a single strip of wire bent to form vertical straight portions having downward projecting sharp pointed hooks at the upper ends thereof parallel therewith and upward diverging portions united by a loop, rising to a plane above the tops of the said hooks, substantially as set forth.

542,032. SHANK-STIFFENER MACHINE. NELSON C. RUBERG, East Bridgewater, Mass., assignor to the Suffolk Shank Company, Portland, Me. Filed Aug. 15, 1892. Serial No. 443,174. (No model.)

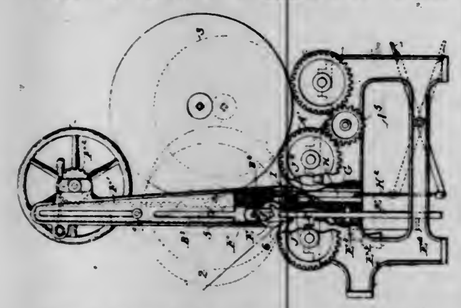


Claim.—1. A shank machine comprising cutters for detaching successively the strips of which the shanks are formed, a form adjacent to the cutters and over which the end of the feed-strip projects during the cutting operation, a yoke having independent actuating devices, and bending arms on said yoke to engage the opposite ends of the strip and bend it over the form, substantially as described.

2. A shank machine comprising cutters for detaching successively the strips of which the shanks are formed, a form, and a reciprocating yoke having bending arms mounted on the opposite sides thereof and made adjustable on the yoke to suit various lengths of shanks, substantially as described.

542,033. WITHDRAWN.

542,034. CLOTH-WINDING MACHINE. WILLIAM P. SIMPSON, Overbrook, Pa. Filed Feb. 14, 1895. Serial No. 538,414. (No model.)



Claim.—1. In a winding machine, the combination with a series of drums, of a shell around which the fabric is wound in contact with one of the drums, and means whereby when the shell has received sufficient fabric it is permitted to move into contact with and be rotated by two of the drums, substantially as described.

2. In a winding machine, the combination with a series of three drums, of a shell around which the fabric is wound in contact with one of the drums, and means whereby when the shell has received sufficient fabric it is permitted to move into contact with and be rotated by two of the drums, and then be moved out of contact with the first drum, and be rotated by two of the drums other than the said first drum, substantially as described.

3. In a winding machine, the combination with a series of drums, of a shell around which the fabric is wound in contact with one of the drums, and supports for said shell for maintaining it in contact with said drum until the roll has attained a certain size, then permitting it to move into contact with and be rotated by two of the drums, substantially as described.

4. In a winding machine, the combination with a series of drums, of a shell around which the fabric is wound in contact with one of the drums, and supports for the shell having a limited movement whereby when the shell has received sufficient fabric it is permitted to move into contact with and be rotated by two of the drums, substantially as described.

5. In a winding machine, the combination with a series of drums, of a shell around which the fabric is wound in contact with one of the drums, means whereby when the shell has received sufficient fabric it is permitted to move into contact with and be rotated by two of the drums, and means for severing the fabric, substantially as described.

6. In a winding machine, the combination with a series of drums, of a shell around which the fabric is wound in contact with one of the drums, means whereby when the shell has received sufficient fabric it is permitted to move into contact with and be rotated by two of the drums, means for severing the fabric, and means for guiding the severed end around a shell to start a new roll, substantially as described.

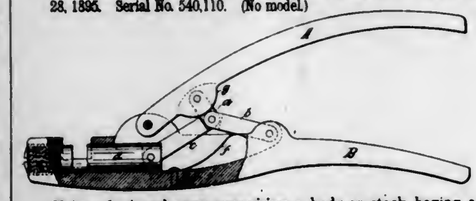
7. In a winding machine, the combination with a series of three drums rotating in the same direction, of a shell around which the fabric is wound in contact with one of the drums, means whereby when the roll has attained a proper size it is permitted to move into contact with and be rotated by two of the drums and can be further completed by being rotated by two of the drums other than the first winding drum, means for severing the fabric a second shell, and means for starting the severed end of the fabric on said second shell, substantially as described.

8. In a winding machine, the combination with a series of drums rotating in the same direction, of a shell around which the fabric is wound in contact with one of the drums, a tension device for the shell, means whereby the partly wound shell may be released from the tension device and permitted to move into contact with and be rotated by two of the drums, means for severing the fabric, and means for guiding the severed end of the fabric around a shell, substantially as described.

9. In a winding machine, the combination with a series of drums, of a shell around which the fabric is wound in contact with one of the drums, an adjustable tension device for said shell for holding it in contact with one of the drums, and V-shaped supports for the shell having a limited movement, substantially as described.

10. In a winding machine, the combination with a series of three drums, of a shell around which the fabric is wound in contact with one of the drums means whereby the shell is permitted to move into contact with and be rotated by two of the drums and then the winding continued in contact with drums other than the first winding drum, a reciprocating frame, a knife carried by the frame for severing the fabric, and a spring-guide also carried by the frame for directing the severed end around the shell, substantially as described.

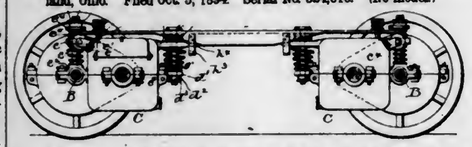
542,035. SEAL-PRESS. THOMAS D. WILLEVER, Irvington, assignor of one-half to George O. Willever, Phillipsburg, N. J. Filed Feb. 28, 1895. Serial No. 540,110. (No model.)



Claim.—1. A seal press comprising a body or stock having a rigid handle thereon, a swinging lever handle pivoted to said stock, a toggle-lever, a link connecting said toggle-lever and lever-handle, a sliding die pivoted to said toggle-lever and a stationary die in said stock all arranged substantially as described.

2. A hand seal press comprising the combination of a body or stock having a longitudinal bore, a recessed side and a rigid handle with a swinging lever-handle pivoted to said stock and having a cam thereon, a toggle-lever pivoted to the stock, a sliding die pivoted to the said toggle-lever, a link connecting the lever-handle and toggle at the joint of the latter and an adjustable stationary die substantially as specified.

542,036. ELECTRIC LOCOMOTIVE. THOMAS E. ADAMS, Cleveland, Ohio. Filed Oct. 3, 1894. Serial No. 524,810. (No model.)



Claim.—1. In an electric locomotive, the combination with two axles and motors geared with said axles, of a single bar located centrally between the ends of said motors and extending over both motors, said bar bearing at its ends on said motors and connected at points between its ends with the respective motors, and connections between said motors and axles substantially as set forth.

2. The combination with car axles, motors geared therewith and casings for said motors, of gear casings mounted on the axles and having movable connections with the motor casings, said motors being supported by the gear casings independently of the truck frame, and a bar connected with both motors substantially as set forth.

3. The combination with car axles, of motor casings, flexible connections between said motor casings and axles, a bar having a sliding connection with said casings and flexible connections between said casings and bar at points between the ends of the latter, substantially as set forth.

4. The combination with an axle, and a motor casing, of gear casings journaled on the axle and connected with said motor casing, a bar, a flexible connection at one side of the motor casing with said bar and flexible connections at the other side of the motor casing with said gear casings, substantially as set forth.

5. The combination with a car axle and a motor geared therewith, of gear casings having sleeves journaled on the axle, a bar, flexible connections between said bar and motor at one side of the latter and flexible connections between the other side of the motor and the sleeves on the gear casings, substantially as set forth.

6. The combination with a car axle, of an electric motor geared at both ends with said axle, two gear casings pivotally connected at one end to the casing of said motor and having sleeves at their other ends journaled on the axle, lugs projecting from the casing of the motor, springs between said lugs and the sleeves on the gear casings, a bar over the motor and a flexible connection between said bar and the casing of the motor, substantially as set forth.

7. The combination with two car axles, and a motor geared with each axle, of gear casings journaled at one end on the axles and pivotally connected at their other ends with the casings of the motors, flexible supports over the axles for said motors, a bar extending over both motors and adapted to have a sliding movement thereon, and flexible connections between said bar and the motor casings, substantially as set forth.

8. The combination with two car axles and a motor geared with each axle, of gear casings having sleeves journaled on the axles, a bar extending over both motor casings and adapted to move thereon, lugs projecting from each motor casing, rods secured to the sleeves of the gear casings and passing through said lugs, heads on said rods, springs on said rods between said lugs and sleeves and between said lugs and heads on the rods, and a flexible connection between each motor casing and said bar, substantially as set forth.

9. The combination with two car axles and a motor geared with each axle, a flexible connection between the outer side of each motor and the car axles, a movable bar extending over said motors, and flexible connections between the inner sides of said motors and said bar, substantially as set forth.

10. The combination with two car axles, of a motor geared with each axle and having a flexible support over the same, rollers carried by the casings of said motors, a bar extending over both motors and adapted to move on said rollers, and flexible connections between said bar and the motors, substantially as set forth.

11. The combination with two car axles, of a motor geared with each axle and having a flexible support over the same, of a bar extending over both motors and adapted to have a movement thereon, lugs projecting from the inner sides of the casings of said motors, pins or rods passing through said lugs and perforations in the bar, and springs between said lugs and bar substantially as set forth.

12. The combination with a car axle, of a motor geared therewith and having a flexible support over the same, a bar having a movable connection with the top of the casing of said motor, a lug projecting from the inner side of said motor casing, a pin or rod passing through said lug and a perforation in said bar, a spring between said bar and the lug on the motor casing, and a spring on said pin or rod between said lug and a washer supported by a nut or head on the lower end of said rod, substantially as set forth.

13. The combination with two car axles, of a motor geared with each axle and having a flexible support over the same, a bar having a movable connection with said motors over the same, and means for sustaining the motors in case of the breakage of any of said connections, substantially as set forth.

14. The combination with two axles, of a motor geared with each axle and having a flexible support over the same, a bar having a movable connection with said motors over the same, flexible connections between said bar and motors, stirrups secured to said bar, and arms projecting from the casings of said motors into said stirrups, substantially as set forth.

15. The combination with two car axles and a motor geared with each axle and having flexible supports over the same, of a movable bar extending over both motors and having elongated slots, headed pins secured to the casings of said motors and passing through said elongated slots, and flexible connections between said bar and motors, substantially as set forth.

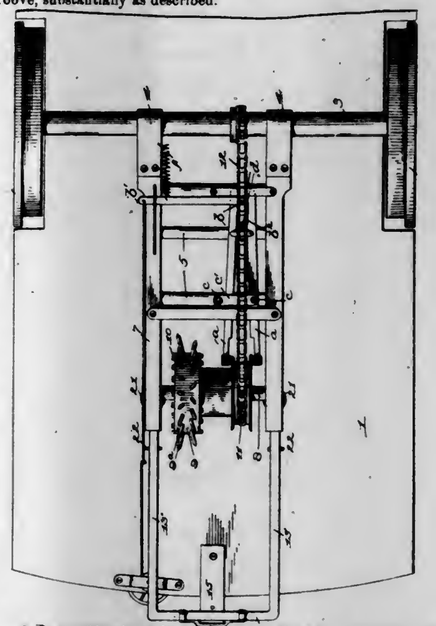
16. The combination with two car axles and a motor geared with each axle and having a flexible support over the same, of a movable bar extending over both motors and having elongated slots, headed pins secured to the casings of the motor and passing through said elongated slots, springs between the heads of said pins and the bar and flexible connections between said bar and the motor, substantially as set forth.

17. In an electric locomotive, the combination with the axle and a motor geared therewith, of a movable bar on said motor, a perforated lug projecting from the motor casing, a rod passing through said lug and bar, a washer on the lower end of said rod, a spring on said rod between the lug and washer, and a large head on the rod adapted to bear on the top of said bar, substantially as set forth.

18. The combination with two car axles and a motor geared with each axle, of gear casings having sleeves journaled on the axles, a bar extending over both motor casings and adapted to move thereon, lugs projecting from each motor casing, rods secured to the sleeves of the gear casings and passing through said lugs, said rods having screw threaded upper ends, washers on said rods, nuts and keys for retaining said washers in place, springs between the washers and lugs, springs between the lugs and sleeves and a flexible connection between each motor casing and said bar, substantially as set forth.

542,037. ATTACHMENT FOR STREET-CARS. JOHN W. BARNES, Rockland, Me., assignor of one-half to Stephen Chase, George Smith, Max Antin, and Alfred Murrey, same place, and Charles Stimpson, Thomaston, Me. Filed Mar. 18, 1895. Serial No. 542,192. (No model.)

Claim.—1. In combination with a street car, the frame including the side bars pivoted to the car axle, the spur wheel journaled between the forward ends of said bars, driving connections from said spur wheel to the car axle, the U shaped spring having its arms connected to the side bars, the vertical cylinder journaled at the end of the car and having a spiral groove, and the rod or plate extending up from the U spring and having a projection engaging the said groove, substantially as described.



2. In combination with a street car, the frame pivoted to the axle thereof, the spur wheel journaled in said frame and driven from the car axle, the springs 21 for forcing said frame normally downward, the lifting device at the front of the car, and the spring connection interposed between said frame and the lifting device, substantially as described.

3. In combination with the car and the wheels and axle thereof, the horizontal frame connected at its rear end to the axle, the spur wheel carried by said frame, the vertical plate attached to the front of the car, the cam comprising the spirally grooved spindle, the spring connected to the forward end of the horizontal frame, the vertical frame, the head carried on the upper end of said vertical frame projecting into the groove in said cam, said cam being adapted to be rotated to depress said spur wheel and the means for returning said spur wheel to normal position.

4. In combination with a car and the supporting wheels and axle thereof, the spur wheel, the means for bringing said wheel into an operative position, the sprocket wheel carried by said spur wheel and the brake adapted to engage said sprocket wheel to prevent the rotation thereof and the spur wheel, whereby the progress of the car is prevented, substantially as described.

542,038. MOLDING-MACHINE. WILLIAM L. BELKNAP, Bridgeport, Conn., assignor to the Belknap Manufacturing Company, same place. Filed Apr. 18, 1895. Serial No. 546,214. (No model.)

Claim.—1. In a molding machine the combination with a plate carrying patterns, of a plate 12 having sockets 26 and balls in said sockets upon which the carrying plate rests.

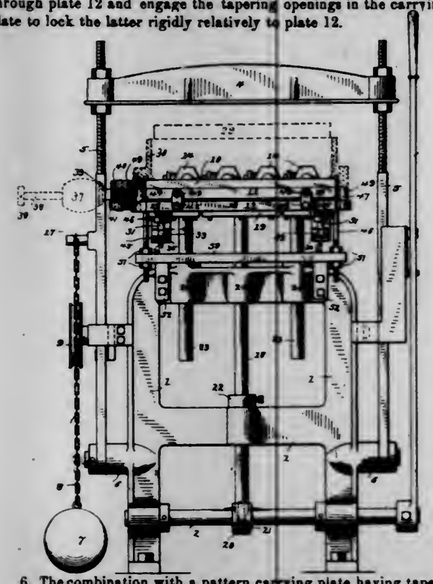
2. In a molding machine the combination with a plate carrying patterns, of a plate 12 having sockets 26, balls in said sockets upon which the carrying plate rests, rings 28 in which the balls lie loosely and which prevent the balls from coming in contact with the walls of the recess.

3. In a molding machine the combination with a plate carrying patterns, of a plate 12 having sockets 26 consisting of threaded openings having in them screw plugs 27 the upper ends of which are flat and balls resting upon the screw plugs upon which the carrying plate rests so that by adjustment of the screw plugs the carrying plate may be caused to rest evenly and firmly upon all the balls.

4. The combination with plate 10 having patterns secured thereto and plate 11 to which plate 10 is secured, of plate 12 having sockets 26 and balls in said sockets upon which plate 11 rests.

5. The combination with a pattern carrying plate having tapering openings 32, plate 12 having sockets 26 and balls in said sockets

on which the carrying plate rests, of tapering pins 31 adapted to pass through plate 12 and engage the tapering openings in the carrying plate to lock the latter rigidly relatively to plate 12.



6. The combination with a pattern carrying plate having tapering openings 32, plate 12 having sockets 26 and balls in said sockets on which the carrying plate rests, of tapering pins 31 adapted to pass through plate 12 and engage the tapering openings to lock the carrying plate relatively to plate 12, levers 33 by which the tapering pins are operated and set screws 36 which limit the downward movement of the pins.

7. The combination with a pattern carrying plate, plate 12 having sockets 26 and balls in said sockets on which the carrying plate rests, of a rod 38 pivoted to plate 12 and having stops 39 and a weight adapted to slide on said rod and engage the inner stop whereby plate 12 may be vibrated as and for the purpose set forth.

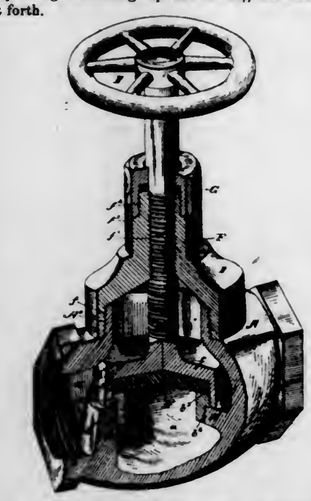
8. The combination with a pattern carrying plate having tapering openings 32, plate 12 having sockets 26 and balls in said sockets upon which the carrying plate rests, of tapering pins 31 adapted to pass through plate 12 and engage the tapering openings, levers 33 by which the tapering pins are operated, set screws 36 which limit the downward movement of the pins, rod 38 pivoted to plate 12 and having stops 39 and a weight adapted to slide on said rod and engage the inner stop to vibrate plate 12 for the purpose set forth, the amount of vibration of plate 12 being determined by the adjustment of the set screws.

542,039. GLOBE-VALVE. HENRY BURR, Charlevoix, Mich. Filed Apr. 28, 1894. Serial No. 509,327. (No model.)

Claim.—1. An improved valve comprising the shell or casing having the partition in which is formed the threaded valve port or opening and provided with a threaded ring or collar mounted in said opening and forming a projecting valve seat, the valve proper consisting of the interiorly-threaded cup and the projecting threaded stem and having the washer disk or plate provided with a threaded periphery and the projecting lug, the threaded washer disk being adjusted in the threaded cup, and a cap piece provided with an interiorly-threaded stem, substantially as set forth.

2. The herein described improved globe valve, comprising the shell or casing having the partition in which is formed the threaded valve port or opening and provided with the exteriorly-threaded removable ring or collar adjusted in said opening and having the interiorly-projecting lugs and the circumferential flange at its top forming the projecting valve seat; the valve proper consisting of the interiorly-threaded cup and the projecting-threaded stem and having the removable washer disk or plate provided with the threaded periphery and the centrally-arranged lug projecting from its outer face, the threaded washer disk being adjusted in the corresponding washer cup; and the cap piece having the interiorly-threaded projecting stem; substantially as set forth.

3. An improved valve having the valve port or opening in which is set a removable ring or collar B, corresponding to said opening and provided with a circumferential flange at its top projecting laterally and forming a raised valve seat, in combination with the valve proper comprising a cup adapted to fit over the raised valve seat and carrying a corresponding disk or plate adjustably secured within said corresponding containing cup and forming the washer, substantially as set forth.



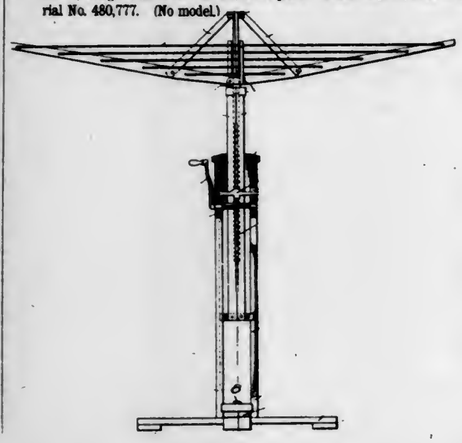
4. In a valve, the combination, with a removable ring or collar forming the valve seat, of the valve proper comprising an interiorly-threaded cup in which is adjusted a removable disk or plate provided with a threaded periphery and forming the washer, said washer disk being adapted to be adjusted within the threaded cup and with relation to the adjustable ring forming the valve seat, substantially as set forth.

5. An improved valve comprising the cup or body portion having the interiorly-threaded walls, in combination with the corresponding circular disk or plate having the threaded periphery and provided with a lug projecting from its outer surface, the disk being adjustable within the corresponding containing cup and forming the washer, substantially as set forth.

6. A valve comprising a cup or body portion within which is adjustable a corresponding disk or plate forming the washer, said washer disk being adjusted in and carried by said corresponding containing cup, substantially as set forth.

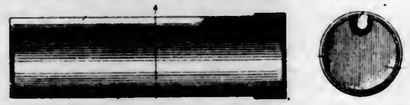
7. An improved valve, comprising a removable ring or collar seated in the valve port and provided with a projecting circumferential flange at the top forming a raised valve seat, the outer face of said flange being threaded, in combination with an interiorly-threaded cup carrying an adjustable threaded disk or plate forming the washer, the threaded washer disk being adjustable within its said interiorly-threaded corresponding cup and carried thereby and the interiorly-threaded projecting edge of the cup being adapted to engage the threaded projecting flange of the ring or collar, substantially as set forth.

542,040. CLOTHES-DRIER. MELBOURNE C. BURR, Minneapolis, Minn., assignor to Wernicke Co., same place. Filed July 17, 1893. Serial No. 480,777. (No model.)



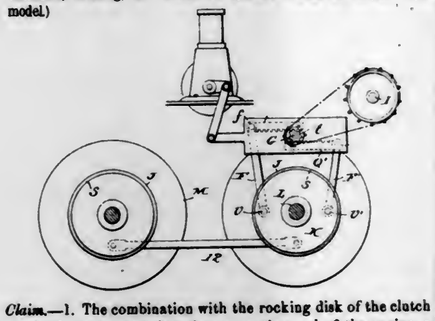
Claim.—The combination, with a clothes reel, of a post, a rack bar arranged therein, a gear and crank for raising or lowering said rack bar, said rack bar being provided with a vertical shaft socket, a shaft, the arms upon the upper end thereof, said bar having a vertical slot opening into said socket, a pin adapted to be inserted through the top of said post into said socket beneath the shaft, whereby when the rack is lowered the shaft will remain stationary and together with the reel arms be easily removed, substantially as described.

542,041. CARTRIDGE-CASE. JOHN C. BUTTERFIELD and TELFORD C. BATCHELOR, London, England. Filed Jan. 9, 1892. Serial No. 417,523. (No model.) Patented in England Sept. 5, 1889, No. 14,025.



Claim.—A closed cartridge case having an open pocket in the form of an external groove formed in the case, and adapted to receive and hold the detonator, substantially as described.

542,042. CLUTCH DRIVING DEVICE FOR MOTORS. JOHN CHARTER, Sterling, Ill. Filed Oct. 9, 1894. Serial No. 525,420. (No model.)



Claim.—1. The combination with the rocking disk of the clutch device, of a lever connected to the connecting rod of the engine, a sliding rack, a wrist pin upon said rack, a link connecting said pin to the rocking disk, a pinion engaging the said rack, and means for turning the pinion, substantially as described.

2. The combination with the rocking disks of two clutch devices, operating in reverse directions a reciprocating lever an adjustable wrist pin carried thereby, means for adjusting said pin to and from the fulcrum of the lever, and a link connecting said pin and the rocking disks, substantially as set forth.

3. The combination of parallel shafts, a clutching device, a rocking disk carried by each shaft and forming part of the clutch device, a link connecting the two rocking disks, and a lever or beam connected with one of the rocking disks to rock the same, substantially as described.

4. The combination of the parallel shafts, clutch devices thereon, rocking disks forming parts of the clutch devices, a connecting rod connecting the disks, a rocking beam carrying an adjustable wrist pin, and a link connecting the said pin to one of the rocking disks, substantially as described.

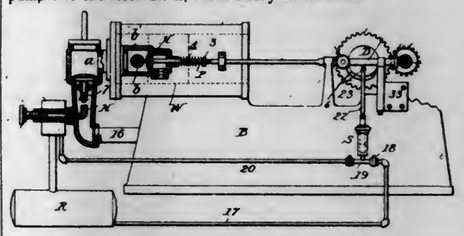
5. The combination with a shaft, of two clutch devices each having a flanged rocking disk and a disk with projections having inclined edges, and rollers between the said edges and the flanges, the two sets of inclines being oppositely arranged, and means for clutching one part of each clutch device temporarily to the shaft, substantially as described.

6. The combination of a shaft, two clutch devices B, B' each having two parts J, K, said clutches constructed to operate in reverse directions, and means for alternately clutching one part of each clutch device to the shaft, substantially as described.

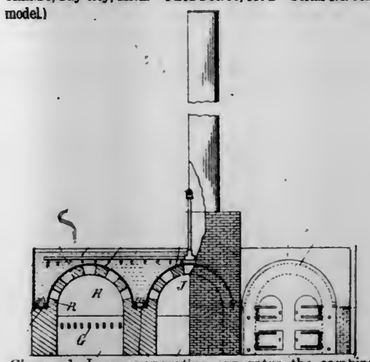
542,043. GOVERNOR FOR GAS-ENGINES. JAMES A. CHARTER, Beloit, Wis., assignor of one-half to John Charter, Sterling, Ill. Filed Nov. 20, 1894. Serial No. 529,391. (No model.)

Claim.—1. The combination with the exhaust valve of a gas engine, of a rod C carrying rollers *f*, *f'*, the latter being grooved, a detent for engaging the latter roller, a governor controlling the detent, and a cam for engaging the roller C, substantially as described.

2. The combination with the inlet valve casing I of a gas engine, of an inlet pipe having an upturned end, a reservoir L, communicating with said pipe, an overflow pipe M from said reservoir with its end below but nearly level with that of the inlet pipe, a reservoir R communicating with the pipe M and a pump S with a pipe leading from the reservoir R to pump S, and another pipe leading from the pump S to the reservoir L, substantially as set forth.



542,044. APPARATUS FOR MANUFACTURING SALT. THOMAS CRANEY, Bay City, Mich. Filed Dec. 18, 1894. Serial No. 532,167. (No model.)



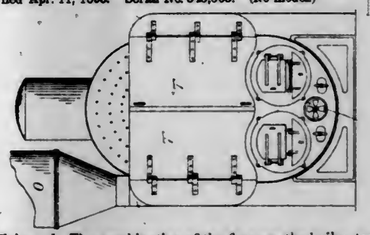
Claim.—1. In an evaporating apparatus, the combination of a metallic pan, having an arch shaped bottom, a furnace beneath the same, and sectional brick arches or checkerwork on the under face of the bottoms, substantially as described.

2. In an evaporating apparatus, the combination of a metallic pan, having three arch shaped bottom sections, horizontal bottom sections between the arch shaped sections, furnaces beneath the outer arches, connections between the inner and outer arches at one end, a stack at the other end of the central arch, and conveyers in the horizontal bottom sections.

3. In an evaporating apparatus, the combination of a metallic pan having a series of arch shaped bottom sections and intermediate horizontal bottom sections, of furnaces beneath the arches, walls supporting the tank under the horizontal sections the side extensions R of the walls beside the horizontal sections and the conveyers between the arches.

4. In an evaporating apparatus, the combination of a metallic pan having a series of arch shaped bottom sections and intermediate horizontal bottom sections, furnaces beneath the arches, conveyers in the horizontal sections, air pipes depending into the tank, cross pipes at the bottom of the air pipes extending over the arches, and formed with jet openings directed downward, substantially as and for the purpose described.

542,045. STEAM-GENERATOR. THOMAS CRANEY, Bay City, Mich. Filed Apr. 11, 1895. Serial No. 545,305. (No model.)



Claim.—1. The combination of the furnace, the boiler, two series of tubes extending therethrough longitudinally and transversely, a jacket around the middle of the boiler on both sides and ends, a connection from the furnace into the end section of the jacket, and from the front jacket into one side jacket, substantially as described.

2. The combination of the boiler, the furnace flue therethrough, the furnaces therein, the rear end chamber, into which the furnace flue connects, the longitudinal tubes through the boiler connecting the rear chamber with the front, a front chamber, side chambers, with one of which the front chamber connects, and a series of transverse tubes connecting the side chambers, substantially as described.

3. In a boiler, the combination of the combustion chamber therein, the smoke chamber with which said first chamber communicates, a series of tubes or flues above the combustion chamber, connecting the smoke chamber with a third chamber, a fourth chamber communicating with said third chamber, and a second series of tubes leading from the last chamber to the smoke stack, substantially as described.

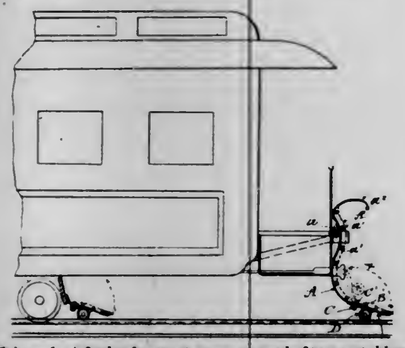
4. In a steam generator, the combination with the horizontal boiler, of the combustion chambers therein, the smoke chamber at one end of the boiler, the jacket around the middle of the boiler and forming chambers on the other three sides thereon, and independent flues connecting the chambers on opposite sides of the boiler, substantially as described.

542,046. DYE. PHILIP FURKELSTEIN, New York, N. Y. Filed Apr. 4, 1895. Serial No. 544,472. (No specimens.)

Claim.—1. A dye composed of an admixture of aniline black, sulphuric acid, Glauber's salts, pepsin, and soda or ammonia.

2. A dye composed of an admixture of aniline black, sulphuric acid, Glauber's salts and pepsin.

542,047. STREET-CAR FENDER. PETER R. FOLEY and MICHAEL F. X. FOLEY, Philadelphia, Pa. Filed Oct. 23, 1894. Serial No. 526,713. (No model.)

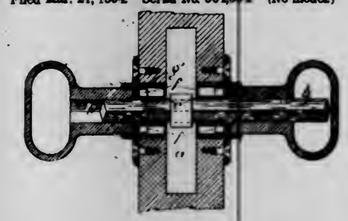


Claim.—1. A fender for street cars composed of two parts hinged together by loose slotted hinges, one of said parts being attached to the car and other part or striking portion of the fender, mounted on suitable supporting wheels that run at all times on the car tracks substantially as shown and described.

2. A street car fender consisting of two parts, one of said parts being secured to the front of the car, and the other part or apron mounted upon suitable supporting wheels, the said parts being connected by a slotted hinge joint, the slot therein being vertical, whereby the said apron will oscillate on the wheels as a fulcrum and permit the depression of the front end of the apron when an object is struck, as set forth.

3. A fender for street cars consisting of the apron B mounted upon suitable supporting wheels that run on the car track, said apron being fastened to the car by means of a slotted hinge joint, the slot in said hinge being the arc of a circle the center of which is the center of the shaft that carries the apron supporting wheels, substantially as and for the purpose set forth.

542,048. KNOB ATTACHMENT. JAMES A. GIBBS, Irving Park, Ill. Filed Mar. 21, 1894. Serial No. 504,544. (No model.)



Claim.—1. The combination with a longitudinally slotted latch back, of a knob-shank with spurs integral therewith and slide actuated by said spurs without intervening mechanism, substantially as specified.

2. The combination with a longitudinally slotted latch-back, of a longitudinally free spindle and a knob-shank with spurs integral therewith and slide actuated without intervening mechanism by said spurs, substantially as specified.

3. The combination with a longitudinally slotted latch-back and slotted escutcheon-plate, and knob-shanks with fixed spurs, of a latch actuated by said spurs without intervening mechanism, and a longitudinally free spindle, substantially as specified.

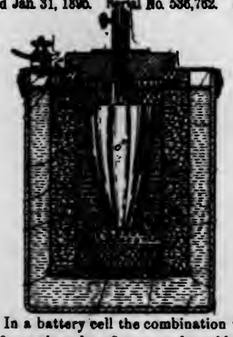
4. The combination with a bossed and longitudinally slotted latch-back and flanged knob shank with fixed spurs, of a latch actuated by said spurs, without intervening mechanism substantially as specified.

5. The combination with a bossed and longitudinally slotted latch-back and flanged knob-shank with fixed spurs, of a latch actuated by said spurs without intervening mechanism, a slotted escutcheon-plate, a spurred knob-shank thereon and longitudinally free spindle, substantially as specified.

6. The combination with a flanged knob-shank with end cylindrically reduced, shouldered and spurred and longitudinally free spindle, of a longitudinally slotted latch-back and latch operated by said spurs without intervening mechanism, substantially as specified.

7. The combination with a longitudinally slotted latch-back and escutcheon-plate with hollow cylinder projecting from its base, of spurred knob-shanks and longitudinally free spindle, substantially as specified.

542,049. GALVANIC BATTERY. RALPH W. GORDON, Boston, Mass. Filed Jan. 31, 1895. Serial No. 536,762. (No model.)



Claim.—1. In a battery cell the combination with a jar containing a solution of caustic soda, of a cover for said jar fitting tightly thereon and having a central opening and plug of insulating material therein, a perforated receptacle secured to the under side of said cover and extending downward into the said solution and having concentric inner and outer walls and containing oxide of copper between said walls, and a positive element consisting of a mass of zinc suspended in said solution from the said insulating plug in the cover, substantially as described.

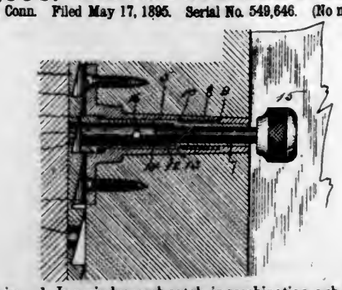
2. In a battery cell, the combination with a jar containing an exciting fluid; of a negative element consisting of a receptacle containing a depolarizing agent and having empty chambers therein, the walls of said receptacle and chambers being perforated for the better permeation of said exciting fluid; and a positive element in said exciting fluid, substantially as described.

3. A negative element for a battery cell composed of concentric cylindrical perforated walls and a bottom piece closing the space between said walls, combined with hollow chambers extending from one of said walls into said space, said chambers being composed of U-shaped perforated strips connected at their open ends to one of said cylindrical walls, said element being adapted to contain depolarizing material, substantially as described.

4. A negative element for a battery cell composed of concentric cylindrical perforated walls and a bottom piece closing the space between said walls, combined with hollow chambers composed of U-shaped perforated strips interposed between said cylindrical walls and having the space between their side walls covered at the top, substantially as and for the purpose described.

5. The herein described negative battery element consisting of an outer perforated wall having a bottom piece with a central opening therein and a short supplemental wall extending upward from the edge of said opening, combined with an inner perforated wall having perforated chambers extending outward from the outer surface thereof, and adapted to be inserted within said outer wall and to fit around said supplemental wall, as described.

542,050. WINDOW-SASH CATCH. ALBERT E. GRAHAM, Windsor, Conn. Filed May 17, 1895. Serial No. 549,646. (No model.)

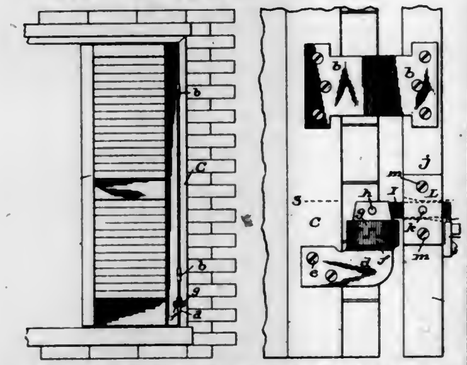


Claim.—1. In a window sash catch, in combination, a shell adapted to be inserted in the sash, a spring block movable within the shell, and a spring bolt movable within the block, substantially as specified.

2. In a window sash catch, in combination, a shell adapted to be inserted in a sash, a spring block movable within the shell, a spring bolt movable within the block, and a pin and slot connection between the bolt and the block whereby the bolt moves independently of the block for a portion of its inward movement only, substantially as specified.

3. In a window sash catch, in combination, a shell consisting of a face plate and a hub adapted to be inserted in the edge of a sash, a spring block with a tubular stem movable within the shell, a spring bolt movable within the stem of the block and having a handle, and a pin projecting from the bolt through slots in the stem of the block and in the hub of the shell, substantially as specified.

542,051. SHUTTER-FASTENER. ADAM HELLER, Baltimore, Md. Filed Apr. 11, 1895. Serial No. 545,311. (No model.)

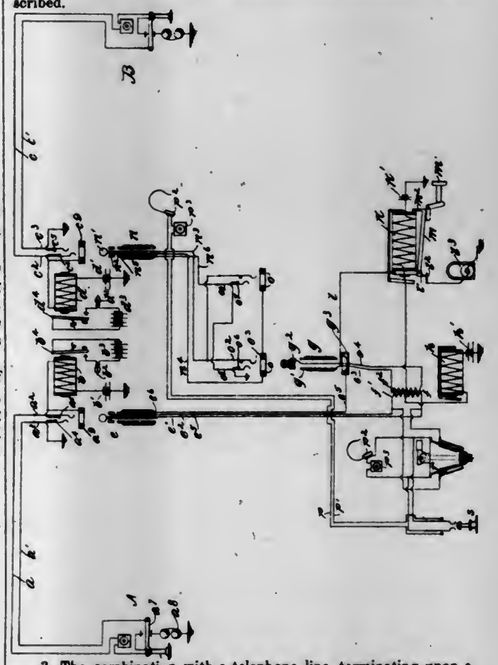


Claim.—In a shutter fastener, the combination of a hinged shutter; a rigid non-revoluble toothed crown, *f*, independent of the said hinges and having a lateral plate by which it is secured rigidly to the window-frame; a plate, L, secured to the edge of the shutter over a slot therein; a lever, I, pivoted to the said shutter plate and working in said slot and provided with an end which projects laterally crosswise on the inner side of the shutter; an inverted toothed crown, *g*, also independent of the hinges and attached to the outer end of said lever; and a turn-bottom pivoted on the shutter independently of the lever and adapted to abut against the said laterally-projecting end thereof.

542,052. TELEPHONE SYSTEM. ANGUS S. HIBBARD, Chicago, Ill. Filed Feb. 21, 1895. Serial No. 539,188. (No model.)

Claim.—1. The combination with telephone lines extending in groups to divided boards of an exchange, of two or more intermediate boards, trunk lines extending between the divided boards and the several intermediate boards adapted to be connected with the telephone lines to extend the circuits at will to any one of the intermediate boards, and means at the intermediate boards for uniting two trunk lines; whereby the connection between any two lines may be completed through any one of said intermediate boards at will.

2. The combination with a telephone line, terminating upon a divided board of the exchange, of an intermediate board, a trunk line extending between said divided board and said intermediate board and adapted to be connected with said telephone line to extend the circuit to the intermediate board, a telephone line terminating upon a second divided board, a trunk line extending between said second divided board and said intermediate board, and means at the intermediate board for uniting two trunk lines, and a pair of indicators at the intermediate board, one under control from each of said telephone lines, substantially as described.



3. The combination with a telephone line, terminating upon a divided board of the exchange, of an intermediate board, a trunk line extending between said divided board and said intermediate board, and adapted to be connected with said telephone line to extend the circuit to the intermediate board, a telephone line terminating upon a second divided board, a trunk line extending between said second divided board and said intermediate board and adapted to be connected with said telephone line to extend the circuit to the intermediate board, means at the intermediate board for uniting the two trunk lines, signaling apparatus at the intermediate board controlled by the subscribers whose lines are connected together, and signaling apparatus at the divided boards adapted to be actuated by the disconnection of the trunk lines at the intermediate board, substantially as described.

4. In a telephone system, the combination with a telephone line terminating upon a divided board of an exchange, of an intermediate board, a trunk line adapted to be connected with said telephone line to extend the circuit to the intermediate board, said trunk line terminating in a plug at the intermediate board normally resting in a socket, a second telephone line terminating upon a divided board, a trunk line adapted to be connected with said telephone line to extend the circuit to the intermediate board, said trunk line terminating in a switch at the intermediate board into which the plug of the first trunk line is adapted to be inserted to complete the connection, signaling apparatus at the divided boards, means for actuating the signaling apparatus at one of said boards by the removal of said trunk line plug from the trunk line switch, and means for actuating the signaling apparatus at the second board by the replacing of the plug in its socket, substantially as described.

5. The combination with a telephone line extending to a board of the exchange, of a trunk line extending from a plug at said board to a plug at an intermediate board, a repeating coil interposed between the plugs, an indicator in a ground branch from the trunk on the side of the repeating coil toward the plug at the intermediate board, a socket in which said plug normally rests to make electrical connection between said trunk line and said socket, a third wire extending from said socket to a contact terminal on the plug at the board at which the telephone line terminates, said terminal adapted when the plug is inserted in the switch of the telephone line to complete the circuit of a battery through said indicator to call the attention of the operator at the intermediate board.

6. In a telephone system, the combination with a repeating coil interposed between the calling and the called subscriber, of a genera-

tor adapted to be connected in circuit with the called subscriber, and a key for throwing said generator into circuit adapted when depressed to connect one coil of said repeating coil in series with the generator, whereby a buzz in the telephone of the calling subscriber is produced, substantially as described.

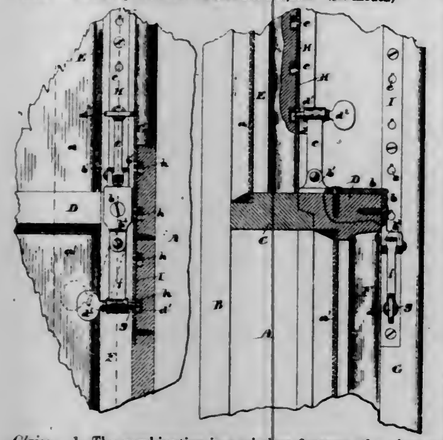
7. In a telephone system, the combination with means for connecting the two telephone lines together, of a battery and a calling generator adapted to be connected in circuit, and a commutator for intermittently opening the circuit of the generator and closing a shunt about the same to afford a path for the battery current, substantially as described.

8. In a telephone system, the combination with two telephone lines connected together, of a repeating coil interposed between the telephone lines, a key adapted when depressed to include a calling generator in circuit and simultaneously open the repeating coil circuit, and an electromagnet adapted to maintain said key depressed until the called subscriber removes his telephone from its hook, substantially as described.

9. The combination with a telephone line extending to the board of an exchange, of an indicator at said board adapted to respond to calling currents sent from the sub-station, a trunk line adapted to be connected with the line to extend the circuit to a switching board, and means controlled by the change of said trunk line from a position of use to a position of disuse for operating said indicator to convey a signal to disconnect the trunk line, substantially as indicated.

10. The combination with telephone lines extending in groups to divided boards, of call receiving indicators therefor at said divided boards adapted to be actuated from the sub-stations, two or more intermediate boards, and means for extending the line of a calling subscriber at will from the divided board to the particular intermediate board that may be selected for answering the call, substantially as described.

542,053. WINDOW-FASTENER. William Hickey, Brookline, Mass. Filed May 14, 1895. Serial No. 549,234. (No model.)

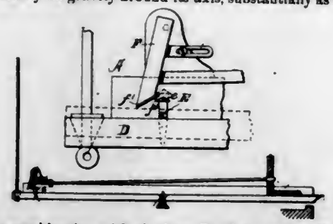


Claim.—1. The combination in a window fastener of a plate secured to the meeting rail of the lower sash; an arm pivoted to said plate and movable about said pivot in a vertical plane; a locking bolt provided with a radially projecting lug at one end and a thumb pad at its other and revolubly mounted in a bearing in the free end of said arm; and a metal plate set in or secured to the upper sash and provided with a plurality of key holes to receive said bolt.

2. The combination in a window fastener of an angular or elbow like stand secured to the meeting rail of the lower sash; a pair of arms pivoted to said stands and movable about said pivots in vertical planes at right angles to each other; a locking bolt revolubly mounted in a bearing in the free end of each of said arms with its axis transversely of said arm and provided on its locking end with a radially projecting lug; and a pair of metal plates each provided with a plurality of key-holes and secured one to the upper sash and the other to the stop bead all constructed and arranged to operate substantially as described.

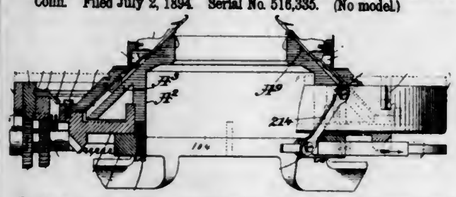
542,054. KEY-HOLDING DEVICE FOR PIPE-ORGANS. Herbert E. Hodgson, Norfolk, Va. Filed Mar. 15, 1895. Serial No. 541,840. (No model.)

Claim.—1. The combination with the keys, of the cam-like stops secured to the keys, the supporting bar F, adapted to engage with the aforesaid stops, means extending to the front of the case for moving at will the bar F into and out of operative position, and a stop supplemental to the said means arranged to hold the bar F in its operative position and away from the position to which it will be normally carried by its gravity around its axis, substantially as set forth.



2. The combination with the keys D, of the screws E arranged in a row transversely of the keys and respectively inserted in the upper sides thereof, the swinging sustaining bar F, and the adjustable stops at *c* for regulating the position of the bar, substantially as set forth.

542,055. KNITTING-MACHINE. James A. House, Bridgeport, Conn. Filed July 2, 1894. Serial No. 516,335. (No model.)



Claim.—1. In a knitting machine, the following instrumentalities, viz:—a needle-bed, a ring or plate provided with needle selecting devices and actuating cams, a vertically movable curb, and rack bars therein having surfaces to co-operate with the instrumentalities employed for moving the needle selecting devices carried by said ring or plate, means to raise and lower said curb, and means to move said rack bars in opposite directions in said curb, substantially as described.

2. The table-top having the spider, and the circular curb, the circular rack bars contained therein, and means to move said rack bars in said curb, combined with devices under the control of a pattern surface to raise and lower said curb and its contained rack bars, for the purposes set forth.

3. The circular curb, a lifting circle, and a series of links connecting said curb and circle, and guides for the curb, combined with devices to partially rotate said circle to raise and lower the curb, substantially as described.

4. The circular curb, the lifting circle, links connecting said circle and curb, and the levers 218 and 222, combined with a cam, and means to rotate and to slide said cam on its shaft to act upon one or the other of said levers to effect the movement of the lifting circle in one or the other direction, substantially as described.

5. In a circular knitting machine, the curb 112, the rack bars therein having teeth, and means to raise and lower said curb, combined with shafts having gears to engage each of said rack bars, and to remain in engagement therewith in all positions of the curb, substantially as described.

6. In a knitting machine, a conical needle-bed, a conical needle actuating cam-ring surrounding said bed and provided with needle actuating cams, and having crossing knitting and non-knitting grooves, and needle-selecting mechanism including an inclined or heart-shaped cam, and points directed toward each other; two circular rack bars each provided with two cam projections, means to move said rack bars, a lever having arms 117 and 118, and carried by said needle-actuating cam-ring and adapted to strike the cam projections on said rack bars to thereby change the relative positions of the directing cam and points automatically to effect the passage of the desired number of needles from the non-knitting into the knitting groove and back again preparatory to knitting a second course, substantially as described.

7. A cam ring having a knitting and a non-knitting groove, one crossing the other, needle selecting devices arranged at the crossing of said grooves and having two points pointed one toward the other, and a directing cam, and having usual knitting cams, a lever mounted on said cam-ring and having arms 117 and 118, and devices intermediate said lever and said selecting devices to move them, substantially as described, and means to reciprocate said cam-ring, combined with two rack bars each provided with a pair of cam projections, and means to move said rack bars one about the other in opposite directions, said arms acting directly on said cam projections to move the selecting devices carried by the cam ring to effect the movement of the butts of all the needles into the non-knitting groove after the completion of a reciprocal course, and to then at a reverse movement of the cam-ring take from the non-knitting groove a defined number of needles for the next reciprocal course to be made, as set forth.

8. The curb, means to raise and lower it, the rack bars carried thereby, and the extension 112ˣ, the shafts 163 and 164 carried by said extension and provided with gears to engage the rack bars; combined with two shafts 168 and 171, gearing connecting the same with said shafts 163 and 164; gears to rotate shafts 168 and 171; a series of pawls and ratchets; a shield; means to move said pawls, a pattern surface and devices intermediate said shield and pattern surface to move the shield and determine which of said pawls shall engage said ratchet wheels, substantially as described.

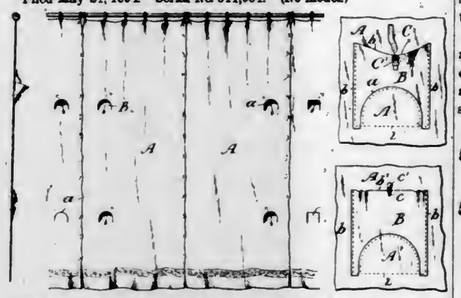
9. Two shafts 163 and 164 having co-incident centers of rotation, worm toothed wheels carried thereby, shafts 168 and 171 having worms and bevel gears 169 and 172 attached to said shafts, combined with a pair of gears for each of said bevel gears, a ratchet wheel attached to each gear of the pairs of gears; a series of pawls, one for each ratchet wheel; means to move said pawls; and a shield to permit as desired the proper pawls to engage said ratchet wheels to rotate the shafts 168 and 171 in either direction and in directions reverse one of the other, substantially as described.

10. The thread holding rolls, a pair of shears having its pivot mounted near said rolls, a pinion having devices to co-operate with the arms of said shears, and a sector lever for rotating said pinion, combined with a rotating hub having annular and crossing grooves, switches in said grooves, and means to support and move said switches, substantially as described.

11. A frame, a hollow spindle mounted therein and provided with thread arms, devices to rotate said spindle to twist the threads and move said thread arms toward and from each other, said devices including a sector lever C, combined with a pair of shears pivoted on said frame, a pinion provided with shear opening devices, a sector lever, as D, and a hub or cylinder provided with annular and crossing grooves to receive pivoted shoes carried by said levers, and a switching device, to operate, substantially as described.

12. A frame, a hollow spindle having thread arms, a pair of shears, a rotating grooved hub, its switches *b*, *b'*, a switch rod b^2 to which they are secured, the sector levers and connections actuated by said hub for moving the said hollow spindle and actuating said shears, combined with a switching bar having horns, a lever or arm, as b^{12}, and a pattern surface to move said lever, substantially as described.

542,056. BERTH-CURTAIN. Samuel Hughes, Lindsay, Canada. Filed May 21, 1894. Serial No. 511,951. (No model.)



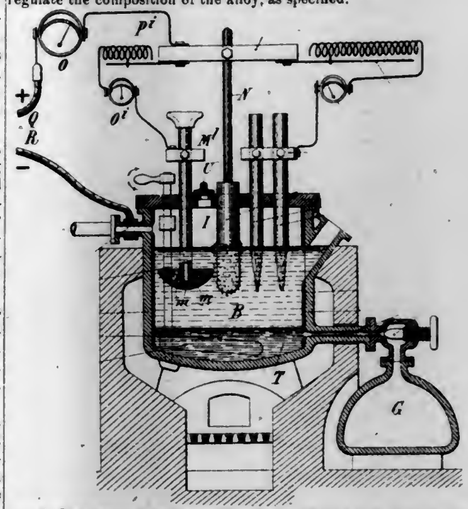
Claim.—The combination with a curtain of a lap having an upper free edge formed by a curved or angular incision passing in a transverse direction and a substantially rectangular piece B placed between said lap and the main curtain and secured to said lap across the base line and along its edge and to the main curtain along the side edges *b b* of said piece so as to form a slack upper edge, substantially as set forth.

542,057. ELECTROLYTIC PROCESS AND APPARATUS. Léon P. Hulin, Modane, France. Filed Dec. 19, 1894. Serial No. 532,291. (No model.) Patented in France May 5, 1894, No. 238,301, and in Belgium May 5, 1894, No. 109,791.

Claim.—1. The process of manufacturing an alloy of an alkali metal or alkali earth metal with a heavy metal, which consists in effecting the electrolysis of a suitable haloid salt of an alkali or alkali earth metal when in a state of igneous fusion, by means of two anodes, one of carbon, and the other formed of the heavy metal to to be alloyed.

2. The herein described method of manufacturing alloys by electrolysis, which consists in employing as an electrolyte the fused salts of the metal of one ingredient of the proposed alloy, and an anode comprised of a carbon member and a metal member composed of the other ingredient for the proposed alloy, as specified.

3. The herein described method of manufacturing alloys which consists in employing as an electrolyte the fused salts of one metal of the alloy and an anode consisting of a carbon member and a member composed of the other metal of the alloy and varying the current to regulate the composition of the alloy, as specified.



4. In apparatus for the production of alloys by electrolysis, the combination of a cathode consisting of a metal crucible, adapted to contain an electrolyte, provided with insulated sides and an exposed bottom, an anode consisting of a carbon and one or more metal members and a stirrer in the crucible, substantially as described.

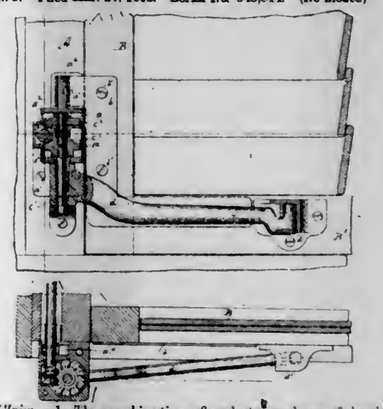
5. In apparatus for the production of alloys by electrolysis the combination with a bath and cathode, an anode consisting of a carbon member and a dish-shaped metal receiving member provided with a hollow stem having lateral openings, communicating with the dish, substantially as described.

6. In apparatus for the production of alloys by electrolysis, an anode-metal container consisting of a dish provided with a hollow stem having lateral openings communicating with the dish, substantially as described.

7. In apparatus for the production of alloys by electrolysis, an anode consisting of a carbon member, and metal members comprised of one or more rods and a dish-shaped metal container provided with a hollow stem having lateral openings communicating with the dish, substantially as described.

542,058. WITHDRAWN.

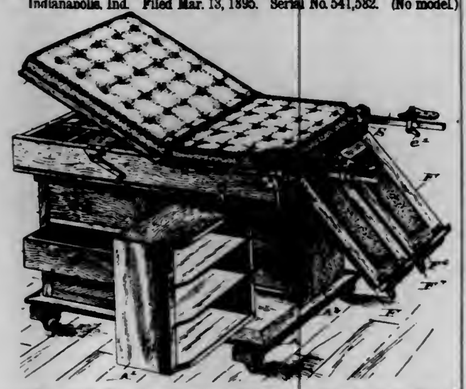
542,059. SHUTTER-WORKER. Thomas Kochka, Jersey City, N. J. Filed Mar. 27, 1895. Serial No. 543,314. (No model.)



Claim.—1. The combination of socket *a*, and cap a^3, having pintle a^6, with a hinge strap hung upon said pintle and adapted to be secured to the shutter, and with a worm shaft, a spindle intergeared therewith, and an arm connected to the spindle and adapted to engage the shutter, substantially as specified.

2. The combination of socket *a*, having an oil chamber a^4, and neck a^5, that connects said chamber with the interior of the socket, with a worm shaft having a collar c^3, engaging the oil chamber, a spindle intergeared with said shaft, and an arm connected to the spindle and adapted to engage the shutter, substantially as specified.

542,060. SURGEON'S OPERATING-TABLE. CHARLES R. LENTZ, Indianapolis, Ind. Filed Mar. 13, 1895. Serial No. 541,582. (No model.)



Claim.—1. The combination, in a surgeon's operating table, of the frame-work provided with a support 1 and catches 2, and a combined drawer and desk A^3 adapted to be either put in position as a drawer, or removed and used as a desk, substantially as set forth.

2. The combination, in a surgeon's operating table, of the main or rigid frame-work A, and a top or tilting frame-work B, the cross-like structure composed of the bars A^6 and B' secured together and having pivots in their ends, the pivots in the ends of the bar A^6 resting in bearings in the frame A, and the pivots in the ends of the bar B' resting in bearings in the frame B, whereby tilting in both directions is secured, and mechanism for controlling said tilting, substantially as shown and described.

3. The combination, in a surgeon's operating table, of the main structure, a rock-bar A^6 pivoted in said structure, a pivoted structure mounted upon said rock-bar, and mechanism, consisting of the rack bar C, the rock-shafts C' and C^2, located in the upper portion of the table, the connecting rod C^3, and the springs C^4 and C^5, whereby the tilting of the frame can be controlled, and its adjusted location secured, and all arranged and operating substantially as set forth.

4. The combination, in a surgeon's operating table, of the main structure, a tilting frame mounted thereon and adapted to tilt in both directions, mechanism whereby the longitudinal tilting can be controlled, and mechanism, consisting of the rack-bar D, the device D', springs D^2 and D^3, levers D^4, and connecting rod D^1, for controlling and adjusting the transverse tilting, all said mechanism being located within the upper or tilting portion of the table, above and free from the cabinets and drawers below, substantially as shown and described.

5. The combination, with a surgeon's operating table, of the foot-rest E pivotally mounted on a shank E', said shank, a bar E^2 on which said shank is adjustably mounted, a cam e' whereby said shank can be locked in adjusted position, and a bifurcated standard E^3 having two or more notches with which a cross-pin on the end of the bar may engage, whereby varying positions of the several parts may be secured, substantially as shown and described.

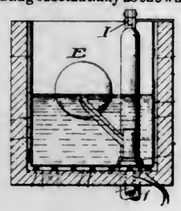
6. The combination, with a surgeon's operating table, of a leg rest hinged thereto, a hinged brace interposed between said leg rest and the structure to which it is connected, a notched plate with which the point of said brace will engage, a rock-shaft, and a spring for operating said brace, substantially as and for the purposes set forth.

7. The combination, in a surgeon's operating table, of a hinged leg-rest F, a foot-piece or step F^2 hinged thereto, an arm F^6 secured to said foot-piece or step, a pawl F^7 hinged to said arm, and the spring F^8 connected to said pawl at one end and to the leg rest at the other, substantially as shown and described.

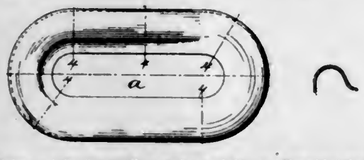
8. The combination, in a surgeon's operating table, of a shelf G formed of a part of the top and provided with arms G' and brackets *g* into which said arms may be inserted, said shelf being thus adapted to form both a portion of the table top or shelf, at will, substantially as shown and described.

542,061. FLUSHING TANK OR RESERVOIR FOR WATER-CLOSETS. HENRY J. LUFF, Cleveland, Ohio. Filed Sept. 7, 1894. Serial No. 522,311. (No model.)

Claim.—A reservoir of the character indicated, comprising an outer case A provided, upon its inner sides and bottom, with ribs so arranged that the spaces between the ribs on the bottom shall be in open relation with the spaces between ribs on the sides, a metallic inner case B seated upon the ribs formed upon the bottom of the outer case, and the bottom of the outer case being provided with channels *a* arranged transversely of the ribs upon said bottom, and said bottom being provided, also, with discharge-openings *a'* leading from said channels, all operating substantially as shown, for the purpose specified.

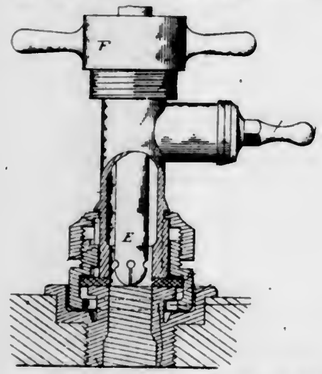


542,062. FENDER FOR FIREPLACES. ORLANDO P. MASON, Bellaire, Ohio, assignor of one-half to James F. Du Bois and Charles W. Dickens, same place. Filed Feb. 25, 1895. Serial No. 539,617. (No model.)



Claim.—A fender cut from substantially an ellipsoidal sheet metal blank having an opening at its center corresponding to the shape of the blank and stamped so as to have an arch-shape between the edge of the hole and its own edge, the line of incision being substantially coincident with the major axis of the blank.

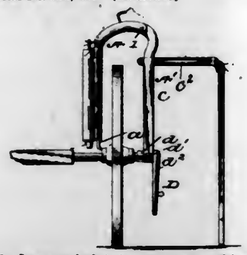
542,063. TAP AND BUSHING. JOHN MOHR, Detroit, Mich. Filed Apr. 11, 1896. Serial No. 545,325. (No model.)



Claim.—1. The combination with a bushing forming one coupling member and provided with a seat within the bushing, of a tap, composed of an outer sleeve adapted to seat against the seat of the bushing and of a tap tube slidingly engaging within said sleeve, a loose collar or extension held in sliding engagement upon the inner end of said sleeve and forming the coupling member of the tap, and a screw but holding said loose collar in adjustable relation with the exterior sleeve of the tap, substantially as described.

2. In a tap and bushing, the combination with the bushing provided with an annular recess, and a flanged nipple located within said recess and forming the seat and coupling member of the bushing, of a tap composed of the outer sleeve D and of a tap tube E slidingly passing through said sleeve, the sliding collar or extension H on the inner end of the sleeve D and forming the coupling member of the tap, the gasket I secured in a recess of said collar and forming in connection with the inner end of the sleeve D, the seat of the tap, and the adjustable screw nut J upon the sleeve D and provided with an interior flange K engaging in the annular groove of the sleeve D all arranged and combined to operate substantially as and for the purpose described.

542,064. DEVICE FOR OILING VEHICLE-AXLES. CHARLES T. MOORMAN, Packwood, Iowa, assignor of two-thirds to Charles A. Moorman, same place, and Eli W. Moorman, Ioka, Iowa. Filed Aug. 24, 1894. Serial No. 521,181. (No model.)



Claim.—1. In an axle lubricator, the combination with a frame adapted to be attached to a wheel, a lubricant receptacle supported by said frame and provided with a valve for closing its discharge opening, and a lever, connected with said valve and serving to raise the same from its seat when depressed, substantially as described.

2. In an axle lubricator, the combination with the frame, having a pivoted part provided with devices for engaging it with the wheel and also provided with means for automatically moving it in a direction lengthwise of the axle spindle, of a lubricant receptacle supported by said pivoted part of the frame, substantially as described.

3. In an axle lubricator, the combination with the frame, having a pivoted part designed to be engaged with a vehicle wheel, and a spring acting upon said pivoted part for the purpose specified, of a lubricant receptacle supported by said pivoted part of the frame and movable therewith.

4 In an axle lubricator, the combination with a frame, having a pivoted part provided with devices for attaching it to a wheel, and a spring acting upon said pivoted part of the frame, of a lubricant receptacle, supported by said pivoted part of the frame and provided with a valve for closing its discharge opening, and a lever, connected with said valve and serving when its free end is depressed to raise said valve from its seat.

5. In an axle lubricator, the combination with a frame, adapted to be attached to a wheel, of a lubricant receptacle, supported by said frame and provided with a discharge spout, a valve normally closing the opening through said spout, and a lever for raising said valve from its seat, substantially as described.

6. The combination with the frame adapted to be attached to a wheel, of a rod, pivoted to said frame, a wrench carried by said rod, and a handle for operating said wrench.

7. The combination with a frame, having a pivoted part adapted to be attached to a vehicle wheel, of a pivoted rod mounted upon said frame, a wrench carried by said rod, and an operating handle for said rod.

8. The combination with a frame adapted to be attached to a wheel, of a rod, pivoted to said frame a wrench carried by said rod, and an operating handle for said rod, said handle having a spring catch, substantially as described.

9. A means for supporting a wheel in vertical position when removed from its axle spindle, said means embodying a substantially inverted U-shaped frame one side of which is designed to be attached to the wheel and having at its other side a supporting leg having a broadened base detachably secured to it, substantially as described.

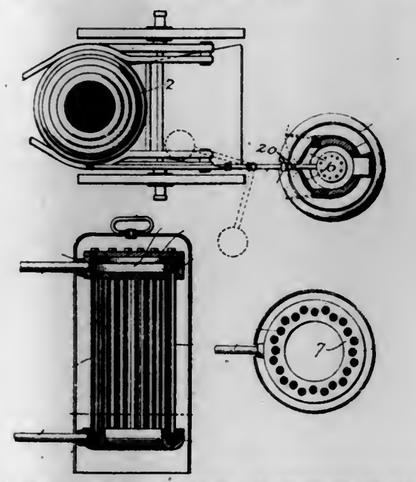
10. The combination with the frame of an axle lubricator, said frame being of substantially inverted U-shape, one leg of which is designed to be attached to the vehicle wheel, an arm pivoted to the other leg of said frame and provided with an operating handle, and a supporting leg having a broadened base detachably secured to said handle, substantially as described and for the purpose specified.

11. The herein-described lubricator for axle spindles, embodying a frame made in sections pivotally attached together, a lubricant receptacle supported by one of said sections, a rod pivoted to the other of said sections, and a wrench carried by said rod, substantially as described.

542,065. FIRE-ENGINE HEATER. HERBERT E. PENNEY, Minneapolis, Minn. Filed Mar. 25, 1895. Serial No. 543,067. (No model.)

Claim.—1. In a device of the class described, the combination with a movable steam boiler and its fire box, of an auxiliary boiler arranged outside the main boiler, but connected therewith for circulation, and a stationary stove or heater into which said auxiliary boiler may be inserted, and from which it may be separated by the movement of the main boiler, substantially as described.

2. In a device of the class described, the combination of a fire engine boiler, a small auxiliary boiler permanently connected thereto, and through which the water in the main boiler circulates a stationary stove or heater provided with an opening in its side to receive said auxiliary boiler when the engine is backed into the house, and to permit its withdrawal with the engine when the latter is moved away from said stove, substantially as described.



3. In a device of the class described, the combination with the fire engine boiler, an auxiliary boiler connected thereto and through which the water from the engine boiler circulates, said auxiliary boiler being arranged to swing in either direction a stationary stove or heater arranged to receive said auxiliary boiler while the engine is standing in the house and to permit its withdrawal when the engine is drawn out, substantially as described.

4. In a device of the class described, the combination, of a fire engine boiler, the auxiliary boiler permanently connected thereto, said auxiliary boiler comprising suitable hollow heads, flues connecting the same, the pipes connecting said heads respectively with the upper and lower portions of said boiler, suitable joints or couplings being provided in said pipes between the auxiliary boiler and said engine boiler to permit the swinging of said auxiliary boiler in either direction, a stationary stove or heater arranged to receive said auxiliary boiler and to permit its immediate removal therefrom, substantially as described.

5. In a device of the class described, the combination, of a fire engine boiler, an auxiliary boiler carried thereby, a stationary stove or heater, said stove being provided with an opening to receive said auxiliary boiler, doors for closing said opening when the auxiliary boiler is within the stove, and arranged to be thrown open when the auxiliary boiler is drawn out, substantially as described.

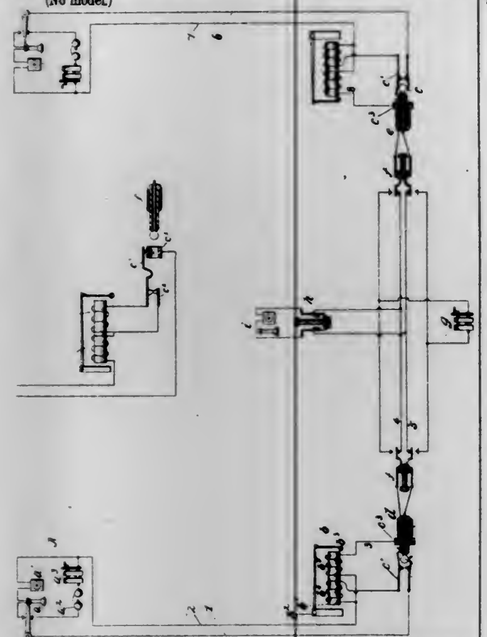
6. In a device of the class described, the combination, with a fire engine boiler, of the auxiliary boiler permanently connected thereto, and through which the water in the engine boiler circulates, and the hood or cover for covering said auxiliary boiler, said hood being provided with a suitable handle, whereby it may be readily placed over or removed from said auxiliary boiler, substantially as described.

7. In a device of the class described, the combination, with the engine boiler, the auxiliary boiler connected thereto and through which the water therein circulates, a stationary stove, said stove being provided with an opening to receive said auxiliary boiler while the engine is standing in the house, and to permit the withdrawal of the same when the engine is drawn out, and said stove being provided with a shell or casing surrounding the same and leading to the chimney or ventilator, substantially as described.

8. In a device of the class described, the combination, with the engine boiler, of the auxiliary boiler, said auxiliary boiler comprising the hollow heads 7 and 8, the head 7 being provided with a large central opening, the plate 9 covering a similar opening in the upper surface of said head 8, a series of flues or tubes connecting said heads, the pipes 12 and 13 respectively connecting said heads with the engine boiler, the couplings in said pipes 13 and 14 to permit the swinging of said auxiliary boiler in either direction, and the hood 17 having the longitudinal slot or opening to receive the pipes 13 and 14, and said hood being also provided with the handle 18 upon the upper end thereof, for the purpose set forth.

9. In a device of the class described, the combination, with a fire engine boiler, of the swinging auxiliary boiler connected thereto and through which the water in the boiler circulates, said auxiliary boiler being arranged to be carried with the engine, and the hood or cover for covering said auxiliary boiler for the purpose set forth.

542,066. ANNUNCIATOR-CIRCUIT FOR TELEPHONE-SWITCH-BOARDS. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Nov. 12, 1894. Serial No. 528,528. (No model.)



Claim.—1. The combination with a telephone line, of an electro-magnet provided with two equal differentially wound helices, one of said helices being included normally in the line circuit, and mechanism operated by the act of making connection with the line at the central station for including said second helix in circuit with the line, whereby said annunciator is rendered neutral.

2. The combination with a telephone line, of an annunciator provided with two equal differentially wound helices connected in different parallel branches of the line circuit, a springjack provided with a pair of contact terminals normally in contact to include one of said helices in the line circuit, a connecting plug, and contact terminals adapted to be actuated by the insertion of said plug in the springjack to include both of said helices in the line circuit, substantially as described.

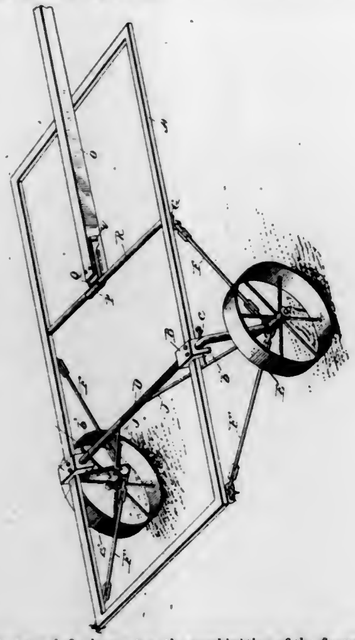
3. The combination with two telephone lines, of switches and connecting plugs therefor at the central office, individual annunciators, one for each line, each annunciator having two equal differentially wound helices, one helix of each of said annunciators being included in the line circuit, and contacts associated with the switch of one of said lines adapted when a plug is inserted in said switch to bring into the circuit the second helix of the annunciator connected with said switch, to render said annunciator neutral, while the annunciator of the other line is left in operative condition to serve as a clearing-out annunciator.

4. The combination with two telephone lines terminating in switches at the central station, of connecting plugs adapted to be inserted into said switches to loop the lines together for conversation, an annunciator for each of said lines, each of said annunciators being provided with two equal differentially wound helices, and contacts associated with said switches and operated by the insertion of the plugs therein for including in the line circuit both helices of one of said annunciators and one helix of the other annunciator, whereby the former will be rendered neutral and the latter may serve as a clearing-out annunciator, substantially as described.

5. The combination with a telephone line, of an annunciator having equal differentially wound helices, said helices being connected with the line circuit, and circuit connections and switch contacts in the springjack adapted to prevent the passage of current through one of said helices while the line is not in use for conversation, substantially as described.

542,067. HARVESTER-TRUCK. STANLEY M. SELLERS and LEWIS C. GUTTERY, Lebanon, Ohio. Filed Dec. 28, 1894. Serial No. 533,197. (No model.)

Claim.—1. In a truck for harvesters the combination of the frame A, having the grooved axle blocks B secured thereon near one end thereof, with a removable axle D bent to shape and provided with wheels, the brace rods J, J, secured on said axle, and the adjusting stay-chains F and F', as set forth.

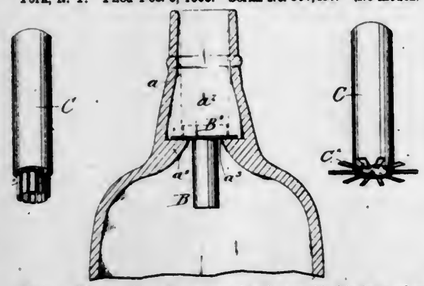


2. In a truck for harvesters the combination of the frame A, the axle blocks B having cross-grooves therein, and rigidly secured to the said frame A, with a removable axle D bent to shape resting in grooves in said blocks and provided with wheels, means for holding said axle in said block, brace rods J, J, secured to said axle, the adjusting stay-chains F secured at one end to the axle at the spindle and at the other to the frame A at a point forward of the axle, and the adjusting stay-chains F' secured at one end to said axle at the spindle and at the other at a point to the rear of said axle, as set forth.

3. In a truck for harvesters the combination of the frame A and an axle bent to shape secured loosely thereto, with adjusting stay chains F and F', adapted to be set to hold the truck at any desired height between the ground and the top of the arch formed by said axle, as set forth.

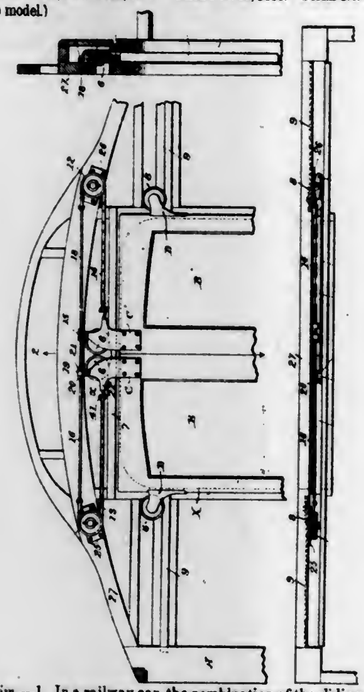
4. In a truck for harvesters the combination of a rod R secured in the frame of the truck, with a tongue, a hook in the rear end thereof, a clevis-shaped bracket Q pivoted near the rear end of said tongue and independent of the hook, having its forward end enlarged to bear against the rod R, and the slots *q* in the legs of the clevis-shaped bracket Q, as set forth.

542,068. VALVE-STOPPER FOR BOTTLES. MAX A. SKALL, New York, N. Y. Filed Feb. 6, 1895. Serial No. 537,439. (No model.)



Claim.—The combination, with a bottle provided in its neck with an internal annular shoulder made integral with and arranged in the lower part of the bottle-neck, said bottle-neck being provided with a contracted mouth merging into an enlarged chamber between the mouth and the internal shoulder, of a valve consisting of a stem or shank guided in the opening formed by the annular shoulder, and a circumferentially-notched disk secured centrally to one end of the shank and projecting around the same, said disk being capable of insertion into the bottle-neck and expansion to a greater diameter than the contracted mouth of the bottle, so as to abut against the inner wall of the contracted portion of the neck when the bottle is inverted, substantially as set forth.

542,069. DOOR-MOVEMENT FOR STREET-CARS. JOHN A. TACKABERRY, New York, N. Y. Filed Feb. 15, 1893. Serial No. 462,463. (No model.)



Claim.—1. In a railway car, the combination of the sliding doors, the rails 7 above them, the rails 9, the wheels 6 mounted on brackets C, C' attached to the upper part of said doors, pulleys 10 and 12, chains 13 and 14, passing around said pulleys, and rods 16 and 18, connected to said chains, and both rods and chains being connected to said brackets, substantially as described.

2. In a railway car, the combination of the sliding doors, the rails 7 above them, the rails 9, the wheels 6 mounted on brackets C, C' attached to the upper part of said doors, guide pulleys, chains 13 and 14 passing around said pulleys, and rods connected to said chains and extending to the brackets in different vertical planes, substantially as described.

3. In a railway car, the combination of the sliding doors, the rails 7 above them, the rails 9, brackets C, C' attached to the upper part of said doors and provided with the arms 15 and 19 in different vertical planes, the wheels 6, mounted on said brackets, pulleys 10 and 12, chains passing around said pulleys, and rods 16 and 18 connected to the arms of the brackets and to the chains, and said chains being also connected to said brackets, substantially as set forth.

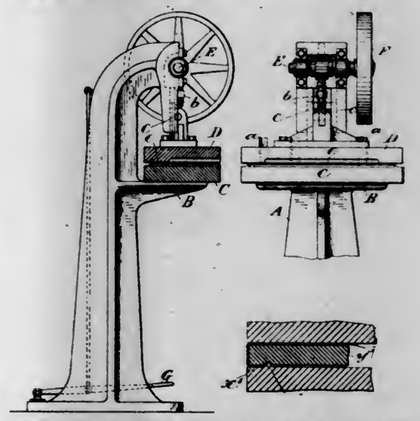
4. In a railway car, the combination of the sliding doors, the rails 7 above them, the rails 9, the wheels 6 mounted on brackets C, C' attached to the upper part of said doors, a vertically arranged pulley 10 and a pulley 12, arranged at an angle to a vertical plane, chains 13 and 14 passing around said pulleys and being directly over the upper edges of the doors, and rods 16 and 18 connected to said chains, both said rods and chains being connected to said brackets, substantially as shown and set forth.

542,070. SHANK-STIFFENER. JEREMIAH M. WATSON, Boston, Mass. Filed Sept. 4, 1894. Serial No. 522,002. (No model.)

Claim.—The herein described shank stiffener for boots and shoes, comprising the flexible non-metallic body A, the flat steel spring B applied to said body, and staples C, the distance between the points of which staples is slightly greater than the width of the spring, whereby said staples may be applied by straddling the spring and without puncturing said spring, and having their points engaged in the body, and thus holding the spring in place and permitting the flexure of the spring and body independently of each other at all points, substantially as set forth.

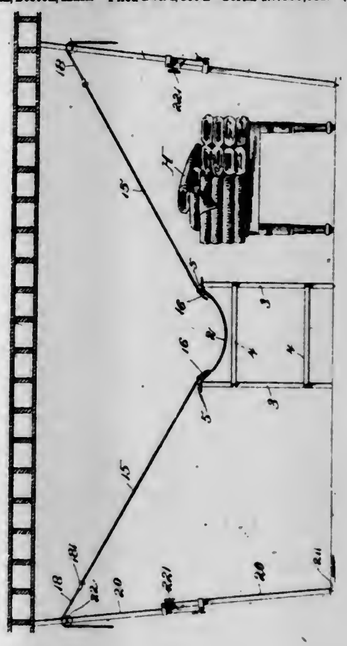


542,071. MACHINE FOR CLINCHING SHEET METAL OF STOVE-BOARDS. WILLIAM WESTLAKE, Brooklyn, N. Y. Filed Jan. 11, 1895. Serial No. 534,530. (No model.)



Claim.—In a machine for the purpose set forth, the combination with the stationary, supported die C, of angular form provided with a knife-edge rib *d* which extends along the two straight sides of the die and about the rounded corner thereof at a uniform distance from the edge of the die, the guides *a*, fixed to the die C at its straight sides, and the upper, reciprocating die D, having the same contour as the die C, substantially as set forth.

542,072. PROTECTIVE APPARATUS. BENJAMIN B. WHITTEMORE, Boston, Mass. Filed Dec. 4, 1894. Serial No. 530,812. (No model.)



Claim.—1. A portable protective apparatus comprising covers or shields to be spread or extended in a room or the like space and a conductor to receive the water that is shed from the said covers or shields and discharge it where desired, substantially as described.

2. A portable protective apparatus comprising covers or shields to be spread or extended in a room or the like space, means for securing said cover or shields in proper position and a collecting trough or conductor to receive the water that is shed from the said covers or shields and discharge it where desired and means for supporting said trough or conductor, substantially as described.

542,073. SUBSTANTIVE COTTON DYE. JOHANN J. BRACK, Basle, Switzerland, assignor to L. Durand, Huguenin & Co., same place, St. Fons, France, and Hüningen, Germany. Filed Dec. 12, 1894. Serial No. 531,576. (Specimens.)

Claim.—1. The herein described improvement in the manufacture of substantive cotton dyes, which consists in combining an amido-naphtolsulfo acid with the diazo-derivative of the base derived from the condensation of formaldehyde with dianisidin, substantially as set forth.

2. The herein described substantive cotton dye derived from amidonaphtoldisulfo acid 1.3.6.8 and the diazo-derivative of the base produced by the condensation of formaldehyde with dianisidin, said coloring matter being in the form of a black-brown powder, which dies unmordanted cotton greenish-blue and being soluble in water with a blue coloration, slightly soluble in alcohol, soluble in concentrated sulfuric acid with a blue color, from which solution on diluting with water a violet precipitate is thrown down.

542,074. POLICE-PATROL SIGNAL-BOX. EMIL BROMBACHER, Buffalo, N. Y. Filed Nov. 26, 1894. Serial No. 529,949. (No model.)

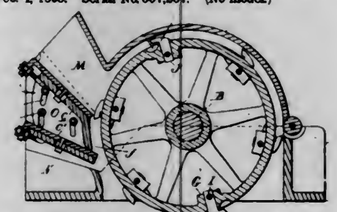


Claim.—1. The combination with a signal mechanism having a switch push button, the box containing the same and adapted to contain a telephone, and the door closing said box, of a supplemental push button arranged in the door in line with the internal switch button and accessible from the outer side of the door, whereby the internal switch button can be operated by the outer push button without opening the door, substantially as set forth.

2. The combination with a signal mechanism having a fast and slow call button, and the box and door inclosing the same, of a supplemental actuating push button arranged in the door opposite said call button and accessible from the outer side of the door, and a lock or catch arranged on the door and adapted to engage with said supplemental push button for holding the same in its depressed position, substantially as set forth.

3. The combination with a signal mechanism having a fast and slow call button and the box and door inclosing the same, of a supplemental actuating push button arranged on the door in line with said call button, and extending outward through the door, and a spring bolt arranged on the outer side of the door and adapted to interlock with the supplemental push button, substantially as set forth.

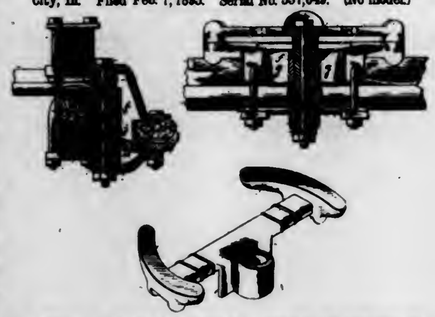
542,075. WOOD-HOG. EDWARD W. BROWN, Bay City, Mich. Filed Feb. 4, 1895. Serial No. 537,287. (No model.)



Claim.—1. In a wood hog, the combination of a base, a cylinder journaled therein having projecting cutting teeth, a hood hinged to one side of the base adapted to inclose the top of the cylinder, a feed spout on the hood, and a vertically adjustable bottom plate supported in the spout having a series of independently longitudinally adjustable bed knives supported thereon.

2. In a wood hog, the combination of the case, the cutting cylinder, and a feed spout, of a detachable, vertically adjustable bed knife supporting plate secured to the sides of the spout, having a series of inclined bearings thereon, bed knives supported thereon and independent means for longitudinally adjusting the bed knives.

542,076. FIFTH-WHEEL FOR VEHICLES. LEWIS BURG, Dallas City, Ill. Filed Feb. 7, 1895. Serial No. 537,649. (No model.)



Claim.—1. In the fifth wheel of a vehicle, the combination with the upper and lower plates, of a frusto-conical projection depending from the rear portion of the upper plate, a depending conical socket on the rear side of the lower plate and a brace extending from beneath the reach, having a lug on its front end upon which the said socket of the lower plate rests, said lug having a conical recess in its upper surface, the conical socket and recess of the lug receiving the projection of the upper plate, and a bolt through the center of the said conical projection and lug securely binding the parts together, as and for the purpose set forth.

2. In the fifth wheel of a vehicle, the combination with the upper and lower plates, of a brace integral with the upper plate secured to the reach, a conical projection depending from the rear of the upper plate, a depending conical socket on the rear side of the lower plate having a flat vertical flange on its front side for supporting the axle bed, a reach brace having an upwardly extending lug on its front end upon which said socket rests, and a conical recess in the upper side of said lug, and a plate beneath the axle having a lug supporting the front end of the reach brace, and said parts being bound together by a bolt through the depending projection of the upper plate, the lugs of the reach brace and axle plate, as and for the purpose set forth.

3. In a fifth wheel for vehicles, the combination with the upper and lower plates, of a brace integral with the upper plate, secured to the reach, a conical projection depending from the rear of the upper plate, a depending conical socket on the rear of the lower plate having a flat vertical flange on its front side in contact with the axle bed, a reach brace having a lug on which the said socket rests and a conical recess in the upper side of said lug, an axle plate beneath the axle, having a concave upper surface to receive the axle, said plate having a lug on its rear side supporting the front end of the reach brace and a conical recess on its under side, and a supplemental reach brace having a conical lug on its front end fitting into the recess of the lug of the axle plate, all of said braces being secured to the reach and the parts held together by the conical projections in the conical sockets and recesses, as and for the purpose set forth.

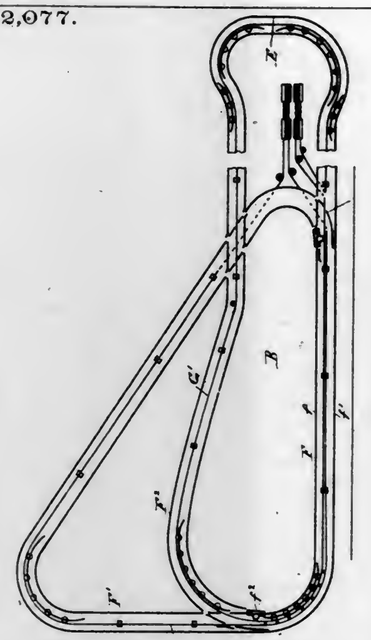
542,077. SYSTEM FOR HANDLING COAL. JEREMIAH CAMPBELL, Chelsea, Mass. Filed Jan. 19, 1895. Serial No. 535,478. (No model.)

Claim.—1. The combination of a track system F', its cable G, the track system F^3, its cable G', the track F with which both systems connect and through which the cables G G' extend, and means within said track F for separating the cables whereby the operative cable is maintained in contact with its holding and guiding rolls while the inoperative cable is held from contact therewith, as and for the purposes described.

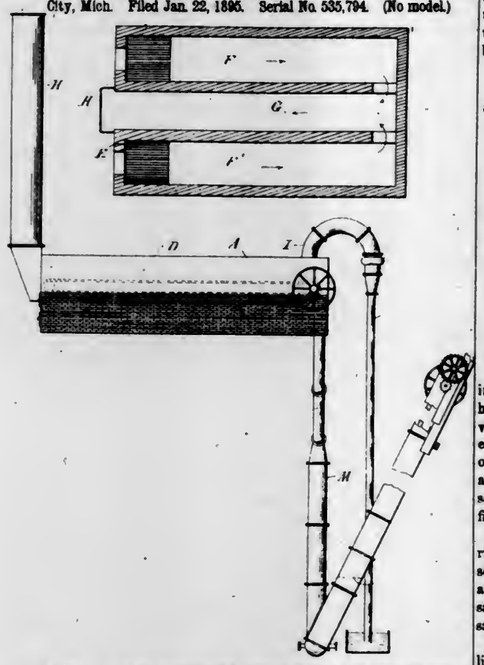
2. The combination of the track F, the two cables G, G' traversing said track, the rolls I, I', and the pins I^3, as and for the purposes described.

3. The combination of a track section F, the track section F', the track section F^3, the cable G extending from the track section F into the track section F', the cable G' extending from the track section F into the track section F^3, and the switch comprising the pivoted frog H having the rail section A^3, A^2 separated by the groove A', and the rail A^3 having the diagonal recess across it through which the cable G' runs and the laterally extending tread support A^{13}, and the rail having the recess A^{11} through which the cable G runs, the said rail having the tread support A^{12} extending beyond the line of the rail, as and for the purposes described.

542,077.



542,078. EVAPORATING APPARATUS. THOMAS CRANEY, Bay City, Mich. Filed Jan. 22, 1895. Serial No. 535,794. (No model.)



Claim.—1. In an evaporating apparatus, the combination with a furnace and the evaporating pan, of depending settling legs from the pan, a foot common to all the legs, a conveyer at the lower end of the foot, a casing for the conveyer, and means for conveying the crystalline deposit from the pan to the legs, substantially as described.

2. In an evaporating apparatus, the combination of the horizontal furnace evaporating pan, conveyers adapted to deliver the precipitate at one end thereof, a depending settling leg into which the conveyer discharges, a conveyer casing at the foot of the leg and a conveyer therein, substantially as described.

3. In an evaporating apparatus, the combination of an evaporating pan, a series of arches in the bottom thereof, horizontal troughs between the arches, a series of conveyers in the troughs delivering to the rear of the pan, a depending settling leg at the end of each conveyer, a common foot for all the settling legs, a conveyer casing leading above the level in the pan and a conveyer in the casing, substantially as described.

542,079. WITHDRAWN.

542,080. PROCESS OF MAKING PHOSPHATES SOLUBLE IN DILUTE CITRIC ACID. DAVID T. DAY, Washington, D. C., assignor of two-thirds to F. B. Squire, Cleveland, and Amor Smith, jr., Cincinnati, Ohio. Filed Nov. 26, 1594. Serial No. 530,018. (No specimens.)

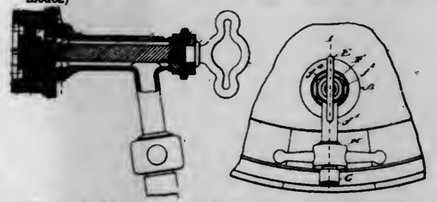
Claim.—1. The process of manufacturing a phosphate of lime essentially soluble in dilute citric acid, which consists in heating a natural or artificial mixture of phosphate and a calcareous base in a suitable furnace to the temperature at which carbonate of lime gives up its carbonic acid, and keeping the temperature below the temperature of partial fusion and securing a maximum of citric-acid-soluble phosphates as described.

2. The process of manufacturing a phosphate of lime soluble in dilute citric acid, which consists in heating a natural or artificial mixture of phosphate and an alkaline earthy base and a potassium salt, such as sulphate or muriate, in a suitable furnace, to a temperature below that at which carbonate of lime ordinarily gives up its carbonic acid and maintaining such low temperature, much below the temperature of partial fusion, as described.

3. The process of manufacturing phosphate of lime soluble in dilute citric acid, which consists in heating a mixture composed of phosphate rock containing a suitable percentage of silica, and a calcareous base in a suitable furnace to the temperature at which carbonate of lime gives up its carbonic acid and keeping the temperature well below partial fusion and securing a maximum of citric-acid-soluble phosphate, as described.

4. The process of manufacturing phosphate of lime soluble in dilute citric acid, which consists in heating a natural or artificial mixture of phosphate, a calcareous base, and added silica, to a temperature above that at which carbonate of lime would give off its carbonic acid and maintaining such temperature as described.

542,081. COMBINED TAP-PLUG AND FAUCET. ALBERT HALLOWELL, Lowell, Mass., assignor to the Universal Barrel Tap Company, Charleston, W. Va. Filed Oct. 13, 1894. Serial No. 525,781. (No model.)



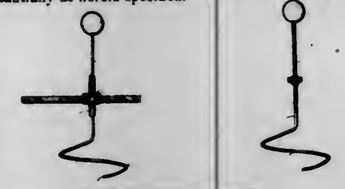
Claim.—1. The combination of the plug, having a way and having ribs in said way, a delivery-tube, adapted to enter said way and having cams to engage said ribs, to retain said tube in said way, a valve, arranged in said plug, and a key, arranged in said tube and engaging said valve and having a collar, adapted to press upon the outer end of said tube, said key having also a projection or cam, adapted to engage another rib, with which said plug is provided in said way, to lock said tube in said way, as and for the purpose specified.

2. The combination of the plug, having a way provided with a rib, a valve, arranged in said plug, a delivery-tube, adapted to be inserted in said way, and a key, turning in said tube and secured therein and adapted to engage said valve and having a projection to engage said rib and to prevent the removal of said tube from said way when said valve is open, as and for the purpose specified.

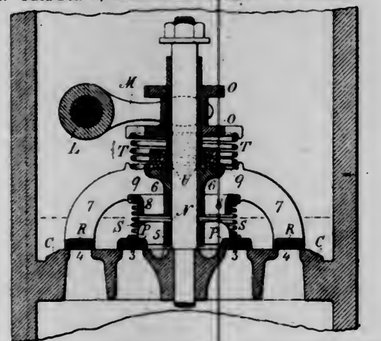
3. In a faucet, the combination of a plug, a valve therein, a delivery-tube detachably connected with the plug, and a valve-actuator or key having means of engagement with the plug to prevent withdrawal of the actuator except when the valve is closed, said actuator also having means of engagement with the delivery-tube preventing independent movement of the latter to detach it from the plug, substantially as described.

542,082. HAT-FASTENER. WILLIAM G. KIRCHHOFF, St. Louis, Mo., assignor to F. William Grundmann, same place. Filed Nov. 21, 1894. Serial No. 529,481. (No model.)

Claim.—The improved hat fastener, comprising the body having a head 2 at one end and a spiral 4 at its opposite end, a series of screw-threads on the said body at a point intermediate of said head and said spiral, and an interiorly screw-threaded bearing to engage the hat, and in which bearing said screw-threaded portion of said body engages, whereby the fastener may be securely attached to the hat, substantially as herein specified.



542,083. VALVE FOR PUMPS. GEORGE DE LAVAL, Warren, Mass., assignor to the Geo. F. Blake Manufacturing Company, New York, N. Y. Filed Dec. 26, 1894. Serial No. 532,951. (No model.)



Claim.—1. The combination with the valve seat having annular water ways, of two annular valves, hubs and arms for the same and a valve rod, and a spring intervening between the two annular valves, substantially as set forth.

2. The combination with a valve seat having two annular water ways through the same, of a main annular valve and its hub, a smaller valve and its hub, a rod upon which the hub of the smaller valve can slide, a spring intervening between the smaller and larger valves, a collar and a spring between the same and the larger valve and means for moving the collar and varying the pressure of the spring, substantially as set forth.

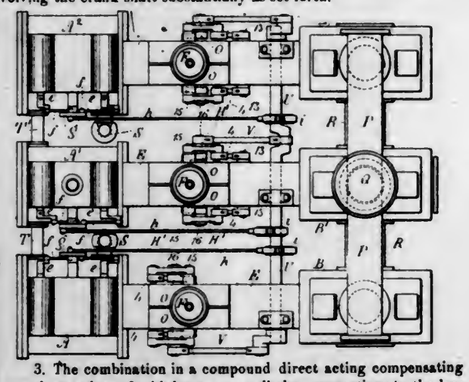
3. The combination with a valve seat having two annular water ways through the same, of a main annular valve and its hub, a smaller valve and its hub, a rod upon which the hub of the smaller valve can slide, a spring intervening between the smaller and larger valves, a collar and a spring between the same and the larger valve and means for moving the collar and varying the pressure of the spring, and a rubber block between the hub of the main valve and the collar, substantially as set forth.

4. The combination with the valve seat having annular passages, of a central rod, a smaller valve and its hub sliding upon the rod, a larger annular valve and its hub sliding upon the rod, a helical spring intervening between the two valves, a collar, and a spring intervening between the collar and the larger annular valve, and means for moving the collar endwise and varying the action of the spring upon the valve, substantially as set forth.

542,084. COMPENSATING PUMPING-ENGINE. GEORGE DE LAVAL, Warren, Mass., assignor to the Geo. F. Blake Manufacturing Company New York, N. Y. Filed Jan. 21, 1895. Serial No. 535,602. (No model.)

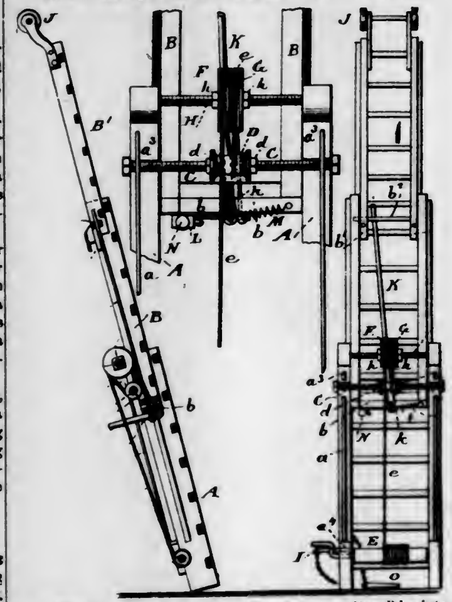
Claim.—1. The combination in a direct acting pumping engine having two or more steam and pumping cylinders, of compensating cylinders and their connecting levers to each cross head, a shaft extending across the engines and having cranks at equal degrees apart, connecting rods between the cranks and the levers of the compensating devices for revolving the shaft, and connections from the revolving crank shaft to the valves of the engine, substantially as set forth.

2. The combination in a compound direct acting compensating pumping engine, of a high pressure cylinder, connections to the low pressure cylinders, valves for the respective engines, and means for actuating the same pumping cylinders and direct connections, compensating cylinders and connections between the plungers thereof and the respective cross heads, a shaft supported by the engine frames and having cranks at equal distances apart, and connecting rods between the cranks and the levers of the compensating devices, for revolving the crank shaft substantially as set forth.



3. The combination in a compound direct acting compensating pumping engine, of a high pressure cylinder, connections to the low pressure cylinders, valves for the respective engines, pumping cylinders and direct connections, compensating cylinders and connections between the plungers thereof and the respective cross heads, a shaft supported by the engine frames and having cranks at equal distances apart, and connecting rods between the cranks and the levers of the compensating devices for revolving the crank shaft, eccentrics on the crank shaft and connections to the valves of the respective cylinders, substantially as set forth.

542,085. TRIPLE LADDER. GEORGE F. LAWYER, Uniontown, Kans. Filed Sept. 21, 1894. Serial No. 523,695. (No model.)



Claim.—1. A triple ladder whose upper section slides into the middle one and that into the bottom one, the sections being extensible by means of a windlass, one pulley on a movable shaft, two pulleys on a fixed shaft and a windlass-rope substantially as shown and described.

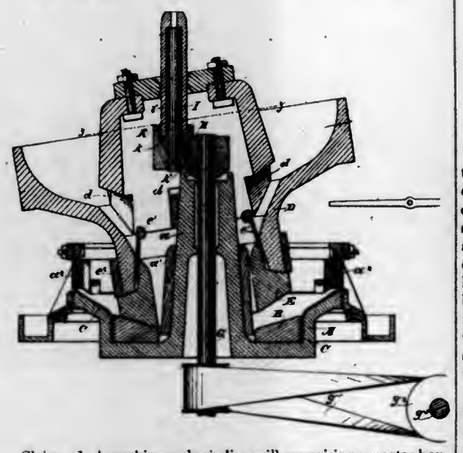
2. The combination with the three sections of a triple ladder, the upper ones sliding into the bottom one, of a windlass and rope, a movable shaft with one pulley, a fixed shaft with two pulleys, a lock-pin, a stop pin and a transverse movable lock bar, all arranged to operate as described.

3. The combination with the transverse slide which locks the two upper sections together, of the vertical shifting rod, the spring and the hand lever as shown and described.

542,086. ROOFING-PAINT. WILLIAM T. LEATHERS, Mount Eagle Pa. Filed Mar. 8, 1894. Serial No. 502,893. (No specimens.)

Claim.—A paint compound consisting of gasolene, gas tar, asphalt patent drier and powdered iron combined in substantially the proportions set forth.

542,087. CRUSHING AND GRINDING MILL. HENRY L. LIGHTNER, San Francisco, and JOHN J. NEWSOM, Oakland, assignors, by mesne assignments, to H. L. Lightner, H. C. Biggs, and O. C. Haslett, San Francisco, and Jessie L. Newsom, Oakland, Cal. Filed Sept. 13, 1894. Serial No. 522,939. (No model.)



Claim.—1. A crushing and grinding mill comprising a mortar having a central cone and outwardly and upwardly sloping sides terminating in vertical encircling sides provided with screen openings; an inwardly sloping die in the bottom of the mortar, a muller of conoidal form surrounding the central cone of the mortar having a shoe on the inside near its lower end so that its inner surface may crush the material prior to its further reduction between the bottom of the shoe and the die in the mortar, said muller having its upper portion provided with inwardly sloping walls for directing the material between its inner walls and the central cone of the mortar, with feed openings through the sides of the muller communicating with the interior thereof; a hopper surrounding the muller and connected and movable with it, a rotary shaft driven from below and passing up through the cone of the mortar, a crank on the top of the shaft within the cone of the muller, and a crank pin fitted loosely through the top of the muller, substantially as herein described.

2. In a crushing and grinding mill having a mortar provided with a central cone, a muller of conoidal form, and a driving shaft passing upwardly through the cone and driven from below, a crank on the top of the shaft and fitting the top of the cone, a chamber in the top of the crank with a port leading therefrom through the crank to the space in the top of the cone, a crank pin projecting upwardly from the crank and a loose sleeve on the pin passing loosely up through the top of the muller and having its lower end fitting the chamber in the top of the crank.

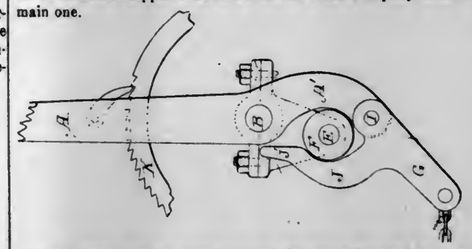
3. In a crushing and grinding mill, the combination of a mortar having a central cone, a muller having an encircling hopper and feed ports through its walls, and the means for wabbling the muller within the mortar about its central cone, consisting of the uprising central shaft driven from below, the crank on the shaft and a crank pin passing freely through the top of the muller and fitted with the loose wearing sleeve substantially as herein described.

4. In a crushing and grinding mill, the combination of a mortar having a central cone, a muller fitted in the mortar, means for wabbling the muller, and an encircling hopper around the muller, the outer edge of said hopper projecting beyond the plane of the sides of the muller to act as a contact against a mechanism for operating a self-feeder, substantially as herein described.

5. In a crushing and grinding mill, the combination, of a mortar having a central cone, a hollow shell forming a cylindrical or conoidal muller, a non-gyratory shaft passing up through the central cone of the mortar, having a crank pin fitted thereto just below the top of the muller, and passing loosely through the same, and means for rotating the shaft.

542,088. BRAKE-LEVER. WILLIAM H. MASTERMAN, Oakland, Cal., assignor of one-half to W. M. Rank, same place. Filed Nov. 8, 1894. Serial No. 528,209. (No model.)

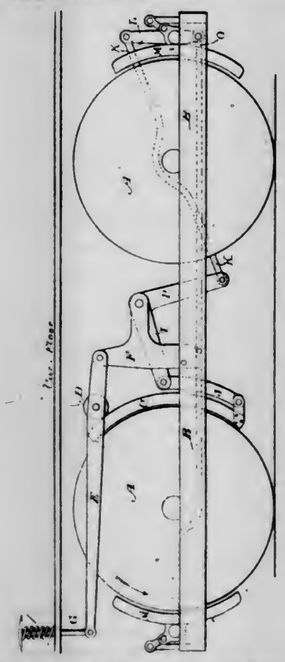
Claim.—1. A brake lever movable about a fulcrum pin, an extension lever pivoted to its lower end and having its own lower outer end connected with the brake mechanism, a curved arm projecting from the side of the second lever, a bearing fixed with relation to the curve of said arm so that when the levers are moved forward, it will act to cause the supplemental lever to travel more rapidly than the main one.



2. A brake lever turning about the stationary fulcrum pin, an extension lever having one end pivoted to the lower end of the main one, and its own outer end connected with the brake mechanism, a curved arm or segment extending from the second lever having a straight extension at its outer end, a roller journaled upon a stationary pin with relation to the levers, so that the curved segment incloses and bears upon it, when the levers are thrown backward to release the brake, said segment traveling about the roller when the levers are thrown forward so as to move the supplemental extension rapidly about the pin which connects it with the main lever during the first portion of its travel, while the straight portion of the extension arm travels in contact with the roller during the remainder of the forward movement.

3. A main and supplemental lever pivoted together below the fulcrum pin of the main lever, the supplemental lever having a curved arm or segment with a straight extension from the outer end thereof adapted to travel in contact with a fixed roller, a journal-box supporting the fulcrum pin of the main lever and a bracket extension formed as a part thereof having the fulcrum pin of the roller fixed at its lower end.

542,089. CAR-BRAKE. WILLIAM H. MASTERMAN, Oakland, Cal., assignor to the Masterman Car Equipment Company. Filed Mar. 4, 1895. Serial No. 540,511. (No model.)



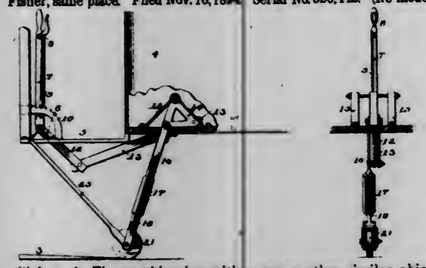
Claim.—1. A device for applying brakes to cars, consisting of a slidable shoe pivotally held at one end, a means including a pressure device whereby said shoe is positively forced into contact with the revolving wheel of the car, a mechanism intermediate between this

sliding shoe and the brake shoes whereby the latter are forced into contact with their respective wheels by the movement of the sliding shoe.

2. A device for applying brakes to cars consisting of a segmental shoe movable to and from the periphery of a wheel of the car, an anti-friction roller adapted to press upon the back of the shoe, and mechanism by which it may be thus pressed upon the shoe, and the latter forced into contact with the periphery of the wheel whereby the shoe is caused to travel in the direction of movement of the wheel, and connecting rods and levers intermediate between the sliding shoe and the brake shoes whereby the movement of the sliding shoe is transmitted and the brakes applied.

542,090. MECHANISM FOR OPERATING RAILWAY-SWITCHES.

ALBERT R. MOORE, Houston, Tex., assignor of one-tenth to Charles N. Fisher, same place. Filed Nov. 10, 1894. Serial No. 528,442. (No model.)

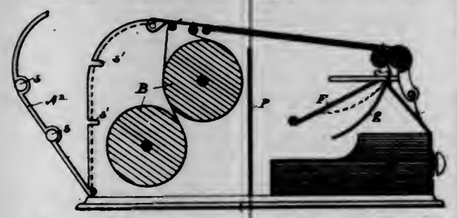


Claim.—1. The combination with a car or other similar object, of the lever, the inclined arm secured thereto, the rearwardly extending bar, the triangular casting or lever pivoted to a bearing secured to the car, and to the rear end or corner of which said bar is pivoted, the rod pivotally connected with the other end or corner of said casting or lever and wheel journaled to said rod, the construction being such that when said casting or lever is depressed by the link bar and connections, the pivots of the casting, the link bar and the wheel will be in alignment with each other, substantially as described.

2. The combination with a car or other similar object, of the lever, the inclined arm, the rearwardly extending bar, the triangular casting pivoted at one corner to the car, and to the rear end of which said bar is pivoted, the rod or bar pivoted to the other corner of said casting, the sleeve connected therewith, a coiled spring located in said sleeve, the rod inserted in the sleeve and the wheel journaled thereto, substantially as described.

3. The combination with a car or other similar object, of the lever, the arm secured thereto, the rod or bar pivoted to said arm, the triangular casting pivoted at its upper corner to the car, the bar pivoted to the front corner of the casting, the sleeve secured thereto, the differential springs located in said sleeve, the rod inserted in said sleeve and the wheel journaled thereto, substantially as described.

542,091. AUTOGRAPHIC REGISTER. GEORGE MORRIS, Cincinnati, Ohio. Filed Dec. 11, 1893. Serial No. 493,447. (No model.)



Claim.—1. In an autographic register, the combination with a fixed cutting shear and a movable shear pivoted to and co-operating with the fixed shear, of the independent spring guide *h* arranged at an inclination across the path of the movable shear and adapted to hold said movable shear in proper cutting relation with the fixed shear under a pressure that increases as the movable shear nears the end of its travel, substantially as set forth.

2. The combination with the fixed shear and the movable shear, of the independent spring guide *h* secured at an inclination across the path of the outward extension of said movable shear and adapted to resist its forward movement by an upward and increasing pressure, substantially as set forth.

3. In combination with the movable cutting bar moving in under relations with the fixed cutting bar, the spring, *h*, formed as described, the holding stud, *i*, and the guide stud, *j*, substantially as set forth

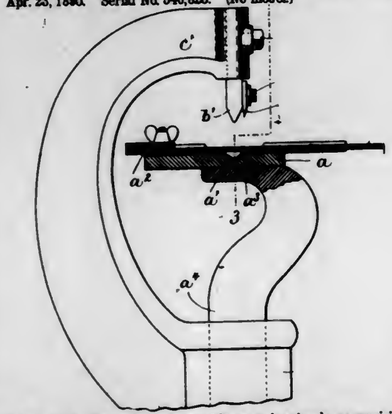
4. In an autographic register, the combination with the feed-out rolls, the fixed dividing bar *c*, the cutting shears, and the shield *e*, of the pivoted extension *f* adapted to normally close the gap between the lower edge of said dividing bar and the upper edge of the shield and extended across the path of the movable cutting shear in position to be operated by said movable shear to swing out of the way in cutting, substantially as set forth.

5. In an autographic register, the combination of the feed-out rolls, the fixed dividing bar *c* immediately below said rolls, the fixed cutting shear d^2 below and in front of said dividing bar, the movable shear d^3 having one end pivoted to the fixed shear, the shield *e*, and the pivoted extension *f* normally extended across the path of the movable cutting shear, between the lower edge of the fixed dividing bar and the upper edge of the shield *e*, the said pivoted extension *f* being operated by the movable cutting shear, substantially as set forth.

6. In an autographic register, the combination with the cutting mechanism, the filing arm, the feed-out rolls, and the fixed dividing bar, of a pivotal extension of said bar provided with a rearwardly extended guide adapted to receive the filing slip when severed by the cutting mechanism and raise the same into close relation with the filing arm preparatory to the action of the latter, substantially as set forth.

7. In an autographic register, the combination with the cutting devices and filing mechanism, of guide fingers attached to a pivotal support operated from the cutting mechanism and adapted to receive the filing slip when severed and raise the same into close relation with the filing mechanism preparatory to the action of the latter, substantially as set forth.

542,092. MACHINE FOR MOLDING SPRING-HEELS. BURTON E. MORRISON, Haverhill, assignor to William Gordon, Boston, Mass. Filed Apr. 23, 1895. Serial No. 546,825. (No model.)



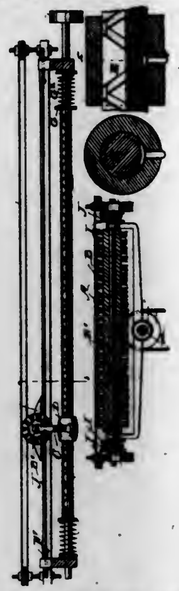
Claim.—1. A machine for molding spring heels, comprising two members, namely, first a sole-supporting bed having a V-shaped recess, and secondly a scoring-blade arranged to enter the top surface of a sole on said bed along a line coinciding with one edge of said recess, and a bending-die affixed to said blade and arranged to force a portion of the sole into said recess, one of said members being movable toward and from the other.

2. A machine for molding spring heels, comprising two members, namely, first a sole-supporting bed having a V-shaped recess, and an adjustable gage adjacent to the inner edge of said recess; and secondly a scoring-blade arranged to enter the top surface of a sole on said bed along a line coinciding with the outer edge of said recess, and a bending-die affixed to said blade and arranged to force a portion of the sole into said recess, one of said members being movable toward and from the other.

542,093. BOLTING-CLOTH BRUSH. HARRY K. MOWSON and ROSWELL P. COREY, Scottsville, N. Y. Filed July 10, 1894. Serial No. 517,099. (No model.)

Claim.—1. A bolting cloth brush, comprising a brush proper, a support for said brush, a nut connected with the said support a revoluble screw rod provided with right and left hand threads engaging the said nut to impart a traveling motion to the latter, and a spring pressed shifting device arranged at the ends of the screw rod, substantially as described.

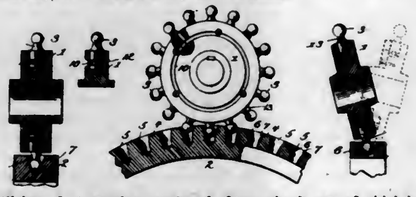
2. A bolting cloth brush, comprising a brush proper, a bracket in which the said brush is journaled, a nut on the said bracket, a revoluble screw rod engaging the said nut, to impart a traveling motion to the latter, the said screw rod being provided with right and left hand threads with which the nut engages, and spring-pressed disks held loosely on the screw rod at the ends of the threads of the said screw rod, the said disks serving to return the nut after reaching the ends of the thread on the screw rod, substantially as shown and described.



3. A bolting cloth brush, comprising a brush journaled in a bracket, a nut held on the said bracket, a revoluble screw rod having a right and left hand thread engaging the said nut, pulleys held on the shaft of the said brush, and a rope fixed at its ends and winding on the said pulleys, substantially as shown and described.

4. A bolting cloth brush, comprising a brush journaled in a bracket, a nut held on the said bracket, a revoluble screw rod having a right and left hand thread engaging the said nut, pulleys held on the shaft of the said brush, a rope fixed at its ends and winding on the said pulleys, and shoes held on the ends of the said shaft and adapted to travel on longitudinal rails below the bolting cloth, substantially as shown and described.

542,094. GEARING. CARL MUEHLEISEN, Baltimore, Md. Filed Mar. 29, 1894. Serial No. 505,542. (No model.)



Claim.—1. A gearing composed of two wheels, one of which has teeth having rounded working ends and a neck or undercut part extending from the round of the end to the face of the wheel, the other wheel having holes of round cross section, each hole at one end being flared outward to the face of the wheel, whereby to allow one wheel to run correct with the other wheel of any diameter, at any desired angle to each other and with equal bearing surface of the teeth in all positions of the wheels.

2. A gearing composed of two wheels, one of which has teeth having rounded working ends and a neck or undercut part extending from the round of the end to the face of the wheel, the other wheel having holes of round cross section their walls flaring to the face of the wheel, in combination with a separate bearing for each shaft journaled in line with the contact elements and fixed supports for said journals, whereby both wheels are mounted in the same fixed supports, and either or both may be adjusted at different inclinations to each other, substantially as described.

3. A pair of gear wheels each formed with radial holes of round cross section, the holes of one wheel being filled with teeth formed with rounded shanks and rounded working ends adapted to engage holes in the other wheel which flare outward to the working face, in combination with means for engaging the round shanks of the teeth, whereby the latter may be turned on such engaging means to change the wear surface of their acting ends in relation to the walls of the holes of the coacting wheel.

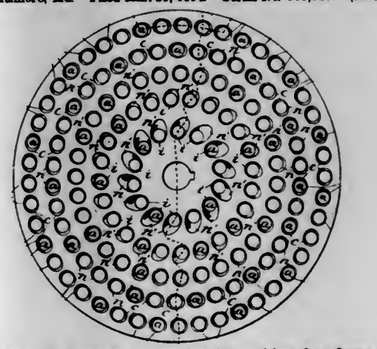
4. A gearing composed of two wheels, one having male teeth with ball shaped working ends, the other having radial holes forming female teeth having flaring open ends forming convex working walls within said holes for the purpose described.

5. A gear-wheel provided with radial teeth formed with ball-shaped working ends, a cylindrical shank and a reduced or neck part joining the cylindrical shank and the ball end, the said shank being the fastening part for the tooth in the wheel and the said neck part being a part of the acting end of the tooth.

6. A gear-wheel formed with cylindrical holes and teeth removably secured therein by corresponding shanks having an annular groove and a ring for engaging said groove, whereby the teeth can be turned to present new engaging or wear surfaces.

7. A gear wheel formed with cylindrical holes in its acting face and an annular groove in its side intersecting said holes and having teeth of round cross section formed with annular grooves on their inner ends and a ring engaging the annular groove in the side of the wheel and the annular groove in the ends of the teeth.

542,095. CHANGEABLE-SPEED GEARING. CARL MUEHLEISEN, Baltimore, Md. Filed Mar. 29, 1894. Serial No. 505,543. (No model.)



Claim.—1. A speed-gear having its working face formed with holes arranged in concentric circles forming female teeth their walls flaring to the working face of the gear and being both convex and concave lengthwise of said holes, substantially as described.

2. A speed gear-wheel having its working face formed with holes arranged in concentric circles, the walls of the holes of the several circles flaring to the working face of the gear and having said walls concave at *i* on that side at which the male tooth leaves the hole and convex on the other sides *c*, *c* and *n*, the said convex walls increasing the arc of such convexity as at *n'* as the several circles of holes approach the center of the wheel, to cause the flare at the ends of the holes to stand in an oblique direction at one side of said hole toward the circumference of the wheel, as shown and described for the purpose stated.

3. A speed gear composed of two engaging gear the one having working faces on opposite sides formed with holes arranged in concentric circles forming female-teeth their walls flaring to the working face of the gear and having their walls both convex and concave, the other gear having teeth formed of round cross section at their working ends and adapted to engage the flaring walls of the holes, substantially as described.

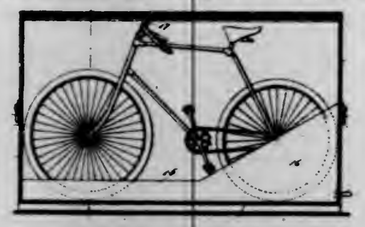
4. A speed-gear constructed with smooth faces of parallel walls and holes extending through to both walls, the holes having their walls flaring to each end and made both convex and concave lengthwise of said holes, whereby to form symmetrical female teeth on both faces of the gear in the way shown and described and for the purpose stated.

542,096. BICYCLE-CASE. NORMAN W. MUMFORD, Jaffery, Fla. Filed Feb. 19, 1895. Serial No. 538,943. (No model.)

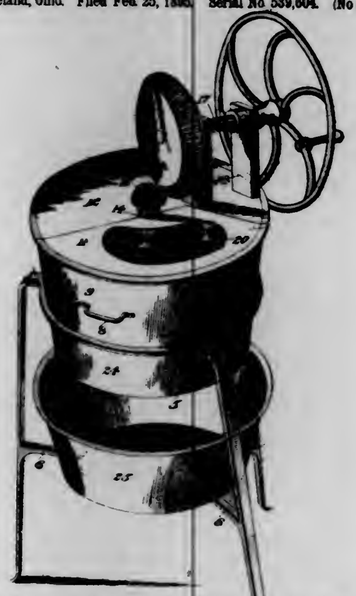
Claim.—1. As an improved article of manufacture, a bicycle case consisting of a closed structure having an opening to receive the bicycle, interior supporting devices for the bicycle and guides extending from the opening in the case adapted to guide and hold the bicycle into position to be secured to the supporting devices, substantially as set forth.

2. As an improved article of manufacture a bicycle case consisting of a closed structure having an end door and provided in its interior with parallel guides extending from said door and adapted to

receive and guide the wheel of the bicycle, said guides having at one end elevated and outwardly inclined portions, substantially as set forth.



542,097. SLICING AND PARING MACHINE. JOHN NETREFA, Cleveland, Ohio. Filed Feb. 25, 1895. Serial No. 539,604. (No model.)



Claim.—1. In a slicing and paring machine, the combination with a frame and actuating mechanism, of a rotatory unyielding cutting disk provided with a knife and a yielding gage plate, substantially as specified.

2. In a slicing and paring machine, the combination with a frame and actuating mechanism, of a cutting disk, knives supported above the disk, and an adjustable gage plate intermediate of said knives and disk, substantially as specified.

3. The combination with a cutting disk and knife, of an intermediate adjustable gage plate, substantially as specified.

4. The combination with a cutting disk and a knife supported thereabove, of a gage plate intermediate of the knife and disk, and means for securing a yielding adjustment of the gage plate, substantially as specified.

5. The combination with a cutting disk and knife supported thereabove, of a gage plate supported above the disk and provided with an aperture through which the knife projects, substantially as specified.

6. The combination with a cutting disk and knife, of an intermediate gage plate, and a spring between the disk and gage plate, substantially as specified.

7. A cutting disk consisting of a frame and plurality of knives, of spring thimbles upon the frame, gage pins projecting from the gage plate into and through the spring thimbles, spring surrounding the gage pins within the spring thimbles and bearing against the gage plate and the end of the thimble, respectively, and thumb screws upon the gage pins below the thimbles, substantially as specified.

8. A cutting disk consisting of a frame having a peripheral flange and knife flange projecting at right angles to the frame, a knife secured to the knife flange and conforming to its contour, and a gage plate fitting within the peripheral flange and provided with a slit through which the knife and knife flange project, and means for adjusting the gage plate, substantially as specified.

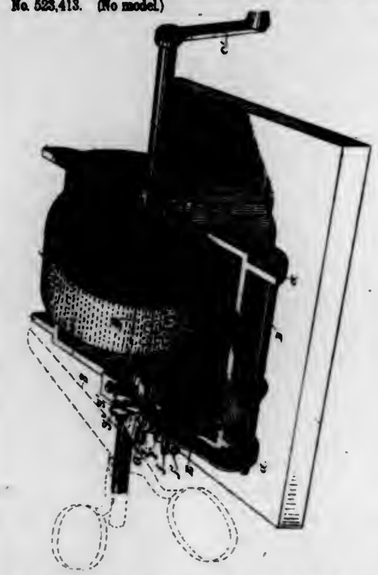
542,098. LATHING. MARSHALL C. NICHOLS, Viroqua, Wis. Filed July 20, 1894. Serial No. 518,121. (No model.)



Claim.—1. As an improved article, a lathing composed of laths each having at each side a rectangular tongue extending from end to end thereof, diagonally opposite the one on the edge of the other and of a thickness less than half that of the lath, the laths secured in place so that there will be formed between them two vertical spaces and an intersecting horizontal recess.

2. The combination with a building, of the laths, each consisting of a strip having tongues at each side diagonally opposite to each other and of a thickness less than half that of the lath, said laths being secured to the building a short distance from each other forming two vertical spaces and an intersecting horizontal recess, and the mortar inserted in said recesses, substantially as described.

542,099. GRINDING APPARATUS. WILBUR F. NICHOLS and BILLY BLOOMHART, San Francisco, Cal. Filed Sept. 18, 1894. Serial No. 523,413. (No model.)



Claim.—1. A grinding apparatus consisting of a hopper having lugs with a shaft mounted therein, a swinging bracket on the shaft, a vertical arm adjustable upon a horizontal pivot in the bracket, a horizontal clamp turnable about said vertical arm, a slidable rotary shaft mounted on the ends of the hopper and a grinding wheel on said shaft and having a lateral travel or feed along the length of the tool edge.

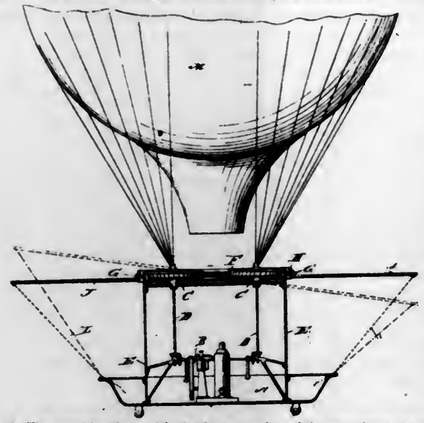
2. A grinding apparatus comprising a hopper adapted to contain water, having lugs projecting from its opposite sides forming bearings, a shaft removably mounted so that it may be fitted in the lugs on opposite sides of the hopper, a clamp carried by the removable shaft, vertical and horizontal pivots about which the clamp is turnable, a longitudinally slidable rotary shaft mounted in the frame centrally between the lugs at opposite sides, and parallel with the first named shaft, and provided with a grinder.

542,100. AERIAL NAVIGATION. ESTANISLAO C. DE LOS OLIVOS, New York, N. Y. Filed Dec. 11, 1894. Serial No. 531,455. (No model.)

Claim.—1. The combination, with the framework and the sustaining screw journaled therein to rotate about an essentially vertical axis, of an aeroplane movably connected to the frame to permit of inclining said aeroplane relatively to the sustaining screw, substantially as described.

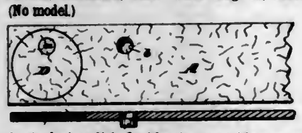
2. The combination with the framework and the sustaining screw journaled therein to rotate about an essentially vertical axis, of an aeroplane movably connected to the frame and provided with an aperture through which passes the screw when the aeroplane is inclined relatively thereto, substantially as described.

3. The combination, with the framework and the sustaining screw journaled therein to rotate about an essentially vertical axis, of an aeroplane pivoted to the frame to permit of inclining said aeroplane relatively to the sustaining screw, substatially as described.



4. The combination, with the framework and the sustaining screw journaled therein to rotate about an essentially vertical axis, of an aeroplane connected to the frame by means of a universal joint, whereby the aeroplane can be inclined in any direction relatively to the sustaining screw, said aeroplane being provided with an aperture for the sustaining screw, substantially as described.

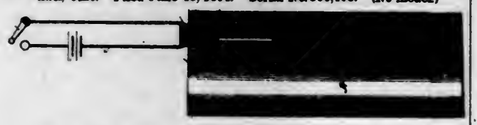
542,101. CLOSING-DISK FOR BLASTING-CARTRIDGES. GERSHOM M. PETERS, Cincinnati, Ohio. Filed Aug. 15, 1890. Serial No. 362,073. (No model.)



Claim.—1. A closing disk for blasting cartridges consisting of an expansive material and provided with an integral plug cut therefrom and then reinserted to seal the entrance or opening for the blasting barrel.

2. A closing disk for blasting cartridges consisting of straw board or analogous material as described, said disk having a plug cut therefrom and then reinserted to seal the opening for the blasting barrel as and for the purpose set forth.

542,102. BLASTING-CARTRIDGE. GERSHOM M. PETERS, Cincinnati, Ohio. Filed June 13, 1891. Serial No. 396,105. (No model.)



Claim.—1. A blasting cartridge comprising a case, a head having an aperture therethrough a detonating cap having wires extending therefrom to a source of electric energy, and a compressible plug tightly fitting the aperture and embedding the portions of the wire against which it in use rests, substantially as and for the purpose set forth.

2. A blasting cartridge comprising a case of waterproof paper a comparatively heavy card board head having an aperture therethrough, a detonating cap within such case and connected by wires to a source of electric energy, said wires passing through such aperture, and a compressible plug fitting the aperture between the wires, so as to embed them and make a water tight joint, substantially as and for the purpose set forth.

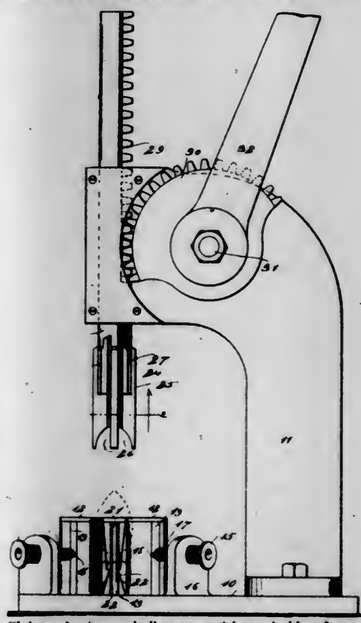
542,103. PROCESS OF MAKING BLASTING-CARTRIDGES. GERSHOM M. PETERS, Cincinnati, Ohio. Original application filed June 13, 1891, Serial No. 396,105. Divided and this application filed Jan. 9, 1893. Serial No. 457,805. (No model.)

Claim.—1. The herein described process for making blasting cartridges which consists in punching an aperture partly through the head by arresting the punch before the blank is entirely forced from the aperture thereby formed, whereby a temporary removable stopper is produced; substantially as and for the purpose set forth.



2. The herein described process of making a blasting cartridge which consists in punching a portion of the material through the head but leaving such partly punched blank in the hole so as to form a temporary stopper; substantially as and for the purpose set forth.

542,104. NUT-SHELLER. JULIEN PRADE, Waco, Tex. Filed June 16, 1894. Serial No. 514,784. (No model.)



Claim.—1. A nut sheller, comprising a holder formed of a plurality of radially yielding plates, knives carried by the said plates, and a plunger provided with radial blades engaging the said plates, substantially as and for the purpose set forth.

2. A nut sheller, comprising a holder formed of a series of radially yielding plates provided with grooves in their edges, knives carried by said plates, and a plunger provided with radial blades adapted to enter the grooves of the said plates, substantially as described.

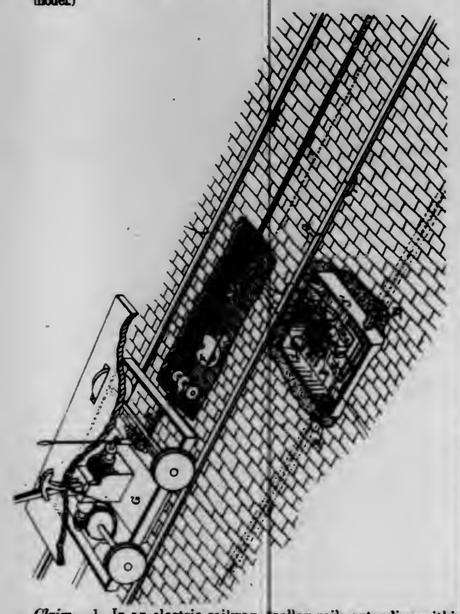
3. A nut sheller, comprising a holder having radially arranged spring-pressed plates narrowed at their upper ends to form a socket between them and provided with longitudinal grooves, knives secured to the plates and projecting from inner edges thereof, and a plunger reciprocating opposite the socket of the holder, the plunger having a concave end and a series of radial blades, some of which register with the grooves of the knife plates, substantially as described.

4. The combination, of the circumferentially placed guides, the adjustable spring-pressed knife plates mounted to slide in the guides, the plates having beveled inner edges to form a socket between them, and each plate being also provided with a longitudinal groove, and the knives secured to the plates and projecting from their inner edges, of the reciprocating plunger having a concave end and a series of radial blades, some of which register with the grooves in the knife plates, substantially as described.

5. In a nut sheller, the combination with a base provided with a series of circumferentially arranged guides, and upwardly projecting lugs, of knife carrying plates fitted to slide in the guides, and provided with shanks, hollow tension screws in the said lugs and into which screws, the shanks of the said plates project, and springs encircling the shanks, substantially as described.

6. In a nut sheller, the combination with a series of radially yielding knife carrying plates arranged circumferentially, said plates having inclined front upper edges, which are grooved longitudinally, of a plunger provided with two sets of radial blades, one set having their lower ends curved on their inner sides to fit over a nut, and the other set adapted to enter the grooves of the knife plates, substantially as described.

542,105. CONDUIT ELECTRIC RAILWAY. LEONIDAS C. PRESSLEY, San Francisco, Cal. Filed Feb. 13, 1895. Serial No. 538,270. (No model.)



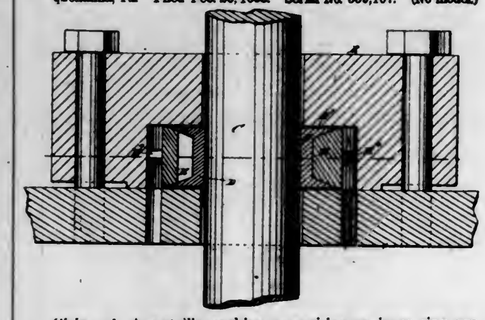
Claim.—1. In an electric railway, trolley rails extending within a conduit in alternate sections upon each side of an intermediate line, the adjacent ends of each two rails overlapping each other a short distance, a main insulated conductor extending parallel with the conduit within a sealed channel, contact conducting plates connected with said conductor adjacent to the ends of each of the rails, an electro magnet connected with the rail over which the trolley is to approach and energized by a temporary current therefrom, a movable armature attracted by said magnet when energized, and forming contact with the conducting plate whereby a direct current is transmitted from the conductor into the rail over which the trolley is approaching.

2. In an electric railway, trolley rails fixed in alternate lengths upon each side of an intermediate central line and slightly overlapping each other at their adjacent ends a trolley connection with the car having two trolley wheels in the line of the two alternate rails, so that they form contact alternately with one rail and the other as the car progresses, electro magnets situated near the adjacent ends of the alternate rails, a wire connecting the magnet with the rail over which the trolley is to approach, whereby the magnet is temporarily energized as soon as contact is made by both trolley wheels with the overlapping ends of adjacent rails, a movable armature which is attracted by the magnet when energized, a conducting plate connected with a main electrical conductor, and with which the armature forms contact when attracted by the magnet, whereby the current is transmitted into the trolley rail directly from the main conductor before the trolley has left the preceding rail.

3. In an electric railway, insulated trolley rails fixed within a conduit in alternate lines, a double trolley adapted to form contact alternately with one rail and the other, an electro magnet connected with the terminal end of each rail, and a swinging armature upon which the magnet acts adapted to form contact with the main conductor and energize the electro magnet, as the trolley wheels pass from one rail to the other and temporarily charge the succeeding rail by the current from the preceding one.

4. In an electric railway, insulated conducting rails supported in line alternately upon one side and the other of a central line, trolley wheels connected with the cars and adapted to travel alternately upon one rail and the succeeding one, electro magnets with movable armatures adapted to make connection between a main conductor and the terminal end of each rail when energized, means for energizing each succeeding electro magnet from the preceding rail, consisting in overlapping said rail so that both trolleys are temporarily traveling upon the two rails, a means for cutting out the preceding rail as soon as the succeeding one has been energized consisting of a second electro magnet by which the swinging armature is attracted when the second magnet is energized, a short independent rail section and a wire connecting it with said magnet, said rail section being so disposed that when the trolley leaves the preceding rail it passes over this independent section and through it energizes the electro magnet whereby the armature is attracted and contact with the conducting plate and connection with the previous rail is broken.

542,106. METALLIC PACKING. EDWARD L. RAYNSFORD, Susquehanna, Pa. Filed Feb. 20, 1895. Serial No. 539,107. (No model.)



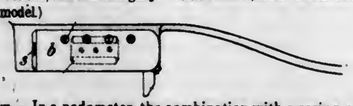
Claim.—1. A metallic packing, comprising an inner ring provived with an annular groove having outwardly beveled sides, and an outer ring having inwardly beveled sides and fitting in the groove of the inner ring, substantially as described.

2. A metallic packing, comprising an inner ring provided with an annular groove having beveled sides and an outer ring provided with lugs on its periphery and having its sides beveled to fit in the groove of the inner ring, substantially as described.

3. A metallic packing, comprising an inner ring formed in sections, each section provided with a groove in its periphery, said groove having beveled sides, and with a tongue at one end and a recess at the other, and an outer ring formed in sections, each section being provided with lugs projecting from its periphery and with a tongue at one end and a rabbet at the other, substantially as herein shown and described.

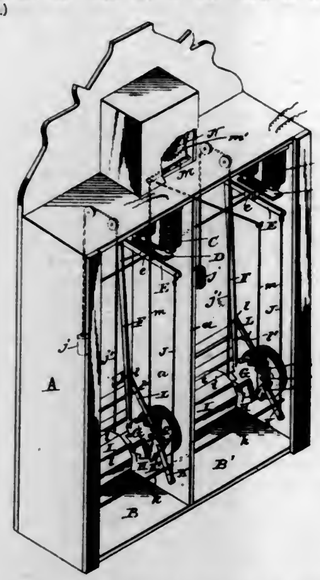
4. A metallic packing, comprising a gland formed with a chamber in communication with a pressure supply, two sectional packing rings held in the said chamber and one fitting upon the other, the outer packing ring being provided with lugs extending to the peripheral wall of the said chamber, substantially as shown and described.

542,107. PEDOMETER. ANTON REINISCH and LORENZ KRATOCHWIL, Vienna, Austria-Hungary. Filed Mar. 10, 1894. Serial No. 510,786. (No model.)



Claim.—In a pedometer, the combination with a casing provided with an opening at one end, said casing being adapted to be secured to a boot or shoe, of a counting mechanism in the casing, a pin projecting through the opening in the casing and provided with a longitudinal slot and with a laterally projecting stud or tooth adapted to engage one of the wheels of the counting mechanism, a rod passing through the slot of the pin, and a spring between the rod and the lower end of the slot of the pin, substantially as herein shown and described.

542,108. TRAIN-ANNUNCIATOR. CHARLES H. RITTENHOUSE, Kendallville, Ind. Filed Feb. 14, 1895. Serial No. 538,433. (No model.)



Claim.—1. In a train annunciator operated by electricity, the combination with the intermittently-operated magnets and their appropriate armature of the lever E having pivoted detent F provided with the pivoted spring-actuated pawl or finger L; rotary indicator-drum I having shaft H provided with the duplex ratchet-wheel G G'; pivoted back-lash pawl K' K; and rod J connecting said pawl to the armature-lever; substantially as and for the purpose shown and set forth.

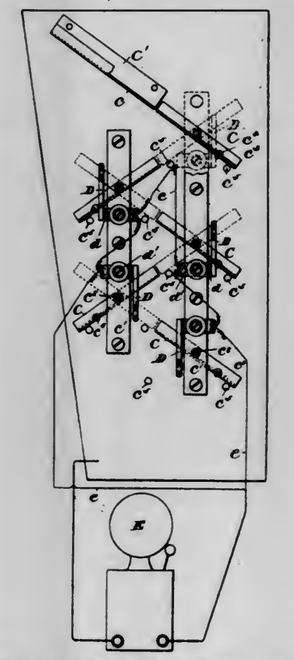
2. The combination with the rotary indicator or annunciator-drum, its shaft and actuating duplex ratchet-wheel, and the pawls or detents operating the same in the manner set forth, of the sheave i; cord or chain j' carrying a weight j at its free end; detent F provided with the pivoted spring-actuated pawl L; lever M having tappet m'; connecting-rod m; and the clock-escapement adapted to trip the tappet at predetermined intervals; substantially as and for the purpose shown and set forth.

3. The combination with the slotted casing, the intermittently rotating annunciator-drum, and the described mechanism for operating the same electrically, of the sliding-shutter P provided with the rod p having stud p'; cam-wheel R having offset r'; and the sheave, weighted cord, and tripping-mechanism for restoring the drum to its initial position automatically; substantially as and for the purpose shown and set forth.

4. The combination, in an electrically-operated train-annunciator, of the following co-operating elements, to wit: the exterior slotted casing subdivided by vertical partitions into two or more compartments; a clock-mechanism mounted in or upon said casing and having an exposed dial, the electro-magnets with their appropriate circuits and circuit-breakers; the armature appertaining to the magnets and the lever connected thereto; the rotary annunciator-drum provided with a central shaft, a concentric grooved sheave, and a duplex ratchet-wheel mounted upon and revolving with the shaft; the duplex detent engaging with its free ends the oppositely-sloping teeth of adjacent wheels forming the duplex ratchet-wheel; the pivoted backlash or retaining-pawl; the rod connecting said pawl with the armature-lever; the re-setting lever having at one end a tappet engaging the clock-escapement and at the opposite end a rod connecting it with the shorter link of the duplex detent; and the weighted cord or chain wound around the sheave appertaining to the annunciator-drum;—all constructed, combined and juxtaposed to operate substantially in the manner and for the purpose herein shown and described.

542,109. COIN-OPERATED TOLL COLLECTOR AND ANNUNCIATOR. WILLIAM A. ROGERS, Omaha, Nebr. Filed Mar. 7, 1895. Serial No. 540,856. (No model.)

Claim.—1. A coin-operated toll collector and annunciator comprising a suitable signal, a chute consisting of a series of sections, the first section being stationary and each succeeding section pivotally supported and inclined alternately at different angles, so as to form a zig-zag way for the passage of a coin, electrical contacts arranged in the path of movement of said pivoted sections, whereby the latter are adapted to close the electric circuit when tilted by the weight of the coin; each alternate pivoted section being located below and at one side of the preceding section and adapted to cause a distinctive response from said signal during the passage of the coin or token from one section to the next succeeding section, whereby the operator may readily ascertain the value of the deposited coin, substantially as described.



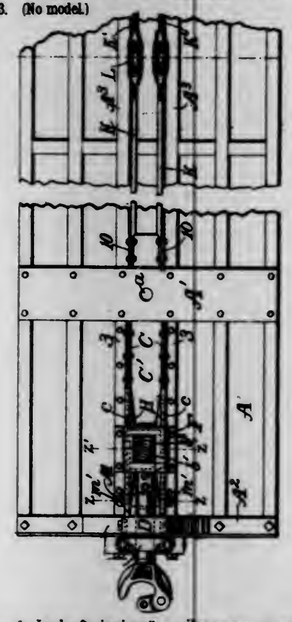
2. In a coin-operated toll collector and annunciator, the combination, with a suitable signal, of a chute comprising a series of sections, two or more of which are pivotally supported and arranged alternately upon suitable supports in different vertical planes; each pivoted section being supported in normal position at an angle to the next succeeding section below the same, so that the lower section will form a continuation of the upper one when the latter is tilted, whereby the pivoted sections of the chute are adapted to make and break said electrical connections during the passage of the coin or token from one section to the next succeeding section, so that said signal may be caused to give distinctive responses according to the denomination or value of the coin deposited in said chute, substantially as described.

3. In a coin-operated toll collector and annunciator, the combination with a suitable signal, of a series of independent chutes, each designed to form a conduit for a coin of a specific value, and provided with one or more pivoted sections adapted to be tilted by the weight of the coin, normally open electrical connections adapted when closed to close an electric circuit between said pivoted section and said signal; the pivoted section being adapted to be tilted on its pivot by the coin or token deposited in the chute and to make and break said electrical connections so as to cause a distinctive response from said signal, whereby the operator may readily ascertain in which chute the coin has been deposited and thereby determine the value of said coin, substantially as described.

4. In a coin-operated toll collector and annunciator, the combination, with a suitable signal, of a series of chutes each comprising a series of sections, two or more of which are pivotally mounted and alternately arranged upon suitable supports, contacts arranged in the path of movement of said pivoted sections, electrical connections between the contacts and the signal, means for automatically restoring the pivoted sections to normal position out of engagement with the contacts, each alternate pivoted section being located below and at one side of the next preceding section and adapted to make and break the electric circuit through said electrical connections during the passage of a coin or token from one section to the next succeeding section, whereby said signal may be caused to give distinctive responses according to the denomination or value of the coin deposited in said chute, substantially as described.

5. In a coin-operated toll collector and annunciator, a chute comprising two or more sections, one of which is stationary and the other pivotally supported and adapted to be tilted on its pivot by the weight of a coin when deposited in said chute, and a weight carried by the pivoted section for restoring the same to normal position after the passage of the coin, said weight being also adapted to serve as a stop for the coin, substantially as described.

542,110. DRAFT-RIGGING FOR RAILWAY-CARS. JAMES A. ROOSEVELT, Austin, Tex., assignor of one-half to Thomas H. Wheless, same place. Filed Feb. 23, 1894. Renewed Dec. 23, 1894. Serial No. 533,233. (No model.)



Claim.—1. In draft rigging for railway cars, a metal plate bent downward in the form of an inverted U, and then having the legs of said U doubled upward and secured between and to the middle sills of the car, with means for attaching the coupler to said plate, substantially as described.

2. In a draft rigging for railway cars, a metal plate bent downward in the form of an inverted U and then having the legs of said U doubled upward and flanged outward, and secured to the middle sills of the car, the said inverted U extending upward between the said sills, and being cut away on either side of the king bolt transom to receive said transom, and perforated to receive said king bolt, with means for attaching the coupler to said plate, substantially as described.

3. In draft rigging for railway cars, a metal plate bent downward in the form of an inverted U, and then having the legs of said U doubled upward and secured between and to the middle sills of the car, and having a hook formed near the forward end of the said plate on the upper side of said inverted U adapted to enter into the front sill of the car, with a bolt hole beneath said hook for a bolt for securing said plate to said front sill, with means for attaching the coupler to said plate, substantially as described.

4. In a draft rigging for railway cars, a metal plate bent downward in the form of an inverted U and then having the legs of said U doubled upward and flanged outward, and secured to the middle sills of the car, the said inverted U extending upward between the said sills, and being cut away on either side of the king bolt transom to receive said transom, and perforated to receive the king bolt, and having a hook formed near the forward end of the said plate on the upper side of said inverted U adapted to enter into the front sill of the car, with a bolt hole beneath said hook for a bolt for securing said plate to said front sill, with means for attaching the coupler to said plate, substantially as described.

5. In a railway car, the combination with a car body provided with middle sills on either side of the median line, of an inverted U-shaped metallic plate fitting between these sills and secured thereto with shoulders near the rear end thereof and a bolt hole in the center of the space between said shoulders, of a transom for the king bolt secured transversely on the car and fitting snugly between the said shoulders, with a bolt hole in said transom corresponding to the bolt hole for the king bolt in said plate, with means for securing the car coupler to said plate, substantially as and for the purposes described.

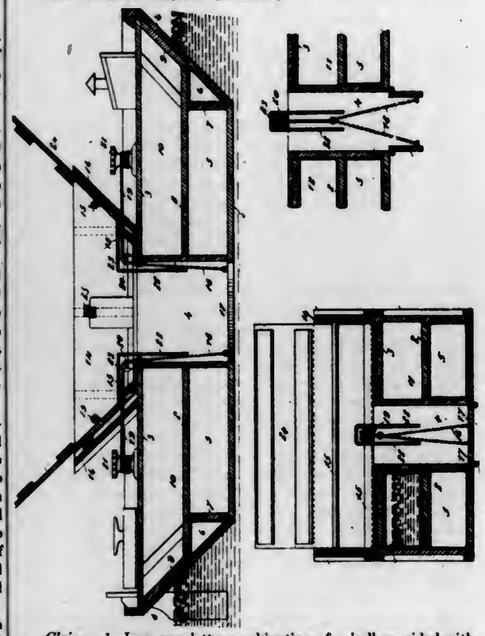
6. In a railway car, the combination with a car body provided with middle sills on either side of the median line, of two inverted U-shaped metallic plates, one at each end of the car, each fitting between these sills and secured thereto with shoulders near the rear end thereof, and a bolt hole in the center of the space between said shoulders, of a transom for the king bolt secured transversely on the car near each end thereof, and fitting snugly in said shoulders, with a bolt hole in said transom corresponding to the bolt hole for the king bolt in said plate, rods running beneath the car from the tail of one of said plates to that of the next, turn buckles for tautening said rods, and means for securing the car couplers to said plates, substantially as and for the purposes described.

7. In a draft rigging of the character described, the combination with the plate C secured to the bottom of the car, the sides of said plate being bent to form eyes in the forward end thereof; of bolts passing through said eyes, and the strap E suspended from said bolts and serving as an auxiliary support for the drawbar, substantially as described.

8. In a draft rigging of the character described, the combination with the plate C secured to the bottom of the car, the sides of said plate being bent to form eyes in the forward end thereof; of bolts passing through said eyes, and the strap suspended from said bolts and serving as an auxiliary support for the drawbar; the drawbar B provided with the tail strap b', the follower plates b^3 and the spring b^3 held within said tail strap, and the ends of said follower plates projecting therefrom, of the plates H attached to the inner sides of said plate C and provided with holding shoulders A, and a plate spanning the sides of said plate C and supporting the said follower plates and the said spring, substantially as and for the purposes described.

9. In a draft rigging of the character described, the combination with the plate C secured to the bottom of the car, of the draw bar B slotted as at b, the safety catch M adapted to engage in said slot, the tail strap b'; the follower plates b^3 and the spring b^3 held within said tail strap, and the ends of said follower plates projecting therefrom, of the plates H attached to the inner sides of said plate C and provided with holding shoulders A, and a plate spanning the sides of said plate C and supporting the said follower plates and the said spring, substantially as and for the purposes described.

542,111. SCOW. JOHN RUSSELL, New York, N. Y. Filed Mar. 11, 1895. Serial No. 541,325. (No model.)



Claim.—1. In a vessel, the combination of a hull provided with inclined stern and bow sheathings, transverse water-tight compartments having inclined outer surfaces adjacent to said sheathings, longitudinal water-tight compartments between the transverse compartments, vertical transverse bulkheads between the adjacent ends of the transverse and longitudinal compartments, air tight tanks in the transverse and longitudinal compartments, and a deck arranged over said compartments, and serving to hold said tanks in place, substantially as set forth.

2. In a vessel, the combination of a hull having an inclined sheathing, a water-tight compartment extending along said sheathing and having an inclined surface adjacent thereto, a bulkhead arranged behind the compartment, a deck over the compartment and an inclined bulkhead above the deck, secured to the inclined sheathing and having its lower part adjacent to the upper edge of the inclined surface of the compartment, substantially as set forth.

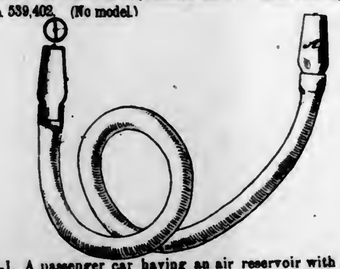
3. In a vessel, the combination of a hull having a central vertical well, longitudinal compartments extending along the opposite sides of the well between the walls thereof and the sheathings of the hull, transverse compartments extending across the ends of the vessel between the end walls of the well, and the bow and stern sheathings of the hull, said transverse compartments also extending across the ends of the longitudinal compartments, bulkheads between the transverse compartments and the ends of the said longitudinal compartments, and air tight tanks in the longitudinal and transverse compartments, substantially as set forth.

4. In a vessel, the combination of a hull having a central vertical well, trap doors hinged at opposite sides of the lower part of the well, and adapted to form a bottom therefor, side pieces extending above the hull on opposite sides of the well, end pieces held between the side pieces at opposite sides of the well, said side and end pieces being separated from the well by a free deck space, L-shaped housings at opposite ends of the well having one arm extending across the said deck space and the other arm extending vertically into the well at one side, and flexible connectors passed through the housings and having their lower ends connected to the adjacent sides of the trap doors at opposite ends thereof, and having their upper ends adapted to be passed over a windlass, substantially as set forth.

5. In a vessel, the combination of a hull having a central vertical well, side pieces extending above the hull on opposite sides of the well, inclined end pieces held between the side pieces at opposite ends of the well, the bars extending between the side pieces and spaced away from the end pieces, and extension end pieces held between said inclined end pieces and the bars, substantially as set forth.

6. In a vessel, the combination of a hull having a central vertical well, side pieces extending above the hull on opposite sides of the well, end pieces held between the side pieces at opposite ends of the well, the bars at opposite ends of the side pieces, a brace beam extending across the space between the side pieces at the central part thereof, and extension end pieces adapted to be secured between the side pieces at opposite ends of the well when required for use, and adapted to be supported at their outer ends on the tie bars, and at their inner ends on the brace beam to form a cover for the well, substantially as set forth.

542,112. MEANS FOR UTILIZING AIR-CUSHIONS ON RAILWAY-CARS. LINFORD F. RUTH, Connellsville, Pa. Filed Feb. 23, 1895. Serial No. 539,402. (No model.)

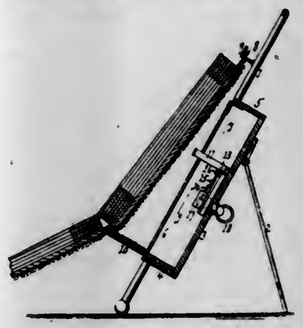


Claim.—1. A passenger car having an air reservoir with pipes leading therefrom and terminating in valved outlets, air cushions having valved inlets, and a detachable hose having couplings at each end adapted to connect respectively to the air pipes and the cushions to transfer the air to the cushions substantially as and for the purpose described.

2. A passenger car having an air reservoir with pipes leading therefrom and terminating in outlets with automatic check valves, air cushions having valved inlets with automatic check valves, and a detachable hose having a nozzle on each end adapted to connect with the pipes and cushions and to force open their check valves substantially as and for the purpose described.

3. A passenger car having an air reservoir with pipes leading therefrom and terminating in ground sockets with automatic check valves, air cushions provided with similar ground sockets and automatic check valves, and a detachable hose having at each end exteriorly ground nozzles with projections adapted to force open the check valves when the nozzles are inserted in the sockets substantially as and for the purpose described.

542,113. SUPPORT FOR PHOTOGRAPHIC ALBUMS. GUSTAVE SCHWAB, New York, N. Y., assignor to Helene Schwab, same place. Filed Aug. 16, 1894. Serial No. 520,477. (No model.)

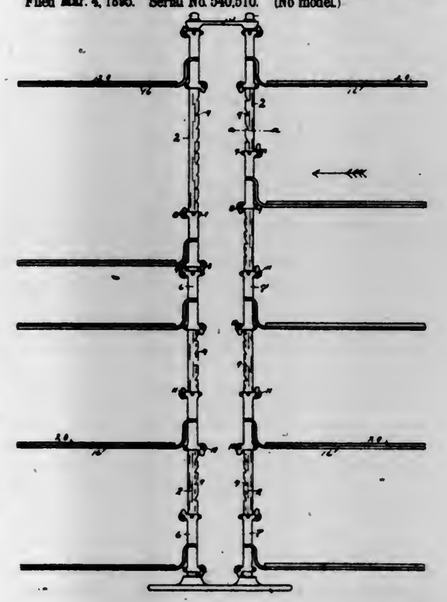


Claim.—1. An easel provided at its upper portion with hooks 9 and at its lower portion with a shelf 10 in combination with an album having attached to the upper or free edge of its under cover eyes 8 in such a position that the album can be readily attached to or detached from the easel and that when these eyes are made to engage the hooks 9, the back of the album rests loosely upon the shelf 10 and is free to move in and out on the same substantially as shown and described.

2. The combination of an easel provided with a receptacle fixed to the back thereof, an album having attached to the upper edge of its under cover means for detachably connecting it to the easel, a music-box arranged within the receptacle, and a detent controlling the starting and stopping mechanism of the music box, said detent being held out of engagement with said mechanism by the weight of the closed album and operating to release said mechanism when the album is opened, substantially as described.

3. The combination of an easel provided at its upper end with hooks and its lower end with a shelf adapted to support the back of an album, an album having attached to the upper edge of its under cover means for detachably engaging said hooks, a music box arranged within the receptacle, and a spring detent normally projecting through the receptacle into engagement with the album and controlling the starting and stopping mechanism of the music box, the weight of the closed album holding said detent inoperative and the shelf operating to throw the album out of contact with the detent when the album is opened, substantially as described.

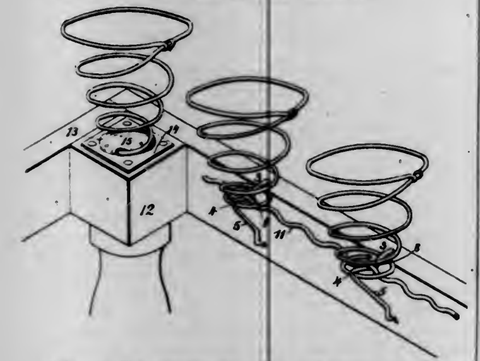
542,114. SHELVING. CLAYTON O. SHUPERT, Miamisburg, Ohio. Filed Mar. 4, 1895. Serial No. 540,510. (No model.)



Claim.—1. In a shelving, the combination with a standard provided with a series of notches, and longitudinal grooves, of a carriage provided with rollers each of which has an increased bearing portion (10^a) which is adapted to fit in the longitudinal grooves, and bolts opposite each roller and adapted to engage with the notches in said standard, substantially as described.

2. In a shelving, the combination with standards having central longitudinal grooves in their inner and outer sides, and a series of notches also in their inner and outer sides, of a carriage provided with rollers each of which has a circumferential bearing surface (10^a) which is adapted to fit in said grooves, bolts on said carriage adapted to engage with the notches in said standards to support the carriage in any position, downwardly projecting arms (16) attached to the sides of said carriage and adapted to support a shelf, substantially as described.

542,115. UPHOLSTERY. JOHN A. STAPLES, Newburg, N. Y.
Filed Feb. 23, 1895. Serial No. 539,586. (No model.)



Claim.—1. The combination with a frame-piece; of a bracket extending laterally from the frame-piece, having its top approximately in the plane of the upper surface of the frame-piece and a spring seated upon and secured to the bracket by a coil at its small end, substantially as described.

2. The combination with a frame-piece; of an angle bracket comprising an upper arm extending laterally from the upper surface of the frame-piece, and a downwardly and inwardly extending oblique arm providing a brace, and a cone spring seated on and secured to the bracket by a coil at its small end; substantially as described.

3. The combination of an angle-bracket, consisting of a laterally extending arm 3 having means for securing it to the upper surface of a frame-piece, a corrugation for seating the spring, and a downwardly extending oblique arm providing a brace 5 having means for securing it to the vertical surface of the frame-piece, and a spring seated upon and secured to the bracket at its small end; substantially as described.

4. The combination of an angle-bracket, consisting of a laterally extending arm 3 having a downwardly projecting point 6 for securing the bracket to the upper surface of a frame-piece, a corrugation for seating the spring, and a downwardly extending oblique arm providing a brace 5 having a projecting point 7 for securing the bracket to the vertical surface of the frame-piece, and a spring seated upon and secured to the bracket at its small end; substantially as described.

5. The combination of the frame piece with a bracket made of wire, one end of such bracket being turned downward to enter the upper surface of the frame piece and also extending inward from the inside edge of the frame piece a sufficient distance to admit of securing a spring to its horizontal or nearly horizontal surface, and thence downwardly and back in a sloping direction to the inside vertical edge of the frame and having an end turned inward toward the frame-piece adapted to be driven into the same, and a spring adapted to be secured to the horizontal or nearly horizontal surface of said bracket, substantially as set forth.

6. The combination with the frame piece of a bracket formed of wire, resting on the upper surface of the frame piece and having means for attaching it thereto, a substantially horizontal inward extension corrugated to receive a spring and a downward and backward sloping portion adapted to be fastened to the inside vertical surface of the frame piece, a spring attached to the upper surface of such bracket by means of the corrugations in the horizontal portion of the wire and a similarly corrugated crossing piece of wire; the bracket, the cross-wire and the base of the spring being interwoven at such crossing, substantially as set forth.

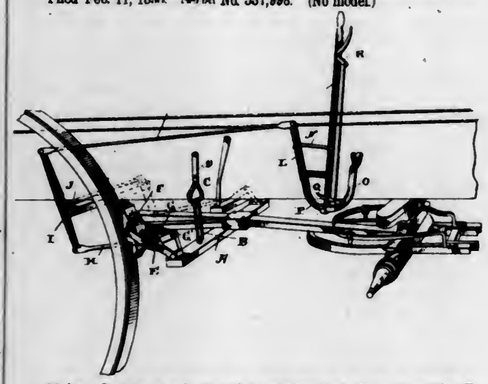
7. The combination with a frame-piece; of the spring supporting arm extending laterally from the surface of the frame-piece, a spring supported on the arm at one side of the frame-piece, and a brace extending from the arm to the frame-piece, and secured to the latter beneath the arm, substantially as described.

8. The combination with a frame-piece; of the spring supporting bracket, comprising an arm extending laterally from the surface of the frame piece, and a downwardly and inwardly inclined arm, and a spring seated and supported on the bracket at one side of the frame piece; substantially as described.

9. A plate for securing the springs of upholstery formed with a cup-shaped center having a hole at one side for the insertion of the small end of the coil of a volute spring; substantially as described.

10. A cup-shaped spring attaching metal plate having a raised circular portion and a rim or flange extending outward therefrom, and means for attaching such plate to the surface of the frame piece, the circular shaped portion of the plate being provided with a hole or slot for the reception of the small coil or coils of the smaller circular end of the spring, substantially as set forth.

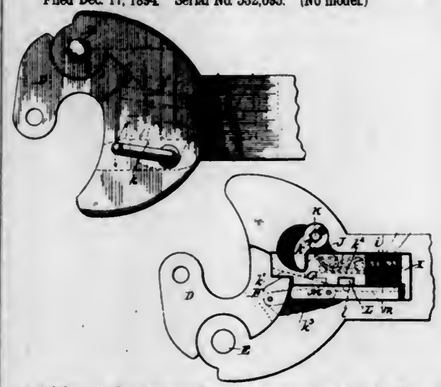
542,116. WAGON-BRAKE. WILLIAM J. STEPHENSON, Edna, Kans.
Filed Feb. 11, 1895. Serial No. 537,998. (No model.)



Claim.—In a wagon brake, the combination of bar A, carrier E pivotally secured thereto and at its outer end bifurcated, the shoe embraced by the bifurcation in which it is secured, jointed link G connected pivotally at one end to the bar and at the opposite end to the shoe, the rod H, and an operating means, substantially as shown and described

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542,117. CAR-COUPLING. AUGUSTUS F. STREET, Zanesville, Ohio.
Filed Dec. 17, 1894. Serial No. 532,095. (No model.)



Claim.—1. In a car coupling the combination with the draw-head, a hinged hook or knuckle, and a latch device for securing such knuckle in coupled position, of a drag or slide connected to and movable back and forth with the said knuckle, the locking device and co-operating mechanism between the slide and locking device substantially as set forth.

2. In a car coupling of the herein described class, a hinged knuckle or hook having an attached drag or slide carried back and forth by the movements of said knuckle, a latch device engaging directly with the knuckle or hook whereby to secure the same in coupled position and co-operating lock devices between the drag or slide and the latch device all substantially as and for the purposes set forth.

3. In a car coupling the combination of the draw-head the hinged hook or knuckle, the latch by which said knuckle is secured in coupled position a lock by which such latch may be held retracted and releasing devices operating through the movement of the knuckle by which to release such lock all substantially as set forth.

4. In a car coupling the combination of the draw-head, the hinged hook or knuckle the latch bar a lock by which said latch bar is held retracted and the drag or slide movable with the knuckle and adapted to actuate said lock all substantially as set forth.

5. In a car coupling the combination of the draw-head, the hinged hook or knuckle and the drag or slide composed of a main section and a pitman connecting the same with the knuckle substantially as set forth.

6. In a car coupling the combination of the draw-head, the hook or knuckle, the latch bar by which said knuckle is secured in locked position, the lock carried by such latch and by which it is held in retracted position, and the drag or slide connected with the knuckle and having a portion by which to operate such lock substantially as set forth.

7. In a car coupling the combination of the coupling devices a sliding latch having a lock device and a drag or slide movable alongside said latch and having a cam or portion by which to actuate said lock device substantially as set forth.

8. In a car coupling the combination of the draw-head having a rearwardly extended mortise and a seat in one of the walls thereof the hook or knuckle, the latch block sliding in said mortise and having a lock movable into and out of the seat in the draw-head and the drag bar connected with the knuckle and having a cam by which to operate the said lock substantially as set forth.

9. The combination of the draw-head having a mortise and provided in the walls thereof with a bolt seat and with a groove for the play of the drag pitman, the latch block also having a groove for the play of said pitman, the lock carried by said block and movable into and out of the seat in the draw-head and the drag slide having a main section adapted to operate the latch lock and a pitman connecting said main section with the knuckle all substantially as and for the purposes set forth.

10. The combination in a car coupling of the latch having a transverse passage or way, the lock comprising a bolt sliding in such way and provided with a stud or projection and the slide movable along said latch and having a guideway for said lock stud and a cam to engage said stud substantially as and for the purposes set forth.

11. The improved car coupling herein described composed of the draw-head having a longitudinal mortise and provided in the wall thereof with a socket forming a seat for the lock bolt the hook or knuckle, the sliding latch block having a transversely operating lock bolt movable into and out of the seat socket of the draw-head, the spring for actuating said latch block and the drag or slide connected with the hook or knuckle and provided with means by which to actuate the lock bolt substantially as set forth.

12. In a car coupling the combination of the draw-head the door or knuckle, the latch block, the spring for actuating said block and a removable bearing for said spring composed of a block or base and a projecting stem substantially as and for the purposes set forth.

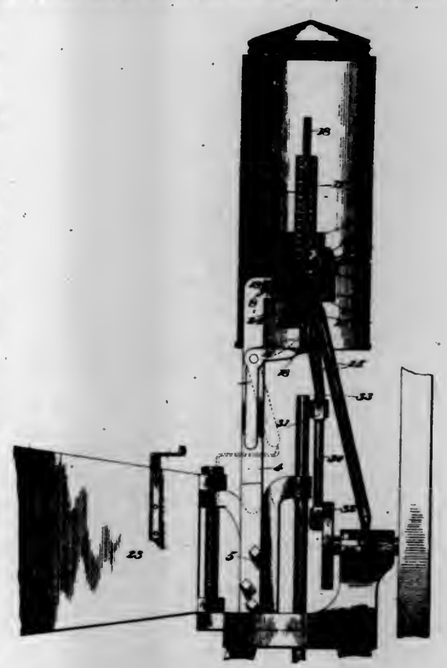
542,118. LUBRICATOR. WILLIAM E. SWEET, Dowagiac, Mich.
Filed Oct. 18, 1894. Serial No. 526,330. (No model.)

Claim.—1. In lubricating apparatus, the combination with a support, cup, and superimposed receptacle, of mechanism for controlling the egress of liquid from the receptacle to the cup, a conduit adapted to convey liquid from the cup to a bearing, a valve controlling the discharge from the conduit in the lower end thereof, a conducting tube adapted to convey the liquid to a movable bearing, said conducting tube being borne upon a movable part and adapted to operate in its movement the valve of the conduit, substantially as set forth.

2. In a lubricating apparatus, the combination with a cup and superimposed receptacle, of a valve controlling the egress of the lubricant from the receptacle to the cup, discharge ducts leading from the bottom of the cup, automatically actuated valves in said ducts, a trip beneath said cup operatively connected with the first named valve, and mechanism upon the machine to be lubricated adapted to actuate the trip to permit the egress of the lubricant from the receptacle to the cup and ducts, substantially as specified.

3. In a lubricating apparatus, the combination with a cup and superimposed receptacle, of a valve adapted to control the egress of the lubricant from the receptacle to the cup, a trip operatively connected with said valve, discharge ducts leading from the bottom of the cup, valves in the ducts, and conducting tubes borne upon a movable part adapted to actuate the valves in the ducts, substantially as specified.

4. In a lubricating apparatus, the combination with a duct, of a valve therein provided with a projecting part or buffer, a conducting tube carried upon a moving part and provided with an interior valve actuating grate seated within its upper end whereby the buffer enters the conducting tube and permits of the contiguous relation between the adjacent ends of the duct and tube, substantially as specified.



5. In a lubricating device for wind mills, the combination with a suitable support, of a receptacle and ducts, a valve controlling the egress of the lubricant from the receptacle to the ducts, a movable vane and intermediate mechanism whereby the valve is actuated by the movement of the vane when thrown into the wind to permit the egress of the lubricant from the receptacle to the ducts, and automatically actuated valves in said ducts controlling the egress of the lubricant therefrom to the parts to be lubricated, substantially as specified.

6. In a lubricating device for wind mills, the combination with a suitable support, of a receptacle and ducts, a valve controlling the egress of the lubricant from the receptacle to the ducts, a trip operatively connected with the valve, a movable vane operatively connected with the valve, valves in the ducts, and conducting tubes carried upon moving parts adapted to actuate the valves in the ducts and to convey the lubricant to the part to be lubricated, substantially as specified.

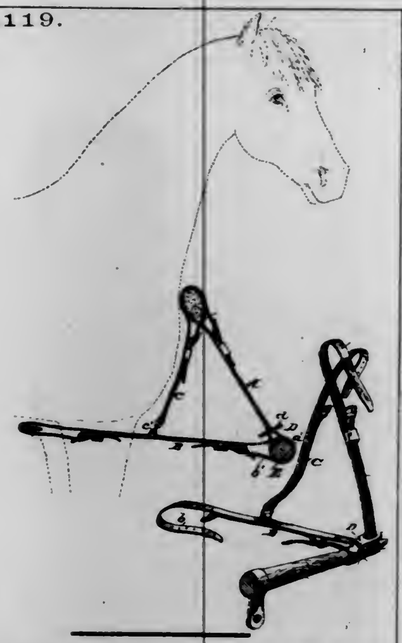
542,119. NECK-YOKE ATTACHMENT. BENJAMIN J. SYKES, Troutville, Pa. Filed Feb. 11, 1895. Serial No. 537,926. (No model.)

Claim.—1. A neck yoke attachment comprising three straps; a hold-back strap extending from the collar to the neck yoke, another strap extending from the neck yoke to the belly band, and the third extending from the intermediate position on the belly band strap to the upper end of the hold-back strap, substantially as and for the purpose described.

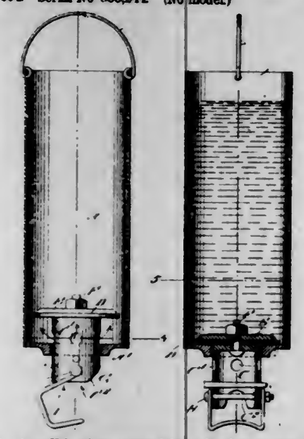
2. A neck-yoke attachment, consisting of three triangularly arranged straps, one being a hold-back strap with loops at both ends and extending from the collar to the neck yoke and embracing the same; another being a belly band strap having loops at both ends and extending from the neck yoke to the belly band and embracing the same; and the third strap being permanently attached to and extending from an intermediate position on the belly band strap to the upper end of the hold back strap and having a loop at its upper end for embracing the collar substantially as and for the purpose described.

3. The combination with the neck yoke; of a slotted tongue D attached to the neck yoke, a belly band strap B having a loop at its forward end encircling the neck yoke, and a hold-back strap A extending through the slot of the tongue D and encircling the neck yoke outside of the loop of the belly band strap substantially as and for the purpose described

542,119.



542,120. WELL-BUCKET. WILLIAM H. TILFORD, Wartrace, Tenn., assignor to himself and Edward M. Dance, same place. Filed Dec. 29, 1894. Serial No 533,244. (No model.)

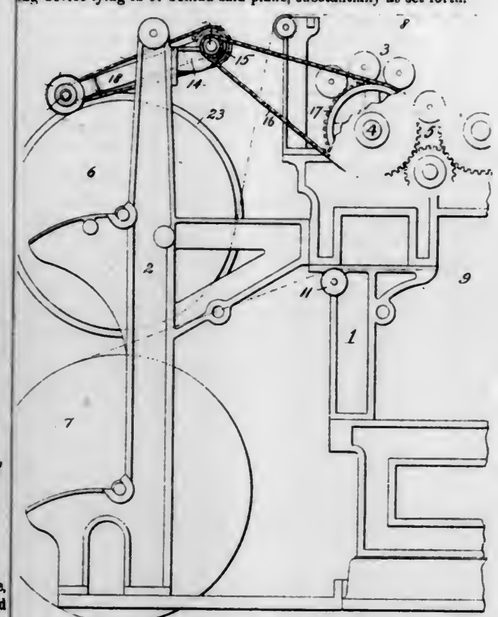


Claim.—1. A well bucket, comprising a bucket proper having an opening in its bottom, a valve controlling the opening in the bottom of the bucket, a tubular valve stem secured on the said valve and fitted to slide in the opening in the said bucket bottom, the said tubular stem being formed with openings near its upper end, and a hook pivoted on the lower end of the said tubular stem, substantially as shown and described.

2. A well bucket, comprising a bucket proper having an opening in its bottom, a valve controlling the opening in the bottom of the bucket, a tubular stem secured to the valve and fitted to slide in the opening in the bucket bottom, said stem being provided with openings near its upper end and having its lower end opened and its side wall provided with a cut-out portion adjacent to the lower end, and a hook pivotally mounted on the lower end of said stem, said hook being adapted to hang below the same, substantially as set forth.

542,121. APPARATUS FOR SEVERING ROLLED WEBS. DAVID E. TITSWORTH, Plainfield, N. J., assignor to the Potter Printing Press Company, same place. Filed Jan. 24, 1895. Serial No. 536,086. (No model.)

Claim.—1. In a printing press the combination, with the web-roll supporting means, of a severing device acting directly on the surface of the web-roll to sever or partially sever the web before it is unwound, said severing device having its cutting edge contained in a plane which is at right angles to its axis and all parts of the severing device lying in or behind said plane, substantially as set forth.



2. In a printing press the combination, with a plurality of web-roll supports, of a severing device acting directly on the surface of one of said rolls before the web is unwound therefrom, said severing device having its cutting edge contained in a plane which is at right angles to its axis and all parts of the severing device lying in or behind said plane, substantially as set forth.

3. In a printing press the combination, with the web-roll supports, of a frame movable toward and from the axis of the web-roll, and a severing device carried by said frame and adapted to act on the rolled web, said severing device having its cutting edge contained in a plane which is at right angles to its axis and all parts of the severing device lying in or behind said plane, substantially as set forth.

4. In a printing press the combination, with the web-roll supports, of a frame movable toward and from the axis of the web-roll, a rotary severing device carried by said frame, said severing device having its cutting edge contained in a plane which is at right angles to its axis and all parts of the severing device lying in or behind said plane and means for rotating said severing device, substantially as set forth.

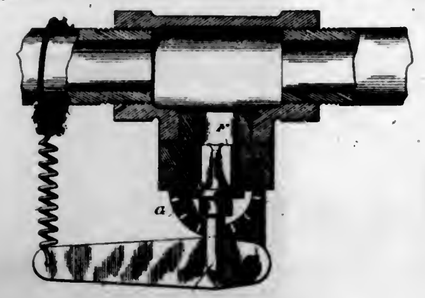
5. In a printing press the combination, with suitable supports for a web-roll, of a swinging frame movable toward and from the axis of the web-roll, a cutter shaft in said frame, a cutter carried by said shaft, said cutter having its cutting edge contained in a plane which is at right angles to its axis and all parts of the cutter lying in or behind said plane and means for maintaining said shaft at a uniform distance from the surface of the web-roll, substantially as set forth.

6. In a printing press the combination with the web-roll supporting frame, of bearings on the said frame, a driving shaft in said bearings, means for driving said shaft from the power mechanism of the press, and a cutter actuated by said shaft and acting on the surface of the roll before the web is unwound, said cutter having its cutting edge contained in a plane which is at right angles to its axis and all parts of the cutter lying in or behind said plane, substantially as set forth.

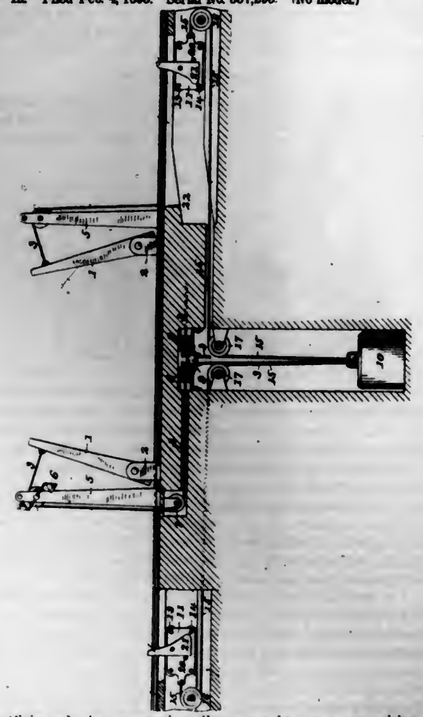
7. In a web feeding and severing machine the combination, with a roll supporting device, of a cutter located so as to make a peripheral cut around the roll and means acting simultaneously with the cutter for leading off the paper from one part of the roll while leaving the paper on the other part in its rolled condition.

542,122. AUTOMATIC SPRINKLER. DANIEL TURNER and CHARLES J. GARDNER, Philadelphia, Pa. Filed June 8, 1894. Serial No. 513,968. (No model.)

Claim.—The combination of a water pipe, a nipple secured thereto, an annular valve bearing against the lower end of the nipple and provided with a guide within the nipple and with a depending stem, the lower end of said stem being forked, a depending rose secured to the lower end of the nipple and forming a guide for the valve stem, a lever fulcrumed on one side of the rose and passing through the fork of the valve stem to support the same, a spring secured to the free end of the lever, and an inflammable fastening securing the spring to a fixed support.



542,123. AUTOMATIC RAILWAY-GATE. JULES WEILL, Chicago, Ill. Filed Feb. 4, 1895. Serial No. 537,293. (No model.)



Claim.—1. An automatic railway crossing gate, comprising in combination, a pivotal gate 1, an operating weight 10, a flexible connection 3, between the gate and the weight, a sliding block 11, provided with a pivoted trigger 19, arranged in the path of the railway train, and a flexible connection 15, between such block 11, and weight 10, substantially as set forth.

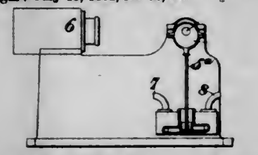
2. An automatic railway crossing gate, comprising in combination, a pivoted gate 1, an operating weight 10, a flexible connection 3, between the gate and the weight, a sliding block 11, provided with a pivoted trigger 19, arranged in the path of the railway train, a guideway 12, for such block, having a depressed end portion 22, and a flexible connection 15, between the block 11, and the weight 10, substantially as set forth.

3. An automatic railway crossing gate, comprising in combination, a series of gates 1, an operating weight 10, common to the series of gates, flexible connections 3, between the gates and the weight, a pair of sliding blocks 11, arranged in the path of the railway train, and at opposite sides of the wagon roadway, and flexible connections 15, between such blocks 11, and the weight 10, substantially as set forth.

4. An automatic railway crossing gate, comprising in combination, a series of gates 1, an operating weight 10, common to the series of gates, flexible connections 3, between the gates and the weight, a pair of sliding blocks 11, provided with pivoted triggers 19, arranged in the path of the railway train, and at opposite sides of the wagon roadway, and flexible connections 15, between such blocks 11, and the weight 10, substantially as set forth.

5. An automatic railway crossing gate, comprising in combination, a series of gates 1, an operating weight 10, common to the series of gates, flexible connections 3, between the gates and the weight, a pair of sliding blocks 11, provided with pivoted triggers 19, arranged in the path of the railway train, and at opposite sides of the wagon roadway, guideways 12, for such blocks 11, having depressed ends 22, and flexible connections 15, between the blocks, 11, and the weight 10, substantially as set forth.

542,124. GAS OR OTHER LIKE MOTOR. JAMES E. WEYMAN, ARTHUR J. DRAKE, and JAMES A. DRAKE, Guildford, England. Filed Nov. 16, 1893. Serial No. 491,131. (No model.) Patented in England Mar. 10, 1892, No. 4,735; in Germany June 25, 1892, No. 66,958; in Belgium July 8, 1892, No. 100,492; in France July 8, 1892, No. 222,871, and in Austria-Hungary July 15, 1892, No. 36,665.



Claim.—1. In a gas or other like motor, the combination with the motor cylinder, of a silencing chamber having its inlet in communication with the exhaust port of said cylinder, and a positively operating yielding valve arranged to control the outlet of said chamber and adapted to open when subjected to excessive pressure substantially as herein described for the purposes specified.

2. In a gas or other like motor, the combination with the motor cylinder, of silencing chambers, one having its inlet connected with the exhaust port of said cylinder, and the other having its outlet in communication with the external atmosphere, a pipe connection between said chambers, a valve for controlling the flow of exhaust gases through said pipe connection from one chamber to the other, and means for operating said valve substantially as herein described for the purpose set forth.

3. In a gas or other like motor, the combination with the motor cylinder, of silencing chambers, one having its inlet connected with the exhaust port of said cylinder, and the other having its outlet in communication with the external atmosphere, a pipe connection between said chambers, a spring valve arranged to control the flow of exhaust gases from one chamber to the other through said pipe connection and adapted to yield and open when subjected to excessive pressure, and means for operating said valve substantially as herein described for the purposes specified.

4. In a gas or other like motor, the combination with the motor cylinder, of silencing chambers 1 and 2 pipes 3 3^a with interposed valve chamber 4 connecting said chambers, pipes connecting the inlet of said chamber 1 with the exhaust port of said motor and the outlet of said chamber 2 with the external atmosphere, a piston valve 5 arranged within said valve chamber, a rod 5^c for operating said valve, a spring arranged between said valve and said rod, and means for operating said rod substantially as herein described.

542,125. BILL-HOLDER. WILLIAM J. WHITWOOD, Wellsville, N. Y. Filed June 26, 1894. Serial No. 515,786. (No model.)



Claim.—1. In a bill holder, the combination, with a base or holder plate, and a clamping piece, of springs fast by one end of each on the plate at opposite ends of said plate, and flexibly connected near their free ends with the ends of the clamping piece, substantially as described.

2. In a bill holder, the combination, with a base or holder plate, and a clamping piece, of bow springs attached at one end to the holder plate at each of its ends extending toward the longitudinal

center of said plate, and a flexible strip attached intermediately to the clamping piece and at its ends to the free ends of the springs, substantially as described.

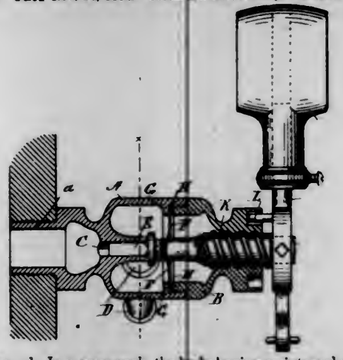
3. In a bill holder, the combination, with a rectangular, flat holder plate, having a depending border flange, and an unbent clamping piece, of plate springs curved flat-wise and fastened at one end of each to the ends of the plate in the recess formed by the depending flange, disposing their free ends along the side edges of said holder plate, and a flexible strip intermediately connected with the clamping piece, and attached at its ends to the free ends of the bow springs, substantially as described.

4. In a bill holder, the combination, with a retangular, flat holder plate, having a depending border flange, and a flattened clamping piece, of two plate springs curved flat-wise and fastened at one end of each on the inner surface of the base flange at opposite end corners of the holder plate, and a flexible strip connected with the flattened clamping piece between the ends of said clamping piece, and having a loose connection at its terminals with the free ends of the springs, substantially as described.

5. In a bill holder, the combination with a base, of a clamp-piece at one face thereof, springs at the opposite face, and flexible strands connecting the springs with the clamp-piece, substantially as described.

6. A bill holder comprising a base, a clamp piece on one side of such base and movable toward and from the same, the flexible strands connected with the clamp piece and extended thence to the opposite side of the base and the springs carried by the base and connected with and exerting a tension in a longitudinal direction upon the strands all substantially as described whereby the clamp piece may operate in a line parallel to the plane of the base or at an angle to such plane and whereby the flexible connections may be bulged laterally to receive between them papers of different widths in excess of the lengths of the clamp piece as and for the purposes described.

542,126. GAGE-COCK. CHARLES A. G. WIETNER, Somerville, Mass. Filed Nov. 24, 1894. Serial No. 529,803. (No model.)



Claim.—1. In a gage-cock, the body having an internal chamber with a reduced axial inlet tube extending therein, a valve mounted upon said inlet tube, and an outlet for the escape of steam when the valve is opened, in combination with a yielding transverse diaphragm and suitable means for supporting the valve and diaphragm against the steam pressure, substantially as set forth.

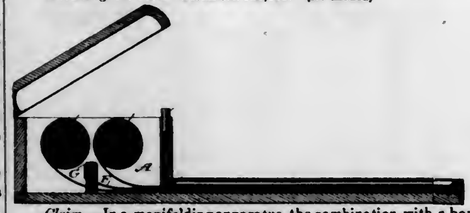
2. In a gage-cock, the chambered body having an intermediate flexible metallic diaphragm, an axial inlet tube, an outlet tube, and a metallic valve mounted on the inlet tube, independent of such diaphragm, in combination with a valve-closer on the other side thereof, comprising a weighted lever having a threaded lateral fulcrum adapted to move axially from and toward the inlet or valve seat, substantially as set forth.

542,127. CIRCULAR-FLANGING MACHINE. WILLIAM H. WOOD, Media, Pa. Filed Mar. 21, 1895. Serial No. 542,671. (No model.)



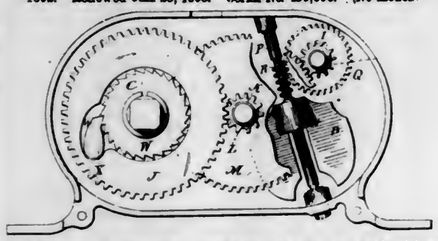
Claim.—A hydraulic flanging-machine comprising the working-cylinder D having a removable head D' and provided with the plunger E having removable head F, grooved sleeve *g*, and cup-washers *f f* on opposite sides thereof, in combination with the laterally-recessed bed or base A, stationary stake B having die-seat *b*, and driving-head J attached to the outer end of the plunger, sliding in grooved ways, *j j*, in the base, and provided with a die-seat, *c*, coinciding with the die seat in stake B; substantially as and for the purpose herein shown and set forth.

542,128. CHECK-PAD. HERBERT G. WOOLWORTH, Troy, N. Y. Filed Aug. 17, 1894. Serial No. 520,635. (No model.)



Claim.—In a manifolding apparatus, the combination with a box having a movable cover and means for supporting a plurality of rolls of paper therein, one side of the box being cut away and the base thereof extending forward so as to form a writing support, of locking devices actuated by the cover so as to prevent any paper being drawn from the box when the cover is closed, and suitable means for supporting the carbon paper sheet substantially as described.

542,129. DOOR-CHECK. GRANVILLE W. WRIGHT, New Haven, Conn., assignor to the Sargent & Company, same place. Filed Feb. 23, 1892. Renewed Jan. 25, 1893. Serial No. 459,698. (No model.)



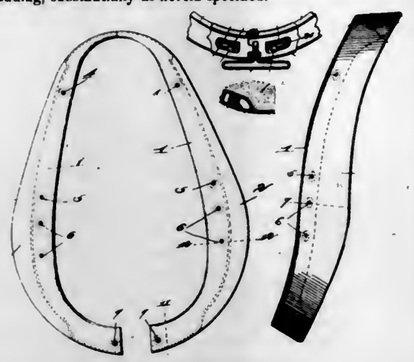
Claim.—1. A door-check consisting of a principal shaft with connection therefrom to the door, and so that a corresponding rotative movement is imparted to the said principal shaft by the opening and closing movement of the door, a second shaft in gear connection with said principal shaft, and whereby the rotative movement imparted to the principal shaft will communicate rapid revolution to the said second shaft, mechanism substantially such as described to yieldingly resist the revolution of said second shaft, and mechanism substantially such as described to disengage said principal shaft from the gearing in the opening movement and engaging it in the closing movement of the door, substantially as described.

2. The combination of a case or frame adapted for attachment to the lintel of a door, a vertical principal shaft in said frame, a volute spring around said shaft, the inner end of the spring secured to said shaft, and the onter end of the spring secured to the case, a lever extending from the said principal shaft and adapted to receive a swinging movement in opening and closing the door, and impart corresponding rotative movement to said shaft, a second shaft with a train of gearing between said principal and second shaft, whereby the rotative movement of the said principal shaft communicates rapid revolution to said second shaft, a fly driven by said second shaft as a resistance to the revolution of said second shaft, with mechanism substantially such as described to disengage the principal shaft from the gearing in the opening movement of the door, and engage the said principal shaft with the gearing in the closing movement of the door, substantially as described.

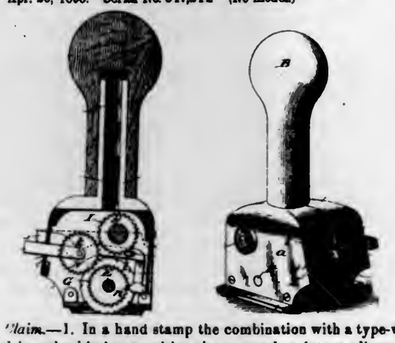
542,130. HORSE-COLLAR. CHARLES A. BALLACK and PERCY B. WESTON, St. Louis, Mo. Filed Nov. 26, 1894. Serial No. 529,938. (No model.)

Claim.—1. ...s an article of manufacture, the body portion of a horse collar cast integral of aluminum in a mold and made hollow by suitable coring during the casting operation, and provided upon its interior with a series of integral metal pillars separated a distance and connecting the inner walls of said hollow body portion, and said pillars being bored and threaded to receive the metallic trimmings of the collar, substantially as herein specified.

2. The hollow mold-cast shell, cored to form internal pillars as described, and having a single flange of thin metal on its outer side only, in combination with a shoulder-padding in contact with one surface of said flange, and a leather casing which incloses said shell and said padding, substantially as herein specified.



542,131. HAND-STAMP. JOHN E. BATES, Pittsburg, Pa. Filed Apr. 26, 1895. Serial No. 547,244. (No model.)



Claim.—1. In a hand stamp the combination with a type-wheel, of a drive wheel in juxtaposition thereto, and an intermediate wheel adapted to be thrown into and out of engagement with the aforesaid wheels, substantially as described.

2. In a hand stamp the combination with a type-wheel, of a drive wheel in juxtaposition thereto, an intermediate wheel adapted to be thrown into engagement with the aforesaid wheels, and means for holding the wheels normally out of engagement, substantially as described.

3. In a hand stamp the combination with a type-wheel, of a drive wheel in juxtaposition thereto, and an intermediate wheel journaled upon an operating key whereby it is thrown into and out of engagement with the aforesaid wheels, substantially as described.

4. In a hand stamp the combination with a type-wheel, of a drive wheel in juxtaposition thereto, a spring pressed operating key, and an intermediate wheel carried by said key adapted to engage the aforesaid wheels, substantially as described.

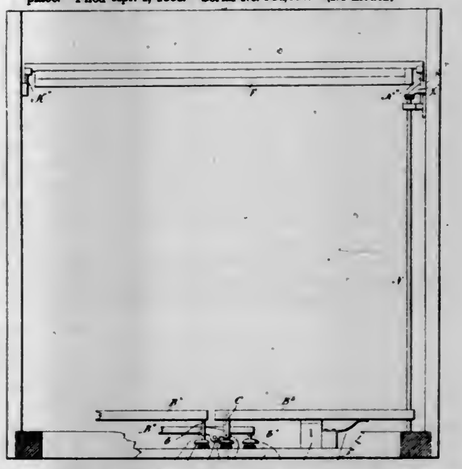
5. In a hand stamp the combination with a type-wheel, of a drive wheel in juxtaposition thereto, an operating key carrying an intermediate wheel for engaging the aforsaid wheels, a dog located upon the operating key, and a spring for holding said dog normally in engagement and the intermediate wheel out of engagement, substantially as described.

6. In a hand stamp corresponding series of type-wheels, drive wheels and intermediate wheels in vertical alignment, in combination with a series of operating keys whereby said wheels are thrown into engagement, and means for retaining all of said wheels normally out of engagement, substantially as described.

7. In a hand stamp the combination with a case, of a series of type-wheels loosely journaled upon a shaft fixed therein, a corresponding series of drive wheels keyed to a shaft journaled in said case, an equal number of longitudinally movable operating keys supported in the case and carrying intermediate wheels adapted to engage the aforesaid wheels, dogs at the extremities of the keys for locking the type-wheels, and springs for pressing said dogs and holding the intermediate wheels normally out of engagement, substantially as described.

8. In a hand stamp the combination with a case of corresponding series of type-wheels, drive wheels and intermediate wheels each provided with ratchet teeth in vertical alignment, a corresponding series of operating keys whereby said wheels are thrown into engagement, and means for retaining all of the wheels normally out of engagement, substantially as described.

542,132. MUFFLER OR DAMPER FOR PIANOS. WILLIAM A. BEIN, New Haven, Conn., assignor to the E. Shoninger Company, same place. Filed Apr. 1, 1895. Serial No. 544,017. (No model.)



Claim.—1. In a muffler attachment for pianos, the combination with a muffler pedal and a releasing pedal, of a two-armed releasing lever pivoted between the said pedals, and arranged to be tilted in opposite directions by the action of the same upon its respective arms, substantially as described.

2. In a muffler attachment for pianos, the combination with a muffler pedal and a releasing pedal, of a pivotal two-armed releasing lever arranged to be tilted in opposite directions by the respective pedals, a muffler pedal lever, and a link connecting the same with the releasing lever, substantially as set forth.

3. In a muffler attachment for pianos, the combination, with a muffler pedal and a releasing pedal, of a pivotal two-armed releasing lever located between the two pedals at the inner ends thereof, upon a horizontal pin, and respectively tilted in opposite directions by the engagement of its ends by the inner ends of the pedals, substantially as set forth.

4. In a muffler attachment for pianos, the combination with a pivotal bracket having the muffler felt connected with it, and provided with a coupling arm furnished with a coupling pin and retaining plate, of a muffler stick, the upper end of which is detachably connected with the said arm, through the medium of the said pin and plate thereof, substantially as set forth.

5. In a muffler attachment for pianos, the combination with two brackets, pivotally secured, respectively, to the inner faces of the ends of the piano case, of a lip tube secured at its ends to the said brackets, a felt bar connected with the said tube through the lip thereof, and a muffler felt connected with the outer end of the said bar, substantially as set forth.

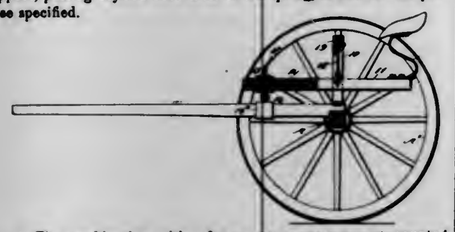
6. In a muffler attachment for pianos, the combination with two brackets, pivotally secured, respectively, to the inner faces of the ends of the piano case, of a lip tube connected at its ends with the said brackets and furnished in its ends with plugs, a felt bar connected with the tube through the lip thereof, and a felt strip connected with the bar, substantially as set forth.

542,133. SWINGING SEAT FOR AGRICULTURAL IMPLEMENTS. LOUIS BEYER, Jr., Calumet Harbor, Wis. Filed Mar. 19, 1895. Serial No. 542,351. (No model.)

Claim.—1. The combination with a supporting spring, of a seat beam suspended from the said spring, by links pivotally connected with the said beam and spring, said seat beam being provided with an anchoring device at one end and a seat at the opposite end, the spring support being between the anchor and seat, substantially as shown and described.

2. The combination, with a fixed auxiliary spring support, of a seat-supporting beam connected with the fixed support by an adjustable fulcrum and loosely suspended from the spring support, as and for the purpose specified.

3. The combination, with a frame and a spring support mounted on the frame, of a seat support having an adjustable fulcrum connection with the frame support, and pivotally suspended from the spring support, passing beyond both sides of the spring, as and for the purpose specified.



4. The combination, with a frame and a spring support mounted upon the frame, of a seat support, an adjustable fulcrum connecting the seat support to the frame, links suspending the seat support from the spring, and adjusting devices connected with the links, whereby they may be held parallel or made to converge at their upper ends, as and for the purpose specified.

5. The combination, with a frame and an arched spring secured on said frame, of a seat support having link connection with the spring and adjustable fulcrum connection with the frame support, substantially as described.

6. The combination, with a supporting frame and an arched spring secured thereto, of a seat support extending through the arched spring, an adjustable link connection between the seat support and the arched spring, and means, substantially as shown and described, for imparting a changeable fulcrum to the said seat support, as and for the purpose specified.

7. The combination, with a supporting frame, an arched spring secured to the said frame, and a sleeve provided with an adjusting screw held to slide upon the frame, of a seat support adjustably connected with the said sleeve, the said support being passed through the said arched spring, and links connecting the seat support with the said spring, as and for the purpose specified.

542,134. MOP HOLDER AND WRINGER. ALBERT M. BIRR, Deer Lodge, Mont. Filed Jan. 22, 1895. Serial No. 535,793. (No model.)



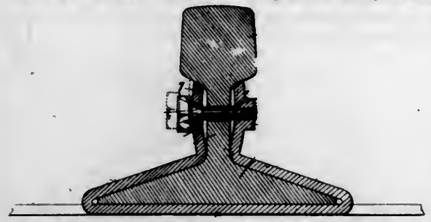
Claim.—1. In a mop holder and wringer, a handle having a screw threaded portion at its forward end, a mop holding device at the said screw threaded end, a head block held to travel on the thread and a frame having sliding movement in the head block, the said frame carrying locking devices adapted to engage with the head block, as and for the purpose specified.

2. In a mop holder and wringer, a mop stick, a head block secured upon the said mop stick and capable of adjustment thereon, the stick being provided at its threaded end with a device for holding a mop, and a frame having sliding movement in the ends of the head block, the said frame being provided with enlargements and the head block with openings of different sizes through one set of which openings the said enlargements may pass, substantially as described.

3. In a mop holder and wringer, the combination with a mop stick having a screw threaded portion at one end, and a head block held to travel on the said threaded portion, of a wringing frame having sliding movement in the head block, a locking device attached to the frame and adapted for engagement with the head block, and a mop holding device secured to the mop stick and having the diverging loops adapted to receive between them the forward member of the wringing frame, as and for the purpose set forth.

4. In a mop holder and wringer, the combination, with a mop stick having a thread at its forward end and a device for holding a mop, the said device being provided with jaws, and a head block held to travel upon the threaded portion of the mop stick, provided with extensions extending laterally in opposite directions from its ends, each extension being provided with a large and with a small connected opening, of a wringing frame having guided movement on the mop stick and a sliding movement in the openings in the head block, said frame being provided with enlargements on its side bars, capable of passing through only one set of the apertures in the ends of the head block, as and for the purpose set forth.

542,135. RAILWAY-TRACK JOINT. FREDERICK W. BOND, St. Louis, Mo., assignor of one-half to Byron F. Hobart, same place. Filed Mar. 20, 1893. Renewed May 21, 1895. Serial No. 550,144. (No model.)

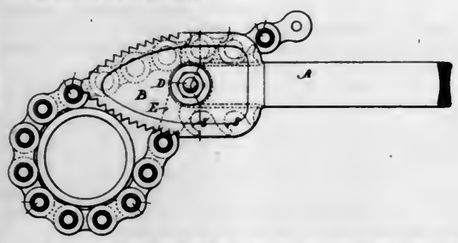


Claim.—1. In a railway track-joint a supporting chair having bottom and top walls, upwardly and slightly outwardly diverging bowed flanges projecting from said top walls, projecting bosses upon said flanges, internally screw threaded openings in said bosses, and a bolt having a conical shaped enlargement adjacent to its head and adapted to be inserted through and in the rail web and turned into the screw threads in said bosses, substantially as set forth.

2. In a railway track joint a supporting chair having walls adapted to embrace the tie flange, said walls provided with upwardly projecting flanges slightly bowed and outwardly diverging, projecting bosses upon one of said flanges, screw threaded openings in said bosses, outwardly tapering openings in the other flange opposite said openings, and a bolt provided with a thickened portion under its head, adapted to be inserted through a tapered opening, rail and screw threaded bosses, to hold the chair in position, substantially as set forth.

3. In a railway track joint, a supporting chair having bottom and top walls, upwardly and slightly outwardly diverging bowed flanges projecting from said top walls, projecting bosses upon said flanges, provided with internally screw threaded openings, bolts having a conical enlargement adjacent their heads adapted to be inserted through one of said flanges of the rail web and turned into the threaded openings in said bosses, and a tie plate formed integral with each end of said supporting chair and adapted to rest upon a tie and support a rail, substantially as herein specified.

542,136. CHAIN PIPE-WRENCH. JOHN C. BOOTH, Brooklyn, N. Y., assignor to J. H. Williams & Co., same place. Filed May 2, 1894. Serial No. 509,746. (No model.)



Claim.—1. The chain for chain wrenches composed of plate links united by pivot pins that pass through the links, the outer links of the chain having integral circular projections around the ends of the pivot pins, the heads of the pivot pins being riveted up within the countersunk recesses in the circular projections, substantially as specified.

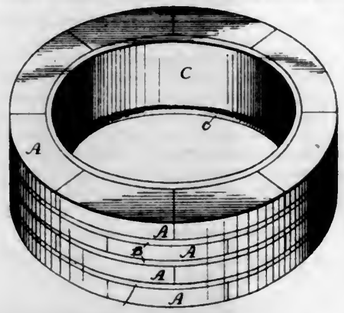
2. The chain for chain wrenches, composed of plate links united by pivot pins that pass through the links, the outer links of the chain having circular projections around the ends of the pivot pins formed of separate washers, the heads of the pivot pins being riveted up within the countersunk recesses of the washers, substantially as set forth.

542,137. PACKING FOR PISTONS, VALVES, &c. WILLIAM A. BRADEN, Chicago, Ill., assignor of one-third to James S. Holmes, same place. Filed Aug. 9, 1894. Serial No. 519,787. (No model.)

Claim.—1. In a packing, the combination of a number of packing rings and a nonmetallic cylinder, open at both ends, around which said rings fit, said cylinder having at its end a short inturned lip, said lip being flexible and free substantially as set forth.

2. In a packing, the combination of a number of metallic and nonmetallic rings arranged alternately, each of the metallic rings being made up of a number of segments, and a cylinder around which all of the rings fit, each segment having a pin entering the cylinder, substantially as shown and described.

3. In a packing, the combination of a number of metallic and nonmetallic rings arranged alternately, each of the metallic rings being made of a number of segments, and a non-metallic cylinder around which all of the rings fit, the parts being temporarily secured together by a substance soluble in water, substantially as shown and described.



542,138. DENTAL BRIDGEWORK. BERNARD B. BRAY, Axtell, Tex. Filed Sept. 4, 1894. Serial No. 522,068. (No model.)



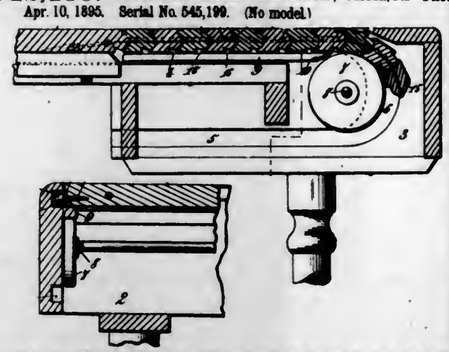
Claim.—1. The combination of a slotted crown, cap or band provided with a lug on each side of the slot, the said lugs forming a tenon and a bridge provided with a recess open at the bottom and adapted to receive the tenon, substantially as and for the purpose specified.

2. A split dental cap, crown or band, provided with a lug at each side of the split therein, the opposing faces of the lugs being fitted for engagement with each other, and a fastening device adapted to be introduced into the lugs for the purpose of binding them together, whereby the said lugs form combinedly a tenon, as and for the purpose specified.

3. The combination of a slotted crown, cap, or band provided with a lug on each side of the slot, means for binding the lugs together to bind the crown, cap or band on a tooth and cause the said lugs to form a tenon, and a bridge provided with a recess open at the bottom and adapted to receive the said tenon, substantially as described.

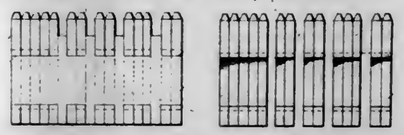
4. A split dental cap, crown or band, provided with a lug at each side of the split portion, the two lugs facing one another, the said lugs being provided with inclined outer side faces, and a pin or screw, adapted to enter the lugs and draw the same together, forming substantially a dove-tail tenon, and imparting to the band, cap or crown a clamping action, substantially as and for the purpose set forth.

542,139. EXTENSION-TABLE. AXEL BRODIN, Warren, Pa. Filed Apr. 10, 1895. Serial No. 545,199. (No model.)



Claim.—The combination with an end leg frame having its side pieces each provided with a guide-way composed of upper, and lower guide portions connected by a guiding switch portion, of a rotary disk or wheel journaled on each side piece and having its periphery lying entirely between the outer edges of the upper, lower, and switch portions of the guide-way of each side piece, and a flexible table-top section composed of connected slats having end anti-friction rollers and resting upon the peripheries of the rotary disks or wheels to traverse the spaces between the peripheries of the said disks or wheels and the outer edges of the upper, lower, and switch portions of the guide-ways, substantially as described.

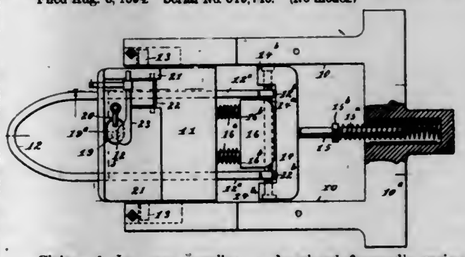
542,140. COMPOSITE TYPE-BAR AND METHOD OF MAKING SAME. LUCIEN A. BROTT and GEORGE A. KAY, Brooklyn, N. Y. Filed Dec. 3, 1894. Serial No. 530,709. (No model.)



Claim.—1. An improved type bar comprising a line of type, and spacing bars and a locking slug therefor formed of type metal, whereby the type and bars and slug may be melted down and be reused, substantially as shown and described.

2. An improved method of forming composite type bars consisting in setting and justifying a line of recessed type and then filling the interstices between the type as well as the recesses therein with molten type metal which when hard binds and spaces the type, the whole being capable of melting down and reuse, substantially as shown and described.

542,141. CAR-COUPLING. EDWARD R. BROWN, Tallahassee, Fla. Filed Aug. 8, 1894. Serial No. 519,740. (No model.)



Claim.—1. In a car coupling, a drawhead forwardly spring-pressed and having two pairs of trunnions that engage longitudinal channels in supports for the drawhead which adapt said drawhead to receive a limited sliding and rocking movement, substantially as described.

2. In a car coupling, the combination with a supporting frame on a car, of a forwardly chambered drawhead that is constructed to rock and slide against spring-pressure, and a bail link pivoted at its ends on a connecting device of the drawhead with the frame, substantially as described.

3. In a car coupling, the combination with a car frame, of a rocking spring-pressed drawhead recessed to admit a link, a pivoted bail link, a gravity actuated pin, and a device that holds the pin elevated until dropped by percussion of another drawhead at the front, substantially as described.

4. In a car coupling, the combination with a supported drawhead, a pivoted coupling link and a gravity pin sloped on the head of a tilting block pivoted on the drawhead and having an arm that the sloped pin-head rests on when elevated, and a pusher limb extended forwardly from the tilting block exteriorly of the drawhead to project in advance thereof and receive the impact of another drawhead, substantially as described.

5. In a car coupling, the combination with a supporting frame on a car, of a trunnioned drawhead that is longitudinally chambered, a crosshead having a supporting slidable carrier rod extended at the rear and engaging the frame, a spring on the carrier rod pressing the crosshead forwardly, a bail link pivoted in the drawhead chamber and on the crosshead, a coupling pin, and a device adapted to support the pin elevated until struck by another car coupling, substantially as described.

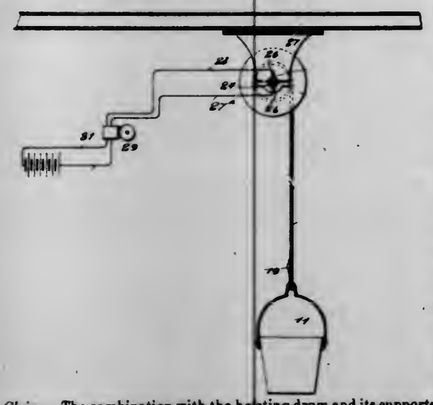
6. In a car coupling, the combination with the supporting frame on a car, a chambered drawhead trunnioned on the frame and arranged to slide on said trunnions, a spring cushioning device at the rear of the drawhead, and a bail link pivoted at its ends on a cross bolt that engages the cushioning device, of a headed coupling pin vertically reciprocal near the front of the drawhead, and a latching device actuated by gravity, and hooking under the head of the pin so as to hold it elevated till dropped by the impact of another drawhead, substantially as shown and described.

7. In a car coupling, having a gravity actuated vertically slidable coupling pin, a guide on which the pin is mounted to slide and holding it against rotation the pin supporting and releasing device, comprising the tilting block pivoted to forwardly incline on the drawhead, an arm on said block engaging a sloped side of the pin-head and hooking under said pin-head when the coupling pin is elevated,

and a pusher limb forwardly projected from the tilting block, and adapted to receive the impact of an approaching draw-head, substantially as described.

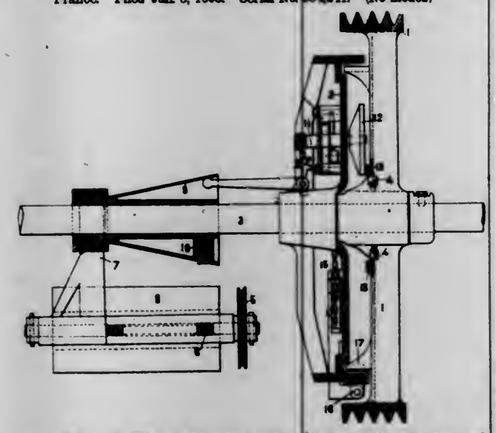
8. The combination of the slidable drawhead, the spring-pressed slidable cross head at the rear thereof, a spring interposed between the drawhead and the cross-head, and the link pivoted to the cross-head and extending through the drawhead to project in advance thereof, substantially as described.

542,142. SIGNALING. DOUGLAS L. V. BROWNE, Denver, Colo. Filed Sept. 12, 1894. Serial No. 522,789. (No model.)



Claim.—The combination with the hoisting drum and its supports or bearings, of a hoisting cable having two insulated conducting cables concealed therein with their upper ends extending through one end of the drum, two insulated apertured plates or rings mounted side by side in said end and connected with the respective wires, a brush extending at its free end through the aperture in the outer plate or ring into engagement with the inner plate or ring, a second brush engaging the outer plate or ring, circuit wires connected to the respective brushes and including an alarm or signal, and a circuit closing device for the opposite ends of the conducting wires, substantially as described.

542,143. CLUTCH SPECIALLY ADAPTED FOR CABLE-DRIVING PULLEYS. CHARLES E. CALLOCH and HENRI C. DELCROIX, La Flèche, France. Filed Jan. 8, 1895. Serial No. 534,241. (No model.)



Claim.—1. The combination with a driving shaft and a fast and loose pulley arranged thereon, of an annular flange carried by said loose pulley, radially movable brake-shoes adapted to engage said flange, an annulus carried by the loose pulley, a friction-disk journaled in the fast pulley and adapted to engage said annulus, a train of gearing driven by said disk and operating to force said brake-shoes against the annular flange on the fast pulley when said disk is rotated, and means for throwing the friction disk into engagement with the said annulus, substantially as described.

2. The combination with a driving shaft and a fast and loose pulley arranged thereon, of an annular flange carried by said loose pulley, radially movable brake-shoes adapted to engage said flange, an annulus carried by the loose pulley, a friction disk journaled in the fast pulley and adapted to engage said annulus, a train of gearing driven by said disk, a reciprocating rack-bar operated by said train, connections between said rack-bar and brake-shoes, and means for throwing said friction disk into engagement with the annulus, substantially as described.

3. The combination with a driving shaft and a fast and loose pulley arranged thereon, of an annular flange carried by said loose pulley, radially movable brake-shoes adapted to engage said flange, an annulus carried by the loose pulley, a friction disk journaled in the fast pulley and adapted to engage said annulus, a train of gearing driven by said disk, a reciprocating rack-bar operated by said train, mechanism actuated by said rack-bar for forcing the brake-shoes into engagement with said annular flange, levers for throwing said friction disk into and out of engagement with the said annulus, a shifting hollow cone for actuating said levers, and means for shifting said cone, substantially as described.

542,144. PENHOLDER. THOMAS C. CAMPBELL, New York, N. Y. Filed Mar. 30, 1895. Serial No. 543,908. (No model.)

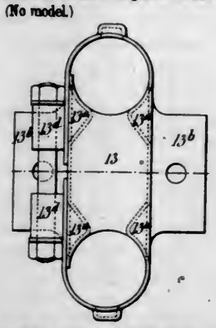


Claim.—1. A pen holder having a hollow barrel provided at one side with an opening, a spring tongue arranged within the barrel and capable of holding a pen in engagement with the interior side thereof, and a slide connected to the tongue and capable of having one end dropped through the opening in the side of the barrel so as to disengage the tongue and pen, substantially as described.

2. In a pen holder, a barrel having a slide therein one end being adapted to drop downward, a spring tongue attached to the side and having a loop formed therein a pivot fixed to the barrel and receiving the loop the tongue being also provided with a beak section for engagement with a pen to hold the same in the barrel, the beak section of the tongue being over the end of the slide which is adapted to drop, as and for the purpose set forth.

3. A pen holder, the barrel of which is provided with a slide, capable of locking engagement with the barrel at both ends of the slide and of being released therefrom at one end, and a spring tongue adapted to hold a pen in engagement with the barrel, the said tongue being carried by the said slide and pivotally connected to the barrel and, releasing itself from the pen simultaneously with the release of one end of the slide from the said barrel, as and for the purpose set forth.

542,145. MEANS FOR BINDING TOGETHER METAL TUBES SERVING FOR GIRDERS, PILLARS, &c. GEORGE E. CHURCH and GEORGE W. ETTENGER, London, England. Filed Apr. 10, 1895. Serial No. 545,192. (No model.)



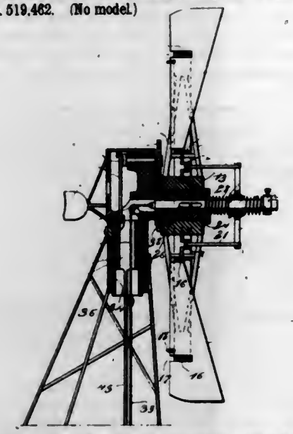
Claim.—1. A metal binder constructed of a rolled or drawn plate one part of which is formed with pockets or hollow projections, which pockets serve both to stiffen such part and to act as abutments for the tubes to be secured while two other parts of the plate are formed as straps to encircle the tubes, said straps being tightened up by suitable devices so as to grip the tubes firmly against the said abutments, substantially as described.

2. In a metal binder formed of a rolled or drawn plate, the combination of a part having pockets or hollow projections formed thereon, two other parts formed as straps adapted to encircle the tubes to be secured together, embossed holes in such straps in the axial line of the binder adapted for the reception of bolts or rivets for attachment of the binder to other structural parts, and means for securing and tightening the straps round the said tubes, substantially as described.

3. In a metal binder formed of a rolled or drawn plate, the combination of a part having pockets or hollow projections, and lateral wings or flanges for attachment to other structural parts, two other parts formed as straps adapted to encircle the tubes to be secured together, embossed holes in such straps in the axial line of the binder, and means for securing and tightening the straps round the said tubes, substantially as described.

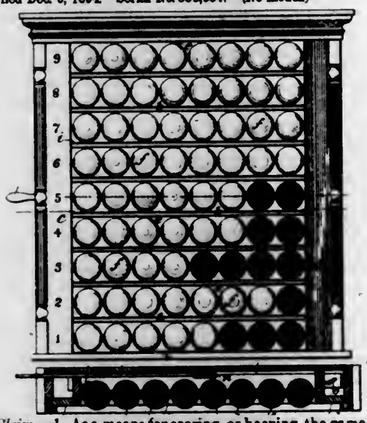
4. In a metal binder formed of a rolled or drawn plate parts 1, 1, having wings 2, 2, and 2^a, 2^a, pockets 3, 3, forming stiffening ribs and abutments for the tubes to be secured, perforated pockets 5, 5, forming abutments for the tightening screw bolt, and parts 1^b, 1^a, adapted to encircle the tubes to be secured, said parts being made to grip the said tubes firmly against the abutments 3, 3, by means of a screw bolt 6 passing through the pockets 5, 5, and through a hole 1^b in the part 1^a substantially as described.

542,146. WINDMILL. EDWARD S. CRAWFORD, Milford, Ill., assignor of one-half to Lewis Dod Jones, same place. Filed Aug. 4, 1894. Serial No. 519,462. (No model.)



Claim.—In a wind-mill, the combination of a head having a laterally extending hollow spindle, a wind-wheel having a boss mounted to turn on said spindle and having pivoted fans provided with crank shafts connected to their pivots, a slide-shaft longitudinally movable in the hollow spindle, a cross-arm mounted on the outer end of said slide-shaft, a spring arranged between said arm and the end of the hollow spindle, a spring connected to the outer end of the shaft and adapted to bear on the outer face of the cross-arm, rods connecting the ends of the said cross-arm to the cranks of the pivoted fans, and means for moving said slide-shaft longitudinally in the hollow spindle, substantially as set forth.

542,147. POOL-COUNTER. PATRICK M. CUNNINGHAM, New York, N. Y., assignor to the Brunswick-Balke-Collender Company, Chicago, Ill. Filed Dec. 6, 1894. Serial No. 530,957. (No model.)



Claim.—1. As a means for scoring, or keeping, the game of fifteen ball pool, an indicator, comprising a series of sets, or rows, of movable devices, each device adapted to be turned, separately by the hand, to score, or mark, the balls holed by each player; and means for simultaneously re-setting all the said devices; for re-use; all substantially as hereinbefore set forth.

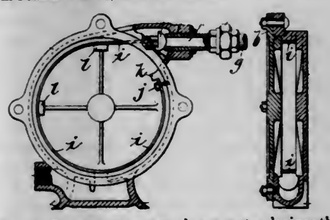
2. In an indicator for keeping the game of fifteen ball pool, the combination, with a suitable supporting frame, of horizontal rows of spherical devices, each mounted on a vertical pivot, and adapted to make half a revolution, to expose to view differently colored portions of its surface; and means for simultaneously turning all those of said devices which may have been rotated half round, to count a score; in order to re-set all the rows, to begin the count of a new game; all substantially as hereinbefore set forth.

542,148. MATTE AND SLAG SEPARATING WELL. JOHN D. DAVIES, Butte, Mont. Filed Sept. 18, 1894. Serial No. 523,402. (No model.)



Claim.—A matte and slag separating well, provided with a large compartment and a small compartment connected with each other at or near their bottoms, a slag discharge and a slot in one end of the large compartment, and a metallic plate held in brackets on the end of the said large compartment and adapted to close the slot therein, the smaller compartment being provided with a matte discharge and a tap-hole, substantially as shown and described.

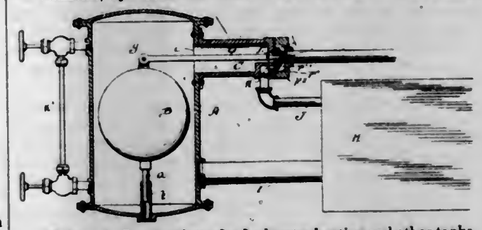
542,149. STEAM-TRAP. JOHN H. DEWHURST, Sheffield, England. Filed Feb. 11, 1895. Serial No. 538,013. (No model.) Patented in England Aug. 30, 1893, No. 16,338; in Belgium Feb. 24, 1894, No. 108,716, and in France Feb. 26, 1894, No. 236,561.



Claim.—1. In a steam trap used as a water drainer the combination of parts and appliances comprising the narrow circular formed case or box *a*, provided with a lid, *b*, an inlet, *c*, and outlet, *d*, the inlet orifice being provided with an adjustable valve seat, *e*, and valve, *h*, such valve being attached to a bent or coiled rod, *i*, constructed of some metal or metallic alloy highly sensitive to heat and secured within the case in the manner and for the purposes substantially as herein described and illustrated.

2. In a steam trap used as a water drainer and lifter the combination of parts and appliances comprising the narrow circular formed case or box, *a*, provided with a lid *b*, an inlet, *c*, and outlet, *d*, the inlet orifice being provided with an adjustable valve seat, *e*, and valve, *h*, such valve being attached to a bent or coiled rod, *i*, constructed of some metal or metallic alloy highly sensitive to heat and secured within the case, together with the appliances provided in or near the outlet orifice *d*, comprising the stop valve, *n*, and the foot valve, *o*, at the bottom of the upcast pipe, *p*, arranged in the manner and for the purposes substantially as herein described and illustrated.

542,150. FEED-WATER REGULATOR. MARCUS DOERNOEFER, Louisville, Ky. Filed Mar. 4, 1895. Serial No. 540,470. (No model.)

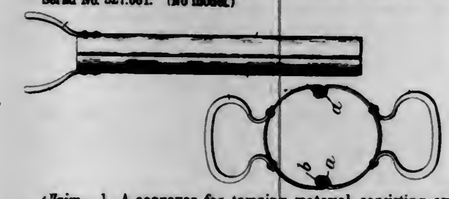


Claim.—1. In a regulator for feed water heating and other tanks, the combination of a float chamber, a smaller chamber offset from the float chamber, the shell of said smaller chamber having a valve seat portion at its outer end, a chambered cap secured to said shell over said valve seat, a slide valve seated within the chamber of said

cap, and seating against the outer face of said seat portion, an inlet to and an outlet from the chamber of said cap, the outlet port being controlled by the said valve, and a float-actuated lever connected to said valve through an opening in said seat portion, substantially as specified.

2. In a regulating device for feed water or other tanks, the combination of a float vessel A, a shell D attached to the upper portion of said vessel and having a chamber which communicates with the chamber of said vessel, said shell having a valve seat portion at its outer end, a chambered cap-piece secured to the outer end of said shell over said seat portion, a slide valve within the chamber of said cap and seating upon the outer face of said seat portion, an inlet leading into said chamber, an outlet leading therefrom through said seat portion, and a float-actuated lever extending through the chamber of the shell D, within which it is fulcrumed, and connected to said valve through an opening in said seat portion which is closed by said valve, said shell D being capable of reversal, substantially as and for the purposes specified.

542,151. CONVEYER FOR TAMPING MATERIALS. ROBERT H. ELLIOTT and JOHN B. CARRINGTON, Birmingham, Ala., assignors to the Alabama Blasting and Mining Company, of Alabama. Filed Nov. 1, 1894. Serial No. 527,681. (No model.)



Claim.—1. A conveyer for tamping material, consisting essentially of two superimposed hollow semicylinders the one being adapted to slide longitudinally relatively to the other with guides for holding the two semicylinders together, and means for separately holding and moving the semi-cylinders substantially as and for the purposes described.

2. A conveyer for tamping material, consisting of two superimposed hollow semicylinders having their longitudinal edges bent so as to hook together, and yet leaving the two parts free to slide longitudinally, with a handle attached to the inner end of each of said semi-cylinders, substantially as and for the purposes described.

542,152. REAMER FOR USE IN MINING. ROBERT H. ELLIOTT and JOHN B. CARRINGTON, Birmingham, Ala., assignors to the Alabama Blasting and Mining Company, of Alabama. Filed Nov. 1, 1894. Serial No. 527,682. (No model.)



Claim.—1. The combination, with a reamer spindle of a centering device forming a journal bearing for the forward end thereof, the said centering device being provided with three or more extensible arms adapted to press outward when said centering device is subjected to longitudinal pressure, substantially as described.

2. The combination with a reamer spindle, of a cap forming a journal bearing therefor, a sliding cap mounted on said first cap and extensible arms connected to said first cap and operated by said sliding cap, substantially as described.

3. The combination, with a reamer spindle, of a centering device forming a journal bearing for the forward end thereof, the said centering device being provided with three or more extensible arms adapted to press outward when said centering device is subjected to longitudinal pressure; with a spring normally drawing said extensible arms inward toward the axis of the reamer spindle, substantially as described.

4. The combination, with a reamer spindle, of a cap forming a journal bearing therefor; a sliding cap mounted on said first cap, and extensible arms connected to said first cap and operated by said sliding cap; and a spring interposed between said caps and normally tending to draw said arms inward toward the axis of the reamer spindle, substantially as described.

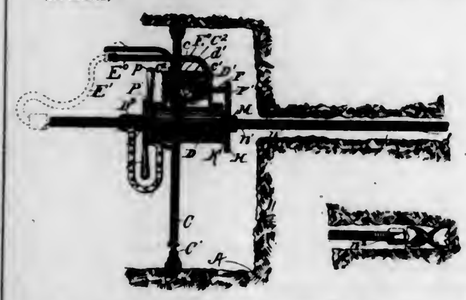
5. In a reamer spindle centering device, the combination with the reamer spindle, of a cap forming a journal bearing therefor and terminating in a forwardly projecting lug, a sliding cap normally projecting beyond the end of said lug, and extensible arms connected to said first cap and operated by pressure on said sliding cap, substantially as and for the purposes described.

6. In a reamer spindle centering device, the combination with the reamer spindle, of a cap forming a journal bearing therefor and terminating in a forwardly projecting lug, a sliding cap normally projecting beyond the end of said lug, and extensible arms connected to said first cap and operated by pressure on said sliding cap, and a spring interposed between said caps and normally tending to press forward said sliding cap, substantially as and for the purposes described.

7. In a reamer spindle centering device, the combination with the reamer spindle, of a cap forming a journal bearing therefor and terminating in a forwardly projecting lug, a sliding cap normally projecting beyond the end of said lug, and toggle joints connected to each of said caps and operated by pressure on said sliding cap, substantially as and for the purposes described.

8. In a reamer spindle centering device, the combination with the reamer spindle, of a cap forming a journal bearing therefor and terminating in a forwardly projecting lug, a sliding cap normally projecting beyond the end of said lug, and toggle joints connected to each of said caps and operated by pressure on said sliding cap, and a spring interposed between said caps and normally tending to press forward said sliding cap, substantially as and for the purposes described.

542,153. MINING-DRILL. ROBERT H. ELLIOTT and JOHN B. CARRINGTON, Birmingham, Ala., assignors to the Alabama Blasting and Mining Company, of Alabama. Filed Nov. 1, 1894. Serial No. 527,683. (No model.)



Claim.—1. In a drilling machine, the combination with a holding sleeve and a drill spindle held against rotary motion therein but free to move longitudinally relative to said sleeve, a loose sleeve mounted on said holding sleeve, and journal bearings therefor; means for revolving the said loose sleeve; a cam plate revolubly mounted on said loose sleeve, and holding pins passing through holes in said loose sleeve, and adapted to be thrown into and out of engagement with said holding sleeve by means of said cam plate, substantially as described.

2. In a drilling machine, the combination with a holding sleeve and a drill spindle held against rotary motion therein but free to move longitudinally relative to said sleeve, a loose sleeve mounted on said holding sleeve, and journal bearings therefor; means for revolving the said loose sleeve; a cam plate revolubly mounted on said loose sleeve, a clamping ring mounted on said loose sleeve and adapted to clamp said cam plate in position, and holding pins passing through holes in said loose sleeve and adapted to be thrown into and out of engagement with said holding sleeve by means of said cam plate, substantially as described.

3. In a drilling machine, the combination with a holding sleeve and a drill spindle held against rotary motion therein but free to move longitudinally relative to said sleeve, a loose sleeve mounted on said holding sleeve, a frame supporting said loose sleeve and forming journal bearings therefor; a gear wheel fast to said loose sleeve, a driving gear mounted in said frame and gearing into said gear wheel, a cam plate revolubly mounted on said loose sleeve, and holding pins passing through holes in said loose sleeve, and adapted to be thrown into and out of engagement with said holding sleeve by means of said cam plate, substantially as described.

4. In a drilling machine, the combination with a holding sleeve and a drill spindle held against rotary motion therein but free to move longitudinally relative to said sleeve, a loose sleeve mounted on said holding sleeve, a frame supporting said loose sleeve and forming journal bearings therefor; a gear wheel fast to said loose sleeve, a driving gear mounted in said frame and gearing into said gear wheel, a cam plate revolubly mounted on said loose sleeve, a clamping ring mounted on said loose sleeve and adapted to clamp said cam plate in position, and holding pins passing through holes in said loose sleeve and adapted to be thrown into and out of engagement with said holding sleeve by means of said cam plate, substantially as described.

5. In a drilling machine, the combination with a holding sleeve and a drill spindle held against rotary motion therein but free to move longitudinally relative to said sleeve, a loose sleeve mounted on said holding sleeve; a trunnioned jacket supporting said loose sleeve and forming journal bearings therefor; columns with hooks clamped thereon supporting said jacket, mechanism for revolving the said loose sleeve; a cam plate revolubly mounted on said loose sleeve, and holding pins passing through holes in said loose sleeve, and adapted to be thrown into and out of engagement with said holding sleeve by means of said cam plate, substantially as described.

6. In a drilling machine, the combination with a holding sleeve and a drill spindle held against rotary motion therein but free to move longitudinally relative to said sleeve, a loose sleeve mounted on said holding sleeve; a trunnioned jacket supporting said loose sleeve and forming journal bearings therefor; columns with hooks clamped thereon supporting said jacket, mechanism for revolving the said loose sleeve; a cam plate revolubly mounted on said loose sleeve, a clamping ring mounted on said loose sleeve and adapted to clamp said cam plate in position, and holding pins passing through holes in said loose sleeve and adapted to be thrown into and out of engagement with said holding sleeve by means of said cam plate, substantially as described.

7. In a drilling machine, the combination with a holding sleeve and a screw threaded drill spindle held against rotary motion therein but free to move longitudinally relative to said sleeve, a loose sleeve mounted on said holding sleeve; a trunnioned jacket supporting said loose sleeve and forming journal bearings therefor; columns with hooks clamped thereon supporting said jacket, mechanism mounted in said jacket for revolving the said loose sleeve and clutch mechanism for connecting and disconnecting the loose sleeve from the holding sleeve, a yoke projecting from the rear end of said jacket and bent upward to form a journal bearing for the screw-threaded drill spindle, and a screw threaded cap hinged to said yoke and adapted to be thrown into and out of engagement with said screw threaded spindle, substantially as described.

8. In a drilling machine, the combination with a holding sleeve and a screw threaded drill spindle held against rotary motion therein but free to move longitudinally relative to said sleeve, a loose sleeve mounted on said holding sleeve; a trunnioned jacket supporting said loose sleeve and forming journal bearings therefor; columns with hooks clamped thereon supporting said jacket, mechanism mounted in said jacket for revolving the said loose sleeve, and holding pins passing through holes in said loose sleeve, and adapted to be thrown into and out of engagement with said holding sleeve by means of said cam plate; a yoke projecting from the rear end of said jacket and bent upward to form a journal bearing for the screw threaded drill spindle, and a screw threaded cap hinged to said yoke and adapted to be thrown into and out of engagement with said screw threaded spindle, substantially as described.

9. In a drilling machine, the combination with a holding sleeve and a screwthreaded drill spindle held against rotary motion therein but free to move longitudinally relative to said sleeve, a loose sleeve mounted on said holding sleeve; a trunnioned jacket supporting said loose sleeve and forming journal bearing therefor; columns with hooks clamped thereon supporting said jacket, mechanism mounted in said jacket for revolving the said loose sleeve, a cam plate revolubly mounted on said loose sleeve and adapted to clamp said cam plate in position, and holding pins passing through holes in said loose sleeve and adapted to be thrown into and out of engagement with said holding sleeve by means of said cam plate, a yoke projecting from the rear end of said jacket and bent upward to form a journal bearing for the screw-threaded drill spindle, and a screw-threaded cap hinged to said yoke and adapted to be thrown into and out of engagement with said screw-threaded spindle, substantially as described.

542,154. CARTRIDGE-CASE FOR CHARGING BLAST-HOLES. ROBERT H. ELLIOTT, Birmingham, and JOHN B. CARRINGTON, Jasper, Ala., assignors to the Alabama Blasting and Mining Company, of Alabama. Filed Mar. 11, 1895. Serial No. 541,332. (No model.)

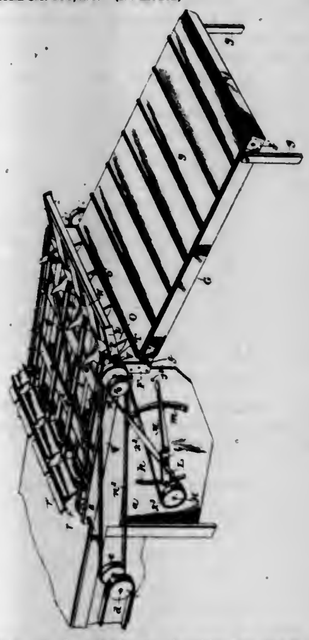


Claim.—1. A cartridge case for use in conveying explosive material, which consists partly of a friable material, and partly of a flexible material, substantially as described.

2. A cartridge case for conveying explosive material, which consists partly of friable clay, and partly of a flexible material, substantially as described.

3. A cartridge case for conveying explosive material, which consists partly of a friable material, and partly of paper, substantially as described.

542,155. BAND-CUTTER AND FEEDER. WILLIAM T. FLICKINGER, McPherson, Kans. Filed Nov. 9, 1893. Renewed May 25, 1895. Serial No. 550,720. (No model.)



Claim.—1. In a feeder for thrashing machines, the main feeder frame, the bundle carrier connected to one end of said main feeder frame, vibrating feed boards working inside of the main feeder frame, and an auxiliary self adjusting feed device pivotally mounted on the main feeder frame at one end over the feed boards and carrying at its pivoted end an off-standing regulator frame working beyond the outer ends of the feed boards and disposed upwardly and outwardly at an angle, substantially as set forth.

2. In a band cutter and feeder for thrashing machines, the main feeder frame having feeders therein, an auxiliary self-adjusting feed device pivotally mounted at one end on the main feeder frame over the feeders therein, and carrying a series of parallel toothed auxiliary feed belts an automatic regular frame adjustably connected to the pivoted end of the self-adjusting feed device and projected outwardly and upwardly therefrom, and the rotating band cutters arranged over the outer ends of the feeders in the main frame, at the point of connection between the regulator frame and said feed device substantially as set forth.

3. In a feeder for thrashing machines, the main feeder frame extended beyond the thrashing machine cylinder, vibrating feed boards loosely connected to a fixed support at one end and provided with a series of longitudinal notched feed strips and plain upwardly disposed retaining flanges at their edges, a vertically adjustable double crank shaft journaled in the main feeder frame under the inner ends of said feed boards, adjustable pitmen connected to the cranks of said shaft and to the bottom of the feed boards near their outer ends, link supports for the feed boards, and means for adjusting the double crank shaft, substantially as set forth.

4. In a feeder for thrashing machines, the frame having vertical slots in its opposite sides, a stationary supporting rod mounted in the frame near its outer end, separate vibrating feed boards arranged to work inside of the frame, links loosely connected to the feed boards near each end and to said stationary rod and an opposite shaft, a double crank shaft having its extremities working in the vertical slots of the frame, adjustable pitmen connected to the crank shaft and to the feed board, an adjusting rock shaft journaled in the frame, short adjusting arms connected at one end to the opposite ends of the rock shaft and at their other ends loosely receiving the double crank shaft, and an adjusting lever connected to one end of said rock shaft, substantially as set forth.

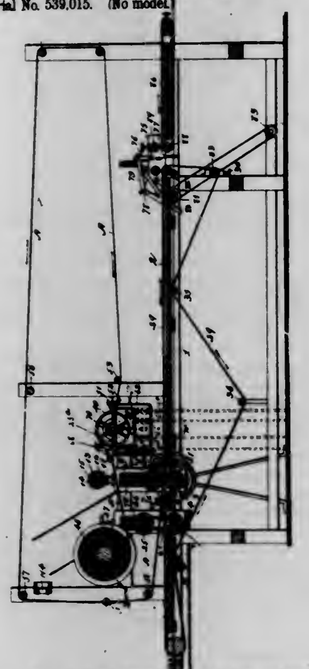
5. In a band cutter and feeder, the main feeder frame having the feeders therein, the bundle carrier connected to one end of the main

feeder frame, a transverse knife shaft journaled at one end and on the top of the main feeder frame, a series of band cutting knives mounted on said knife shaft, a self-adjusting feed device pivotally mounted at one end on the knife shaft leaving the other end free to work inside of the main feeder frame, and an automatic regulator frame adjustably connected to the pivoted end of the self-adjusting feeding device, substantially as set forth.

6. In a band cutter and feeder, the main frame having feeders therein, the bundle carrier, a transverse knife shaft journaled on top of the main feeder frame, a series of knife disks mounted on the knife shaft and having knife blades and pulley hubs at one side, a feed frame pivoted at one end to the extremities of the knife shaft, a toothed forced feed roller journaled at the free end of the feed frame and having pulley portions, and auxiliary feed belts passing over the pulley portions of the roller and the pulley hubs of the knife disks, substantially as set forth.

7. In a band cutter and feeder, the main frame having feeders therein, the bundle carrier, a transverse knife shaft journaled on top of the main feeder frame, a series of flanged knife disks mounted on the knife shaft and having pulley hubs at one side, a feed frame pivoted at one end to the extremities of the knife shaft, a toothed force feed roller journaled at the free end of the feed frame and having reduced pulley portions, auxiliary feed belts passing over the pulley portions of the roller and said pulley hubs and provided with flanged feed fingers, a separate automatic regulator frame adjustably connected to the pivoted end of the feed frame, and fender strips secured to the feed frame and to the regulator frame, substantially as set forth.

542,156. MACHINE FOR APPLYING BINDING-STRIPS TO BOOKS. ABRAHAM L. GARVER, Roaring Spring, Pa. Filed Feb. 19, 1895. Serial No. 539,015. (No model.)



Claim.—1. In a machine for applying binding and backing strips to books, tablets and like work, the combination of an endless feed apron, the two positively driven pressure rolls one above the other, said rolls being made up of a series of broad faced sections which are capable of independent lateral adjustment on their shafts, means whereby one of said rolls may be adjusted vertically, means for carrying the tape or binding strip and for guiding it between said rolls above the apron, and means for applying paste to said tape or strip, substantially as specified.

2. In a machine for the purposes described, the combination with the endless, traveling feed apron, of the rolls 24 and 25 between which said apron passes, said rolls being each made up of a series of broad faced sections which are capable of independent lateral adjustment upon their shafts, substantially as specified.

3. In a machine for the purposes described, the combination with the endless traveling feed apron, of the parallel rolls 24 and 25 which are journaled one above and one below said apron, and in oblique relation thereto, said rolls being made up of a series of broad faced sections which are arranged to slide freely upon their shafts and can be independently adjusted thereon, substantially as specified.

4. In a machine for the purposes described, the combination of a paste pot, a paste roll turning therein, guide rollers for holding the tape in contact with the paste roller, and a distributer bar over which the tape passes after leaving the paste roll, said bar having in its otherwise plain edge a single V-shaped notch, substantially as specified.

5. In a machine for the purposes described, the combination with the endless feed apron, the rollers 24 and 25 journaled one above the other, the rollers 6 and 7, also journaled one above the other to the rear of the rollers 24 and 25, and the tape-guiding devices, of a tape folding and applying device, an adjustable gage parallel therewith and having an adjustable lip which holds the work to said apron, and a laterally acting spring in connection with said lip for pressing the work into said tape-folding and applying device, substantially as specified.

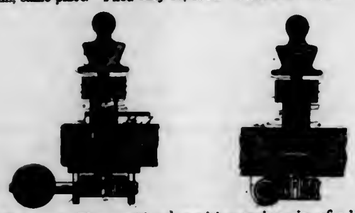
6. In a machine for the purposes described, the adjustable gage 109, having on its guiding face the vertically adjustable lip 110, the spring 112 attached to the gage at one end, and the tension screw for said spring, substantially as specified.

7. In a machine for the purposes described, the tape guiding and folding device 90, having the lower lip or flange 91, the upper lips 100, and 102^a, the tape guiding roller 92, and the series of rollers which press the tape against the binding edge of the work, substantially as specified.

8. In a machine for the purposes described, the tape-guiding and folding device 90, comprising an adjustable bar, having the lip 91 at its lower inner edge, the tape guiding roller 92, the yielding adjustable upper lip 100, the second adjustable folding lip 102^a, the oblique roller 95 carried thereby, its opposite and similar roller 94, the spring 97, the roller 98 carried thereby, and the series of vertical rollers 95^a beyond the rollers 94, 95, substantially as specified.

9. The combination with the endless feed apron, the rolls 24 and 25 journaled one above the other, and the rolls 6 and 7, also journaled one above the other to the rear of the rollers 24 and 25 of the tape folding and applying device, and the parallel gage, said device and gage extending between and to the rear of the said rolls 6 and 7, substantially as specified.

542,157. STRINGING DEVICE FOR MUSICAL INSTRUMENTS. EDWARD L. GOSSE, Kansas City, Mo., assignor of one-half to L. A. Laughlin, same place. Filed May 17, 1894. Serial No. 511,625. (No model.)



Claim.—1. The combination with a tuning pin, of a longitudinal kerf in the pin, a fixed jaw in the bottom thereof extending diametrically across the pin, a coextensive movable jaw operating within the kerf, and actuating mechanism connected with the movable jaw to operate it in both directions, substantially as specified.

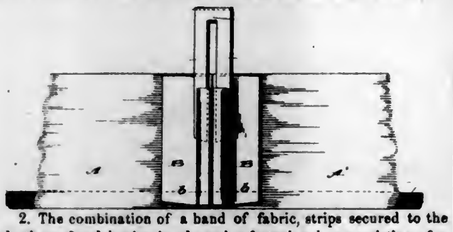
2. The combination with a tuning pin, of a kerf in the end of the pin, a fixed jaw in the bottom of the kerf, a movable jaw working in the kerf, a limiting nut fastened to the end of the pin, and limiting the movement of the movable jaw, and mechanism for actuating the movable jaw in both directions, substantially as specified.

3. The combination with a tuning pin, a kerf in the end thereof and a fixed jaw in the bottom of the kerf, of a movable jaw working within the kerf an exterior nut having an internal limiting flange upon the end of the pin, and actuating mechanism connected with the movable jaw to operate it in both directions, substantially as specified.

4. The combination with a tuning pin, a kerf in the end of the pin, and a fixed jaw in the bottom thereof, of a limiting nut on the end of the pin, a movable jaw working in the kerf, a bulbous headed screw screwing into the nut, a recess in the movable jaw adapted to receive the bulbous end of the screw, and oppositely projecting lugs adapted to rotatably secure the bulbous head to the movable jaw, substantially as set forth.

542,158. MOURNING HAT-BAND. MICHAEL GRENTHAL and ISAAC GRENTHAL, New York, N. Y. Filed Feb. 28, 1895. Serial No. 540,075. (No model.)

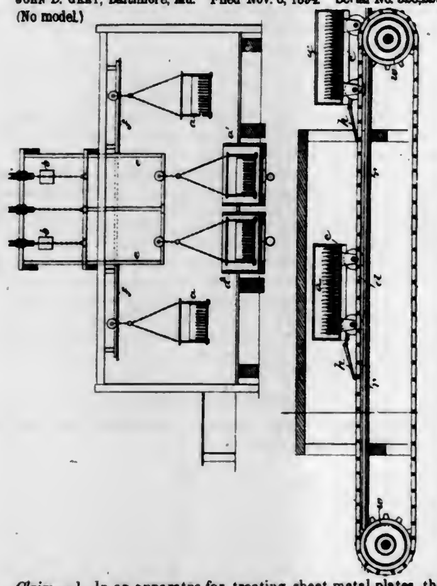
Claim.—1. The combination of a band of fabric, strips secured to the ends thereof and having bends and a fastening key consisting of a substantially flat plate slotted longitudinally to form legs in the same plane as the main portion of said plate and adapted to work in and be hidden by said bends, substantially as shown and described.



2. The combination of a band of fabric, strips secured to the ends thereof and having bends and a fastening key consisting of a substantially flat plate slotted longitudinally to form legs lying in the same plane with the main portion of said plate and adapted to work in and be hidden by said bends, said key being formed at its end with a flange extending at right angles to the length thereof, substantially as described.

3. The combination of a hat band and a narrow band at the lower edge thereof and having at its ends strips having bends, and a fastening key engaging said bends to draw the ends of the band together, substantially as and for the purposes specified.

542,159. APPARATUS FOR TREATING SHEET-METAL PLATES. JOHN D. GREY, Baltimore, Md. Filed Nov. 8, 1894. Serial No. 528,229. (No model.)

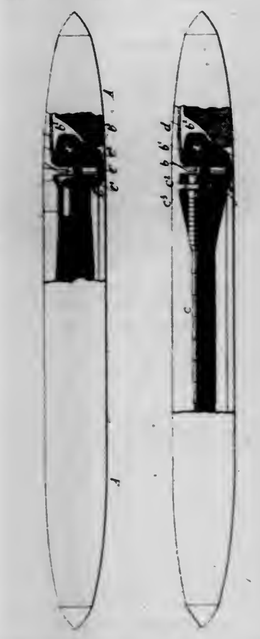


Claim.—1. In an apparatus for treating sheet metal plates, the combination of an oven having rails extending through it, sprocket wheels arranged outside of the oven and connected by an endless chain also passing through the oven, and carriages for the plates having hooks *h* adapted to connect the carriages to the chain and be automatically disconnected by the teeth of the sprocket wheels substantially as and for the purpose described.

2. The apparatus herein described for treating iron and steel plates in the manufacture of tin, terne, and galvanized plates, consisting of the combination with the pickling apparatus and cold rolls; of a series of racks for supporting the plates in the pickling and washing baths, a set of carriages for receiving these racks, an intermediate drying oven with open ends and tracks running through it to support the carriages, an endless chain also passing through said oven and provided with driving mechanism and means for connecting the carriages thereto substantially as and for the purpose described.

542,160. BOBBIN-SHUTTLE. THOMAS HAMPSON, Anniston, Ala., assignor of one-half to James R. Goodwin, same place. Filed Dec. 26, 1894. Serial No. 533,015. (No model.)

Claim.—1. In combination with a shuttle and with the tongue pivotally secured therein, a bobbin clutch pivoted forward of the pivotal connection of the tongue and having jaws for engaging the bobbin, and means forming a part of said tongue for raising the jaws when said tongue is lowered.

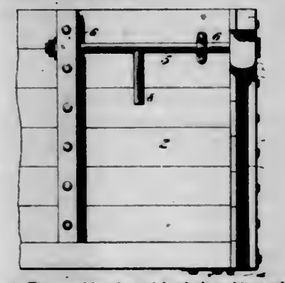


2. In combination with a shuttle, and with a bobbin having a flanged end, the tongue pivotally secured in said shuttle, a bobbin clutch pivoted forward of the pivotal connection of the tongue and carrying at one end two jaws extending upward and conforming to the lower half of said flanged end, and means forming a part of the tongue for raising said jaws when the tongue is lowered.

3. A shuttle provided with a clutch for engaging the bobbin flange comprising a pivoted arm and two jaws at one end thereof, said jaws being curved outwardly and upwardly to conform to the lower half of said flange, in combination with a tongue pivotally secured in said shuttle and having a part adapted to operate the clutch, substantially as described.

4. In combination, a shuttle, a tongue pivotally secured therein and having a cam extension, a flanged bobbin, and a clutch consisting of an arm pivoted forward of the pivotal connection of the tongue, one end of which is in contact with said cam and the other end of which carries two jaws adapted to be raised into engagement with the bobbin flange as the tongue is lowered.

542,161. LATCH. JAMES HENDERSON, Three Rivers, Mich., assignor to the Sheffield Car Company, same place. Filed May 28, 1894. Serial No. 512,706. (No model.)



Claim.—1. The combination with a bolt and lugged securing head, of a pocket provided with a spirally grooved bore adapted to receive and actuate the same, substantially in the manner and for the purpose specified.

2. The combination with a rotatory bolt provided with a weighted handle and with a T-shaped head, of a pocket provided with a bore and with internal diametrically opposite spiral grooves, the ends of said grooves being in the same horizontal plane at one end of the pocket and in the same vertical plane at the other whereby the T-shaped head will automatically return to its initial position after having passed through the pocket, substantially as specified.

542,162. POCKET-COMPANION. JAMES M. HOCKER, Jr., Lexington, Ky., assignor to Nannie L. Hocker and James C. Rogers, same place. Filed Feb. 2, 1895. Serial No. 537,103. (No model.)

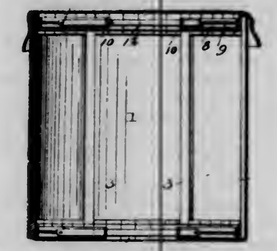


Claim.—1. The herein described pocket companion comprising the case having the longitudinal compartment 3, the match compartment 4, the change compartment 1, stamp compartment 2, and cutter-compartment 5; with the separate hinged covers for compartments 1 and 2, and the hinged cover for compartments 3, 4, 5, combined, said cover having a knife on one end for the purpose and substantially as described.

2. As a new article of manufacture the herein described case, composed of the shell A, having partitions D, E, *b*, and I, and openings *i* and *c*; with the covers F, G and J, the latter having a knife *j*, all constructed and adapted for the purposes set forth.

3. A pocket companion comprising a single hollow case divided by partitions into a plurality of compartments, and hinged covers for said compartments; one of said compartments having an opening in its bottom, and also an opening in its side, and the cover for this compartment having a knife secured to its edge in position to cut the butt end of a cigar inserted in the side opening, as the cover is closed, substantially as and for the purpose described.

542,163. PORTABLE BATH-CABINET. JOHN H. KOCHENDERFER, Gallon, Ohio. Filed Apr. 19, 1895. Serial No. 546,319. (No model.)



Claim.—1. The combination with the rectangular strip of textile material, of the segment blocks at top and bottom thereof, and the vertical stays or slats and said strip adapted to be bent into cylindrical form or knocked down and rolled up in a reverse direction; substantially as described.

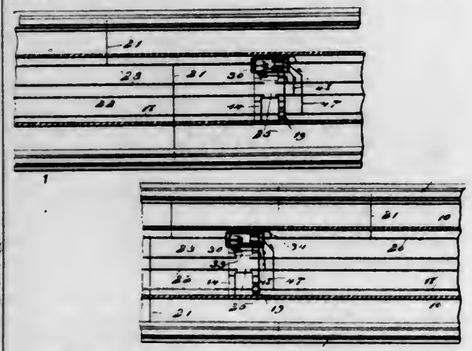
2. The combination with the rectangular strip of textile material, bent into cylindrical form, the segment blocks secured to the top and bottom thereof and the vertical slats, of the hoop attached to the cylinder consisting of a number of spring metal bars provided with loops and slots, and the spring metal bar passing through said loops and provided with headed pins seated in said slots; substantially as described.

542,164. CONDUIT ELECTRIC RAILWAY. LOUIS R. LAVALLE and ALBERT H. LAVALLE, Holyoke, Mass. Filed Mar. 17, 1894. Serial No. 503,997. (No model.)

Claim.—1. In an electric railway, the combination with the trolley and switch wires, of the insulating supporting blocks arranged beneath the wire ends, means for fastening the wires to the blocks, and insulating cushions arranged between the wires and the blocks, substantially as described.

2. The combination, with the switch and trolley wires having bent ends, of the supporting and insulating blocks to carry the wires, the blocks having recesses in their bottoms to receive fastening nuts on the wires, and insulating cushions arranged between the wires and the blocks, substantially as described.

3. In an electric railway, the combination with the trolley wires arranged in blocks, and the supply and return wires, of the switch comprising an electro-magnet, a swinging armature adjacent to the magnet, a sliding rack actuated by the magnet, a pair of swinging switch arms actuated by the rack, contact springs to engage the arms, and electrical connections whereby the switch is operated by the passing of a trolley on the trolley and switch wires, substantially as described.



4. In an electric railway, the herein-described trolley, comprising a cylindrical hanger, a second spring-depressed cylinder arranged within the hanger, an insulated contact tube in the second cylinder, a truck insulated on the lower end of the trolly, a conductor leading from the truck to the contact tube, and a conductor held in the upper part of the trolley and having a sliding contact with the contact tube, substantially as described.

5. In an electric railway, the herein-described trolley, comprising an extensible hanger or arm, a truck insulated on the lower end of the hanger or arm, a contact tube within the hanger, a conductor connecting the truck with the contact tube, and a second conductor held in the upper part of the hanger and provided with a head to enter the contact tube, substantially as described.

6. In an electric railway, the herein-described trolley, comprising an upper cylinder pivoted on a support, a second spring-depressed cylinder held within the upper cylinder, an arm secured to the lower cylinder, a truck insulated on the arm, a contact tube within the lower cylinder, a conductor leading from the truck to the contact tube, and a second conductor held in the upper part of the hanger and provided with a head to enter the contact tube, substantially as described.

7. The combination with slotted supporting plate having trunnion sockets in its upper side, of the swinging hanger having sliding sections, and trunnions, as specified, the conducting rod fixed as to vertical movement, also insulated as shown, and having a sliding contact head, as shown and described.

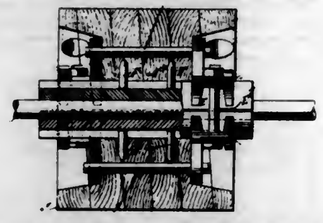
542,165. BANJO. WILLIAM F. LIBBY, Gorham, Me. Filed Feb. 26, 1895. Serial No. 539,764. (No model.)



Claim.—1. In a banjo, a head frame comprising a clamping ring provided with a series of recesses formed in its inner edge, a body portion consisting of an upper band having its upper end provided with a flange curved inwardly and downwardly, a base band of greater diameter than the upper band separate therefrom and provided at its lower end with an inwardly and upwardly curved flange, an offset band separate from the upper and base band located between the opposing edges of said upper and base bands connecting the two, the said offset band being provided with a series of apertures, and brackets having their upper ends held in the said recesses in the inner edge of the clamping ring and the lower ends extending through the said apertures in the offset band and provided with lock nuts upon their lower ends contained within the body of the frame, substantially as set forth.

2. In a banjo, a neck provided at that edge at which the fifth string is located with a longitudinal groove, and a guide located within the said groove and with which the said fifth string is adapted to engage, whereby the said fifth string may be carried to the key board of the instrument, substantially as described.

542,166. SPLIT PULLEY. MAHLON B. LORAH, Reading, Pa. Filed Sept. 12, 1894. Serial No. 522,777. (No model.)



Claim.—1. A split pulley having a bushing forming the hub made in sections, said bushing being projected at each side of the web of the divided pulley, and a clamp device on each end of the bushing having portions loosely secured to the web of the pulley and adapted to clamp the bushings to the shaft, as set forth.

2. A split pulley comprising two pulley sections forming a continuous rim, and an apertured web, said web having projecting members at each side, a bushing projected beyond the web, clamp devices hung on the projecting members of the web, adapted to be moved on their supports and provided with clamp portions fitting the bushing, substantially as described.

3. A split pulley, comprising two pulley sections made of wood and forming a continuous rim and an apertured web, a bushing made in sections held in the said web, clamping devices hung on the pulley sections and engaging the said bushing, to clamp the latter to the shaft, and pins held in the web of the pulley and projecting into the opening thereof, to engage longitudinal grooves in the said bushing, substantially as shown and described.

4. A split pulley, comprising two pulley sections made of disks of wood and forming a continuous rim and an apertured web each web section having a rod passed transversely through and projected at the opposite faces of the web, a bushing made in two sections held in the web and clamping devices loosely hung on the projected ends of the transverse rods held to engage the bushing to clamp the latter to the shaft, as shown and for the purposes described.

5. A split pulley, comprising two pulley sections forming a continuous rim and an apertured web, said rim having apertures at predetermined points, a bushing made of two sections projected at the ends beyond the web, clamp members fitted over the said projected ends at a point inside the rim of the pulley, and tightening bolts and nuts connecting such clamp members, said nuts being disposed in line with the apertures in the rim, all arranged substantially as shown and for the purposes described.

542,167. RAILWAY-SWITCH MECHANISM. ULYSSES G. MEENACH, Alton, Ill. Filed Dec. 15, 1894. Serial No. 531,878. (No model.)

Claim.—1. In a railway switch mechanism, the combination of a lever 13 connected to the switch, an arm 15 connected to said lever, a lever 18 connected to said arm, a movable plate 20 bearing against the lever 18, the movable wings 24, and a wedge shaped disk 30 carried by the locomotive for engaging the plate 20, substantially as and for the purpose set forth.

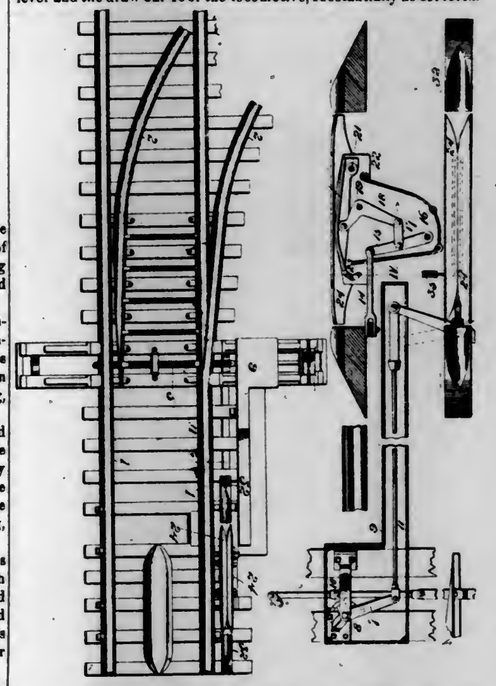
2. In a railway switch mechanism, the combination of a movable plate 20, movable wings 24, and mechanism connected with the switch and operated by the movement of said plate, said plate being adapted to be moved by a disk carried by the locomotive, substantially as and for the purpose set forth.

3. In a railway switch mechanism, the combination of a movable plate 20, mechanism located between the plate and the switch whereby the latter is operated when the plate is moved, and spring pressed wings 24 inclosing the plate, said plate being adapted to be moved by a disk carried on the locomotive, substantially as set forth.

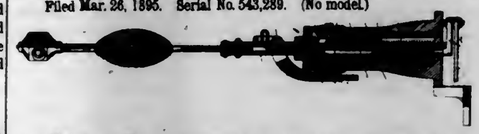
4. In a railway switch mechanism, the combination of a plate 20, a lever 18 pivoted beneath the plate, and mechanism connecting the lever to the switch, said plate being pivoted at one end and connected at the other end to a signal shaft by means of links 23, substantially as and for the purpose set forth.

5. In a railway switch mechanism, the combination of a movable plate, the movable wings, mechanism connected to the switch and adapted to be operated by the plate, and means for moving the plate consisting of a wedge-shaped disk 30 carried by the locomotive and movably mounted upon an arm 31, so that it may be shifted out of the path of said plate, substantially as set forth.

6. In a railway switch mechanism, the combination of a movable plate 20, movable-wings 24, mechanism located between the plate and the switch, and means for moving the plate consisting of a wedge-shaped disk 30, loosely mounted upon an arm 31, and means for moving the disk out of the path of said plate, consisting of a yoke 37, a bell crank lever 41, a strap 40, a bolt 51, a spring 48, a block 52, having a slot 53, a bolt 50, and a connection between said bell crank lever and the draw bar 46 of the locomotive, substantially as set forth.



542,168. SWITCH-STAND. ULYSSES G. MEENACH, Alton, Ill. Filed Mar. 26, 1895. Serial No. 543,289. (No model.)



Claim.—1. The combination in an automatic switch stand, of a cap having ratchet connection with the body of the stand, a vertically movable collar held from rotary movement upon the shaft of the stand and engaging said cap when in its lower position, and a lever connected to said collar and adapted to raise it out of engagement with said cap, substantially as and for the purpose set forth.

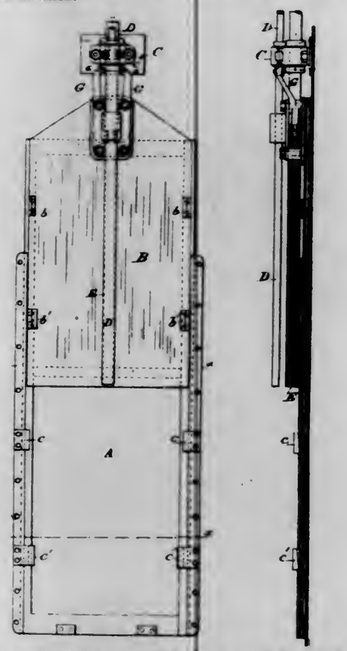
2. In an automatic switch stand, a hollow switch stand body, a cap having pawl and ratchet connection with the stand, a collar having a non-circular extension fitting in a socket in said cap, a shaft, a non-circular sleeve passing through said collar, a lever pivoted to said sleeve, and a connection between said lever and collar, substantially as set forth.

3. In an automatic switch stand, the combination of a hollow switch stand body, a shaft, a ratchet block surrounding the shaft and held from turning within said body, a cap having teeth engaging the teeth of the ratchet block, a spring acting to hold the block into engagement with said cap, a pawl and ratchet connection between said cap and said body, a collar having a non-circular extension fitting in a socket in said cap, a sleeve secured to the shaft and fitting within said collar, a lever pivoted to the sleeve, and straps connecting said lever to said collar, substantially as set forth.

4. In an automatic switch stand, the combination of a switch stand body having internal ribs, a ratchet block having grooves to receive said ribs, a spring for holding the block in its upper position, a cap having pawl and ratchet connection with said body, and having teeth engaging the teeth of said block, a collar having a non-circular extension fitting in a socket in said cap, a sleeve secured to the shaft of the stand, a lever pivoted to the sleeve, and straps connecting the lever to the collar, substantially as and for the purpose set forth.

542,169. AUTOMATIC GRAVITY-CLOSING WATER-TIGHT DOOR. GEORGE W. MELVILLE, Washington, D. C. Filed Mar. 11, 1895. Serial No. 541,284. (No model.)

Claim.—1. In an automatic gravity-closing water-tight door operating mechanism, a pair of dogs having screw-threaded jaws pivoted to the door, said dogs serving as a divided nut, in combination with a rotatable screw journaled on the bulkhead above the door and adapted to be engaged by the threaded jaws of the dogs, and a rod of irregular shape in cross-section, journaled above the door and adapted to lie between the ends of the dogs and to operate said dogs by a partial rotation.



2. The gravity closing water-tight door provided with a bisected nut, a screw adapted to be engaged with said nut, a rod having a major and minor axis in cross section to operate said nut, in combination with an opening in a bulkhead, as shown and set forth.

3. In gravity closing water-tight door mechanism, the combination of a door provided with pivoted dogs, having teeth, an operating screw adapted to be engaged by said teeth and arranged to be released by a rod, of unequal diameter in cross-section to operate said dogs, and which receives part of a revolution and permits the door to close by its own weight, as specified..

4. In gravity closing water-tight door mechanism, a door, pivoted dogs G attached to said door, having rollers *e*, a rod of unequal diameter in cross-section, adapted to actuate said dogs, and a screw, in combination with wedges and keepers constructed as shown, to seal said door tightly against its seating surface, all arranged as set forth.

5. In gravity closing water-tight door mechanism, a door, pivoted dogs having teeth and attached to said door, engaging with an operating screw E and adapted to be actuated by a rod D of unequal diameter in cross section attached to the bulkhead as specified.

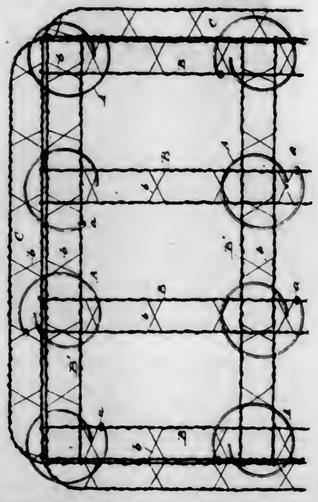
6. The combination in a gravity closing door mechanism, with an opening that can be closed by said door, means for releasing it, consisting of a rod of irregular cross-section journaled to the bulkhead above the door, a divided nut G, attached to said door, and having teeth, and a screw E, with which said nut is adapted to engage and replace said door in its normal position and tighten it, as specified.

542,170. SPRING-BED. AMBROSE L. NORTON, Attica, N. Y. Filed Feb. 15, 1895. Serial No. 538,596. (No model.)

Claim.—1. A spring bed consisting of a series of coiled springs connected together at their tops and bottoms by a series of longitudinal and transverse openwork tempered steel strips having their ends bent into hooks to engage the outside strips running at right angles thereto, substantially as described.

2. In a spring bed, the combination with a series of coiled springs having their top and bottom ends bent into hooks located diametrically opposite to each other, of a series of openwork tempered steel strips with which said hooks engage, said strips being also intermeshed with the top and bottom coils of the springs, substantially as described.

3. In a spring bed, the combination with a series of coiled springs, and a series of longitudinal and transverse strips with which said springs engage, said strips being formed of openwork tempered steel, of a border for the bed, also formed of openwork tempered steel, and engaged with the ends of the strips by hooks formed on said ends of the latter, substantially as described.



4. The combination with a series of connecting strips, of a series of coiled springs, each alternate spring being so connected with said strips as to exert a constant tension upon the whole framework of the bed in a direction opposite to that exerted by the adjoining springs, as set forth.

542,171. PROCESS OF DEPHOSPHORIZING IRON ORES. WILLIAM B. PHILLIPS, Birmingham, Ala. Filed Nov. 18, 1893. Serial No. 491,332. (No specimens.)

Claim.—The process of dephosphorizing iron ore which consists in rendering the ore magnetic by subjecting the ore while highly heated to the action of a reducing gas, then magnetically concentrating the ore thus treated, and finally subjecting the concentrated ore to the action of dilute sulphuric acid, substantially as described.

542,172. COMPOSITION OF MATTER FOR COVERING WALLS, &c. CHARLES B. ROCKWOOD, Indianapolis, Ind. Filed Mar. 2, 1895. Serial No. 540,384. (No specimens.)

Claim.—The herein described composition of matter to be used for covering walls and other surfaces, consisting of dry white-lead, sugar, alum, lime, linseed-meal, or cotton-seed meal, clay, calcined gypsum, sand and water in proportion and union substantially as specified.

542,173. COMPOSITION OF MATTER FOR COVERING WALLS, &c. CHARLES B. ROCKWOOD, Indianapolis, Ind. Filed Mar. 2, 1895. Serial No. 540,385. (No specimens.)

Claim.—The herein described composition of matter to be used as a cement for the covering of walls and other surfaces, and for casting into molds, consisting of lime oxide of zinc, sulphate of magnesia, borax, sugar, marl, calcined gypsum and water in proportion and union substantially as specified.

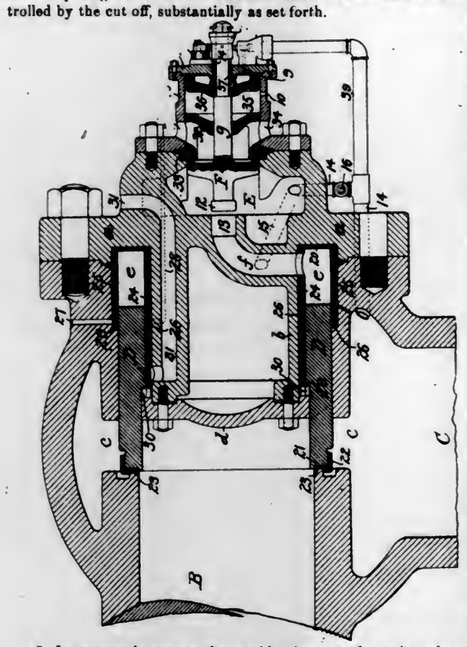
542,174. VALVE FOR PNEUMATIC CANNONS. MINOTT W. SEWALL, New York, N. Y. Filed Sept. 3, 1892. Serial No. 445,015. (No model.)

Claim.—1. In a pneumatic cannon, a firing valve, a firing valve chamber, an exhaust valve and exhaust valve chamber, said chambers being normally connected, and means closing the connecting passage during the opening and closing movement of the exhaust valve, as set forth.

2. In pneumatic cannon, the combination with the main valve and exhaust valve, of a cut-off operated by the exhaust valve for confining the pressure to one end of the main valve during the movement of the exhaust valve, substantially as described.

3. In pneumatic cannon, the combination with the main valve and its chamber, the exhaust valve and its chamber communicating with the main valve chamber, and the exhaust passage from the latter chamber controlled by said exhaust valve, of a cut-off operated by the exhaust valve for closing the main valve chamber during the opening of the exhaust passage, substantially as set forth.

4. In pneumatic cannon, the combination, with the main valve, of the exhaust valve and cut-off carried thereby having different areas, of an exhaust passage controlled by the exhaust valve and another passage between the main and exhaust valve chambers controlled by the cut off, substantially as set forth.



5. In pneumatic cannon, the combination with the main and exhaust valves, a chamber for each valve normally in communication, and an exhaust passage from one of said chambers, of a cut-off for closing communication of the chambers when the exhaust valve is operated to open said exhaust passage, substantially as set forth.

6. In pneumatic cannon the combination, with the main valve, an exhaust valve, and a piston against which pressure acts for causing the movement of the exhaust valve in one direction, of a cut off for holding the pressure to one end of the main valve and against which said pressure acts for moving the exhaust valve in the opposite direction, substantially as set forth.

7. In pneumatic cannon, the combination with the main valve and its chamber, the exhaust valve chamber, and the connecting passage, of the exhaust valve having connected thereto upon one side a piston of greater area than the exhaust valve and at its opposite side a head of less area than said valve for closing the said passage and main valve chamber, substantially as set forth.

8. In pneumatic cannon, the combination with the main valve and its chamber, of an exhaust valve chamber having greater capacity than the main valve chamber, an exhaust opening from the exhaust valve chamber, an exhaust valve controlling the said opening, a passage connecting the two chambers, and a cut-off carried by the exhaust valve for closing said connecting passage substantially as set forth.

9. In pneumatic cannon, the combination with the main and exhaust valves, a fluid pressure supply passage leading to the exhaust valve chamber, a priming valve in and controlling said passage normally open to the atmosphere on one side and exposed to the fluid pressure upon the other side, and means for moving the priming valve to close the atmospheric openings and open the passage for the fluid pressure, substantially as set forth.

10. In pneumatic cannon, the combination with the priming valve casing having atmospheric ports and a passage for the fluid pressure above the valve seat, and a connection with the fluid pressure below said seat, of a valve seated in said casing having a plug for closing the atmospheric ports, and means for operating the valve to open said fluid pressure connection, and close the atmospheric ports, substantially as set forth.

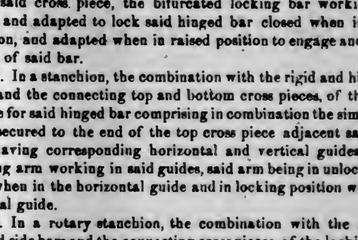
11. The combination with the exhaust and priming valves, of a starting lever for said priming valve, and a latch normally engaging the exhaust valve to hold it against movement, substantially as set forth.

12. The combination with the main and priming valves, of a starting lever for the priming valve having an arm yieldingly held to duty against the priming valve stem, and a cam carried by the exhaust valve for tripping the arm, substantially as set forth.

13. The combination with the exhaust and priming valves, and a cam on the exhaust valve stem, of a starting lever carrying a tripping arm one portion of which is adapted to be encountered by said cam and the other portion of which acts against the priming valve stem.

14. The combination, with the main, exhaust and priming valves, of a cam on the exhaust valve stem, a starting lever having a tripping arm bearing against the cam and the priming valve stem, and a latch mounted on the exhaust valve casing and normally holding the exhaust valve against movement, and connections between the starting lever and said latch for operating the latter, substantially as set forth.

542,175. BOOT OR SHOE. JAMES F. SHARPE, Toronto, Canada. Filed Apr. 30, 1894. Serial No. 509,560. (No model.)



Claim.—1. The process herein described of securely attaching a rubber sole to boots or shoes, which consists in connecting to the rubber sole near its edge a waterproof strip or welt turning the rubber-coated strip over the edge of the middle sole or insole and then attaching the rubber sole and rubber-coated strip to the said middle-sole or insole, substantially as and for the purpose specified.

2. The process herein described of securely attaching a rubber sole and heel to boots or shoes, which consists in attaching to the rubber sole near its edge a waterproof strip or welt turning the rubber-coated strip over the edge of the middle-sole or insole and attaching the rubber sole and rubber-coated strip to the middle-sole or insole, and also in attaching to the heel a rubber tread formed integral with or separate from the rubber sole and having lugs or projections formed thereon, and cementing them into holes formed to receive them in a leather lift of the heel; the whole being riveted together, substantially as and for the purpose specified.

3. The process herein described of securely attaching a rubber sole to boots or shoes which consists, in the case of a boot or shoe having a leather middle-sole, in cementing to the upper edge of the rubber sole, when in a soft state, a strip of canvas or other material covered with a coating of soft rubber, the rubber side of the strip being next to the rubber sole, and vulcanizing the same; in then cementing the leather middle-sole on to the rubber sole, and then turning the rubber-coated strip of canvas up and over the leather middle-sole and cementing it down on the edge of the leather middle-sole; the rubber sole and the leather middle-sole thus secured together, then being riveted to the insole and the upper, substantially as and for the purpose specified.

542,176. STANCHION. SANKEY S. SILVIS, Newport, Minn. Filed Jan. 15, 1895. Serial No. 535,016. (No model.)

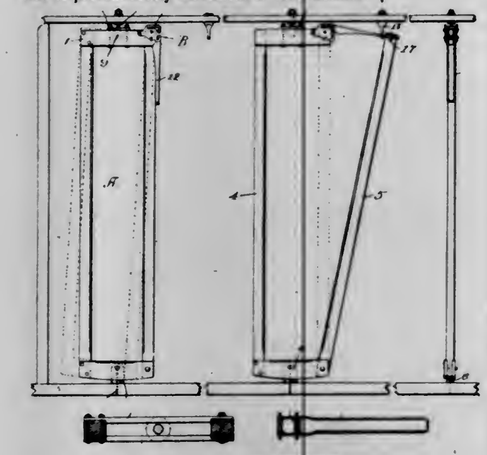
Claim.—1. In a stanchion, the combination with the rigid and hinged bars and the top cross piece, of the horizontal and vertical guides upon said cross piece adjacent said hinged bar, and the stop therefor working in said guides.

2. In a stanchion, the combination with the rigid and hinged side bars, and the top cross piece, of the right angled guide depending from said cross piece, the bifurcated locking bar working in said guide and adapted to lock said hinged bar closed when in lowered position, and adapted when in raised position to engage and limit the swing of said bar.

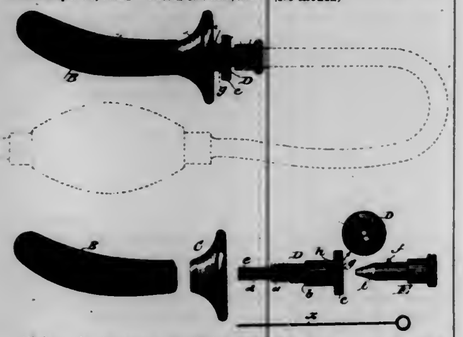
3. In a stanchion, the combination with the rigid and hinged side bars, and the connecting top and bottom cross pieces, of the locking device for said hinged bar comprising in combination the similar members secured to the end of the top cross piece adjacent said hinged bar, having corresponding horizontal and vertical guides, and the locking arm working in said guides, said arm being in unlocking position when in the horizontal guide and in locking position when in the vertical guide.

4. In a rotary stanchion, the combination with the rigid and hinged side bars and the connecting cross pieces, of the locking device

comprising in combination, the members secured to the top cross piece adjacent said hinged bar and having right angled guides, the locking bar having projections working in said guides, and engaging the hinged side bar to secure it in closed position and limit its opening movement, and the means for engaging said locking bar when in unlocked position to prevent rotary movement of the stanchion.



542,177. ANAL BOUGIE. FRANKLIN P. STUKEY, Lancaster, Ohio. Filed Sept. 26, 1894. Serial No. 524,197. (No model.)



Claim.—1. A pessary consisting of a hollow perforated nozzle invested with a distendible sheath and provided with an inwardly opening valve located within the nozzle substantially as and for the purposes described.

2. A pessary consisting of a hollow perforated nozzle having a valve within it and invested with a distendible sheath, a base clamp for holding the sheath between it and the nozzle, and a clamp screw passing through the clamp and engaging with the nozzle, substantially as and for the purposes described.

3. A pessary consisting of a hollow perforated nozzle with a distendible sheath, and a valve, a base clamp with hollow clamp screw, and a detachable syringe coupling, substantially as set forth.

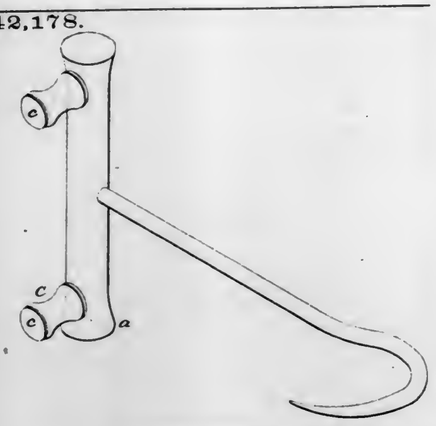
4. A pessary consisting of a hollow perforated nozzle with a valve, a distendible sheath, a base clamp, a hollow clamp screw with a cam slot and conical fitting, and a detachable coupling adapted to connect with a syringe and having a laterally projecting pin working in the cam slot, and a conical end closing tightly in the conical fitting of the hollow clamp screw, substantially as and for the purposes set forth.

5. In a pessary, the combination with the inflatable sheath, of an extra inflatable sheath provided with perforations and adapted to be placed over the first named sheath to apply lubricants or medicaments, substantially as and for the purposes described.

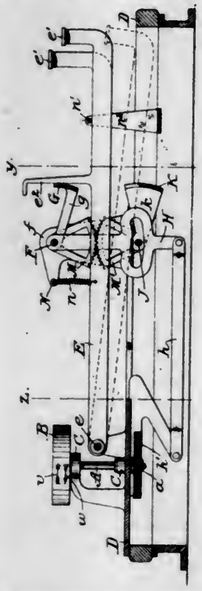
542,178. COMBINED HOOK AND HAMMER. HENRY A. TILLETT, THOMAS D. TARPLEY, and ROBERT J. MOORE, Abilene, Tex. Filed May 21, 1894. Serial No. 512,024. (No model.)

Claim.—A hook for handling bales and other articles, consisting of the hollow handle A having its rounded ends *a* closed and adapted to form hammer heads, the hook proper B attached to said handle, the guards or projections C attached to said handle, and the pads or protectors c on the ends thereof, substantially as set forth.

542,178.



542,179. MECHANICAL MOVEMENT. DANIEL L. TOWER, Brooklyn, N. Y. Filed Sept. 21, 1892. Serial No. 446,386. (No model.)



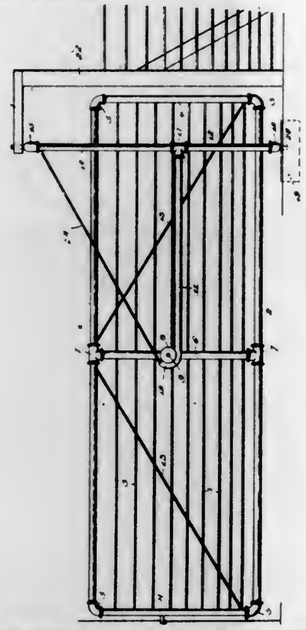
Claim.—1. The combination of a rotatable body, a series of keys or levers, two bails oppositely disposed with respect to said levers, and connections from said bails to said rotatable body whereby the latter is moved in opposite directions by the movement of the bails and whereby each bail is moved in opposition to the other, substantially as shown and described.

2. The combination of a rotatable body, a series of levers, two bails disposed oppositely with respect to said levers, and each operated differentially by said levers, connection between said bails whereby they move together but in opposite directions, and a connection from said bails to said rotatable body, substantially as shown and described.

3. The combination of a rotatable body, a series of keys or levers, two bails oppositely disposed with respect to said levers and having inclined edges whereby they are operated differentially by said levers, connection between said bails whereby they may move together but in opposite directions and a connection from said bails to said rotatable body whereby the latter may be rotated in either direction, substantially as shown and described.

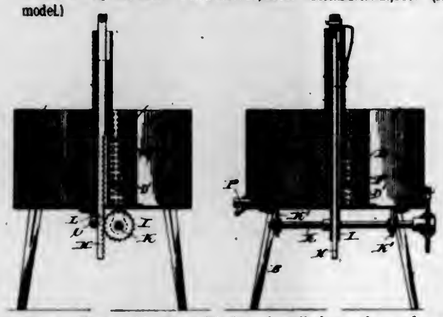
542,180. GATE. GEORGE W. WOLFE and JAMES A. GIBSON, North Baltimore, Ohio. Filed Apr. 25, 1895. Serial No. 547,166. (No model.)

Claim.—1. The combination with a gate provided at opposite sides with centrally arranged rollers, of a hanger comprising a vertical standard, journaled at its top and bottom, having vertical tubular sides provided with couplings connecting their terminals, and a pair of horizontal arms located at opposite sides of the gate having their inner ends coupled to the standard, and their outer ends curved upward, said arms receiving and supporting the rollers of the gate, substantially as described.



2. The combination of a gate provided with a central vertical bar, plates secured to opposite sides of the central bar and provided with journals, rollers mounted on the journals, and a hanger comprising the vertical standard having parallel sides, connected at their ends by couplings, and the horizontal arms 11, constructed of tubular metal, having their inner ends secured to the sides of the standard, and their outer ends curved upward, and the inclined braces extending from the outer ends of the arms to the top of the standard, substantially as described.

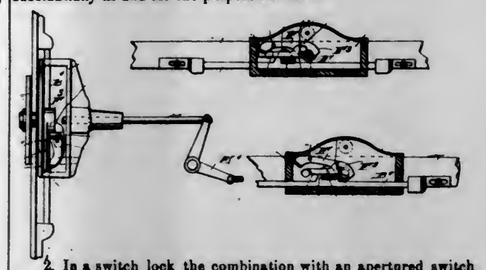
542,181. WASHING-MACHINE. JAMES F. WOOD and HENRY A. DIXON, Woodyard, Ohio. Filed Mar. 19, 1895. Serial No. 542,389. (No model.)



Claim.—The combination with the tub, cylinder, and pounder or presser, of the tube extending therethrough, the tubular stem connected to the pounder or presser and carrying a spring bolt at its upper end, the rack bar passing through the tube and tubular stem, the pinion and the shaft, the guide bracket and roller, the ratchet disk, the lever and pawls, all arranged substantially as shown and described.

542,182. SWITCH-LOCK. SAMUEL E. BARLEY, Red Bank, assignor of one-half to Benjamin R. Matthews, Bound Brook, N. J. Filed Aug. 16, 1894. Serial No. 520,501. (No model.)

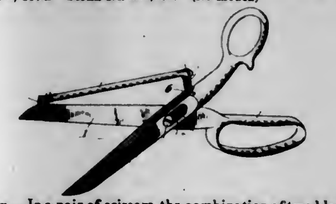
Claim.—1. In a switch lock, the combination with an apertured switch bar, and a plunger adapted to enter the aperture of the switch bar, of a pivoted lever provided at one end with an aperture and adapted to be operated by the switch bar, and a second lever engaging the first named lever to hold it raised, the said second lever being adapted to be engaged by the plunger to release the first named lever, substantially as and for the purpose set forth.



2. In a switch lock the combination with an apertured switch bar, and a plunger adapted to enter the aperture of the switch bar, of a pivoted lever having at one end an aperture to receive the plunger and a projection above the aperture to pass into the path of the plunger, and at its other end with a lug, and a spring pressed lever having one end projecting into the path of the plunger, and its other end adapted to engage the lug of the first named lever, substantially as herein shown and described.

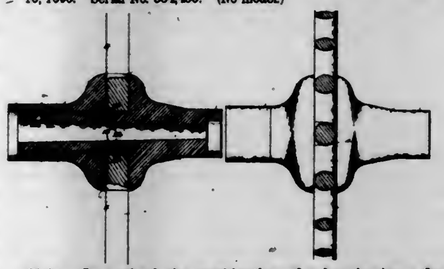
3. In a switch lock, the combination with an apertured switch bar provided with a cam, and a plunger adapted to engage the aperture of the switch bar, of a pivoted lever provided at one end with an aperture and a projection, and at its other end with a lug, and a spring pressed lever having its ends beveled and provided with a lug adapted to engage the end of the projection of the first named lever, the said spring pressed lever being engaged by the lug of the said first named lever and projecting into the path of the plunger, substantially as described.

542,183. SCISSORS. RUFUS P. BOWDOIN, Wilmington, N. C. Filed Nov. 3, 1894. Serial No. 527,787. (No model.)



Claim.—In a pair of scissors, the combination of two blades one of which is provided with a longitudinally elongated slot, a pin passing through said slot and into the remaining blade whereby said blades are connected so as to be capable of sliding one upon the other, an arm secured to the inner side of the slotted blade in rear of the slot, and a rod arranged outside of the plane of the blades and having one end pivotally connected to said arm and its remaining end extended toward the point of the remaining blade and pivotally connected thereto, substantially as described.

542,184. WHEEL. JAMES M. COMBS, Auburn, Nebr. Filed Jan. 10, 1895. Serial No. 534,455. (No model.)



Claim.—In a wheel, the combination of a box having a fixed flange, and a series of longitudinal grooves formed in the surface of the box adjacent to the flange, a band 14 surrounding the box adjacent to the flange to close the outer sides of the grooves and thereby form pockets, a removable flange fitted upon the box, means for securing the removable flange in place, and spokes fitted at their inner ends between said flanges and provided at their extremities with

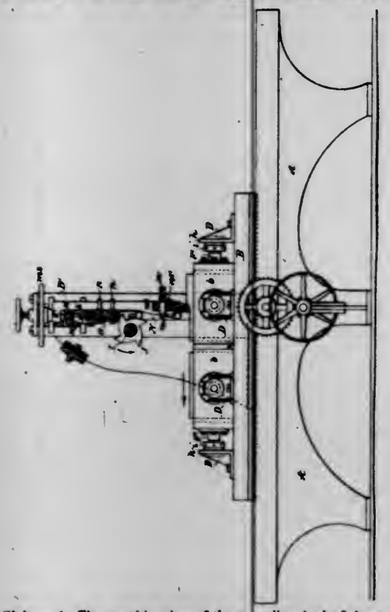
tongue 15 arranged parallel with said extremities to fit in the pockets on the box, said tongues extending outwardly or from the removable flange, substantially as specified.

542,185. WIRE FENCE. JOSEPH M. DENNING, Estherville, Iowa. Filed Nov. 16, 1894. Serial No. 529,040. (No model.)



Claim.—In a fence, the combination with horizontal cables, composed of twisted wires, of a vertical stay constructed of wire and coiled around each cable to form an encircling loop and passed through each loop at the bottom of the cable and interlaced between the wires of each cable and closely coiled around one of them, whereby the stay is securely fastened against movement longitudinally of the fence and the wires of each cable are bound firmly together, and are prevented from separating, substantially as described.

542,186. MACHINE FOR DRESSING SURFACES OF STONE BLOCKS. OLIVER T. DUTRO, Buffalo, N. Y., and THOMAS MCFEELY, Philadelphia, Pa. Filed June 12, 1894. Serial No. 514,311. (No model.)



Claim.—1. The combination of the traveling bed of the machine having clamps for securing thereon one or more rows of blocks, with a transverse bar carrying a tool stem for each row of blocks, and rotating cam mechanism for operating said bar, substantially as specified.

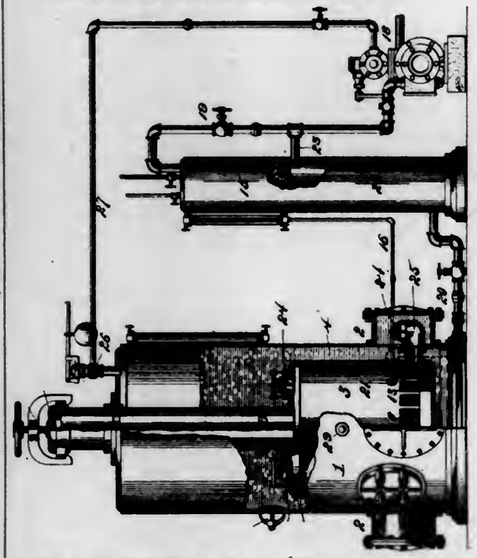
2. The combination of the movable bed of the machine, with a clamping device comprising a cruciform rib or bar and a series of movable side and end clamps co-operating therewith so as to constitute a clamp for holding four blocks, substantially as specified.

3. The combination of the table or bed of the machine with the clamps having movable sides and ends, and adjusting mechanism therefor, comprising the duplex reversely threaded screw stem and the two nuts adapted to said stem, one of said nuts being carried by the adjustable plate of the clamp, substantially as specified.

4. The combination of the movable jaw of the clamp, with the adjusting screw stem and the two nuts, one of said nuts being carried by the adjustable clamp and the other nut being vertically guided on a block secured to the table or bed of the machine, whereby it is adapted for use in connection with clamps of different heights, substantially as specified.

5. The combination of the transverse bar of the machine carrying the tool stem or post, means for vertically reciprocating said bar, the reciprocated bed carrying the blocks to be acted upon, bars for lifting the transverse bar out of operative position, cam bars for acting upon said lifting bars, and means whereby said cam bars are shifted at each end of the reciprocating motion of the table, whereby the tools are operative during one movement of the table, and inoperative during the reverse movement, substantially as specified.

542,187. BOILER-FURNACE. ALBERT DWELLE, St. Louis, Mo., assignor to Zach W. Tinker and Emily C. Dwelle, same place, and Charles W. Dwelle and Charles W. Dwelle, trustee, Denver, Colo. Filed July 23, 1894. Serial No. 518,316. (No model.)



Claim.—1. In a boiler furnace, the combination of a combustion chamber, provided with valves, a boiler surrounding the combustion chamber, and into which said valves open, an oil chamber, an air chamber, a pump for forcing oil and air from their chambers into the combustion chamber; and an escape flue for said combustion chamber; substantially as set forth.

2. In a boiler furnace, the combination of a combustion chamber, provided with valves, a boiler inclosing the combustion chamber, tubes for admitting air to the combustion chamber, and which are provided with suitable caps or doors, a tube for permitting the escape of the products of combustion from the combustion chamber, and which is provided with a suitable cap or valve, and means for forcing oil and air into the combustion chamber; substantially as set forth.

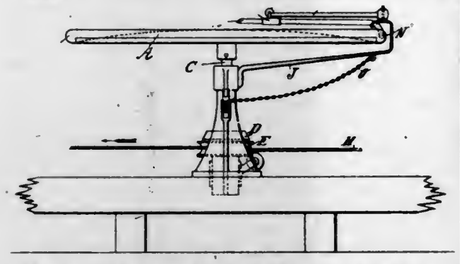
3. In a boiler furnace, the combination of a boiler, a combustion chamber inclosed wholly within the boiler, valves opening from the top of said combustion chamber into the boiler, short pipes extending out from the side of the combustion chamber and also provided with valves opening into the boiler, a valved outlet for the escape of products of combustion, and means for forcing fuel and air into the combustion chamber, substantially as and for the purpose set forth.

4. In a boiler furnace, the combination of a combustion chamber, provided with valves, a boiler inclosing the combustion chamber, a flue communicating with the combustion, chamber, and extending through the boiler, and provided with a cap or valve on its outer end, air flues communicating with the combustion chamber, and extending through the boiler, and provided with caps or valves on their outer ends, an oil tank, a pipe connecting the oil tank with the combustion chamber, a pump, a pipe forming a communication between the pump, and the combustion chamber, and a pipe forming a communication between the pump and said oil tank; substantially as set forth.

5. In a boiler furnace, the combination of a combustion chamber provided with valves, a boiler inclosing the combustion chamber, an oil tank, a pipe forming a communication between the oil tank and the combustion chamber, a pump, a pipe forming a communication between the pump and the combustion chamber, and a pipe forming a communication between the pump and said oil tank; substantially as set forth.

6. In a boiler furnace, the combination of a combustion chamber, provided with valves, a boiler inclosing the combustion chamber, an oil tank, an air reservoir, a pipe forming a communication between the air reservoir and said combustion chamber, an oil tank, a pipe forming a communication between the oil tank and the combustion chamber, and which passes through the inner end of said air pipe, a pump, a pipe forming a communication between the pump and said air reservoir, and a pipe forming a communication between the pump and said oil tank; substantially as and for the purpose set forth.

542,188. MACHINE FOR DYEING SKINS. RICHARD ERGANG, Magdeburg, Germany. Filed Dec. 18, 1894. Serial No. 532,177. (No model.)

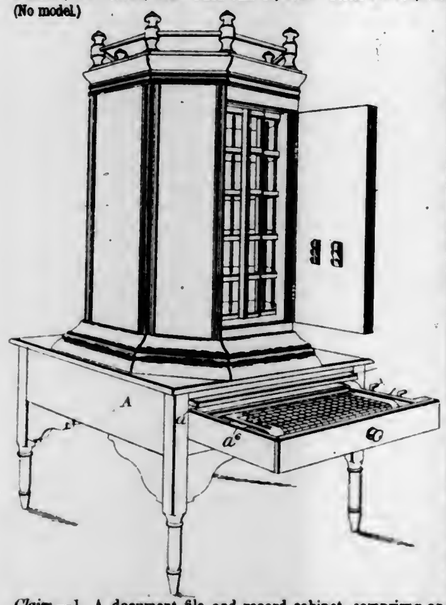


Claim.—1. An apparatus for dyeing skins, comprising a rotary table provided with a channel around the edge thereof and a pipe opening at one end into the said channel in a direction opposite to that of the rotation of the table, and the other end opening near the center of the table, whereby, when the table is rotated the liquid collecting in the channel, participating in the rotation of the table, is caused to pass through the pipe and be discharged over the center of the table.

2. An apparatus for dyeing skins, comprising a rotary table provided at its edge with an upwardly and inwardly bent flange to form a channel and a flexible pipe having one end opening into the channel in a direction opposite to that of the rotation of the table, and the other end opening near the center of the table, all substantially as set forth.

3. An apparatus for dyeing skins, comprising a rotary table provided at its outer edge with a channel, a flexible pipe having one end opening into the channel in a direction opposite to that of the rotation of the table and the other end opening near the center of the table, and an arm pivoted to a stationary part of the table frame the said arm being provided with sleeves for the reception of the flexible tube, substantially as and for the purpose set forth

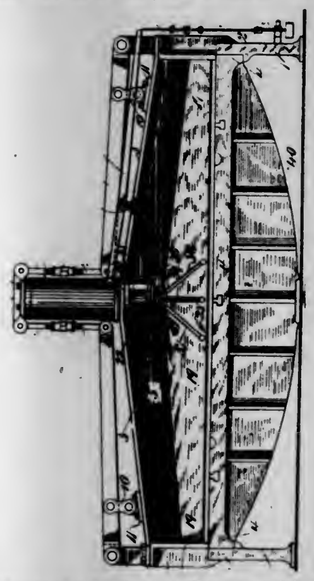
542,189. DOCUMENT FILE AND RECORD CABINET. PERRY FRAZER, New Castle, Ind. Filed Jan. 14, 1895. Serial No. 534,877. (No model.)



Claim.—1. A document file and record cabinet, comprising an indexed record sheet mounted on carrying rollers, the rollers being rotatably held in a suitable movable frame, and a revoluble file case consisting in a central shaft having a series of horizontally disposed shelves secured thereto, the space between the shelves being divided into compartments by a series of rods arranged vertically in parallel rows as and for the purpose set forth.

2. A document file and record cabinet, comprising an index record sheet mounted to be wound around rollers, the rollers being rotatably carried by a movable frame arranged to enter a desk-like base, on which is mounted a revoluble file case consisting in a central shaft having a series of horizontally disposed shelves secured thereto, the space between the shelves being divided into compartments by a series of rods arranged vertically in parallel rows, as and for the purpose set forth.

542,190. STEAM-SHEARS. GEORGE GUILD, Cambridge City, Ind., assignor to the Cambridge City Punch, Shear and Roll Company, same place. Filed Feb. 20, 1895. Serial No. 539,034. (No model.)



Claim.—1. In a steam or other fluid actuated shearing machine, the combination with a descending knife head, and a fixed shearing table, of a fixed piston centrally disposed over said knife-head, a cylinder adapted to slide vertically on said piston, levers pivoted on the top outer ends of said knife-head, and having their power ends directed toward said cylinder, fixed fulcrum blocks, and links pivoted on said blocks and the fulcrums of said levers, all substantially as and for the purpose set forth.

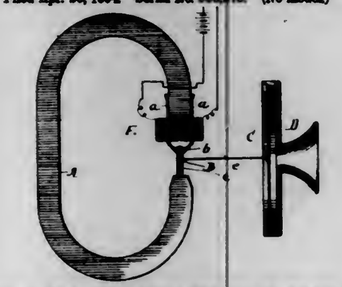
2. In a steam or other fluid actuated shearing machine, the combination with a descending knife head, a fixed shearing table and its supporting frame, of a fixed piston centrally disposed over said knife-head, a piston supporting beam, a cylinder adapted to slide vertically on said piston, levers pivoted on the top outer ends of said knife-head and having their power ends directed toward said cylinder, fulcrum links hinged to said beam and to the fulcrum centers of said levers, connecting rods connecting the power ends of said levers to said sliding cylinder, and suitable means whereby the actuating fluid is admitted into and exhausted from said cylinder, all substantially as and for the purpose set forth.

3. In a steam or other fluid actuated shearing machine, the combination with a holding-down head and its actuating cylinder, of a piston-rod depending from said cylinder and pivoted on said holding down head at its lower end, said rod having a slot above its pivotal point, a crosshead accurately fitting and adapted to slide in said slot, arms pivoted at their top ends to said cross-head and having their bottom ends pivoted on said holding down head on opposite sides of said piston rod, all substantially as and for the purpose set forth.

4. In a steam or other fluid actuated shearing machine, the combination with a descending-knife-head, a descending holding-down-head, a shearing table and its supporting frame, of a fixed piston centrally disposed over said knife-head, a piston supporting beam, a cylinder adapted to slide longitudinally on said fixed piston, suitable knife head actuating levers fulcrumed on said beam on opposite sides of said sliding cylinder, a crosshead on said cylinder, adjustable rods connecting the said crosshead and the ends of said levers, fulcrum blocks on said beam, and fulcrum links connecting the fulcrum centers of said levers and said blocks, all substantially as and for the purpose set forth.

5. In a steam or other fluid actuated shearing machine, the combination with a descending knife-head, a descending holding down-head, a shearing table and its supporting frame, of a hollow vertical piston centrally disposed over said knife-head, a piston supporting beam, a cylinder adapted to slide on said piston, levers pivoted on the top ends of said knife-head and having their power arms directed toward the center piston and its cylinder, fulcrum links hinged on said beam and on the fulcrum centers of said levers, connecting rods connecting the power ends of said levers with said sliding cylinder, a lower fixed cylinder, an actuating piston rod depending therefrom and having its lower end pivoted on said holding down head, said rod being slotted immediately above its pivotal end, a crosshead adapted to slide longitudinally in said slot, depending or outwardly extending steadying arms pivoted to said crosshead and to said holding-down head on opposite sides of said piston rod, and a suitable starting valve connecting with both the actuating cylinders, all substantially as and for the purpose set forth.

542,191. MAGNETO-ELECTRIC TELEPHONY. EDWARD S. HALSEY, South Evanston, assignor of one-half to William J. Phelps, Chicago, Ill. Filed Apr. 20, 1894. Serial No. 508,273. (No model.)

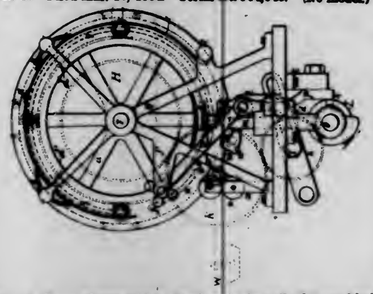


Claim.—1. In magneto-electric telephony the method of transmission which consists in compelling a magnetic current practically constant in quantity and direction to be diverted variably through dual paths included by the magnetic circuit in responsive keeping with the air vibrations due to vocal sounds and thereupon exciting inductively in the electric circuit at the local path or paths derived impulses responsive to the shifts in the magnetic flow at such path or paths, substantially as described.

2. In magneto-electric telephones, the combination with a vibrating diaphragm, of an exciting magnet having dual terminals of like polarity constituting diverse paths for the magnetic current, an inductor included in the electric circuit and located within the magnetic field at such path or paths, a movable keeper interposed in the magnetic circuit at near proximity to the dual pole terminals and with the single end thereof shifting to and fro between such terminals, and a connector extended from such keeper to control the same in accord with the vibrations of the diaphragm, substantially as described.

3. In magneto-electric telephones, the combination with a vibrating diaphragm, of an exciting magnet having a movable pole terminal and opposite dual pole terminals confronting the same with the coil for the electric circuit within their inductive field, and a connector located between the diaphragm and the movable pole terminal whereby the latter shifts in keeping with the shifts of the diaphragm, substantially as described.

542,192. PAPER-TUBE MACHINE. CHARLES HOWELLS, New York, N. Y. Filed Mar. 17, 1894. Serial No. 504,046. (No model.)



Claim.—1. In a tube machine, the herein described movable hollow mandrel having an opening leading outward, a disk having an exhaust passage and a pressure passage with each of which passages said hollow mandrel communicates in succession with means for winding the material on said mandrel.

2. In a tube machine, the herein described movable hollow mandrel having an opening leading outward, a disk having an exhaust passage and a pressure passage with each of which passages said hollow mandrel communicates in succession, means for winding the material on said mandrel, and means for stripping the tube from the mandrel.

3. The combination of a revoluble hollow mandrel having an opening leading outward, a disk having an exhaust passage and a pressure passage with each of which passages said hollow mandrel communicates in succession, and means for presenting the material to said mandrel, as set forth.

4. The combination with a movable mandrel-carrier, and a hollow mandrel carried thereby having an opening leading outward, of a disk having an exhaust passage for communication with the hollow mandrel during a portion of the movement of its carrier, and also having a pressure passage for communication with the hollow mandrel during another portion of the movement of its carrier, and means for spirally winding the material on said mandrel, as set forth.

5. The combination with a movable mandrel-carrier and a hollow mandrel mounted therein, of gearing for rotating the mandrel during the movement of the carrier, a disk having a passage through which air is exhausted from the mandrel and also having another passage through which air may pass to the mandrel, as set forth.

6. The combination with a revoluble mandrel-carrier and a hollow mandrel mounted therein and having air openings, of gearing for rotating the mandrel during the revolutions of the carrier, a disk having a passage through which air is exhausted from the mandrel and also having another passage through which air may pass to the mandrel, as set forth.

7. The combination with a movable mandrel-carrier and a hollow mandrel mounted therein and having openings leading outward, of gearing for rotating the mandrel during the movement of the carrier, a disk having a passage through which air is exhausted from the mandrel, also having another passage through which air may pass to the mandrel, means for feeding material to the mandrel and a pressing plate along which the rotating mandrel with the material travels, as set forth.

8. The combination with a revoluble mandrel-carrier, and a hollow mandrel mounted therein having openings leading outward, of gearing for rotating the mandrel during the movement of the carrier, an exhaust communication with the hollow mandrel, and a pressure connection also with said mandrel, as set forth.

9. The combination with a revoluble mandrel-carrier and a hollow mandrel mounted therein and having openings leading outward, of gearing for rotating the mandrel during the movement of the carrier, a disk having a passage through which air is exhausted from the mandrel, also having another passage through which air may pass to the mandrel, means for feeding material in the web to the mandrel, and a severing device for the web, as set forth.

10. The combination with a revoluble mandrel-carrier, and a hollow mandrel mounted therein, and having openings leading outward, of gearing for rotating the mandrel during the movement of the carrier, a disk having a passage through which air is exhausted from the mandrel, also having another passage through which air may pass to the mandrel, means for feeding material in the web to the mandrel, a severing device for the web, and a pressing plate against which the mandrel and material rotate, as set forth.

11. The combination with the movable mandrel-carrier and a revoluble hollow mandrel mounted therein and having openings leading outward, a disk having a passage through which air is exhausted from the mandrel, and also having another passage through which air may pass to the mandrel, of means for feeding material to the mandrel and a stationary yielding pressing plate against which the mandrel and material bear in the movement of the carrier, as set forth.

12. The combination with the movable mandrel-carrier and a rotating hollow mandrel mounted therein and having openings leading outward, a disk having a passage through which air is exhausted from the mandrel, also having another passage through which air may pass to the mandrel, of means for feeding material to the mandrel and the curved pressing plate against which the mandrel travels, and springs for holding the pressing plate to duty, as set forth.

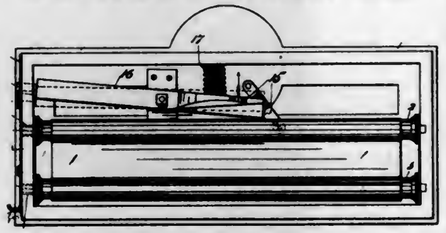
13. The combination with the movable mandrel-carrier and a revoluble hollow mandrel mounted therein and having openings leading outward, a disk having a passage through which air is exhausted from the mandrel, also having another passage through which air may pass to the mandrel, of a movable platen for presenting the material to the mandrel and a cutter for severing the material, as set forth.

14. The combination with the movable mandrel-carrier, and a revoluble hollow mandrel mounted therein, and having openings leading outward, a disk having a passage through which air is exhausted from the mandrel, also having another passage through which air may pass to the mandrel, of a movable platen for presenting the material to the mandrel, a cutter bar, a cutter coacting with said bar, for severing the material and means for temporarily removing the cutter bar from active position, as set forth.

15. The combination with the movable mandrel-carrier, and a mandrel mounted therein, of a movable platen for presenting the material to the mandrel, a cutter for severing the material, means for moving the platen and cutter simultaneously, and a reciprocating stripper for removing the tube from the mandrel, substantially as described.

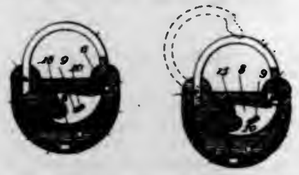
16. The combination with the revoluble mandrel-carrier, and a rotating mandrel mounted therein, of a movable platen for presenting the material to the mandrel while the mandrel and carrier are moving, a severing device for the material, and a stripper for removing the tube from the mandrel while it and its carrier are moving, as set forth.

542,193. STATION-INDICATOR. WILLIAM J. HULL, Cambridge City, Ind. Filed Mar. 23, 1895. Serial No. 542,918. (No model.)



Claim.—In a station indicator, the combination with an inclosing casing, upper and lower key winding drums and an indicator ribbon, of an alarm mechanism on said casing, a guard over the key winding ends of said drums, a cam spring, a lever having one end lapping over said cam spring and its opposite end engaging said key guard plate, substantially as and for the purpose set forth.

542,194. PADLOCK. CHARLIE H. JOHNSON, Marshall, Minn. Filed Sept. 24, 1894. Serial No. 523,931. (No model.)

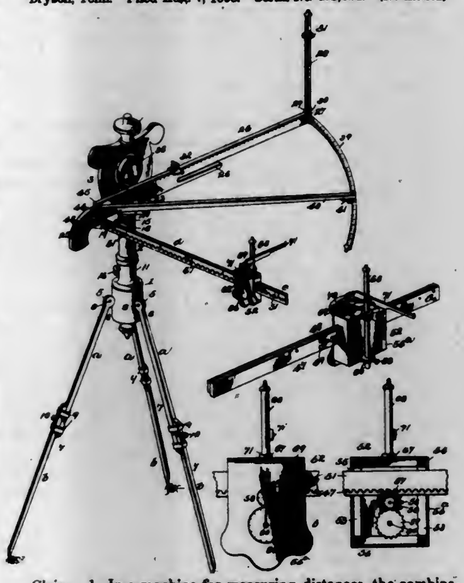


Claim.—1. In a lock the combination with a shackle or part to be locked, and a bolt for locking said shackle, of a dog, adapted, first, to be projected into engagement with the shackle on movement of the key in one direction and, secondly, to be projected into engagement with the bolt to withdraw the latter from the shackle by movement of the key in the opposite direction, substantially as described.

2. The combination with the shackle or part to be locked, and the bolt adapted to engage the shackle, of the dog having a beak adapted to engage the shackle, a part for moving the bolt, a shoulder adapted to be engaged by the key to throw the beak into engagement with the shackle, and a tail adapted to be engaged by the key only when the beak is in engagement with the shackle, whereby a second movement is imparted to the dog to release the shackle, substantially as described.

3. In a lock the combination with the shackle or part to be locked provided with a recess to receive a bolt and a projection on its locking extremity, and a spring for opening the shackle, said shackle being susceptible of slight inward movement when it is locked, of a dog provided with a slot and mounted upon a fixed fulcrum pin, a tail upon the dog and a spring and stop pin arranged to normally hold the tail out of the path of the key ward, a shoulder upon the dog normally in the path of the key ward, and a beak upon the dog adapted to engage the projection of the shackle when the latter is pressed inward, whereby when the shackle is pressed inward and the key is turned in one direction the beak engages the shackle and the tail is thrown into the path of the key ward and when the key is turned in the opposite direction the ward engages the tail of the dog and moves the latter to withdraw the bolt and release the shackle, substantially as described.

542,195. MEASURING-MACHINE. JOHN L. KELLUM, Jr., near Bryson, Tenn. Filed Aug. 7, 1893. Serial No. 482,621. (No model.)



Claim.—1. In a machine for measuring distances, the combination with a rigid portion or standard, of a main beam mounted thereon so as to be capable of swinging on a horizontal axis, said beam having a triangular block fixed thereto, a guide-beam comprising two sections removably and rigidly joined to each other, the guide-beam having one end removably secured to the triangular block so as to extend at right angles to the main beam, and an indicator movable on the guide-beam, substantially as described.

2. In a distance measuring machine, a rigid portion or standard, a main beam mounted thereon so as to be capable of swinging on a horizontal axis, an arc-shaped and graduated rod secured to the outer end of the main beam and extending horizontally, a needle beam hinged to the opposite end of the main beam and arranged so that its free end will swing in the arc of the said graduated rod, a guide-beam removably secured to the main beam and extending horizontally and at right angles thereto, and an indicator mounted and operating on the guide-beam, substantially as described.

3. In a machine for measuring distances, the combination of a rigid portion or standard, a main beam mounted thereon so as to be capable of swinging on a horizontal axis, a guide-beam rigidly secured to the main beam and extending at right angles thereto, the said guide-beam having a series of cog-teeth extending throughout its length, an indicating carriage slidably mounted on said guide-beam and having at one side a dial face, a spindle mounted vertically on the indicating carriage and capable of axial adjustment thereon, a horizontal indicating rod fixed to the spindle, a shaft revolubly mounted within the indicating carriage, an indicating arm fixed to said shaft and operating with the dial on the carriage, and a gear fixed to the shaft and meshing with the cog-teeth on the guide-bar, substantially as described.

4. In a machine for measuring distances, the combination of a rigid portion or standard, a main beam mounted on the same so as to be capable of swinging on a horizontal axis, distance indicating devices carried by said main beam, a toothed sector fixed to the main beam and concentric with the axis thereof, a spindle or shaft revolubly mounted in the rigid portion or standard and above the sector, a gear fixed to the shaft and meshing with the sector, a dial fixed adjacent to the shaft, and an indicating arm operated by the shaft and working on the dial, substantially as described.

5. In a machine for measuring distances, the combination of a rigid portion or standard, a main beam mounted thereon so as to be capable of swinging on a horizontal axis and having at its under side and near its middle a parallel and forwardly-projecting extension, a graduated and arc-shaped plate having one end hinged to the front end of the main beam and capable of swinging so as to lie with its free end in the space between the said beam and the parallel extension, and a needle-beam hinged to the opposite end of the main beam and having its free end capable of sliding connection with the plate, substantially as described.

6. In a machine for measuring distances, a body portion or standard comprising the parts 1, 2, and 3, the part 1 being provided

with suitable supporting legs and having at its upper portion an axial socket, the part 2 being formed with a stud on its lower side which fits into the said socket and having at its upper end a horizontally-perforated projection, and the part 3 being provided at its lower side with a corresponding projection hingedly mounted on the projection of the part 2 by means of a pin passing through the two parts, and distance-indicating mechanism mounted on the part 3 and capable of swinging on a horizontal axis, substantially as described.

7. In an instrument for measuring distances, the combination of a vertical support, a graduated beam pivoted to the support between its ends and adapted to tilt in a vertical plane, indicating devices to determine the declination of the said graduated beam and actuated on moving the latter, a graduated bar pivotally attached to the front end of the said beam and having a slide mounted thereon, and a sight slide adapted to travel upon the graduated beam and co-operate with the graduations of the latter and the graduations of the said pivoted bar when determining the required measurements, substantially as set forth.

8. In an instrument for determining distances, the combination of a support having an upper part pivoted thereto so as to move laterally, an indicating mechanism for determining the variation of the said upper part from a normal position, a graduated beam pivotally connected between its ends to the said upper part of the support so as to operate in a vertical plane, the two pivotal connections between the parts of the support and the said beam and the support, respectively, being right-angularly disposed, indicating mechanism to determine the variation of the graduated beam from a pre-determined position, a graduated bar at the outer end of the beam and occupying a vertical position, and a sight slide adapted to move upon the graduated beam, substantially as set forth for the purpose described.

9. In a machine for measuring distances, the combination of a rigid body portion or standard, a main beam mounted on the body portion or standard and so as to be capable of swinging on a horizontal axis, a guide-bar rigidly secured to the main beam and extending at right angles thereto, an indicating carriage movable on the guide-bar and having a segmental dial face on its upper side, a spindle mounted on one vertical side of the indicating carriage and extending vertically thereon, an indicator-arm fixed to the spindle and projecting over the said dial face, and a second indicating arm or rod fixed to the spindle and capable of projecting toward the free end of the main beam, substantially as described.

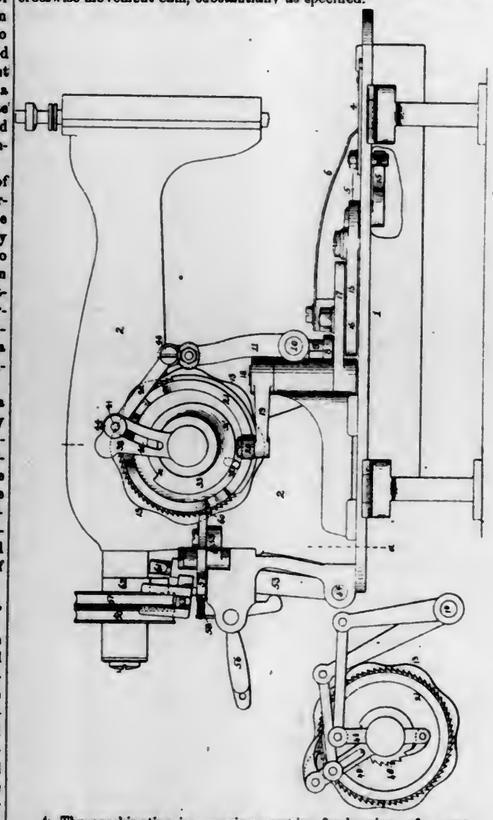
10. The herein specified measuring and surveying instrument, comprising a support formed of pivoted parts, an indicating mechanism to determine the relative variation of the said parts when moved upon the connecting pivot, a graduated beam having pivotal connection with the support, the said pivots being right-angularly disposed, a registering mechanism to determine the declination of the graduated beam and actuated thereby, a graduated bar, and a graduated arc-shaped plate having pivotal connection with the front end of the beam, the said bar extending vertically and the plate horizontally, a needle bar having pivotal connection with the rear end of the beam and adapted to move on the arc-shaped plate, a guide beam extending at right angles to the graduated beam, an indicator movable upon the guide beam and having its registering mechanism actuated by direct contact therewith, and having a segmental dial face on its upper side, a spindle journaled on one side of the said indicator, and an indicating arm pivoted to the said spindle and adapted to operate over the said segmental dial face, substantially as described for the purpose set forth.

542,196. SEWING-MACHINE FOR BARRING AND TACKING. HORACE LE ROY KEMP, Camden, N. J., assignor to the Philadelphia Barring Machine Company, same place and Philadelphia, Pa. Filed May 25, 1893. Serial No. 475,439. (No model.)

Claim.—1. The combination in a sewing machine for barring, of a work carrier, a pair of cams, intervening mechanism whereby one of said cams is caused to move the work carrier in the direction of the length of the bar, and the other is caused to move said carrier in a direction crosswise of the bar, and differential driving mechanism for operating the cam which imparts to the work carrier movement in the direction of the length of the bar, substantially as specified.

2. The combination in a sewing machine for barring, of a work carrier, a pair of cams, intervening mechanism whereby one of said cams is caused to impart movement to the work carrier in the direction of the length of the bar, and the other cam is caused to impart movement to said carrier in a direction crosswise of the bar, differential driving devices whereby the cam which imparts movement to the work carrier in the direction of the length of the bar is caused to move faster at one part of its rotation than at another, and means for regulating the speed of the slow movement, substantially as specified.

3. The combination in a sewing machine for barring, of a work carrier, a pair of cams, intervening devices whereby one of said cams is caused to impart movement to the work carrier in the direction of the length of the bar, and the other cam is caused to impart movement to said carrier in a direction crosswise of the bar, means for rotating the crosswise-movement cam, a clutch for connecting the two cams, means for operating said clutch, and means for operating the cam which imparts movement to the work carrier in the direction of the length of the bar when said cam is released from the crosswise-movement cam, substantially as specified.



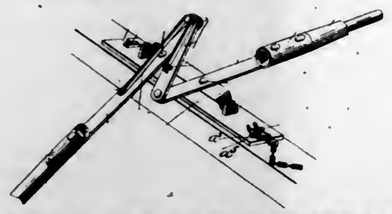
4. The combination in a sewing machine for barring, of a work carrier, a pair of cams, intervening devices whereby one of said cams is caused to impart movement to the work carrier in the direction of the length of the bar, and the other cam is caused to impart movement to said carrier in a direction crosswise of the bar, means for driving the said crosswise-movement cam, a clutching element carried by said cam, a sliding pawl carried by the other cam, a cam for operating said pawl, and mechanism for driving the cam which imparts movement to the work carrier in the direction of the length of the bar, when it is released from the crosswise-movement cam, substantially as specified.

5. The combination in a sewing machine for barring, of a work carrier, a pair of cams, intervening devices whereby one of said cams is caused to impart movement to the work carrier in the direction of the length of the bar, and the other is caused to impart movement to said carrier in a direction crosswise of the bar, a driving shaft having fast and loose pulleys and a shouldered stop disk, an arm carrying a belt guide and a stop for engaging with said shouldered disk, a retaining lever for said arm, means for operating the work carrier cams, and a device for tripping the retainer lever when the bar has been completed, substantially as specified.

6. The combination in a sewing machine for barring, of a work carrier, a pair of cams, intervening devices whereby one of said cams is caused to impart movement to the work carrier in the direction of the length of the bar, and the other is caused to impart movement to said carrier in a direction crosswise of the bar, a driving shaft having fast and loose pulleys and a cam disk with stop shoulder, an arm having a belt guide and a spring plunger for bearing upon said cam disk and engaging with said stop shoulder, a retainer lever for said arm, means for operating the work carrier cams, and devices for tripping said retainer lever substantially as specified.

7. The combination in a sewing machine for barring, of a work carrier, a pair of cams, intervening devices whereby one of said cams is caused to impart movement to the work carrier in the direction of the length of the bar, and the other cam is caused to impart movement to said work carrier in a direction crosswise of the bar, a driving shaft having fast and loose pulleys and a cam disk with stop shoulder projecting beyond the highest point of the cam, an arm having a belt guide and a spring plunger bearing upon said cam disk and engaging with said stop shoulder, a stop for preventing further depression of said plunger than that caused by the action of the cam disk, a retainer lever for said arm, means for tripping said lever, and mechanism for operating the work carrier cams, substantially as specified.

542,197. ROWING APPARATUS. EMIL KINDSCHER, Brooklyn, N. Y. Filed July 14, 1894. Serial No. 517,593. (No model.)



Claim.—1. In a rowing apparatus, the combination of a rock-shaft mounted upon a gunwale-plate, a hand and a blade extension or lever pivotally mounted on the rock-shaft, a connecting-link joining the two levers or extensions together, plates toward the free ends of the extensions constituting means for attaching a handle and an oar-blade to and holding them to their respective extensions, and means for removably attaching the gunwale-plate upon the side of a boat, the plate being slotted toward one end into which a bolt is to take, and perforated toward the other end into which a screw or bolt is to take to be held securely in place by a latch, substantially as and for the purpose set forth.

2. A rowing apparatus comprising a rock-shaft mounted upon a plate, a hand-extension or lever and blade-extension or lever, both extensions or levers being pivotally mounted upon the rock-shaft, a connecting-link joining the two extensions or levers together, and a spring acting to open the connecting-link and the blade extension or lever to exert additional pressure upon the blade-extension, substantially as and for the purpose set forth.

3. A rowing apparatus comprising a rock-shaft mounted upon a suitable plate or support, a pair of levers pivotally mounted on the shaft and constituting a blade and a hand extension, a connecting-link joining the levers, and a two-armed spring secured at the juncture of the connecting-link and the blade-extension and having its members engaging abutments located respectively on the link and the blade-extension, substantially as described.

4. A bow-facing rowing apparatus, comprising a plate to be rigidly but removably fastened upon the gunwale of a boat, a rock-shaft having its pivotal ends journaled in bearings in posts or lugs on the gunwale plate, a hand-extension or lever and a blade-extension or lever, the hand and blade extensions or levers pivotally mounted upon the rock-shaft and joined together by a connecting-link which is pivoted to the outer end of the hand-extension or lever and to the inner end of the blade-extension or lever, a spring acting to open the connecting-link and the blade-extension or lever, sockets or plates on the end of the hand and blade-extensions or levers, designed to hold a handle and an oar-blade in their proper ends, and means for holding the gunwale-plate in place, substantially as and for the purpose set forth.

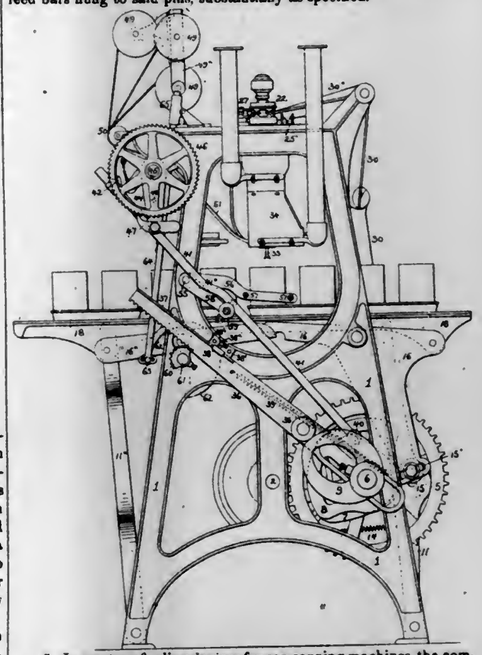
542,198. CAN-CAPPING MACHINE. CHARLES M. KRUSE, Bridgeton, N. J., assignor to the Canners Supply Company, same place. Filed Apr. 3, 1895. Serial No. 544,294. (No model.)

Claim.—1. Can feeding mechanism for can capping machines, comprising tray lifting bars and tray feeding bars operating alternately, engaging levers carrying said lifting bars, swinging frames for the feeding bars, and cams for actuating said levers and frames, the lifter actuating levers having adjustable rollers on which their cams act, substantially as specified.

2. In can tray feeding devices for can capping machines, the combination of tray lifting bars and tray feeding bars operating alternately, said tray feeding bars having slotted webs and adjustable plates having lugs or pins for centering and retaining the trays on the feed bars, substantially as specified.

3. In can tray feeding mechanism for can capping machines, the combination of the swinging frames, having laterally projecting pins, tray feeding bars, and collars engaging with said bars, and laterally adjustable on the pins, substantially as specified.

4. In can tray feeding mechanism for can capping machines, the combination of the swinging frames having vertical slots, pins adjustable in said slots, and projecting laterally from the frames, and feed bars hung to said pins, substantially as specified.



5. In can tray feeding devices for can capping machines, the combination of the tray lifters and the tray feeders operating alternately, with engaging levers carrying the lifting bars, a pair of swinging frames carrying the feeding bars, cams for operating said levers and frames, and an adjustable roller on one of the frames on which its cam acts, substantially as specified.

6. In can tray feeding devices for can capping machines, the combination of the tray lifters, the engaging levers carrying the same, the tray feeding bars, the swinging frames carrying the same, cams for actuating said frames and levers, an adjustable stop screw for limiting movement of one of the frames in one direction, and an adjustable roller on said frame for the action of the cam, substantially as specified.

7. The combination of the weighted can-cap holder, lifter levers for raising the same, a lever engaging with one of said lifters, a cam for actuating said lever, and an adjustable roller on the lever for engaging with said cam, substantially as specified.

8. The combination in solder feeding devices for can capping machines, of a feed shaft having a ratchet wheel, a loose arm having a pawl for engaging with said ratchet wheel, a reciprocating rod having an inclined portion, projections on the rod and arm for engaging one with the other, and a rod supporting device having a portion projecting into the path of the can tray whereby said rod is lifted into or dropped out of operative position, depending upon the presence or absence of the cans in position to be acted upon, substantially as specified.

9. The combination of the solder feed shaft and its ratchet wheel the loose arm having a pawl for engaging with said ratchet wheel, the reciprocating rod, having an inclined portion, projections on the rod and arm for engaging each other, and a rock shaft having one arm serving as a support for the rod, and another arm with a projection extending into the path of the can tray, substantially as specified.

10. The combination of the acid feeding device, the acid vessel, and operating mechanism for said device, comprising a rod guided at its upper end in a swinging bar, a vibrating arm and means whereby the said rod is adjustably connected to the arm, substantially as specified.

11. The combination of the solder feed shaft and its feed wheels, the presser wheels, arms carrying the same, a suspended rod, and springs connecting the outer ends of said arms to said rod, substantially as specified.

12. The combination of the solder feed shaft and its feed wheels, the presser wheels, arms carrying the same, adjustable bolts carried

by said arms, and springs connected at the upper ends to said bolts and at the lower ends to a fixed rod, substantially as specified.

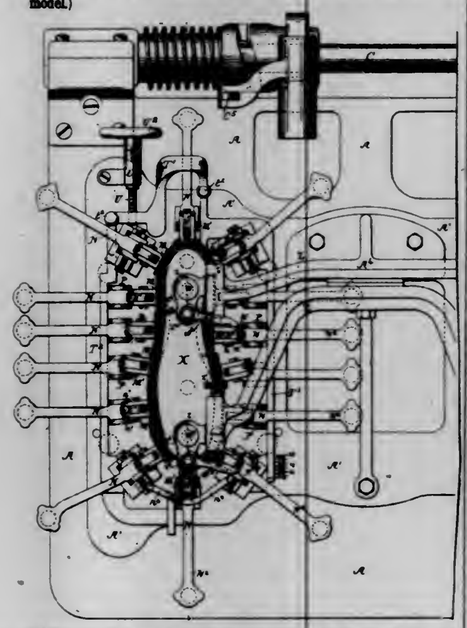
13. The combination of the soldering irons, the spindles therefor, collars secured to said spindles and having tapered lower ends, a fixed supporting bar, and plates adjustable on said bar and having tapered seats for said collars, substantially as specified.

14. The combination of the soldering iron spindle, having a slotted drive plate at the upper end, with the driving sprocket wheel adapted to a bearing on the fixed frame, and having lugs engaging with the slots of the drive plate, substantially as specified.

15. The combination of the fixed frame, the acid feeding device, the reciprocating drive rack therefor having a back flange, the bracket for guiding said flange, a stem on said bracket and a lug secured to the fixed frame and constituting a bearing in which said stem is free to slide and turn, substantially as specified.

16. The combination of the row of soldering irons, the series of solder spools, one for each iron of the row, and a solder spool frame comprising the expanded lower portion with spool spindle at each end, the contracted upper portion also having a spool spindle at each end, and a central forwardly projecting bracket having laterally projecting spool spindles at its forward end, substantially as specified.

542,199. LASTING-MACHINE. DAVID LAKE, Philadelphia, Pa., assignor to the American Lasting Machine Company, Camden, N. J. Filed July 27, 1891. Renewed Oct. 18, 1894. Serial No. 526,320. (No model.)



Claim.—1. The combination in a machine for lasting boots and shoes, of the vertically movable last support, the grippers arranged on each side of the support, a vertically movable plate to which the grippers are secured, a plate to which the movable jaws of the nippers are attached, pressing pads arranged around the nippers and last support and connected to the gripper plate, levers carrying said pads, a vertically moving plate attached to said levers, and mechanism for moving said plates and last support, substantially as specified.

2. The combination in a machine for lasting boots and shoes, of the last support, a series of grippers, a series of independent pressing pads arranged around the last support, and a series of lifters controlling the height of the series of pressing pads, said lifters being connected together whereby they can be operated from a single point to raise or lower the pressing pads to accommodate lasts of different sizes.

3. The combination in a machine for lasting boots and shoes of the last support, the series of nippers, and the series of independent pressing pads arranged around the last support, with a series of shifters connected together and controlling the lateral movement of the the series of pressing pads, whereby the machine can be adjusted to lasts of different shapes.

4. The combination in a lasting machine, of the last support, a last having an indicator mark thereon, mechanism for drawing down and turning the upper against the last, a holding or pressing foot at the top of the last, a gage arm on a fixed portion of the machine, and mechanism for adjusting the holding foot longitudinally in respect to the last whereby it can enter the cavity in the last when the gage is in line with the mark on the last, substantially as and for the purpose set forth.

5. The combination in a lasting machine, of the last support, the gripper, pivoted levers slotted at one end, a pad carrier adapted to said slotted levers, operating mechanism connected to the opposite arm of each lever for giving the forward push to the pad carrier, and mechanism connected to the block whereby the carrier is drawn down and turned under the last, substantially as and for the purpose specified.

6. The combination in a lasting machine, of the last support, a pivoted bell crank lever, a cam at its upper end, a block adapted to the upper end of the lever and to the cam, a presser pad on said block, a vertically movable plate D connected to the opposite end of said lever, a cam and a pin adapted to said cam and connected to the plate, substantially as described.

7. The combination of the last support, the pads, levers carrying said pads, mechanism for operating said levers, posts to which the levers are pivoted, sockets for said posts, with means for vertically adjusting the posts in the sockets, substantially as described.

8. The combination of the last support, the pads, levers carrying said pads, mechanism for operating said levers, posts to which the levers are pivoted, sockets for said posts, with means for vertically adjusting the posts in the sockets, and a lifter engaging with a number of the sockets whereby the posts and their levers and pads can be adjusted vertically in unison, substantially as described.

9. The combination in a lasting machine, of the last support, the toe presser pad, a lever carrying said pad, and mechanism for operating said lever, the lever having two arms acting as fulcrums for hand pinchers, substantially as and for the purpose set forth.

10. The combination in a lasting machine, of the last support, pads, levers carrying said pads, a vertically movable plate, a rod connecting the lever to said plate, bearings having inclined ways therein, pivot pins connecting the rods to the plate, said pins being adapted to the inclined ways in the bearings, bars to which the bearings are attached and a screw rod passing through lugs on said bar, whereby the bars are moved toward the center of the machine on turning the screw rod, thereby raising the pivots of the rods connected to the levers, substantially as and for the purpose described.

11. The combination in a lasting machine, of the frame, cam shaft, mechanism for driving said shaft, a series of face cams on said shaft, a series of levers having pins adapted to the grooves in the face cams, the last supporting rods, the gripper plate, the jaw plate, and the pad plate, said plates and rods being connected to their respective levers, the grippers carried by the gripping plate the jaws of which are acted upon through the medium of the jaw plates, presser pads and levers therefor, said levers being connected to the pad plate, the whole arranged and operated substantially as described.

12. The combination in a lasting machine, of the last support, lasting mechanism, abutment rods pressing on the last, bearings for said abutment rods adjustable in the direction of the length of the last, a sleeve for each abutment rod, having an arm which can be moved in the path of said rod, a post carrying said sleeve, and a spring tending to force the sleeve down, substantially as described.

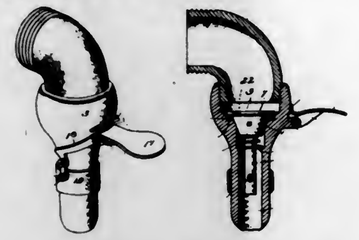
542,200. NECK-YOKE. CHRISTIAN H. LAMBERT, Anderson, Ind., assignor to the Buckeye Manufacturing Company, same place. Filed May 13, 1895. Serial No. 549,040. (No model.)



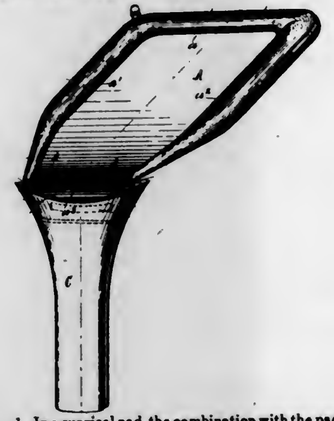
Claim.—The combination of a pole-engaging piece, a clip C secured to the upper edge of said piece and slotted at *c'*, a two-part pin B pivotally inclosed within said clip C, the two parts of said pin being correspondingly semi-circularly notched at *b*, a headed-pin D pivotally resting in the opening formed by the two notches *b* and provided with an eye E, and a yoke-engaging part provided with ears pivotally clamped to the said eye E, substantially as described.

542,201. FAUCET. JAMES S. LESTER, Atlanta, Ga. Filed Dec. 20, 1894. Serial No. 532,444. (No model.)

Claim.—A faucet having a coupling, a casing secured to the outlet end of the coupling and provided with a valve-seat arranged contiguous to the extremity of the coupling, a valve mounted to operate between the seat and the extremity of the coupling and of greater area than the outlet opening of the latter, the upper surface of the valve being concaved, a cushion spring opposed to the movement of the valve in approaching its seat and insufficient in strength to resist the pressure of the fluid, whereby the spring is compressed as the valve is returned to its seat, means for moving the valve from its seat against the pressure of the fluid, and loose connections between said means and the valve-stem, substantially as specified.



542,202. SURGICAL PAD. JOHN HENRY MORRISON, Salida, Colo.; Georgia A. Morrison executrix of said John Henry Morrison, deceased. Filed May 7, 1894. Serial No. 510,332. (No model.)



Claim.—1. In a surgical pad, the combination with the pad proper surrounded on three sides by a cushion leaving the opposite side open; of a pendent conduit detachably connected with the pad under its open edge, upright separated loops near the inlet end of the conduit, and a transverse stiffening bar detachably engaging said loops, as and for the purpose set forth.

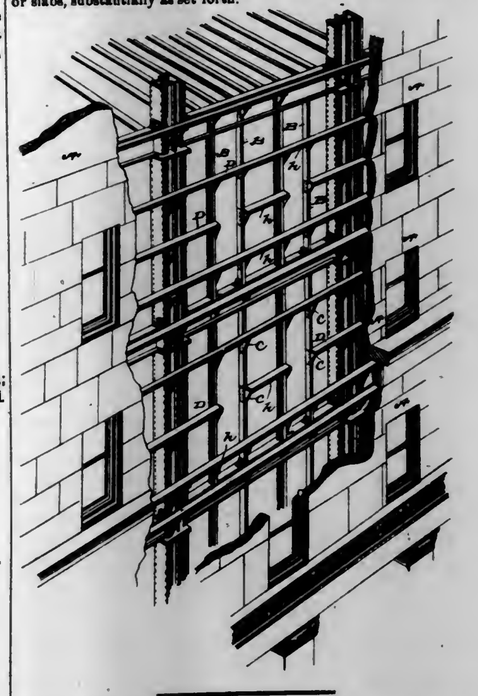
2. In a surgical pad, the combination with a flat sheet forming a pad having a flap at one edge, and an inflated cushion surrounding the three remaining edges and thicker at that edge remote from the flap; of a pendent discharge conduit whose inlet end receives said flap, the latter and the adjacent wall of the conduit having aligned openings, and a fastening piece provided with headed projections removably passed through said openings, as and for the purpose set forth.

3. A surgical pad consisting of a single piece of flexible material such as rubber and comprising a substantially rectangular flat sheet or pad having a tapering extension or flap at one edge, and a substantially U-shaped inflatable cushion whose central portion extends along the opposite edge and whose extremities extend along the two sides of said pad and terminate short of said flap, the body of the pad standing opposite the diametric center of the cushion when inflated and said cushion being then thicker at the edge remote from the flap, substantially as described.

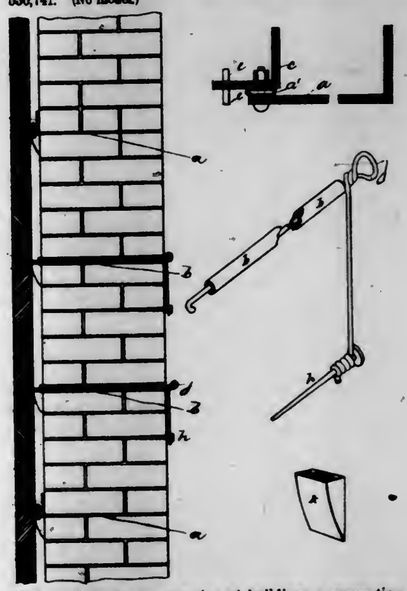
542,203. CONSTRUCTION OF BUILDINGS. JOHN C. PELTON, Jr., San Francisco, Cal. Filed Nov. 14, 1892. Serial No. 451,994. (No model.)

Claim.—1. A composite building having a steel or iron framework provided at intervals throughout with shelves projecting therefrom and having outer up-turned edges entering grooves in the bottom or lower surface of the facing stones or slabs, substantially as set forth.

2. A composite building having its steel or iron frame-work provided at intervals throughout with shelves projecting therefrom and having up-turned outer edges entering grooves in the lower surface of the facing stones or slabs, and tie-bars or anchors arranged between the meeting edges of said stones or slabs, and having dowel-pins in their outer ends, entering said meeting surfaces of the stones or slabs, substantially as set forth.



542,204. CONSTRUCTION OF BUILDINGS. JOHN C. PELTON, San Francisco, Cal. Filed Mar. 11, 1893. Renewed Dec. 3, 1894. Serial No. 530,741. (No model.)



Claim.—1. In the construction of buildings, a supporting plate having an inner upturned end, in combination with a shelf connected directly to the projecting end of said plate, and means for connecting said shelf to the facing tile, sheet or block, substantially as set forth.

2. In the construction of buildings, a supporting plate having an inner angular end, in combination with a shelf, a shim or wedge interposed between said plate and shelf, and means for connecting said plate, shelf and shim, substantially as set forth.

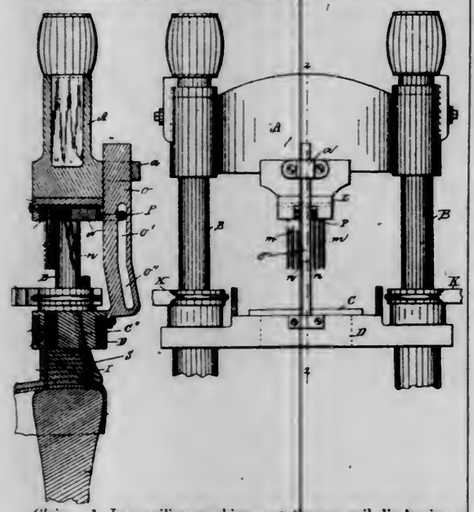
3. In the construction of buildings, a supporting plate having an inner angular end, in combination with an angular shelf having a dowel pin or stud engaging abutting facing plates, sheets or blocks, and means for connecting said shelf and plate, substantially as specified.

4. In the construction of buildings, a supporting plate having an inner angular end, in combination with an angular shelf having a dowel pin or stud engaging abutting facing tiles, sheets, or blocks, a shim or wedge interposed between said plate and shelf, and means for connecting said plate, shelf and shim, substantially as set forth.

5. In the construction of buildings, the combination, with a tube passing through the wall, of an anchor, comprising a wire or rod passing through the tube, and having a hook at one end engaging a facing slab, sheet or block, and secured at the other end upon the inside of the wall, said wire being adapted to be drawn upon to effectively secure said hook in the slab, sheet or block, substantially as set forth.

6. In the construction of buildings, the combination of plates having their inner ends anchored in the wall, shelves connected to said plates and to sheets, slabs or blocks by studs or dowels, tubes inserted in the wall, and anchors having hooks at their outer ends also engaging said slabs, blocks or sheets and anchored at their opposite ends in the wall, upon the inside, said anchors being twisted intermediately of their ends, upon the inside of the wall, substantially as described.

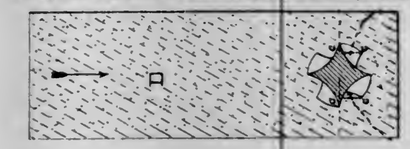
542,205. HEEL-NAILING-MACHINE ATTACHMENT. JOSEPH H. POPE, Brockton, and HENRY H. WAUGH, Whitman, Mass. Filed Jan. 9, 1895. Serial No. 534,350. (No model.)



Claim.—1. In a nailing machine a stationary nail die having a series of vertical and inclined perforations combined with a vertically movable head, a driver block having vertical drivers secured thereto and a horizontally sliding auxiliary driver block having inclined drivers adapted to be driven through the inclined nail die perforations, substantially as and for the purpose set forth.

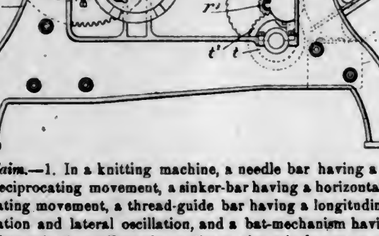
2. In a nailing machine a stationary nail die having a series of vertical and inclined perforations and a movable head having secured to the same a driver block having a series of vertical drivers and a sliding auxiliary driver block having a series of inclined drivers combined with a guide device for guiding said inclined drivers through the inclined nail die perforations substantially as and for the purpose set forth.

542,206. CONCRETE-IRON CONSTRUCTION. ERNEST L. RANSOME, Chicago, Ill. Filed Oct. 10, 1894. Serial No. 525,531. (No model.)



Claim.—In concrete iron or like construction, an integral spirally ridged strengthening bar having in perpendicular cross section a perimeter of concave curves substantially as described.

542,207. CARPET-SWEEPER. SILAS H. RAYMOND, Grand Rapids, Mich., assignor to T. Stewart White, Thomas Friant, Galus W. Perkins, and Charles J. Reed, same place. Filed Oct. 29, 1894. Serial No. 527,240. (No model.)

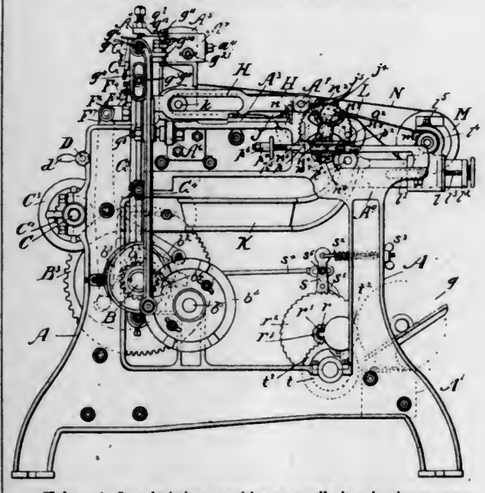


Claim.—1. In a carpet sweeper, in combination with a case having driving and supporting wheels, and a brush shaft having pulleys engaging said wheels, vertically flexible guard bars supporting said brush shaft, and a bail attached to said bars, substantially as described.

2. In a carpet sweeper, in combination with a case having driving and supporting wheels, and a brush shaft having pulleys engaging said wheels, guard bars secured to said case at their ends and projecting outward from said case, said bars also having overlapping and pivoted portions near the middle, journals for said brush shaft and a bail attached to and supported by said bars, substantially as described.

3. In a carpet sweeper, guard bars attached at their respective ends to the sweeper case, and having divided and overlapping middle portions, a bail having inwardly projecting ends, passing through said middle portions, a brush shaft journaled on the said inwardly projecting ends of said bail, and means for rotating said brush shaft, substantially as described.

542,208. WARP-KNITTING MACHINE. WALTER ROBERTS, Beacon Falls, assignor to the Beach Manufacturing Company, Hartford, Conn. Filed Apr. 28, 1893. Serial No. 472,257. (No model.)



Claim.—1. In a knitting machine, a needle bar having a vertically reciprocating movement, a sinker-bar having a horizontally reciprocating movement, a thread-guide bar having a longitudinal reciprocation and lateral oscillation, and a bat-mechanism having an intermittent horizontally reciprocating and vertical movement, and mechanism to impart said movements to the said several devices in proper relation one to the other, substantially as and for the purpose described.

2. In a knitting machine, a bat-feed device having a horizontal sliding bearing in the frame of the machine at the rear end and a sliding bearing at its forward end in slotted bars pivotally connected at one end to the frame, and capable of vibration, the slotted bars and mechanism to impart a horizontal reciprocation to the bat device and a vibratory motion to the forward slotted support and consequently to the forward end of the bat device, substantially as described.

3. In a knitting machine, the bat-feed device comprising the side bars J of the carriage carrying the apron-roll M at one end and the apron support m' at the other end and having a sliding bearing at the rear end in the frame of the machine and having a sliding bearing at the forward end in slotted bars H, the slotted bars pivoted at one end to the frame of the machine, in combination with rods pivoted thereto and engaging cams upon the main shaft, and arms pivoted to the rear end of the carriage and connected with eccentrics upon the main shaft whereby horizontal reciprocation is imparted to said bat carriage and an oscillating or vibratory motion is caused at its forward end, substantially as described.

4. In a knitting machine, the bat carriage borne on the frame of the machine and comprising the two side bars J having the apron-roll M adjustably mounted at the rear end and having the fixed apron support m' at the forward end, the tension roll L mounted in the side-bars J and interposed between the apron-roll and apron-support, and the apron extending around said roll M, support m' and overriding the tension roller, in combination with mechanism for imparting reciprocating motion to said bat carriage in horizontal and vertical planes, all substantially as and for the purpose specified.

5. In a knitting machine, the combination with the apron-supporting bar of the bat device, of a bat clamp pivoted in brackets adjustably secured to the apron-support, and means to elevate and depress said bat-clamp, substantially as specified.

6. In a knitting machine, the combination with the apron-supporting-bar m', of the bat-clamp comprising the brackets m^3 adjustably secured to the ends of the bar m' and having the bearings m^3, m^4, therein, the bat-clamp support m^5 fulcrumed at its forward end in the bearing m^3 in the bracket and having a lateral projection at its rear end, the angular bat-point bar secured to said support, and means for rocking the support and bat point bar, substantially as and for the purpose specified.

7. In a knitting machine, the combination of the apron support m', the brackets m^3 adjustably secured thereto, the bat-point bar secured to supports fulcrumed at their forward ends in bearings in the brackets m^3, and having a lateral projection at the rear end, a rocker m^8 pivoted to the bracket and slotted at its forward end and engaging the projection m^9 upon the support, and means to operate said rocker to elevate and depress the bat point bar, substantially as described.

8. In a knitting machine, the bat device comprising a sliding carriage supported on the frame, and having the apron-support at its forward end, the bat-clamp fulcrumed in brackets upon said support, the lever m^{10} having the rocker m^8 to engage and rock the bat-clamp and having the roller m^{11} thereon, in combination with a cam-lug m^{12} upon the frame which forms a ride for the roller in the backward movement of the carriage and elevates the bat-clamp arms supporting the forward end of the carriage, means for imparting a vertical movement thereto, and means for reciprocating the carriage substantially as described.

9. The combination with the apron-support m' of the bat clamp-bar O secured to supports fulcrumed in brackets adjustably secured to the apron support, the bat-point-plate o' bolted to said bar O and having the bat-points projecting therefrom in such manner that they contact with the bat in advance of and exert no pressure upon the apron support, substantially as described.

10. The combination with the apron support m' and the bat-clamp fulcrumed upon brackets secured thereto, of the pivoted lever m^{10} operatively connected to the bat-clamp and having a spring connected to its free end, and having a lateral projection, and a fixed plate having an inclined cam-face to form a ride for the projection upon the lever and govern its vertical movement, substantially as described.

11. In a knitting machine, the angular thread-guide bar G having the thread-guides G' secured to the lower forward edge thereof and having circular journals at its ends, journal bearings g therefor supported on blocks A^7 adjustably secured to uprights upon the frame of the machine, and mechanism to impart a longitudinal reciprocation and an oscillating motion to said thread-guide-bar, substantially as described.

12. In a knitting machine, in combination with the frame, a horizontal shaft bearing cams and eccentrics, a vertically reciprocating needle bar, a horizontally reciprocating sinker bar, and a longitudinally reciprocating and laterally rocking thread guide bar supported on the frame, rods and levers connecting said devices with their respective cams to impart said respective movements, a horizontally reciprocating and vertically moving bat feed device pivoted in slotted bearings on the frame, means for reciprocating the bat feed device, and means for causing a vertical movement of the same, all substantially as described.

13. The combination with the frame and thread-guide bar, of the supporting block A^7 adjustably secured to the frame and having projections A^4, the journal bearing g, in which the guide-bar is journaled, adjustably supported between said projections by adjusting screws g' extended therethrough and the adjusting screws, substantially as described.

14. In a knitting machine, in combination with the apron supporting bar of the bat feed device, the brackets secured to said bar, the bat clamp pivoted in said brackets and with its forward end adapted to bear upon the apron-support, the plates bearing bat points located on the upper side of the bat clamp, and means as described for rocking said bat clamp, all substantially as described.

15. In combination with the frame a thread guide bar loosely borne in adjustable bearings in a supporting block, the supporting block adjustably secured to the frame, and the adjusting screws borne in the block and in engagement with the bearings, all substantially as described.

16 In a knitting machine, a bat carriage comprising side bars pivoted in sliding collars borne on the frame of the machine, means for reciprocating the bat carriage, and means for supporting and actuating the forward end of the carriage, all substantially as described.

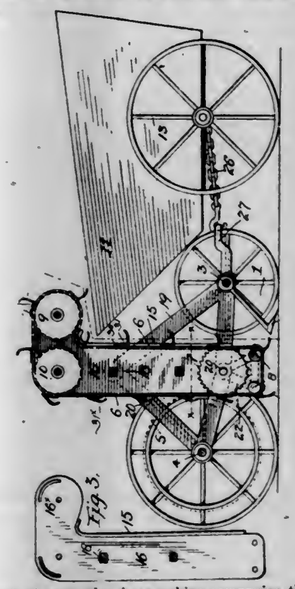
17. In a knitting machine in combination, a bat feed device, the brackets borne on the frame of the bat feed and supporting an apron roll, and an adjusting screw borne in the frame and in engagement with the roll supporting brackets, all substantially as described.

18. In a knitting machine, a thread guide bar loosely supported in bearings at each end thereof, the bearings supported on adjusting screws, means for clamping the screws, and the adjustable slides supporting the adjusting screws, all substantially as described.

19. In combination with the carriage of the bat feed device, a hollow stud secured to the carriage, a pawl support having a projection located within the stud, the ratchet wheel pivot borne in the pawl support, the retaining pawl pivoted to the pawl support, the driving pawls secured to a swinging arm, a stop located in the path of movement of the arm, and means for reciprocating the carriage, all substantially as described.

20. In combination with the carriage of the bat feed device, the retaining pawl support secured to the carriage, the ratchet wheel borne in operative relation to the said pawl support, the swinging arm bearing driving pawls in engagement with the ratchet wheel, the engaging pawls, an adjustable spring buffer located in the path of movement of the swinging arm, and means for reciprocating the carriage, all substantially as described.

542,209. SNOW-CLEANING MACHINE. GIOVANNI B. SIOCARDI, New York Mills, N. Y. Filed Apr. 23, 1895. Serial No. 546,818. (No model.)



Claim.—1. A snow cleaning machine comprising the frame, the vertical side plates having offset portions, the guide roller therein, said plates having the guide bars 15 extending inwardly therefrom with curved upper ends, the conveyer chain and means for operating the conveyer chain and guiding the same vertically between the side plates, substantially as described.

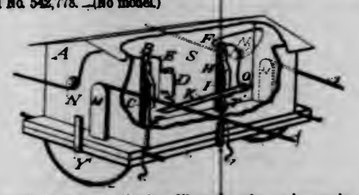
2. A snow cleaning machine comprising the frame, the vertically extending side plates with offset upper portions and the guide rollers at said upper portions, the driving sprocket at the lower part of said

side plates, the two guide rolls below the driving sprocket and on each side of the center thereof and the conveyer chain passing about the said rollers and engaging the driving sprocket, substantially as described.

3. In combination, the frame, the front and rear carrying wheels, the conveying chain, the support for the same extending vertically from between the wheels and the cutting knives arranged in front of the same and adapted to cut the snow, said knives being hung upon the axle of the front carrying wheels and inclining rearwardly therefrom, substantially as described.

4. A snow cleaning machine comprising the frame, the vertical side plates having the guide bars 15 extending inwardly therefrom, the guiding rollers and sprocket wheels, the conveyer chains made up of the links to engage the sprocket wheels and the flexible belt portion to engage the guide bars 15, the buckets carried by the conveyer chains and means for operating the chains, substantially as described.

542,210. SAFETY DEVICE FOR HANDLING ELECTRIC-ARC LAMPS. EDWARD P. SHOWDEN, St. Joseph, Mo. Filed Mar. 23, 1895. Serial No. 542,778. (No model.)

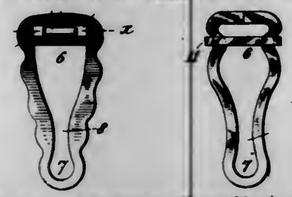


Claim.—1. In a device for handling electric arc lamps, in a combination, box A, switch board S having rigidly attached block conductors B and H, and to which spring conductors C and I are respectively attached, a switch conductor D also attached to switch board, feed wire E conducting to block conductor B and said switch conductor D, feed wire F conducting to block conductor H and switch K, a table Q suspended from box A by means of cables P P passing over pulleys M M, hangers R R by which, in connection with cables X X, the lamp is suspended from table Q, plugs T and T', wires V and V', the switch K and notch N, together with bracket O, cable rods L L, insulator knobs N N, and guides Y Y Y Y and Z Z, substantially as described and for the purpose specified.

2. In a safety device for handling electric arc lamps the combination of block conductors B and H, spring conductors C and I, switch K, switch conductor D and notch or spring switch receiver W, and bracket O, substantially as described and for the purpose specified.

3. In a safety device for handling electric arc lamps the combination of plugs T and T' for closing the circuit through the lamp and breaking the circuit through switch K by plug T' entering between conductor H and spring I thereby disengaging switch K and notch or spring switch receiver W, together with table or frame Q and the hangers and guides carried thereby, substantially as set forth and for the purpose specified.

542,211. GARMENT-SUPPORTER. CHARLES W. STIMSON, New York, N. Y. Filed Nov. 20, 1894. Serial No. 529,400. (No model.)



Claim.—1. In a garment supporter, the combination with a loop having an opening enlarged at one end and contracted at the other end, the top portion of said loop having disconnected ends, of a band connecting the ends of said loop and adapted to limit the separation thereof, and located at a point intermediate between the extremities of said loop, and a strip of fabric connected to said loop, substantially as described.

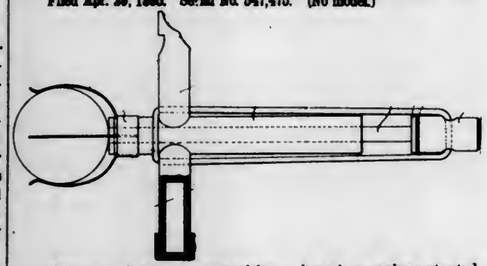
2. In a clasp, the combination, with a button, of a spring loop having an opening enlarged at the ends and contracted at an intermediate point, one end of said opening being adapted to permit the passage of the head of the button therethrough and the other end being adapted to receive the shank of the button but to prevent the passage of the head of the button, the top portion of said loop having disconnected ends, of a band connecting the ends of said loop and adapted to limit the separation thereof and a strip of fabric attached to said loop and covering and concealing said band and the disconnected end of said loop, substantially as described.

3. In a clasp, the combination, with a button, of a spring loop having an opening enlarged at the ends and contracted at an intermediate point, one end of said opening being adapted to permit the passage of the head of the button therethrough and the other end being adapted to receive the shank of the button but to prevent the passage of the head of the button, the sides of said loop being disconnected at one end, openings 10, 10, in said disconnected end, a band 11 passing through said openings 10, 10, and connecting the sides of the loop, and a strip of fabric connecting said button and loop and covering the disconnected end of said loop, substantially as described.

4. In a garment supporter, the combination with a loop having an opening enlarged at one end, and contracted at the other end, the top portion of said loop having disconnected ends, of openings 10 in said disconnected ends, and a band 11 passing through said openings and connecting the sides of the loop, substantially as described.

5. In a garment supporter, the combination, with a loop having an opening enlarged at one end and contracted at the other end, and having its sides separated at the larger end of the loop, of a band 11 connecting the sides of the loop at said larger end, and adapted to limit the separation thereof, and a strip of fabric attached to said loop and covering and concealing the said band and the disconnected ends of the loop, substantially as described.

542,212. TOY GUN. WILLIAM R. M. TENNEY, Boston, Mass. Filed Apr. 29, 1895. Serial No. 547,475. (No model.)

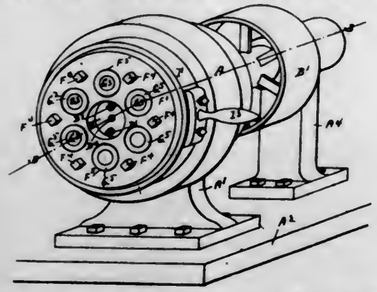


Claim.—1. A toy gun comprising a barrel, a spring-actuated plunger movable in said barrel, and a hammer which is movable upon the plunger and forms one side of a cap-holding recess, said hammer being arranged to abut against a part of the barrel when the plunger is projected and thereby explode a cap inserted in said recess.

2. A toy gun comprising a barrel having a lateral arm provided with a whistle, a spring-actuated plunger movable in said barrel, and a cap-exploding hammer on said plunger.

3. A toy gun comprising a barrel having two lateral arms, one provided with a whistle and the other with a seat and a cap rotatable thereon, a spring-impelled plunger movable in said barrel, and a cap exploding hammer on said plunger.

542,218. MACHINE FOR SWAGING WIRE. EDWIN W. VAUGHAN, Worcester, Mass. Filed May 14, 1894. Serial No. 511,269. (No model.)



Claim.—1. In a machine for swaging wire, the combination with a revolving die-block, dies and beaters carried by said die-block and capable of a radial motion thereon, a series of hangers pivoted at one end concentrically around said die-block, rolls journaled in the free ends of said hangers, said hangers being hung at an angle with radial lines passing through the axes of said rolls and means applied to the free ends of said hangers to rock the same and carry said rolls toward said die-block, substantially as described.

2. In a machine for swaging wire, the combination with a revolving die-block, dies and beaters carried by said die-block and capable of a radial movement therein, of a series of hangers pivoted at one end concentrically around said die-block and at an angle with radial lines passing through said hangers, rolls carried by said hangers, a ring inclosing said hangers and provided with cam surfaces arranged to bear against the free ends of said hangers and radially opposite the axes of said rolls, substantially as described.

3. In a machine for swaging wire, the combination with a fixed frame-work of a revolving die-block carrying a pair of dies and a pair of beaters capable of a radial movement in said block, as described, a series of hangers pivoted to said frame-work and concentrically around said die-block, rolls journaled in said hangers and a ring provided with cam surfaces arranged to bear against the free ends of said hangers and rock them on their pivots and carry the rolls toward said die-block, substantially as described.

4. In a machine for swaging wire, the combination with a revolving die block provided with a diametrical slot, dies held in said slot, beaters resting against said dies and extending to the periphery of said block, said dies and said beaters being capable of a radial motion in said slot, of a series of rolls carried upon rotating spindles, gears attached to said spindles and a driving gear engaging the gears on said spindles, whereby said rolls are positively rotated with their peripheries moving in the same direction as the movement of said beaters, substantially as described.

5. In a machine for swaging wire, the combination of a revolving shaft, a die block carried by said shaft, dies carried in said die block, beaters resting against said dies, hangers pivoted around said die block, spindles journaled in said hangers, rolls carried by said spindles, gears attached to said spindles, a driving gear on said shaft engaging the gears on said spindles and means by which said hangers are crowded toward said die block, substantially as described.

6. In a machine for swaging wire, the combination of a shaft B, a die block carried by said shaft, dies and beaters carried by said die block, rolls arranged concentrically around said die block, said rolls having a positive rotary motion through connected gearing, whereby the periphery of said rolls is moved in the same direction as said beaters, substantially as described.

7. In a machine for swaging wire, the combination of a shell A, plates F and F', bolts F^4 passing through said plates and held by said shell, die-block B^3, dies C, C and beaters C^3, C^3 carried in said die-block, hangers G pivoted on said bolts F^4 concentrically around said die-block, rolls G^4 journaled in said pivoted hangers and a ring I' having cam surfaces I^3 bearing against the free ends of said hangers, substantially as described.

8. In a machine for swaging wire, the combination of a revolving hollow shaft B carrying a die block B^3 provided with a diametrical slot B^3, dies C, C held in said slot, a die retaining plate D attached to said die-block and provided with a central recess opposite said dies and a hardened steel plate D^3 held in said recess and bearing against said dies, substantially as described.

9. In a machine for swaging wire, the combination of a shell A, plates F and F', sleeves F^5 by which said plates are separated, bolts F^4 passing through said sleeves into said shell, hangers G pivoted on said sleeves, spindles G^2 journaled in said hangers, rolls G^4 attached to said spindles, die-block B^3, dies C, C, beaters C^3, C^3 held in said die-block and a ring inclosing said hangers and arranged to bear against the free ends of said hangers, by which said hangers are held from rocking on their axes as said beaters are brought into contact with said rolls, substantially as described.

542,214. CAR-AXLE LUBRICATOR. ARTHUR W. WRIGHT, Detroit, Mich., assignor of one-thirtieth to Jane P. Williams, same place. Filed Jan. 8, 1895. Serial No. 534,190. (No model.)

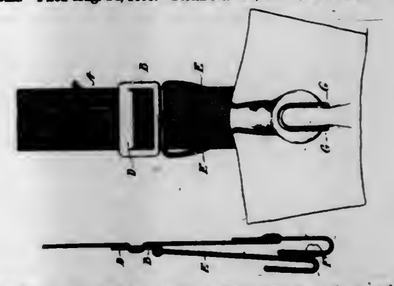


Claim.—1. The combination of a car axle box, a transverse partition below the journal therein having longitudinal apertures beneath the front and rear faces of the journal, blocks or legs in the bottom, spring standards having shoulders on their outer faces and pads secured to the standards, the parts being combined as and for the purpose set forth.

2. In a lubricator for car journals, the combination of the box, a transverse partition therein below the journal to form an oil receptacle, the fibrous lubricating pads passing through such apertures into the receptacle, the standards I, to the upper end of which the pads are secured, the lower ends thereof passing through the apertures in the partition, the shoulders J on the standards, the lug K in the bottom of the box having the inclined face *e* and the vertical face *k*, the parts being arranged as and for the purpose described.

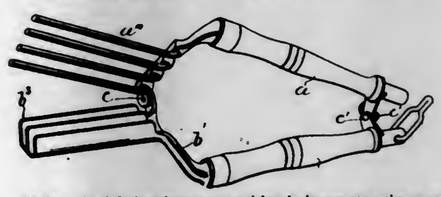
3. The combination with a car axle box, of a transverse partition arranged below the journal, and formed with a curved central section and inclined outer sections, and the elongated apertures G between the sections, on opposite sides of the plane of the journal, wicking pads extending through the openings G, and separated standards passing through the partition and having yielding sections to which the wicking is secured, substantially as described.

542,215. GARMENT-FASTENER. GEORGE E. ADAMS, New Britain, Conn. Filed Aug. 24, 1893. Serial No. 483,980. (No model.)



Claim.—A garment-fastener consisting of a tape A, carrying a clasp having depending side arms, said side arms being bent up to form a hook, in combination with a stud F supported by the said tape A, the edge of the stud head being engaged and supported by said hook, substantially as described.

542,216. HAIR-CRIMPER. FREDERICK E. ALLEN, Lynn, Mass., assignor to the Lynn Novelty Manufacturing Company, of Maine. Filed Oct. 8, 1894. Serial No. 525,262. (No model.)



Claim.—1. A hair crimper comprising in its construction a pair of handles provided at one end with offset arms pivotally connected, crimping devices upon said arms, and pivotally-connected levers at the opposite end of said handles, the pivots of said arms and levers being out of alignment, substantially as and for the purpose described.

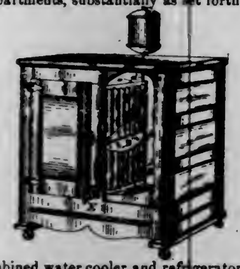
2. A hair crimper comprising in its construction a pair of handles provided at one end with offset arms pivotally connected, crimping devices upon said arms, pivotally-connected levers upon the opposite end of said handles, the pivots of said arms and levers being out of alignment, and a spring mounted upon said levers, substantially as and for the purpose described.

3. A hair crimper comprising in its construction a pair of handles provided at one end with offset arms pivotally connected, crimping blades upon one of said arms, crimping bars upon the other of said arms, pivotally-connected levers upon the other end of said handles, the pivots of said arms and levers being out of alignment, a spring mounted upon said levers, and a clamp pivoted to the end of one of said handles and arranged to slip over the end of the other of said handles, substantially as and for the purpose described.

542,217. COMBINED WATER-COOLER AND REFRIGERATOR. FRANCIS R. BRAL, Northville, Mich. Filed Apr. 26, 1894. Serial No. 508,946. (No model.)

Claim.—1. In a combined water cooler and refrigerator, the combination with a refrigerator, of a case forming an ice chamber

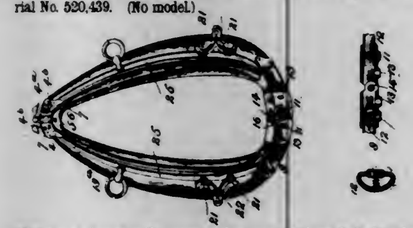
and a provision chamber therewithin, of a water cooling chamber constituting a partition between the ice chamber and provision chamber having its sides constructed with corrugated plates and provided with an interior diaphragm separating the water cooler into two communicating compartments, substantially as set forth.



2. In a combined water cooler and refrigerator, a water cooling chamber with vertical sides joined together to form a water tight compartment subdivided into two compartments by a vertical partition therein, said partition shortened at both top and bottom to allow free circulation between the two compartments, substantially as set forth.

3. In a combined water cooler and refrigerator, an inclosing case A forming an interior chamber, and a water cooler within said chamber constituting a partition dividing said interior chamber into an ice receiving apartment and a provision apartment, said water cooler spaced from the top and bottom of said interior chamber, one face of the cooler directly exposed to the ice receiving apartment and the opposite face of the cooler directly exposed to the provision apartment, substantially as set forth.

542,218. HORSE-COLLAR. CARL BLOCK, St. Louis, Mo., assignor to the Hameless Collar Company, of Missouri. Filed Aug. 16, 1894. Serial No. 520,439. (No model.)



Claim.—A horse collar comprising two sections 2, 3, forming the hames, means for hinging the sections together at the top, the tubular pieces 9 secured to the lower ends of the sections, having pins 11, the coiled springs 12 pressing the pins forward, the locking sections 10, within which the tubular pieces fit, having a series of openings 13, with which the pins engage, locking pin 14 carrying a spring 14' and securing the sections together, and means for retracting the locking pin, substantially as described.

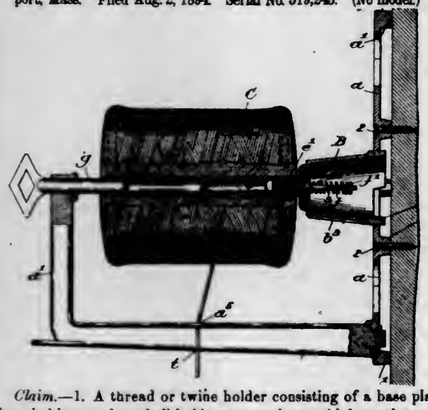
542,219. TUBE-CUTTER. JOHN J. K. FITZPATRICK, Kemp, Tex., assignor to Herman Strauss, same place. Filed June 19, 1894. Serial No. 515,078. (No model.)



Claim.—1. The combination with a hollow stock provided with guides, and adapted to be rotated, of cutters or knives fitted in said guides and provided at their inner ends with inclined feet, a seating ring fitted exteriorly upon the stock and provided with radial seats, a collar secured to the seating ring to close the lower sides of the rests, coiled springs arranged in transvere perforations of the stock and bearing at their outer ends against the inner surface of said collar and their inner ends against the feet of the cutters, a spindle fitted in the bore of the stock and having a tapered portion to engage the feet of the cutters, and means for feeding the spindle axially in the stock, substantially as specified.

2. The combination with a hollow-stock adapted to be rotated, of a shouldered bushing adjustably mounted upon the stock and having a reduced portion to fit within the end of a boiler tube, radially slidable cutters mounted in guides near one end of the stock and provided at their inner ends, within the bore of the stock, with inclined feet 11, a seating ring fitted exteriorly upon the stock and keyed thereto, the same being provided with radial rests registering with the guides in the stock, a collar secured to the seating ring and closing said rests therein, a feed-nut secured to the inner end of the stock, a spindle fitted in the bore of the stock, having a tapered portion to engage the feet of the cutters and terminating in a threaded portion to engage said feed nut, and retraction-springs arranged in perforations in the stock and bearing against the feet of the cutters to return the same when the tapered portion of the spindle is disengaged therefrom, the outer ends of the perforations in which the springs are seated being covered and closed by said bushing, substantially as specified.

542,220. THREAD OR TWINE HOLDER. GEORGE H. HEDGE, New Bedford, assignor to the Westport Manufacturing Company, Westport, Mass. Filed Aug. 2, 1894. Serial No. 519,245. (No model.)



Claim.—1. A thread or twine holder consisting of a base plate, a detachable tapering shell-holder mounted on said base plate and provided with a hub, a sleeve rotatable on the hub, a headed spring-controlled bolt extended through the hub and adapted to bear upon the sleeve, to regulate its rotation, and an overhanging arm on the base plate provided with guide eyes, substantially as described.

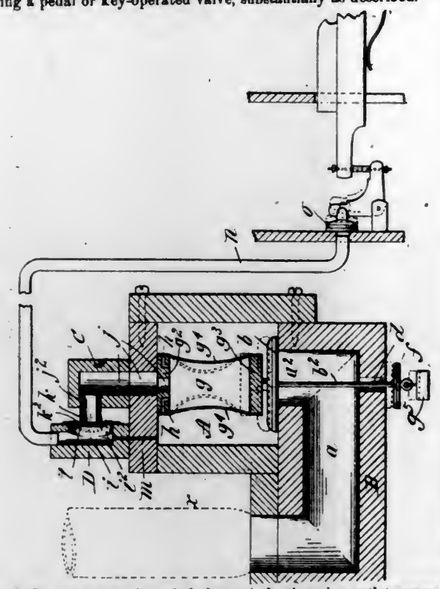
2. A thread or twine holder consisting of a base plate, a detachable shell-holder mounted thereon, a rotatable sleeve on the shell-holder, to receive and hold a cylindrical shell carrying a mass of thread or twine, a tension device to regulate the rotation of the sleeve and the said mass held thereon, an arm on the base plate having an eye in line with the axis of the shell-holder, and a removable pin held in said eye and to enter and support the outer end of the shell, substantially as described.

3. A thread or twine holder consisting of a base plate, a shell-holder detachably mounted thereon and having a tapering body portion to receive and hold a conical shell, a rotatable sleeve on the outer end of the shell-holder to receive and hold a cylindrical shell, a tension device to regulate the rotation of said sleeve and shell held thereon, and an arm on the base plate provided with guide eyes, substantially as described.

542,221. ORGAN. MARTIN HETHERINGTON, Springfield, Mass., assignor to J. W. Steere & Son, same place. Filed Oct. 13, 1894. Serial No. 525,803. (No model.)

Claim.—1. In an organ, a wind-chest with a passage leading therefrom having a valve thereat, a collapsible pneumatic, having a movable wall by which the said valve is supported, and having a small opening communicating from the wind-chest to its interior, a passage leading from the interior of said pneumatic to the exterior of the wind-chest, a chamber having an opening opposite the orifice of said passage from the pneumatic, having a passage leading thereinto from the wind-chest, and having a flexible deflecting diaphragm covering said opening which is adapted to close the end of said passage from the pneumatic, and a tube leading from the said chamber and having a normally closed valve, substantially as described.

2. In an organ, a pipe, a wind-chest with a passage, a_5, leading from its bottom to the pipe, having a valve, b, thereat, a collapsible pneumatic depending from the top wall of the wind-chest having a movable bottom to which the said valve is connected and having a small opening communicating from the wind-chest to its interior, a passage leading from the interior of said pneumatic to the exterior of the wind-chest, a chamber having an opening opposite the orifice of said passage from the pneumatic, having a passage leading therefrom from the wind-chest, and having a flexible deflecting diaphragm covering said opening which is adapted to close the end of said passage from the pneumatic, a tube leading from the said chamber and having a pedal or key-operated valve, substantially as described.



3. In an organ, the wind-chest, A, having the outlet passage leading from its bottom to the sound producing device, and having a pneumatic suspended therewithin which comprises an inclosed chamber with a movable bottom and flexible collapsible sides supporting said bottom, which latter is directly over the said outlet passage, and constructed with a valved passage leading from its interior to atmospheric air, and with a small unvalved passage communicating from its interior to said wind-chest, a valve supported by said movable bottom of the pneumatic which normally closes said outlet passage, a key, or like part, and means actuated by, and intervening between the key and said valved passage which leads from the interior of the pneumatic, substantially as and for the purposes set forth.

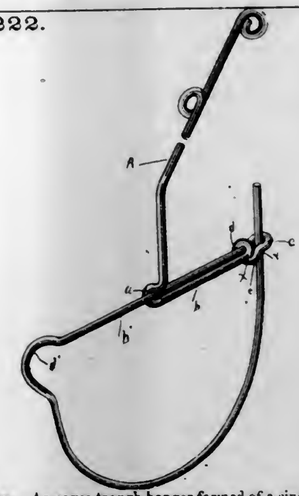
4. In an organ, a pneumatic, or motor, with a passage leading therefrom having a nozzle-like terminus, a chamber with an opening opposite such nozzle having a flexible, marginally secured, and laterally deflecting diaphragm covering it, and adapted to lie against and close the nozzle end of said passage, in combination with apparatus for maintaining a uniform pressure in both the pneumatic and said chamber, and a pipe leading from said chamber, having a valve which, opened, exhausts said chamber and effects the drawing of said diaphragm away from said passage nozzle, substantially as described.

5. The combination with the wind-chest having the rail, or board, C, at its top, with a pneumatic, g, suspended from its upper wall and with the passage, j, leading from the interior of said pneumatic up through the top of the wind-chest and within said board, a section of tube, k, entering said board, C, to connect with said passage, j, the chamber, i, with the diaphragm-closed opening adjacent the end of said tube and means for maintaining and exhausting the pressure from said chamber, substantially as described.

6. In an organ, the combination with an exhaust passage for a wind chamber, or pneumatic, which consists of an open-end tube or nozzle with a washer of sheepskin, or a like flexible material secured on the end of said tube to constitute internal and external flexible flanges, of a chamber having an opening opposite said nozzle which is closed by a marginally connected diaphragm, and means for maintaining and exhausting at will the pressure in said chamber, substantially as described.

7. In a organ apparatus of the character described, the combination with the rail, or board, D, having the chamber, i, with an orifice, and a deflecting marginally connected diaphragm closing said orifice, of the rail, or board, C, having the passage, j, the tube-section, k, screwing into an opening which connects with said passage, whereby said tube is adjustable toward and from the diaphragm, substantially as described.

542,222. EAVES-TROUGH HANGER. MARTIN L. HUNKER, Canton, Ohio, assignor to James H. Eller, same place. Filed Apr. 3, 1895. Serial No. 544,298. (No model.)



Claim.—An eaves-trough hanger formed of a single piece of wire consisting of the arm A, provided at its bottom or lower portion with the bend a, the bend or ring d, extended around the portion b' so as to form a stop e, the loop c, and the free end of the wire extended through the loop c, substantially as and for purpose specified.

542,223. DRILLING-TOOL. MOSES G. JOHNSON, Hartford, Conn. Filed Apr. 19, 1893. Serial No. 471,002. (No model.)

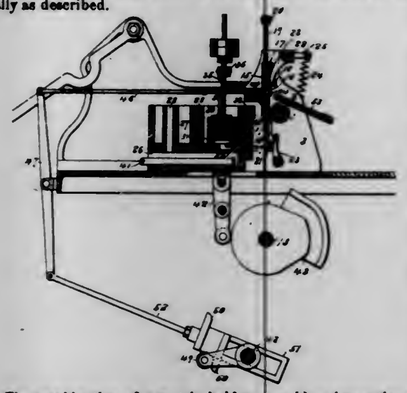


Claim.—A boring tool having a shank and a point, with parallel grooves of decreasing depth extending full width on a spiral of uniform pitch from point to shank, and parallel lands extending full width on a spiral of uniform pitch from point to shank, the edges of the lands and the center line of the grooves being parallel and on the same pitch from end to end, substantially as specified.

542,224. MATRIX-MAKING AND PRINTING-BAR-CASTING MACHINE. HOMER LEE, New York, N. Y., and EDMOND LEBRUN, Newark, N. J., assignors to the Electric Typographic Company, of West Virginia. Original application filed Oct. 31, 1888, Serial No. 289,676. Divided and this application filed Oct. 11, 1890. Renewed Feb. 23, 1895. Serial No. 539,495. (No model.)

Claim.—1. The combination of a matrix holder, and a mold reciprocating in straight lines in two directions, in one direction to and from contact with the matrix in the holder and in the other to and from a position for discharging the printing bar from the mold, substantially as described.

2. The combination of a casting box, a plunger for ejecting the printing bar from the mold, a casting box moving to and from the mold and a mold reciprocating in a straight line from a position wherein the mold cavity is in communication with the casting box to a position wherein the mold cavity is in the path of the plunger, substantially as described.



3. The combination of a matrix holder, a mold reciprocating in straight lines in two directions, and a casting box moving to and from the mold, substantially as described.

4. The combination of a mold reciprocating in straight lines in two directions, and a matrix holder and casting box located on opposite sides of the mold and moving to and from the same, substantially as described.

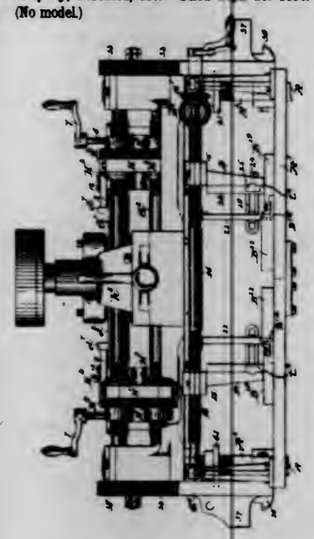
5. The combination of a reciprocating casting box, a matrix holder, and a mold reciprocating from a position for discharging the printing bar to a position in which the mold cavity is in communication with the casting box, and moved against the matrix holder by the casting box in the latter position, substantially as described.

6. The combination with a reciprocating casting box and matrix holder, of plunger 45, and mold 15 reciprocating in straight lines in two directions from the plunger to the casting box and matrix holder, substantially as described.

7. The combination with a casting box and matrix holder, of the swinging mold 15 reciprocating vertically and horizontally in fixed guide slots 18, substantially as described.

8. The combination with a mold having rectilinear movement to and from its position for taking a cast from a matrix, of a plunger for ejecting the printing bar from the mold, a casting box moving to and from the mold and mechanism which operates said plunger when the mold has moved from said matrix, substantially as described.

542,225. MACHINE FOR MANUFACTURE OF PAPER BOXES. EUGENE H. TAYLOR, Lynn, Mass., assignor to the Cushman Paper Box Machine Company, Portland, Me. Filed Sept. 25, 1890. Serial No. 366,123. (No model.)



Claim.—1. The pressure head, combined with the rocking block and its attached end wiper plate, and with a yielding locking device for the said block, substantially as described.

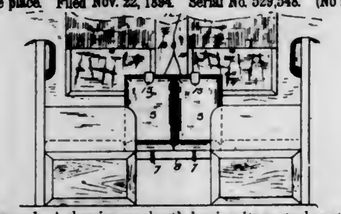
2. The stationary tracks B^{13}, the side guides having nuts at their ends, longitudinally adjustable blocks 19 on said guides, and the horizontally adjustable stop 21 for each block, and the cross shafts provided with right and left hand screws with which the said nuts are engaged, combined with the connecting shaft 18, and engaging bevel gears on said connecting or cross-shafts whereby the said side guides are made adjustable simultaneously by rotation of the connecting shaft, substantially as described.

3. The adjustable side guide, and its longitudinally adjustable block 19, combined with the horizontally adjustable stop 21, and tracks to support the blank to operate, substantially as described.

4. The combination with the "former," and the rock-shaft B having splined ends, and bearings therefor at the extremities of said ends of the lip-turners n provided with hubs laterally adjustable on the splined ends of said rock-shaft inside of said bearings, and set screws to clamp the hubs thereon to thereby adapt said lip turners to boxes of different length, substantially as described.

5. The guide A^3 having a beveled notch, the cross-head having a sleeve, and a bevel ended locking device, combined with the slide bar having a bevel surface 28, to operate, substantially as described.

542,226. SLEEPING-CAR BERTH. WILLIAM D. DOWNS, Denver, Colo., assignor of three-eighths to D. Walter Evans and Albert W. Reitze, same place. Filed Nov. 22, 1894. Serial No. 529,548. (No model.)



Claim.—1. A sleeping car berth having its central portion transversely divided, the two parts being hinged together in such a manner that the hinged seat part may be moved toward the side of the car by raising one portion thereof to a position parallel, or approximately parallel, with the car side, and suitable means attached to the hinged central portion of the berth bottom for effecting said adjustment, substantially as described.

2. A sleeping car berth whose bottom is provided with a central part transversely divided and hinged whereby it is adapted to fold, in combination with a mattress having a flap on its margin, the outer edge of the flap being free and its inner edge fast to the mattress whereby the edges of the bed clothing may be concealed, and thus removed from contact with the movable central part of the berth-bottom, substantially as described.

3. A sleeping car berth having the central part of its bottom transversely divided and adapted to fold, in combination with means for manipulating the same consisting of a cord passing around a pulley attached to the side of the car, substantially as described.

4. A sleeping car berth having a hinged central portion adapted to slide and fold, in combination with anti-frictional rollers journaled in the framework of the berth and engaging the movable central part on the under side, substantially as described.

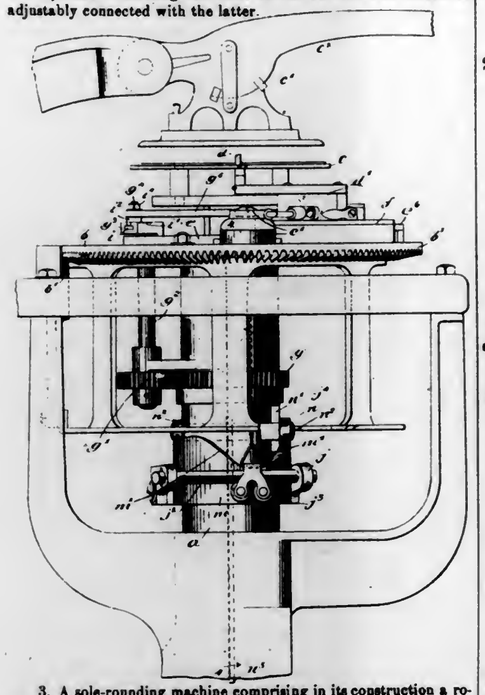
5. A mattress having a flap on its margin, the outer edge of the flap being free and its inner edge fast to the mattress, the depth of the flap being sufficient to receive and conceal the edges of the bed clothing which are tucked between the flap and the body of the mattress, substantially as described.

REISSUES.

11,501. SOLE-ROUNDING MACHINE. GIDEON JULIAN, Boston, assignor, by direct and mesne assignments, to Charles F. Brown, trustee, Reading, Mass. Filed Apr. 9, 1895. Serial No. 545,114. Original No. 528,128, dated Oct. 23, 1894.

Claim.—1. A sole-rounding machine comprising in its construction a rotary table, a knife-carrier movable back and forth on the table, a stationary gear, and a movable gear carried by the rotary table and connected with said stationary gear, said movable gear having a crank which is connected with the knife-carrier.

2. A sole-rounding machine comprising in its construction a rotary table, a knife-carrier movable back and forth on the table, a stationary gear, a movable gear carried by the rotary table and connected with said stationary gear, said movable gear having a crank, and a pitman connecting the knife carrier and the said crank and adjustably connected with the latter.



3. A sole-rounding machine comprising in its construction a rotary table, a knife-holder movable back and forth thereon, a lever carried by the table and connected with the said holder, a cam carried by said lever, a bearing-piece resting on the cam, and a weight suspended from said bearing-piece.

4. A sole-rounding machine comprising in its construction a supporting column, a rotary table, and independently movable knife-holder thereon, a lever pivoted to the under side of the table and embracing the column, a flexible connection between the lever and the knife-holder, a cam encircling the column and supported by the lever, a cross-bar extending through the column and bearing on the cam, and a weight suspended from the said cross-bar.

5. In a sole-rounding machine, the combination of a pattern, a trimming-knife, a holder therefor, a knife-carrier supporting said holder, a table or support for said carrier, mechanism substantially as described for changing the positions of the support and carrier relatively to the pattern to cause a progressive cutting action of the knife, a shaft journaled in said support and provided with a crank which is connected with the knife carrier, and means for positively rotating said shaft and thereby imparting a positive independent back-and-forth movement to the knife-carrier, whereby the cutting action of the knife is alternately accelerated and retarded.

11,502. DENTAL PLUGGER. FRANK J. RICHARDS, Williamsport, Pa., assignor to the Buffalo Dental Manufacturing Company, Buffalo, N. Y. Filed July 19, 1894. Serial No. 518,060. Original No. 494,227 dated Mar. 28, 1893.



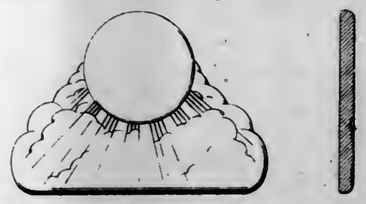
Claim.—1. The combination with a straight striker and its casing in which the striker moves with a rectilinear reciprocating movement, of a curved guide tip secured to said casing, and a curved holder arranged in said guide tip and arranged with its inner end in the path of said striker, substantially as specified.

2. The combination with a straight plunger, a striking pin fitting in a socket in the end of said plunger, a curved guide tip E and a curved holder mounted in said guide tip with its inner end in the path of the striking pin, substantially as specified.

3. The combination with a straight plunger and an inclosing casing, of a tapered sheath fitted to the end of the casing to inclose the end of the plunger, a striking pin fitting in a socket in the end of the plunger, a curved tip fitted in the reduced end of said sheath, and a curved holder, slidably fitted in the tip with its inner end in the path of the striking pin, substantially as specified.

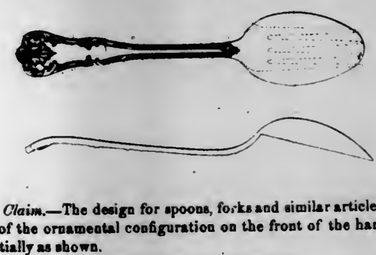
DESIGNS.

24,441. CAKE OR CRACKER. DAVID STEWART, Philadelphia, Pa. Filed May 14, 1895. Serial No. 549,323. Term of patent 7 years.



Claim.—The design for a cake or cracker, substantially as herein shown and described.

24,442. SPOON OR FORK. GEORGE C. LUNT, Greenfield, Mass., assignor to the A. F. Towle & Son Company, same place. Filed June 6, 1895. Serial No. 551,910. Term of patent 7 years.



Claim.—The design for spoons, forks and similar articles consisting of the ornamental configuration on the front of the handle, substantially as shown.

24,443. BADGE. MICHAEL J. SULLIVAN, Chicago, Ill. Filed May 20, 1895. Serial No. 550,001. Term of patent 3½ years.



Claim.—The design for a badge or insignia herein shown and described.

24,444. BUCKLE. DAVID STONE, New York, N. Y. Filed May 18, 1895. Serial No. 549,838. Term of patent 7 years.



Claim.—The design for a buckle herein shown and described.

24,445. BUTTON. EDWARD RICHARD HUGHES, Liverpool, assignor to F. & A. Downes, Worcester, England. Filed May 14, 1895. Serial No. 549,320. Term of patent 14 years.



Claim.—The design of a button for gloves, &c., substantially as shown and described.

24,446. HAND FOR TIMEPIECES. WEBSTER C. BALL, Cleveland, Ohio. Filed Mar. 22, 1895. Serial No. 542,856. Term of patent 14 years.



Claim.—The design for the hands of time pieces, &c., substantially as described and illustrated.

24,447. GLASS STOPPER FOR BOTTLES. WILLIAM W. LOWREY, Staten Island, N. Y. Filed Apr. 22, 1895. Serial No. 546,794. Term of patent 3½ years.



Claim.—The design for a glass stopper for bottles herein shown and described.

24,448. FRAME FOR PISTOLS. WILLIAM F. MARKHAM, Plymouth, Mich. Filed Apr. 11, 1895. Serial No. 545,400. Term of patent 7 years.



Claim.—The design for a pistol frame substantially as herein shown and described.

24,449. CIGAR-HOLDER. JAMES M. MERRITT, Homer, Mich., assignor of one-half to Benjamin F. Goodrich, same place. Filed May 18, 1895. Serial No. 549,837. Term of patent 7 years.



Claim.—The design for a cigar holder herein shown and described as set forth.

24,450. KNIFE-HANDLE. DANIEL GREENLEAF and JOSEPH H. CROSBY, Jacksonville, Fla. Filed May 4, 1895. Serial No. 548,163. Term of patent 7 years.



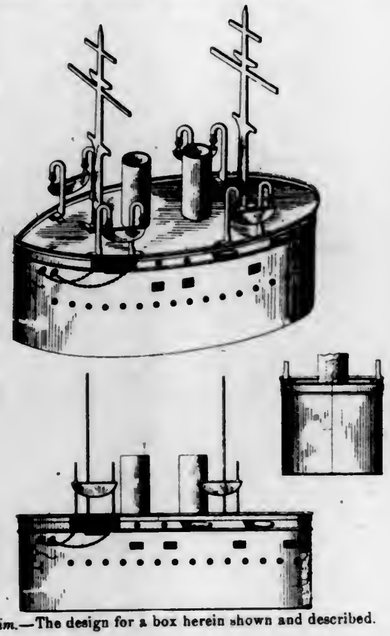
Claim.—The design for a knife handle, as herein shown and described.

24,451. LAMP-FOUNT HOLDER. JOSEPH E. BONNER, Ansonia, Conn. Filed May 11, 1895. Serial No. 549,012. Term of patent 3½ years.



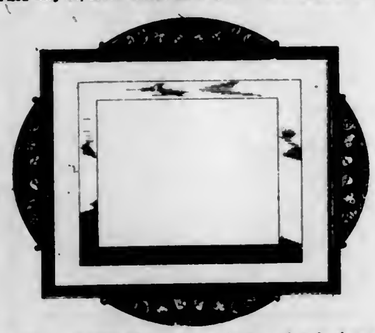
Claim.—The design for lamp fount holders and similar articles, substantially as shown and described.

24,452. BOX. EDWARD SAALBACH, Washington, D. C. Filed May 31, 1895. Serial No. 551,330. Term of patent 3½ years.



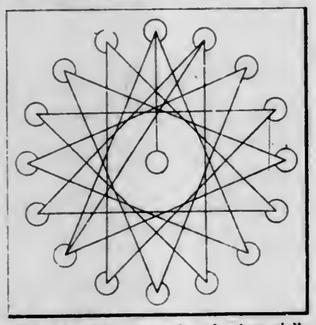
Claim.—The design for a box herein shown and described.

24,453. PICTURE-FRAME. THOMAS M. KENT, Baltimore, Md. Filed May 27, 1895. Serial No. 550,868. Term of patent 3½ years.



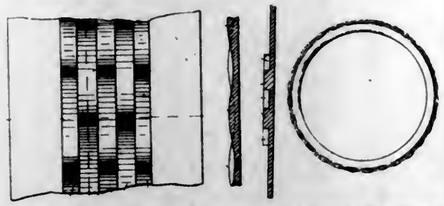
Claim.—The design for a picture-frame as herein shown and described.

24,454. GAME-BOARD. WILLIAM A. SMETHURST, Philadelphia, Pa. Filed May 2, 1895. Serial No. 547,937. Term of patent 3½ years.



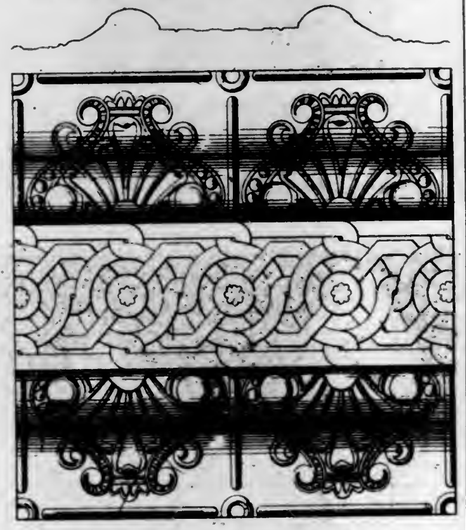
Claim.—The design for a game board, substantially as described and shown.

24,455. TIRE-COVER FOR BICYCLES. HARRY HEATON, Jr., King's Norton, assignor to Charles Kingston Welch, Coventry, England. Filed Feb. 21, 1895. Serial No. 539,283. Term of patent 14 years. Patented in England June 27, 1894. No. 235,173.



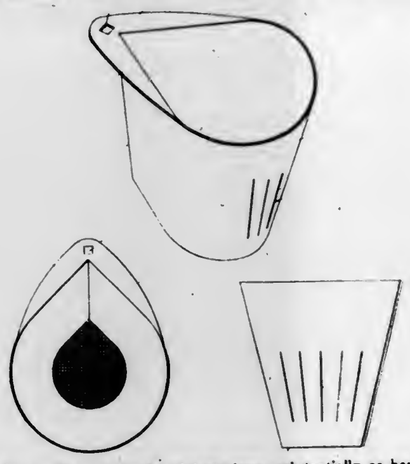
Claim.—The design for tire covers, as herein shown and described.

24,456. CEILING-PLATE. EDWARD A. LANGENBACH, Canton, Ohio. Filed May 23, 1895. Serial No. 550,454. Term of patent 7 years.



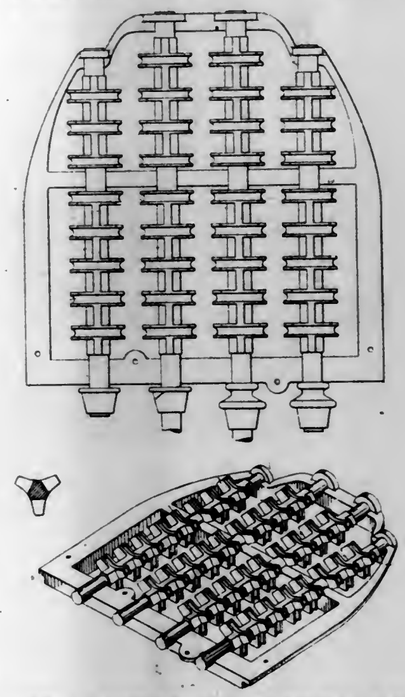
Claim.—The design for a ceiling plate, as herein shown and described.

24,457. SINK-STRAINER. EMELINE B. VROOMAN, Chicago, Ill. Filed June 7, 1895. Serial No. 552,033. Term of patent 14 years.



Claim.—The design for sink-strainers substantially as herein shown and described.

24,458. FURNACE-GRATE. WALTER S. STEVENSON, Philadelphia, Pa. Filed Feb. 21, 1895. Serial No. 539,286. Term of patent 14 years.

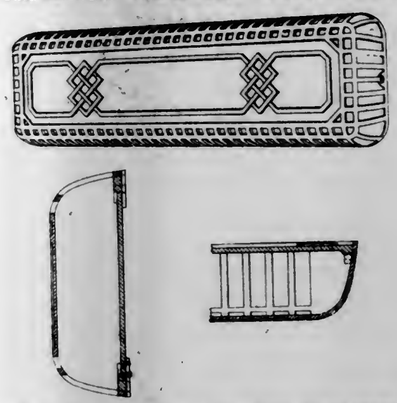


Claim.—1. The design for a stove grate, substantially as described and shown.

2. In a design for a stove grate, the design for the frame, substantially as described and shown.

3. In a design for a stove grate, the design for the bar, substantially as described and shown.

24,459. ELECTRIC-HEATER CASE. JAMES F. MCELROY, Albany, N. Y., assignor to the Consolidated Car-Heating Company, same place. Filed Mar. 7, 1895. Serial No. 540,897. Term of patent 14 years.



Claim.—The design for an electric heater case as herein shown and described.

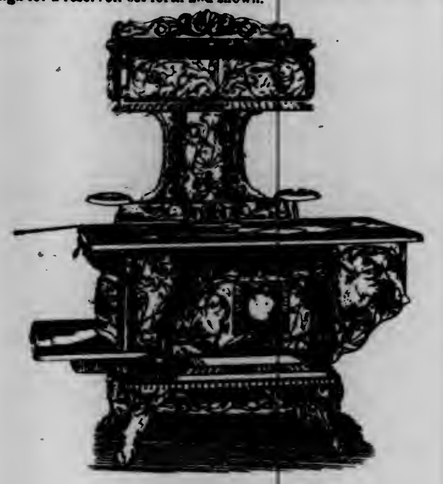
24,460. STOVE. ELLA A. BLAKSLEE, Rock Island, Ill. Filed May 2, 1895. Serial No. 547,838. Term of patent 7 years.

Claim.—1. The design for a stove herein set forth and shown.

2. In the design for a cook-stove herein set forth and shown, the design for an oven door set forth and shown.

3. In the design for a cook-stove herein set forth and shown, the design for standard and legs set forth and shown.

4. In the design for a cook-stove herein set forth and shown, the design for a reservoir set forth and shown.



24,461. MONUMENT. WILLIAM H. PERRY, Concord, N. H. Filed June 7, 1895. Serial No. 552,084. Term of patent 7 years.



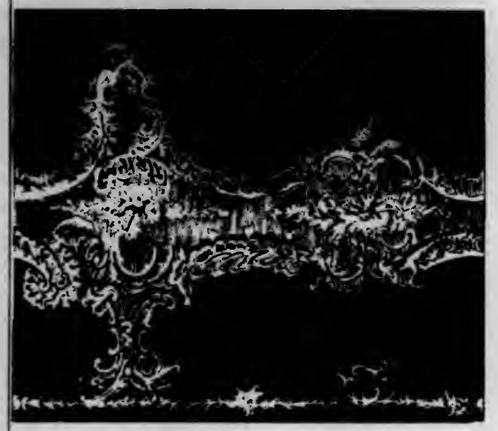
Claim.—The design for a monument, substantially as described and shown.

24,462. CARPET-BODY. ARTHUR MIDDLETON ROSE, Yonkers, assignor to the W. & J. Sloane, New York, N. Y. Filed June 1, 1895. Serial No. 551,411. Term of patent 3½ years.



Claim.—The design for a carpet body, substantially as shown.

24,463. CARPET-BORDER. ARTHUR MIDDLETON ROSE, Yonkers, assignor to the W. & J. Sloane, New York, N. Y. Filed June 1, 1895. Serial No. 551,410. Term of patent 3½ years.



Claim.—The design for a carpet border, substantially as shown.

TRADE-MARKS

REGISTERED JULY 2, 1895.

26,742. CERTAIN NAMED WEARING-APPAREL. UNION SPECIAL SEWING MACHINE COMPANY, Chicago, Ill. Filed June 6, 1895.

DOUBLE LOCK

Essential feature.—The words "DOUBLE LOCK." Used since September 15, 1893.

26,743. CERTAIN NAMED WEARING-APPAREL. UNION SPECIAL SEWING MACHINE COMPANY, Chicago, Ill. Filed June 6, 1895.



Essential feature.—The representation of two padlocks with the loops joined by a staple and the words "DOUBLE LOCKED." Used since September 15, 1893.

26,744. CERTAIN NAMED WEARING-APPAREL. UNION SPECIAL SEWING MACHINE COMPANY, Chicago, Ill. Filed June 6, 1895.



Essential feature.—The representation of two padlocks with the loops joined by a staple. Used since September 15, 1893.

26,745. BUTTON HOSE-SUPPORTERS. GEORGE FROST COMPANY, Boston, Mass. Filed May 8, 1895.

RUBBA

Essential feature.—The word "RUBBA." Used since February 5, 1895.

26,746. COTTON PIECE GOODS. KING PHILIP MILLS, Fall River, Mass. Filed June 8, 1895.

2611

Essential feature.—The number "2611." Used since March 1, 1895.

26,747. PAPER BAGS. UNION BAG AND PAPER COMPANY, Chicago, Ill. Filed July 10, 1894.



Essential feature.—A picture of an elephant. Used since November 1, 1893.

26,748. LEATHER BELTING. CHARLES A. SCHIEREN & Co., New York, N. Y. Filed Apr. 11, 1895.

PERFORATED

Essential feature.—The word "PERFORATED," surrounded by a link-chain border. Used since May 20, 1887.

26,749. BOTTLED LAGER-BEER. VALENTIN BLATZ BREWING COMPANY, Milwaukee, Wis. Filed May 31, 1895.



Essential feature.—The word "BLATZ," in heavy characteristic script, inscribed upon a triangle. Used since February 9, 1895.

26,750. LAGER-BEER. UNITED STATES BREWING COMPANY OF CHICAGO, Chicago, Ill. Filed Jan. 29, 1895.



Essential feature.—The representation of a shield bearing the word "BRANDS," and surmounted by a hop-blossom, superimposed upon fasces, inscribed with the letters "U. S." Used since June 1, 1889.

26,751. WHISKY. ANDREW MCNAB & Co., Leith, Scotland. Filed May 25, 1895.



Essential feature.—The representation of a galley and the words "GALLEY BRAND." Used since March 18, 1886.

26,752. GIN. NATIONAL DISTILLING COMPANY, Milwaukee, Wis. Filed May 31, 1895.

POSTHOORN

Essential feature.—The word "POSTHOORN." Used since February 15, 1894.

26,753. CHEWING-GUM. THE KOLA CHEMICAL COMPANY, Cleveland, Ohio. Filed May 2, 1895.



Essential feature.—The representation of a partly nude male figure engaged in the act of overturning columns by forcing them over with his hands. Used since March 1, 1895.

26,754. CANDY. JAMES ARCHIBALD MCCLURG, New York, N. Y. Filed May 20, 1895.

Plantation

Essential feature.—The word "PLANTATION." Used since January, 1881

26,755. CAKES AND CRACKERS. DAVID STEWART, Philadelphia, Pa. Filed May 14, 1895.

RISING SUN

Essential feature.—The words "RISING SUN." Used since April 21, 1895.

26,756. BAKING-POWDER. JOHN DALLAS GREGORY, Louisville, Ky. Filed May 31, 1895.



Essential feature.—An annular space inclosed by a circular band divided into segments by radiating lines, the segments containing names of different articles of food in the making of which the powder may be used. Used since August, 1893.

26,757. SAUSAGE-MEAT. NORTH PACKING AND PROVISION COMPANY, Boston, Mass. Filed Apr. 6, 1895.

WORLD'S FOOD FAIR



Essential feature.—The words "WORLD'S FOOD FAIR" and a pictorial representation of an exhibit of various buckets, bags, and packages of sausage-meat. Used since October 1, 1894.

26,758. MEDICAL PLASTERS. THE DR. D. P. ORDWAY PLASTER COMPANY, Camden, Me. Filed May 20, 1895.

D. P. Ordway

Essential feature.—A fac-simile of the signature of D. P. Ordway. Used since March 24, 1892.

26,759. MEDICINAL REMEDY FOR DYSPEPSIA. CHARLES E. LAVERY, Newton's Corners, N. Y. Filed May 31, 1895.

CUPEPSO



Essential feature.—The word "CUPEPSO," arranged in ornamental letters and associated with a branch of the cubeb plant. Used since March 11, 1895.

26,760. BLOOD-PURIFIER. LOUISA A. KREMBIEL, Dayton, Ohio Filed May 18, 1895.



WILHELM'S

Essential feature.—A bust portrait of King William and the word "WILHELM." Used since March, 1895.

26,761. COUGH BALSAM. VAN VLEET MANSFIELD DRUG COMPANY, Memphis, Tenn. Filed May 16, 1895.



Essential feature.—The word "HUNGARIAN" and the representation of a patient seated in a chair, a woman standing in front of the patient, and an angel appearing above, in clouds, and handing the bottle to the woman, whose hand is outstretched to receive it. Behind the woman is a small circular table, upon which are a cup and saucer. Used since 1848.

26,762. CERTAIN NAMED MEDICINAL REMEDIES. THE ZEM ZEM MEDICINE COMPANY, Fort Worth, Tex. Filed May 20, 1895.



Essential feature.—The word "ZEM-ZEM" and the representation of a well and a woman dispensing water therefrom to a procession of people passing around the well. Used since April 5, 1895.

26,763. POWDERED SUBSTANCE FOR RELIEF OF HEADACHE. EVERETT A. GRAVES, Boston, Mass. Filed Apr. 23, 1895.

MAQUEINA

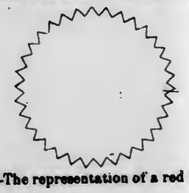
Essential feature.—The word "MAQUEINA." Used since June 1, 1891.

26,764. TOOTH-POWDER AND RECEPTACLES FOR SAME. JOHN SCOTT SANGER and RODERICK MCLEAN SANGER, Orange, N. J. Filed Jan. 14, 1895.

La Parfait

Essential feature.—The words "LA PARFAIT" and a scroll on which they are inscribed. Used since December 20, 1894.

26,765. CERTAIN NAMED TOILET PREPARATIONS AND MEDICINAL REMEDIES, SOAP, BLUING, AND MUCILAGE. THE RED SEAL REMEDY COMPANY, Rockland, Me. Filed May 9, 1895.



Essential feature.—The representation of a red seal. Used since September 15, 1893.

26,766. CLEANING AND DISINFECTING PREPARATION FOR MATERIALS AND FABRICS. LARIAT MANUFACTURING COMPANY, Jersey City, N. J., and Boston, Mass. Filed May 31, 1895.



Essential feature.—The compound word "CLEAN-IO" and the representation of an irregular portion of a floor with a bottle standing upright and bearing a label showing the said compound word "CLEAN-IO." Used since March 1, 1895.

26,767. WATER-BUG AND ROACH EXTERMINATOR. JOHN S. JUNO, Schenectady, N. Y. Filed May 11, 1895.

MRS. J'S. BUG EXIT

Essential feature.—The words "MRS. J'S. BUG EXIT." Used since December 5, 1894.

26,768. LACING-HOOKS, EYELETS, AND RIVETS. ELEAZER KEMPSHALL, Boston, Mass. Filed May 14, 1895.

FAST COLOR

Essential feature.—The words "FAST COLOR." Used since 1888.

26,769. METAL AND WIRE GOODS, CHAINS, CABLES, CONDUCTORS, HARD SPELTER, AND CERTAIN RUBBER GOODS. FELTEN & GUILLEAUME, Mülheim-on-the-Rhine, Germany. Filed Mar. 19, 1895.

NEPTUNE

Essential feature.—The word "NEPTUNE." Used since 1875.

26,770. CHIMNEYS, LANTERN-GLOBES, AND REFLECTORS. GILL BROTHERS & CO., Steubenville, Ohio. Filed May 18, 1895.

ACME

Essential feature.—The word "ACME." Used since January 1, 1875.

26,771. CHIMNEYS, LANTERN-GLOBES, AND REFLECTORS. GILL BROTHERS & CO., Steubenville, Ohio. Filed May 18, 1895.

SAMSON

Essential feature.—The word "SAMSON." Used since January 1, 1887.

26,772. CHIMNEYS, LANTERN-GLOBES, AND REFLECTORS. GILL BROTHERS & CO., Steubenville, Ohio. Filed May 18, 1895.

HERO

Essential feature.—The word "HERO." Used since March 1, 1893.

26,773. CHIMNEYS, LANTERN-GLOBES, AND REFLECTORS. GILL BROTHERS & CO., Steubenville, Ohio. Filed May 18, 1895.

ROYAL

Essential feature.—The word "ROYAL." Used since May 1, 1880.

26,774. SEWING-MACHINES AND PARTS THEREOF. UNION SPECIAL SEWING MACHINE COMPANY, Chicago, Ill. Filed Nov. 7, 1893.



Essential feature.—The representation of two padlocks with the loops joined by a staple. Used since September 15, 1893.

26,775. SEWING-MACHINES AND PARTS THEREOF. UNION SPECIAL SEWING MACHINE COMPANY, Chicago, Ill. Filed June 6, 1895.



Essential feature.—The representation of two padlocks with the loops joined by a staple and with the words "DOUBLE LOCKED." Used since September 15, 1893.

26,776. WRINGERS AND PARTS THEREOF. THE AMERICAN WRINGER COMPANY, Providence and Woonsocket, R. I., New York and Auburn, N. Y., and Erie, Pa. Filed May 31, 1895.

ROYAL

Essential feature.—The word "ROYAL." Used since April, 1892.

26,777. WRINGERS AND PARTS THEREOF. THE AMERICAN WRINGER COMPANY, Providence and Woonsocket, R. I., New York and Auburn, N. Y., and Erie, Pa. Filed May 31, 1895.

CONQUEROR

Essential feature.—The word "CONQUEROR." Used since October, 1879.

26,778. CLOTHES-WRINGERS. THE AMERICAN WRINGER COMPANY, Providence, R. I., New York and Auburn, N. Y., and Erie, Pa. Filed May 31, 1895.

KEYSTONE

Essential feature.—The word "KEYSTONE." Used since September, 1878.

26,779. DENTAL INSTRUMENTS. ROBERT BRUCE DONALDSON, Washington, D. C. Filed June 1, 1895.

DONALDSON

Essential feature.—The word "DONALDSON" crossed horizontally by a barbed needle. Used since May 1, 1895.

26,780. TELEPHONES AND TELEPHONIC INSTRUMENTS. THE PHOENIX TELEPHONE COMPANY, New York, N. Y. Filed Dec. 7, 1894.

Essential feature.—The words "PHOENIX TELEPHONE." Used since September 15, 1894.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

LEHIGH VALLEY RAILROAD COMPANY *v.* KEARNEY *et al.*

Decided May 27, 1895.

1. KEARNEY AND TRONSON—SPARK-ARRESTERS—REISSUE—INVALID.

Reissued Letters Patent to Kearney and Tronson, No. 5,184, dated December 10, 1872, for an improvement in spark-arresters, examined and *Held* to be invalid, because not for same invention as covered by original patent and anticipated by certain patents cited.

2. SAME—SAME—SAME—REJECTION BY PATENT OFFICE—RESTRICTED CLAIMS.

The rule is that where the applicant acquiesces in the rejection of claims by the Patent Office or in a construction which narrows or restricts them, and where the elements which go to make up the combination of the claim are mentioned specifically and by reference-letters, leaving no room for question as to what was intended, the claim must be confined and restricted to the particular device described. (*Knapp* v. *Morss*, 65 O. G., 1593; 150 U. S., 221.)

3. SAME—SAME—SAME—INFRINGEMENT.

Reissued Letters Patent to Kearney and Tronson, No. 5,184, dated December 10, 1872, for an improvement in spark-arresters, examined and *Held* not to be infringed, because not for a pioneer invention and the defendant did not use the specific features claimed in the patent.

APPEAL from the Circuit Court of the United States for the District of New Jersey.

STATEMENT OF THE CASE.

This was a suit in equity brought in the Circuit Court of the United States for the District of New Jersey by Francis Kearney and Mary F. Tronson, executrix of Luke F. Tronson, deceased, against the Lehigh Valley Railroad Company, for the alleged infringement of reissue Letters Patent of the United States No. 5,184, granted to Francis Kearney and Luke F. Tronson, December 10, 1872, for an improvement in spark-arresters, the original patent having been granted April 20, 1871, No. 113,528. Mary F. Tronson having died since the appeal was taken, Elwood C. Harris was substituted as administrator, etc.

The railroad company relied on these defenses: First, that the reissue was illegal and void because the original patent was not inoperative by reason of a defective or insufficient specification, or any error arising from inadvertence, accident, or mistake; that the scope of the patent had been enlarged so as to cover another and different invention from the original, and that new matter had been introduced into the specification; second, that the alleged invention covered by the reissue patent was not patentable since the change from prior forms of spark-arresters was not productive of any improved or materially different result; third, that the reissue patent was void for want of substantial novelty in the subject-matter thereof in view of the prior state of the art as shown in certain enumerated patents; fourth, non-infringement.

The case was heard on bill, answer and proofs, and resulted in a decree for injunction, and referring the case to a master to take an account of the gains and profits accruing to the company by reason of infringement and of the damages suffered by complainants thereby. The master subsequently reported, and a final decree was rendered against the defendant for the sum of $6,235.52, whereupon the case was brought to this Court on appeal. The opinion of the circuit court will be found reported. (32 Fed. Rep., 320.)

Mr. Robert J. Fisher and *Mr. Charles E. Mitchell* for the appellant.

Mr. Elwood C. Harris for the appellees.

Mr. Chief-Justice FULLER delivered the opinion of the Court.

Kearney and Tronson applied January 5, 1871, for Letters Patent for a certain improvement in spark-arresters for locomotives, which application was rejected on reference to patent to James L. Vauclain, August 20, 1861, and after various amendments was allowed, and the patent issued April 11, 1871. The following is the specification of the application and of the patent as allowed, the parts stricken out by amendment being in brackets and the parts inserted being in italics:

The improvement relates to effectually preventing hot coals passing from the chimneys of locomotives, [by a peculiar manner of] arresting them before they get to the chimney.

On the forward end of a locomotive-boiler is an extension, on the top of which is the chimney or smoke-stack. This receptacle of all that passes [from the fire] through the boiler flues to the smoke-stack is technically known as the smoke-head; the pipes from the boiler to the engine pass through the smoke-head, and the steam is exhausted thereinto from the cylinders. In the unoccupied space in this smoke-head we place a grate, [formed either with bars or of netting, or perforated plates; the shape is not material;] we make them circular, as being most convenient in ordinary cases. It is best there should be a clear space on all sides or around the grate] *the peculiar features of which are its perpendicular bars with fixed apertures sufficiently fine to stop the sparks that come from the fire, the size of the grate being determined by the area of opening needed for the regular draft and escape of smoke on kindling the fire, or when the engine is not in motion.*

Upon the top of the grating a tube or pipe is fitted, extending upward a short distance above the top of the smoke-head into the chimney. A space is left around the top of the pipe between the edges of the aperture in the top of the smoke-head and the pipe. This space is covered with netting or grating to prevent sparks or coals from passing through into the chimney.

In the accompanying drawings, Figure 1 is a view, in section, of the front of the smoke-head, with the gratings and pipe in position. Fig. 2 is a side view of the end of the boiler and of the smoke-head.

A is the boiler. B, the flues. C, the smoke-head. D, the grate. E, the pipe on the top of the grate. F is the netting closing the aperture between the pipe and the smoke head. G is the chimney or smoke-stack; and I, the exhaust-pipes from the engines.

It will be seen that nothing but smoke and gas can pass the top netting F, and that no coals or dangerous sparks can pass into the chimney, they being arrested by the grate D without having received any impulse from the exhaust-pipes. The strong draft created by the exhausting steam up the pipe into the chimney brings the coals and sparks to the grating, against which they strike and fall harmless into the space in the smoke-head. [The force of coals drawn from the fire when impelled by the exhaust steam up the chimney is such as to cut through netting, and even cast-iron over a quarter of an inch thick, in two or three mouths, in any description of spark-arresters located in the smoke-stack.]

By our arrangement the gases that are returned by contrivances that turn sparks downward in the smoke-stack, and sometimes force open the fire-door, have a clear passage to the atmosphere.

[What we claim and desire to secure is—

1. The grate D, pipe E, the net or grate F, as and for the purpose specified and shown.

2. Combining a spark-arrester with the smoke-head of a locomotive in the manner and for the purpose hereinabove set forth.]

We disclaim all draft-regulating contrivances, and also all gratings with lateral adjustable openings.

What we do claim as our improvement, and desire to secure, is—

The grate D with longitudinal bars, as and for the purposes specified and shown.

On June 7, 1872, Kearney and Tronson applied for a reissue, which was rejected on reference to James L. Vauclain, smoke-stack, August 20, 1861; Weideman, Major and Sample, spark-arrester, December 20, 1870; and James Smith, spark-arrester, March 7, 1871; and after amendment was allowed, and the reissue granted December 10, 1872.

The following is the specification of the application and of the reissue as allowed, the parts stricken out being bracketed and the parts inserted italicized:

Figure 1 is a vertical cross-section of the smoke-box of a locomotive with our improvements attached, and Fig. 2 is a vertical longitudinal section of the same, and a portion of the boiler.

The letters of reference indicate the same parts in both figures.

A represents a portion of the boiler of a locomotive. B is a space, commonly called the smoke-box. C C are the flues at the point where they enter the smoke-box; E is a pipe extending from within the base of the smoke-stack down into the smoke-box, and commonly termed a "petticoat-pipe;" D is a grating placed at the lower part of the petticoat-pipe to prevent any cinders or sparks passing into the same; F is a netting or grating placed around the top of the petticoat-pipe so as to cover the annular opening caused by the difference in size of the upper part of the petticoat-pipe and the bottom of the smoke-stack G. H is a piece of boiler-plate or sheet-iron placed at the bottom of the smoke-box in order to provide a flat surface for the grate D to rest upon, and is provided with holes, through which the exhaust-pipes I I pass.

Our improvements relate to providing locomotives with a suitable device for preventing live coals, cinders, sparks, and like substances, which may leave the furnace, from passing into or out of the smoke-stack, and to retain them in the smoke-box, from which place they may be removed at pleasure.

It has heretofore been the practice to cover the tops of smoke-stacks of locomotives with a wire netting or grating, for the purpose of preventing the escape of sparks and cinders; and, in some cases, an inverted metal cone is also placed in the center of such netting or grating to receive and break the force of the cinders as they are thrown against it.

In all of these contrivances the cinders receive so much force from the exhausting steam while on their way up the petticoat-pipe and smoke-stack that they very soon destroy the netting or grating placed at the top of the smoke-stack, and where a cone or other device is used to turn the cinders downward and partially protect the grating the gases are also retarded in their escape.

In order to overcome these difficulties, we place a grating, D, at or near the lower end of the petticoat-pipe E so as to surround the exhaust-pipes I I, and prevent any cinders or sparks entering the pipe E, while allowing free passage for the smoke and gases. We also place a grating or netting, F, around the top of the petticoat-pipe to cover the aperture left between it and the smoke-stack in order to arrest any sparks or cinders that may be drawn to that point.

[In the construction of the grating E we prefer to use vertical bars as shown in the drawings, but any style or kind of grating may be used that will prevent cinders or sparks from entering the petticoat-pipe, such as a perforated surface or a grating formed in any manner desired, and the apertures or perforations may be regulated in size and area of surface covered by the amount of opening required for the regular draft and escape of smoke on kindling the fire or when the engine is not in motion.] *We construct the grating D with straight vertical bars of iron, placed at small distances apart, but these spaces should be such, in the aggregate, as will be sufficient for the draft and escape of the smoke, on kindling the fire, or when the engine is not in motion.*

By this arrangement nothing but smoke and gas are allowed to pass the netting F, and no coals or dangerous sparks can pass out of the smoke-box into the petticoat-pipe, they being arrested by the grating D before having received any very great impulse by reason of the exhaust-pipes. The strong draft up the pipe E and smoke-stack brings the greatest portion of the cinders and sparks to the grating D, against which they strike and fall harmless to the bottom of the smoke-box, while the smoke and gases have free and uninterrupted egress through the petticoat-pipe and smoke-stack, they being perfectly clear; and the gratings D and F are not liable to be injured by the cinders striking against them, as they are arrested before having obtained the force they would have if allowed to pass up into the smoke-stack.

What we claim as our invention, and desire to secure by Letters Patent, is—

[1. Placing a grating in the smoke-box of a locomotive to prevent sparks or cinders entering the petticoat pipe, substantially as described and shown.

2. The combination of the grating D with the netting F, substantially as and for the purposes described and shown.]

1. *The grating D, with vertical bars placed at the foot of the spark or petticoat pipe E, in the manner and for the purpose substantially as described.*

2. *The combination of the grating D with the netting F, in the manner and for the purpose substantially as described.*

The drawings accompanying the reissue were, with some difference of lettering, practically the same as accompanied the original application, and were as follows:

Fig. 1.

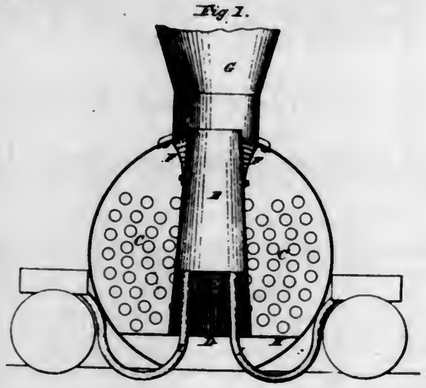
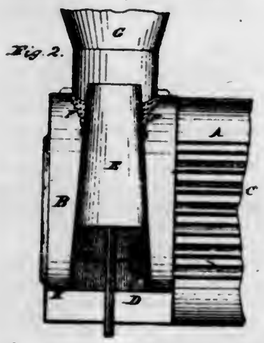


Fig. 2.



As to the original specification, it will be perceived that the application was for a patent spark-arrester placed in the smoke-box of a locomotive in contradistinction to a spark-arrester placed in the smoke-stack, and it was said that the spark-arrester might be—

formed either with bars or of netting, or perforated plates; the shape is not material; we make them circular, as being most convenient in ordinary cases;

but after the application was rejected on reference to the Vauclain patent of August 20, 1861, the specification was changed so as to disclaim the construction of Vauclain, and the claim of a combination of "a spark-arrester with the smoke-head of a locomotive" was altered to a claim for "the grate D with longitudinal bars," the specification being amended accordingly. The construction of the grate "either with bars or of netting, or perforated plates," was changed into "perpendicular bars with fixed apertures, sufficiently fine to stop the sparks which come from the fire," and the clause that "the force of coals drawn from the fire when impelled by the exhaust-steam up the chimney is such as to cut through netting, and even cast-iron over a quarter of an inch thick, in two or three months, in any description of spark-arresters located in the smoke-stack," was struck out. The claim, taken with the specification and drawings, covered the combination in the smoke-box of a locomotive-engine, of a petticoat-pipe with a spark-arresting grating composed of longitudinal

bars, and as no other form was described or illustrated and the grating was designated by the reference-letter, it followed that it must be of the form shown in the drawings, namely, a series of long bars placed vertically with long openings between them extending from the top to the bottom of the grating.

The rule is that where the applicant acquiesces in the rejection of claims by the Patent Office or in a construction which narrows or restricts them, and where the elements which go to make up the combination of the claim are mentioned specifically and by reference-letters, leaving no room for question as to what was intended, the claim must be confined and restricted to the particular device described. (*Knapp v. Morss*, 65 O. G., 1593; 150 U. S., 221.)

We find nothing in the specification to indicate that the use of the vertical bars was patentably different from the netting or perforated plates originally stated to be equivalent devices, and no new result produced by the use of those bars is pointed out. As to the specification of the reissue application, it will have been seen that what was omitted before because rejected by the Patent Office was restored, and it was again stated that the form of the grating was not material, but that any kind of apertures or perforations might be used, though a preference was expressed for the use of vertical bars as shown in the drawings. There was in the reissue a description of a piece of boiler-plate or sheet-iron at the bottom of the smoke-box providing a flat surface for the grate to rest on, and having holes for the passage of the exhaust-pipe, and this plate, lettered H in the reissued drawings, was not described in the original patent, although in the original drawings there was a faint line running across the smoke-box which might be said to be such plate, as the grate could not stand on nothing. The disclaimer was also omitted. The claims of the reissue patent as filed were:

1. Placing a grating in the smoke-box of a locomotive to prevent sparks or cinders entering the petticoat-pipe, substantially as described and shown.

2. The combination of the grating D with the netting F, substantially as and for the purposes described and shown.

These were substantially the same claims as were made on the original application and afterward abandoned. The reissue application having been rejected, these claims were struck out and two others substituted, the second of which was substantially the same as the original second reissue claim, and the first of which limited the invention to the specific form of grating shown; and the specification was amended by erasing the matter which provided that the form of grating was immaterial, and inserting the paragraph stating the construction of the grating D, with straight vertical bars of iron, placed at small distances apart.

We are of opinion that the patent was limited to a grating composed of vertical bars and the spaces between them, the bars being attached at their upper ends to the bottom of the petticoat-pipe.

Ordinarily the tubes for heating water in locomotive-boilers lead from the fire-box into the smoke-stack; and smoke, gases and cinders are discharged into the atmosphere through the smoke-stack, propelled by the draft created by the exhaust-steam. To arrest the discharge of sparks and cinders, locomotives were provided years before the date of this patent with various devices known as spark-arresters.

On the hearing, several forms of pipe into which the exhaust-steam is discharged through exhaust-nozzles were referred to as long in use; particularly that shown in the Kearney and Tronson patent, technically known as a petticoat-pipe, in which the pipe is greater in diameter at the bottom and an opening is left between the top of the pipe and the opening for the stack leading out of the top of the smoke-box, and guarded by a screen; and that shown in the May patent, where the pipe is a downward extension of the smoke-stack into the smoke-box, and there is no opening around the pipe at the point at which it passes through the top of the smoke-box. In the petticoat-pipe there are two points of entry into the stack, one at the top and one at the bottom of the pipe; in the other the point of entry is at the bottom.

The patents referred to by the Patent Office and others were introduced on behalf of defendant to show the state of the art at the time of the grant to Kearney and Tronson.

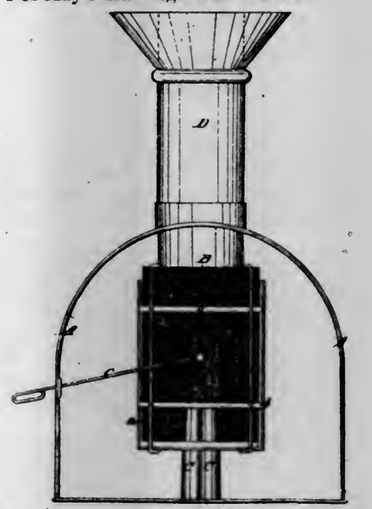
The patent granted to Hubbell, June 26, 1841, for a spark-arrester, No. 2,143, furnishes an example of a spark-arrester below the base of the smoke-stack, and this patent shows that in that year a cylinder of perforated metal or wire-gauze could be used for arresting sparks at the front end of a locomotive and within the smoke-box. The patent to May, July 28, 1857, No. 17,884, showed a spark-arrester in a locomotive smoke-box, the two exhaust-nozzles entering a drum made of perforated plates of metal or wire-gauze. This drum, at the upper end, is attached to a downward prolongation of the stack into the smoke-box. May's claim was:

My arrangement of the spark-arrester within the smoke-box of the locomotive steam boiler so that the stack or chimney shall be prolonged down into the smoke-box and made of wire-gauze or perforated plates, and otherwise so constructed as specified that the entire track of the smoke shall be through the gauze or perforated plates.

He sets forth—

the advantages of making the spark-arrester within the smoke-box instead of placing it within the chimney or in a chamber arranged above the smoke-box, and made to communicate therewith by a flue.

Fig. 1 of May's drawings is as follows:



The patent of Vauclain of August 20, 1861, No.

33,114, has a similar cage or grating to that of May's patent and the same arrangement of downward extension of stack and exhaust-nozzles, but there is a screened opening at the top of the cage for the passage of smoke and gases, and the perforations are horizontal. These apertures, as stated in the specification, may consist chiefly or wholly of latitudinal slots, and the drawings show that the perforations are quite elongated.

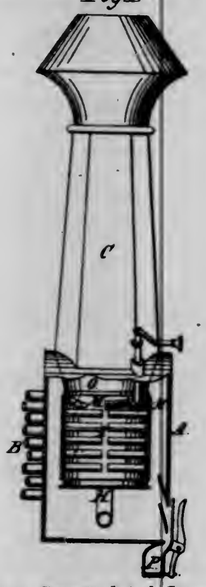
In the opinion of the circuit court it is said that the apertures appear, from the drawings, to be cut out of sheet-iron, and that such a screen—

could not be said to be made of iron bars, which are the thing patented to the plaintiffs, but it approaches very near to it. The slots and iron strips are also placed horizontally, while the plaintiffs' patent is for a grate with vertical bars.

But there is no suggestion in the patent that the perforated screen is made of sheet metal. Nothing is said in the specification as to material, and the drawings do not impress us as affording a satisfactory basis for the conclusion that the material was sheet rather than cast iron.

Fig. 1 of this patent is as follows:

Fig 1.



In the patent to Sweet, dated June 23, 1863, No 38,992, the exhaust-nozzles enter a hollow cylinder made of wire-gauze, and the screens are described as being either in the form of a cylinder or the frustum of a cone.

In Smith's patent of August 16, 1870, No. 106,515, a device of perforated metal is used. This patent shows the exhaust-nozzles as entering the frustum of a cone formed of perforated metal which at the top unites with a downward extension of the chimney, the perforations extending up to the smoke-arch, and outside of the spark-arrester is a lift-pipe which may be made adjustable.

The patent to Weideman, Major and Sample, of December 20, 1870, No. 110,315, shows a spark-arrester of finely-perforated metal, a petticoat-pipe, and what is called a draft-pipe.

Smith's patent of March 7, 1871, No. 112,506, describes a spark-arrester consisting of a grated tubular casing made by a continuous bar of wrought-iron coiled spirally in horizontal coils, or of cast-iron rings, one above the other, lying horizontally and strung to upright rods to keep them a proper distance apart—

or, the grating may be made in any other desired manner, providing it presents rigid bars for the hard ignited cinders to strike against, and providing there are openings sufficient in number and size to permit the free escape of lighter particles with the products of combustion.

This was held by the circuit court to closely approach the invention patented by the plaintiff, the only difference being that the coiled wrought-iron bar and the cast-iron bars or rings were horizontally arranged, while plaintiff's patent required the bars to be vertical, but the circuit court was of opinion that this patent should be laid out of view because plaintiff's application was sworn to December 31, 1870, and filed in the Patent Office January 5, 1871, and the time of the filing of Smith's application was not shown. It should, perhaps, be noted that as Kearney and Tronson modified their claims on the reissue upon the citation of this patent with those of Vauclain, and Weideman, Major and Sample, they apparently conceded the seniority of Smith's invention.

These patents show that, prior to Kearney and Tronson's invention, spark-arresters had long been placed at the base of the smoke-stack in connection with a petticoat-pipe or a downward extension of the stack; that the advantage of placing a spark-arrester in the smoke-box instead of in the smoke-stack was recognized as early as the May patent, July 25, 1857; that the exhaust-nozzles had been led into the base of such arresters, and that such arresters had been made from wire-gauze and from perforated metal, the apertures producing in one instance horizontal gratings.

The spark-arrester with vertical slots or perforations, used by defendant, until discontinued upon the commencement of this suit, was devised by its own employés and was used in ignorance of complainants' patent as matter of fact and taken out upon notice of the claim for infringement. This spark-arrester was originally constructed under the patent to Alexander Mitchell, No. 178,181, May 30, 1876, and was provided with round perforations, afterward changed so that the perforations were elongated.

What is claimed is that these apertures are an infringement because they are upright, although conceded that if rectangular they would not infringe.

The defendant's expert testified, correctly as we think, in regard to this device as compared with that described and claimed in the reissue patent, that in defendant's structure there is no such grating as the grating D, with vertical bars,

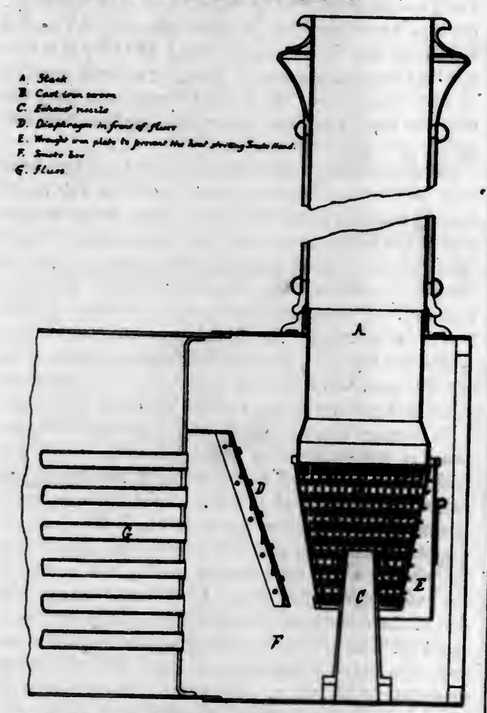
but there is, on the other hand, a grating made up of short vertical slots, only about three and a quarter inches in length, which none of them run the entire height, or even half the height of the spark-arrester. It takes five of the short slots of the defendant's structure, with the accompanying cross-pieces, to make up the height of the defendant's device. Neither in the defendant's device is the grating made of vertical bars, but it is a casting, having slots in it, which slots, it is true, are longer vertically than they are horizontally, but which slots are not spaces formed between and by vertical bars arranged close together.

As to the second element in the combination of the first claim, the petticoat-pipe, it is the function of that pipe to produce—

two lines of draft from the smoke-box, one through the grating

D and up through the petticoat-pipe, and the other from the smoke-box around the outer and upper edge of the petticoat-pipe, and as shown in complainants' patent through the grating F.

The device is in substance as follows:



And the petticoat-pipe within the smoke-box is not present in defendant's structure.

In respect of the second claim of the patent, which relates to the netting F over the opening at the upper end of the petticoat-pipe, both Kearney and his expert admit that there is no infringement, as there is no such opening and no such netting in defendant's device. Something was said about complainants' grating being of cast metal, but there is nothing on this subject in complainants' patent, and they were not pioneer inventors entitled to invoke a broad range of equivalents.

We have already seen that Kearney and Tronson, who were experienced and practical railroad men, declared in their original applications for the patent and for the reissue, that the shape of their grating was not material, and that it might be made either from bars or netting or perforated plates; and if their particular construction of grate with the long vertical bars was a mere equivalent for the grates shown in the prior patents, then it would not be a patentable invention, but a mere change of form.

And we do not understand the specifications to set up any new or improved result by the grating composed of vertical bars, (although the advantage resulting from placing the spark-arrester in the smoke-box, which was old, was shown,) nor do we find from the evidence that the change of form constituted any advance in the art.

It appears that a spark-arrester such as Kearney and Tronson's was used upon a few locomotives on the Morris & Essex Railroad, of which Kearney and Tronson were employés, Tronson being the master mechanic, and that the use was discontinued after a year or so; that it was used experimentally on a locomotive on the Central Railroad of New Jersey, and on one of the Troy & Whitehall Railroads; but a careful consideration of the evidence, which we deem it unnecessary to review in detail, convinces us that Kearney and Tronson originally correctly averred that bars, or perforated plates, or wire-nettings, were equivalent devices, and that a grating with vertical bars was not productive of any better result than was accomplished by the prior devices.

Upon the whole, therefore, we conclude that the Kearney and Tronson reissue is void for want of patentable novelty.

Decree reversed and cause remanded with a direction to dismiss the bill.

U. S. Circuit Court—Northern District of Ohio, Eastern Division.

AMERICAN FIBRE CHAMOIS COMPANY *v.* WILLIAMSON, Ex'r, *et al.* AMERICAN FIBRE CHAMOIS COMPANY *v.* BUCKSKIN FIBRE COMPANY *et al.*

Decided June 5, 1895.

1. MCLAUCHLIN—PROCESS OF SOFTENING FIBROUS SHEETS—VOID.
   Letters Patent No. 511,789, to John C. McLauchlin, for an improvement in processes of softening fibrous sheets, which consists in first moistening the sheets with a solution of gelatine and then pounding said sheets while in a moist condition, *Held* not to have gone out of the domain of common mechanical knowledge and to be absolutely void upon its face.
2. SCOTT—MANUFACTURE OF FLEXIBLE PAPER—VOID.
   Letters Patent No. 216,108, to T. Seymour Scott, for an improvement in manufacture of flexible paper, which consists in passing Manila or kindred paper through breaking-rolls and subsequently through calender-rolls and in the strong flexible paper produced thereby, *Held* not to have gone out of the domain of common mechanical knowledge and to be absolutely void upon its face.
3. DEMURRER.
   When the patent sued on is void on its face, the right of the court to dispose of the case on demurrer is well settled; but the right should not be exercised unless the case is plain and the conduct of the parties warrant it. (*West* v. *Rae et al.*, 33 Fed. Rep., 45; *Studebaker Bros. Mfg. Co.* v. *Illinois Iron & Bolt Co.*, 42 Fed. Rep, 51.)

RICKS, *J.*:

These are two bills filed by the complainant to sustain the validity of Letters Patent No. 511,789, dated January 2, 1894, issued to John C. McLauchlin. They were filed one in March and the other in April last. Answers were filed to the same denying the validity of the patent and denying infringement. The defendants sought to speed these cases as rapidly as possible and waived the usual time for answer and served the complainant with notice to file their replication or they would move to dismiss the bills for want of prosecution. Thereupon the complainant asked leave to dismiss the bills without prejudice and at the same time filed two new bills against the same defendants, the new bills differing from the old ones in the respect that Letters Patent No. 216,108, dated June 3, 1879, issued to T. Seymour Scott, for an improvement in the manufacture of flexible paper, had

since the filing of the former bills been assigned to the complainant, and the new bills were therefore based upon both the McLauchlin and the Scott patents.

The defendants, in view of the action of the plaintiff in asking for leave to dismiss its original bills without prejudice, prayed leave of the court to withdraw their answers to the original bills and filed a demurrer to both the original and new bills upon the ground that the patents were void upon their face for want of novelty and utility.

Counsel for the complainant contends that this is a very summary and new method of disposing of patent cases and insist upon the court's overruling the demurrers and allowing the cases to take their usual course, in order that the rights of the plaintiff may be determined after evidence has been filed and the usual time for preparation given.

In the first place the right of the court to dispose of such cases upon demurrer seems to be well settled. In the case of *West* v. *Rae et al.* (33 Fed. Rep., 45,) Judge Blodgett said:

> In the light of these authorities, I cannot see why in a suit for infringement of a patent so clearly and baldly void as this, the court ought not to save the defendant from the vexation and expense of a trial upon proofs by sustaining a demurrer to the bill.
>
> If, after a case reaches the Supreme Court, that Court can, from its common knowledge, without reference to the pleadings and proofs, but merely from an examination of the patent itself, say that the patent is void, I see no reason why the court of original jurisdiction cannot do the same. The demurrer is therefore sustained and the bill dismissed for want of equity.

In *Studebaker Bros. Mfg. Co.* v. *Illinois Iron & Bolt Co.* (42 Fed. Rep., 51) Judge Blodgett again says:

> This is a bill in equity charging defendant with the infringement of Patent No. 256,744, granted by the United States to Joshua Sandage, April 18, 1882, for a "wagon-axle skein," and praying an accounting. Defendants have demurred to the bill on the ground that the patent in question on its face shows no patentable novelty in the device covered by the specification and claims.

The court, after comparing the patented device with the state of the art at the time the patent was granted, reached the conclusion that the patentee "had not gone out of the domain of common mechanical knowledge," and sustained the demurrer in the following language:

> Therefore, while I am averse to sustaining demurrers in this class of cases, which shall, in effect, say that the Patent Office has issued a patent which is obviously, and from common knowledge, void for want of invention, yet, when a case is as plain as this seems to me to be, I think it the duty of the court to do so, and thus save the parties the extraordinary expenses and delay which almost uniformly attend patent litigation. The demurrer is sustained and the bill dismissed for want of equity.

This practice is further clearly sustained by a decision of the Supreme Court of April 30, 1895, the title of which is not now before me. In considering the case the Supreme Court ignored the record of the court below entirely and decided the case upon the faces of the patents, holding that the patents were in valid for want of patentable invention. The case came from the Circuit Court of the United States for the Northern District of California. The Supreme Court said:

> For the reasons above given, we think all these patents are invalid, and that the demurrer to the bill should have been sustained in the court below.

I agree fully with Judge Blodgett that patent cases should not be disposed of upon demurrers to the bill, for the reason that the patents are void upon their face unless the cases are very plain and the conduct of the parties in litigation shows that they are brought for the purpose of harassing those who are simply dealers and not manufacturers. The process covered by the patent sued upon is for making a flexible paper lining, a large demand for which has lately grown up out of the new style of making ladies' dresses. The great demand will probably be of short duration, because when the style of dress changes the use of the paper will be dispensed with. It is for this reason that the complainant is bringing a large number of suits throughout the United States, and they are directed mainly against dealers who are handling this article as a matter of trade.

Some years ago, when the inventor of a patent hay-fork instituted a large number of suits in this court against farmers who were mere users, Judge Baxter stayed the proceedings until the complainant should have time to proceed against the manufacturer, it appearing by affidavit that the manufacturer was perfectly solvent and within the reach of a court of competent jurisdiction. He did this upon the theory that, while the statute gave the complainant the right to sue the user, when suits of that kind were instituted in great numbers it was evident that the complainant's purpose was to force the defendants to settle because of the expenses of making a defense. If the patent was valid and the users were infringers, the judge contended that the suit ought to be brought against the manufacturer, who had both the means to respond in damages and the means and opportunity for making a full defense and testing the merits of the patent upon a fair trial. In this case the application of the complainant to dismiss the suits first instituted without prejudice and immediately filing the new bills shows a disposition to annoy the defendants by vexatious litigation. The bills in the original suits could have been amended or supplemental bills could have been filed. The defendants' desire to speed the cases, as shown by the course of their defense, would have waived any possible ground of demurrer and the cases would have been brought to a speedy hearing upon the merits.

But it is obvious to my mind that these patents are absolutely void. The process covered by the patent is old and was well known and described by scientific works long before the complainant's patent was applied for. For example, in the *Polytechnic Review*, published as early as 1877, a process for making paper to be used as a substitute for cloth for umbrellas, rain-coats, and even for dress-cloth, was recognized. The process is described as follows:

> This cloth is generally made of paper alone, by beating it to make it soft, and impregnating it with gummy substances to make it more resistant to the action of water.

Again, in the Encyclopædia of Chemistry, published in 1879, the mode of making paper cloth, warranted to wash, as made in Japan is described. The paper is made out of vegetable substance, and it describes a process very similar to that set forth in the patent.

Knight's American Mechanical Dictionary, published in 1875, by illustration and description shows machines used for rolling leather similar to the machine used in rolling the paper-pulp or Manila paper as described in the complainant's patent.

There is no patent claimed on the substance used in making this flexible paper; there is no patent claimed on the machinery used for rolling the pulp or moistened paper; there is no patent claimed for using the machine and paper together. The patents have not gone out of the domain of common mechanical knowledge, which is within the judicial knowledge of the court, and I think, therefore, they are absolutely void upon their face.

The demurrer to the four bills will be sustained and the suits dismissed.

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OF THE
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[BY AUTHORITY OF CONGRESS.]

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., June 28, 1895.

SIR: The Secretary of the Interior has ordered that Hiram Sweet, of Afton, Ohio, be not recognized after this date as attorney or agent in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,

E. WOMACK,
Chief Clerk.

The Commissioner of Patents.

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The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below:

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Brazil.	Portugal.
Costa Rica.	Russia.
Denmark.	San Salvador.
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Mexico.	

Applications filed in this Office presenting oaths not executed in compliance with this order will be treated as incomplete.

Indexes to Periodicals.

The following journals containing indexes to periodical literature may be found on file in the reading room of the scientific library:

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Abstracts of all the principal articles on "Physics" published in the American and Continental journals since January 1, 1895, will be found in the *Proceedings of the Physical Society of London.*

Electrical World, New York, a weekly digest of electrical articles.

Journal of the Association of Engineering Societies, Chicago, a monthly synoptical index of civil-engineering literature, mostly American.

Engineering Magazine, New York, a monthly title-index of engineering articles in the English language only.

Publishers' Catalogues.

This Office would be pleased to receive from manufacturers and publishers such catalogues, circulars, price-lists, or other advertisements relating to the sciences and mechanical arts as are published by them for gratuitous distribution; but notice is hereby given such manufacturers or dealers who feel disposed to send their publications that not less than three copies should be forwarded in order that the subjects may be properly indexed, classified, and subclassified in the Scientific Library for convenient and ready reference.

Issue of July 9, 1895.

Patents	390	No. 542,227 to No. 542,616, inclusive.
Designs	2	No. 24,464 to No. 24,465, inclusive.
Trade-Marks	28	No. 26,781 to No. 26,808, inclusive.
Labels	None.	
Prints	None.	
Reissues	1	No. 11,503.
Total issue	421	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Prints.	States.	Patents and Designs.	Trade-Marks and Prints.
Alabama			New Hampshire		1
Arizona Territory	1		New Jersey	11	1
Arkansas	1		New Mexico Territ'y		
California	11		New York	60	4
Colorado	2		North Carolina	1	
Connecticut	16	1	North Dakota	1	
Delaware	1		Ohio	29	
District of Columbia	3	1	Oklahoma Territory		
Florida	1	1	Oregon		
Georgia	3		Pennsylvania	45	7
Idaho	1		Rhode Island	1	1
Illinois	42	1	South Carolina		
Indian Territory			South Dakota	2	
Indiana	8		Tennessee	1	
Iowa	6		Texas	5	
Kansas	3		Utah Territory	1	
Kentucky	1		Vermont	2	
Louisiana			Virginia	2	
Maine	3		Washington	3	
Maryland	11		West Virginia	4	
Massachusetts	29	3	Wisconsin	11	
Michigan	15		Wyoming		
Minnesota	6	1	U. S. Army		
Mississippi			U. S. Navy		
Missouri	18	1	Total to citizens of the United States	367	23
Montana	2				
Nebraska	4				
Nevada					

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Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
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Barbadoes			Newfoundland		
Belgium			New South Wales	1	
Bermuda			New Zealand		
Brazil			Norway		
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Chile, Republic of			Queensland		
Colombia			Roumania		
Cuba			Russia		
Denmark			Scotland	2	
Ecuador			South Australia		
Egypt			Spain		
England	8	3	Sweden	1	
France	1		Switzerland		
Germany	3	2	Turkey		
Guatemala			Victoria	1	
Hawaii	1		West Australia		
India					
Ireland	2		Total to citizens of foreign countries	25	5
Italy					
Japan					

APPLICATIONS UNDER EXAMINATION.

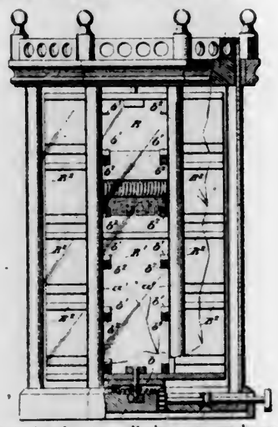
Condition at Close of Business July 2, 1895.

Division No.	Subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears.—Under one month.			
15	Plastics, Paper-Making, Paving Glass, Fuel, Bread-Making, etc	June 3	July 1	89
11	Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery	June 3	June 29	128
8	Furniture, Beds, Store Furniture, etc.	June 8	June 27	136
2	Farm Stock, Products, etc	June 3	June 27	156
4	Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	June 12	June 26	81
12	Mechanical Engineering, Store-Service, etc.	June 21	June 25	81
29	Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	June 5	June 25	109
31	Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	June 4	June 25	64
14	Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	June 3	June 29	71
17	Paper-Manufactures and Printing	June 3	June 25	106
21	Textiles, etc.	June 7	June 24	121
18	Steam-Engineering, etc	June 6	June 24	85
3	Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	June 5	June 24	73
5	Fine Arts, Stationery, Book-Binding, Music, etc.	June 4	June 24	148
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13	Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	June 8	June 22	86
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1	Tillage and Fences	June 6	June 5	293
24	Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	June 3	June 3	108
30	Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, Optics.	June 3	June 3	222
9	Hydraulics, Fire-Extinguishers, etc.	June 3	June 3	369
34	Railway Brakes, Draft Appliances, and Rolling-Stock.	June 6	May 27	108
	Between one and two months.			
7	Harvesters, Games and Toys, and Velocipedes.	May 27	June 12	341
	Total number of applications awaiting action			4,927
	Under one month in arrears.			
	Designs	June 24	June 24	87
	Trade-Marks	June 28	June 29	14

PATENTS

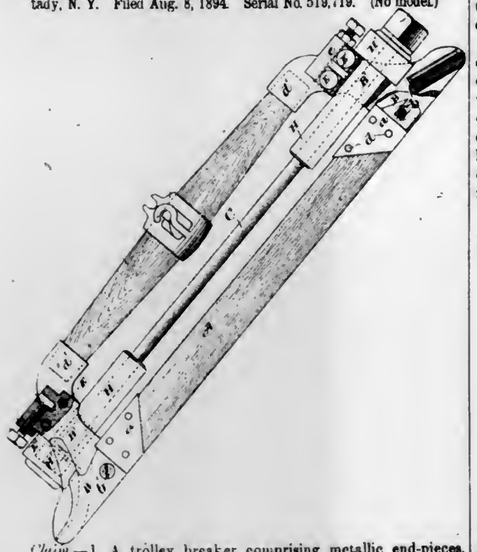
GRANTED JULY 9, 1895.

542,227. SHOW-CASE. CHARLES J. BACKHAUS, La Porte, Ind. Filed Feb. 2, 1895. Serial No. 537,090. (No model.)



Claim.—An inclosed rotary display case made up of top and bottom pieces which are connected to each other by vertical partitions, the rear ends of each pair of partitions abutting to provide spaces for horizontal shelves B^3 and vertical spaces the walls of which are parallel, the inner sides of the parallel walls having box supports b' which project therefrom, and above said box supports b' studs or pins b^3 with which the lids of the boxes engage to hold them rearwardly inclined, the spaces with the box-supports communicating with a central space which is common to each box receiving space, substantially as shown and for the purpose set forth.

542,228. TROLLEY-BREAKER. HENRY P. BALL and CHARLES A. LIEB, New York, assignors to the General Electric Company, Schenectady, N. Y. Filed Aug. 8, 1894. Serial No. 519,719. (No model.)



Claim.—1. A trolley breaker comprising metallic end-pieces, compression and extension members having their ends located in the metallic end-pieces, and a middle brace or bar being longitudinally adjustable and adapted to compress the parts in places.

2. As a new article of manufacture, a trolley breaker or line section insulator for electric conductors, consisting of metallic end pieces secured together by a central bar C of metal, insulated from such pieces and having an upper and lower bar of wood adapted to act as compression and extension members respectively, and means, substantially as described, for permitting the end pieces to move outwardly on the ends of the extension member and yet retain the latter in place.

3. A trolley breaker consisting of metallic end pieces and three longitudinal bars arranged in a vertical plane and spaced from one another, the top bar being a compression member and the lowest bar an extension member, said bars having their ends connected to and insulated from the metallic end pieces, and the lowest bar being removable from the metallic end-pieces without disturbing the other parts of the trolley breaker.

4. A trolley breaker consisting of metallic end pieces, three longitudinal bars, one of the outer ones of which is a compression member, and the other an extension member, means for permitting the end pieces to move outwardly on the ends of the extension member and yet retain the latter in place, the said three longitudinal bars being spaced from one another and having their ends connected to and insulated from the metallic end pieces, and means for adjusting the middle bar longitudinally.

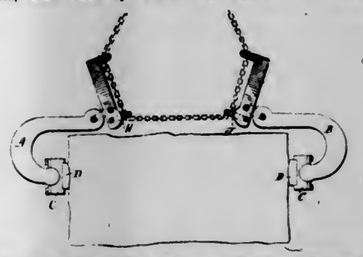
5. As a new article of manufacture, a trolley breaker comprising an upper bar D of wood, a span wire attaching member D' thereon, a central bar C of metal, a lower bar A of wood having a metallic envelope a upon its ends, and metallic end pieces B, B; the central bar being insulated from the metallic end pieces and provided with adjustments for its length, whereby the insulator may be taken down or assembled without removing it from its place.

6. In a trolley breaker or line section insulator, a lower bar as A, of an insulating material, provided with metallic envelopes a having slotted tongues a', the metallic envelopes being formed in a single piece.

7. In a trolley section insulator, the combination with the metallic end pieces B having a socket in their inner face, of the bar A of insulating material having the metallic envelopes a at its ends, with the open-ended slotted projection a' engaging and secured in the sockets in the pieces B.

8. A trolley section insulator composed of the following parts; end metallic pieces to receive the trolley and feed wires, having sockets on their lower inner face, a bar of insulating material sheathed with metal at its ends and detachably secured in the sockets of the end pieces, an intermediate metallic rod detachably secured to the end pieces and insulated therefrom, and a removable top-bar of insulating material carrying a metallic span wire bracket, the end pieces of the insulator being provided with plates and bolts for clamping the feed wires thereto.

542,229. LIFTING-DOG FOR CRANES. FRANK BEATTIE, Leete Island, Conn. Filed Sept. 7, 1894. Serial No. 522,315. (Model.)

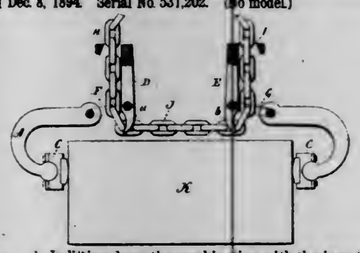


Claim.—1. In lifting dogs for cranes, the combination with the jaws thereof, of two arms pivotally connected with the upper ends of said jaws, said arms constructed with eyes at their upper ends, and

provided with links at their lower ends, below the point of connection to the said jaws, and a chain connecting said links and eyes and adapted to be engaged by the lifting mechanism, substantially as and for the purpose described.

2. The herein described lifting dogs for cranes, consisting of two jaws, each provided with a face for engagement with the article to be lifted, arms secured to the upper ends of said jaws, said arms constructed with eyes at their upper ends, and a chain secured to the lower end of one arm, below its point of connection to the jaw, through a link secured to the lower end of the second arm, upward through the eye of said second arm and into connection with the eye of the first arm, substantially as described.

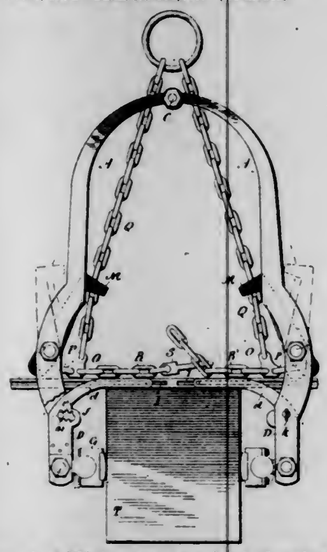
542,230. LIFTING-DOG. FRANK BEATTIE, Leete Island, Conn. Filed Dec. 8, 1894. Serial No. 531,202. (No model.)



Claim.—1. In lifting dogs, the combination with the jaws thereof, of two arms, links connecting each pair of jaws and arms, the upper ends of said arms constructed with outwardly projecting eyes, and with fingers at their lower ends below their point of connection with said jaws, a chain adapted to be engaged by the said fingers and extending upward through said eyes, substantially as described.

2. In lifting dogs, the combination with the jaws thereof, of two arms, links connecting each pair of jaws and arms, said arms constructed with fingers at their lower ends below the point of connection with said jaws, and a lifting chain adapted to be engaged by said fingers, substantially as described.

542,231. LIFTING-DOG. FRANK BEATTIE, Leete Island, Conn. Filed Dec. 8, 1894. Serial No. 531,203. (No model.)

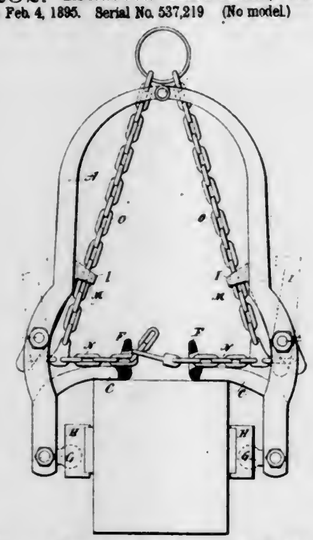


Claim.—1. A lifting apparatus consisting of a pair of tongs, the legs of which are vertically divided, jaws hung in the lower ends of said legs, and provided with bearing-blocks, the upper ends of said jaws bifurcated, a slotted transverse rod with which the said upper ends of the jaws are connected, arms hung in said legs above the said rod, connections between the lower ends of said arms, and a lifting chain in connection with the upper ends of said arms, and whereby they are drawn together in the raising operation, substantially as described.

2. A lifting apparatus consisting of a pair of tongs, the legs of which are vertically divided, jaws hung in the lower ends of said legs, and provided with bearing-blocks, the upper ends of said jaws bifurcated, a slotted transverse rod, with which the said upper ends of the jaws are connected, arms hung in said legs above said rod, bell-crank levers connected with the lower ends of said arms and with the lifting chain which extends upward through eyes at the upper ends of said arms, said bell-crank levers also connected by an adjustable chain, substantially as described.

3. A lifting apparatus consisting of a pair of tongs, the legs of which are vertically divided, jaws hung in the lower ends of said legs, and provided with bearing-blocks, the upper ends of said jaws formed from two plates connected at their outer ends, a slotted transverse rod with which the said upper ends of the jaws are connected, each of said plates constructed with radial slots crossed by a segmental slot, the legs of the tongs formed with slots, there being recesses corresponding to said radial slots in the jaws, spring-pins extending through said slots, with wings to engage therewith, arms hung in said legs above the said rod, connections between the lower ends of said arms, and a lifting chain in connection with said arms, and whereby they are drawn together in the raising operation, substantially as described.

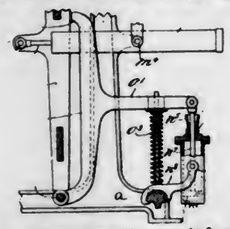
542,232. LIFTING-DOG. FRANK BEATTIE, Leete Island, Conn. Filed Feb. 4, 1895. Serial No. 537,219 (No model.)



Claim.—1. A lifting apparatus consisting of a pair of tongs, the legs of which are vertically divided, jaws hung in the lower ends of said legs and provided with bearing-blocks, the upper ends of said jaws formed with eyes, arms hung in said legs above said jaws, tension chains passing through said eyes and connecting the lower ends of said arms, and a lifting chain connected with the tension chains and in engagement with the upper ends of said arms, and whereby said arms are drawn together in the raising operation, substantially as described.

2. The combination in a lifting apparatus comprising a pair of jaws, two swinging arms connected with said jaws and lifting chains in engagement with said arms for raising them and said jaws, of bearing blocks secured to the lower ends of said jaws by universal joints, which joints are below the transverse centers of the said blocks, substantially as described.

542,233. IRONING-MACHINE. GOTTLOB BINDER, Philadelphia, Pa. Filed Jan. 17, 1895. Serial No. 535,294. (No model.)



Claim.—1. In an ironing machine, a main frame, a table, a traveler iron-frame, a coiled spring, an operating rod connected with said iron frame and with said spring, a buffer pivoted to said main-frame and normally engaging said iron-frame, said buffer provided with an arm, a liquid check connected with the arm of said buffer and a spring interposed between said buffer-arm and main-frame, substantially as and for the purposes described.

2. In an ironing machine, a main-frame, a traveler iron-frame, a buffer pivoted to said main-frame and engaging said traveler frame, said buffer provided with an arm, a liquid check pivoted to a bracket of said main-frame and the piston-rod thereof connected with the arm of said buffer and a spring interposed between said arm and bracket, substantially as and for the purposes described.

3. In an ironing machine, a reciprocating frame held under spring tension, means for actuating the same, a buffer pivoted to the main-frame and normally engaging said reciprocating frame, said buffer provided with an arm, a spring controlled liquid cylinder check pivotally connected with said main frame and the piston-rod thereof pivotally connected with the arm of said buffer, substantially as and for the purposes described.

4. In an ironing machine, a main-frame, a traveler-frame, a buffer pivoted to the main-frame and engaging said traveler-frame, said buffer provided with a projecting arm, a liquid check, comprising a cylinder rifled or provided with spiral channels extending from about the top to a point some distance from the bottom thereof, a rod having a piston with an oblique orifice or vent therein, a packing box mounted in a funnel-shaped cap connected with the top of said cylinder, and a spring interposed between said buffer-arm and main-frame, substantially as and for the purposes described.

5. In an ironing machine, a main-frame, a table, a traveler iron frame, hollow casings provided with internal springs having an operating rod connected therewith for compressing the same, one end of said rod being connected with the traveler iron frame, a buffer provided with an arm having a liquid check connected therewith and a spring interposed between said arm and main-frame, substantially as and for the purposes described.

6. In an ironing machine, a main-frame, a table, an iron, a traveler-frame, a pivotally supported liquid cylinder check having internal channels, a rod having a perforated piston movable in said cylinder by the movement of said traveler-frame, said cylinder provided with a removable cap having a funnel-shaped end, a buffer pivoted to said main-frame and engaging said traveler-frame, said buffer having an arm engaged by said piston-rod and a spring interposed between said buffer-arm and main-frame, substantially as and for the purposes described.

7. An ironing machine provided with a main-frame, a traveler frame pivoted therein, a movable iron carried by said traveler frame, a hollow casing pivoted at about its center to the main frame and having an oscillatory movement therein, a coiled spring mounted in said casing, a rod secured at one end to said spring and pivoted at the other end to the traveler-frame, a buffer, a liquid check, the cylinder of which is pivoted in the main frame, and a piston rod pivotally connected with said buffer, and a spring interposed between said buffer and main-frame, substantially as and for the purposes described.

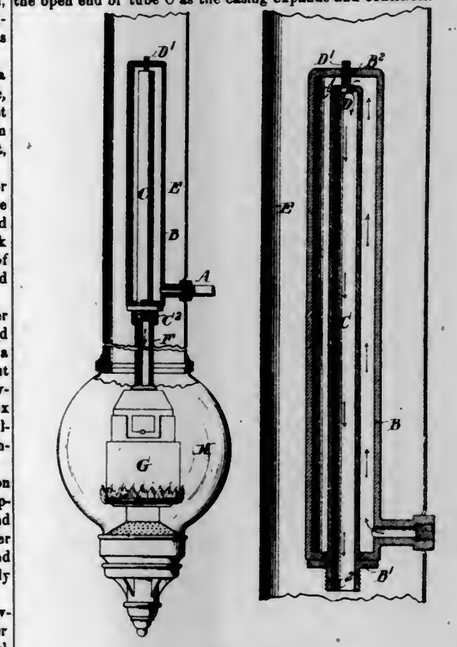
8. An ironing machine provided with a main-frame, a traveler frame pivoted therein, a revoluble iron carried by said traveler-frame, a casing pivoted at about the center to the main-frame and having an oscillatory movement therein, a spring mounted in said casing, a rod secured at one end to said spring and pivoted at the other end to said traveler-frame, a pivoted buffer provided with a projecting-arm, a liquid check comprising a cylinder and piston rod, said cylinder being pivotally connected with the main frame and said rod with the arm of said buffer, and a coiled spring interposed between the arm of said buffer and main-frame, substantially as and for the purposes described.

542,234. THERMOSTATIC REGULATOR FOR GAS-BURNERS. JOHN D. BOWMAN, Altoona, Pa. Filed Mar. 1, 1895. Serial No. 540,145. (No model.)

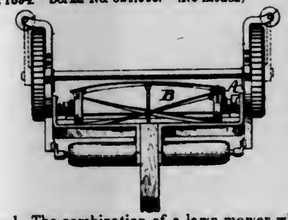
Claim.—1. A thermostatic regulator for gas burners consisting of an outer tubular casing B, an inner tube C secured to and extending through the casing at one end and opening into said casing at its other end, and a valve D secured to the upper end of casing B and arranged to operate on the open end of tube C as the casing expands and contracts.

2. A thermostatic regulator for gas burners consisting of an outer tubular casing B, an inner tube C secured to and extending through the casing at one end and opening into said casing at its other end, and an adjustable valve D secured to the upper end of casing B and arranged to operate on the open end of tube C as the casing expands and contracts.

3. A thermostatic regulator for gas burners consisting of an outer tubular casing B, an inner tube C secured to and extending through the casing at one end and opening into said casing at its other end, a gas entrance port situated near the lower end of casing B, and a valve D secured to the upper end of casing B and arranged to operate on the open end of tube C as the casing expands and contracts.



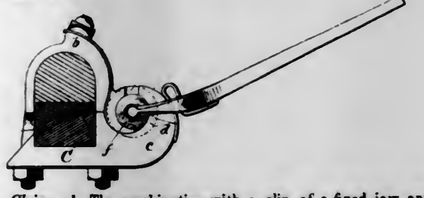
542,235. LAWN-MOWER. JOHN BRAUN, Philadelphia, Pa. Filed Aug. 30, 1894. Serial No. 521,660. (No model.)



Claim.—1. The combination of a lawn mower with a fender or guard consisting of a frame or support secured thereto and extending forward to the outer edge of the power wheel and having a suitable buffer consisting of a pivoted roller movable about an upright axis and carried thereby so as to protect the mower upon its forward and lateral portions.

2. The combination of a lawn mower with a fender or guard consisting of a frame or support extending forward and to the outer edge of the power wheel and having a suitable buffer consisting of a pivoted roller of rubber or soft material movable about an upright axis secured thereto so as to protect the mower upon its forward and lateral portions.

542,236. THILL-COUPLING. STEPHEN H. BROKAW and FLOYD S. NICHOLSON, Hornellsville, N. Y. Filed Mar. 14, 1895. Serial No. 541,738. (No model.)

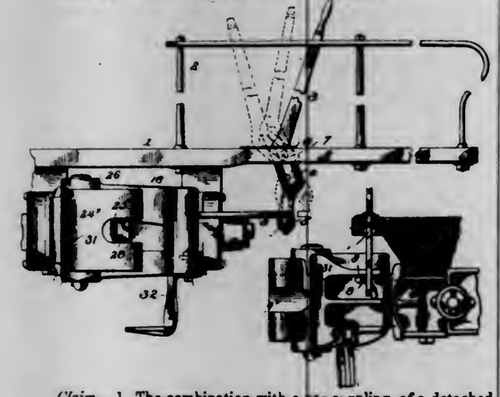


Claim.—1. The combination with a clip, of a fixed jaw and a yielding jaw connected therewith, a thill having a pin or projection to enter between said jaws and having an opening adjacent to said pin or projection, and a spring secured to the thill and adapted to enter said opening and bear on the fixed jaw, substantially as set forth.

2. The combination with a clip, a fixed jaw and a yielding jaw connected therewith, said jaws being so disposed as to leave a slot between them, of a thill, a pin on said thill adapted to enter between said jaws, a portion of said thill being made thin to pass through said slot, and said thill being made with an opening adjacent to the pin for the reception of the fixed jaw, and a spring secured to the thill and adapted to bear on said fixed jaw, substantially as set forth.

3. The combination with a clip, of a plate secured thereto and having a fixed jaw, a spring adjustably secured at one end to the clip and free at its other end and a jaw at the free end of said spring adapted to cooperate with the fixed jaw to inclose a pin or projection on the thill, substantially as set forth.

542,237. CAR-COUPLING. PERRY BROWN, Wilmington, Del. Filed Sept. 7, 1894. Serial No. 522,348. (No model.)



Claim.—1. The combination with a car-coupling, of a detached block 39 fitting between the clutch and the draw-head, having a single projection 38 midway of its height, semicircular recesses to receive the coupling-pin, and recesses 37 adapted to receive the nose of the clutch of the coupling, and having flanges at top and bottom to keep the same from shifting vertically, substantially as described and shown.

2. The combination with a coupling, having a clutch and a locking-dog, of a rock-shaft adapted to move longitudinally provided with an arm to move the locking-dog, and intermediate mechanism between the rock-shaft and clutch constructed and arranged to open the clutch by an endwise movement as the rock-shaft moves in one direction, and close the same as it moves in the opposite direction, substantially as described.

3. The combination with a car-coupling having a clutch and a locking-dog, of a sliding lever working on a fulcrum parallel with the length of the car, and intermediate mechanism between said lever and the clutch and dog, constructed and arranged to operate the dog and push open the clutch by a movement of the lever crosswise of the car, substantially as described.

4. The combination with a coupling, having a clutch and locking dog, of a slotted lever pivoted near the platform, a rock-shaft having an endwise movement, and intermediate mechanism between the shafts and the clutch for operating said clutch, substantially as described.

5. The combination with a car coupling, having a clutch and a locking dog, of a lever 3 having a slot 4, a support for said lever near the platform, a rock-shaft 9 having arms 8 and 10, and an arm 13 connected with said rock-shaft 9, and a double crank 18, one arm of said crank being connected to the arm 13, and the other arm acting on the clutch, substantially as described.

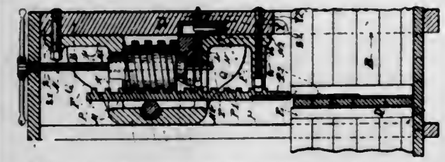
6. The combination in a coupling having a swinging clutch and a locking device therefor, of a crank constructed and arranged to throw out and draw in said clutch, and a rock-shaft independent of the locking device and having a cam operating on said locking device and means for moving said crank, substantially as described.

7. In a car coupling, the combination with the clutch 14, a crank 18 for operating the same, of ribs 29, 30 for protecting the crank and strengthening the draw-bar, substantially as described.

8. The combination with a draw-bar having an external rib, of a guard-arm 32 having its upper end bent to form a clamp embracing said rib, and a bolt passing through both jaws of the clamp and the rib, whereby the guard is securely fastened by a single bolt, substantially as described.

542,238. HEAD-GATE-OPERATING MECHANISM. FRANK C. BROWN, Highland Lake, Colo. Filed Apr. 8, 1895. Serial No. 544,973. (No model.)

Claim.—1. A head gate operating mechanism comprising a worm gear having hubs, a rack meshing in said gear and secured to the gate, a box adapted to receive and support said gear and rack, a manually operating rod having a projection adjacent to its lower end, a hollow chamber in said gear, cores of smaller diameter through said hubs, and a slot in the lower end or hub communicating with said chamber, adapted to receive said operating rod projection, substantially as set forth.



2. In a hand gate operating mechanism the combination of the box having a chamber therein, a worm journaled therein, a rack in mesh with said gear, a roller supporting said rack, and a manually operating rod adapted to turn said worm.

3. In a head gate operating mechanism the combination of the box having the transverse partial partitions, the worm, the rack and gate, and the roller support.

4. In a head gate operating mechanism the combination with the box having the transverse partition, of the worm having hubs, a hollow chamber, cores through said hubs communicating therewith, a diametrical slot in said hub, and an independent block supporting the lower hub.

5. In a head gate operating mechanism the combination with the worm and rack and box support, of a manually operated rod arranged in said worm substantially as shown and an independent removable bearing block adapted for the lower bearing of the worm.

6. In a head gate operating mechanism the combination with the worm, rack and operating rod, of a cast box support having partial transverse partitions, one of which is adapted to support one end of said worm, an independent block supported by said second partition and adapted to support the opposite end of said worm, and means for securing said box to the flume box supports to prevent its displacement by removing its bolts or fastenings.

7. In a head gate operating mechanism the combination with the worm, rack and operative rod of a cast box support for said parts having two of its fastening bolts arranged at opposite ends thereof and behind and close to said rod and rack, whereby the said bolts or their nuts cannot be removed and the operating device moved from its normal position.

8. The combination with the worm, and rack having teeth meshing with one another, and the operating rod of the independent block having a stepped bearing for the worm and an opening therethrough for the end of said rod.

9. The combination with the worm and operating rod, of the box support having partitions, a groove in the lower partition, an independent bearing block, a locking bar adapted to slide under said block in said groove under the end of said operating rod, a tumbler case and tumblers arranged and adapted to lock said bar both in a position of use and disuse, relatively to said bar, and a key for manipulating said tumblers.

10. The combination with the worm, operating rod and rack, of the box support, the independent bearing block, a lock case secured to said box having a locking bar having two sets of notches arranged therein and adapted to be moved laterally under said block and the end of said operating rod, notches in the edges of said bar, two spring actuated tumblers pivoted in said case to bear in said notches, whereby it may be locked either in a position of use or disuse, and a key for separating said tumblers and releasing said bar.

11. The combination with the worm and box of the lock case, the spring actuated tumblers and the locking bar.

12. In a head gate operating mechanism the combination of the box, the worm, the rack, the operating rod, the roller, the independent bearing block, the lock case, the spring actuated tumblers, the locking bar and the key, substantially as specified.

13. In a head gate operating mechanism the combination with the box of a lock case secured thereto to project therefrom, a support for said box forming a portion of said flume, having a recess therein extending partially through it and adapted to receive said case, and openings therethrough adapted to pass the key and locking bolt into said case.

14. In a head gate operating mechanism the combination of the box and lock case and a cross support provided with a recess adapted to receive and conceal said lock case.

15. The combination of the cast box, the worm, the operating rod, the rack and extension, the gate, the roller, the independent bearing block, the locking bar, the locking case, the spring actuated tumblers, the key, a hole in said box adapted to receive the end of said key, the top flume piece for supporting said operating rod and the lock case supporting flume piece having a recess therein adapted to receive and conceal in said cross piece the said case.

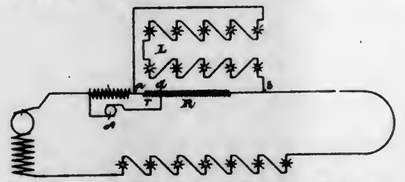
16. In a head gate operating mechanism the combination of the box, the worm, the operating rod, the block, the locking bar, the locking case, the spring actuated tumblers, and means for supporting said box and rod and for concealing said locking case, all arranged substantially as herein set forth.

542,239. GARMENT-FASTENING DEVICE. OSCAR L. CADY, Lincoln, Nebr. Filed Feb. 6, 1894. Serial No. 499,308. (No model.)



Claim.—The combination, with the blank, A, comprising, essentially, a circular ring and being provided with the integral retaining nib, 3, and, at a point opposite, with the thread eye, 4, said device being adapted to be attached to a garment upon one side; said nib and thread eye being re-curved and extending outward; in combination with the approximately double L shaped blank, B, preferably of wire, provided with the recurved portions, 10, and the extending stems, 5, the straight portions, 6, 6, and the terminations, 7, 7, said terminations, 7, and stems, 5, being adapted to be hidden within the fabric and acting to retain said blank, B, said recurved portion being adapted to ride below said blank, A, and engage said nib, 3, all substantially as and for the purpose set forth.

542,240. ELECTRIC METER. FRANK P. COX, Lynn, Mass., assignor to the General Electric Company, of New York. Filed Feb. 15, 1895. Serial No. 538,473. (No model.)



Claim.—1. The combination of a constant current circuit, with a meter motor having a field winding in the main line, and its armature shunting the field through a resistance, so graduated in amount as to give a starting torque sufficient to overcome friction.

2. The combination of a constant current circuit, having a resistance in shunt to the translating devices, or any desired portion of them, and a meter with a stationary inducing winding in the main line, and an armature winding shunting the inducing winding and connected at one terminal to an intermediate point in the resistance.

3. The combination of a constant current circuit with a meter motor coupled in circuit, with the field winding and translating devices forming one side of a Wheatstone bridge, the armature and a resistance the second side of the bridge, and a resistance corresponding to the bridge wire adjusted to give a starting torque to the motor, as set forth.

4. The combination of a constant current circuit, with a meter motor having a main field winding in the main line, an armature shunting the field winding and the translating devices through a resistance, and an auxiliary field winding wound so as to enhance the starting torque of the motor, and connected between the main field winding and the translating devices, as set forth.

5. The method of operating an electric meter, consisting in establishing an initial starting torque for overcoming the friction of the moving element of the meter and gradually diminishing, or removing, said torque as the load comes on.

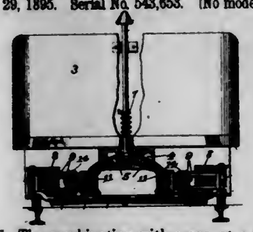
6. The method of operating an electric meter, consisting in establishing, besides the normal operating torque of the meter, an extra torque for overcoming the friction of the moving element thereof under light load conditions, removing said compensating torque, and afterward establishing a torque opposing the motion of the moving element of the meter.

542,241. FENCE-POST. JOSEPH CRAMER, Delano, Minn. Filed Apr. 17, 1895. Serial No. 546,098. (No model.)

Claim.—A base for fence posts, and consisting of a vertically-elongated body portion having at its upper end a plane face 5, a bar having a portion extending parallel with the plane face and transversely in relation to the base, and having its ends bent at right angles to said parallel portion, and rigidly connected with the base, and two fingers located below the bar and fixed one to each side of the base, said fingers being extended inwardly and outwardly and being arranged so that they will lie nearer to the plane face 5 than the bar, substantially as described.



542,242. CAR-FENDER. ROBERT C. DE VAULT, Philadelphia, Pa. Filed Mar. 29, 1895. Serial No. 543,653. (No model.)

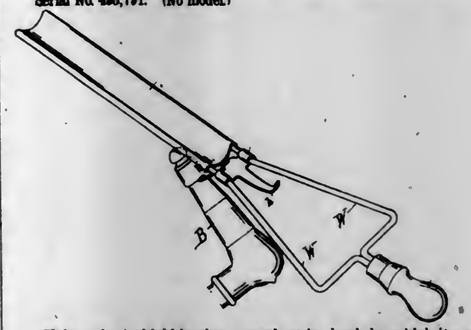


Claim.—1. The combination with a car, of a fender adapted to fold up upon itself, a guard pivoted to said fender and adapted to fold up upon itself, springs for normally urging and holding said fender outwardly and said guard up against the front of the dash-board, dogs for securing the same in their closed positions and means for releasing said dogs, substantially as and for the purpose described.

2. The combination with a car, of a fender therefor, consisting of side frames pivoted to brackets on the under side of the car, and also pivoted at their central points, springs for normally holding the parts of said side bars in a direct line, a transverse bar connecting the outer ends of said side frames, a supporting platform for said fender made up of a series of angularly disposed rods pivoted at their central and outer portions, connected to said transverse bar and to the under side of the car, a pair of pivoted dogs adapted to hold said side bars in their folded position, and means for actuating said dogs, substantially as and for the purpose described.

3. The combination with a car, of a fender therefor, consisting of side frames pivoted to brackets on the under side of the car, and also pivoted at their central points, springs for normally holding the parts of said side bars in a direct line, a transverse bar connecting the outer ends of said side frame, a supporting platform for said fender made up of a series of angularly disposed rods pivoted at their central and outer portions, connected to said transverse bar and to the under side of the car, a folding guard pivoted to said side frames, springs for normally urging said guard upwardly, a pair of pivoted dogs adapted to hold said side bars in their folded position, and means for actuating said dogs, substantially as and for the purpose described.

542,248. SHIELD FOR CURLING-IRONS. JOSEPH C. EARNSHAW, Yonkers, assignor to Paul R. Lewis, New York, N. Y. Filed Jan. 5, 1894. Serial No. 496,791. (No model.)



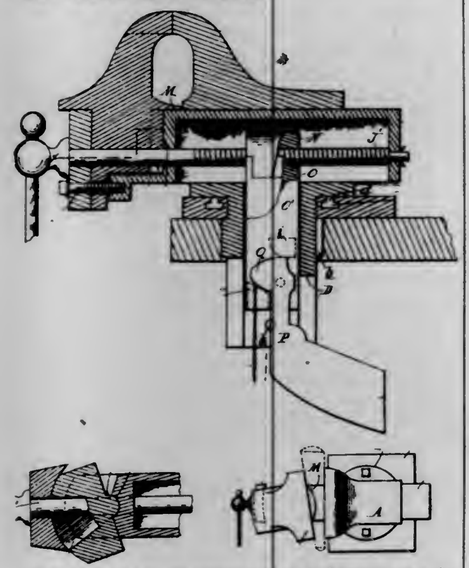
Claim.—1. A shield having a catch at its back by which it can be supported on a burner tip in a nearly vertical position, and a hook projecting in front of the shield, substantially as described.

2. A shield having a catch at its back by which it can be supported on a burner tip in a nearly vertical position, and a hook projecting in front of the shield, and shoulders, substantially as described.

3. A shield attached to side wires, and having an attachment fastened to the side wires and terminating at one end in a catch at the back of the shield, and at the other end in a hook projecting in front of the shield, substantially as described.

4. A shield attached to side wires which are bent inwardly below the shield to form shoulders, and a catch at the back and a hook in front of the shield, substantially as described.

542,244. VISE. CLARE ERNST, Bay City, Mich. Filed Sept. 11, 1894. Serial No. 522,706. (No model.)



Claim.—1. In a vise, the combination of a bed-plate, a post swiveled thereon, a stationary jaw on the post, a horizontal arm slidingly engaging in a transverse aperture in the stationary jaw, the movable jaw swiveled on the end of said arm, and the set screw passing through the arm and swiveled jaw substantially as described.

2. In a vise, the combination of a bed-plate, a post swiveled thereon, a flange on the post resting on the plate, lugs on the post adapted to enter notches in the plate and to be locked beneath the same by a partial rotation, and bolts on the post, entering undercut grooves in the plate, to lock the post in its adjusted position, substantially as described.

3. In a vise, the combination of the stationary jaw, having a transverse aperture, an arm sliding therein, a screw in the arm, the plate E at the forward end of the arm, the movable jaw supported on the plate and having a swivel joint connection with the forward end of the arm, a clamping bolt on the arm passing through a segmental slot in the jaw, and a clamping plate or nut on the outer face of the jaw, with which said bolt engages, and in which the screw is journaled substantially as described.

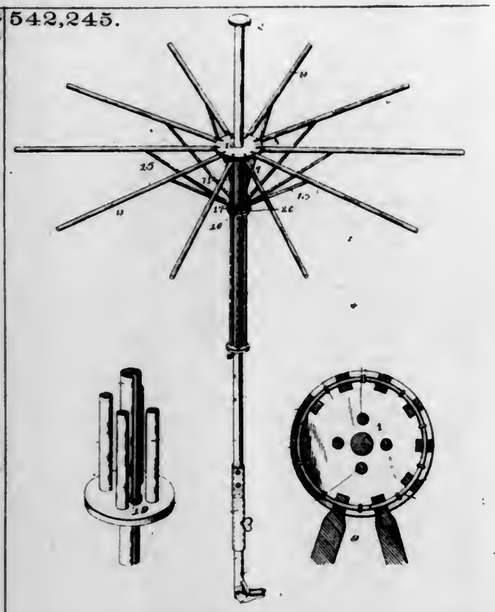
4. In a vise, the combination of the stationary jaw having a transverse aperture, an arm sliding therein, the plate E at the forward end of the arm, the movable jaw supported on this plate, a fan shaped slot through the jaw the screw in the arm, passing through the fan shaped slot in the movable jaw, a clamping plate or nut supporting the outer end of the screw, and securing devices for clamping the jaw between the arm C and the clamping plate in its adjusted position, substantially as described.

5. In a vise, the combination of the tubular post carrying the stationary and movable jaws, the screw therethrough, the upper and lower nut sections engaging the screw, the separated legs on the nut sections depending into the post, the lugs i i' on the leg of the lower section the lever pivoted to the inside of the leg of the upper section between the lugs, and the cam head on the lever, substantially as described.

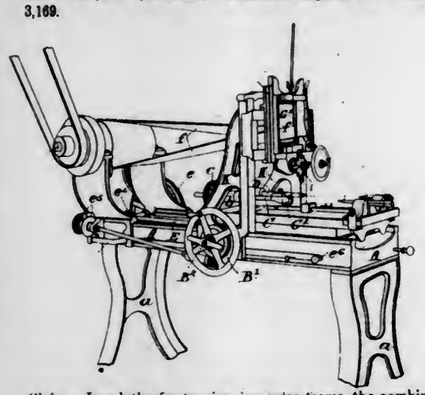
542,245. CLOTHES-DRIER. JAMES EVERETT, Sault Ste. Marie, Mich. Filed Apr. 19, 1894. Serial No. 508,183. (No model.)

Claim.—In a clothes drier, the combination with a standard carrying drying arms, of a pressure head arranged at the upper end thereof, and a clamping foot arranged at the lower end of the same and comprising a cam foot-lever, a ratchet, and a pawl carried by the foot-lever and engaging said ratchet, substantially as specified.

542,245.



542,246. MACHINERY FOR SHAPING HEADS OF WOODEN CLUBS. DANIEL FRASER, Edinburgh, Scotland, assignor to the Scottish Golf Club Manufacturing Company, Limited. Filed Aug. 7, 1894. Serial No. 519,661. (No model.) Patented in England Feb. 14, 1894, No. 3,169.



Claim.—In a lathe for turning irregular forms, the combination of a work holding spindle, a model holding spindle parallel thereto and geared to revolve at the same speed and in the same direction, a traversing frame carrying said spindle, a tool holder supported above said spindles, and having vertical and horizontal movement, a revolving cutter and a guide wheel carried by said holder on an axis parallel to said spindles, and means for revolving both spindles and the cutter, and for traversing said spindle carrying frame.

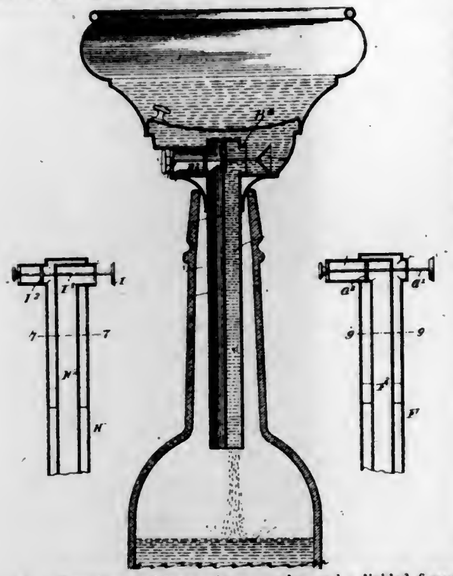
542,247. WOOD-PRESERVATIVE. HUGO GALLINOWSKY, Galveston, Tex., assignor of one-half to Isaac Heffron, same place. Filed Apr 20, 1895. Serial No. 546,538. (No specimens.)

Claim.—A compound for coating piles and other timbers, consisting of a fibrous material, oxalic acid, magnesium chloride, magnesium oxide, and boracic acid, substantially as set forth.

542,248. FUNNEL. EDWARD N. GAUDRON, Brooklyn, N. Y., assignor of one-half to Ions Graham Hervison, same place. Filed July 7, 1894. Serial No. 516,789. (No model.)

Claim.—1. A funnel, provided with a piston and a valve, of which the valve controls the inlet of the liquid from the funnel body to the vessel, and the piston controls the said valve to force the latter shut, substantially as shown and described.

2. A funnel, provided with a liquid chamber, a compressed air chamber, a piston, and a valve, all arranged in such a manner that the air compressed in the said compressed air chamber acts on the said piston to force the valve shut on the said liquid chamber, substantially as shown and described.



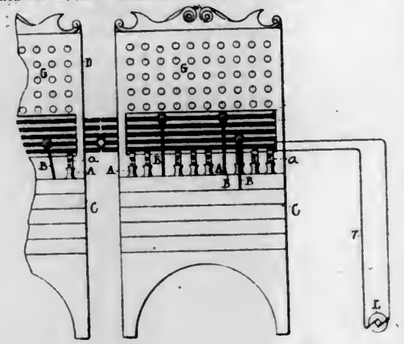
3. A funnel, comprising a piston, a valve, and a divided funnel nozzle forming a liquid chamber and a compressed air chamber, the said liquid chamber opening at its upper end into the funnel body and being adapted to be closed by the said valve, while the upper end of the compressed air chamber connects with the said piston to actuate the latter and to force the said valve shut on the said upper end of the liquid chamber, substantially as shown and described.

4. A funnel, comprising a funnel body, an inlet or nozzle held on the said funnel body, and having a liquid chamber opening into the said funnel body, a compressed air chamber leading to a cylinder, a piston and a valve of which the valve is adapted to be seated on a seat in the upper end of the said liquid chamber, and the piston is held to operate in the cylinder and is adapted to be actuated by the compressed air in the compressed air chamber, substantially as shown and described.

5. A funnel, comprising a funnel body, a nozzle extending from the said funnel body, a dished bottom in the said funnel and having a depressed channel opening into the said nozzle, and a valve fitted to slide in the said channel and adapted to close the seat in the upper end of the said nozzle, substantially as shown and described.

6. A funnel having a liquid chamber provided with a cut-off valve, and a compressed air chamber provided with a movable wall adapted to be moved by the rise of the air pressure in the air chamber, said cut-off valve being connected to said movable wall and adapted to be operated thereby, substantially as set forth.

542,249. TELEPHONE-SWITCHBOARD. JAMES F. GILLILAND, Adrian, Mich., assignor to the Gilliland Electric Company, same place. Filed Oct. 26, 1894. Serial No. 527,008. (No model.)

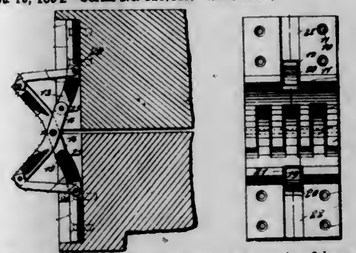


Claim.—1. In a telephone switch-board, the combination of lines terminating in movable plugs at which they are normally closed, of a pair or pairs of insulated connector plates, having no circuit connections, and adapted to engage with the plugs and connect the lines together, substantially as set forth.

2. In a telephone switch-board, the combination with telephone lines, of movable plugs having normally closed spring contacts connected with the telephone lines, of a series of pairs of flat connector plates, insulated from each other and adapted to have the spring contacts of the plugs pushed over them, substantially as set forth.

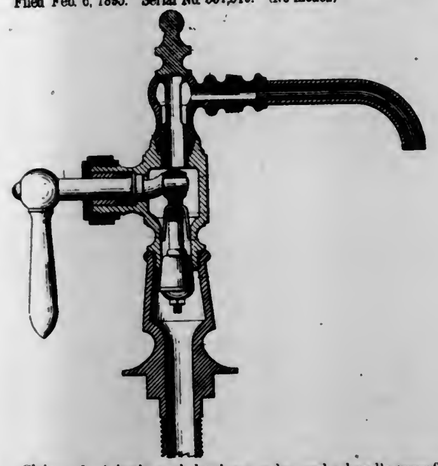
3. In a telephone switch-board, the combination with telephone lines terminating at movable plugs at which the lines are normally closed, of a pair of connector plates, insulated from each other, and connected with the calling generator, and other similar pairs of plates, without any circuit connections, such plates being adapted to engage with the plug contacts so as to open them and connect them with any other circuit connected with the same pair of plates, substantially as set forth.

542,250. HINGE. ARTHUR H. GILMAN, Aurelia, Iowa. Filed Sept. 19, 1894. Serial No. 523,445. (No model.)



Claim.—In a hinge, the combination of a pair of leaves having their adjacent ends equally curved in opposite directions, a pair of pivoted connecting levers, each pivoted at one end to the adjacent curved end of one of the said leaves, the respective pivoted ends of the connecting levers being curved equally to the curved ends of the leaves to which they are secured, but in opposite directions to said curvature, and a pair of braces each connected at one end to one of the leaves and at the other end to one of the connecting levers, the faces of the leaves and connecting levers adjacent to their connections with the braces being grooved to receive and house the said braces, substantially as set forth.

542,251. BASIN-COCK. JOSEPH H. GLAUBER, Cleveland, Ohio. Filed Feb. 6, 1895. Serial No. 537,519. (No model.)



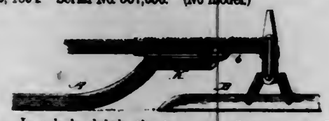
Claim.—1. A basin cock having a valve and a handle therefor, in combination with the head —G— having elbow —10— integral therewith and seated to be horizontally rotated to any desired angle in respect to said handle, and a threaded barrel —N— through head —G— engaging the body of the faucet to fasten the head —G— in position, substantially as set forth.

2. The faucet described consisting of the body part —B— having a valve seat, the valve —C—, the horizontal spindle —D— connected with the valve stem and having handle —E—, in combination with the horizontally rotatable head —G— provided with a socket

portion —8— seated in the top of body —B— and the hollow bolt —N— to secure head —G— in place, substantially as set forth.

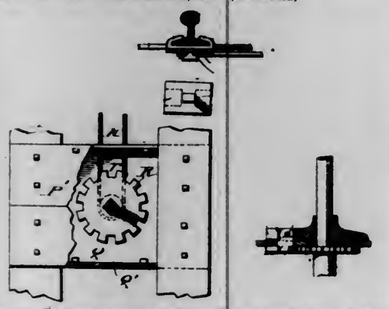
3. The construction described comprising the body —B— having a ground socket in its top and a valve and valve handle supported thereon, in combination with the head —G— seated in said socket and having the spout projection —10— rigid therewith, and the barrel shaped bolt —N— extending through part —G— from the top and engaging in body —B— below the socket therein, substantially as set forth.

542,252. BOB-SLEIGH. OLAF M. GORDER, Canby, Minn. Filed Apr. 16, 1894. Serial No. 507,658. (No model.)



Claim.—In a bob sleigh, the two sets of runners A, B, the two bolsters F, H, and the reach composed of the two sections I, J, one of which is solid and the other U-shaped, so as to receive the front end of the solid section, and provided with a series of perforations, combined with the bracket K, secured to the rear runners, the hooked plate *b*, secured to the bracket, and having its front end project into the U-shaped section J; and the pin *e* which passes through the perforated section J, and through the front end of the plate *b*, substantially as shown.

542,253. RAILWAY-SWITCH. ROBERT E. HAMILL, Marshall, Ill. Filed Mar. 21, 1895. Serial No. 542,678. (No model.)



Claim.—1. The combination of a rail, a slotted plate on which it is mounted, a chair having wings extending over the base of the rail, a body portion uniting the flanges, wings projecting laterally from the body portion below the slot, and a lug or projection extending downwardly from the body portion, for the purpose specified.

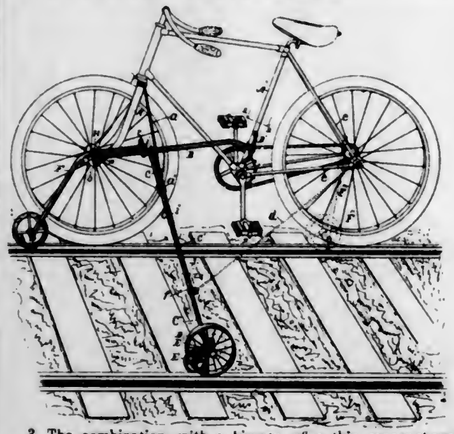
2. The combination of the pivoted rail, the split rails, plates on which they are mounted, guide slots in the plates below the rails, chairs having wings embracing the bases of the rails on opposite sides, body portions uniting the wings and extending through the slots of the plates, and rods connected to the body portions of the chairs and connecting chairs on opposite rails.

3. The combination of the pivoted rail, the shifting switch rails, the cable for operating them and the switch-stand consisting of an upright shaft around the lower end of which the cable is wound, a locking wheel secured to said shaft and provided with a series of peripheral teeth, a locking block or latch secured by a bolt to the frame of the switch-stand, and a locking device extending through the bolt for the purpose specified.

542,254. BICYCLE ATTACHMENT. GEORGE E. HEATON, Kalamazoo, Mich. Filed July 7 1894. Serial No. 516,837. (No model.)

Claim.—1. The combination with a bicycle, of the brace rod, B, hooked into a bracket attached to the forward axle and clamped to the vertical brace rod of said bicycle; a lateral arm projecting across the track from said brace rod; a support wheel, D, at the end of said brace rod; a guide wheel, E, on the arm, E'; a lever, F, supported on the bracket attached to the axle of the forward wheel and pressing against a spring, *r*, on the bracket, G, and bearing a guide wheel, F', adapted to press against the inside of the rail of the railroad in front of the forward wheel of said bicycle, all substantially as described for the purpose specified.

2. The combination, with a bicycle, of a brace rod, B, with a hook, *m'*, adapted to hook into the loops, *m*, on the bracket, H, attached to the axle of the forward wheel of the bicycle; a clamp, B', with hinged portions, *n*, *n'*, connected by a key *n''*, around the vertical brace rod, A', of the frame of said bicycle; a lever, F, supported in a clip in the bracket, H, and bearing a flat guide wheel, F', at its lower end adapted to bear against the inner side of one of the rails of the railroad track; a spring, *r*, at the rear end of said lever to throw it out; and a lateral arm adapted to project across a railroad track and having a wheel, D, to rest upon the opposite rail thereof; a guide wheel, E, supported on the arm, E', to rest against the inside of the opposite rail, the said lateral arm being constructed of sections C, C', C'', of telescope tube that can be shoved together; and suitable brace rods for bracing said arm, all co-acting together substantially as described for the purpose specified.



3. The combination, with a bicycle, of a thin saucer-shaped guide wheel, F', suitably supported below and in front of the forward wheel of said bicycle to engage the side of the rail; a lateral arm from said bicycle adapted to project across a railroad track; a wheel on said arm adapted to rest upon the opposite rail of said track to balance the machine to enable a bicycle to be operated on the rails of a railroad track.

4. The combination, with a bicycle, of the guide wheel, F', suitably supported below and in front of the forward wheel of said bicycle to rest against the side of the rail; a lateral arm from said bicycle adapted to project across the railroad track; a support wheel on said arm adapted to rest upon the opposite rail of said track to balance the machine; and a guide wheel and an arm adapted to rest inside of the rail to guide the said support wheel in place to enable the bicycle to be operated on the rails of the railroad track.

5. The combination, with a bicycle, of a lateral arm from said bicycle; a wheel at the end of said lateral arm adapted to rest upon one rail of the railway track; an arm, F, attached to the axle of the front wheel of said bicycle projecting down and forward; a wheel, F', on said arm adapted to come in contact with the inside of the rail on which the main part of the vehicle is traveling; a spring, *i*, suitably attached to the frame and tending to throw the rear end of said arm away from the machine so as to cause the front wheel of the machine to steer toward the rail and bring the guide wheel, F', in contact with the side of the rail so that the wheel will be constantly guided upon the track so that the machine can be operated upon the track, for the purpose specified.

6. The combination, with a bicycle, of a brace, B, adapted to hook in a loop on a bracket attached to the axle of the front wheel; a saddle, B'; a clamp, *n*, *n'*, with a key, *n''*, adapted to attach the rear end of said brace to the vertical brace, A', of said bicycle; a lateral arm attached to said brace and projecting across the track and bearing a support wheel at the opposite end in combination with suitable guide mechanism for keeping the main part of the bicycle upon one rail, substantially as described.

7. In a railway velocipede, a main frame bearing two wheels adapted to rest upon one rail of the track; the forward of said wheels being pivotally connected to the frame; a lateral arm bearing a guide support wheel on the opposite rail of said track; a small guide wheel in front of the forward main wheel of said velocipede; an arm connected to said guide wheel and to the axle of said forward wheel; a spring between the rear end of said arm and frame tending to throw the guide wheel against the side of the rail and to steer the forward pivoted wheel of the machine onto the rail so as to guide the same and cause it to keep upon the track, substantially as described.

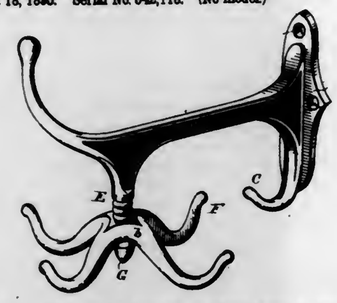
8. In a railway velocipede, the main frame with wheels and propelling gear to rest upon one rail of the railway track; and pivotal bearing and connection for the forward of said wheels; a wheel adapted to rest upon the opposite rail of said track on bearings and connected to the main frame; a small saucer-shaped guide wheel in front of the forward main wheel on said velocipede adapted to rest against one side only of the rail to guide the main wheel upon the track; and suitable means of propelling the same, for the purpose specified.

9. In a railway velocipede, the frame bearing wheels adapted to rest upon the rails of the railway track; suitable means of revolving the wheels to propel the said machine; and a saucer-shaped guide wheel below and in front of the wheels of said machine adapted to rest against the inside of the rail only, to guide the same upon the track, for the purpose specified.

10. In a railway velocipede, the combination with a wheel, of a thin, saucer-shaped guide wheel attached to a suitable support and adapted to rest against the inside of the rail below and in front of the said wheel to guide the same and keep it upon the track, for the purpose specified.

11. The combination with a bicycle, of an arm attached thereto; a wheel on said arm so that the main wheels of the bicycle can rest upon one rail of the track and the wheel upon the arm upon the opposite rail; a thin guide adapted to press on the inner side only of the rail in front of the forward main wheel of the bicycle; and suitable connections therefrom to the fork and axle of the forward wheel to serve as a guide for the same to keep the whole upon the track and reduce the friction, as described.

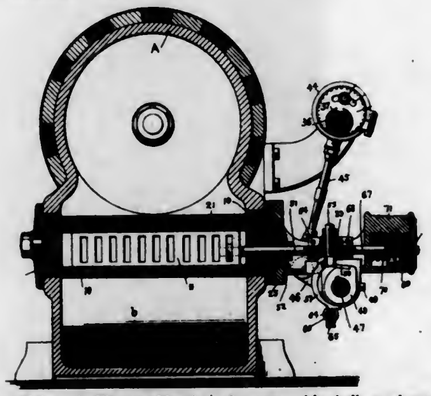
542,255. HOOK. CHARLES HENKEL, Brattleborough, Vt. Filed Mar. 18, 1895. Serial No. 542,118. (No model.)



Claim.—1. The arm A, having attaching plate B, upwardly-extending hook D, and depending stem E, at its outer end, and a plurality of horizontally extending and symmetrically disposed hooks F F, rotatively supported by said depending stem E, substantially as set forth.

2. The arm A, having attaching plate B, depending hook C adjacent to said plate, upwardly-extending hook D at its outer end, depending stem E, near its outer end, and pintle G, screwing into a socket in said stem, and having a locking shoulder *e* fitting in said socket, and a plurality of horizontally-extending and symmetrically-disposed hooks F, F, rotating upon said pintle G, substantially as set forth.

542,256. STEAM-ENGINE. EDWARD K. HILL, Worcester, Mass., and JOSEPH H. W. HOADLEY, Chicago, Ill. Filed Oct. 1, 1894. Serial No. 524,645. (No model.)



Claim.—1. The combination of a removable shell or plug provided with seats for the inlet and outlet valves, and a brace or strut for reinforcing the inlet valve seat, made in the form of a ladder or grating, substantially as described.

2. The combination of the cylinder, a transverse shell or plug fitting therein having inlet and outlet valve-seats, inlet and outlet valves arranged in said plug to move transversely of the cylinder, and a brace or strut for reinforcing the inlet valve-seat, substantially as described.

3. The combination of the cylinder, a removable shell or plug having inlet and outlet valve-seats, inlet and outlet valves mounted in said plug arranged to move transversely of the cylinder, and a brace or strut made in the form of a grating or ladder for reinforcing the inlet valve-seat, substantially as described.

4. The combination of the cylinder, a removable shell or plug, an inlet valve mounted in said plug, springs for holding the inlet valve upon its seat, a part or piece for holding said springs in place, said part being secured between the removable plug and its bearings in the cylinder, substantially as described.

5. In an engine, the combination of a removable plug or shell, having a valve seat, a removable cap or head secured to one end of said plug, and a valve-actuating mechanism mounted on said head, substantially as described.

6. In an engine, the combination of a removable plug or shell, inlet and outlet valves mounted in said shell, a removable cap or head secured to one end of said plug, a valve actuating mechanism mounted on said head, a shaft for driving said valve actuating mechanism, and a universal joint for connecting said shaft with a shaft driven from the main shaft of the engine, substantially as described.

7. In an engine, the combination of an inlet valve working transversely of the cylinder, a vertically movable tappet actuating the inlet valve, a curved arm or finger extending downwardly from said tappet to engage suitable governor-controlled connections, whereby said governor-connections can act substantially in line with said tappet, and an oscillating pusher for engaging said tappet, substantially as described.

8. In an engine, the combination of a valve working transversely of the cylinder, a movable tappet for actuating said valve, governor controlled connections for regulating the position of said tappet, and a pivoted, oscillating pusher having an offset projection or wearing surface located with angular lead for engaging with and actuating said tappet, substantially as described.

9. In an engine, the combination of an inlet valve working transversely of the cylinder, a vertically movable tappet for actuating the inlet valve, a curved arm or finger extending downwardly from said tappet, a reciprocating governor-controlled rod, and a conical roller journaled upon said rod, in position to engage said arm, substantially as described.

10. In a valve-gear for engines, the combination of a vertically movable tappet, a reciprocating governor-controlled rod, a conical roller for adjusting the height of said tappet journaled upon said rod, a bracket for securing said roller in place upon the rod, said bracket being provided with a cam-shaped projection forming a safety device in case of accident to the governor, substantially as described

11. In an engine, the combination of a valve working transversely of the cylinder, a dash-pot arranged on the working side of the engine in line with said valve, and adjustable connections between the valve and dash-pot, substantially as described.

12. In an engine, the combination of an inlet valve working transversely of the cylinder, a vertically movable tappet actuating the inlet valve, a dash-pot acting to close said inlet valve, adjustable connections between the inlet valve and the vertically movable tappet, and adjustable connections between the vertically movable tappet and the dash-pot, substantially as described.

13. In an engine, the combination of a removable plug or shell, inlet and outlet valves mounted in said plug, and movable transversely of the cylinder, a vertically movable sliding tappet, governor-controlled connections for regulating the position of said tappet, a pivoted, oscillating pusher operating upon said tappet to open the inlet valve, a dash-pot for closing the inlet valve, and means for actuating the outlet valve, substantially as described.

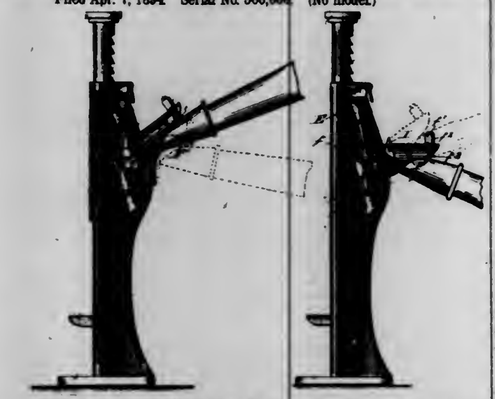
14. The combination of removable shells or plugs, one being secured at each end of the cylinder, inlet and outlet valves mounted in each of said plugs, a movable tappet and a pivoted, oscillating pusher for each inlet valve, and a valve actuating shaft having independent eccentrics connected to operate each outlet valve and each pusher, substantially as described.

15. In an engine, the combination of an inlet valve, an outlet valve, a vertically adjustable tappet and an oscillating pusher for actuating the inlet valve, and toggle-levers or links for actuating the outlet valve, substantially as described.

16. In an engine, the combination of an inlet valve and an outlet valve, a vertically movable tappet, an oscillating pusher, an eccentric for actuating said pusher to open the inlet valve, a dash-pot acting to close the inlet valve, toggle levers or links connected to said outlet valve, and an eccentric for actuating said toggle levers, substantially as described.

542,257. LIFTING-JACK. HARVEY HOLAHAN, Harvey, Ill.

Filed Apr. 7, 1894. Serial No. 506,686. (No model.)



Claim.—1. In a lifting-jack, the combination with the standard, and a rack-bar adapted to slide in the latter, of the pivoted lever, a lifting pawl pivoted to the lever, a locking pawl pivoted to the standard, a spring extending from one pawl to the other, and connected with both on the sides thereof, and a device attached to the standard and holding the spring at a point intermediate of the pawls, as shown and described.

2. In a lifting-jack, the combination with a hollow standard having, interiorly, an inwardly curved portion at its upper end, of a pivoted lever, a lifting pawl pivoted to the latter, a locking pawl pivoted in the standard, a spring connected with the pawls for actuating them, and means for adjusting the spring for varying its tension and action on the pawls, substantially as shown and described.

3. In a lifting-jack, the combination with the hollow standard having interiorly an inwardly curved upper portion, a lever pivoted in the standard, a lifting pawl pivoted to said lever, a locking pawl pivoted to the standard, a ribbon spring which is connected with both pawls, a slide attached to the spring and adapted for adjustment horizontally, and means for securing said slide in different adjustments, whereby the spring is held under different tensions as required to act on the pawls, as shown and described.

4. In a lifting-jack, the combination, with the hollow standard having interiorly an inwardly-curved portion at its upper end, a pivoted lever, a lifting pawl pivoted to said lever, a locking pawl pivoted in the standard, a spring which connects said pawls, a horizontal slide connected with the spring, a lever pivoted to the standard and having engagement with the slide, whereby the latter may be adjusted and held locked as required to change the action of the spring on the pawls, as shown and described.

5. In a lifting-jack, the combination with a hollow standard, and rack-bar sliding therein, of a pivoted lever having its inner end constructed to act as a cam, a lifting pawl pivoted to such end of the lever, a locking pawl pivoted in the standard, a spring for throwing the locking pawl out of engagement with the rack-bar, as shown and described, whereby the locking pawl is pushed into re-engagement with the rack-bar when the cam end of the lever is thrown down, as shown and described.

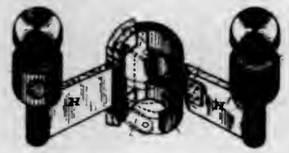
6. In a lifting-jack, the combination with a hollow standard and a rack-bar sliding therein, of a locking pawl pivoted in the standard, a lever proper also pivoted in the standard, and having its inner end arranged contiguous to the locking pawl, to adapt it to act as a cam, a handle socket pivoted to said lever proper, and means for adjustably connecting the latter with said socket, substantially as shown and described.

7. In a lifting-jack, the combination with a hollow standard and a rack-bar sliding therein, of a locking pawl pivoted in the standard, a lever proper also pivoted in the standard, and having its inner end arranged contiguous to the locking pawl, to adapt it to act as a cam, handle socket pivoted to said lever proper, and the screw bolt, nut and spring arranged in connection with the lever proper and the socket as shown and described, to operate as specified.

542,258. ELECTRICAL MEASURING-INSTRUMENT. FRANK HOLDEN, Schenectady, N. Y., assignor, by mesne assignments, to the General Electric Company, same place. Filed Jan. 22, 1895. Serial No. 535,753. (No model.)

Claim.—1. In an electric measuring instrument, a field-coil, an index mounted in the axis of the coil, and a yoke of magnetic material carried by the index, the sides of the yoke being parallel to the axis of the coil.

2. In an electric measuring instrument, a field-coil deeper at one part of its circumference than at another, an index mounted in the axis of the coil, and a yoke of magnetic material carried by the index, the sides of the yoke being arranged to embrace the coil and being parallel to the axis thereof.



3. An electric measuring instrument comprising a field-coil deeper at one part of its circumference than at another, binding posts mechanically and electrically united therewith, an index mounted in the axis of the coil and carrying a yoke of magnetic material, and a spring opposing the motion of the index; the parts being mechanically united so that they may be removed from the supporting base without derangement, substantially as set out herein.

4. A field-coil for an electric measuring instrument, composed of a strip of conducting material having registering perforations through which the inner terminal of the coil is passed.

5. A field-coil for an electric measuring instrument, composed of a serrated strip of conducting material having registering perforations through which the inner terminal of the coil is passed.

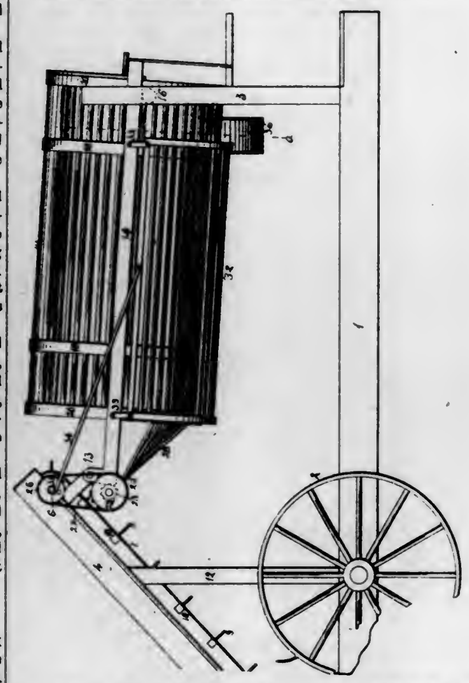
6. As a new article of manufacture, a serrated strip of conducting material for the field-coil of an electric measuring instrument, having perforations adapted to register when the strip is coiled.

7. As a new article of manufacture, a strip of conducting material for the field-coil of an electric measuring instrument, having serrated edges and perforations adapted to register when the strip is coiled.

8. In an electric measuring instrument, a yoke of magnetic material carried by the index and adapted to embrace the field-coil, the yoke having the ends of its sides united by a piece of non-magnetic material; whereby vibration of such sides is prevented.

542,259. POTATO-DIGGER. CHARLES E JACKSON, Kings, Ill.

Filed Mar. 12, 1895. Serial No. 541,507. (No model.)



Claim.—1. In a potato digger, a potato assorter consisting of an inclined rotatable cylinder, a sifter located beneath the cylinder and means for imparting a swinging movement to the sifter.

2. In a potato digger a potato assorter consisting of a rotary cylinder standing in an inclined position, a sifter located beneath the cylinder, means for imparting a swinging movement to the sifter and a spout located at the discharge end of the sifter.

542,260. STOCK-WATERING TROUGH. FREMONT C. JONES, Lewis, Iowa. Filed Aug. 28, 1894. Serial No. 521,523. (No model.)



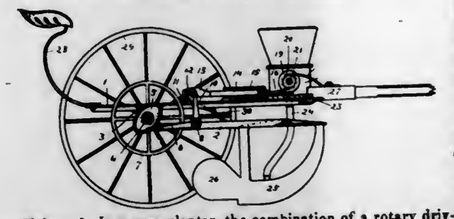
Claim.—1. In a stock watering trough, the combination of the trough body provided at one end with a water inlet opening, a valve plate attached to one end of the trough body over the inlet opening thereof and provided with a valve opening, a valve seat nipple fitted in said valve opening and projecting beyond both ends thereof, a float lever arranged within the trough body and working at one end over one end of said valve seat nipple, a safety flap valve attached to one side of the valve plate and working over one end of the valve seat nipple opposite the valve end of the float lever, and a connection between the valve end of the float lever and said flap valve, substantially as set forth.

2. In a stock watering trough, the combination of the open trough body provided at one end with a water inlet opening, a valve plate attached to one end of the trough body over said opening and provided with a valve opening, a float lever hinged at one end to said valve plate and working within the trough body, a float provided with a clip adjustably embracing said lever, the hinged end of said lever forming a valve working over one end of said valve opening, a safety flap valve attached to said valve plate and working over the opposite end of said valve opening, and a connection between the valve end of said lever and said flap valve, substantially as set forth.

3. In a stock watering trough, the combination of the trough body provided at one end with a water inlet opening, a valve plate detachably secured to one end of the trough body and provided with a valve opening, and a valve recess formed in one side and communicating with said valve opening and the water inlet opening, a valve seat nipple adjustably fitted in said valve opening and projecting beyond both ends thereof, a safety flap valve attached to one side of the valve plate within the valve recess and working over one end of said nipple, a float lever working within the trough body and hinged at one end to one side of the valve plate immediately below the valve opening, the hinged end of said lever being provided with a valve disk working over one end of the nipple opposite the flap valve, and a valve connecting link loosely connected at its ends to one side of said flap valve and to the valve end of the float lever, substantially as set forth.

542,261. CORN-PLANTER. HENRY KELLER, Woodburn, Ind.

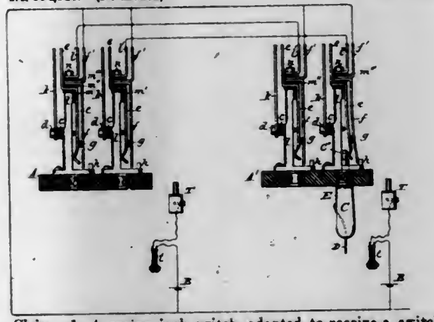
Filed Feb. 21, 1895. Serial No. 539,205. (No model.)



Claim.—1. In a corn planter, the combination of a rotary driving-axle, mounted in proper ground wheels having ratchet face hubs and the described means for forming a locked engagement of the said axle with said wheels, and provided with a fixed cam 5 adapted to actuate the seed dropping mechanism, a main-frame 1 carrying the operating mechanism, a planting-shoe frame 2 pivotally connected to the frame 2 as shown, the feeding cylinders 19 mounted as shown upon the ends of the transverse shaft 21 and having a series of seed receptacles 45 adapted to alternately register with the openings from the hopper and those to the discharging tubes, the rotatable shaft 21 having a ratchet wheel midway its ends, the vibrating lever 14 adapted to actuate the said shaft 21 by engaging the said ratchet wheel and having at its rear end a rectangular lug 12 and the bell-crank lever rigidly fixed on the rock-shaft 8, the horizontal arm 6 of which is mounted as described in the said cam 5 and having its vertical arm 10 engaged with the vibrating lever 14 in the said slot 12, whereby elevating the planting shoes automatically throws the seeding mechanism out of gear, all substantially as described.

2. In a corn planter, the seed dropping mechanism comprising the following instrumentalities: the transverse shaft 21 rotatably mounted as shown in the boxes 18, carrying on its extremities the feeding cylinders 19 provided with registering seed-receptacles, as described, and having at the center of its length the rigid ratchet wheel 20 to engage the vibrating lever, the lever 14 having upon its forward end means for actuating the said wheel and provided at its rear end with a slotted extension as shown, for the purpose of throwing the said mechanism out of gear by elevating the planting shoes, and a bell-crank lever rigidly fixed on the rock shaft 8 having its upper end loosely mounted in the said slotted end of the vibrating lever and adapted to operate the same, and having its lower arm mounted as described in the actuating cam 5 rigidly fixed upon the driving axle, all substantially as and for the purpose set forth and described.

542,262. MULTIPLE SWITCHBOARD FOR TELEPHONE-EXCHANGES. MILO G. KELLOGG, Chicago, Ill. Filed Dec. 21, 1889. Serial No. 334,519. (No model.)



Claim.—1. A spring jack switch, adapted to receive a switch-plug, consisting of a metal frame through the front of which is the switch hole, a contact spring or piece placed with its length parallel to the axis of the hole, a second-contact spring insulated from and parallel with the first contact-spring and operated by it to be pressed into contact with a contact point or piece while a plug is in the switch hole, substantially as set forth.

2. A spring jack switch, adapted to receive a switch plug, consisting of a metal frame through the front of which is the switch hole, a contact-spring or piece insulated from the metal frame and placed with its length parallel to the axis of the hole, and a second contact spring or piece insulated from the first contact-spring and normally insulated from the metal frame, placed parallel to said first spring and operated by it to be pressed into connection with said metal frame while a plug is in the switch hole, substantially as set forth.

3. A spring jack switch, adapted to receive a switch plug, consisting of a metal frame through the front of which is the switch hole, a contact-point insulated from the metal frame, a contact-spring or piece insulated from the metal frame, placed with its length parallel to the axis of the switch hole and normally in contact with said contact-point, and a second contact-piece or spring insulated from the first contact spring normally insulated from the metal frame, and placed parallel to the first spring, said first spring being operated by the plug, on its insertion, to be pressed away from its normal connection with its contact-point and to press the other contact-piece into connection with the metal frame, substantially as set forth.

4. In a spring jack switch, a contact-spring or piece placed with its length parallel to the axis of the switch hole, a second contact-spring or piece insulated from and parallel with the first contact spring and a contact-point normally insulated from both contact-springs said switch being adapted to receive a switch plug, which on its insertion, moves the first contact-spring which presses the second contact-spring into connection with said contact-point, substantially as set forth.

5. In a spring jack switch, a contact-spring or piece placed with its length parallel to the axis of the switch hole and normally in contact with a contact-point, a second contact-spring or piece placed parallel to and insulated from the first spring, and another contact-point normally insulated from the rest, said switch being adapted to receive a switch plug, which on its insertion, moves the first contact-spring away from its contact-point with which it is normally in contact, and presses the second contact spring into connection with said other contact-point, substantially as set forth.

6. In a spring jack switch, a metal frame extending to the front of the switch board and through the front of which is a switch hole, a contact-spring or piece placed with its length parallel to the switch hole, a second contact-spring or piece insulated from and parallel with the first contact-spring and normally insulated from the metal frame,

said switch being adapted to receive a switch plug which, on its insertion, moves the contact-spring, and said contact spring when thus moved presses the contact-piece into connection with the metal frame, substantially as set forth.

7. In a spring jack switch, a metal frame extending to the front of the switch board and through the front of which is a switch hole, a contact spring or piece placed parallel to the switch hole and insulated from the metal frame a contact point with which said spring is normally in contact, and a second contact spring or piece insulated from the first contact-spring and also normally insulated from the metal frame, said switch being adapted to receive a switch-plug, which on its insertion moves the first contact spring away from its normal connection with said contact-point, and presses the second contact spring into connection with the metal frame, substantially as set forth.

8. In a spring-jack switch, a contact spring placed with its length parallel to the switch hole, a second contact spring insulated from and parallel with the first contact spring, a contact-point normally insulated from the second contact-piece and electrically connected with a metal test contact piece on the front of the switch board, said switch being adapted to receive a switch-plug which on its insertion, moves the first contact-spring and presses the second contact spring into connection with said contact-point, substantially as set forth.

9. In a spring jack switch, a contact spring placed with its length parallel to the switch hole, a contact point with which the spring is normally in contact a second contact spring or piece insulated from the first contact spring and placed parallel to it, and a contact point normally insulated from the second contact spring, and a test-piece placed on the front of the switch board with which the last named contact point is electrically connected, said switch being adapted to receive a switch-plug which on its insertion, moves the first spring away from its normal connection with its contact-point and presses the second contact-piece into connection with its contact point, substantially as set forth.

10. The combination of the frame-work having a hole therein, a metal switch-frame mounted on said frame-work with one end in the hole and having in said end a switch hole for the reception of a switch plug, two insulated contact-pieces or springs carried by said frame, an insulated contact point also carried by the metal frame and with which one of said springs is normally in contact, and another contact point also carried by said metal frame with which the other spring is normally out of contact, the arrangement being such that when a switch plug is inserted one contact spring moves out of contact with the point with which it is normally in contact, and the other spring moves into contact with the point with which it is normally out of contact.

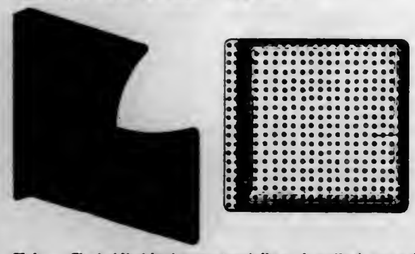
11. The combination of the frame-work having a hole therein for the insertion of a switch plug, two contact-pieces or springs insulated from each other, arranged in the rear of the frame-work parallel, or substantially so, with the axis of the switch hole, a contact point with which one of the springs is normally in contact and another contact point with which the other spring is normally out of contact, the arrangement being such that when a switch plug is inserted one spring is pressed out of contact with its contact-point and the other into contact with its contact point.

12. The combination, of the frame-work having a hole therein for the insertion of a switch plug, two contact pieces or springs, insulated from each other, arranged in the rear of the frame-work, parallel, or substantially so, with the axis of the switch hole an insulated contact point upon which one of the springs bears, and another contact point also insulated from both springs and with which the second contact spring is normally out of contact the arrangement being such that when a plug is inserted into the switch hole, one spring is pressed out of contact with the point against which it normally bears, and the other spring is pressed into contact with the point with which it is normally out of contact.

13. The combination, of the frame-work having a hole therein for the insertion of a switch plug, two contact pieces or springs, insulated from each other, arranged in rear of the frame-work, parallel, or substantially so, with the axis of the switch hole, an insulated contact point upon which one of the springs normally bears, another contact-point with which the other spring is normally out of contact and a metal test piece or contact at the front of the switch board with which piece the last named contact is in electrical connection.

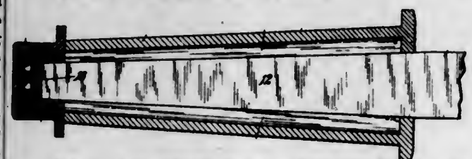
14. In a springjack switch the combination, with the frame-work of the switch board, two insulated contact pieces or springs arranged in rear of the frame-work parallel with each other, or substantially so, and at right angles to the plane of the face of the frame-work, a contact point against which one of the springs normally bears, and another contact point with which the other spring is normally out of contact, of a switch plug, adapted to be inserted into the switch, the arrangement being such that when the plug is inserted one spring is pressed out of contact with the contact point against which it normally bears, and the other spring is pressed into contact with the contact point with which it is normally out of contact.

542,263. BRIDLE-BLINDER. WILLIAM KIEL, Butler, N. J., assignor to the Butler Hard Rubber Company, New York, N. Y. Filed Apr. 1, 1895. Serial No. 544,071. (No model.)



Claim.—The bridle-blinder substantially as described, comprising a perforated plate forming a core, and layers of hard rubber upon each side of the core extending through the perforations thereof and vulcanized thereto, said plate being provided with an extension having perforations.

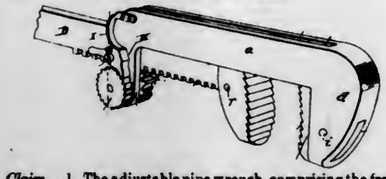
542,264. AXLE. CONRAD J. KILIAN, Milwaukee, Wis. Filed Aug. 4, 1894. Serial No. 519,443. (No model.)



Claim.—1. The combination with a metal axle having a contrated screw-threaded stem, of a removable skein fitted on the axle a detachable exteriorly screw-threaded sleeve on the end of the axle bearing against the skein and a lock-nut turning on the stem against the sleeve, adapted to hold the skein in place on the axle, substantially as described.

2. The combination with a metal axle having a tapering extremity and a screw-threaded stem, of a detachable enlarged skein fitted on the tapering extremity of the axle, a detachable exteriorly screw-threaded sleeve bearing against the outer extremity of the skein, a lock-nut turning on the stem against the sleeve, and a cap-nut turning by screw-thread on the sleeve and inclosing the sleeve, the screw-threaded stem and the nut thereon, substantially as described.

542,265. PIPE-WRENCH. KARL A. KLOSE, Richfield, Minn. Filed Nov. 5, 1894. Serial No. 527,963. (No model.)

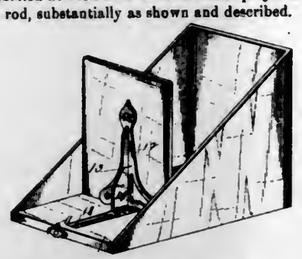


Claim.—1. The adjustable pipe wrench, comprising the frame having the two parallel branches, provided on their inner sides with parallel slide bearings, and also having the seat for a removable jaw at one end and depending parallel branches at the opposite end, in combination with the slidable jaw, having the head constructed to slide below the under side of said parallel branches, and having the ear or projection carrying the stud or cross pin, the detachable handle having the rack teeth, a pinion engaging said teeth and a suitable means for fixing the position of the pinion, substantially as specified.

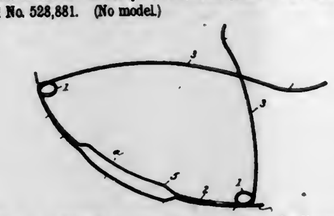
2. A pipe wrench, comprising a frame, having a seat for a removable jaw, and also having arms or bearings for a transverse shaft, in combination with a transverse shaft, a pinion on the shaft, and a ratchet wheel also on the shaft, a spring-backed dog for engaging the ratchet wheel, and a slidable jaw having a handle provided with teeth for engaging the pinion, substantially as specified.

542,266. FILE. JOSEPH LEHRBUTER, St. Louis, Mo. Filed July 10, 1894. Serial No. 517,068. (No model.)

Claim.—In a bill file the combination, with the bottom, sides, and front, thereof, of a rod placed in a slot formed in said bottom, a follower board, a follower attachment to operate on said rod, said attachment comprising a vertical portion secured to the board, a semicircular horizontal projection, to rest over said rod and a looped or socketed portion at the end of the horizontal projection said loop engaging the rod, substantially as shown and described.



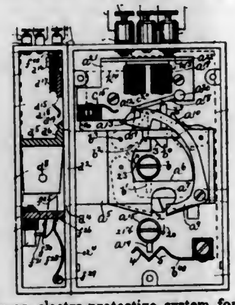
542,267. NAPKIN-HOLDER. THOMAS B. LEPLEY, Zuck, Ohio, assignor of one-half to Joseph Grant, same place. Filed Nov. 15, 1894. Serial No. 528,881. (No model.)



Claim.—1. A napkin holder consisting of two duplicate sections, each formed of an integral length of spring wire bent at a point between its ends to form a coil and having its ends extended to form the arms 2 and 3, the said arms of each section having a normal tendency to a partially elliptical position, and the arm 2 of one section being arranged parallel with the arm 2 of the other section, the two having their free ends projected to form spurs, said arms 2 being rigidly secured together so that a space will be left between their extremities and so that the arms 3 will be free, substantially as described.

2. A napkin holder consisting of two sections, each formed of an integral length of spring wire, shaped to form arms 2 and 3 and having the arms 2 secured to each other so that their ends will project ont to form spurs for attachment with the napkin, the arms 3 being free and having a tendency inward, substantially as described.

542,268. ELECTROPROTECTIVE SYSTEM FOR LOCKS. MORRIS MARTIN, Malden, assignor of one-half to Benjamin W. Wells, Boston, Mass. Filed Oct. 4, 1894. Serial No. 524,896. (No model.)



Claim.—1. In an electro-protective system for stores and like places, the combination of the following instrumentalities, viz:—an electric circuit provided with a test circuit controller and with one or more auxiliary circuit controllers, and a locking mechanism governed in its operation by the condition of the test circuit controller, for the purpose specified.

2. In an electro-protective system for stores and like places, the combination of the following instrumentalities, viz:—an electric circuit provided with a test circuit controller and with one or more auxiliary circuit controllers, a lock provided with a bolt, and a key to operate said bolt rendered effective to move the bolt in one direction by the operation of the test circuit controller, for the purpose specified.

3. In an electro-protective system for stores and like places, the combination of the following instrumentalies, viz:—an electric circuit provided with a test circuit controller and with auxiliary circuit controllers, a locking mechanism governed in its operation by the condition of the test circuit controller, and an alarm circuit rendered effective by the operation of the locking mechanism, for the purpose specified.

4. In an electro-protective system for stores and like places, the combination of the following instrumentalities, viz:—an electric circuit, a lock, and a circuit controller for said circuit co-operating with the said lock to necessitate the operation of the circuit controller to permit the lock to be actuated, for the purpose specified.

5. The combination with a lock, of an obstruction or barrier normally preventing the operation of the said lock but adapted to be moved to permit the said lock to be operated, and an electric circuit rendered effective by the movement of the said barrier or obstruction, for the purpose specified.

6. A lock constructed to be operated by two keys of different make or design, means in said lock rendered effective by the act of locking with one key to render the said lock inoperative to be unlocked by the said key, and a second key to act on said means to restore the lock into condition to be unlocked by the first key, for the purpose specified.

7. A lock constructed to be locked by the use of one key and to be unlocked by the conjoint use of two keys, means in the said lock rendered effective by the locking key to render the lock inoperative to be opened by the locking key, and a second key to act on said means to place the lock in condition to be unlocked by the locking key, for the purpose specified.

8. A lock provided with a bolt mechanism, and with a device to permit the said bolt mechanism to be unlocked by a key when the said device is in one condition, means rendered effective by the movement of the bolt in one direction to operate said device to render the said key inoperative to move the bolt in the opposite direction, and a second key to operate said device to render the first key again operative to move the bolt in the said opposite direction, substantially as described.

9. A lock provided with a bolt mechanism, and with a device to permit the said bolt mechanism to be unlocked by a key when the said device is in one condition, means rendered effective by the movement of the bolt in one direction to operate said device to render the said key inoperative to move the bolt in the opposite direction, and mechanical means to act on the said device and restore it into condition to render the said key again operative to move the bolt in the said opposite direction.

10. In an electro-protective system for stores and like places, the combination of the following instrumentalities, viz: a lock provided with a bolt mechanism, a key to effect the movement of the bolt in opposite directions, a tumbler co-operating with the said bolt and operated on the movement of the bolt in one direction to render the operating key inoperative, an electro-magnet to operate said tumbler and restore it into position to render the said key again operative, a circuit controller governing the operation of the said electro-magnet, and a movable time strip controlling the operation of the said circuit controller, substantially as described.

11. In an electro-protective system for stores and like places, the combination of the following instrumentalities, viz:—a lock mechanism, a key to operate it, an electro-magnet in circuit with said lock, and a circuit controller at the lock included in said circuit and co-operating with said key, for the purpose specified.

12. The combination of the following instrumentalities, viz:—a clock comprising a time movement, a time strip moved thereby and provided with time indications or graduations, and having one or more slots or openings, and a circuit controller governed by said time strip as described, a marking device, an electro-magnet to operate the said marking device, and a circuit controller to govern the operation of said electro-magnet.

13. The combination with a lock, of an indicator responsive in a given direction to the operation of the lock for a predetermined number, means to render the said indicator non-responsive to the operation of the lock and yet permit the said lock to be operated after the said predetermined number at which the indicator is rendered non-responsive, and means to move the indicator in the same direction to again render it responsive to the operation of the lock, substantially as described.

14. In an electro-protective system for stores and like places, the combination of the following instrumentalities, viz:—a lock provided with a bolt, means rendered effective by the act of locking to render the locking key inoperative, means to restore the lock to an operative condition to enable the inoperative key to again become operative, a barrier or obstruction to the operation of the lock by the locking key, and an electric circuit controlled by said barrier or obstruction, for the purpose specified.

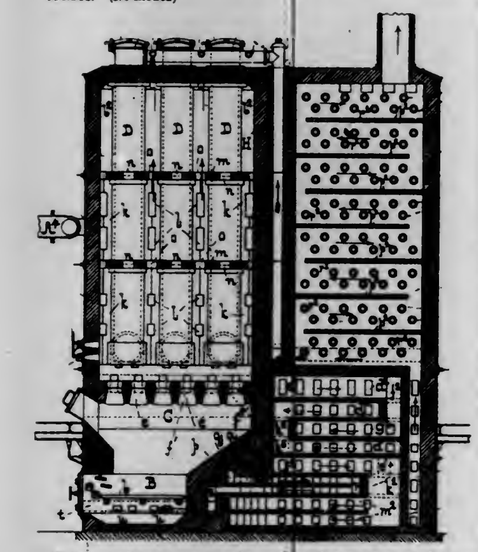
15. In an electro-protective system for stores and like places, the combination of the following instrumentalities, viz:—a lock provided with a bolt, means rendered effective by the act of locking to render

the locking key inoperative, means to restore the lock to an operative condition to enable the inoperative key to again become operative, a barrier or obstruction to the operation of the lock by the locking key, and an electric circuit controlled by said barrier or obstruction, and an alarm circuit provided with a controller operated by the said bolt, substantially as described.

16. A lock provided with a bolt having an opening a^6 and a notch or opening a^7, a movable tumbler having an arm normally forming one wall of the notch a^7, a key provided with a bit co-operating with the said tumbler, a pivoted lever to engage the tumbler and withdraw its arm from the path of movement of the said bit, a movable dog to engage the said lever and release the said tumbler, and a second key to actuate said dog, substantially as described.

542,269. APPARATUS FOR MANUFACTURE OF OIL-GAS.

FREDERICK MAYER, Baltimore, Md. Filed Dec. 11, 1894. Serial No. 531,511. (No model.)



Claim.—1. In an apparatus for carbureting water gas, the combination of a retort chamber containing a series of vertical retorts, a furnace situated under the retort chamber and separated from it by a perforated arch, a body of brickwork in the rear of the furnace having circuitous passages therein through which the products of combustion from the retort chamber pass to heat it, a vaporizing chamber erected over the said brickwork having circuitous passages therein, which form a continuation of those in the said brickwork, and which lead finally to a stack, gangs of vaporizing pipe which are partially or wholly within the said vaporizing chamber, leading ultimately to the upper ends of the retorts, to convey hydro-carbon vapors from the top of the vaporizing chamber to the top of the retorts, substantially as specified.

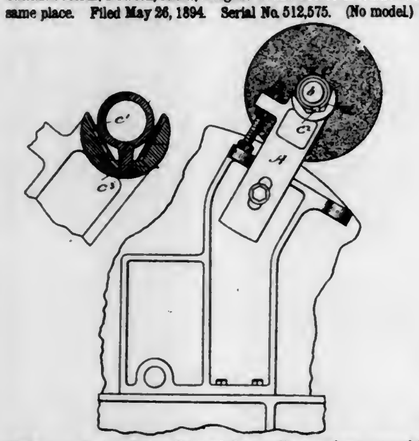
2. In an apparatus for carbureting water gas, a furnace covered by a perforated arch, combined with a retort chamber erected over the said arch, a system of vertical retorts situated in the said retort chamber, having wings which are cut away at certain points to give continuity to the various spaces exterior of the retorts and between them and the brickwork of the retort chamber, and plates which form partitions in the retort chamber between the rows of retorts therein, provided with spaces or openings through which the products of combustion ascend to the upper portion of the retort chamber, substantially as specified.

3. In an apparatus for carbureting water gas, the combination of a vaporizing chamber and a series of vaporizing pipes within the said chamber with their ends projecting from it, a box to which the ends of the said vaporizing pipes are connected, a supply pipe supported within the said box having knife-edged, or conducting plates, the points of which are over the ends of the said pipes, and overflow apertures, and a pipe for conveying hydro-carbon to the said supply pipe, substantially as specified.

4. In an apparatus for carbureting water gas, the combination of a series of vaporizing pipes connected to a box at their ends, a supply pipe in the said box having knife-edged triangular plates on its lower side with the points over the ends of the said vaporizing pipes, a conveying pipe to feed the supply pipe, and sustaining bolts which pass through stuffing boxes in the top of said box and are adjustable in length whereby the said supply pipe may be leveled in the said box without reference to its position, substantially as specified.

542,270. STAND FOR GRINDING-ROLLS OF CARDING-ENGINES.

CHARLES MILLS, Newton, Mass., assignor to the Pettee Machine Works, same place. Filed May 26, 1894. Serial No. 512,575. (No model.)

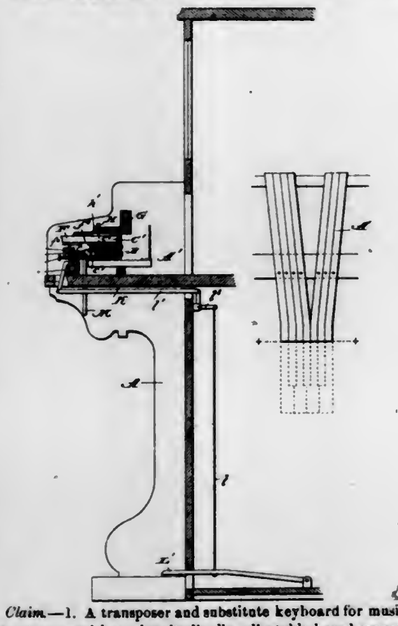


Claim.—1. A grinding roll stand for carding engines comprising supporting brackets having V-shaped shaft supports and ribbed bushings in which the shaft of the grinding roll is journaled, said bushings being mounted in said brackets so that the ribs are in contact with the inclined sides of the V-shaped shaft support, substantially as described.

2. In a grinding roll stand for carding engines, the combination with V-shaped shaft-supports, of bushings in which the grinding-roll shaft is mounted, said bushings resting upon the inclined sides of said V-shaped supports; but being separated therefrom throughout the greater portion of their lengths and peripheries, and having extensions which enter holes in the supports to prevent endwise movement of said bushings.

542,271. SUBSTITUTING AND TRANSPOSING KEYBOARD FOR PIANOS OR ORGANS.

WILLIAM S. MOSES, Tracy, Minn. Filed Nov. 1, 1894. Serial No. 527,667. (No model.)



Claim.—1. A transposer and substitute keyboard for musical instruments, comprising a longitudinally adjustable board mounted on a fixed support and provided with keys, of a strip suitably supported below the transposer and adapted to be actuated by a pedal to change the inclination of the transposer, for the purpose set forth.

2. In a transposer, the combination, of a frame which is movable longitudinally and pivotally upon a support, said frame having keys F, pins extending from said keys so as to bear upon the regular keys A', a locking-bar carried by the transposer frame and extending through a slot in the rigid board of the piano frame to engage with a rack-plate and a spring connected to the lower end of the locking-bar and to the frame, together with the rack-plate, scale or indicator-plate and indicator, substantially as shown and for the purpose set forth.

3. In a transposer for musical instruments, the combination, of a frame C the rear end of which is supported by a bar or rod B, a strip L hinged to a suitable support and connected to a pedal so that the angle of the transposer can be varied, the transposer keys having pins which engage with the regular keys of the instrument, substantially as set forth.

4. In a transposer for musical instruments, the combination, of a frame C the rear end of which is supported by a bar or rod B, a keyboard carried by the frame and located over the regular keys, the keys of the supplemental keyboard extending beyond the ends of the regular keyboard, a strip L hinged to a suitable support and connected to a pedal so that the angle of the transposer can be varied, the supplemental keys having pins which engage with the regular keys of the instrument, substantially as set forth.

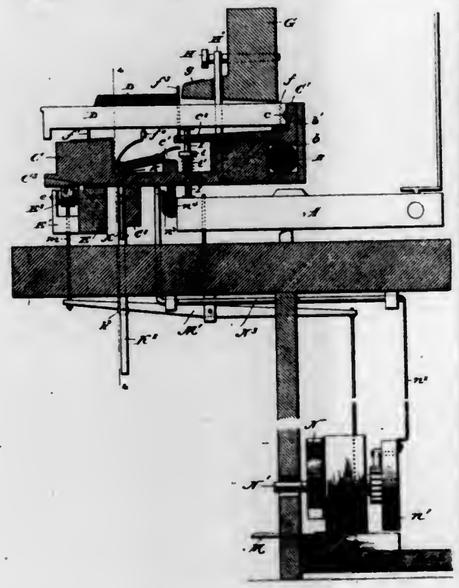
5. In a transposer for musical instruments, the combination, of a transposer mounted at its rear end upon a rod so that it can be moved longitudinally and the front portion thereof raised and lowered, a support beneath the front portion of the transposer, and means for varying the height of said support, substantially as shown and for the purpose set forth.

6. In a musical instrument having fixed supporting means for a transposer, the combination, of a transposer consisting of a frame C recessed to lie over the fixed supporting rod, coupler-boards hinged within a recess in the upper side of the frame C, wires pivoted on the coupler-boards and having bent ends one of which engages with depending pins exteuding from the transposer keys and the other with adjustable blocks carried by said keys, together with means for raising the coupler-boards, said means consisting of turn-keys E having lugs which engage with the under side of the coupler-boards, the parts being combined and organized, substantially as shown and for the purpose set forth.

7. In combination with a musical instrument, of a transposer pivotally supported at its rear end and laterally movable, a locking-bar pivoted to the transposer and extending through a slot in the frame of the instrument, a rack-bar with which the locking-bar engages and a spring connected to the lower end of the locking-bar and to the transposer, together with bars M depending from the transposer and adapted to be operated upon by the knees of the operator, for the purpose set forth.

542,272. KEYBOARD FOR PIANOS OR ORGANS.

WILLIAM S. MOSES, Tracy, Minn. Filed Mar. 28, 1895. Serial No. 543,584. (No model.)



Claim.—1. In a transposer for musical instruments, the combination, of a transposer board supported so that its forward end may be raised vertically and the transposer then moved longitudinally, of levers for elevating the front end of the transposer, and a spring-actuated frame connected to the transposer to shift the same longitudinally when raised, and means for holding the transposer against movement when lowered, for the purpose set forth.

2. In a transposer for musical instruments, the combination, of a transposer board C supported at its rear end so that it may be tilted to disengage it from its other supports and its locking means, means for automatically moving the transposer longitudinally when elevated, and pins carried by the transposer board, said pins being adapted to engage the keys of the transposer and of the instrument, and springs which abut against the transposer board and collars on the pins to exert an upward pressure on the pins and hold them out of engagement with the regular keys when the front end of the transposer board is elevated.

3. In a transposer for musical instruments, the combination, of a transposer board supported so as to be tilted and then moved longitudinally, of spring-actuating means for moving the transposer board in either direction when elevated.

4. In a transposer for musical instruments, the combination, of a transposer board having pins carried thereby and of sufficient length to engage with the keys of the transposer and with the regular keys of the instrument, an upwardly-projecting bar carried by the transposer board, said bar being positioned in front of a rigid portion of the frame said rigid portion having a series of holes for the reception of a stop-pin, and means for automatically reciprocating the transposer board when raised, substantially as shown.

5. In a transposer for musical instruments, the combination, of a rigid frame having a series of apertures, a corresponding scale-plate carried by said rigid frame, of a movable transposer having attached thereto a scale-bar and an indicator-pin, the scale-bar being in line with the holes in the rigid frame and the indicator-pin in line with the scale-plate, a removable stop-pin adapted to engage the holes in the rigid frame, and pins carried by a rail or bar adjacent to the front of the transposer, said pins being adapted to engage with apertures in the transposer, for the purpose set forth.

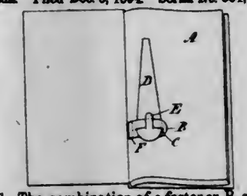
6. The combination, with a transposer mounted at its rear end upon a rod so that it can be moved longitudinally and the front portion raised and lowered, of a fixed support beneath the front part of the transposer and pins projecting therefrom to engage apertures in the transposer, and levers pivoted to the fixed support and provided with means for moving them in unison, the ends of the levers which engage the transposer being provided with rollers, substantially as shown and for the purpose set forth.

7. The combination, with a transposer constructed substantially as shown and provided with coupler-boards each having a series of wires bent as shown to engage with the keys of the transposer and with pins interposed between the supplemental and regular keys or levers, of means for raising the forward ends of the coupler-boards, said means consisting of bell-crank levers connected to each other and to depending levers or arms, said levers being actuated below the keyboard of the instrument, substantially as shown and for the purpose set forth.

8. In a transposer for musical instruments constructed substantially as shown, the combination with a pair of coupler-boards hinged to the transposer board, said coupler-boards having depending portions, of bell-crank levers pivoted to the transposer board and connected so as to move in unison, one end of the bell-crank levers engaging with depending portions formed on or attached to the coupler-boards, and operating levers each having a sliding extension, a spring for holding the coupler-boards normally out of an operative position and set-screws for limiting the movement of the operating levers in one direction, substantially as shown and for the purpose set forth.

542,273. COMBINED PAPER-CUTTER, BOOK-MARKER, AND FASTENER.

JAMES H. MUNRO and ALEXANDER R. MUNRO, New Glasgow, Canada. Filed Dec. 8, 1894. Serial No. 531,191. (No model.)



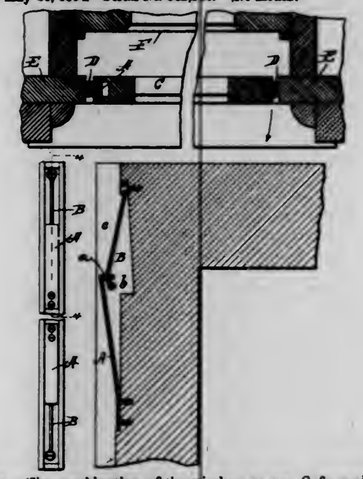
Claim.—1. The combination of a fastener B, comprising a tag or strip of cardboard having a slit or slot C, therein, and adapted to be adhesively attached at one end to a book or magazine, and a flexible paper-cutter D, of cardboard or other suitable material having a

tongue E, made by an incision near one end, the free end of the tongue pointing toward the opposite end, said paper-cutter inserted in the slot and held frictionally by the tongue, the heel of the paper-cutter overlapping a portion of the fastener, as set forth.

2. The combination of a book or magazine, a fastener B, comprising a tag or strip of cardboard or other suitable material adhesively attached at one end to the book or magazine, and having a slit or slot C, and a paper-cutter D, of cardboard or other suitable material inserted in said slot and having a tongue E, incised in said paper-cutter and overlapping a portion of the fastener, to hold the paper-cutter frictionally in place against the fastener, as set forth.

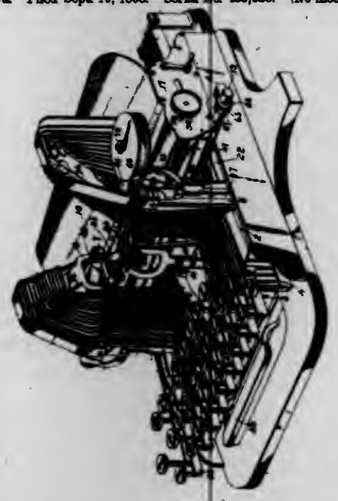
3. The combination of a fastener B, having a slot C, and a paper-cutter D, having a tongue E, overlapping a portion of the fastener when the cutter is inserted in the slot, as set forth.

542,274. WINDOW-SCREEN. PETER E. MCINTOSH, Chicago, Ill. Filed May 26, 1894. Serial No. 512,510. (No model.)



Claim.—The combination of the window screen, C, formed with the grooves, *c*, in its edges; the strips, D, secured on the opposite inner sides of a window frame; with a spring made of elastic metal bent at right angles at one end, and having a socket through such bent part, and at the other end slightly bent in the opposite direction, and having two screw holes through it in such bent portion; and a wire catch, formed with a head too large to pass through the socket, and at the other end having a screw hole, the catch passing through the socket in the head of the former, the spring and catch being screwed to the screen in its groove; substantially as and for the purpose specified.

542,275. TYPE-WRITING MACHINE. THOMAS OLIVER, Epworth, Iowa. Filed Sept. 19, 1893. Serial No. 485,823. (No model.)



Claim.—1. The combination with a carriage bearing a rotary platen, of a feeding lever, pawl-and-ratchet connections between the lever and the platen, means to actuate said lever when the carriage reaches its initial or starting position, and a gage-arm connected to the lever and carrying a cam which coacts with a fixed lug to regulate the throw of the lever.

2. The combination with a carriage bearing a rotary platen, of a feeding lever, pawl-and-ratchet connections between the lever and the platen, means to actuate said lever, a gage-arm operatively connected to the lever, and adjustable means for limiting the movement of said arm to regulate the throw of the lever.

3. The combination with a carriage bearing a rotary platen, of a feeding lever operatively connected to the platen, a gage arm connected at one end to the feeding lever, and a cam carried by the gage-arm to co-operate with a fixed lug to gage the amount of rotation of the platen.

4. The combination with a slidable carriage, and operating connections, of a marginal stop slidably fitted upon a guide-bar in the path of a projection on the carriage and having a bifurcated eye-portion loosely and revolubly mounted upon the guide-bar and a cam-ring arranged between the separated portions of the eye and feathered upon the guide-bar said eye-portion having a shoulder to engage an eccentric portion of the cam-ring.

5. The combination with a shifting frame capable of movement in a direction at right angles to the line of writing, and a carriage mounted upon said frame and provided with suitable feeding mechanism, of shifting-levers provided with oppositely-disposed stops to engage a stationary part of the shifting frame, and connections between said levers and the shifting frame whereby the latter may be moved in opposite directions from an intermediate point of rest, at which point said stationary part of the frame is engaged by the stops.

6. The combination of a slidable shifting frame provided with an extension or stem fitting in a guide and having adjustable stops to limit the movements thereof, a carriage mounted upon said frame, shifting levers, and operating connections between the levers and the shifting frame whereby the latter is moved in opposite directions from an intermediate point of rest.

7. The combination with a shifting frame and a carriage mounted thereon, of a rock-shaft operatively connected to the shifting-frame and provided with a crank bearing a lateral pin, and independently-movable shifting levers provided respectively with oppositely-curved cam-slots adapted to engage said pin to rock said shaft in opposite directions from a point of rest.

8. The combination with a carriage provided with a rack-bar and an actuating-spring, and a pivotal dog engaging said rack-bar, of a swinging releasing-bar pivoted adjacent to its upper edge and arranged with its free lower edge contiguous to the said dog and provided with a cam-lug, a spring for repressing the releasing-bar and normally holding the same out of engagement with the dog and a longitudinally slidable trip-rod having a beveled end arranged to engage said lug and move the releasing-bar toward the dog to disengage the latter from the rack-bar.

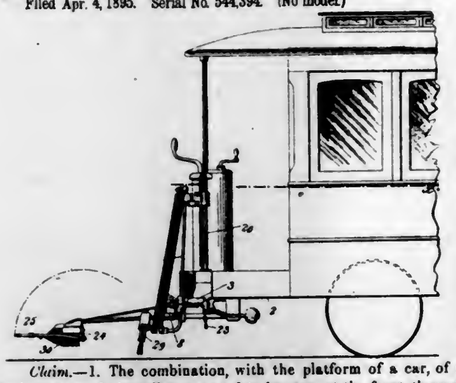
9. The combination with a carriage and feeding mechanism therefor, key-levers, and ribbon feeding devices operatively connected to the key-levers, of a pivotal ribbon-holder or guide having a cranked spindle and spaced arms having loops for the reception of a ribbon, and connections between the said cranked spindles and the key-levers, substantially as specified.

10. The combination with a carriage, feeding mechanism therefor, key-levers, and a space-bar actuated by said key-levers and operatively connected with the feeding mechanism, of a locking device comprising a transversely disposed shaft arranged parallel with the space-bar and provided with arms to engage the same, a trip arm arranged in the path of a projection upon the carriage and carried by a rotatable spring actuated spindle, and connections between said spindle and the said shaft, substantially as specified.

11. The combination with a carriage mounted for movement transverse to the line of writing and capable of a plurality of positions, feeding mechanism therefor, key-levers, a space-bar actuated by the key-levers and operatively connected with the feeding mechism, and shifting levers to move the carriage in a direction transverse to the line of writing of locking-arms arranged to engage the space-bar, a trip-arm operatively connected to the locking-arms, and a pivotal detent adjustably secured to the carriage to engage said trip-arm, and adapted to be disengaged therefrom by shifting the carriage.

12. The combination with a carriage capable of movement at right angles to the line of writing, feeding mechanism for the carriage, key-levers, and a space-bar actuated by said key-levers and operatively connected to the feeding mechanism, of locking-arms to engage said space-bar, a trip-arm connected to the locking arms a detent upon the carriage to engage said trip-arm, and means for moving the carriage in a direction at right angles to the line of writing to disengage the said detent from the trip-arm.

542,276. CAR-FENDER. DANIEL O'MAHONY, Jersey City, N. J. Filed Apr. 4, 1895. Serial No. 544,394. (No model.)



Claim.—1. The combination, with the platform of a car, of a fender or guard pivotally supported to hangers at the front thereof, a supplemental fender or guard pivotally connected therewith and adapted to be folded thereon or projected in front thereof, and brushes secured on the front of the main fender and arranged in rear of the supplemental fender substantially as shown and described.

2. The combination, with the platform of a car, of a main fender or guard frame pivotally connected with hangers supported from the platform and carrying at its front end a supplemental guard or fender pivotally connected therewith and adapted to be folded thereon or projected in front thereof, said main frame being also provided with sweepers adapted to move in contact with the track and clean the same, substantially as shown and described.

3. The combination, with the front platform of a car, of a main fender or guard frame the inner end of which consists of a shaft pivotally connected with the said platform and provided centrally thereof with a shoulder rigidly secured thereto, a lever pivotally supported beneath the platform, the forward end of which is adapted to abut against said shoulder and hold the forward end of the fender or guard frame above or adjacent to the track, and a rod or bolt extending through the platform in contact with said lever and adapted to be operated from the platform to release its connection with said shoulder and allow the fender or guard to drop to and come in contact with the track, substantially as shown and described.

4. The combination, with a car, of a main fender or guard pivotally connected at its inner end with an auxiliary fender or guard removably connected with the car and arranged substantially vertical in front thereof, said main fender or guard being adapted to be folded vertically or projected in front of the car in connection with or adjacent to the tracks and carrying at its forward end a supplemental fender pivotally connected therewith and adapted to be folded thereon or projected in front thereof, substantially as shown and described.

5. The combination with a car, of an auxiliary fender or guard suspended from the top of the dash-board of the car and removable therefrom, the hangers on the bottom of the platform having grooves or recesses therein, the projections or lugs on said fender adapted to enter said grooves or recesses, a main fender pivotally connected at its inner end to said auxiliary fender and a supplemental fender adapted to be folded on the main fender, substantially as described.

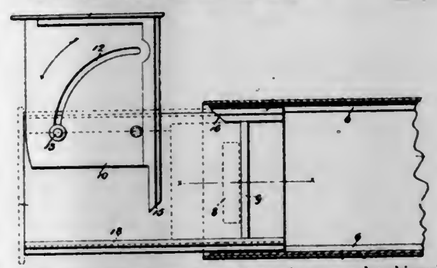
6. The combination, with a car, of a main fender or guard pivotally connected at its inner end with an auxiliary fender or guard which is removably connected with the car near the top of the dash-board and suspended therefrom and provided near its lower end with projections or lugs adapted to enter grooves or recesses formed in hangers connected with the bottom of the platform, and said main fender or guard being provided at its front end with a supplemental fender pivotally connected therewith and adapted to be folded thereon or projected in front thereof in contact with or adjacent to the track, substantially as shown and described.

7. The combination, with a car, of an auxiliary fender removably supported near the top of the dash-board and suspended in front of the car, a main fender or guard pivotally connected with said auxiliary fender a short distance above the lower end thereof by means of a shaft which forms the rear part of the frame of said main fender or guard, a shoulder rigidly secured to said shaft, a lever pivotally connected with the platform of the car, one end of which is adapted to come in contact with said shoulder or projection and the other end of which is provided with a weight, a spring connected with said lever and with a hanger connected with the platform, adapted to hold the forward end of said lever in contact with said shoulder or projection, and the front end of the main fender or guard above the track, and means for operating said lever and breaking the connection therewith said shoulder and permitting the fender or guard to drop in contact with the track, substantially as shown and described.

8. The combination, with a car, of an auxiliary fender or guard pivotally supported near the top of the dash board and removable therefrom and extending downward below the platform, a main fender or guard pivotally connected with said auxiliary fender and adapted to be folded in front thereof or projected in front of the car adjacent to the track, a supplemental fender or guard pivotally connected with the forward end of the main fender and adapted to be folded thereon or projected forward in front of the main fender or guard, and a series of brushes or sweepers connected with said main fender or guard and adapted to be brought in contact with the track, substantially as shown and described.

9. The combination of a car, of an auxiliary fender pivotally supported near the top of the dash board and removable therefrom and extending downward below the platform, a main fender or guard pivotally connected with said auxiliary fender and adapted to be folded in front thereof or projected in front of the car adjacent to the track, a supplemental fender or guard pivotally connected with the forward end of the main fender and adapted to be folded thereon or projected forward in front of the main fender or guard, and a series of brushes or sweepers connected with said main fender or guard and adapted to be brought in contact with the track, a lever pivotally supported beneath the platform of the car, the rear end of which is weighted and the front end of which is adapted to come in contact with and abut against a shoulder formed on the rear end of the main fender or guard and hold the same above the track, and means for operating said lever, consisting of a rod or bar extending vertically therefrom through the platform, whereby the connection between the lever and the shoulder may be broken and allow the main fender or guard to drop in contact with the track, substantially as shown and described.

542,277. BOOKCASE. PETER J. PAULY, Sr., St. Louis, Mo. Filed Oct. 1, 1894. Serial No. 524,585. (No model.)



Claim.—1. A book case comprising a drawer, a plate hinged to the same and adapted to swing in a plane substantially parallel to the bottom of said drawer, suitable means in connection with the drawer bottom for limiting the movement of the hinged plate in one direction, and a vertical front plate for said hinged plate having a suitable handle, substantially as set forth.

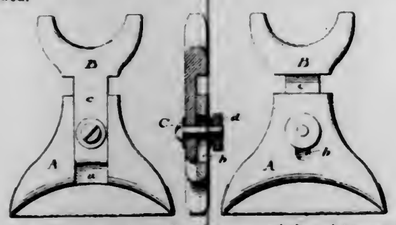
2. A book case having a suitable opening, guide-ways located within the same, a drawer adapted to slide within the opening and provided with tongued strips, a plate adapted to swing in a plane substantially parallel to the bottom of the drawer hinged to said drawer and provided with a curved slot, a pin passing through said slot and into said drawer for limiting the movement of the hinged plate in one direction, and a front plate provided with a suitable handle for closing the opening for the drawer, substantially as set forth.

3. A book case comprising a suitable opening, guide-ways within the same, tongued strips movable within the guide-ways, a drawer to which the said strips are secured, a hinged plate carried by said drawer and having a tongued strip secured to one edge of the same and extending a suitable distance beyond the rear edge thereof, a mitered edge formed on the free edge of said strip and adapted to co-operate with a similar edge formed on one of the tongued strips of the drawer, a semi-circular slot formed in said plate, a pin passing through said slot and into said drawer, a front plate secured to the front edge of the hinged plate and provided with a suitable handle, and a groove forming a part of the drawer for receiving the free edge of the hinged plate when the latter is in a closed position, substantially as set forth.

542,278. WRIST-SUPPORT FOR VIOLIN-PLAYERS. JOHN H. PETERMANN, Trenton, N. J. Filed June 20, 1894. Serial No. 515,180. (No model.)

Claim.—1. A wrist support for violin players forked or crotched at each end adapted to embrace the hand or wrist at one end and the neck of the violin at the other end and having a retaining band

attached to the forks of one end thereof; substantially as shown and described.

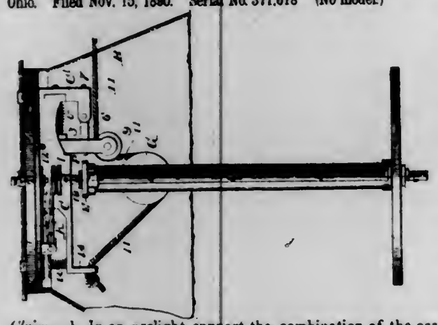


2. A wrist support for violin players consisting of two or more parts extensibly adjustable as to each other, said support being forked or crotched at each end and adapted to embrace the hand or wrist at one end and the neck of the violin at the other end thereof; substantially as shown and described.

3. A wrist support for violin players consisting of two parts, each of said parts being crotched or forked at one end, one of said parts having a tongue adapted to play in or upon the other of said parts, in combination with an adjustable clamping device adapted to clamp the two parts together at various points within the degree of their extensibility; substantially as shown and described.

4. A wrist support for violin players consisting of two forked or crotched parts relatively adjustable to each other, one of said parts having a tongue adapted to play within or upon the other of said parts, and the other of said parts having a perpendicular groove within which said tongue is placed and a retaining band attached to the forks thereof, in combination with a clamping device adjustably connecting said parts; substantially as shown and described.

542,279. ARC-LIGHT SUPPORT. BARTON PICKERING, Dayton, Ohio. Filed Nov. 15, 1890. Serial No. 371,618. (No model.)



Claim.—1. In an arclight support the combination of the case with spring actuated catch 1, held therein, having ears 2 on the top and lugs 31 on the sides at the bottom, the gravitative dog 4 pivoted in said ears, to hold said catch out of contact with the hanger, the pintle 3, spring actuated lever 7, the locking dog 6 pivoted to the case at one end and the other resting on said lever, the operating arm P pivoted to said case and engaging said lugs of the catch, the shouldered hanger D provided with plate E which supports an arc-lamp, the conductor rod H held in said plate and the pulley G; the rope 11 to raise and lower said lamp, the electrical circuit plate 12, pivotal arm K to engage said conductor rod, pivotal arm J with spiral spring to hold the same in contact with said plate, when said lamp is out of circuit, the plate L, with time connections, substantially as shown and described.

2. In combination with the spring-actuated catch having an inclosing case, the shouldered hanger head to engage said catch, the gravitative dog held in the ears of said catch to hold said head out of engagement with said catch when by bearing against the face of the same, the same is withdrawn from contact with said hanger, substantially as described.

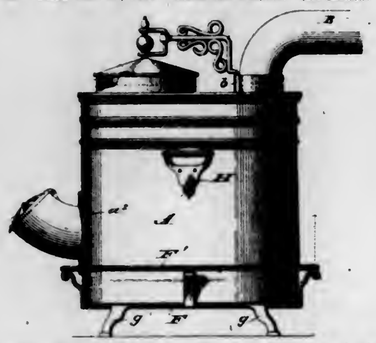
3. The combination of the case, the operating arm P with cross-bar, and pulley 9 pivoted therein, the spring-actuated catch with lateral lugs to engage said arm, the spring-actuated lever and dog held on said lever and the two pivoted to said case, as a means to hold said operating arm from being carried back and thereby preventing the carrying back said catch, substantially as set forth.

4. The combination of the case provided with a lug for the attachment of a rope, the spring-actuated catch having a gravitative dog pivoted at its front end, lugs on its sides and carrying a pintel in a vertical orifice, the operating-arm provided with a cross-bar and pulley for a rope, hanger D provided with a pulley, lever 7 with spring, and engaging dog 6, to lock said operating arm, that the hanger-head may be attached when the same is drawn up, and to carry back said catch and thereby release said hanger, substantially as set forth.

5. In an arclamp suspension catch the combination of the long and short electric circuits; the former comprising plate 12 connected with line wire, arm K, insulated connecting rod H, helices, hanger D, case and plate L with line; the latter comprising plate 12, pivotal connection arm J, case and plate L to line, substantially as set forth.

6. In an arclamp suspension catch the insulated conductor rod H supported in lamp and hanger, the hanger head to which said lamp is suspended, arms J and K, to form distinct electrical circuits, as said lamp is attached and detached, to and from said suspending catch, substantially as set forth.

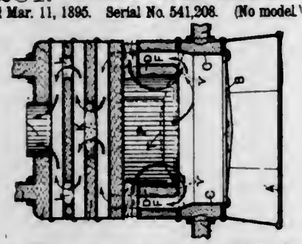
542,280. PORTABLE STOVE. JOHN H. RENFROE, Willow Springs, Mo. Filed Mar. 21, 1895. Serial No. 542,665. (No model.)



Claim.—1. In combination with a stove constructed substantially as shown and provided with an opening in its top, of a cover D adapted to close said opening and provided with an upwardly projecting pin *d*, a bail C pivotally connected at its ends to the pin *d*, and a swinging bracket B' suitably supported on the top of the stove and having at its outer end an apertured knob which loosely engages the connecting portion of the bail, substantially as shown and for the purpose set forth.

2. In combination with a stove of the character described, a bracket supported so as to swing horizontally in its support, said bracket having an apertured outer end, a cover for an opening in the top of the stove having an upwardly-projecting pin with which the ends of a bail engage, the connecting portion of the bail being in engagement with the aperture at the end of the bracket, the parts being organized so that the cover can be raised vertically and swung to one side of the opening, substantially as shown.

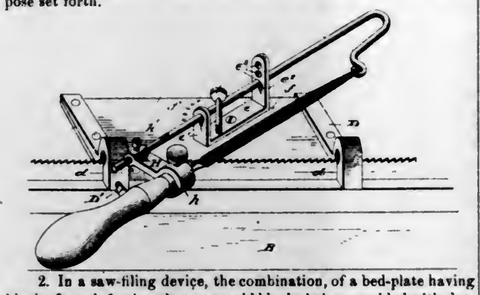
542,281. SECTIONAL BOILER. HOMER D. ROGERS, Chicago, Ill. Filed Mar. 11, 1895. Serial No. 541,208. (No model.)



Claim.—The combination in a sectional boiler furnace, of a grate, an air tight chamber below the grate, forming the ash pit, a substantially annular chamber at the sides above and surrounding the grate and forming the fire chamber, a hollow water section above the annular water chamber, forming the closed top of the fire chamber, air passageways opening into the top portion of the fire chamber, and flues leading vertically from the sides at the middle or lower portion of the fire chamber through the annular water chamber, and through the water chamber which is imposed upon the annular water chamber, as hereinbefore stated.

542,282. SAW-SHARPENING TOOL. CHARLES P. ROOD, La Fargeville, N. Y. Filed Mar. 28, 1895. Serial No. 543,570. (No model.)

Claim.—1. In a saw-filing device, the combination, of a bed-plate having blocks attached to the ends thereof which are adapted to engage with the saw-blade, a set-screw passing through one of said blocks to impinge against the saw-blade, a frame pivoted to the bed-plate and having upwardly-projecting members one of the members having a vertical series of apertures and the other a single one, and means for holding the frame upon the bed-plate; together with a bar one end of which is looped and formed into an eye and the other end flattened, and a clamp having sockets into which pass the end of the bar and handle of a file, the point of the file engaging the eye formed on the other end of the bar, substantially as shown and for the purpose set forth.



2. In a saw-filing device, the combination, of a bed-plate having blocks for reinforcing the same, said blocks being provided with slots to receive the saw-blade, a frame having a base and upwardly-projecting members of different lengths, the shorter member having a single aperture and the longer member a vertical series of apertures, means for adjusting the frame upon the bed-plate and retaining it fixedly thereon, together with a bar adapted to engage with the frame one end of the bar being formed to receive the tip of the file and the other being partially flattened to receive a clamp, said clamp being adapted to also engage the ferruled end of the file-handle, substantially as shown.

542,283. PLATE-GIRDER. HARRY H. ROUSSEAU, Pittsburg, Pa. Filed Nov. 14, 1894. Serial No. 528,721. (No model.)



Claim.—1. A plate-metal girder comprising a flat web-plate and built up edge-flanges severally composed of a plurality of connected irons having their combined mass distributed symmetrically about the line of rivet-connection with the web, substantially as described.

2. In a plate-metal girder, the combination with a flat web-plate, of an edge-flange formed of separate angle-irons on opposite sides of the web, and flange-attaching rivets severally inserted perpendicularly through the web, and the irons on both sides of the web, approximately at the center of gravity of the flange-section, substantially as described.

3. In a plate-girder, the combination with a web-plate of an attached edge-flange comprising four angle-irons arranged in pairs on opposite sides of the web with lapping vertical legs and their horizontal legs projecting in parallel planes, and attaching rivets severally inserted through the web and the lapping legs of the four angle-irons, substantially as described.

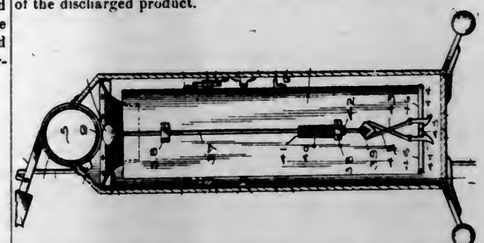
4. In a plate-girder, the combination with a web-plate and I-shaped flanges secured to its opposite edges, of stiffening plates severally comprising a straight section of angle-iron secured by one of its legs directly to the web-plate and bearing at opposite ends upon the inner edges of the I-shaped flanges, substantially as described.

5. A plate-metal girder comprising a web having I-shaped flanges on its opposite longitudinal edges and its center-line coincident with the center-lines of the web-portions of the respective flanges, substantially as described.

542,284. AUTOMATIC WEIGHING-SCALE. ANDREW SCHULZE, Lott, Tex., assignor to the Kingsland & Douglas Manufacturing Company, St. Louis, Mo. Filed Oct. 8, 1894. Serial No. 525,209. (No model.)

Claim.—1. In combination with a pneumatic conveyer, a closed casing connected thereto, a weighing apparatus therein whose receptacle is in communication with said pneumatic conveyer and receives cotton or other product thereform, doors at the bottom of said weighing receptacle, automatic means opening said doors, and doors at the bottom of the casing adapted to be opened by the weight of the discharged product.

2. In combination with a pneumatic conveyer, a closed casing connected thereto, a weighing apparatus therein whose receptacle is adapted to receive cotton or other product from the conveyer, a valve for cutting off the supply of cotton, connections for opening the weighing receptacle when the scale of the weighing apparatus is tipped, and doors in the casing adapted to be opened by the weight of the discharged product.



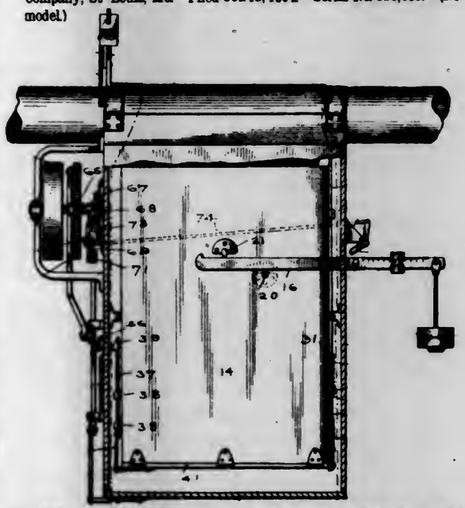
3. In combination with a pneumatic conveyer, a closed casing connected thereto, a weighing apparatus therein whose receptacle is adapted to receive cotton or other product from the conveyer, connections for opening the weighing receptacle when the scale of the weighing apparatus is tipped, and doors in the casing adapted to be opened by the weight of the discharged product.

4. In combination with a pneumatic conveyer, a closed casing connected thereto having doors normally held closed, a weighing apparatus in such casing whose receptacle is adapted to receive cotton or other product from the conveyer, a valve for cutting off the supply of cotton, doors in the casing adapted to be opened by the weight of the discharged product, and valve connections for turning on the supply of cotton from the conveyer to the weighing receptacle.

5. In combination with a pneumatic conveyer, a closed casing connected thereto, a weighing apparatus therein whose receptacle is adapted to receive cotton or other product from the conveyer, a valve between such conveyer and receptacle, doors in such receptacle, actuating connections between such doors and said valve, valve-operating devices between the scale of the weighing apparatus and the said valve, whereby when the scale of the weighing apparatus is tipped such doors will be opened and such valve be closed, and doors in the bottom of said casing adapted to be opened by the discharged product.

6. In combination with a pneumatic conveyer, a closed casing connected thereto, a weighing apparatus therein whose receptacle is adapted to receive cotton or other product from the conveyer, a suitable valve between said conveyer and receptacle, doors in such receptacle and casing, actuating connections between the doors of such receptacle and the conveyer valve for opening such doors as the valve is closed, the doors of the casing being opened by the weight of the discharged product, and resetting means operated at will for again putting the weighing apparatus into operation and opening the conveyer valve.

542,285. AUTOMATIC COTTON-WEIGHING SCALE. ANDREW SCHULZE, Lott, Tex., assignor to the Kingsland & Douglas Manufacturing Company, St. Louis, Mo. Filed Oct. 15, 1894. Serial No. 526,009. (No model.)



Claim.—1. In combination with a pneumatic conveyer, a scale suitably supported within a closed casing, connected with the conveyer, a weighing receptacle carried by the scale adapted to receive

cotton or other products from the conveyer, means connected with the scale for cutting off the supply and opening the weighing receptacle and casing when such scale is tipped, and devices for then closing said receptacle and casing and turning on the supply.

2. In combination with a pneumatic conveyer, a scale supported within a closed casing connected with the conveyer, the weighing receptacle of such scale adapted to receive cotton or other staples through a gate or valve in the conveyer, doors in the weighing receptacle and casing, means for opening such doors and closing the conveyer valve on the tipping of the scale beam, and devices for closing such doors and opening such valve on the emptying of the weighing receptacle.

3. In combination with a pneumatic conveyer, a closed casing connected to the conveyer, a scale beam pivoted within such casing, a weighing receptacle carried by such scale beam and adapted to receive cotton or other products through a valve in said conveyer, doors in said receptacle and the casing, mechanism connected with the scale beam for automatically opening such doors on the tipping of the scale beam and closing the conveyer valve and then closing such doors with the opening of said valve.

4. In combination with a pneumatic conveyer, a closed casing connected to such conveyer, a scale within such casing, its weighing receptacle adapted to receive cotton or other products through a valve in said conveyer, doors in the bottom of such weighing receptacle and casing, means connected with the conveyer valve for opening the doors of the weighing receptacle as such valve is closed, mechanism connected with the scale for opening the doors of the casing and closing the conveyer valve when the scale is tipped, and then closing the doors of both the casing and weighing receptacle and opening the conveyer valve.

5. In combination with a pneumatic conveyer, a closed casing connected to the conveyer, a scale within such casing, its weighing receptacle adapted to receive cotton or other products through a valve in said conveyer, doors in the bottom of such weighing receptacle and casing, means connected with the conveyer valve for opening the doors of the weighing receptacle, mechanism connected with the scale for opening the doors of the casing and closing the conveyer valve, then closing the doors of both the casing and weighing receptacle and opening the conveyer valve, and means for operating said mechanism put into connection therewith by the tipping of the scale.

542,286. LAMP. WALTER J. SMART, Brooklyn, N. Y. Filed June 20, 1893. Serial No. 478,298. (No model.)



Claim.—1. The combination of a combustion chamber, a straight burner body extended through said combustion chamber, burner ducts extended downward from the burner body, a perforated plate through which the burner ducts extend and a plate like piece extending above and below the burner body, substantially as specified.

2. The combination of a combustion chamber of substantially cylindric form, a burner body extended lengthwise within the combustion chamber, burner ducts extended downward from said burner body, a diaphragm or plate like piece rearward of the burner body and extended above and below the same, a perforated plate through which the burner ducts pass, and a deflector forward of said burner ducts, substantially as specified.

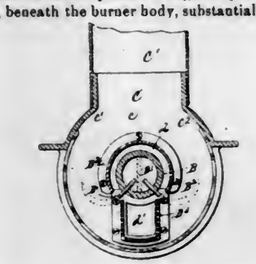
3. The combination with a combustion chamber of a burner body, extended therethrough and having a straight row of downwardly extended burner ducts, removable plugs for the ends of the burner body, the perforated plate having an inclined portion, the diaphragm rearward of the burner body and a deflector having connection with the perforated plate, substantially as specified.

4. The combination with a casing forming a combustion chamber of a burner body extended therethrough, burner ducts projected downward from the burner body, a perforated plate through which said ducts project, a deflector plate extended above and forward of the burner body and a reflecting surface on said deflector.

542,287. LAMP. WALTER J. SMART, Brooklyn, N. Y. Filed Nov. 15, 1894. Serial No. 528,871. (No model.)

Claim.—1. The combination with a combustion chamber, of a burner body extended lengthwise in said chamber, two series of jet tubes extended therefrom and a deflector plate having its lower edge substantially on a horizontal plane with the jet outlets, substantially as specified.

2. The combination with a combustion chamber, of a burner body extended lengthwise therein, two series of jet tubes extended at opposite angles from the burner body, a deflector plate extended around a portion of the burner body and a trough shaped plate, having perforated walls, beneath the burner body, substantially as specified.



3. The combination of a combustion chamber, a straight burner body therein divided into compartments by a partition, a set of jet tubes extended from each of said compartments, the deflector plate and the perforated plate, substantially as specified.

542,288. HAME-FASTENER. JOHN W. STANLEY, Blue Springs, Mo. Filed Nov. 10, 1894. Serial No. 528,409. (No model.)



Claim.—1. A hame fastener comprising a longitudinally-slotted body having teeth on one side and having a yoke at one end, a slidable section movable through the yoke and located on that side of the slotted body opposite the teeth, an arm pivoted to the inner end of the slidable section and operating through the slot of the body, and having a transverse portion at its free end to engage with the said ratchet teeth, and a lever to extend over the slotted side of the body and positively secure the free end of the pivoted arm in engagement with any of the said teeth, substantially as described.

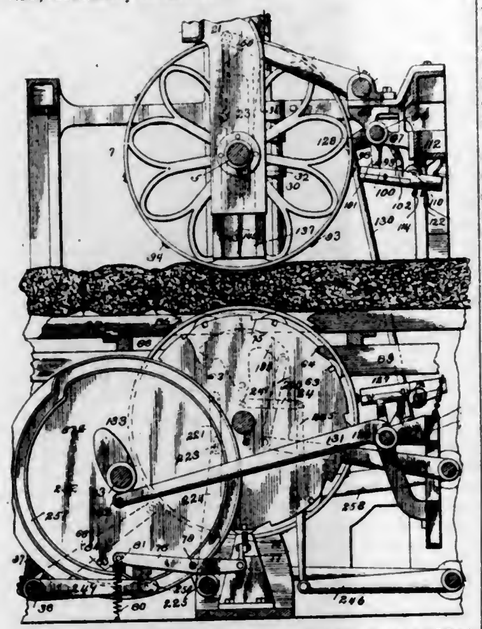
2. In a hame fastener, the combination with a longitudinally-slotted body having ratchet teeth on one side, a section having a hook and slidably connected with the said body and arranged to move upon the side opposite that provided with the teeth, and an arm having pivotal connection at one end with the said section and operating through the longitudinal slot of the body, and having a transverse portion at its free end to engage with any one of the series of ratchet teeth, of a lever having laterally extending flattened journals and constructed to project over the toothed side of the slotted body and hold the free end of the pivoted arm in positive engagement with the required ratchet teeth, and a spring exerting a pressure upon the flattened journals of the lever so as to hold the latter in intimate relation with the slotted body, substantially as set forth.

3. In a hame fastener, the combination with a longitudinally-slotted body having ratchet teeth on one side, and a section slidably connected with the slotted body and having a portion to engage with the said ratchet teeth, of a lever having flattened journals at one end, and a plate secured at one end to the slotted body and having projecting portions at its opposite end to bear against the said flattened journals to maintain the said lever in closed relation upon the slotted body, substantially as set forth for the purpose described.

4. The herein shown and described hame fastener, comprising a longitudinally-slotted body having a yoke at one end and formed on one side with a series of ratchet teeth, a slidable section arranged on that side of the body opposite the teeth and operating through the said yoke, an arm pivoted at one end to the slidable section and operating through the longitudinal slot of the body, and having a transversely-disposed pin at its free end to engage with the said ratchet teeth, a lever having its inner end curved and formed with laterally-extending flattened journals which are fitted in recesses at that end of the slotted body opposite the yoke, and a plate secured at one end to the slotted body and having its opposite end slotted and formed with lips to engage with and retain the flattened journals in the recesses, and by means of which the said lever is held in closed relation upon the slotted body, substantially as and for the purpose set forth.

542,289. MACHINE FOR TUFTING MATTRESSES. EDWIN N. STEPHENSON, Waco, Tex. Filed July 12, 1894. Serial No. 517,348. (No model.)

Claim.—1. In a mattress-tufting machine, the combination with an upper and a lower series of feed wheels and with gearing driving the same in unison, of two series of tuft-carrying devices, and means for vibrating the same toward and from the feed-wheels, the latter being provided, at suitable intervals, with tuft-retaining devices, substantially as described.



2. The combination with an upper and a lower series of feed-wheels each provided upon its periphery with tuft-retaining devices, arranged at intervals, of an upper and lower series of tuft-carrying devices, tuft-feeding devices automatically co-operating therewith, and mechanism for intermittently vibrating the tuft-carrying devices toward and from said feed-wheels, substantially as described.

3. The combination with an upper and a lower series of feed-wheels, each provided upon its periphery with tuft-retaining devices arranged at suitable intervals, of an upper and lower series of tuft-carrying devices each consisting of a barrel adapted to contain a number of tufts, automatically operated feed-bars for advancing the tufts in said barrels, and mechanism for vibrating the two series of tuft-carrying devices toward and from said feed-wheels at proper intervals, substantially as described.

4. The combination with an upper and a lower series of feed-wheels, each having tuft-retaining devices arranged at suitable intervals upon its periphery, of an upper and lower series of tuft-carrying devices each consisting of a barrel adapted to contain a number of tufts, a series of toothed feed-bars arranged in said barrels, pinions carried by shafts journaled on said barrels and meshing with said toothed feed-bars, a series of arms loosely mounted on the pinion-shafts, pawls mounted on said arms and meshing with ratchets on said shafts, and mechanism for vibrating the tuft-carrying devices toward and from the feed-wheels at intervals whereby the pawl-carrying arms are vibrated, substantially as described.

5. The combination with an upper and a lower series of feed-wheels, each provided on its periphery with tuft-retaining devices arranged at intervals, of an upper and lower series of tuft-carrying devices each comprising a barrel and an automatically operated feed-bar, an upper and a lower rock-shaft upon which the two series of tuft-carrying devices are mounted, means for intermittently operating one of said rock-shafts to vibrate its tuft-carrying devices toward and from one series of feed-wheels, and a connecting-rod by which simultaneous action is communicated from one rock-shaft to the other, substantially as described.

6. The combination with a feed-wheel provided at suitable intervals on its periphery with tuft-retaining spurs, or points, of a tuft-feeding device, consisting of a barrel adapted to contain a number of tufts, a toothed feed-bar lying in said barrel, a pinion engaging said bar and carried by a shaft journaled on the barrel, a ratchet fixed on said shaft, an arm loosely mounted thereon and carrying a pawl engaging the ratchet, a screw-threaded spindle pivoted on a fixed support and passing through a sleeve on the end of said arm, said spindle being provided with stop-nuts above and below said sleeve, a rock-shaft on which is mounted the barrel-supporting arms, and means for operating said rock-shaft at intervals to vibrate the tuft-feeding device toward and from the feed-wheel, substantially as described.

7. The combination with an upper and a lower series of feed-wheels, each provided at intervals upon its periphery with tuft-retaining spurs, or points, of an upper and lower series of tuft-carrying devices, automatic tuft-feeding devices, an upper and a lower rock-shaft upon which the two series of tuft-carrying devices are rigidly mounted, an actuating lever-arm rigid upon one of said rock-shafts, a cam arm revolving in the same plane with the end of said lever, and a connecting-rod uniting arms upon the upper and lower rock-shafts said arms extending in opposite directions from the shafts, substantially as described.

8. The combination with an upper and a lower series of feed-wheels, between which the mattress is advanced and compressed, of a vertically adjustable support for the shaft carrying the upper series, spur-gears mounted on both upper and lower shafts, a gear mounted on a fixed axis and meshing with the spur-gear on the shaft carrying the lower series of feed-wheels, and an intermediate gear meshing with the gear on said fixed axis and with the spur-gear on the shaft carrying the upper series of feed-wheels, said intermediate gear being mounted on an arm which is loose on said fixed axis, substantially as described.

9. The combination with an upper and a lower series of feed-wheels carried by a vertically adjustable and a non-adjustable shaft respectively, of spur-gears mounted on said shafts, a gear mounted on a fixed axis lying in the same vertical line with said upper and lower shafts, an intermediate gear meshing with both the gear on said fixed axis and the spur-gear on the adjustable upper shaft, and a carrier-plate loosely mounted on the fixed axis and carrying a bearing for the intermediate gear, said carrier-plate being provided with an arm having a slot curved on a line struck from the fixed axis, as a center, and receiving a set-screw which is tapped into the machine frame, substantially as described.

10. The combination with an upper and a lower series of feed-wheels and with mechanism for imparting intermittent rotary motion thereto, of a series of tufting-needles, a series of needle-gates carrying said tufting-needles and movable in brackets which lie adjacent to the feed-wheels of the upper series, and mechanism for reciprocating said needle gates in unison, substantially as described.

11. The combination with an upper and a lower series of feed-wheels and with mechanism for imparting intermittent rotary motion thereto, of a series of tufting-needles, a series of needle-gates carrying said needles and movable in brackets which lie adjacent to the feed-wheels of the upper series, means for reciprocating the needle-gates in unison, and a series of knotters to knot the tufting-twine on the under side of the mattress, substantially as described.

12. The combination with an upper and a lower series of feed-wheels, each provided, at intervals upon its periphery, with tuft-retaining devices, of a series of tufting-needles carried by needle-gates which move vertically in brackets arranged adjacent to the feed-wheels of the upper series, means for reciprocating said needle-gates at intervals, and mechanism for giving, between two successive reciprocations of said needle gates, a limited lateral movement to the support for the mattress and to both series of feed-wheels, between which the mattress is compressed, substantially as described.

13. The combination with an upper and with a lower series of feed-wheels, each having, at intervals upon its periphery, suitable tuft-retaining devices, of an upper and lower series of tuft-carrying devices, rock-shafts on which said tuft-carrying devices are mounted, means for operating said rock-shafts at intervals, to cause both series of tuft-carrying devices to approach and recede from the feed-wheels in unison, a series of tufting-needles and needle-gates movable in brackets which lie adjacent to the feed-wheels of the upper series, means for reciprocating said needle-gates at intervals, and mechanism for moving the mattress support and both series of feed-wheels laterally, between two successive reciprocations of the tufting-needles, substantially as described.

14. The combination with an upper and a lower series of feed-wheels, each pivoted with tuft retaining devices arranged at intervals on the periphery, of an upper and lower series of tuft-carrying devices, means for vibrating the same, at intervals, toward and from the feed-wheels, a series of tufting-needles carried by needle-gates which move in brackets lying adjacent to the feed-wheels of the upper series, means for reciprocating said needle-gates at intervals, a series of knotters lying beneath the peripheries of the feed-wheels of the lower series, means for operating said knotters, and mechanism for giving a limited lateral movement to the mattress support and to both series of feed-wheels, simultaneously, between two successive reciprocations of the needle-gates, substantially as described.

15. The combination with an under and a lower series of feed-wheels, each provided with tuft-retaining devices arranged at intervals on its periphery, of longitudinally movable shafts carrying the upper and lower series of feed-wheels, and mechanism for imparting a limited longitudinal movement to both shafts simultaneously, at suitable intervals, substantially as described.

16. The combination with an upper and a lower series of feed-

wheels mounted on shafts which are movable longitudinally, of mechanism for imparting a limited, longitudinal movement to said shafts simultaneously, substantially as described.

17. The combination with an upper and a lower series of feed-wheels mounted on shafts which are movable longitudinally, of a rock-shaft having rigid arms linked to both of the feed-wheel-shafts, and means for operating said rock-shaft at intervals, substantially as described.

18. The combination with an upper and a lower series of feed-wheels mounted on shafts which are longitudinally movable, of a vertical rock-shaft having rigid arms which extend immediately above and beneath each of the feed-wheel-shafts, to which said arms are linked, said rock-shaft being also provided with a lever-arm, and means for operating said lever-arm at suitable intervals to give a limited longitudinal movement to both the feed-wheel-shafts simultaneously, substantially as described.

19. The combination with an upper and a lower series of feed-wheels mounted upon shafts which are longitudinally movable, each feed-wheel being provided with tuft-retaining devices arranged at intervals on its periphery, of an upper and lower series of automatic tuft-carrying devices, a series of tufting-needles carried by a series of needle-gates which move in brackets adjacent to the feed-wheels of the upper series, a series of operating levers linked to the needle-gates, a rock-shaft carrying said levers, means for operating said rock-shaft, a rock-shaft having arms linked to the shafts of the feed-wheels, means for operating said rock-shaft at intervals, and a series of knotters arranged within the peripheries of the feed-wheels of the lower series, substantially as described.

20. The combination with an upper and a lower series of feed-wheels mounted on longitudinally movable shafts each feed-wheel being provided at intervals upon its periphery with tuft-retaining devices, of an upper and lower series of tuft-carrying devices each consisting of a barrel adapted to contain a number of tufts, a series of automatically operated feed-bars arranged in said barrels, an upper and lower rock-shaft carrying the two series of tuft-carrying devices, said rock-shafts having oppositely extending arms connected by a rod, a cam-actuated lever arm mounted on one of said shafts, a series of tufting needles, a series of needle-gates movable in brackets arranged adjacent to the feed-wheels of the upper series, a series of lever-arms linked to the gates, a rock-shaft carrying said lever-arms, a rock-shaft having rigid arms which are linked to both the feed-wheel-shafts, means for operating both of said rock-shafts at different times, and a series of knotters arranged within the peripheries of the feed-wheels of the lower series, substantially as described.

21. The combination with an upper and lower set of feed-wheels for advancing the mattress intermittently, of a series of needles, a series of intermittently rotating knotter-heads having looper-arms, an upper series of twine clamping devices upon the shells inclosing the knotter heads, a lower series of twine clamping devices and means for automatically operating said parts in relation to each other, substantially as described.

22. The combination with automatic means for advancing the mattress, of a series of tufting-needles, an upper series of twine-clamping devices, a series of knotter-heads having looper arms, vertically movable stems arranged in and adapted to rise at intervals above said knotter-heads, a pair of twine-clamping jaws mounted on an annulus surrounding each knotter-head, means for swiveling said annuli at intervals and for operating the jaws, mechanism for rotating the knotter-heads, and a series of twine-clamping and knot-drawing devices arranged below the knotter-heads, substantially as described.

23. The combination with a series of tufting-needles of a corresponding series of knotter-heads arranged beneath the mattress, each head comprising a looper-arm and having a metallic section capable of a limited rotary movement between an upper and lower section, the upper section of the looper-arm projecting beyond the others and having a hooked end with a hanging barb, a spring normally pressing the end of the middle section against the edge of the barb, stems adapted to rise periodically above the knotter-heads, mechanism for revolving the latter, means for catching and holding the cut ends of the twine, as the needles descend the first time, and a series of twine-clamping and knot-drawing devices to catch the twine-loops as the needles descend the second time, substantially as described.

24. The combination with a series of tufting-needles of an upper and lower series of feed-wheels, a series of needles and needle-gates arranged within the peripheries of the upper series of feed-wheels, means for moving the shafts of both series longitudinally between two successive strokes of the needles, a series of knotter-heads having looper-arms arranged within the peripheries of the lower series of feed-wheels, means for rotating said knotter-heads at suitable intervals, a series of vertically movable stems lying in said knotter-heads, means for projecting the same upward, a series of pairs of jaws mounted on annuli surrounding the knotter-heads, means for giving rotary movement to said annuli, cutters mounted upon the movable jaws, means for operating the jaws and cutters, and a series of twine-clamping and knot-drawing devices arranged below the knotter-heads, substantially as described.

25. In a mattress-tufting machine, a revoluble knotter-head having a stem, and a looper-arm, the head and looper-arm being formed in three sections, the upper and lower thereof rigid with the stem and the middle section capable of a limited rotary movement between them, the upper section of the looper-arm being prolonged beyond the others and provided with a hanging barb, against the edge of which the end of the middle section is held by a spring, substantially as described.

26. In a mattress-tufting machine, a revoluble knotter-head having a looper-arm the whole being formed in three sections, the middle section capable of a limited rotary movement, the upper section of the looper arm extending beyond the other sections and being provided at its end with a hook having a hanging barb, the beveled extremity of the lower section lying near the point of said barb, and a spring normally pressing the end of the middle section against the edge of said barb, substantially as described.

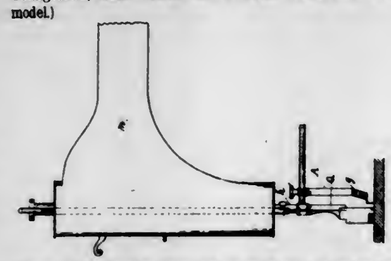
27. In a mattress-tufting machine, a knotter-head having a looper-arm, the whole formed in three sections, the middle section being capable of a limited rotary movement, a spring by which the end of the middle section of the looper-arm is normally pressed against the edge of a hanging barb on the prolonged end of the upper section, a circular shell in which said knotter-head revolves, an inwardly pressed stop adapted to engage a lip on the outer face of the middle section, which overhangs a release-cam on the lower-section, an annulus mounted on an outer shoulder on said shell and having a rigid jaw, a movable jaw having a curved lever, a cutter mounted on the same axis and having a similarly curved lever the end of which has a lug hanging against the outer face of the jaw-lever and connected to the end of the latter-lever by a spring, a frame inclosing a curved slot adapted to receive a friction-roll on a stud hanging from the lug on the cutter lever, a bracket supporting said frame, means for moving said bracket toward and from the circular shell, and mechanism for swiveling the annulus and revolving the knotter-head, substantially as described.

28. In a mattress-tufting machine, a device for catching and holding the twine and drawing the knot, consisting of a jaw-plate pivoted upon a vertically movable support, a jaw pivoted to the upper, curved end of said jaw-plate, near its point, a jaw-operating plate mounted on the same pivot with the jaw-plate, the latter having a straight slot in the portion below its pivot, and the former having a straight-edged continuation below and upon one side of the pivot, the lower extremity being beveled off, an angular cutter-blade pivoted on the rear face of the jaw-plate, behind the jaw, a cutter-operating plate pivoted on the jaw-plate and having an angular lower end, a lever having a friction-roll lying in the slot in the lower part of the jaw-plate and adapted to engage the edges of the cutter and jaw-operating plates, and means for raising and lowering the movable support and for operating the lever carrying the friction roll, substantially as described.

29. In a machine for tufting-mattresses, a mattress support, a series of tufting needles, and means for shifting said support automatically between two successive strokes of the needles, to carry the twine over the tufts, substantially as described.

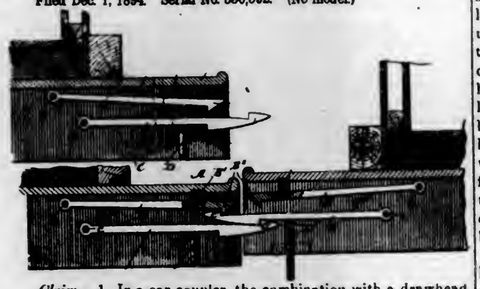
30. In a machine for tufting-mattresses, the combination with a movable support for the mattress of an upper and lower series of wheels between which said mattress lies and by which it is compressed and the tufts held against its opposite surface, a series of needles, and means for moving both series of wheels and the mattress-support to one side, in unison, between the first and second strokes of the needles, substantially as described.

542,290. SEWING-MACHINE ATTACHMENT. VALENTINE STEY, Youngstown, Ohio. Filed Mar. 7, 1894. Serial No. 502,663. (No model.)



Claim.—The herein described attachment to sewing machines, consisting of the main arm, an elastic presser foot secured to the lower end thereof, said presser foot having a slot, a rod projecting laterally from the upper end of said arm, and a guide adjustably secured upon said rod, said guide having its lower part formed of elastic metal and said elastic part extending first forward, then laterally toward the presser foot upon a plane higher than the latter and thence downward to the plane of the same, said downwardly extending part of the guide being adapted to be received within said slot in the presser foot, substantially as described.

542,291. CAR-COUPLING. ANGEL B. STUBBINS, Wellsville, Ohio. Filed Dec. 1, 1894. Serial No. 530,592. (No model.)



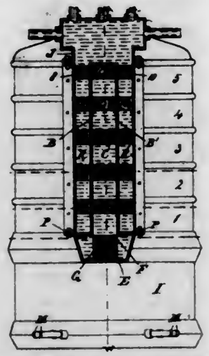
Claim.—1. In a car coupler, the combination with a drawhead, of an upper spring jaw and the lower jaw adapted for rigid adjustment, said jaws having arrow headed ends, the lower jaw being made longer than the upper one, and movable independent of the upper jaw, substantially as shown and described.

2. In a car coupler, the combination with a drawhead of the upper spring jaw, the lower pivoted jaw and the bail for lifting and holding the lower jaw in a rigid position, substantially as shown and described.

3. In a car coupler, the combination with a drawhead, having solid top and sides, of a spring actuated upper jaw, a pivoted lower jaw, a lifting bail having an offset and crank handle, all arranged, substantially as shown and described.

4. In a car coupler, the combination with a drawhead, having a pin opening in the top, the upper spring jaw, the lower pivoted jaw, and the bail with offset and crank handle, said upper and lower jaws also having pin openings, substantially as and for the purpose described.

542,292. HOT-WATER-CIRCULATING BOILER. CHARLES A. SULLIVAN and THOMAS J. BEST, Montreal, Canada. Filed Feb. 27, 1893. Serial No. 463,811. (No model.) Patented in Canada June 21, 1892, No. 39,168.



Claim.—1. A hot water heater comprising a fire pot section with water space, superimposed water heating sections, and a water stack, the latter formed with a central water space or column and two side spaces or columns continuous and uninterrupted throughout their length the central column being in direct communication at its lower end with the water space of said fire pot section, but closed at its upper end, and the said side columns closed at their lower ends or cut off from communication with the fire pot section but open at their upper ends to communicate with the distributing header, and the said superimposed heating sections containing vertical diaphragms and communicating with said water stack, for the purpose set forth.

2. A hot water heater comprising a fire pot section with water space, superimposed water heating sections, and a water stack, the latter divided by vertical partitions into a central water space or column and two side spaces or columns continuous and uninterrupted throughout their length, the central column being in direct communication at its lower end with the water space of said fire pot section but closed at its upper end, and the said side columns closed at their lower ends or cut off from communication with the fire pot section but open at their upper ends to communicate with the distributing header, and the said superimposed heating sections communicating with said water stack and containing vertical diaphragms extending from the vertical partitions of the water stack inward concentrically to a point slightly beyond the lateral axis of the section, for the purpose set forth.

3. A hot water heater comprising a fire pot section with water space, superimposed water heating sections, and a water stack, the latter divided by vertical partitions into a central water space or column, and two side spaces or columns continuous and uninterrupted throughout their length, the central column being in direct communication at its lower end with the water space of said fire pot section but closed at its upper end, and the said side columns closed at their lower ends or cut off from communication with the fire pot section but open at their upper ends to communicate with the distributing header, and the said superimposed heating sections communicating with said water stack and containing vertical diaphragms extending from the vertical partitions of the water stack inward concentrically to a point slightly beyond the lateral axis of the section, and vertical diaphragms situated centrally of such sections and dividing the space between said concentric diaphragms.

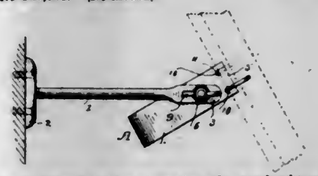
4. In a hot water heater having a fire pot section, superimposed heating sections and a water stack having vertical partitions, said superimposed heating sections communicating with said water stack and containing vertical diaphragms extending from the vertical partitions of the water stack inward concentrically to a point where they terminate freely slightly beyond the lateral axis of the section, and vertical diaphragm situated centrally of the section in line with the longitudinal axis of same dividing the free open space between said concentric diaphragms and extending an equal distance on each side of the lateral axis of the section substantially as shown and described.

5. A hot water circulating boiler having a water stack A, divided into three uninterrupted vertical columns or spaces R, C, R' by vertical partitions B, B' said spaces connected by ports 8, 9, 10, with water spaces G, in the boiler sections, said sections provided with diaphragms D, D' in said water spaces extending from the vertical partitions of the water stack inward concentrically to a point slightly beyond the lateral axis of the section, said columns R R' closed at the bottom and open at the top to the outlet, and the column C, closed at the top and open at the bottom to the inlet, as and for the purpose set forth.

6. A hot water circulation boiler superposed on a fire chamber and connecting with a water space around said chamber, said boiler composed of sections laid one upon another, each section having a water space 6, and a smoke space 7, the smoke spaces connected by flues 12, through the water space, said boiler sections having at the rear a row of three ports 8, 9, 10, leading from a water stack, containing vertical partitions, to the water-space and subdivided internally by diaphragms D, D' extending from the vertical partitions of the water-stack inward concentrically to a point slightly beyond the lateral axis of the section, the middle ports 9 being in vertical alignment and connected by an uninterrupted water space or column C, in the water stack, which is closed at the top, the bottom thereof connecting with the water space around the fire chamber; and the vertical side ports 8, and 10, respectively connecting with the uninterrupted water spaces R, R' in the water stack, being closed at the bottom and open at the top, as set forth.

7. A hot water circulating heater having at the rear uninterrupted water columns R, C, R', formed in the water stack by vertical partitions B B', connecting through ports 8, 9, 10 with superposed boiler sections, said sections having diaphragms D, D' extending from the vertical partitions of the water stack inward concentrically to a point slightly beyond the lateral axis of the section in the water spaces thereof and intervening the smoke spaces; flues 12, connecting the smoke spaces through the water spaces, and vertical diaphragms D^9, intervening the diaphragms D, D', to divide the inflow as set forth.

542,293. BOOK-HOLDER. FRANKLIN A. TAYLOR, Waterbury, Conn., assignor to Blake & Johnson, same place. Filed May 16, 1895. Serial No 549,571. (No model.)



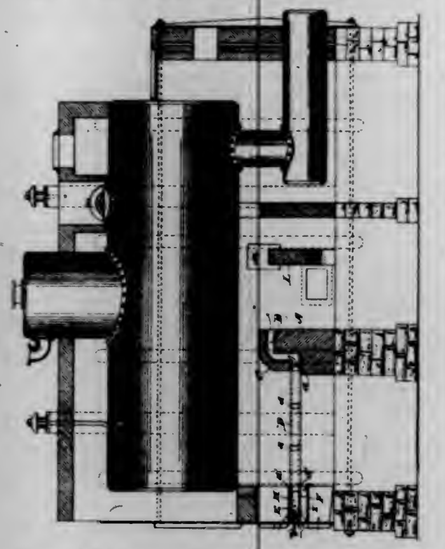
Claim.—1. A book holder consisting of a standard having a head, a clamp consisting of spring arms adapted to engage the back of the

book, a bolt by which the arms are clamped to the book and the clamp is locked to the head, and slides carried by the arms of the clamp and adapted to support an opened book.

2. A book holder consisting of a standard having a head, a clamp consisting of spring arms having jaws 5 adapted to engage the back of a book, a bolt which passes through the arms of the clamp and the head, a thumb screw by which the arms are clamped to the book and the clamp is locked to the head, and slides carried by the arms of the clamp adapted to support an opened book.

3. A book holder consisting of a standard having a head, a clamp consisting of spring arms adapted to engage the back of a book, a bolt by which the arms are clamped to a book and the clamp is locked to the head, and slides carried by the arms of the clamp and provided with inwardly turned ends which are adapted to lie over the edges of the opened leaves of the book to hold them in position.

542,294. SMOKELESS FURNACE. BENJAMIN A. THOMAS, Chicago, Ill., assignor to the Engineering Improvement Company, same place. Filed Nov. 19, 1894. Serial No. 529,271. (No model.)



Claim.—1. In a smokeless furnace, the combination with a bridge wall, of a series of hollow grate-bars communicating with the atmosphere and opening at their rear ends near the bridge wall whereby a volume of heated air may be supplied to the products of combustion escaping over the bridge wall, and a series of separate torches supported in the rear of the bridge wall and between which the escaping gases pass and whereby they are ignited, substantially as described.

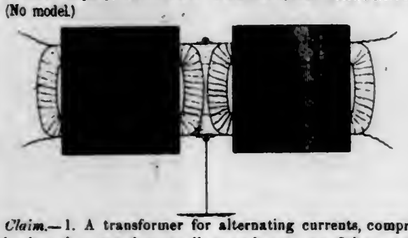
2. In a smokeless furnace, the combination with a bridge wall provided with a chamber at its top opening along its front and rear sides, a series of hollow grate bars communicating with the front of said chamber at their rear ends and with the outer air at their front ends, a damper to regulate the admission of air to said grate bars, and slabs or plates arranged transversely of the furnace behind the bridge wall, substantially as and for the purpose described.

3. In a smokeless furnace, the combination with a bridge wall, a hollow casting mounted thereon and having an opening at the front and rear of the bridge wall, linings applied to said casting, hollow grate bars communicating at their rear ends with said hollow casting and at their front ends with the outer air, a valve controlling the air inlet and a second bridge wall arranged in the rear of the first and slabs or plates mounted transversely thereon, substantially as described.

4. In a smokeless furnace, the combination with a bridge wall having an air chamber therein opening at the front and rear of the bridge wall, of a series of hollow grate bars communicating with the atmosphere and opening at their rear ends into the chamber in the bridge wall, a torch arranged in the rear of the bridge wall for igniting the commingled gases escaping over the bridge wall, and a valve or damper arranged in the air inlet and controllable from the furnace front, substantially as described.

5. A furnace grate, comprising in combination a bridge wall having an air chamber in its upper portion opening at the front and rear of the bridge wall, a series of hollow grate bars separated from each other longitudinally and communicating at their rear ends with said air chamber, dead plates arranged transversely to said grate bars and separated vertically to provide an air space between them, a damper hinged in said space and a ratchet handle connected with said damper and projected through the front wall of the furnace, substantially as described.

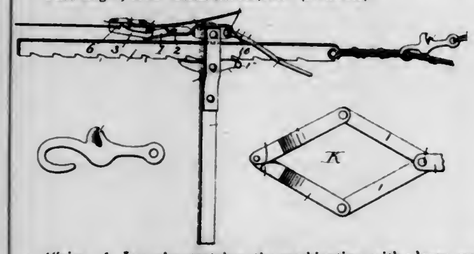
542,295. TRANSFORMER FOR ALTERNATING-CURRENT SYSTEMS. ELIHU THOMSON, Swampscott, Mass., assignor to the General Electric Company, of New York. Filed Mar. 6, 1895. Serial No. 540,699. (No model.)



Claim.—1. A transformer for alternating currents, comprising two laminated cores, primary coils wound upon one of the cores, secondary coils upon the other, and plates or links of copper connecting the cores and adjacent to the primary and secondary coils, the plates being connected to earth.

2. A transformer for alternating currents, comprising two laminated cores, primary coils wound upon one of such cores, secondary coils wound upon the other, and connecting plates or links of copper interposed between the sections of the primary and secondary coils, each plate or link being interposed between coils of both types, and all the plates being connected to earth.

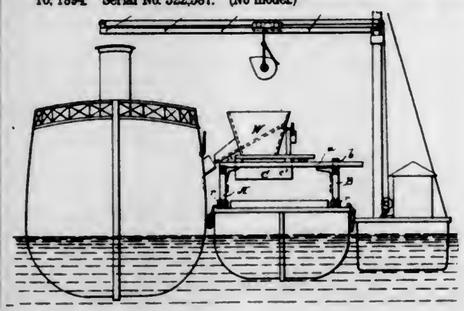
542,296. WIRE-STRETCHER. ANDREW J. UPHAM, Sycamore, Ill. Filed Aug. 7, 1894. Serial No. 519,639. (No model.)



Claim.—1. In a wire stretcher, the combination, with a lever, one end of which is slotted and provided with an arm, of a flexible clamp pivotally secured to one end of the arm, and a slotted pawl pivotally secured to the other, a notch bar through the lever, and through the pawl, one end of which is provided with means for securing the wire thereto, a pawl within the lever, one end of which engages with the notched bar and the other end is adapted to be engaged by the slotted portion of the other pawl, whereby the two pawls may be locked out of engagement with the bar, substantially as set forth.

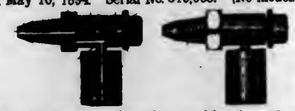
2. In a wire stretcher, the combination of a notched bar, a lever E sleeved on said bar and provided with pawls H and L, said pawl H being provided with shoulder 10, and said pawl L with slot 7 adapted to receive the adjacent end of pawl H and abut against shoulder 10 substantially as shown and for the purpose described.

542,297. ADJUSTABLE PORTABLE FRAME. JOHN E. WALSH, New York, N. Y., assignor to Mary A. Walsh, same place. Filed Sept. 10, 1894. Serial No. 522,587. (No model.)



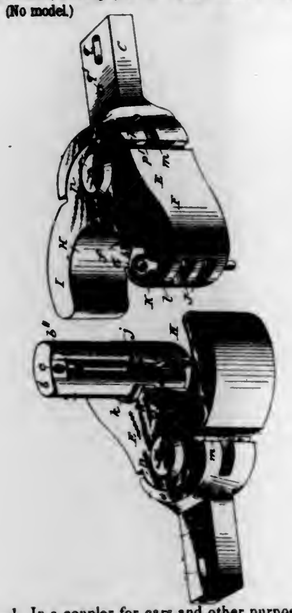
Claim.—In an adjustable portable frame, the combination of the truss A having the horizontal rails *a a*, the truss B supporting one end of the truss A and adjustable on said rails, and the frame C movable on said rails *a*, substantially as described.

542,298. VENT-PLUG. THOMAS WHEATLEY, Syracuse, N. Y. Filed May 10, 1894. Serial No. 510,683. (No model.)



Claim.—In an air valve, the combination of an inclosing shell formed with inlet and outlet ports, and a valve seat surrounding one of the ports, a revoluble valve operating piece provided with a socket extending inwardly from one end and formed with an inner wall of less area than the valve seat and having said end movable lengthwise of the inclosing shell, and an expansible valve piece formed of softer material than the valve seat and having one extremity automatically movable lengthwise within the socket of the valve operating piece and bearing against the inner wall of the socket and its opposite extremity movable into engagement with the valve seat for closing the corresponding port, substantially as described.

542,299. CAR-COUPLING. HARRY M. WHITTINGTON, New York, N. Y., assignor of two-thirds to Thomas W. Hogan, same place, and Thomas Gerehart, Brooklyn, N. Y. Filed June 24, 1892. Serial No. 437,821. (No model.)



Claim.—1. In a coupler for cars and other purposes, two coupling heads, having each a coupling horn adapted to engage at one side against the like horn of the other, and having each a recess at its side engaging with the other, said recesses coinciding when said horns engage, and then constituting an oblong pin hole in combination with a pin having a body of oblong cross section, corresponding substantially in shape to the shape of said pin-hole entering simultaneously both said recesses and when therein locking said horns together, substantially as and for the purpose set forth.

2. In a coupler for cars and other purposes, the coupling heads having each a coupling horn engaging at one side with the like horn of the other head and having each a coupling hole coinciding with a like hole in the other, in combination with a coupling pin entering both said holes and thereby locking said heads together, said pin carried by one of said heads, when in the unlocked position elevated above said hole therein, and means holding said pin in the unlocked position, substantially as and for the purpose set forth.

3. In a coupler for cars and other purposes, a coupling head having a coupling horn engaging at one side with the like horn of a like coupling head, and having a coupling hole coinciding with a like hole in a like coupling head when the two are in engagement, in combination with a coupling pin carried by said head, entering said hole therein and the like hole in a like head when engaged thereby, said pin when in the unlocked position elevated above said hole, means holding said pin in the unlocked position, and automatically operating means releasing said pin when engaged by a like head, substantially as and for the purpose set forth.

4. In car couplers a coupling head adapted to engage with a like head of a reciprocal coupler, and having a coupling horn F, and a coupling hole G in its side face, a recess H for receiving the horn of a like coupler, and a guiding horn I, in combination with a pin entering said hole G and the like hole of a like coupler for locking the two together, said pin movable above said hole and elevated thereabove when in the unlocked position, means for holding said pin in the unlocked position, and a trip, operated by the engagement of an opposing coupler with said head, and when operated releasing said pin, substantially as and for the purpose set forth.

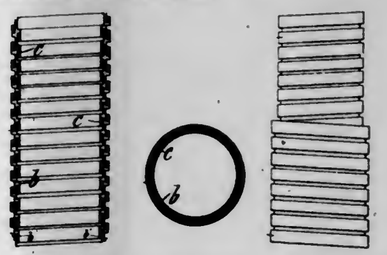
5. In a coupler for cars and other purposes, two coupling heads, having each a coupling horn, said horns having each at one side an engaging face engaging with the like face of the other horn, and having each a coupling hole in said engaging face coinciding with the like hole of the other, in combination with a coupling pin entering both said holes to lock said heads together, carried by one of said heads, and when in the unlocked position out of engagement with the other of said heads, means for holding said pin in the unlocked position, and a trip carried by the head carrying said pin, projecting at the engaging face of the horn thereof, operated by the like face of the horn of a like head when the two engage, and when operated releasing said pin, substantially as and for the purpose set forth.

6. In a car coupler, the coupling head adapted to engage with a like opposing coupler, having a coupling horn as F, and a coupling hole as G, arranged at its side face, in combination with a coupling pin as B, having a shank as *a* adapted to fit said hole when the pin is raised and thereby to retain the latter in position, and having an enlarged body portion as *b*, adapted when the pin is in the coupled position to rest a portion thereof in said hole G and the other portion thereof in the corresponding hole of the opposing coupler.

7. In a car coupler, the coupling head adapted to couple with a like opposing coupler and constructed with a coupling horn as F, having a coupling hole as G, traversing its side, in combination with a coupling pin as B, consisting of two portions as *b' b''*, the one adapted when the coupler is coupled to fit said coupling hole G and the other adapted to fit a like coupling hole of the opposing coupler.

8. In a car coupler, the coupling head adapted to couple with a like opposing coupler, having a coupling horn F and hole G in the side thereof, and groove *g* and shoulder *h* adjacent to said hole, in combination with a coupling pin having a shank entering said hole G and constructed with a wing *e*, adapted when said pin is in one position to project into the path of a similar coupling horn of an opposing coupling head and as the coupling heads approach to be moved thereby into said groove *g* to permit the coupling pin to lock the couplers together.

542,300. FLEXIBLE TUBE OF METAL. HEINRICH WITZENMANN, Pforzheim, Germany. Filed Feb. 20, 1894. Serial No. 500,876. (No model.) Patented in Germany Feb. 2, 1894, No. 76,745; in France Feb. 12, 1894, No. 236,225; in Austria Feb. 27, 1894, No. 44/547; in Hungary, Mar. 5, 1894, No. 169; in Italy May 10, 1894, No. 36,359/214, and in Switzerland May 21, 1894, No. 8,538.



Claim.—1. A flexible tube comprising an inner and outer tube, each composed of a spirally wound metal band, the spirals of the outer tube being wound in one direction and the spirals of the inner tube in an opposite direction, said inner and outer tubes being fastened together at their respective ends, substantially as and for the purposes set forth.

2. A flexible tube comprising an inner and an outer tube, each composed of a spirally wound metal band having recessed edges, the spirals of the outer tube being wound in one direction and the spirals of the inner tube in an opposite direction said inner and outer tubes fastened together at their respective ends, substantially as and for the purposes set forth.

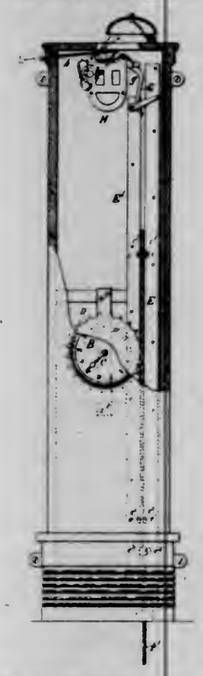
3. A flexible tube comprising two spirals one within the other and fastened together at their respective ends, each spiral formed of a continuous metal band, the inner spiral being wound in one direction and the outer spiral in an opposite direction and a packing strip applied to the coils of the inner spiral, substantially as and for the purposes set forth.

4. A flexible tube comprising two spirals one within the other and fastened together at their respective ends, the inner spiral formed of a continuous metal band having a cross-section of two inversely disposed channels, and being wound in one direction, the outer spiral formed also of a continuous metal band, whose cross-section also forms two inversely disposed channels the outer flanges of which are bent so that they interlock one with another when coiled, said outer spiral being wound in an opposite direction to that of the inner spiral, substantially as and for the purposes set forth.

5. A flexible tube comprising two spirals one within the other and fastened together at their respective ends, the said spirals formed of channeled continuous metal bands, one spiral being wound in one direction and the other in an opposite direction, substantially as and for the purposes set forth.

6. A flexible tube comprising two spirals one within the other and fastened together at their respective ends, the said spirals formed of channeled continuous metal bands, the upper flange of one coil of one of the spirals interlocking with the lower channeled portion of the adjacent coil of the same spiral, substantially as and for the purpose set forth.

542,301. BILGE-WATER ALARM. EGBERT BRUSH, Smithtown Branch, N. Y. Filed July 26, 1893. Serial No. 481,470. (No model.)

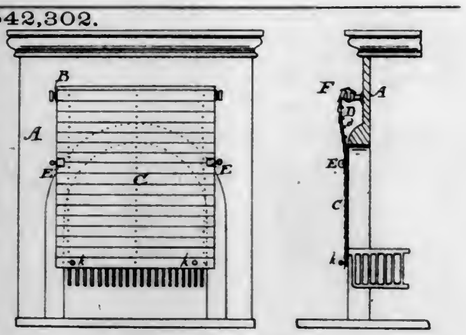


Claim.—In a bilge water alarm, the combination of a vertically movable rod, a float adjustable along the rod, an alarm device comprising a bell, a bell-clapper and a bell clapper rod and a pivoted arm upon which the bell clapper rod rests when not in action the pivoted arm having its free end in the path of movement of the rod and designed to throw the alarm device into action upon its upward movement substantially as specified.

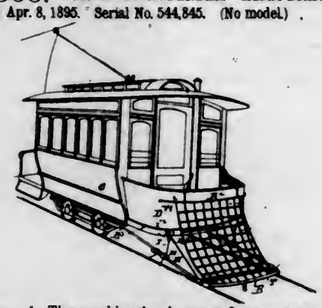
542,302. CURTAIN BLOWER FOR GRATES OR STOVES. WILLIAM H. BURDEN, Cleveland, Ohio. Filed Nov. 1, 1894. Serial No. 527,680. (No model.)

Claim.—The herein described curtain blower for grates, consisting of chains D, slats C attached to said chains with rivets *d* loosely inserted through the links of the chain and permanently fixed in the slats, in combination with the spring roller B and adapted to operate as described.

542,302.



542,303. CAR GUARD OR FENDER. HENRY BURDEN, Troy, N. Y. Filed Apr. 8, 1895. Serial No. 544,845. (No model.)



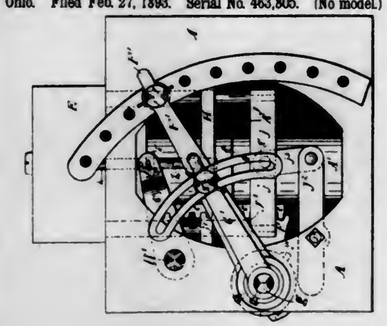
Claim.—1. The combination in a net for a car-guard or fender of a series of elastic tube-parts strung upon wires or chains arranged to intersect each other angularly between the tube-parts and to connect thereat, with a bar at the bottom of the net and a rail at the top substantially in the manner as and for the purposes set forth.

2. The combination with a net for a car-guard or fender composed of a series of elastic tube-sections strung upon chains or wires arranged to intersect each other angularly between the tube-parts and to connect thereat; of a fender bar provided with an elastic covering at its front side connected to the lower end of said net, and a top rail connected to the upper end of the net, substantially in the manner as and for the purposes set forth.

3. In a fender-bar for a car-guard or fender the combination with the fender-bar proper of a cushion on its front side formed from a section of rubber tubing which is slit throughout its length on one side and with the slit edges of the tubing embracing the bar, and secured thereon by wire, and a cushioning material inserted between the inner surface of the tubing and the outer side face of the bar, substantially in the manner as and for the purposes set forth.

4. The combination with the net N^2, constructed with elastic tubular sections strung upon wires or chains so as to intersect each other between the tube sections and at the top connected by means of the springs Y, with the rail R^2; the bar B, connected to the bottom of the net; the frame F, at its front end connecting with the bar B, and provided with slides N, in each of its sides with the rear ends of the frame hinged to a bracket at each side of the car, substantially as and for the purposes set forth.

542,304. MOLDING-MACHINE. JOHN E. DONOVAN, Cincinnati, Ohio. Filed Feb. 27, 1893. Serial No. 463,805. (No model.)



Claim.—1. In a pulley molding machine the combination of the frame having an annular opening in its top and a recessed depression surrounding said opening, a rigid central hollow column, the follower board composed of annular sections, the outer one supported in the recess in the frame and the inner one supported upon the central column, the half rim pattern, fitted to slide vertically between the outer and intermediate sections of the follower board, the hub pattern fitted to slide vertically through the central section, and means substantially as shown to elevate the rim and hub patterns above the follower board and retract them after the mold is formed, substantially as shown and described.

2. The combination of the supporting frame, the rigid central column secured therein, a central flanged ring secured upon said column, the ring B^3 supported upon said flange, the outer ring B supported by the flange on the frame, the follower C arranged to slide upon the column, the follower D arranged to slide within it, the rim pattern secured upon the follower C, and the hub pattern secured upon the follower D, the racks *c* and *d* projecting from said followers, the cogged segments and the shafts and levers for operating the same, for the purpose of elevating and lowering the patterns, substantially as shown and described.

3. In a pulley molding machine, the combination of the frame, a central column slotted upon one side, the follower C having racks *c* fitted to slide upon the outside of said column; the follower D having rack *d* projecting through the slot in the column and adapted to slide therein, a follower board composed of rings B, B', B^3, the rim pattern secured upon the follower C, and the hub pattern secured upon the follower D, cogged segments F engaging the teeth of the racks *c* and having the hubs *f* journaled in the frame of the machine, the shaft *g* journaled in the hubs *f*, the cogged segment G secured upon said shaft between the segments F and engaging the teeth of the rack *d*, the lever F^v secured on hub *f*, the lever G' having slotted segments g^3, a set screw for adjusting the levers with relation to each other and securing them together, whereby the followers, with the hub and rim patterns, are simultaneously elevated and lowered, substantially as shown and described.

4. In a pulley molding machine, the combination of the frame, two vertically sliding followers mounted therein, the hub pattern secured upon one follower and the rim pattern secured to the other follower, racks *c*, *d*, secured respectively to the followers, cogged segments mounted upon rock shafts for operating said followers, and means for adjusting the vertical position of the followers in relation to each other and holding them in such position, for the purpose of varying the hub relative to the rim, substantially as shown and described.

5. The combination, in a pulley molding machine, of the main frame having annular opening in the top and recessed depression around said opening, a central hollow column rigidly secured to the base of the frame, the follower board formed of three rings, the outer one supported in the recess in the frame top, and the inner ones supported upon the central column, the rim pattern adapted to slide between the outer and intermediate rings of the follower board, the hub pattern fitted to slide through the central ring into the hollow column, removable rim pattern secured upon the follower board and disconnected from the hub and rim patterns, and means, such as shown, to elevate and lower the hub and rim patterns, substantially as set forth.

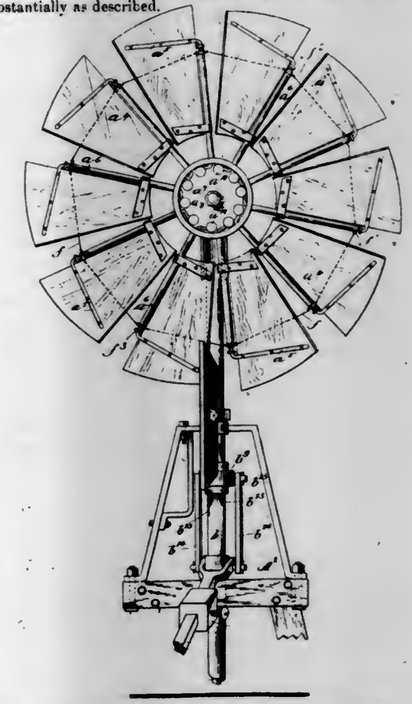
6. The combination in a pulley molding machine, with the supporting frame, and vertically sliding hub pattern, of the vertically adjustable boss pattern E^2, the bolt *c*, the head of which forms the core print, and the cam *c'*, actuated by said bolt to lock the boss pattern in any position desired, substantially as shown and described.

7. The combination of the frame A, central slotted column A', the followers fitted to slide within and without said column, the racks projecting from said followers, the hub and rim patterns secured upon said followers, the hubs and cogged segments to actuate the outer follower, the shaft sleeved within the hubs and having a cogged segment secured thereon to actuate the inner follower, the levers for actuating said shaft and hubs, the cam disks secured upon the hubs of the follower actuating segments, the vertically sliding flask elevating pins and their actuating levers in the path of said cam disks, whereby the hub and rim patterns are withdrawn, and the flask raised by a single movement of said levers, substantially as shown and described.

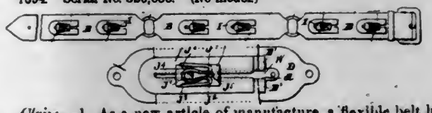
542,305. WINDMILL. DANIEL FULLER, Topsfield, Mass. Filed May 22, 1891. Serial No. 393,716. (No model.)

Claim.—1. In a windmill, the combination of a hub; hollow spokes on the hub; rods within the spokes; cranks on the inner ends of the rods; disks movable flatwise within the hub and controlling the cranks; a counter-weight connected with the disks, and blades secured upon the rods with the axis of each blade near one edge of that blade, all substantially as and for the purposes set forth.

2. In a windmill, a hub with radial hollow spokes a^6, inclined to the axis of the hub and connected at their outer ends by stay rods *f* extending from each spoke to its neighbor; blade carrying rods a^5 mounted in the hollow spokes a^6; blades a^1 rigidly connected to rods a^5 with their inner edges close to the inclined hollow spokes a^6; and means for controlling the blade carrying rods a^5 and thereby controlling the inclination of the blades a^1, all combined and operating substantially as described.



542,306. BELT. HENRY J. GAISMAN, Cincinnati, Ohio, assignor of one-half to Ferdinand S. M. Blun, New York, N. Y. Filed Oct. 16, 1894. Serial No. 526,038. (No model.)



Claim.—1. As a new article of manufacture, a flexible belt having secured thereto a series of fasteners, each provided with a horizontal slot open at one end, said fasteners being located on the inner face of the belt and being spaced apart, substantially as shown and described.

2. As a new article of manufacture, a flexible belt having secured thereto a series of fasteners, each provided with a horizontal slot open at one end, the metal of said fasteners at the edges of said slots being raised from the face of said belt, said fasteners being located on the inner face of the belt and being spaced apart, substantially as shown and described.

3. As a new article of manufacture, a flexible belt having secured thereto a series of fasteners each provided with a horizontal slot open at one end, said fastener being located on the inner face of the belt, and being spaced apart, and means located at the open end of said slot to prevent the spontaneous removal of the button through the open end of the slot under ordinary conditions of use, but arranged to allow the button to be removed by a direct pull when required, all substantially as herein specified.

4. A belt having on its inner face a holding device provided with a slot open at one end and adapted to receive a button, and a spring located at the open end of said slot adapted to prevent the spontaneous removal of the button through the open end of the slot, said spring when depressed permitting the button to pass through the open end of said slot, substantially as herein specified.

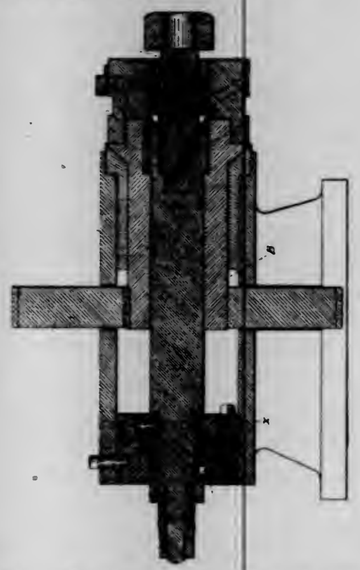
5. A belt having on its inner face a holding device provided with a slot open at one end, adapted to receive a button the metal at the edges of said slot being raised, and a spring located at the open end of said slot adapted to prevent the spontaneous removal of the button through the open end of the slot, said spring when depressed permitting the button to pass through the open end of said slot, substantially as herein specified.

6. The combination with a waist belt of a stay of suitable material fixed on its interior, and having a longitudinally formed slot serving as a guide, and a smoothly fitted facing E, forming a substantial way, for the proper lateral adjustment of an inclosed part, the parts being formed and arranged as shown, the edges of the facing being set out of coincidence with the main body of the stay and providing a liberal space in depth and width for the inclosed part to move laterally without contact with the main body, which latter is undisturbed and appears as the ordinary belt, as herein specified.

7. In a waist belt having a main body A, lining B, and longitudinally slotted stay D, transversely slitted as shown by D', the folded facing E applied in the slot, arranged to perform the double function of providing a smooth surface for a part sliding horizontally within and of holding the lining B and stay D firmly together in the correct position, as herein specified.

8. In a waist belt a stay of firm material mounted within the main body, and having a longitudinal slot *d*, and a portion adjacent raised as shown, forming a horizontal way on the face presented toward the main body adjacent to such slot, adapted to hold a properly shaped device, in combination with a slide as the plates H and I arranged on the opposite faces of the stay and connecting parts J^3, J^3, permanently but loosely mounted in such slot, and capable of being adjusted therein, and with a button holder of elastic wire attached to said slide having a central loop J', adapted to strongly hold a button and to allow it to be engaged and detached by a sufficent force applied horizontally, all substantially as herein specified.

542,307. TAPPING, FACING, AND REAMING MACHINE. WILLIAM MCILVRID and PERRY Y. HODGE, Jersey City, N. J., assignors to the A. A. Griffing Iron Company, same place. Filed Apr. 13, 1895. Serial No. 545,596. (No model.)



Claim.—1. The combination of a spindle having a tapering head adapted to move longitudinally, chasers secured to and longitudinally adjustable on said head, and a movable detent adapted to detain said chasers while the head is moving forward and spreading them, substantially as described.

2. The combination of a spindle having a tapering head adapted to move longitudinally, chasers secured to and longitudinally adjustable on said head, a movable detent adapted to detain said chasers while the head is moving forward and spreading them, and means for reciprocating the spindle, substantially as described.

3. The combination of a spindle having a tapering head adapted to move longitudinally, chasers secured to and longitudinally movable on said head, a collar engaging and encircling the rear ends of the chasers and adapted to move therewith and a movable detent adapted to engage said collar, substantially as described.

4. The combination of a spindle having a tapering head adapted to move longitudinally, chasers secured to and longitudinally movable on said head, a slotted collar engaging and encircling the rear ends of the chasers, a movable detent adapted to engage said collar, and a pin secured to the head and projecting into the slots of the collar, substantially as described.

5. The combination of a spindle having a tapering head adapted to move longitudinally, chasers having lugs secured to and longitudinally movable on said head, a grooved collar engaging and encircling the rear ends of the chasers, and a movable detent adapted to engage said collar, substantially as described.

6. The combination of a spindle having a tapering head adapted to move longitudinally, chasers secured to and longitudinally movable on said head, a rotary sleeve so keyed to said spindle as to permit the latter to reciprocate, a detent having a lug thereon, and extending loosely through said sleeve and adapted to detain said chasers while the head is moving forward and spreading them and a lever having a cam lug adapted to engage the lug and lift the detent as the sleeve and spindle rotate substantially as described.

7. The combination with a spindle having cutters or chasers at its forward end and adapted to move longitudinally, of automatic feeding mechanism for giving said spindle a forward thrust, and a movable detent for said spindle substantially as described.

8. The combination of a spindle, a tapering head at one end thereof, chasers secured to and longitudinally adjustable on said head, a movable detent adapted to detain said chasers while the head is moving forward and spreading them, and a cam device at the other end of said spindle to impart to it a reciprocating motion substantially as described.

9. The combination of a spindle, a tapering head at one end thereof, chasers secured to and longitudinally adjustable on said head, a movable detent adapted to detain said chasers while the head is moving forward and spreading them, a sleeve with a cam groove therein upon the other end of the spindle, a ring upon the sleeve with a cam pin adapted to engage the cam groove, and a friction band surrounding said ring and firmly secured to the frame of the machine substantially as described.

10. The combination of a spindle, a tapering head at one end thereof, chasers secured to and longitudinally adjustable on said head, a movable detent adapted to detain said chasers while the head is moving forward and spreading them, a sleeve upon the other end of said spindle, a ring surrounding said sleeve and connected therewith by a cam device, and a friction band, made in two parts which are hinged together on one side and joined on the other side by an adjusting screw, encircling said ring and firmly secured to the frame of the machine substantially as described.

11. The combination of a spindle, a tapering head at one end thereof, chasers secured to and longitudinally adjustable on said head, a movable detent adapted to detain said chasers while the head is moving forward and spreading them, a cam device at the other end of said spindle, and means for adjusting the spindle longitudinally with reference to the cam substantially as described.

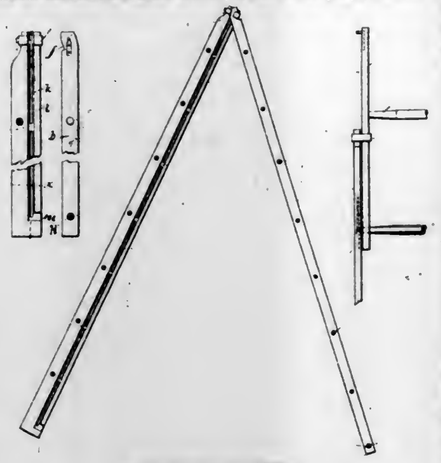
12. The combination of a spindle, a sleeve with a cam groove therein, a ring upon the sleeve with a pin adapted to engage the cam groove, and a friction band surrounding said ring and firmly secured to the frame of the machine substantially as described.

13. The combination of a spindle, a tapering head upon one end thereof, chasers having lugs secured to and longitudinally movable on said head, a grooved and slotted collar the grooved end of which engages and encircles the lugs of the chasers, a pin secured to the head and projecting into the slots of the collar, a rotary sleeve so keyed to said spindle as to permit the latter to reciprocate, a detent having a lug thereon and extending loosely through said sleeve and adapted to detain said chasers while the head is moving forward and spreading them, a lever having a cam-lug adapted to engage the detent lug and lift the detent as the sleeve and spindle rotate, a spring for depressing the detent, a sleeve upon the other end of said spindle, a ring surrounding said sleeve and connected therewith by a cam device, a friction band, made in two parts which are hinged together on one side and joined on the other side by an adjusting screw, encircling said ring and firmly secured to the frame of the machine, and means for adjusting the spindle longitudinally with reference to the cam substantially as described.

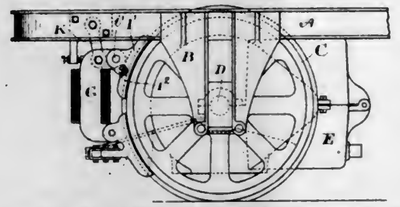
542,308. COMBINED STEP AND EXTENSION LADDER. JEROME B. MCKEEVER, Lansing, Mich. Filed Mar. 30, 1895. Serial No. 543,797. (No model.)

Claim.—1. The combination in a ladder, of an outer section having recesses formed and open in the upper ends of its sides, an inner section having pins projecting from its sides into said recesses, and straps secured to the sides of the outer section and embracing the sides of the inner section, the sides of the inner section having notches forming seats for the straps, and the straps having their ends separated to form a passage for the rounds of the inner section when the latter is extended, substantially as and for the purpose set forth.

2. The combination in a ladder of an outer section having longitudinal grooves in its sides, and a series of inclined grooves in the rear walls of the longitudinal grooves, an inner extensible section having a tubular round projecting at each end into the said longitudinal groove, spring actuated rods in the tubular round projecting into the inclined grooves, and straps secured to the outer section and forming guides for the inner extensible section, as and for the purpose set forth.



542,309. ELECTRIC BRAKE. WILLIAM B. POTTER, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Mar. 20, 1895. Serial No. 542,492. (No model.)



Claim.—1. In a braking apparatus and in combination, a wheel or other moving element, of the driven apparatus and a part co-operating therewith in arresting its motion, such part having a plurality of portions co-operating with and acting to stop the wheel, some only of which are actuated manually, and all of which may be actuated by power.

2. In a braking apparatus and in combination, a brake shoe normally engaging with a wheel or moving element when manually actuated, and having then a certain area of engagement, but co-operating with the moving element over a greater area when actuated by power.

3. In combination, in a braking apparatus, a wheel or moving element, a brake shoe or similar retarding means, manually actuated means for applying such shoe, such manually actuated means operating a part only of such shoe, and a power actuated mechanism connected with the entire shoe or retarding means, and applying the whole of it to the wheel.

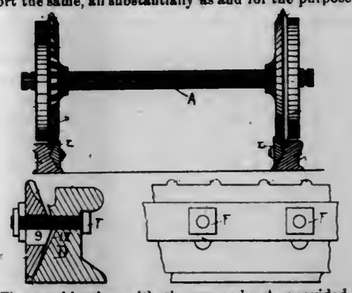
4. In combination, in a braking apparatus, a wheel or moving element, a brake shoe or similar retarding means co-operating therewith, means for manually actuating the shoe, such means engaging with a part only of the shoe, an electric circuit, a source of power for such circuit, and means, actuated by the current from such source of power, for applying the entire shoe to the wheel or moving element.

5. In a braking apparatus, and in combination, a wheel or moving element, a brake shoe co-operating therewith in arresting its motion, means for manually actuating a part of the brake shoe, means for electrically actuating the entire shoe, and a stop preserving the relation of the shoe to the axle of the wheel; whereby the shoe may be maintained as close as desired to the tread of the wheel.

6. In a braking apparatus and in combination, a wheel or moving element, a brake shoe, means for manually applying part of the brake shoe to the wheel, an electric motor driving the wheel, and means, actuated by the current from the motor, for electrically applying the entire shoe to the wheel.

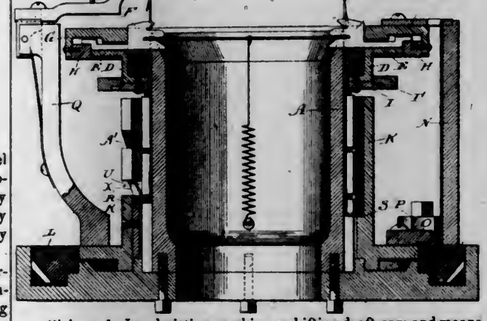
542,310. RAILWAY-CAR WHEEL. JONAS PRENTZ, Omaha, Nebr. Filed Mar. 2, 1894. Serial No. 502,158. (No model.)

Claim.—1. The combination with a car axle having suitable wheels, said wheels being provided with outwardly extending friction flanges, said friction flanges being scalloped, of a two part rail comprising a main supporting section in combination with a friction rail, transversely in the shape of an isosceles triangle, the base of said friction rail being positioned vertically, and being reversibly and adjustably secured to the main part of said rail, the angular sides of said friction rail being adapted to engage the friction flanges of said wheels, to support the same, all substantially as and for the purpose set forth.



2. The combination with the car axle, A, provided with the wheels, G, having the friction flanges, C, provided with the corrugations, 3, of the two part rail comprising the section, D, having the angular seating, 12, and the lower circular seating, 7, of the friction rail, E, provided with the two circular edges, 10, 10, said friction rail being in cross section in the form of an isosceles triangle, and provided with the transverse opening, 9, and the connecting bolts, F, all arranged to operate substantially as and for the purpose set forth.

542,311. KNITTING-MACHINE. EDISON E. RANDALL, Joliet, assignor of one-half to Henry Pope, Chicago, Ill. Filed Mar. 25, 1895. Serial No. 543,092. (No model.)



Claim.—1. In a knitting machine, a shifting draft-cam and means for automatically shifting it from one side of the lifting cam to the other at reverse movements of the machine, for the purpose described.

2. In a knitting machine, a shifting draft-cam movable upon the inner surface of the cam-cylinder, in combination with means upon the exterior of said cylinder for automatically shifting it from one side of the lifting-cam to the other at reverse movements of the machine, for the purpose described.

3. In a knitting machine, the combination, with the cam-cylinder provided with slots, of the shifting draft-cam arranged upon the inner side of the same and having pins projecting through said slots, and a shifter yieldingly held in fixed position upon the exterior of the cam-cylinder and co-operating with the projecting pins of the draft-cam to automatically shift it to opposite sides of the lifting cam at reverse movements of the machine, for the purpose described.

4. In a knitting machine, the combination, with the cam-cylinder provided with slots, of the shifting draft cam arranged upon the inner side of the same and having pins projecting through said slots, a friction ring supported upon the needle-cylinder, and a shifter carried by said ring and co-operating with the projecting pins of the draft-cam, for the purpose described.

5. In a knitting machine, a movable draft-cam and provisions in virtue of which it is caused to automatically rise out of the path of the needle-heels when the machine is turned in a direction to move it in advance of the lifting cam, and to remain in its lower position and depress the needles when the machine is turned in the direction to cause it to follow the lifting cam.

6. In a knitting machine, the combination, with the lifting-cam, of a draft-cam movable relatively thereto and means by which when the lifting-cam is moved in advance of the draft-cam the latter will operate to depress the needles which have been elevated by the lift-

ing-cam, and when the movement is reversed the draft-cam will yield and rise to permit the needle-heels to pass under it and over the lifting-cam.

7. A knitting machine having provisions in virtue of which the lengths of reciprocating movements of the machine determine the number of needles operating, whereby the number of needles operating may be gradually decreased by decreasing the lengths of the strokes, and increased by increasing the lengths of the strokes, substantially as described.

8. A rotary and reversible knitting machine having provisions in virtue of which the number of needles operating during its reciprocating movements is determined by the lengths of the strokes of the machine, substantially as and for the purpose described.

9. In a knitting machine, the combination, with the slotted cam-cylinder, of the shifting cam U having the pins V V' projecting through the slots of the cylinder, and the shifter-plate C' co-operating with said pins, substantially as described.

10. In a knitting machine, the combination, with the needle-cylinder A and the slotted cam-cylinder K, of the cam-plate U movably mounted between the two cylinders and having the pins V V' projecting through the slots in the cam-cylinder, the friction ring I' supported on the needle-cylinder, and the shifter plate C' carried by said ring and co-operating with the pins V V' of the cam-plate U, substantially as described.

11. In a knitting machine, the combination, with the needle-cylinder A and the cam cylinder K having the inclined slots W W' on opposite sides of the lifting-cam and connected at their upper ends by the slot X, and the open space Z above the slot X with the inclined slots A' A^2 diverging from its lower corners, of the cam-plate U interposed between the cylinders and having the pins V V' co-operating with the slots in the cam-cylinder, the friction ring I' supported on the needle-cylinder, and the shifter-plate C' having the open space D' and the slot B' co-operating with the pin V of the cam-plate U, substantially as described.

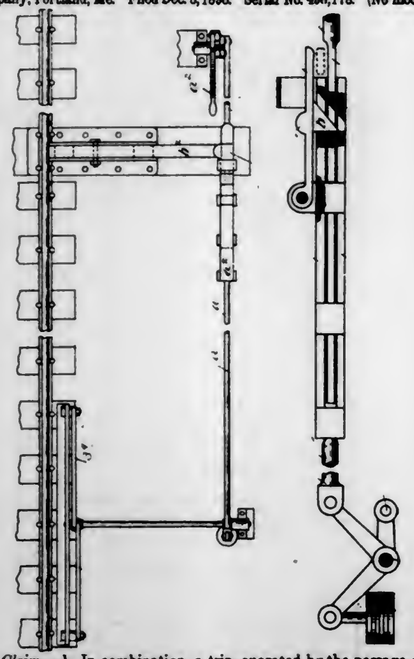
542,312. COMBINED WINDOW-SCREEN AND AWNING. WILLIAM ROMUNDER and EDWARD J. PELLMAN, Milwaukee, Wis. Filed Jan. 28, 1895. Serial No. 536,408. (No model.)



Claim.—1. A removable window-screen, in combination with an awning attached directly thereto, the operating cords of said awning passing through the screen-frame and being secured on the inner surface thereof, substantially as set forth.

2. The combination with a window-casing, of a window-screen removably suspended therefrom, and provided with locking devices for adjustably securing it thereto, vertical guide-rods on the outer surface of the screen-frame, sleeves movable upon said guide-rods, side-bars pivoted to said sleeves, a cross-bar secured to said side-bars, angle plates secured to and projecting forward of the upper side edges of said frame, a cross-bar secured to said projecting ends of the said angle-plates, an awning secured to said side and cross-bars, pulleys arranged upon opposite sides of the upper part of said screen-frame in line with transverse cord passages formed in said frame, cords extending up from the opposite ends of the described lower cross-bar and passing around said pulleys and through said cord-passages, and down on the inner side of said screen frame, and a cord fastening device on the lower inner side of said frame for engagement with the ends of said cords, substantially as set forth.

542,313. SAFETY APPARATUS FOR RAILWAYS. BENTON C. ROWELL, Boston, Mass., assignor to the Rowell-Potter Safety Stop Company, Portland, Me. Filed Dec. 8, 1893. Serial No. 493,178. (No model.)



Claim.—1. In combination, a trip, operated by the passage of a train; a safety stop; and mechanism whereby the safety stop may be set to safety by an attendant and held in position until released by the trip, substantially as shown and described.

2. In combination a connecting rod in two parts; an automatic lock fast to one of the two parts; a lever; a counterweight; and a safety stop; all the parts being constructed and arranged to operate substantially as described.

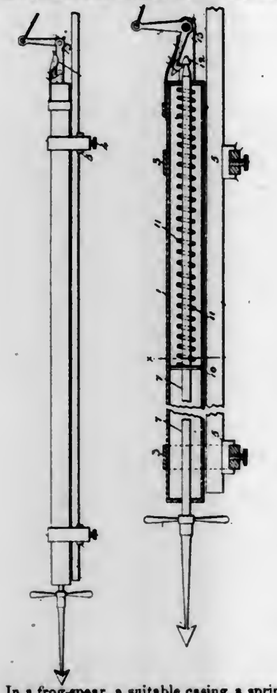
542,314. BALING-PRESS. JOHN M. SANDERS, Dalton, Ga. Filed July 24, 1894. Serial No. 518,422. (No model.)



Claim.—1. In a baling press, the combination with the base beams, the casting secured thereto near one end, having a central boss, the plate supported on said boss and the rotatable casting having downwardly depending studs on which are journaled anti-friction rollers at each end, of the trip lever having an extension with which said rollers are adapted to engage and formed with a curved arm, the plunger rod having a coiled spring, the plates secured to the outer end of said rod, the anti-friction roller located between said plates and journaled thereto, forming a guide way within which said curved arm plays, and the guide rod pivotally connected with the plunger rod and with the casting of the base beams, substantially as described.

2. In a baling press, the combination with the base beams, the casting secured thereto near one end, having a central boss and the rotatable casting having downwardly depending studs on which are journaled anti-friction rollers, of the trip-lever, pivoted centrally to the stationary casting, having one end curved and the other end formed with an extension with which said rollers are adapted to engage, the plunger rod having a coiled spring, the plates secured to said rod, the anti-friction rollers located between said plates and journaled thereto, forming a guide way within which the curved end of the trip lever plays, the guide rod pivotally connected with the plunger rod and casting of the base beams, the upright secured to said base beams and the elastic buffer secured to said upright against which the free end of the trip lever is adapted to impinge, substantially as described.

542,315. DEVICE FOR SPEARING FROGS, &c. DAVID SANGUINETTE, St. Louis, Mo. Filed Oct. 29, 1894. Serial No. 527,166. (No model.)



Claim.—1. In a frog-spear, a suitable casing, a spring-controlled stem operating within the same, a spear at one projecting end of the stem, and means for actuating the stem from the opposite projecting end of the same, substantially as set forth.

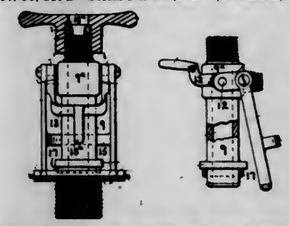
2. In a frog-spear, a suitable casing, a spring-controlled stem operating within the same, a spear at one projecting end of the stem, and a tripping lever for actuating the stem from the opposite end of said stem, substantially as set forth.

3. In a frog-spear, a suitable casing, a spring-controlled stem operating within the same, a spear at one projecting end of the stem, a tripping lever for actuating the stem from the opposite end thereof, and means for limiting the movement of the tripping lever, substantially as set forth.

4. In a frog-spear, a suitable casing, a spring-controlled stem operating within the same, a spear at one projecting end of the stem, a tripping lever for actuating the stem from the opposite end thereof, a spring plate for controlling the tripping lever and preventing lateral displacement, and a suitable device for limiting the tilting of the tripping lever, substantially as set forth.

5. A frog-spear comprising a suitable casing, a stem operating within the same and projecting therefrom at either end, a spear carried at one end of the stem, operating arms secured to the stem adjacent to the spear, a guide disk secured to the stem within the casing, a coiled spring encircling the stem within the casing and interposed between the disk and the inner opposite end of the casing, a cone at the outer projecting end of the stem opposite to that carrying the spear, a tripping lever, a toe carried by the lever adapted to engage with the cone on said stem, arms secured to the casing to which the tripping lever is pivoted, a cross bar at the end of said arms, a lug at the pivotal portion of the tripping lever adapted to strike said cross bar, a spring plate projecting from the casing and adapted to press against the outer surface of the inner arm of the tripping lever, lateral depending ears on said spring plate embracing the sides of the said inner arm, and a suitable cord for tripping the lever, substantially as set forth.

542,316. BUNG ATTACHMENT FOR BARRELS. FRANK SCHEIER, Milwaukee, Wis., assignor of one-half to Joseph Schulte, Cleveland, Ohio. Filed Nov. 30, 1894. Serial No. 530,353. (No model.)



Claim.—1. In combination with an attachment for barrels, a holder flanged near the bottom and having a central vertical passage and a horizontal connecting passage opening through a nipple, trunnions extending from said holder, a yielding washer below the flange on said holder, a bifurcated lever pivoted to said trunnions, uprights pivoted to the free ends of said lever and connected by a band, and lateral lugs at the bases of said uprights, substantially as and for the purpose set forth.

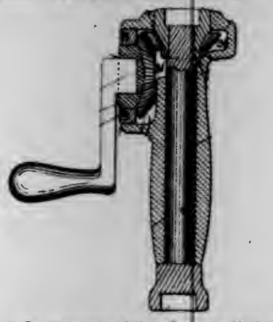
2. In combination with an attachment for barrels, a holder having a central vertical passage and a horizontal connecting passage opening through a nipple, said holder threaded at the top and provided with a flange near the bottom, trunnions extending from said holder near said threaded end, a yielding washer below said flange, a bifurcated lever pivoted to said trunnions, uprights pivoted to the free ends of said lever and connected by a band, lateral lugs at the bases of said uprights, an internally threaded and shouldered cap adapted to engage the threaded end of said holder, and a yielding washer below the shoulder in said cap, substantially as and for the purpose set forth.

3. In combination with an attachment for barrels, a bung-plate having a depending bushing internally chambered and shouldered and adapted to engage the bung-hole of a barrel, lateral T-openings in said plate, and laterally extending ears on said plate connected by upper surface grooves, substantially as and for the purpose set forth.

4. In an attachment for barrels, a bung-plate having a depending bushing internally chambered and shouldered and adapted to be secured to the bung-hole of a barrel, and lateral T-openings in said plate, in combination with a flanged holder having a central vertical passage and a horizontal connecting passage opening through a nipple, said holder provided with a base adapted to enter the upper part of the chamber in said bung-plate bushing, a yielding washer arranged below the flange of said holder to form a tight joint between said plate and holder, a bifurcated lever trunnioned to said holder and uprights connected by a band pivoted to the free end of said lever having lugs adapted to enter said T-openings and form a secure connection with said plate, substantially as and for the purpose set forth.

5. The combination, in an attachment for barrels, of a bung-plate having a depending bushing internally chambered and shouldered and adapted to be secured in the bung-hole of a barrel, and lateral T-openings in said plate; a flanged holder externally threaded at the top having a vertical passage and a horizontal connecting passage opening through a nipple, said holder provided with a base adapted to enter the upper part of the chamber in said bung-plate bushing, and a yielding washer arranged below the flange of said holder to form a tight joint between said plate and holder, a bifurcated lever trunnioned to said holder, uprights connected by a band pivoted to the free ends of said lever having lugs adapted to enter said T-openings and form a secure connection with said plate, and an internally threaded and shouldered cap adapted to engage the threaded end of said holder, with a yielding washer below the shoulder in said cap arranged to snugly embrace a tube when said cap is screwed down, substantially as and for the purpose set forth.

542,317. WRENCH. WILLIAM J. SHEA, Hartford, Conn. Filed May 14, 1895. Serial No. 549,250. (No model.)



Claim.—1. In a wrench of the class specified, the combination with a handle; of a rotary-shaft journaled therein, and provided at one end with a polygonally-recessed rotary-head secured thereto, and at its opposite end with a polygonally-recessed gear-carrier having a gear thereon; a polygonally-recessed gear-carrier rotatably disposed at one side of said handle, and having a gear thereon adapted to mesh with the gear disposed at one end of the rotary-shaft; and means for actuating said gears and shaft, substantially as described.

2. In a wrench of the class described, the combination with a handle having an enlarged, recessed head at one end, and an annular, projecting-flange forming a casing at one side thereof; of a polygonally-recessed bevel-gear carrier rotatably disposed in said recessed head, and having a bevel-gear thereon; a rotary-shaft journaled in said handle and having one of its ends secured to said bevel-gear carrier, and having its opposite end provided with a polygonally-recessed head abutting against one end of said handle, and adapted to rotate with said shaft; a polygonally-recessed bevel-gear carrier rotatably disposed in said casing at the side of said handle, and provided with a bevel-gear adapted to mesh with the bevel-gear in the recessed head of said handle; and means for actuating said bevel-gears and shaft, substantially as described.

3. In a wrench of the class described, the combination with a handle; of a rotary-shaft journaled therein, and having a polygonally-recessed head secured to one end of said shaft; and a polygonally-recessed bevel-gear carrier secured to the opposite end of said shaft and adapted to rotate therewith; a bevel-gear disposed on said carrier; a polygonally-recessed bevel-gear carrier rotatably disposed at one side of said handle, and provided with a bevel-gear adapted to mesh with the bevel-gear disposed at the end of said shaft; and means for actuating said bevel-gears and shaft, substantially as described.

4. In a wrench of the class described, the combination with a handle; of a rotary-shaft journaled therein, and provided at one end with a polygonally-recessed rotary-head secured thereto, and at its opposite end with a polygonally-recessed gear-carrier having a gear thereon; a polygonally-recessed gear-carrier rotatably disposed at one side of said handle, and having a gear thereon adapted to mesh with the gear disposed at one end of the rotary-shaft; and an actuating device provided with a polygonal stud adapted to fit into one of said polygonal recesses of the gear-carriers or shaft-head and actuate said shaft and gear-carriers, substantially as described.

5. In a wrench of the class described, the combination with a handle having an enlarged, recessed head at one end, and an annular projecting-flange forming a casing at one side thereof, and having screw-threads on its interior walls; of a polygonally-recessed bevel-gear carrier rotatably disposed in said head, and having a bevel-gear thereon; a rotary shaft journaled in said handle and having one of its ends secured to said bevel-gear carrier, and having its opposite end provided with a polygonally-recessed head abutting against one end of said handle, and adapted to rotate with said shaft; a polygonally-recessed bevel-gear carrier rotatably disposed in said casing at the side of said handle, and provided with a bevel-gear adapted to mesh with the bevel-gear in the recessed head of said handle; an exteriorly screw-threaded collar-nut adapted to be turned into the casing for securing said bevel-gear carrier therein; and a crank-arm provided with a polygonally-shaped projecting-stud adapted to fit into one of said polygonal recesses of the gear-carrier or shaft-head to actuate said gears and shaft, substantially as described.

6. In a wrench of the class described, the combination with a handle having a longitudinal bore; of a rotary-shaft journaled in said handle and having a squared end; a polygonally-recessed head integrally connected to one end of said shaft and abutting against the lower end of the handle, and adapted to form a continuation of said handle, said handle being provided with an enlarged, recessed head provided with a bore concentric to the longitudinal bore thereof, and with an annular flange at one side thereof forming a casing adjacent the enlarged head, and having screw-threads in its interior wall; a polygonally-recessed bevel-gear carrier rotatably secured in the bore of the enlarged head, and having a bevel-gear thereon, and provided with a squared socket adapted to be secured on to the squared end of the shaft; a polygonally-recessed bevel-gear carrier rotatably disposed in said casing at one side of the handle, and provided with a bevel-gear adapted to mesh with the bevel-gear in the enlarged head of the handle; an exteriorly screw-threaded collar-nut adapted to be turned into said casing, and hold said bevel-gear carrier rotatably secured therein; and a crank-arm provided with a polygonally-shaped projecting-stud adapted to fit into one of the polygonal recesses in the bevel-gear carriers or the shaft-head to actuate the shaft and gears, substantially as described.

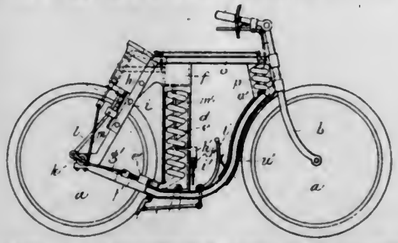
7. The improved wrench herein described, consisting of a handle, a rotary-shaft therein having squared sockets at each end thereof adapted to engage a bolt head or nut; a gear adapted to rotate with said shaft; a gear rotatably disposed at one side of said handle, and having a squared socket therein adapted to engage a bolt head or nut, and also adapted to mesh with the gear on said rotary-shaft; and means adapted to be inserted in any one of the sockets for actuating said gears and shaft, substantially as described.

542,318. TABLE-FASTENER. CARL E. SJOHOLM, Pullman, Ill. Filed Feb. 27, 1894. Serial No. 501,699. (No model.)



Claim.—A fastener for car and similar tables consisting of a stationary wall plate provided with a rectangular opening having a beveled lower edge, and with an integral rectangular hook-lug projected rearwardly and downwardly from the inner upper edge and in rear of said opening to a point opposite or below the lower beveled edge thereof, and a table plate adapted to be fastened to a table and provided with an end rest flange and a straight projected lock end adapted to lie flush with the top of the table and provided with a rectangular catch opening or slot adapted to engage over said rectangular hook lug, the sides of said catch opening or slot being beveled to agree with the disposition of the hook lug, substantially as set forth.

542,319. MOTOR FOR VEHICLES. WILLARD I. TWOMBLY, Portland, Me., assignor of one-half to Benjamin S. Lovell, Boston, Mass. Filed Aug. 31, 1894. Serial No. 521,793. (No model.)



Claim.—1. A motor comprising a boiler, engine, tank adapted to contain a combustible volatile fluid and condenser, a pump mechanism operated by said engine and adapted to re-convey the motive fluid after condensation into the boiler, and an air pump operated by said engine and adapted to force a spray of the volatile fluid upon the condenser, substantially as and for the purposes set forth.

2. In a vehicle, a motor comprising an engine, boiler and condenser, an exhaust pipe leading from the engine to the condenser, a fuel tank supported in said vehicle, a force-pump operated by said engine and adapted to re-convey the motive fluid after condensation to the boiler, a burner located beneath said boiler and receiving its fuel supply from said fuel tank, an atomizer consisting of a pipe leading from the fuel tank and terminating beneath the condenser, and an air pump adapted to force a spray of the fuel from the atomizer upon the condenser, substantially as and for the purposes set forth.

3. In a vehicle, a double frame made hollow, a boiler, engine and condenser mounted on said frame, an exhaust pipe leading from the engine into said frame and thence through said frame to the condenser, a conduit leading from said condenser to the boiler forward by the lower part of said hollow frame, and a force pump adapted to take up the motive fluid from said conduit and re-convey it to the boiler, substantially as and for the purposes set forth.

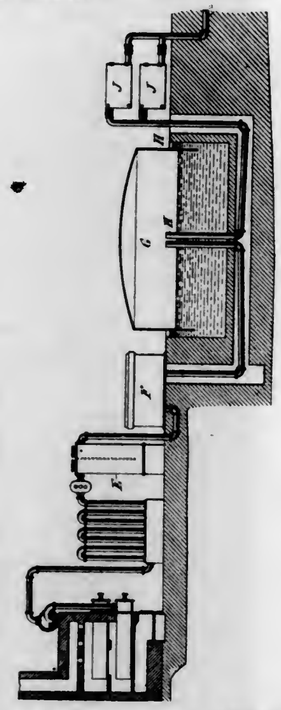
4. In a vehicle, the combination with wheels and a suitable frame, of an engine, boiler and condenser mounted upon said frame, said frame being hollow and serving as a conduit from the exhaust to the condenser and from the condenser to the boiler, substantially as and for the purposes set forth.

5. In a vehicle, the combination with wheels and a hollow double frame, arranged one on each side of said wheels, of a boiler, engine and condenser mounted on said frame, the top of said hollow frame serving as a conduit from the exhaust to the condenser, the bottom on one side serving as a conduit from the condenser to the boiler and on the other side serving as a conduit for an air blast to feed air to the burner and to the atomizer, whereby a spray of volatile fluid is thrown upon the condenser, substantially as and for the purposes set forth.

6. In a vehicle, the combination with an engine, boiler and condenser mounted on said vehicle, a fuel tank mounted in said vehicle and formed continuous with the condenser case, an atomizer leading from said fuel tank to a point beneath the condenser coil, and means for automatically forcing a blast of air across the orifice of the atomizer, and upon the condenser, substantially as and for the purposes set forth.

7. In a vehicle, the combination with a suitable frame and wheels, of an engine, boiler and condenser mounted on said frame, a burner adapted to supply heat to said boiler and a continuous jacket surrounding said boiler and engine, substantially as and for the purposes set forth.

542,320. PROCESS OF AND APPARATUS FOR MAKING GAS. THOMAS L. WILLSON, New York, N. Y. Filed May 9, 1895. Serial No. 548,689. (No model.)

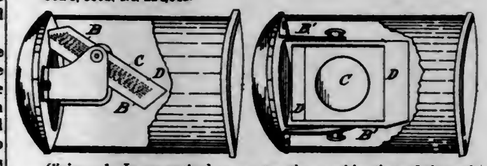


Claim.—1. The improved treatment of illuminating gas which consists in passing it, after it has been purified, and before it enters the mains, into contact with a metallic carbide decomposable by water to generate a hydrocarbon gas, whereby the gas is dehydrated and enriched.

2. The improved treatment of illuminating gas which consists in passing it on its way from the gas holder into the main into contact with a metallic carbide decomposable by water to generate a hydrocarbon gas, whereby the gas is dehydrated and enriched.

3. The combination with gas-generating and purifying apparatus and a gas-holder, of a carbide dehydrator substantially as described introduced to be traversed by the gas between the gas holder and the main.

542,321. METHOD BY WHICH PICTURES PROJECTED UPON SCREENS BY MAGIC LANTERNS ARE SEEN IN RELIEF. JOHN ANDERTON, Birmingham, England. Filed July 5, 1893. Serial No. 479,630. (No model.) Patented in England July 7, 1891, No. 11,520, and in France Oct. 8, 1892. No. 224,813.

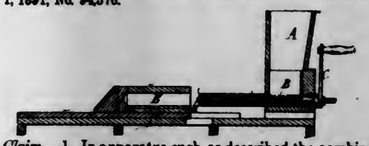


Claim.—1. In an optical apparatus the combination of the pair of lanterns having the polarizers arranged at right angles to each other, the pair of analyzers having the analyzing plates arranged therein at right angles to each other and capable of analyzing the polarized light and a non depolarizing screen adapted to receive the pictures without pepolarizing or either elliptically or circularly polarizing them, substantially as described.

2. In an optical apparatus, the combination, of the means for polarizing the light and throwing the pictures upon a screen, and the analyzers for analyzing the polarized light, having analyzing plates arranged therein at right angles to each other, substantially as described.

3. In an optical apparatus, the combination of the pair of lanterns having the polarizers arranged at right angles to each other and the pair of analyzers having the analyzing plates arranged therein at right angles to each other and capable of analyzing the polarized light, substantially as described.

542,322. MACHINE FOR FILLING CARTRIDGE OR OTHER CASES. TELFORD C. RATCHELOR, London, England. Filed Jan. 9, 1892. Serial No. 417,594. (No model.) Patented in England Mar. 13, 1890, No. 3,963; in France Mar. 26, 1891, No. 212,383; in Switzerland Mar. 28, 1891, No. 3,578; in Spain Mar. 30, 1891, No. 11,024, and in Belgium Apr. 1, 1891, No. 94,376.

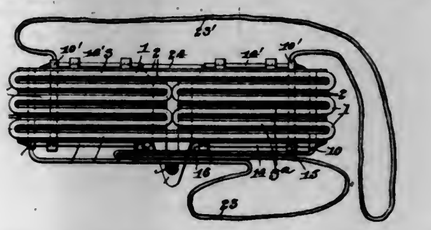


Claim.—1. In apparatus such as described the combination with the filling screw of a worm wheel I located at the head of such screw and adapted to be operated by said filling screw, and one or more feeding worms K connected with and operated by said worm wheel substantially as and for the purpose described.

2. In an apparatus such as described, the combination with the filling screw, and its surrounding tube, of a hollow mandrel within such filling screw, and the worm located within such mandrel, substantially as set forth.

3. In an apparatus such as described, the combination with the filling screw and its surrounding tube, of a hollow mandrel contained within said filling screw, the worm contained within the mandrel, and means for operating said screw and worm simultaneously, substantially as set forth.

542,323. MAIL-BAG AND LOCK THEREFOR. WILLIAM F. BEASLEY, Baltimore, Md. Filed Sept. 11, 1894. Serial No. 522,723. (No model.)



Claim.—1. A bag having a series of apertured gussets around its upper edge, the forward and rear gussets being the width of the mouth of the bag when folded, and the intermediate gussets having a length not greater than half of that of the forward and rear gussets, and folding flat between them, the said gussets being corrugated and resting the one within the other in combination with means to prevent the separation of the said front and rear gussets, the said means pass-

ing through the apertures in the several gussets, and being secured to the exterior gussets at the apertures therein, substantially as described.

2. A bag having a series of apertured gussets around its upper edge, the forward and rear gussets being the width of the mouth of the bag when folded, and the intermediate gussets having a length not greater than half of that of the forward and rear gussets and folding flat between them, the open tines in some of the intermediate gussets being elongated to fold over the ends of the posts, in combination with posts secured to one of the exterior gussets and projecting through the apertures in the intermediate gussets to the outer surface of the opposite exterior gusset and means secured to the last named exterior gusset to engage the said posts, substantially as described.

3. A bag having a series of gussets around its upper edge, the forward and gear gussets being the width of the mouth of the bag when folded and the intermediate gussets having a length not greater than half of that of the forward and rear gussets, and folding flat between them, the said gussets being corrugated and nesting the one within the other, substantially as described.

4. A bag having a series of gussets around its upper edge, the forward and rear gussets being the width of the mouth of the bag when folded, and the intermediate gussets having a length not greater than half of that of the forward and rear gussets, and folding flat between them, in combination with a piece slidingly secured to one of the exterior folds and adapted to project between the opposite intermediate gussets and through the other exterior fold, posts secured to one of the said exterior gussets, and through the intermediate gussets and the opposite exterior gusset, bolts engaging the said post and held by the said piece, and means to prevent the withdrawal of the said piece from within the said gussets substantially as described.

5. A bag having a series of gussets around its upper edge, the forward and rear gussets being the width of the mouth of the bag when folded and the intermediate gussets having a length not greater than half of that of the forward and rear gussets and folded flat between them, each of the said forward and rear gussets having I shaped slots therein and the intermediate gussets each having one half of a corresponding I shaped slot, in combination with a tongue, the said tongue consisting of a rigid piece slidingly connected to one of the exterior gussets whereby it may be retracted from the interior of the mouth of the bag, and means for detachably securing the said locking means to the opposite exterior gusset secured to one of the exterior gussets and adapted to pass through the slots in the opposite exterior gusset and in the intermediate gussets, the said tongue being I shaped in cross section, substantially as described.

6. A bag having a series of gussets around its upper edge, the forward and rear gussets being the width of the mouth of the bag when folded, and the intermediate gussets having a length not greater than half of that of the forward and rear gussets and folding flat between them, in combination with means for locking the exterior gussets together passing through the exterior and the opposite intermediate gussets, thereby holding the gussets against displacement, the said intermediate gussets having open slots in their inner ends to receive the said means, substantially as described.

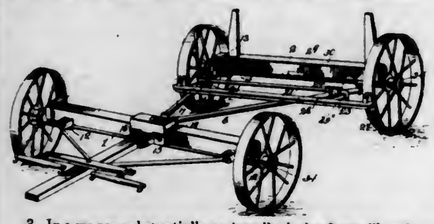
7. A bag having a series of gussets around its upper edge, the forward and rear gussets being the width of the mouth of the bag when folded, and the intermediate gussets having a length not greater than half of that of the forward and rear gussets and folding flat between them, in combination with an I shaped tongue passing through the exterior and the opposite intermediate gussets, thereby holding them against displacement, each of the opposite pairs of said intermediate gussets having the one-half of a correspondingly shaped open slot in its inner end, substantially as described.

8. A bag having a series of apertured gussets around its upper edge, the forward and rear gussets being the width of the mouth of the bag when folded and the intermediate gussets having a length not greater than half of the forward and rear gussets, in combination with posts secured to one of the exterior gussets and adapted to pass through the apertures in the opposite exterior gusset and intermediate gussets when the bag is folded, straps secured to the said posts and passing through the said apertures, whereby the posts are guided to their seats when the bag is folded, and means upon the exterior gusset to lock the said posts against retraction, substantially as described.

542,324. WAGON. HARWELL L. BENNETT and RUSSELL B. ADAMS, Westerville, Ohio. Filed Mar. 12, 1895. Serial No. 542,767. (No model.)

Claim.—1. In a wagon, the combination of the rear axle, sockets 5 on said axle, the Y-shaped casting having sockets 7, reaches 6 loosely secured in said sockets 5 and 7, a lengthening pole 28 having a rounded tip and a coupling pin hole, the front axle having a seat for the tip of said pole, substantially as described.

2. In a wagon, the reaches 6 and the Y-shaped casting the stem of which has rounded surfaces and a hole to receive the coupling pin the walls of which are rounded, for the purpose explained.



3. In a wagon substantially as described, the front sill and a casting 15 secured thereto having the front wall 16 and the upper wall 18 having flanges 19 to afford a recess between the sill and the upper wall of the casting, for the purpose explained.

4. In a wagon, the combination with the rear axle, reaches 6 secured to said axle near the wheels and converging at their forward ends, bearings 24 movably attached to said reaches, the brake lever journaled in said bearings, and pins to prevent movement of said lever in its bearings and movement of the bearings on the reaches, substantially as described.

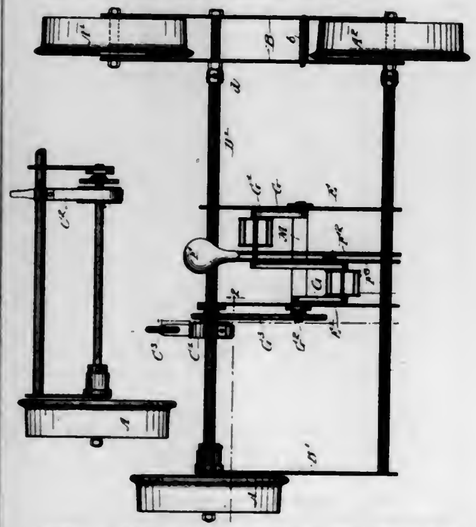
5. In a wagon, a tubular axle, a removable wear sleeve on said axle, a casting or box on said sleeve, a pin passing through the box, sleeve, and axle for securing the same to the axle, and a sill secured to said box and preventing the removal of said pin, substantially as shown.

542,325. BRIDGE FLOORING, DECKING, ROOFING, &c. JOHN V. BOYD-WILSON, Glasgow, Scotland. Filed Mar. 2, 1895. Serial No. 540,321. (No model.) Patented in England Feb. 16, 1891, No. 2,791.



Claim.—In combination the girders of inverted U shape having integral inwardly turned flanges, and the concrete blocks between the sides of said girder, said blocks having grooves in their upper portions to receive the inwardly turned flanges, the base portions of said blocks extending under the said flanges, substantially as described.

542,326. RAILWAY-TRICYCLE. FRANK BRADY, Chicago, Ill. Filed Mar. 10, 1893. Serial No. 465,483. (No model.)



Claim.—1. In a railway tricycle the combination with the wheels, the wheel frame and the main frame, said wheel frame detachable from the main frame, of the driving power, substantially between the two ends of the main frame, said power consisting of a lever for driving by hand and foot mechanism for driving with the feet, substantially as described.

2. In a railway tricycle the combination with the driving wheel, and its axle, and connections between said axle and an auxiliary driving shaft, of a lever J for driving the latter, said lever bent or curved, and the detachable link connection between said lever, and said auxiliary shaft, substantially as shown and described.

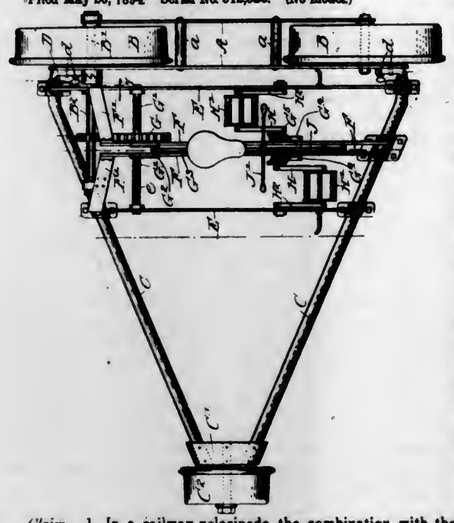
3. In a railway tricycle the combination with an auxiliary driving shaft of a lever for driving the same, and clutch mechanism connecting the lever and shaft consisting of a flexible band, one end connected with the lever above its pivotal point and the other end to the lever below the pivotal point, the two portions of the band crossing each other, a wheel loosely mounted on the shaft, around the periphery of which the band is passed, and clutch mechanism within the wheel for engaging the wheel to the shaft when the wheel is revolved in one direction, substantially as described.

4. In a railway tricycle the combination with the wheels and the wheel frame of the main frame on which the driving mechanism is mounted, said main frame consisting of two parallel rods extending from one wheel frame to the other, said rods attachable to and detachable from the wheel frame, at one end, substantially as described.

5. In a railway tricycle the combination with the main frame, a hand driving lever, and the seat standard supported by said frame of a brace extending from said seat standard to the main frame, said brace provided with notches into which locking mechanism on the lever may engage, substantially as described.

6. In a railway tricycle the combination with the main frame and driving gear mounted thereon, said driving gear consisting of foot mechanism and hand mechanism of a lever constituting the hand mechanism, said lever provided with mechanism whereby it may be disengaged from the driving gear and with locking mechanism whereby it may be locked in the desired position when disengaged, substantially as described.

542,327. RAILWAY-VELOCIPEDE. FRANK BRADY, Chicago, Ill. Filed May 26, 1894. Serial No. 512,536. (No model.)



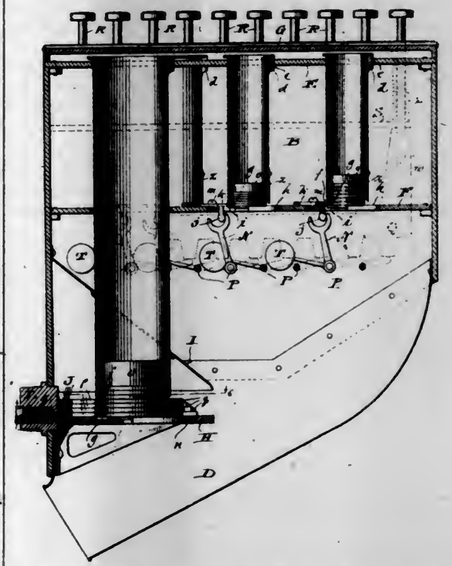
Claim.—1. In a railway velocipede, the combination with the main frame, of the detachable frame mounted thereon, the crank-shaft and foot pedals, mounted thereon, the pitman-rod connected to said crank shaft, the gear operated by said pitman the pitman and clutch mechanism, all arranged substantially as shown and described.

2. In a railway velocipede the combination with the main wheel, carrying frame and tubular radial arms carrying the auxiliary wheel and driving mechanism, of elbow arms, one portion of which enters the tubular frame arms and the other portion of which is detachably bolted to the main wheel frame, substantially as described.

3. In a railway velocipede, the combination with the main and detachable frames, of the crank shaft, gear and pinion, the pitman connecting the crank shaft and gear, the foot pedals mounted upon the crank shaft, and a hand-lever pivoted upon the detachable frame and connected with the pitman, whereby either hand or foot power, or both, may be used, substantially as shown and described.

542,328. COIN-DELIVERY APPARATUS. EDWARD J. BRANDT, Watertown, Wis. Filed July 14, 1894. Serial No. 517,513. (No model.)

Claim.—1. A coin delivery apparatus embodying a series of coin receptacles each in the form of a tube partially cut away at one end and having the remainder of this end provided with a longitudinal notch and inturned flanges flanking the notch, a series of coin-ejectors in register with the tube-notches, and suitable means for effecting the reciprocation of single ejectors or combinations of ejectors by a single mechanical impulse.



2. A coin delivery apparatus embodying a coin receptacle in the form of a tube partially cut away at one end for a depth equal to the thickness of a plurality of a certain denomination of coin and the remainder of this end provided with a longitudinal notch and inturned flanges flanking the same, a series of slides one upon the other and provided with noses in register with the tube-notch, and suitable means for effecting an independent reciprocation of the first slide as well as a simultaneous reciprocation of this first slide and one or more of the others in the same series by a single mechanical impulse.

3. A coin delivery apparatus embodying a series of coin receptacles each in the form of a tube partially cut away at one end and the remainder of this end provided with a longitudinal notch flanked by inturned flanges, the cut away portion of the majority of the tubes being of sufficient depth to clear single coins of various denominations, and the cut away portion of the remainder of the tubes being of a depth equal to a plurality of the coins contained therein, a series of coin-ejectors in register with the slots in the majority of said tubes, suitable means for effecting a reciprocation of single ejectors or combinations of ejectors by a single mechanical impulse, a series of slides one upon another and provided with noses in register with the notch in any remaining tube, and other suitable means for effecting an independent reciprocation of the first of these slides as well as a simultaneous reciprocation of this first slide and one or more of the others in the series by a single mechanical impulse.

4. A coin delivery apparatus embodying a series of coin receptacles each in the form of a tube partially cut away at one end and the remainder of this end provided with a longitudinal notch and inturned flanges flanking the same, a yielding stop guarding the cut-away portion of the tube, a coin-ejector in register with the tube notch, and suitable means for reciprocating the ejector.

5. A coin delivery apparatus embodying a series of coin receptacles each in the form of a tube partially cut away at one end and the remainder of this end provided with a longitudinal notch flanked by inturned flanges, coin-ejectors in register with the tube-notches, crank-rods provided with levers controlling the ejectors, loose bars having feet opposing the crank-rods, and suitable means for actuating each bar, there being one or more feet on any bar proportionate to the number of crank-rods it is desirable to operate by a single impulse.

6. A coin delivery apparatus embodying a series of coin receptacles each in the form of a tube partially cut away at one end and the remainder of this end provided with a longitudinal notch flanked by inturned flanges, coin-ejectors in register with the tube-notches, crank-rods provided with levers controlling the ejectors, weighted arms on the crank-rods loose bars having feet opposing the crank-rods, and suitable means for actuating each bar, the number of feet on any bar being proportionate to the number of crank-rods it is desirable to operate by a single impulse.

7. A coin delivery apparatus embodying a series of coin receptacles each in the form of a tube partially cut away at one end and the remainder of this end provided with a longitudinal notch flanked by inturned flanges, coin-ejectors in register with the tube-notches, crank-rods provided with levers controlling the ejectors, loose bars having feet opposing the crank-rods, and a spring-controlled push-rod connected to each bar, the number of feet on any bar being proportionate to the number of crank-rods it is desirable to operate by means of a single push-rod.

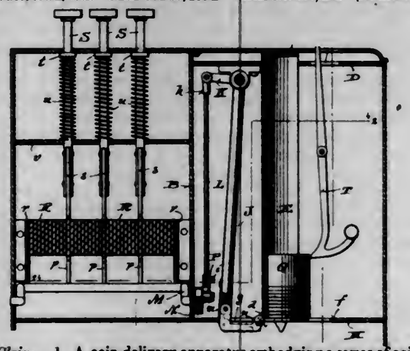
8. A coin delivery apparatus embodying a series of coin receptacles each in the form of a tube partially cut away at one end and having the remainder of this end provided with a longitudinal notch and inturned flanges flanking the notch, a series of coin-ejectors in register with the notches, means for effecting a reciprocation of single ejectors or combination of ejectors by a single mechanical impulse, and disks of greater thickness than the depth of the cut away portions of the tubes arranged in the latter to follow the coin and operate as stops against movement of the ejectors when any of said tubes are emptied.

9. A coin delivery apparatus embodying a coin receptacle in the form of a tube cut away at one end to a depth sufficient to clear a number of coins contained therein and having the remainder of this end provided with a longitudinal notch flanked by inturned flanges, a series of slides one upon another and provided with noses in register with the tube-notch, a lug projecting upward from each of a majority of the slides in the path of the succeeding slide, and a spring-controlled push-rod extended outward from each slide.

10. A coin delivery apparatus embodying a coin receptacle in the form of a tube cut away at one end to a depth sufficient to clear a number of coins contained therein and having the remainder of this end provided with a longitudinal notch flanked by inturned flanges, a series of slides one upon another and provided with noses in register with the tube-notch, anti-friction rollers opposing edges of the slides, and suitable means for effecting an independent reciprocation of the first of the latter slides as well as a simultaneous reciprocation of this first slide and one or more in the series by a single mechanical impulse.

11. A coin delivery apparatus embodying a casing divided into front and rear compartments, the front compartment being of greater depth than the rear and having a chute-like bottom an apertured plate in the front compartment, coin tubes supported on the plate adjacent to the apertures therein and held against rotation, each tube having a portion of its lower end cut away and the remainder of this end provided with a longitudinal notch flanked by inturned flanges, slides on said plate in register with the notches, crank-rods provided with levers controlling the slides, bars provided with feet opposing the crank-rods, indexed push-rods connected to the bars and extended through the top of the casing, an apertured bracket in the front compartment of said casing, another coin tube supported on the bracket adjacent to the aperture therein, the lower end of the latter tube being similar to those aforesaid, but having the depth of its cut away portion equal to the thickness of a plurality of coins of certain denomination, slides one upon another on the bracket in register with the notch in the latter tube, push-rods extended through the casing from each of the latter slides, and suitable means for imparting the motion of any of these latter slides above the lower one to all of its predecessors.

542,329. COIN-DELIVERY APPARATUS. EDWARD J. BRANDT, Watertown, Wis. Filed Oct. 29, 1894. Serial No. 527,256. (No model.)



Claim.—1. A coin-delivery apparatus embodying a series of coin-holders each in the form of a tube having front and rear notches at its lower end, a supporting plate provided with openings partly in register with the lower ends of the coin-holders and slots radiating from these openings parallel to the rear notches in said coin-holders; an arm oscillative in rear of each coin-holder, a balanced coin-expelling finger connected to the arm to work in a plate-slot and corresponding rear notch of the adjacent coin-holder, and suitable means for operating said arm.

2. A coin-delivery apparatus embodying a series of coin-holders each in the form of a tube having front and rear notches at its lower end and provided with depending interior lugs, a supporting plate provided with perforations for engagement of the coin-holder lugs, openings partly in register with the lower ends of these holders and slots radiating from the openings parallel to the rear notches in said holders, an arm oscillative in rear of each coin-holder, a balanced coin-expelling finger connected to the arm to work in a plate-slot and corresponding rear notch of the adjacent coin-holder, and suitable means for actuating said arm.

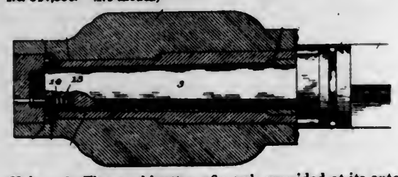
3. A coin-delivery apparatus embodying a series of coin-holders each in the form of a tube having front and rear notches at its lower end and cut away throughout its length to present an opening of less width than its diameter, a supporting plate provided with openings partly in register with the lower ends of the coin-holders and slots radiating from these openings parallel to the rear notches in said coin-holders; an arm oscillative in rear of each coin-holder, a balanced coin-expelling finger connected to the arm to work in a plate-slot and corresponding rear notch of the adjacent coin holder, and suitable means for actuating said arm.

4. A coin-delivery apparatus embodying a series of coin-holders each in the form of a tube closed at its upper end, cut away throughout its length to present an opening of less width than its diameter, and provided at its lower end with front and rear notches, a follower arranged in each coin-holder, a pivotal indicating trip arranged to bear against the contents of the coin-holder and automatically swing on its pivot the instant the follower passes a predetermined point in its descent, a supporting plate provided with openings partly in register with the lower ends of the coin holders and slots radiating from these openings parallel to the rear notches in said coin-holders, an arm oscillative in rear of each coin-holder, a balanced coin-expelling finger connected to the arm to work in a plate-slot and corresponding rear notch of the adjacent coin-holder, and suitable means for actuating said arm.

5. A coin-delivery apparatus embodying a series of coin-holders in vertical arrangement and having their lower ends provided with front and rear notches, a supporting plate having openings partly in register with the notched ends of the coin-holders and slots radiating from these openings parallel to the rear notches in said coin-holders, trunnioned arms in rear of these coin-holders, balanced angular fingers connected to the lower ends of the arms to work in the plate-slots and rear notches of the aforesaid coin-holders, lateral stops on the fingers beneath said supporting plate, crank-controlled operating devices for the arms, loose bars having depending lugs opposing the cranks and spring controlled push-rods joined to the bars.

6. A coin-delivery apparatus embodying a series of coin-holders in vertical arrangement and having their lower ends provided with front and rear notches, a supporting plate having openings partly in register with the notched ends of the coin-holders and slots radiating from these openings parallel to the rear notches of said coin-holders, trunnioned arms in rear of these coin-holders, shanks extending from the arms, shackles connected to the shanks, cranks carrying disks, sockets wristed to the disks, link-rods in adjustable connection with the shackles and sockets, suitable means for actuating the shanks, balanced angular fingers connected to the lower ends of said arms to work in the plate-slots and rear notches of the aforesaid coin-holders, and lateral stops on the fingers beneath said supporting plate.

542,330. HUB. EDWARD O. BRYDEN, Chicago, Ill., assignor of one-half to W. F. Combs, Reno City, Okla. Filed July 12, 1894. Serial No. 517,330. (No model.)

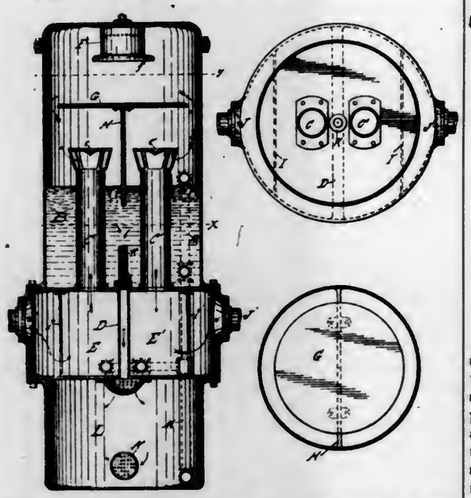


Claim.—1. The combination of a hub provided at its outer end with an interior annular shoulder, an axle box arranged within the hub, the removable lining fitting within the axle box and having its rear end interlocked with the same, and having its front end extended beyond the axle box and the shoulder of the hub and threaded, the nut 8 arranged on the threaded end of the lining and engaging both the axle box and the shoulder of the hub and locking both the axle box and the lining therein, said nut 8 being of the same diameter as the interior of the outer end of the hub, a spindle receiving the lining and extending beyond the same, and an axle nut screwing on the spindle and fitting within and filling the outer end of the hub and concealing the nut 8, substantially as described.

2. The combination of a spindle having the ordinary shoulder and provided beyond the same with an enlarged cylindrical portion 22, having an annular groove 23 and forming a shoulder at the body of the axle, a sand band arranged on the enlarged cylindrical portion 22 and fitting against the shoulder of the body of the axle and provided at its bottom with an opening, and a hub fitting against the adjacent ends of the sand band and provided with a sleeve located within the sand band and supported by the adjacent end of the enlarged cylindrical portion 22 and terminating at the groove thereof, substantially as described.

3. The combination of a spindle having its outer end threaded and provided with a longitudinal socket, a spring actuated bolt mounted in the socket of the spindle and disposed longitudinally thereof and projecting outward therefrom, and a circular nut fitting on the outer threaded end of the spindle, and provided in its outer face with a pair of sockets, and having an opening extending entirely through it and receiving the projecting portion of the bolt, the latter having its outer end flush with the outer face of the nut and entirely filling said opening, said nut being adapted to be screwed on or off the spindle by a tool having a pair of rigid projections to interlock with the sockets, and provided with a pin of greater length than the projections to fit in the opening for depressing the bolt and holding the same out of engagement with the nut, substantially as described.

542,331. FEED-WATER HEATER AND PURIFIER. THOMAS J. COOKSON, Chicago, Ill. Filed May 13, 1895. Serial No. 549,121. (No model.)



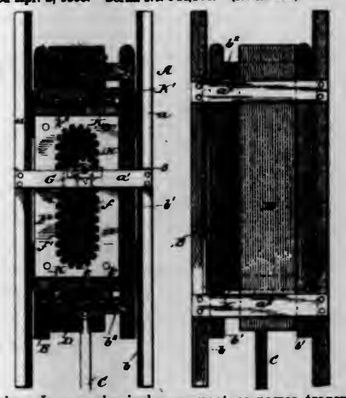
Claim.—1. The herein described feed water heater and purifier, consisting of the combination of the chamber A into which the steam enters, divided into two compartments E E', ports J, J' therein, the baffle plates I, I', opposite said ports, the chamber B into which the water is fed, and the conduits C, C', connecting the chambers A and B, all substantially as shown and described.

2. The herein described feed water heater and purifier, consisting of the combination of the chamber A into which the steam enters, divided into the compartments E, E', ports J, J' therein, baffle plates I, I', opposite said ports, the chamber B into which the water is fed, the partition H therein, the conduits C, C' connecting the chambers A and B, all substantially as shown and described.

3. The herein described feed water heater and purifier, consisting of the combination of the chamber A into which the steam enters, divided into two compartments E, E', ports J, J' therein, baffle plates I, I' opposite said ports, the chamber B into which the water is fed, the partition H therein, the conduits C, C' connecting the chambers A and B, the water inlet F and the water outlet K, and the hollow partition D into which K leads, all substantially as shown and described.

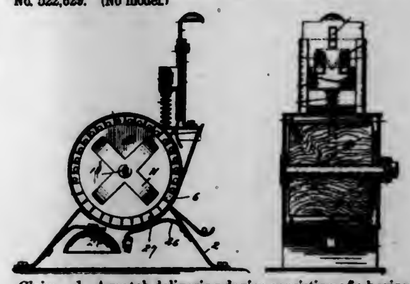
4. The herein described feed water heater, consisting of the combination of the steam chambers E, E', the ports J, J' therein, and baffle plates I, I' having corrugated surfaces, the corrugations extending from a middle line diagonally downward toward the edges, all substantially as shown and described.

542,332. PUMP ATTACHMENT. BASEL DECKER, Minatare, Nebr. Filed Apr. 2, 1895. Serial No. 544,170. (No model.)



Claim.—In a mechanical movement or power transmitter, the combination with a main frame, of the sliding frame therein, the shiftable plate or block, the toothed frame having double rows of teeth arranged alternately, the guide track arranged within the toothed frame, the bearing blocks, and balls, the power shaft and pinion, said pinion having two rows of teeth arranged alternately, substantially as shown and described.

542,333. MATCH-DELIVERING DEVICE. SAMUEL H. DICKERSON and FRANK S. GILBERT, Cleveland, Ohio. Filed Sept. 10, 1894. Serial No. 522,629. (No model.)



Claim.—1. A match delivering device consisting of a horizontally supported cylindrical receptacle, open at one of its ends and provided with a longitudinal delivery opening below the horizontal center of said receptacle, a cylindrical conveyer loosely mounted therein, and provided with means for carrying articles to be delivered, a removable cover for the open end of the receptacle, a friction device carried by the receptacle and interposed between the removable cover and the end of the conveyer and adapted to prevent any accidental movement of said removable cover and means for intermittently revolving the conveyer, substantially as described.

2. A match delivering device consisting of a horizontally supported cylindrical receptacle provided with a longitudinal delivery opening, located as described, a cylindrical conveyer mounted to revolve therein, a spring-controlled sliding plate supported on the receptacle and provided with a projection adapted to enter the receptacle and engage the conveyer and revolve it when said plate is depressed, a spring arm carried by the device and provided with a projection which enters the receptacle and is adapted to be intermittently engaged by the conveyer, and a bell supported in a position to be struck by the free end of said spring arm, substantially as described and for the purpose set forth.

3. A match delivering device consisting of a horizontal cylindrical receptacle open at one of its ends, and provided with a longitudinal delivery opening, a shaft in said receptacle, a cylindrical conveyer on said shaft, a removable cover or end 7 for the open end of the receptacle, means for removably securing said end in place, said means consisting of the slotted bail 8 carried by the end 7, the head 10 and neck 10ª formed on the shaft 3 and means for revolving the conveyer, substantially as described.

542,334. ROLL-HOLDER CAMERA AND PICTURE-EXHIBITOR. WILLIAM V. EDMOND, Chicago, Ill., assignor, by direct and mesne assignments, to C. B. Sims and Joseph Uhrig, same place. Filed Nov. 30, 1894. Serial No. 530,323. (No model.)

Claim.—1. A combined camera and picture exhibitor comprising a case provided with a suitable lens and with suitable means for sustaining, protecting and exposing the sensitized film, said case having a removable front plate and a removable back plate, both of said plates being removable independent of the film carrying rollers and the front plate being formed with a sight opening therein, substantially as described.



2. A combined camera and picture exhibitor comprising a case provided with a suitable lens and with suitable means for sustaining, protecting and exposing the sensitized film, and having a removable front plate B provided with a flange *b* and provided with a sight opening *b'*, and a back plate B' provided with a flange *b*, said flanges serving to connect said plates with the body of the case, substantially as described.

3. A combined camera and picture exhibitor comprising a case provided with a suitable lens and with suitable means for sustaining, protecting and exposing the sensitized film, said case having a removable front plate and a removable back plate and a handle provided with a lens or magnifying glass detachably connected to said case, substantially as described.

4. A combined camera and picture exhibitor comprising a case provided with a suitable lens and with suitable means for sustaining, protecting and exposing the sensitized film, said case having a removable back plate and a removable front plate, a handle detachably connected to said case and a lens connected to said handle, in manner permitting said lens to be moved outward and from said case, substantially as described.

5. A combined camera and picture exhibitor comprising a case provided with suitable rollers for carrying a sensitized film, and provided also with a lens and with suitable means for protecting and exposing said sensitized film, of a removable front plate B provided with a sight opening, a removable back plate B' and a lens T detachably connected to said case and movably mounted with respect to said case, whereby the position of said lens can be shifted to obtain the desired focus, substantially as described.

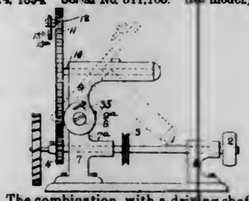
6. The combination with the case A having a detachable front plate B and back plate B' and suitable rollers D and D' of a handle S detachably connected to said case, a lens T and pivoted arms *t* and t^3 for connecting said lens to said handle, substantially as described.

7. In a camera, the combination with a front plate having a raised rib b^3 about its sight opening, of a perforated stop plate K for retaining the lens in place upon said front plate, said stop plate K having at its periphery an inwardly turned flange to engage said rib b^3 whereby said stop plate can be readily removed when a plate having a different size of sight opening is to be employed, substantially as described.

8. In a camera the combination with a case or body, of rollers for carrying the sensitized film, one or both of said rollers being slotted lengthwise and being provided at its inner end with the headed portion *c'* whereby the accidental withdrawal of the rollers will be prevented, substantially as described.

542,335. MEANS FOR OPERATING HOUSEHOLD DEVICES.

JAMES J. FAULKNER, St. Louis, assignor of a part of his right to Fred Harmon Paddelle, Bay City, and Edward J. Fitzharris, Saginaw, Mich. Filed May 14, 1894. Serial No. 511,105. (No model.)
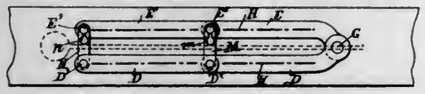


Claim.—1. The combination, with a driving shaft carrying a pinion, of a gear-wheel in gear with said pinion mounted in bearings formed by an upward extension of one of the bearings of the driving shaft, a pin eccentrically mounted on said gear-wheel and pulley cords attached to said pin, whereby said cords will be given a reciprocating motion by the rotation of the gear-wheels, substantially as described.

2. The combination with a driving shaft carrying a pinion, a gear-wheel in gear with said pinion mounted in bearings pivotally connected to an upward extension of one of the bearings of the driving shaft, a pin eccentrically mounted on said gear-wheel, and pulley cords attached to said pin, whereby said cords will be given a reciprocating motion by the rotation of the gear-wheel, substantially as described.

3. The combination with a driving shaft carrying a pinion, of a gear-wheel in gear with said pinion mounted in bearings pivotally connected to an upward extension of one of the bearings of the driving shaft, locking means for holding said gear-wheel in gear with said pinion, a pin eccentrically mounted on said gear wheel, and pulley cords attached to said pin, whereby said cords will be given a reciprocating motion by the rotation of the gear-wheel, substantially as described.

542,336. PNEUMATIC-TIRE FASTENER. ERNEST L. FERGUSON, Chicago, Ill. Filed Oct. 10, 1894. Serial No. 525,535. (No model.)



Claim.—1. A pneumatic tire fastener, composed of two series of pivotally connected narrow plates so arranged that the series are pivotally connected at one end and that each member of one series is opposite its corresponding member of the other series, in combination with locking hooks fastened to one series and hooking over pins or studs in the opposite series in such a manner that the two series are held firmly together when so attached all as set forth and described.

2. A pneumatic tire fastener, composed of two series of pivotally connected narrow plates, attached to the outer casing of said tire at the slit in said casing and so arranged that the two series are pivotally connected with each other at one end by a stud which passes through and is attached to the rim of the wheel, all substantially as and for the use set forth.

3. A pneumatic tire fastener, composed of two series of pivotally connected narrow plates, attached to the outer casing of said tire on each side of the slit in said casing and so arranged that the two series are pivotally connected with each other at one end by a stud which passes through and is attached to the rim of the wheel, in combination with locking hooks so attached to one of said series of plates that they will hook over pins or studs in the opposite series in such a manner that the two series of plates will be held firmly together, all as set forth and described.

4. A pneumatic tire fastener, composed of the two arms "D" and "E:" the stud "G" forming a pivot for said arms to swing on: the extension pieces "D'" and "E'" pivotally fastened near the ends of the pieces "D" and "E:" and the locking hooks "M" and "N" so fastened and arranged as to lock and fasten said pieces together, all as is set forth and described.

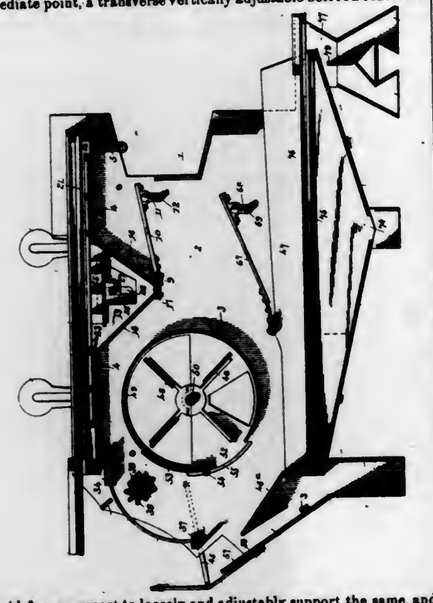
5. In a pneumatic tire fastener composed of two series of plates pivotally connected with each other, a locking hook or hooks fastened to one series and so arranged as to hook over pins or studs in the opposite series in such a manner that the two series are held firmly together, when said hook or hooks are so attached, all as set forth and described.

542,337. FOUL-SEED EXTRACTOR AND RECLEANER. EDGAR L. FIXLER and ANSON H. WILLIAMS, Delta, Ohio. Filed Nov. 16, 1894. Serial No. 529,039. (No model.)

Claim.—1. In a grain recleaner, the casing, upper and lower cleaning shoes supported to vibrate within the casing and having separating sieves, a segmental grain grating arranged within one end of the casing and comprising upper and lower transverse bars and a series of parallel curved grating wires, the upper of said transverse bars being arranged directly under one end of the upper shoe, and a fan arranged between the two shoes to direct its blast through the falling grain passing from the upper to the lower shoe through said grating, substantially as set forth.

2. In a machine of the class described, a cleaning shoe provided with a flat floor and with a bottom seed pocket at an intermediate point, the separating sieve fitted within said shoe, a stationary vertically adjustable skeleton frame support arranged within the seed pocket of the shoe, and comprising a series of connected parallel frame bars, and a stationary rectangular sieve cleaning frame secured intermediately on said support so as to extend beyond both sides of the seed pocket, and provided with a series of transverse cleaner bars adapted to work against the under side of said sieve, and also over the flat floor of the shoe to work the separations into the seed pocket, substantially as set forth.

3. In a grain recleaner, the casing, upper and lower vibrating cleaning shoes supported within the casing, the upper of said shoes being provided at an intermediate point with a bottom seed pocket, the separating sieve fitted in the upper shoe, a stationary rectangular sieve cleaning frame arranged on the bottom of the upper shoe longitudinally under the sieve therein, and adapted to provide for cleaning the sieve and also for working the separations into said seed pocket, a transverse skeleton frame support connected to said frame at an intermediate point, a transverse vertically adjustable bolt rod connected



to said frame support to loosely and adjustably support the same, and a fan arranged between the two shoes, substantially as set forth.

4. In a grain recleaner, the combination of upper and lower vibrating cleaning shoes, a grain grating arranged under the discharging end of the upper shoe, a fluted grain roller under the upper end of said grating, and the fan arranged between the two shoes, substantially as set forth.

5. In a grain recleaner, the casing, the upper and lower cleaning shoes supported to vibrate within the casing and having separating sieves, a segmental grain grating arranged within one end of the casing and comprising upper and lower transverse bars and a series of parallel curved grating wires, the upper of said transverse bars forming a rest bar for one end of the upper shoe to slide on, an inclined grain board supported at an angle over and in contact with said grating, a longitudinally fluted grain roller mounted to rotate within said grating adjacent to the rest bar thereof, and a fan arranged to discharge its blast under said grating, substantially as set forth.

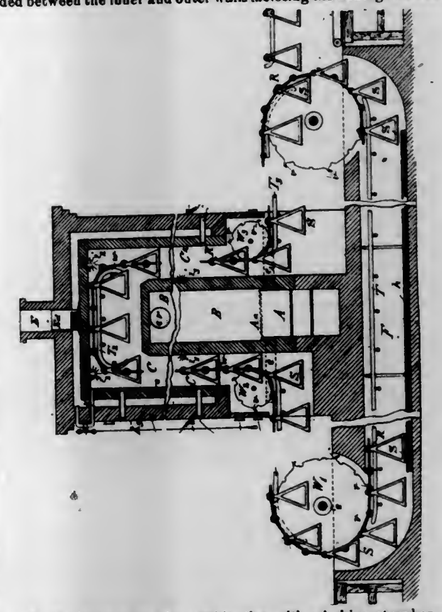
6. In a grain recleaner, the combination of the casing, the vibrating separating shoe mounted within the casing and having a sieve therein, and an adjustable skimming apron supported at one end of the casing and adapted to have one end adjusted within one end of the shoe above the sieve therein, substantially as set forth.

7. In a grain recleaner, the combination of the casing, the vibrating cleaning shoe mounted within the casing and having a sieve therein, a U-shaped adjusting bail pivotally connected to one end of the casing, and a skimming apron attached to said bail, said skimming apron comprising a series of parallel angular wires and transverse bars connecting the ends of said wires, one of said transverse bars being adapted to be adjusted to a position within the open end of the shoe above the sieve therein, substantially as set forth.

8. In a grain recleaner, the combination of the casing, upper and lower vibrating shoes carrying sieves, a segmental grain grating arranged at one end of the casing below the plane of the discharging end of the upper shoe a fluted grain roller arranged under the upper end of the grating, adjacent inclined cant boards arranged below the lower end of the grating and declining toward the lower shoe, a circular fan casing arranged between the two shoes and provided in one side with a door-inclosed blast opening disposed below the plane of the grating to discharge the blast through the grain as it falls to the lower shoe and the fan, substantially as set forth.

542,338. BAKE-OVEN. HERMAN F. W. HUSS, Long Island City, N. Y. Filed Jan. 10, 1895. Serial No. 534,457. (No model.)

Claim.—1. A bake-oven, comprising a baking chamber, having double walls on all sides, and double decking, and closed against the furnace and flues; a heater set in center of the baking chamber and extending into it, and a furnace beneath this heater, having flues leading directly into chimney and provided with dampers whereby these flues may be partly or wholly closed, and with a register connecting the furnace with the heater and admitting hot gases, produced by the combustion of fuel, to pass through the heater and through flues provided between the inner and outer walls inclosing the baking chamber.



2. In a bake-oven, the combination with a baking chamber, inclosed by double walls on all sides, of a heater, set in center of the baking chamber and capable of being heated by oil or gas burners arranged within the heater, the hot gases, produced by combustion of the fuel passing through the heater and through flues provided in the space between the inner and the outer walls inclosing the baking chamber.

3. The combination with a bake-oven, having double walls, of a boiler set closely to the heater between the walls and between the flues conducting the hot gases from the furnace, and of pipes, conducting water to and from the boiler, for the purpose of utilizing the heat of gases passing from the heater, for heating a supply of water required for preparing dough and for heating a fermenting compartment for raising the wares.

4. The combination with a bake-oven, having inner and outer walls and a baking chamber closed against the furnace and flues, provided in the space between the inner and the outer walls inclosing the baking chamber, and a double top, communicating with main flue to the chimney, of a damper, regulating the draft through the furnace, through the heater and flues and consisting of a hollow cylinder open on top and perforated on sides, set upon a lid, overlapping the opening into the flue and operated by a bell crank and a rod attached to it.

5. In a bake-oven, the combination with a damper, regulating the draft through the furnace, through the heater and flues and operated by a bell crank and a rod attached to it, of a board with studs adapted to hold the rod in position to produce any required draft.

6. The combination with a bake-oven, having a heater set within the baking chamber and a furnace beneath the heater and provided with a register, admitting hot gases into the heater, of flues, provided with dampers and connecting the furnace directly with the main flue and thus capable of producing strong draft, necessary when fire is started.

7. In a bake-oven, comprising a baking chamber with a heater set within the baking chamber and a fermenting compartment arranged beneath, the combination with carriers consisting of two grooved rolls set upon an axis from which shelves with wares are detachably suspended, and connected by links into a flexible train, of rails affixed to the walls of the fermenting compartment and of the baking chamber, and forming suitable tracks over which these carriers are drawn.

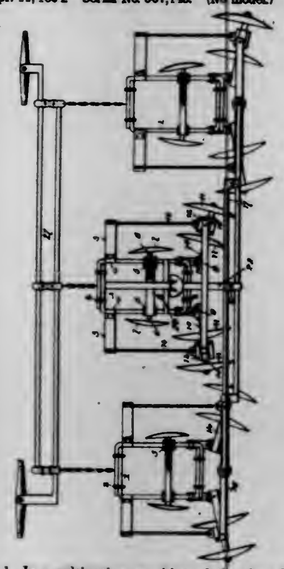
8. In a bake oven, comprising a baking chamber with a heater set within the baking chamber and a fermenting compartment arranged beneath, the combination with carriers from which shelves

with wares are detachably suspended, and connected by links into a flexible train of wheels keyed to shafts and provided with hooks in corresponding position, adapted to take up the axes of the carriers between the rolls and their connecting links and thus pull them over rails on which these carriers travel, and to transmit them from one track to another.

9. In a bake-oven, comprising a baking chamber with a heater set within the baking chamber and a fermenting compartment arranged beneath, the combination with carriers from which shelves with wares are detachably suspended, and connected by links into a flexible train, of wheels provided with hooks adapted to take up, move and transmit the carriers, of spirally toothed wheels keyed to the shafts and driven concurrently by worms, and of levers with pawls attached thereto, operating ratchet wheels, set on the shafts of the transmitting wheels, these pawls being adapted to move the transmitting wheels by hand power and to arrest their backward motion, thus sustaining the carriers with shelves suspended from the rails in the baking chamber.

10. In a bake-oven, adapted for a continuous baking process and provided with a counting machine, the combination with wheels, transmitting carriers into, and out of the baking chamber, and corresponding in the extent of their circumference to the length of links connecting the carriers, of a disk, set on the shaft of these wheels and carrying a pawl adjustably attached to it and operating the counting machine, to indicate the number of shelves transmitted into or out of the baking chamber.

542,339. CULTIVATOR. ALFRED M. JONES, Elmwood, Nebr. Filed Apr. 11, 1894. Serial No. 507,143. (No model.)



Claim.—1. In a cultivating machine of the class described, the combination of a central machine and two outer machines on opposite sides of the said central machine, each machine comprising a pair of guide disks, rear operating disks, arch frames and yokes and transversely adjustable connections for the outer machines whereby the said outer machines may be extended from or drawn inward to the said central machine, substantially as and for the purposes specified.

2. In a cultivating machine of the class described, the combination of a central machine and an outer machine on each side of said central machine, each machine comprising a frame having opposite arched ends, an intermediate arch, a pair of guide disks, rear operating disks, arches or yokes over the said operating disks and adjustable means for connecting the arches over the said operating disks consisting of rods transversely movable, substantially as and for the purposes specified.

542,340. COLLAPSIBLE BOAT. RANSOM K. LARAWAY, Battle Creek, Mich. Filed Jan. 5, 1895. Serial No. 533,916. (No model.)

Claim.—1. A collapsible boat, comprised of an outer envelope of impervious canvas, inner sides, composed of longitudinal strips of wood connected at their end portions by hinges, an inside bottom comprising a plurality of longitudinally folding boards or strips of wood connected together by hinges, removable division boards and braces, provided with means for securing the same to the said side strips, and gunwales removably secured to the said division boards and braces, substantially in the manner, and for the purposes set forth.



2. A collapsible boat, comprised of an outer envelope, or covering of canvas, made impervious to water, inner sides, constituting the body part thereof, composed of longitudinal strips of wood connected at their end portions by hinges; gun-wales carrying row locks, removably secured to the said body part, the inner bottom part comprising a plurality of longitudinal strips of wood placed side by side and connected by hinges; vertical brace-boards located transversely of the boat, and provided with means, substantially as shown and described, for removably securing the said division brace-boards to said side strips and gun-wales, to form a substantial boat, for the purposes set forth.

3. In a collapsible boat, the outermost covering of impervious canvas, the side portions of wood, extending longitudinally the entire length of said boat, hinged together at or near the ends thereof, gunwales provided with row locks and removably attached to said side portions, the boat inside bottom board, composed of a plurality of wooden strips placed side by side, and hinged together, vertical transverse brace and division boards, provided with means for removably securing the same to said boat sides, substantially in the manner and for the purposes illustrated and described.

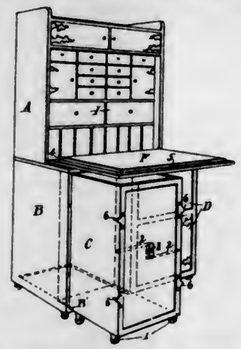
4. In a collapsible boat, the outer covering of canvas, the side portions of wood extending longitudinally the entire length and forming the inside of the boat hinged together at their end portions; gunwales provided with row locks, and having a plurality of canvas seats attaching them transversely in length, corresponding with the width of the top of the brace-bars, or division boards; division brace-boards removably fixed to the side-portions, and to the said gunwales, and a plurality of strips of wood, placed side by side, and secured together by hinges,—the whole constructed and arranged substantially as and for the purposes specified.

5. In a collapsible boat, the main frame or sides A, the bottom B, the canvas covering, A', the transverse brace-division boards C, the gun-wales D, provided with row locks R, and canvas seats E, and means, substantially as shown illustrated and described, for attaching the several parts together and for collapsing and packing the same, for the purposes set forth.

6. In a collapsible boat, the canvas covering, the gunwales made in sections and hinged together at their ends, combined with the bottom, the side cleats, the division boards, and the seats, having their ends supported upon the gunwales and bolted in position, substantially as set forth.

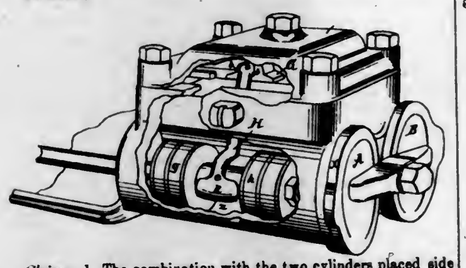
7. In a collapsible boat, the canvas covering, the canvas seat, having its ends secured to the gunwales and located above the recessed top edges of the division boards, combined with the division boards and the vertical side pieces to which the ends of the division boards are fastened, substantially as shown.

542,341. KITCHEN-CABINET. CHARLES H. LITTLE, Saginaw, Mich. Filed Mar. 11, 1895. Serial No. 541,232. (No model.)



Claim.—In a cabinet of the class described the combination with the upper half of the cabinet provided with partitions, pigeon holes, drawers and divisions, a hinged door in front of the same adapted to turn down, a bread board adjustably secured to the door, the cabinet being adapted to receive the bread board as the door is closed, of a flour bin in the lower half of the cabinet, the bin being independent of the cabinet and having independent rollers, the cabinet being capable of receiving the bin and holding it when the cabinet is moved, substantially as described.

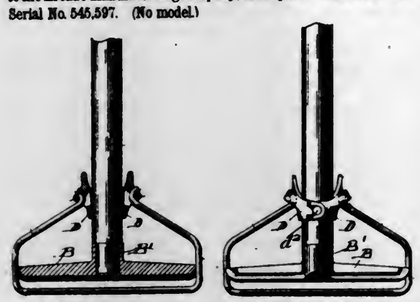
542,342. DUPLEX STEAM-ENGINE. CASSIUS M. MILLER and EDGAR E. MILLER, Canton, Ohio. Filed Aug. 27, 1894. Serial No. 521,417. (No model.)



Claim.—1. The combination with the two cylinders placed side by side and provided with live and exhaust steam passages leading from one cylinder to the other, of the valve seats provided with ports communicating with said passages, the valves for opening and closing the ports, the pivoted oscillating arms connected with said valves, and the pistons in said cylinders operating said arms by impact, to operate said valves, substantially as described.

2. The combination with the cylinders A and B placed side by side and provided with valve seats, one of said valve seats being provided with ports 1, 2, 3, 4, 5 and 6 and the other with ports 7, 8, 9, 10 and 11, the valve F having recesses *a*, *a*, and a central live steam passage and the valve G having a central recess *a*, of the web connecting said cylinders provided with passages 12, 13, 14, 15, 19, 20, 21, 22 leading from one cylinder to the valve seats in the other cylinder and with exhaust passages 16, 17 and 23 and exhaust port 24, the pivoted oscillating arms connected with said valves, and the pistons located in said cylinders and operating said arms by impact therewith, substantially as described.

542,343. MOP-HEAD. CHARLES MORGAN, Freeport, Ill., assignor to the Arcade Manufacturing Company, same place. Filed Apr. 13, 1895. Serial No. 545,597. (No model.)



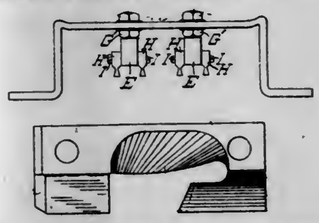
Claim.—1. In a mop-head, the combination with the mop-handle and a cross-bar attached thereto, of a bail co-acting with the cross-bar and having a central portion approximately parallel thereto and parts approximately at right angles to the said central portion and adapted to permit sliding movement of the bail with reference to the cross-bar, a clasp sliding on the handle and provided with a lever adapted to impinge, at one end, upon the handle, the opposite end of the lever being in engagement with the corresponding end of the bail and the bail being normally under tension and adapted to press the impinging end of the lever against the handle.

2. In a mop-head, the combination with a handle provided with a suitable cross-bar, of a clasp made up of two levers pivoted together and each adapted to impinge at one end upon the handle, and a bail having its central portion normally parallel to the cross-bar and its ends in engagement with the free ends of said levers and adapted to press them apart, thereby pressing the impinging ends of the levers firmly against the handle.

3. The combination with the handle, A, having the cross-bar, B, of the clasp made up of the semi-annular parts, D, D, formed with gudgeons, d^3, d^3, and corresponding sockets and the bail having the central portion, C, parallel to the cross-bar, the approximately parallel portions, *c*, *c*, and the oblique portions, *c'*, *c'*, terminating in hooks, c^3, c^3, engaging suitable loops upon the levers, D, D.

4. The combination with the handle, A, having the cross-bar, B, of the ratchet bars, E, E, set in the handle, the two part clasp, D, D, formed substantially as described and adapted to engage the ratchet bars and the bail having its ends in engagement with the levers, D, D, and adapted to press their ends into engagement with the ratchet bars; substantially as shown and described.

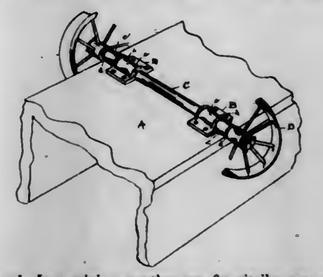
542,344. CUTTING-TOOL FOR DOVETAIL GROOVES. PETER MCCOURT, Arpin, Wis., assignor of one-half to A. L. Arpin, same place. Filed Jan. 7, 1895. Serial No. 534,111. (No model.)



Claim.—1. A cutting tool for forming dove tail grooves, consisting of the cutting portion L having divergent sides and with its front end slanted forward and downwardly to form a cutting edge at the sole, and recessed inwardly to form the lateral cutting edges M. M. in combination with the stock H formed integrally with the portion L. and provided with a lateral recess N above the cutting edges and the guide J. supported in front of the portion L. with an open space between it and the cutting edges, substantially as described.

2. A cutting tool for forming dove-tail grooves, consisting of the combination with the supporting frame plate, provided with the adjusting slots D, the cutter supporting blocks E secured to said frame by bolts passing through said slots and one or more cutters having a stock H adapted to be adjustably secured to said blocks, and provided with the lateral recess N, the guide J, and cutting edges M, M, substantially as described.

542,345. MOUNTING FOR MINING OR SIMILAR CARS. JAMES W. MCGILL, Peoria, Ill. Filed Oct. 22, 1894. Serial No. 526,534. (No model.)



Claim.—1. In a mining or other car for similar use, means for mounting the same on wheels and consisting of the bearing or clamping plate B bolted to the bottom of said car having the head *e* and provided with holes *f* and *h* the shaft C mounted within said clamping plates and provided with the holes *g* and *i*, the bolt *e*, arranged substantially as and for the purposes set forth, and the wheels D D revolubly mounted on said shaft C as set forth.

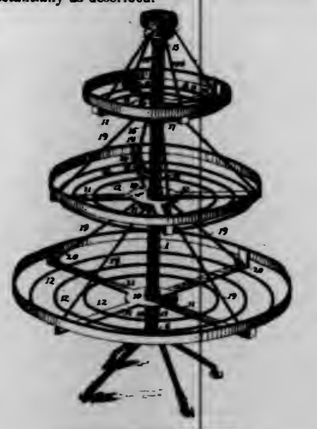
2. In a mining or similar car a bearing plate B having the longitudinal channel *b*, the head e with the lug or projection *d* and the bore *b* forming a continuation of the said channel *b* and said plate B having the holes *f* and *h* passing through the said plate B substantially at right angles to each other for the purposes herein set forth and described.

542,346. REVOLVING FLOWER-STAND. ANDERS C. NIELSEN, Tyler, Minn. Filed Mar. 14, 1895. Serial No. 541,757. (No model.)

Claim.—1. A supporting stand for flowers, merchandise, &c. comprising a series of concentric revolving shelves, a standard or support therefor. and a series of collars surrounding said standard or support upon which said shelves rest, in combination with a corresponding series of perforated disks, supporting collars therefor surrounding said standard or support, and a series of inclined connecting wires or braces, all arranged substantially as and for the purpose specified.

2. A separable or knock-down flower stand, comprising a centrally arranged hollow standard, a series of concentric revolable shelves mounted thereon, a corresponding series of revolable perfo-

rated disks also surrounding said standards, and the interposed connecting wires or braces between said shelves and disks, in combination with a series of sliding and detachable collars for supporting said shelves and disks, and the removable pins for holding said collars in position, substantially as described.



542,347. GATE. DANIEL A. PECK, Lobelia, W. Va. Filed Mar. 19, 1895. Serial No. 542,392. (No model.)

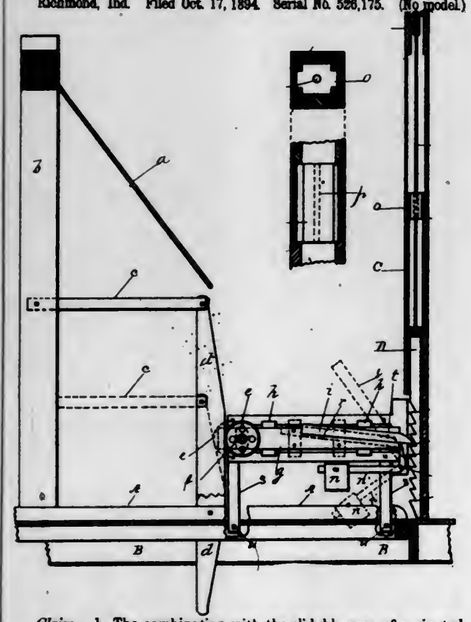


Claim.—1. The combination with a gate normally constructed to occupy a position in the line of fencing and form a panel thereof, one end portion of the gate normally extending across the roadway, of a turn-post supporting the gate midway of its ends, operating levers pivoted at their inner ends to the top end portion of the turn-post and normally occurring parallel with the roadway and at one side thereof, and stops to engage with the outer end portions of the said levers and hold the parts in normal position, substantially in the manner set forth.

2. In combination, a gate mounted midway of its ends upon a vertically-disposed turn-post, a cross bar and rest secured to the upper end of the turn-post and right-angularly disposed, the ends of the said rest being recessed on their top side, operating levers having their inner ends fitted in the recessed ends of the said rest and pivoted therein so as to have a vertical movement, braces, or stays, connecting the ends of the said cross bar with the levers a short distance from their pivotal ends, and stops to engage with the outer end portions of the said levers and hold the parts in a normal position, substantially as specified.

3. In combination, a gate normally occurring in the line of fencing and forming a panel thereof, one end portion extending across the roadway, a turn-post supporting the gate midway of its ends, posts disposed equidistant from the turn-post on opposite sides of the gate, their upper ends being extended to form stops, a cross beam connecting the upper ends of said posts and forming a bearing for the upper end of the turn-post, a cross bar and rest secured to the upper end of the turn-post and being right-angularly disposed, the end portions of the said rest being recessed in their upper sides, levers having cross handles at their outer ends, and having their inner ends fitted in the recessed ends of the said rest and pivoted therein, braces, or stays, connecting the ends of the cross bar with the said levers a short distance from their pivotal ends, arms projected from the same side of the cross beam and inclined to the horizontal, and inclined lifts to cause the levers to ride thereon and over the said stops when closing the gate, substantially in the manner specified.

542,348. SAFETY-GATE FOR ELEVATORS. CHARLES F. PERLLE, Richmond, Ind. Filed Oct. 17, 1894. Serial No. 526,175. (No model.)



Claim.—1. The combination with the slidable arm, of a pivoted lever having one end engaged with said slidable arm and its other end provided with a weight, substantially as described.

2. The combination with an elevator gate and a toothed bar connected thereto, of a slidable arm, a pivoted bar thereon designed to engage said toothed bar, and a pivoted lever, having one end engaged with said slidable arm and its other end provided with a weight, substantially as described.

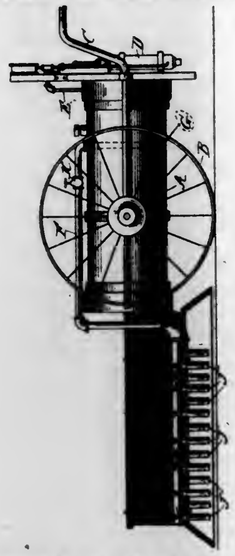
3. The combination with an elevator gate, and a toothed bar connected thereto, and with the elevator platform carrying a bar *d*, of a slidable arm, a wheel thereon designed to be engaged by said bar *d*, and a pivoted bar on said arm designed to be forced into engagement with said toothed bar, substantially as described.

4. The combination with the elevator platform, a bar *d* carried thereby, the gate, and a toothed bar connected with said gate, of a slidable arm engaged by said bar *d* and forced in one direction thereby, and a pivoted arm on said bar designed to engage said toothed bar, substantially as described.

5. The combination with the gate, the rope from one end of which said gate is suspended, a movable toothed lock bar secured to the other end of said rope; a slidable arm, and a pivoted bar carried by said arm and designed to engage said toothed bar and thereby hold the gate elevated, substantially as described.

542,349. APPARATUS FOR REPAIRING ASPHALT PAVEMENTS. AMOS H. PERKINS, Chicago, Ill., assignor to the United States Repair and Guaranty Company, same place. Filed July 30, 1894. Serial No. 519,003. (No model.)

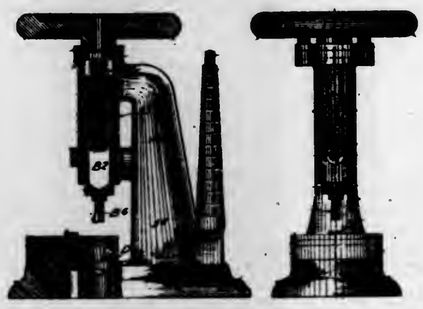
Claim.—1. In an apparatus for repairing asphalt pavements the combination with a series of hooded fluid burners and a reservoir for supplying fuel thereto, said reservoir and burners being portably mounted, of a supply pipe connecting the reservoir with the burners and exposed to the heat of the burners, substantially as described.



2. In an apparatus for repairing asphalt pavements, the combination with a series of fluid burners and a reservoir for supplying fuel thereto, said reservoir and burners being portably mounted, of a hood for said burners and a supply pipe connecting said burners with the reservoir, lying in a plane with or slightly above the hood, that portion of the hood underlying said pipe being perforated or cut away so as to expose said pipe to the heat of the burners, substantially as described.

3. In an apparatus for repairing asphalt pavements, the combination with a series of fluid burners and a reservoir for supplying fuel thereto, said reservoir and burners being portably mounted of a supply pipe connecting the burners with the reservoir, a hood for said burners lying in a plane with, or slightly below, said pipe, said hood consisting of wire cloth or netting plastered with asbestos cement or equivalent material except that portion underlying the said pipe, substantially as described.

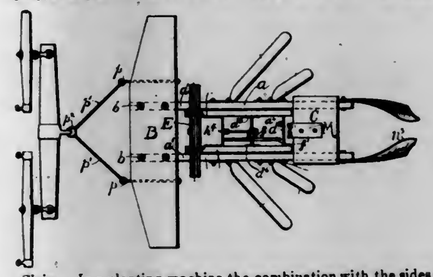
542,350. APPARATUS FOR ENLARGING OR REDUCING FINGER-RINGS. ARTHUR G. PINFOLD and GEORGE V. PINFOLD, Cheekheaton, England. Filed Feb. 26, 1895. Serial No. 539,794. (No model.) Patented in England Feb. 6, 1893. No. 2,595.



Claim.—1. In a device of the character described, the combination with a support, of a vertically-movable ram adapted to carry a punch at its lower end, and a rotatable die-block provided with a series of graduated openings adapted to be brought into position beneath the ram and punch, said block having a series of perforations adapted to align with a socket in the support, one or more die plates rotatably mounted over the die-block and provided with a series of graduated openings, said die plate or plates being provided also with perforations adapted to align with the perforations in the die-block, and pins adapted to be arranged within the aligned perforations of the die-block, plate, or plates and support, for the purpose specified.

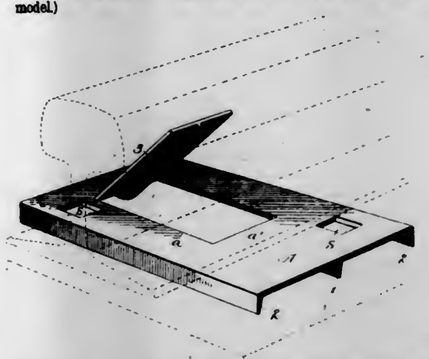
2. In a device of the character described, the combination with a support having a vertical opening, of a ram arranged in said opening, a punch-carrier on the lower end of the ram and adapted to receive a punch, a nut carried by the ram and having a threaded opening, said ram having a lateral vertical keyway, a screw engaging said threaded opening, a hand wheel carried by said screw, a screw or stud engaging the keyway, a die block rotatably mounted on the support and having a series of graduated openings adapted to be brought into alignment with the ram and punch, a die plate rotatably mounted over the die block and provided with a series of graduated openings, and pins adjustably securing the die-block and die plate to the support, as specified.

542,351. CORN-PLANTER. ARCHIBALD PUNTENEY and EPHRAIM C. SOOT, Kansas City, Mo., assignors to the Kansas City Hay Press Company, same place. Filed Dec. 6, 1892. Serial No. 454,311. (No model.)



Claim.—In a planting machine the combination with the sides of said machine of an intermediate vibrating frame hinged at its rear end to the rear end of the said sides and having a hopper for the seed upon its forward vibrating end and openings for the seed and seed feeding devices in said hopper, a spoked wheel mounted upon a rotating shaft upon said vibrating frame in rear of said hopper and an eccentric on said shaft an eccentric arm connected with the said seed dropping devices in said hopper and a support upon said planting machine extending above said frame and a spring connected with the upper end of said support and the vibrating end of said frame whereby the automatic action of the spoked wheel is enabled to be made constant in the path of the furrow made by the plow.

542,352. COMBINED TIE-PLATE AND RAIL-BRACE. CHARLES F. QUINCY, Chicago, Ill., assignor to the Servis Railroad Tie-Plate Company, New York, N. Y. Filed Mar. 6, 1895. Serial No. 540,772. (No model.)



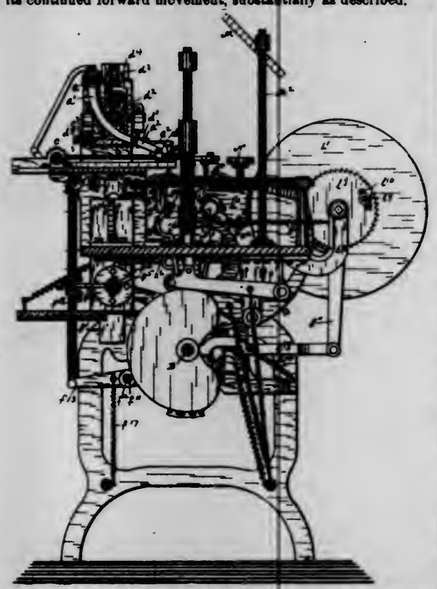
Claim.—1. A combined tie-plate and rail-brace having truss-ribs upon the under surface of both plate and brace; substantially as and for the purposes specified.

2. A ribbed tie plate, having a ribbed rail-brace of general rectangular form struck from the body of the plate; substantially as and for the purposes specified.

542,353. ENVELOPE-MACHINE. HENRY D. SWIFT and DANIEL W. SWIFT, Worcester, Mass., assignors, by direct and mesne assignments, to the Logan, Swift & Brigham Envelope Company, same place. Filed Apr. 23, 1886. Serial No. 199,964. (No model.)

Claim.—1. The combination with a feeding table of a shaft, a ratchet wheel attached to said shaft, actuating and retaining pawls engaging said ratchet wheel and a crank arm attached to one end

of said shaft and operatively connected with said table to bring said table to its highest position when said crank arm is at its highest dead center, said crank arm being capable of a complete revolution, whereby said arm, when at its highest position, will lower the table by its continued forward movement, substantially as described.



2. The combination with the feeding table, of a shaft operatively connected with said table, a ratchet wheel attached to said shaft, actuating and retaining pawls engaging said ratchet wheel, a pivoted frame carrying said actuating pawl, and a spring applied to sustain the weight of said frame, substantially as described.

3. The combination with the feeding table, of a shaft operatively connected with said table, a ratchet wheel attached to said shaft, an actuating pawl engaging said ratchet wheel, a reciprocating rod having lugs attached thereto, arranged to engage and operate said actuating pawl, and adjusting screws held in said lugs, substantially as described.

4. The combination with the feeding table, of a shaft operatively connected with said table, a ratchet wheel on said shaft, an actuating pawl engaging said ratchet wheel, a reciprocating rod having projecting lugs arranged to move said pawl, and a finger attached to said rod and extending over and resting upon the pile of blanks held on said feeding table, whereby the downward motion of said rod is limited, and the extent of its reciprocating motion varied to correspond with the height of the pile of blanks, substantially as described.

5. The combination with the feeding table, of the mechanism for elevating the same and consisting of a shaft f^4, a ratchet wheel f^5, retaining pawl f^{26}, frame f^9, actuating pawl f^8 having connected mechanism by which they are operated to produce an intermittent rotary motion of said shaft, and a crank arm attached to the end of said shaft and operatively connected with said table to bring it into its highest position when said crank arm is on its highest dead center, whereby said table is lowered by the continued forward motion of said crank arm, substantially as described.

6. The combination with the feeding table of an envelope machine, for presenting a pile of blanks to the action of the gumming mechanism, and guides at one side of the pile of blanks, against which they are held in proper position to receive the gum, of tapered gages f^{27}, on arms pivoted to the rigid portions of the machine, and springs f^{28} applied to press the tapered gages against the pile of blanks and hold it against the guides, as described.

7. The combination with the devices for placing gum upon the blanks in an envelope machine, and a gumming roll having a reciprocating motion to and from a gum supply over said gumming devices and having a gear wheel attached to its shaft, of a rack lying in the path of, and in mesh with, said gear wheel, said rack having a longitudinal sliding motion, through connected operating mechanism, so timed with reference to the passage of the gumming roll over the surfaces of said gumming devices, as to vary the surface of the gumming roll in contact with said gumming devices.

8. The combination with pick-ups, having a vertically reciprocating motion, carrying gum to the blanks in an envelope machine, of a gum box placed at one side of said pick-ups, and a gumming roll with a horizontally reciprocating motion to and from said gum box over the gumming surfaces of said pick-ups, said gumming roll moving in one direction only at each complete reciprocation of the pick-ups, and having connected operating mechanism substantially as described at the end of its outward movement, whereby it is rotated on its axis, so as to present a new surface to the pick-ups during its return, or inward, movement.

9. The combination of a rocking shaft a, provided with radial arms a', a gumming roll a^2, links a^3 connecting said roll and said radial arms, a rocking sleeve c^{11} held concentrically on said shaft a and having a radial arm c^3, a sliding rack c^5 connected with said radial arm c^3 and a gear c' on the shaft of said gumming roll, whereby the action of said rock-shaft a, and concentric sleeve c^{11} will produce a conjoint motion of said rack and said gumming roll, substantially as described.

10. The combination with a feeding table, upon which the pile of blanks is supported, of a vertically reciprocating slide d^3 provided with an overhanging arm carrying the pick-ups, a lever d^5 and a yielding connection between said lever and said slide, consisting of a link d^7 connected with said lever, a rod d^9 connected with said slide and capable of sliding within said link and a spring d^9 interposed between said rod and said link, substantially as described.

11. The combination with the folding bed of an envelope machine of a folder for folding the back-flaps, said folder consisting of a rocking shaft journaled at one side of the folding bed with a channel or groove forming a lip extending the length of said folding bed, and an arm attached to said shaft, and a folding plate connected with said arm and adapted to press upon the back-flap, said folding plate having its edge resting in the groove of the shaft and against the lip, as described.

12. In the folding mechanism of an envelope machine, the combination of a vibrating arm, a folder plate connected with said vibrating arm, a screw threaded sleeve carried in said vibrating arm and provided with a flanged end opposing said folding plate and an elastic washer interposed between said folding plate and the flanged end of said screw threaded sleeve, substantially as described.

13. The combination in the folder for folding the back-flap of an envelope, of a vibrating arm, a folder plate connected with said arm by a bolt, an elastic washer resting against the surface of said plate through which the force is applied from said arm to said plate, and a screw threaded sleeve held in said arm and inclosing the connecting bolt and with its end resting against the elastic washer, whereby the space between said vibrating arm and said folding plate is varied, as described.

14. The combination in a folder for folding the back-flap of an envelope, of a vibrating arm, a folder plate connected to said arm by a screw threaded bolt, a screw threaded sleeve held in said arm, an elastic washer interposed between said folding plate and said screw threaded sleeve and an adjusting nut carried by said screw threaded bolt and bearing against the opposite end of said screw threaded sleeve, substantially as described.

15. In a folder for folding the back-flap of an envelope, of a vibrating arm attached to a rocking rod or spindle, whose axis lies in the horizontal plane of the folding bed, said rod having a channel or groove extending the length of the folding bed, a folding plate whose edge rests in said channel, said plate being operatively connected with said vibrating arm with the edge of the folding plate bearing against the side of said channel, substantially as described.

16. In the folding bed of an envelope machine, consisting of a central section, and a vertically adjustable rectangular frame surrounding said central section, the combination with said adjustable portion, of a series of levers with one end of each lever supporting said adjustable portion, and having means connected with their opposite ends whereby they may be depressed and the adjustable portion of the bed raised, as described.

17. The combination with the folding bed of an envelope machine, consisting of a central section, and a surrounding rectangular portion vertically adjustable with reference to said central section, of levers whose free ends support the adjustable portion of the bed, and screws k^4 passing through the opposite ends of said levers, whereby they are depressed and the adjustable portion of the bed raised, as described.

18. The combination with the folding bed of an envelope machine, consisting of a central section, and a surrounding rectangular section vertically adjustable with reference to said central section, of levers k^3, k^5, and k^2, fulcrumed midway their length, and supporting said adjustable section on their free ends, screws k^4, and chairs k^3, as described.

19. The combination with the folding bed of an envelope machine, of the scroll shaped wings j, attached to rings j^3, rotating on bearings with their axis of rotation above the surface of the folding bed, as described.

20. The combination with the folding bed of an envelope machine, and vibrating wings lying in openings in the folding bed and journaled at the side of the bed and actuated through connected operating mechanism, of the curved flanges, or ways j^3, to support the edge of the envelope, as it is carried above and around the axis of rotation of the vibrating arms, as described.

21. The combination with the folding bed of an envelope machine, and mechanism for raising and carrying the envelope off the folding bed, of flanges, or guides, j^3, and vertical flanges j^3, as described.

22. The combination with vibrating wings for delivering the envelopes from the folding table, said wings raising and carrying the envelopes in a circular path, substantially as described, of the curved guards j^{10}, to resist the centrifugal motion of the envelopes.

23. The combination with the drier, and the reciprocating wings j, j, and a reciprocating conveyer k of the side plates j^{11} forming guides whereby the envelope is held from lateral displacement as it is delivered to said conveyer, substantially as described.

24. The combination with mechanism for delivering the envelopes from the folding bed, consisting of the vibrating wings j, journaled with their axis of rotation raised above the surface of the folding table, and having a rotation of one half of a revolution, of a conveyer, consisting of a plate upon which the envelopes are laid by the vibrating wings j, said plate having a reciprocating motion, conveying the envelope to the drying mechanism, as described.

25. The combination with mechanism for raising the envelope from the folding table of an envelope machine with its seal flap uppermost as it is folded and turning the envelope so as to bring its seal flap downward and delivering the same to a conveyer by which it is carried to the drying mechanism, substantially as described, of a conveyer, consisting of a reciprocating plate operated through connected actuating mechanism, said plate having a projecting curved rib k', as described.

26. The combination with mechanism for raising the envelope from the folding table and delivering the same to a conveyer, by which it is carried to the drying mechanism, of a conveyer, consisting of a plate reciprocated through connected operating mechanism, said plate having a depression to receive the seal-flap, as described.

27. The combination with the drier of an envelope machine, of a reciprocating conveyer plate k, provided upon its upper surface with a depression adapted to receive the seal flap and having a hook k' by which the envelope is pushed into the drier and a hook k^2 upon its lower surface by which the envelope is withdrawn from the drier, substantially as described.

28. The combination with the drying mechanism of an envelope machine, of conveyer k, attached to the slide k^3, cranks k^6, and k^7, crank shaft k^8, connecting rod k^{10}, and actuating cam k^{11}, all operating as described.

29. The combination of a reciprocating conveyer for carrying envelopes from the folding to the drying mechanism, having connected means for operating the same, said conveyer consisting of plate k having a depression in its surface to receive the seal flap of the envelope, and a rotating drier having fingers which lift the envelope from the conveyer, as described.

30. The combination with the drier, of a reciprocating conveyer plate k, provided with a depression in its upper surface to receive the seal flap of the envelope and having hooks k' and k^2, by which an envelope is pushed into and withdrawn from the drier, and a chute arranged to receive the withdrawn envelope, substantially as described.

31. A rotating drier for envelope machines, consisting of a revolving drum, composed of two parallel disks, said disks having racks attached, forming a series of pockets around the periphery of the drum adapted to receive the envelopes and maintain them in a radial position.

32. A drier for envelope machines, consisting of a revolving drum having a series of pockets arranged around its periphery and adapted to hold the envelopes in a radial position, said pockets having openings to allow radial currents of air to pass from the center of the drum outward and over the surfaces of the envelopes held in said pockets, as described.

33. A drier for envelope machines, consisting of a revolving drum, composed of two parallel disks having racks attached and extending around their periphery and adapted to hold the envelopes in a radial position, said disks having concentric flanges on their inner surfaces on which the edges of the envelopes rest, as described.

34. A drier for envelope machines consisting of a revolving drum, having a series of racks arranged around its periphery adapted to maintain the envelopes in a radial position and admit the free circulation of air over their surfaces, and a central chamber containing a revolving fan, by which air is driven radially outward and over the envelopes held in said racks, as described.

35. The combination with a revolving drier for envelope machines, having connected means for forcing air from the center radially outward, of racks arranged around the periphery of the drier and adapted to hold envelopes in a radial position, said racks having their inner edges beveled and forming funnel shaped passages for the air, as described.

36. The combination with a drier for envelope machines consisting of a revolving drum having pockets arranged around its periphery and a central revolving fan wheel, by which air currents are forced outward and over the surfaces of the envelopes held in said pockets, of a series of openings arranged concentrically about the axis of the revolving drum, and a rotating register l^{21}, by which the volume of air passing over the envelopes is varied, as described.

37. The combination with the revolving drier of an envelope machine, of an actuating ratchet wheel, having connected operating mechanism, said ratchet wheel having a slot, and a screw bolt passing through said slot into the drier, whereby the position of the drier may be changed relatively to said ratchet wheel, as described.

38. The combination of disks L, L', having flanges l^4, and racks forming pockets for envelopes, said racks consisting of bars l' attached to the disks at l, cross bars l^2 connecting the inner ends of the bars l', and central fingers l^3, as described.

39. The combination of disks L L', flanges l^4, racks composed of bars l', attached to said disks, cross bars l^2, central fingers l^3, central fan l^{19}, openings l^{20}, and register l^{21}, as described.

40. The combination with the mechanism of an envelope machine for gumming and folding an envelope blank, whereby said blank is operated upon with its seal flap foremost, of the vibrating wings, substantially as described, by which the folded envelope is reversed so as to bring its back flap foremost as it is delivered to the drying mechanism.

41. The combination with ways upon which the envelopes are delivered from the drying mechanism, and a reciprocating pusher by which the envelopes are moved along said ways into bunches, as described, of a pivoted tripping finger, whose free end stands, in its normal position, in the path of the envelope as it is moved by the pusher, and a spring whose tension is applied to said pivoted finger in a line passing near its axis of rotation, so that a slight movement of the pivoted finger by the moving envelope will cause the force of said spring to be exerted on the opposite side of the axis of said finger, thereby tripping the finger and withdrawing it from the path of the envelope, as described.

42. The combination with the pusher m, attached to a pivoted lever m^2, having connected means for operating the same, pin r, pivoted finger m^7, having an arm m^8, and a spring m^{13}, whose tension is applied to the arm m^9, as described.

43. The combination with rocking shaft m^6, having a finger attached, actuated by the passage of an envelope into the till, arm m^{24}, on said rocking shaft, pawl m^{20}, having connected means for actuating the same, the arm m^{24} acting on the tail of the pawl m^{20} ratchet wheel m^{15}, connected with and operating the counting mechanism, as described.

44. The combination with mechanism for bunching the envelopes in an envelope machine, of a plate brought into the path of the envelopes at stated intervals, as determined by the passage of the envelopes into the bunch, said plate presenting an inclined surface to the edge of certain of the passing envelopes whereby they are carried out beyond the remaining envelopes, as described.

45. The combination with ways m', on which the edges of the envelopes rest as they are carried into the bunch, pusher m, having a slot m^{24}, plate m^{26}, with an inclined edge m^{27}, said plate having connected actuating mechanism whereby it is brought into the path of certain of the envelopes as they are carried by the pusher over the ways m', as described.

46. The combination with the counting mechanism of an envelope machine, of a plate wheel m^{15}, having a notch m^{17}, arm m^{21}, adapted to enter said notch, spring m^{23} applied to hold said arm m^{21} on the edge of the plate wheel, arm m^{24}, and plate m^{26}, having an inclined edge m^{27}, all arranged and operating as set forth.

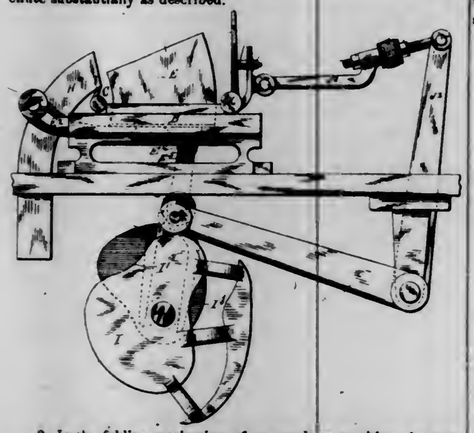
47. The combination with the revolving drier of an envelope machine, adapted to carry a series of envelopes held in a radial position around its edge, of a finger, or fingers, having a motion about a pivoted point, and arranged in position to be struck, and moved by a projecting envelope, said fingers having connected stopping mechanism, as described.

48. The combination with the revolving drier of an envelope machine of fingers n^3, attached to the arm n', of a pivoted lever whose arm n^5, engages a notch in the bar n^4, bar n^4, attached to the cam plate f^{24}, all arranged and operating substantially as described.

542,354. ENVELOPE-MACHINE. HENRY D. SWIFT and DANIEL W. SWIFT, Worcester, Mass., assignors, by direct and mesne assignments, to the Logan, Swift & Brigham Envelope Company, same place. Filed Apr. 4, 1887. Serial No. 233,639. (No model.)

Claim.—1. In the folding mechanism of an envelope machine, the combination with a bed upon which the envelope is folded and a chute to receive the envelope from said folding bed, of a series of envelope raising and supporting blades capable of an angular movement in a vertical plane and connected actuating mechanism, by which an angular movement is imparted to said blades, whereby their

upper edges are raised from a position substantially parallel with the folding bed to a position at an angle vertical and in alignment with the receiving chute, and mechanism delivering an envelope from the inclined upper edges of said supporting blades into said receiving chute substantially as described.



2. In the folding mechanism of an envelope machine, the combination with a bed upon which the envelope is folded and envelope supporting blades which move in vertical planes through openings in said bed, whereby the folded envelope is raised from the bed to a position inclined thereto, of a blade pivoted at the side of the bed and having a short vibratory motion against the edge of the raised envelope, substantially as described.

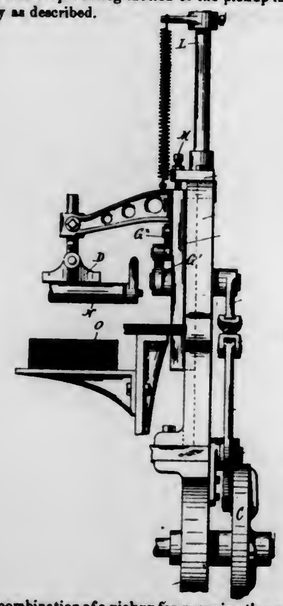
3. In the folding mechanism of an envelope machine, the combination with a bed on which the envelope is folded, and a vibrating blade or leaf for folding the back-flap of the envelope having connected actuating mechanism, substantially as described, of a yielding device, consisting of the link J^3, screw-threaded bolt J^4, nuts *c*, *d*, and elastic washer J^5, substantially as described.

4. In the folding mechanism of an envelope machine, the combination with a bed upon which the envelope is folded, of an arm K', pivoted at the side of the bed and having a vibratory motion, a bolt L, carried by said vibratory arm and having a convex head L^3, entering a concave socket in the folding plate, a folding plate K^3, carried on said bolt, a sleeve L^3, placed between said vibratory arm and said folding plate, said folding plate being capable of a slight oscillating motion on said bolt, by which the plane of the folding plate is varied with reference to the plane of the bed, substantially as described.

5. In the folding mechanism of an envelope machine, the combination with a bed upon which the envelope is folded, of an oscillating spindle K having an arm K', folding plate K^3 having a yielding connection with the arm K' by means of a screw threaded bolt L, nut L', sleeve L^3 and elastic washer L^4, substantially as described.

6. In the folding mechanism of an envelope machine, the combination with a bed upon which the envelope is folded, of an oscillating spindle K provided with a shoulder K^3, an arm K' extending from said spindle, a folding plate K^4 having its edge resting against said shoulder K^3, but not attached thereto, said folding plate having a yielding action with the arm K' by means of a screw threaded bolt L, nut L', sleeve L^3 and elastic washer L^4, substantially as described.

4. The combination with a reciprocating pickup of an actuating cam by which said pickup is reciprocated in one direction and carried upon the envelope blanks and partially reciprocated in the opposite direction, and a spring whose tension is applied to said pickup to complete the reciprocating motion of the pickup in one direction, substantially as described.



5. The combination of a pickup for gumming the envelope blanks, and having a reciprocating motion, an actuating cam by which said pickup is reciprocated in one direction and partially in the opposite direction, a spring with its tension applied to said pickup to complete its reciprocation, and a gage to limit its motion as actuated by said spring, substantially as described.

6. The combination of the pickup D having a reciprocating motion, an actuating cam C, provided with a cam slot by which said pickup is carried upon the envelope blanks, a spring K applied to said pickup to complete the motion of said pickup, and an adjustable stop to limit the motion of said pickup as actuated by said spring and intermediate mechanism between said cam and said pickup, substantially as described.

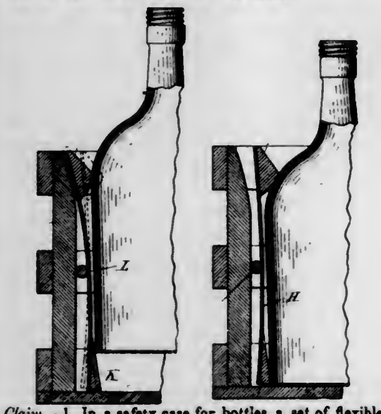
542,355. ENVELOPE-MACHINE. HENRY D. SWIFT and DANIEL W. SWIFT, Worcester, Mass., assignors to the Logan, Swift & Brigham Envelope Company, same place. Filed Aug. 10, 1888. Serial No. 282,473. (No model.)

Claim.—1. The combination with a reciprocating pickup for gumming the envelope blank, and a gumming roll for distributing gum upon the under surface of said pickup, of a spring with its tension applied to raise said pickup, and operating mechanism by which said pickup is carried upon the pile of envelope blanks with a positive motion, substantially as described.

2. The combination with a pickup having a reciprocating motion and a gumming roll for distributing a coating of gum upon said pickup, of a spring whose tension is applied to said pickup to raise it above the gumming roll, and a gage by which its upward motion is determined, substantially as described.

3. The combination with a vertically reciprocating pickup, of a spring with its tension applied to counterbalance the weight of said pickup and an actuating cam, by which said pickup is raised and lowered, through intermediate operating mechanism, substantially as described.

542,356. SAFETY-CASE FOR BOTTLES. BENJAMIN S. ATWOOD, Whitman, assignor of one-half to Albert G. Smalley, Boston, Mass. Filed May 10, 1895. Serial No. 548,823. (No model.)



Claim.—1. In a safety case for bottles, a set of flexible elastic holding strips pivotally connected at or near their centers to the casing proper, and having end wedge shaped pieces at one or both ends, substantially as, and for the purpose set forth.

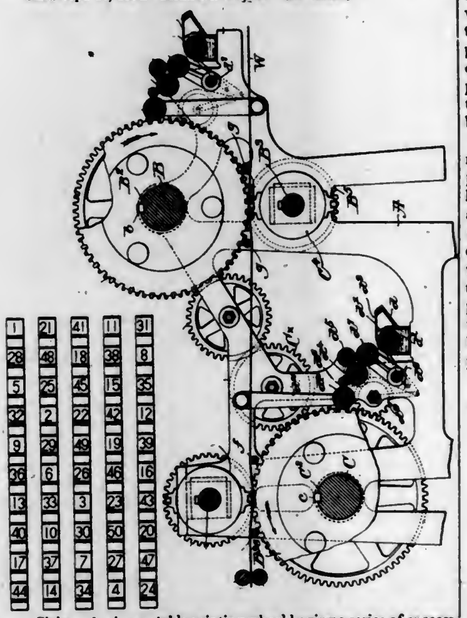
2. In a safety case for bottles, a set of flexible elastic holding pieces, pivotally attached at or near the center to the casing proper, substantially as and for the purpose set forth.

542,357. LOOP-HOLDER. ACHILL W. BRAND, Salt Lake City, Utah. Filed Oct. 1, 1894. Serial No. 524,671. (No model.)



Claim.—A loop holder formed of a single sheet of metal comprising a body portion *c* provided with a pin *c'* struck up therefrom, an arch at one end of the body portion, an exposed back plate *e* upon said arch, said back plate being provided with an opening *e'* for the reception of the pin *c'*, a second arch at the other end of said body portion, and a retaining finger *d* upon said second arch; substantially as described.

542,358. NUMBERING-MACHINE. JOHN R. CARTER, Boston, Mass., assignor to the Carter-Crume Company, Niagara Falls, N. Y. Filed Sept. 17, 1894. Serial No. 523,188. (No model.)



Claim.—1. A revoluble printing wheel having a series of successive figures or characters secured thereto in a non-adjacent manner, or out of regular sequence, as described, and moving in a circular path, and a platen to intermittingly approach the printing point, and to pass by it in unison with the movement of the character being printed, combined with means to rotate said wheel through an arc greater than the distance between two adjacent figures or characters, and equal to the interval between two successive ones, whereby the successive figures or characters are brought into printing position opposite the platen, and thereby printed in regular sequence, and means to actuate the platen, substantially as described.

2. A revoluble printing wheel having a series of successive non-adjacent figures or characters secured thereto and moving in a circular path, whereby the entire series may be printed in regular sequence by rotation of the wheel in the same direction, combined with a platen movable in a path externally tangent at the printing point to the path of the characters, and means to move said wheel and platen, to bring the platen into position at the printing point simultaneously with the character to be printed to cause the figures or characters to be printed singly in their proper sequence, during simultaneous movement of the wheel and platen, substantially as described.

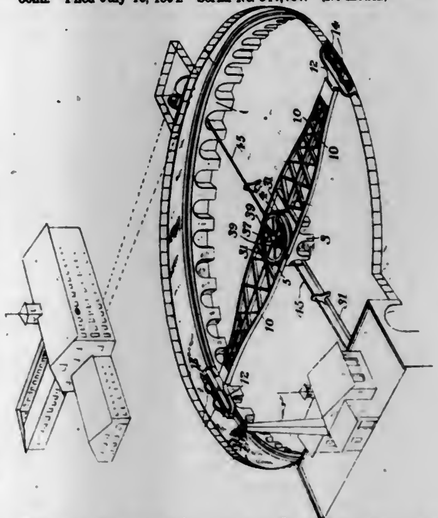
3. A revoluble printing wheel having a series of successive non-adjacent figures or characters secured thereto and moving in a circular path, whereby the entire series will be printed in regular sequence by rotation of the wheel in the same direction prior to the repetition of the first, and inking mechanism for said printing wheel, combined with a plurality of separate platens movable about a common center in a circular path externally tangent at the printing point to the path of the characters secured to said printing wheel, and means to move said wheel and platens to bring the latter one after another into printing position with one after another of the non-adjacent characters or figures on the wheel, to cause the numbers to be printed in their proper sequence, substantially as described.

4. A series of revoluble printing wheels, each having a series of successive non-adjacent figures secured thereto and moving in a circular path, a common axis of rotation for said wheels, and an inking mechanism for the wheels, combined with a series of separate platens each movable toward and away from the printing point of one of said wheels, means to adjust the relative position of said wheels upon their common axis, and to adjust said platens correspondingly, and an actuating mechanism to move the wheels and platens, to bring the latter into position to cause the figures or characters on each wheel to be printed singly in their proper sequence by its co operating platen, substantially as described.

5. A revoluble shaft, a series of independent printing wheels laterally and rotatably adjustable thereon, each wheel having a series of successive figures or characters secured thereto in a non-adjacent manner, or out of regular sequence, as described, and moving in a circular path and a series of separate platens laterally and rotatably adjustable on a common support, and movable toward and away from the printing point of their co-operating printing wheels, combined with means to rotate said wheels in the same direction and to move the platens in paths externally tangent at the printing point to the paths of the figures or characters, whereby the consecutive figures or characters on each wheel are caused to approach their respective platens in regular sequence, to be so printed, the intervals between the printed figures or characters in two or more sets being regulated by the adjustment of the printing wheels, substantially as described.

6. In an apparatus for printing series of figures or characters in regular sequence upon opposite sides of a continuous web, a revoluble printing wheel located at each side of the path of the web, each wheel having rigidly secured upon its periphery a series of successive non-adjacent figures or characters, a platen to intermittingly co-operate with each printing-wheel, and of sufficient width to act upon but one character at a time, and guide rolls adjacent each wheel and between it and the web, combined with feed rolls for the web, and means to move said printing wheels and their platens, to bring the latter into position to press the web against one figure after another fixed on the wheel and to move past the printing point in unison with the figure being printed, to thereby cause them to be printed singly in their proper sequence, substantially as described.

542,359. POWER-MOTOR. EPHRAIM CHAQUETTE, Bridgeport, Conn. Filed July 16, 1894. Serial No. 517,707. (No model.)



Claim.—1. In a motor a rotary power transmitting gear, an engine adapted to move around a circular way or track, having a plurality of driving wheels set in line to run on a single rail or bearing surface, and a beam or lever attached to the engine and to said gear at the center of the circular way for supporting the engine and confining it to its circular path, substantially as set forth.

2. In a motor, an engine adapted to travel in a circle, and a stationary boiler, in combination with a power transmitting gear at the center of said circle, a connecting steam pipe composed of stationary and movable sections, the latter extending from the stationary pipe at the center, out to the engine, at the circumference, and a moving beam or lever extending from said gear at the center to the engine at the circumference of the circle, and adapted to carry said movable section, substantially as set forth.

3. In a motor, the combination of a centrally pivoted lever having a traveling engine mounted on each end, a circular way or track having ascending and descending grades, a power transmitting gear journaled at the center of said way and to which said lever is connected and a steam cut-off mechanism applied and arranged to cut off the steam power at one or more points in the circle during the movement of the engine, substantially as set forth.

4. In a motor, a traveling engine, a circular way on which said engine travels, a valve moving with the engine, and projections on the circle with which the valve connections engage, whereby the valve movement is controlled by the engine movement, all combined substantially as described.

5. In a motor, the combination of a centrally pivoted lever having a traveling engine mounted on each end thereof, and means for supplying steam to the engine from a fixed point a circular track or way having a short ascending and a long descending grade, and a throttle valve and means substantially as described whereby steam is cut off at the descending portion, and turned on at the ascending portion of the track.

6. In a motor, the combination of a circular track or way, a stationary boiler, a power transmitting gear at the center of said way, a lever connected to said gear, and steam supply and exhaust pipes having joints in their lengths at the center of movement of suitable character to permit the pipes to follow the movement of the lever in a horizontal direction around the circle, substantially as set forth.

7. In a motor, the combination of a stationary boiler, and a traveling engine having connection by means of steam pipes with yielding joints or couplings that permit the engine to travel in a continuous circle and in ascending and descending inclines or grades thereof, substantially as set forth.

8. A motor having a traveling engine adapted to move in a circle, a circular way or track consisting of a single rail or narrow bearing surface, a lever to the outer end whereof said engine is secured, a power transmitting gear with which the lever is connected at the center of the circle, and a power shaft geared into said power transmitting gear, substantially as described.

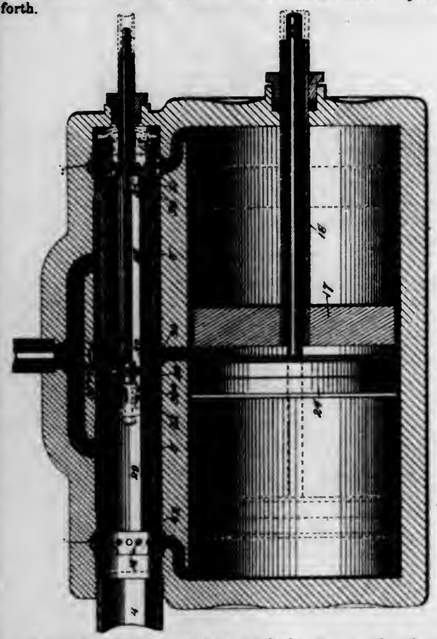
9. In a motor for producing and supplying power for driving machinery and the like, the combination of a rotatory power transmitting gear, the main power shaft, operative connections between said shaft and gear whereby motion is communicated from the former to the latter, a circular track concentric with said gear, a locomotive capable of traveling on said track, a lever having its inner end pivotally connected with said gear at the sides thereof whereby said lever is capable of a vertical swinging movement, the yoke swiveled within the forward end of said lever, the locomotive having its frame secured to said yoke, the steam supply and exhaust pipes leading from any suitable point to the steam cylinders of the locomotive and provided with flexible joints whereby said pipes will not become distorted by the circuitous travel of the locomotive in ascending and descending grades, substantially as set forth.

10. In a motor, an exterior track or way and interior driving gear, and a fixed generator of expansive gas, a locomotive traveling on the way and operatively connected with the interior driving gear, and connections from the generator to the locomotive whereby the power supply may be maintained while the locomotive is moving, all combined substantially as described.

542,360. STEAM-ENGINE. ROBERT I. DENNISON, Kansas City, Mo., assignor to The Cowles, Dennison Manufacturing Company, same place. Filed Nov. 17, 1894. Serial No. 529,063. (No model.)

Claim.—1. A steam-engine, comprising a cylinder, a steam-chest having ports communicating with said cylinder at its middle and at its ends, oppositely reciprocating pistons in said cylinder, a shaft provided with oppositely projecting cranks, operative connections between said cranks and said pistons, a valve within the steam-chest, comprising a pair of telescopic sections, oppositely projecting eccentrics upon the shaft, and operative connections between said telescopic sections and said eccentrics, substantially as set forth

2. A steam-engine, comprising a cylinder, a steam-chest having a valve-passage, ports connecting the same with said cylinder at its middle and at its ends, a passage communicating with said valve-passage between the middle port and each end port, a steam-supply pipe communicating with both of said passages, and an exhaust-pipe communicating with the valve-passage, in combination with a valve, comprising a tubular section in external diameter less than the diameter of said valve-passage, and enlarged at each end to fit snugly within said passage, and a second tubular section also in external diameter less than the diameter of said valve-passage and fitting at one end in the first-mentioned section and enlarged at its opposite end to correspond externally to the internal diameter of said valve-passage, and means to slide said sections alternately away from each other to permit steam to enter the cylinder at its ends and toward each other to permit steam to enter the cylinder at its middle, substantially as set forth.

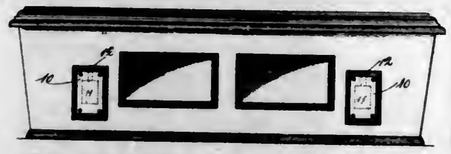


3. A steam-engine, comprising a cylinder, a steam-chest having a valve-passage, ports connecting the same with said cylinder at its middle and at its ends, a passage communicating with said valve-passage between the middle port and each end port, a steam-supply pipe communicating with both of said passages, and an exhaust-pipe communicating with the valve-passage, in combination with a valve comprising a section which is externally of less diameter than the valve-passage and is enlarged a suitable distance from its ends to fit snugly within said passage, and is provided with packing-rings to make a steam-tight joint between the same and the wall of said passage, and is provided also at one end with a series of perforations or apertures, and a second section of external diameter less than the valve-passage and fitting in the contiguous end of the first-mentioned section, and provided externally with a packing-ring, and enlarged at its opposite end to fit snugly within said passage, also provided with a packing-ring to make a steam-tight joint, and means to cause said valve-sections to be moved simultaneously in opposite directions to permit the steam to enter the cylinder at its middle port and the exhaust-steam to escape at the end-ports, or to permit the steam to enter the cylinder at the end-ports and the exhaust-steam to escape through the middle port, substantially as set forth.

4. A steam-engine, comprising a cylinder, a steam-chest having a valve-passage, ports connecting the same with said cylinder at its middle and at its ends, a passage communicating with said valve-passage between the middle port and each end-port, a steam supply pipe communicating with both of said passages, an exhaust-pipe communicating with the valve-passage, a shaft provided with oppositely projecting cranks, and a pair of pistons in the cylinder operatively connected to said cranks, in combination with a valve comprising a section which is externally of less diameter than the valve-passage and is enlarged a suitable distance from its ends to fit snugly within said passage, and is provided with packing-rings to make steam-tight joints between the same and the wall of said passage, and is provided also at one end with a series of perforations or apertures, and a second section of external diameter less than the valve-passage and fitting in the contiguous end of the first-mentioned section, and provided externally with a packing-ring, and enlarged at its opposite end to fit snugly within said passage, also provided with a packing-ring to make a steam-tight joint, a spider-frame secured upon the end of the first-mentioned section adjacent to the closed end of the valve-passage, a tubular stem or sleeve secured thereto and projecting through said closed end of the valve-passage, a pitman pivotally connected at one end to said tubular stem or sleeve and eccentrically connected at its opposite end to the shaft, a stem or rod secured to the corresponding end of the second section and projecting through said tubular stem or sleeve, and a pitman pivotally connected to the same at one end and eccentrically connected to the shaft at the opposite end, substantially as set forth.

5. A steam-engine, comprising a cylinder, a steam-chest having ports communicating with the middle and with the ends of the cylinder, a valve comprising a pair of sections, and means to slide the same alternately away from and toward each other, in combination with a pair of pistons in the cylinder, a tubular stem or sleeve projecting from one of said pistons through one end of the cylinder, a cross-head mounted upon the outer end of the same, a shaft provided with a pair of similar cranks and with an interposed crank of equal length which projects oppositely from the first-mentioned cranks, pitmen pivotally connecting the cross-head with the first-mentioned cranks, a piston-rod or stem projecting from the other valve through said tubular stem or sleeve, and a pitman pivotally connecting said rod or stem with said oppositely projecting crank, substantially as set forth.

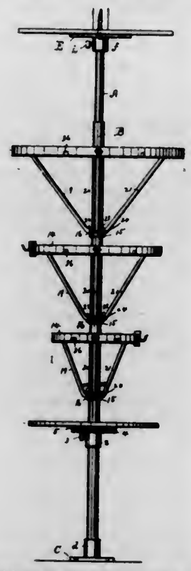
542,361. PERMANENT COFFIN-LOWERING ATTACHMENT. JOHN S. FLAGG, Baltimore, Md. Filed June 15, 1894. Serial No. 514,711. (No model.)



Claim.—1. A coffin provided with a chamber adapted to receive the full length of a cord, a perforation through which said cord may be drawn and means for preventing the withdrawal of the entire cord.

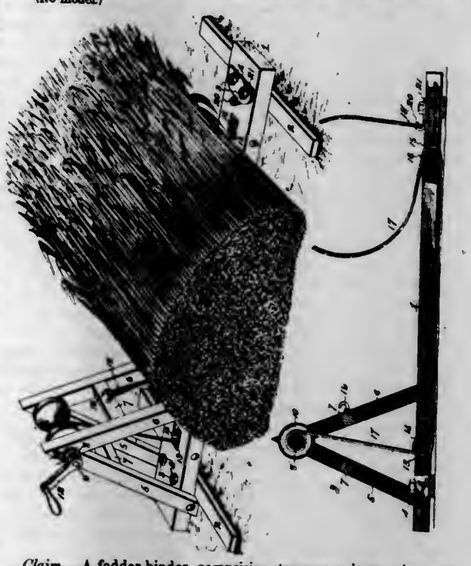
2. A coffin having plates secured thereto, each of said plates being provided with a chamber to receive the full length of a cord and a perforation through which said cord may be drawn.

542,362. DISPLAY-STAND. PHILIP GANSHORN, Streator, Ill., assignor of two-thirds to Ludwig Otto Lorenz and Robert Renz, same place. Filed Apr. 4, 1894. Serial No. 506,342. (No model.)



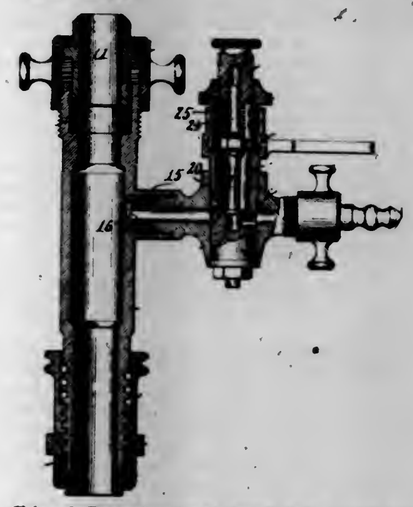
Claim.—The combination of a telescopic standard and plates for holding the upper and lower ends thereof, as described, with adjustable racks, each rack consisting of an upper and lower sleeve, an annular-band having notched lower-edges, hooks adapted to engage the notched band, a series of brackets connecting the notched-band and sleeves, as shown, and a set screw for securing each rack, substantially as and for the purpose set forth.

542,363. FODDER-BINDER. WALTER W. GRAHAM and JAMES H. GRAHAM, Mayview, Mo. Filed Jan. 24, 1895. Serial No. 536,008. (No model.)



Claim.—A fodder-binder, comprising transverse bars, a base or bridge-beam secured thereto, a framework secured near one end of and projecting above said base or bridge-beam, a shaft journaled therein, a drum mounted upon said shaft, a ratchet-wheel also mounted upon said shaft, a pawl carried by said framework and engaging said ratchet-wheel, a hook carried by said framework, a hook carried near the front end of the base or bridge-beam, guide-rollers carried by said bridge-beam, one contiguous to said framework, and the other to the hook carried by said base or bridge-beam, a cable or rope engaging said guide-rollers, and provided with an eye or loop at one end and secured to the said drum at its opposite end, and means to operate said shaft, substantially as set forth.

542,364. APPARATUS FOR DRAWING BEER. AUGUST KOPP, Hamilton, Ohio, assignor, by mesne assignments, to August Kopp, Leonhard Miller, and Paul Tieck, same place. Filed Mar. 9, 1895. Serial No. 541,116. (No model.)



Claim.—1. The combination of a bushing having a cork-seat and a notched counterbore above the same, a threaded sleeve having a packing box at its upper end and a collar fast near its lower end, a packing ring upon the lower end of said sleeve under said collar and adapted to be compressed facially against the floor of the counter-

bore in said bushing, and a sleeve nut threaded on said sleeve above said collar and having lugs adapted to engage the notches in said bushing, substantially as and for the purpose set forth.

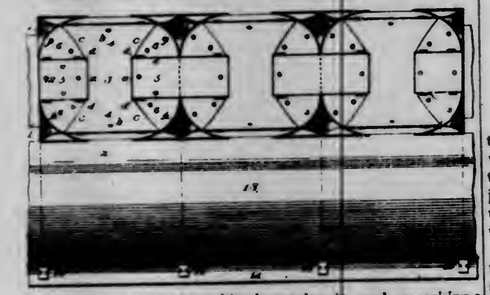
2. The combination of a bushing having a cork-seat and a notched counterbore above the same, a threaded sleeve having a packing box at its upper end and having a collar fast near its lower end, a packing ring surrounding the lower end of said sleeve below said collar and adapted to make facial contact with the floor of the counterbore in said bushing when the end of said sleeve projects below said floor into the cork-seat of the bushing, and a sleeve-nut threaded upon said sleeve above said collar and having lugs adapted to engage the notches of said bushing, substantially as and for the purpose set forth.

3. The combination of a sleeve adapted for detachable connection with a beer keg and having an air branch, a plug cock disposed in said air branch and having its plug axially bored from the top and provided with a cross-air passage, a valve disposed in the bore of said plug and serving to close the air passage across the plug, a flexible disk with its center secured to said valve and with its periphery clamped to the wall of the bore of the plug, and a spring disposed within the plug and holding said valve yieldingly to closed position, substantially as and for the purpose set forth.

4. The combination of a sleeve adapted for detachable connection with a beer keg and having an air branch, a plug cock disposed in said air branch and having its plug axially bored from the top and provided with a cross-air passage, a valve disposed in the bore of said plug and serving to close the air passage across the plug, a flexible disk with its center clamped to said valve and its periphery seating in a counterbore in said plug, a gland screwed into the counterbore of the plug and clamping the periphery of said disk, an adjusting screw in the top of said gland, and a spring within said gland and under said adjusting screw and above said disk and serving to hold said valve yieldingly to closed position, substantially as and for the purpose set forth.

542,365. DEVICE FOR MANUFACTURING WOODEN DISHES.

JOSEPH W. LANNERT, Kansas City, Mo. Filed Feb. 9, 1895. Serial No. 537,838. (No model.)



Claim.—A device for making impressions in wood, comprising a shaft, a cylinder secured thereon, a number of plates secured upon the cylinder, of the required formation and arrangement, screw-bolts engaging certain edges of said plates, knives or blades for cutting or creasing purposes, arranged against said edges of said plates and provided with slots through which said clamping-bolts extend, in combination with segmental plates arranged transversely of and bearing against the lower edge of each knife or blade and occupying correspondingly-shaped cavities in the said cylinder, and set-screws engaging threaded passages in said plates and bearing at their lower ends upon said segmental plates, substantially as set forth.

542,366. COMBINED WHISTLE AND CIGAR-HOLDER.

LEON LEMOS, San Francisco, Cal. Filed Aug. 7, 1894. Serial No. 519,677. (No model.)

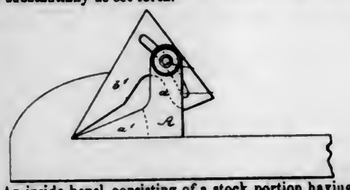


Claim.—The combined whistle and cigar-holder herein described consisting of the body —A, divided by a partition into two compartments, one of which is closed by a plug —E, the other of which is open at —B— to form a cigar-holder, the tube —D— connecting the passage in the mouth-piece with the compartment —B— on the opposite side of the partition, and the slit —F— and the opening —G— in the top of the body, constructed for operation as set forth.

542,367. INSIDE BEVEL.

SAMUEL H. MARKHAM, Pittsburg, Pa. Filed Mar. 4, 1895. Serial No. 540,397. (No model.)

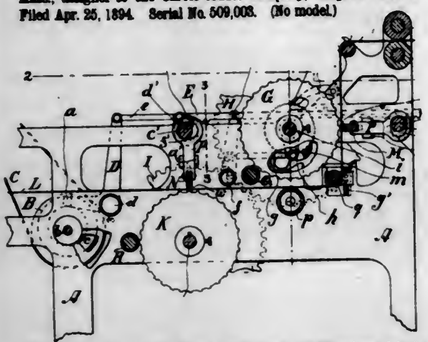
Claim.—1. An inside bevel, consisting of two angular members, each member having a pointed limb which may have its point meet the point of the other member, and one of said members formed with a slot with which it may slide upon an adjusting screw in the other member substantially as set forth.



2. An inside bevel, consisting of a stock portion having a longitudinal slotted limb and a pointed limb, the outer edges of said limbs being at a right angle to one another, an adjusting screw passing through the end of the slotted limb of said stock portion, and a blade portion having a pointed limb and a limb formed with a segmental slot having its center at the point of the other limb,—said slotted limb sliding in the slot of the stock and upon the adjusting screw, substantially as set forth.

542,368. NUMBERING-MACHINE.

FRANCIS MEISEL, Boston, Mass., assignor to the Carter-Crume Company, Niagara Falls, N. Y. Filed Apr. 25, 1894. Serial No. 509,003. (No model.)



Claim.—1. In a numbering machine the combination with the intermittently rotated printing wheels, of the reciprocating platens working in planes at an angle to each other to press the paper against the respective wheels, means for operating the platens, and an adjustable guide-and-web-adjusting roller below the upper platen and under which the paper passes from the first printing wheel and platen upwardly to the upper platen, substantially as described.

2. In a numbering machine, the combination with the intermittently rotated printing wheels, of intermittently reciprocating platens arranged with their faces at an angle to each other to move the paper against the respective wheels; one of the platens being above and in advance of the other, and guides over which the paper passes with one run extending upwardly to expose the impression from the first wheel to the operator prior to the impression by the second wheel, substantially as set forth.

3. In a numbering machine, the combination with the intermittently rotated printing wheels, of the reciprocating platens working in approximately vertical and horizontal planes respectively to press the paper against the respective wheels, means for operating the platens, and an adjustable guide-and-web-adjusting roller below the upper horizontally working platen and under which the lateral run of the paper passes from the first printing wheel and platen upwardly to the second wheel and upper platen, substantially as described.

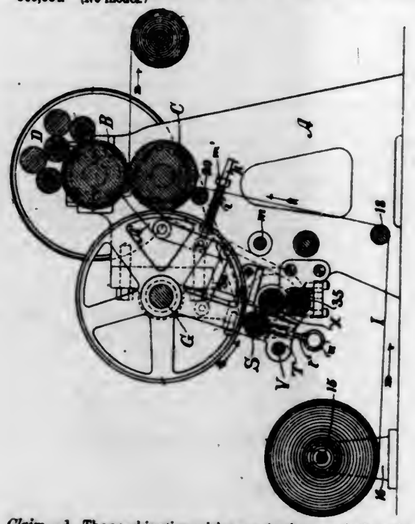
4. In a numbering-machine, the combination, with the intermittingly moving printing wheels G, K, mounted upon shafts *i*, *n*, extending across the machine and connected by gears H, I, whereby said shafts are revolved together at the same speed, of two movable co-operating platens having their faces arranged in planes at an angle to each other and acting upon opposite sides of the web or sheet to bring the same into contact with the types, shafts geared to the rack and provided with cams or eccentrics engaging the said platens, the ratchet wheel *k* on the shaft *i*, the pawl *m* mounted upon the swinging arm *h*, the rack-bar E, and means for reciprocating the same, and suitable connections between the rack-bar and the pawl-carrying arm *h*, all operating substantially as described.

5. In a numbering-machine, the combination, with the intermittingly moving printing wheels G, K, mounted upon shafts *i*, *n*, extending across the machine and connected by gears H, I, whereby said shafts are revolved together at the same speed, of the two movable co-operating platens M, N, having their faces arranged in planes at an angle to each other and acting upon opposite sides of the web or sheet to bring the same into contact with the types, the sliding platen-carriers P moving in planes at an angle to each other, the shafts *d'* provided with the eccentrics *c'* for actuating the carriers P and with pinions *f'*, the rack-bar E engaging said pinions, and means for reciprocating the rack-bar, all constructed to operate substantially as set forth.

6. In a numbering-machine, the combination, with the intermittingly moving printing wheels G, K, mounted upon shafts *i*, *n*, extending across the machine and connected by gears H, I, whereby said shafts are revolved together at the same speed, of the two movable co-operating platens M, N, having their faces arranged in planes at an angle to each other and acting upon opposite sides of the web or sheet to bring the same into contact with the types, the sliding platen-carriers P moving in planes at an angle to each other, the shafts *d'* provided with the eccentrics *c'* for actuating the carriers P and with pinions *f'*, the rack-bar E engaging said pinions and means for reciprocating the rack-bar, the ratchet wheel *k* on the shaft *i*, the pawl *m* mounted upon the swinging arm *h*, the rod *g*, the lever 10 connected with the rack-bar, and retaining pawl 12, the guide-rolls *q*, *r*, and means for drawing the web or sheet through the machine, all constructed to operate substantially as and for the purpose set forth.

542,369. NUMBERING ATTACHMENT FOR PRINTING-MACHINES.

FRANCIS MEISEL, Boston, Mass., assignor to the Carter-Crume Company, Niagara Falls, N. Y. Filed Apr. 25, 1894. Serial No. 509,004. (No model.)



Claim.—1. The combination with a numbering or printing wheel, of a form-roller mounted to rotate freely in a movable bearing in a vibrating frame, mechanism for swinging said frame, wheels for driving the form-roller from the axis of said numbering wheel and at the same surface velocity therewith, means for actuating the form roller bearings to throw the form-roller into and out of operative connection with the numbering wheel when the frame is vibrated, and a driven ink supplying cylinder, with which said form-roller contacts and by which it is rotated when out of contact with the numbering wheel, substantially as set forth.

2. In a cylinder-printing-machine, the combination, with the impression-cylinder having a continuous rotary motion, of an intermittingly rotated numbering-wheel parallel and co-operating therewith and having the same surface velocity as the impression-cylinder during the time that it is printing the numbers on the paper in contact with said cylinder, a ratchet-and-pawl-mechanism for intermittingly rotating the numbering-wheel, and a rotary cam for actuating the ratchet-and-pawl-mechanism, substantially as set forth.

3. In a cylinder-printing-machine, the combination, with the impression-cylinder having a continuous rotary motion, of an intermittingly rotated numbering-wheel mounted on a shaft provided with fixed bearings; said wheel having projections provided on their faces with numbering-types, said numbering-wheel having the same surface velocity as the impression cylinder during the time that it is printing the numbers on the paper, a ratchet-and-pawl-mechanism for intermittingly rotating the numbering-wheel, and a cam and spring for actuating the ratchet-and-pawl-mechanism, said cam being mounted on a shaft connected by gears with the shaft of the impression-cylinder, substantially as described.

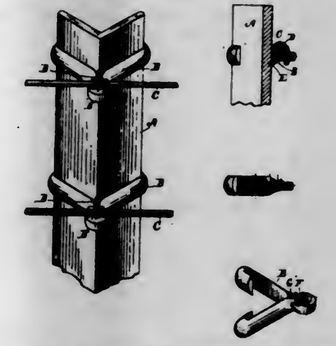
4. In a cylinder printing-machine, the combination with the impression cylinder having a continuous rotary motion and an intermittingly rotated numbering wheel co-operating therewith and having the same surface velocity as said cylinder during the time it is printing the numbers on the paper, of a form-roller supported in a vibrating frame, means for alternately throwing the form-roller into and out of contact with the numbering wheel and driving it from said numbering wheel and at the same surface velocity therewith, and a driven ink-supplying cylinder into contact with which said form roller is thrown and by which it is rotated when not in contact with said numbering wheel, substantially as set forth.

5. In a cylinder-printing-machine, the combination, with the impression-cylinder and an intermittingly rotated numbering-wheel co-operating therewith, of the form-roller S mounted in a vibrating frame and having its shaft provided with friction wheels *b'*, the bearer-wheels Q, W, on the shaft of the numbering-wheel adapted to rotate the form-roller with the same surface velocity as the numbering-wheel by frictional contact with said wheels *b'*, means for vibrating the form-roller supporting-frame, and the cams *q'* and springs *s'*, whereby the form-roller is alternately brought into contact with the numbering-wheel and the ink-supplying-cylinder X as the form-roller-frame is vibrated, substantially as set forth.

6. In a cylinder-printing-machine, the combination of the impression-cylinder, an intermittingly rotated numbering-wheel, a form-roller mounted in a vibrating supporting-frame and adapted to be brought into contact with the numbering-wheel, means for rotating the form-roller with the same surface velocity as the numbering-wheel, the ink-supplying-cylinder X adapted to rotate the form-roller at an increased speed by frictional contact therewith when said form-roller is not in contact with the numbering-wheel, the cams *q'*, springs *s'* and the mechanism for vibrating the form-roller-frame consisting of the cam B', lever A', link 30, and spring *i'*, all constructed to operate substantially as set forth.

542,370. FENCE-WIRE FASTENER.

VOORHEES F. MOUNT, Homer, Mich. Filed Apr. 1, 1895. Serial No. 544,053. (No model.)



Claim.—1. The combination of the angle-iron post, A; the bracket, B, looped around the limbs of the angle iron and resting securely against the angle of the same; the projecting portion, B', thereon grooved at F to receive the longitudinal wire; a catch, E, for engaging a notch in the angle of the iron; and a staple, C, looped over the longitudinal wire and inserted through a hole in the projecting portion, B', and into the little socket, G, between the bracket and the post to secure the longitudinal wire in place, substantially as described for the purpose specified.

2. The combination of the angle-iron post, A; the brackets, B, adapted to loop around the limbs of the angle-iron and resting securely against the angle of the same; the projecting portion, B', thereon grooved at F to receive the longitudinal wire; a staple, C, looped over the longitudinal wire and inserted through a hole in the projecting portion, B', and into the little socket, G, between the bracket and the post to secure the longitudinal wire in place, for the purpose specified.

3. The combination of the angle-iron post, A; the bracket, B, looped around the limbs of the angle-iron and resting securely against the angle of the same; the projecting portion, B', thereon; a catch, E, for engaging a notch in the angle of the iron; and a staple, C, looped over the longitudinal wire and inserted through a hole in the projecting portion, B', and into the little socket, G, between the bracket and the post to secure the longitudinal wire in place, for the purpose specified.

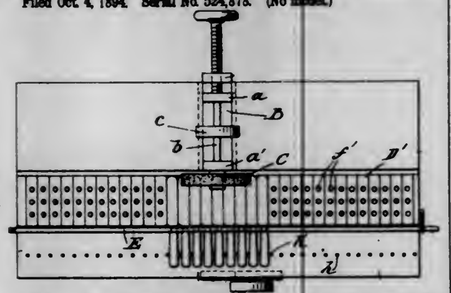
4. In a metallic fence, the combination of a metallic angle-iron fence post; a bracket, B, to engage the same closely throughout its entire length around the outside of the same; a projecting portion, B', on the bracket, B, opposite the angle of the fence post containing a vertical aperture; a longitudinal wire adapted to pass between the aperture and the angle of the fence post; and a staple, D, one limb of which is to be inserted in the aperture and the other in a little pocket, G, next to the fence post, the lower end of which staple is bent to one side to secure it in place and retain the longitudinal wire securely in position on the post, as specified.

542,371. SMOKE-CONSUMING FURNACE. ALBERT J. McINTOSH, Sag Harbor, assignor of two-thirds to Samuel Griffin, Riverhead, and Charles M. Griffing, Shelter Island, N. Y. Filed July 28, 1894. Serial No. 518,849. (No model.)



Claim.—In combination, a steam boiler provided with a fire box and an ash pit at one end a smoke chamber at the rear, tubes intermediate the fire box and the smoke chamber, and a bridge wall between the fire box and the flues and at a short distance from the flues, whereby a combustion chamber is formed between the bridge wall and the ends of the flues, and an air induction pipe leading from the front of the boiler through the ash pit into the combustion chamber, the outer end of which is provided with a valve and the inner end is bent upward to a point substantially midway of the combustion chamber and provided with perforated branch pipes, substantially as set forth.

542,372. KNIFE-SHARPENER. JACOB OEFINGER, Meriden, Conn. Filed Oct. 4, 1894. Serial No. 524,873. (No model.)



Claim.—1. A knife sharpener comprising the combination of a supporting table, a frame longitudinally slidably secured upon the same at the front and transversely recessed to receive the knife-blades, pins removably inserted in the said frame where the handles rest to separate and prevent lateral movement of said handles, a rod pivoted to one end of the frame, adapted to bear upon the knives and engage beneath a hook upon the opposite end of the frame, whereby it serves as a clamp, teeth formed upon the under surface of said frame, gears meshing therewith to reciprocate said frame, an emery wheel journaled in bearings secured to the rear of the table to slide at angles to the knife-holder, and an adjusting screw bearing against said bearings to shift the wheel, substantially as shown and described.

2. A knife sharpener comprising the combination of a supporting table, a frame secured upon the same at the front, and longitudinally slidable, said frame and the table being open to form an air space, a strip upon the rear portion of the front frame, having a series of lateral recesses therein, and having openings or apertures in the base thereof, a clamping bar pivotally secured to the frame to hold the knives in position, pins removably inserted in the frame between the handles to prevent lateral movement thereof, means for moistening the knives, teeth formed upon the under surface of the gears meshing therewith to reciprocate the knife-holder, a plate sliding transversely upon the rear of the table, an emery wheel journaled thereon to revolve vertically across the knife blades, and a hand screw mounted in a flange upon the frame and inserted in one of the bearings to adjust the wheel, substantially as shown and described.

3. A knife sharpener comprising a frame suitably supported, and having an auxiliary frame at the front thereof, a block sliding longitudinally in the said frame, a strip thereon having lateral recesses therein tapered toward one side to hold the knives at an angle, the said block and strip being open to form an air space, a clamp to secure the knives, means for securing the same against lateral movement, a moistening tank secured above the strip and having a depending flexibly secured drip pipe or jet to moisten the knives, and an emery wheel journaled in contact with the knives substantially as shown and described.

4. A knife sharpener comprising a frame suitably supported, an auxiliary frame in front thereof, having a longitudinal block sliding therein, a strip mounted thereon, and having a series of lateral recesses therein tapered toward one side to hold the knife edges uppermost, a bar pivoted to one end of the block and secured beneath a hook at the opposite end, and adapted to fit between the guards and handles of the knives, pins inserted in the block between the handles to prevent lateral movement thereof teeth formed upon the under side of the block, and gears meshing therewith whereby the same is reciprocated, means for moistening the knives and the strip, a plate sliding transversely across the rear of the frame, bearings mounted thereon, an emery wheel journaled in the said bearings in contact with the knives, and a screw at the rear of the frame to adjust the emery wheel, substantially as shown and described.

5. A knife sharpener comprising a frame suitably supported, an auxiliary frame at the front thereof, a block sliding longitudinally thereon, both the said frame and block being open to form an air space, a strip upon the rear portion of the block having a series of lateral recesses therein which are tapered toward one side to hold the edges of the knives uppermost, a bar pivoted to one end of the block and resting beneath a hook at the opposite end, the said bar being adapted to rest between the guards and handles of the knives and clamp them in position, pins inserted in the block between the handles to prevent lateral movement thereof, teeth formed upon the under side of the block, gears meshing therewith to reciprocate the same, a tank or reservoir above the strip having a flexible pipe depending therefrom carrying a drip pipe or jet to moisten the knives and the strip, a plate sliding transversely across the main frame, bearings mounted thereon, a shaft journaled in the said bearings, having an emery wheel thereon, and a hand screw mounted in a flange upon the frame and inserted in one of the bearings whereby the wheel may be forced forwardly and rearwardly over the knives, substantially as shown and described.

542,373. GIRTH-RIGGING FOR SIDE-SADDLES. JESSE D. PADGITT, Dallas, Tex., assignor to Padgitt Brothers, same place. Filed Apr. 23, 1895. Serial No. 546,906. (No model.)



Claim.—1. The side-saddle having its tree extended at its front end transversely opposite to form shoulders 6, in advance of the pommel, and below the curved rest 5 of the saddle seat, combined with the front and rear straps 7 and 9 arranged on the shoulders and tree in rear of the cantle; the rings 11, and connecting strap 12, substantially as specified.

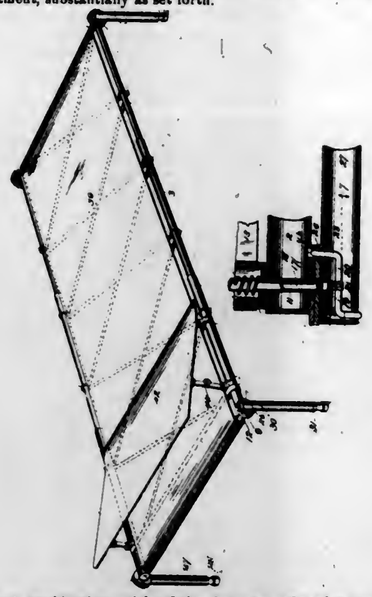
2. The improved saddle having its tree provided with the extension or shoulders 6; superimposed curved rest 5, and the cantle 3, combined with the strap 7, resting on shoulders 6 and depending therefrom and riveted to the extension; the strap 9 arranged flatly against the rear side of the cantle and riveted thereto and given a quarter twist beyond the ends of the cantle and below the same riveted to the tree, the rings 11 in the ends of the straps 7 and 9, and the connecting-strap 12, substantially as specified.

542,374. COMBINED BED, TABLE, STRETCHER, AND CHAIR. JOHANN F. SAUERBIER and KARL M. SAUERBIER, Independence, Mo. Filed Apr. 12, 1895. Serial No. 545,479. (No model.)

Claim.—1. A combination article of the character referred to, comprising a frame consisting of telescopic side-bars, a rigid foot-bar at one end, a spring-roller at the opposite end, a flexible support secured at its opposite ends to said supporting roller and said foot-bar, so that as the article is retracted lengthwise said flexible support will be wound automatically upon said roller, and legs operatively connected to and supporting said frame, substantially as set forth.

2. A combination article of the character referred to, comprising a frame consisting of telescopic side-bars, a rigid foot-bar at one

end, a spring-roller at the opposite end, a flexible support secured at its opposite ends to said spring-roller and said foot-bar, so that as the article is retracted lengthwise said flexible support will be wound automatically upon said roller, legs pivotally connected to and supporting said frame, and means to lock said legs at various points of adjustment, substantially as set forth.



3. A combination article of the character referred to, comprising a frame consisting of telescopic side-bars, a rigid foot-bar at one end, a spring-roller at the opposite end, a flexible support secured at its opposite ends to said spring-roller and said foot-bar, so that as the article is retracted lengthwise said flexible support will be wound automatically upon said roller, and extensible and contractible legs connected to and supporting said frame, substantially as set forth.

4. A combination article of the character referred to, comprising a frame, consisting of telescopic side-sections, a rigid foot-bar connecting the same at one end, a tubular rod projecting through and rigidly carried by the same at their opposite ends, disks carried by said tubular sections and provided with a series of apertures, legs provided with disks pivotally mounted upon the projecting ends of said tubular rod and fitting against the first-named disks, a tie-rod extending through said disks and said tubular sections of the frame, and provided with a head engaging one of the last named disks, and a threaded end engaging a threaded aperture of the other of the last-named disks, so as to clamp said disks firmly against the first-named disks, a spring-actuated lever pivoted in one end of said rod and having a pair of arms, one of them projecting through an aperture in said leg and the other through an aperture in the disk carrying said leg and into one of the apertures of the first-named disk with which it contacts, a spring-roller mounted upon said tubular rod and forming the head-bar of the frame, and a flexible support connecting the same with the foot-bar, substantially as and for the purpose set forth.

5. A combination article of the character referred to, comprising a frame consisting of telescopic side-bars, a rigid foot-bar, and a head-bar in the form of a spring-roller, a flexible support attached to the spring-roller at one end and at its opposite end to the foot-bar, devices pivoted at the corners of said frame, and means to secure said devices in various positions, substantially as set forth.

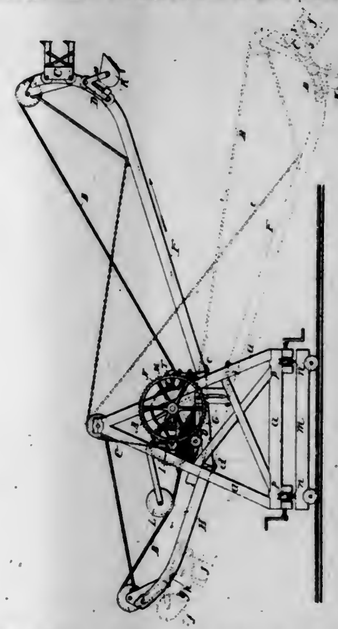
6. A combination article of the character referred to, comprising a frame consisting of telescopic side-bars, springs carried internally by certain of said side-bars, and projecting through apertures in the contiguous telescopic sections, so as to secure said side-bars in their extended or retracted position, a rigid bar connecting said side-bars at one end, a spring-roller connecting said side-bars at their opposite ends, a flexible support attached at its opposite ends to said foot-bar and said spring-roller, and devices pivoted at the corners of said frame and adapted to serve as legs or handles, and means to secure or lock said devices in various positions, substantially as set forth

7. A combination article of the character referred to, comprising a frame consisting of telescopic side-bars, a rigid foot-bar and a head-bar in the form of a spring-roller, telescopic legs attached to said frame at its corners, means to secure them in their extended or retracted positions, a flexible support connecting said foot-bar and said spring-roller head-bar, rings loosely embracing said telescopic side-bars, and a strap laced through said rings and connecting said side-bars at one end and attached to the flexible support at its opposite or foot end, substantially as set forth.

8. A combination article of the character referred to, comprising a frame consisting of telescopic side bars, a rigid foot-bar and a head-bar in the form of a spring-roller, telescopic legs attached to said frame at its corners, means to secure them in their extended or retracted positions, a flexible support connecting said foot-bar and said spring-roller head-bar, rings loosely embracing said telescopic side-bars, a strap laced through said rings and connecting said side-bars at one end and attached to the flexible support at its opposite or foot-end, and a head-rest pivotally connected near its front end to legs or ears carried by said telescopic side-bars, and pivotally connected to the same near its rear end by a break-joint brace, substantially as set forth.

9. In a combination article of the character referred to, a frame, comprising telescopic side-bars, a spring-roller head-bar, and a rigid foot-bar carrying disks at its opposite ends provided with apertures, leg-carrying disks fitting snugly against said first-named disks and provided with cylindrical bosses which find a bearing in said first-named disks and in the opposite ends of the tubular foot-bar, a tie-rod extending axially through said disks and said foot-bar, and provided with a head at one end and with a thread at its opposite end; said head bearing against one of the leg-carrying disks and said thread engaging the thread in the other leg-carrying disk, a spring-actuated lever pivotally mounted in one end of said rod, and provided with an outwardly projecting arm engaging an aperture in said leg, and with an inwardly projecting arm engaging an aperture in said leg-carrying disk and projecting into one of the apertures of one of the first-named disks, substantially as set forth.

542,375. EXCAVATING-MACHINE. CHARLES R. SCOLES, Hillsborough, Canada. Filed Apr. 20, 1894. Serial No. 508,352. (No model.)



Claim.—1. In an excavator a shovel K as described in drawings mounted on a truck frame D the body of shovel turning on pin *k* so as to fill itself while following plows J J J J and having a bar *f*, hinged to it in the manner shown, bar *f* having a plate attached to the free end of it which catches in the earth or substance to be excavated, upon shovel being moved backward, and so forces shovel K into an upright position shown, where it is held by catch on truck frame, all this substantially as set forth in specification and in manner hereinbefore shown.

2. In an excavating machine a set of double or single tracks carried on arms hinged or otherwise joined together, capable of being raised and lowered and attached to frame of machine in the manner hereinbefore described.

3. In an excavator the combination of adjustable tracks and gangs of plows attached to a truck frame the wheels of which run upon and are guided by the tracks and are followed by a receiver or shovel carried on a truck frame mounted on wheels, also guided by and running on same tracks on hinged adjustable arms, the plows, arms, and receiver, acting in combination for the purpose and in the manner hereinbefore set forth.

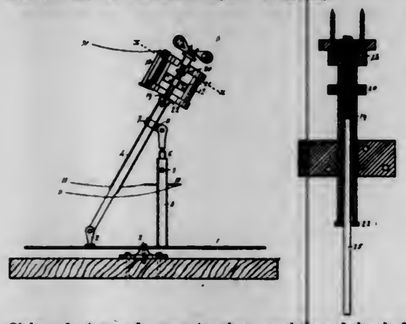
542,376. DISINFECTING APPARATUS. ORCHARD G. SCOTT and WILLIAM F. BRADSHAW, San Francisco, Cal. Filed Mar. 29, 1895. Serial No. 543,728. (No model.)



Claim.—1. A disinfecting apparatus consisting essentially of a tank, a pipe leading from the lower end of the tank and having its free end turned upward, a conical plate secured to and surrounding the upturned end of the pipe, a pad supported by the said plate, and a cup also secured on the pipe and surrounding the pad and plate.

2. In a disinfecting apparatus, the combination of a tank, a pipe leading therefrom, a valve in said pipe having its handle provided with a lateral extension, a bracket depending from the tank, and a set screw mounted in said bracket and engaging the extension of the valve handle.

542,377. TARGET-TRAP AND BIRD THEREFOR. LEANDER L. SHATTUCK, Titusville, Pa., assignor to Cerelle Shattuck, same place. Filed Nov. 22, 1894. Serial No. 529,597. (No model.)

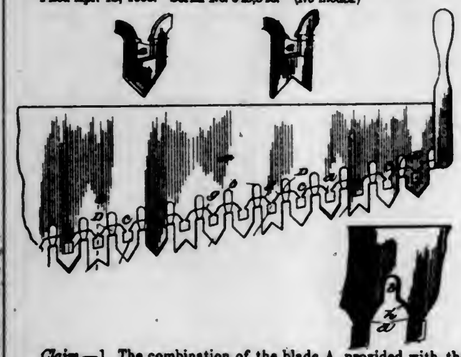


Claim.—1. A trap for trap shooting; consisting of the shaft 14 located centrally in a cylindrical case 13, the coiled spring 16 connected at the ends with the shaft and the walls of the cylindrical case respectively and operating when released to drive the shaft 14, the toothed pinion 15 on said shaft meshing into and driving the pinion 20 on the sleeve 19; the sleeve 19 being held in place and supported on the interior spindle 25 which is exteriorly threaded and fitting with interior threads in the sleeve 19; said spindle being flattened and passing through a slot in the bracket 22, thereby being prevented from turning with the sleeve 19; the head 23 and pins 24 on said sleeve 19; the pins 17 on the pinion 15 and latch 18 holding the pinion until released; all operating in combination substantially as described and for the purposes herein set forth.

2. A target or bird, for trap shooting; consisting of the shank 27, wings 29, constructed inclined and tilted as described, and with openings in each wing fitted to receive flat disks of paper, and with holes 28 fitted to be loosely adjusted on the pins 24; substantially as shown and described.

3. A trap and bird for trap shooting; consisting of the shaft 14 located centrally in a cylindrical case 13; the coiled spring 16 connected at the ends with the shaft and the walls of the case respectively and operating when released to drive the shaft 14; the toothed pinion 15 on said shaft meshing into and driving the pinion 20 on the sleeve 19, the sleeve 19 being held in place and supported on the spindle 25, which is externally threaded fitting with interior threads in the sleeve 19, said spindle being flattened at the lower end and passing through a slot in the bracket 22, thereby being prevented from turning with the sleeve 19; the head 23 and pins 24 on said sleeve 19; the target or bird consisting of the shank 27, wings 29, constructed inclined and tilting as described and with openings in each wing fitted to receive flat disks of paper, and with holes 28 in the shank fitted to be loosely adjusted on the pins 24; the pins 17 on the pinion 15, and latch 18 for holding the pinion till released; all the parts operating in combination and mounted on a revolving and adjustable base substantially as described and for the purposes herein set forth.

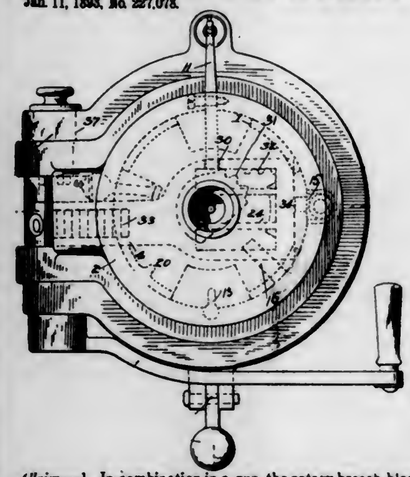
542,378. INSERTIBLE SAW-TOOTH. MATHIAS L. SHUSTER, Mineral Point, Ohio, assignor of one-half to Elmer C. Jesse, same place. Filed Apr. 12, 1895. Serial No. 545,540. (No model.)



Claim.—1. The combination of the blade A, provided with the recesses *b*, extended into the blade, the arms *c* formed integral with the blade, and provided with the shoulders *d* and the heads *f*, the teeth provided with the openings *e* the lugs *k'* and the curved arms *g*, provided with grooves *h*, and the keys or wedges D located between the teeth, substantially as and for the purpose specified.

2. The combination of the blade A, provided with the recesses *b*, extended into the blade, the arms *c*, formed integral with, the blade, the teeth provided with openings the lugs *k'* and curved arms formed integral with the teeth and provided with V-shaped grooves and lugs, the shoulders *d*, and the wedges D, all arranged substantially as described and for the purpose specified.

542,379. BREECH MECHANISM FOR ORDNANCE. ARENT SILFVERSPARRE, Bofors, Sweden. Filed Sept. 12, 1894. Serial No. 522,855. (No model.) Patented in Sweden Dec. 3, 1892, No. 4,592; in Norway Dec. 3, 1892, No. 2,960; in England Jan. 6, 1893, No. 328, and in France Jan. 11, 1893, No. 227,073.



Claim.—1. In combination in a gun, the rotary breech block the carrier for the same, the firing pin, the locking piece for the rotary breech block, the sliding bar movable on the carrier with connection to the firing pin for operating it, said sliding bar also operating the breech block lock and means for operating the sliding bar substantially as described.

2. In combination in a gun, the rotary breech block having the locking screw threads, the segment on the block, the sliding rack engaging the segment, means for operating the rack, the firing pin having lugs, the wedges carried by the sliding rack to engage the lugs, and cocking mechanism, substantially as described.

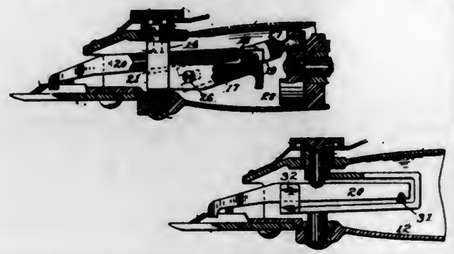
3. In combination in a gun, the rotary breech block having the locking screw threads, the segment on the block, the rack bar engaging therewith, the means for operating the rack bar, the firing pin having lugs, the wedges on the rack bar engaging the same, the said firing pin having also the notch 27, and the catch 26 movable to engage the notch of the firing pin and means for controlling the catch, substantially as described.

4. In combination in a gun the rotary breech block, the segment thereon, the rack bar engaging the segment, the firing pin having the lugs, the wedges on the rack bar engaging the same, the catch for holding the firing pin cocked, the trigger for releasing the catch, the flange 29 on the rack bar arranged to engage and lock the trigger when the mechanism is open and having a recess to release the trigger when the mechanism is closed, substantially as described.

5. In combination in a gun, the rotary breech block of ogival form, the carrier for said breech block and means for rotating the block, the axis of said carrier being the center from which the curve of the ogival block is struck.

6. In combination, the breech block, the carrier therefor, the sliding bar arranged to unlock the breech block, means for operating the sliding bar, the notches therein and the firing pin having spurs to enter the notches of the sliding bar, substantially as described.

542,380. ANIMAL-SHEARS. WILLIAM SILVER, Tamworth, New South Wales, assignor of three-fourths to Nathan Cohen, same place, and Benjamin Francis Marks, Sidney, New South Wales. Filed Jan. 4, 1893. Serial No. 457,909. (No model.) Patented in England Dec. 30, 1892, No. 24,092.



Claim.—1. In combination with a spindle having a socket, a tension lever removably mounted in said socket, and tension mechanism locking said lever in place, whereby when the tension mechanism is released the tension lever can be readily withdrawn longitudinally, substantially as described.

2. In a shearing machine, the combination with the spindle and means for partially rotating the same, of a tension lever passing through an aperture in said spindle and arranged to be held therein by a partial rotation of the same, tension mechanism for locking the tension lever to the spindle so as to cause said lever to move in unison with said spindle; said tension mechanism being adapted to permit the tension lever to be readily removed when the tension is relieved without the removal of internal parts of the machine, substantially as described.

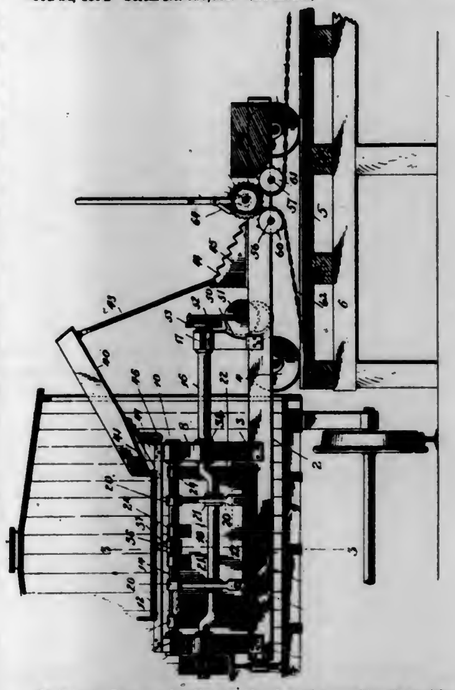
3. In a shearing machine, the combination with a spindle having a slotted central aperture and means for partially rotating the same, of a tension lever provided with a key adapted to be passed through and be locked in the aperture of said spindle, tension mechanism for locking the tension lever in the spindle so as to cause said lever to be moved in unison with said spindle, said tension mechanism being adapted to permit the tension lever to be readily removed when the tension is relieved by a partial rotation of said tension lever, substantially as described.

4. In a shearing machine, the combination with a spindle and means for partially rotating the same, of a tension lever, tension mechanism for locking the lever to the spindle so as to cause said lever and spindle to move in unison, and a cutter carried by the tension lever, together with a comb pivotally arranged below the cutter, substantially as described.

5. In a shearing machine, the combination with a lever carrying a cutter and means for reciprocating said cutter, of a comb pivotally arranged below the cutter, substantially as described.

6. In a shearing machine, the combination with a lever vibrating in a fixed plane and operating the cutter, of a swinging or canting comb and tension mechanism, substantially as described.

542,381. CAR-LOADING MECHANISM. OTIS A. THAYER, WILLIAM T. THAYER, and WILLIAM H. MCCONNELL, Charleston, W. Va. Filed Oct. 24, 1894. Serial No. 526,816. (No model.)



Claim.—1. In a car loading mechanism, the combination with a movable frame and oppositely rotated crank shafts journaled therein, of oppositely arranged swinging shovels yieldingly and pivotally connected to the crank shafts, and means for feeding material onto said shovels, substantially as described.

2. In a car loading mechanism the combination with a movable frame, oppositely rotated crank shafts journaled therein, mortised pendulums pivotally supported above said crank shafts and sliding blocks in said pendulum mortises in which said cranks are journaled, of oppositely arranged and swinging shovels and a yielding and pivotal connection between said shovels and pendulums and means for feeding material into the path of said shovels, substantially as and for the purpose specified.

3. In a car loading mechanism the combination with a movable frame, oppositely rotated crank shafts journaled therein, mortised pendulums pivotally supported in the frame work and sliding blocks in said mortises in which said cranks are journaled, of oppositely arranged swinging shovels, stirrup shaped brackets 25 on said shovels, bolts 26 passing loosely therethrough and having a pivotal connection with the pendulum ends, a collar on each bolt, springs 29 between said collars and brackets and springs 31 between said brackets and nuts on the ends of the bolts, substantially as and for the purpose specified.

4. In a car loading mechanism the combination with a movable frame, oppositely rotated crank shafts journaled therein, and gear wheels connecting the ends of said shafts, of oppositely arranged swinging shovels, said shovels having a pivotal and yielding connection with said shaft cranks and means for feeding material on to said shovels, substantially as and for the purpose specified.

5. In a car loading mechanism the combination with a movable frame, oppositely rotated crank shafts journaled therein, and gear wheels connecting said shafts, of oppositely arranged swinging shovels said shovels having pivotal and yielding connections with said shaft cranks and concave floor plates supported beneath the paths of said shovels in arcs of circles struck from the pivot points of the latter, substantially as and for the purpose specified.

6. In a car loading mechanism the combination with a movable frame, oppositely rotated crank shafts journaled therein, and oppositely arranged swinging shovels having pivotal and yielding connections with said crank shafts, of a convex apron arranged to discharge on said shovels, an inclined chute leading on to said apron and a semi-conical separating elevation in said chute, substantially as and for the purpose specified.

7. In a car loading mechanism the combination with a movable frame, oppositely rotated crank shafts journaled therein and oppositely arranged swinging shovels having pivotal connections with said shaft cranks, of a convex apron arranged to discharge on said shovels, an inclined chute leading to said apron and jointedly connected with the machine frame, brackets 45 supported on the frame base having graduated steps and props 43 pivotally connected at their upper ends with the upper portion of the chute substantially as and for the purpose specified.

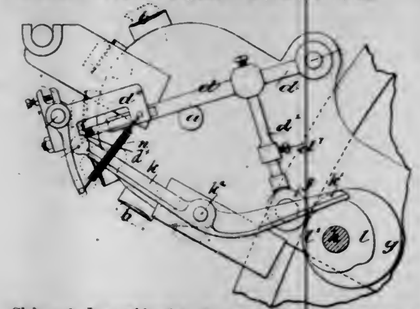
8. In a car loading mechanism the combination with a frame work the rear portion of which is mounted upon wheels, the latter running upon an elevated track and a shoveling mechanism mounted on the forward portion of said frame, of transverse shafts 55, 56 and 57 journaled as described in said frame, sprocket wheels 58, 60 and 61 on said shafts, a ratchet wheel on the shaft 55, a lever fulcrumed on said shaft 55, a pawl pivoted on said lever adapted to engage with the teeth of said ratchet wheel on either side of the center of the latter and a chain 62 running over the wheel 58 and against the inner sides of the wheels 60 and 61, said chain being attached at its ends to the track frame, substantially as and for the purpose specified.

542,382. ART OF PREPARING METAL PLATES FOR LITHOGRAPHIC PRINTING. HEINRICH L. B. TOOBE, Brooklyn, N. Y., assignor, by mesne assignments, to Peter Peiffer, Newark, N. J. Filed Sept. 27, 1894. Serial No. 524,296. (No specimens.)

Claim.—1. The process of treating plates of aluminium or other suitable metal, to adapt them for lithographic purposes which consists in washing the surface in an acidulated alum solution and then applying thereto a solution of alum (sulphate of potassa and alumina), chloride of calcium, sulphate of alumina and nitrous acid, substantially as described.

2. The process herein described for preparing metal plates for lithographic printing which consists of suitably cleansing the surface, removing the previous design by washing with a solution of sulphuric and hydrochloric acid and then treating in a bath consisting of a solution of alum, sulphate of alumina, chloride of calcium and nitrous acid, substantially as described.

542,383. REVOLVING-FLAT CARDING-ENGINE. CHARLES BUTTERWORTH, Oldham, England. Filed Feb. 9, 1893. Serial No. 537,772. (No model.) Patented in England Oct. 24, 1891, No. 18,340.



Claim.—1. In combination, the comb, the oscillating supports therefor, said comb being pivotally connected thereto, the arm or lever extending from the pivotal support and means for oscillating the lever to move the comb toward or from the flats, substantially as described.

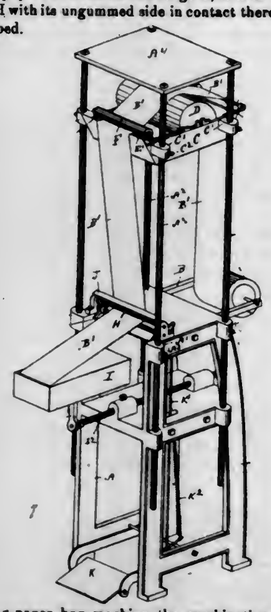
2. In combination, the oscillating supports, the carrier block adjustable thereon, the comb pivotally connected with said carrier block and means for oscillating the comb about its pivot, substantially as described.

3. In combination, the flats, the comb, the oscillating supports for the said comb, means for moving the comb about its pivotal connection toward and from the flat and means for adjusting the comb toward and from the flat in addition to its pivotal movement and its oscillation, substantially as described.

4. In combination, the flats, the oscillating arms *d*, the comb in pivotal connection therewith and having a depending arm connected with the pivot and the lever and cam for operating said arm, substantially as described.

542,384. PAPER-BOX-COVERING MACHINE. CLARENCE W. HOBBS, Lynn, assignor, by mesne assignments, to himself, Richard Sugden, and Harry W. Goddard, Spencer, Mass. Filed Oct. 10, 1892. Serial No. 448,319. (No model.)

Claim.—1. In a paper box machine, the combination with a supporting frame-work A provided with lugs A′ of the parallel vertical rods A^2 held in said lugs, plate A^4 uniting the upper ends of said rods, brackets B, B projecting from said frame-work for supporting a roll of paper, gum box C held between said vertical rods A^2 and having its edge G adapted to scrape the gummed surface of the paper, gum roll D journaled in said box, rod H supported by the frame-work and located vertically below said scraping edge G, whereby the strip of gummed paper as it leaves said edge G, is held by gravity against said rod H with its ungummed side in contact therewith, substantially as described.



2. In a paper box machine, the combination of a gum box C, gum roll D journaled in said gum box, scraping edge G formed on the side of said gum box, guide rod H located vertically below and beneath said edge G, whereby the gummed strip of paper as it leaves the edge G will hang by its own weight with its ungummed side against said rod H and a former I placed below and in front of said rod H and means for severing the paper strip, substantially as described.

3. In a paper box machine, the combination with a gum-box provided with a scraping edge G, of the levers E, E, weighted roll F, carried by the free ends of said levers and arranged to ride upon the paper strip in its passage from the gum roll to said scraping edge and be raised by an increase in the tension of the paper strip, whereby the angle of the paper strip is varied as it approaches the scraping edge, substantially as described.

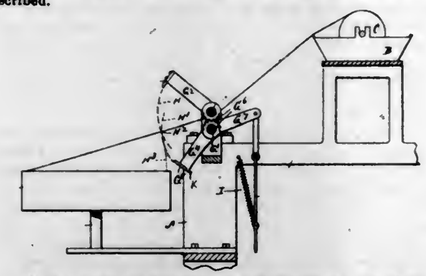
4. In a paper box machine, the combination with the gum roll and gum-box of the levers E, E, pivoted at one end to said gum-box and carrying the rod F′ and roll F at their free ends, between which the paper strip passes, and spurs L, L, by which said levers are supported in an upright position with the rod F′ above the gum roll, substantially as described.

5. In a paper box machine, the combination of a frame-work A, brackets B, B projecting from said frame-work for supporting a roll of paper, vertical parallel rods A^2 held by said frame-work, gum box C adjustably held between said vertical rods A^2, gum roll D journaled in said gum box, brackets B^4 carried by said gum box and a guide rod B^3 held by said brackets, substantially as described.

542,385. CUTTING MECHANISM FOR PAPER-BOX MACHINES. CLARENCE W. HOBBS, Lynn, assignor, by mesne assignments, to himself, Richard Sugden, and Harry W. Goddard, Spencer, Mass. Filed Oct. 10, 1892. Serial No. 448,320. (No model.)

Claim.—1. In a paper box machine, the combination of a "former" upon which the box is supported, a pair of parallel shafts G and G′ serving as guide rods between which a paper strip is conducted to a box held on said "former," a pair of vibrating arms capable of an angular motion about axes coincident with the axes of said shafts, cutting blades carried by the free ends of said arms and means by which said arms are simultaneously moved to bring the cutting edges of said knives into contact, substantially as described.

2. In a paper box machine, the combination of the parallel shafts G, G′ serving as guides for a paper strip, arms capable of an angular motion about axes coincident with the axes of said shafts, cutting blades carried by the free ends of said arms and a "former" arranged to support a box with its rear end in advance of said cutting blades when separated and beneath said cutting blades when brought together, whereby the paper strip when severed will fall entirely upon the surface of a paper box held upon said former, substantially as described.



3. In a paper box machine, the combination of a pair of parallel shafts G, G′ serving as guide rods for a paper strip as it is conducted from the gum box to the former, a "former" upon which the box is supported, a pair of vibrating arms G^2 and G^4, cutting blades G^2 and G^3 carried by the free ends of said arms, gears G^5 by which said arms are given a conjoint action, arm G^7, connecting rod G^8 and retractile spring I, substantially as described.

542,386. BATTEN FOR NARROW-WARE LOOMS. ALFRED IKEIMER, Philadelphia, Pa. Filed Sept. 22, 1892. Serial No. 446,619. (No model.)



Claim.—1. The combination with the frame-work of a batten, the shuttles, and the races or guides for the shuttles, of castings secured to the said frame-work and formed with forwardly projecting bosses to which the said races are held, substantially as described.

2. The combination with the frame work of a batten, the shuttles, and the races or guides for the shuttles, of the castings 9, 9, located adjacent to the ends of the races, and the intermediate castings 10, the said castings being secured to the said frame-work and formed with bosses to which the said races are held, substantially as described.

3. The combination with the frame-work of a batten, the shuttles, and races or guides for the shuttles formed of strips of vulcanized fiber, of the castings 9, 9, and 10, secured to said frame-work at their ends and formed with bosses to which the said races are secured, substantially as described.

4. The combination with the frame-work of a batten, the shuttles, the races or guides for the shuttles, and pinions for operating the shuttles, of the castings 9 and 10 for supporting the races or guides, and the adjustable casting 17 for the pinion 5′, substantially as described.

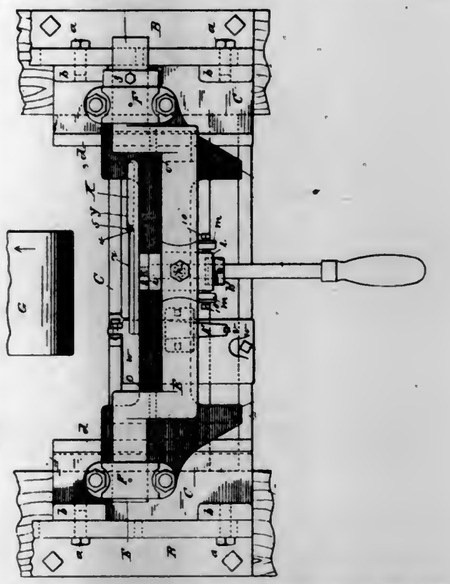
542,387. WITHDRAWN.

542,388. KNIFE-GRINDING DEVICE. JOSEPH H. LA FAVE, Toledo, Ohio, assignor of one-half to William H. Chapin, Springfield, Mass. Filed Oct. 13, 1894. Serial No. 525,798. (No model.)

Claim.—1. device for holding knives and analogous articles while grinding the same, consisting of a knife-holding element, a handle, to one end of which said knife-holding element is attached, a supporting sleeve for said handle within which it may have a rocking movement, and with which it may oscillate in a horizontal plane, combined with devices for supporting said knife-holding element, handle, and sleeve, substantially as and for the purpose set forth.

2. A device for holding knives and analogous articles while grinding the same, consisting of a knife-holding element, a handle, to one end of which said knife-holding element is attached, a supporting sleeve for said handle within which it may have a rocking movement, and with which it may oscillate in a horizontal plane, combined with a rock-shaft on which said sleeve is hung in a position to one side of the axial line thereof, whereby said knife-holding element is supported substantially on said axial line, substantially as set forth.

3. A device for holding knives and analogous articles while grinding the same, consisting of a knife-holding element, a handle, to one end of which said knife-holding element is attached, a supporting sleeve for said handle within which it may have a rocking movement, and with which it may oscillate in a horizontal plane, combined with a rock-shaft on which said sleeve is hung in a position to one side of the axial line thereof, a guide-track having a curved end pivoted under and at right angles to said rock-shaft, and an arm extending from said rock-shaft and having one end bearing and movable on said track, substantially as set forth.



4. A device for holding knives and analogous articles while grinding the same, consisting of a knife-holding element, a handle, to one end of which said knife-holding element is attached, a supporting sleeve for said handle within which it may have a rocking movement, and with which it may oscillate in a horizontal plane, combined with a rock-shaft on which said sleeve is hung which is longitudinally adjustable in its bearings, and means for securing said shaft in different positions to which it may be so adjusted, and bearings for said rock-shaft, substantially as set forth.

5. A device for holding knives and analogous articles while grinding the same, consisting of a knife-holding element, a handle, to one end of which said knife-holding element is attached, a supporting sleeve for said handle within which it may have a rocking movement, and with which it may oscillate in a horizontal plane, a rock-shaft on which said sleeve is hung, a sliding table, D, having bearings thereon in which said rock-shaft is supported having racks, R, on the under side thereof, a frame, C, under said table, D, a shaft, S, hung in said frame, having pinions thereon engaging with said racks, and a treadle and devices connecting the same with said shaft, S, whereby the same is rotated and the table, D, is moved toward the grindstone, combined and operating substantially as set forth.

542,389. METALLIC HELMET. JACOB P. LIND, Columbus, Ohio. Filed Aug. 16, 1894. Serial No. 520,421. (No model.)

Claim.—1. In a helmet construction, the combination of the oppositely located side sections of substantially oval form, with the front and rear sections each of which has a narrow upper end and a wider lower end, the side edges being cut on a curve to adapt them to the form of the oval side sections to which they are united, their narrow upper ends being also united, the several sections being suitably concaved to impart the desired rounded form to the helmet, substantially as set forth.

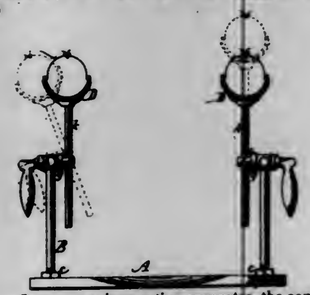
2. The combination with a helmet body, of a plate secured to its upper side, said plate having a triangular opening with oppositely located beveled walls as described, a spring strip secured beneath said plate and extending across the said opening, said strip having a portion extending upwardly above the plate, and an ornament supporting stem having a substantially dove-tailed base portion adapted to fit within the opening in the plate and be detained therein by pressure of the spring, substantially as specified.

3. In a helmet the combination with the body thereof and its folding drop visor sections *e* and *e′* fulcrumed to said body, of a stop loop or keeper *f* projecting from the upper visor section *e*, a staple or ring *f′* on the helmet body through which said keeper passes to limit the

vertical movement of the upper visor section, and a lug or ring *g* on the lower visor section adapted to engage the lower portion of the upper visor section to limit the downward movement of the former, substantially as set forth.

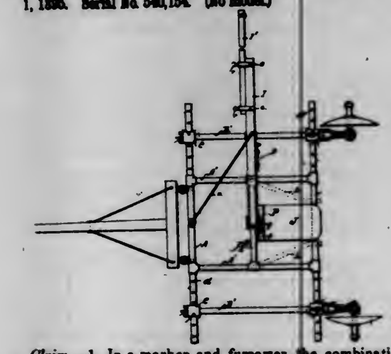


542,390. SURGEON'S OPERATING APPARATUS. SAMUEL H. LEIB, Rochester, N. Y. Filed Jan. 7, 1893. Serial No. 457,626. (No model.)



Claim.—In a surgeon's operating apparatus, the combination of the bed plate A adapted to be laid flatwise on a table, the standards B B screwing into the front corners of the same and provided with the cranked ends *a a*, the couplings C C fitted on the cranked ends, and the rests D D provided with spindles *k k* resting in said couplings, as shown and described and for the purpose specified.

542,391. COMBINED LAND-MARKER, COVERER, AND FURROWER. ASA S. LEFFINGWELL, Welham's Cross Roads, Md. Filed Mar. 1, 1895. Serial No. 540,154. (No model.)



Claim.—1. In a marker and furrower, the combination with a central rigid frame, of parallel extensions projecting laterally from the opposite corners of the frame, and provided with a series of apertures, runner sections comprising connecting bars, runners, and the blocks C C, having horizontal openings through which the extensions pass and vertical apertures, removable pins fitting through the apertures in the blocks and extensions, ears on the blocks C, a disk-supporting arm pivotally secured to the ears, an adjustable disk on the arm, a sector rack fixedly secured to the block C, a lever carrying the dog engaging the rack, and a rigid rod pivotally connecting the lever with the disk-supporting arm, substantially as described.

2. The combination with the rectangular frame, of projections extending laterally from the ends thereof, parallel with each other and formed with a series of perforations, a laterally adjustable runner section comprising a runner, a cross-bar, and single piece blocks connecting the same formed with horizontal openings through which the extensions pass, and apertures in line with the apertures in the extensions, and removable securing pins passing through the apertures, substantially as described.

3. The combination with a frame, of a laterally adjustable runner section and means for effecting the adjustment thereof, a single piece coupling block at the rear of the runner formed with integral lateral projections and a rigid sector, a lever secured on the sector carrying a suitable locking dog, a vertically adjustable disk-supporting arm pivotally secured to the projections of the block, a disk at the outer end of the arm, and a rigid rod pivotally connected to the arm at one end and with a lever at the opposite end, substantially as described.

4. The combination with a frame, of laterally adjustable runners, coupling blocks between the frame and rear ends of the runners consisting of single piece blocks having ears, vertically adjustable disk supporting arms pivotally secured to the ears, a disk on the arms, a lever pivoted on the machine, means for holding the lever in adjusted positions, and a rigid link connecting the lever with the arms, substantially as described.

5. The combination with a disk-supporting arm having a bearing plate at its outer end, of an apertured hub plate an eye-bolt passing through the plates, a shaft passing through the hub plate and eye-bolt, independent means for securing the shaft in the hub plate, a disk, an elongated sleeve secured to the outer face of the disk, and a nut on the shaft entering a recess in the sleeve and engaging the same for securing the disk on the shaft, substantially as described.

542,392. CLUTCH MECHANISM FOR BICYCLES. GEORGE ST. CLAIR MARSON, Chicago, Ill. Filed Mar. 29, 1895. Serial No. 543,729. (No model.)



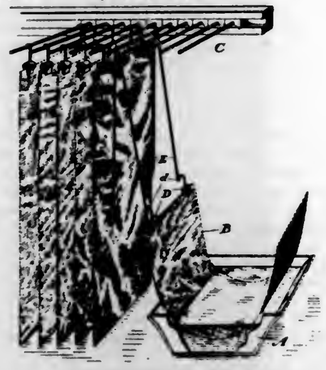
Claim.—1. In a bicycle, the combination, with a sprocket wheel loosely mounted upon the driven shaft, a clutch mechanism located within the sprocket wheel and having a series of detents on its inner periphery and a series of pawls designed to engage the detents, of a spring rigidly secured to the shaft and coiled inside the pawls to engage therewith whereby the same are held in engagement with the detents, substantially as described.

2. In a bicycle propelling mechanism, the shaft B, having one end of the spring E secured thereto and mounted on said shaft, and having its outer end pressing against the pawls *d d'*, the free end of said pawls adapted to engage one of a series of detents *e* in the sprocket wheel C, whereby the latter is enabled to convey motion in one direction only to said shaft B, substantially as and for the purpose described.

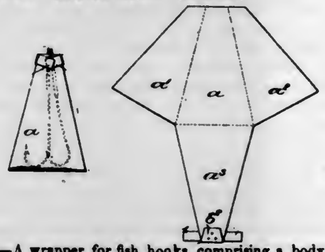
542,393. PROCESS OF TREATING WIRE-CLOTH FOR SCREENS. GEORGE R. MEADOWS, Toronto, Canada. Filed Apr. 12, 1894. Serial No. 507,210. (Specimens.)

Claim.—1. The herein-before described process of producing a transparent imperforate screen fabric of open mesh wire cloth, consisting in passing each sheet separately in a concave form through a receptacle containing a suitable transparent solution, then raising each sheets directly from the solution without making contact with any object in its movement into a perpendicular position and supporting them in this position until they are dried, substantially as described.

2. The herein-before described process of producing a transparent imperforate screen fabric of open mesh wire cloth, consisting in passing the sheets of cloth in a concave form through a receptacle containing a suitable bath, then raising such sheet to a perpendicular position and supporting the said sheets in this position and finally shaking said sheets when the solution is about half dry to reduce the transparency, substantially as described.



542,394. WRAPPER FOR FISH-HOOKS. GEORGE F. MILLS, Brooklyn, assignor to William Mills & Son, New York, N. Y. Filed Sept. 24, 1894. Serial No. 523,871. (No model.)



Claim.—A wrapper for fish hooks, comprising a body portion, overlapping flaps at the sides of the body portion, an extended flap at the bottom of the body portion adapted to fold over the overlapping side flaps and a flexible metal clasp secured at the free end of said last named folding flap and provided with extended wings of such length that, together with the body portion of the clasp, they may be folded to completely surround the mouth of the wrapper, forming at the same time a fastening for holding the mouth of the wrapper closed and a guard against the tearing of the mouth of the wrapper, substantially as set forth.

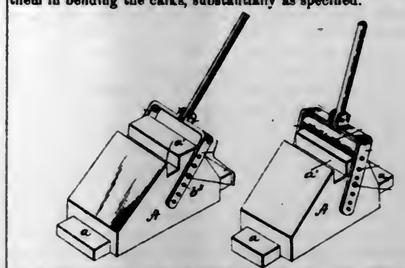
542,395. SPRING-BACK FOLDING CAMP-CHAIR. THOMAS D. REILLY, Helena, Mont. Filed Dec. 4, 1894. Serial No. 530,806. (No model.)



Claim.—The combination in a camp chair, of a pair of leg frames pivoted near their center and connected along their upper edges by a strip of canvas to form a seat, of a back frame pivoted to one of said leg frames, a pair of springs fastened to the lower end of said back frame and connected at their ends by a transverse rod, whereby a yielding or flexible back is provided, which may be folded down upon the leg frames of the chair, substantially as described.

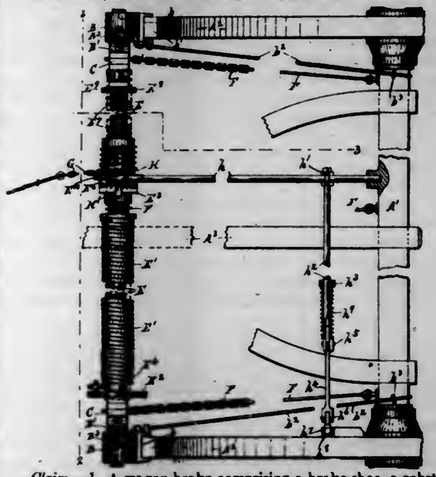
542,396. HORSESHOE-CALK-BENDING DEVICE. MORGAN ROCHE, Newark, N. Y. Filed Apr. 17, 1895. Serial No. 546,055. (No model.)

Claim.—1. In a horse-shoe calk-bending device, the combination with a block or anvil provided with a transversely disposed groove slot or opening *a'* in its upper face adapted to receive the heel ends of a horse-shoe blank, and having pin-holes for seats in the sides of the block or anvil, of a pair of yoke-arms provided with sets of pin-holes therein adapted to be aligned with the pin-holes or seats in the sides of the block or anvil, removable pins insertible through any desired set of holes in the yoke-arms into the holes in the sides of the block or anvil, and a lever secured to the yoke-arms for operating them in bending the calks, substantially as specified.



2. In a horse-shoe calk-bending device, the combination with a block or anvil provided with a transversely disposed groove, slot or opening *a'* in its upper face adapted to receive the heel ends of a horse-shoe blank, and having pin-holes or seats in the vertical sides of the block or anvil, of a pair of yoke-arms provided with sets of pin-holes therein adapted to be aligned with the pin-holes or seats in the sides of the block or anvil, removable pins insertible through any desired set of holes in the yoke-arms into the pin-holes or seats in the sides of the block or anvil, a lever secured to the yoke-arms for operating them in bending the calks, and a roller journaled in the yoke-arms and adapted to contact with and move over the horse-shoe blank when the lever is operated, substantially as set forth.

542,397. WAGON-BRAKE. WILLIAM SIVERD, Portageville, N. Y. Filed Dec. 6, 1894. Serial No. 530,962. (No model.)



Claim.—1. A wagon brake comprising a brake-shoe, a substantially fixed part of the vehicle a revoluble shaft for forcing the brake-shoe to its operative position, a connection between said substantially fixed part and the shaft and a spring for actuating the shaft, substantially as and for the purpose described.

2. A wagon brake comprising a brake-shoe, a substantially fixed part of the vehicle a revoluble shaft for forcing the brake-shoe to its operative position, a connection between said substantially fixed part and the shaft a spring for actuating the shaft, and a connection to the spring for forcing the same to its inoperative position, substantially as and for the purpose specified.

3. A wagon brake comprising a brake-shoe provided with a projecting arm, a guide for the arm, a substantially fixed part of the vehicle a revoluble shaft for forcing the brake-shoe to its operative position, and a connection between said substantially fixed part and the shaft substantially as and for the purpose set forth.

4. A wagon brake comprising a brake-shoe, a substantially fixed part of the vehicle arranged at the rear of the brake-shoe, a revoluble shaft for forcing the brake-shoe to its operative position, a connection between said substantially fixed part and the shaft provided with a flexible extremity movable around the shaft, and a spring for rotating the shaft, substantially as and for the purpose described.

5. A wagon brake comprising a brake-shoe, a substantially fixed part of the vehicle a revoluble shaft for forcing the brake-shoe to its operative position, a connection between said substantially fixed part and the shaft a spring for actuating the shaft provided with a clutch section, and a second clutch section detachably engaging the former section for moving the same against the action of the spring and permitting independent movement thereof, substantially as and for the purpose specified.

6. A wagon brake comprising a brake-shoe, a substantially fixed part of the vehicle a revoluble shaft for forcing the brake-shoe to its operative position, a connection between said substantially fixed part and the shaft a spring for actuating the shaft provided with a clutch section, a second clutch detachably engaging the former section for moving the same against the action of the spring and permitting independent movement thereof, and a connection to the latter clutch section for forcing the same from its normal position, substantially as and for the purpose described.

7. A wagon brake comprising a brake-shoe, a substantially fixed part of the vehicle a revoluble shaft for forcing the brake-shoe to its operative position, a connection between said substantially fixed part and the shaft a spring for actuating the shaft provided with a clutch section, a second clutch section detachably engaging the former section for moving the same against the action of the spring and permitting independent movement thereof, and a spring for forcing the latter clutch section to its normal position, substantially as and for the purpose set forth.

8. A wagon brake comprising a brake-shoe, a substantially fixed part of the vehicle a revoluble shaft for forcing the brake-shoe to its operative position, a connection between said substantially fixed part and the shaft a spring for actuating the shaft provided with a clutch section, a second clutch section detachably engaging the former section for moving the same against the action of the spring and permitting independent movement thereof, a connection to the latter clutch section for forcing the same from its normal position, and a spring for forcing the latter clutch section to its normal position, substantially as and for the purpose specified.

9. A wagon brake comprising a brake-shoe, a substantially fixed part of the vehicle a revoluble shaft for forcing the brake-shoe to its operative position, a connection between said substantially fixed part and the shaft a spring for actuating the shaft provided with a clutch section, a second clutch section detachably engaging the former section for moving the same against the action of the spring and permitting independent movement thereof, and means for disengaging the clutch sections, substantially as and for the purpose described.

10. A wagon brake comprising a brake-shoe, a substantially fixed part of the vehicle a revoluble shaft for forcing the brake-shoe to its operative position, a connection between said substantially fixed part and the shaft a spring for actuating the shaft provided with a clutch section, a second clutch section detachably engaging the former section for moving the same against the action of the spring and permitting independent movement thereof, a guide connected to the rear wheel, a lever for disengaging the clutch sections, and a shoe movable in said guide and connected to the lever for actuating the same, substantially as and for the purpose set forth.

11. A wagon brake comprising a brake-shoe, a substantially fixed part of the vehicle a revoluble shaft for forcing the brake-shoe to its operative position, a connection between said substantially fixed part and the shaft a spring for actuating the shaft provided with a clutch section, a second clutch section detachably engaging the former section for moving the same against the action of the spring and permitting independent movement thereof, a guide connected to the rear wheel, a lever for disengaging the clutch sections, a rectilinearly movable rod for actuating the lever, a shoe movable in the guide, and a lever having one extremity pivoted to the rod and its opposite extremity normally depressed beneath its former extremity and pivoted to the shoe, substantially as and for the purpose described.

12. A wagon brake comprising a brake-shoe, a substantially fixed part of the vehicle a revoluble shaft for forcing the brake-shoe to its operative position, a connection between said substantially fixed part and the shaft a spring for actuating the shaft provided with a clutch section, a second clutch section detachably engaging the former section for moving the same against the action of the spring and permitting independent movement thereof, a guide connected to the rear wheel, a lever for disengaging the clutch sections, a rectilinearly movable rod for actuating the lever, a shoe movable in the guide, a lever having one extremity pivoted to the rod and its opposite extremity normally depressed beneath its former extremity and pivoted to the shoe, and a spring for forcing the latter lever to its normal position, substantially as and for the purpose specified.

13. A wagon brake comprising a brake-shoe, a substantially fixed part of the vehicle a revoluble shaft for forcing the brake-shoe to its operative position, a connection between said substantially fixed part and the shaft a spring for actuating the shaft, a connection to the spring for forcing the same to its inoperative position, and a doubletree movable lengthwise of the line of draft and connected to said connection for actuating the same, substantially as and for the purpose set forth.

14. A wagon brake comprising a brake-shoe, a substantially fixed part of the vehicle a revoluble shaft for forcing the brake-shoe to its operative position, a connection between said substantially fixed part and the shaft a spring for actuating the shaft, a connection to the spring for forcing the same to its inoperative position, a doubletree movable lengthwise of the line of draft and connected to said connection for actuating the same, and a stop for limiting the movement of the doubletree, substantially as and for the purpose described.

15. A wagon brake comprising a brake-shoe, a substantially fixed part of the vehicle a revoluble shaft for forcing the brake-shoe to its operative position, a connection between said substantially fixed part and the shaft a spring for actuating the shaft provided with a clutch section, a second clutch section detachably engaging the former section for moving the same against the action of the spring and permitting independent movement thereof, a connection to the latter clutch section for forcing the same from its normal position, and a doubletree movable lengthwise of the line of draft and connected to said connection for actuating the same, substantially as and for the purpose set forth.

16. The combination with a vehicle having a king bolt; of a wagon brake comprising a brake-shoe, a substantially fixed part of the vehicle a revoluble shaft for forcing the brake-shoe to its operative position, a connection between said substantially fixed part and the shaft a spring for actuating the shaft provided with a clutch section, a second clutch section detachably engaging the former section for moving the same against the action of the spring and permitting independent movement thereof, a connection to the latter clutch section for partially rotating the same having a slot registered with the king bolt, a doubletree movable lengthwise of the line of draft and connected to said connection for actuating the same, and a stop for limiting the movement of the doubletree, substantially as and for the purpose specified.

17. A wagon brake comprising a brake-shoe, a substantially fixed part of the vehicle a revoluble shaft for forcing the brake-shoe to its operative position, a connection between said substantially fixed part and the shaft a spring for actuating the shaft, a support for the brake-shoe movable up and down and having its upper extremity hinged and its opposite extremity hinged to the front side of the brake-shoe, substantially as and for the purpose set forth.

18. A wagon brake comprising a brake-shoe, a substantially fixed part of the vehicle a revoluble shaft for forcing the brake-shoe to its operative position, a connection between said substantially fixed part and the shaft a spring for actuating the shaft, a support for the brake-shoe movable up and down and having its upper extremity hinged and its opposite extremity hinged to the front side of the brake-shoe, and a stop for preventing movement of said support, substantially as and for the purpose described.

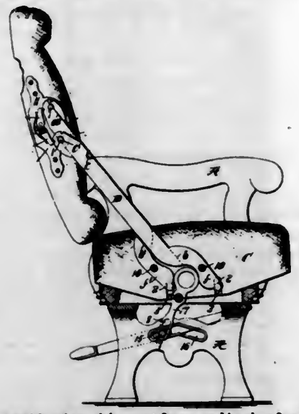
19. A wagon brake comprising a brake-shoe, a substantially fixed part of the vehicle a revoluble shaft for forcing the brake-shoe to its operative position, a connection between said substantially fixed part and the shaft a spring for actuating the shaft, a supporting spindle, a support for the brake-shoe movable up and down and having its upper extremity hinged to said spindle and its opposite extremity hinged to the front side of the brake-shoe, a stop for preventing movement of said support, and a counterbalance for automatically forcing the stop from operative position, substantially as and for the purpose specified.

20. A wagon brake comprising a brake-shoe, a substantially fixed part of the vehicle a revoluble shaft for forcing the brake-shoe to its operative position, a connection between said substantially fixed part and the shaft a spring for actuating the shaft, a supporting spindle, a support for the brake-shoe movable up and down and having its upper extremity hinged to said spindle and its opposite extremity hinged to the front side of the brake-shoe, a stop for preventing movement of said support, a counterbalance for automatically forcing the stop from operative position, and a second stop for preventing operation of the counterbalance, substantially as and for the purpose described.

542,398. CAR-SEAT. WILLIAM P. SYMNS, Jr., and AUGUST F. KREUTZBERG, New York, N. Y., assignors to the Pottier & Stymus Company, same place. Filed July 7, 1894. Serial No. 516,808. (No model.)

Claim.—1. The combination with a seat frame and back, of reversing arms, each pivoted to the seat frame and back on opposite sides of the vertical center, the portions of said arms between the seat and back lying in parallel planes and overlapping each other and being of such width as to avoid separation at their inner edges during the reversing operation, substantially as described.

2. The combination with a seat frame and back, of reversing arms, each pivoted to the seat frame and back on opposite sides of the vertical center, the portions of said arms between the seat and back being of equal width and lying in parallel planes and one upon the other in the normal positions of the back, the width of said portions being such as to avoid separation at their inner edges during the reversing operation, substantially as described.



3. The combination with a seat frame and back, of reversing arms, each pivoted to the seat frame and back on opposite sides of the vertical center, said arms having straight portions extending from the seat to the back and bent outward at their lower ends opposite the seat for connection to the seat frame, the straight portions of said arms lying in parallel planes and overlapping and being of such width as to avoid separation at their inner edges during the reversing operation, substantially as described.

4. The combination with a seat frame and back, of reversing arms, each pivoted to the seat frame and back on opposite sides of the vertical center, said arms having straight portions of equal width extending from the seat to the back and bent outward at their lower ends opposite the seat for connection to the seat frame, the straight portions of said arms lying in parallel planes and one upon the other in the normal position of the seat and being of such width as to avoid separation at their inner edges during the reversing operation, substantially as described.

5. The combination with a seat frame and back, of reversing arms, each pivoted to said frame and back on opposite sides of the vertical center and having a stop adapted to arrest the movement of and support the other arm, the portions of said arms between the seat and back lying in parallel planes and overlapping each other and being of such width as to avoid separation at their inner edges during the reversing operation, substantially as described.

6. The combination with a seat frame and back, of reversing arms, each pivoted to said frame and back on opposite sides of the vertical center and having two stops thereon on opposite sides of the line of intersection with the other arm adapted to arrest the movement of and support the latter, the portions of said arms between the seat and back lying in parallel planes and overlapping each other and being of such width as to avoid separation at their inner edges during the reversing operation, substantially as described.

7. The combination with a seat frame and back, of reversing arms, each pivoted to said frame and back on opposite sides of the vertical center and having two stops thereon on opposite sides of the line of intersection with the other arm adapted to arrest the movement of and support the latter, the portions of said arms between the seat and back lying in parallel planes and overlapping each other and being of such width as to avoid separation at their inner edges during the reversing operation, and connections for shifting the seat by the movement of said arms, substantially as described.

8. The combination with a seat frame and back, of reversing arms, each pivoted to said frame and back on opposite sides of the vertical center and having two stops thereon on opposite sides of the line of intersection with the other arm adapted to arrest the movement of and support the latter, the portions of said arms between the seat and back lying in parallel planes and overlapping each other and being of such width as to avoid separation at their inner edges during the reversing operation, a foot rest, and connections for shifting said foot rest to opposite sides of the seat by the movement of said arms, substantially as described.

9. The combination with a seat frame and back, of reversing arms, each pivoted to said frame and back on opposite sides of the vertical center and having two stops thereon on opposite sides of the line of intersection with the other arm adapted to arrest the movement of and support the latter, the portions of said arms between the seat and back lying in parallel planes and overlapping each other and being of such width as to avoid separation at their inner edges during the reversing operation, a foot rest, and connections for shifting the seat and said foot rest in opposite directions by the movement of said arms, substantially as described.

10. The combination with a seat frame and back, of the reversing arms D, D′ having straight intersecting central portions lying in parallel planes and extending from the seat to the back, and each provided with stops at opposite ends for the other arm, substantially as described.

11. The combination with a seat frame and back, of reversing arms D, D′ having straight intersecting central portions of equal width lying in parallel planes and extending from the seat to the back, and each provided with stops at opposite ends for the other arm in line with the opposite edges of said straight portions, substantially as described.

12. The combination with a seat frame and back, of the reversing arms D, D′, having straight intersecting central portions of equal width lying in parallel planes and extending from the seat to the back, and pivoted to the back in line with the outer edges of said straight portions, each of said arms having stops at opposite ends for the other arm in line with the opposite edges of said straight portions, and notches on their inner edges to receive the back pivot of the other arm, substantially as described.

13. The combination with a seat frame and back, of the reversing arms D, D′ having straight intersecting central portions lying in parallel planes and reduced to form shoulders a, b and a', b' at the opposite ends in line with the opposite edges of said straight portions, substantially as described.

14. The combination with a seat frame and back, of the reversing arms D, D′ having straight intersecting central portions lying in parallel planes and forming the shoulders a, b and a', b' at the opposite ends in line with the opposite edges of said straight portions, and having edge notches c, c' receiving the pivots by which the arms are connected to the said back, substantially as described.

15. The combination with a seat frame and back, of the reversing arms D, D′ having straight intersecting central portions lying in parallel planes and provided with stops at the opposite ends in line with the opposite edges of said straight portions, and having the end locking notches d, e and d', e', and locking devices engaging said notches and running edgewise of the arms, substantially as described.

16. The combination with a seat frame and back, of reversing arms having intersecting central portions, and each provided with stops on opposite sides of said intersecting portions and with edge locking notches at the ends at which said arms are attached to the seat back, and locking devices engaging said notches and moving edgewise of the arms for locking and unlocking the latter, substantially as described.

17. The combination with a seat frame and back, of reversing arms having edge locking notches, spring pressed catch levers 13 pivoted to move edgewise of the arms and engaging said notches, one of said levers being adapted to be rocked against the spring pressure by a key for locking and unlocking said arms, and connections between said lever and the other lever for releasing the latter, substantially as described.

18. The combination with a seat frame and back, of the reversing arms D, D′ having straight intersecting central portions lying in parallel planes and stops at the opposite ends in line with the opposite edges of said straight portions, and having projections f, f' for shifting the seat, substantially as described.

19. The combination with a seat frame and back, of the reversing arms D, D′ having straight intersecting central portions lying in parallel planes and stops at the opposite ends in line with the opposite edges of said straight portions, and having projections f, f' for shifting the seat, a foot rest, and connections by which said foot rest is shifted by the projections f, f' in reversing the seat, substantially as described.

20. The combination with a seat frame and back, of the reversing arms D, D′ having straight intersecting central portions reduced to form the shoulders a, b, and a', b' at opposite ends in line with the opposite edges of said straight portions, and having seat shifting projections f, f', levers 17 actuated by said projections, foot rest F having bowls 15, inclined notches 16 in the frame, and studs 7 on the foot rest engaging levers 17, substantially as described.

542,399. INKSTAND-STOPPER. LEVI H. THOMAS, Chicago, Ill., assignor to the Safety Bottle and Ink Company, of New Jersey. Filed Oct. 8, 1894. Serial No. 525,204. (No model.)

Claim.—1. An attachment for ink bottles and the like, consisting of a stopper proper having a central aperture, a recess or groove opening downwardly and arranged around the said aperture, and a tube extending down from the outer wall of said recess or groove and having a flexible lower end provided with a suitable valve or valves, substantially as described.

2. An attachment for ink bottles and the like, consisting of a stopper proper having a central aperture, a tube extending down from said stopper and having a flexible lower valved end, and a recess or groove intermediate of the stopper and said tube.

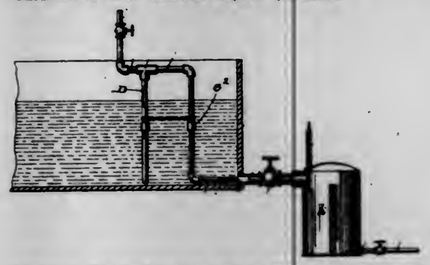


3. An attachment for bottles and other liquid or semi-liquid containing receptacles, consisting of a stopper proper having a central aperture, an annular recess or groove around said aperture, and a flexible tube projecting down from the stopper proper and having its upper portion tightly clamped between the stopper proper and the neck of the bottle, and its lower end provided with suitable valves substantially as and for the purpose described.

4. As a new article of manufacture, a liquid or semi-liquid containing receptacle having a suitable neck, a stopper proper inserted in said neck and having a central aperture and an annular recess or groove around said aperture, and a tube extending down from the outer side of said stopper proper and having a valved, flexible lower end.

5. An attachment for bottles and other liquid or semi-liquid containing receptacles, consisting of a stopper proper having a central aperture and a flexible tube projecting down from the stopper proper and having its upper position tightly clamped between the stopper proper and the neck of the receptacle, and its lower end provided with a suitable valve, substantially as and for the purpose described.

542,400. MILK-HEATER. CHARLES H. WOODARD, Kaneville, Ill. Filed Mar. 13, 1895. Serial No. 542,098. (No model.)

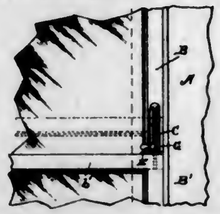


Claim.—1. The combination with the receiving vat A, provided with the opening *e*, in its lower portion, of the steam pipe B, provided with the valve *b*, and nozzle-piece B', the double elbow coupling C, secured on the piece B', the suction or supply pipe D, connected at its upper end to said coupling near the orifice in the nozzle, the discharge pipe E, secured at one of its ends to the coupling opposite the nozzle and extending to near the opening *e*, in the lower portion of the vat, the outlet pipe F, secured at one of its ends in the opening *e*, and provided with the valve *f*, the receptacle G, at the other end of the pipe F, and the thermometer *g*, located in its upper portion near the opening of said pipe, all constructed, arranged and operating substantially as and for the purpose set forth.

2. The combination with the receiving vat A, provided with the opening *e*, in its lower portion, of the steam pipe B, provided with the valve *b*, and horizontal nozzle piece B', the double elbow coupling C, secured on the piece B', the suction or supply pipe D, connected at its upper end to said coupling near the orifice in the nozzle, the discharge pipe E, secured at one of its ends to the coupling opposite the nozzle, and located horizontally above the milk line and extending to near the opening *e*, in the lower portion of the vat, but disconnected from said opening, the outlet pipe F, secured at one of its ends in the opening *e*, and provided with the valve *f*, the receptacle G, at the other end of the pipe F, and the thermometer *g*, located in its upper portion near the opening of said pipe, all constructed, arranged and operating substantially as and for the purpose set forth.

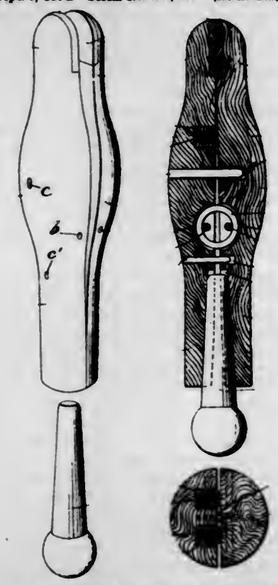
542,401. SASH-LOCK. STEPHEN J. ANDERSON, Chicago, Ill. Filed Feb. 4, 1895. Serial No. 537,191. (No model.)

Claim.—1. The combination of a guide-piece, secured to the upper sash and having a vertical slot or groove in one of its sides, said groove terminating at its lower portion in an enlargement or recess, and a projection at its bottom to fit in a groove in the lower sash, with a locking bolt or catch adjustably secured to the lower sash and adapted to operate in the slot of the guide-piece and to engage said piece, substantially as described.



2. The combination of the guide-piece C, having the hollow vertical rib c^3, provided with the extension *c*, and teeth or corrugations c^4, and the vertical slot c', and recess c^5, secured to the upper sash, with the slotted plate E, secured to the lower sash, the sliding plate E', movably secured on the plate E, and having the recess e^3, pin e', and teeth or corrugations e^4, the disk D', having the cam-groove or opening D^3, and locking bolt or catch D, and the button G, secured to the pin e', and provided with the thumb-lever *g*, and eccentrically located pin g', all constructed, arranged, and operating substantially as and for the purpose set forth.

542,402. RING-CLAMP. MOSES A. AMELEWITZ, New York, N. Y. Filed Sept. 6, 1894. Serial No. 522,258. (No model.)



Claim.—1. A ring clamp comprising two sections, a ring between said sections entering the same, pins passing through the sections within the ring, whereby the clamp is pivoted centrally and interiorly, and a conical pin at the rear adapted to force the jaws of the clamp together, substantially as shown and described.

2. A ring clamp comprising two sections having aligning recesses therein, and having an exterior annular or peripheral enlargement or bilge to form a grasp for the hand, a ring resting in both of the interior recesses, pins passing through the sections within the ring, and a conical pin at the rear adapted to force the jaws of the clamp together, substantially as shown and described.

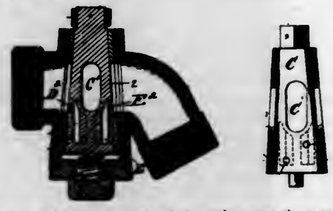
3. A ring clamp comprising two sections having aligning recesses therein where they meet, a ring resting in both of the said recesses, pins passing through the sections within the ring, guide pins at either side of the ring, secured to one of the sections and entering the other, and a conical pin at the rear adapted to force the jaws of the clamp together, substantially as shown and described.

4. A ring clamp comprising two sections each having a central enlargement or bilge upon the exterior thereof, whereby a grasp is afforded to the hand, aligning grooves in each of the sections where they meet, a ring resting within the said recesses, pins passing through the sections within the ring, guide pins at either side of the ring secured in one of the sections and projecting within the opposite section, recesses in one of the said sections rearward of the jaws of the clamp, spiral springs within the said recesses bearing against the opposite section, whereby the said jaws are normally distended, and a conical pin inserted between the sections at the rear and adapted to force the rear portions of the said sections apart and clamp the jaws together, substantially as shown and described.

542,403. PROCESS OF MAKING COLORING-MATTER FROM LOGWOOD. PETER T. AUSTEN, Brooklyn, assignor to the Wm. J. Matheson & Company, Limited, New York, N. Y. Filed Dec. 6, 1894. Serial No. 531,033. (No specimens.)

Claim.—In the art of obtaining a technically pure coloring matter from logwood, the improvement which consists in dissolving borax in hot, dilute logwood extract and cooling the same sufficiently to cause a precipitate of coloring matter to form, and separating the precipitate from the remaining liquor as described.

542,404. COMBINATION ANGLE-COCK AND WARNING-SIGNAL. WILLIAM R. BEDELL, Jackson, Mich. Filed Aug. 10, 1894. Serial No. 519,923. (No model.)



Claim.—1. The combination of the valve case, A, provided with the passages, H, and, I, communicating with an alarm, B^3, and the plug, C, provided with the opening, C', recesses, D, and, E, and holes D^3, E^3, so located in said plug that they shall form connecting passages between the recesses, D, and, E, respectively and the main passage in said case upon opposite sides of said plug, when the opening, C', is closed by the walls of said case, said plug being also provided with holes, D' E', so located in said plug that they shall form connecting passages between D, and E, and the passages, H, and I, respectively when the opening, C', is closed by the walls of said case, substantially as shown and described.

2. The combination of the valve case, A, provided with the passages, H, and, I, communicating with an alarm, B^3, and the plug, C, provided with the opening, C', recesses, D, and, E, and holes, D^3, and, E^3, so located in said plug that they shall form connecting passages between the recesses, D, and, E, respectively and the main passage in said case, upon opposite sides of said plug, when the opening, C', is closed by the walls of said case, said plug being also provided with holes, D', E', so located in said plug that they shall form connecting passages between, D, and, E, and the passages, H, and, I, respectively when the opening, C', is closed by the walls of said case, and non-return valves, H', I', opening toward the alarm, B^3, said non-return valves being located in the passages, H, and I, substantially as shown and for the purpose described.

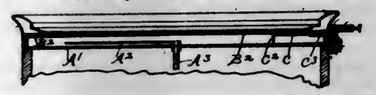
542,405. HAT-MIRROR. JAMES BEST and CHARLES J. KNOX, Belfast, Ireland. Filed Aug. 11, 1894. Serial No. 520,071. (No model.) Patented in England Feb. 21, 1894, No. 3,713.



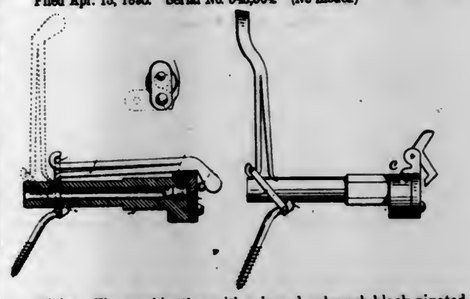
Claim.—A hat mirror comprising a frame having a series of perpendicular projections *m* on its rim, a mirror within said frame, a back plate *c* also within said frame and provided with a central enlargement and screw-threaded stud *d*, and a screw-threaded nut *e*, substantially as set forth.

542,406. ELECTRIC ALARM-GAGE. WILLIAM H. BRADT, Troy, N. Y. Filed Feb. 23, 1894. Renewed May 8, 1895. Serial No. 548,581. (No model.)

Claim.—In an electrical alarm-gage, the combination with the index, of a cap having a rotary perforated rim, a contact insulated from such rim and fixed thereon to project through the rim-aperture into the path of the index, and means for connecting the index and contact with the battery-wires, substantially as described.

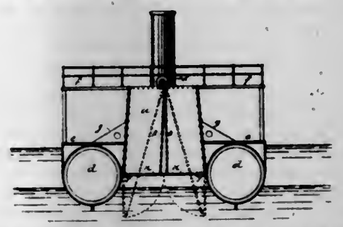


542,407. BURGLAR-ALARM. NOAH P. CHAFFEE, Athens, Pa. Filed Apr. 13, 1895. Serial No. 545,564. (No model.)



Claim.—The combination with a barrel, a breech-block pivoted thereon to open or close the breech and locking into it, a firing pin mounted in or upon said breech-block, of a main spring and firing hammer combined, bifurcated substantially as shown, one arm having a bearing upon a link around the barrel, and a hammer head integral with and created by bending the solid body of the main spring beyond its bifurcation, angularly to reach over the breech-block and engage with the firing pin, and a screw pivoted upon said link and having a head provided with a lip engaging with a recess in the barrel, for mounting the alarm upon the jamb of a casing so that when the door is opened it will trip the main spring and explode the cartridge in the barrel.

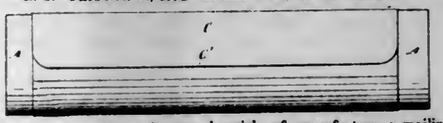
542,408. DUMPING-SCOW. DANIEL DELEHANTY, Brooklyn, N. Y. Filed Nov. 6, 1894. Serial No. 528,107. (No model.)



Claim.—1. In a dumping scow the combination of two pontons, a superstructure for carrying refuse supported by said pontons and consisting of receptacles having straight, unobstructed sides slanting from the top downward and outward, the said pontons supporting said receptacles entirely above the water when not loaded substantially as described.

2. In a dumping scow the combination of two pontons, a refuse receptacle having straight unobstructed sides slanting from the top down and outward carried thereby and having discharge openings between the said pontons and two screw propellers, one carried by each of said pontons, said refuse receptacle being supported entirely above the water when not loaded substantially as described.

542,409. MAILING-PACKAGE. EDWIN J. FLETCHER, New York, N. Y. Filed Nov. 24, 1894. Serial No. 529,795. (No model.)



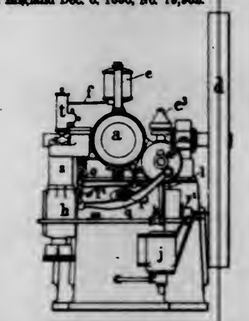
Claim.—1. As an improved article of manufacture a mailing wrapper composed of a thin veneer adapted to be rolled in the direction of the length of the grain of the wood, and an independent outside wrapper of paper having a gummed portion, said outer wrapper

being designed to receive the address and to hold the veneer in its rolled condition, substantially as shown and described.

2. As an improved article of manufacture a mailing wrapper consisting of a thin sheet of veneer adapted to be rolled in the direction of the grain of the wood and having narrow strips of veneer along the two edges which form the ends when the wrapper is rolled, to protect the ends of the leaves which it embraces, substantially as specified.

3. The combination with a plurality of leaves, of a wrapper of thin veneer of the same width as the leaves and placed between two of the latter and rolled with the same in the direction of the grain of the wood, and an independent outside wrapper of paper of less width embracing the leaves and veneer wrapper and sealed, substantially as shown and described.

542,410. LIQUID-HYDROCARBON MOTOR. SAMUEL GRIFFIN, Bath, England. Filed May 19, 1893. Serial No. 474,827. (No model.) Patented in England Dec. 6, 1890, No. 19,962.



Claim.—1. In a liquid hydro-carbon motor, the combination of a retort or heater, means for heating the same internally preparatory to starting the motor and for producing a portion of the combustible or working charge, said means consisting of a spraying-apparatus arranged at one end of the retort or heater, and the motor connected with the retort or heater, substantially as set forth.

2. In a liquid hydro-carbon motor, the combination of a retort or heater, and means for heating the same internally preparatory to starting the motor and for producing a portion of the combustible or working charge, said means consisting of a spraying-apparatus arranged at one end of the retort or heater, and an opening at the other end of the same communicating directly with the atmosphere and provided with a suitable removable closure, substantially as set forth.

3. In a liquid hydro-carbon motor, the combination of a retort or heater, provided with an inner central case and with a jacket completely encircling the same and forming an annulus adapted for the exhaust gases to pass through, means for heating the interior of the central case preparatory to starting the motor and for producing a portion of the combustible or working charge, such means consisting of a spraying-apparatus arranged at one end of the retort or heater and adapted to eject a fine spray of intimately mixed air and liquid hydro-carbon into the central case of said retort, and the motor connected with said retort, substantially as set forth.

4. In a liquid hydro-carbon motor, the combination of a retort or heater, provided with an inner central case and with a jacket surrounding the same and forming an annulus adapted for the passage of exhaust gases, an additional outer jacket or cover around the aforesaid jacket and forming a third separate chamber or space for the passage of the air used in forming the working charge, said third or outer chamber having communication at one end with one end of the chamber in the central case, a spraying-apparatus arranged at said end and adapted to eject a fine spray of intimately mixed air and liquid hydro-carbon into the central case of the retort, and the motor connected with the retort, substantially as set forth.

5. In a liquid hydro-carbon motor, the combination of a retort or heater having an interior central case provided with longitudinal corrugations all around the same, a jacket encircling the case and forming an annulus or space for the passage of the exhaust gases, means for heating the retort, and the motor connected with the retort, substantially as set forth.

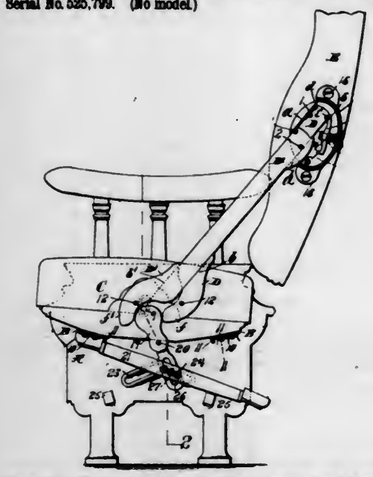
6. In a liquid hydro-carbon motor, the combination of a retort or heater having an inner central case provided with longitudinal corrugations, a jacket surrounding the case and forming a space for the passage of the exhaust gases, an additional jacket or outer cover for said jacket forming a space or annulus for the passage of air used in forming the working charge, said outer space or annulus communicating with one end of the chamber of the inner case, a spraying-apparatus arranged at said end and adapted to eject a fine spray of mixed air and liquid hydro-carbon into the inner case of said retort, and the motor connected with the retort, substantially as set forth.

7. In a liquid hydro-carbon motor, the combination of a retort or heater, said retort or heater being composed of an inner central case, a jacket surrounding said case and forming a space for the passage of exhaust gases and an additional jacket outside of the aforesaid jacket forming a space or annulus adapted for the passage of air used in forming the working charge, said outer space having communication with one end of the chamber of the central case, a spraying-apparatus located at said end and adapted to eject a fine spray of intimately mixed air and liquid hydro-carbon into the interior of said inner case, the motor, and a casing containing exhaust and charging passages, said casing being arranged between the retort or heater and the motor, the exhaust passage having communication with the space between the first-named jacket and the inner case and said charging passage communicating with the chamber of said case, substantially as set forth.

8. In a liquid hydro-carbon motor, the combination of a retort or heater, a motor connected by means of charging and exhaust passages with the retort or heater, charging and exhaust-valves arranged in said respective passages, a governor, and mechanism connected with the governor and said valves, whereby by the action of the governor the valves are rendered inoperative and remain closed when the normal velocity of the engine is exceeded, substantially as set forth.

9. In a liquid hydro-carbon motor, the combination of a retort or heater, a motor connected by means of charging and exhaust-passages with said retort or heater, charging and exhaust valves arranged in the passages, the governor, and mechanism arranged between the governor and said valves whereby by the action of the governor the valves are rendered inoperative and remain closed while the normal velocity is exceeded, said mechanism comprising cams arranged on the lay-shaft of the engine, fulcrumed levers adapted to be actuated from one end by means of said cams, contact pieces arranged respectively at the other ends of said levers and on said valves, a bell-crank or governor lever connected with the governor, and a connecting-rod or link between the contact-pieces of the exhaust valve and the said bell-crank lever, the latter being loosely connected with said link, substantially as set forth.

542,411. CAR-SEAT. JOHN S. JOHNSTON, Chicago, Ill., assignor to the Pottier & Stymus Company, New York, N. Y. Filed Oct. 13, 1894. Serial No. 525,799. (No model.)



Claim.—1. The combination with a seat frame and back, of reversing arms pivoted to the seat frame and back, and lying in parallel planes, the back pivot of the inner arm extending inwardly from said arm, and a cap on the back outside the arms in which the outer arm is pivoted, whereby each of said arms is pivoted out of the plane of movement of the other arm, substantially as described.

2. The combination with a seat frame and back, of reversing arms pivoted to the seat frame and back on opposite sides of the vertical center and lying in parallel planes, the back pivot of the inner arm extending inwardly from said arm, and a cap on the back outside the arms in which the outer arm is pivoted, whereby each of said arms is pivoted out of the plane of movement of the other arm, substantially as described.

3. The combination with a seat frame and back, of reversing arms pivoted to the seat frame and back on opposite sides of the vertical center, the portions of said arms between the seat and back lying in parallel planes and overlapping each other and being of such width as to avoid separation at their inner edges during reversing, the back pivot of the inner arm extending inwardly from said arm, and a cap on the back outside the arms in which the outer arm is pivoted, whereby each of said arms is pivoted out of the plane of movement of the other arm, substantially as described.

4. The combination with a seat frame and back, of reversing arms pivoted to the seat frame and back on opposite sides of the vertical center, the portions of said arms between the seat and back being of equal width and lying in parallel planes and one upon the other in the normal position of the back, the width of said portions being such as to avoid separation at their inner edges during reversing, the back pivot of the inner arm extending inwardly from said arm, and a cap on the back outside the arms in which the outer arm is pivoted, whereby each of said arms is pivoted out of the plane of movement of the other arm, substantially as described.

5. The combination with a seat frame and back, of reversing arms pivoted to the seat frame and back on opposite sides of the vertical center, each of said arms having stops on opposite sides of the line of intersection with the other arm adapted to arrest the movement of and support the latter, the portions of said arms between the seat and back lying in parallel planes and overlapping each other and being of such width as to avoid separation at their inner edges during reversing, the back pivot of the inner arm extending inwardly from said arm, and a cap on the back outside the arms in which the outer arm is pivoted, whereby each of said arms is pivoted out of the plane of movement of the other arm, substantially as described.

6. The combination with a seat frame and back, of reversing arms pivoted to the seat frame and back on opposite sides of the vertical center, the portions of said arms above the seat lying in parallel planes and being straight and of equal width, said straight portions overlapping and being of such width as to avoid separation at their inner edges during reversing, each of said arms having stops at opposite ends for the other arm in line with the opposite edges of said straight portions, the back pivot of the inner arm extending inwardly from said arm, and a cap on the back outside the arms in which the outer arm is pivoted, whereby each of said arms is pivoted out of the plane of movement of the other arm, substantially as described.

7. The combination with a seat frame and back, of reversing arms pivoted to the seat frame and back on opposite sides of the vertical center, each of said arms having stops on opposite sides of the line of intersection with the other arm adapted to arrest the movement of and support the latter, the portions of said arms between the seat and back lying in parallel planes and overlapping each other and being of such width as to avoid separation at their inner edges during reversing, the back pivot of the inner arm extending inwardly from said arm, a cap on the back outside the arms in which the outer arm is pivoted, whereby each of said arms is pivoted out of the plane of movement of the other arm, a foot rest, and connections for shifting said foot rest by said arms, substantially as described.

8. The combination with a seat frame and back, of reversing arms pivoted to the seat frame and back on opposite sides of the vertical center, each of said arms having stops on opposite sides of the line of intersection with the other arm adapted to arrest the movement of and support the latter, the portions of said arms between the seat and back lying in parallel planes and overlapping each other and being of such width as to avoid separation at their inner edges during reversing, the back pivot of the inner arm extending inwardly from said arm, a cap on the back outside the arms in which the outer arm is pivoted, whereby each of said arms is pivoted out of the plane of movement of the other arm, a foot rest and seat, and connections for shifting said foot rest and seat by said arms, substantially as described.

9. The combination with the seat frame and back, of reversing arms pivoted to the seat frame and back on opposite sides of the vertical center, each of said arms having stops on opposite sides of the line of intersection with the other arm adapted to arrest the movement of and support the latter, the portions of said arms between the seat and back lying in parallel planes and overlapping each other and being of such width as to avoid separation at their inner edges during reversing, the back pivot of the inner arm extending inwardly from said arm, a cap on the back outside the arms in which the outer arm is pivoted, whereby each of said arms is pivoted out of the plane of movement of the other arm, and locking devices for the arms, substantially as described.

10. The combination with a shiftable seat back, of a foot rest having rest bars at the front and rear of the seat, and connections between the back and foot rest for moving said foot rest when the back is shifted, to carry the rest bar at the front of the seat out of the way of the occupant of the seat and carry the rest bar at the rear of the seat into position ready for use, substantially as described.

11. The combination with a shiftable seat back, of a foot rest having rest bars at the front and rear of the seat, connections between the back and foot rest for moving said foot rest when the back is shifted, to carry the rest bar at the front of the seat out of the way of the occupant of the seat and carry the rest bar at the rear of the seat into position for use, and supports on the frame for the rear side of the foot rest, substantially as described.

12. The combination with a shiftable seat back, of a foot rest having rest bars at the front and rear of the seat, and connections between the back and foot rest for raising the rest bar at the front of the seat and lowering the rest bar at the rear of the seat when the back is shifted, substantially as described.

13. The combination with a shiftable seat back, of a foot rest having rest bars at the front and rear of the seat, and connections between the back and foot rest for withdrawing and raising the rest bar at the front of the seat and projecting and lowering the rest bar at the rear of the seat when the back is shifted, substantially as described.

14. The combination with a shiftable seat back, of a foot rest having side bars provided with a sliding connection with the seat frame and rest bars at the front and rear of the seat, and connections between the back and foot rest for shifting the foot rest transversely to the seat when the back is shifted, substantially as described.

15. The combination with a shiftable seat back, of a foot rest having side bars provided with a slotted sliding connection with the seat frame and rest bars at the front and rear of the seat, and connections between the back and foot rest for shifting the foot rest transversely to the seat when the back is shifted, substantially as described.

16. The combination with a seat frame and back, of a foot rest having side bars and rest bars at the front and rear of the seat, said side bars having an inclined slot connection with the seat frame, whereby one rest bar is lowered and the other raised as the foot rest is shifted transversely to the seat, and connections between the back and foot rest for shifting the foot rest transversely to the seat as the back is shifted, substantially as described.

17. The combination with a seat frame and shiftable seat back, of oscillating arms for shifting said back, a shiftable foot rest having rest bars at the front and rear of the seat, and a lever actuated by the arms and engaging the foot rest for shifting the latter when the back is shifted, substantially as described.

18. The combination with a seat frame and shiftable seat back, of oscillating arms for shifting said back, a shiftable foot rest having rest bars at the front and rear of the seat, a shiftable seat, and a lever actuated by the arms and engaging the foot rest and seat for shifting the seat and foot rest when the back is shifted, substantially as described.

19. The combination with a seat frame and shiftable seat back, of a pair of oscillating arms pivoted to the seat frame at one end of the back for shifting the latter, a shiftable seat, and a lever engaging the seat for shifting the latter and actuated in one direction by one of the arms and in the opposite direction by the other arm, substantially as described.

20. The combination with a seat frame and shiftable seat back and seat, of a pair of oscillating arms at one end of the back for shifting said back, and having extensions below their frame pivots a lever mounted on the frame between said extensions, and a pin and slot connection between said seat and lever, substantially as described.

21. The combination with a seat frame and back, of back-shifting arms, a foot rest having side bars 21 and rest bars 22, a sliding slotted connection between the foot rest and frame, and connections between said foot rest and the back shifting arms, substantially as described.

22. The combination with a seat frame and back, of back shifting arms, a foot rest having side bars 21 and rest bars 22, a sliding slotted connection between the foot rest and frame, connections between said foot rest and the back shifting arms, and supports 25 on the frame for the rear side of the foot rest, substantially as described.

23. The combination with a seat frame and back, of back shifting arms, a foot rest having side bars 21 and rest bars 22, double inclined slots 23 and lugs 24 forming a sliding slotted connection between the foot rest and frame, and connections between said foot rest and back shifting arms, substantially as described.

24. The combination with a seat frame and back, of back shifting arms, a foot rest having side bars 21 and rest bars 22, double inclined slots 23 and lugs 24 forming a sliding slotted connection between the foot rest and frame, and levers 19 actuated by the back shifting arms and connected with the foot rest, substantially as described.

25. The combination with a seat frame and back, of back shifting arms having extensions *f*, *f'*, a foot rest having side bars 21 and rest bars 22, double inclined slots 23 and lugs 24 forming a sliding slotted connection between the foot rest and frame, and levers 19 mounted between said extensions *f*, *f'*, and connected with the foot rest, substantially as described.

26. The combination with a seat frame and back, of back shift-

ing arms having extensions *f*, *f'*, a foot rest having side bars 21 and rest bars 22, double inclined slots 23 and lugs 24 forming a sliding slotted connection between the foot rest and frame, sliding seat C, and levers 19 mounted between said extensions *f*, *f'*, and connected with the foot rest and seat, substantially as described.

27. The combination with seat frame A having metal sills B provided with flanges 11, of the shiftable foot rest having metal side bars 21 and wooden rest bars 22 engaging respectively said flanges and sills, substantially as described.

28. The combination with a seat frame and back, of back reversing arms pivoted to the seat frame and back on opposite sides of the vertical center, and having extensions *f*, *f'* below the frame pivots, a foot rest having side bars 21 and rest bars 22, a sliding connection between said foot rest and frame, and levers 19 mounted between said extensions and connected with the foot rest, substantially as described.

29. The combination with a seat frame and back, of back reversing arms pivoted to the seat frame and back on opposite sides of the vertical center, and having extensions *f*, *f'* below the frame pivots, a foot rest having side bars 21 and rest bars 22, double inclined slots 23 and lugs 24 forming a sliding connection between said foot rest and frame, and levers 19 mounted between said extensions and connected with the foot rest, substantially as described.

30. The combination with a seat frame and back, of reversing arms having edge locking notches *c*, *c'*, and spring pressed bar 17 sliding edgewise of the arms and having locking catches 6 at opposite ends, substantially as described.

31. The combination with a seat frame and back, of revising arms having locking notches *c*, *c'*, and holding notches *d*, *d'*, and sliding spring pressed bar 17 having locking catches 6 at opposite ends, substantially as described.

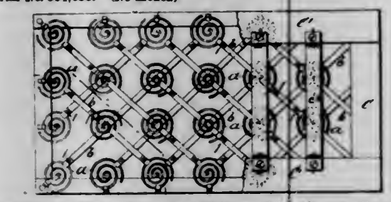
32. The combination with a seat frame, and back, of reversing arms having locking notches *c*, *c'* and holding notches *d*, *d'*, sliding spring pressed bar 17 having locking catches 6 at opposite ends, and stem 18 constructed to be engaged by a key for withdrawing the bar, substantially as described.

33. The combination with a seat frame and back, of reversing arms D, D' having locking notches *c*, *c'*, cap 14 on the back covering the ends of the arms, and having flange 15, and sliding spring pressed bar 17 having locking catches 6 at opposite ends and stem 18 mounted in said flange and constructed to be engaged by a key for withdrawing the bar, substantially as described.

34. The combination with a seat frame, of a foot rest having side bars 21 and rest bars 22, and double inclined slots 23 and lugs 24 forming a sliding slotted connection between the foot rest and frame, substantially as described.

35. The combination with a seat frame and back, of reversing arms D, D', cap 14 on the back in which the outer arm is pivoted, and shoulders *a*, *a'* on the arms closing the front of said cap, substantially as described.

542,412. SEAT. JOHN S. JOHNSTON, New York, N. Y., assignor to the Pottier & Stymus Company, same place. Filed May 31, 1895. Serial No. 551,058. (No model.)



Claim.—1. The combination with a cushion frame, of series of coil springs having one end detachably connected to the frame, and spring plates connecting two edge springs on opposite sides of the cushion and crossing the inside springs between said edge springs, said plates being provided with loops in which the top coils of the springs are detachably held, substantially as described.

2. The combination with a cushion frame, of series of coil springs having one end detachably connected to the frame and two sets of diagonal spring plates extending at right angles to each other and connecting two edge springs on opposite sides of the cushion and crossing the inside springs between said edge springs, said plates being provided with loops in which the top coils of the springs are detachably held, substantially as described.

3. The combination with a cushion frame, of coil springs having one end detachably connected to the frame, edge spring plates detachably secured to and supported by the outside springs and secured together at the corners to form a frame extending about the cushion, and spring plates connecting the tops of the springs together to form a single spring body and detachably secured to the springs, substantially as described.

4. The combination with a cushion frame, of coil springs arranged in rows longitudinally of and transversely to the frame and having one end detachably connected to the frame, edge spring plates detachably secured to and supported by the outside springs and secured together at the corners to form a frame extending about the cushion, and diagonal spring plates connecting the tops of the springs together and detachably secured to the springs and crossing centrally of sets of four springs, substantially as described.

5. The combination with a cushion frame, of coil springs having one end straight and entering openings in the frame, edge spring plates secured to and supported by the outside springs and secured together at the corners to form a frame extending about the cushion, loops on the edge plates in which the coils of the springs are detachably held, and spring plates connecting the tops of the springs together to form a single spring body and provided with loops in which the coils of the springs are detachably held, substantially as described.

6. The combination with a cushion frame, of coil springs arranged in rows longitudinally of and transversely to the frame and having one end straight and entering openings in the frame, edge spring plates secured to and supported by the outside springs and secured together at the corners to form a frame extending about the cushion, loops in the edge plates in which the coils of the springs are detachably held, and diagonal spring plates connecting the tops of the springs together and crossing centrally of sets of four springs and provided with loops in which the coils of the springs are detachably held, substantially as described.

7. The combination with a cushion frame, of springs *a* detachably mounted on the frame, edge spring plates *c* having loops 1 receiving the top coils of the edge springs, and two sets of diagonal spring plates *b* extending at right angles to each other and connecting two edge springs on opposite sides of the cushion and having loops 1 receiving the top coils of the springs, substantially as described.

8. The combination with a cushion frame, of springs *a* having straight ends entering openings in the frame, edge spring plates *c* having loops 1 receiving the top coils of the edge springs, and two sets of diagonal spring plates *b* extending at right angles to each other and connecting two edge springs on opposite sides of the cushion and having loops 1 receiving the top coils of the springs, substantially as described.

9. A cushion having a spring edge formed by a row of coiled springs in combination with spring rods on opposite sides of the springs to which the top coils of the springs are connected at opposite sides, said spring rods extending longitudinally of the cushion and having their ends supported directly on the frame and held in place thereon by means permitting the rods to move longitudinally, substantially as described.

10. A seat back having independent spring sections arranged longitudinaly of the back and forming respectively a raised vertical portion dividing the seat into separate chair sections, and backs for the separate chair sections, and having a top spring edge formed by a row of coil springs having their top coils connected at opposite sides to spring rods extending longitudinally of the back and having their ends supported on the frame, substantially as described.

11. A seat back having independent spring sections arranged longitudinally of the back and forming respectively a raised vertical portion dividing the seat into separate chair sections, and backs for the separate chair sections, and having top and bottom spring edges formed by rows of coil springs having their top coils connected at opposite sides to spring rods extending longitudinally of the back and having their ends supported on the frame, substantially as described.

12. A seat back having independent spring sections arranged longitudinally of the back and forming respectively a raised vertical portion dividing the seat into separate chair sections, and backs for the separate chair sections, and having a top spring edge formed by a row of coil springs having their top coils connected at opposite sides to spring rods extending longitudinally of the back and having their ends supported on the frame, textile material covering the spring body thus formed and having its edges secured to the frame, and upholstering supported on the textile material, substantially as described.

13. A seat back having independent spring sections arranged longitudinally of the back and forming respectively a raised vertical portion dividing the seat into separate chair sections, and backs for the separate chair sections, and having top and bottom spring edges formed by rows of coil springs having their top coils connected at opposite sides to spring rods extending longitudinally of the back and having their ends supported on the frame, textile material covering the spring body thus formed and having its edges secured to the frame, and upholstering supported on the textile material, substantially as described.

14. The combination with the bars E, E, of the edge row of coil springs *g*, spring rods *h* on opposite sides of the springs extending from bar to bar and having a sliding connection to the bars at their opposite ends, and clips 4 connecting the opposite sides of the springs to the rods, substantially as described.

15. The combination with the side and end bars of a seat back, of edge rows of springs *g* at top and bottom of the back, spring rods *h* on opposite sides of the springs extending between the end bars and having their ends supported thereon, clips 4 connecting the opposite sides of the springs to the rods, and a spring body between the edge springs, substantially as described.

16. The combination with a seat back frame, of a transverse row of springs *i* forming a raised spring section dividing the seat back, springs *m* forming independent back sections on opposite sides of the dividing section, rows of springs *l* outside the back sections forming spring side edges for the back sections, spring rods *k* inclosing each of said spring sections, and clips 4 connecting the springs to the rods, substantially as described.

17. The combination with a seat back frame, of a transverse row of springs *i* forming a raised spring section dividing the seat back springs *m* forming independent back sections on opposite sides of the dividing section, rows of springs *l* outside the back sections forming spring side edges for the back sections, spring rods *k* inclosing each of said spring sections, clips 4 connecting the springs to the rods, and spring plates *n* in each back section connecting the opposite sides of the section and secured together at their intersection, substantially as described.

18. The combination with a seat back frame, of a transverse row of springs *i* forming a raised sprng section dividing the seat back, springs *m* forming independent back sections on opposite sides of the dividing section, rows of springs *l* outside the back sections forming spring side edges for the back sections, spring rods *k* inclosing each of said spring sections, clips 4 connecting the springs to the rods, and strips *o* connecting the rods to the frame and holding the sections under tension, substantially as described.

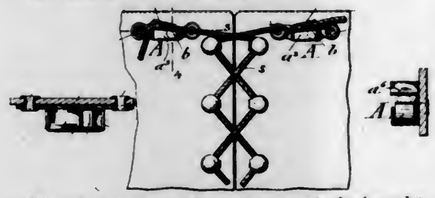
19. The combination with a seat back frame, of a transverse row of springs *i* forming a raised spring section dividing the seat back, springs *m* forming independent back sections on opposite sides of the dividing section, rows of springs *l* outside the back sections forming spring side edges for the back sections, a longitudinal row of springs forming an independent top spring edge, and a covering of flexible material extending over the spring sections and edge and secured to the frame, substantially as described.

20. The combination with a seat back frame, of a transverse row of springs *i* forming a raised spring section dividing the seat back, springs *m* forming independent back sections on opposite sides of the dividing section, rows of springs *l* outside the back sections forming spring side edges for the back sections, longitudinal rows of springs forming independent top and bottom spring edges, and a covering of flexible material extending over the spring sections and edges and secured to the frame, substantially as described.

21. The combination with a seat back frame, of a transverse row of springs *i* forming a raised spring section dividing the seat back, springs *m* forming independent back sections on opposite sides of the dividing section, rows of springs *l* outside the back sections forming spring side edges for the back sections, longitudinal rows of springs *g* at top and bottom of the back forming spring edges, rods *h* extending between the end bars of the frame and having their ends supported thereon, and clips 4 connecting the springs *g* to the rods, substantially as described.

22. The combination with a seat back frame, of a transverse row of springs *i* forming a raised spring section dividing the seat back, springs *m* forming independent back sections on opposite sides of the dividing section, rows of springs *l* outside the back sections forming spring side edges for the back sections, spring rods *k* inclosing each of said spring sections, clips 4 connecting the springs to the rods, longitudinal rows of springs *g* at top and bottom of the back forming spring edges, rods *h* extending between the end bars of the frame and having their ends supported thereon, and clips 4 connecting the springs *g* to the rods, substantially as described.

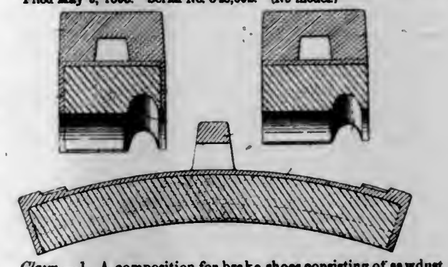
542,413. SHOE-STRING FASTENER. JACOB KASSCHAU, New York, N. Y., assignor to Rousseau & Co., same place. Filed Nov. 20, 1894. Serial No. 529,376. (No model.)



Claim.—1. A shoe-string fastener, composed of a base-plate, a box-shaped portion projecting from the lower part of the base-plate, said box-shaped portion being higher at one end than at the other, a bent-up flange above the box-shaped portion, converging toward the lower end of the same, a roller placed in the box-shaped portion, and being of such diameter that it is prevented from passing out of the space between the box-shaped portion and the converging flange, and means for attaching the base-plate to the shoe-upper, substantially as set forth.

2. A shoe-string fastener, composed of a base-plate, provided with eyes at its ends, means for fastening said eye-shaped ends to the upper, a box-shaped portion projecting from the lower part of said base-plate, said box-shaped portion being higher at the outer end than at the end near the string, a bent-up converging flange above the box-shaped portion, converging toward the lower end of said box-shaped portion, and a roller placed in said box-shaped portion and being of such diameter that it is prevented from passing out from the space between the box-shaped portion and the converging flange, substantially as set forth.

542,414. BRAKE-SHOE. JOHN J. KINZER, Jr., Pittsburg, Pa. Filed May 9, 1895. Serial No. 548,692. (No model.)



Claim.—1. A composition for brake shoes consisting of sawdust, comminuted iron, asbestos, plumbago, resin and a binder, substantially as set forth.

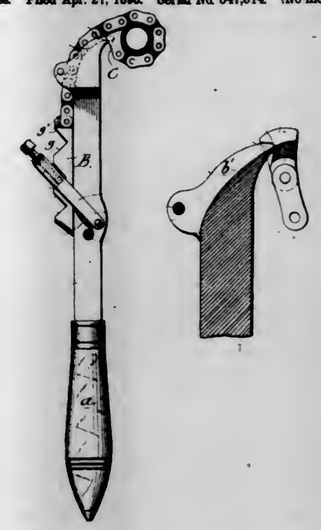
2. A composition for brake shoes consisting of sawdust, comminuted iron, asbestos, plumbago, resin and linseed oil, substantially as set forth.

542,415. HOOK AND STUD FOR SHOES. ALBERT LATHAM, Springfield, Mass. Filed Apr. 29, 1893. Serial No. 472,362. (No model.)



Claim.—A shoe stud or hook having an outwardly projecting annular flange *c* and an inturned annular flange *c'* and a plastic covering within which said flanges are completely embedded substantially as shown.

542,416. PIPE-WRENCH. LAWRENCE L. LATTER, Falmouth, Mass. Filed Apr. 27, 1895. Serial No. 547,314. (No model.)



Claim.—1. In a chain wrench, the combination, of a stock having a head portion provided with side flanges and an intermediate curved portion, said head being extended to one side of the stock to form a jaw, and a chain having a terminal link provided with recesses to receive the said jaw whereby the chain is locked to the stock.

2. In a chain wrench, the combination, of a handle or stock having a curved channeled head provided with a jaw which projects to one side of the plane of its rear face, and a chain fitting the channel of the head and provided with a terminal link having recesses adapted to receive the jaw whereby the chain is locked to the handle or stock.

3. In a chain wrench, a stock having separated side flanges and an intermediate curved portion forming a channeled head, said flanges terminating in projecting points, and a chain fitted in the channel formed between said flanges, having a terminal link consisting of a body portion and side flanges said flanges being thickened at their outer ends to form recesses at their bases adapted to receive said points, and said body portion between the thickened flanges forming a continuation of the curved portion of the head when the link is locked to the latter.

4. In a pipe wrench, the combination, of a stock having a curved channeled head terminating in a jaw, and a chain fitted in the channel of the head, having a terminal link with recesses to receive said jaw, said link having the free end forming a continuation of the channeled head of the stock and adapted to grip the pipe.

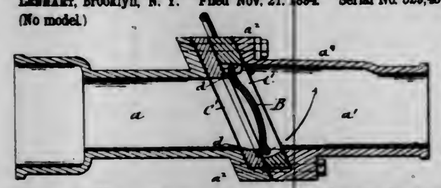
5. In a pipe wrench, a stock having a head provided with a jaw, a chain adapted to surround the pipe, and to be locked to said head, a block pivotally secured to said chain, and provided with an inclined plane or surface, and means engaging said block to effect an accurate adjustment of the chain upon the pipe.

6. In a pipe wrench, the combination, of a stock or handle and a chain adapted to surround and grip the pipe said chain having a block secured to one end and provided with grooves or notches forming cam surfaces, a pivoted yoke on the stock, inclosing the block, and a screw passing through the yoke and engaging the cam surfaces to accurately adjust the chain.

7. In a pipe wrench, the combination, of a stock or handle having a channeled head provided with lugs or ears, a chain mounted in said head, means for gripping the pipe, means for securing and adjusting the chain, and a removable bolt or pin passing through said lugs or ears whereby the chain may be readily removed and another substituted.

8. In chain wrench, the combination, with a stock and a chain adapted to operate with the same to grip a pipe, of a bar or piece on said chain adapted to lie against the face of the stock, and provided with inclined or cam surfaces, a bifurcated yoke pivoted to the stock and a screw passing through the head of the same so that its free end may operate upon the cam surfaces of the block, to adjust the block along the stock and adjust the grip of the chain upon the pipe, and springs bearing against the yoke to hold it yieldingly in position.

542,417. BACKWATER AND SEWER-GAS TRAP. PHILIP F. LEHBART, Brooklyn, N. Y. Filed Nov. 21, 1894. Serial No. 529,439. (No model.)

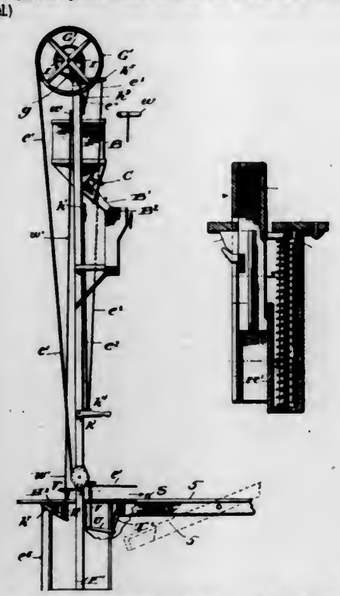


Claim.—1. The combination of a valve-casing, formed of an inner and an outer pipe-section, said pipe-sections being provided with exterior, angular flanges forming a guide-box open at the upper end, bolts for connecting said flanges, and a valve-frame inserted into the open top-part of the guide-box and provided with a valve-seat and with a valve hinged to the upper part of the frame, substantially as set forth.

2. The combination of a valve-casing, formed of an inner and an outer pipe-section, said pipe-sections being provided with exterior, angular flanges forming a guide-box, bolts for connecting said flanges, and a valve-frame inserted into the open top-part of the guide-box and formed of two sections, the inner section being provided with a valve-seat and the outer section with a valve which is hinged to its upper part, substantially as set forth.

3. The combination of a valve-casing, composed of an inner and outer pipe-section united at a suitable angle of inclination to the longitudinal axis of the casing, said pipe-sections being provided with inclined angular flanges abutting at the sides and bottom and being open at the top, bolts for connecting said flanges, a valve-frame guided by said inclined flanges, and composed of two sections, one section being of the same interior diameter as the inner pipe-section of the valve-casing, while the outer section is in line with the interior surface of the enlarged outer pipe-section of the valve-casing, and a valve hinged to the upper part of the outer section of the valve-frame and adapted to swing in the enlarged upper part of the outer pipe-section, substantially as set forth.

542,418. GRAIN-ELEVATOR. WILLIAM W. LOCKWOOD, Winfield, Kans., assignor to the Lockwood Scale and Elevator Manufacturing Company, same place. Filed Nov. 26, 1894. Serial No. 530,038. (No model.)



Claim.—1. In an elevator, the combination with the hoisting drum, means for driving the same, the spiral tracks, means whereby said tracks are driven by the backward rotation of said drum, a brake adapted to arrest the rotation of said drum, and means whereby said brake is applied by the rotation of the said tracks, substantially as shown and described.

2. In an elevator, the combination with the hoisting drum, means for driving the same, the beveled geared wheel G^7, the clutch dogs Q carried by said wheel and adapted to clutch the same to the horizontal drum in the backward rotation of said drum, the spiral tracks driven from said wheel G^7, the governing mechanism operated by said tracks and means to arrest the backward movement of said hoisting drum operated by said governing mechanism, substantially as shown and described.

3. In an elevator the combination with the hoisting drum means for driving the same, the bevel geared wheel G^7, the clutch dogs Q carried by said wheel and adapted to clutch the same to the hoisting drum in the backward rotation of the said drum, the spiral tracks driven from said wheel G^7, the governing mechanism operated by said tracks, the lever P operated by said governing mechanism and designed to actuate mechanism to arrest the backward motion of the said hoisting drum, substantially as shown and described.

4. In an elevator the combination with the hoisting drum means for driving the same, the bevel geared wheel G^7, means for clutching the hoisting drum in the backward rotation of said drum, a vertical shaft L', carrying a bevel wheel designed to mesh with teeth on the said wheel G^7, a casting j keyed to said shaft, and carrying a plurality of spirally inclined tracks, governing mechanism actuated by said tracks, braking mechanism for arresting the backward revolution of said hoisting drum at regular intervals, operated by said governing mechanism, substantially as shown and described.

5. The casting R combined with the vertical guides R', the top plate R and the spring casing R^4, the block slidable in said guides, and adapted to be depressed by contact with a vehicle wheel when moving in one direction, and to be thrown against the top plate by contact with the wheel in the other direction, so as to prevent it being depressed, a spring held in the casing R^4 to elevate said block when depressed, and means to prevent displacement of said block by said spring, substantially as shown and described.

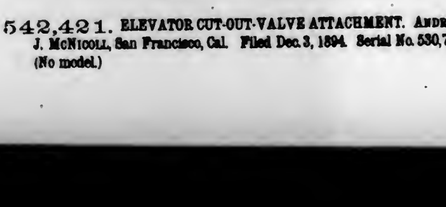
6. In combination with a tilting platform, means to scotch the wheels of a vehicle on said platform, said means comprising the casting R, secured to the said platform, a block vertically slidable in said casting and adapted to be depressed by contact with the wheel of said vehicle when driven on said platform, and to be prevented from being depressed when said wheel comes in contact therewith, when said wheel is backed on said platform, and a spring to actuate said block, substantially as shown and described.

7. In combination with a tilting platform of an elevator, the casting 8 having prongs as described and mounted on a vertical post S', the spring S^3, the integral lug S^4 bearing against the integral lug R^3 on the casting R, the said projecting portion S adapted to be depressed only when pressure is applied from the side carrying the lug R^3, substantially as shown and described.

8. In combination a casting J held to the top of an upright post a winding drum shaft mounted in said casting, the clutch dogs I pivoted to integral projections of said casting, the rim G^2 and springs for holding said clutch dogs against the inner periphery of said rim, and means for supporting the free ends of said dogs and for releasing one of the said dogs, substantially as shown and described.

9. In combination, a casting J, held to an upright post a winding drum shaft mounted in said casting, the clutch dogs I pivoted to integral portions of said casting, the bar A^4 pivoted near its longitudinal center to an upwardly extending portion of said casting and having link connection with the free ends of said dogs I, the winding drum G' and rim G^2 secured thereto and means for releasing one of the said dogs, substantially as shown and described.

542,419. PLASTERER'S HAWK. JOHN I. LOVE, Medford, Mass. Filed Dec. 14, 1894. Serial No. 531,789. (No model.)

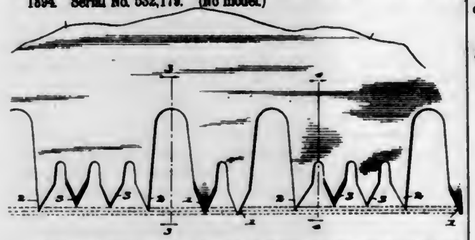


Claim.—1. A plasterer's hawk, having a plate comprising a plurality of members hinged to enable them to be folded, one toward another, and a handle adapted to be secured to said plate in a line perpendicular to the plane of the plate, for transportation, substantially as described.

2. A plasterer's hawk consisting of a plate comprising two members hinged one to the other and provided each with a threaded shank member adapted to abut when the two plate members are turned into working position and thereby form a threaded shank, and a removable handle threaded to engage said threaded shanks and to hold said members in working position, substantially as described.

3. A plasterer's hawk consisting of a plate comprising two members hinged one to the other and provided each with a tapering threaded shank member adapted to abut when the two plate members are turned into working position and thereby form a conical or tapering threaded shank; and a removable handle threaded to engage said threaded shank, and when screwed thereupon act through the said taper to draw the members into and hold the same in working position, substantially as described.

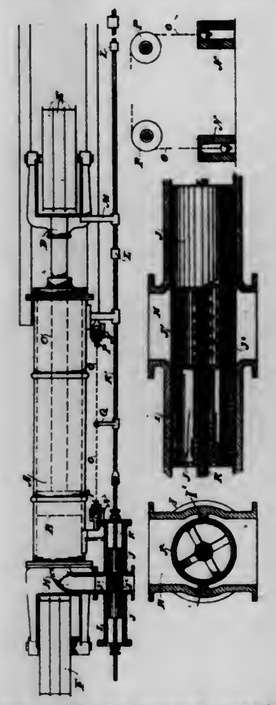
542,420. CROSSCUT-SAW. JOHN W. MORRIS, Indianapolis, Ind., assignor of one-half to Charles S. Bronson, same place. Filed Dec. 18, 1894. Serial No. 532,179. (No model.)



Claim.—A cross-cut saw having primary cutting teeth with little or no set, shorter secondary cutting teeth provided with set, and clearing teeth of intermediate length and interposed between said primary and secondary cutting teeth, substantially as set forth.

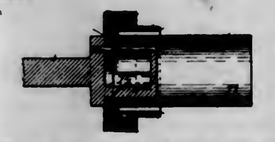
542,421. ELEVATOR CUT-OUT-VALVE ATTACHMENT. ANDREW J. MCNICOLL, San Francisco, Cal. Filed Dec. 3, 1894. Serial No. 530,732. (No model.)

Claim.—1. An elevator cut out valve attachment, consisting of a cylindrical valve chamber with closed ends and stuffing boxes for the passage of a valve rod, a valve fixed to said rod and movable loosely in said chamber parallel with the main hydraulic cylinder, and comprising cylindrical end portions normally open at both ends for the free passage of water through the valve whereby the valve is balanced, and an intermediate port normally corresponding in position with the transverse passage made through the valve chamber and connecting the main cylinder with the source of supply and controlling valve, an extension of the valve rod having fixed collars and an arm fixed to the piston rod cross head adapted to strike the collars and move the valve in the same direction with the piston and without intermediate levers, and means connected with the valve rod for returning the valve to its normal position when the main supply valve is open.



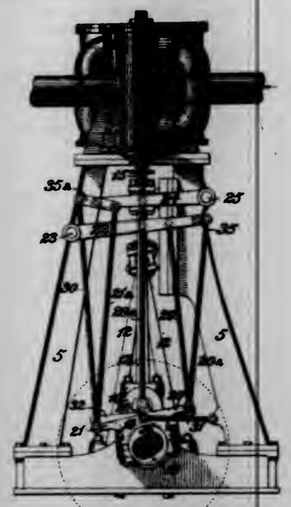
2. An elevator cut out valve attachment, consisting of a valve moving loosely in a valve chamber parallel with the main hydraulic cylinder and comprising cylindrical end portions normally open at both ends for the free passage of water through the valve whereby the valve is balanced, and an intermediate port normally corresponding in position with the transverse passage made through the valve chamber and connecting the main cylinder with the source of supply and controlling valve, a stem or rod connected with the valve and means whereby it is actuated by the movement of the cylinder cross head.

542,422. METHOD OF MAKING SEAMLESS PLATED WIRE. EDWARD NELSON, Providence, R. I. Filed Apr. 3, 1895. Serial No. 544,279. (No specimens.)



Claim.—The method herein described for making seamless plated wire, the same consisting in forming a disk or plated sheet-metal into a cup, the plated surface being on the inside, elongating the cup into a tube closed at one end, cleaning the outside of the tube with acid, covering the same with flux, covering the outer surface with liquid solder, drawing the solder-covered tube through a die to even the solder, turning the tube so as to bring the solder-covered surface on the inside, drawing the tube over the cleaned and flux-covered core and the so-formed ingot into wire, as described.

542,423. VALVE-GEAR. FRANCIS M. RITES, Pittsburg, Pa. Filed Oct. 16, 1894. Serial No. 526,041. (No model.)



Claim.—1. The combination of a plurality of cylinders, pistons fitting said cylinders and coupled to cranks set angularly upon a shaft, an eccentric, a frame or link rigidly connected to the strap of the eccentric, and constrained to move in a direction at right angles to its length, and independent connections from said link or frame to the valves of the cylinders, substantially as set forth.

2. The combination of a plurality of cylinders, pistons fitting said cylinders and coupled to cranks set at angles to each other, an eccentric, a link or frame formed on or rigidly connected to the strap of the eccentric, a guide controlling the direction of movement of the link or frame, and connections from the link or frame to the valves of the cylinders, substantially as set forth.

3. The combination of a plurality of cylinders, pistons fitting said cylinders, and coupled to cranks set at angles to each other, an eccentric, an eccentric strap, and substantially parallel connections between the eccentric strap and the valves of the cylinders, substantially as set forth.

4. The combination of a plurality of cylinders, pistons fitting said cylinders, and coupled to cranks set at angles to each other, an eccentric, an eccentric strap, a link or frame rigidly united to the eccentric strap, independent connections between the link or frame and the distributing valves, and a guide which is connected to the link or frame and to a stationary part of the engine, substantially as set forth.

5. The combination of a plurality of cylinders, pistons fitting said cylinders and coupled to a shaft so as to have relatively varying movements such as are imparted by angularly set cranks, an eccentric, a frame or link rigidly connected to the strap of the eccentric, and constrained to move in a direction at right angles to its length, and independent connections from said link or frame to the valves of the cylinders, substantially as set forth.

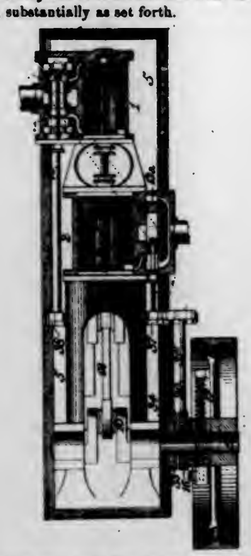
6. The combination, with a plurality of cylinders and pistons fitting said cylinders, of a link or frame constrained to move at right angles to its length, and independent connections between the valves of the several cylinders and the link or frame at such points that the relative movements of each piston and its valve will be substantially similar throughout the series, for the purpose of effecting similar distributions of steam to the several cylinders, substantially as set forth.

542,424. VALVE-GEAR. FRANCIS M. RITES, Pittsburg, Pa. Filed Oct. 16, 1894. Serial No. 526,042. (No model.)

Claim.—1. A valve gear for operating two or more valves and adapted to be adjusted so as to effect variations in the operations of the valves, and a governing device controlling the adjustment of the valve gear to effect relative differential variations in the operations of the valves, substantially as set forth.

2. The combination, with a fixed eccentric, of an adjustable eccentric, a valve operated by the adjustable eccentric, and a valve connected to and operated by both the fixed and adjustable eccentrics, substantially as set forth.

3. The combination, with two separate, or independent, valves, of a fixed eccentric, an adjustable eccentric, connections from one of the valves to the adjustable eccentric and from the other valve to both eccentrics, substantially as set forth.



4. The combination with two or more cylinders, of valves for each of the cylinders, a fixed eccentric and an adjustable eccentric, connections from the adjustable eccentric to the valve or valves of one of the cylinders, and connections from the fixed and adjustable eccentrics to the valve or valves of the other cylinders, substantially as set forth.

5. The combination, substantially as set forth, of an adjustable eccentric, a fixed eccentric, a link or frame connecting the rods of said eccentrics, a distribution valve mechanism connected to the link or frame or to the adjustable eccentric, and a distribution valve mechanism independently connected to the link or frame.

6. The combination, substantially as set forth, of an adjustable eccentric, a fixed eccentric, a link or frame connecting system actuated by the rods of said eccentrics, two or more distribution valve mechanisms, and connections through which the movement of the adjustable eccentric is transmitted to one of said valve mechanisms, and a resultant of the movement of the adjustable and the fixed eccentric is transmitted, through the link or frame connecting system, to another one or more of said valve mechanisms.

7. The combination, substantially as set forth, of an adjustable eccentric, a fixed eccentric, a link or frame connecting the rods of said eccentrics, a distribution valve mechanism connected to the link or frame or to the adjustable eccentric, a distribution valve mechanism independently connected to the link or frame, and a governor controlling the adjustable eccentric.

8. The combination, substantially as set forth, of an adjustable eccentric, a fixed eccentric, a governor controlling the adjustable eccentric, two or more fluid pressure cylinders, valve mechanisms independently controlling the distribution of said cylinders, and connections through which the movement of the adjustable eccentric is transmitted to one of said valve mechanisms, and a resultant of the movement of the adjustable and the fixed eccentric is transmitted to another one or more of said valve mechanisms.

9. The combination, substantially as set forth, of an adjustable eccentric, a fixed eccentric, a link or frame connecting system actuated by the rods of said eccentrics, and two distribution valve mechanisms connected to different points on the link or frame connecting system.

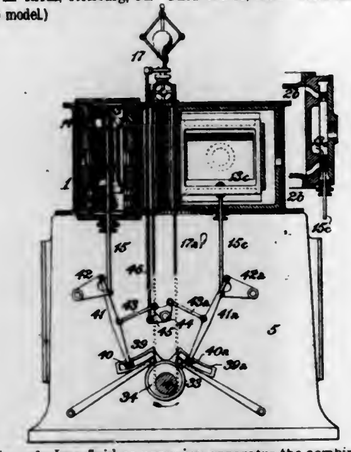
10. The combination, substantially as set forth, of an adjustable eccentric, a fixed eccentric, a link or frame connecting system actuated by the rods of said eccentrics, a governor controlling the adjustable eccentric, and two distribution valve mechanisms connected to different points on the link or frame connecting system.

11. The combination, substantially as set forth, of an adjustable eccentric, a fixed eccentric, a link or frame connecting the rods of said eccentrics, a distribution valve mechanism connected to the adjustable eccentric, and a distribution valve mechanism connected to the link or frame.

12. The combination, with two or more eccentrics, of two or more valves operated by the eccentrics, and a governor connected to and controlling the adjustment of one of the eccentrics, and thereby adapted to effect variations in the operation of the valves, substantially as set forth.

13. The combination, with an adjustable eccentric and one or more fixed eccentrics, of two or more valves operated by the eccentrics, and a governor connected to and controlling the adjustable eccentric and adapted by its movement to effect variations in the operation of the valves, substantially as set forth.

542,425. MEANS FOR ELASTIC-FLUID COMPRESSION. FRANCIS M. RITES, Pittsburg, Pa. Filed Oct. 16, 1894. Serial No. 526,043. (No model.)



Claim.—1. In a fluid compressing apparatus the combination of a compressor, a motor for actuating the compressor, and a governing device controlling both the motor and the discharge of fluid from the compressor, substantially as set forth.

2. In a fluid compressing apparatus, the combination of a compressor, a motor for actuating the compressor, and a governing device controlling simultaneously both the motor and the discharge of fluid from the compressor, substantially as set forth.

3. In a fluid compressing apparatus, the combination of a compressor, a fluid motor for actuating the compressor, and a governing device controlling both the supply of fluid to the motor and the discharge of fluid from the compressor, substantially as set forth.

4. In a fluid compressing apparatus, the combination of a compressor, a motor for actuating the compressor, and a governor actuated by the motor and controlling the discharge of fluid from the compressor, substantially as set forth.

5. In a fluid compressing apparatus, the combination of a compressor, a motor for actuating the compressor, a governor having connections for controlling the motor and the discharge from the compressor, and means for adjusting the connections, substantially as set forth.

6. In a fluid compressing apparatus, the combination of a compressor, a fluid motor for actuating the compressor, a governing device controlling the supply of fluid to the motor and the discharge from the compressor, and means for adjusting the governing device in accordance with variations in the pressure of the motor fluid, substantially as set forth.

7. In a fluid compressing apparatus, the combination of a compressor, a motor for actuating the compressor, a governor controlling the supply of fluid to the motor and discharge of fluid from the compressor, and means for automatically varying the relative effects of the governor on the supply of fluid to the motor and the discharge from the compressor, substantially as set forth.

8. In an apparatus for the compression of elastic fluid, the combination, substantially as set forth, of a motor cylinder, a compressor cylinder, valve mechanisms independently effecting distribution functions of said cylinders, and connections to said mechanisms whereby said distribution functions are coincidently and positively varied by a common controlling element.

9. In an apparatus for the compression of elastic fluid, the combination, substantially as set forth, of a motor cylinder, a compressor cylinder, valve mechanisms independently effecting distribution functions of said cylinders, a governor, and connections from said governor to the distribution valve mechanisms of the motor and compressor cylinders.

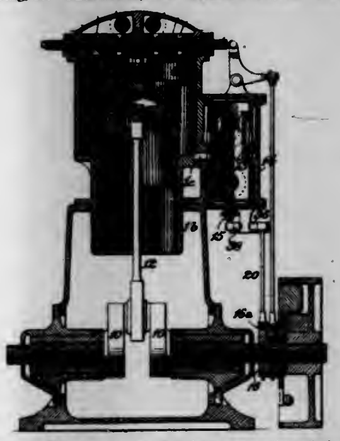
10. In an apparatus for the compression of elastic fluid, the combination, substantially as set forth, of a motor cylinder, a compressor cylinder, valve mechanisms independently effecting induction to the motor cylinder and eduction from the compressor cylinder, a governor, and connections from said governor to said valve mechanisms which operate thereon coincidently and in opposite direction.

11. In an apparatus for the compression of elastic fluid, the combination, substantially as set forth, of a motor cylinder, a compressor cylinder, valve mechanisms independently effecting induction to the motor cylinder and eduction from the compressor cylinder, a governor, connections from said governor to said valve mechanisms which operate thereon coincidently, and a fluid pressure device for maintaining a determined relation of variation of distribution functions in the motor and compressor cylinders under variations of pressure in the motor cylinder independently of variations of load.

12. In an apparatus for the compression of elastic fluid, the combination, substantially as set forth, of a motor cylinder, a compressor cylinder, valve mechanisms independently effecting induction to the motor cylinder and eduction from the compressor cylinder, a governor, connections from said governor to said valve mechanisms which operate coincidently thereon, and a fluid pressure device for reducing the speed of the moving parts as the pressure of compressed fluid approximates the maximum within any determined degree.

13. In an apparatus for the compression of elastic fluids the combination, substantially as set forth, of a motor cylinder, a compressor cylinder, valves effecting the induction function of the motor cylinder, valves effecting the eduction function of the compressor cylinder, actuating mechanism detachably connected to said valves, tripping or releasing mechanism for engaging and disengaging said valves to and from the actuating mechanism, a governor, and connections from said governor to the tripping or releasing mechanism for coincidently operating the same on both the motor and compressor cylinders.

542,426. HIGH-SPEED FLUID-COMPRESSOR. FRANCIS M. RITES, Pittsburg, Pa. Filed Oct. 16, 1894. Serial No. 526,044. (No model.)



Claim.—1. In an apparatus for the compression of elastic fluid, the combination, substantially as set forth, of a cylinder, a differential piston working therein, a valve mechanism controlling the distribution of motive fluid to and from one or more of the surfaces of said piston, a valve mechanism controlling the distribution of fluid to be compressed to and from another surface or surfaces of said piston, and a single governing mechanism connected to and controlling both of said distribution valve mechanisms.

2. In an apparatus for the compression of elastic fluid, the combination, substantially as set forth, of two cylinders of different diameters, each having a tubular extension, differential pistons, each fitting one of said cylinders and the tubular extension thereof, a valve mechanism controlling the distribution of motive fluid to and from a smaller surface of the piston of the smaller cylinder, and thence to and from a smaller surface of the piston of the larger cylinder, valve mechanisms independently controlling the induction and eduction of fluid to be compressed to and from a larger surface of the piston of the larger cylinder and thence to and from a larger surface of the piston of the smaller cylinder, and a governor connected to the motive fluid distribution valve mechanism and to the eduction valve mechanism of fluid to be compressed.

3. In an apparatus for the compression of elastic fluid, the combination, substantially as set forth, of a motor, a compressor cylinder, a valve mechanism controlling the eduction function thereof, an adjustable eccentric actuating the eduction valve mechanism, and a governor actuated by the motor and controlling said adjustable eccentric.

4. In an apparatus for the compression of elastic fluid, the combination, substantially as set forth, of a cylinder, a piston working in said cylinder and forming a division between spaces therein for the

reception of motive fluid and of fluid to be compressed, respectively, a valve mechanism controlling distribution in the motive fluid space, a valve mechanism controlling eduction from the space for fluid to be compressed, adjustable eccentrics, each actuating one of said valve mechanisms, and a governor connected to and controlling both of said eccentrics.

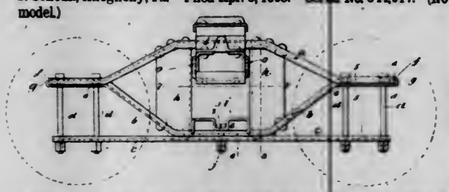
5. In an apparatus for the compression of elastic fluid the combination of a motor, a compressor, a valve mechanism for the motor, a valve mechanism for the compressor, two adjustable eccentrics, one having connections to the valve mechanism of the motor and the other having connections to the valve mechanism of the compressor, and means connecting the eccentrics whereby the adjustment of one of the eccentrics, by a governor, or otherwise, for the purpose of varying the functions of the valve mechanism to which it is connected, effects an inverse adjustment of the other eccentric, for the purpose of varying the functions of the valve mechanism to which it is connected, substantially as set forth.

6. An adjustable valve operating device comprising two connected eccentrics having connections for operating two separate valve mechanisms and adapted to be adjusted on a shaft so that any variation in the adjustment of one of the eccentrics and the valve mechanism operated thereby will cause an opposite variation in the other eccentric and the valve mechanism operated thereby, substantially as set forth.

7. The combination with the valve mechanism of a motor and with the valve mechanism of a compressor of two rigidly connected adjustable eccentrics for operating the valve mechanisms and means whereby the two eccentrics may be simultaneously adjusted to cause opposite variations in the valve mechanisms, substantially as set forth.

8. In a combined motor and compressing apparatus, the combination of a crank shaft, a cylinder, a differential piston fitting the cylinder and forming a division between spaces therein for the reception of motive fluid and fluid to be compressed, connections from the piston to the shaft, a valve mechanism controlling the distribution of motive fluid, a valve mechanism controlling the eduction of compressed fluid, connections from each of the valve mechanisms to an adjustable eccentric on the shaft, and a governing device for adjusting the eccentrics to vary the distribution of motor fluid and the eduction of compressed fluid, substantially as set forth.

542,427. PRESSED-STEEL TRUCK-FRAME FOR CARS. CHARLES T. SCHOEN, Allegheny, Pa. Filed Apr. 8, 1895. Serial No. 544,917. (No model.)



Claim.—1. A side for car trucks constructed of channel bars of pressed steel having their flanges or sides arranged adjacent and having their meeting ends telescoped or interlapped, combined with connecting vertical columns rigidly united to them, substantially as described.

2. A truck frame comprising an upper arch bar made as a channel with its flanges deepest between its ends, a lower arch bar widest between its ends and having its ends narrowed and fitted within the flanges of the upper arch bar, and connecting columns, substantially as described.

3. In a truck frame, the combination of two sides, each comprising upper and lower channel arch bars having their flanges arranged adjacent and interlapping at their ends, a spring plank extending from one side to the other, a tie-bar, and vertical columns rigidly united to the arch bars and to the spring plank and connecting them, substantially as described.

4. A side frame for trucks composed of upper and lower arch bars formed as channels, combined with vertical columns of L-shape in cross-section and boxed in at their ends and rigidly united, as by riveting, to the upper and lower arch bars, substantially as described.

5. In combination with the arch bars and their connecting columns, of a bolster having lateral swells adapted to fit between said columns and having top brackets to engage the upper arch bar, thereby to prevent lateral and endwise displacement of the bolster, and permit its withdrawal endwise from the truck, substantially as described.

6. A truck channel or spring plank provided with a central longitudinal depression having enlarged and deeper depressions at those points that come adjacent to the arch-bars of the truck, so as to extend to the said arch-bars and be supported thereupon, substantially as and for the purpose described.

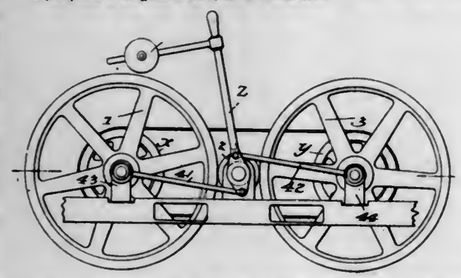
7. A truck channel, or spring plank, of metal, bowed or contracted in its sides between its ends and adjacent to the plane of the brake beams, thereby to admit of the horizontal arrangement of the brake beams between the wheels of the truck, substantially as described.

8. The combination with a spring plank or truck channel, of double or two-armed pressed-steel brackets arranged transversely thereof and adapted to sustain the brake beams, substantially as described.

9. In a truck frame, vertical columns of L-shape in cross-section, boxed in at their ends and riveted to the arch-bars and having one of their wings wider at the bottom than at the top thereby affording material for the reception of two or more rivets and serving to stiffen and brace the frame, substantially as described.

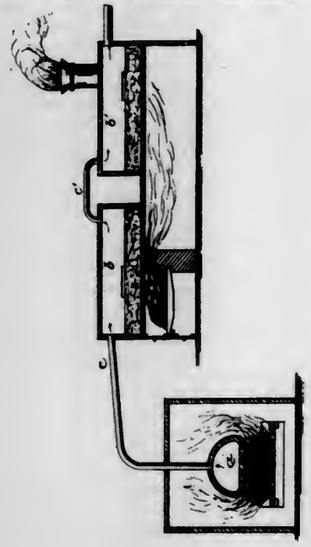
10. In a truck frame, the combination of top and bottom arch-bars, a truck channel or spring plank and vertical columns of L-shape in cross-section having one of their wings widened or extended laterally along the spring plank and riveted to such spring plank and having their ends boxed in and riveted to the top and bottom arch-bars, substantially as described.

542,428. POWER TRANSMISSION. FRANÇOIS SINGRE, Paris, France. Filed May 16, 1894. Serial No. 511,455. (No model.) Patented in France Mar. 14, 1893, No. 228,602; in England Sept. 16, 1893, No. 17,431, and in Belgium Feb. 3, 1894, No. 106,385.



Claim.—In combination, the two friction wheels, the movable bearings 43 and 44 therefor, the friction roll 2 bearing on the friction wheels and arranged between them, the lever pivoted axially of the friction roll, links connected to said lever, and to said movable bearings to adjust the pressure between the friction wheels and friction roll and means connecting the friction wheels to make them move in unison and under all adjustments thereof consisting of the elastic strap and the pulleys x—y around which the elastic strap extends, substantially as described.

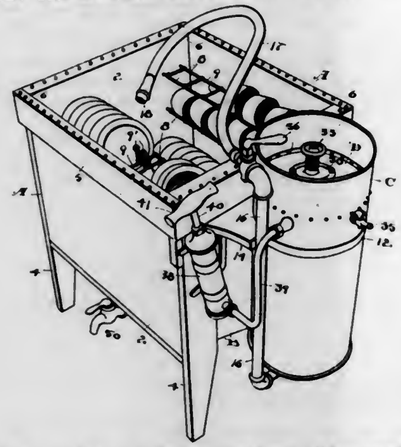
542,429. PROCESS OF MAKING NEUTRAL ALKALINE SULFATES FROM BISULFATES. ERIC A. STARKE, San Francisco, Cal. Filed Oct. 15, 1894. Serial No. 525,965. (No specimens.)



Claim.—1. The manufacture of neutral alkaline sulfate consisting in the heating of sulfur in contact with an acid sulfate.

2. The manufacture of neutral alkaline sulfate and the production of sulfuric acid from an acid sulfate, consisting in heating sulfur with the acid sulfate, then collecting the resulting sulfurous acid fumes and converting them into sulfuric acid.

542,430. DISH-CLEANER. LUCIUS A SUNDERLAND, Madison, Ohio. Filed Jan. 18, 1895. Serial No. 535,356. (No model.)

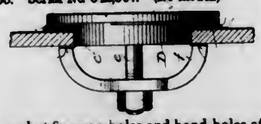


Claim.—1. As a new article of manufacture, a dish receptacle, a combined water and air tank fixed to the side of the said receptacle and having a fixed cover set below the top edge thereof and provided with a valved opening in its center, the rigid pipe —16— fixed to the bottom of the water tank and the valve —36— therein, the flexible hose connected to the said pipe to deliver the water upon the dishes, and an air pump connected with said air and water tank above the water line in said tank, substantially as set forth.

2. The machine described, consisting of the dish washing receptacle, a hot water tank having its cover set inward below its upper end and a valve seated in said cover, an air pump to force air into said hot water tank and a flexible hose and nozzle to deliver the water to the dishes under pressure, substantially as set forth.

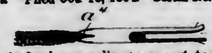
3. The combined water and air tank described with the cover D— below its upper edge substantially as shown and inclined to its center, a hollow perforated cylinder —21— set into said cover and having a valve in its bottom seated from below and having a stem extending above the part —21— and supported thereon, substantially as set forth.

542,431. GASKET. JUSTUS VALLAT, Milwaukee, Wis. Filed Mar. 19, 1895. Serial No. 542,307. (No model.)



Claim.—A gasket for man-holes and hand-holes of steam-boilers, consisting of a flat open disk or ring of copper permanently united to the metal of the boiler or closing plate by an interposed flat open disk or ring of usudurian.

542,432. FASTENER FOR SHOE-LACES. CHARLES WILDE, Philadelphia, Pa. Filed Oct. 16, 1894. Serial No. 526,031. (No model.)

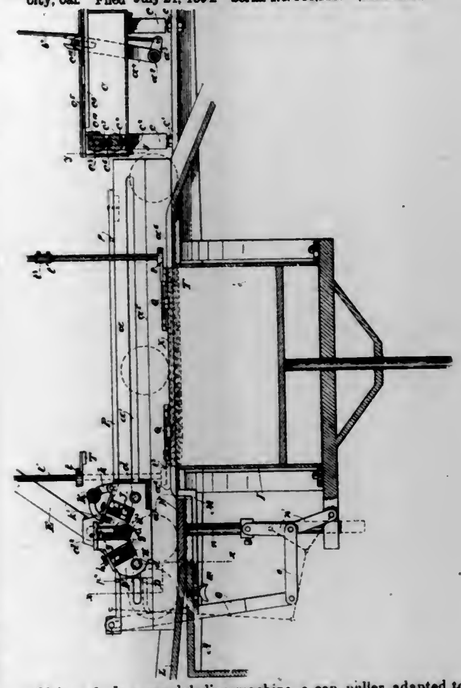


Claim.—1. A tip for laces, split at one end, to form engaging projections and having its opposite end split and contracted, in a manner to become attached to the lace.

2. A combined tip and fastener for shoe laces consisting of a body split at one end to form spring jaws, the opposite end split as at a^4, with the teeth or spurs of the split securing the laces, for the purpose described.

3. A combined tip and fastener for shoe laces consisting of a body split to form duplicate spring jaws, one of which is flared, for the purpose described, the opposite end of said tip being also split to receive the lace, for the purpose specified.

542,433. CAN-LABELING MACHINE. HENRY ALBERS, Crescent City, Cal. Filed July 21, 1894. Serial No. 518,225. (No model.)



Claim.—1. In a can labeling machine, a can puller adapted to reciprocate within a horizontal runway, mechanism by which said reciprocation is accomplished, a paste-box having a sliding platen movable above it, and rollers whereby paste is supplied from the box to the lower surface of the platen, a paste roller journaled upon the can puller adapted to receive paste from the platen in its reciprocations and paste-heads beneath which the roller upon the can puller travels so as to supply paste to those heads.

2. In a can labeling machine, a can puller, with mechanism by which it is movable within a horizontal runway a paste-box, a horizontal slidable platen movable above the box and rollers whereby paste is delivered from the box upon the surface of the platen, a roller journaled upon the can puller adapted to receive paste from the platen when the two are brought into contact, vertically reciprocating paste-heads beneath which said roller travels so as to deliver paste upon the lower surfaces of the paste-heads, a label box situated in the line of travel of the can puller over which the can is caused to roll, said paste-heads being alternately depressed so as to apply paste to the ends of the label before the label is picked up and rolled upon the can in its movement over the pile.

3. A can puller movable in guides upon a runway having pins projecting through guiding slots in said runway, carriers exterior to the runway connected by said pins with the can puller and having vertical channels made in their exterior surfaces, swinging arms fulcrumed to standards above the runway having in them rollers entering and movable in the vertical channels of the carriers, a rotary crank shaft and a connecting rod extending from the crank to the swinging arms whereby the latter are oscillated and the can puller reciprocated upon the runway.

4. The can puller adapted to reciprocate within a horizontal runway, a mechanism for reciprocating said can puller, a paste-box having a sliding platen and means for applying paste thereto, a paste roller on the can puller adapted to receive paste from the platen, guide ledges within the runway upon which the ends of the can travel, a chamber situated between said guide ledges and beneath the runway, adapted to contain the labels which are to be applied to the cans, a roller adjustably journaled across the can puller adapted to form contact with the can and cause the latter to roll along the ledges above the label pile, and a pressure roller journaled across the can puller adapted to press upon the upper side of the can and to apply and smooth the label thereon.

5. The combination of a paste box having a sliding platen, means for applying paste thereto, can puller movable in guides upon the horizontal runway above a chamber containing labels which are to be applied to cans, guide ledges upon which the ends of the can travel.

and rollers by which the can is caused to move over said ledges and pressure applied thereto to smooth and apply the label, the paste heads and paste roller adjustably connected with the can puller, and adapted to receive paste from the sliding platen whereby paste which has been first applied to said roller is transferred to paste heads beneath which said roller passes during the reciprocation of the can puller.

6. The paste container, the paste rollers journaled transversely therein adapted to form contact with each other, a sliding platen movable horizontally across the top of the paste container so as to form contact with the uppermost of the rollers and receive paste therefrom at each reciprocation, in combination with a horizontally traveling can puller having a paste roller adapted to contact with the platen and receive paste therefrom, and mechanism for operating the can puller and platen in unison.

7. A paste container having transversely journaled rollers adapted to take up the paste, a platen movable longitudinally above the container so as to travel in contact with the uppermost of said rollers, a mechanism by which it is reciprocated consisting of rocker arms fulcrumed upon an oscillating shaft having the movable ends connected with the platen, and a connecting rod and crank mechanism whereby power is derived from the main driving shaft to reciprocate the platen, in combination with a horizontally traveling can puller, a paste roller mounted therein and adapted to receive paste from the platen and mechanism for operating the can puller simultaneously with the platen so that they approach each other.

8. In a can labeling machine, a paste container situated at one end of the machine having a horizontally movable platen adapted to travel above it, and rollers whereby paste is delivered from the container upon the under surface of the platen, a can puller adapted to receive cans from a supply chute and to roll them in a horizontal runway above a chamber containing labels which are to be applied to the cans, a paste roller, vertically reciprocating paste-heads movable above the ends of the labels so as to apply paste alternately to these ends, a paste roller mounted upon the can puller and adapted to roll beneath the paste heads when the can puller is reciprocated, and mechanism whereby the can puller and the platen of the paste receptacle are caused to reciprocate in opposite directions so that paste is delivered from the platen upon the paste roller of the can puller when the two approach each other, and is delivered from the paste roller of the can puller upon the paste heads when the can puller returns.

9. The paste receptacle having a platen adapted to reciprocate horizontally above it, rollers journaled to rotate within the receptacle whereby paste is delivered and distributed upon the under surface of the platen, and scrapers adjusted with relation to the rollers and platen so as to scrape off any accumulations of paste at each reciprocation of the apparatus, in combination with a horizontally traveling can puller having a paste roller adapted to pass under the platen and mechanism for causing the platen and can puller to approach and recede from each other simultaneously.

10. A paste receptacle having a platen and mechanism whereby it is reciprocated horizontally above the receptacle, rollers journaled transversely across the receptacle adapted to distribute paste therefrom upon the lower surface of the reciprocating platen, gear-wheels fixed upon the outer ends of the roller shafts engaging with each other, and a toothed rack formed upon the lower surface of the platen engaging the uppermost of the gear-wheels whereby the rotation of the wheels is effected by the reciprocation of the platen.

11. A table upon which cans are received from the delivery chute, a mechanism by which said table is raised and depressed consisting of toggle levers connected with a vertically moving stem upon which the table is supported, an oscillating lever connected with the toggles at one end having the other end connected with a horizontally moving slide and contact pins fixed respectively upon the slide and upon the carriers by which the can puller is moved whereby the table is reciprocated to alternately receive a can from the chute and to deliver it into the can puller to be carried into the runway.

12. In a can labeling machine, a paste receptacle situated at one end having a horizontally sliding platen moving above it, and rollers by which paste is supplied to the platen, a can puller reciprocating from the opposite end of the machine having a roller adapted to pass beneath the platen and receive paste therefrom and to deliver it to vertically reciprocating paste heads which in turn apply the paste to the label ends, and collars upon the ends of the paste roller shaft, with means for adjusting the collars so that the paste roller may pass between the downwardly projecting cleaning edges of the platen.

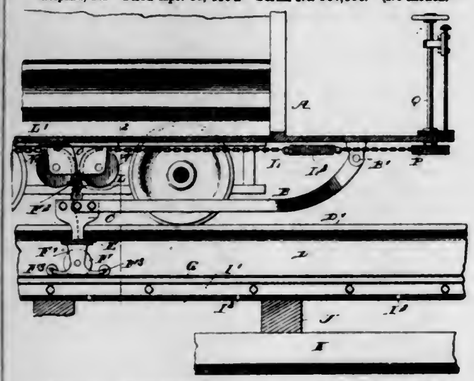
13. In a can labeling machine, the paste receptacle with rollers, and the horizontally reciprocating platen adapted to receive paste from the rollers, a can puller having a paste roller adjustably journaled upon it adapted to pass beneath the platen and receive paste therefrom, vertically reciprocating paste heads beneath which the can puller roller is adapted to pass so as to deliver paste thereon to be subsequently applied to the ends of the labels, and plates fixed with relation to the paste-heads so that any paste which is squeezed out beyond the edges of the heads, will be removed and accumulation thereon prevented.

14. In a can labeling machine, a paste receptacle having distributing rollers, vertically reciprocating paste-heads, a slidable platen above the rollers by which paste is conveyed from the paste receptacle, a can puller having a roller which receives paste from the platen and transmits it to the paste heads, a label containing chamber situated below the paste heads, and seats or holders to which the paste heads are attached, with means for adjustment and holding said heads with relation to the position of the labels beneath.

15. In a can labeling machine, paste-heads situated above a label containing chamber, means for applying paste to said heads, and a device for reciprocating the paste-heads, consisting of oscillating levers connected with the stems of the paste-heads, and mechanism connected with the main crank shaft whereby the levers are oscillated and the paste-heads are alternately depressed upon the opposite ends of the labels.

16. In a can labeling machine, paste-heads situated above a label containing chamber, means for applying paste to said heads, and a device for alternately depressing the paste heads to apply paste to the opposite ends of the labels, consisting of segmental fulcrumed cams, an intermediate connection between said cams and the stems of the paste-heads, and oscillating levers driven from the main crank shaft, through which the cams are moved.

542,434. UNDERGROUND TROLLEY. LEEDHAM BINNS, Philadelphia, Pa. Filed Apr. 11, 1894. Serial No. 507,161. (No model.)



Claim.—1. An underground conduit having its base plate formed with integral longitudinal flanges, and a non-conducting rail fastened in the said flanges and covered at its head with a conducting plate, substantially as described.

2. An underground conduit provided with a conducting rail composed of a non-conducting rail proper, and a sheet metal covering for the head of the said rail proper, and a covering of waterproof material applied over the sides of and adapted to protect the said non-conducting rail proper from moisture, as set forth.

3. An underground trolley, comprising a frame adapted to be pivoted to the car, a head secured in the free end of the said frame, a trolley pulley journaled in a frame attached to the said head, chains connected with the said head and extending in opposite directions under the car, and means for winding up or unwinding the said chains to impart an upward or downward swinging motion to the said frame, substantially as shown and described.

4. An underground trolley provided with a swinging frame pivoted on the under side of the vehicle, a head held in the free end of the said frame and adapted to be weighted, a trolley pulley frame insulated on the lower end of the said head, and provided with a shoe which projects from the forward portion thereof and a pulley journaled in the said trolley pulley frame, substantially as shown and described.

5. An underground trolley, comprising a pivoted frame, a head secured in the free end of the said pivoted frame, a trolley pulley connected to said head, a chain connected to the head and provided with a spring whereby elasticity is imparted thereto, and means for winding and unwinding said chain beyond said spring, substantially as set forth.

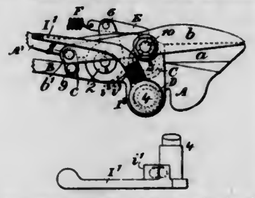
6. An underground conduit, comprising a bottom plate having central longitudinal flanges projecting from its upper face, and side portions having at their lower ends outwardly projecting flanges secured to said bottom plate and at their upper ends inwardly projecting flanges, the adjacent edges of which are spaced apart to form a slot, substantially as set forth.

7. An underground trolley, provided with a frame adapted to be pivoted on the car, a head held on the free end of said frame, a trolley-pulley frame insulated on the lower end of the head, a pulley journaled therein and shoes mounted on said pulley frame and extending forwardly and rearwardly from the pulley, substantially as set forth.

8. An underground trolley, provided with a frame adapted to be pivoted on the car, a head held on the free end thereof, a trolley pulley frame insulated on the lower end of the head, a pulley journaled in the pulley frame, shoes mounted on the pulley frame and projecting forwardly and rearwardly from the pulley, and a roller on the under side of each shoe, substantially as set forth.

9. The combination of a slotted conduit, having flanges projecting upward from its bottom, a conducting rail secured to the wall of the conduit between said flanges and comprising a body portion of non-conducting material and a covering of metal, and insulating waterproof material arranged between said flanges and covering the otherwise exposed sides of said body portion, substantially as set forth.

542,435. CORRUGATING AND CUTTING TOOL. JAMES BLUMER, Brooklyn, N. Y. Filed Jan. 28, 1895. Serial No. 536,454. (Model.)



Claim.—1. The combination with the stock, the rigid handle, the corrugating rolls and their arbors, of a stationary cutting jaw upon the stock, a moving cutting jaw and integral arm pivoted to the stock, the moving handle, and a connection from the end of the arm of the moving cutter to said handle, substantially as and for the purposes set forth.

2. The combination with the stock and the handles, of the corrugating rolls and means for operating the same, the arbor 3 of one corrugating roll secured in the stock, the arbor 4 of the other corrugating roll made eccentric and passing through the stock, and an arm secured to the end of the eccentric arbor 4 and adapted by its movement to regulate the position of the one corrugating roll to the other, substantially as set forth.

3. The combination with the stock and the handles, of the corrugating rolls and means for operating the same, the arbor 3 of one corrugating roll secured in the stock, the arbor 4 of the other corrugating roll made eccentric and passing through the stock, and an arm secured to the end of the eccentric arbor 4 and adapted by its movement to regulate the position of one corrugating roll to the other, and a means connected to the arm and acting to maintain the position of the arm, substantially as set forth.

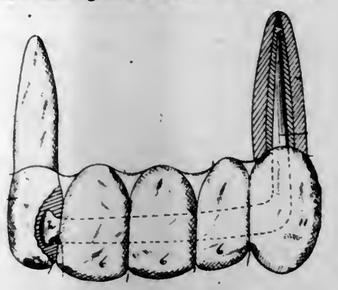
4. The combination with the stock and the handles, of the corrugating rolls and means for operating the same, the arbor 3 of one corrugating roll secured in the stock, the arbor 4 of the other corrugating roll made eccentric and passing through the stock, and an arm secured to the end of the eccentric arbor 4 and adapted by its movement to regulate the position of the one corrugating roll to the other, an enlargement upon the side of the arm, a spring connected to the arm and acting upon the stock and producing a friction to maintain the position of the arm, the enlargement when the arm is turned up coming below the arm of the moving cutting jaw to maintain the handles and jaws in a closed condition, substantially as set forth.

5. The combination with the stock, the handles, the corrugating rolls, a stationary arbor for one corrugating roll secured in the stock and an eccentric arbor for the other corrugating roll passing through the stock and the hub projecting therefrom, of a stationary cutting jaw connected to the stock, a moving cutting jaw and integral arm pivoted to the stock, a link connecting the arm of the moving cutting jaw to one handle for operating the cutters, and an arm secured to the eccentric arbor of one corrugating roll, and a spring connected to said arm and adapted to frictionally maintain said arm in position, substantially as set forth.

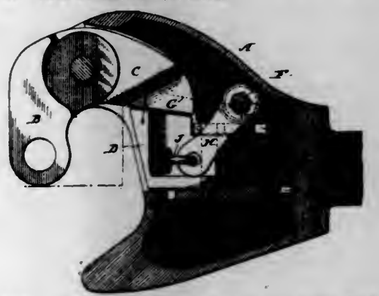
542,436. ARTIFICIAL DENTURE. ELEAZER P. BROWN, Flushing, N. Y. Filed Mar. 5, 1857. Serial No. 229,888. (No model.)

Claim.—1. An artificial denture or bridge consisting of two or more porcelain teeth supported on a metal bar, and having the contiguous surfaces of the teeth fused together, substantially as set forth.

2. An artificial denture or bridge consisting of two or more porcelain teeth having a metal bar passing laterally through them, and baked therein to conceal its surfaces, the contiguous surfaces of the several teeth fused together, substantially as set forth.



542,437. CAR-COUPLING. HOWARD H. BURDEN, New York, assignor to the Trojan Car Coupler Company, Troy, N. Y. Filed Nov. 21, 1892. Serial No. 452,714. (No model.)



Claim.—1. In a car coupler the combination with the knuckle and locking device therefor, of an arm connected to the locking device, and a spring connected to be operated with the arm, and arranged to put the knuckle under pressure, substantially as described.

2. In a car coupler the combination with the knuckle and locking block, of an arm connected to the block to operate the same, a spring connected to the arm and bearing against the knuckle, and means for operating the arm and spring, substantially as described.

3. In a car coupler the combination with the knuckle having a locking tongue and a locking block engaging the tongue, an arm connected to the block, a spring connected to the arm and bearing on the locking tongue, and means for operating the arm and spring and placing the latter under tension, substantially as described.

4. In a car coupler the combination with the knuckle having a locking tongue, a locking block engaging the tongue, a shaft, an arm on the shaft engaging the locking block, and a spring connected to the arm and bearing on the locking tongue, substantially as described.

5. In a car coupler the combination with the knuckle having a locking tongue of a pivoted locking block, a shaft carrying an arm connected to operate the block, a spring connected to the shaft and bearing on the locking tongue, and an arm connected to the shaft to operate the same, and arranged to be operated from the car, substantially as described.

6. In a car coupler the combination with the head, of the knuckle pivotally mounted therein having a locking jaw, a pivoted locking block, a shaft mounted in the head, an arm mounted on the shaft engaging the block, a spring also mounted on the shaft engaging the locking tongue, and an arm connected to the shaft for operating the same, substantially as described.

7. In a car coupler the combination with a knuckle, of a horizontally pivoted locking block for the knuckle, an arm mounted on a vertical pivot and connected to the locking block, and means for operating the arm, substantially as described.

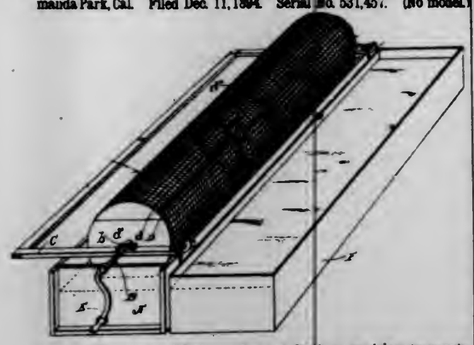
8. In a car coupler the combination with the knuckle, of the pivoted locking block, a shaft, an arm mounted on the shaft, and connected to the locking block, the said arm serving to hold the block in locking position until it is withdrawn by rotation of the shaft, substantially as described.

9. In a car coupler the combination with the knuckle, of a locking block for the knuckle, an arm for operating the locking block and means for putting the arm under pressure to depress and hold the block in locking position when the knuckle is closed, substantially as described.

10. In a car coupler the combination with the knuckle, of a locking block for the knuckle, an arm for operating the locking block, a

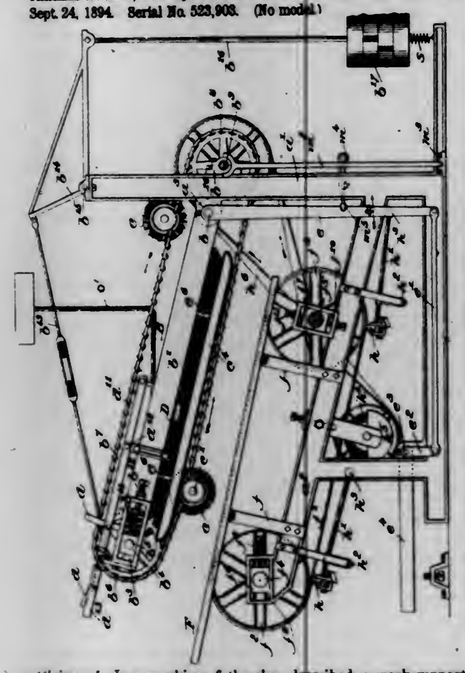
spring connected to the arm for putting the block under pressure, substantially as described.

542,438. NUT OR FRUIT WASHER. LEWIS R. BUTLER, Lamanda Park, Cal. Filed Dec. 11, 1894. Serial No. 531,457. (No model.)



Claim.—The nut and fruit washer set forth comprising two vats arranged side by side; pivoted cylinder supporting levers arranged to extend across either of such vats; a cylinder journaled upon such levers and adapted to be placed in and removed from either vat by swinging the levers upon their pivots.

542,439. MACHINE FOR COLORING AND POLISHING LEATHER. CHARLES W. EDES, Peabody, and ALBERT W. PRATT, Salem, Mass. Filed Sept. 24, 1894. Serial No. 523,903. (No model.)



Claim.—1. In a machine of the class described, a work-support or table, an endless carrier, a carrying frame therefor, said carrying frame and work-support having a relative movement to separate the working device from or bring it in contact with the work upon the support, a working device rotatably mounted in fixed position upon said endless carrier, driving mechanism for said carrier, and means to rotate the said working device about its own axis during its body movement by said endless carrier, substantially as described.

2. A machine of the class described containing the following instrumentalities, viz:—a work-support, a working device, an endless traveling carrier having bearings for said working device, a vertically movable frame sustaining the said carrier, and manually operated means to raise and lower said frame to remove said working device from and to place it in operative contact with its work, at will, substantially as described.

3. A machine of the class described containing the following instrumentalities, viz:—a work support, a screen having its perforations extended in the direction of the travel of the working device, the material to be applied being deposited upon one side of said screen, and a working device, and means to move the same in contact with the opposite side of said screen to thereby remove the said material through the successive perforations past which it travels, and apply the same to the work, substantially as described.

4. In a machine of the class described, a work-support, a working device, and a movable frame therefor, whereby the said working device may be moved toward and from its work, and driving mechanism for the said working device connected with the frame for the latter whereby movement of said frame out of operative position automatically stops movement of the said working device, substantially as described.

5. In a machine of the class described, one or more working devices and an endless carrier therefor, a vertically movable frame for the said endless carrier, a screen in contact with which the said working device or devices move, a work-support, and means to separate the said screen and working devices whereby the latter may be used for rubbing-in purposes, substantially as described.

6. In a machine of the class described, one or more working devices, and a swinging frame as B carrying the same, combined with a work-support, and means to adjust the angle of its inclination to correspond with the line of travel of said working device and to hold the same fixedly in said adjusted position, substantially as described.

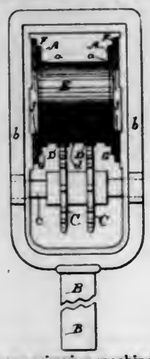
542,440. HOSE-SUPPORTER. ROBERT GORTON, Plainfield, N. J. Original application filed Apr. 12, 1895. Serial No. 545,459. Divided and this application filed May 18, 1895. Serial No. 549,771. (No model.)



Claim.—1. A garment supporter having a button, a constricted retaining loop and a flap of suitable material, adapted to be interposed between the garment and the loop.

2. A garment supporter having a flap of suitable material adapted to be interposed between the garment and the loop or clasp.

542,441. CAN-CRIMPING MACHINE. JAMES GOULD, Jr., Berkeley Cal. Filed Mar. 19, 1895. Serial No. 542,387. (No model.)

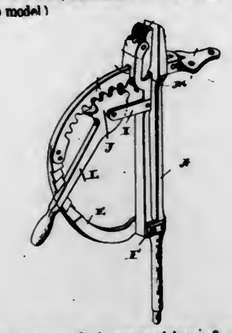


Claim.—1. In a can crimping machine, a crimping bar or surface formed with a series of aligned, distinct pressing points, separated by intervening depressions or indentations, and adapted to successively operate upon the can, and means for rolling the can in contact therewith.

2. In a can crimping machine, a fixed crimping bar or surface formed with a series of aligned, distinct pressing points, separated by intervening depressions whereby the contact face of the bar or surface is irregular and broken, in combination with means for rolling the cans in contact with said bar or surface whereby its separated points act successively upon the can.

3. A can crimping machine consisting of a traveling carrier on which the cans are advanced, and on which they roll, suitable guides for the cans while on the carrier and fixed crimping bars above the cans with their working edges irregular or broken and composed of a series of aligned distinct pressing points adapted to bear successively upon the can head flanges, said points being separated by intervening indentations or depressions.

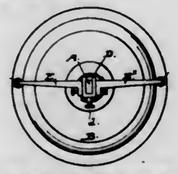
542,442. VISE. THOMAS L. HAMILTON, Sumner, assignor of one-half to Henry D. Smith, Ashburn, Ga. Filed Mar. 2, 1895. Serial No. 540,343. (No model.)



Claim.—1. An improved vise comprising a fixed jaw, a pivoted jaw, cogged bar C extended outward from said jaw, a notched arm E, the pivoted jaw, the lever carried by the latter and adapted at its handle end to engage the notched arm, and the cogged segment on the inner end of the lever in engagement with the cogged bar, substantially as shown and described.

2. An improved vise comprising the fixed jaw having the recess formed therein, a cogged segment having its end extended through said recess, a securing device attached to said end, the movable jaw pivoted at its lower end and provided at its upper end with the vertical slot whereby it is adapted to move on said cogged segment, the pinion pivotally supported by the movable jaw and engaging the cogs of the segment, and a lever extended from the pinion and provided with a locking means, substantially as shown and described.

542,443. TAILOR'S DRAFTING-INSTRUMENT. JOHN S. HAND, San Francisco, Cal., assignor to Lillia Hand, same place. Filed Nov. 5, 1894. Serial No. 527,960. (No model.)



Claim.—1. The herein described instrument for drafting patterns comprising a straight blade a fixed head on one end thereof, the outer face of which is at a right angle to the blade, an adjustable slide on the blade carrying arms that project on opposite sides of the blade and at a right angle thereto, and fixed sockets on the head having pencil-points and means for projecting said points beyond the face of the head and for drawing them within the same; the said pencil-points being located in line with the outer ends of the projecting arms on the blade and in planes parallel with the blade.

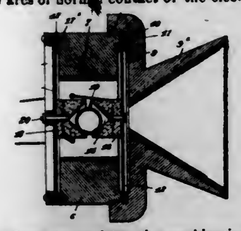
2. The combination with the straight blade —A— and the fixed cross-head —B— thereon, of the adjustable slide on the blade carrying an arm projecting outward at a right angle to the blade, and the marking-point on the head in line with the outer end of the said arm and in a plane parallel with the blade.

3. The combination with the blade —A— and the cross-head —B— fixed thereon, of the adjustable slide —D— arms —E—E×— thereon, the sockets —B'—B³—on the head carrying pencil-points —*b*—*b*×— and the marking-point —C×— on the center of the head, constructed for operation substantially as hereinbefore described.

542,444. TELEPHONIC TRANSMITTER. CHARLES C. HUGHES, Baltimore, Md. Filed Sept. 12, 1894. Serial No. 522,832. (No model.)

Claim.—1. In a telephone transmitter, an electrode having a cavity whose sections on planes perpendicular to the direction of motion are arcs of circles of gradually varying radii, and the co-operating electrode having an exterior surface whose sections in the same planes are also arcs of circles of varying radii, the radii of the arcs of normal contact of the electrodes differing in value.

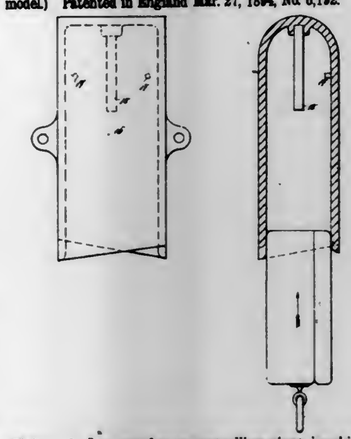
2. A telephone transmitter, comprising a diaphgram adapted to receive sound waves, an electrode secured thereto, a second diaphragm having a similar electrode secured thereto, each of said electrodes having a cavity whose sections in planes perpendicular to the direction of motion are arcs of circles of gradually varying radii, and a free electrode held in suspension by the aforesaid electrodes, and having an exterior surface whose sections in planes perpendicular to the direction of motion are also arcs of circles of varying radii, the radii of the arcs of normal contact of the electrodes differing in value.



3. In a telephone transmitter, the combination of a diaphragm adapted to receive sound-waves, an electrode secured thereto and having a reentrant conical surface, a second diaphragm provided with an electrode secured thereto having a reentrant conical surface, a free electrode arranged to move over said surfaces in accordance with sound-waves to vary the area of the mutual contact of the surfaces of the electrodes.

4. In a telephone transmitter, the combination with a diaphragm provided with an electrode secured thereto having a reentrant conical surface, a second electrode provided with a suitable support, and having also a reentrant conical surface, and a free electrode in contact with said surfaces and adapted to move thereover to vary the area of contact in accordance with sound-waves acting on the said diaphragm.

542,445. WATCHMAN'S TIME-RECORDER. CARL MÜLLER, Eberswalde, Germany. Filed Apr. 19, 1894. Serial No. 508,206. (No model.) Patented in England Mar. 27, 1894, No. 6,192.

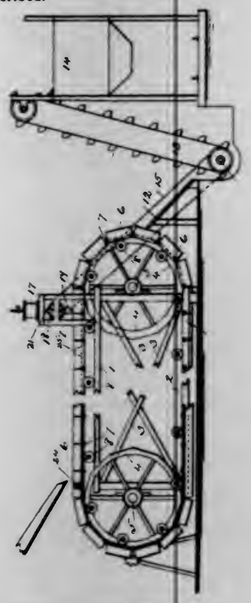


Claim.—1. In a watchmen-controlling plant, in which the marks are produced by putting a portable clock into a fixed casing containing a pin adapted to operate the marking-device of said clock, the combination, in each of said fixed casings, with said marking-pin, of a stopping pin or pins adapted to limit the inward movement of said clock; the side-wall carrying said stopping pin or pins having an inclined edge at the open end of the said fixed casing, for the purpose as described.

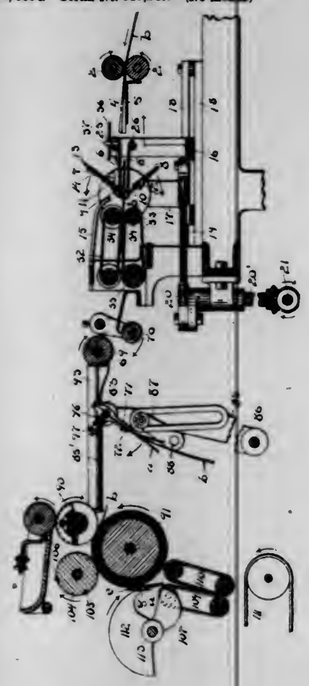
2. In a watchmen controlling-plant, in which the marks are produced by putting a portable clock into a fixed casing containing a pin adapted to operate the marking-device of said clock, the combination, in each of said fixed casings, with said marking pin, of a stopping pin or pins adapted to limit the inward movement of said clock; the side-wall carrying said stopping pin or pins having an inclined edge at the open end of the said fixed casing, the opposite edge of the latter being also inclined, but having another degree of inclination, for the purpose as described.

542,446. SLAG-BALLAST MACHINE. JOHN OWEN, Pittsburg, Pa. Filed Sept. 21, 1894. Serial No. 523,729. (No model.)

Claim.—The herein described apparatus for manufacturing ballast, consisting of the frame of a suitable length, having rails at the top and bottom, the plates 6 hinged together to form a continuous trough or conveyer, suitable wheels 4 compassed by and operating said conveyer, anti-friction rollers 8 arranged beneath the pans 6 operating along the rails 1—2 to support the conveyer, a breaking device arranged at one end of the said conveyer, and another conveyer 13 for receiving the broken slag and discharging the same into suitable bins, all arranged and combined for service, substantially as and for the purpose described.



542,447. PAPER-BAG MACHINE. SIMON E. PETTER, Cleveland, Ohio, assignor to Frank H. Kelly and Norton T. Horr, trustees. Filed June 21, 1894. Serial No. 515,245. (No model.)



Claim.—1. The machine described, having a pair of central folding wings constructed to grip the edges of the bottom of the bag transversely, side folding wings to enter the side plaits of the blank, and mechanism to turn said central and side wings together into parallel planes, substantially as set forth.

2. The construction described, comprising a pair of plates arranged to grip the bag blank across the center of the diamond fold, at its back, a pair of central folding wings, constructed to grip the edge of the blank and opposite pairs of side folding wings to fold the side edges of the blank, substantially as set forth.

3. The folding mechanism described, consisting of a pair of opposite pinching plates arranged to momentarily grip the blank while the bottom thereof is being folded, the central folding wings constructed to grip the edge of the blank, and the side folding wings, and mechanism connected with said wings to turn them together from the initial position to a parallel vertical plane, and thereby produce the "diamond fold" of the blank, substantially as set forth.

4. The folding mechanism consisting of the central folding wings, folding wings at each side of the central wings arranged to enter the sides of the blank and to turn and spread the same, a pair of pinching guide plates for the blank adapted to be moved in respect to each other and to the central wings and a sliding frame carrying said central and side wings, substantially as set forth.

5. In a paper bag machine, a pair of pinching guide plates before the folding wings and separate shafts supporting said plates and one of said plates constructed and arranged to move longitudinally in respect to the other, and the central and side folding wings substantially as set forth.

6. The pinching guide plates and separate shafts on which said plates are supported, mechanism to rotate said shafts, and mechanism to slide one of said plates back and forth in respect to the other, substantially as set fortl..

7. The mechanism described, consisting of a sliding carrier frame, a pair of central folding wings and a pair of side folding wings on each side of the central wings supported upon said frame, and mechanism upon said frame to rotate said wings and fold the end of the bag blank, substantially as set forth.

8. The machine having a horizontally sliding carrier frame, central and side folding wings supported on said frame, and mechanism connecting each of said side wings and one of the central wings rigidly together for rotation one with the other and sliding shafts supporting said mechanism, substantially as set forth.

9. In a paper bag folding machine, a sliding carrier frame, central and side folding wings supported upon said frame, a horizontal arm upon each side of said frame pivoted on the main frame and slotted at its end, and mechanism engaged in said slot to carry the side folding wings inward and outward in respect to the central wings, substantially as set forth.

10. The sliding carrier frame, the central and side wings supported thereon, separate shafts upon opposite sides of said frame extending toward each other, side folders supported upon the ends of said shafts, and a horizontal lever on each side of the machine having a slot in its end engaging a projection on the corresponding shaft, substantially as set forth.

11. The side wings and the central wings for folding the bottom of the bag, the sliding carrier frame supporting said wings, a longitudinally sliding shaft on each side of said frame and carrying the said wings, a horizontally pivoted lever on each side of the machine in one end of which one of said sliding shafts engages, and mechanism at the opposite end of said lever to move the same at intervals, whereby as said levers are moved the shafts carrying the folding wings are moved, substantially as set forth.

12. The main frame, the sliding carrier frame thereon, and the central and side folding wings upon said carrier frame, in combination with horizontally arranged arms upon the sides of the machine constructed to connect with and operate the said folding wings, and mechanism to move said sliding carriage back and forth, substantially as set forth.

13. The main frame, the movable carriage thereon, and the folding wings carried by said carriage, said folding wings having connected therewith sliding shafts on each side of the machine, horizontally arranged arms to actuate said shafts, mechanism to operate said arms, and mechanism to move said carriage back and forth, substantially as set forth.

14. The main frame and the movable carrier frame, a pair of shafts extending each transversely of the machine and having folding wings operated from their inner ends, in combination with said wings and with horizontally arranged actuating levers having slots at their ends through which said shafts are engaged, substantially as set forth.

15. The mechanism herein described for operating the middle and side folding wings consisting of a sliding frame, a pair of shafts supported upon said frame transversely thereto, the folding wings and mechanism supporting said wings upon said shafts, pulleys on said shafts and cables to turn the same, and a horizontally arranged lever upon each side of the machine and having a slot at one end through which the shaft upon that side of the machine is engaged, whereby the said shafts are rotated and moved inward and outward at the same time, substantially as described.

16. The mechanism described, consisting of a shaft, gripping fingers supported upon said shaft, and a pulley and cord for rotating said shaft, pivoted supports carrying said shaft, and a crank to actuate said supports and carry them back and forth, whereby the bag blank is received by the gripping fingers at one extremity of its throw, and is delivered to the carrying rolls at the other extremity of its throw, substantially as set forth.

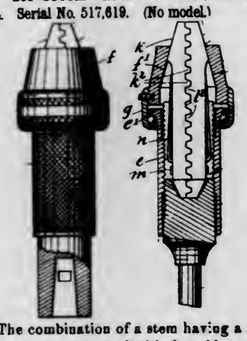
17. In a machine as described, the shaft carrying the gripping fingers, and gripping fingers upon said shaft constructed to open and close, and mechanism connected with said shaft and said fingers comprising a sliding box supported on said shaft and means to bear against said box, substantially as set forth.

18. The machine having a transferring device, consisting of a series of fingers, hinged together and a shaft supporting said fingers having one of each set fixed rigidly thereto and a pivoted frame carrying said shafts, and mechanism to open and close said fingers at the extremities of the throw of the said device to one position and the other, in combination with a rotating shaft having a crank working in said pivoted frame, whereby said frame is moved back and forth, substantially as set forth.

19. The mechanism described, consisting of the carrying roll, the pasting roll and the creasing roll above said carrying roll and bearing thereon, and a device constructed to fold the blank and bear it against the carrying roll, said device constructed to engage the opposite flaps of the blank successively, substantially as set forth.

20. The mechanism described for coupleting the folding of the blank, the creasing roll and the carrying roll, and rotating members constructed to fold the flaps of the blank successively and to bear the said flaps against the said carrying roll and complete the bag, substantially as set forth.

542,448. BIT-STOCK. HENRY V. SMITH, Hartford, Conn. Filed July 14, 1894. Serial No. 517,619. (No model.)



Claim.—1. The combination of a stem having a screw-threaded portion, tool-holding jaws connected with the said stem, a chuck body made in sections which are free to rotate relative to each other, one section engaging with the screw-threaded part of the said stem, and the other engaging with the jaws, the coupling nut secured to one of the said sections and having an inturned flange constituting part of a ball race, the other section having a portion formed to constitute the other part of the said ball race, and the antifriction balls located in the said race, substantially as set forth.

2. In combination with a stem having a threaded portion, tool holding jaws carried by the said stem having cams on the outer ends and being of an angular shape in cross section when closed, a sectional chuck body movable lengthwise of the stem and comprising an outer cam section having a jaw socket fitting the jaws in cross-section, a coupling nut secured to the cam section and having an inturned flange, the sleeve section having an interior thread fitting the threaded portion of the stem, and a cone formed on the outer surface as part of a ball race, and the ball bearings located between the cone and the flange of the nut, all substantially as described.

3. In combination with a stem having a threaded portion and a transverse jaw socket, tool holding jaws mounted in the said jaw socket whereby they rotate with the stem having cams on the outer ends and being of an oblong shape in cross-section when closed, a sectional chuck body movable lengthwise of the stem and having an outer cam section having an oblong socket to receive the jaws, a coupling nut united to the cam section and having a flange forming part of a ball race, a sleeve section having an interior thread fitting the threaded portion of the stem and a cone forming the complementary part of the ball race, and the ball bearings located within the ball race, all substantially as described.

542,449. SPIDER. BARTON E. SPERRY, Batavia, Ill. Filed Oct. 5, 1894. Serial No. 524,987. (No model.)



Claim.—1. A spider having a socket cast integral therewith, with an open end to receive the wooden handle, and provided with an opening near the body of the spider through which can be inserted a suitable device for fastening a handle in the socket, substantially as specified.

2. A spider provided with a socket cast integral therewith, one end of the socket being open for the reception of the end of the handle, and provided near the body of the spider with an opening leading into the interior of the socket through which a nut can be inserted to fasten the handle in the socket; and one or more lugs or projections on the interior of the socket against which the securing nut will strike to hold the handle in the socket, substantially as specified.

3. A spider having a socket cast integral therewith, the socket being open at one end to receive the end of the handle, and having an opening near the body of the spider for the insertion of the nut, and projecting lug or lugs on the interior of the socket: a wooden handle, the end of which is adapted to enter the socket; and a screw-threaded rod extending into the wooden handle and projecting between the lugs in the socket and adapted to receive the fastening nut which is inserted through the opening in the socket near the body of the spider, substantially as specified.

542,450. FOUNTAIN-PEN. WILLIAM W. STEWART. Brooklyn, N. Y. Filed Mar. 23, 1894. Serial No. 504,759. (No model.)



Claim.—1. A fountain pen constructed with a reservoir holder closed at its rear end and having its pen-holding end or nozzle obstructed, the obstructed passage through said nozzle being formed as capillary spaces or interstices of varying widths including narrower portions for attracting ink and wider portions extending continuously from the reservoir to the exterior for the escape of air, so that in filling the inverted pen the ink will descend in the narrower spaces, and the wider ones will be left free for the outflow of air, and an ink-conductor constituting part of the obstruction of said nozzle, extending through the latter from the exterior and prolonged within the reservoir to near the closed end thereof, whereby in filling to serve as a guide to the entering ink to carry it to the lower part of the reservoir past the contained air to avoid imprisoning the latter or obstructing its escape.

2. A fountain pen constructed with a reservoir holder closed at its rear end and having its pen-holding end or nozzle obstructed, the obstructed passage through said nozzle being formed as capillary spaces or interstices of varying widths including narrower portions for attracting ink and wider portions extending continuously from the reservoir to the exterior for the escape of air, so that in filling the inverted pen the ink will descend in the narrower spaces, and the wider ones will be left free for the outflow of air, and an ink-conductor constituting part of the obstruction of said nozzle, extending through the latter from the exterior and prolonged within the reservoir to near the closed end thereof, and a partition in the nozzle separating the interstices on opposite sides of it, so as in filling the pen to tend to prevent the entering ink introduced into the interstices on one side thereof from overflowing into those on the opposite side and thereby choking them against the free escape of air.

3. A fountain pen constructed with a reservoir holder closed at its rear end and having its pen-holding end or nozzle obstructed, the obstructed passage through said nozzle being formed as capillary spaces or interstices of varying widths including narrower portions for attracting ink and wider portions extending continuously from the reservoir to the exterior for the escape of air, so that in filling the inverted pen the ink will descend in the narrower spaces, and the wider ones will be left free for the outflow of air, and an ink conductor constituting part of the obstruction of said nozzle, extending through the latter from the exterior and prolonged within the reservoir to near the closed end thereof, and the pen arranged in the nozzle to divide its bore and serve as a partition separating the interstices on opposite sides of it, so as in filling the pen to tend to prevent the entering ink introduced into the interstices on one side thereof from overflowing into those on the opposite side and thereby choking them against the free escape of air.

4. A fountain pen constructed with a reservoir holder closed at its rear end and having its pen-holding end or nozzle obstructed, the obstructed passage through said nozzle being formed as capillary spaces or interstices with the pen arranged in the nozzle to divide its bore, and an ink conductor or bar constituting part of the obstruction of said nozzle, extending from the exterior of the pen along the pen-

shank, through the nozzle and into the reservoir nearly to the closed end thereof, and constructed to form a continuous longitudinal capillary conductor to which the ink may cling as it descends into the inverted holder in filling, whereby the entering ink is restrained from obstructing the interstices through which the air escapes.

5. A fountain pen constructed with a reservoir holder closed at its rear end and having its pen-holding end or nozzle obstructed, the obstructed passage through said nozzle formed as capillary spaces or interstices with the pen arranged in the nozzle to divide its bore, and two ink conductors or bars constituting part of the obstruction of said nozzle, arranged on opposite sides of the pen and extending from the exterior through the nozzle and into the reservoir, and one or both prolonged within the reservoir to near the closed end thereof, and forming a continuous longitudinal capillary conductor to which the ink may cling as it descends into the inverted holder in filling.

6. In a fountain pen, the combination with the reservoir holder and pen, of two ink conductors or feed bars mounted on opposite sides of the pen loosely filling the nozzle of the holder so as to leave interstices around them, and extending from the exterior through the nozzle and into the ink reservoir, and longitudinally grooved or rounded so as to form approximately segments of tubes in cross-section, whereby they serve as feeders for taking the ink to the pen, and in filling the inverted holder one of them may serve to conduct the entering ink and carry it into the reservoir.

7. In a fountain pen, the combination with the reservoir holder and pen, of two ink conductors or feed bars mounted on opposite sides of the pen and extending from the exterior in parallel manner through the nozzle and loosely filling the nozzle so as to form varying interstices between them and the pen and nozzle, prolonged into the ink reservoir, and flared apart within the ink reservoir so as to form a clear space for movement of air between them.

8. In a fountain pen, the combination with the reservoir holder and pen, of two ink conductors or feed bars F and G constructed as segments of a tube mounted on opposite sides of the pen so that the latter divides their common bore, extended through the nozzle and into the ink reservoir, and flared apart in the latter to form a free passage between them for movement of air.

9. In a fountain pen, the combination with the reservoir holder and pen, of a divided tube E, the legs F G of which constitute ink conductors extending through the nozzle and lying against opposite sides of the pen, said legs being flared or bowed apart within the ink reservoir to form a space between them for movement of air.

10. In a fountain pen, the combination with the reservoir holder and pen, of two ink conductors extended along the pen and through the nozzle, and one or both prolonged into the reservoir to near the closed end thereof, and a wire extended along one of said ink conductors from the rear part of the reservoir to the pen.

11. In a fountain pen, the combination with the reservoir holder and pen, of two ink conductors consisting of longitudinally grooved or rounded bars as segments of tubes, extended through the nozzle, and one or both prolonged within the reservoir to near the closed end thereof, and a wire extended parallel with one of said ink conductors and lying in the groove thereof.

12. In a fountain pen, the combination with the reservoir holder and pen, of an ink conductor consisting of a longitudinally grooved bar as a segment of a tube extended through the nozzle into the ink reservoir and down along the pen, and constructed with notches *e e* in its portion communicating with the pen surface.

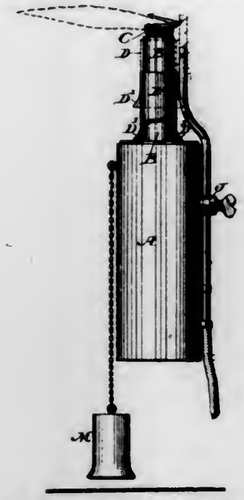
13. In a fountain pen, the combination with the reservoir holder and pen, of two ink conductors consisting of the opposite legs of a split tube extended through the nozzle and into the reservoir, and lying against opposite sides of the pen, and formed with notches *e e* on their projecting portions lying against the pen.

14. A fountain pen having continuous interstices through its nozzle of varying widths, graduated to fill with ink and bubbles of air in writing to control the flow, and so proportioned that when the pen is inverted and ink is supplied to the exterior, the ink descends into the reservoir through the narrower spaces and leaves a wider space or interstice unobstructed for exhalation of air, whereby the pen may be refilled without unscrewing the nozzle.

542,451. PLUMBER'S TORCH. HENRY J. TAYLOR and WILLIAM J. TAYLOR, Philadelphia, Pa. Filed Feb. 19, 1895. Serial No. 538,979. (No model.)

Claim.—1. A plumber's torch consisting of a body, a wick tube, a sleeve movable on said tube, an air pipe secured to said sleeve, a guiding boss on said body, and a tightening screw on said boss, said pipe being closed at top and provided with a vent in its side, and the parts combined substantially as described.

2. A plumber's torch consisting of a body with a boss on its side, a wick tube, a sleeve movable on said tube, an air pipe secured to said sleeve and having a set-off adapting it to be guided in said boss on said body, and a thumb screw for clamping said pipe in said boss, said pipe having a closed top and an air vent in its side, said parts being combined substantially as described.



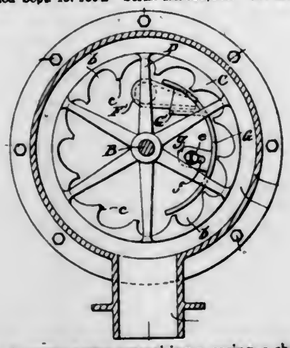
542,452. CELLULOID ARTICLES AND PROCESS OF MANUFACTURING SAME. CHARLES H. THURBER, East Orange, and CHRISTIAN W. SCHAEFER, Newark, assignors to the Celluloid Company, Newark, N. J. Filed Oct. 19, 1894. Serial No. 526,352. (No specimens.)



Claim.—1. The process of manufacturing articles of celluloid or similar material, consisting in, first, serrating, or otherwise irregularly forming, the edge of the blank, and then subjecting the said blank to the action of dies to form the flaring crinkled rim or border of the finished article, substantially as described.

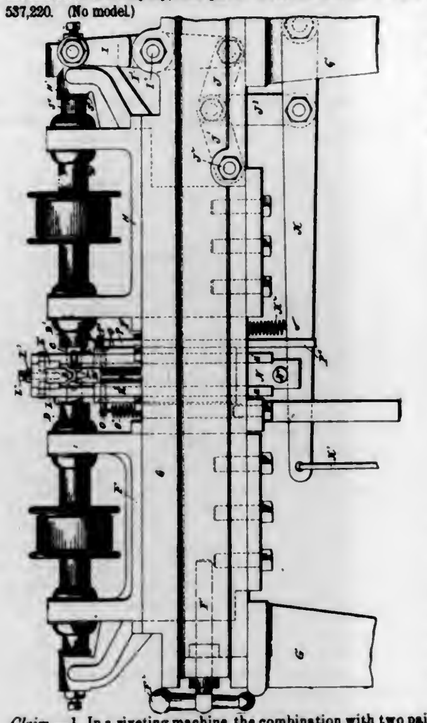
2. A finished dish or plate made of celluloid, or similar material, having a body and a flaring crinkled rim or border, the edge of said rim or border being serrated or otherwise irregularly formed, and having the same edge as that of the blank from which the dish or plate was formed, substantially as described.

542,453. WATER-MOTOR. ARCHER T. VERNON, Greensborough, N. C. Filed Sept. 15, 1894. Serial No. 523,076. (No model.)



Claim.—A water motor comprising a casing, a shaft journaled therein, a wheel within the casing, open at one side and having spokes at the opposite side by means of which it is mounted upon the shaft, the interior periphery of the said wheel being cut out to form buckets, an inlet tube extending through the casing to receive the supply pipe thereon, an elbow secured upon the said tube, a tapered nozzle mounted thereon, extending within the wheel and directed against the buckets, a segmental guard having a slotted lug thereon and adjustably secured to the casing by a screw passing therethrough, the said guard having an opening therein at the top, and an extension or guide at the rear of the said opening through which the nozzle extends, substantially as shown and described.

542,454. MACHINE FOR HEADING RIVETS OF CHAINS. FREDERIK WAIBLE and WILLIAM R. WILLETTS, Waterbury, Conn., assignors to the American Pin Company, same place. Filed Feb. 4, 1895. Serial No. 537,220. (No model.)



Claim.—1. In a riveting machine, the combination with two pairs of spinning-rolls, one being movable toward and away from the other; of two dies or work-holders, and a reciprocating frame in which one of the dies or work-holders is mounted, and which comprises two slides respectively located on the opposite sides of the other die or work-holder and arranged in the same vertical plane therewith so that downward draft upon the frame will be directly through the dies or work-holders, substantially as described.

2. In a riveting machine, the combination with two pairs of rolls arranged in line with each other and one of them being movable toward and away from the other; of two work-holders or dies, and a reciprocating frame carrying the upper work-holder or die, and moving the same toward and away from the other work-holder or die, and comprising two slides located in the vertical plane of the work-holders or dies, and constructed at their upper ends to give access to the rolls to the work held by the dies or holders, substantially as described.

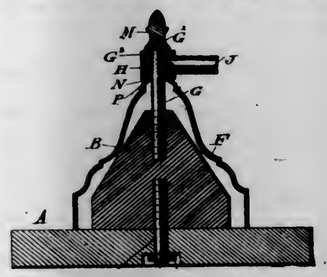
3. In a riveting machine, the combination with two pairs of spinning-rolls respectively arranged to rotate in opposite directions, and one being movable toward and away from the other, of two gripping dies, a reciprocating die-frame in which one of the dies is mounted, and a locking lever for holding the said frame in the operating position of the die which it carries, substantially as described.

4. In a riveting machine, the combination with two pairs of rolls, a reciprocating head with which one pair of rolls is connected, an operating-lever, connection between the said head and lever, whereby the head is moved back and forth, two gripping-dies located between the pairs of rolls, and a reciprocating die-frame in which one of the dies is mounted and which is adapted at its lower end to be engaged and lifted by the said lever, substantially as described.

5. In a riveting machine, the combination with two pairs of rolls, of chucks in which the same are mounted, oppositely revolving spindles carrying the chucks, a movable head having one of the spindles journaled in it, two gripping dies located between the chucks, a reciprocating die frame having one of the dies connected with it, an operating-lever adapted to engage with one end of the said frame for lifting it, connection between the said lever and the movable head, whereby the same is advanced with its spindle and chuck toward the other spindle and chuck, and a locking-lever adapted to lock the die-frame in its depressed position, and constructed to be unlocked by means of the engagement with it of the operating-lever, substantially as described.

6. In a riveting machine the combination with two pairs of spinning rolls, of two chucks in which the said pairs of rolls are mounted, two spindles carrying the chucks, means for rotating the spindles in opposite directions, two dies located between the rolls, and one of them being movable, and anti-friction bearings for the spindles, consisting of bearing-pieces having conical surfaces, located within chambers formed in the ends of the spindles, caps fitting over the ends of the spindles, and receiving oil for the lubrication of the said bearing-pieces, and end-thrust screws passing through the said caps and engaging with the outer bearing-pieces within the chambers substantially as set forth.

542,455. LAMP-SUPPORT. WILLIAM M. WHITEHEAD, Philadelphia, Pa. Filed Nov. 28, 1894. Serial No. 530,224. (No model.)



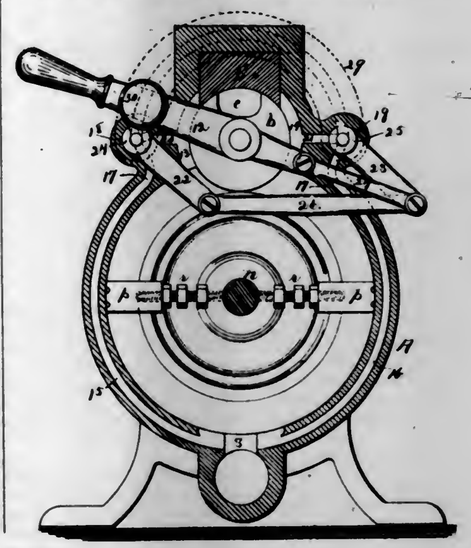
Claim.—1. A lamp support consisting of a base, a weight and shell thereon, a pin or screw rising from the weight through said shell, a boss on an axial portion of said screw, a nut on the upper end of said screw, and a lamp-supporting-arm connected with said boss, the parts being combined substantially as described.

2. A base, a weight thereon, a screw connecting said base and weight, a shell on the base inclosing said weight, a stem rising from the weight and passing through the apex of the shell, a rotary boss on the axial portion of said stem, and a nut on said stem over the boss, the parts named being combined substantially as described.

3. In a lamp support substantially as described, a weighted base having a stem rising from the same, and a swinging arm provided with a boss which has an axis on said stem, the axial portion of said stem and contiguous wall of the boss being conical, the parts named being combined as stated.

4. In a lamp support, a weighted base and an inclosing shell, a stem rising from the weight of the base, a boss on said stem, and a lamp-supporting arm connected with said boss, the apex of the shell forming a conical bearing for said boss which rests thereon, the parts named being combined substantially as described.

542,456. ROTARY ENGINE. WILLARD G. ADAMS, Weedsport, N. Y. Filed Nov. 8, 1894. Serial No. 528,203. (No model.)



Claim.—1. In a rotary engine an abutment provided with a steam port and mounted upon a tubular shaft provided with a port registering with that of said abutment, a steam pipe within said shaft provided with a port adapted to register with said shaft and abutment ports, and means to rotate said steam pipe independently, to change the engagement of its port with the other, ports in combination.

2. In a rotary engine, an abutment provided with a steam port and mounted upon a tubular shaft provided with a port registering with that of said abutment, a steam pipe within said shaft provided with a port adapted to register with said shaft port, and means to rotate said steam pipe independently, to change the engagement of said ports, in combination with recesses in the walls of said abutment-chamber and on opposite sides thereof.

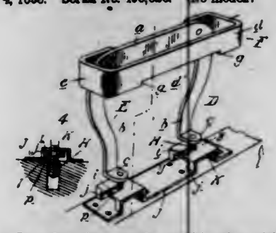
3. In a rotary engine, the combination with a case, a rotating piston-head concentric therewith and provided with suitable pistons, an exhaust port, passages within and upon opposite sides of the case connected to the exhaust port and valves in said passages, of a sectional tubular shaft, a rotating abutment upon one section thereof, ports through said shaft and abutment opening into the steam chamber in said abutment, the other or steam-pipe section being rotatable independently of the abutment section and having in its inner end a port adapted to register with those of the abutment section and abutment when the abutment shaft-section is rotated, and in the other with ports, one of which is always in register with a steam-inlet pipe, a hand-lever mounted upon the steam-pipe section and links connecting it to the valves in the casing passages, whereby, when said pipe is rotated by said lever, one of said valves is closed and the other opened, and the engine reversed.

4. In a rotary engine, an abutment, a tubular and sectional shaft, one section carrying said abutment and rotating with it, the other section constituting a steam-pipe having a continuous connection to a steam-inlet pipe, an inlet pipe, a hand lever mounted upon the outer end of the steam-pipe whereby said steam-pipe is rotated, and suitable ports in said shaft sections adapted to register when the abutment section of the shaft is rotated, in combination with a piston head concentric with its casing and suitable pistons therein.

5. In a rotary engine, the combination with a steam-inlet pipe, of a rotatable steam pipe provided at one end with inlet ports, always registering therewith and at the other end with a discharge port, suitable to register with the abutment, a rotating abutment and means to rotate said steam pipe to throw said discharge port into position to register with the port of said abutment to discharge steam into the steam chamber therein.

6. In a rotary engine, the combination with a case, a piston-head therein, an abutment in said case, a steam inlet-pipe, a rotatable steam pipe provided at one end with inlet ports, one of which is always in register with said inlet pipe and at the other end with a discharge port, suitable to register with the abutment and means to rotate said steam pipe, to throw one of said inlet ports into register, and the other out of register with said inlet pipe, of an exhaust port in the case, recesses in and upon opposite sides of the abutment chamber, passages in the case connected at, one end to the exhaust port and at their other ends to said recesses, and means to close the valve in one passage and open the other when said steam pipe is rotated to reverse the engine.

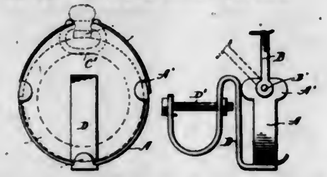
542,457. **DOOR-HANGER.** WILLIAM J. ARNDT, Detroit, Mich. Filed Nov. 4, 1893. Serial No. 490,020. (No model.)



Claim.—1. In a door hanger, the combination with a door member and a track wheel, of a rail member on the wheel having depending arms, locking plates on one of the members, each plate having open-ended slots entering from corresponding sides of the plates and a stop formed thereon, screws on the other member adapted to pass into and rest in the slots, locking nuts on the screws, and said screws directly engaging the stops after adjustment to prevent the lateral or longitudinal movement of the hanger independent of the door, substantially as described.

2. In a door hanger, the combination with a door, of a wheel, a rail on the wheel having depending arms, offsets on the lower ends of the arms, screws secured to the offsets and projecting downwardly, a locking plate on the door having raised arched portions formed with different sized passages to their corresponding sides one above the other, the upper passage adapted to receive the screws, locking nuts on the screws adapted to pass through the lower passages in the raised portions for locking the screws in their adjusted positions, and stops projecting into engagement with the screws to prevent the independent longitudinal movement of the hanger, substantially as described.

542,458. **WATCH-CARRIER.** ARCHIBALD RANKATYNE, Waterbury, Conn., assignor to the Waterbury Clock Company, same place. Filed Apr. 29, 1895. Serial No. 547,512. (No model.)



Claim.—1. In a watch-carrier, the combination with a clip, of a spring stirrup adapted to receive a watch and grip the same by the edge thereof, and a bail pivotally connected with the upper ends of the stirrup, and adapted when swung into the plane thereof to engage with the watch pendant, substantially as set forth.

2. In a watch-carrier, the combination of a clip, of a spring stirrup adapted to receive a watch and grip the same by the edge, and constructed with transversely arranged retaining fingers, and a bail pivotally connected with the upper ends of the stirrup and adapted, when swung into the plane thereof, to engage the watch by its pendant, substantially as set forth.

3. In a watch-carrier, the combination with a clip, of a spring stirrup constructed to receive a watch and grip the same by the edge, and a bail pivotally connected with the upper ends of the stirrup, and constructed with a forwardly opening slot to receive the watch pendant, substantially as set forth.

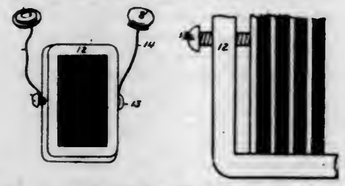
4. In a watch-carrier, the combination with a clip, of a spring-stirrup constructed to receive a watch and grip the same by its edge, and a bail pivotally connected with the upper ends of the stirrup, and constructed with a forwardly opening slot adapted to receive the watch-pendant, and embossed adjacent to the side walls of the said slot to co-act with the pendant-ring, substantially as set forth.

5. In a watch-carrier, the combination with a clip, of a spring-stirrup constructed to receive a watch and grip the same by its edge, and a bail pivotally connected with the upper ends of the stirrup and constructed with a forwardly opening slot to receive the watch pendant, and embossed adjacent to the side walls of the said slot to co-act with the pendant-ring, and the said bail being also constructed with upwardly turned fingers flanking the opening of the slot, substantially as set forth.

6. In a watch-carrier, the combination with a clip, of a spring-stirrup constructed to receive a watch and grip the same by its edge, and a bail pivotally connected with the upper ends of the stirrup and constructed with a forwardly opening slot, adapted to receive the watch pendant and with oppositely located notches leading laterally out of the side walls of the said slot, and embossed in line with the said notches, substantially as set forth.

7. In a watch-carrier, the combination with a spring-stirrup, adapted to receive a watch and grip the same by its edge, of a bail pivotally connected with the stirrup and constructed to engage with the watch pendent when brought into the plane of the stirrup, and a clip connected with the stirrup and extending upward behind the same to form a rear support for the watch, and also adapted to be fastened to a bicycle, substantially as set forth.

542,459. **ELECTRIC BATTERY AND APPLICATION THEREOF TO MEDICINAL PURPOSES.** SETH R. BECKWITH, Orange, N. J. Filed Apr. 3, 1895. Serial No. 544,358. (No model.)

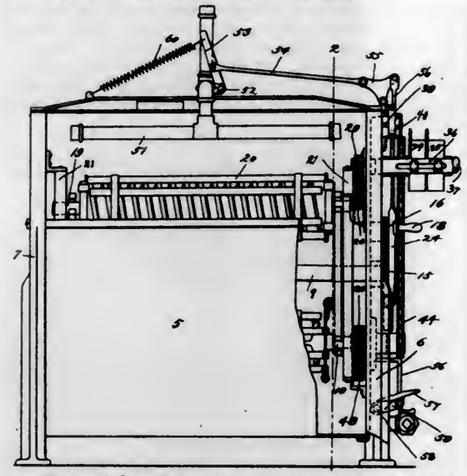


Claim.—1. An electric battery consisting of a frame open at the sides and a plurality of battery elements composed of metallic plates, in width equal to the thickness of said frame laid lengthwise therein

so as to be entirely surrounded thereby or locked together and held in position by friction.

2. The combination with a plaster of metallic contacts attached thereto and an electric battery removably attached to said contacts.

542,460. **DISH-CLEANER.** GEORGE S. BLAKESLEE, Chicago, Ill. Filed Nov. 27, 1893. Serial No. 492,114. (No model.)



Claim.—1. In a dish-washing machine, the combination with a water-tank, one or more dish-holding baskets, and a basket-carrier for carrying the baskets through the water in the water-tank, of devices for rotating the baskets upon their axes, and mechanism for throwing said devices into and out of operative connection with the baskets, substantially as described.

2. In a dish washing machine, the combination with a water tank, dish holding baskets, and a basket carrier for carrying the baskets through the water in the tank, of means whereby the baskets may be rotated upon their axes at intervals while they are submerged in the water in the tank, substantially as described.

3. In a dish-washing machine, the combination of a rotatable basket-carrier, dish-holding baskets rotatable on the basket-carrier, means for rotating the carrier, and basket-rotating devices movable into and out of gear with the shaft of each basket when it is carried to a certain point by the basket-carrier, substantially as described.

4. In a dish-washing machine, the combination with a water-tank, one or more dish-holding baskets, and a basket-carrier for moving the baskets through the water in the tank, of mechanism operating independently of the movement of the basket carrier for rotating said basket or baskets upon their axes, when the basket-carrier is stationary, substantially as described.

5. In a dish-washing machine, the combination with a tank, of a rotatable basket-carrier, rotatable baskets carried by the carrier and moved thereby through the water in the tank, upper and lower devices for rotating said baskets upon their axes, and sprinkling devices, substantially as described.

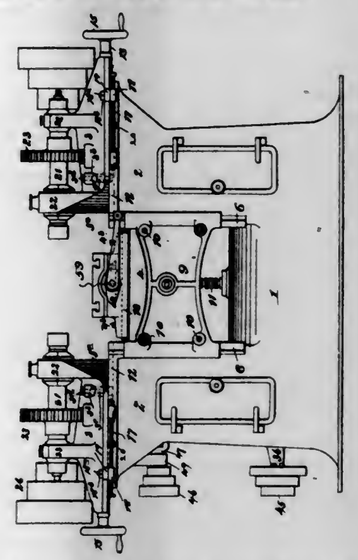
6. In a dish-washing machine, the combination with a water-tank, rotatable dish-holding baskets, and a basket-carrier for carrying the baskets through the water in the tank, of means for rotating one or more of said baskets upon their axes when said carrier is stationary, and a sprinkler arranged in position to sprinkle the dishes in one of said baskets while it is rotating, substantially as described.

7. In a dish-washing machine, the combination with a tank, and dish-holding baskets, of a rotary basket carrier, means for holding the baskets in position upon said carrier, pinions 26 carried by said baskets, a shaft 27, bracket 31 mounted thereupon, a pinion 32 carried by said bracket and adapted to mesh with said pinions 26, means for rotating said shaft, a pinion mounted upon said shaft and meshing with said pinion 32, and means for throwing said pinion 32 into and out of mesh with said pinions 26, substantially as described.

8. In a dish-washing machine, the combination with a tank, and dish-holding baskets, of a rotary basket carrier, means for holding the baskets in position upon said carrier, pinions 26 carried by said baskets, a shaft 27, bracket 31 mounted thereupon, a pinion 32 carried by said bracket and adapted to mesh with said pinions 26, means for rotating said shaft, a pinion mounted upon said shaft and meshing with said pinion 32, means for throwing said pinion 32 into and out of mesh with said pinions 26, a shaft 42, pinion 45 mounted upon said shaft and rotating therewith, bracket 47 carried by said shaft, pinion 48 mounted in said bracket and adapted to mesh with said pinions 26, means for rotating said shaft 42, and means for moving said pinion 48 into and out of mesh with said pinions 26, substantially as described.

9. In a dish-washing machine, the combination with a tank, and dish-holding baskets, of a rotary basket carrier, means for holding the baskets in position upon said carrier, pinions 26 carried by said baskets, a shaft 27, bracket 31 mounted thereupon, a pinion 32 carried by said bracket and adapted to mesh with said pinions 26, means for rotating said shaft, a pinion mounted upon said shaft and meshing with said pinion 32, a shaft 42, pinion 45 mounted upon said shaft and rotating therewith, bracket 47 carried by said shaft, pinion 48 mounted in said bracket and adapted to mesh with said pinions 26, means for rotating said shaft 42, and means for rocking said brackets 31 and 47 simultaneously, substantially as described.

542,461. **MILLING-MACHINE.** JOHN L. BOGERT, Flushing, N. Y. Filed Sept. 29, 1894. Serial No. 524,424. (No model.)



Claim.—1. In a milling machine, the combination of a head stock, with a pulley carried independently of said head-stock and gearing between the spindle of the head-stock and said pulley, said head stock being arranged to move parallel to the axis of said pulley, the pinion of said gearing being wholly disconnected from the head stock, the gear wheel carried by the head stock being arranged to travel along said pinion while in mesh, substantially as described.

2. In a milling machine, the combination of a head stock having a spindle and a gear wheel carried thereby, with a pinion along which said gear can move, and a pulley connected with said pinion, said pulley and pinion being carried independently of said head stock and having no supporting connection therewith, so that the head stock and its spindle and gear can move along said pinion without correspondingly moving said pinion, substantially as described.

3. In a milling machine, the combination of a head stock having a spindle and a gear wheel, said head stock being adapted to move to-and-fro, with a bracket carried independently of the head stock, a long pinion carried thereby to mesh with said gear wheel and a pulley connected with said pinion, the pinion being entirely separate from the head stock, so that the head stock and its spindle and gear can move along said pinion without correspondingly moving said pinion, substantially as described.

4. In a milling machine, the combination of a column having ways and a head stock mounted thereon and having a spindle and a gear wheel, with a bracket secured to said column, said bracket having extensions 25^a, a long pinion journaled between said extensions and a pulley connected with said pinion, whereby when the head-stock moves along said ways said wheel and pinion will remain in mesh, substantially as described.

5. In a milling machine, the combination of a column and a head stock adapted to move along the same, with a knee or elevating slide carried independently of the head stock and having a recess or pocket to receive said head-stock, and ways or guides between the inner corners of the column and the knee as and for the purposes specified.

6. In a milling machine, the combination of a column and a head-stock adapted to be moved along the same, the side or end of said head stock being beveled inwardly, with a knee having a pocket or recess also beveled to receive said head stock, substantially as described.

7. In a milling machine, the combination of a base, and two columns, and a head stock adapted to be moved along said columns, with a knee located between said columns and guided thereby and carried independently of the head stock by ways on the inner corners of said column and knee, said knee having pockets or recesses at its sides to receive said head stock, as and for the purposes set forth.

8. In a milling machine, the combination of a pulley and a pinion, and a bracket carrying the same, with a shaft carried by said bracket, a gear wheel and a bevel wheel carried by said shaft, another shaft 33 carrying a bevel wheel to mesh with the first mentioned bevel wheel, a shaft 43 having a pulley and gearing between said shafts, a shaft 51, a pulley connected therewith by a universal joint and a worm shaft connected with the shaft 51 by a universal joint, substantially as described.

9. The combination of two parallel shafts 39, 43 and a shaft 33 at right angles thereto, intermeshing miter gears on the shafts 33 and 39, and intermeshing spur wheels 41, 42 on the shafts 39 and 43, and means for detachably connecting said gears with said shafts 39 and 43, substantially as described.

10. In a milling machine, the combination of a knee and a table supported thereby, with gearing 57, 57ª 58 and 59 to move said table, a worm to mesh with the worm 57ª, means for operating said worm, a lever to disengage said worm from said worm 57ª and means for holding and releasing said lever, as and for the purposes specified.

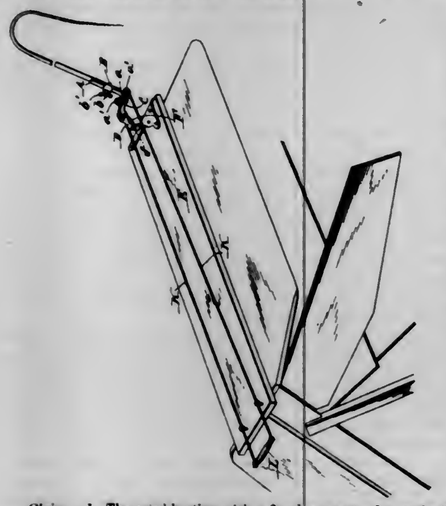
11. In a milling machine the combination of a knee, a table carried thereby, gearing to move said table and a worm to operate said gearing, with a weighted lever to move said worm into and out of mesh with said gear, a sliding rod to hold said lever in its normal position, and means connected with said table to operate said rod, substantially as described.

12. In a milling machine the combination of a knee, a table carried thereby and gearing to operate said table, with a worm to turn said gearing, a lever pivoted on said knee and movably connected with said worm, a stud on said lever, a rod having a toe to engage said stud, a head on said rod, a spring to move said rod, and an adjustable rod or bolt carred by said table to operate said headed rod or bolt to release said lever, substantially as described.

542,462. ELECTRIC INSULATING MATERIAL. JAMES O. BROWN, Chicago, Ill. Filed May 5, 1894. Serial No. 510,163. (Specimens.)

Claim.—An electric insulating material consisting of quartz, pyrites of iron, and oxide of manganese, made into a vitrified mass, substantially in the proportions and in the manner hereinbefore set forth.

542,463. HORSE-WHIPPING DEVICE. HENRY J. CASE, Owasco, assignor to the Johnston Harvester Company, Batavia, N. Y. Filed Feb. 7, 1895. Serial No. 537,575. (No model.)

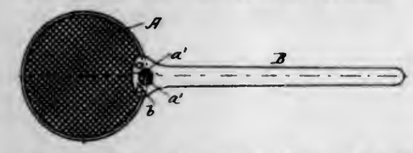


Claim.—1. The combination with a fixed support, of a vertically swinging arm connected at its rear end to said support by a horizontal pivot, and a whip holder connected to the free end of said swinging arm by a vertical pivot, substantially as set forth.

2. The combination with a fixed support, of a vertically swinging arm connected at its rear end to said support by a horizontal pivot, a whip holder connected to the free end of said swinging arm by a vertical pivot, and an elevating spring interposed between said support and said vertically swinging arm, substantially as set forth.

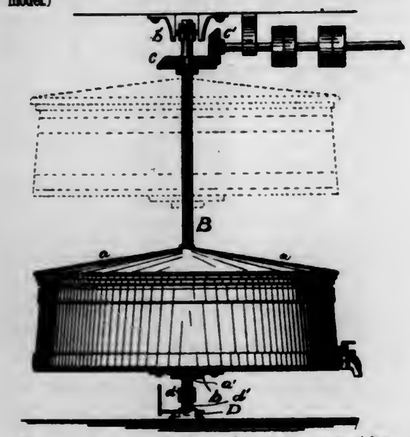
3. The combination with a fixed support, of a vertically swinging arm connected at its rear end to said support by a horizontal pivot, a whip holder connected with the free end of said swinging arm by a vertical pivot, an elevating spring interposed between said support and said vertically swinging arm, and actuating rods connected at their front ends with said whip holder on opposite sides of said vertical pivot and having their rear ends connected by a handle, substantially as set forth.

542,464. INSECT-DESTROYER. GEORGE S. CHASE, Cambridge, Mass. Filed Sept. 19, 1894. Serial No. 523,438. (No model.)



Claim.—As an improved article of manufacture an insect killer having a handle B with an enlarged end *b* in which a recess *b'* is formed, a net wire gauze A with a metal binding strip *a*, the ends *a'* of which meet within the recess *b'* and are there fastened to the handle B.

542,465. APPARATUS FOR BUTTER-MAKING. FREDERICK W. CHURCH, Belgium, N. Y. Filed Apr. 5, 1895. Serial No. 544,525. (No model.)



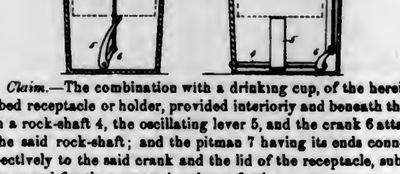
Claim.—1. An apparatus for making butter comprising a milk-vat or receptacle mounted upon a vertically threaded shaft, a vertically threaded shaft, means for rotating said shaft for the purpose of raising and lowering said vat and means for tilting said shaft and vat.

2. An apparatus for making butter comprising a milk-vat or receptacle mounted upon a vertically threaded shaft, a vertically threaded shaft, said shaft being hinged at its upper end, means for rotating said shaft for the purpose of raising and lowering said vat and means for tilting said shaft at its lower end for the purpose of tilting said vat.

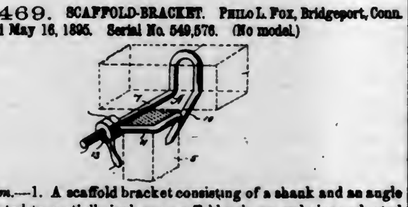
3. The combination with a vertical threaded shaft of a vat-receptacle having a central threaded nut with which the threads on said shaft are adapted to engage, a faucet in said receptacle, a vat having a central opening and a vertically perforated rim and a draw-off faucet, and an ice-receptacle mounted in said vat opening, substantially as described for the purposes set forth.

542,466. SACK-TIE. JOHAN R. EICHENBERGER, Burton City, Ohio. Filed Jan. 16, 1895. Serial No. 535,067. (No model.)

Claim.—As an improved article of manufacture a sack-tie secured to a sack and consisting of the wire tie formed of a single piece and of spring wire, the loops *a*, *b* and *c*, the loops *c* located at an angle to the loops *a* and *b* and at angle to each other, the loops *c*, located adjacent to each other at their bottom or lower ends, the opening or space *d* and a cord secured to the wire tie, all arranged and constructed substantially as described and for the purpose set forth.



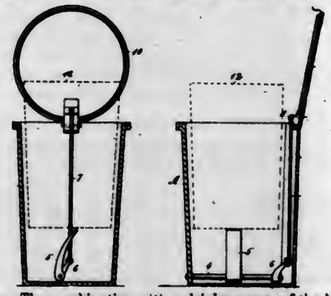
542,467. MANIFOLDING BLANK-BOOK. WILLIAM F. ENGLISH, Philadelphia, Pa. Filed Mar. 29, 1895. Serial No. 543,614. (No model.)



Claim.—1. In a manifolding blank book, the back B having the covers C and D, the carbons E and F attached to said back, and adapted to be folded toward each other, the leaves G, H, and J adapted to be folded upon each other as described, the leaf G being permanently secured in the book, while the other leaves H and J are adapted to be detached therefrom, substantially as described.

2. In a manifolding blank book, the back B having the covers C and D, a continuous elongated leaf formed by the leaves G, H, and J connected together, said leaf G being adapted to be permanently secured in the book by means of the extension K of the back, which is brought up over said leaf G and secured in position, and the carbons E and F secured to said cover on opposite sides of the leaf G, and adapted to be folded toward each other, substantially as described.

542,468. DRINKING-CUP HOLDER. HORACE M. EVANS, Valparaiso, Ind. Filed Jan. 30, 1895. Serial No. 536,672. (No model.)



Claim.—The combination with a drinking cup, of the herein described receptacle or holder, provided interiorly and beneath the cup with a rock-shaft 4, the oscillating lever 5, and the crank 6 attached to the said rock-shaft; and the pitman 7 having its ends connected respectively to the said crank and the lid of the receptacle, substantially as and for the purpose herein set forth.

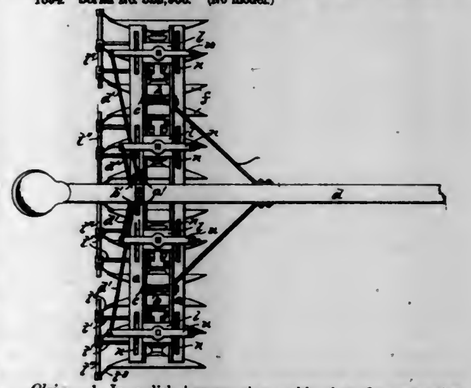
542,469. SCAFFOLD-BRACKET. PHILO L. FOX, Bridgeport, Conn. Filed May 16, 1895. Serial No. 549,576. (No model.)

Claim.—1. A scaffold bracket consisting of a shank and an angle arm adapted to partially inclose a scaffold pole, an end piece adapted to lie on the side of the ledger opposite to the scaffold pole and an angle piece extending downward from the end piece in position to engage the scaffold pole.

2. The combination with a bracket consisting of a shank and an angle arm adapted to partially inclose a scaffold pole, an end piece adapted to lie on the side of the ledger opposite to the scaffold pole and an angle piece extending downward from the end piece in position to engage the scaffold pole, of means substantially as described and shown for clamping both the bracket and ledger to the scaffold pole.

3. A scaffold bracket consisting of a shank threaded at its outer end and having an end piece adapted to lie on the side of the ledger opposite to the scaffold pole and an angle piece extending downward from the end piece in position to engage the scaffold pole, an angle arm having a head adapted to pass over the shank, said arm being adapted to lie on the outer face of the scaffold pole and to partially inclose the side of the scaffold pole opposite to the shank and a nut engaging the shank whereby the bracket is clamped to the scaffold pole and the ledger is clamped between the end piece and the scaffold pole.

542,470. HARROW. EDWARD W. FREIBURGHOUSE, Hiawatha, assignor of one-half to Ephraim Keim, Sabetha, Kans. Filed Sept. 13, 1894. Serial No. 522,906. (No model.)



Claim.—1. In a disk harrow, the combination of a supporting frame, a hanger therefrom having the toothed disk, the disks mounted on a shaft, the vertical frame in which said shaft is journaled provided with the vertical toothed disk, the clamping bolt passing through said disks and extended beyond the same, a stirrup on said bolt, and braces from said stirrup to the lower portions of said vertical frame.

2. In a harrow, the combination of a harrow frame, the depending turnable disk frames, each provided with a gang of disks, rigid cross heads on the upper ends of said frames, levers connected therewith to turn the frames, each frame having a joint, and a clamping bolt extending outwardly beneath the cross head, vertical rods rigidly connecting the cross heads and said bolts, and braces from the bolts to the lower portions of the frames, substantially as described.

3. The combination of the frame, the adjustable blocks therein, each block having a depending frame in which a harrow disk shaft is mounted, each frame being turnable in its block and formed to permit lateral swing, the rigid cross heads on the upper ends of said depending frames, the horizontal bolts extending forwardly from said depending frames, and at their outer ends rigidly connected by the vertical rods with the front ends of their respective cross heads, the levers at the rear side of the machine being connected with the opposite ends of the cross heads.

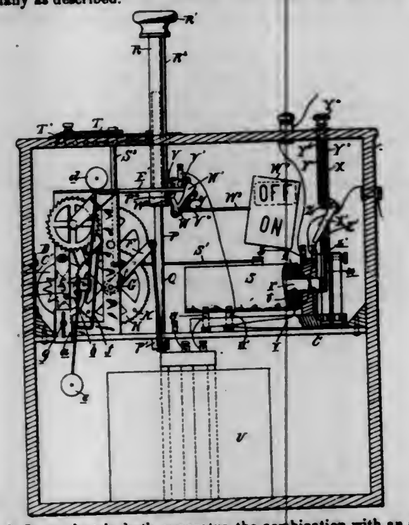
4. The combination in a harrow, of the main frame composed of the two bars, the tongue extending across the bars, the series of turnable harrow disk gangs adjustably arranged in the frame, the two brackets mounted on the tongue, the two levers mounted on said brackets to swing transversely to the line of draft, a rod adjustably connecting the left hand lever and the intermediate right hand gang and the outer left hand gang, and a rod adjustably connecting the right hand lever and intermediate left hand gang and outer right hand gang, substantially as described.

5. In a harrow, the combination of a main frame, the depending turnable disk gang frame jointed and having the clamping bolt, a horizontal bolt extending through the lower part of the frame and projecting rearwardly, a brace between said two bolts, a horizontal bar secured to the rear end of said horizontal bolt, and the cleaners secured thereto, substantially as described.

542,471. ELECTRIC-BATH APPARATUS. WILLIAM R. GOLDEN, Auburndale, Ohio. Filed Mar. 5, 1895. Serial No. 540,583. (No model.)

Claim.—1. An electric bath apparatus consisting of an electric generator, an induction coil in circuit therewith, and a registering and clock mechanism operating in connection with the generator and

coil and forming part of the electrical circuit between the two, substantially as described.



2. In an electric bath apparatus the combination with an electric generator, of an induction coil in circuit therewith, a registering and clock mechanism, the frame of which forms part of the circuit, and a winding device for said mechanism which closes the circuit when operated, and breaks the same at the end of the period during which the mechanism is adapted to run, substantially as described.

3. In an electric bath apparatus, the combination with a clock mechanism, of a winding device for said mechanism, and means for automatically locking said device at the end of the period during which the mechanism is adapted to run, substantially as and for the purpose described.

4. In an electric bath apparatus the combination with a clock mechanism and of a winding device therefor, consisting of a vertical rod P, a collar P^3 thereon, a telescoping tube R adapted to strike against said collar, a rock arm on the main spindle of the clock work, and connection between said rock arm and the rod P, substantially as described.

5. In an electric bath apparatus, the combination with a clock work mechanism, a winding device therefor, and a registering device in connection with and operated by the winding mechanism, substantially as described.

6. In an electric bath apparatus, the combination with a clock work, a winding device therefor, substantially as described. a gear wheel sleeved upon the main shaft of the clock work mechanism, a ratchet hub integral with said gear wheel, a pawl on the rock arm adapted to engage with the ratchet hub, pins K on said gear wheel adapted to engage with teeth on a star wheel L, and a register wheel adjacent to and on the shaft with said star wheel, substantially as and for the purpose described.

7. In an electric bath apparatus, the combination with an inclosing casing, of an induction coil, a metallic tube sleeved upon said coil, a lever arm S^1 pivotally connected to the tube and to the arm S^2 on a vertical shaft S^3, and an index and regulating hand T secured to the upper end of the vertical shaft above the casing adapted to move on the arc of a graduated circle T', substantially as described.

8. In an electric bath apparatus, the combination with an inclosing casing and an induction coil therein, of a vibrating tongue for said coil, a swinging starting device for said tongue, a plunger extending without the casing and having connection with said starting device, and means within the casing for normally holding the starting device out of the path of the vibrating tongue, substantially as described.

9. In an electric bath apparatus, the combination with the inclosing casing, an induction coil therein, and a starting device for said coil comprising a drop tube X, a swinging finger X' on the lower end thereof, a rod Y, extending through the tube, an enlargement Y' at the upper end and a finger Z at the lower end of said rod, engaging a notch in the finger X', and a spring Y^3 encircling the rod Y and interposed between the enlarged portion of said rod and the bottom of the tube, substantially as and for the purpose described.

10. In an electric bath apparatus, the combination with a clock mechanism and a balanced escapement for said mechanism comprising a slotted plate *a* adjustably secured to the frame E, an upwardly inclined arm *b* integral therewith, a plate *c* pivoted to the free end thereof, a weighted arm *d* secured to and extending above said plate, and a similar arm *e* extending below the plate and adapted to engage with the stem *f* of the escapement, substantially as described.

542,472. PNEUMATIC-TIRE VALVE. EDWARD O. GOSS, Waterbury, Conn., assignor to The Scovill Manufacturing Company, same place. Filed July 16, 1894. Serial No. 517,667. (No model.)



Claim.—In a valve for pneumatic tires, the combination with a valve-body comprising a head and a hollow shank, the former being externally threaded and containing an internally threaded circular chamber, and the latter opening into the inner end of the said chamber; of an externally threaded annular plug located in the said chamber, a packing washer located in the bottom of the said chamber, and held in place by the plug which forces it against the bottom wall thereof, a valve proper located within the inner end of the hollow shank, bearing against the said washer, and constructed with a stem which passes outward through the central opening of the said plug, an adjusting nut applied to the outer end of the valve stem, and bearing against the outer end of the plug, a spring located in the said hollow shank, and interposed between the outer end thereof and the valve, which it exerts a constant effort to force against the said washer, and a dust-cap applied to the external threads of the head of the valve-body, substantially as set forth.

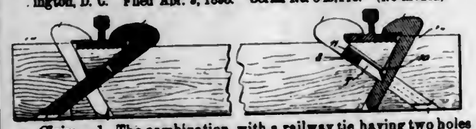
542,473. NECKWEAR-FASTENER. JOHN M. GUILBERT, Philadelphia, Pa. Filed Mar. 25, 1895. Serial No. 543,013. (No model.)



Claim.—1. A neck wear retainer consisting of a single piece of wire composing the loops B, C, and D, and the pin E, said pin being pendent from one limb of the loop B, and a pendent limb of the loop D having a prong F below the bend of said loop B, said parts being combined substantially as described.

2. A neck wear retainer consisting of a piece of material having the loops B, C, and D with the pin E, said loop D having on one end the prong F below the bend of the loop B, and the cross bar G of the loop C forming a stop for the neck band when engaged by the pin E, said parts being combined substantially as described.

542,474. RAILWAY SPIKE AND TIE. SIMON J. HARRY, Washington, D. C. Filed Apr. 9, 1895. Serial No. 545,116. (No model.)



Claim.—1. The combination, with a railway tie having two holes therein for rail spikes, which cross each other, of two spikes, one of which is provided with a longitudinal recess or cavity therein carrying a spring operated chuck and also a transverse recess or cut away portion, into which said longitudinal recess opens, and the other with a recess on its upper side, which said chuck is adapted to enter, substantially as shown and described.

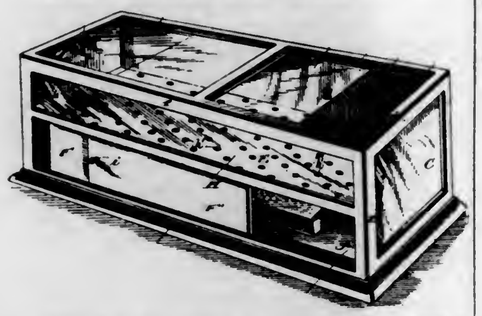
2. The combination, with a railway tie having upper extensions at each end against which the rails of the track are adapted to abut, and provided with holes for spikes formed in the tie which cross each other at an inclination near the middle thereof, of spikes adapted to be driven through said holes, one of which is provided with a longitudinal recess carrying a spring-operated chuck, and the other with a notch which said chuck is adapted to enter when the spikes are driven into the holes in the tie, and means for releasing the chuck to admit of withdrawing the spikes, substantially as shown and described.

3. The combination, with a railway tie having upper extensions at each end against which the rails of the track are adapted to abut, and provided with holes for spikes formed in the tie which cross each other at an inclination near the middle thereof, of spikes adapted to be driven through said holes, one of which is provided with a longitudinal recess carrying a spring-operated chuck, and the other with a notch which said chuck is adapted to enter when the spikes are driven into the holes in the tie, and the spike containing the chuck being also provided with a bore extending through the lower end thereof adapted to receive an arm or extension of the chuck, whereby the chuck may be forced backward and the spikes withdrawn, substantially as shown and described.

4. The combination, with a railway tie having upward extensions at each end forming shoulders against which the rails are adapted to abut, and provided with diagonal holes for spikes at each side of the rail which cross each other near the middle of the tie, of spikes adapted to be driven into said holes and having heads to clamp the bottom flange of the rail, one of said spikes being provided with a longitudinal recess in which is placed a spring-operated chuck, and a continuation of said recess opening at the lower end of said spike and a transverse notch or recess about midway of one side thereof, and the other spike being provided about midway of its length, at one side, with a recess having an abrupt shoulder at the lower end thereof, which said chuck is adapted to enter, said chuck being also provided with an arm or projection which extends through the bore in the lower end of the spike in which it is located, substantially as shown and described.

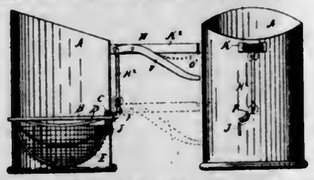
5. The combination, with a railway tie, of means for holding the rails in position, consisting of transverse holes formed at each side of the rail which cross each other at an inclination about midway of the tie, and spikes adapted to be driven into said holes, one of which is provided with a longitudinal recess adapted to receive a spring-operated chuck and a bore communicating with said recess and opening at the lower end of the spike, said spike being also provided with a transverse recess about midway of its length in one side thereof and the other spike being provided with a recess adjacent to the first, forming an abrupt shoulder therein, into which said chuck is adapted to enter, substantially as shown and described.

542,475. SHOW-CASE. WILLIAM HOARE, Washington, D. C. Filed Feb. 5, 1895. Serial No. 537,380. (No model.)



Claim.—The show-case described, composed of the base with its frame-work, the glass plates mounted to slide independently of each other in guides at the top, the mirrors at the front and ends, the horizontal perforated partition within the case, the glass back to the upper compartment, the sliding doors at the rear of the lower compartment, and the removable receptacle within the lower compartment, substantially as and for the purpose specified.

542,476. FLOUR-SIFTER. WARREN D. HOUSE, Kansas City, Mo. Filed June 14, 1892. Serial No. 436,743. (No model.)



Claim.—1. In a sifter of the kind described, the combination with the beater shaft having an end bent, a coil spring having one end connected to the beater shaft, and the other end connected to the body of the sifter, and mechanism connected to the handle of the sifter and to the bent arm of the beater shaft, whereby the hand holding the handle may operate the shaft against the pressure of the spring, substantially as described.

2. In a sifter of the kind described the combination with a movable arm connected to or in close proximity to the sifter handle, of a bent beater shaft connected to the said movable arm and a spring tension between the said parts adapted to resist the pressure of the hand when said pressure is applied to the movable arm.

3. The combination with the beater shaft, B, of the bent arm F, rod H, and spring J as specified.

4. The combination with the bent shaft, B, the handle K and connecting arm H, the beater shaft being provided with a spring connection with the body of the sifter, as specified.

5. In a sifter, the combination with a beater having a cranked shaft, of an operating rod connected to the crank, and a handle of resilient material, connected at one end to the body of the sifter and at its other end to the operating rod; substantially as described.

6. In a sifter, the combination with a beater having a cranked shaft, of a pivoted lever connected at one end to the crank, and a spring for normally holding the other end of the lever depressed; substantially as described.

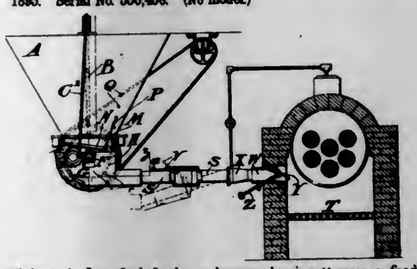
7. In a sifter, the combination with a beater having a cranked shaft, of a pivoted lever connected to the crank, a handle within which the lever is pivoted, and a spring for normally holding the free end of the lever depressed; substantially as described.

8. In a sifter, the combination with a beater having a cranked shaft, of an operating rod journaled to the crank, a pivoted lever connected to the operating rod, a handle within which the lever is pivoted, and a spring for holding the free end of the lever depressed; substantially as described.

9. In a sifter, the combination with a beater having a cranked shaft, of an operating rod journaled to the crank, a pivoted lever connected to the operating rod, a handle within which the lever is pivoted, and a torsion spring connected at one end to the body of the sifter and at the other end to the crank for holding the free end of the lever depressed; substantially as described.

10. In a sifter, the combination with a beater having a cranked shaft, of an operating rod having at its lower end an eye through which the crank passes freely, and having at its upper end a thumb-presser top or cap, a handle in proximity to the operating rod, said handle having guides through which the rod passes, and a spring acting in opposition to the rod, substantially as described.

542,477. FEEDING SHAVINGS TO FURNACES. THOMAS W. JENKINS, Philadelphia, Pa. Filed Mar. 9, 1893. Renewed May 23, 1895. Serial No. 550,458. (No model.)



Claim.—1. In a fuel feeder, a hopper having therein a feeding device, a rising and falling beater, and means for operating said device and beater, said device being of the form of a drum with spurs thereon, substantially as described

2. A fuel feeder having a hopper with spring actuated gates in its discharge end, a rotatable feed drum, and a casing with discharge pipe below said hopper, said drum having studs thereon, said parts being combined, substantially as described.

3. A fuel feeder having a hopper with an agitator therein, a feed drum with studs thereon, a casing below said hopper with a discharge pipe, an automatically operating valve in said pipe and an injector at the end of said discharge pipe said parts being combined substantially as described.

4. In a fuel feeder, a hopper provided with a beater, and a feed roller, a pipe leading from the hopper to a furnace, and provided with a valve to automatically shut-off the communication between the hopper and furnace, and an injector in combination with a chute communicating with a furnace and adapted to direct the fuel to different parts of the same, substantially as shown and described.

5. In a fuel feeder, a hopper, a feeding device, a pipe leading from said hopper to a furnace, an automatically-closing valve in said pipe, a chute with an adjustable valve in its discharge end, and an injector between the automatically-closing valve and the chute, said parts being combined substantially as described.

542,478. BUDDING-TOOL. ELSA A. KNOWLTON and JOHN H. WARRENER, Lee, Ohio. Filed Oct. 18, 1894. Serial No. 526,308. (No model.)

Claim.—1. In a budding tool the combination with a handle, a concavo-convex tapering guide arranged on said handle, and a knife

provided with a cutting edge in advance of said guide, whereby the bark may be slit and simultaneously opened for the insertion of the bud, substantially as described.

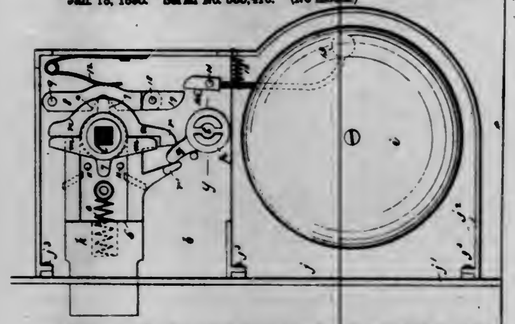


2. A tool of the character described comprising a handle, a concavo-convex guide extending outwardly and downwardly from the handle, and a knife provided with a cutting edge in advance and below the guide, substantially as described.

3. In a budding tool, the combination with a handle, of a concavo-convex tapering guide extending outwardly and downwardly from the handle, together with a knife adjustably held in the handle and provided with a cutting edge in advance and below the guide, substantially as described.

4. A budding tool, comprising a handle, a concavo-convex guide extending outwardly and downwardly from the handle, a knife provided with a cutting edge in advance and below the guide, and a gouge, substantially as described.

542,479. ALARM-LOCK. JACOB W. LOHR, Newark, assignor to George C. Steiger, New Brunswick, N. J. Filed Nov. 2, 1893. Renewed Jan. 18, 1895. Serial No. 535,416. (No model.)



Claim.—1. The improved alarm lock herein described, in which is combined with the lock case, an alarm bell, a hammer for sounding an alarm thereon, a tumbler within said case for operating said hammer, a latch or locking bolt, *k*, and a sectional spindle provided with knobs on opposite sides of said lock case which are independently operable, one operating the tumbler for the alarm bell and the other the latch or bolt *k*, all substantially as set forth.

2. In an alarm lock, the case, the sectional spindle, the sections of which are independently operable from opposite sides of the door, tumblers arranged within the lock case at opposite sides of the joint therein, a lever 8 having the pivoted end piece, 17, and having a V shaped notch to receive the arm 7 of the tumbler, 6, said bell hammer and an alarm bell, all arranged and combined substantially as set forth.

3. In combination with the case of an alarm lock adapted to be inserted in the mortise of a door, a latch *k* spindle, *e*, in sections operable one independent of the other, tumblers arranged on said spindle, one at the side of the other on opposite sides of the joint in said spindle, a lever 8, having a pivoted end section, 17, a spring 12 holding said lever to one of said tumblers, a spring, *o*, holding latch, *k*, to the other, an alarm bell-hammer and bell engaged by the section 17, a key tumbler, *p*, for operating the latch without operating the alarm, and knobs for operating the spindle sections from opposite sides of the door, substantially as set forth.

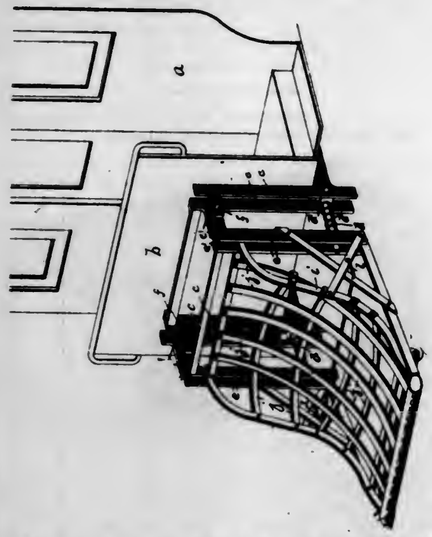
4. In an alarm lock, the combination with a sectional spindle and its knobs, tumblers arranged on said sections, one operating the latch bolt and the other the alarm bell mechanisms, said latch bolt and alarm mechanisms, a key tumbler for operating the latch bolt from the side of the door having the alarm bell-operating knob and a dead latch operable from the inside of the door to prevent repression of said latch bolt, all substantially as and for the purposes set forth.

5. In an alarm lock, the combination therein, of a sectional spindle one section of which operates alarm operating mechanisms and the other latch operating mechanisms, an alarm bell, and latch and said mechanisms for operating the same independently, a repression piece 20, adapted to throw the alarm operating parts out of operative relation with the bell, a key-tumbler adapted to operate the latch independently of the latch operating spindle and a dead lock for preventing the unlatching of the latch, substantially as set forth.

6. In an alarm lock, the combination with the latch, jointed lever 8, independent tumblers, jointed spindle and alarm mechanisms, a repression piece, 20, attached to a turn piece arranged in a slotted cylinder of the lock case and said lock case having said slotted cylinder and turn piece therein adapted to give longitudinal movement to the repression piece as the same is turned to throw the alarm mechanisms from the alarm-sounding position, substantially as set forth.

7. In an alarm lock, the combination with the slotted key tumbler and the latch operated thereby, of the pivotal finger piece, *f*, and the sliding dead latch *u*, adapted to enter the slot of said tumbler to lock said tumbler, having the screw shank 4 working in said finger piece, substantially as set forth.

542,480. CAR-FENDER. JOSEPH LEIGHTHAM, Reading, Pa., assignor of one-half to William H. Slichter, same place. Filed Mar. 21, 1895. Serial No. 542,859. (No model.)



Claim.—1. A car provided with the supporting plates extending upwardly in front of the dash from and rigidly secured to the beams beneath the platform, the upper ends thereof formed to have a fender hinged removably thereto, and swinging guides having springs for the lower part of the fender carried by the supports beneath the plane of the platform substantially as described.

2. A car provided with the vertical supporting plates arranged in pairs and extending up in front of the dash and down below the same, and having the forward perforated ears at their upper ends, substantially as described.

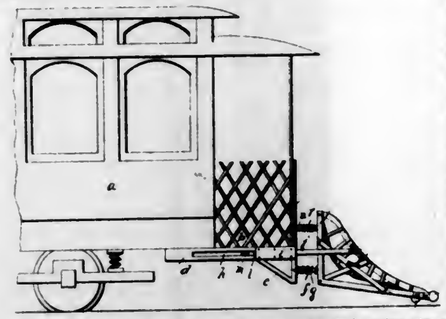
3. A car provided with the vertical supporting plates extending up in front of the dash and extended below the same and provided with the rear extensions secured to the platform timbers, and with the forward ears at its upper end, and the swinging pins pivoted between the lower ends of the plates and having coiled springs thereon.

542,481. CAR-FENDER. JOSEPH LEIGHTHAM, Reading, Pa., assignor of one-half to William H. Slichter, same place. Filed Apr. 8, 1895. Serial No. 545,096. (No model.)

Claim.—1. The fender comprising the rear frame and the forwardly and downwardly extending bottom frame with the sides, said fender pivotally joined at its sides to the car and springs between the car and the rear end of the fender above and below the pivotal points of the fender, substantially as described.

2. The fender removably pivoted to the car and having the retractive spring removably connecting the upper part of the rear end of the fender and the dasher, and the springs between the lower part of the fender and the car and removable from the fender, substantially as described.

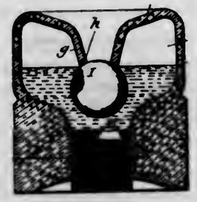
3. The fender extending up in front of the dash and downwardly and forwardly below the dash, expansive springs interposed between the car and the lower part of the fender, and arms extending forwardly from the car and to which said fender is pivoted at its sides above the plane of said springs and a distance below its upper end, said fender having a limited longitudinal movement in addition to its swing, substantially as described.



4. A car having the longitudinal sideways at its end, spring stops therein, the sliding fender supporting bars in said ways having the longitudinal slots in their outer ends, the fender pivoted at its sides in said arms so that the pivots can slide in said slots, and springs holding the fender, substantially as described.

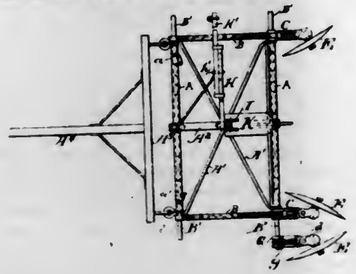
5. A car having the forwardly extending slidable fender supporting arms extending beneath the platform to a point in front of the dash, brackets depending from the platform and having swinging guides provided with springs, the fender pivoted at its sides in said arms and formed to receive said guides and be held by the springs substantially as described.

542,482. INK WELL OR HOLDER. WILLIAM E. LEWIS, Corry, Pa. Filed Dec. 8, 1893. Serial No. 493,119. (No model.)



Claim.—An invertible ink well formed from glass and having its entire body composed of a single piece with its top having a central depending conical flange and its bottom a central, vertical aperture disposed below the pen aperture which extends through the conical flange of a much greater diameter than said pen aperture and adapted to serve as an inclosure for the buoyant ball stopper, a stopper removably placed in the base aperture, and the aforesaid buoyant stopper limited in its movements by the wall of the base aperture and adapted, by reason of its buoyancy to automatically close the pen aperture when the well is in its operative position and also adapted by reason of gravity to automatically seat over and close the pen aperture when the well is inverted, whereby the well is automatically rendered air tight at all times, substantially as specified.

542,483. COMBINED LAND MARKER, FURROWER, AND COVERER. SWEETSER LEFTWICH, Jr., Wellham's Cross Roads, Md. Filed Mar. 1, 1895. Serial No. 540,153. (No model.)



Claim.—1. The combination with a frame, of laterally adjustable extensions thereon, and runners consisting of T-iron having their forward ends rigidly secured to the forward extensions and curved from the point of connection downward and rearward having their rear ends extending upward to a point on a plane below the plane of the forward ends and secured to the rear extensions, a draft connection at the forward end of the machine, and adjustable disks secured to the rear extensions, substantially as described.

2. The combination with laterally adjustable runners, of upwardly extending segmental tongues fixedly secured directly on the runners and having perforations therein, of vertically adjustable disk carrying arms having apertures through which the tongue passes, pins for securing the arms in place, and adjustable disks on the outer ends of the arms, substantially as described.

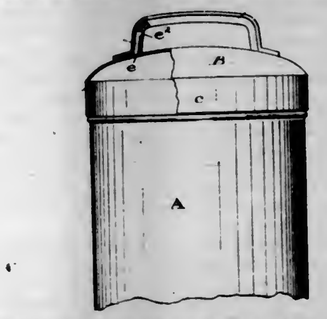
3. The combination with the adjustable runners, of stationary curved segments having perforations therein, a vertically adjustable disk carrying arm, having a vertical opening therein through which the segment passes, pins passing through the arms and segments, a horizontal bearing plate on the outer end of the arm having a segmental series of apertures therein, a bearing block, pivotally secured on the plate having an apertured finger registering with the apertures of the plate, pins passing through the apertures, a shaft fixedly secured to the bearing block, a disk mounted on the shaft, and means for securing the disk in place, substantially as described.

4. The combination with tubular end bars of the frames, of extensions slidingly and adjustably secured therein, means for uniting the outer end of the extensions comprising curved runners rigidly secured at opposite ends to the extension, disk carrying arms having bifurcated inner ends, loosely sleeved on the rear extensions and spanning the rear ends of the runners, disks on the arms, and means for vertically adjusting the disks, substantially as described.

5. The combination with the vertically adjustable disk carrying arms, of a laterally adjustable bearing block secured thereon, a shaft passing through the block and rigidly secured, a disk on the shaft, having oppositely extending hubs, the inner hub projecting into a socket in the block and a securing means on the opposite end of the shaft engaging the opposite hub, substantially as described.

6. The combination with the frame having tubular end bars, of extensions telescoped therein and projecting beyond the same, means for adjusting the extensions, runners at the ends of the extensions rigidly secured at opposite ends thereto, disk carrying arms pivoted on the extensions at the rear ends of the runners, disks on the arms, and supplemental disk carrying arms on the outer ends of the rear extensions adjustably secured in position and carrying suitable disks, substantially as described.

542,484. COVER FOR ICE-CREAM CANS. AUGUST MAAG, Baltimore, Md. Filed May 18, 1895. Serial No. 549,749. (No model.)



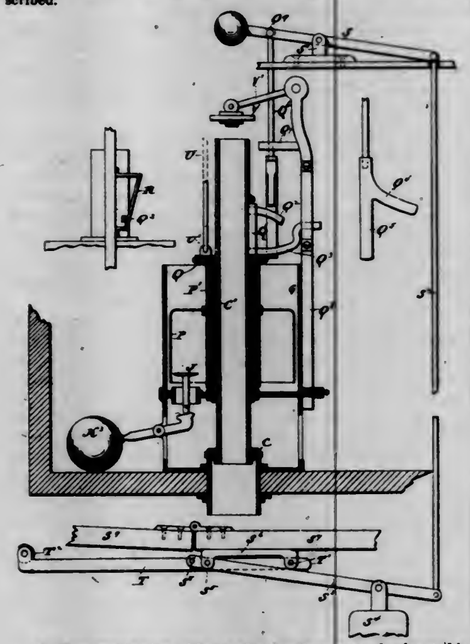
Claim.—1. An ice cream can having a cover and a handle on the cover and provided with a vent in the handle which is in communication with the can.

2. A can having a flanged cover and provided with a handle on the cover, and having a hole, *e*, in the cover which is coincident with a passage, *e'*, extending through one leg of the handle, said passage having its termination, e^2, at the under side of the handle where it is shielded by the hand-grasp part.

542,485. VALVE FOR WATER-CLOSETS. JOHN MESSER, New Haven, Conn. Filed June 18, 1894. Serial No. 514,917. (No model.)

Claim.—1. The combination with the tank of a water-closet, of a valve through which the water in the tank is discharged, a float-chamber, a valve located in the said chamber for discharging the water contained therein, and a float located in the said chamber and arranged for co-action with the valve of the tank, substantially as described.

2. The combination with the tank of a water-closet, of a valve located therein, a tubular stem for the said valve, a cup located within the tank, concentric with the said stem and containing a float-chamber, a valve controlling the egress of the water from the bottom of the said chamber, and a float located in the said chamber and arranged to coact with the tubular valve-stem, substantially as described.



3. The combination with a tank, of a discharge valve located in the bottom thereof, a tubular stem for the said valve, a cup located within the tank concentric with said valve and its stem, and containing a float-chamber, a valve located in the bottom of the said float-chamber for emptying the same, a float for controlling the opening of the said float-chamber valve, a valve-float located in the said float-chamber, and arranged to co-act with the stem of the tank-valve, and means for normally holding the float in its depressed position, and for releasing it to permit it to coact with the said valve-stem in emptying the tank, substantially as described.

4. The combination with a tank, of a valve located in the bottom thereof, a vertically arranged tubular stem for the said valve, a cup located in the tank concentric with the said valve and stem, and containing in its upper portion a valve float-chamber, a valve located in the bottom of the said float-chamber for emptying the same, means for opening the said valve of the float-chamber, an annular valve-float located in the said chamber and co-acting with the valve-stem to lift it, and hence the valve, and means for maintaining the float in its normally depressed position, and for releasing it to lift the stem and valve, substantially as described.

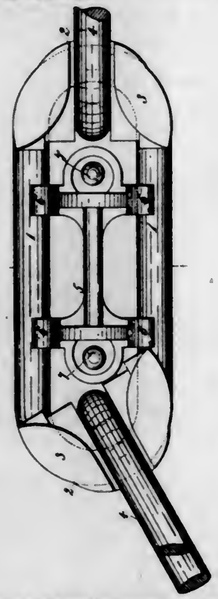
5. The combination with a tank, of a valve located in the bottom thereof, a tubular stem for the said valve, a float coacting directly with the said stem to lift the said valve, a float chamber located in the tank and containing the said float, a valve for discharging the water contained in the float chamber and means for temporarily closing the upper end of the stem for preventing the ejection of air through it during the emptying of the tank, substantially as described.

6. In a water-closet, the combination with a tank and means for discharging the same for flushing the closet, of a closet-seat, and mechanism between the seat and the said means for discharging the tank, including two horizontally arranged levers one of which is engaged at its forward end by the seat, and pivotally hung at its rear end, and the other of which is pivotally connected at its forward end with the lever first mentioned, and pivotally hung at a point close to, but in rear of its connection with the other lever, substantially as set forth.

542,486. DRIVE-CHAIN. JAMES H. MITCHELL, Philadelphia, Pa. Filed Apr. 13, 1895. Serial No. 545,634. (No model.)

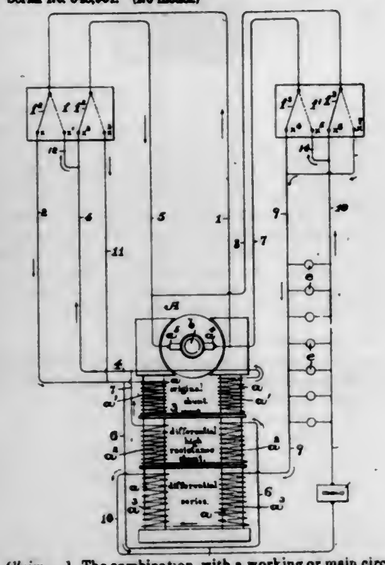
Claim.—1. The combination with a chain link provided with cross-heads or wearing blocks, of an independent locking piece engaging the link and limiting the movement of the wearing block and its encircling link, substantially as shown and described.

2. The combination with a chain link having wearing blocks loosely held at each extremity, of a locking or holding piece interposed between the wearing blocks, in the body of the link, substantially as shown and described.



3. In a chain the links whereof are provided with movable cross-heads or wearing blocks, as set forth, a locking piece arranged to grasp each side of the link, limiting the movement of said cross-heads or wearing blocks substantially as shown and described.

542,487. ELECTRIC-LIGHTING SYSTEM AND DYNAMO THEREFOR. MORRIS MOSKOWITZ, Newark, N. J., assignor to the National Electric Car Lighting Company, of West Virginia. Filed May 11, 1895. Serial No. 548,901. (No model.)



Claim.—1. The combination, with a working or main circuit containing lamps or other translating devices, of a dynamo in said main circuit, and wound in a differential series coil around the field of said dynamo, said dynamo having a self-excited field coil in circuit with its armature, and an opposing high resistance field coil fed from the dynamo, substantially as and for the purposes set forth.

2. The combination, with a working or main circuit containing lamps or other translating devices, of a dynamo in said main circuit, and a reversible driving power for operating the same, said main circuit being wound in a differential series coil around the field of said dynamo, a pole changer in said main circuit, a self-excited field coil on said dynamo in circuit with its armature, and opposing high resistance field coil in circuit with and fed from said dynamo, and a pole changer in circuit with the dynamo armature and said field coils, substantially as and for the purposes set forth.

3. The combination, with a dynamo having its armature in circuit with a differential high resistance coil which tends to cut down the field magnetism, of a reversible driving power, and a pole changer responsive to the reversal of said power, and a main circuit connected with said dynamo and wound in a differential series coil around the field thereof, and co-acting with said differential high resistance coil, substantially as and for the purposes set forth.

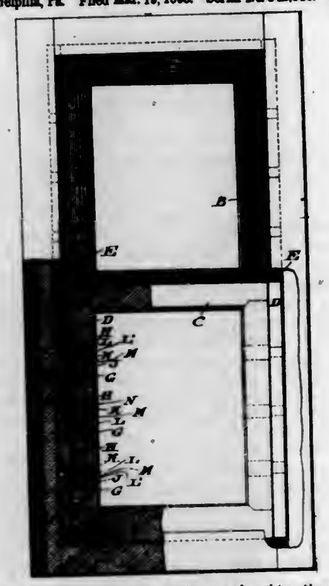
4. The combination, with a dynamo having its armature in circuit with a differential high resistance coil which tends to cut down the field magnetism, of a reversible driving power, and a pole changer responsive to the reversal of said power, and a main circuit connected with said dynamo and wound in a differential series coil around the field thereof, and co-acting with said differential high resistance coil, and a pole changer in said main circuit, substantially as and for the purposes set forth.

5. The combination, of a dynamo mounted on a car truck and driven from the car-wheel axle, a field-exciting coil fed from said dynamo, an opposing differential high resistance field coil also fed from said dynamo, a pole changer in the connecting circuits, and a main circuit connected with said dynamo wound in a differential series coil around the field of said dynamo, and co-acting with said differential high resistance coil to cut down the field magnetism, substantially as and for the purposes set forth.

6. The combination, of a dynamo mounted on a car truck and driven from the car-wheel axle, a field-exciting coil fed from said dynamo, an opposing differential high resistance field coil also fed from said dynamo, a pole changer in the connecting circuits, and a main circuit connected with said dynamo wound in a differential series coil around the field of said dynamo, and co-acting with said differential high resistance coil to cut down the field magnetism, and a pole changer in said main circuit, substantially as and for the purposes set forth.

7. A dynamo-electric machine, subject to variable armature speed, having a self-excited field coil in shunt with its armature, an opposing differential high resistance field coil, also in shunt with the armature of said dynamo, and a differential series field coil, in main circuit with the armature of the dynamo, co-acting with said differential high resistance coil, to cut down the field magnetism of said dynamo, substantially as and for the purposes set forth.

542,488. REVERSIBLE WINDOW-SASH. CLEMENT S. MOSHOP, Philadelphia, Pa. Filed Mar. 19, 1895. Serial No. 542,318. (No model.)



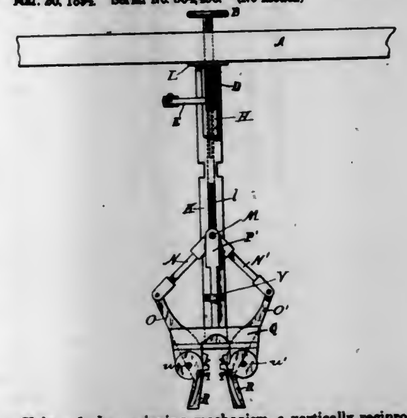
Claim.—1. A window sash, strips on the sides thereof, having thimbles secured therein, plates secured to the sides of said sash, having openings therein adapted to register with said thimbles, studs movable in said sash and thimbles, and having shoulders adapted to abut against said plates, and suitable stops for holding said studs in position, said parts being combined substantially as described.

2. A window sash, a movable strip adjacent thereto, threaded thimbles secured therein, plates attached to said sash, and having thimbles extending therefrom, threaded studs provided with a shoulder mounted in said last mentioned thimbles, and bushings secured within the latter, and acting as a stop, substantially as described.

3. In a device of the character described, a window sash and a strip D adjacent thereto, the threaded thimble G secured in said strip, the apertured plate H and thimble L′ attached thereto, the stud K mounted in said thimble L′, and having the shoulder L and squared portion P thereon, and the internal bushing M serving as a stop, said parts being combined substantially as described.

4. In a device of the character described, a window sash, and a strip D adjacent thereto, the threaded thimble G secured in said strip, the apertured plate H and thimble L′ attached thereto, the stud K mounted in said thimble L′, and having the shoulder L, and squared portion P thereon, the internal bushing M serving to hold said shoulder in contact with said plate H, and the plate N for holding said bushing in position, said parts being combined substantially as described.

542,489. CABLE-GRIP. ELIHU NELSON, New York, N. Y. Filed Mar. 20, 1894. Serial No. 504,430. (No model.)



Claim.—1. In a gripping mechanism, a vertically reciprocating bar connected to one end of a toggle system, and a pair of grip bars at the opposite end of said system, and pivoted cable-lifting fingers movable toward and from the plane of the gripping surfaces, as set forth, said fingers being movable on axes independent of the pivots of the grip bars.

2. In a gripping mechanism, a frame having a vertical movement and a gripping apparatus having a rocking or horizontal movement, a projection upon the said gripping apparatus and a finger mounted upon the said frame in a pivotal manner and being in line with the said projection, as set forth.

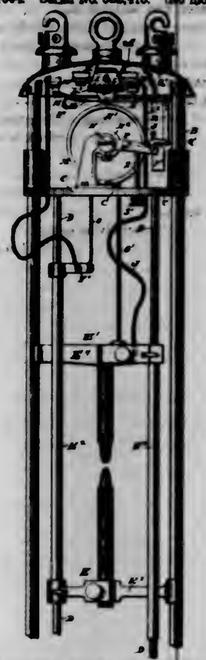
3. In a gripping mechanism, a frame or bar having a vertical movement a grip bar having a rocking movement, the two movements being simultaneous, in combination with a projection extending from the said grip bar, a finger pivotally mounted upon the said frame or bar and being in line with the said projection, as set forth.

4. In a gripping mechanism, a frame or bar having a vertical movement and a grip bar having a rocking movement, the two movements being simultaneous, in combination with a projection extending from the said grip bar, a finger pivotally mounted upon the said frame or bar and provided with a curved slot, the said projection entering the said slot, as set forth.

5. In a gripping mechanism, a frame or bar having a vertical movement, and a grip bar having a rocking movement, the two movements being simultaneous, in combination with a pin projecting from the said grip bar, a finger pivotally mounted upon the said frame or bar and having a curved slot, the said pin being adjustably secured to the said grip bar and being adapted to enter the said slot, as set forth.

6. In a gripping mechanism a frame or bar having vertical movement, two grip bars having a rocking movement, the said movements being simultaneous in combination with projections extending from the said grip bars and fingers pivotally mounted in different planes upon the said frame or bar, each finger in line with one of the said projections, as set forth.

542,490. ELECTRIC-ARC LAMP. SAMUEL E. NUTTING, Oak Park, assignor to George W. Furbeck and Joseph Kettlestrings, Chicago, Ill. Filed Sept. 8, 1894. Serial No. 522,413. (No model.)



Claim.—1. An arc lamp, having a carbon-controlling mechanism, consisting of an electrical conductor secured directly between fixed cross-heads, said conductor and said cross-heads suitably placed in the circuit of said lamp, means for stretching or tightening said conductor, and a movable part adapted to bear directly against said conductor all substantially as set forth and shown.

2. An arc lamp having a carbon controlling mechanism consisting of a number of small parallel wires secured to fixed cross-heads and placed in the circuit of said lamp, said wires adapted to expand and contract by the action of the temperature resultant upon the resistance to the current in passing through said wires, a lever placed transversely to said wires, said lever adapted to bear against said wires midway between the points of attachment of the wires to the fixed cross-heads, said lever also adapted to respond to any action of the wires due to expansion or contraction, and a suitable carbon actuating mechanism, all substantially as set forth.

3. An arc lamp, having a carbon controlling mechanism consisting of a suitable conductor secured at either end to fixed cross-heads and placed in the circuit of said lamp, and a carbon actuating mechanism consisting of a spring actuated lever suitably connected to the brake and brake wheel and relative parts, said lever adapted to bear centrally against said conductor and its part to be actuated thereby, all substantially as and for the purpose set forth.

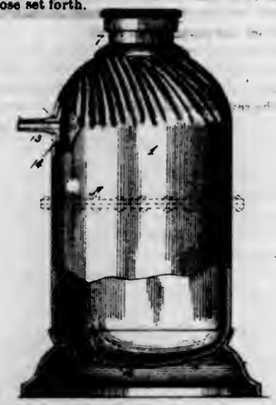
4. In an arc lamp, a short circuiting device placed between fixed cross heads connected by a thermo electric conductor, said short circuiting device adapted to automatically close and relieve said conductor of excessive current, all substantially as set forth.

542,491. SHEET-METAL RECEPTACLE FOR FIRE-EXTINGUISHING CHEMICALS. EDWARD F. O'TOOLE, St. Louis, Mo. Filed Mar. 19, 1894. Serial No. 504,351. (No model.)

Claim.—1. The herein described vessel composed of a single piece of sheet metal, its center being smooth and cylindrical and its ends provided with corrugations commencing at nothing near the center and growing deeper toward the ends so as to make the latter dome-shaped, all said corrugations being flattened, each upon the next in one direction around the vessel as and for the purpose set forth.

2. The herein described vessel composed of a single piece of sheet metal, its center being smooth and cylindrical except the bung, and its ends provided with corrugations commencing at nothing near the center and growing deeper toward the ends so as to make the latter dome-shaped, as and for the purpose set forth.

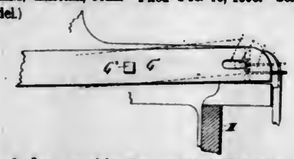
3. The herein described vessel composed of a single piece of sheet metal, its center being smooth and cylindrical and its ends dome-shaped, the material of the upper end being provided with corrugations commencing at nothing near the center and growing deeper toward but terminating short of the upper end, all said corrugations being flattened, and a neck piece having an interior annular groove in which the ends of the uppermost corrugations are soldered, as and for the purpose set forth.



4. The herein described vessel composed of a single piece of sheet metal, its center being smooth and cylindrical and its ends provided with approximately longitudinal corrugations commencing at nothing near the center and growing deeper toward the ends so as to make the latter dome-shaped, all said corrugations being flattened and those at the lower end of the vessel meeting at its axis and held in position by a coating of solder within the vessel, as and for the purpose set forth.

5. The herein described vessel composed of a single piece of sheet metal, its center being smooth and cylindrical and its ends rounding or dome-shaped, the material of such ends being provided with corrugations commencing at nothing near the center and curving inward and growing gradually deeper toward the ends, all said corrugations being flattened so as to extend spirally around the vessel, those at the upper end thereof terminating short of the axis and those at the lower end of the vessel meeting at its axis and held in position by a coating of solder within the vessel, and a neck having an interior annular groove into which the ends of the uppermost corrugations are soldered, as and for the purpose set forth.

542,492. MACHINE FOR SETTING LACING-STUDS. THOMAS A. PERRIER, Ansonia, Conn. Filed Feb. 18, 1895. Serial No. 538,745. (No model.)



Claim.—1. In a machine for setting lacing-studs, the combination with a fixed punch, of a vertically movable block or carrier, a holding jaw secured thereto, an oscillating jaw-head mounted in the said block or carrier, and a feeding-jaw located upon the said oscillating jaw-head and adapted to receive a stud, and carry the same to the holding jaw with which it co-acts to hold the stud when the same is pressed against the punch by the movement of the block or carrier, substantially as described.

2. In a machine for setting lacing-studs the combination with a fixed punch, of a vertically movable block or carrier, a holding jaw carried thereby, an oscillating jaw-head mounted in the said carrier, and a feeding-jaw located upon the said jaw-head and constructed with a pocket which receives the studs which it carries to the holding jaw, and adapted to coact therewith to hold them while they are forced against the punch by the movement of the block or carrier, substantially as described.

3. In a machine for setting lacing-studs, the combination with a fixed punch, of a movable block or carrier, a holding jaw applied thereto, an oscillating jaw-head located therein, a feeding-jaw carried by the said jaw-head, and adapted to have the studs fed to it one by one, and a yielding gate-lever arranged to feed the studs one at a time, and connected with the said jaw-head which is oscillated by it and by which it is finally lifted for the feeding of the studs, substantially as described.

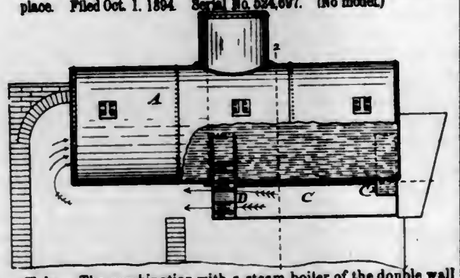
4. In a machine for setting lacing-studs, the combination with a fixed punch, of a reciprocating block or carrier moving toward and away from the punch, a holding jaw carried by the said block or carrier, an oscillating jaw-head mounted in the said block or carrier, a feeding jaw located upon the said oscillating jaw-head, and adapted to receive the studs one by one, an operating-pin located in the said oscillating jaw-head, a yielding gate-lever constructed with an elongated slot for the reception of the said pin, and means operated by the said lever for permitting the studs to be fed one by one to the feeding-jaw, substantially as described.

5. In a machine for setting lacing-studs, the combination with a fixed punch, of a reciprocating block or carrier moving toward and away from the same, a fixed jaw removably mounted in the said block or carrier, and having a segmental shank, of an oscillating-jaw-head mounted in the block or carrier, a feeding-jaw removably attached to the said jaw-head, constructed with a pocket to receive the studs one by one, and with a segmental shank arranged out of alignment with the shank of the fixed jaw, and means for operating the said jaw head in oscillation, and for feeding the studs one by one to the pocket of the feeding-jaw, substantially as described.

6. In a machine for setting lacing-studs, the combination with a punch, of a holding jaw, a feeding jaw co-operating with the holding jaw to grip the studs, and a circular jaw-head to which the feeding jaw is secured and by the oscillation of which the said feeding jaw is moved toward and away from the holding-jaw, substantially as described.

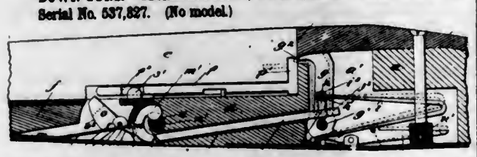
7. In a machine for setting lacing-studs, the combination with a punch, of a holding jaw, a segmental feeding jaw constructed at its inner end with a clearance opening to receive the punch, and with an undercut pocket to receive the heads of the studs and a circular jaw-head to which the segmental feeding-jaw is secured, and by the oscillation of which the said jaw is moved toward and away from the holding-jaw, substantially as set forth.

542,493. BOILER-FURNACE. GEORGE PLAYFORD, Cleveland, Ohio, assignor, by mesne assignments, to the Playford Stoker Company, same place. Filed Oct. 1, 1894. Serial No. 524,697. (No model.)



Claim.—The combination with a steam boiler of the double wall fire-box C consisting of the double rear end wall, curved in its upper side to fit the bottom of the boiler, the sheets forming said wall riveted to the boiler on each side of an opening in the bottom of the boiler, the low side walls connecting the said end wall with the front end wall, and flues D through the rear end walls, constructed and operating as specified.

542,494. REBOUND AND EJECTING MECHANISM FOR BREAK-DOWN GUNS. GEORGE D. POTTER, Wallace, Idaho. Filed Feb. 9, 1895. Serial No. 537,827. (No model.)



Claim.—1. In a breech-loading break-down hammerless gun, the combination with a hammer, a rectilinearly movable cocking-rod, a main spring, an intermediate and positive connection between said spring and the hammer and rod, and a lever, the said rod and lever cooperating by superficial contact and without positive connection, the said lever being arranged in the frame eccentrically with relation to the hinge-pin, and having its rear and lower end arranged in line with the cocking-rod to force the said cocking-rod rearwardly to cock the hammer, and having a forwardly extended projection in operative connection with the fore-end, whereby said lever is actuated by the dropping of the barrels to cock the hammer and thereafter permit the closing of the gun without disturbing the lever, cocking-rod or hammer, substantially as described.

2. In a breech-loading break-down hammerless gun, the combination with a hammer, a rectilinearly movable cocking-rod, a main spring and a stirrup positively connecting the hammer, spring and rod, and a lever, the said rod and lever operating by superficial contact and without positive connection, the said lever being arranged in the frame eccentrically with relation to the hinge-pin, and having its rear and lower end arranged in line with the cocking rod to force said cocking-rod rearwardly to cock the hammer, and having a forwardly extended projection in operative connection with the fore-end, whereby said lever is actuated by the dropping of the barrels to cock the hammer and thereafter permit the closing of the gun without disturbing the lever, cocking-rod or hammer, substantially as described.

3. In a breech-loading break down hammerless gun, the combination of an ejector mechanism comprising an ejector hammer pivoted in the fore-end and having a trip, with a hammer, a rectilinearly movable cocking-rod, a main spring intermediately and positively connecting the hammer and rod, and a lever, the said rod and lever cooperating by superficial contact and without positive connection, the said lever being arranged in the frame eccentrically with relation to the hinge-pin, and having its rear and lower end arranged in line with the cocking-rod to force the said cocking-rod rearwardly to cock the hammer, and having a forwardly extended projection in operative connection with said trip, whereby said lever is actuated by the dropping of the barrels to cock the hammer and thereafter permit the closing of the gun without disturbing the lever, cocking-rod or hammer, substantially as described.

4. In a breech-loading break-down hammerless gun, the combination of an ejector mechanism comprising an ejector hammer pivoted in the fore-end and having a trip, with a hammer, a rectilinearly movable cocking-rod, a main spring, a stirrup positively connecting the hammer, spring and rod, and a lever, the said rod and lever operating by superficial contact and without positive connection, the said lever being arranged in the frame eccentrically with relation to the hinge pin, and having its rear and lower end arranged in line with the cocking-rod to force said cocking-rod rearwardly to cock the hammer, and having a forwardly extended projection in operative connection with the fore-end, whereby said lever is actuated by the dropping of the barrels to cock the hammer and thereafter permit the closing of the gun without disturbing the lever, cocking-rod or hammer, substantially as described.

5. In a breech-loading break-down hammerless gun, the combination of a hammer, a rectilinearly movable cocking-rod, a main spring, a stirrup interposed between the main spring, hammer and cocking-rod and holding said rod in operative connection with the said hammer at all times, and a lever arranged in the front end of the body of the gun and provided with a rearwardly extended end adapted to abut against the cocking-rod and move the same rearwardly to cock the hammer when the barrels are dropped, substantially as described.

6. In a breech-loading break-down hammerless gun, the combination of a hammer, a rectilinearly movable cocking-rod, a main spring, a stirrup connected at different points in its length with the hammer, the rod and the said spring, and a lever arranged in the body of the gun and provided with a rearwardly projecting end adapted to abut against the cocking-rod and move the same rearwardly to cock the hammer when the barrels are dropped, substantially as described.

7. In a breech-loading break-down hammerless gun, the combination of a hammer, a main spring a cocking-rod, and a cocking-rod operating lever with a stirrup interposed between and connecting the said hammer, spring and rod to constitute a toggle by which said main spring is compressed and the hammer cocked as the cocking-rod is acted upon by the lever upon the dropping of the barrels, substantially as described.

8. In a breech-loading break-down hammerless gun, the combination of a main-spring having its lower limb fulcrumed at its forward end, a sear, a support or rest for such main-spring fixed to and moving with said sear and arranged in the rear of the hammer's pivot, a hammer, and a stirrup pivotally connecting the upper limb of said spring and the hammer, the sear, upon the pulling of the trigger, being raised and the spring support on the sear acting upon and tilting the main-spring to throw the free end of such spring forward and effect a forward alignment of the centers of connection of the stirrup, hammer and spring, upon the fall of the hammer, the spring after the fall of the hammer and by the release of the trigger and sear then falling back and effecting a re-alignment of the centers and a rebound of the hammer, substantially as described.

9. In a breech-loading break-down hammerless gun, an extractor, an ejector hammer pivoted in the fore-end, a spring acting thereupon to hold it in retracted position, and a cocking lever cooperating with said ejector hammer after the gun has been fired selectively to trip and impel it against the extractor, substantially as described.

10. In a breech-loading break-down hammerless gun, a curved cocking lever having its upper end journaled in a bearing between the top of the hinge-pin and the end of the body of the frame and eccentrically with relation to the axis upon which the barrel turns, and having a rotary and sliding motion in connection with the fore-end, and provided with a forward projection, combined with an

ejector hammer with which said projection engages to trip said hammer, substantially as described.

11. In a breech-loading break-down hammerless gun, the combination with the hammer, a rectilinearly movable cocking-rod, a cocking-rod operating lever having a forwardly projecting portion, an ejector hammer pivoted in the fore-end of the gun and having a rearwardly projecting trip cooperating with the forwardly projecting portion of the cocking-rod operating lever, and a spring having one end fixed and the other movable against and with the ejector hammer, substantially as described.

12. In a breech-loading break-down hammerless gun, the combination of a hammer, a main spring and a sear, with a rectilinearly movable cocking-rod, means to move it rearwardly, and a stirrup connected with the rear end of said cocking-rod at one of its ends, pivoted to the hammer above its point of connection with the cocking-rod, and also pivoted to one end of the main spring at a point above its pivotal connection with the hammer, substantially as and for the purpose described.

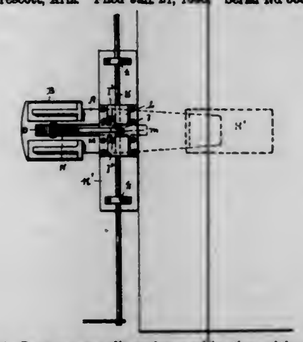
13. In a breech-loading break-down hammerless gun, the combination with a hammer, a cocking-rod and articulated connections between the said hammer and cocking-rod, of a cocking-rod operating lever journaled within the frame and having a rearwardly projecting end adapted to cooperate with the cocking-rod and having a forward projection extending into the fore-end, and an ejector hammer provided with a trip adapted to cooperate with the forward projection of the said operating lever, substantially as and for the purpose described.

14. In a breech-loading break-down hammerless gun, the combination with the hammer, a rectilinearly movable cocking-rod and means to connect the same, of a hinge-pin having a cavity in its upper side, a cocking-rod operating lever provided with a head seated in said cavity and rotatable therein, and also provided with a rearwardly projecting end adapted to cooperate with the cocking-rod, and also provided with a forward projection, and an ejector hammer pivoted in the fore-end, a trip extending from said hammer into cooperative relation with the forward projection of the cocking-rod operating lever, and a spring bearing against the said ejector hammer, substantially as described.

15. In a breech loading break-down hammerless gun, the combination with a hammer, a cocking-rod, and operating connections between the two, of a cocking-rod operating lever, a fixed extractor post, an extractor mechanism provided with a mortise of greater length than the diameter of the post, an ejector hammer, and a lever journaled within the body of the gun and interposed between the cocking-rod and the said ejector hammer and cooperating with both upon the dropping and closing of the barrel, substantially as described.

16. The combination with a hinge-piu, of a cocking-rod operating lever journaled thereupon and a set-screw seated in the fore-end of the body and bearing against a notch in the hinge-pin, substantially as and for the purpose described.

542,495. CAR-COUPLING. WARREN C. POTTS and ROBERT L. DANIEL, Prescott, Ariz. Filed Jan. 21, 1895. Serial No. 535,665. (No model.)



Claim.—1. In a car coupling, the combination with a draw-bar having a chambered draw-head, whose forward end is transversely convexed and cut away laterally, as at *c*, *c*, and the bottom wall of the chamber of which is formed with the recess E, and a raised, angular projection in rear of said recess, of a link clutch or hook, comprising a bar pivotally seated in the draw-bar, said bar having a nose at its forward end which is designed to engage the recess E, and an angular recess *j* in its lower edge arranged to fit the said projection, substantially as specified.

2. In a car coupling, the combination with the draw bar formed with upper and lower shoulders H, of a yoke H' which engages said shoulders, a rod or bolt I passing loosely through the said yoke, and through a longitudinal passage in the draw bar, said rod or bolt having a head at its forward end, a nut on its rear end, and a spring coiled around said rod or bolt and bearing at one end against the yoke, and at the opposite end against the draw bar, substantially as specified.

542,496. PLUME-HOLDER FOR HARNESS. WILLIAM RAUSCHENBERGER, Milwaukee, Wis. Filed Jan. 3, 1891. Serial No. 376,578. (No model.)

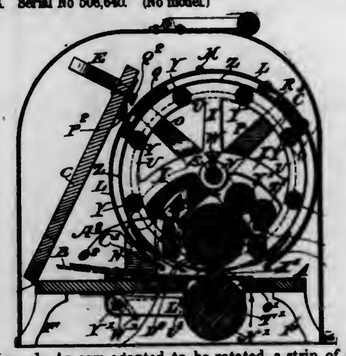


Claim.—1. The combination with a plume of a plume holder and rosette provided with a central opening in the outside for the reception and attachment of the plume and projecting outwardly therefrom and constituting an exposed ornamental margin around its base, and a loop attached to the back of said rosette and constituting a fastening for securing it to harness, substantially as and for the purposes set forth.

2. The combination of a plume, a plume-holder provided with an opening in its outer face for the reception and attachment of the plume, and a depending tapering elastic shank adapted to be inserted and held in a loop of the harness, substantially as and for the purposes set forth.

3. The combination of a plume, a rosette having a central opening in its outer face, in which said plume is secured, and extending outwardly therefrom so as to constitute an exposed marginal base therefor, and a tapering elastic wire loop attached to the back of said rosette and serving by its insertion in a loop, to fasten it to the harness, substantially as and for the purposes set forth.

542,497. ROTARY COPYING-MACHINE. GEORGE RENFORS, JOHN G. RENFORS, and MARTIN O. RENFORS, Philadelphia, Pa. Filed Apr. 23 1894. Serial No 508,640. (No model.)



Claim.—1. An arm adapted to be rotated, a strip of paper attached thereto, and suitably supported having thereon the characters to be re-produced, an inking roll located between the inner periphery

of said paper and the axis of rotation, a feed roll, and means for actuating the arm and the rolls, said parts being combined substantially as described.

2. A skeleton cylinder, inking rolls suitably supported therein, a sheet of prepared paper supported upon said cylinder, a feed roll, means for revolving said paper between said rolls, and means for separating said feed and inking rolls at proper intervals, substantially as described.

3. An arm adapted to be rotated, a strip of paper attached thereto and suitably supported, having thereon the characters to be reproduced, an inking roll located between the inner periphery of said paper and the axis of rotation, and a feed roll, means for actuating said arm and roll, and means for causing said feed roll to approach and recede from the inking device at proper times, said parts being combined substantially as described.

4. A skeleton cylinder, an arm adapted to be revolved, a sheet of suitably prepared paper attached thereto, a removable inking device supported within said skeleton cylinder, a feed roll, means for revolving the arm and rolls a cam and means for causing said feed roll to approach and recede from the inking device at proper intervals, and said parts being combined substantially as described.

5. A skeleton cylinder, an arm adapted to be revolved, a sheet of suitably prepared paper attached thereto, a removable inking device supported within said skeleton cylinder, a feed roll, means for revolving said arm and roll, a cam, and means for causing said feed roll to approach and recede from the inking device at proper intervals, said cam being adjustable, and carrying a stop adapted to engage a spring-actuated pin suitably supported on the frame of the machine, said parts being combined substantially as described.

6. A skeleton cylinder, an arm adapted to be revolved and to carry a sheet of suitably prepared paper, an inking device within said cylinder, a feed roll supported on the spring-pressed arms U', gears Q', K', and P', dog L', gear H' carrying the adjustable cam, having the stop G^3 thereon, and the spring-pressed pin H^3, adjacent thereto, said parts being combined substantially as described.

7. A skeleton cylinder, an arm adapted to be revolved and to carry a sheet of suitably prepared paper, an inking device within said cylinder, a feed roll supported on the spring-pressed arms U', gears Q', K', and P', dog L', and carrying roller X', gear H' carrying a cam having the stop G^3 thereon, and the spring-pressed pin H^3, adjacent thereto, said parts being combined substantially as described.

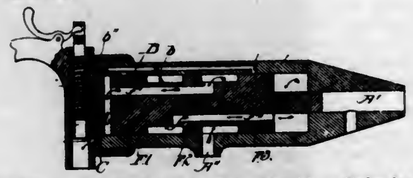
8. A skeleton cylinder, an arm adapted to be revolved, and to carry a sheet of suitably prepared paper, an inking device within said cylinder, a feed roll supported on the spring-pressed arms U', gears Q', K', and P', dog L', gear H', carrying the adjustable cam, and the stop G^3, the spring-pressed pin H^3 adjacent thereto, and the hinged extension C provided with a gage, said parts being combined substantially as described.

9. In a rotary copying machine, a movable arm, adapted to actuate a sheet of suitably prepared material, a frame about which said material is adapted to be revolved, an inking device supported within said frame, a feed roll adjacent said inking device, means for actuating said feed roll, and arm in unison, and means for causing said feed roll to approach and recede from said inking device at proper intervals, substantially as described.

10. In a rotary copying machine, a bed, a frame mounted thereon, an inking roll supported within said frame, a feed roll, said bed being interposed between said rolls, a movable arm, adapted to actuate a strip of suitable material, said material being adapted to be passed between said rolls, in combination with means for actuating said arm, substantially as described.

11. In a device of the character described, a rotatable element, a strip of prepared material attached thereto, and suitably supported, having thereon the characters to be reproduced, an inking device located between the inner periphery of said paper and the axis of rotation, a feed roll, and means for actuating said rotatable element and said roll, the above parts being combined substantially as described.

542,498. ENGINE. FRANK C. RIESCHE, St. Louis, Mo., assignor to Pierre Chouteau, same place Filed Feb. 25, 1895. Serial No. 539,625. (No model.)



Claim.—1. In an engine, the combination with a cylinder formed with an annular recess in its ends, into which leads the exhaust, of a handle base which is adapted to be secured to said cylinder and close the annular recess, an opening in the handle base which opens into said recess, and means on the handle base for controlling said opening, substantially as described.

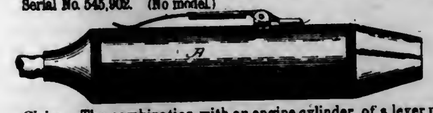
2. In an engine, the combination with a cylinder formed with a shoulder on one end, of a cylinder head loosely seated on said shoulder, a handle base which is secured to the cylinder and holds the cylinder head in position, the exhaust of the engine passing up the side of the cylinder and through the handle base, and means on the handle base for controlling the exhaust; substantially as described.

3. In an engine, the combination with the cylinder having an inlet port leading to its side, exhaust ports leading from the sides of the cylinder on each side of the inlet port, and a piston provided with three heads for controlling said ports, said piston being formed with passages which lead from the ends thereof to beyond the middle head, which middle head controls the inlet port, whereby, when the fluid is exhausting from one end of the piston chamber, it returns through the piston passage to the exhaust port farthest from the end exhausting, the head at the exhausting end, closing the nearest exhaust port; substantially as described.

4. In an engine, the combination with the cylinder having an inlet port leading to its side, exhaust ports leading from the sides of the cylinder on each side of the inlet port, a piston provided with three heads for controlling said ports, said piston being formed with passages which lead from the ends thereof to beyond the middle head, which middle head controls the inlet port, whereby, when the fluid is exhausting from one end of the piston-chamber, it returns through the piston passage to the exhaust port farthest from the end exhausting the head at the exhausting end, closing the nearest exhaust port, a port B connecting said exhausts, and means located at the end of the cylinder for controlliug the escape of the exhaust through port B; substantially as described.

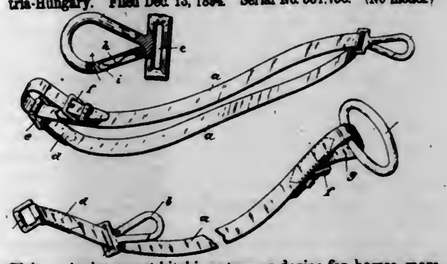
5. In an engine, the combination with the cylinder having an inlet port leading thereinto about midway its length, and an exhaust port B which is arranged at the side of the cylinder into which it opens at points *b* and *b'*, and leads to the end of the cylinder, of a piston provided with three heads co-operating with said inlet and exhaust ports, and means located at the end of the cylinder for controlling the escape of the exhaust through port B; substantially as described.

542,499. ATTACHMENT FOR ENGINES. FRANK C. RIESCHE, St. Louis, Mo., assignor to Pierre Chouteau, same place. Filed Apr. 16, 1895. Serial No. 545,902. (No model.)



Claim.—The combination with an engine cylinder, of a lever pivoted thereon, a packing on the lever for controlling the exhaust, and a leaf-spring forming a continuation of a lever, for forcing the packing against the exhaust port; substantially as described.

542,500. HITCHING-STRAP. ISIDOR VON RISCH, Postelberg, Austria-Hungary. Filed Dec. 13, 1894. Serial No. 531,738. (No model.)



Claim.—An improved hitching strap or device for horses, more particularly for saddle horses employed for military purposes, consisting of a strap *a*, a sliding snap hook *b* arranged on said strap, a buckle frame firmly secured to one end (*d*) of the strap, and a buckle *f* firmly secured near the other end of the strap, said latter end (*g*) being fastened up into a loop by means of the said buckle *f*, said loop being adapted to engage the buckle frame *e* (or the halter ring *m*) all said parts, substantially as and for the purposes described and illustrated.

542,501. VENTILATOR. WILLIAM W. ROBINSON, Ripon, Wis. Filed Feb. 28, 1895. Serial No. 540,050. (No model.)

Claim.—The combination with a window sash provided with a horizontal rail and a vertical rail near the lower end, of the hinged doors, the wire gauze screen and the hood or housing secured to the outside of the sash, open at the lower side and closed at the upper side, substantially as described.



542,502. CIGAR-TIP CUTTER. GEORGE H. RODGERS, Somerville, assignor of one-half to Nathan Schloss, Boston, Mass. Filed Nov. 19, 1894. Serial No. 529,279. (No model.)



Claim.—1. A cigar-tip cutter, consisting of a casing having an opening for the tip of a cigar, a tip-cutter movable across said opening and having a circular bevel-edged opening normally registering with the opening in the casing, to cut the tip, a spring to move the cutter in one direction, and a normally disengaged actuator to positively move the cutter in the other direction and thereafter release it, substantially as described.

2. A cigar-tip cutter, consisting of a casing having an opening for the tip of a cigar, a tip-cutter movable across said opening and having a bevel-edged opening normally registering with the opening in the casing, to cut the tip, and a lug on the cutter, combined with a spring to move the cutter in one direction, a manually operated actuator, and a yielding pawl therein to engage said lug and move the cutter in the other direction, continued movement of the actuator disengaging said pawl and lug, substantially as described.

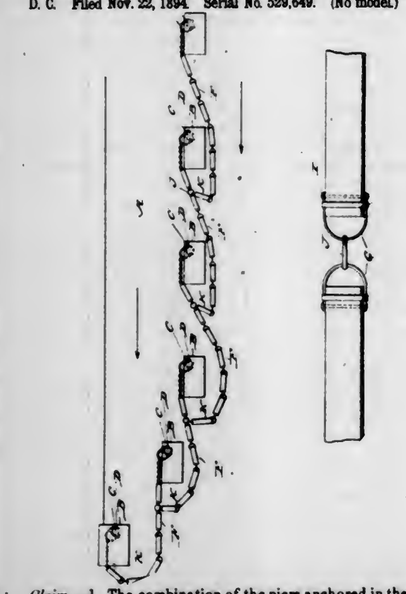
3. A cigar-tip cutter, consisting of a casing having an opening for the tip of a cigar, a manually controlled actuator pivoted in said casing, and a projection on the actuator, combined with a tip-cutter movable across the opening in the casing, a spring to retract it, and a lug on said cutter in the path of the projection, movement of the actuator in one direction causing engagement of the projection and lug, to operate the cutter against the action of its spring, substantially as described.

4. The combination with the following instrumentalities viz:—a casing, a swinging plate pivoted thereto, a spring to move it in one direction, an actuator to positively move said plate in the other direction and automatically release it, a rotatable carrier, means to impart sudden rotation thereto by the spring actuated movement of the swinging plate, and a manually controlled detent to stop such rotation, substantially as described.

5. The combination with the following instrumentalities, viz:—a casing having a sight opening therein, a swinging plate provided with a lug and pivoted to the casing, a spring to move it in one direction, an actuator, a yielding pawl thereon to engage the lug and move the plate in the other direction, continued movement of the actuator disengaging the pawl and lug, a rotatable carrier mounted below the sight opening, means to impart sudden rotation to the carrier, and means controlled by the actuator to thereafter stop the carrier, substantially as described.

6. The combination with the following instrumentalities viz:—a casing, a swinging plate pivoted thereto, a spring to retract it, an actuator for and normally disengaged from said plate, a projection on the actuator, a lug on the plate in the path of said projection, movement of the actuator in one direction causing engagement of the projection and lug, to operate the plate against the action of its spring, a rotatable spindle having a notched disk thereon, a striker on the swinging plate movable in the path of and to rotate the disk, and a detent controlled by the actuator to stop such rotation, substantially as described.

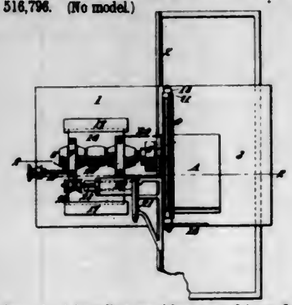
542,503. BOOM-HITCH AND LOOP-SWING. JOHN C. SATTES, St. Albans, W. Va., assignor of one-half to P. R. R. M. Sattes, Washington, D. C. Filed Nov. 22, 1894. Serial No. 529,649. (No model.)



Claim.—1. The combination of the piers anchored in the stream, the booms each having one end connected to the inner side of one of the piers and passed around the next pier and having the other end connected to the next boom section and forming a series of loops at each side of the piers to receive the logs.

2. The combination of the piers, the posts thereon, the bands or rings on said posts, the booms made in sections having their ends connected by loops or staples, and each of said booms having one end connected to the rings and passed around the next pier and having the other end connected to the next boom section, forming a loop at each pier.

542,504. BEVELING-MACHINE. CARL SCHRAUBSTADTER, Jr., and CHARLES R. SCHILLING, St. Louis, Mo., assignors to the Western Engravers' Supply Company, of Missouri. Filed July 7, 1894. Serial No. 516,796. (No model.)



Claim.—1. A beveling machine comprising a feeding device movable horizontally, a cutting device, and an independently adjustable rule whose edge is adapted to lie upon the printing plate carried by said feeding device parallel with the line of motion and thereby indicate the course of the cut, substantially as and for the purpose set forth.

2. A beveling machine comprising a feeding device, a cutting device adjustable transversely thereto and a rule connected with the adjustable portion of the cutting device to move therewith.

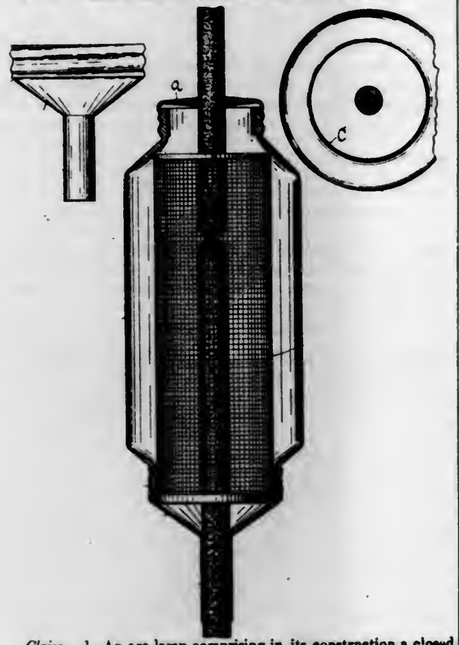
3. A beveling machine comprising a reciprocating bed, a cutting device adjustable transversely thereto and an independently adjustable rule connected with the adjustable portion of the cutting device to move therewith.

4. A beveling machine comprising a reciprocating bed, a plate carrying journal bearings, a shaft in said bearings and a cutter head on said shaft, said plate being adjustable transversely to said bed, and an independently adjustable rule for indicating the course of the cut, said rule being pivotally connected to a support on said adjustable plate.

5. In a plate beveling machine, a horizontally movable feed table and a rotary cutter head carried on a shaft which is approximately parallel to the plane of the feed table, said cutter head being far enough above said feed table to permit a printing plate carried by said feed table to pass freely thereunder and being adapted to hold one or more cutting tools adjustable to clear said feed table, whereby a groove of any desired depth and cross section may be cut in any direction and in any portion of a printing plate on said feed table, substantially as and for the purpose set forth.

6. In a plate beveling machine, a rotary cutter head adapted to hold a cutting tool, and a rule for indicating the line of the cut, said rule being independently adjustable by means of a screw fixed in the support of the rule at one end and at the other end passing through lugs independently of said support and a nut between them.

542,505. ARC LAMP. ALBERT C. SEIBOLD, Mount Vernon, assignor of one-third to Edgar O. Clark and William Sowdon, New York, N. Y. Filed Jan. 7, 1895. Serial No. 534,034. (No model.)



Claim.—1. An arc lamp comprising in its construction a closed globe, and an internal foraminous guard surrounding the arc and extending throughout the length of the globe, substantially as and for the purpose set forth.

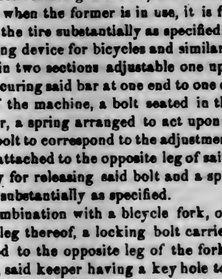
2. The combination with the globe of an arc lamp, of a cap attached to the bottom thereof containing a conical collecting chamber and a tubular discharge through which the lower electrode passes, an internal foraminous guard surrounding the arc and extending throughout the length of the globe, and a cap closing the top of the globe and provided with an orifice for the passage of the upper electrode, substantially as and for the purpose set forth.

3. The combination with the closed globe of an arc lamp, of an internal foraminous guard surrounding the arc, and adapted to direct the carbon dust downwardly, substantially as and for the purpose set forth.

542,506. LAMP-BURNER. TABER SKINNER, Philadelphia, Pa. Filed Feb. 16, 1895. Serial No. 538,619. (No model.)

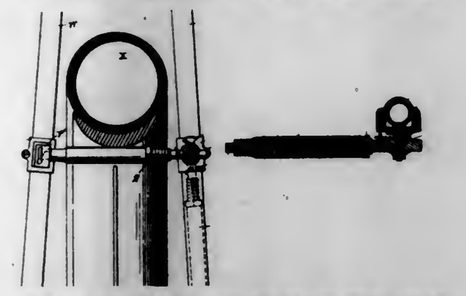
Claim.—1. A burner, provided with a perforated flanged base, a cone suitably mounted upon said base, a wick tube, and an open ended flaring, gravitating hood inclosing said wick tube, and situated between said cone and base, said hood serving to concentrate currents of air at the point of combustion and being movable relative to said wick tube.

2. A burner, having a suitable base and wick tube, a cone mounted upon said base, and an open ended flaring, gravitating hood inclosing said wick tube, and located between said base and cone, said hood serving to concentrate currents of air at the point of combustion, and being movable relative to said wick tube.



3. A burner, having a suitable base and a wick tube, a support attached to said base, a cone hinged to said support, a catch for holding said cone in position, and an open ended conical gravitating hood supported upon said base, below said cone, and inclosing said wick tube, said hood having a recessed edge and serving to concentrate currents of air at the point of combustion.

542,507. LOCKING DEVICE FOR BICYCLES. HERMAN C. TAFEL, Louisville, Ky. Filed Oct. 19, 1894. Serial No. 526,397. (No model.)



Claim.—1. A locking device for bicycles and similar vehicles comprising a bar pivotally attached to the frame of the machine upon one side of one of the wheels thereof, and formed in two sections, one of which is adjustably secured upon the other, and a keeper attached to the frame upon the opposite side of the wheel and adapted to receive said bar, means whereby the bar is locked in said keeper, said keeper having a key-hole to receive a key to act upon said bar and release it from said keeper, substantially as specified.

2. A locking device for bicycles and similar vehicles comprising a bar pivotally attached to one leg of one of the forks of the machine, a spring actuated bolt seated in the opposite end portion of said bar, a socket for said bolt upon the opposite leg of the fork, and a suitable key for releasing said bolt, said bolt and its lock being arranged so that when the former is in use, it is forced into compressing relation to the tire substantially as specified.

3. A locking device for bicycles and similar vehicles, comprising a bar formed in two sections adjustable one upon the other, means for pivotally securing said bar at one end to one end of the legs of one of the forks of the machine, a bolt seated in the opposite end portion of said bar, a spring arranged to act upon said bolt, means for adjusting said bolt to correspond to the adjustment of the bar, a socket designed to be attached to the opposite leg of said fork and to receive said bolt, a key for releasing said bolt and a spring arranged to act upon said bar, substantially as specified.

4. The combination with a bicycle fork, of a bar pivotally attached to one leg thereof, a locking bolt carried by said bar, and a keeper attached to the opposite leg of the fork, and adapted to receive said bolt, said keeper having a key hole to receive a key to act upon said bolt and release it from said keeper, substantially as specified.

542,508. MEDICAL ELECTRODE. ANDREW P. VAN TUYL, Jr., Brooklyn, N. Y., assignor to himself and Edward C. Park, same place. Filed May 15, 1895. Serial No. 549,400. (No model.)

Claim.—1. An electrode for medical electro-therapeutic use having a sponge plate to which the conductor is connected and the corners of which plate are turned over to form hooks, and the removable felt or sponge secured by the hooks, substantially as set forth.

2. The combination in an electrode for medical electro-therapeutic use, of a sponge plate having its corners turned over to form hooks, a sponge or absorbent material held by such hooks, a conductor extending out from such sponge plate and having an insulating covering, a back plate connected with the sponge plate and an elastic skirt surrounding the sponge plate and having its edges held between such sponge plate and the back plate, substantially as set forth.

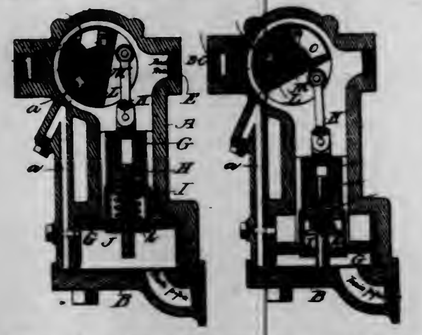


3. The combination in an electrode for medical purposes, of a sponge plate and a conductor therewith connected, sponge or other absorbent material upon such sponge plate, and a water-proof skirt connected with the sponge plate and surrounding the felt or sponge, substantially as set forth.

4. The combination in a medical electrode having a plate with its corners bent over to form hooks, of a removable sponge or felt for receiving the medicated liquid, a conductor connected with the sponge plate, and a back plate of insulating material, and a skirt having its inner edge clamped between the sponge plate and the back plate and surrounding the sponge or porous material, substantially as set forth.

5. The combination in a medical electrode, of a sponge plate, an insulated conductor extending out from the same, and buttons at the outer end of the conductor, a screw for connecting the buttons and the conductor and a spring link between the buttons and to which one of the battery conductors is connected, substantially as set forth.

542,509. TRIPLE VALVE. WILLIAM C. WHITACRE, St. Louis, Mo., assignor to the Whitacre Air-Brake Company, East St. Louis, Ill. Filed Mar. 8, 1894. Serial No. 502,802. (No model.)



Claim.—1. In a triple-valve, the combination with the casing formed with two different diameters, and having a seat formed in its upper end, the train pipe leading into the larger bore at the lower end, the pipe connecting the valve with the auxiliary reservoir, leading into and from the upper end of the casing at the top of the smaller bore, a port leading from the valve seat to the brake cylinder, of a master-valve, operating in the bores of the casing between the train-pipe and auxiliary reservoir pipe openings, a rotary valve seated in the upper end of the casing and adapted to be operated by the movement of the master-valve, and suitable ports and cross-connections in said rotary valve for controlling the passage of air through the casing into the auxiliary reservoir and brake cylinder, and the exhaust of the brake cylinder, substantially as described.

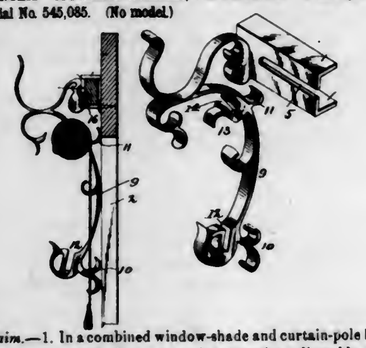
2. In a triple valve the combination with the casing, of a master-valve located therein, a spring-controlled rod H which projects from the lower end of the master-valve, a link K which is connected to the upper end of the master-valve, and a rotary valve L located in the upper part of the casing and to which the upper end of link K is connected, said rotary valve being formed with a cross port N and capping groove O which co-operate with ports *a*, *f*, F', and P in the casing, substantially as and for the purpose described.

3. In a triple-valve, the combination with a casing provided with suitable ports and pipe connections, of a rotary valve which is formed with cross-ports and side-groove ports on its seating surface, said rotary valve being seated on one side of the casing only so as to expose one side surface and form a passage to its cross-ports, and a master valve which is connected to and operates said rotary valve, substantially as described.

4. In a triple-valve, the combination with the casing, of a master valve located therein, a rotary valve formed with a bifurcation mounted in the casing and seated on one side only thereof, and a link connection between the master valve and the bifurcation in the rotary valve, substantially as described.

5. In a triple valve, the combination with the casing, of a master-valve located therein, a rotary valve having a link connection with, and adapted to be operated by, the master-valve, said master-valve being chambered to receive a rod H having formed thereon a flange A, spring I operating between the flange A and a shoulder in the valve, and a confining cap J, substantially as described.

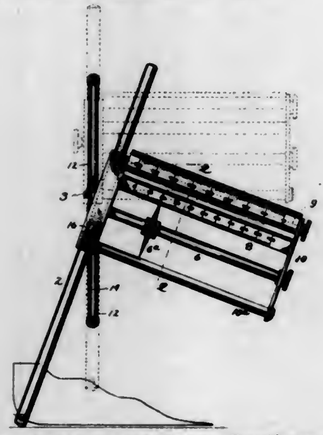
542,510. COMBINED WINDOW-SHADE AND CURTAIN-POLE HANGER. CHARLES A. WILLIAMS, Van Buren, Ind. Filed Apr. 9, 1895. Serial No. 545,085. (No model.)



Claim.—1. In a combined window-shade and curtain-pole hanger, the combination with the rectangular bar, the adjustable sockets formed with longitudinal slots, and the set-screws, of the brackets formed integral with said sockets, comprising the outwardly-extending curved arms, and the downwardly-extending curved arms formed with slotted extensions at their lower ends, adapted to bear against a window-frame or casing and to form bearings for a shade-roller; substantially as described.

2. As an improved article, an end-bracket for a combined shade-roller and curtain-pole hanger, consisting of the rectangular socket formed with a longitudinal slot, the outwardly-extending arm provided with an inwardly-projecting lug and the downwardly-extending arm formed with a slotted extension at the lower end; all formed integral with each other, substantially as described.

542,511. PLANIMETER. EDWARD J. WILLIS, Richmond, Va. Filed Jan. 24, 1895. Serial No. 536,069. (No model.)



Claim.—1. A planimeter having an adjustable tracer-bar and a measuring wheel having rotary and longitudinal movement on a fixed shaft, and a guide point upon the frame adapted to move in a fixed guide channel, substantially as and for the purposes described.

2. A planimeter having an adjustable tracer-bar, a measuring wheel having rotary and longitudinal movement upon a fixed shaft, and a guide point on the frame, in combination with a fixed guide consisting of a strip having a channel in which the guide point moves, substantially as and for the purposes described.

3. The means for setting a planimeter to enable horse-power to be read direct from the planimeter, said means comprising a planimeter with an adjustable tracer-bar, and an attachment consisting of graduated arms pivotally connected and capable of separation by the pivotal adjustment of the graduated arms to set the same to the card length of an indicator diagram, the line on which said graduations are made passing through the center of the hinge of the arms, substantially as and for the purposes described.

4. The means for setting a planimeter to enable horse-power to be read direct from the planimeter, said means comprising a planimeter having an adjustable tracer-bar, and an attachment composed of two graduated arms pivotally connected and provided with points adapted to be set to the atmospheric line of an indicator card, the graduations on said arms serving to set the tracer-bar to a reading which will enable the horse-power to be read from the planimeter after the tracer-bar has traced the lines of the indicator card, substantially as and for the purposes described.

5. The means for setting a planimeter to enable horse-power to be read direct from the planimeter, said means comprising a planimeter having an adjustable tracer-bar and adapted to receive interchangeable scales, and an attachment composed of two graduated arms pivotally connected and each provided with a point adapted to be set to the atmospheric line of an indicator card, substantially as and for the purposes described.

6. The means for setting a planimeter to enable horse-power to be read direct from the planimeter, said means comprising a planimeter with an adjustable tracer-bar, and an attachment composed of graduated arms pivotally connected together and each provided with an adjustable point arranged upon one side of the pivotal point of connection of said arms, substantially as and for the purposes described.

7. The means for setting a planimeter to enable horse-power to be read direct from the planimeter, said means comprising a planimeter having an adjustable tracer-bar, and an attachment consisting of two graduated arms adapted to be set to the card length of an indicator diagram, the line on which said graduations are made passing through the center of a hinge of the arms and the graduations serving to set the tracer-bar to reading corresponding to the reciprocals of sundry engine constants as ascertained from a table of such constants, substantially as and for the purposes described.

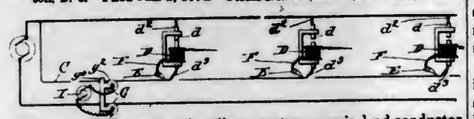
8. The means for setting a planimeter to enable horse-power to be read direct from the planimeter, said means comprising a planimeter having an adjustable tracer-bar, and an attachment consisting of two pivoted arms graduated on one side for large engines and slow speeds and on the other side for small engines and higher speeds and adapted to be set to the atmospheric line of an indicator diagram, the line on which said graduations are made passing through the center of a hinge of the arms and the graduations serving to set the tracer-bar to reading corresponding to the reciprocals of sundry engine constants as ascertained from a table of such constants, substantially as and for the purposes described.

9. The combination with a planimeter having a measuring wheel which is capable of rotation and longitudinal movement upon a fixed shaft, of a revoluble scale bar mounted on an axis parallel with the shaft of the wheel and having a plurality of scale graduations, substantially as and for the purposes described.

10. The combination with a planimeter having a measuring wheel capable of revolution and longitudinal movement on a fixed shaft, of a scale bar of polygonal form in cross section, revoluble on a bar or axis, arranged in parallelism with the shaft carrying the measuring wheel, substantially as and for the purposes described.

11. The combination with a planimeter having a measuring wheel capable of revolution and longitudinal movement on a fixed shaft, of a triangular scale bar, revoluble on an axis parallel with the shaft carrying the measuring wheel, the flat faces of said scale bar being differently graduated, substantially as and for the purposes described.

542,512. ELECTRIC-RAILWAY SYSTEM. ROBERT B. WILSON, Cincinnati, Ohio, assignor of one-half to Jeremiah M. Wilson, Washington, D. C. Filed Jan. 2, 1894. Serial No. 495,418. (No model.)



Claim.—1. In an electric railway system, a main lead conductor and a sectional conductor, each section of which has its own connection with the lead conductor, the connection being normally open and disconnected from the lead conductor and adapted to be closed by a current from a preceding section and thereafter to be kept closed by a current through itself direct to the return separate from and independent of any other connection, substantially as described.

2. In an electric railway system, the combination with a main lead conductor and a sectional conductor each section of which has its own connection with the lead conductor, the connection being separate from and independent of any other connection, normally open and disconnected from the lead conductor, and adapted to be closed by a current from a preceding section and thereafter to be kept closed by a current through itself direct to the return, of means of opening the connection mechanically by a passing car, substantially as described.

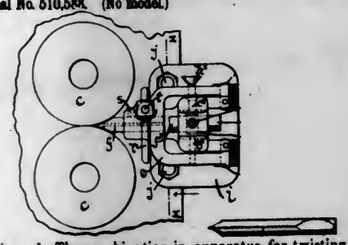
3. In an electrical railway system, a main lead-conductor and a sectional conductor each section of which has its own separate and independent connection with the lead-conductor, the connection including electro-magnet the core of which is normally disconnected from the lead-conductor and connected with a section of the sectional conductor, and the winding of which is connected with the section and to ground, whereby the core is closed with the lead-conductor by a current from the section around the winding to ground; energizing the core, and the core is held closed by a current from the lead conductor through the core to the section and back from the section around the winding to ground, and a mechanical switch adapted to break connection between the section and the winding by a passing car, substantially as described.

4. In an electrical railway system, a lead-conductor to connect with a dynamo or other source of electricity and extending along a railway, a return conductor or discharge, a sectional conductor, connections between the sectional conductor and the lead, the connections including electro-magnets and their armatures, one or both of which are movable and which are connected, respectively, to the several sections of the sectional conductor and to the lead, conductors connected to the several sections of the sectional conductors by mechanical switches, and wound around the electro-magnets, extending to ground, and a current-collector connected with a motor on a car and engaging the return and the sectional conductor and coming in contact with the switches, substantially as described

5. In an electrical railway system, a lead-conductor to connect with a dynamo or other source of electricity, and extending along a railway, a return conductor or discharge, a sectional conductor, connections between the sectional conductor and the lead, the connections including electro-magnets and their armatures, one or both of which are movable and which are connected, respectively, to the several sections of the sectional conductor and to the lead, conductors connected to the several sections of the sectional conductors by mechanical switches and wound around the electro-magnets extending to ground, and a current-collector connected with a motor on a moving car, engaging the return and the sectional conductor, and having an upward extension coming in contact with the switches, substantially as described.

6. A trolley for underground electric railways, consisting of two vertical supports connected to the respective brushes of an electric motor, arms pivotally connected with the supports and provided with coil springs, wheels mounted on the arms, and pins whereby the upward movement of the arms is limited, substantially as described.

542,513. APPARATUS FOR TWISTING AND REELING METALLIC STRIPS. THOMAS V. ALLIS, New York, N. Y. Filed May 9, 1894. Serial No. 510,589. (No model.)



Claim.—1. The combination in apparatus for twisting long flat strips of a twisting die having a spiral passage, rolls for forcing the strips through the die, a reel for reeling the twisted strips, and automatic stop mechanism subject to the strip splices for stopping the rolls and the reel substantially as described.

2. The combination with the rolls and the die, of the bracket having the seat for the die and the hooked lips, the hook-nut, adjusting screw in the nut, and the die clamp swiveled to the said screw, said hook nut detachably engaged with the hooked lips of the bracket substantially as described.

3. The combination with the rolls and the die, of the strip guide and the hinged gate carrying the guide, and having the locking bolt substantially as described.

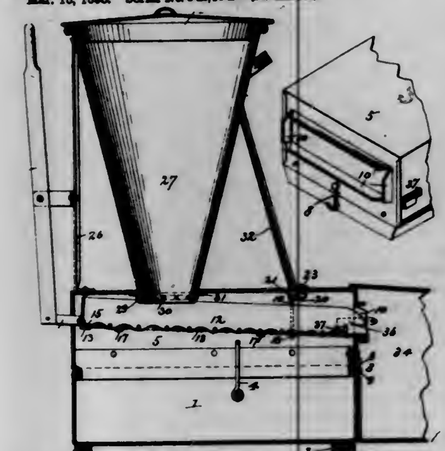
4. A twisting die for flattened galvanized strips having a spiral passage for said strips, suitably larger than the cross section of the strips for clearance of particles of spelter rubbed off said strips, and also being in substantially the same degree shorter in pitch than the pitch of the twist to be produced substantially as described.

5. The combination with the rolls and the die, of the slotted strip guide, and the hinged gate carrying said guide, said gate having the open channel for holding the guide, and for releasing the slotted guide substantially as described.

6. In a strip twisting machine the combination with the twisting die of the clamping seat and a jaw adjustable with respect thereto for holding the die, said seat and jaw having recessed faces forming together with the die when clamped therein a cooling chamber in which the die is exposed to the cooling fluid, and provided with circulating passages substantially as described.

7. In a strip twisting machine the combination with the twisting die and the strip guide, of the clamping seat and a jaw adjustable relatively thereto for holding the die and guide, said die and guide secured in said clamp with a space between them and together with said clamp forming a chamber for a cooling fluid, and said clamp provided with a supply passage for the fluid substantially as described.

542,514. COAL-SIFTER. CHARLES G. BAILEY, York, Pa. Filed Mar. 18, 1895. Serial No. 542,194. (No model.)



Claim.—In a coal sifter, the combination with the ash pan, the removable screen-box, and the vibrating screen, of the funnel-shaped hopper, projecting through an opening in the screen-box and provided, at its lower end, with a collar having its upper edge turned outwardly, forming a flange; substantially as described.

542,515. WINDOW-SHADE CORNICE. DANIEL BOYER, Cressona, Pa. Filed Mar. 30, 1895. Serial No. 543,862. (No model.)



Claim.—1. A device of the class described, comprising a longitudinal supporting rod, the slide-plate bent to form the top and bottom approximately U-shaped fingers or flanges arranged at each end and embracing the top and bottom edges of the supporting rod, said plate being bent to form an end clutch-finger or claw adapted to engage the face of the rod and being bent at its center to form a vertical approximately U-shaped projecting rib having its front edge cut away or open at the top portion and providing a socket, in combination with the bracket plate provided with recesses or openings adapted to support the shade or curtain devices and having at its rear edge the tongue c^3 adapted to rest within the lower closed portion of the socket, substantially as and for the purpose set forth.

2. A device of the class described, comprising the longitudinal supporting rod provided with the longitudinal top and bottom recesses a in its rear face, the slide-plate formed in a single piece and bent to provide the top and bottom approximately U-shaped fingers or flanges b' arranged at each end and embracing the top and bottom edges of the supporting rod, said slide-plate having the bent up clutch-finger or claw at one end and the central vertical approximately U-shaped bent rib having its front edge cut away or open at the top portion and forming a socket, in combination with the bracket plate provided with the curved or segmental recess in its top edge and with the perforations or openings adapted to receive the shade roller devices and provided at its rear edge with the tongue c^3 formed by the upwardly-extending recess c^4 and adapted to rest within the lower closed portion of the socket, substantially as and for the purpose set forth.

3. A device of the class described, comprising a longitudinal supporting rod, a slide-plate having fingers or flanges embracing the top and bottom edges of the supporting rod, said slide being bent at its center to form a projecting vertical approximately U-shaped socket, in combination with the bracket having a tongue fitting said socket and provided with recesses or openings for supporting the shade or curtain devices, substantially as and for the purpose set forth.

4. In a device of the class described, the combination, with a slide-plate bent to form rearwardly-projecting clamping fingers or flanges at the top and bottom and bent up to form the vertical projecting approximately U-shaped rib having its front edge cut away or open at its top portion, of the bracket plate having recesses or perforations adapted to receive the shade or curtain devices and provided at its rear with the tongue c^3 adapted to rest within the lower closed portion of the socket, substantially as and for the purpose set forth.

5. A device of the class described, comprising the longitudinal supporting rod, the slide adjustable thereon and provided with the fingers or flanges embracing the edges of the supporting rod and with a clutch-finger or claw adapted to engage the face of the rod, said slide having a vertical projecting approximately U-shaped socket rib, and the bracket plate provided at its rear edge with a tongue received by said socket, substantially as and for the purpose set forth.

6. The herein described window shade cornice, consisting of the longitudinal supporting rod having the longitudinal recesses a a and the longitudinal central rib a' at its rear face and the smooth front face a^3, the slide-plate bent in a single piece to form the approximately U-shaped top and bottom fingers or flanges b' and the front plate or body portion b having the bent up clutch-finger or claw B^3 and the central vertical projecting approximately U-shaped rib B' with the top portion of its front edge cut away or open, and the bracket plate having the curved or segmental recess c in its top edge and provided with the perforations or openings c' c' and with the tongue c^3 at its rear edge formed by the upwardly-extending recess c^4, substantially as and for the purpose set forth.

542,516. AIR-VALVE. THOMAS W. BROOKS, San Francisco, Cal., assignor to the Dunham, Carrigan & Hayden Company, same place. Filed June 29, 1894. Serial No. 516,089. (No model.)



Claim.—1. In an air or relief valve, the combination of the casing, a buoyant spherical body adapted to be used as a valve, and a flat disk valve, both within the casing and both acting automatically, and so arranged that both or either can be used in one chamber as the pressure may demand, substantially as described.

2. In an air or relief valve, the combination of the sectional case, whose upper section is perforated and provided with an inner valve seat, a flat disk valve operating in connection with said seat, a buoyant spherical body adapted to be used as a valve, situated below the disk valve, and ledges on the lower portion of the casing for supporting the spherical body, substantially as described.

3. In an air or relief valve, the combination of a chamber or casing having a valve-seat, a buoyant spherical body adapted to be used as a valve, and a removable flat valve, the latter valve being for use under high pressure; the two in conjunction for medium pressures, and the spherical valve alone under low pressure, the other elements remaining the same in each case, in the manner substantially and for the purposes specified.

4. In an air or relief valve, a flat disk valve having guiding wings, and a stem above and a cup-formed downward extension, so the latter will cause reaction of the water and increase the closing force of an impinging current passing around the valve, in the manner substantially and for the purposes described.

5. In an air or relief valve, the combination of the casing, the flat disk valve having a stem, guide wings, and a cup-flange, and the elastic-covered buoyant spherical body adapted to be used as a valve, together with the supporting ledges therefor, substantially as described.

6. The combination of the casing whose upper section is perforated and provided with an inner valve seat, and whose lower section has inner ledges, the flat disk valve having an upper stem and a downward cup-shaped extension, and the buoyant spherical body adapted to be used as a valve and located below the disk valve, said valves being adapted for automatic use either jointly or separately, substantially as described.

7. In an air or relief valve, the combination of a separable chamber having upper and lower sections, the lower section provided with wings or ledges, a buoyant spherical body adapted to be used as a valve sustained centrally by said ledges, and the top section of the casing having an inner valve seat adapted to be closed by the spherical body, an interposed disk valve between the spherical body and the seat, and a spring-provided valve stem for said disk valve, substantially as described.

8. In an air or relief valve, the combination of a buoyant spherical body adapted to be used as a valve, and a flat metallic one in one chamber, and acting together and automatically, the flat valve having a cup-shaped inverted flange to cause a reactive and reverse flow of the upward impinging water, and provided with a stem and an adjustable spring so that the resistance of the valve can be adjusted to suit the amount of water pressure or flow to perform the closing action, substantially as described.

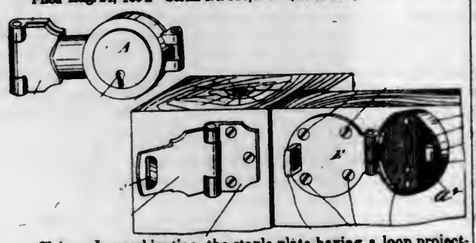
542,517. GABLE ORNAMENT FOR BUILDINGS. JOHN S. BURTON, Danville, Ill. Filed May 2, 1895. Serial No. 547,862. (No model.)



Claim.—1. An adjustable gable ornament having converging strips A, A, united by a movable joint, and an extension brace connecting said strips, substantially as specified.

2. An adjustable gable ornament having the converging strips A, A, the joint piece B, seated in grooves or recesses in the meeting ends of said strips, and a transverse brace C connecting said strips and having slots therein loosely engaged by bearings on the said strips A, A, substantially as specified.

542,518. HASP-LOCK. ANDREW CASSIN, Handsworth, England. Filed Aug. 21, 1894. Serial No. 520,873. (No model.)



Claim.—In combination, the staple plate having a loop projecting therefrom within its marginal limits, the hasp to engage the loop, the lock case having an inclosed bolt to engage the loop, the partition a^3 in the lock case through which the bolt projects, said partition forming a compartment to receive both the loop and the hasp end and the projecting end of the bolt whereby said parts are inclosed.

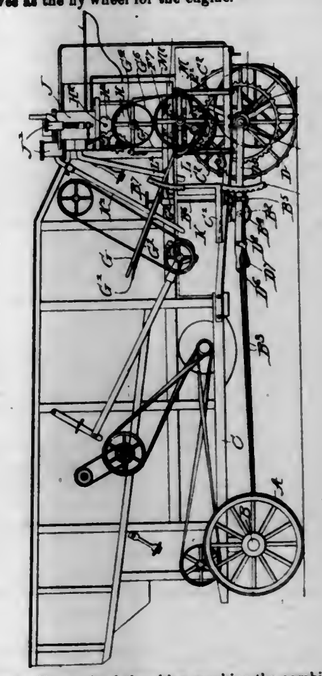
542,519. THRASHING-MACHINE. CHARLES F. GODDARD, Chicago, Ill., assignor to Richard Love Duvall, same place. Filed Nov. 7, 1894. Serial No. 528,171. (No model.)

Claim.—1. In a self-contained thrashing machine the combination upon a single common frame of the separator with a traction wheel, an engine, a power supplying source for such engine, connections from the engine to the traction wheel, and connections from the engine to the separator mechanism so constructed as that the cylinder of the separator serves as the fly wheel for the engine.

2. In a thrashing machine the combination of the separator with a forward axle having a crank at one end, a traction wheel at the other end, a smaller wheel on the crank, and a handle for turning the axle so as to vary the relative positions of the two wheels.

3. In a thrashing machine the combination of the separator with a forward axle having a crank at one end, a traction wheel at the other end, a smaller wheel on the crank, and a handle for turning the axle so as to vary the relative positions of the two wheels, and a spring between the crank and the frame tending to force the crank downwardly, and thus to force the smaller wheel toward the ground.

4. In a self contained thrashing machine the combination upon a single common frame of the separator, an engine, a power supplying source for such engine, and connections from the engine to the separator mechanism so constructed as that the cylinder of the separator serves as the fly wheel for the engine.



5. In a self contained thrashing machine the combination upon a common frame of a separator with a gas engine, a carburetor and water tank, and connections from the carburetor and water tank to the engine, and driving connections from the engine to the separator mechanism, said driving connections being so constructed that the cylinder of the separator serves as the fly wheel of the engine.

6. In a thrashing machine the combination of a separator with a forward axle having a crank at one end, a broad tread supporting wheel at one end, a smaller wheel on the crank, and a handle for turning the axle so as to vary the relative positions of the two wheels.

7. In a thrashing machine the combination of a separator with a forward axle having a crank at one end, a broad tread supporting wheel at one end, a smaller wheel on the crank, and a handle for turning the axle so as to vary the relative positions of the two wheels, and a spring between the crank and the frame tending to force the crank downwardly and thus to force the smaller wheel toward the ground.

8. The combination of a thrashing machine proper with a broad tread supporting wheel on one axle and a driving engine placed substantially over such supporting wheel, and a power supply or source of energy located on the common supporting frame and connected with the engine.

9. The combination of a thrashing machine proper with a forward axle having the usual supporting wheel at one end and a broad-tread supporting wheel at the other, and an engine and cylinder at the forward end and over the forward supporting wheels, the size, weight and arrangement of engine and cylinder being such that the forward supporting wheel sustains an amount of such total weight equal to the normal burden of such supporting wheel, the center of gravity of the remaining portion of such total weight being substantially over the broad tread supporting wheel, and a power supply or source of energy located on the common supporting frame and connected with the engine.

10. The combination of a thrashing machine proper with an engine mounted on the frame thereof and adapted to drive the operating mechanism of the thrasher, in combination with a broad tread supporting wheel, the line of motion of such engine being substantially vertical through the axis of such broad tread wheel, and a power supply or source of energy located on the common supporting frame and connected with the engine.

11. The combination of a thrashing machine proper having a cylinder with a supporting frame and a broad tread supporting wheel and an engine supported on said supporting frame connected with the

cylinder so that the latter acts as a fly wheel, and a power supply or source of energy on the frame and operatively connected with the engine.

12. The combination of a thrashing machine proper with an engine, a broad tread supporting wheel at one end thereof, the engine operating so that its thrust is substantially in a vertical line through the axis of such supporting wheel, and an axle with supporting wheels pivoted at the other end so that one axle being placed at an angle to the other and the thrust of the engine being in a vertical direction the necessity of anchoring the machine is largely obviated, and a power supply or source of energy mounted on the frame and connected with the engine.

13. In a power-transmitting device, the combination of a driving wheel, a driven wheel, a belt connecting the said wheels, a shaft on which the driven wheel is mounted, a movable support for the said shaft, whereby the driving and driven wheels may be thrown into and out of contact with each other, a pinion on the shaft of the driven wheel, a gear wheel engaged by the said pinion and so arranged with relation thereto that they remain in gear whatever be the positions to which the driven wheel and the shaft may be adjusted, a shaft for the gear wheel, and connections from such latter shaft to the part ultimately to be driven.

14. In a thrashing machine the combination of the separator with a supporting traction wheel, a driving engine, and a power transmitting device from the engine to the traction wheel embracing two friction wheels or pulleys, to one of which the power is transmitted from the other either by frictional contact of the two wheels or by a belt about the two wheels.

15. In a power transmitting device the combination of two friction wheels or pulleys mounted one on the driving shaft, the other on the driven shaft, and surrounded by a belt, one of said friction wheels or pulleys movable with reference to the other so as to tighten the belt and disengage the wheels, or loosen the belt and bring the wheels operatively together.

16. In a self contained thrashing machine the combination on a common frame of a separator, with an engine, a power supply source for said engine, and a permanent driving connection from the engine shaft to the shaft of the cylinder of the separator so that both always revolve together.

17. In a self-contained thrashing machine the combination of the separator, with a traction wheel, an engine, a power supplying source for such engine, and connections from the engine to the traction wheel and connections from the engine to the separator mechanism so constructed that the cylinder of the separator serves as a fly wheel for the engine.

18. In a self contained thrashing machine the combination of the separator, with an engine, a power supplying source for such engine, and connections from the engine to the separator mechanism so constructed that the cylinder of the separator serves as a fly wheel for the engine.

19. In a self-contained thrashing machine the combination of a separator, with an engine, a power supply source for said engine, and a permanent driving connection from the engine shaft to the shaft of the cylinder of the separator so that both always revolve together.

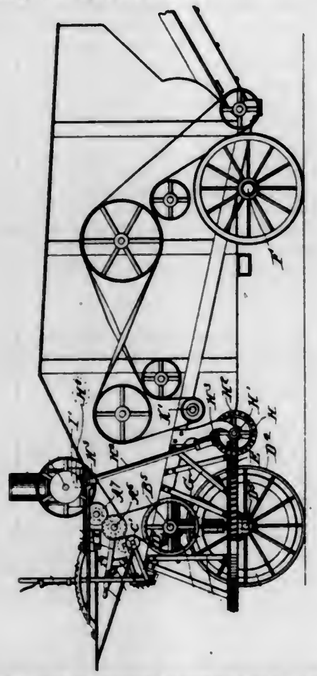
20. In a self-contained thrashing machine, the combination upon a common frame of a separator with an engine in the nature of a gas engine but without a balance-wheel, a traction wheel, a carburetor and water tank, and connections from the carburetor and water tank to the engine, and driving connections from the engine to the separator cylinder and to the traction wheel mechanism, the connections from the engine to the separator cylinder being such that the latter acts as a balance or fly wheel.

21. In a self-contained thrashing machine, the combination of a separator with an engine in the nature of a gas engine but without a balance wheel, the two located on one and the same common frame, the power-supply source for the engine on the same frame, and connections from the power-supply source, to such engine, and power connections from the engine to the cylinder of the separator, so that the cylinder acts as a balance wheel.

22. In a self-contained thrashing machine, the combination of a separator with the cylinder of a gas engine, located on the separator frame and in close proximity to the cylinder, a power-supply source for the engine on the same frame, connections from the power supply source to the engine and power connections from the engine to the cylinder of the separator so that the cylinder acts as a balance wheel whereby a light and compact self-contained thrasher is produced, substantially as shown and described.

542,520. THRASHING-MACHINE. CHARLES F. GODDARD, Chicago, Ill., assignor to Richard Love Duvall, same place. Filed Dec. 24, 1894. Serial No. 532,837. (No model.)

Claim.—1. The combination in a thrashing machine of an engine and a separator attached to the same frame, a shaft operatively connected with said engine, two shafts each operatively connected with the driving wheel of the thrashing machine, a frictional connection between each of said latter shafts and the former shaft and a controlling device associated with each of said frictional connections and adapted to be controlled by a single handle whereby the driving wheel may be disconnected from the engine, or alternately connected therewith so as to rotate in alternate directions while the engine shaft is continuously rotating in one direction.

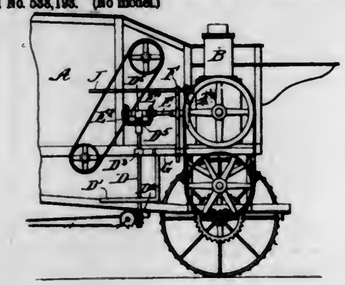


2. In a thrashing machine the combination of a separator proper with a cylinder, a driving engine mounted above the cylinder, a traction wheel mounted beneath the cylinder and engine, and connecting and driving mechanism about the cylinder from engine to traction wheel, the parts so arranged and of such proportions as that the traction wheel comes substantially under the center of gravity of the forward end of the machine on which the cylinder and driving engine are mounted.

3. In a thrashing machine the combination of a separator proper with a cylinder, a driving engine mounted above the cylinder, a traction wheel mounted beneath the cylinder and engine, and connecting and driving mechanism about the cylinder from engine to traction wheel, and a movable frame for the traction wheel, and driving and connecting mechanism therefor to the engine.

4. In a thrashing machine the combination of a separator proper with a cylinder, a driving engine mounted above the cylinder, a traction wheel mounted beneath the cylinder and engine, and connecting and driving mechanism about the cylinder from engine to traction wheel, and a movable frame for the traction wheel, and driving and connecting mechanism therefor to the engine, and a supporting wheel associated with the traction wheel.

542,521. STEERING MECHANISM FOR THRASHING-MACHINES. CHARLES F. GODDARD, Chicago, Ill. Filed Feb. 13, 1895. Serial No. 538,193. (No model.)



Claim.—1. The combination of a shaft having a gear wheel on the end thereof, with a transverse shaft mounted upon a cap on the end of the first mentioned shaft so as to swing thereon, and gear wheels on such transverse shaft adapted to intermittently engage the gear wheel on the first mentioned shaft.

2. In a thrashing machine the combination of a steering gear with a controlling shaft therefor, a gear on such shaft, a tilting shaft with gears thereon which move therewith said gears adapted one at a time to engage the controlling shaft, and means for driving said gears.

3. The combination of a controlling shaft with a gear thereon, a transverse shaft with gears thereon adapted alternately to engage the first mentioned gear, and means whereby the transverse shaft may be raised or lowered at one end to bring the gears thereon alternately in engagement with the gear on the controlling shaft.

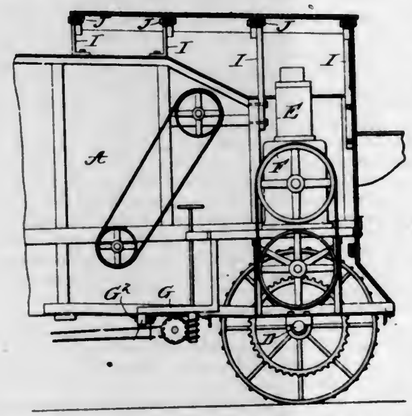
4. In a thrashing machine the combination of a rotating driving wheel with a shaft having a friction wheel on one end thereof opposed to the driving wheel and gears on the other end, means for moving the end of the shaft carrying the friction wheel either vertically or laterally, and a shaft and gear adapted alternately to engage the gears on the transverse shaft.

5. The combination of a shaft adapted to be alternately rotated in opposite directions, with a gear wheel on the upper end thereof, a tilting bearing on the top of said shaft, a transverse shaft in such bearing, gears thereto on opposite sides of the bearing and adapted alternately to engage the gear on the reversing shaft.

6. The combination of a shaft adapted to be alternately rotated in opposite directions, with a gear wheel on the upper end thereof, a tilting bearing on the top of said shaft, a transverse shaft in such bearing, gears thereto on opposite sides of the bearing and adapted alternately to engage the gear on the reversing shaft, and a friction wheel on the other end of the transverse shaft, and means for moving that end of the shaft to bring one and then the other of its gears into engagement with the gear on the vertical shaft.

7. The combination of a shaft adapted to be alternately rotated in opposite directions, with a gear wheel on the upper end thereof, a tilting bearing on the top of said shaft, a transverse shaft in such bearing, gears thereto on opposite sides of the bearing and adapted alternately to engage the gear on the reversing shaft, and a friction wheel on the other end of the transverse shaft, and means for moving that end of the shaft to bring one and then the other of its gears into engagement with the gear on the vertical shaft, and to bring the friction gear against an opposed driving gear, whereby the transverse shaft is rotated.

542,522. THRASHING-MACHINE. CHARLES F. GODDARD, Chicago, Ill. Filed Feb. 14, 1895. Serial No. 538,364. (No model.)

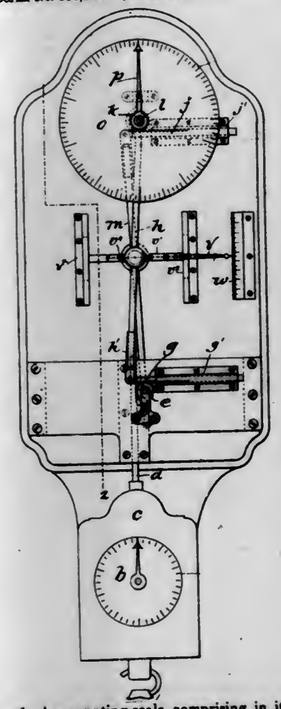


Claim.—1. The combination in a thrashing machine of a separator and an engine upon a common frame, said engine provided with a protecting cab that prevents the grain from becoming entangled therewith.

2. The combination in a thrashing machine of a separator and an engine upon the same frame, a protecting cab for said engine that prevents the grain from becoming entangled therewith, the partitions of said cab nearest the engine being removable so as to allow the machinery to be inspected.

3. The combination in a thrashing machine of a separator, an engine located at one side thereof and adapted to be connected to the cylinder of said separator, said separator and engine having a common frame, and a protecting cab removably connected to said separator and adapted to protect the engine and prevent the grain from becoming entangled therewith when the machine is in operation.

542,523. COMPUTING-SCALE. CUMMINGS M. HOLDEN, South West Harbor, Me., and EUGENE M. GORDEN, Malden, Mass. Filed July 2, 1894. Serial No. 516,296. (No model.)



Claim.—1. A computing-scale comprising in its construction a weighing mechanism, a cost-indicator, intermediate mechanism which is actuated by the weighing mechanism and communicates motion therefrom to the cost-indicator, said intermediate mechanism including an oscillatory lever and a movable fulcrum the position of which determines the extent of operation of the cost indicator, and a price-per-pound indicator whereby the position of the fulcrum for any given price per pound may be indicated, as set forth.

2. A computing-scale comprising in its construction a weighing mechanism, a cost-indicator, a movable fulcrum, a lever adapted to oscillate on said fulcrum, connections between one end of said lever and the weighing mechanism through which a movement is imparted to the lever when said mechanism is actuated, connections between the other end of the lever and the cost-indicator whereby the said movement of the lever is caused to actuate the cost-indicator, and a price-per-pound indicator adapted to indicate the position of the fulcrum required for the indication of any desired price per pound, the position of said fulcrum governing the operation of the cost-indicator by the lever, as set forth.

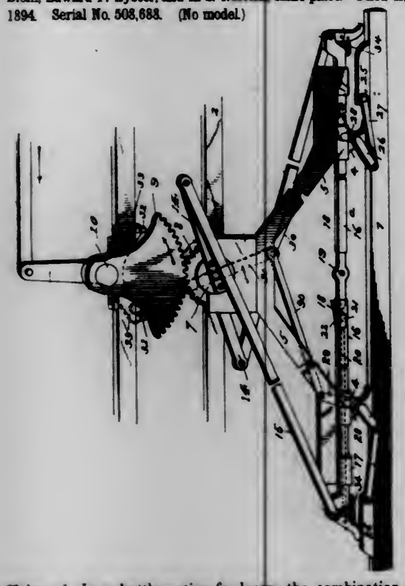
3. A computing-scale comprising in its construction a weighing mechanism, a cost-indicator, a slide movable in fixed guides and provided with a fulcrum-pin or stud, a lever having a slot receiving said fulcrum-pin, connections between one end of said lever and the weighing mechanism through which the lever is moved on the fulcrum-pin when the weighing mechanism is actuated, connections between the opposite end of the lever and the cost-indicator, and a price-per-pound indicator including a pointer affixed to the fulcrum-slide and a scale arranged to co-operate with said pointer in indicating the position of the fulcrum-pin required for the indication of any given price per pound, as set forth.

4. A computing scale comprising in its construction a weighing mechanism having a vertically movable rack-bar, such as b^5; a cost-indicator having a rotary shaft c; an oscillatory lever having at one end a rack connected by a pinion with the rack-bar b^5 and at its other end a rack meshing with a pinion on the shaft c; an adjustable fulcrum movable in a slot in said lever; and a price-per-pound indicator comprising a pointer connected with said fulcrum and a fixed graduated scale co-operating with said pointer, as set forth.

542,524. DETERGENT COMPOUND. LLEWELLYN H. HUTCHINSON, Northfield, Vt., assignor to Marlborough W. Cross, George A. Cross, Levi T. Cross, and John A. Cross, same place. Filed Apr. 10, 1895. Serial No. 545,222. (No specimens.)

Claim.—The composition of matter herein-described for cleansing marble, granite and the like, consisting of oxalic acid, wood alcohol, chloride of lime and water in about the proportions stated.

542,525. SHUTTLE-MOTION FOR LOOMS. WILLIAM F. KIRTZING, Glen Rock, Pa., assignor, by mesne assignments, to W. C. Kohler, Paul J. Beck, Israel Glaifelter, Wm. J. Reider, Joseph Dise, Samuel K. Diehl, Edward F. Eyster, and A. S. Norrish, same place. Filed Apr. 23, 1894. Serial No. 508,683. (No model.)



Claim.—1. In a shuttle motion for looms, the combination with the shuttle bars and means for operating the same, of a catch to each shuttle bar to engage the shuttle, a lever pivoted to each shuttle bar and reciprocable therewith, a reciprocating rod connected to each lever and having a member to engage the catch of each shuttle bar to release the same from the shuttle, a reciprocating cam to act on each of said levers, an oscillating lever having connection with said reciprocating cams to throw the same in and out of engagement with said levers in alternation to release the shuttle from the shuttle bars, and means for shifting said oscillating lever, substantially as and for the purposes described.

2. In a shuttle motion for looms, the combination of the shuttle bars provided with a catch, the shaft carrying the crank-arms driving rods connecting said shaft with said shuttle bars, a pivoted lever at the outer end of each shuttle bar, a reciprocating rod connected with each of said levers to actuate said catch to release the shuttle from the shuttle bar, a toothed wheel mounted on the shaft of said crank-arms, a rack engaging the teeth of said wheel, means for actuating said rack, cams reciprocable beneath the pivoted levers to which the shuttle releasing rods are connected, an oscillating lever, rods connected with said lever and having connection with said reciprocable cams, and means for shifting the oscillating lever to slide the cams beneath the said pivoted levers, substantially as and for the purposes described.

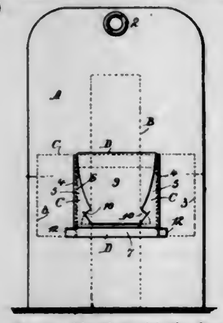
3. In a shuttle motion for looms, the combination of the shuttle bars, the shaft carrying the crank arms and connected by driving rods with said shuttle bars, the toothed wheel mounted on the shaft of said crank arms, the rack engaging the teeth of said wheel, means for actuating said rack, the oscillating lever 31, the arms carrying pins to move said lever in opposite directions, rods connected to said oscillating lever, cams connected with said rods to be actuated therefrom, and mechanism acted on by said cams for releasing the shuttle from the shuttle bars in alternation, substantially as and for the purposes described.

542,526. BICYCLE-BEARING. THOMAS F. LA BELLE, Holyoke, Mass. Filed Oct. 31, 1894. Serial No. 527,527. (No model.)

Claim.—The combination of a cylindrical shell *b* having its end portions reduced in diameter to form external circular shoulders, sleeves *g* fitting upon said reduced ends and abutting against said shoulders, projecting beyond the shell, and carrying flanges *h* to which the spokes may be attached, and removable ball-cups *i* received in said sleeves, having reduced portions to be received within the shell, the shoulders so formed abutting against the ends of the shell, and enlarged screw-threaded end portions projecting beyond the sleeves and forming shoulders abutting against the ends of the sleeves, substantially as described.



542,527. FOLDING MAILABLE MATCH-RECEIVER. FRED C. LOUNSBURY, Plainfield, N. J. Filed Sept. 22, 1894. Serial No. 523,775. (No model.)



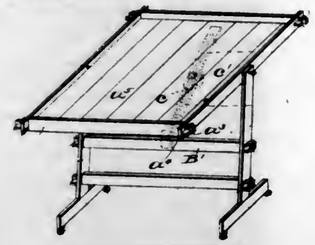
Claim.—1. The combination with the backing, of a strip with ends passing through slots in the backing and secured thereto and adapted to form the front and ends of a receptacle and hinged so as to lie down flat against the back or be unfolded for use, a bottom with projecting ends and a tongue fastened to the backing and adapted to lie flat against such backing or be unfolded for use, and a tongue connected with the bottom and passing up inside the receptacle and secured to the front, substantially as set forth.

2. The combination with the backing, of a strip with ends secured to the backing and adapted to form the front and ends of a receptacle and hinged so as to lie down flat against the back or be unfolded for use, a bottom with a tongue fastened to the backing and adapted to lie flat against such backing or be unfolded for use, a tongue connected with the bottom and passing up inside the receptacle, and a flap connected with the tongue and passing down in front of the receptacle and adapted to be connected thereto, substantially as set forth.

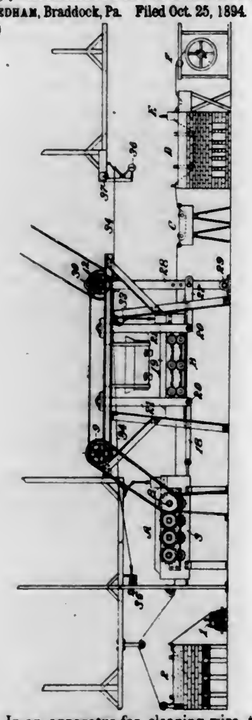
3. The combination with the backing, of a strip with ends passing through slots in the backing and secured thereto and adapted to form the front and ends of a receptacle and hinged so as to lie down flat against the back or be unfolded for use, a bottom with projecting ends and a tongue fastened to the backing and adapted to lie flat against such backing or be unfolded for use, a tongue connected with the bottom and passing up inside the receptacle, a flap connected with the tongue and passing down in front of the receptacle and secured thereto, substantially as set forth.

542,528. MODELING-BOARD. ALBERT E. MALTBY, Slippery Rock, Pa. Filed Jan. 23, 1895. Serial No. 535,881. (No model.)

Claim.—A knock down modeling board comprising among its members the knock down tray, the knock down supporting frame having vertical standards and cross bars, the pivotal pins engaging said standards and tray, the adjusting bar pivotally connected to said tray and one of said cross bars, said bar consisting of two parts, the one having a guiding rib engaging a groove in the other and an adjusting bolt and nut engaging said parts for adjustably securing the same together, substantially as described.



542,529. APPARATUS FOR SCOURING AND POLISHING WIRE. JOSEPH NEEDHAM, Braddock, Pa. Filed Oct. 25, 1894. Serial No. 526,918. (No model.)



Claim.—1. In an apparatus for cleaning wire, the combination of a box or trough having openings in its ends for the passage of wire, and two or more pairs of rollers provided with wings for pressing the scouring material against the wire, while passing between the rollers, the rollers of each pair rotating in opposite directions substantially as set forth.

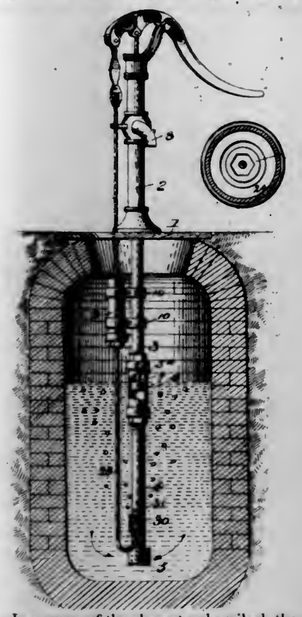
2. In an apparatus for cleaning wire, the combination of a box or trough containing the scouring material provided with one or more openings in its front end and one or more slides at its rear end, provided with a slot having an enlargement at one end, substantially as set forth.

3. In an apparatus for cleaning wire, the combination of a box or trough containing scouring material, one or more pairs of rollers provided with wings for pressing the scouring material against the wire, the rollers of each pair rotating in opposite directions and a reciprocating sieve for the separation of scale and other foreign substances from the scouring material, substantially as set forth.

4. In an apparatus for cleaning wire, the combination of a reciprocating box or trough containing polishing material and one or more pairs of rolls arranged to bite upon the wire, said rollers having a peripheral movement equal to the longitudinal movement of the box or trough, but in the opposite direction, substantially as set forth.

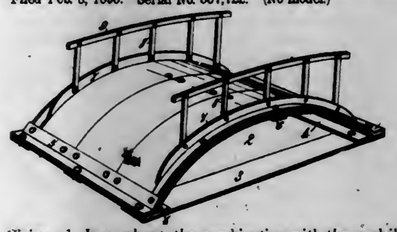
5. In an apparatus for cleaning wire, a stationary box or trough containing scouring material in combination with a sieve movably mounted therein, a reciprocating box or trough containing polishing material and provided with a separating sieve, and a connection from the reciprocating box to the movable sieve, substantially as set forth.

542,530. PURIFYING-PUMP. WILLIAM W. NORMAN, Allenville, Mo. Filed Mar. 16, 1895. Serial No. 541,983. (No model.)



Claim.—In a pump of the character described, the combination with the air cylinder, the pipe connected therewith having a gravity valve, and the diaphragm located in said cylinder formed with a central boss having an angular bore, of the vertically movable tube provided with a nut at its lower end adapted to engage with said angular bore, the plunger through which said tube passes, and confined between said washers, the cage connected with the pump handle provided with a valve, and the nut on the end of said tube fitting and working in an opening in said case; substantially as specified.

542,531. CULVERT OR BRIDGE. JOHN W. OGLE, Arcadia, Ill. Filed Feb. 8, 1895. Serial No. 537,722. (No model.)



Claim.—1. In a culvert, the combination with the mudsills, the girders bolted to the mudsills, and the angle-bar abutments bolted to the tops of the mudsills, of the arch composed of boiler steel and bolted to said abutments, substantially as described.

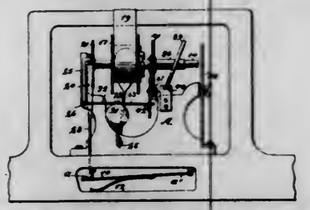
2. In a culvert, the combination with the mudsills, girders and angle-bar abutments bolted together and composed of boiler steel, of the arch sections composed of boiler steel and having their ends bolted to said angle-bar abutments, and the stay-beam or brace bolted to the under side of the crown of the arch and extended across the arch sections, substantially as described.

3. In a culvert, the combination with a boiler steel foundation composed of mudsills, girders and angle-bar abutments, all bolted together, of a boiler steel arch having its ends bolted to said abutments and provided on its top, at opposite sides, with upwardly turned flanges to retain the culvert covering and afford attachment for the standards of the hand rails, substantially as described.

542,532. RIBBON MECHANISM FOR TYPE-WRITING MACHINES. FRED W. OVERHISER, Cold Spring, N. Y. Filed Mar. 24, 1893. Serial No. 467,501. (No model.)

Claim.—1. In a type writing machine, the combination with two shafts, and ribbon spools mounted thereon, of a pawl and ratchet mechanism for operating the shafts, and a sliding bar operated by the wind-

ing of the ribbon upon the spools, and a gravity operated connection between said bar and the pawls for alternately throwing them in and out of engagement with their ratchet wheels, substantially as described.



2. In a type writing machine, the combination with two shafts, and ribbon spools mounted thereon, of pawl and ratchet mechanisms for operating the shafts, a sliding bar operated by the winding of the ribbon on the spools, a pendulum on the sliding bar, and a gravity operated connection between the pendulum and the pawls, whereby the pawls will be alternately thrown out of engagement with the ratchet wheels, substantially as described.

3. In a type writing machine, the combination with two shafts provided with ratchet wheels, and ribbon spools on said shafts, of pawls for engaging the ratchet wheels, a sliding rod connected with the pawls for alternately moving them in and out of engagement with the ratchet wheels, a sliding bar operated by the winding of the ribbon on the spools, and a gravity operated connection between said bar and rod for operating the latter from the former, substantially as described.

4. In a type writing machine, the combination with two shafts, ribbon spools mounted to slide thereon, and a pawl and ratchet mechanism for operating the said shafts, of a sliding rod connected with the pawls for alternately moving them in and out of engagement with the ratchet wheels, a sliding bar operated by the winding of the ribbon on the spools, a connection between said bar and rod for operating the latter from the former, and a spool shifting device connected with and operated by the said sliding bar, substantially as described.

5. In a type writing machine, the combination with two shafts, ribbon spools mounted to slide on the shafts, and a pawl and ratchet mechanism for operating the said shafts, of a sliding rod connected with the pawls for alternately moving them in and out of engagement with the ratchet wheels, a sliding bar provided with upwardly projecting arms engaging the ribbon rolls on the spools, a gravity operated connection between the said bar and rod for operating the latter from the former, and a spool shifting device connected with and operated by the said sliding bar, substantially as described.

6. In a type writing machine, the combination with the two shafts, ribbon spools mounted to slide thereon, and means for alternately operating the said shafts, of a cam on one of the shafts and connected with one of the ribbon spools, a stationary guide with which the cam engages, and means for operating the cam from the shaft operating mechanism, substantially as described.

7. In a type writing machine, the combination with two shafts, spools mounted to slide thereon and means for alternately operating the shafts, of a sliding bar provided with arms projecting between the flanges of the spools, a cam on one of the shafts and connected with the spool thereof, a stationary guide with which the cam engages, and mechanism for operating the cam from the sliding bar, substantially as described.

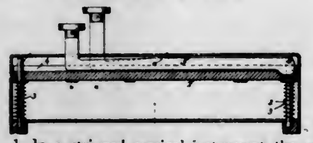
8. In a type-writing machine, the combination, with spool shafts, spools held to slide thereon and turn therewith, ratchets connecting with the shafts, dogs connected with the ratchets, and a connecting rod uniting the dogs, holding one in action when the other is out, of a shifting shaft operated from the spools, a pendulum connection between the shifting shaft and the connecting medium of the dogs, and a frame connected with the dogs, whereby they are operated when the frame is depressed, as and for the purpose set forth.

9. In a type-writing machine, the combination, with spool shafts, spools mounted to turn with the shafts and to slide thereon, and means, substantially as shown and described, for revolving the said shafts, of a cam loosely mounted upon one of the shafts and having a swivel connection with one of the spools, and a pawl and ratchet mechanism for operating the cam, the cam serving to give lateral movement to both of the spools upon their shafts while said shafts are being revolved, substantially as and for the purpose specified.

10. In a type writing machine, the combination with two shafts, and spools mounted thereon, of a sliding bar provided with arms projecting between the flanges of the spools, a sleeve on one of the spool shafts and provided with a cam and a gear wheel, said sleeve being connected with the spool of the shaft, a pawl engaging the gear wheel and operated from the sliding bar, and means for operating said sliding bar, substantially as described.

11. In a type writing machine, the combination with two shafts, provided with ratchet wheels and spools mounted to slide on the said shafts, of a sliding connecting rod, pawls engaging the ratchet wheels, means for operating the pawls, a sliding bar provided with arms projecting between the flanges of the spools, a pendulum connection between the sliding bar and connecting rod, a sliding cam on one of the shafts, a guide with which the cam engages, and a pawl and ratchet mechanism for operating the cam, said pawl and ratchet mechanism being operated by the sliding bar, substantially as herein shown and described.

542,533. STRINGED MUSICAL INSTRUMENT. WILLIAM B. OWEN, New York, N. Y., and JOHN H. CROWELL, Vineyard Haven, Mass., assignors to the C. F. Zimmerman Company, Dolgeville, N. Y. Filed Apr. 18, 1895. Serial No. 546,224. (No model.)



Claim.—1. In a stringed musical instrument, the combination with the strings, of a rectilinearly movable damper bar, a key mounted independently of the bar, and a cross-pin carried by said key and adapted to loosely engage the bar, substantially as described.

2. In a stringed musical instrument, the combination with the strings, of a rectilinearly movable damper bar, a key mounted independently of the bar and extending above the same, and a cross-pin carried by the key and loosely engaging the bar at its center, substantially as described.

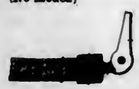
3. In a stringed musical instrument the combination with the strings, of a movable and longitudinally slotted damper bar, and a key seated along the slot of the bar, substantially as described.

4. In a stringed musical instrument the combination with the strings, of a movable slotted damper bar, and a key arranged along the slot and having a cross pin made to rest on the bar substantially as described.

5. In a stringed musical instrument the combination with the strings, of a movable damper bar, guide rods for said bar, and a key fulcrumed on one of said guide rods and made to extend toward the other guide rod substantially as described.

6. In a stringed musical instrument the combination with the strings, of a series of damper bars, and actuating keys for said bars, said keys being provided with finger buttons ranged along different lines, the buttons in different ranks being located at varying heights substantially as described.

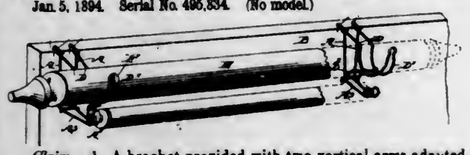
542,534. SPECTACLES OR EYEGLASSES. JOSEPH E. PARKER, Philadelphia, Pa., assignor to Ivan Fox, same place. Filed Feb. 20, 1894. Serial No. 500,922. (No model.)



Claim.—1. In an eye glass or spectacle, a clasp for holding a lens, formed with side plates which embrace the edge of said lens and inclose or cover a hole formed through it and containing a filling the extremities of which are fused soldered or similarly united with the inner faces of said plates, substantially as set forth.

2. An eye glass or spectacle lens combined with a carrying clasp by a concealed joint composed of a metallic pin inclosed within and passing through a hole through the lens beneath the clasp side plates, and secured to said side plates by a soldered joint, substantially as set forth.

542,535. BRACKET. CHARLES PETTIT, Tacoma, Wash. Filed Jan. 5, 1894. Serial No. 496,834. (No model.)

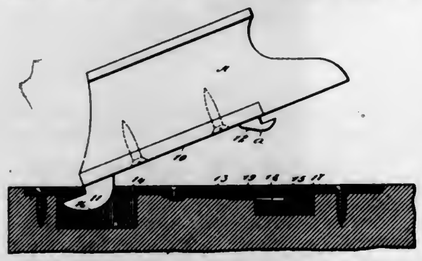


Claim.—1. A bracket provided with two vertical arms adapted to rest on the face of the support, the upper ends of said arms being formed with angular offsets, a downwardly extending pin or spur formed on each arm at the end of the angular offset, and a forwardly extending projection at the lower end of the bracket carrying a keeper, substantially as shown and described.

2. A bracket having a vertical portion adapted to rest on the front face of a support, an angular portion adapted to rest on the top of the support, the said angular portion being provided with two downwardly projecting pins or spurs, a forwardly extending projection at the lower portion of the bracket, a keeper carried by said projection, and an auxiliary bracket held on the first bracket and provided with a semi-circular keeper, substantially as shown and described.

3. A bracket provided with two vertical arms adapted to rest on the face of the support, the upper end of each arm being formed with an angular offset having a downwardly projecting pin or spur, a forwardly extending projection at the lower portion of the bracket carrying a keeper, an auxiliary bracket held on the first bracket and provided with a keeper, and a brace for supporting said auxiliary bracket, substantially as shown and described.

542,536. VEHICLE-SEAT LOCK. THOMAS L. PFLEEGOR, Burlingame, Pa. Filed Mar. 28, 1895. Serial No. 543,486. (No model.)



Claim.—1. A seat lock, the same consisting of oppositely projecting angled bolts adapted for rigid attachment to the forward and rear portion of a seat riser, a face plate adapted for attachment to the body of the vehicle, having openings to receive the under surface of the said bolts, and a spring secured to the said face plate, and having its free end extending partially across one of the openings therein and adapted for engagement with one of the bolts, as and for the purpose specified.

2. A vehicle seat lock, the same consisting of a plate adapted to be attached to the riser of a vehicle seat, the said plate being provided with a forwardly extending angular bolt at its forward end, and a rearwardly extending angular bolt at its rear end, the bolts being rigid with the plate and the forward surface of the rear bolt being inclined, a face plate having openings to receive both bolts, and a spring secured to the under surface of the said face plate, the free end whereof extends across and beneath the opening in the plate, adapted to receive the rear and beveled bolt, as and for the purpose specified.

3. In a vehicle seat lock, the combination, with a seat, of a bolt secured to the forward end of each riser thereof, the said bolt being of angular construction and forwardly projected, and a bolt attached rearward of the center of each riser, being also of angular construction, rearwardly projected and provided with a beveled forward face, of a vehicle body having recesses in its upper edges adapted to receive the bolts of the seat, each rear recess being made to meet a rearwardly and downwardly inclined recess which is continued in its side walls, a face plate secured over the recessed portions of the body, having openings to receive the bolts, of less length than the recesses in the body with which they are in registry, and a spring attached to each face plate, being located in the inclined recesses of the body, as and for the purpose set forth.

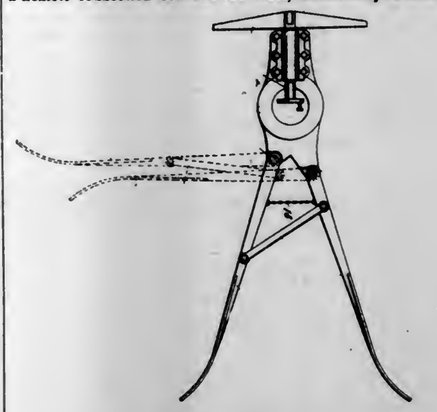
542,537. WINDMILL-REGULATOR. FRANK C. RATHBUN, Ethan, S. D. Filed Jan. 18, 1895. Serial No. 535,366. (No model.)

Claim.—1. The combination with a casting adapted to carry a wind wheel, of vanes pivoted to the rear of the casting in different vertical planes and at different distances from the bore of the said casting, and a connecting rod having its ends pivoted to the vanes, substantially as described.

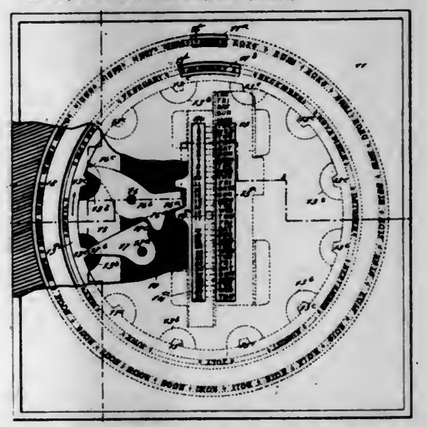
2. The combination with the main casting adapted to carry a wind wheel and provided at its rear end with lugs in different vertical planes and one in rear of the other, of vanes pivoted to the said lugs and a rod arranged obliquely and having its ends pivoted to the vanes, substantially as described.

3. The combination with a casting adapted to carry a wind wheel at one end, of diverging vanes pivoted to the casting in different vertical planes and at different distances from the bore of the said casting, substantially as described.

4. The combination with a casting adapted to carry a wind wheel, and provided at its rear end with lugs in different vertical planes and one in rear of the other, of curved vanes pivoted to the said lugs, a rod arranged obliquely and having its ends pivoted to the vanes, and a flexible connection between the vanes, substantially as described.



542,538. CALENDAR. GEORGE W. SHIRK, Van Orin, Ill. Filed Mar. 21, 1895. Serial No. 542,663. (Model.)



Claim.—1. An adjustable calendar having a day date slide, automatically adjustable when the month name indication is exposed, so as to display the correct number of date integers for the current month, substantially as described.

2. A calendar, comprising a recessed casing, apertured and slotted in its front, a rotatable plate ring having numerical year indications thereon, a movable dial plate having month name symbols produced thereon in regular order, a longitudinally-movable slide plate bearing day names, and a longitudinally-adjustable day date slide plate operated simultaneously with the dial plate, substantially as described.

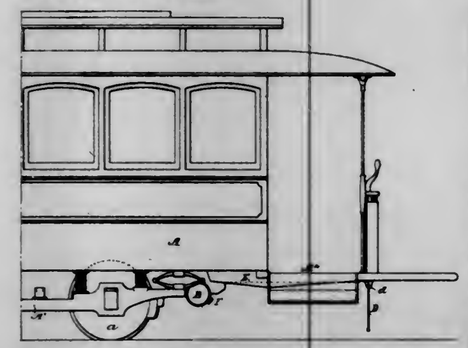
3. In a calendar, the combination with a recessed casing, having its face plate apertured in its front for the exposure of year symbols and month names in sequence, and also provided with two parallel slots, of a rotatable plate ring having numerical year indications thereon, adapted to be successively exposed at one aperture of the face plate, a movable dial plate having month name symbols produced thereon, adapted to successively appear at the other aperture of the face plate when the dial is moved, a longitudinally-movable slide plate bearing day names, a longitudinally-adjustable slide plate bearing day dates, the said slide plates being located opposite the slots of the face plate, and devices for simultaneously and correspondingly moving the day date slide plate when the dial plate is partly rotated, substantially as described.

4. In a calendar, the combination with a recessed casing having two apertures and two parallel slots in its face plate, of a rotatable plate ring having numerical spaced year indications thereon, adapted to successively appear opposite one of the apertures in the face plate, a rotatably movable dial plate having spaced month name symbols thereon, adapted to successively appear at the other aperture in the face plate when the dial is moved, a day name slide plate longitudinally adjustable behind one of the slots in the face plate, a day date slide plate longitudinally movable at the rear of the other slot in the face plate, and pivoted dogs adapted to receive motion from the dial

plate and longitudinally move the day date slide plate, substantially as described.

5. In a calendar, the combination with a casing, having parallel slots in its face plate, and a rotary year date plate in the casing, a dial plate having a raised rim and a series of cams on the inner edge of said rim, of a slidable day date plate in the casing opposite one of the slots in said casing, and pivoted dogs engaging each other, one of the dogs engaging a notch in the slidable plate, both dogs being adapted to receive the impinge of the cams of the dial plate for the slidable movement of the day date plate, substantially as described.

542,539. APPARATUS FOR REMOVING OBSTRUCTIONS FROM CAR-TRACKS. FRANK SHUMAN, Philadelphia, Pa. Filed Nov. 14, 1894. Serial No. 528,746. (No model.)



Claim.—1. The means herein described of preventing accidents to or from obstructing bodies in the paths of traction vehicles, said means consisting of a source of gaseous fluid supply under pressure, in combination with means for projecting a blast or blasts of such fluid under pressure forwardly in advance of the front wheels of said vehicles and at such an angle to the track as will cause the body to be lifted and carried forward in advance of the wheels, substantially as described.

2. The combination of a car, with a reservoir under the car containing fluid under pressure, a nozzle or nozzles communicating with said reservoir and extending forwardly so as to discharge said fluid in advance of the wheels or running gear of the car and at such an angle to the track as will cause the body to be lifted and carried forward in advance of the wheels, substantially as described.

3. The combination of a car, a reservoir containing fluid under pressure, nozzles communicating with said reservoir and discharging in front of the wheels or running gear of the car, valves for closing said nozzles, and means for automatically opening the valves when the car passes over an obstruction so that a blast of gaseous fluid under pressure will be projected in advance of the wheels or running gear of the car, substantially as described.

4. The combination of a car, the reservoir mounted under the car and containing fluid under pressure, a series of discharge openings and means for closing said openings, a trigger in front of the reservoir, so situated that it will strike an obstruction and allow the fluid in the reservoir to discharge toward the obstruction, substantially as described.

5. The combination of a car, a reservoir mounted under the car and having a series of openings so arranged as to discharge in advance of the wheels or running gear, a seal for each opening, cutters for the seals and means for operating the cutters, substantially as described.

6. The combination of the car, the reservoir arranged transversely under the car and having a series of discharge openings, disks closing said openings, cutters mounted inside the cylinder for cutting the disks and means for operating the cutters, substantially as described.

7. The combination of the car, the transversely arranged reservoir under the car, a series of discharge openings, disks for closing said openings, spring cutters within the cylinder for the disks, latches for holding the cutters away from the disks, levers for releasing the cutters, a piston connected to the levers, a cap closing the space beyond the piston and a puncturing device controlled by a trigger in advance of the reservoir, substantially as described.

8. The combination of the reservoir having a series of discharge openings, said reservoir being so mounted under the car that the fluid under pressure will be projected therefrom in advance of the wheels, a pivoted frame forming a trigger, said frame being hung under the forward portion of the car in advance of the reservoir, and being connected to mechanism for opening the discharge passages of the cylinder, and means for lifting the frame clear of an obstruction after it strikes the same; substantially as described.

9. The combination of the car, the fluid pressure reservoir, valved openings therein, a pivoted frame hung to the car in advance of the cylinder, a rod extending from the frame to the valve operating mechanism of the cylinder and a spring for turning the frame under the car to clear an obstruction, substantially as described.

10. The combination of the car, a cushioned fender projecting in advance of the dasher of the car and of a sufficient height to strike a person above the knees, with a reservoir under the car charged with gaseous fluid under pressure, discharge openings in said reservoir, valves for said openings and a trigger arranged under the car back of the cushion fender and in advance of the reservoir, said trigger being connected to the valve operating mechanism of the reservoir, substantially as described.

542,540. PNEUMATIC FIRING DEVICE FOR FIREARMS. ISAIAH H. SIMPSON, Brunswick, Me. Filed Dec. 5, 1894. Serial No. 530,847. (No model.)



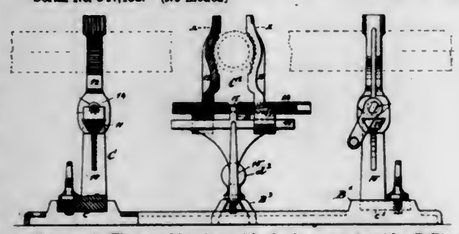
Claim.—1. A pneumatic firing device for firearms, provided with an air propelled plunger carrying the firing pin, substantially as shown and described.

2. A pneumatic firing device for firearms, comprising a cylinder, and a plunger fitted to slide in the said cylinder and carrying the firing pin, substantially as shown and described.

3. A pneumatic firing device for firearms, comprising a cylinder connected at its rear end with a channel or pipe for withdrawing air from the cylinder or forcing air therein, and a plunger fitted to slide in the said cylinder and carrying a firing pin, substantially as shown and described.

4. A pneumatic firing device for firearms, comprising a cylinder connected at its rear end with a channel or pipe for withdrawing air from the cylinder or forcing air therein, and a plunger fitted to slide in the said cylinder and carrying a firing pin, the said firing pin being adapted to pass through an aperture in a partition held in the front end of the cylinder, to engage the firing pin with the cartridge, substantially as shown and described.

542,541. PLUMBER'S WIPING IMPLEMENT. THOMAS J. SMITH, New York, and GEORGE M. AMON, Brooklyn, N. Y. Filed Apr. 25, 1895. Serial No. 547,152. (No model.)



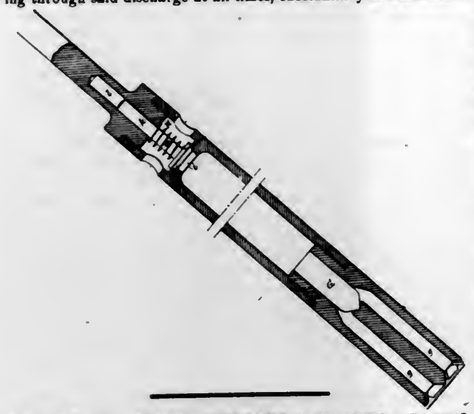
Claim.—1. The combination with the base A of guides B B' secured to or formed on the base and situated in line with each other, standards 10 movably fitted to these guides, means for securing the standards in the required position, guides 11 secured to the standards 10, jaws 12, 13 movably fitted to these guides, and a right and left hand screw 14 engaging each pair of jaws substantially as described.

2. The combination with the base A of primary guides B B' secured to or formed on the base and situated in line with each other, a secondary guide B^3 secured to or formed on the base and situated at an angle toward the primary guides, standards 10 movably fitted into the several guides B B' B^3, means for securing these standards in the required positions, guides 11 secured to the standards 10, jaws 12, 13 movably fitted to these guides and a right and left hand screw 14 engaging each pair of jaws substantially as described.

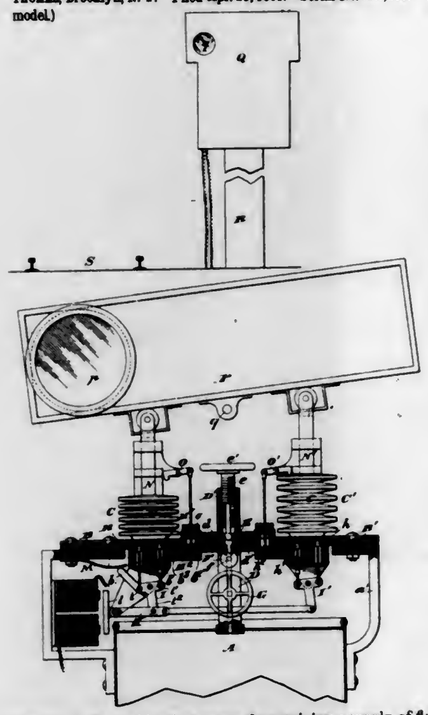
542,542. ROCK-DRILL. THOMAS SYMONDS, Leominster, Mass. Filed Feb. 15, 1893. Renewed June 7, 1895. Serial No. 552,035. (No model.)

Claim.—The combination with a drill having guiding faces, and having its cutting edges in the same plane, and discharge passages extending therefrom through the drill shank, and discharge openings extending through the side of the shank adjacent to the valve-seat between said openings and the inlet mouths of the discharge passage, and the spring pressed valve adapted to said valve seat so located as

to permit the free discharge of the disintegrated rock and water rising through said discharge at all times, substantially as described.



542,543. ELECTRICALLY-CONTROLLED MOTOR. GEORGE L. THOMAS, Brooklyn, N. Y. Filed Apr. 25, 1895. Serial No. 547,119. (No model.)



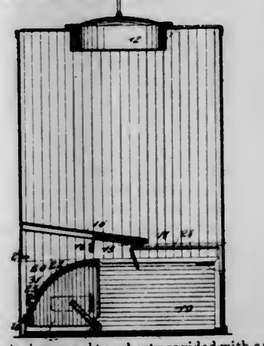
Claim.—1. In combination, means for retaining a supply of fluid under compression, an expansible chamber, means for communicating the movement of the expansible chamber to the work to be done, means for admitting the actuating fluid to and discharging it from the expansible chamber and means for automatically cutting off the admission of the actuating fluid to the expansible chamber at a predetermined point in the movement of the expansible chamber, substantially as set forth.

2. In combination, means for retaining a supply of fluid under compression, an expansible chamber, valves for admitting the actuating fluid to and discharging it from the expansible chamber, an electromagnet for controlling the movement of said valves and a valve under the control of the expansible chamber to cut off the admission of the actuating fluid at a predetermined point in the movement of the expansible chamber, substantially as set forth.

3. In combination, means for retaining a supply of fluid under compression, an expansible chamber, valves for admitting the actuating fluid to or discharging it from the expansible chamber, a rocking lever for simultaneously opening one of said valves and closing the other, an electromagnet for moving the said rocking lever in one direction and means for moving said rocking lever in the opposite direction when the electromagnet is de-energized, substantially as set forth.

4. In combination, means for retaining a supply of fluid under compression, an expansible chamber, means for admitting the actuating fluid to and discharging it from the expansible chamber, a valve under the control of the expansible chamber to cut off the admission of the actuating fluid, said valve being under the control of the pressure of the actuating fluid to force it open when the expansible chamber is permitted to collapse, substantially as set forth.

542,544. TEA-CHEST. TYLAR B. THOMPSON and CHARLES T. HULL, Missoula, Mont., and JOHN H. WILLMAN, San Francisco, Cal. Filed Oct. 1, 1894. Serial No. 524,661. (No model.)



Claim.—1. An improved tea chest provided with an inclined shelf projecting rearwardly from the inner surface of its front wall, a guard depending from the shelf and with a sliding drawer below the shelf, said drawer having a curved front and provided with a sliding door, substantially as described.

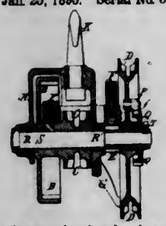
2. An improved tea chest having an opening in its top closed by a cover, and provided with an inclined shelf projecting from its front wall, a downwardly projecting guard on the shelf, a drawer in the bottom, and a stop for limiting the outward movement of the drawer, substantially as described.

3. An improved tea chest having an opening in its top closed by a cover, and provided with an inclined shelf projecting from its front wall, a guard projecting downwardly from the shelf, a drawer in the bottom, a stop for limiting the outward movement of the drawer, and springs secured to the drawer and adapted to engage the chest when the drawer is pulled out to prevent the drawer from being accidentally pushed in, substantially as described.

4. An improved tea chest, comprising a casing having an opening in one side at the bottom, said opening being adapted to close by a temporary plate or cover, a drawer in the bottom of the casing opposite the said opening, said drawer having a curved front and a sliding door, and stopping devices for limiting the outward movement of the drawer substantially as described.

5. An improved tea chest, comprising the chest proper provided with a cover and having an opening in one side at the bottom, said opening being adapted to be closed by a temporary plate or cover, a rearwardly projecting shelf on the inside of the chest, and a drawer in the bottom of the chest below the shelf, said drawer having a curved front and provided with a sliding door, substantially as described.

542,545. HOISTING MECHANISM. BENJAMIN L. TOQUET, Westport, Conn. Filed Jan. 25, 1895. Serial No. 536,169. (No model.)



Claim.—1. A hoisting mechanism having a frame, a shaft adapted to turn in bearings in the frame, a hoisting wheel mounted to turn upon said shaft, and a driving pulley free to turn independently of said shaft in hoisting, and means for causing the shaft to turn with the driving pulley for lowering, and at a different speed from the hoisting wheel.

2. A hoisting mechanism having a frame, a hoisting wheel, a shaft in bearings in the frame and upon which said wheel is mounted to turn independently of said shaft when hoisting, and means for turning the said shaft in a direction opposite to that of the hoisting wheel for lowering, substantially as described.

3. A hoisting mechanism having a hoisting wheel, a shaft supporting said wheel, a frame having one or more friction bearings for said shaft, a driving pulley free to turn independently of the shaft in hoisting, and means for causing the shaft to turn with the driving pulley for lowering at a different speed from the hoisting wheel.

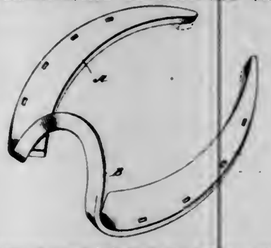
4. A hoisting mechanism, comprising a shaft, a hoisting wheel mounted to turn on said shaft, a driving pulley geared at all times to said hoisting wheel, the said driving pulley being free to turn independently of said shaft in hoisting and means for causing the shaft to turn with the pulley for lowering at a different speed from the hoisting wheel.

5. A hoisting mechanism comprising a main shaft, a hoisting wheel mounted to turn on said shaft, a driving pulley having affixed to or formed in one with it a pinion adjacent to it, gearing connecting said pinion with the hoisting wheel, the driving pulley being free to turn independently of the main shaft in hoisting and means for causing the shaft to turn with the driving pulley for lowering.

6. A hoisting mechanism comprising a shaft, a hoisting wheel mounted to turn upon said shaft, a driving pulley, gearing to transmit motion to the hoisting wheel, the said pulley being mounted to turn upon the shaft in hoisting with means for automatically locking the said shaft to the driving pulley when not hoisting.

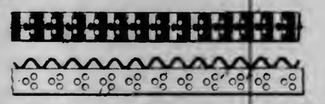
7. A hoisting mechanism, comprising a frame, a shaft mounted to turn in the frame, one or more friction bearings for the shaft, a hoisting wheel free to turn upon the shaft, a driving pulley also free to turn upon the shaft in hoisting, means for locking it to the shaft at other times and connecting gearing consisting of a pinion on the pulley, gears F F, pinions F' F' and a gear on the hoisting wheel, all substantially as described.

542,546. SPRING-HORSESHOE. ALBERT J. WALKER, Jacksonville, Fla. Filed Dec. 10, 1894. Serial No. 531,404. (No model.)



Claim.—A horseshoe consisting of side portions and an elastic bridge-piece connecting the forward ends of said side portions, said bridge-piece being bent up rearwardly at an angle to the said side portions and having its lower edge above the same, substantially as set forth.

542,547. METAL FRAME AND STOCK THEREFOR. ALBERT WARNER, Jr., Hoboken, N. J. Filed Feb. 25, 1893. Serial No. 539,663. (No model.)



Claim.—1. The herein described stock or material for the manufacture of frames and the like, the same consisting of two members disposed at an angle to each other, one member being crimped, permitting it to readily flex edgewise, substantially as described.

2. The herein described flexible stock or material for the manufacture of frames and the like, consisting of a transversely crimped face member and a back member secured longitudinally to the face member at about the center of the latter, and approximately at right angles thereto, substantially as described.

3. The herein described stock or material for the manufacture of frames and the like, consisting of a face member crimped transversely, and a flat member having a straight edge, which is secured to the face member at the crimps thereof, substantially as described.

4. The herein described stock or material, consisting of a face member formed with perforations and crimped transversely, and a back member secured longitudinally to the face member, substantially as described.

5. A metallic frame or similar article, comprising a flexible member crimped transversely, and a member secured to such crimped member at an angle thereto, the members being bent to shape edgewise of the crimped member, substantially as described.

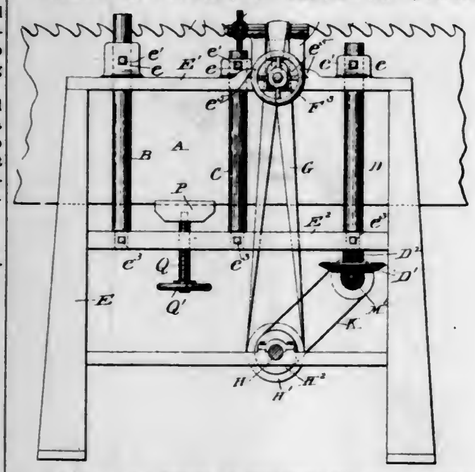
6. A metallic frame or similar article, having a flexible face member crimped transversely and bent to shape edgewise, substantially as described.

7. A frame for stands, mirrors, plateaux and the like, having a back member, and a face member at approximately right angles thereto to form a T, the face member thus forming an outer and an inner flange, substantially as described.

8. A frame for stands, mirrors, plateaux and the like, having a back member, a face member secured thereto to form an inner and an outer flange, and legs secured to the back member at the outside, the outer flange overhanging the legs and the inner flange forming a stop for the article framed, substantially as described.

9. A metallic frame having a band provided at the front or top edge with a shoulder extending around the band and disposed inwardly, and a second shoulder extending around the band at such front or top edge and disposed outwardly, substantially as described.

542,548. SAW-SHARPENING MACHINE. RUBEN F. BARKER, Marinette, Wis. Filed Feb. 4, 1895. Serial No. 537,292. (No model.)



Claim.—1. In a machine for sharpening saw teeth, the combination with an upright frame and vertical guide rollers horizontally adjustable therein and adapted to hold the saw blade between each pair; of a pair of abrading wheels arranged one on either side of the saw blade, with their axes parallel with the longitudinal axis of the saw blade, and adapted to cut into the sides of the saw teeth near the base thereof; means for advancing and retiring said abrading wheels, and means for rotating said abrading wheels simultaneously, and means also for rotating one pair of said guide rollers, substantially as described.

2. In a machine for sharpening saw teeth, the combination with an upright frame, a pair of vertical feed rollers mounted therein near one end thereof adjustable horizontally, and adapted to cause the saw blade to move past the abrading wheels; pairs of vertical guide rollers, also mounted in said frame and adjustable horizontally, each pair being adapted to hold and guide the saw blade; of a pair of abrading wheels arranged one on either side of the saw blade with their axes parallel with the longitudinal axis of the saw blade and being adapted to cut into the sides of the saw teeth near the base thereof on both sides simultaneously; means for advancing and retiring said abrading wheels and means for rotating said abrading wheels and said pair of feed rollers at a different speed, substantially as described.

3. In a machine for sharpening saw teeth, the combination with an upright frame, a pair of vertical feed rollers mounted therein near one end thereof, adjustable horizontally and adapted to cause the saw blade to move past the abrading wheels; pairs of vertical guide rollers also mounted in said frame and adjustable horizontally, each pair being adapted to hold and guide the saw blade; of a pair of abrading wheels each mounted upon a shaft journaled in a sliding block on either side of said saw blade, having their axes parallel with the longitudinal axis of the saw blade, and being adapted to cut into the sides of the saw teeth near the base thereof on both sides simultaneously; a hand wheel and screw mounted on either side of said frame for advancing and retiring said abrading wheels, and means for rotating said abrading wheels and said pair of feed rollers, substantially as described.

4. In a machine for sharpening saw teeth, the combination with an upright frame, a pair of vertical feed rollers mounted in said frame near one end thereof and adjustable horizontally; a bevel gear on the lower end of one of said rollers meshing with a bevel pinion mounted upon a shaft journaled in the lower part of said frame; a pulley on said shaft, means for driving said pulley; gearing between said feed rollers at their lower ends; the said rollers being adapted to cause the saw blade to move past the abrading wheels when adjusted upon the saw and rotated; pairs of vertical guide rollers, also mounted in said frame and adjustable horizontally, and adapted to hold and guide the saw blade; of a pair of abrading wheels arranged one on either side of the saw blade with their axes parallel with the longitudinal axis of the saw blade and being adapted to cut into the sides of the saw teeth near the base thereof on both sides simultaneously; and means for advancing and retiring said abrading wheels, substantially as described.

5. In a machine for sharpening saw teeth, the combination with an upright frame, a pair of vertical feed rollers mounted therein near one end thereof and adjustable horizontally; a bevel gear on the lower end of one of said rollers meshing with a bevel pinion mounted upon a shaft journaled in the lower part of said frame; a pulley on said shaft, means for driving said pulley; gearing between said feed rollers at their lower ends, the said rollers being adapted to cause the saw blade to move past the abrading wheels when adjusted upon the saw and rotated; pairs of vertical guide rollers also mounted in said frame and adjustable horizontally, and adapted to hold and guide the saw blade; of a pair of abrading wheels each mounted upon a shaft journaled in a sliding block on either side of said saw blade, having their axes parallel with the longitudinal axis of the saw blade, and being adapted to cut into the sides of the saw teeth near the base thereof on both sides simultaneously; a hand wheel and screw mounted on either side of said frame for advancing and retiring said abrading wheels, and means for rotating said abrading wheels, substantially as described.

6. In a machine for sharpening saw teeth, the combination with an upright frame, a pair of vertical feed rollers mounted therein near one end thereof and adjustable horizontally; a bevel gear on the lower end of one of said rollers meshing with a bevel pinion mounted upon a shaft journaled in the lower part of said frame; a pulley on said shaft, means for driving said pulley; gearing between said feed rollers at their lower ends for causing said rollers to rotate simultaneously but in opposite directions; pairs of vertical guide rollers also mounted in said frame and adjustable horizontally; a hand wheel and screw carrying a vertically adjustable block, mounted in the lower part of said frame, and adapted to support the lower edge of the saw blade; a pair of abrading wheels each mounted upon a shaft journaled in a sliding block on either side of said saw blade, having their axes parallel with the longitudinal axis of the saw blade, and being adapted to cut into the sides of the saw teeth near the base thereof on either side of the saw blade; a hand wheel and screw mounted on either side of said frame for advancing and retiring said abrading wheels independent of each other; and a pulley fixed on the same shaft with each of said abrading wheels, and means for driving said pulleys, substantially as described.

542,549. SEWING-MACHINE. NICHOLAS F. BECKER, Cincinnati, Ohio. Filed Sept. 13, 1894. Serial No. 522,912. (No model.)



Claim.—1. In a sewing-machine, the combination of a traveling table, and mechanism for propelling the same, a stitching carriage mounted upon said table, means for reciprocating said carriage transversely to the line of travel of the table, and a needle carried by a laterally yielding support swiveled upon said carriage, whereby the needle is fed forward continuously across the goods and simultaneously reciprocated transversely to stitch the goods, and is given a lateral, yielding movement to compensate for the forward movement of the table, substantially as described.

2. In a sewing-machine, the combination of a traveling table, and mechanism for propelling the same, a stitching carriage mounted upon said table, means for reciprocating said carriage transversely to the line of travel of the table, a laterally yielding needle support carried by the carriage and operating to permit the needle to yield in the line of travel of the table, and means for restoring the needle support to its normal position, substantially as described.

3. In a sewing-machine, the combination of a traveling table and mechanism for propelling the same, a stitching carriage mounted upon said table, means for reciprocating said carriage transversely to the line of travel of the table, a laterally yielding needle support swiveled upon said table and carrying a needle, and a tension spring connected to said carriage and needle-support and operating to normally hold said needle in operative position for piercing the goods to be stitched, substantially as described.

4. In a sewing-machine, the combination of a traveling table and mechanism for propelling the same, a stitching carriage mounted upon said table, means for reciprocating said carriage transversely to the line of travel of the table, a laterally yielding needle support mounted upon the carriage and carrying a hooked needle, and a threading device attached to the carriage and operating in conjunction with the needle to form the stitch, substantially as described.

5. In a sewing machine employing a reciprocating stitching carriage a needle support swiveled upon said carriage a hook needle carried by said support, a retractile spring connecting said support to said carriage, the oscillating threading device q mounted upon the table, mechanism connecting said device with the reciprocating carriage for operating said threading device appropriately in time movements with the reciprocation of said carriage, substantially as specified.

6. In a sewing machine employing a reciprocating stitching carriage, the combination of a needle support upon said carriage, the retractile spring for controlling said support and the needle mounted thereon, and threading mechanism consisting of the rock shaft q mounted upon the table and engaging with the slotted cam devices on the carriage whereby said shaft is rocked forward and backward by the reciprocation of the carriage, substantially as specified.

7. In a sewing machine the sewing mechanism consisting of the reciprocating carriage M, a needle mounted thereon, rock shaft q mounted on the table and oscillating mechanism connecting said rock arm with the said stitching-carriage of the carriage for oscillating said arm in time movements with the thrusts of the needle, substantially as specified.

8. In a sewing machine the combination of a stitching carriage the threading mechanism consisting of the rock shaft q, eyelet arm q', crank r, connecting rod r', slot s^3, guide pins s, and tripping guide plate v, substantially as specified.

9. In a sewing machine the combination of the driving shaft J suspended from the pendulous arm L, the stitching carriage M attached to and laterally adjustable upon the table C, and mechanism for reciprocating said carriage mounted upon laterally adjusted brackets whereby the stitching carriage and the driving mechanism may be adjusted to operate on either side of the machine, substantially as specified.

10. In a sewing machine the combination of the stitching mechanism with adjustable driving mechanism secured to the frame of the machine and means for adjusting and locking the said mechanisms at opposite sides of the machine, substantially as specified.

11. In a sewing machine the combination of a traveling table a stitching carriage M provided with needle T at each end and duplex threading mechanism provided upon each side of the carriage, a table and the driving mechanism mounted upon laterally adjustable bearings whereby the stitching carriage and the driving mechanism are adjusted across the table for sewing on either side of the machine, substantially as specified.

12. In a sewing machine, the combination with a traveling table and a reciprocating stitching carriage, of the driving mechanism consisting of the screw shaft J, nut P, the rock arms F, and bar M' engaging with the stitching carriage, whereby the carriage is reciprocated by the revolution of the driving shaft which propels the table, substantially as specified.

13. In combination with a sewing machine the sack holding mechanism applied to one side of the frame thereof consisting of the hinged clamps D, D', b, b', the series of pins d^3, and the mechanism for raising and lowering the said pins, substantially as specified.

14. In a sewing machine a sack clamping mechanism consisting of the hinged clamps D, D', and supplemental clamps b, b', provided with a slot e between said clamps opposite the path of the needle, substantially as specified.

15. In combination with the hinged clamping bars D, D', the tripping lever E, rock shafts h, h', cranks c', c', connecting rods d, and pin bars d', and hinged links I, I', substantially as specified.

16. In combination with the sewing machine frame provided with adjustable rock arms F the tripping levers E pivoted to said frame having their inner ends inclined and extended to serve as stops for the movement of said rock arms the hinged arms g for holding the sack clamping mechanism closed, and the weighted catches g' for engaging said arms and adapted to be tripped by said levers, substantially as specified.

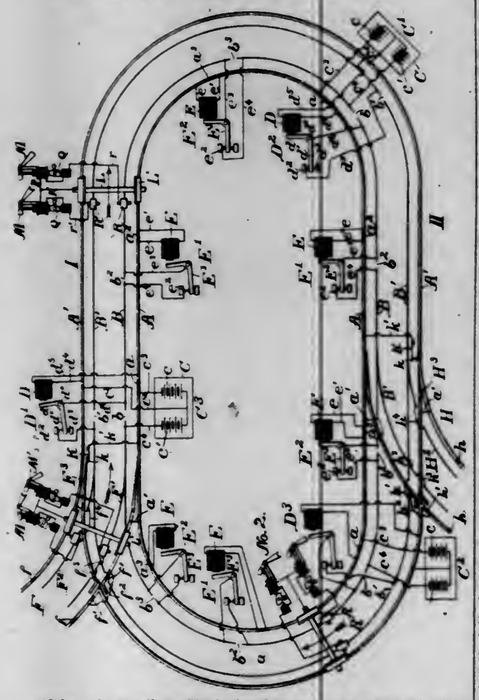
17. In a sewing machine the combination with a traveling table, and a stitching carriage laterally adjustable thereon, of the adjustable

driving mechanism consisting substantially of the screw threaded driving shaft, the nut P adjustably connected to the table, the lugs *n* of the carriage M, the rock arms F mounted upon the sliding brackets H, the bar M', the eccentric Q, mounted upon the driving shaft and operating the rock arms F, substantially as specified.

18. In combination with the pendulous arms G, sliding brackets H, the driving mechanism supported thereon, the setting lever L connected to pendulous arm G, whereby the driving mechanism may be adjusted to either side of the frame of the machine, substantially as specified.

19. In a sack sewing machine, in combination with the frame thereof, mechanism for holding the mouth of a sack open in an upright position, slotted clamping mechanism for holding the mouth of the sack closed in position for stitching, and a reciprocating traveling stitching carriage armed with a needle mounted upon a yielding needle support, which needle is thrust through the sack along the line of the slot in said clamps by the reciprocation of said carriage, substantially as described.

542,550. RAILWAY BLOCK-SIGNAL SYSTEM. GEORGE M. BROWN, Galesburg, Ill., assignor of one-half to J. J. McKee, Bethlehem, Pa. Filed May 4, 1895. Serial No. 548,115. (No model.)



Claim.—1. A railway block signal system comprising a plurality of sources of electricity, a continuous traffic rail, a second traffic rail composed of a plurality of sections insulated from each other, a conducting rail composed of a series of conductors continuous through each block and insulated from each other; a second conducting rail composed of a series of conductors and consisting of a plurality of broken sections in each block, insulated from each other; electro-magnets connecting the insulated sections of the traffic rail, and circuit breakers operated by the said magnets and connecting the insulated sections of the broken conducting rail; and signals operated by the current from the conducting rails, substantially as described.

2. A railway block signal system comprising a source of electricity for every block, two traffic rails, the one continuous and the other broken into sections insulated from each other; two conducting rails, the one continuous throughout the entire block and the other broken into a plurality of sections insulated from each other, an electro-magnet connecting the two adjacent ends of the broken traffic rail, and a circuit breaker operated by the said magnets and connecting the insulated sections of the broken conducting rail, and signals carried by the cab and operated by the conducting rails, substantially as described.

3. A railway block signal system comprising a plurality of sources of electricity, a continuous traffic rail, a second traffic rail composed of a plurality of sections insulated from each other, a conducting rail composed of a series of conductors continuous through each block and insulated from each other; a second conducting rail composed of a series of conductors and consisting of a plurality of broken sections in each block, insulated from each other; electro-magnets connecting the insulated sections of the traffic rail; and circuit breakers operated by the said magnets and connecting the insulated sections of the broken conducting rail; and a signal carried by the train and operated by the current from the one conducting rail, and a second signal also carried by the train and operated by the current from the second conducting rail, substantially as described

4. A railway block signal system comprising a source of electricity for every block, two traffic rails, the one continuous and the other broken into sections insulated from each other; two conducting rails, the one continuous throughout the entire block and the other broken into a plurality of sections insulated from each other; an electro-magnet connecting the two adjacent ends of the broken traffic rail, and a circuit breaker operated by the said magnets and connecting the insulated sections of the broken conducting rail, and a signal carried by the train and operated by the current from the one conducting rail, and a second signal also carried by the train and operated by the current from the second conducting rail, substantially as described.

5. A railway block signal system comprising a plurality of sources of electricity, a continuous traffic rail, a second traffic rail composed of a plurality of sections, insulated from each other; a conducting rail composed of conductors continuous through each block and insulated from each other; a second conducting rail composed of a series of conductors, and consisting of a plurality of broken sections in each block, insulated from each other; electro-magnets connecting the insulated sections of the traffic rail, and circuit breakers operated by the said magnets and connecting the insulated sections of the broken conducting rail; trolleys carried by the train running on the said conducting rails; and signals carried by the train operated by the current from the conducting rails, substantially as described.

6. A railway block signal system comprising a source of electricity for every block, two traffic rails, the one continuous and the other broken into sections insulated from each other, two conducting rails, the one continuous throughout the entire block and the other broken into a plurality of sections insulated from each other, an electro-magnet connecting the two adjacent ends of the broken traffic rail, and a circuit breaker operated by the said magnets and connecting the insulated sections of the broken conducting rail, trolleys carried by the train running on said conducting rails, and signals carried by the cab and operated by the conducting rails, substantially as described.

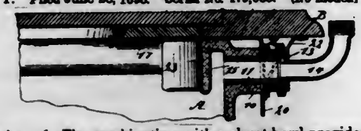
7. A railway block signal system comprising a plurality of sources of electricity, a continuous traffic rail, a second traffic rail composed of a plurality of sections insulated from each other, a conducting rail composed of a series of conductors continuous through each block and insulated from each other; a second conducting rail composed of a series of conductors and consisting of a plurality of broken sections in each block, insulated from each other; electro-magnets connecting the insulated sections of the traffic rail; and circuit breakers operated by the said magnets and connecting the insulated sections of the broken conducting rail; an electro-magnet connected to the two traffic rails, a circuit breaker operated by the said magnet connecting the end section of the broken conducting rail to the end of the continuous conducting rail of the next block, and a signal carried by the train and operated by the current from the one conducting rail, and a second signal also carried by the train and operated by the current from the second conducting rail, substantially as described.

8. A railway block signal system comprising a source of electricity for every block, two traffic rails, the one continuous and the other broken into sections insulated from each other; two conducting rails, the one continuous throughout the entire block and the other broken into a plurality of sections insulated from each other; an electro-magnet connecting the two adjacent ends of the broken traffic rail, and a circuit breaker operated by the said magnets and connecting the insulated sections of the broken conducting rail, and trolleys carried by the train running on said conducting rails; an electro magnet connected to the two traffic rails, a circuit breaker operated by the said magnet, connecting the end section of the broken conducting rail to the end of the continuous conducting rail of the next block; a signal carried by the train and connected to one of said trolleys and operated by the current from the one conducting rail, and a second signal also carried by the train and connected by the other of said trolleys, and operated by the current from the second conducting rail, substantially as described.

9. A railway block signal system comprising a plurality of sources of electricity, a continuous traffic rail, a second traffic rail composed of a plurality of sections insulated from each other, a conducting rail composed of a series of conductors continuous through each block and insulated from each other; a second conducting rail composed of a series of conductors and consisting of a plurality of broken sections in each block, insulated from each other; electro-magnets connecting the insulated sections of the traffic rail; and circuit breakers operated by the said magnets and connecting the insulated sections of the broken conducting rail; and a signal carried by the train and operated by the current from the one conducting rail, and a second signal also carried by the train and operated by the current from the second conducting rail and means for short circuiting the track rails when a switch is open, substantially as described.

10. A railway block signal system comprising a source of electricity for every block, two traffic rails, the one continuous and the other broken into sections insulated from each other; two conducting rails, the one continuous throughout the entire block and the other broken into a plurality of sections insulated from each other; an electro-magnet connecting the two adjacent ends of the broken traffic rail, and a circuit breaker operated by the said magnets and connecting the insulated sections of the broken conducting rail, and a signal carried by the train and operated by the current from the one conducting rail, and a second signal also carried by the train and operated by the current from the second conducting rail, and a spring and conductor connecting the opposite traffic rail adapted to close the circuit when the switch is open, substantially as described.

542,551. WATER-CLOSET SEAT. PATRICK J. CAHILL, Utica, N. Y. Filed June 23, 1893. Serial No. 479,065. (No model.)



Claim.—1. The combination, with a closet bowl provided with a spud, of a closet seat and a support for the same, said support having a bracket projecting therefrom and apertured to receive the spud of the bowl, substantially as shown and described.

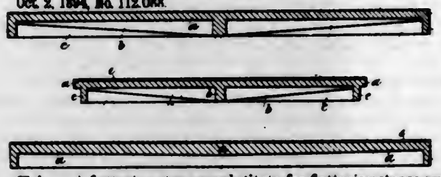
2. A support for the seat of a flushing bowl closet, provided with a bracket projected therefrom and apertured to receive the flushing pipe spud of the bowl, substantially as shown and described.

3. A support for the seat of flushing bowl closets, the said support being provided with a bracket projected therefrom, having an opening adapted to receive the flushing pipe spud of the bowl, and a tongue facing the opening in the bracket, the said tongue being adapted for engagement with the spreading lip at the mouth of the flushing pipe spud, substantially as shown and described.

4. The combination, with the bowl of a flushing closet, its flushing tube, lock nut and coupling, of a support with which the seat and cover are connected, and a bracket projected downward from the support, provided with an opening adapted to receive the flushing pipe spud, the lock nut of the spud being adapted for engagement with the bracket, as and for the purpose set forth.

5. The combination, with the bowl of a flushing closet, its spud, its spreading lip at the mouth of the spud, and the lock nut and coupling connected with the spud, of a support with which the seat and cover are adapted to be connected, a bracket projected downward from the support, provided with an opening therein through which the spud passes, the said bracket being engaged by the lock nut of the spud, and a tongue likewise projected from the support and having locking engagement with the spreading lip of the bowl, as specified.

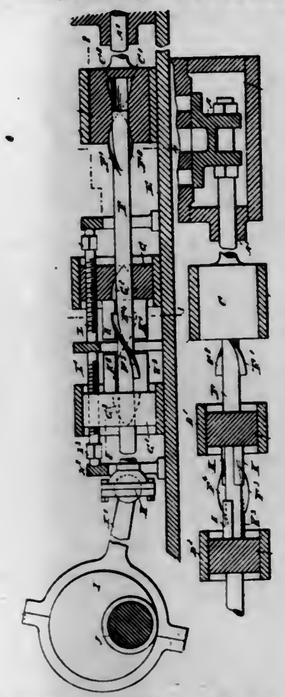
542,552. FLATTENING-STONE FOR FLATTENING PLATE-GLASS. GEORGE F. CHANCE, West Smethwick, and JOSEPH E. SCOTT, West Bromwich, assignors to the Chance Brothers & Company, Limited, West Smethwick, England. Filed Apr. 15, 1895. Serial No. 545,809. (No model.) Patented in France Oct. 2, 1894, No. 241,801, and in Belgium Oct. 2, 1894, No. 112,088.



Claim.—A flattening stone or substitute for flattening stones employed in the flattening of sheet glass which consists of metallic slabs, the upper or acting surfaces of which are coated with a fire-proof composition consisting essentially of a mixture of sulphate of baryta and silicate of soda or silicate of potash, substantially as described.

542,553. VALVE-GEAR. FRANK J. CHRIST, Fort McPherson, Ga. Filed Mar. 8, 1895. Serial No. 541,013. (No model.)

Claim.—1. A valve gear, provided with a nut-block connected with the valve and adapted to receive an intermittent sliding motion from the eccentric through the medium of a rod which has a reciprocating and rotary motion imparted to it substantially as described.



2. A valve gear provided with a nut-block connected with the valve, a rod receiving a reciprocating motion from an eccentric, means for turning the rod during a part of its stroke, and threads on the said rod engaging corresponding grooves in the said nut block, substantially as shown and described.

3. A valve gear, comprising a nut-block connected with the valve, a rod mounted to turn and to slide and receiving a reciprocating motion from an eccentric, a set of threads on the said rod engaging grooves in the said nut-block, a set of blocks, and a second set of threads on the said rod to engage the grooves on the said set of blocks during part of the stroke of the rod, substantially as shown and described.

4. A valve gear, comprising a nut-block connected with the valve, a rod mounted to turn and to slide and receiving a reciprocating motion from an eccentric, a set of threads on the said rod engaging grooves in the said nut-block, a set of blocks, a second set of threads on the said rod to engage the grooves in the said set of blocks during part of the stroke of the rod, and means, substantially as described, for adjusting the said set of blocks, as set forth.

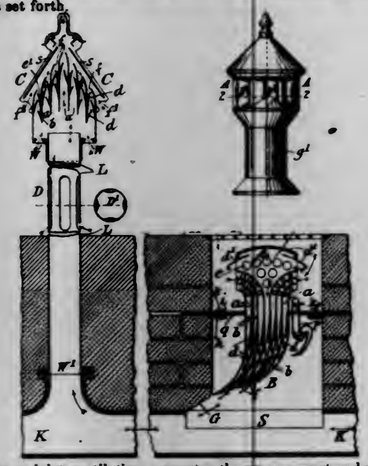
5. A valve gear, comprising a rod for imparting an intermittent motion to the valve, the said rod being mounted to turn and to slide, a ball and socket connection for connecting one end of the said rod with an eccentric rod, threads held on the said rod, and a set of adjustable nut blocks adapted to be engaged by the said threads during part of the stroke of the rod, substantially as shown and described.

6. A valve gear, comprising a rod for imparting an intermittent motion to the valve, the said rod being mounted to turn and to slide, a ball and socket connection for connecting one end of the said rod with an eccentric rod, threads held on the said rod, a set of adjustable nut blocks adapted to be engaged by the said threads during part of the stroke of the rod, and means for independently adjusting the said blocks, as set forth.

542,554. VENTILATION APPARATUS. JAMES CURTIS, Carlton, Victoria. Filed Apr. 17, 1895. Serial No. 546,091. (No model.)

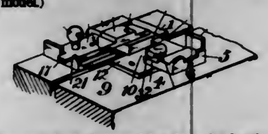
Claim.—1. An improved ventilation apparatus consisting of a series of flues *a*, with wide openings, and narrow exits *f*, said flues formed by a series of divisions *b* and having attached to said divisions a series of fixed trap-plates *d*, arranged to form successive traps or pockets in said flues on alternate sides, substantially as and for the purposes set forth.

2. An improved adjustable ventilation apparatus having in combination a series of flues *a*, movable trap-plates d^3 within said flues, bars *m m* connected to said plates at the outlets *f* of said flues and means for moving said bars and plates, substantially as and for the purposes set forth.



3. In an inlet ventilation apparatus the arrangement and combination of inlets A, flues *a'*, divisions *b'*, chamber O, channel *l*, pipe *l'*, flues *a*, divisions *b*, trap-plates *d* and outlets *f* substantially as described.

542,555. FASTENER FOR MEETING-RAILS OF SASHES. WILLIAM H. DEAN, West Berkeley, Cal. Filed Jan. 24, 1895. Serial No. 536,130. (No model.)

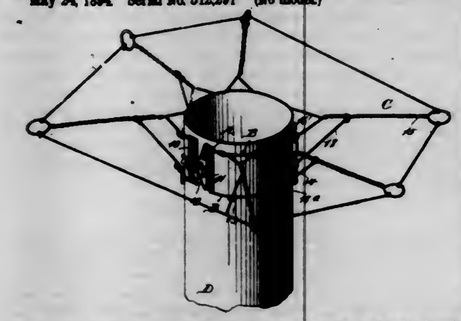


Claim.—1. In a sash lock the combination of a latch or lock with angle L-shaped slot 10 in one side thereof, and a slot 3 near one end, and a turned over-portion 14, a lug 11 with which the opening 10 engages, and a lever 8, all arranged substantially as and for the purpose set forth.

2. A sash lock comprising a latch or lock 4 provided with an L-shaped opening in one side, a longitudinal slot 3, turned over portion 14, and flange 5 having a cut-out portion 6, an operating lever 8 having at its inner end the cam surfaces 13 and 15, and at its outer end a reduced portion and a knob 18, substantially as and for the purpose set forth.

3. In a sash lock, the combination of a latch or lock 4 having an L-shaped opening 10 in one side thereof, a lever coacting with said latch or lock, and a spring pressed button having a bolt attached thereto, said button being adapted to engage with said opening 10, substantially as described.

542,556. CLOTHES-DRIER. JOHN DEAN, Spokane, Wash. Filed May 24, 1894. Serial No. 512,291. (No model.)

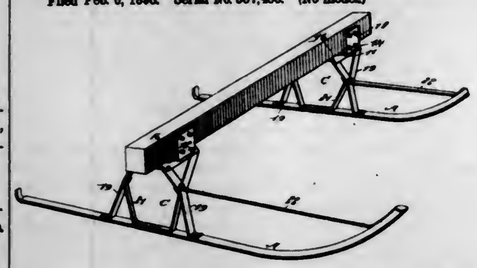


Claim.—1. A clothes drier, the same consisting of body bands provided with sockets therein, and a clamp each member of which forms a connection between the corresponding superposed ends of the bands, the said clamp being adapted to unite the opposing ends of the bands in clamping engagement with a support, arms pivotally connected with the upper band, and braces pivotally connected with the arms and adapted to enter the sockets in the lower body band, as and for the purpose set forth.

2. A clothes drier, the same consisting of bands, a clamp connecting the bands, the bands being provided with sockets formed therein, arms adapted to carry the clothes, having their inner ends bifurcated and pivotally connected with one of the bands, braces connected with the arms and adapted to enter the sockets in the next lower band, and stops located upon the braces, whereby their passage in the sockets is limited, as and for the purpose set forth.

3. A clothes drier adapted to be attached to a stove pipe or like support, the same consisting of a clamp made in two sections, bands attached at their ends to the members of the clamp, being provided with sockets located at intervals apart thereon, arms adapted to support clothes, and pivotally connected with the upper band, bars connecting the arms and braces pivotally connected with the arms, provided with stops and having their lower ends shaped to enter the sockets in the lower band, holding the arms at that time in a horizontal position, substantially as shown and described.

542,557. BOB-SLEIGH. HARVEY L. EASTMAN, Wahpeton, N. D. Filed Feb. 6, 1895. Serial No. 537,488. (No model.)



Claim.—1. The combination, with a bolster, of runners mounted for independent oscillatory movement, each mounting comprising knee standards, a plate provided with sockets secured upon the knee standards, a plate located between the sockets of the knee standards, and attached to the bolster, the bolster plate being likewise provided with a socket shaped reversely to the sockets in the knee plates, and a pintle having bearing in the said sockets, substantially as shown and described.

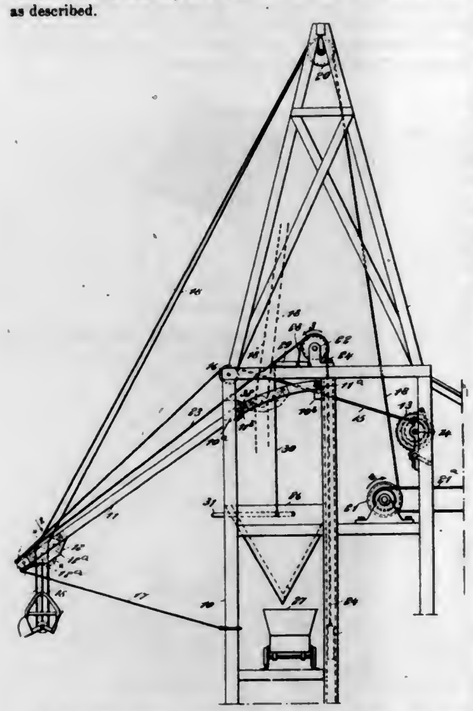
2. The combination, with a bolster, of runners mounted for independent oscillatory movement, each mounting comprising a plate attached to the bolster and provided with a socket therein, knee plates located at each side of the bolster plate, each knee plate being provided with a socket having a reverse curve to that of the bolster plate, and knees formed in one piece, comprising connected bifurcated standards, the said knees being attached to the knee plates and likewise to the runners, as and for the purpose set forth.

3. The combination with the runners, and a bolster, of a plate secured to the bolster and provided with a socket, knees secured to the runners on opposite sides of the bolster and having forked upper ends, the upper ends of the opposing members of the knees being connected by the plates having sockets therein, a plate secured to the knees and provided with spaced sockets shaped reversely to the socket of the bolster plate, and a pintle in said sockets, substantially as described.

542,558. COAL-ELEVATING APPARATUS. GEORGE HAHN, New York, N. Y. Filed Jan. 14, 1895. Serial No. 534,852. (No model.)

Claim.—1. The combination of a supporting frame having a sheave at its upper part, a trackway secured to and extending beyond the said frame below the said sheave and having a sheave at its outer end, a truck arranged to move on said trackway and provided with a sheave, a shovel, a cable secured thereto and passing over the sheave on the truck and over the sheave on the upper part of the supporting frame, a cable secured to the truck and passing over the sheave at the outer end of the trackway and back to the supporting frame, a sheave on the supporting frame over which said cable passes, a weight secured to the said cable, and means for drawing in the first mentioned cable, substantially as shown and described.

2. In a coal hoisting apparatus, a supporting frame, a normally stationary jib beam pivoted thereon at a point between the ends of the jib, the outer end of the beam being extended beyond the frame, a truck movable on the beam, a shovel and its operating mechanism combined with the truck, a guy rope holding the outer end of the beam from upward movement, a second guy rope connected to the beam, a pulley raised above the beam and on the frame and over which pulley the second rope passes, and hoisting mechanism connected to the second rope and mounted on the frame, substantially as described.



3. In a coal hoisting apparatus, a supporting frame, a jib beam having a trackway and mounted thereon a truck movable on the beam, a pulley mounted on the truck, a pulley on the frame and elevated above the beam, a cable passing over the pulleys on the frame and truck, a sectional shovel affixed to the lower end of the cable, hoisting mechanism for the cable, a pulley at the outer end of the beam, a second cable connected to the truck and passing over the pulley at the outer end of the beam, a drum on the frame to which the second cable is connected, a weight connected to the drum and actuating the same, brake mechanism for the drum, and a rope for operating the sections of the shovel substantially as described.

4. The combination with a frame, of a track-way projecting outwardly therefrom, a truck movable on the track-way, a pulley on the truck, a second pulley elevated above the frame and located out of vertical alignment with the outer portion of the track-way, a cable passing over the two pulleys, a sectional shovel connected to the lower end of the cable, means for drawing on the said cable, a second cable connected to the truck, and a weight connected to the second cable, and giving the truck an outward tendency, and a rope for operating the sections of the shovel, substantially as described.

5. In a coal hoisting apparatus, a frame, two transversely aligned beams mounted on said frame and having adjacent inner ends, a jib beam formed of the two duplicate channel irons arranged channel to channel and respectively pivoted to the adjacent inner ends of the said beams, the outer end of the irons being rigidly connected to each other, a truck having rollers movable in the channels of the beam sections, and shovel mechanism operating with the beam and its truck, substantially as described.

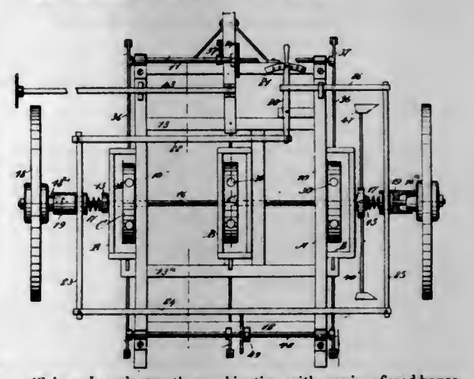
6. In an apparatus for hoisting coal, a frame, a jib beam pivotally mounted thereon, a truck movable on the jib beam, a pulley mounted on the truck, a pulley 20 mounted at the upper extremity of the frame and out of alignment with the outer portion of the jib beam, a sectional shovel, a hoisting rope connected with the shovel and passing over the pulley on the truck and over the pulley 20, means for drawing on the hoisting cable, a second cable connected to the truck, a drum on the frame over which the second cable is wound, a weight connected to the drum whereby it is made to actuate the second cable, a hopper located below the inner end of the jib beam and into which the shovel may dump its contents, a strap brake for the drum which operates the second cable aforesaid, and a lever fulcrumed on the hopper and connected to the strap brake whereby the same may be operated, and a rope for operating the second shovel, substantially as described.

542,559. WEDGE. WILLIAM I. HARMON, Mount Vernon, Wash. Filed Apr. 3, 1895. Serial No. 544,311. (No model.)



Claim.—A wedge comprising a wooden body and a metal frame, said body having opposite beveled sides and being provided with a head projecting above the frame and having a metal band and said frame being provided with opposite side portions connected together at their lower ends and beveled to fit the beveled sides of the body, said frame having its sides between said beveled side portions thereof open to permit the expansion of the wooden body laterally in the frame, and straps formed integrally with the beveled side portions of the frame at the upper parts thereof, said straps being arranged to extend across the open sides of the frame to tie the beveled side portions thereof together at their upper parts, substantially as set forth.

542,560. PLANTER. CALEB E. P. HOBART, Cherokee, Iowa. Filed Jan. 10, 1895. Serial No. 534,460. (No model.)



Claim.—In a planter, the combination, with a series of seed boxes, a shaft held to revolve in all of the boxes, and rotary droppers located in the said boxes and provided with a series of peripheral openings, of wheels loosely mounted on the said shaft or axle, having conically shaped hubs, sockets, springs mounted on the shaft or axle and normally holding the sockets in engagement with the hubs, a shifting lever, a connection between the shifting lever and both of the sockets, and a wheel comprising a hub and spokes, secured on the shaft or axle at the outer side of the outer box, the spokes being provided with shoes at their outer extremities for marking purposes; and the number of spokes being made to correspond to the number of pockets in a dropper, as and for the purpose specified.

542,561. MUSICAL INSTRUMENT. HENRY I. HOLCOMB, Centreville, S. D. Filed Feb. 26, 1895. Serial No. 539,798. (No model.)

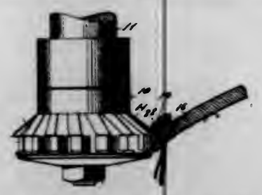


Claim.—1. A musical instrument of the guitar or banjo type, provided with an auxiliary hollow body of less diameter than the body of the instrument and supported within the said body from the sides thereof, and a bridge between the inner face of the main body and the outer face of the auxiliary body, said bridge being in advance of the string bridge of the instrument, substantially as described.

2. In a musical instrument of the guitar or banjo type, the combination with the body of the instrument having end blocks on its inner surface, of an auxiliary hollow body of less diameter than the main body, and provided with end blocks, and pins or strips secured in the said end blocks and supporting the auxiliary body in the main body, substantially as described.

3. In a musical instrument of the guitar or banjo type, the combination with the body of the instrument having a sound opening in its top or sounding board, of an auxiliary hollow body of less diameter than the main body and provided with a sound opening in its top or sounding board registering with the sound opening of the main body, pins or strips secured to the main and auxiliary bodies at the front and rear and supporting the said auxiliary body in the main body, and a bridge between the two bodies and in advance of the string bridge of the main body, substantially as described.

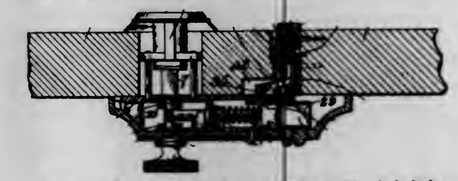
542,562. CUTTER FOR WELT-TRIMMERS. GUSTAF A. HULTIN, Chicago, Ill. Filed Nov. 22, 1894. Serial No. 529,594. (No model.)



Claim.—1. A cutter for welt trimmers, comprising a cutter or head having parallel rows of peripheral knives, the rows being of dissimilar lengths, and the longer knives having their cutting edges inclined outwardly and downwardly from the edge next to the shorter knives, substantially as described.

2. A cutter for welt trimmers, having parallel rows of peripheral knives of dissimilar lengths, the shorter knives being straight edged and provided with lips at their outer ends and the longer knives having their cutting edges inclined outwardly and downwardly from the edge next to the shorter knives, substantially as described.

542,563. LOCK. AMBRICUS V. JEWETT, Abilene, Kans. Filed Feb. 9, 1895. Serial No. 537,829. (No model.)



Claim.—1. In a door-lock, the combination, with a bolt, bolt casing, and bolt socket, of a movable protecting plate or shield adapted to project from the edge of the door in front of the bolt, said shield being engaged by said bolt and moved inwardly therewith when the latter is withdrawn, and means for projecting said shield, independent of the means for projecting the bolt, substantially as described.

2. In a door-lock, the combination, with a bolt, bolt casing, and bolt socket, of a spring-actuated protecting plate or shield adapted to project from the edge of the door in front of the bolt when projected from its casing, whereby access can not be had to said bolt from the outside when the door is closed, substantially as described.

3. In a door-lock, the combination, with a bolt, a bolt casing, and a bolt socket, of a movable plate or shield adapted to be projected past the edge of the casing and interposed in front of the end of said bolt when projected from its casing, whereby access can not be had to said bolt from the outside when the door is closed, a spring for projecting said shield, and a push rod for releasing said spring, substantially as described.

4. In a door-lock, the combination, with a bolt, a bolt casing, and bolt socket, of a protecting plate or shield adapted to project from the edge of the door in front of the bolt when the latter is in its locking position, whereby access can not be had to said bolt from the outside when the door is closed, operative mechanism for projecting said shield, and a stop on the door-jamb coming into engagement with said operative mechanism when the door is closed and actuating the same to project said shield, substantially as described,

5. In a door-lock, the combination, with a bolt, a bolt casing, and bolt socket, of a protecting plate or shield adapted to project from the edge of the door in front of the bolt when the latter is in its locking position, whereby access can not be had to said bolt from the outside when the door is closed, a spring detent restraining said shield within said casing when the door is open, a trip arranged to trip said detent to release said shield, and a stop on the door-jamb engaging said trip on the closing of the door to project said shield, substantially as described.

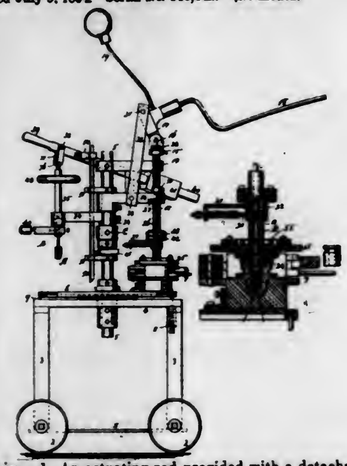
542,564. LINE-REEL. CHARLES A. KOERNER, Evansville, Ind. Filed Oct. 24, 1894. Serial No. 526,859. (No model.)

Claim.—1. As an improved article of manufacture, a line reel having a rectangular body portion formed of wire and bent at the corners to produce end flanges and also bent to form an eye between two corners one end of the wire sticking out at the end of the reel between the said eye and one of the corners to form a crank, and a handle pivotally connected with the body between the other corners and extending in line with the reel's axis of rotation, substantially as described.

2. A line reel having a rectangular body portion formed of wire and bent at the corners to produce end flanges and also bent to form eyes between the corners at the end portions of the body, and a spindle extending through the said eyes to form an axle for the body, said spindle being formed with a handle in alignment with the axle portion of the spindle, substantially as described.



542,565. PRESS FOR MAKING SCREW-INSULATORS. SERAPHIN KRIBS, Brooklyn, assignor to William Brookfield, New York, N. Y. Filed July 5, 1894. Serial No. 516,642. (No model.)



Claim.—1. An actuating rod provided with a detachable screw plunger, combined with a rotary spindle adapted to engage the screw plunger, and a movable mold adapted to travel from the actuating rod to the spindle substantially as described.

2. An actuating rod provided with a detachable screw plunger, combined with a rotary spindle adapted to engage the screw plunger, a mold, and a movable support for the mold substantially as described.

3. An actuating rod provided with a detachable screw plunger, combined with a rotary spindle adapted to engage the screw plunger, a mold, a movable support for the mold, and a lock for holding the support with the mold in operative position relatively to the actuating rod and spindle substantially as described.

4. An actuating rod provided with a detachable screw plunger, combined with a rotary spindle adapted to engage the screw plunger, a mold, a movable support for the mold, and a lock or detent 50 actuated by the spindle and made to engage the movable support substantially as described.

5. An actuating rod provided with a detachable screw plunger, combined with a rotating spindle adapted to engage the screw plunger, a filling piece 49 adapted to be placed on the screw plunger, and a movable mold adapted to travel from the actuating rod to the spindle substantially as described.

6. An actuating rod provided with a detachable screw plunger, combined with a rotary spindle adapted to engage the screw plunger, and a movable mold adapted to travel from the actuating rod to the spindle, said actuating rod and spindle being independent of one another substantially as described.

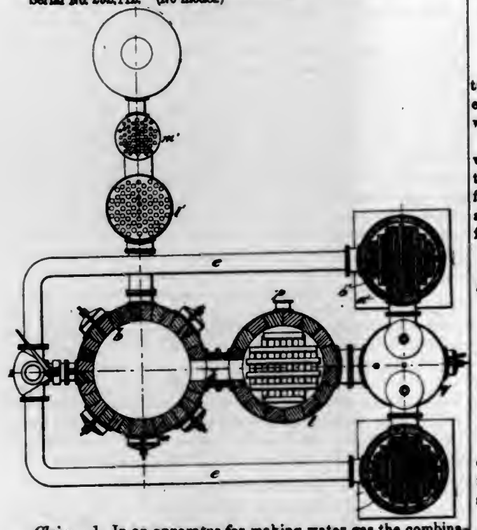
7. An actuating rod provided with a detachable screw plunger, combined with a rotary spindle adapted to engage the screw plunger, a movable mold adapted to travel from the actuating rod to the spindle, and independent actuating levers for the rod and the spindle respectively substantially as described.

8. An actuating rod provided with a detachable screw plunger, combined with a rotary spindle adapted to engage the screw plunger, a mold, a movable support for the mold, and a standard for supporting the actuating rod and spindle and about which the support is movable substantially as described.

9. An actuating rod provided with a detachable screw plunger, combined with a rotary spindle adapted to engage the screw plunger, a mold, a movable support for the mold, and a measure secured above the support and adapted to charge the mold substantially as described.

10. A screw plunger combined with a follower and actuating mechanism substantially as described for the plunger and follower, and a jet extending around the plunger and supported by and moving with the follower, substantially as described.

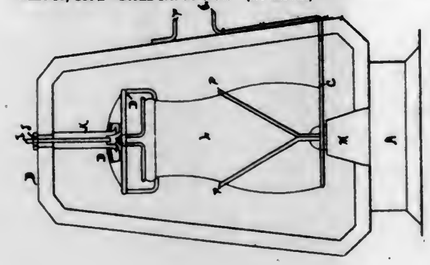
542,566. APPARATUS FOR MANUFACTURE OF WATER-GAS. THADDEUS S. C. LOWE, Norristown, assignor to the Guarantee Trust and Safe Deposit Company, trustee, Philadelphia, Pa. Filed Nov. 28, 1888. Serial No. 292,112. (No model.)



Claim.—1. In an apparatus for making water gas the combination of the gas generator *a*, the separate superheater *l*, having refractory material piled therein, a separate steam generator *q*, having metal bars *t*, openly piled therein, said generator being provided with water inlet *v*, and trapped water outlet *y*, the stoves *z*, *z'*, arranged above the level of the steam generator, flues for connecting the stoves, generators and superheater, and regulating valves, substantially as specified, whereby the outgoing products of combustion from said gas generator are caused to pass out through said stoves alternately and the inflowing blast of atmospheric air for sustaining combustion in said gas generator is caused to pass through said stoves alternately in the manner and for the purpose described.

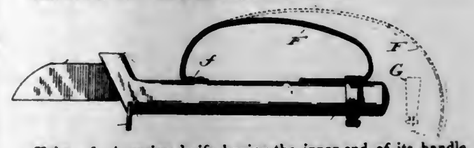
2. In an apparatus for making water gas, the combination of the gas generator *a*, the separate superheater *l*, the separate steam generator *q*, the stoves *z*, *z'*, the flue *k*, connecting the gas generator and superheater at the top, the flue b^3, connecting the superheater and the steam generator at the bottom, the valved hot blast pipes *e*, communicating with the gas generator above and below the fuel, the tubular boiler *l'*, the water heater *m'*, the valved flues *i*, *r'*, connecting the gas generator and the tubular boiler at the bottom, the flue r^3, connecting the boiler and the water heater at the top the hot water pipe *s'*, connecting the upper part of the heater and the lower part of the boiler, the gas cleaner *n'*, and the valved flue connecting the heater *m'* and cleaner *n'*, substantially as described.

542,567. TUBULAR LANTERN. GEORGE W. LYNCH, Detroit, Mich., assignor to the Buhl Stamping Company, same place. Filed June 13, 1894. Serial No. 514,457. (No model.)



Claim.—In a lift lantern, the combination with globe L, movable bell D, and a perforated plate upon which the globe rests, of a wire C, secured to said perforated plate, embracing one of the tubes B, extending upward on the outside of said tube, and provided with a projecting ear G, substantially as and for the purposes set forth.

542,568. KNIFE-HANDLE. THEODORE R. MILLER, Leando, Iowa. Filed Jan. 9, 1895. Serial No. 534,363. (No model.)



Claim.—1. A paring knife having the inner end of its handle turned upward at an angle and its blade projecting from this upturned end, the cutting edge of the knife being raised above or out of line with the lower edge of the handle, substantially as set forth.

2. A paring knife having the inner end of its handle turned upward at an angle and provided with a finger guard projecting from the opposite edge of the handle; the blade being made to project from the turned up end and the cutting edge of the blade being raised above the lower edge of the handle, substantially as described and for the purpose specified.

542,569. METALLIC CEILING. VALENTINE MOESLEIN, New York, N. Y. Filed Mar. 5, 1895. Serial No. 540,643. (No model.)



Claim.—1. A metallic ceiling, comprising a furring frame formed of longitudinal and transverse strips, each provided with a crimping rail, and panels crimped upon the said rails, substantially as herein shown and described.

2. A metal ceiling, provided with a furring frame for supporting the panels, the said frame comprising longitudinal and transverse strips each provided with a crimping rail on its under side, upon which the panels are crimped, substantially as shown and described.

3. A metallic ceiling provided with a furring frame for supporting the panels, the said frame consisting of longitudinal and transverse strips, each provided with a crimping rail on its under side, the transverse strips being in sections and having their ends bent upwardly to receive the side edges of the longitudinal strip between it and its crimping rail, substantially as described.

4. A metal ceiling comprising a furring frame having longitudinal and transverse strips each provided with a rail, and panels formed with flanges adapted to be crimped on the said rail, substantially as shown and described.

5. A metallic ceiling, comprising a frame formed of longitudinal and transverse strips, each provided with a crimping rail, and panels provided with approximately U-shaped flanges adapted to receive and to be crimped around said rails, substantially as described.

6. A metallic ceiling, comprising a furring frame formed of longitudinal and transverse strips provided with half round crimping rails on their under sides, and panels provided with approximately U-shaped flanges adapted to receive and to be crimped around the rails, substantially as described.

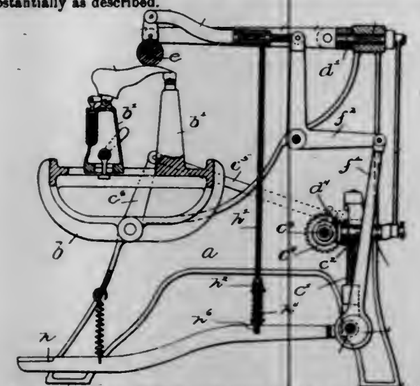
7. A metallic ceiling, comprising a frame formed of longitudinal and transverse strips provided with crimping rails on their under sides, and panels provided on two adjacent sides with approximately U-shaped flanges and in the other two sides with upturned flanges, the U-shaped flanges being adapted to receive and to be crimped upon the rails, substantially as described.

8. In a metallic ceiling, a panel provided on two adjacent sides with approximately U-shaped flanges adapted to be crimped upon a rail and on the other two sides with upturned flanges adapted to interlock with the U-shaped flanges of the adjacent panel, substantially as described.

542,570. SOLE-LEVELING MACHINE. FRED W. MCARDLE, Boston, Mass., assignor to Edward C. Judd, same place. Filed Oct. 9, 1893. Serial No. 487,607. (No model.)

Claim.—1. A sole-leveling machine combining in its structure the following elements, to wit: a rocking jack, a pivoted roll-frame or holder, a vibratory roll-carrier pivotally mounted on the roll-frame or holder and carrying a leveling roll which is tilted by the rocking motion of the roll-frame or holder, a single power-shaft, and inde-

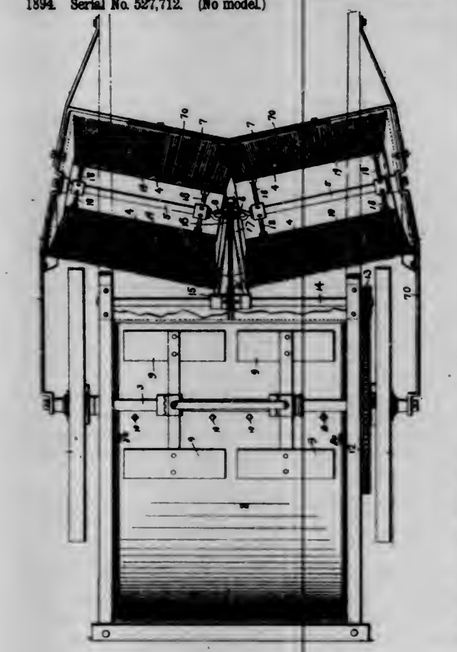
pendent mechanisms all driven by said power-shaft and respectively in operative connection with the said jack, the vibratory roll-carrier, and the roll-frame or holder, for automatically and continuously vibrating the roll-carrier and rocking the jack and roll-frame or holder, substantially as described.



2. A sole-leveling machine combining in its structure the following elements, to wit: a jack which rocks in one direction only, a pivotal roll-frame or holder extending over the jack and adapted to rock in a vertical plane and to rise and fall, a vibratory roll-carrier pivoted to the roll-frame or holder, a leveling-roll mounted on the pivoted roll-carrier, a single power-shaft, and three independent mechanisms driven by the power-shaft and respectively in operative connection with the roll-frame or holder, the pivoted vibratory roll-carrier, and the jack, substantially as described.

3. The combination of a jack which rocks in one direction only, a vertically swinging and rocking roll-frame having a jointed connection with a journal provided with a crank, a reciprocating leveling-roll mounted on the roll-frame, a single drive-shaft, a pitman connected with the crank on the journal of the rocking-frame and actuated by connections with the said drive-shaft for automatically rocking the roll-frame, a swinging-lever having a pitman and eccentric connection with the drive shaft for reciprocating the leveling-roll, a crank on the axis of the rocking-jack, and connections between the said drive-shaft and the crank on the axis of the jack, substantially as described.

542,571. STREET-SWEEPER. ANDREW J. REYNOLDS, Worcester, Mass., assignor of one-half to Curtis S. Yeaw, same place. Filed Nov. 2, 1894. Serial No. 527,712. (No model.)

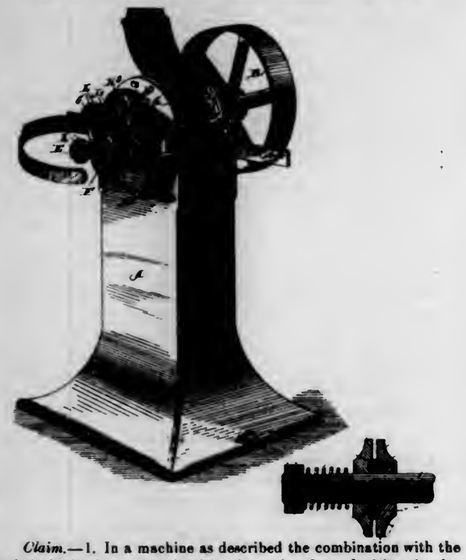


Claim.—1. In a street sweeper, the combination with a frame, an axle mounted thereon, two wheels loose on said axle, and adapted to be clutched thereto to cause the axle to revolve with the wheels, to operate through intervening mechanism the rotary brushes, and a collecting receptacle or bucket supported on the frame between the wheels, and at the rear of the brushes, of two rotary brushes arranged at an angle to each other, and means for supporting said brushes, and a deflector or apron supported directly in front of, and in close proximity to said brushes, said deflector of angular shape in horizontal cross section, and of curved shape in vertical cross section, with its upper end extending back over the top of the brushes, and its lower end provided with a flexible portion extending under the lower front part of the brushes, substantially as set forth.

2. In a street sweeper, the combination with the frame, an axle mounted thereon, two wheels loose on said axle, and adapted to be clutched thereto to cause said axle to revolve with said wheels, to operate, through intervening mechanism, the rotary brushes, and a collecting bucket supported on the frame between the wheels, at the rear of the brushes, of two rotary brushes, located in front of the collecting bucket, and extending at an angle to each other, and jointed at their inner ends, to a driven shaft and supported independently at at their outer ends, and at their inner ends, so that the outer ends, or the inner ends may be raised or lowered independently, and a deflector or apron supported in front of the rotary brushes, and in close proximity thereto, said apron being of angular shape in horizontal cross section, and of curved shape in vertical cross section, with its upper end extending rearwardly over the brushes, and its lower end provided with a flexible portion adapted to extend under the lower front part of the brushes, substantially as set forth.

3. In a street sweeper, the combination with the frame, and two rotary brushes supported thereon, and arranged at an angle to each other, and jointedly connected at their inner ends to a driven shaft, in such a manner that the bristles at the inner ends will intermesh at their front portions, of an apron or deflector supported in front of and in close proximity to the brushes, said deflector of angular shape in horizontal cross section, and of curved shape in vertical cross section, with its upper end extending rearwardly over the brushes, and its lower end provided with a flexible portion adapted to extend under the lower front part of the brushes, substantially as set forth.

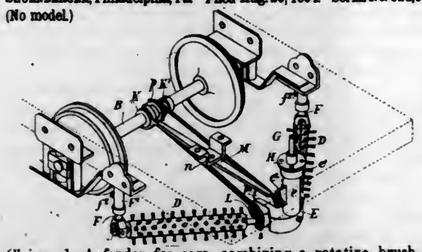
542,572. HOOP-FLARING MACHINE. MAX H. RITZWOLLER, Peoria, Ill. Filed May 1, 1895. Serial No. 547,795. (No model.)



Claim.—1. In a machine as described the combination with the feed shafts, having each a fixed head member formed with a circular socket in its clamp face, an opposing yielding clamp head having a similar socket and a washer held between the said heads having its opposite faces filling the sockets in the said heads as set forth.

2. As an improvement in hoop bending and flaring machines, a feed shaft having a fixed clamp head provided with a circular socket in its bearing face, a second clamp head loosely fitted on the said shaft, having a corresponding socket, a washer held between the said heads and having its opposite faces adapted to seat in the aforesaid sockets, the spring J and the adjustable collar K all arranged substantially as shown and for the purposes described.

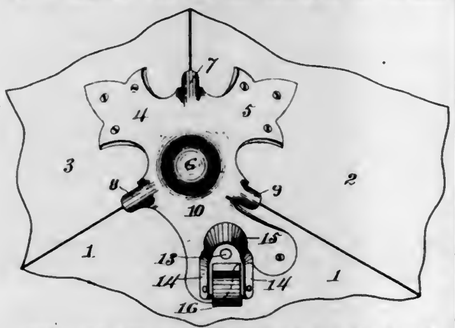
542,573. ROTARY FENDER FOR RAILWAY-CARS. JOHN H. SHOENBERGER, Philadelphia, Pa. Filed Aug. 29, 1894. Serial No. 521,599. (No model.)



Claim.—1. A fender for cars, combining a rotative brush or sweeper, a vertically movable support for the spindle of said brush, gearing for rotating the brush, having as one of its elements a laterally movable clutch, and means whereby the rising and falling movement of the brush spindle is caused to effect the lateral movement of said clutch, substantially as specified.

2. A fender for cars combining a rotative brush or sweeper, a vertically movable support for the spindle of said brush, a catch for retaining said support in the elevated position, a trip plate in advance of the fender for releasing said catch, rotating mechanism for the fender having as one of its elements a clutch, and means whereby said clutch is thrown into and out of action on the descent and rise of the movable brush support.

542,574. TRUNK CASTER AND CORNER-SHIELD. JOHN A. SLAMA, Chicago, Ill. Filed Feb. 8, 1895. Serial No. 537,726. (No model.)



Claim.—In a trunk caster, the combination of a plate having a conical hub cast solid with it, the latter having a flat face and a rivet projection integral with the face, with the wheel, the conical cup, having an opening for the said rivet projection, and a flat bearing surface between the cup and opening, for the said flat face, and the arms joined together by the cup, and between which the wheel is journaled, as set forth.

542,575. MILK-PAIL ATTACHMENT. RAY D. SMITH, Greenwood, N. Y. Filed Nov. 15, 1894. Serial No. 528,912. (No model.)



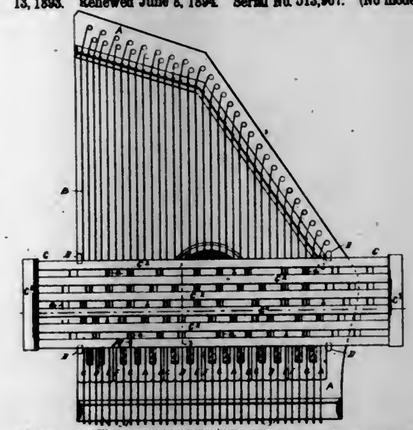
Claim.—1. A milk pail attachment comprising a breast provided with a strainer and spout, and spring actuated wire rods connected with said breast, and having hooks at their rear ends, adapted to engage the ears upon the pail substantially as shown and described.

2. A milk pail attachment comprising a breast provided with a strainer and spout, the wire rods connected with said breast and having hooks at each end, the hooks at the outer ends being adapted to engage the ears upon the pail the inner ends of said wires overlapping, and a coiled spring surrounding said overlapping portions between the hooks, substantially as shown and described.

3. A milk pail attachment, consisting of a breast having a strainer and spout, a flange carried by said breast, and the wire rods connected with said flange having hooks at each end, the hooks at the rear end being adapted to engage the ears of the pail and a coiled spring connecting the adjacent ends of said wire rods, substantially as shown and described.

4. In a milk pail attachment, a segment shaped breast having a strainer or spout, a depending flange, the packing strip, the guides, the wire rods held by said guides, said rods being hooked or bent at each end, and a coiled spring surrounding the adjacent ends of said wire rods, and adapted to bring the hooks at the rear end of its rods into engagement with the ears of the pail substantially as shown and described.

542,576. HARP. JOHN C. ST. JOHN, Boston, Mass. Filed May 13, 1893. Renewed June 8, 1894. Serial No. 513,967. (No model.)



Claim.—1. The combination with a zither, or harp, of a shield, which extends above and across and beyond the strings, and has a series of parallel rows of openings to expose certain strings, and coverings adapted to be depressed toward and rise from said strings, and supports for, and which are adapted for the slide longitudinally of, said shield, to adjust its openings as to the strings of the harp, substantially as described, for the purpose specified.

2. The combination with a zither or harp, of a shield which extends above and across and beyond the strings, and has a series of parallel rows of openings to expose certain strings, and coverings adapted to be depressed toward and rise from said strings, supports for, and which are adapted for the slide longitudinally of, said shield thereon, to adjust its openings as to the strings of the harp, and means, which are on said shield and said harp, and are relatively adapted as guides for said adjustments of the shield, substantially as described, for the purpose specified.

3. The combination with a zither or harp, of a shield, which extends above and across the strings, suitably supported, and has a series of parallel rows of openings to expose certain strings and portions in each of said rows, that intervene between said openings, and cover certain strings, and are adapted to be depressed toward, and to rise from the strings, substantially as described, for the purpose specified.

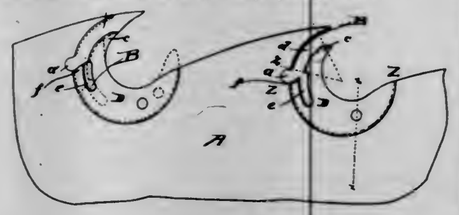
4. The combination with a harp or zither, of a shield which extends above and across the strings, suitably supported, and has a series of parallel ribs and a series of parallel rows of openings to expose certain strings and portions in each of said rows that intervene between said openings and cover certain strings, said portions along one side being attached to, and along the other side free of, said ribs; substantially as and for the purpose described.

5. A shield for a harp or zither, composed of end pieces, and a series of parallel ribs each made of sheet metal doubled upon itself, and resilient or flexible portions held and supported by said doubled-over ribs, and openings between said portions; all substantially as and for the purposes described.

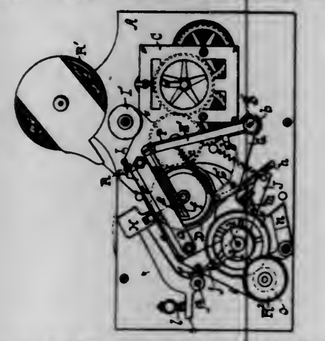
542,577. INSERTIBLE SAW-TOOTH. ASTON W. WALTER, Canton, Ohio, assignor of one-half to Charles W. Beam, same place. Filed Oct. 12, 1894. Serial No. 525,667. (No model.)

Claim.—The combination of a saw-blade provided with a recess B and the recess *a* said recess *a* opening into the recess B, the tooth C, provided with the heel *a'* and having a segmental section located

between its heel and point, the locking key, adjustable in a circular path in an opposite direction from the longitudinal movement of the tooth, and provided with the slot *e*, the shoulder *f* and the segmental section *c*, substantially as and for the purpose specified.



542,578. WORKMAN'S TIME-RECORDER. CHARLES A. WIDMER, New York, N. Y., assignor to the Widmer Time Recorder Company, of New Jersey. Filed Mar. 14, 1895. Serial No. 541,651. (No model.)



Claim.—1. In a time-recorder, the combination of a type-plate mounted to slide and provided with a series of stepped teeth adapted to engage with the key, and a handle in operative connection with said type-plate for moving the same toward the key to bring the corresponding character into the printing line, substantially as described.

2. In a time-recorder, the combination of a type plate mounted to slide and provided with a series of stepped teeth adapted to engage with the key, an operating handle, and an operative yielding connection between said handle and the type-plate for moving the latter toward the key to bring the corresponding character into the printing line, substantially as described.

3. The combination with a plurality of sliding, independently mounted type-plates provided with stepped teeth adapted to engage with the key, an actuating handle, and a yielding operative connection between said handle and the type-plates for moving the latter toward the key to bring the corresponding characters into the printing line, substantially as described.

4. The combination with a plurality of sliding, independently mounted type-plates provided with stepped teeth adapted to engage with the key, of a plurality of levers engaging said type-plates respectively, a crank arm engaging said levers for returning the same to their normal positions, and a yielding connection between said crank arm and the levers for actuating the latter to move the type-plates toward the key, substantially as described.

5. In a time recorder, the combination of a plurality of sliding, independently mounted type-plates provided with stepped teeth, keys provided with stops *k* and with graduated ends adapted to extend across the stepped teeth of the type-plates for checking the motion of the latter, and an actuating handle in operative connection with said type-plates for moving the same toward the key, substantially as described.

542,579. WICK-RAISER. HARLAN P. WILDER, Gardner, Mass. Filed June 16, 1894. Serial No. 514,819. (No model.)



Claim.—1. A wick raiser comprising a sheet of material rolled into the form of a sleeve with its abutting edges extending longitudinally thereof, said sheet having teeth within its marginal edges punched up from its body portion and the wick tube provided with a bearing for the wick opposite to and parallel to the sleeve with a wick passage between, substantially as described.

2. A wick raiser comprising a sheet of material rolled into the form of a sleeve, with its abutting edges extending lengthwise of the sleeve and with teeth punched up from its body portion within its marginal edges, said sleeve fitting closely a rod or spindle and secured thereto, and having a spindle joint extending lengthwise of the spindle, substantially as described.

3. A wick raiser comprising a roll or sleeve having hollow teeth punched out of its body portion, the circular edges of which are ragged or irregular, and the wick tube provided with a bearing for the wick opposite the roll or sleeve, substantially as described.

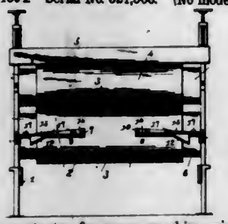
4. In combination in a wick raiser, the wick tube, and the raiser device comprising the sheet of material rolled into cylindrical form and having teeth projecting therefrom, said teeth being punched out of its body portion within its marginal edges, and leaving perforations therein, and the said wick tube having a bearing for the wick opposite the cylinder with a wick passage between, substantially as described.

542,580. ADJUSTABLE BEARING. MCCLINTOCK YOUNG, Frederick, Md. Filed Feb. 10, 1894. Serial No. 499,806. (No model.)



Claim.—The combination of the main frame, the roll C, the movable journal bearings G, the screws H, working against the said bearings to advance the same, the collars swiveled on said screws, and connections between said collars and bearings for positively withdrawing the latter when the screws are withdrawn.

542,581. PAPER-MACHINE WIRE-CLOTH PROTECTOR. ADAM YOUNG, Berkley, Md., assignor of one-half to Nelson James, same place. Filed Aug. 28, 1894. Serial No. 521,506. (No model.)



Claim.—1. A protector for paper machine wires consisting of a pulp pan adapted to be supported in rear of the bottom couch roll of a paper machine between the upper and lower portions of the wire to receive the pulp washings from the top couch roll, and provided with a bottom discharge opening, substantially as set forth.
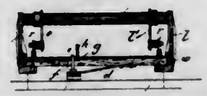
2. A protector for paper machine wires consisting of a pulp pan adapted to be supported at one end and in rear of the bottom couch roll of a paper machine to receive the pulp washings from the top couch roll, and provided with a bottom discharge opening and an inclined discharge spout leading off from said opening, substantially as set forth.

3. The herein described protector for paper machine wires, consisting of a shallow pulp pan provided at one end with an attaching flange, upturned dam flanges at one side and end, a bottom discharge opening, and a notched side edge adapted to register with one end of the bottom couch roll of a paper machine, substantially as set forth.

4. The herein described protector for paper machine wires, consisting of a shallow pulp pan provided near one end with a bottom discharge opening, an inclined side inclosed discharge spout leading off from said opening, and a notched side edge adapted to register with one end of the bottom couch roll of a paper machine, and a flexible joint strip clamped onto the notched side edge of said pan, substantially as set forth.

5. The herein described protector for paper machine wires, consisting of a shallow pulp pan provided near one end with a bottom discharge opening and with a notched side edge adapted to register with one end of the bottom couch roll of a paper machine, a flexible joint strip fitted on the notched side edge of the pan and projecting beyond the same, and a hinged clamp plate attached to the pan and removably clamped onto said flexible joint strip, substantially as set forth.

542,582. ATTACHMENT FOR ZITHERS OR OTHER MUSICAL INSTRUMENTS. MAXIMILIAN C. R. ANDORFF, Markneukirchin, Germany. Filed Oct. 11, 1894. Serial No. 525,625. (No model.)



Claim.—1. In an attachment for stringed instruments, the combination of a series of dampers adapted to bear upon the strings of the instrument, a sheet or strip having note openings cut therein and adapted to bear upon the dampers and suitable means for continuously feeding the strip or sheet of music forward across the dampers substantially as and for the purpose set forth.

2. In an attachment for stringed instruments, the combination of a suitable table carrying a series of dampers arranged across the said table, a sheet or strip having note openings cut therein, suitable means for holding the strip or sheet over the dampers, and suitable independent mechanism for continuously feeding the strip or sheet forward, substantially as and for the purpose set forth.

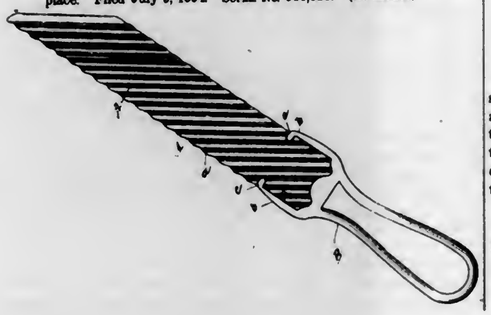
3. In an attachment for stringed instruments, the combination of a suitable table having a set of dampers movably secured thereto, a sheet or strip of music having note perforations cut therein and adapted to be fed forward over the dampers, a strip or rod secured to said table and adapted to hold the music strip onto the table, and suitable independent mechanism for continuously feeding the sheet or strip of music forward, substantially as and for the purpose set forth.

4. In an attachment for stringed instruments the combination of a suitable table carrying a series of dampers, a sheet or strip having note perforations cut therein adapted to be fed over the table and dampers and suitable mechanism consisting of a rod carrying a pair of arms, and a second pair of arms pivoted thereto and adapted to engage the strip or sheet of music and an operating lever secured to the rod adapted to move the same, substantially in the manner and for the purpose set forth.

5. In an attachment for stringed instruments, the combination of a suitable table carrying a series of dampers diagonally arranged thereon, a sheet or strip having note perforations cut therein and adapted to be fed along the table and over the dampers, suitable guides on said table for directing the course of the sheet or strip and suitable means for feeding the strip forward, substantially as and for the purpose set forth.

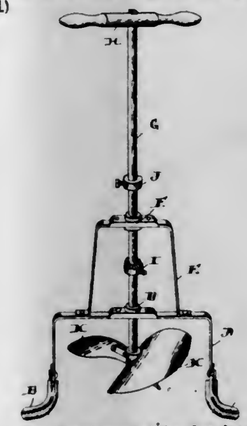
6. In an attachment for stringed instruments the combination of a suitable table having a series of dampers arranged thereon, and having their pins beveled at one end, a sheet or strip having note perforations cut therein and adapted to move along the table and over the pins of the dampers, suitable means for retaining the strip on the table and guiding it in its course over the table and suitable means for feeding the strip or sheet of music across the dampers consisting of a rod having attached thereto a pair of arms in engagement with the sheet or strip an operating lever attached to the rod, and a spring for holding the rod in an elevated position, substantially as shown and described.

542,583. BREAD-KNIFE. LORENZO D. BALL, Canton, Ohio, assignor of two-thirds to George Humphries and Samuel Kauffman, same place. Filed July 9, 1894. Serial No. 516,920. (No model.)



Claim.—The combination of the blade A, provided with diagonal corrugations, said diagonal corrugations extended beyond the edge of the blade forming the teeth *a*, said blade corrugated throughout its entire length, the handle B, provided with the arms *b*, having the tangs *c*, said arms embracing a portion of the corrugated blade, all arranged substantially as shown and described.

542,584. IMPLEMENT FOR TRANSPLANTING. CHARLES D. CARTER, Spring Arbor, Mich. Filed Dec. 13, 1894. Serial No. 531,682. (No model.)

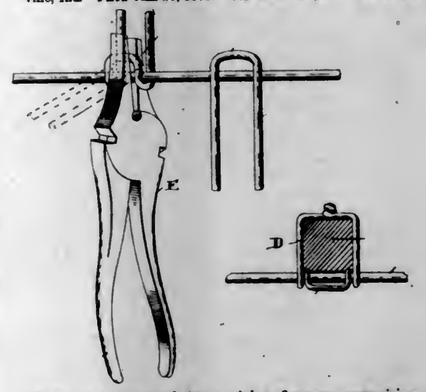


Claim.—1. In an implement of the class described, the combination of a suitable supporting frame, the revoluble shaft therein, and the oppositely inclined curved shares K secured at their adjacent edges to opposite sides of the lower end of said shaft, substantially as shown and described.

2. An implement for use in setting out strawberry plants comprising the frame having a bearing provided with a serrated lower surface, the revoluble shaft mounted in the frame, the collar thereon having a serrated upper surface, and the mound forming device carried by the shaft, substantially as shown and described.

3. An improved implement for use in setting out strawberry plants comprising the longitudinally and transversely curved shares arranged to cross each other at the center of rotation, substantially as shown and described.

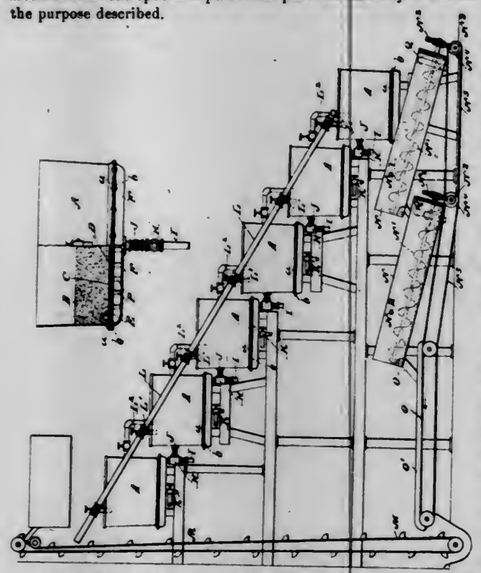
542,585. FENCE-PICKET FASTENER. JACOB CAYLOR, Ridgeville, Ind. Filed Jan. 23, 1895. Serial No. 535,927. (No model.)



Claim.—An improved fence-picket fastener comprising a U-shaped blank having its loop twisted around the strand as shown, the arms D extended outward from the strand with the picket positioned therebetween with its face in engagement with the convolutions of the portion of the loop twisted about the strand to prevent vertical displacement, and the extremities of arms D twisted together around the picket, substantially as shown and described.

542,586. PROCESS OF AND APPARATUS FOR FILTERING SACCHARINE JUICES. WILLIAM EAMES and OTTO SCHMIDT, Kealia, Kauai, Hawaii. Filed June 5, 1894. Serial No. 513,513. (No model.) Patented in Hawaii Jan. 24, 1894.

Claim.—1. The filtering tank for saccharine juices consisting of the upper section A, lower section B with outlets H I J, pillars or supports P, and steam pipe K, the said sections being flanged and bolted together, a perforated plate resting upon the pillars, and a filtering medium sustained upon said perforated plate substantially as and for the purpose described.



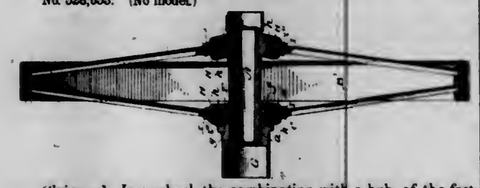
2. The sand filtering apparatus, consisting of a battery of tanks arranged in inclined series and provided with a feed pipe with inlets and valves for the several tanks, transfer pipes and valves connecting the tanks, inclined troughs with rotary spiral conveyers, arranged to wash and convey the sand from one to the other, a carrier belt and an endless elevator belt with buckets arranged to carry the washed sand to the highest tanks substantially as and for the purpose described.

542,587. ROTARY HARROW. JAMES G. FERRILL, Batesville, Ark. Filed Jan. 19, 1895. Serial No. 535,509. (No model.)



Claim.—In a harrow essentially as described a harrow section comprising an outer annular rim, cross bars fixedly connected therewith, having a central spindle member projected upward therefrom, an inner annular rim secured on the said cross bars, and pendent tooth members loosely connected with the aforesaid inner and outer annular members all arranged substantially as shown and described.

542,588. WHEEL. GEORGE C. HALE, Kansas City, Mo., assignor of one-half to Joseph J. Heim, same place. Filed Nov. 13, 1894. Serial No. 528,653. (No model.)



Claim.—1. In a wheel, the combination with a hub, of the fast and slidable collars provided with sockets, a series of spokes fitted in the sockets of the fast collar, and another series of spokes provided with ball shaped ends which are seated and keyed in the sockets of the slidable collar to turn therein, for the purposes described, substantially as set forth.

2. In a wheel, the combination with a hub and a felly, of the fast and slidable collars fitted to the hub and each collar provided with rounded sockets, and the spokes each having its outer end seated in the felly to turn therein and keyed in a rounded socket on one of the collars by a ball shaped gib which permits the inner end of the spoke to have a turning movement on the hub, substantially as and for the purposes described.

3. The combination with a hub, and a slidable collar provided with sockets, of a series of spokes, and enlarged, rounded gibs or keys which are seated in said sockets and hold the spokes therein against endwise movement but permitting a limited turning movement of said spokes, substantially as and for the purposes described.

4. In a wheel, the combination of a hub provided with ball shaped sockets, the spokes fitted in said sockets, and a ball shaped gib or key applied to each spoke and fitted within the socket, substantially as and for the purposes described.

5. In a wheel, the combination of a socket on the hub, a spoke, and a rounded sectional gib fastened to the spoke and fitted in an enlargement of the socket, substantially as and for the purposes described.

6. In a wheel, the combination of a rounded socket on the hub, a tapered spoke having a rounded inner end which bears upon the walls of the socket, and a rounded gib fastened to the inner end of said spoke and provided with an enlarged portion which fits snugly in the socket, substantially as and for the purposes described.

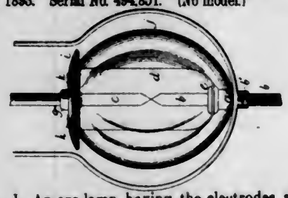
7. In a wheel, the combination of a spoke, a sectional gib having its members applied to the spoke and provided with the enlarged rounded ends, means for fastening the sectional gib to the spoke, and a socket which has an enlarged end to receive the enlarged portion of the gib, substantially as and for the purposes described.

8. In a wheel, the combination with a hub, of a fast collar thereon provided with ball shaped sockets, a slidable collar seated on the hub and likewise provided with the ball shaped sockets, and two series of spokes each of which is provided with a gib that fits in one of the sockets on said collars, whereby the spokes are keyed in the collars and said spokes can turn therein, to accommodate themselves to the travel of the slidable collar, substantially as and for the purposes described.

9. In a wheel, the combination of a felly having a cavity and an opening, a thimble struck up from a piece of metal to produce the tenon and the open socket which are fitted in the opening and cavity, respectively, of said felly, and a spoke having its outer rounded end seated in the socket of the thimble, substantially as and for the purposes described.

10. A wheel consisting of a hub, a divided felly having the inclined plates and the adjusting wedge, a series of rounded thimbles fitted in said felly, fast and slidable collars on said hub and provided with rounded sockets, and the spokes having their rounded outer ends seated in said thimbles and provided at their inner ends with rounded gibs which are fitted in the rounded sockets of said collars, substantially as and for the purposes described.

542,589. ELECTRIC-ARC LAMP. FRANK M. HILDEBRANDT, EDWIN S. HILDEBRANDT, and HENRY F. HILDEBRANDT, Baltimore, Md. Filed Dec. 27, 1893. Serial No. 494,851. (No model.)



Claim.—1. An arc lamp having the electrodes around the arc inclosed in a small transparent or translucent normally air tight casing, said casing being provided in its upper end with a valve or valves normally closed whereby the casing is filled with a highly luminous gas and the longevity of the electrodes is extended.

2. An arc lamp having its electrodes around the arc inclosed in a small transparent or translucent casing so arranged as to maintain the gases luminous in said casing and air tight against the ingress of air but affording egress for the heated gases developed by the arc.

3. An arc lamp having its electrodes around the arc inclosed in a transparent or translucent casing air tight at all points below the arc, so arranged as to maintain the gases luminous in said casing, means for preventing the ingress of air, and an outwardly opening valve or valves for permitting the discharge of gases.

4. An arc lamp having its arc inclosed in a small transparent or translucent casing air tight below the arc, so arranged as to maintain the gases luminous in said casing, a closely fitting opening to permit the feed of the positive carbon, and an outwardly opening normally closed valve or valves in the top of the casing adjacent to the heated gases.

5. An arc lamp having its arc inclosed in a small transparent or translucent casing air tight below the arc, so arranged as to maintain the gases luminous in said casing, a metallic closure having a closely fitting opening to permit the feed of the positive carbon, and means in the top of the casing for permitting the escape of the gases developed by the arc.

6. An arc lamp having its arc inclosed in a transparent or translucent casing air tight against ingress of air, so arranged as to maintain the gases luminous in said casing, and provided with a closure at the top having a closely fitting feed opening for the positive carbon.

7. An arc lamp having its arc inclosed in a small transparent or translucent casing so arranged as to maintain the gases luminous in said casing and air-tight against the ingress of air, a metallic closure for the top of the casing provided with a valve or valves for affording egress for the heated gases developed by the arc, and with a shield, and a globe surrounding the casing, the opening of which is covered by the shield.

8. An arc lamp having its arc inclosed in a transparent or translucent casing air tight below the arc, a closure for the top of the casing provided with a closely fitting feed opening for the positive carbon, and a valve opening in said closure.

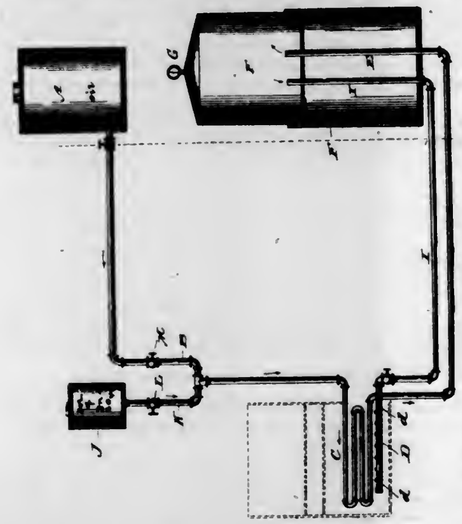
9. An arc lamp having its arc inclosed in a transparent or translucent casing air tight against the ingress of air and so arranged as to maintain the gases luminous in said casing, means for permitting the escape of the gases produced by the arc, a closely fitting opening in the bottom of the casing for permitting the insertion from beneath of the negative carbon, and a closely fitting opening in the top of the casing for permitting the feed of the positive carbon, said carbons being entirely inclosed within the casing.

10. An arc lamp having its arc inclosed within a transparent or translucent casing air tight at its lower end, a closure for the top of the casing having a closely fitting opening for the feeding of the positive carbon provided with a packing of fire proof material for the purpose set forth.

11. An arc lamp having its arc inclosed within a transparent or translucent casing air tight against ingress of air and so arranged as to maintain the gases luminous in said casing and means for permitting the egress of the gases produced by the arc, said casing having a contracted lower opening closed by a collar having a closely fitting opening for permitting the insertion from below of the negative carbon.

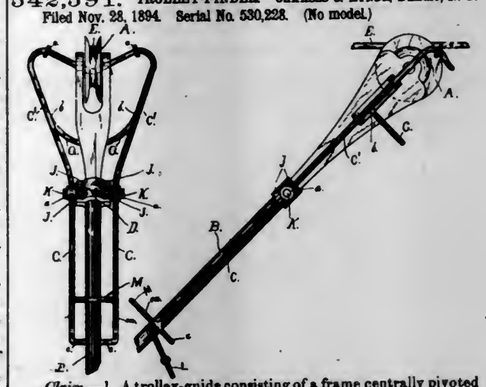
12. An arc lamp having its arc inclosed within a transparent or translucent casing air tight against the ingress of air, and having means for permitting the egress of the gases produced by the arc, the lower end of the casing being contracted and closed by a collar having a closely fitting opening to permit the insertion from below of the negative carbon, a recess in the collar, a packing of fire proof material, and a clamp for holding said carbon in position.

542,590. PROCESS OF BURNING PETROLEUM. JOHN J. LOONEY, Columbiana, Ohio. Filed May 5, 1894. Serial No. 510,201. (No model.)



Claim.—The herein described process of preventing the charring or carbonizing of the oil in the pipes, consisting in mixing with the oil in the pipes a solution of zinc sulphate, then subjecting the mixture of oil and zinc sulphate in the coils or pipes to heat for the purpose of converting the oil into gas, and then conveying the gas to a burner, or gasometer or other holder prepared to receive it, substantially as described.

542,591. TROLLEY-FINDER. CHARLES C. LYNDE, Buffalo, N. Y. Filed Nov. 28, 1894. Serial No. 530,228. (No model.)

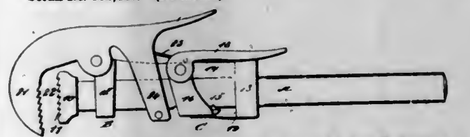


Claim.—1. A trolley-guide consisting of a frame centrally pivoted to the trolley-pole, its lower portion having a loop encircling the trolley-pole to limit its swinging movement and its upper swinging portion having a cross-piece adapted for contact with the lower side of the trolley-wire substantially as and for the purpose stated.

2. A trolley-guide consisting of a frame centrally pivoted to the trolley-wire, a clamp adjustable upon the trolley-pole and upon which the pivot for the frame is located, the lower portion of the frame having a loop encircling the trolley-pole to limit its swinging movement and its upper swinging portion having a cross piece adapted for contact with the lower side of the trolley-wire substantially as and for the purpose stated.

3. A trolley guide consisting of a frame comprising the side bars C, C, having at their lower ends the loop *m* encircling the trolley-pole B, the upper diverging arms C' C' connected at their outer ends by the downwardly curved cross-piece *h*, and the clamp D D' adjustably secured to the trolley-pole B and having the trunnions K, K, adapted for loose engagement with the sockets *a*, *a*, on the frame all combined and operating substantially as and for the purpose stated.

542,592. WRENCH. EDWARD I. MOREY, Durango, Colo., assignor of one fourth to Frederick W. Smith, same place. Filed Dec. 20, 1894. Serial No. 532,447. (No model.)



Claim.—1. In a wrench the combination of a handle having a jaw, a slide movable on the handle and adapted to be locked thereto, and a jaw pivoted on said slide at one side of the handle and provided at its rear end with a stirrup encircling the said handle and adapted to bear on the forward face thereof, substantially as set forth.

2. In a wrench the combination of a handle having a jaw having a roughened face, a slide movable on the handle, a jaw pivoted on said slide and a spring actuated stirrup pivoted on said slide encircling the handle and provided with a tooth or projection adapted to engage the roughened face of the handle substantially as set forth.

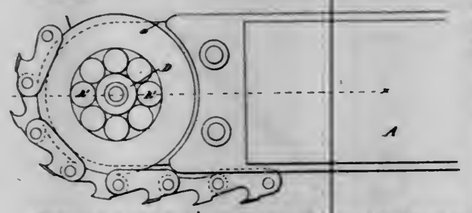
3. In a wrench, the combination of a handle having a jaw, a slide movable on the handle and adapted to be locked thereto and a jaw pivoted on the slide at one side of the handle and provided with a stirrup adapted to engage the face of the handle, and having its rear part beyond its pivot formed into a handle, substantially as set forth.

4. In a wrench, the combination of a handle having a jaw and a roughened face, a slide movable on the handle and comprising a tie-bar extending along the handle opposite the roughened face thereof, and end straps encircling the said handle, and a jaw pivoted on said slide and provided with a stirrup encircling the handle and adapted to bear, on the roughened face thereof, substantially as set forth.

5. In a wrench, the combination, with a handle provided with a jaw at one of its ends and with transverse channels in one of its faces,

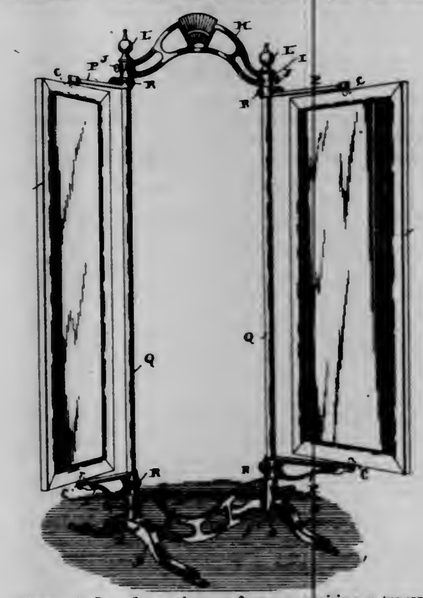
of a slide consisting of straps surrounding the handle and a connecting bar uniting the straps, a stirrup lock pivoted upon the slide and extending around the channeled portion of the handle, the stirrup being provided with a tooth entering the said channels, a spring normally holding the strap in locking position, a handle located at one end of the stirrup, a jaw pivoted upon the slide extending over the handle jaw and terminating at its inner end in a handle, a spring bearing against the pivoted jaw, normally holding its working face at an angle to that of the handle jaw, and a stirrup secured to the pivoted jaw and embracing the handle, limiting the extent of angularity with relation to the handle jaw, as and for the purpose specified.

542,593. ENDLESS-CHAIN-CUTTER MORTISING-MACHINE. CHARLES S. MOSKLEY, Dubuque, Iowa, assignor to the Dubuque Specialty Machine Works, same place. Filed Dec. 27, 1892. Serial No. 456,345. (No model.)



Claim.—In an endless chain-cutter mortising machine, the cutter bar having the plates *a* and B, with a recess formed in the inner surfaces of said plates, a removable axle fitting in said recesses a screw G, passing through said plates and axle, and securely holding the axle in the recesses in said plates, friction rollers E, E, disk or wheel C, and an endless chain-cutter traveling around said bar, all combined to operate, as and for the purposes described and shown.

542,594. MIRROR. CHARLES P. MOSHER and NELSON R. STREETER, Groton, N. Y. Filed Sept. 7, 1894. Serial No. 522,369. (No model.)



Claim.—1. In a floor mirror, a frame comprising a transverse arch at its lower end having feet extending laterally therefrom, upwardly extending side bars having their lower ends rigidly connected with said arch, tubes surrounding said side bars, an arch placed above the said tubes and connecting the upper ends of said rods, laterally projecting arms rigidly connected with said tubes and adapted thereby to swing freely around said side bars, and mirrors supported between said arms, substantially as described.

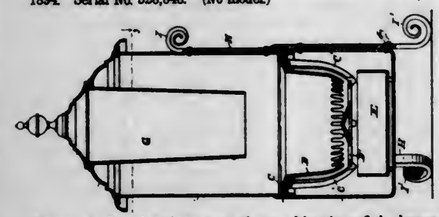
2. A mirror comprising a frame having side bars, a connecting arch or stretcher at the lower ends of the side bars, tubes surrounding, supported by, and rotatable independent of said bars, arms rigidly connected to opposite ends of the said tubes, the lower arms resting upon said arch, substantially as shown and described.

3. A mirror comprising the feet A having depending sockets, an arch or stretcher connecting the said feet and having a socket above and registering with the said feet sockets, side bars extending into the said stretcher sockets and into the feet sockets, an arch connecting the upper ends of the side bars, and mirror frames supported upon the said side bars, substantially as specified.

4. A floor mirror comprising a rectangular open frame-work, tubes supported by and freely rotatable upon the side bars of said frames, upper and lower laterally extending arms rigidly connected to said tubes to form therewith mirror frames, said arms adapted to pass between and around the side bars, and mirror frames supported by said arms, substantially as shown and described.

5. A mirror comprising an open frame-work having vertical side bars, and mirror supporting frames having inner vertical tubes supported by and surrounding and rotatable independent of the said side bars and extending throughout the length of the said side bars, the mirror frames being of a height less than the distance between the horizontal portion of the open frame-work, and of a width less than the distance between the said side bars of the frame-work, whereby the mirror frames are adapted to swing through the said open frame or around the outside thereof, substantially as described.

542,595. HEATING-STOVE. HERBERT L. MOSHER, Dowagiac, Mich., assignor of one-half to Fred E. Lee, same place. Filed Nov. 15, 1894. Serial No. 528,848. (No model.)



Claim.—1. In a heating stove, the combination of the lower casing, A′, constructed of sheet metal stamped out in a single piece; the metallic ring, B, supported in the top of said fire pot on a suitable shoulder; the upper or drum portion, A constructed of sheet metal and supported in said ring on a suitable shoulder; the upright bars, H, riveted to the lower casing, A′, and to the drum portion, A, above and extending downwardly terminating in a spiral to form the leg; the door, L, in the lower casing, A′, for the introduction of the ash pan, E; the rigid ring, C, supported centrally on the ring, B; the hangers, C′ rigidly attached to said ring, C; the grate, D′, supported on said hangers, C′; the coal basket, D, centrally located between said hangers, all substantially as described for the purpose specified.

2. In a heating stove, the combination of the sheet metal lower casing, A′; the cast ring, B, thereon; the sheet metal drum portion, A, above; and grate and coal fixtures supported on said cast ring, B; and upright bars, H, secured to the sheet metal lower casing, A′; and the sheet metal portion, A, above to unite the parts together and turned up to form legs at the bottom, substantially as described.

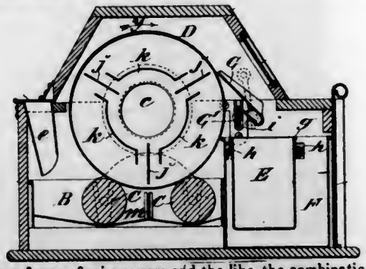
3. In a heating stove, the combination of the lower casing, A′, constructed of sheet metal; the ring, B, supported in the top of said lower casing on a suitable shoulder; the upper or drum portion, A, constructed of sheet metal and supported in said ring on a suitable shoulder; and upright bars, H, secured to the lower casing, A′, and the drum portion, A, above, for the purpose specified.

4. In a heating stove, the sheet metal lower casing stamped from a single piece of metal; upright bars attached to the sides of said lower casing and extending downwardly to form legs and upwardly to support the superstructure of the stove, for the purpose specified.

5. In a heating stove, the combination of the lower casing, A′, constructed of sheet metal stamped out in a single piece; the metallic ring, B, supported in the top of said lower casing on a suitable shoulder; the upper or drum portion, A, constructed of sheet metal and supported in said ring on a suitable shoulder; the upright bars, H, riveted to the lower casing, A′, and to the drum portion, A, above and extending downwardly terminating in a spiral to form the leg; the door, L, in the lower casing, A′, for the introduction of the ash pan, E; the rigid ring, C, supported centrally on the ring, B; the coal basket, D; the grate, D′, supported from said ring, C, substantially as described.

542,596. ICE-CREAM FREEZER. WILLIAM B. MCCANN, Philadelphia, Pa. Filed Feb. 24, 1893. Renewed Sept. 18, 1894. Serial No. 523,347. (No model.)

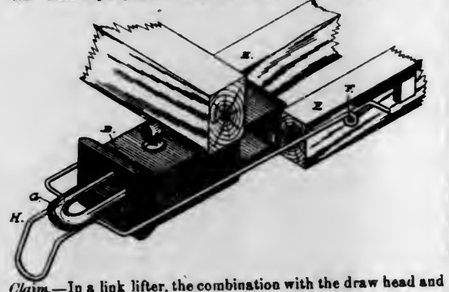
Claim.—1. In a freezer for ice cream and the like, a cylinder to contain the refrigerant provided interiorly with means for agitating and upholding the refrigerant during the rotation of the cylinder, said means comprising the plates *j*, arranged substantially radial to the cylinder and the tray-likes plates *k*, between the plates *j*, and arranged substantially as set forth.



2. In a freezer for ice-cream and the like, the combination with the cylinder for the refrigerant and means for feeding to the periphery thereof the liquid to be frozen, of the sides which support the scraper, the recessed keepers *i*, fixed to said sides, the bar G′, adapted to rest removably in said keepers, and the scraper, of sheet metal bent into a U-shape and its lower branch secured rigidly to the bar G′ at its front end, whereby the scraper is supported wholly by the said bar, as set forth.

3. In a freezer of the character described, the combination with the cylinder for the refrigerant, a scraper to remove the cream therefrom, and two feed-rollers arranged respectively, on opposite sides of a vertical plane passing longitudinally through the axis of the cylinder, of a cream pan in which said rollers are mounted, said pan having a partition between said rollers, as set forth.

542,597. CAR-COUPLING. VALENTINE PFAFF, San Francisco, Cal. Filed Sept. 4, 1894. Serial No. 522,097. (No model.)



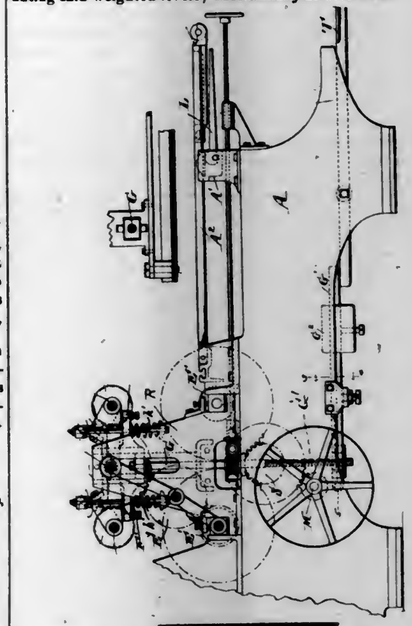
Claim.—In a link lifter, the combination with the draw head and link therein; of the lifting device consisting of a rectangular frame surrounding the draw-head and having a forwardly projecting and downwardly bent extension beneath the front end of the link, the side arms of said frame being bent into eyes, then carried to the rear in line with their bodies, and then bent downward in rounded terminals, pivot pins through said eyes into the beams of the car, and leaf-springs connected at their rear ends with said beams and having their forward ends bearing on the terminals of said frame-arms with sufficient power to sustain the front ends of both the frame and the link, as and for the purpose set forth.

542,598. DOUBLE OR SECTIONAL PLANING-MACHINE. LOUIS T. PYOTT, Ardmore, assignor to Daniel A. Waters and William G. Vernon, Philadelphia, Pa. Filed Feb. 2, 1892. Serial No. 420,118. (No model.)

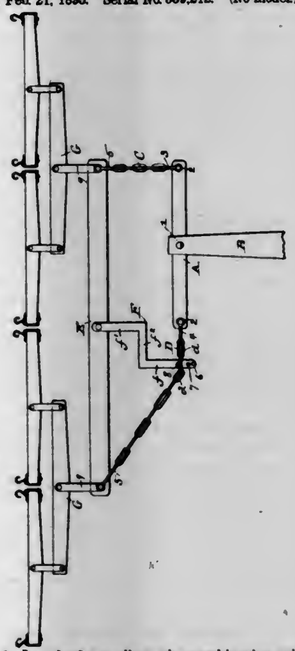
Claim.—1. In a sectional or double planing machine, a vertical guide way on each side of the machine, a cross-head adapted to slide vertically therein, vertical lifting rods on which the cross-head is mounted, weighted levers to which the free ends of said rods are attached, upper entry-feed rolls constructed in sections, each having independent driving bearings pivotally mounted upon the cross-head, and counter-acting spring-controlled rods mounted upon and having their resistance entirely within the cross-head, whereby a double set of resistance supports, both operating through the cross head, is provided for the feed rolls, said resistance supports operating independently of each other, either as to both sections of the feed rolls or as to either section thereof; substantially as described.

2. In a sectional or double planing machine, a vertical guide-way on each side of the frame, a cross head adapted to slide therein, a vertical rod on which the same is mounted, said cross head being provided with independent spring rods and swing arms mounted thereon, forming an independent driving shaft support for each individual section of the upper feeding-in rolls with its resistance entirely within the cross head; substantially as described.

3. In a sectional or double planing machine, in combination with vertically adjustable bearings for upper feed rolls, of a double set of resistance supports therefor, one by springs automatically controlling the said rolls, and the other by weighted levers, the former independent of the latter, in combination with a relief lever and treadle actuating said weighted levers; substantially as described.



542,599. DRAFT-EQUALIZER. GEORGE W. RAYMOND, Seneca, Ill. Filed Feb. 21, 1895. Serial No. 539,212. (No model.)

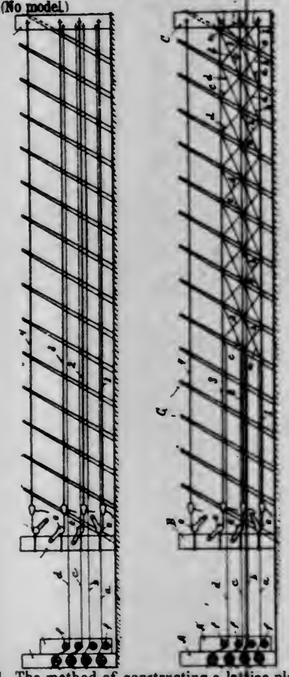


Claim.—1. In a draft-equalizer, the combination, with a plow or other like implement, of a draft-plate pivotally secured thereto, an evener, chains connecting the ends of the draft plate and evener, an equalizer pivotally secured at one end to the evener, its other end being adapted to enter one of the links of one of said chains, and doubletrees attached to the ends of the evener, substantially as described.

2. In a draft-equalizer, the combination, with a plow or other like implement, of a draft-plate pivotally secured thereto, an evener, chains connecting the ends of the draft-plate and evener, a right-angular equalizer secured at one end to the evener, its other end being adapted to enter one of the links of one of said chains, and doubletrees attached to the ends of the evener, substantially as described.

3. In a draft-equalizer, the combination, with a plow or other like implement, of a draft-plate pivotally secured thereto, an evener, chains connecting the ends of the draft-plate and evener, an equalizer comprising two arms each at a right angle to a central portion, one of said arms being pivotally secured to the evener, the free end of the other arm being adapted to enter one of the links of one of said chains, means for preventing the link on the arm from slipping from its position, and doubletrees attached to the ends of the evener, substantially as described.

542,600. LATTICE HEDGE FENCE AND METHOD OF PLASHING. WESLEY YOUNG, Dayton, Ohio. Filed Feb. 25, 1895. Serial No. 539,668. (No model.)



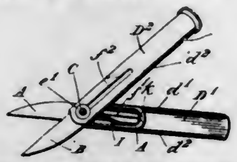
Claim.—1. The method of constructing a lattice plashed hedge fence, which consists in stretching a series of horizontally extended main wires one above the other along a line of plants, then stringing a second series of small wires supported on tension spools so as to yield up and down, then drawing the said second series of wires alternately up and down between the horizontal wires in such manner as to form a lattice work and securing both series of wires to the plants at the meeting points of said wires, substantially as described.

2. The method of forming a combined hedge and lattice fence, which consists in inclining a series of plants adjacent to and parallel with a series of horizontally extended main wires arranged one above another, stretching another series of wires alternately up and down between the horizontally secured main wires, and fastening both series of wires to the inclined plants, at the meeting points of the two series of wires, substantially as described.

3. In a combined hedge and lattice fence, a series of horizontally supported main wires strung one above another, and a series of lattice-forming wires inclined alternately up and down and crossing each other between the main wires, in combination with a series of inclined plants to which both series of wires are secured, substantially as described.

542,601. POCKET-SCISSORS. FRANCIS R. BAKER, Harborne, assignor to Leopold Myers, Birmingham, England. Filed Mar. 28, 1895. Serial No. 543,503. (No model.)

Claim.—1. A pair of pocket scissors comprising a pair of blades and a pair of trough like sheaths fitted one upon the other to make a complete receptacle, said sheath having longitudinal slots diametrically opposite each other and a rivet passing through said slots and serving both to connect all the parts together and as the pivot for the blades, substantially as described.

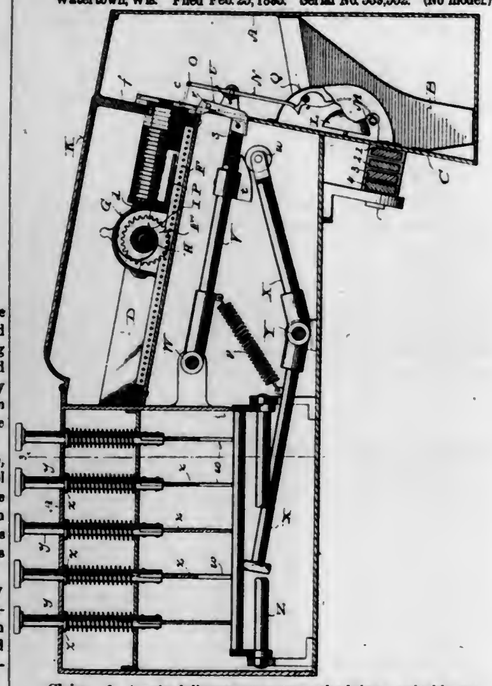


2. In combination, the channel sheaths, one of which has a notch *l*, a pair of blades adapted to slide in the sheaths and one of said blades having a projection *k* on its rear extension adapted to pass through the notch of the opposite sheath and a rivet for securing all the parts together, substantially as described.

3. The combination in a pair of pocket scissors of a pair of blades, a sheath made in two parts of trough section metal in which the blades fit and in which the blades will slide, said two blades and the two parts of the sheath being connected together by and adapted to turn on a cross rivet or pin passing through longitudinal slots in the halves of the sheath to permit of the blades being slid into or partly out of the sheath, one of said blades containing a spring adapted to act upon the other blade to open the blades apart ready for use, all substantially as set forth.

4. The combination in a pair of pocket scissors of a pair of blades, a sheath made in two parts of trough section metal in which the blades fit and in which the blades will slide, said two blades and the two parts of the sheath being connected together by and adapted to turn on a cross rivet or pin passing through longitudinal slots in the halves of the sheath to permit of the blades being slid into or partly out of the sheath one of said blades containing a spring adapted to act upon the other blade to open the blades apart ready for use and one half of the sheath having a loop to turn over the end of the other half sheath and maintain the scissors closed, all substantially as set forth.

542,602. COIN-DELIVERY APPARATUS. EDWARD J. BRANDT, Watertown, Wis. Filed Feb. 25, 1895. Serial No. 539,552. (No model.)



Claim.—1. A coin-delivery apparatus embodying a suitable casing, a series of inclined coin-channels in the casing, an apertured plate facing the lower ends of the channels, racks arranged in said channels, hollow coin-followers in sliding engagement with the racks, rack-engaging pinions fast on arbors mounted in the followers, volute springs connecting the arbors and housings, and reciprocative pushers operative to lift coin from the aforesaid channels into register with the plate-apertures, the latter being of such contour and dimensions as will permit escape of coin brought into register therewith.

2. A coin-delivery apparatus embodying a suitable casing, a pair of inclined coin-channels in the casing, a suitably apertured plate facing the lower ends of the channels, a pair of parallel single coin-pushers operative in one channel adjacent to said plate, levers connected to both pushers, a lug on one of the levers arranged to lift the other, another pusher operative in the remaining channel, and having a working face approximately equal in width to the thickness of two coins, a lever connected to the latter pusher and provided with a lug arranged to lift the outermost of the former levers, and still another lever provided with a lug arranged to lift all the aforesaid levers.

3. A coin delivery apparatus that embodies a suitable casing, a series of inclined coin channels in the casing, an apertured stop-plate at the lower ends of the channels, coin-pushers loose in the plate, and a reciprocative mechanism for the pushers comprising a series of rockers, together with a series of vertically reciprocative edgewise plates having depending feet opposing the rockers.

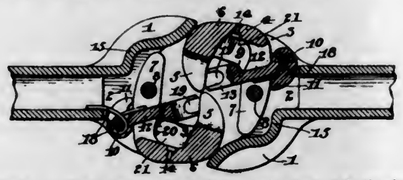
4. A coin-delivery apparatus embodying a suitable casing, a series of inclined coin-channels in the casing, a plate that faces the lower ends of the channels and has a series of coin-apertures, as well as vertical slots communicating with these apertures, coin-pushers loosely engaging the slots, ears on the pushers abutting said plate, tilt-rods in pivotal connection with the lower ends of said pushers, springs in the rods exertive against the aforesaid pushers, and suitable mechanism for actuating said rods.

5. A coin-delivery apparatus embodying a suitable casing, a series of inclined coin-channels in the casing, a plate that faces the lower ends of the channels and has a series of coin apertures above the bottoms of the same, as well as vertical slots communicating with these apertures; coin-pushers maintained in loose engagement with the slots, tilt-rods in pivotal connection with the pushers, bell-cranks exertive against the rods, rockers operative against the bell-cranks, a series of loose edgewise plates having depending feet opposing the rockers, and push-rods joined to the plates.

6. A coin-delivery apparatus embodying a suitable casing, a series of inclined coin-channels in the casing, a plate that faces the lower ends of the channels and has a series of coin-apertures above the bottoms of the same, as well as vertical slots communicating with these apertures; coin-pushers maintained in loose engagement with the slots, tilt-rods in pivotal connection with the pushers, bell cranks exertive against the rods, springs connecting the rods and bell-cranks, rockers operative against said bell-cranks, a series of loose edgewise plates having depending feet opposing the rockers, and push-rods joined to the plates.

7. A coin-delivery apparatus embodying a suitable casing a series of inclined coin-channels in the casing, an apertured stop-plate at the lower ends of the channels, coin-pushers loose in the plate, a reciprocative mechanism for the pushers, coin followers in the aforesaid channels, loose pins in the paths of the coin-followers, and an alarm-mechanism arranged to be actuated by movement of the pins under impulse of said followers.

542,603. CAR-COUPLING. PHILIP C. BROWN, Washington, D. C. Filed May 13, 1895. Serial No. 549,177. (No model.)



Claim.—1. In a car coupling, the combination, with the drawhead having a guard arm, of a horizontally swinging knuckle pivoted in the drawhead, having a buffer surface so sloped that the direction of pressure at the point of contact of two such knuckles impacting when both closed and with the drawheads in alignment, will pass outside the pivotal axes of the knuckles, whereby the pressure will open the knuckles from their closed position, and having another portion projecting out of the mouth of the drawhead except when the knuckle is in its closed position and arranged to subsequently receive an impact from said opposite knuckle to throw the knuckle inwardly and effect a coupling, substantially as described.

2. In a car coupling, the combination, with the drawhead having a guard arm, of a horizontally swinging knuckle pivoted in the drawhead, having a buffer surface so sloped that the direction of pressure at the point of contact of two such knuckles impacting when both closed and with the drawheads in alignment, will pass outside the pivotal axes of the knuckles, whereby the pressure will open the knuckles from their closed position, and having another portion projecting out of the mouth of the drawhead except when the knuckle is in its closed position and arranged to subsequently receive an impact from said opposite knuckle to throw the knuckle inwardly and effect a coupling, and a spring for so throwing said knuckle, substantially as described.

3. In a car coupling, the combination, with the drawhead having a guard arm, of a horizontally swinging knuckle pivoted in the drawhead, having a buffer surface so sloped that the direction of pressure at the point of contact of two such knuckles impacting when both closed and with the drawheads in alignment, will pass outside the pivotal axes of the knuckles, whereby the pressure will open the knuckles from their closed position, and having another portion projecting out of the mouth of the drawhead except when the knuckle is in its closed position and arranged to subsequently receive an impact from said opposite knuckle to throw the knuckle inwardly and effect a coupling, and independent means for so throwing said knuckle, substantially as described.

4. In a car coupling, the combination, with the drawhead having a guard arm, of a horizontally swinging knuckle pivoted in the drawhead, having a buffer surface so sloped that the direction of pressure at the point of contact of two such knuckles impacting when both closed and with the drawheads in alignment, will pass outside the pivotal axes of the knuckles, whereby the pressure will open the knuckles from their closed position, and a lever pivoted upon the drawhead and projecting out of the mouth of the drawhead to close said knuckle by impact of the opposite knuckle, substantially as described.

5. In a car coupling, the combination, with the drawhead having a guard arm, of a horizontally swinging knuckle pivoted on the drawhead, a lever arranged to be actuated by the entering end of the similar knuckle of the opposite drawhead to throw the knuckle inward and effect a coupling, and means, independent of said entering end, for actuating said lever, substantially as described.

6. In a car coupling, the combination, with the drawhead having a guard arm, of a horizontally swinging knuckle pivoted on the drawhead, a lever arranged to be actuated by the entering end of the similar knuckle of the opposite drawhead, to throw the knuckle inwardly, and a spring for so throwing said knuckle, substantially as described.

7. In a car coupling, the combination, with the drawhead having a guard arm, of the horizontally swinging knuckle pivoted on the drawhead, a guard lever interposed between the opposite drawhead, and actuated by the latter knuckle to close the other, and means, independent of the entering end, for closing said knuckle, substantially as described.

8. In a car coupling, the combination, with the drawhead having a guard arm, of the horizontally swinging knuckle pivoted on the drawhead, a guard lever interposed between said knuckle and the entering end of the similar knuckle of the opposite drawhead, and actuated by the latter knuckle to close the other, and a spring for closing said knuckle, substantially as described.

9. In a car coupling, the combination, with the drawhead having a guard arm, of the horizontally swinging knuckle pivoted on the drawhead, a movable guard arranged to be actuated by the entering end of a similar knuckle of the opposite drawhead, said guard having an operative connection with the first knuckle whereby the latter will be moved inwardly or closed by the impact of the opposite knuckle, and independent means for so closing said knuckle, substantially as described.

10. In a car coupling, the combination, with the drawhead having a guard arm, of the horizontally swinging knuckle pivoted on the drawhead, a movable guard arranged to be actuated by the entering end of a similar knuckle of the opposite drawhead, said guard having an operative connection with the first knuckle whereby the latter will be moved inwardly or closed by the impact of the opposite knuckle, and a spring for so closing said knuckle, substantially as described.

11. In a car coupling, the combination, with the drawhead provided with a guard arm, of a horizontally swinging knuckle pivoted thereon, a movable guard interposed between the knuckle and the entering end of the similar knuckle of the opposite drawhead, and operatively connected with the knuckle so that an outward movement of the guard will produce an inward movement of the knuckle, and independent means for so moving said knuckle inwardly, substantially as described.

12. In a car coupling, the combination, with the drawhead provided with a guard arm, of a horizontally swinging knuckle pivoted thereon, a movable guard interposed between the knuckle and the entering end of the similar knuckle of the opposite drawhead, and operatively connected with the knuckle so that an outward movement of the guard will produce an inward movement of the knuckle, and a spring for so moving said knuckle, substantially as described.

13. In a car coupling, the combination, with the drawhead having a guard arm, of the knuckle pivoted on the drawhead, and a guard lever pivoted on the drawhead, whereof one arm is arranged to be actuated by the entering end of a similar knuckle of the opposite

drawhead, and the other arm engages the first knuckle to throw it inwardly, substantially as described.

14. In a car coupling, the combination, with the drawhead having a guard arm, of the horizontally swinging knuckle pivoted on the drawhead, and a guard lever pivoted on the drawhead, whereof one arm is arranged to be actuated by the entering end of a similar knuckle of the opposite drawhead, and the other arm engages the first knuckle to throw it inwardly, substantially as described.

15. In a car coupling, the combination, with the drawhead having a guard arm, of the horizontally swinging knuckle pivoted on the drawhead, a guard lever pivoted on the drawhead, whereof one arm is arranged to be actuated by the entering end of a similar knuckle of the opposite drawhead, and the other arm engages the first knuckle to throw it inwardly, and independent means for actuating said knuckle inwardly, substantially as described.

16. In a car coupling, the combination, with the drawhead having a guard arm, of the horizontally swinging knuckle pivoted on the drawhead, a guard lever pivoted on the drawhead whereof one arm is arranged to be actuated by the entering end of a similar knuckle of the opposite drawhead, and the other arm engages the first knuckle to throw it inwardly, and a spring for so throwing said knuckle, substantially as described.

17. In a car coupling, the combination, with the drawhead, of the swinging knuckle pivoted on the drawhead, and a guard lever pivoted on the drawhead in the rear of the knuckle and having an arm interposed between said knuckle and the entering end of the similar knuckle of the opposite drawhead and actuated by said end, said lever also having an arm engaging the first knuckle to throw it inwardly, substantially as described.

18. In a car coupling, the combination, with the drawhead having a guard arm, of the horizontally swinging knuckle pivoted on the drawhead, and a guard lever pivoted on the drawhead in the rear of the knuckle and having an arm interposed between said knuckle and the entering end of the similar knuckle of the opposite drawhead and actuated by said end, said lever also having an arm engaging the first knuckle to throw it inwardly, substantially as described.

19. In a car coupling, the combination, with the drawhead having a guard arm, of the horizontally swinging knuckle pivoted on the drawhead, a guard lever pivoted on the drawhead in the rear of the knuckle and having an arm interposed between said knuckle and the entering end of the similar knuckle of the opposite drawhead and actuated by said end, said lever also having an arm engaging the first knuckle to throw it inwardly, and independent means for actuating said lever, substantially as described.

20. In a car coupling, the combination, with the drawhead having a guard arm, of the horizontally swinging knuckle pivoted on the drawhead, a guard lever pivoted on the drawhead in the rear of the knuckle and having an arm interposed between said knuckle and the entering end of the similar knuckle of the opposite drawhead and actuated by said end, said lever also having an arm engaging the first knuckle to throw it inwardly, and a spring for so throwing said knuckle, substantially as described.

21. In a car coupling, the combination, with the drawhead provided with a guard arm, of a knuckle pivoted thereon, and a lever pivoted on said drawhead, one arm of said lever being moved inwardly, and thus pressing outward on its pivot the entering end of the similar knuckle of the opposite drawhead, by the outward movement of the knuckle actuating another arm of said lever, substantially as described.

22. In a car coupling, the combination, with the drawhead provided with a guard arm, of a horizontally swinging knuckle pivoted thereon, and a lever pivoted on said drawhead, one arm of said lever being moved inwardly, and thus pressing outward on its pivot the entering end of the similar knuckle of the opposite drawhead, by the outward movement of the knuckle actuating another arm of said lever, substantially as described.

23. In a car coupling, the combination, with the drawhead provided with a guard arm, of a horizontally swinging knuckle pivoted thereon, a lever pivoted on said drawhead, one arm of said lever being moved inwardly, and thus pressing outward on its pivot the entering end of the similar knuckle of the opposite drawhead, by the outward movement of the knuckle actuating another arm of said lever, and a spring resisting said movement, substantially as described.

24. In a car coupling, the combination, with the drawhead having a guard arm, of a horizontally swinging knuckle pivoted on the drawhead, and a lever vibrating oppositely to said knuckle and arranged to be actuated by the entering end of the similar knuckle of the opposite drawhead to throw the knuckle inward and effect a coupling, substantially as described.

25. In a car coupling, the combination, with the drawhead having a guard arm, of a horizontally swinging knuckle pivoted on the drawhead, a lever vibrating oppositely to said knuckle and arranged to be actuated by the entering end of the similar knuckle of the opposite drawhead to throw the knuckle inwardly and effect a coupling, and means independent of said entering end, for actuating said lever, substantially as described.

26. In a car coupling, the combination, with the drawhead having a guard arm, of a horizontally swinging knuckle pivoted on the drawhead, a lever vibrating oppositely to said knuckle and arranged to be actuated by the entering end of the similar knuckle of the opposite drawhead to throw the knuckle inwardly, and effect a coupling, and a spring for so throwing said knuckle, substantially as described.

27. In a car coupling, the combination, with the drawhead having a guard arm, of the horizontally swinging U-shaped knuckle pivoted through its rear arm upon the drawhead, its bend receiving the nose of the opposite similar knuckle, and operative mechanism for inwardly swinging said knuckle arranged to be actuated by the transverse inward movement of the opposite knuckle, substantially as described.

28. In a car coupling, the combination, with the drawhead having a guard arm, of the horizontally swinging U-shaped knuckle pivoted through its rear arm upon the drawhead, its bend receiving the nose of the opposite similar knuckle, operative mechanism for inwardly swinging said knuckle arranged to be actuated by the transverse inward movement of the opposite knuckle, and a spring for so swinging said knuckle, substantially as described.

29. In a car coupling, the combination with the drawhead having a guard arm, of the horizontally swinging U-shaped knuckle pivoted through its rear arm upon the drawhead, and a guard lever interposed between said knuckle and the entering end of the similar knuckle of the opposite drawhead, and actuated by the latter knuckle to close the other, substantially as described.

30. In a car coupling, the combination with the drawhead having a guard arm, of the horizontally swinging U-shaped knuckle pivoted through its rear arm upon the drawhead, a guard lever interposed between said knuckle and the entering end of the similar knuckle of the opposite drawhead, and actuated by the latter knuckle to close the other, and a spring for so closing said knuckle, substantially as described.

31. In a car coupling, the combination with the drawhead having a guard arm, of the horizontally swinging U-shaped knuckle the rear arm of which engages the drawhead to transmit the pull thereto through said rear arm, and ejector mechanism, actuated by the outward movement of said knuckle, for moving outward the other knuckle, substantially as described.

32. In a car coupling, the combination, with the drawhead having a guard arm, of the horizontally swinging U-shaped knuckle the rear arm of which engages the drawhead to transmit the pull thereto through said rear arm, and a lever, actuated by the outward movement of the knuckle, and engaging the end of the opposite knuckle to eject it from the drawhead, substantially as described.

33. In a car coupling, the combination with the drawhead having a guard arm of a horizontally swinging knuckle centrally pivoted therein and a lever actuated by the inward pivotal movement of the opposite similar knuckle, to move its knuckle inwardly, substantially as described.

34. In a car coupling, the combination with the drawhead having a guard arm of a horizontally swinging knuckle centrally pivoted therein and a lever actuated by the inward pivotal movement of the opposite similar knuckle, to move its knuckle inwardly, and independent means for so throwing said knuckle, substantially as described.

35. In a car coupling, the combination with the drawhead having a guard arm of a horizontally swinging knuckle centrally pivoted therein and a lever actuated by the inward pivotal movement of the opposite similar knuckle, to move its knuckle inwardly, and a spring for so throwing said knuckle, substantially as described.

36. In a car coupling, the combination, with the drawhead having a guard arm, of the horizontally swinging U-shaped knuckle pivoted through its rear arm upon the drawhead, and an arm swinging on the drawhead extending across the rear arm of the knuckle and having in its end a recess to receive a pin for link and pin coupling, said recess being wholly open on the side next the knuckle whereby the strain upon the pin is wholly borne by said knuckle, substantially as described.

37. In a car coupling, the combination, with a drawhead and a horizontally swinging knuckle pivoted thereon, said knuckle being slotted to permit the passage therethrough of a link, of a pin support movable relatively to the knuckle, said knuckle being recessed to receive the pin support when not in use, substantially as described.

38. In a car coupling, the combination, with a drawhead and a horizontally swinging knuckle pivoted thereon, said knuckle being slotted to permit the passage therethrough of a link, of a pin support movable relatively to the knuckle, and when in position to receive the pin permitting the whole strain of the pin to bear against the rear of the knuckle, said knuckle being recessed to receive the pin support when not in use, substantially as described.

39. In a car coupling, the combination, with a drawhead and a horizontally swinging knuckle pivoted thereon, said knuckle being slotted to permit the passage therethrough of a link, of a pin support on the drawhead independent of the knuckle, said knuckle being recessed to receive the pin support when not in use, substantially as described.

40. In a car coupling, the combination with the drawhead, of the horizontally swinging knuckle pivoted on the drawhead, a guard lever interposed between said knuckle and the entering end of the similar knuckle of the opposite drawhead, and actuated by the latter knuckle to close the other, said lever being recessed to form a pin-hole for a link and pin coupling, substantially as described.

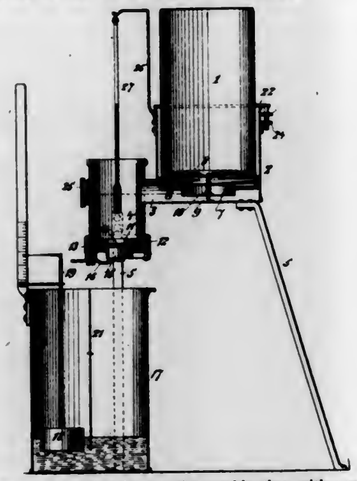
41. In a car coupling, the combination of the drawhead, the knuckle 4 pivoted thereon, and the guard lever 9, also pivoted on the drawhead, said knuckle and lever having opposite vibratory movements, substantially as described.

42. In a car coupling, the combination of the drawhead, the knuckle 4 pivoted thereon, the guard lever 9, also pivoted on the drawhead, said knuckle and lever having opposite vibratory movements, and the spring 18, actuating said lever and knuckle, substantially as described.

43. In a car coupling, the combination of the drawhead, the knuckle 4, having the forked arm whereby it is pivoted on the drawhead, and the guard lever 9 passing through said fork, substantially as described.

44. In a car coupling, the combination of the drawhead the knuckle 4, having the forked arm whereby it is pivoted on the drawhead, the guard lever 9 passing through said fork, and the spring 18 actuating said lever and knuckle, substantially as described.

542,604. VISCOSIMETER. ROLLA C. CARPENTER, Ithaca, N. Y. Filed July 10, 1894. Serial No. 517,141. (No model.)



Claim.—1. In a viscosimeter, the combination, with a reservoir for containing the liquid to be tested, of a receptacle adapted to receive liquid flowing from said reservoir and having a sharp-edged orifice adapted to permit the passage of the liquid, and means for regulating the flow of liquid from the reservoir to said receptacle, substantially as described.

2. In a viscosimeter, the combination, with a reservoir for containing the liquid to be tested, air tight above the level of the liquid in said reservoir, of a receptacle adapted to receive liquid flowing from said reservoir, and having a sharp-edged orifice adapted to permit the passage of the liquid, and a source of air supply for the reservoir arranged to be closed by the rise of liquid within said receptacle, substantially as described.

3. In a viscosimeter, the combination, with a reservoir for containing the liquid to be tested, air tight above the level of the liquid within said reservoir, of a receptacle adapted to receive liquid flowing from said reservoir, and having in its bottom an opening, a removable plate bearing against the bottom of said receptacle and having an orifice for the passage of the liquid, registering with the opening in said receptacle, and a source of air supply for the reservoir arranged to be closed by the rise of liquid within said receptacle, substantially as described.

4. In a viscosimeter, the combination, with a reservoir for containing the liquid to be tested, of a receptacle arranged to receive liquid flowing from said reservoir, and having an opening for permitting the escape of the liquid therefrom, a removable plate covering the opening and having an orifice for the passage of the liquid, and means for regulating the flow of liquid from said reservoir to said receptacle, substantially as described.

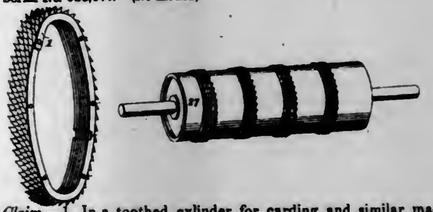
5. In a viscosimeter, the combination, with a reservoir for containing the liquid to be tested, of a receptacle arranged to receive liquid flowing from said reservoir, and having an opening for permitting the escape of the liquid therefrom, a removable plate covering said opening and having an orifice for the passage of the liquid, a valve for closing said orifice, and means for regulating the flow of liquid from said reservoir to said receptacle, substantially as described.

6. In a viscosimeter, the combination, with a reservoir for containing the liquid to be tested, of a receptacle arranged to receive liquid flowing from said reservoir, and having an opening for permitting the escape of the liquid therefrom, a screw-cap screwing upon said receptacle and holding a removable plate against the sides of the opening in said receptacle, said plate having an orifice for the passage of the liquid, a valve carried by said screw-cap and adapted to close the orifice in said plate, and means for regulating the flow of liquid from said reservoir to said receptacle, substantially as described.

7. In a viscosimeter, the combination, with a reservoir for containing the liquid to be tested, air tight above the level of the liquid in said reservoir, and a suitable support for such reservoir, of a receptacle adapted to receive liquid flowing from said reservoir, and having a means for permitting the escape of the liquid therefrom, a source of air supply for the reservoir arranged to be closed by the rise of the liquid within said reservoir, and means for adjusting the height of such source of air supply with reference to said receptacle, substantially as described.

8. In a viscosimeter, the combination, with a reservoir for containing the liquid to be tested, air tight above the level of the liquid in said reservoir, and a suitable support for such reservoir, of a receptacle adapted to receive liquid flowing from said reservoir, and having a means for permitting the escape of the liquid therefrom, a source of air supply for the reservoir arranged to be closed by the rise of the liquid within said receptable, and means for adjusting the height of said reservoir with reference to said receptacle, substantially as described.

542,605. METALLIC TOOTHED CYLINDER FOR CARDING OR SIMILAR MACHINES. WILLIAM H. CLAY and JOHN H. KNOWLES, Philadelphia, Pa.; said Clay assignor to said Knowles. Filed Nov. 6, 1894. Serial No. 528,077. (No model.)



Claim.—1. In a toothed cylinder for carding and similar machines, the combination with the body or shell of the cylinder, of a series of independent toothed rings, each composed of thin annular layers of externally toothed metal fastened together through their body portions to form a single independent unitary ring composed solely of the united layers and their fastenings, and each provided with a keyway cut across the interior surface, and soft metal keys passed through said keyways and upset or riveted therein so as to bind the rings upon the body or shell.

2. In a toothed cylinder for carding and similar machines, the combination, with the body or shell of the cylinder, of a series of independent externally toothed metallic rings each ring consisting of thin metal ribe or laminæ having teeth formed in their outer edges secured together, so as to form a single unitary toothed ring, a keyway cut across the interior surface of each of the rings, soft metal keys passed through said keyways and upset or riveted therein so as to bind the rings upon the said body or shell, and pits or spaces formed in the surface of said body or shell below the said keys to receive a portion of the metal of each key when it is upset or riveted and thereby prevent the rings or any of them from slipping on the body or shell.

3. As an article of manufacture, an externally toothed detachable ring for the cylinders of carding engines, &c., composed of a continuous strip of metal, toothed on its outer edge and having an untoothed or blank margin below its toothed edge, spirally wound with adjacent folds of the spirally wound strip in contact, and secured each to the other so that the blank margin of the strip will constitute the body and inner surface of the ring, and the toothed edge of the strip the external toothed surface of the ring, the whole forming a single unitary ring adapted to be secured to the body cylinder, or to be removed therefrom for the purpose described.

4. As an article of manufacture, a toothed detachable ring for cylinders of carding and similar machines, composed of thin annular externally toothed layers of metal secured by fastenings which pass through their body portions to form a single, independent, unitary ring, composed solely of the united layers and their fastenings, adapted to be secured to the body part of a cylinder, or to be removed therefrom for the purpose described.

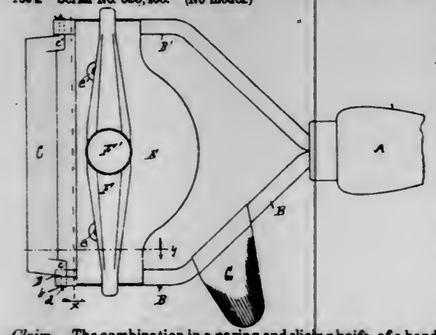
5. In a toothed cylinder for carding and similar machines the combination, with the body or shell of the cylinder, of a series of independent externally toothed metallic rings each ring consisting of a continuous strip of metal having teeth formed in one edge of the strip, wound substantially as described in a spiral with the faces of adjacent folds of the spirally wound strip in contact and having the said folds secured together by fastenings so as to form a single unitary toothed ring consisting only of the folds of the spirally wound toothed strip and their fastenings, a keyway cut across the interior surface of each of the rings and soft metal keys passed through said keyways and upset or riveted therein so as to bind the rings upon the said body or shell.

6. In a toothed cylinder for carding and similar machines, the combination, with the body or shell of the cylinder, of a series of independent externally toothed metallic rings each ring consisting of a continuous strip of metal having teeth formed in one edge of the strip, wound substantially as described in a spiral with the faces of adjacent folds of the spirally wound strip in contact and having the said folds secured together by fastenings so as to form a single unitary toothed ring consisting only of the folds of the spirally wound toothed strip and their fastenings, a keyway cut across the interior surface of each of the rings, soft metal keys passed through said keyways and upset or riveted therein so as to bind the rings upon the said body or shell, and pits or spaces formed in the surface of said body or shell below said keys to receive a portion of the metal of each key when it is upset or riveted and thereby prevent the rings or any of them from slipping on the body or shell.

7. In a toothed cylinder for carding and similar machines, the combination with the body or shell of the cylinder, of a series of independent externally toothed metallic rings each ring consisting of a continuous strip of metal having teeth formed in one edge of the strip and having an untoothed or blank margin below the toothed edge of the strip, the said strip being wound on edge in a spiral to form the ring and the folds of the spirally wound strip being secured by rivets passing through the blank margin of the strip and riveted so as to form a single unitary ring consisting only of the folds of the spirally wound toothed strip and the rivets which secure the folds, a keyway cut across the interior surface of each of the rings, soft metal keys passed through said keyways and upset or riveted therein so as to bind the rings upon the said body or shell, and pits or spaces formed in the surface of said body or shell below the said keys to receive a portion of the metal of each key when it is upset or riveted and thereby prevent the rings or any of them from slipping on the body or shell.

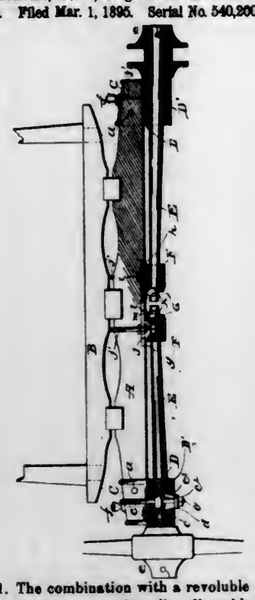
8. A cylinder or roll for carding and similar machines, comprising a smooth surfaced cylindrical body having mounted thereon a series of detachable externally toothed rings or bands, each ring or band consisting of a single strip of thin metal, toothed upon one edge, and wound in a spiral with adjacent folds of the spirally wound strip in contact, and secured each to the other, and having the untoothed edges of the folds of the spirally wound strip which constitutes the ring or band in contact with the body of the cylinder or roll.

542,606. PARING AND SLICING KNIFE. JONAS CRONWELL, Erie, Pa., assignor of one-half to Martin Neilson, same place. Filed Sept. 19, 1894. Serial No. 523,463. (No model.)



Claim.—The combination in a paring and slicing knife, of a handle A having arms B B' therein, a blade C having trunnions thereon pivoted in bearings in the ends of the arms B, B', a shoulder D on the end of one of said arms limiting the movement of said blade on its trunnions, and an adjustable guide plate E, substantially as and for the purpose set forth.

542,607. VEHICLE-AXLE. JOHN H. CURL and WILLIAM G. CUMMINS, McMinnville, Tenn., assignors of one-fourth to Clay Faulkner, same place. Filed Mar. 1, 1895. Serial No. 540,200. (No model.)



Claim.—1. The combination with a revoluble axle, of an outer bearing therefor and an inner pivotally adjustable bearing, substantially as set forth.

2. The combination with a revoluble axle of an outer bearing therefor, an inner pivotally adjustable bearing, and devices for securing the latter in a fixed position after it has been adjusted, substantially as set forth.

3. The combination with a revoluble axle, of an outer bearing, and an inner bearing constructed and adapted to be adjusted horizontally and pivotally and prevented from displacement laterally and longitudinally, substantially as set forth.

4. The combination with a revoluble axle, of an outer bearing, an inner bearing, a fixed plate having a perforation and a projection on the inner bearing adapted to enter said perforation and means for securing said bearing in a fixed position, substantially as set forth.

5. The combination with a fixed axle and a revoluble axle, of outer bearings for the revoluble axle secured to the fixed axle, a perforated plate secured to the fixed axle, a bearing block for the inner end of the revoluble axle, a projection on said bearing block entering said perforated plate, and a strap or clip for securing said bearing block to the fixed axle, substantially as set forth.

6. The combination with an outer and an inner bearing and a revoluble axle mounted therein, of a collar mounted on the end of the axle and having a notched cam-shaped end and a pin passing through the axle and adapted to enter one of said notches, substantially as set forth.

7. The combination with a fixed axle, of an outer bearing secured thereto, an inner pivotally adjustable bearing, an axle mounted in said bearings, ears projecting from the inner bearing, and a strap or clip passing through said ears and over the fixed axle, substantially as set forth.

8. The combination with a fixed axle, of a sleeve on the end thereof, a block or plate made integral with said sleeve and forming the upper portion of a bearing for a revoluble axle, a block forming the lower portion of said bearing, ears projecting from one portion of said bearing, and a strap or clip passing through said ears and over the said sleeve, substantially as set forth.

542,608. CAR-COUPLING. ROBERT DUNMORE, Weston, W. Va., assignor of one-half to Moris Greenstein, same place. Filed Apr. 3, 1895. Serial No. 544,587. (No model.)

Claim.—1. In a car coupling, the combination of a draw-head, a pivoted knuckle, a jaw mounted on the draw-head and projecting outward from the front of the draw-head and having the knuckle mounted on its outer end, and arranged to swing laterally of the draw-head to permit the knuckle to pass another, whereby two draw-heads may couple automatically when the knuckles thereof are locked, and means for locking the knuckle in its closed position, substantially as described.

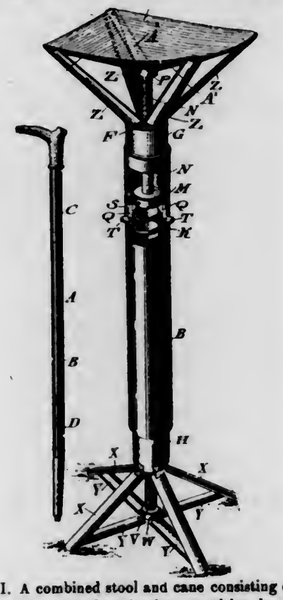


2. In a car coupling, the combination of a draw-head, a laterally movable jaw pivotally mounted on the draw-head, and capable of a limited longitudinal movement, and inter-locking with the draw-head when at the limit of its forward movement, a knuckle pivoted to and carried by the jaw, and means for locking the knuckle when closed, substantially as described.

3. In a car coupling, the combination of a draw-head, provided in its top and bottom walls with recesses, a laterally movable jaw pivotally mounted in the draw-head, and capable of a limited longitudinal movement, and inter-locking with the said recesses when at the limit of its forward movement, a spring for holding the jaw normally in engagement with said recesses, a knuckle pivoted to and carried by the jaw, and means for locking the knuckle, when closed, substantially as described.

4. In a car coupling, the combination of a draw-head, a jaw having a longitudinal slot or opening, and provided in the upper and lower walls thereof with grooves, and a knuckle pivoted to the jaw and having an arm arranged to swing in the opening or slot, and provided with lugs, inter-locking with the grooves thereof, whereby the knuckle-pin is relieved of strain, and the knuckle is prevented from leaving the draw-head, substantially as described.

542,609. COMBINED STOOL AND CANE. MORRIS GORDON and SAMUEL COOPERSTEIN, Philadelphia, Pa., assignors of one-third to Harris Gordon, same place. Filed Mar. 27, 1895. Serial No. 543,308. (No model.)



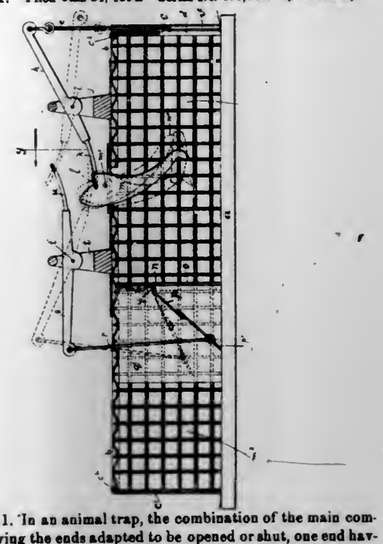
Claim.—1. A combined stool and cane consisting of hollow detachable sections, the central one having a partition therein and carrying stems with springs bearing against said partition, folding seat and feet hinged to said stems respectively and inclosed in the other sections, said parts being combined substantially as described.

2. A cane composed of a hollow central section and end sections, spring-actuated stems located in the upper and lower portions of said central section, and seat supporting devices and feet suitably attached to the ends of said central section and to said opposite stems respectively, the above parts being combined substantially as described.

3. A cane composed of a hollow central section having a partition therein, and detachable end sections, stems in said central section passing freely through the ends thereof, springs bearing against one end of said stems, seat supporting arms secured to one of said stems and feet suitably secured to the other stem, said parts being combined substantially as described.

4. A cane composed of hollow central and end sections, said central section having a partition and springs adjacent thereto, the spring-pressed dogs Q, the stems N and V, the seat-supporting devices Z and A' and the legs X and braces Y hinged together, the above parts being combined substantially as described.

542,610. AUTOMATIC ANIMAL-TRAP. JOHN B. HOBBY, New York, N. Y. Filed Jan. 31, 1894. Serial No. 498,548. (No model.)



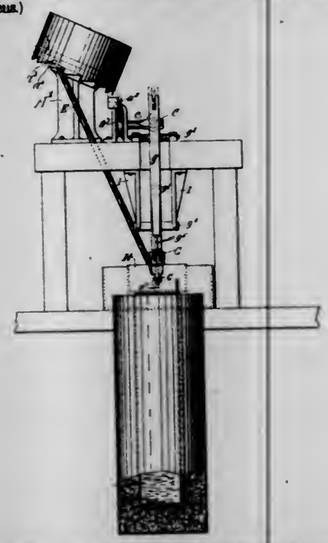
Claim.—1. In an animal trap, the combination of the main compartment, having the ends adapted to be opened or shut, one end having an aperture adapted to be controlled by a vertically-sliding door, a lever adapted to raise and lower said door, a bait hook adapted to engage one arm of said lever and to lock the same when the sliding door is raised, an apertured partition dividing the compartment, a swinging gate guarding said aperture in said partition, a rod and lever operated by said swinging gate, said lever extending over and adapted to depress one end of the lever controlling the sliding door to reset the trap when the swinging gate is operated, substantially as set forth.

2. In an animal trap, the bait hook consisting of a portion *m*, carrying a suitable hook, having a notch *l*, and beveled or curved at the forward portion of its upper end, combined with the lever *h*, having a sliding door secured at one end to close the main chamber of the trap, a catch *k* at the other end adapted to ride over the beveled upper portion of the bait hook to set the same, and then engage and hold it and the lever, the lever *s*, a connecting rod, and a gate located between the two compartments, whereby the catch lever is actuated to automatically set the trap, substantially as specified.

3. In an animal trap, the main compartment, the swinging end piece *c*, at one end thereof, and provided with the aperture *d*, the pivoted end piece *c'* at the opposite end of the chamber, and the bait hook suspended from the roof of the chamber and provided with both an inclined surface and a slot or notch *l*, at its upper end; combined with a vertically sliding door *e*, the lever *h*, projection *j*, and catch *k*, the lever being connected with the door *e*, at one end and the catch at the other, and the catch being adapted to engage with the slot or notch, substantially as set forth.

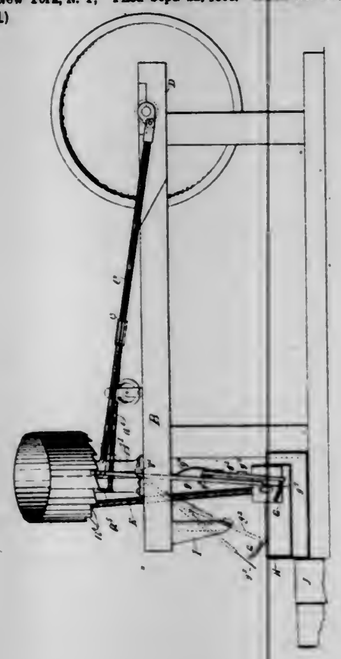
4. The combination in an animal trap, of a compartment divided into two spaces by the apertured partition *n* and having the ends *c* and *c'* adapted to be opened when required one of said ends *c* being apertured at *d*, a bait hook *m* provided with the slot *l* and suspended from the roof of the compartment between the partition *n* and the apertured end *c*, a vertically sliding door *e* guarding said aperture *d* of said end *c*, a lever *h*, fulcrumed at *i* to a projection *j* on the roof of the compartment, said door *e* being suspended from one end of said lever *h*, the other end of said lever *h* being provided with a catch *k* adapted when depressed to engage the slot *l* of the hook *m* and to be locked therein, a swinging gate *p* provided with prongs *p'* and adapted to guard the opening *o* in said partition *n*, a rod *r* secured to said gate, a lever *s*, pivoted at *t'* to a projection *t* on the roof of the compartment, one end of said rod *r* being pivoted to one end of said lever *s*, the other end of said lever *s* being provided with a catch *u* extending over the catch *k* of lever *h* and arranged so that when the gate *p* is swung upward the rod *r* will depress the catch *u* of lever *s* down upon said catch *k* of lever *h* until the said catch *k* enters slot *l* of bait hook *m*, substantially as and for the purposes set forth.

542,611. PROCESS OF COATING PILLS. DAVID M. HOLBROOK, Brooklyn, assignor to William H. Schieffelin, William N. Clark, William S. Merserean, William L. Brower, Henry S. Clark, and William J. Schieffelin, New York, N. Y. Filed Sept. 22, 1893. Serial No. 486,166. (No specimens.)



Claim.—The process of coating pills, consisting in lowering them one separately from another into coating material which will remain liquid only at a temperature above normal atmospheric temperature, subsequently removing them quickly from said material and finally dropping them directly into a column of a liquid which is of less specific gravity than the pill and is inert with respect to the coating of the same, the liquid being maintained at a sufficiently low temperature and the column of the same being sufficiently high to cause the congelation of the coating material before the pill has reached the bottom of the liquid, substantially as specified.

542,612. MACHINE FOR COATING PILLS. DAVID M HOLBROOK, Brooklyn, assignor to William H. Schieffelin, William N. Clark, William S. Merserean, William L. Brower, Henry S. Clark, and William J. Schieffelin, New York, N. Y. Filed Sept. 22, 1893. Serial No. 486,167. (No model.)



Claim.—1. In an apparatus for coating pills, the combination of a receptacle for the pills, a tank for liquid coating material, an open work support, means for transferring the pills from the receptacle to the support, and means for moving said support into and out of said tank, so that it may first sustain the pill within said tank and afterward remove it therefrom, substantially as specified.

2. In an apparatus for coating pills, the combination of a receptacle for the pills, a tank for liquid coating material, an oscillating open work support for sustaining the pills in said tank and mechanism for oscillating said support to remove the pills from the tank, substantially as specified.

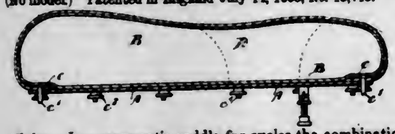
3. In an apparatus for coating pills, the combination of a rotary receptacle for the pills, having a rotary bottom provided with a number of holes upon which bottom the mass of pills rests, and also having a non-rotary bottom provided with a hole and arranged below the rotary bottom, a tank of coating material, an open work support, means for moving the said support into and out of said tank and means for rotating the said receptacle, substantially as specified.

4. In an apparatus for coating pills, the combination of a receptacle for the pills, a tank for liquid coating material, a support provided with tines or needles, a rod moving with said support, but having a loose connection therewith, tines or needles at the end of said rod, means for moving said support and rod together and a detent for holding back said support and permitting the rod to travel beyond said support, substantially as specified.

5. In an apparatus for coating pills, the combination of a receptacle for coating material a receptacle for cooling material and automatic means for removing pills from the coating material to the cooling material, substantially as specified.

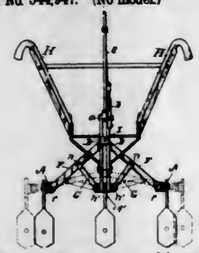
6. In an apparatus for coating pills, the combination of a receptacle for coating material, a receptacle for cooling material, automatic mechanism for transferring the pills one at a time from the coating receptacle to the cooling receptacle, and a cooling material, such as oil, naphtha, or liquid paraffine, substantially as specified.

542,613. SADDLE FOR CYCLES. JOHN P. JOHNSTON, Dublin, Ireland. Filed Nov. 2, 1893. Renewed May 31, 1895. Serial No. 551,134. (No model.) Patented in England July 14, 1893, No. 13,715.



Claim.—In a pneumatic saddle for cycles the combination with an air bag having suitable valve, a cover molded to the required shape, a base plate with clamp for fitting to the machine, and a light metal frame, inside the edge of the cover, of two sets of fastenings, one riveting the cover permanently to the frame and the other bolting the frame with cover removably to the base plate, substantially as and for the purposes specified.

542,614. LEVER CULTIVATOR. WILLIAM S. LAWRENCE, Kalamazoo, Mich., assignor to Martha J. Lawrence, same place. Filed Apr. 8, 1895. Serial No. 544,947. (No model.)



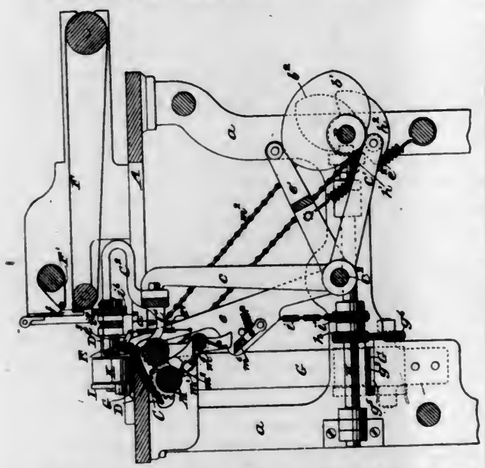
Claim.—1. The combination in a cultivator, of a central tooth bearing bar, A'; lateral tooth bearing bars or wings, A, pivotally connected to the forward part of said bar, A'; parallel vertical bars, B, B, secured to the central bar, A', and projecting upwardly therefrom; handles, H, secured to said central bar and by suitable braces to the upwardly projecting bars, B, B; a slide, I, adapted to slide between the bars, B, B, which serve as a guideway for the same; links, F, F, pivoted to said slide, I, and to the wings, A, A, by the pivots, *r*; links, G, G, pivoted on suitable ears at *s'*, *s'*, to the central bar, A', and to the central portion of the links, F, F, by pivots, *s*; the bent adjusting lever, C, pivoted at *a* between the upper ends of the vertical bars, B; and the link, E, connecting the said lever, C, and slide, I, together at pivots, *i*, *i'*, all co-acting together substantially as described for the purpose specified.

2. The combination, in a cultivator, of a central tooth bearing bar, A'; lateral tooth bearing bars or wings, A, pivotally connected to the forward part of said bar, A'; a vertical standard secured to the central bar, A', and projecting upwardly therefrom; a slide, I, operating in said standard; links, F, F, connecting the slide, in said standard and the wings to each side together; links, G, pivoted to the central tooth bearing bar and to the central portion of the links, F, F, and suitable means of adjusting the slide, I, to vary the width of the cultivator, as specified.

3. The combination, in a cultivator, of a central tooth bearing bar A'; lateral tooth bearing bars or wings, A, pivotally connected to the forward part of said bar, A'; a vertical standard secured to the central bar, A', and projecting upwardly therefrom; suitable handles attached to the central bar and by suitable braces to the central standard; a slide, I, operating in said standard; links F, F, connecting the slide in said standard and wings to each side together; links, G, pivoted to the central tooth bearing bar and to the central portions of the links, F, F; and suitable means of adjusting the slide, I, to vary the width of the cultivator, as specified.

4. The combination, in a cultivator, of a central standard; a slide, I, adjustable along said standard; link connections from said slide to the lateral wings of the cultivator; a bent lever, C, to the upper end of said standard connected by suitable link, E, to the slide, I; a notched segment, D, on which said lever, C, is adjusted by means of a suitable catch, for the purpose specified.

542,615. CIGARETTE AND CHEROOT MACHINE. JAMES H. DUNN, New York, N. Y., assignor of one-half to Louisa Allen, same place. Filed Nov. 16, 1894. Serial No. 528,983. (No model.)



Claim.—1. In combination, the reciprocating rolling table, a rolling apron carried by the table, a compressor having a movement relatively to the table and adapted to hold the apron about the filler and means for feeding a wrapper to the apron between the compressor and table in a path transversely to the plane in which the rolling table moves, substantially as set forth.

2. In combination, a reciprocating rolling table having a depressed portion therein, a rolling apron carried by the table and forming a pocket for the filler in the depressed portion, the compressor having a movement bodily through space, for engaging the belt and rolling the filler up the forward incline of the depressed portion into position to be wrapped, and a rocking movement on its axis for compressing the apron snugly around the filler and holding it against bodily movement through space as the wrapper is rolled around it, means for feeding the wrapper to the cigarette while so held and means for imparting said movements to the compressor, substantially as set forth.

3. In combination, a bed frame provided with an abutment, a reciprocating rolling table, an apron carried thereby, a compressor for engaging the apron, having a movement bodily through space and a rocking movement on its axis, the said compressor adapted to be engaged by the abutment when moved forwardly for engaging the apron and holding it snugly around the filler, means for feeding a wrapper to the filler while so held and means for imparting said movements to the compressor, substantially as set forth.

4. In combination, a reciprocating rolling table, an apron carried thereby, a compressor having a movement bodily through space and a rocking movement on its axis, the said compressor being in position to engage the apron and hold it snugly about the filler and means for presenting a wrapper to the apron between the compressor and table, substantially as set forth.

5. In combination, a rolling table provided with a depressed portion, a rolling apron carried by the table and adapted to rest within the depressed portion to form a pocket therein, a compressor in position to engage the apron to wrap it about the filler, means for swinging the compressor forwardly to roll the filler along the table, means for presenting a wrapper to the apron between the compressor and table in a path transverse to the movement of the rolling table and means for swinging the table rearwardly for rolling the wrapper around the filler for forming the cigarette, substantially as set forth.

6. In combination, a rolling mechanism, means for operating it, an endless carrier extending transversely across the path in which the rolling mechanism moves and an endless belt for holding the wrapper flatly against its carrier as it approaches the rolling mechanism, substantially as set forth.

7. In combination, a rolling mechanism means for operating it, an endless belt carrier extending transversely across the path in which the rolling mechanism moves, an endless belt for holding the wrapper flatly against its carrier as it approaches the rolling mechanism, a gumming mechanism in position to apply gum to one edge of the wrapper as it advances between the said belts and means for operating the belt at intervals, substantially as set forth.

8. In combination, a rolling mechanism, a drive shaft for actuating it, a wrapper carrier for presenting the wrappers in proximity to the rolling mechanism, a drive shaft for operating the wrapper carrier and a sector and disk connection between said drive shafts for imparting a step by step movement of the one under the continuous rotation of the other, substantially as set forth.

9. In combination, a rolling mechanism, comprising a reciprocating rolling table, an apron, and a compressor means for presenting a wrapper to the rolling mechanism, trimming blades in position to receive the wrapped cigarette as it falls from the rolling mechanism and means carried by the compressor for actuating the blades and means for reciprocating the compressor and rolling table, substantially as set forth.

10. In combination a rolling mechanism, comprising a rolling table, an apron and a compressor, means for presenting a wrapper to the rolling mechanism, a pair of rollers for receiving the wrapped cigarette from the rolling mechanism, spring actuated trimming blades in position to receive the cigarette from between said rollers and a dog carried by the compressor support for actuating the trimming blades in one direction, substantially as set forth.

11. In combination, a reciprocating roller table, a rolling apron, an endless wrapper carrier arranged to move in a path transversely to the movement of the rolling table, and means for operating the table, the apron and the wrapper carrier, the said rolling table being arranged to pass beneath the upper part of the wrapper carrier, substantially as set forth.

12. In combination, a rolling mechanism, means for presenting a wrapper to the rolling mechanism, a pair of rollers for receiving the wrapped cigarette, and means for imparting a rotary movement to the rollers, one of the said rollers being caused to rotate faster than the other for imparting a rolling movement to the wrapped cigarette, substantially as set forth.

542,616. NAIL ASSORTING AND DELIVERING MECHANISM. THOMAS K. KEITH, Boston, and GEORGE H. CLARK, Allston, assignors to James W. Brooks, trustee, Petersham, Mass. Filed Sept. 17, 1894. Serial No. 523,215. (No model.)

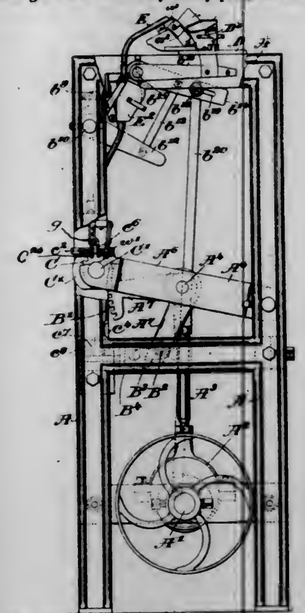
Claim.—1. A stationary hopper to receive nails in bulk, and a pivoted vibrating lifter grooved for the reception longitudinally thereon of a nail, combined with a curved rest located between the hopper and the tube to receive the nails and forming one end of the hopper and also a detent to retain the nail on the lifting device until it is to be discharged therefrom, substantially as described.

2. A nail-receiving hopper, and a rest located at or near one end thereof, a portion of the hopper being cut away to leave a space between itself and the rest, combined with a lifting device to receive longitudinally and lift nails from the hopper, the space permitting the escape therethrough, of nails lying crosswise to and which may be lifted by the lifting device, substantially as described.

3. A hopper to receive nails, a nail-lifting device to lift the nails therefrom, and a nail-distributing tube system, combined with a nail-assorting mechanism comprising a shelf, and a co-operating finger movable toward and away from it, to arrest each nail separately, and means to move the finger along the shelf and slide each nail thereupon until its upper end projects over the end of the shelf, those nails having their head ends uppermost being tipped by gravity and turned over the end of the shelf and discharged, substantially as described.

4. In a nail-assorting mechanism, a shelf to receive each nail thereon, and a co-operating finger b^3 movable at times into contact with and to slide on said shelf, the end of the finger when in contact

with the shelf forming a temporary stop for each nail, separation of said finger and shelf forming a passage therebetween through which a nail remaining on the shelf may freely pass, substantially as described.



5. In a nail-assorting mechanism, a throat, and a gate to close it, intermittingly-combined with an independent assorting device to arrest and lift each nail after its release from the throat, to operate, substantially as described.

6. The combination with a nail tube or tubes to contain nails, of a receiver or carrier having a hole to receive a nail, and means to move said receiver or carrier bodily toward and from said nail tube vertically, to receive nails from the tube and thereafter to deliver said nails substantially as described.

7. A nail distributer having one or more tubes, and a nail-receiver or carrier to receive nails therefrom, combined with means to reverse said receiver or carrier and also move it vertically when reversed, substantially as described.

8. A nail-assorting mechanism, a system of tubes in which the nails are assorted provided with nail-holding devices, a nail-receiver or carrier and an actuating device upon which it is mounted, combined with means to raise and lower said actuating device and with it the receiver or carrier, whereby the latter when in one position may receive a series of nails and when in another position may act as a driver to force the points of the nails contained in it directly into a heel or other article, substantially as described.

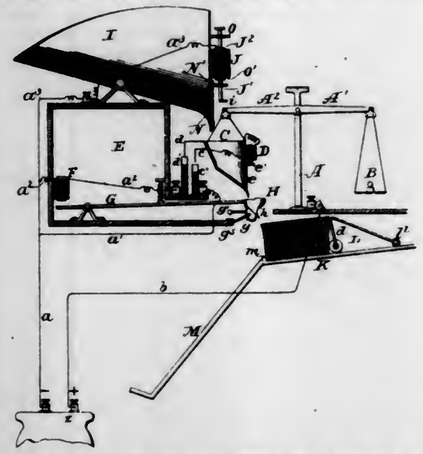
9. A nail-receiver or carrier provided with a series of nail-receiving holes and adapted when in its uppermost position to receive simultaneously a series of nails, combined with independent holding devices for the nails, and means connected to and to positively withdraw the holding devices from engagement with the nails whereby the latter may be discharged in unison from the receiver when in its reverse position, substantially as described.

REISSUES.

11,503. AUTOMATIC ELECTRIC WEIGHING-SCALE. CHARLES F. WOOD, Richmond, Va. Filed Jan. 29, 1894. Serial No. 498,403. Original No. 500,045, dated June 20, 1893.

Claim.—1. The combination with a scale beam, a hopper or receptacle and a transfer hopper or funnel, of electrical devices for controlling the discharge door of said hopper or receptacle, electrical devices for controlling the transfer hopper or funnel, and two circuit closers controlled by the movements of the scale-beam and included in an electric circuit with said electrical devices and a generator, substantially as set forth.

2. The combination with two receptacles, one adapted to discharge into the other, electro-magnetic devices for controlling the outlet of the upper receptacle and electro-magnetic devices for controlling the outlet of the lower receptacle, of a scale beam and two circuit closers actuated thereby and included in circuit with said electro-magnetic devices, substantially as set forth.



3. The combination with a main hopper and a scale beam, of a receiving hopper or receptacle carried by the scale beam, a transfer hopper or funnel adapted to receive material from the receiving hopper and discharge it into a bag, electro-magnetic devices for controlling the discharge of material from said hoppers or receptacles, electro-magnetic devices for controlling the operation of the transfer hopper or funnel, and means for controlling all of said electro-magnetic devices whereby to render the operation of the apparatus automatic and continuous to weigh and discharge predetermined quantities of material as long as the main hopper or receptacle is kept charged therewith, substantially as set forth.

4. In an automatic weighing device, the combination with a hopper, its gate or door and a scale beam, of an armature projecting from said gate or door, a movable electro-magnet connected to the hopper and adapted to attract said armature an electric circuit including said electro-magnet and a rod carried by said electro-magnet and adapted to be engaged by the scale beam, substantially as set forth.

5. In an automatic weighing apparatus, the combination with a hopper, its door or gate and a scale beam, of an electro-magnetic device adapted to hold said gate or door open an electric circuit including said electro-magnet, and a rod carried by the electro-magnetic device adapted to be engaged by the scale beam, whereby to control the action of said gate or door, substantially as set forth.

6. In an automatic weighing apparatus, the combination with a hopper, its gate or door and a scale beam, of an armature projecting from said gate or door, an electro-magnet, a yielding connection between said electro-magnet and the hopper, a rod carried by said electro-magnet and adapted to be engaged by the scale beam to control the operation of the gate or door and an electric circuit including said rod, scale beam and electro-magnet, substantially as set forth.

7. The combination with a main hopper, a scale beam and a weighing hopper or receptacle carried by the scale beam, of a pivoted lever, a transfer hopper carried by the pivoted lever and adapted to receive material from the weighing hopper or receptacle and discharge it into a bag and means for automatically controlling the movements of said pivoted lever, substantially as set forth.

8. The combination with a main hopper and a weighing hopper, of a pivoted lever, an armature at one end of said pivoted lever, a transfer hopper at the other end of said pivoted lever, said transfer hopper being adapted to receive material from the weighing hopper, and an electro-magnet adapted to attract said armature, whereby to cause the transfer hopper to enter a bag to discharge its contents therein, substantially as set forth.

9. The combination with a main receptacle and a transfer receptacle, of a scale beam, a weighing receptacle carried by the scale beam and disposed between the main and the transfer receptacle, and electro-magnetic devices controlled by the movements of the scale beam for controlling the discharge of material from said receptacles, substantially as set forth.

10. In an electrical weighing scales, the combination with the reservoir hopper and its door, and its scale beam with its weighing receptacle, of an electro magnet with battery circuit arranged to lift the door by the contact of the scale beam, said electro magnet being made bodily movable so as to follow the scale beam up and down and lift the door by mechanical as well as electrical action, substantially as shown and described.

11. The combination of hopper I having door N with armature N'; the electro magnet J with rod J' and cross bar J^3, guiding supports O, O', supporting spring S, and the scale beam with weighing receptacle arranged to lift the electro magnet and make electrical contact as described.

12. In an electric weighing scales, the combination of the pendent weighing receptacle C having door e with armature e' and electro magnet D, and an electrical contact and battery circuit, said contact being arranged to be closed by the descent of the receptacle C to open its discharge door, as described.

13. In an electric weighing scales, the combination with the scale beam; of the hopper with discharge door N and magnet J arranged above it, the suspended weighing receptacle C with discharge door e and magnet D, the transfer funnel H mounted on lever G, the magnet F and the two electrical circuits and their contacts d, d' and c, c', arranged to operate in sequence to raise the transfer funnel and discharge the contents of receptacle C therein, substantially as set forth.

14. The combination with the electrical weighing scales having movable receptacle C, and a bag holder; of a transfer funnel with supporting lever and operating magnet connected with the weighing scales and operated by its circuit, and arranged to transfer the contents of the weighing receptacle to the bag, substantially as shown and described.

15. The combination of the hopper with electrically controlled door N, the scale beam with suspended receptacle C having electrically controlled discharge door, the adjustable transfer funnel H, two electrical circuits with contacts carried by the receptacle C, one circuit being arranged to adjust the funnel and the other to control the discharge door of the weighing receptacle and bag holding and feeding devices, substantially as shown, and described.

DESIGNS.

24,464. BOTTLE. CHARLES DE WITT, Baltimore, Md. Filed May 23, 1895. Serial No. 551,006. Term of patent 7 years.



Claim.—The design for a bottle, substantially as herein described and illustrated in the accompanying drawings.

24,465. FUSE-BLOCK BOX. JAMES WARD PACKARD, Warren, Ohio. Filed Apr. 30, 1895. Serial No. 547,702. Term of patent 7 years.







Claim.—The design for a fuse-block box, substantially as herein shown and described.

TRADE-MARKS

REGISTERED JULY 9, 1895.

26,781. LADIES' AND BOYS' WAISTS. ADOLPH NEUVILLE, St. Louis, Mo. Filed June 13, 1895.

Premier

Essential feature.—The word "PREMIER." Used since December 1, 1894.

26,782. WRITING-PAPER AND ENVELOPES. Z. & W. M. CRANE, Dalton, Mass. Filed May 27, 1895.

EARLY

Essential feature.—The word "EARLY." Used since May 1, 1895.

26,783. LINIMENT. HENRY L. LOHMEYER, Pittsburg, Pa. Filed June 5, 1895.

NANCY HANKS

Essential feature.—The words "NANCY HANKS." Used since March, 1893.

26,784. CHEMICAL AND MEDICAL PRODUCTS. VEREINIGTE CHEMISCHE FABRIKEN ZIMMER & Co., Frankfort-on-the-Main, Germany. Filed Mar. 23, 1895.



Essential feature.—The representation of a heraldic eagle with an escutcheon on its breast, containing a monogram of the letters "C Z." Used since April, 1887.

26,785. TONICS. WILLIAM F. MAIER, Brooklyn, N. Y. Filed June 12, 1895.

APICOLA

Essential feature.—The word "APICOLA." Used since April 20, 1895.

26,786. CONDITION-POWDERS FOR HORSES. HENRY L. LOHMEYER, Pittsburg, Pa. Filed June 5, 1895.

NANCY HANKS

Essential feature.—The words "NANCY HANKS." Used since March, 1893.

26,787. POLISHING AND CLEANING PREPARATION. LAURENCE DANA COLONY and BENJAMIN SARGENT OSGOOD, Keene, N. H. Filed May 31, 1895.

CANDO

Essential feature.—The word "CANDO." Used since May 1, 1895.

26,788. DISINFECTANTS. ALFRED NOBACK, Rahway, N. J. Filed May 8, 1895.



Essential feature.—The representation of a cylinder and the words "THE RAPID CLEANING CARTRIDGE." Used since JANUARY 30, 1892.

26,789. SYRINGES. THE BUTLER HARD RUBBER COMPANY, New York, N. Y. Filed May 17, 1895.

EUREKA

Essential feature.—The word "EUREKA." Used since May 1, 1895.

26,790. WINES. THE FIRM OF J. H. STEUERNAGEL, Frankfort-on-the-Main, Germany. Filed June 1, 1895.



Essential feature.—The representation of a pair of escutcheons embracing a helmet that is surmounted by an eagle. Used since December, 1891.

26,791. WHISKY. JAMES L. DENMAN & Co., London, England. Filed May 14, 1895.

Big Ben

Essential feature.—The words "BIG BEN." Used since December 30, 1893.

26,792. WHISKY. JAMES L. DENMAN & Co., London, England. Filed May 14, 1895.



Essential feature.—A representation of the upper portion of the Westminster clock-tower, known as "BIG BEN." Used since December 30, 1893.

26,793. CIGARS. AUGUSTIN BARRY SANTA ROSA, Key West, Fla. Filed May 23, 1895.

Charming Princess of Wales

Essential feature.—The words "CHARMING PRINCESS OF WALES." Used since December 30, 1893.

26,794. CHEWING-GUM. FRANK C. OBERHOLTZ, Washington, D. C. Filed June 11, 1895.

COMPLEXION

Essential feature.—The word "COMPLEXION." Used since May 1, 1895.

26,795. BAKING-POWDER. C. D. BOSS & SON, New London, Conn. Filed May 25, 1895.

BOSS!

Essential feature.—The word "BOSS." Used since April 15, 1895.

26,796. TEAS, COFFEES, SPICES, AND SOAP. RANSOM BROS. COMPANY, Albert Lea, Minn. Filed May 27, 1895.

GOLD COIN

Essential feature.—The words "GOLD COIN." Used since October 27, 1890.

26,797. MACCARONI. GUANO & RAGGIO, Philadelphia, Pa. Filed May 24, 1895.

Essential feature.—The word "DIANANT." Used since November 26, 1894.

26,798. MACCARONI. GUANO & RAGGIO, Philadelphia, Pa. Filed May 24, 1895.

LA ROSA

Essential feature.—The words "LA ROSA." Used since March 1, 1882.

26,799. BUTTER AND CHEESE. JAMES LUNHAM GRANT, Liverpool, England. Filed June 4, 1895.



Essential feature.—The representation of a meadow sweet flower and the words "MEADOW SWEET." Used since February 13, 1895.

26,800. CANNED BEANS. THE ILLINOIS CANNING CO., Hooperston, Ill. Filed June 10, 1895.



Essential feature.—The words "JOAN OF ARC," a marine view, and a spray or open wreath of flowers. Used since May 20, 1895.

26,801. HAMS. NORTH PACKING AND PROVISION COMPANY, Boston, Mass. Filed Apr. 6, 1895.

COTTAGE HAM

Essential feature.—The words "COTTAGE HAM." Used since October 1, 1894.

26,802. SEWING-MACHINE TREADLES. SLOTKIN & PRAGLIN, New York, N. Y. Filed June 5, 1895.

SHARER

Essential feature.—The word "SHARER." Used since May 4, 1892.

26,803. PORTABLE WEIGHING-SCALES. JONES OF BINGHAMTON, Binghamton, N. Y. Filed June 10, 1895.

CLOVER LEAF

Essential feature.—The words "CLOVER LEAF." Used since June 1, 1895.

26,804. FIBER-WARE, INCLUDING SIGNS, PANELS, DADOES, CENTERPIECES, TILE, AND TABLE-TOPS. HOWARD FIBRE WARE COMPANY, Providence, R. I. Filed Nov. 21, 1894.

H. F. C. W.

Essential feature.—The figures of three interlaced rings inclosing the letters "H F W Co. Used since January, 1895.

26,805. WINDOW-GLASS AND GLASSWARE. THOMAS WIGHTMAN, Pittsburg, Pa. Filed June 5, 1895.

MONOGRAM BRAND

Essential feature.—The words "MONOGRAM BRAND." Used since November 10, 1894.

26,806. STEAM-BOILERS AND WATER-HEATERS. THE RAYMOND & CAMPBELL MANUFACTURING COMPANY, Middletown, Pa. Filed Apr. 30, 1895.

SUN

Essential feature.—The word "SUN." Used since September, 1892.

26,807. BOOTS AND SHOES AND LEATHER FOR UPPERS OF SAME. RICE & HUTCHINS, INCORPORATED, Boston, Mass. Filed June 4, 1895.

Argonaut.

Essential feature.—The word "ARGONAUT." Used since May 24, 1895.

26,808. HORSE-BLANKETS. WILLIAM R. RILEY & CO., Philadelphia, Pa. Filed June 4, 1895.

STONE

Essential feature.—The word "STONE." Used since February 1, 1891.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court of Appeals—Seventh Circuit.

WELLS GLASS COMPANY *et al. v.* HENDERSON *et al.*

Decided May 11, 1895.

1. HENDERSON—MANUFACTURING METALLIC CROSS BARS AND RAILS FOR WINDOW-SASHES—VOID.

Held that Letters Patent to William Henderson, No. 412,751, of October 15, 1889, for a process of manufacturing metallic, cross bars and rails for window-sash and analogous structures, are invalid on the ground that the process is purely mechanical as there is involved no chemical or other elemental action which is separable from the functions of the several mechanical devices which are employed to effect the result.

2. HENDERSON—WINDOW-SASH BARS—CONSTRUED AND RESTRICTED.

Held that Letters Patent No. 420,510, to William Henderson, of February 4, 1890, for improvements in window-sash bars, must, in view of the art, be restricted to the particular forms of construction described, which the defendants did not use

3. MATTER EXCLUDED BY THE PATENT OFFICE AS SEPARATE INVENTION CANNOT BE CLAIMED AS COVERED BY THIS PATENT.

Held that where a patentee during the pendency of his application presented matter whereby he described and sought to include a device substantially identical in form and in details of construction with that made by the defendants, which matter the Patent Office regarded as for an entirely distinct and independent invention from that embraced in the invention as originally filed, and which matter was for such reason excluded, and the applicant acquiesced in such ruling, he cannot be heard to insist that the matter so excluded is nevertheless covered by the patent.

APPEAL from the Circuit Court of the United States, Northern District of Illinois.

STATEMENT OF THE CASE.

The appellee, William Henderson, is the grantee of Letters Patent No. 412,751 and No. 420,510, issued October 15, 1889, and February 4, 1890, respectively, the first for a process of manufacturing metallic cross-bars and rails for window-sashes and analogous structures and the second for improvements in window-sash bars designed to be made by the process described in the first patent. The bill charged the appellants, The Wells Glass Company and Herman Schuhmann, with infringement of both patents and prayed an injunction and an accounting. The defendants answered, setting up a license, and denying both invention and infringement. General replication. The court below considered that both patents were valid and had been infringed, and decreed an injunction and accounting, as prayed.

The specification, drawings, and claims of the second patent, which, it may be noted, was first applied for, are as follows:

Be it known that I, WILLIAM HENDERSON, a subject of the Queen of Great Britain, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Window-Sash Bars, of which the following is a specification.

My invention relates to rails or cross-bars and fastening for window-sashes, and is more especially adapted to that class of sashes which contain many small pieces of glass cut in numerous configurations and designs, such as is seen in stained-glass windows and other ornamental windows; and the objects of my improvements are to furnish a strong and durable cross-bar and fastening which shall be of little weight, which will not rust or corrode, which can be easily bent into any desired form, and is readily placed in any sash and removed therefrom conveniently, and also to facilitate the operation of repairing or replacing broken parts without interfering with the other portions. I attain these objects by the peculiar construction of the bar and the removable fastening or cap; and in order to enable others skilled in the art to which my invention pertains to make and use the same I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a front view of my bar and fastening as it appears in a window-sash. Fig. 2 is a transverse section of the bar and cap. Fig. 3 is a side elevation of the bar and cap with the latter removed, showing the notched ends. Fig. 4 is a sectional view taken at the line *x y*, Fig. 1, and shows the manner of securing or locking one bar to another. Figs. 5 and 6 are views of modified forms of the cap.

In the drawings, A represents my bar, formed of one piece of material, and preferably made of metal.

a is the rib thereof, having its upper part made with a flange *a'*, as seen in Fig. 2 of the drawings, for securing more firmly the cap or fastening, as will be presently explained. The lower part of this stem or rib is formed with shoulders *b b* at right angles with the rib, for supporting the glass, and beneath said shoulders I preferably form a hollow *f* of any desired form. It will be readily understood that the hollow portion of the bar can be dispensed with, thus leaving it with a flat surface, or that portion may be solid; but I prefer to form it hollow, as shown, thereby gaining strength without materially increasing the weight of the bar. It is also evident that this form affords a better surface for finishing.

At each end of the bar A, I provide notches *c c*, preferably of an acute-angle form, as shown in Fig. 3. The lower notches are adapted to connect with and fit over the shoulder of the transverse bar, as seen, and will be more readily understood by reference to Fig. 4 of the drawings. By clipping off a portion of the upper notch on the rib *a* the bar is formed as seen at E, which form permits the cap to rest upon the surface of the glass and hold it securely in place.

B is a cap, made of one piece of material and preferably of metal shaped to form a hollow *b'*, which may be of any form, but preferably of triangular form, as shown in Fig. 5. It will be observed that at the bottom of the cap and opposite the apex of the hollow *b'* I provide a longitudinal slot d^2, which extends the entire length of the securing-cap. Into this slot the rib *a* is inserted, and the cap is pressed down over the same until the lips *d* rest upon the surface of the glass. Of course the cap may be made of any size and the exterior of any form which may be found to be best adapted to receive a polish or finish. While I prefer to form the cap with a triangular hollow and have found from experience that such a form is more desirable, yet I may use a hollow of the form shown in Fig. 2 or any other shape without departing from the spirit of my invention.

In Fig. 6 I have shown a modified form of a cap which I may sometimes use, and in this modification I form the cap of one piece of material, as before, with the longitudinal slot d^2, and lips *d* at right angles with the slot, as shown. The edges of the lips *d* are bent upward within the hollow of the cap at substantially right angles with the lips, and form the parallel sides *h h* of the groove or slot. These parallel sides will clasp the rib *a* firmly, and prevent a rocking or lateral movement of the cap on the rib, as will be understood by reference to the drawings.

In bending the cap B to conform to the curve of the bar, and so that the adjustment of the cap on the rib of the bar can be easily effected, I place the rib *a* within the groove d^2 of the cap and bend both cap and bar at the same time, and in order to prevent the cap slipping from the rib while thus working the material I sometimes form the rib with a slight enlargement *a'* at the top thereof. This enlargement also assists in retaining the cap in place after the glass is in position, and gives additional strength to the whole bar; but it is not absolutely necessary to hold the cap in place, as this is done by soldering the ends of the cap to its transverse cap, which it overlaps and interlocks, as is seen in Fig. 4 of the drawings. It will be further noticed that each end *g* of the cap is cut at a suitable angle to conform to the side of the cap with which the end meets, thus allowing it to fit snugly against the transverse cap and to press against the surface of the glass. In forming the notches on the ends of the bar the cap is placed over the rib *a*, and with a suitable machine the notches are made. The cap is then removed, and the portion of the upper notch is clipped off to form the ends, as at E. By this operation I am enabled to cut the cap and bar of corresponding length, thus making the adjustment of the cap an easy matter.

My object in clipping the upper end of the rib *a*, as seen at E in Fig. 3, is in joining the parts together the lower portion of the transverse bar will fit in the angular notch c, and the trans-

verse cap will rest on the glass when it (the glass) is thick; but when thin glass is used the cap will rest on the clipped end E of the rib *a*.

In manufacturing my bar and cap I may use a die of proper form and "draw" the metal through the same, or I may take strips of metal of suitable dimensions and form the same as desired by folding or otherwise. It is also evident that I can make them of various kinds of sheet metal and other material, and that the contour of the cap and of the lower portion of the bar may be made in numerous designs.

In use my bars and caps are easily applied to any window-sash, and are especially adapted to be used in doors or windows where sudden shocks or jars occur, as my construction secures the glass very firmly. The application is evident. The bars and caps are cut in suitable lengths and bent into any desired form. The cap is then removed, and the edge of the glass rests upon the shoulders of the bar. The cap is then placed on the rib *a* and pressed down until the lower portion rests upon the surface of the glass. The ends of the caps may then be soldered to the connecting one, thus making the fastening more secure.

It is readily understood that I can form the cap B with a groove or channel having parallel sides, or may form it with a core; but I prefer the formations above named. It is also obvious that I may form the rib *a* with a flange on each side of the same at the top, or I may use only one flange, as shown.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The cross-bar A, having the shoulders *b b* and rib *a* at right angles therewith, the hollow projection *f* beneath the shoulders, the ends formed as at *c c* and E, and the vertically-adjustable cap B, substantially as shown and described, and for the purpose set forth.

2. The combination of the cross-bar A, having the rib *a* and shoulders *b b* at right angles with the rib, the hollow projection *f*, the ends formed as at *c c* and E, with the vertically-adjustable cap B, having slot d^2 and lips *d d* at right angles with the rib when in the slot, substantially as shown and described.

3. The combination of the cross-bar A, having the rib *a* and shoulders *b b* at right angles with the rib, the hollow projection *f*, the ends formed as at *c c* and E, with the vertically-adjustable cap B, having slot d^2, lips *d* at right angles with the slot, and parallel sides *h h*, substantially as shown and described.

4. In window-sash and analogous structures, the cross-bar A, having the notches *c c*, shoulders *b b*, and rib *a*, having its ends formed as at E, in combination with the cap B, having the hollow *b'*, lips *d d*, slot d^2, and both ends cut at an angle, as at *g*, substantially as and for the purpose set forth.

5. In window-sash and analogous structures, the cross-bar A, having the notches *c c*, shoulders *b b*, and rib *a*, having its ends *a'* and ends formed as at *e*, in combination with the cap B, provided with a triangular hollow *b'*, and having lips *d d*, slot d^2, and angles *g*, substantially as shown and described, and for the purpose set forth.

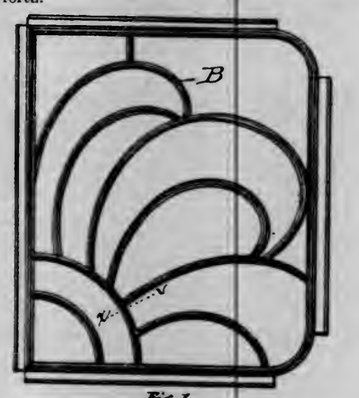


Fig. 1.

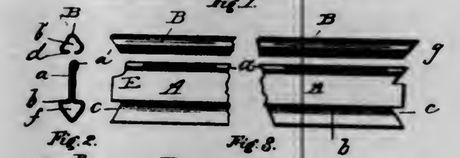


Fig. 2. Fig. 3.

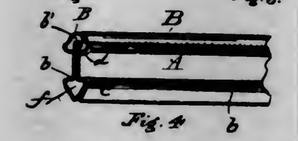


Fig. 4.

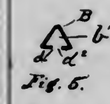


Fig. 5.

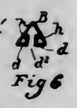


Fig 6

The claims of Patent No. 412,751 are as follows:

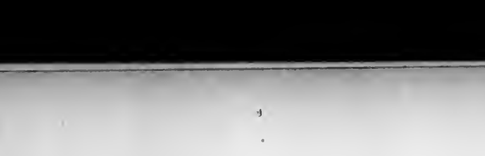
1. The herein-described process of manufacturing cross-bars, rails, and fastenings for window-sashes, &c., consisting, first, in passing the strips of metal through a die or dies giving the bars the desired conformation or shape, then cutting or sawing the formed strips into proper lengths, then notching the ends of the strips, and then passing the notched strips through a device for bending the same into suitable shape or curve ready for use, substantially as and for the purpose set forth.

2. The herein-described process of manufacturing metallic cross-bars, rails, and fastenings for window-sashes, consisting, first, in drawing the strips of metal through a die or dies making the proper conformation or shape, then placing the strips horizontally against a revolving circular saw and cutting them to proper lengths, then notching the ends of the formed strips by placing them longitudinally against a series of revolving disks, then passing the notched strips through a series of rollers, thus bending them to a proper curve ready for use, substantially as shown and described, and for the purpose set forth.

3. The herein-described process of manufacturing metallic cross-bars, rails, and fastenings for window-sashes consisting, first, in passing strips of metal through a die or dies forming a bar and cap of desired conformation, then placing the cap on the rib of the bar and cutting them into proper lengths, then notching the ends of the strip, and then passing the notched strips through a device for bending the same to a desired curve, then removing the adjustable cap and clipping the ends of the rib of the bar at a desired angle, substantially as shown and described, and for the purpose set forth.

4. The herien-described method of manufacturing hollow metallic cross-bars, rails, and fastenings for window-sashes, consisting, first, of forming a metallic bar and cap in separate pieces, then adjusting the cap on the rib or web of the bar, then bending, cutting, and notching the same as a whole, then removing the adjustable cap and cutting the ends of the web or rib of the bar, substantially as and for the purpose specified.

The appellant, Schuhmann, applied July 1, 1889, for Letters Patent on improvements in metallic window-sash bars, and on the ensuing 12th of November was granted Letters Patent No. 415,068, in accordance with which, it is conceded, the alleged infringing devices were made. They are sufficiently illustrated by the following drawings, which are in evidence and are substantially identical with Figs. 2 and 4 of Schuhmann's patent:





Before WOODS, BUNN, and SEAMAN, Judges.

Messrs. Banning & Banning for the appellants.

Messrs. Offield, Towle & Linthicum for the appellees.

WOODS, *C. J.*, after making the foregoing statement, delivered the opinion of the court.

The process of Patent No. 412,751 is purely mechanical. The devices and machinery necessary for its accomplishment, consisting of dies, a "bending or conforming device," a "machine for forming or notching the ends of the bars," and other familiar appliances, are illustrated by drawings and minutely described in the specification. The application for the patent was rejected, in the first instance, on the ground that—

the alleged method is, as presented, the necessary function or operation of the mechanism described;

and, notwithstanding the amendments made to the second, third, and fourth claims, we are of opinion that the objection was not obviated and the patent should not have been granted. In the case of *Appleton Manuftg. Co.* v. *Star Manuftg. Co.*, (9 C. C. A., 42; 60 Fed. Rep., 411; 18 U. S. App., 492,) where it was necessary to consider the question of the patentability of mechanical processes we were unable to deduce from the decided cases a definite rule; but whatever uncertainty there had been, or lack of harmony, in the decisions and dicta of the Supreme Court on the

subject was removed by the recent opinion of that Court in *The Risdon Iron & Locomotive Works* v. *Medart et al.*, from which we quote the following:

The four claims of the patent make no reference to the mechanism exhibited in the drawings and described in the specification. All claim an improvement in the art of manufacturing, and set forth in more or less detail the various steps in that process. That certain processes of manufacture are patentable is as clear as that certain others are not, but nowhere is the distinction between them accurately defined. There is somewhat of the same obscurity in the line of demarcation as in that between mechanical skill and invention, or in that between a new article of manufacture, which is universally held to be patentable, and the function of a machine, which it is equally clear is not. It may be said in general that processes of manufacture which involve chemical or other similar elemental action are patentable, though mechanism may be necessary in the application or carrying out of such process, while those which consist solely in the operation of a machine are not. Most processes which have been held to be patentable require the aid of mechanism in their practical application, but where such mechanism is subsidiary to the chemical action, the fact that the patentee may be entitled to a patent upon his mechanism does not impair his right to a patent for the process, since he would lose the benefit of his real discovery, which might be applied in a dozen different ways, if he were not entitled to such patent. But, if the operation of his device be purely mechanical, no such considerations apply, since the function of the machine is entirely independent of any chemical or other similar action.

This is followed by—

a review of some of the principal cases upon the subject of patents for processes,

and, after quoting from *Corning* v. *Burden*, (15 How., 252,) the statement is added that—

although the cases are not numerous, this distinction between a process and a function has never been departed from by this Court.

It is evident that in the process for making metallic sash-bars described in Henderson's patent there is involved no chemical or other elemental action which is separable or distinguishable from the function of the several mechanical devices which are employed to effect the result. The patent is therefore invalid.

It is not necessary to pass upon the question of novelty in the second patent. In view of the prior art it is clear that, if valid, the patent must be restricted to the particular forms of construction described. Similar forms in bars for uniting glass and other plates in skylights, show-cases, and windows are shown in earlier patents which are in evidence, and especially in No. 315,958, issued April 14, 1885, to Overman and O'Connor, and No. 370,075, issued September 20, 1887, to Macleod. If the various forms illustrated in these patents were not, like Henderson's device—

especially adapted to that class of sashes which contain many small pieces of glass cut in numerous configurations and designs—

it was mainly because of the size of the parts, and once it was perceived to be desirable to use a stronger material than lead in the construction of windows of stained glass or of clear glass in small pieces it required no invention to adapt to that purpose the designs of Macleod and others by reducing or otherwise changing their proportions. Henderson himself, before seeking a patent for a bar with rib and shoulders and adjustable cap, had introduced into public use and was under contract to furnish the Wells Glass Company a metallic T-shaped bar, and the idea of putting on the rib of that bar a cap to make the finish the same and to afford support for the glass on both sides, whether it was Henderson's own conception or was, as Schuhmann testified, his suggestion, was an expedient which was too obvious to be called invention, even if such a cap or counterpart had never before been employed, and in the notching, fitting, and bending of the parts, by means of devices which were in common and familiar use, it is difficult to see anything essentially new or beyond the powers of ordinary mechanical experience and skill.

In addition to the prior art the file-wrapper shows that, pending the application for this patent, Henderson presented an amendment to his specification whereby he described and sought to include a sash-bar substantially identical in form and in details of construction with the bars made by the appellants and that the amendment was not allowed because it proposed—

matter not embraced in the statement of invention or specification or drawing as originally filed.

In response to this counsel says:

What of it? Certainly no question in this case is affected thereby. That the device of the defendant appellants contains a new and additional invention, supplemental to and built upon the invention of Henderson, does not for a moment take it out from under the Henderson device patent as an infringement thereof.

This argument proceeds upon an erroneous assumption of fact. The proposed amendment did not describe an invention made up of the device first described and of additional and supplemental matter severable therefrom. It was regarded by the Patent Office as presenting and was rejected because it presented and the claim based upon it was for—

an entirely distinct and independent invention from that embraced in the application as originally filed.

Having acquiesced in that ruling, the patentee cannot be heard to insist that the matter so excluded is, nevertheless, covered by the patent.

It follows that the decree of the Circuit Court, in so far as it declared Patent No. 412,751 to be valid and infringed and No. 420,510 to have been infringed, is erroneous and should be reversed, and it is so ordered.

U. S. Circuit Court—Southern District of New York.

HUPFELD *v.* AUTOMATON PIANO CO. *et al.*

Decided April 6, 1895.

1. INFRINGEMENT BY RECEIVER—JURISDICTION OF.
   Upon a motion to dismiss a bill in equity for infringement of a United States patent by a receiver appointed by a State court, upon the ground that the complainant had not obtained leave to sue from the court making the appointment, *Held* that the general rule that a court will not entertain jurisdiction of a suit against a receiver appointed by another court until the appointing court has given its consent does not apply when the jurisdiction of the court in which the receiver is sued is conferred by Federal laws.
2. SAME—SAME.
   In a suit to restrain the infringement of a patent by a receiver appointed by a State court, *Held* that the Federal courts will entertain jurisdiction of such suit, without leave of the State court first obtained, to enjoin individuals, even though they be officers of a State court, from acts of infringement.
3. SAME—EXTENSION OF TIME TO PLEAD—GENERAL APPEARANCE.
   Where the defendant had obtained extension of time to plead, answer, demur, or take such other action as it may be advised, *Held* this is the equivalent to a general appearance.

Messrs. Goepel & Raegener (*Mr. Thomas M. Rowlette*, of counsel) for the complainant.

Mr. S. O. Edmonds for the defendants.

LACOMBE, *J.*:

This is a bill in equity for infringement of United States Letters Patent No. 429,419, with the usual averments. Complainant is an alien, the defendant piano company is a New Jersey corporation, and the defend-

ant De Frece a citizen of the State of New York, and an inhabitant of the southern district thereof.

The present motion is to set aside the service of the subpœna *ad respondendum* and to dismiss the bill on the ground that this court has not jurisdiction of the defendants or either of them.

The defendant piano company has obtained extension of time to plead, answer, demur, or take such other action as it may be advised. This is the equivalent of a general appearance, and the motion to dismiss as to it is, therefore, denied.

The defendant De Frece was appointed receiver of the defendant corporation by the Chancery Court of New Jersey, and subsequently was appointed ancillary receiver by the supreme court of this State. Motion to dismiss as to him is made upon the ground that complainant has not obtained leave to sue him from either of the courts appointing him. Leave was obtained from the New York court; but the order giving it has since been vacated. The general rule undoubtedly is that a court will not entertain jurisdiction of a suit against a receiver appointed by another court until the appointing court has given its consent that he be sued. This rule rests on principles of comity, and is considered essential for the protection of the receiver, as an officer of the court appointing him, against unnecessary and expensive litigation touching controversies wherein it may often be within the power of the appointing court to give ample relief to any person aggrieved; but the rule has its qualifications, and the case at bar does not fall within it.

This suit is one under the Federal laws, involving questions as to the validity and infringement of United States Letters Patent, which the State courts have no jurisdiction to determine. (*Continental Store Service Co.* v. *Clark*, 100 N. Y., 370.) The Federal courts cannot assent to the proposition that they have no jurisdiction, without leave of the State courts first obtained, to enjoin individuals, even though they be officers of State courts, from infringing upon the rights of the owner of a patent. To do so would be to abdicate functions which, under the Federal Constitution, are confided to them, and to them exclusively, by the Federal laws. Such a refusal would leave it within the power of the State courts to exclude the holder of rights granted to him by the United States from the only tribunals which have jurisdiction to vindicate those rights. The reasoning in *Barron* v. *Burnside* (121 U. S.) and other similar authorities applies perfectly to such a case as this.

The motion is denied.

U. S. Circuit Court—Eastern Division of the Eastern Judicial District of Missouri.

THE FRONT RANK STEEL FURNACE COMPANY *v.* WROUGHT IRON RANGE COMPANY.

Decided October 19, 1894.

1. CAMPBELL—HOT-AIR FURNACES.
   The first and third claims of Patent No. 414,018 (the two sued on) are anticipated and void.
2. SAME—PROPORTIONS—FORM.
   Mere change of form and proportions is not patentable where no new result is produced.
3. SAME—LONG DELAY IN APPLYING FOR PATENT.
   Where an inventor delays four or five years in applying for a patent, "he assumes the chances of the field being occupied by other and more diligent designers more prompt to supplement their creative efforts by a reduction to practice."

Mr. B. F. Rex for the complainant.

Mr. George H. Knight and *Mr. H. G. Ellis* for the defendant.

PRIEST, *J.:*

This case comes before me on an order sustaining a petition for review and is placed in very narrow lines by the order. The cause was heard by Judge Hallett, who ordered an interlocutory decree adjudging the complainant's patent valid, awarding an injunction and accounting against the defendant for infringement of Letters Patent No. 414,018, to Francis M. Campbell, inventor, and William Thuener, assignee, for an improvement in hot-air furnaces. No written opinion was filed by Judge Hallett. While submitting his oral views, which were very imperfectly reported, he observes:

I shall not discuss this matter at great length, but I must say again I think the complainant's device, comprehending, as it does, the location of the several flues, the upward and the side, and the manner of connecting with the fire-chamber, and the introduction of the cold air, may be of the nature of invention.

Judge Hallett had before him several furnaces of similar construction and involving much the same principle of action as that of complainant's.

A petition was filed upon the ground of newly-discovered evidence, and the attention of the court was called particularly to the Powell and Krause furnaces, the former of which was put in use as early as 1884 and the latter in 1888. Upon this showing Judge Hallett ordered—

that a rehearing be allowed at the next term of the court upon the question of the novelty of complainant's invention with reference to the Powell furnace and the Krause furnace mentioned in respondent's affidavits filed June 24, 1893.

The necessary steps marked out in the order have been taken to present the question thus reserved. Whatever might be my disposition otherwise, I feel constrained to the consideration of this single question and such others only as are strictly incidental to and necessarily grow out of it, though counsel have given attention in their respective arguments to quite all the issues involved in the contest as it originally stood. The respondent mainly relies, so far as this hearing is concerned, upon the Powell furnace as an anticipation of the complainant's furnace. The number of anticipations is not material. If one perfected and used has preceded, it is sufficient to defeat the validity of the patent relied upon. This, then, at once introduces the question whether the Powell furnace was an anticipation of the complainant's. The Campbell patent, under which complainant claims, is for an improvement in hot-air furnaces—

which relates especially to the system of flues traversed by the products of combustion in their escape from the combustion chamber.

The arrangement of complainant's furnace is thus described: Leading from the upper portion of the combustion-chamber, which is practically an upright chamber in the customary form, are two horizontal escape flues B B′, which lead, respectively, into two vertical flues C C′ at and toward the upper portion thereof. The upright flues at the lower end thereof connect with a horizontal chamber D toward the ends of it. The exit from the horizontal chamber is by means of an upright flue E, which rises from the center of the chamber midway between the vertical flues C C′ and at its upper end connects with any suitable escape-flue. Cold air is admitted into the hot-air chamber at the rear of the furnace and directly to the rear and under the chamber to which the two upright flues unite. The operation of the furnace is described in the specifications as follows:

The heated products of combustion escape from the chamber A into the descending flues C C′, which are quite large in diameter, and larger than the flue E. Owing to their size and to the use of a pair of them the flues C C′ are sufficient for the chamber A and no direct escape is needed. The course from the flues C C′ is downward into the chamber D, which serves not only to provide an additional heating-surface, but also as a dust-chamber and as a guard to favor the delivery of the incoming cold air toward the central portion of the chamber G. From the chamber D the escape is, as stated, upward through the flue E.

Three claims are predicated on these specifications, the first and third of which are necessary to notice:

1. In a furnace, the combination, with the hot-air chamber having an air-inlet in one side near its bottom, of the combustion-chamber situated eccentrically within the hot-air chamber and adjacent to the side thereof opposite that having the air-inlet, the flues B B′, extending from the inner side of the combustion-chamber near the top thereof, the descending flues C C′, communicating at top with the flues B B′, respectively, the chamber D, communicating with the lower ends of the flues C C′, and the ascending flue E, rising centrally from the chamber between the flues B B′, substantially as specified.
3. In a furnace, the combination, with the hot-air chamber and the combustion-chamber situated eccentrically therein, of the flues B B′, extending from the top of the combustion-chamber, the descending flues C C′, of large diameter, communicating, respectively, with the flues B B′, the heating-chamber D, communicating with the lower ends of the flues C C′, and the ascending flue E, rising from the chamber D between the flues C C′ and of much smaller diameter than the latter flues, as and for the purposes set forth.

The virtues of this special mode of construction or system of escape-flues are particularly dwelt upon in the specifications. Of the vertical flues C C′ it is said that owing to their size and the use of a pair of them, they are sufficient for the combustion-chamber and no direct escape is needed. Of the horizontal chamber it is claimed that it not only provides additional heating-surface, but also a dust-chamber and a guard to favor the delivery of the incoming cold air through the central portion of the hot-air chamber. In addition to this, the dust-chamber is not connected with the combustion-chamber, and the space between the two affords an opportunity for the air to rise. The ascending flue E is smaller than the descending flues C C′, which is for the purpose of retarding the descent through the flues C C′ and increasing the heating-surface thereof, and by means of the retardation of the product of combustion the greatest possible amount of heat will be thrown out from the descending flues into the hot-air chamber, and because of this difference in size between the flue E and the flues C C′ the air will pass much more rapidly upward through the flue than it can descend through the flues C C′.

I assume that this arrangement of flues has in it the quality of an invention. The Powell furnace is constructed upon the same operative principle as that of the complainant's, the mechanical structure differing only in a few slight and, to my apprehension, unimportant particulars. In other words, if the complainant's furnace be an improvement on the Powell furnace it is one of degree and not of kind, and, as was said in the case of *Burt* v. *Evory* (133 U. S., 349, 358)—

the test is that the improvement must be the product of an original conception. (*Pearce* v. *Mulford*, 102 U. S., 112, 118; *Slawson* v. *Grand St. Railroad*, 107 U. S., 649; *Mason* v. *New York City*, 124 U. S., 601, and many other cases.) And a mere carrying forward or more extended application of an original idea—a mere improvement in degree—is not invention

The same idea was more fully expressed by Mr. Justice Strong in *Smith* v. *Nichols*, (21 Wall., 112,) as follows:

But a mere carrying forward or new or more extended application of the original thought, a change only in form, proportions, or degree, the substitution of equivalents doing substantially the same thing in the same way, by substantially the same means, with better results, is not such invention as will sustain a patent. These rules apply alike whether what preceded was covered by a patent or rested only in public knowledge and use. In neither case can there be an invasion of such domain and an appropriation of anything found therein. In one case everything belongs to the prior patentee; in the other, to the public at large.

Counsel for complainant insists that complainant's furnace as described in the specifications and claims of the Campbell patent differs from the Powell furnace in the following particulars:

First. That, unlike complainant's furnace, its parts were not intended to operate with a single cold-air inlet at the rear, but with two cold-air inlets at the sides.

Second. The lower horizontal chamber was located on an ash-pit extension, whereas in the Campbell patent an air-passage exists between the ash-pit and the horizontal chamber D.

Third. In the Powell furnace the down-flues are constructed so as to be smaller than the up-flues.

The method of introducing the cold air at the rear is not an essential claim of the Campbell patent. If so, it appears that the patent would have been refused, because that method of introducing cold air had long prior been in use. Complainant's claim must rest upon the arrangement of a system of flues for the product of combustion. To such a design the specifications limit and commit it. The place of introducing the cold air is a non-essential.

The attachment of the horizontal chamber to the ash-pit in the Powell furnace, whereas in the Campbell furnace it is independent of such connection, does not destroy the identity of principle in operation or design. It may be conceded because of the non-attachment of this chamber to the combustion-chamber or ash-pit the hot air would rise more freely than in the Powell furnace; yet this does not impeach the identity of principle in the operation of the two, but only the degree, and is not the product of inventive skill. It is manifest not only from the physical structure of the Powell furnace, but the fact is clearly emphasized by the testimony, that there is a free circulation upwardly of air between the combustion-chamber and the down-flues in the Powell furnace. Moreover, just such an independent arrangement of the horizontal chamber D is found in the Ringen furnace of 1885.

In the Powell furnace the two vertical chambers or flues are contracted at the lower end; but the bodies of these flues are larger in diameter than the escape-flue located between them. They operate precisely alike and upon the same principle. An equivalent of this is found in the smaller horizontal flues B B′ of the Campbell furnace.

Counsel for complainant seems to realize that the Powell pattern of furnace stands conspicuously in the

way of the Campbell patent, and to overcome this impediment strives for the first time on this rehearing to show that Campbell completed and perfected his invention as early as January, 1884, but was prevented by lack of pecuniary means from pressing an application for grant of Letters Patent. If I am right in concluding that the Campbell furnace is an essential duplicate of the Powell furnace, this argument cannot avail the complainant. The Powell furnace was put in public use in 1884, and to a limited extent has been in service ever since. The Campbell patent was applied for in February, 1889. Section 4886, Revised Statutes, provides that—

> any person who has invented or discovered any new and useful art, machine, manufacture or composition of matter, or any new and useful improvement thereof not known or used by others in this country or any foreign country, * * * *not in public use* or on sale for more than two years prior to his application * * * may * * * obtain a patent therefor.

The interpretation of this statute by the Supreme Court in the case of *Andrews* v. *Hovey* (123 U. S., 267) clearly defeats this contention of complainant. In a case to which reference is made in the opinion just referred to, and speaking with reference to the policy of the statute, it is said—

> that the inventor must apply for his patent within two years after his invention is in such a condition that he can apply for a patent for it, and that if he does not apply within such time but applies after the expiration of such time and obtains a patent, and it appears that his invention was in public use at a time more than two years earlier than the date of his application, his patent will be void, even though such public use was without his knowledge, consent, or allowance, and even though he was in fact the original and first inventor of the thing patented and so in public use.

If Campbell's plans of furnace were complete in conception in January, 1884, it was his duty to give it to the public for use at the earliest practicable time. Inventive talent is encouraged that public comfort, utility, and convenience may be augmented. It has been well said:

> Justice requires that the public should reward those only who keep faith with it; who apply their creative energies to the promotion of the public good; and who having generated ideas reduce them as speedily as possible to practical and beneficial public use. (Rob. Pats., vol. 1, p. 548.)

We are entitled to presume that the conception is contemporaneous with the application; but, waiving this and the further presumption that a failure to apply for a patent evidences an incomplete and imperfect conception, the circumstances that would justify the inventor in withholding his invention from public use for a period of four or five years must be of a more immoderate character than I find to exist in this case. But conception alone, although complete, is not sufficient, for when the patentee proposes to assert that his invention was anterior to the date of his application he must not only prove that he made the invention at the period suggested, but that he reduced it to practice in the form of an operative machine. (*Johnson* v. *Root*, 2 Cliff., 116.)

No effort has been made to prove the construction of a furnace prior to 1888. Complainant's counsel cites us to those cases which seem to encourage experimental tests in order to perfect the instrument before applying for patent, as if by such reference to lead us to suppose that Campbell was demonstrating the value or perfecting the detail of his invention through such actual experiments. Of this I find no evidence in the record. If, however, he were thus engaged, he assumed the chances of the field being occupied by other and more diligent designers more prompt to supplement their creative efforts by a reduction to practice.

The fact is the Powell furnace was constructed and satisfactorily employed in 1884, incorporating all of the mechanical elements of construction and arrangement and combining all of the operative principles obtaining in the Campbell furnace.

The bill will be dismissed at complainant's cost.

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[BY AUTHORITY OF CONGRESS.]

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The Official Gazette.

THE OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $10; single copies, 10 cents, if mailed to foreign countries 10 cents additional for postage; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Withdrawal of Cases from Issue.

Hereafter all amendments proposed to allowed applications which involve a withdrawal from issue, and all petitions and requests relating thereto, shall be filed with the docket clerk, Mr. J. M. Emory, and transmitted by him to the Primary Examiner for report. If the Examiner shall report favorably to the admission of such amendment, the matter will be laid before the Commissioner for immediate determination. If the Examiner shall report unfavorably, the case will be docketed and will be heard and decided by the Commissioner in regular course, unless good reasons shall appear for immediate action.

Copies of Decisions Furnished.

Hereafter an uncertified copy of every decision or action by any tribunal in this Office will be furnished by such tribunal to the interested party or parties without charge.

Notice.

It is hereby directed that in the printing of claims of applications for patents the punctuation of the claims as made by applicants be strictly followed, and that the punctuation of the specification made by applicants be not departed from except to cure a manifest absurdity.

Indexes to Periodicals.

The following journals containing indexes to periodical literature may be found on file in the reading room of the scientific library:

Engineering Review, London, a monthly synoptical index of periodical literature in the English, French, and German languages, including hydraulic, railway, mechanical, electrical, mining, metallurgical, marine, military, and gas engineering.

Abstracts of all the principal articles on "Physics" published in the American and Continental journals since January 1, 1895, will be found in the *Proceedings of the Physical Society of London.*

Electrical World, New York, a weekly digest of electrical articles.

Journal of the Association of Engineering Societies, Chicago, a monthly synoptical index of civil-engineering literature, mostly American.

Engineering Magazine, New York, a monthly title-index of engineering articles in the English language only.

Amendment to the Rules of Practice.

The following regulations for the conduct of proceedings in the Patent Office are established:

65. An applicant will be considered to persist in his claim for a patent without altering his specification in case he fail to act in prosecution of the same for six months after the Office action thereon, and thereupon the Examiner will make a re-examination of the case.

134. In appealable cases in which no limit of appeal is fixed, no appeal will be entertained by any tribunal in the Office unless taken within six months from the action which puts the case in condition for appeal, unless it be shown to the satisfaction of the Commissioner that such delay was unavoidable.

68. In every case pending before the Office more than five years, in which the record raises the presumption that there have been intentional delays in prosecution, the Examiner may require the applicant to show cause why the case was not more rapidly prosecuted, and at the hearing thereon, or upon failure of the applicant to appear, the Examiner will determine, under all the circumstances of the case, whether there have been intentional and unreasonable delays in prosecution, and upon finding the fact to be so, he will reject the case for that reason. Present Rules 65, 69, and 134 are repealed, and present Rule 68 is renumbered 69.

The foregoing rules will be in effect on and after April 15, 1895, and will affect pending cases as though the last Office action were upon said date.

Publishers' Catalogues.

This Office would be pleased to receive from manufacturers and publishers such catalogues, circulars, price-lists, or other advertisements relating to the sciences and mechanical arts as are published by them for gratuitous distribution; but notice is hereby given such manufacturers or dealers who feel disposed to send their publications that not less than three copies should be forwarded in order that the subjects may be properly indexed, classified, and subclassified in the Scientific Library for convenient and ready reference.

Issue of July 16, 1895.

Patents	365—No. 542,617 to No. 542,981, inclusive.
Designs	28—No. 24,466 to No. 24,493, inclusive.
Trade-Marks	30—No. 26,609 to No. 26,638, inclusive.
Labels	None.
Prints	None.
Reissues	None.
Total issue	423

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Prints.	States.	Patents and Designs.	Trade-Marks and Prints.
Alabama	1	.....	New Hampshire	3	.....
Arizona Territory	.....	.....	New Jersey	15	1
Arkansas	.....	.....	New Mexico Ter.	.....	.....
California	8	1	New York	62	8
Colorado	3	.....	North Carolina	.....	.....
Connecticut	11	1	North Dakota	.....	.....
Delaware	1	.....	Ohio	30	2
District of Columbia	1	1	Oklahoma Ter.	1	.....
Florida	1	.....	Oregon	2	.....
Georgia	3	.....	Pennsylvania	35	4
Idaho	.....	.....	Rhode Island	4	.....
Illinois	34	2	South Carolina	1	.....
Indiana	8	.....	South Dakota	1	.....
Indian Territory	.....	.....	Tennessee	2	.....
Iowa	7	.....	Texas	7	.....
Kansas	2	.....	Utah Territory	.....	.....
Kentucky	8	.....	Vermont	1	.....
Louisiana	.....	1	Virginia	4	2
Maine	.....	.....	Washington	1	.....
Maryland	5	.....	West Virginia	.....	.....
Massachusetts	48	1	Wisconsin	8	.....
Michigan	6	.....	Wyoming	1	.....
Minnesota	3	1	U. S. Army	.....	.....
Mississippi	1	1	U. S. Navy	.....	.....
Missouri	13	.....			
Montana	1	.....	Total to citizens of the United States	347	22
Nebraska	4	1			
Nevada	.....	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentine Republic	.....	.....	Japan	.....	.....
Austria-Hungary	3	.....	Mexico	.....	.....
Barbadoes	.....	.....	Netherlands	1	.....
Belgium	1	2	Newfoundland	.....	.....
Bermuda	.....	.....	New South Wales	.....	.....
Brazil	.....	.....	New Zealand	.....	.....
Canada	4	.....	Nicaragua	.....	.....
Chile, Republic of	.....	.....	Peru	.....	.....
Colombia	.....	.....	Portugal	.....	.....
Cuba	.....	.....	Queensland	.....	.....
Denmark	.....	.....	Roumania	.....	.....
Ecuador	.....	.....	Russia	.....	.....
Egypt	.....	.....	Scotland	1	.....
England	12	4	South Australia	.....	.....
Finland	.....	.....	Spain	1	.....
France	4	1	Sweden	3	.....
Germany	16	1	Switzerland	.....	.....
Greece	.....	.....	Venezuela	.....	.....
Guatemala	.....	.....	Victoria	.....	.....
Hawaii	.....	.....	West Australia	.....	.....
India	.....	.....			
Ireland	.....	.....	Total to citizens of foreign countries	46	8
Italy	.....	.....			

APPLICATIONS UNDER EXAMINATION.

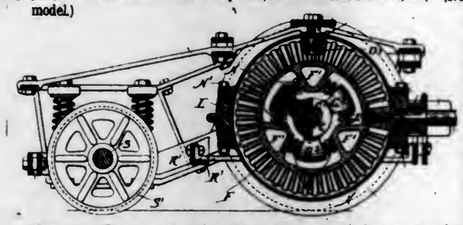
Condition at Close of Business July 9, 1895.

Division No.	Subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended.	No. ar.
	In arrears.—Under one month.			
15	Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	June 10	July 8	71
11	Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	June 10	July 6	
31	Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	June 10	July 5	58
3	Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	June 10	July 5	72
14	Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	June 10	July 5	75
12	Mechanical Engineering, Stove-Service, etc.	July 2	July 3	68
21	Textiles, etc.	June 10	July 3	124
18	Steam-Engineering, etc.	June 28	July 2	96
4	Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	June 20	July 2	67
8	Furniture, Beds, Store Furniture, etc.	June 13	July 2	155
20	Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	June 17	July 1	
13	Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	June 12	July 1	91
16	Telegraphy, Telephony, Electric Lighting and Signaling.	June 12	July 1	109
25	Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone-Working, Vegetable Cutters and Crushers.	June 11	July 1	
23	Instruments of Precision, Acoustics, etc.	June 10	July 1	9
27	Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	June 10	July 1	1
2	Farm Stock, Products, etc.	June 10	July 1	1
17	Paper-Manufactures and Printing	June 13	June 28	98
22	Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	June 9	June 27	101
24	Railway Brakes, Draft Appliances, and Rolling-Stock.	June 11	June 26	138
5	Fine Arts, Stationery, Book-Binding, Music, etc.	June 10	June 26	152
32	Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels, etc.	June 10	June 26	17
29	Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	June 11	June 25	139
10	Carriages and Wagons	June 10	June 24	147
7	Harvesters, Games and Toys, and Velocipedes.	June 10	June 20	405
19	Stoves and Furnaces	June 10	June 19	280
6	Chemistry, Explosives, Medicines, Fertilizers, Preserving, Photography, Sugar and Salt, Surgery.	June 12	June 15	183
26	Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	June 10	June 10	135
30	Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, Optics.	June 10	June 10	230
1	Tillage and Fences	June 10	June 10	301
	Between one and two months.			
24	Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	June 4	June 10	194
28	Pneumatics, Refrigeration, Air and Gas Engines, etc.	June 6	June 6	191
9	Hydraulics, Fire-Extinguishers, etc.	June 3	June 3	360
	Total number of applications awaiting action			5,013
	Under one month in arrears.			
	Designs	June 26	June 28	99
	Trade-Marks	July 5	July 6	7

PATENTS

GRANTED JULY 16, 1895.

542,617. RUNNING-GEAR FOR ELECTRIC RAILWAYS. BION J. ARNOLD, Chicago, Ill., assignor to the Thomson-Houston Electric Company, of Connecticut. Filed Apr. 13, 1891. Serial No. 388,631. (No model.)



Claim.—1. The combination of a frame carried upon trucks loosely supported at opposite ends upon wheeled axles, an electric motor thereon, speed-reducing gearing between the armature and the axle, and elastic connections permitting play of the gearing eccentrically out of normal alignment with the axle, as set forth.

2. The combination of trucks spring-supported at opposite ends upon wheeled axles, an electric motor carried by a supplemental frame supported thereon, a gear-wheel having a rigid bearing in the frame and driven by the armature, a second wheel meshing with the first, and surrounding the axle with sufficient clearance to allow relative play, and means for transmitting the rotating movement of said gear to the axle while permitting easy relative play of the parts, taking up the movements of the motor relatively to the axle, as set forth.

3. The combination of trucks spring-supported at opposite ends upon wheeled axles, an electric motor carried in a supplemental frame thereon, and elastic gearing connecting the armature to an axle upon each of the trucks and permitting play of the gearing eccentrically, taking up the play of the motor relatively to the axles, as set forth.

4. The combination of an electric motor carried in a frame mounted on spring-supported trucks, a gear having a rigid bearing therein and operated by the motor, a driven gear-wheel meshing therewith surrounding the axle and sharing the movements of the motor relatively to the axle so as to preserve it in fixed relation relatively to the armature, and elastic couplings joining the gear-wheel and the axle, as set forth.

5. The combination of a truck-frame spring-supported upon wheeled axles, an electric motor carried in a frame thereon, and a gearing between the armature and axle which shares the play of the motor, but permits the axle to play both angularly and eccentrically relatively to the driven member of the gearing, as set forth.

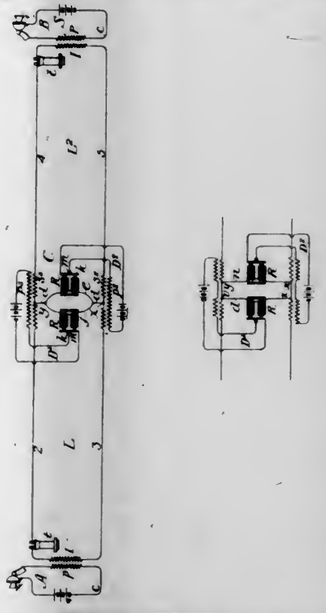
6. The combination of trucks spring-supported at opposite ends upon wheeled axles, an electric motor carried in a frame thereon having an armature extending longitudinally of the truck and geared to two of the axles, and two-part gears connecting the armature with the axles having elastic couplings permitting freedom of play of the axles relatively to the armature, as set forth.

7. In an electric car, the combination of a frame loosely supported at opposite ends on wheeled axles, a driving gear journaled in rigid bearings in the frame, and a loose connection between one axle and said gear permitting an eccentric oscillation of the axle in relation to the gear.

542,618. TELEPHONE RELAY OR REPEATER. CHESTER H. ARNOLD, Boston, Mass., assignor to the American Bell Telephone Company, same place. Filed Mar. 16, 1895. Serial No. 542,058. (No model.)

Claim.—1. In a telephone relay or repeater system, a compound main line circuit; a double bridge between the conductors of the said main line circuit, each branch thereof containing a repeating or receiving magnet; two local repeating circuits, controlled by the said two receiving magnets respectively; and induction coils having their secondary windings in the two main line conductors respectively, one half on either side of the bridge, and their primaries, included together with variable resistance repeating transmitters in the said local circuits respectively, substantially as described.

2. In a telephone repeating system, the combination of two main telephone circuits; two local repeating circuits each including a variable resistance repeating transmitter and a source of current; and two induction coils, having their secondary windings interposed between the two ends of the two main circuits respectively, so that a compound circuit is formed with a secondary winding in each of its conductors; with a bridge between the said two conductors uniting points at the centers of the said two secondary windings, and divided into two parallel branches; and a receiving or repeating magnet in each branch, placed in operative relation to the two repeating transmitters respectively, and adapted to control the same, substantially as described.

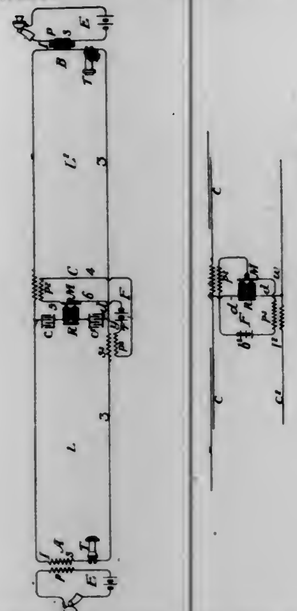


542,619. TELEPHONIC REPEATING CIRCUIT AND APPARATUS. CHESTER H. ARNOLD, Boston, Mass., assignor to the American Bell Telephone Company, same place. Filed Mar. 16, 1895. Serial No. 542,060. (No model.)

Claim.—1. In a telephone circuit repeating system, the combination of a main telephone circuit; a local repeating circuit containing a source of current and a variable resistance repeating transmitter; a repeating or receiving electromagnet in a bridge having electrostatic or inductive electrical connection between the conductors respectively of said main circuit; placed in operative relation to the said repeating transmitter to actuate the same; and a repeating induction coil having its secondary winding divided into two sections, placed respectively at the two ends of the bridge and on different sides thereof, and provided with a similarly divided primary whose sections are both included in the local circuit, and each associated with one of the said secondary sections; substantially as described.

2. In a telephone circuit repeating system the combination substantially as hereinbefore described, of a main telephone circuit; a local repeating circuit containing a variable resistance transmitting medium, and a source of current; a bridge conductor extending between the conductors of the said main circuit, and containing a repeating or receiving electromagnet mounted in operative relation to the said variable resistance medium and adapted to operate the same; a condenser interposed in the said bridge whereby it is divided con-

ductively, but left inductively continuous; and a repeating induction coil interposed between the local and main circuits, having its secondary windings in two sections placed in the main line conductors respectively, one on each side of the bridge, and its primary also in two sections placed in the local circuit, and associated each with one of the secondary sections.



3. The combination in a telephone circuit repeating system, of a main telephone circuit; a local repeating circuit including a variable resistance transmitting medium; a bridge extending between the main circuit conductors; a repeating or receiving electro-magnet mounted in operative relation to the said variable resistance medium; and a repeating induction coil having its secondary winding in two sections connected in the two main line conductors on different sides of the bridge, and its primary also in two sections both in the local circuit, and each associated with one of the secondary sections; with two condensers included in the circuit of the bridge conductor one on each side of the repeating electro-magnet, substantially as described.

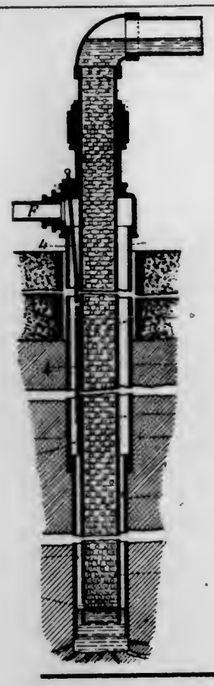
542,620. PNEUMATIC WATER-ELEVATOR. JAMES E. BACON, Richmond, Va. Filed May 10, 1894. Serial No. 510,696. (No model.)

Claim.—1. The combination in a water elevating apparatus, of an up-take pipe a surrounding tube extending to the lower end of the up-take pipe, or nearly so, an air tight connection between the up-take pipe and its surrounding tube, and a pipe for supplying air or other fluid under pressure, an opening in the up-take pipe above the lower end thereof, a valve for opening or closing that opening, and a rod extending to the top of the well for operating the valve, substantially as and for the purposes set forth.

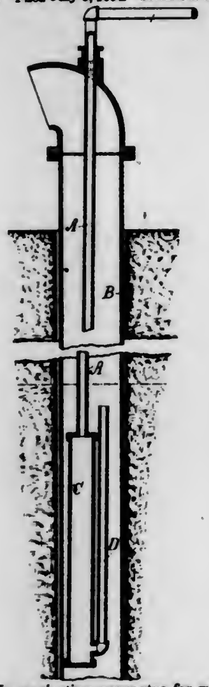
2. The combination in a water elevating apparatus with a drilled well, of an uptake pipe, a tube within the well surrounding the uptake pipe and extending below the lower end of the same, and an air tight connection between the upper end of the exterior tube and the uptake pipe for forming an air chamber around the uptake pipe, and a pipe for supplying air or other fluid under pressure into the air chamber whereby the air chamber and the uptake pipe are of as great capacity as the drilled well is adapted to receive, there being two or more openings in the uptake pipe at different elevations, and a valve and means for opening or closing the same from the top of the well for regulating the inlet of air to the uptake pipe, substantially as set forth.

3. The method herein specified of discharging liquid from a well consisting in providing an uptake pipe extending above the top of the well and having two or more air inlets at different levels, and an air tight space within which air under pressure can act upon the water standing at the ordinary level in such space and force the same down until the air escapes into one of the openings in the uptake pipe and continuing the air pressure and discharge of water until the level of water in the confined chamber descends in consequence of the level of the water in the well descending until the air escapes through the second opening in the uptake pipe, substantially as set forth.

542,620.



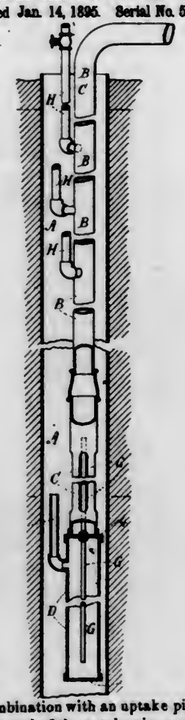
542,621. PNEUMATIC WATER-ELEVATOR. JAMES E. BACON, Richmond, Va. Filed July 5, 1894. Serial No. 516,548. (No model.)



Claim.—1. In an ejecting apparatus for wells, the combination with the uptake pipe of a long air chamber near the lower end of the uptake pipe, a tube for supplying air into such chamber and a pipe open at both ends and extending up from near the lower end of the air chamber into the uptake pipe above such air chamber and delivering a continuous jet of air into the water in the uptake pipe, substantially as specified.

2. A tubular well lining forming an uptake pipe and having a delivery upper end, in combination with an air forcing pipe a long air chamber within and near the lower end of the tubular lining and to which the lower end of the air forcing pipe is connected and a discharge pipe or nozzle receiving air from the lower part of the chamber and delivering the same as a continuous jet into the uptake pipe above such air chamber substantially as specified.

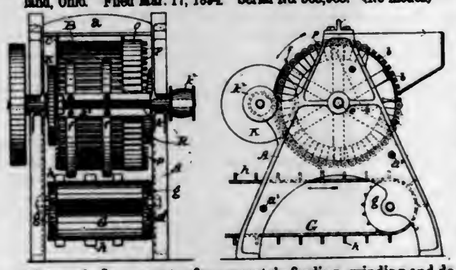
542,622. WATER-RAISING APPARATUS. JAMES E. BACON, Richmond, Va. Filed Jan. 14, 1895. Serial No. 534,734. (No model.)



Claim.—1. The combination with an uptake pipe, of a closed air reservoir below the lower end of the uptake pipe and connected therewith, and a pipe for supplying air into such reservoir, and a jet tube from the said reservoir extending up into the uptake pipe, there being an opening into the lower end of the uptake pipe for the admission of the liquid, substantially as set forth.

2. The combination with the uptake pipe in a water elevating apparatus, of a slotted tube at the lower end of such uptake pipe, a head screwed to such slotted lower end, a tubular reservoir connected with such head and having a closed lower end, an air inlet pipe for supplying air to the reservoir, an ejector nozzle passing from near the lower end of the air reservoir through the upper head of such reservoir and centrally within the uptake pipe above the lateral inlet openings, substantially as set forth.

542,623. FEEDING APPARATUS. CLARENCE M. BARBER, Cleveland, Ohio. Filed Mar. 17, 1894. Serial No. 503,965. (No model.)



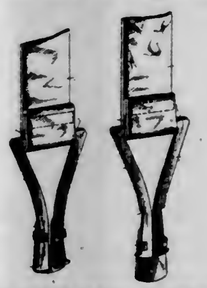
Claim.—1. In apparatus for separately feeding, grinding and delivering articles from a mass, the combination of a hopper for the articles to be fed, a rotation drum forming one side of said hopper and having grooves in its periphery each of which is adapted to receive a single one of the articles in the hopper, a guard conforming to a portion of the periphery of the drum and preventing the escape of the articles in the grooves, plungers supported on one end of the drum in alignment with each of the grooves thereof, a grinding or polishing device located opposite the open end of the grooves, and a cam located in the path of the plungers and adapted to drive them into the grooves and force the articles therein against the grinder, substantially as described.

2. In apparatus for separately feeding, grinding and delivering articles from a mass, the combination of a hopper for the articles to be fed, a rotating drum forming one side of said hopper and having grooves in its periphery each of which is adapted to receive a single, one of the articles in the hopper, a guard conforming to a portion of the periphery of the drum and in contact therewith and with the articles in the grooves, plungers supported on one end of the drum in alignment with each of the grooves, a grinding or polishing device located opposite the open end of the grooves, and a cam located in the path of the plungers, and adapted to drive them into the grooves and force the articles therein against the grinder, substantially as described.

3. In apparatus for separately feeding, grinding and delivering articles from a mass, the combination of a hopper for the articles to be fed, a rotating drum forming one side of said hopper and having grooves in its periphery each of which is adapted to receive a single one of the articles in the hopper, a guard conforming to a portion of the periphery of the drum and confining the articles in the grooves, plungers supported on one end of the drum in alignment with each of the grooves thereof, a grinding or polishing device located opposite the open end of the grooves, and a cam located in the path of the plungers and adapted to drive them into the grooves and force the articles therein against the grinder, and a conveyer beneath the drum to receive and carry away the finished articles, substantially as described.

4. The combination of a hopper for the articles to be fed, a rotating drum forming one side of said hopper, grooves in the periphery of said drum extending the entire length thereof, a guard conforming to a portion of the periphery of the drum and preventing the escape of the articles from the grooves, tubular casings rigid with the drum and aligned axially with each of the grooves thereof, plungers extending entirely through said casings and having one end engaging the groove with which said casing is aligned and the other protruding from the other end of the casing, a spring in each casing to retract the plungers from the grooves, and a cam located in the path of the protruding ends of the plungers and adapted to drive them into the grooves and force out the articles therein, substantially as described.

542,624. GARMENT-SUPPORTER. WILLIAM H. BARNUM, New York, N. Y. Filed Feb. 9, 1895. Serial No. 537,811. (No model.)

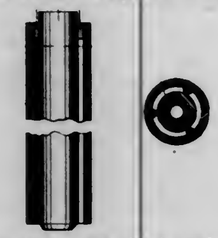


Claim.—1. A garment supporter or clasp comprising two spring jaws disconnected at their operative or clamping ends and converging toward said ends, and a one piece clip having a sliding relation to said jaws and provided with a central slit in alignment with the inner edges of the jaws for engaging the material of the garment, whereby the latter is caused to operate upon the clip and slide said clip upon the spring jaws for causing the latter to clasp the garment, substantially as specified.

2. In a garment support or clasp, the combination with two spring jaws converging toward their operative or clamping ends and formed with oppositely diverging outer edges and with stops or shoulders, of a sliding clip adjustable lengthwise of and embracing said spring jaws for the purpose of closing the same, and limited in its movements by said stops or shoulders, said clip being provided with a central slit in alignment with the clamping edges of the jaws, said slit being adapted to engage the material of the garment, whereby said clip is moved relatively to the jaws and the latter caused to clasp the garment, substantially in the manner specified.

542,625. CARBON FOR ELECTRIC LAMPS. HENRI F. CABIRAU, Paris, France. Filed Apr. 11, 1895. Serial No. 545,296. (No model.) Patented in France Sept. 18, 1894, No. 241,477.

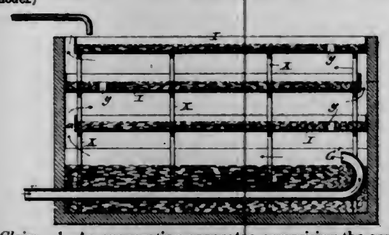
Claim.—1. A carbon for electric arc lamps, consisting of two pencils nested together, the inner pencil being provided with a central opening and radial channels or air passages formed between the nested pencils, substantially as and for the purposes set forth.



2. A compound carbon pencil for electric arc lamps, consisting of a carbon cylinder and a tube of carbon surrounding said carbon cylinder and separated by ribs therefrom, substantially as and for the purposes set forth.

3. A compound carbon pencil for electric arc lamps, consisting of two nested together pencils cemented to each other and air openings between the nested pencils, substantially as and for the purposes set forth.

542,626. EVAPORATING APPARATUS. DANIEL P. FERRO CARDOZO, New York, N. Y. Filed Sept. 26, 1894. Serial No. 524,181. (No model.)



Claim.—1. An evaporating apparatus comprising the combination of a tank having an air and vapor outlet, a hot air supply pipe entering one side thereof near the bottom, extending approximately to the opposite side, and then having its end turned upwardly so as to deliver the hot air at a suitable distance above the bottom of the tank, an open pan arranged within the tank above the outlet of the hot air pipe, a hot air passage-way at the end of the tank opposite the mouth of the hot air pipe, and means for supplying to the pan the liquid to be evaporated, the organization being such that the hot air pipe at the bottom of the tank is submerged in the liquid that is being evaporated.

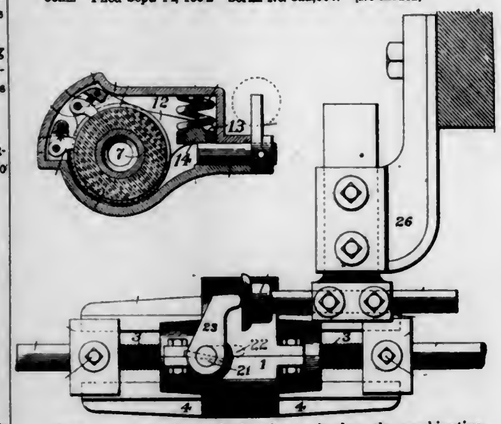
2. An evaporating apparatus consisting of a tank having supported therein a series of flat open pans arranged one above another, each having an overflow pipe arranged in its bottom, with passage ways between the walls of the tank and the opposite ends of adjoining pans, a hot air supply pipe entering the bottom of the tank and having its mouth or inner end arranged to deliver the hot air above the bottom of the tank, and a supply pipe for delivering the solution to be evaporated to the upper pan, substantially as and for the purpose set forth.

3. The combination of a tank, a flat hot air pipe entering one side thereof, extending approximately to the opposite side and then having its end curved upwardly so that its discharge mouth delivers the hot air therefrom horizontally, or substantially so, a series of open pans arranged above the hot air pipe, and passage ways between the opposite ends of adjoining pans and the wall of the tank, each pan being provided with an overflow conduit to deliver an excess of solution therein to the pan next below it, and finally to the bottom of the tank, the discharge mouth of the hot air pipe being arranged under the lower pan at the side of the casing opposite the passage way, between the pan and the walls of the casing, and a supply pipe for delivering the regulated quantity of solution to the upper pan.

4. The combination of a tank, a flat hot air pipe entering one side thereof, extending approximately to the opposite side and then having its end curved upwardly so that its discharge mouth delivers the hot air therefrom horizontally, or substantially so, a series of open pans arranged above the hot air pipe, passage ways between the opposite ends of adjoining pans and the walls of the tank, each pan being provided with an overflow conduit to deliver an excess of solution therein to the pan next below it, and finally to the bottom of the tank, the discharge mouth of the hot air pipe being arranged under the lower pan at the side of the casing opposite the passage way, between the pan and the walls of the tank, a supply pipe for delivering a regulated quantity of solution to the upper pan, and normally closed doors in the side of the tank to afford access to the pans and the bottom of the tank, substantially as and for the purpose set forth.

5. The combination of the tank, having an air or vapor outlet a hot air pipe relatively wide and flat, entering the side of the tank, extending approximately to the opposite side thereof and having its end curved upwardly so that its discharge mouth delivers the hot air therefrom horizontally or substantially so, at a suitable distance above the bottom of the tank, an open pan arranged above the mouth of the hot air pipe and leaving a hot air passage-way at the end opposite the mouth of said pipe, and means for delivering the liquid to be evaporated in a regulated quantity to the pan, the organization being such that the excess of liquid in the pan overflows into the bottom of the tank, and the hot air pipe is submerged in the liquid accumulated at the bottom of the tank, substantially as set forth.

542,627. SLACK-ADJUSTER. EPHRAIEM CHAQUETTE, Bridgeport, Conn. Filed Sept. 14, 1894. Serial No. 522,997. (No model.)

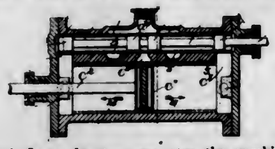


Claim.—1. In a take-up device for car brakes, the combination with the brake rod having its opposed ends oppositely screw-threaded, of a nut having right and left hand screw-threads and joining the ends of the brake-rod, a housing in which said nut is supported and may be rotated, a lever fulcrumed upon the nut and provided with a pawl for engaging the latter, a second lever having operative connection with the first and projecting outside the housing, and a fixed abutment or head adjacent to and adapted to turn a secondary lever, substantially as specified.

2. In a take-up device for car brakes, the combination with the brake rod whose adjacent ends are oppositely screw-threaded, of the similarly screw-threaded nut joined to the ends of the brake rod, the housing wherein the nut has a bearing, a spring-returned pawl-bearing lever fulcrumed about the nut and adapted to rotate the same, a detent pawl attached to the interior of the housing, and the secondary lever and means for operating the same whereby the pawl-carrying lever is actuated, substantially as set forth.

3. In a take-up mechanism for car brakes, the combination with the brake rod whose extremities are oppositely screw threaded, of the nut provided with right and left hand screw threads and joining the ends of the brake rod, a housing inclosing the nut and forming a bearing therefor, ways upon the housing co-operating with slide blocks on the brake rod, a spring-returned pawl-carrying lever arranged within the housing and adapted to actuate the nut, means for holding said nut against retrogression, and a secondary lever having operative engagement with the primary lever, and a head for the actuation of said secondary lever, the whole arranged substantially as described.

542,628. VALVE-OPERATING DEVICE FOR ELEVATORS. JOHN H. CLARK, Boston, Mass., assignor to the Whittier Machine Company, same place. Filed Dec. 14, 1891. Serial No. 414,983. (No model.)



Claim.—1. In an elevator apparatus, the combination of a cylinder containing a piston, supply pipes connected with the opposite ends of the said cylinder whereby a constant pressure is maintained upon each side of the piston, the outlet ports separate from the inlet or supply pipes and arranged at each side of the piston, valves which control the said outlet ports, and means for shifting the valves from the car or cage of the elevator, substantially as described.

2. A cylinder containing a piston, and the inlet pipes connected with the said cylinder near each end and through which a constant pressure is maintained upon each side of the piston, combined with the outlet ports for each end of the said cylinder, said ports being separate from the inlet ports or pipes, the valves which control the said outlet ports, and an outlet port intermediate of the said end outlet ports which is normally closed by the piston in the cylinder, substantially as described.

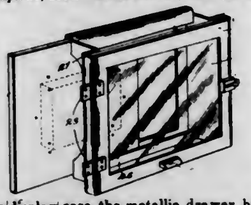
3. A cylinder containing a piston, and having the pressure supply pipes, one at each end thereof, and having also an outlet port near each end of the cylinder, and an intermediate outlet port which is closed by the piston within the cylinder when the latter is in its normal position, in combination with a valve device whereby the movement of the piston within the cylinder is controlled, the said valve device having valves for the several outlet ports or openings for the said cylinder, the relation of the said valves being such that the two end ports are covered and the intermediate port is uncovered when the valve device is in its intermediate position,—and when the valve device is moved in one direction from its intermediate position, one of the end ports is uncovered or opened and the intermediate port is covered or closed, and when the valve device is moved in the opposite direction from its intermediate position the other end port is uncovered or opened, and the intermediate port is closed, substantially as described.

4. A cylinder containing a piston, and a pressure inlet at each end thereof, combined with two end outlet ports and an intermediate port, and a piston valve having a piston to normally close each of said end ports, and two intermediate pistons, one normally lying at each side of said intermediate port, substantially as described.

5. A cylinder containing a piston, and a pressure inlet at each end thereof and provided with the outlet openings or ports c^7, c^8 near the ends of the cylinder, and the outlet opening or port c^9 near the middle of the cylinder, in combination with the bushing, $d^\times$, provided with the openings 5, such openings registering with the said outlet ports c^7, c^8, c^9 from the cylinder, and there being other openings through the said bushing between the openings which communicate with the intermediate outlet port, and with the end outlet ports, the waste or outlet pipe e provided with the branches e', e^3 and the piston valve d^7 movable in the said bushing, and provided with the heads or pistons d^8, d^9 near its ends, and d^{10}, d^{11} near its middle, substantially as set forth.

6. A cylinder containing a piston, separate inlet and exhaust ports near each end of the said cylinder, the inlet ports being without valves whereby there is a constant pressure upon each side of the piston, a valve device to control the said exhaust ports, a middle exhaust port which is closed by the piston within the cylinder when it is in its middle or normal position, and which is also controlled by the said valve device, substantially as described.

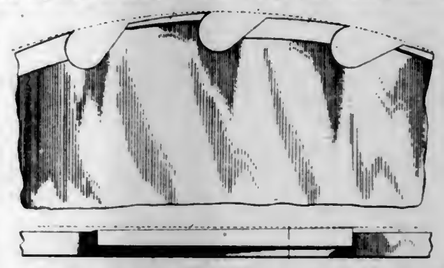
542,629. DISPLAY-CASE. WILLIAM L. DEMPSEY, New Franklin, Mo. Filed Apr. 23, 1894. Serial No. 508,572. (No model.)



Claim.—In a display case, the metallic drawer having the front end 10 of its vertical sides bent ontwardly at right angles, thereby increasing laterally the width of the front over the main body of said drawer and forming an enlarged mouth, the vertical door-frame 19 having a width exceeding that of said body and hinged at one edge to swing and close in said enlarged mouth, and provided with a glazed portion, in combination with a vertical display-plate 27 removably located in guide-ways 25, 26 carried by said door-frame, whereby said display-plate is supported bodily by said door-frame and removable bodily from the separate receptacle upon opening said door-frame, a latch for fastening the edge of said door-frame which is opposite said hinged edge, and a handle for withdrawing the entire device from between two shelves, substantially as herein specified.

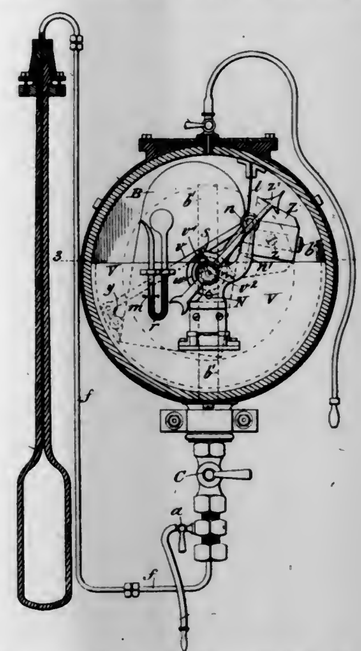
542,630. SAW. CHARLES H. DOUGLAS, Chicago, Ill. Filed Nov. 23, 1894. Serial No. 529,718. (No model.)

Claim.—1. A saw provided with teeth so formed that the backs or outer edges of the teeth have a clearance of less than five degrees angle from the line of cut, and on the sides of which there are ribs A, A, which extend from the cutting points to or toward the heels, which ribs are more prominent at the points than at the heels of the teeth, and form an angle with the face of the saw blade of less than one degree, substantially as and for the purpose herein specified.



2. A saw-tooth that is provided with a rib A on one side, from the point of said tooth to or toward the heel, which rib is thicker or more prominent at the point than at the heel, substantially as and for the purpose specified.

542,631. PRESSURE-GAGE. WALTHER DÜRR, Munich, Germany. Filed Nov. 5, 1894. Serial No. 527,958. (No model.) Patented in Belgium Dec. 31, 1887, No. 88,838; in Switzerland Dec. 13, 1889, No. 1,706; in England Dec. 14, 1889, No. 20,139; in Austria-Hungary Apr. 2, 1890, No. 53,572 and No. 12,103, and in Germany June 5, 1890, No. 52,318.



Claim.—1. In a pressure-gage, the combination, with a receptacle containing a sealing liquid, and a bell inverted over said receiver and dipping therein, of means for compelling the bell to move in the arc of a circle when operating, and an indicating device actuated by the bell, substantially as set forth.

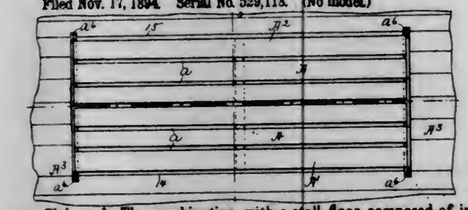
2. In a pressure-gage, a receiver containing a sealing liquid, a bell inverted over and dipping into the sealing liquid, and means for indicating the movements of the bell, in combination with a compensator, consisting in a U-shaped tube provided with a globe or enlargement on one arm of the tube, a sealing liquid confining atmospheric air in the globe, and a mark for indicating the normal level of the sealing liquid on the other arm of the tube, substantially as set forth.

3. In a pressure-gage, the combination, with a receptacle containing a sealing liquid, and a bell inverted over said receiver and dipping therein, of means for compelling the bell to move in the arc of a circle when operating, an inlet-pipe opening below the bell, and an indicating device actuated by the bell, substantially as set forth.

4. In a pressure-gage, the combination, with a casing containing a sealing liquid, of a receiver open at its lower end and dipping into the sealing liquid, a compensating device in communication with the interior of the casing outside the receiver, and means for varying the pressure in that part of the casing with which the compensator communicates, substantially as set forth.

5. In a pressure-gage, the combination, with a casing containing a sealing liquid, of a receiver open at its lower end and dipping into the liquid, a leaf spring from which the receiver is suspended, a lever attached to the receiver at one end, a spindle secured to the lever at the other end, a toothed segment secured to the spindle, a gear pinion in mesh with the segment, and an indicator operated by the gear pinion, substantially as set forth.

542,632. STALL-FLOOR. CHARLES R. EMERY, Boston, Mass., assignor of three-fourths to the W. A. Snow & Company, same place. Filed Nov. 17, 1894. Serial No. 529,113. (No model.)



Claim.—1. The combination with a stall floor composed of independent planks separated from one another to leave slots or spaces between them, and a basin or bed therefor, of a reinforcing bridge secured to the under side of the said spaced planks between their ends, to tie the same, preserve the spacing thereof, and to form a support therefor, the said bridge having depressions therein below and in line with the spaces between the planks and extending nearly to the basin floor, to thereby permit the passage without obstruction of a cleaning hook through and below said slots from end to end thereof, and the passage of said cleaning hook along the surface of the basin or bed without substantial obstruction, substantially as described.

2. A stall floor composed of independent planks arranged longitudinally of the stall separated from one another to leave slots or spaces between them and secured together at their ends; a basin arranged below said spaced planks with its rearwardly inclined bottom divided transversely into upper and lower inclined portions, and a reinforcing bridge secured to the under side of the said spaced planks between their ends and having depressions therein below and in line with the spaces between the planks, the said bridge being secured to the under side of the spaced planks at a point to enable it to bear upon and be supported by the lower inclined portion adjoining the lower end of the upper inclined portion, whereby the bottom of the depressions in said bridge will be substantially flush with the upper inclined portion of said basin, in combination, substantially as and for the purpose specified.

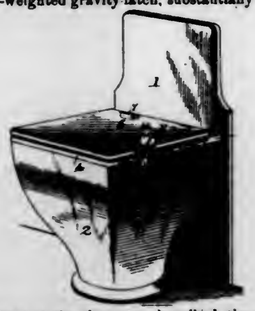
3. The combination with a stall floor composed of independent planks separated from one another to leave slots or spaces between them, and a basin or bed therefor, of a reinforcing bridge secured to the under side of the said spaced planks between their ends, to tie the same, preserve the spacing thereof, and to form a support therefor, the said bridge having depressions therein below and in line with the spaces between the planks and extending nearly to the basin floor, to thereby permit the passage without obstruction of a cleaning hook through and below said slots from end to end thereof, and the passage of said cleaning hook along the surface of the basin or bed without substantial obstruction, and having also openings therein extending to the basin or bed to form passages for the flow of liquids along the basin or bed from one to the other side of the said bridge, substantially as described.

542,633. CLOSET. PLATO G. EMERY, Chicago, Ill., assignor to the Adams & Westlake Company, of Illinois. Filed Feb. 21, 1895. Serial No. 539,238. (No model.)

Claim.—1. In a closet of the character described, a hinged seat and a hinged lid combined with a counter-weighted gravity latch suitably limited in its swinging movement, and a pin, said latch and pin automatically connecting the seat and lid when both are down and adapting them to be raised together and automatically detached when raised, substantially as set forth.

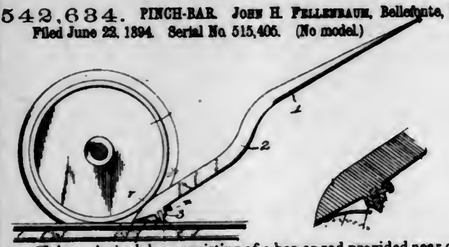
2. In a closet of the character described, a hinged seat and a hinged lid combined with a pin projecting from a side of the seat, and a counter-weighted gravity latch pivoted to a corresponding side of the lid and suitably limited in its swinging movement, said pin and latch automatically connecting the seat and lid when both are down and adapting them to be raised together and automatically detached when raised substantially as set forth.

3. In a closet of the character described, the combination of a seat hinged to a fixture of the casing, a hinged lid, a pin projecting from a side of the seat, and a counter-weighted gravity latch suitably limited in its movement and pivoted to a corresponding side of the lid and having an elongated toe, the construction of the operative surfaces of the pin and toe being as described, whereby the seat and lid having been raised together upon the engagement of the pin and toe, the latter shall be allowed to slip from the pin by the action of the counter-weighted gravity latch, substantially as set forth.



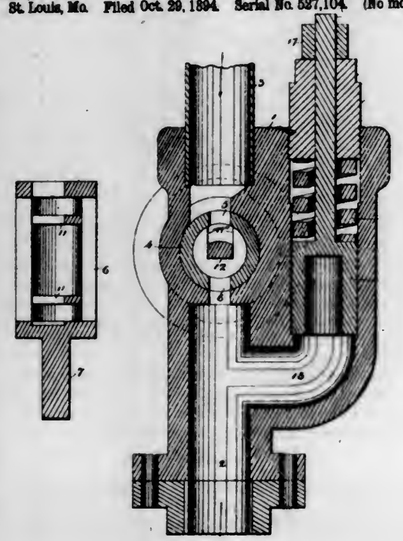
4. In a closet of the character described, the combination of a bowl, a hinged seat, a hinged lid, a pin projecting from a side of the seat, and a counter-weighted gravity latch having a shoulder for limiting its swinging movement and an elongated toe for automatic engagement with and detachment from said pin, substantially as set forth.

542,634. PINCH-BAR. JOHN H. FELLENBAUM, Bellefonte, Pa. Filed June 22, 1894. Serial No. 515,405. (No model.)



Claim.—A pinch bar consisting of a bar or rod provided near one end with a fulcrum point, and a spring shoe fixed to said end and projecting rearwardly to a point immediately forward of the fulcrum, the rear end of the shoe being free and having a normal tendency away from the bar, which tendency is of sufficient strength to raise every portion of the pinch bar when the same is attended by no other force than its inherent weight, substantially as described.

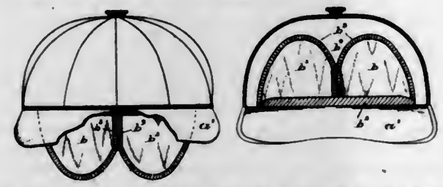
542,635. FLUID-PRESSURE REGULATOR. FRANK M. GAMACHE, St. Louis, Mo. Filed Oct. 29, 1894. Serial No. 527,104. (No model.)



Claim.—1. A fluid-pressure regulator comprising a casing, a passage leading therefrom to a suitable generator and system, a regulator valve in the casing normally in open communication with said passage, suitable means for operating said valve upon variation of pressure within the generator, and an emergency valve loosely mounted within the regulator valve in the casing and controlling the inlet passage from the generator into the casing, substantially as set forth.

2. A fluid-pressure regulator comprising a casing, a passage leading therefrom to a suitable generator and system, a regulator valve in the casing normally in open communication with said passage, an arm secured to said valve, a fluid-operated piston in said casing, a stem on said piston, a pivoted arm secured to the stem, an inwardly curved slot at the opposite end of said arm, means for securing the end of the arm secured to the valve in an adjusted position along the slot of the pivoted arm, and an emergency valve loosely mounted within the regulator valve and controlling the inlet passage from the generator into the casing, substantially as set forth.

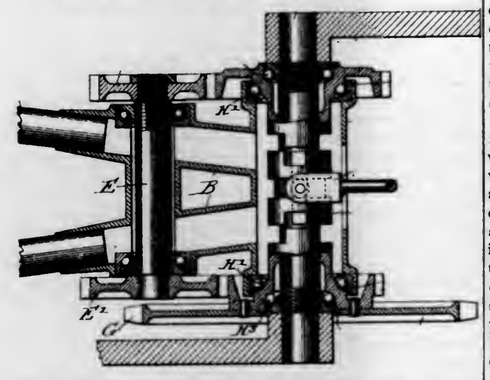
542,636. CAP. HARRY GOLDSTEIN, Boston, Mass. Filed Apr. 27, 1895. Serial No. 547,424. (No model.)



Claim.—1. A head gear comprising a body and a pair of contiguous eye guards of transparent material, flexibly hinged at their inner edges directly to the front of the body and adapted to be folded inside of, or to be projected from the body to shield the eyes of the wearer, substantially as described.

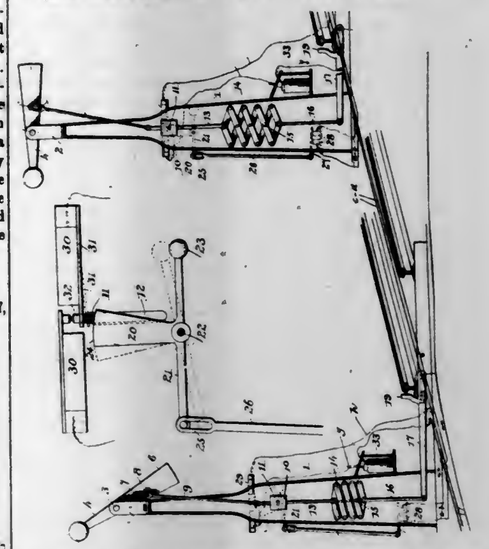
2. A head gear comprising a body and a pair of contiguous eye guards of transparent material having the lower adjacent edges diverging and connected at their inner edges directly to the front of the body by a hinge forming strip so that the guards may be folded inside of or projected from the body to shield the eyes of the wearer, substantially as described.

542,637. BICYCLE. FRANK M. GOODHUE and JAMES E. GOODHUE, St. Charles, assignors to the Two-Speed Bicycle Company, Chicago, Ill. Filed Oct. 23, 1894. Serial No. 526,711. (No model.)



Claim.—The combination of a bicycle frame, with the usual wheels and a connecting piece at about the point where the pedal-shaft is located, said connecting piece comprising two sleeves rigidly connected by parts of such connection, and sockets or the like for the various forks and rods of the frame, a pedal-shaft in the first mentioned sleeve, two gear-wheels of different sizes toward the ends of the pedal shaft and loose thereon, bearings therefor in the ends of the sleeve, a sprocket-wheel rigid with one gear, a clutch within the sleeve between the gears and adapted to slide on but rotate with the shaft, and thus to operatively connect it with either gear, a moving device for the clutch, under the control of the operator, an auxiliary shaft in the other sleeve and thus in rigid relation to the pedal-shaft, bearings therefor within the sleeve and gears of different sizes thereon simultaneously meshing with the gears of the pedal-shaft, substantially as shown and described.

542,638. AUTOMATIC RAILWAY-SIGNAL. ALONZO J. GRIFFIN, Wilkes-Barré, Pa., assignor of one-fourth to George T. Griffin, same place. Filed Aug. 7, 1894. Serial No. 519,666. (No model.)



Claim.—1. In a railway signal, the combination with the tower having a guide slot, and the movable semaphore supported on the tower; of a set of pivotally supported lazy tongs carrying a pin working in said guide slot, a connection between said lazy tongs and the movable semaphore, train controlled operating devices connected with the lazy tongs means for locking the pin carried by the lazy tongs at one end of the slot in which it works to secure the lazy tongs distended or expanded, and means for automatically releasing or tripping said pin to allow the lazy tongs to fold, substantially as set forth.

2. In a railway signaling apparatus, the combination with the signal tower having a guide slot, and the movable semaphore supported thereon; of a vertically movable weight working within the tower and provided with a projecting pin extended through and working in said guide slot, a set of lazy tongs pivotally supported within the tower and connected at one end with said weight, train controlled operating connections with said lazy tongs, a lock lever weighted at one end and pivotally supported on the tower adjacent to the movement of said pin, said lever being provided at an intermediate point with an offstanding cam arm adapted to engage under and against the pin when elevated, and an automatic releasing or trip device for said lock lever, substantially as set forth.

3. In a railway signaling apparatus, the combination with the signal tower and the movable semaphore supported thereon; of the vertically movable weight working within the tower and provided with a projecting pin, a set of pivotally supported lazy tongs connected at one end with said weight and at the other end with suitable train controlled operating means, a weighted lock lever pivotally supported adjacent to the movement of said pin and provided with an offstanding cam arm adapted to engage under the pin when elevated, an electro magnet device having an armature lever, a trip rod connected at one end to said armature lever and at its upper end to one end of said lock lever, a circuit closer comprising normally spaced contact plates supported above the pin of the weight and operated by the movement of said pin, and suitable electrical circuits with said circuit closer and said electro magnet device, substantially as set forth.

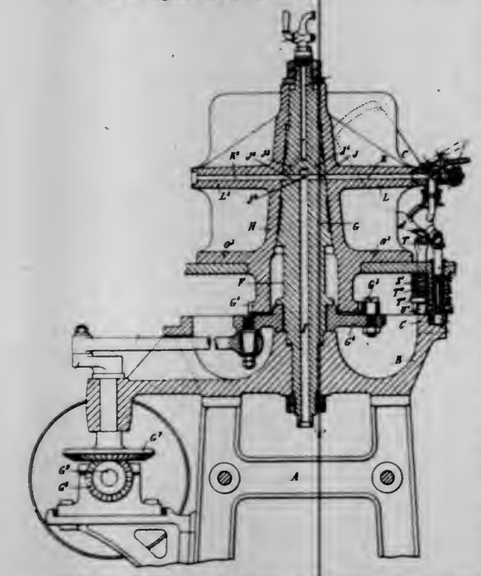
4. In a railway signaling apparatus, the combination of the signal tower provided at its upper end with a semicircular signal casing, separate pairs of independently movable semaphore disks mounted within said casing, each pair of disks being weighted for rotation in one direction, a pair of vertically movable weights working within the tower, lazy tongs operating connections with each of said weights, suitable connections between each weight and a pair of said semaphore disks to rotate the same in a direction opposite to the inducement of their weights, a locking device for each weight to support the same in their elevated positions, and means for automatically releasing or tripping each lock device, substantially as set forth.

5. In a railway signaling apparatus, the combination with the signal tower provided at its upper end with a semicircular signal casing, an oscillating shaft journaled transversely in said signal casing, separate pairs of semicircular semaphore disks working within said casing and mounted on said shaft, one pair of said disks being loose

on the shaft and the other pair fast thereon, and one disk of each pair of disks being provided with a winding pulley and separately controlled operating cords connected to said winding pulleys, substantially as set forth.

6. In a railway signaling apparatus, the combination with the signal tower provided at its upper end with a semicircular signal casing, an oscillating shaft journaled transversely in said casing, separate pairs of semicircular semaphore disks working within said casing and mounted on said shaft, one pair of disks being mounted loose on the shaft and the other pair fast thereon, and the said disks of each pair being reversely disposed to each other, connecting bridges connecting diametrically opposite ends of the disks that are loose on the said shaft, weights pivoted to one side of one of the disks of each pair, stop pins arranged at one side of said weights, peripheral stop pins for each pair of weights adapted to engage the front sides of the signal casing, winding pulleys connected to one of the disks of each pair, separately operating cords connected at their upper ends to said winding pulleys, and separately controlled operating connections connected with each of said operating cords, substantially as set forth.

542,639. BOTTLING APPARATUS. CÉLESTIN GUÉRET, Paris, France, assignor to Guéret Frères, same place. Filed Apr. 29, 1895. Serial No. 547,516. (No model.) Patented in France Nov. 20, 1894, No. 243,007, and in England Jan. 1, 1895, No. 85.



Claim.—1. In bottling apparatus, the combination with a supporting frame and table, of a vertically-arranged plug having a channel or passage through which the liquid to be bottled is adapted to pass, a rotatable shell or casing surrounding the plug and having an extended arm provided with a passage adapted to align with the passage in the plug when said casing is rotated, a discharge tube carried at the outer end of the said arm, a vertical plunger adapted to be periodically raised during the rotation of the casing to support the head of a siphon and cause the filling tube of the latter to be brought into communication with the discharge tube of the arm, and a second plunger also adapted to be periodically raised during the rotation of the said casing and to operate the valve lever of the siphon simultaneously with the communication between the filling tube of the siphon and the discharge tube of the apparatus, all as and for the purpose specified.

2. In bottling apparatus, the combination with a supporting frame and table, of a vertically-arranged plug having a series of horizontal passages through which the liquid to be bottled is adapted to pass, a shell or casing surrounding the plug and having a series of extended arms each provided with a passage adapted to be brought into alignment with the passages in the plug when the casing is rotated, a discharge tube carried at the outer end of each arm, vertical plungers arranged beneath and corresponding respectively with the said discharge tubes and adapted to be periodically raised to support the head of a siphon and cause the filling tube of the latter to be brought into communication with the corresponding discharge tube, and a second series of plungers arranged respectively in proximity to the first series of plungers and adapted to be periodically raised and operate the valve levers of the respective siphons simultaneously with the communication between the filling tubes of the siphons with the discharge tubes of the apparatus, all as and for the purpose specified.

3. In bottling apparatus, the combination with a supporting frame and table, of a vertically-arranged plug having a channel or passage through which the liquid to be bottled is adapted to pass, a shell or casing surrounding the plug and having an extended arm provided with a passage adapted to align with the passage in the plug when the casing is rotated, a discharge tube carried at the outer end of the arm and adapted to communicate with the passage of the arm, a valve carried by the arm and adapted to control the communication between the passage of the arm and the discharge tube, a vertical plunger adapted to be periodically raised during the rotation of the casing to support the head of a siphon and cause the filling tube of the latter to be brought into communication with the discharge tube of the arm, and a second plunger also adapted to be periodically raised during the rotation of the said casing and to operate the valve lever of the siphon simultaneously with the communication between the filling tube of the siphon and the discharge tube of the apparatus, all as and for the purpose specified.

4. In bottling apparatus, the combination with a supporting frame and table, of a vertically-arranged plug having a channel or passage through which the liquid to be bottled is adapted to pass, a rotatable shell or casing surrounding the plug and having an extended arm provided with a passage adapted to align with the passage in the plug when said casing is rotated, a discharge tube carried at the outer end of the said arm, a vertical cushioned plunger adapted to be periodically raised during the rotation of the casing to support the head of a siphon and cause the filling tube of the latter to be brought into communication with the discharge tube of the arm, and a second vertical cushioned plunger adapted also to be periodically raised during the rotation of the casing and to operate the valve lever of the siphon, all as and for the purpose specified.

5. In bottling apparatus, the combination with a supporting frame and table, of a vertically-arranged plug having a passage through which the liquid to be bottled is adapted to pass, and also a second passage adapted to communicate at its outer end with the open air, a shell or casing surrounding the plug and having an extended arm provided with a passage adapted to align with the first passage in the plug when the casing is rotated, and also with the inner end of the second passage of the plug when not in alignment with the first passage, a discharge tube carried at the outer end of the arm, a vertical plunger adapted to be periodically raised during the rotation of the said casing to support the head of a siphon and cause the filling tube of the latter to be brought into communication with the discharge tube of the arm, and a second plunger also adapted to be periodically raised during the rotation of the casing and to operate the valve lever of the siphon simultaneously with the communication between the filling tube of the siphon and the discharge tube of the apparatus, all as and for the purpose specified.

6. In bottling apparatus, the combination with a supporting frame and table, of a vertically-arranged plug having a series of horizontal passages through which the liquid to be bottled is adapted to pass, and also a series of inclined passages communicating with the outer air, a shell or casing surrounding the plug and having a series of extended arms each provided with a passage adapted to be brought into alignment with the horizontal and inclined passages in the plug alternately when the casing is rotated, a discharge tube carried at the outer end of each arm, vertical plungers arranged beneath and corresponding respectively with the said discharge tubes and adapted to be periodically raised to support the head of a siphon and cause the filling tube of the latter to be brought into communication with the corresponding discharge tube, and a second series of vertical plungers arranged respectively in proximity to the first series of plungers and adapted to be periodically raised and operate the valve levers of the respective siphons simultaneously with the communication between the filling tubes of the siphons and the discharge tubes of the apparatus, all as and for the purpose specified.

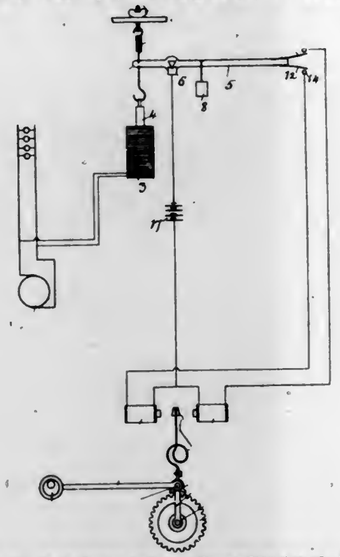
7. In bottling apparatus, the combination with a supporting frame and table, of a vertically-arranged plug having a passage through which the liquid to be bottled is adapted to pass, and also a second passage adapted to communicate at its outer end with the open air, a valve adapted to control such communication, a shell or casing surrounding the plug and having an extended arm provided with a passage adapted to align with the first passage in the plug when the casing is rotated, and also with the inner end of the second passage of the plug when not in alignment with the first passage, a discharge tube carried at the outer end of the arm, a vertical plunger adapted to be periodically raised during the rotation of the said casing to support the head of a siphon and cause the filling tube of the latter to be brought into communication with the discharge tube of the arm, and a second plunger also adapted to be periodically raised during the rotation of the casing, and to operate the valve lever of the siphon simultaneously with the communication between the filling tube of the siphon and the discharge tube of the apparatus, all as and for the purpose specified.

8. In bottling apparatus, the combination with a supporting frame and table, of a vertically-arranged plug having a channel or passage through which the liquid to be bottled is adapted to pass, a rotatable shell or casing surrounding the plug and having an extended arm provided with a passage adapted to align with the passage in the plug when the said casing is rotated, a discharge tube carried at the outer end of the said arm, a vertical plunger adapted to be periodically raised during the rotation of the casing to support the head of a siphon and cause the filling tube of the latter to be brought into communication with the discharge tube of the arm, and a second plunger also adapted to be periodically raised during the rotation of the said casing and to operate the valve lever of the siphon simultaneously with the connection between the filling tube of the siphon and the discharge tube of the apparatus, and means for effecting a step-by-step rotation of the casing consisting of a rotating shaft, a crank thereon, a connecting rod jointed at one end to the crank, a disk to which the opposite end of the rod is connected and adapted to be oscillated by said rod, a pawl carried by the said disk, and a ratchet wheel on the casing engaged by said pawl, all as and for the purpose specified.

9. In bottling apparatus, the combination with a supporting frame and table, of a vertical plug carried by the table and having its lower end extended and terminating in a neck or nozzle and having a cone-shaped upper portion, and said plug also having a vertical channel or passage and a series of radiating horizontal passages in communication with the vertical passage, and also upwardly inclined passages intermediate the horizontal passages, a shell or casing rotatably mounted upon the plug, a series of arms integral with the casing and each having bores or passages adapted to be brought into communication with the horizontal passages of the plug and with the inclined passages when not in communication with the horizontal passages, the said plug having also a second vertical passage adapted to communicate with the outer air, the said passage being in communication with the inclined passages, a valve carried at the outer end of each of the arms, a flared depending discharge tube or nozzle in communication with the passage of each of the arms, fixed siphon supports adapted to support the body of the siphons, a series of vertically-movable plungers carrying each a bearing or support at the upper end for the head of a siphon, and a second series of vertically movable plungers for operating the valve levers of the siphons, all as specified

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542,640. ELECTRIC GOVERNOR. WILLIAM W. HANDY, Lake Roland, Md. Filed May 1, 1895. Serial No. 547,712. (No model.)

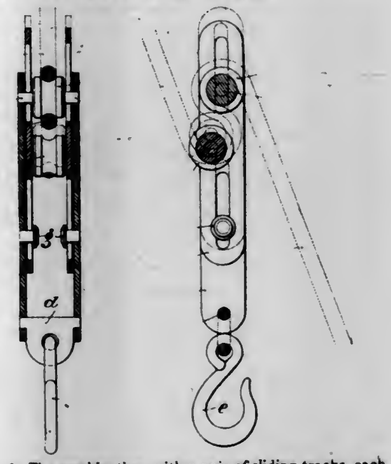


Claim.—1. In an electric governor the combination of a dynamo, a prime motor and mechanism for regulating the force applied to the motor, a shunt coil, and a series coil in the same circuit and mechanism operated by said coils, and a mechanism controlled thereby to regulate the force applied to the motor.

2. In an electric governor the combination of a dynamo, a prime motor and mechanism for regulating the force applied to the motor, a shunt coil, a series coil, in the same circuit and a reciprocating core in each of said coils with mechanism controlled by the motion of said cores to regulate the force applied to the motor.

3. In an electric governor the combination of a dynamo, a prime motor and mechanism for regulating the force applied to the motor, a shunt coil, a series coil wound in sections and connected with a switch mechanism by which one or more of said sections may be thrown into circuit, a reciprocating core or cores within the shunt and series coils operated thereby, and mechanism controlled by the motion of the core or cores to regulate the force applied to the motor.

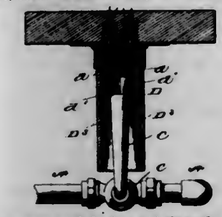
542,641. FIRE-ESCAPE. VITUS HEMBACHER, Fischach, Germany. Filed Oct. 18, 1894. Serial No. 526,290. (No model.)



Claim.—1. The combination, with a pair of sliding tracks, each having an upper and a lower slot, an axle fixed between the said sliding tracks, and a roller mounted on the axle, of a pair of tracks outside the slotted tracks, an axle fixed in the ends of the said outer tracks and passing through the upper slot in the slotted tracks, a roller mounted on said axle, a pair of studs passing through the lower slots and fixed in the outer tracks, and a rope passing under the second roller, over the first roller and thence to the ground, substantially as set forth.

2. The combination, with a pair of tracks, an axle connecting said tracks at the upper ends, a cross piece connecting the lower ends of said tracks and provided with an eye, a roller journaled on the axle, and a hook device engaging the eye in the cross piece, of a pair of slotted sliding tracks, a roller journaled therein, and a pair of studs passing through the slots in the sliding tracks and fixed into the other tracks, substantially as set forth.

542,642. STOP-COCK LOCK. CHARLES HEYMAN, New York, N. Y. Filed Mar. 20, 1895. Serial No. 542,736. (No model.)



Claim.—1. A stop cock lock consisting of a rigid base, lock-casings or sections hinged thereto, the said casings having squared inner ends adapted to fit flush against the base, the casings adapted to meet and form a hollow tube when placed at right angles to the base and a catch or locking device adapted to hold the said casings together.

2. In a stop-cock lock, a base, casings hinged thereto having metal spring tongues secured and insulated within them, contact devices mounted in the base between the said casings and adapted to touch the metal spring tongues when the casings are closed.

3. The combination with a stop-cock having an elongated handle, of a stop-cock lock consisting of opposite sections hinged to a rigid base, adapted to meet and inclose the said handle and a catch or locking device secured to the sections and adapted to hold them together.

4. In a stop-cock lock, the combination with the base D provided with the spring pressed pins d^3 insulated from each other, of

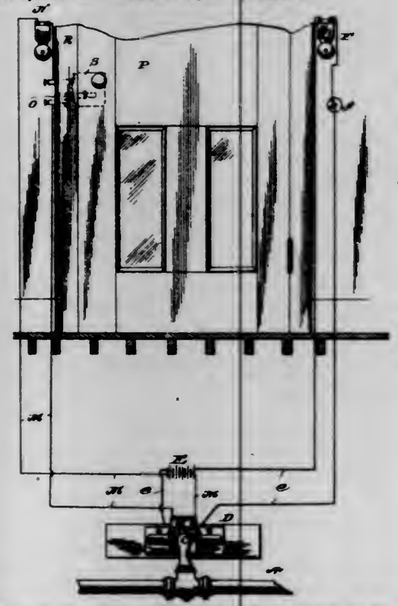
the casings D^3, D^4, hinged to the base, and the metal spring tongues d' secured within the said casings, and insulated therefrom by the blocks d, substantially as and for the purpose set forth.

5. In a stop-cock lock, the combination with the base D', provided with the spring pressed pins d^3, insulated from each other, of the casings D^3, D^4, hinged to the base, and capable of being moved until they are at right angles to the base, the metal spring tongues d' secured within the said casings and insulated therefrom by the blocks d, a battery connected by means of wires through an electric bell to the spring pressed pins d^3, a circuit closer such as c, and a switch f all substantially as and for the purpose set forth.

6. In a stop-cock lock, the combination with a base, provided with spring pressed pins insulated from each other, lock casings hinged to the base having a catch D^4, metal spring tongues secured within the said casings and insulated therefrom, a circuit closer connecting the said metal spring tongues, and wires connecting the aforesaid spring pressed pins with a battery and an electric bell.

7. The combination with a stop-cock lock consisting of a base, lock-casings or sections having squared inner ends hinged to the base and adapted to meet and form a hollow tube when placed at right angles to the base the said lock casings being provided with metal spring tongues mounted within them and insulated from each other and from the casings, contact devices mounted in the base between the said casings and insulated from each other, the said contact devices bearing upon and being in electrical connection with the metal spring tongues when the casings are at right angles with the base, a circuit closer in electrical connection with the aforesaid metal spring tongues, and an electric circuit uniting the contact-devices.

542,643. STOP-COCK LOCK. CHARLES HEYMAN, New York, N. Y. Filed Apr. 23, 1895. Serial No. 546,929. (No model.)



Claim.—1. A circuit closer consisting of a metal tube in electric connection with one pole of a battery, a spring-pressed metal button mounted in the said tube and in contact therewith, a metal cap or nut secured to one end of the said tube and insulated therefrom, the said cap or nut in electric connection with the opposite pole of the said battery, an opening in the said cap or nut, and a metal rod secured to the aforesaid spring-pressed metal button and extending rearwardly through the opening in the cap or nut without contact, the said rod having its outer end enlarged and adapted, normally, to rest upon and be in electrical contact with the said cap or nut, making the circuit, and to break the circuit whenever the aforesaid spring-pressed button is pushed into the tube.

2. A circuit closer consisting of a metal tube k having a flange in electric connection with one pole of a battery, a spring-pressed metal button k' mounted in the said tube and in contact therewith, a metal cap or nut k^2 secured to one end of the said tube and insulated therefrom, the same being in electric connection with the opposite pole of said battery and having an opening through its length, and a metal rod k^3 secured to the aforesaid button k', extending through the opening in the cap or nut k^2 and having upon its outer end an enlargement adapted normally to close the circuit through the said cap or nut k^2 and to break the circuit when the button k' is pushed into the tube, all substantially as and for the purpose set forth.

3. The combination with a stop-cock lock having a base D' and lock-casings D^3, D^4, hinged thereto, of the spring-pressed pins g, g', mounted in the casings D^3, D^4, and adapted to touch each other when the casings D^3, D^4, are closed together, electric buttons, spring-pressed pins or contact devices H mounted in the bed-portion D' between the casings D^3, D^4 insulated from each other and in circuit with an alarm N and an electric key O, and contact plates k' suitably mounted in the casings D^3, D^4 in electric connection with the spring-pressed pins g, g', the said contact plates k' bearing upon and being in electric contact with the pins H when the casings D^3, D^4 are closed, all substantially as and for the purpose set forth.

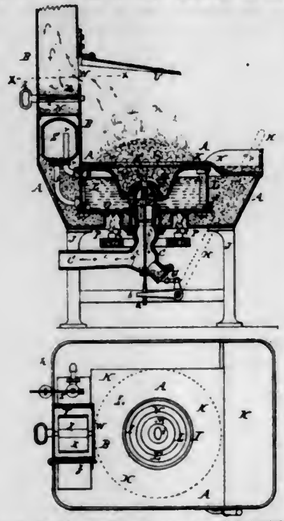
4. The combination with a metal stop-cock handle having an insulating annulus c', of the stop-cock lock D, a battery, an electric circuit c and the electric circuit M, the stop-cock lock D being provided with the metal spring tongues d' and the contact devices d^3, and the spring-pressed pins g, g', the contact plates k' electrically connected with the pins g, g', and the contact devices H united to the electric circuit M, all substantially as and for the purposes described.

5. The combination with a metal stop-cock handle having an insulating annulus c', of the stop-cock lock D, a battery, an electric circuit c and the electric circuit M, the stop-cock lock D being provided with the metal spring tongues d' and the contact devices d^3, and the spring pressed pins g, g', the contact plates k' electrically connected with the pins g, g', and the contact devices H united to the electric circuit M, and the circuit closer K also united to the electric circuit M, all substantially as and for the purposes described.

6. The combination with a stop-cock having a metal handle provided with an insulating annulus, of a stop-cock lock provided with contact devices arranged to bear upon the said annulus, an electric circuit uniting the said contact devices with the poles of a battery and an alarm placed in the said circuit, as set forth.

7. The combination with a stop-cock having a metal handle provided with an insulating annulus, and a stop-cock lock, of a battery, systems of electric circuit connected with the said battery, alarms governed by switches, keys and the like, interposed in the said electric circuit, circuit closers and contact devices mounted in the stop-cock lock, whereby when one circuit is closed the other will be open.

542,644. BLACKSMITH'S FORGE. KARL HITZLBERGER, New York, N. Y. Filed Jan. 16, 1893. Serial No. 458,586. (No model.)

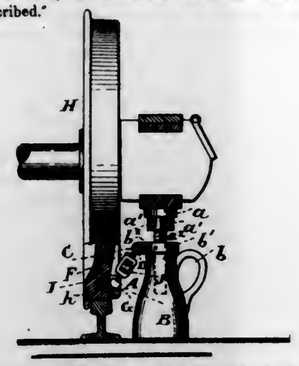


Claim.—1. In a forge, the chimney provided with an opening W, in its side above the hearth, and the hood secured to the chimney above said opening, combined with the pocket X, formed by the lateral bottom Y, provided with a valve Z, a secondary bottom N forming a receptacle for the ashes, and the door Z, substantially as shown.

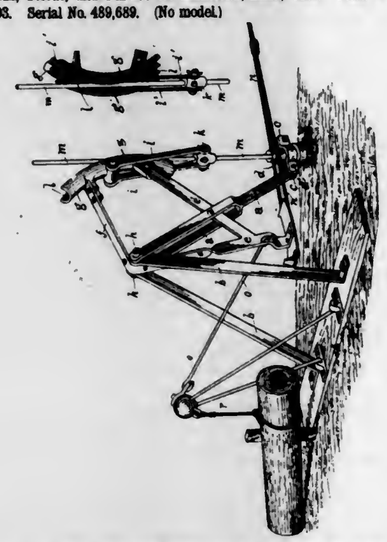
2. The hearth, and the boiler located under it, combined with the bottom P, having suitable openings through it, and means for heating the water in the boiler through the openings, substantially as set forth.

542,645. RAILROAD LIFTING-JACK. JAMES A. HOLMAN, Salida, Colo. Filed May 31, 1895. Serial No. 551,313. (No model.)

Claim.—The band C, nut and screw D E, the eye screw F, the foot-piece G carrying a male screw I, and the yoke J working on the right and left screws F I, in combination with the jack A as and for the purpose described."



542,646. PUMPING APPARATUS FOR OIL-WELLS. SAMUEL M. JONES, Toledo, and ERNEST W. HAMMOND, Lima, Ohio. Filed Nov. 1, 1893. Serial No. 489,689. (No model.)



Claim.—1. In a pumping apparatus for oil or other wells, the piping or tubing of the well in combination with a tripod or frame, means for attaching one part of said tripod or frame to said piping or tubing, suitable supports for the remaining parts of said tripod or frame independent of said piping or tubing, and a pumping lever fulcrumed in said tripod or frame, substantially as and for the purposes specified.

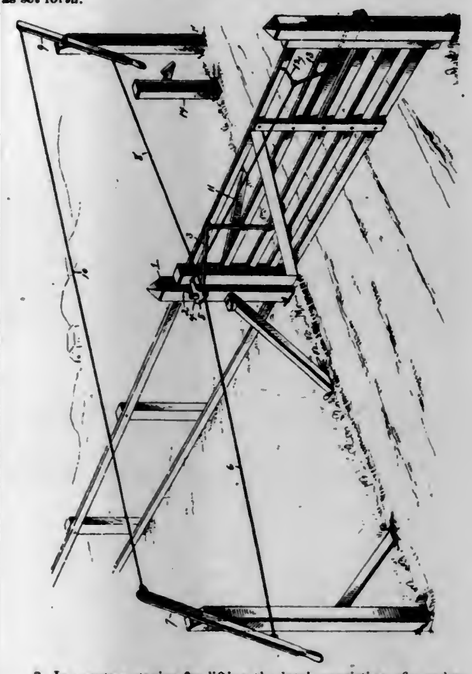
2. The combination with the piping or tubing of an oil or similar well, of a pumping frame provided with an extended supporting base and an intermediate pivotal support for the pumping lever, said frame being connected to the piping or tubing of the well at a point to one side of the pivotal support for the lever and being independently supported on the opposite side of the pivot at a point or points remote from the piping or tubing, substantially as and for the purpose specified.

3. The combination of a pipe or other tubing of an oil or other well with a tripod for supporting the pump lever, means for detachably connecting one leg of the tripod to such tube or pipe, and suitable supports for the remaining legs of said tripod, substantially as and for the purpose specified.

542,647. GATE. WALTER JONES, Bowling Green, Ky., assignor to himself and Lewis C. Johnson, same place. Filed Nov. 12, 1894. Serial No. 528,551. (No model.)

Claim.—1. In a gate a device for lifting the latch consisting of a rod secured at one end to the latch and at the other end to a laterally movable rod, a second rod secured at one end to the gate above the latch and at the other end to the said laterally movable rod, as set forth.

2. In a gate a device for lifting the latch consisting of a rod secured at one end to the latch and at the other end to a laterally movable rod; a second rod secured at one end to the gate above the latch and at the other end to the said laterally movable rod; a pivoted plate having one end of the laterally movable rod secured thereto, as set forth.



3. In a gate a device for lifting the latch consisting of a rod secured at one end to the latch and at the other end to a laterally movable rod, a second rod secured at one end to the gate above the latch and at the other end to the said laterally movable rod, a pivoted angle plate having one end of the laterally movable rod secured thereto, and a pull secured to the said angle plate on the opposite side of the pivot point, as set forth.

4. In a gate a device for lifting the latch consisting of a rod secured at one end to the latch and at the other end to a laterally movable rod, a second rod secured at one end to the gate above the latch and at the other end to the said laterally movable rod, a pivoted angle plate having one end of the laterally movable rod secured thereto, and a pull secured to the said angle plate on the opposite side of the pivot point, said pull secured at its other end to one end of a lever located beyond the gate and on one side thereof, a rod connecting the other end of said lever with one end of a similar lever located beyond the gate on the opposite side, and a rod connecting the other end of said second lever with the angle plate, as set forth.

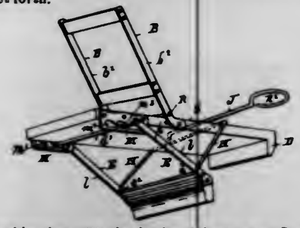
5. A device for opening and closing a gate consisting of an arm pivoted to the gate and an arm pivoted to the hinge post of the gate the ends of said arms being pivoted together, a rod secured to the pivot point of the arms and extending across the gate in one direction and a rod secured to the pivot point of the arms and extending in the opposite direction from the first rod, as set forth.

6. A device for opening and closing a gate consisting of an arm pivoted to the gate and an arm pivoted to the hinge post of the gate the ends of said arms being pivoted together, a rod secured to the pivot point of the arms and extending across the gate in one direction and a rod secured to the pivot point of the arms and extending in the opposite direction from the first rod; said rods respectively secured to an end of a lever, said levers located one on each side of the gate, a rod connecting the other ends of the said levers, as set forth.

542,648. ATTACHABLE WINDOW-SEAT. EDWIN J. KEIRSTED, Lansingburg, N. Y. Filed Nov. 26, 1894. Serial No. 529,924. (No model.)

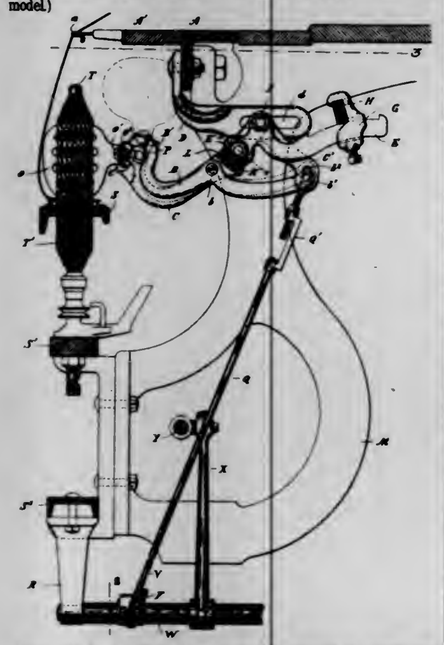
Claim.—1. The combination with a horizontal seat-part made with a clamp on its under edge across its inner end by which it will engage with the inner side of a window sill, and having a plate at each side made with a slot containing notches; of a brace made with its inner end adapted to engage with the wall below a window sill, and its outer end having a rod adapted to interlock in the notches of the

seat side plates, and having a bail that is pivoted to the sides of the brace with its loop including the seat-part, and a back-part pivoted to the sides of the seat-part, substantially in the manner as and for the purposes set forth.



2. The combination with the horizontal seat-part S, made with the clamping end edge D, side-plates M, M, each made with the slot m^3, having notches m^3; of the brace E, made with side arms e^3, e^3, which at their upper ends are connected to a rod d', arranged within the slot m^3, and adapted to engage oppositely with the notches therein and provided with a bail-form loop N, that is pivoted to the brace sides and arranged to incloss the seat-part, and the pivoted holder J, all constructed and arranged to be operated, substantially in the manner as and for the purposes set forth.

542,649. SEPARATOR FOR SPINNING-FRAMES. ARTHUR MASON, Taunton, Mass. Filed Mar. 19, 1895. Serial No. 542,362. (No model.)



Claim.—1. In a spinning frame, the combination of a separator, a separator lever to which the separator is pivoted, a support in which the separator lever is fulcrumed, mechanism which turns the separator lever on its fulcrum and causes the separator to rise in advance of the ring rail when the separator is in its operative position between two bobbins, and a tripping device which, throws the separator down into its operative position between the bobbins before the separator lever turns on its fulcrum to lift the separator, substantially as described.

2. The combination of a separator, a separator lever, a fulcrum for said lever intermediately between its ends, a tripping lever and a fulcrum for the tripping lever intermediately between its ends, a rod pivoted at its upper end to the rear arm of the tripping lever and to the rear arm of the separator lever, the pivot for said rod having play in a slot in the separator lever, a wave rocker, said rod having at its lower end a flexible connection with the wave rocker whereby, when the rocker turns, the tripping lever will be turned on its fulcrum to throw the raised separator blade into operative position, before the separator lever begins to move on its fulcrum, substantially as described.

3. The combination of a separator, a separator lever, a fulcrum for said lever intermediately between its ends, a tripping lever and a fulcrum for the tripping lever intermediately between its ends, a rod pivoted at its upper end to the rear arm of the separator lever, the pivot for said rod having play in a slot in the separator lever, a wave rocker, said rod having at its lower end a flexible connection with the wave rocker, and a cam dog on the rocker which guides the flexible portion whereby, when said rocker turns, the tripping lever will be turned on its fulcrum to throw the raised separator blade into operative position, substantially as described.

4. In a spinning frame, the combination of a series of separator levers, a series of brackets in which the separator levers are fulcrumed, a series of separators pivoted to the forward arms of said levers, and a stiffening rod which serves as a common counterweight for said separators adjustably secured to the rear arms of said levers, substantially as described.

5. A separator lever composed of two bars having overlapping ends bolted together, a toothed segment on one bar and a toothed guide on the other engaging in said toothed segment whereby the two bars may be set at various angles to each other, substantially as described.

6. In a spinning frame, the combination of a series of brackets supported from the roll beam, a series of separator levers pivoted in said brackets, a stiffening rod extending transversely of all the separator levers in said series and serving as a common counterweight, and a series of dogs which clamp said rod to the levers, substantially as described.

7. In a spinning frame, a series of separators each having a blade O and a bent shank O^2 formed with flanged sides and an elongated slot O^3, in combination with a corrugated metal holder I embraced by the separator shanks and having a series of elongated slots which register with the slots in the separator shank, and bolts which pass through said slots and secure the separators to the holder, substantially as described.

8. In a spinning frame, a series of separators, each having a blade O and a bent shank O^2 formed with flanged sides, and an elongated slot O^3, in combination with a corrugated metal holder I embraced by the separator shanks and having a series of elongated slots which register with the slots in the separator shank, bolts which pass through said slots and secure the separators adjustably to the holders, a bracket P' also bolted to the separator holder, and a separator lever to which the bracket is pivoted substantially as described.

9. The combination of the bent levers C and E bolted together and forming a lever for the separator blade, a movable pivot on which said levers are fulcrumed, and a tripping lever pivoted to the separator lever, substantially as described.

10. The combination of the bent levers C and E bolted together and forming a lever for the separator blade, an adjustable pivot on which said levers are fulcrumed, a toothed segment and indicator whereby the two levers C and E may be adjusted to different angles with relation to each other, a tripping lever pivoted to the compound separator lever, a rod H which is adjustably secured to the rear arms of a series of separator levers and which serves as stiffening rod and counterbalance, and which bears against the samson which forms a stop, substantially as described.

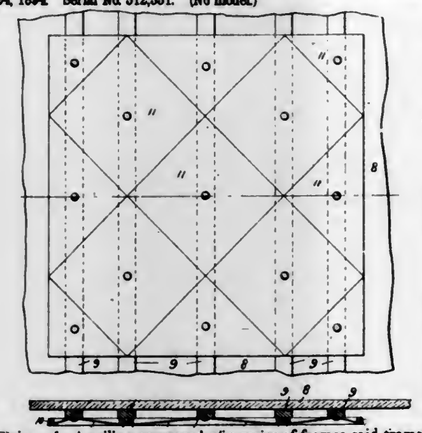
542,650. STOVEPIPE DRUM AND FURNACE. JOHN H. MINGUS, Guthrie Centre, Iowa. Filed Dec. 18, 1894. Serial No. 532,240. (No model.)



Claim.—In a heating drum for stoves or furnaces, the combination with a hollow cylindrical drum, of the upper and lower horizontal cross bars provided with perforated feet at either end by means of which they are riveted within the drum and located a sufficient distance from the ends thereof to afford free spaces at the top and bottom of the drum, a centrally arranged hollow metallic cylinder closed at its ends and interposed between and riveted or otherwise

secured to said cross bars, and a spiral deflector extending one or more times around the central cylinder, and being of a width sufficient to extend across the space between the central cylinder and inner wall of the drum, said spiral deflector being riveted or otherwise secured at its upper end to the upper cross bar and its lower end to the lower cross bar, said parts being arranged, combined and supported, substantially as specified.

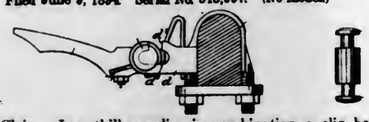
542,651. CEILING. RICHARD W. OWEN, Chicago, Ill. Filed May 24, 1894. Serial No. 512,331. (No model.)



Claim.—1. A ceiling composed of a series of frames, said frames having their exposed faces covered with leather or equivalent material and having their edges beveled inwardly, the edges of the leather or other covering being secured to the inwardly beveled edges of the frames, substantially as described and for the purpose specified.

2. A ceiling composed of a series of frames having their exposed faces covered with leather or equivalent material indented between the sides of the frames and secured in place, said frames having their edges beveled inwardly, the edges of the leather or other covering being folded over the inwardly beveled edges of and secured to the frames, substantially as described and for the purpose specified.

542,652. THILL-COUPLING. WILLIAM PEARCE, Plantsville, Conn. Filed June 9, 1894. Serial No. 513,997. (No model.)

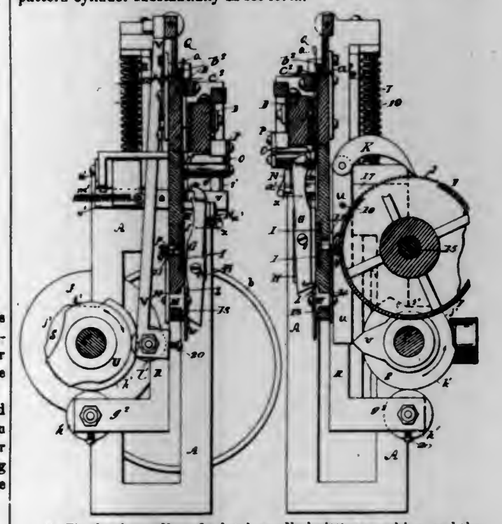


Claim.—In a thill coupling in combination, a clip having ears with elongated pivot sockets open on the upper side, a shackle having an eye forming a trunnion socket, a slit severing the side wall of such socket, a clamping bolt extending through the parts, a guard on the lower side of the shackle and projecting across the slit, and the renewable trunnion the outer ends of which have heads which overlie the edges of the pivot sockets in the ears and on the outer surface thereof, all substantially as described.

542,653. STRAIGHT-KNITTING MACHINE. WILLIAM H. PEPPER and ALBERT T. L. DAVIS, Lake Village, assignors to Edgar C. Covell, Laconia, N. H. Filed Nov. 8, 1888. Renewed May 23, 1895. Serial No. 550,410. (No model.)

Claim.—1. The needles of a knitting machine, the reciprocating cam-bar which actuates said needles, a laterally-movable slide, a vertically-movable holder mounted on said laterally-movable slide, and a swinging needle shifter mounted on said holder, in combination with a laterally-movable shifter cam L, which effects the swinging movement of said needle shifter, a pattern drum which co-operates with said laterally-movable slide and said cam L, to move the same laterally, means for maintaining the laterally-movable slide and the cam L, in co-operative relation with the pattern cylinder and means carried by the needle-actuating cam-bar and between said cam-bar and said vertically-movable holder for effecting the vertical movements of said vertically movable holder, substantially as set forth.

2. The needles of a straight knitting machine, the reciprocating cam bar which actuates said needles, two laterally-movable slides I, I, two vertically-movable holders mounted on and carried by said slides respectively, and two swinging, needle shifters, each pivoted to one of said vertically-movable holders, said slides, holders, and shifters, being located at opposite ends of the machine so as to co-operate with the needles at both ends of the machine, in combination with means for effecting the vertical movements of said holders, two shifter cams which co-operate with said needle shifters respectively to swing said shifters, two laterally-movable slides M, M, by which said shifter cams are respectively carried, and a rotating pattern cylinder or wheel for effecting the lateral movements of said slides I, and said cam-slides M, said pattern cylinder or wheel having at each end a series of receding steps *r*, *r*, which co-operate with one of said slides I, and one of said slides M, during the narrowing operation to allow said slides to move inward step by step, and having also at each end a series of cams *s*, and dwells *t*, which co-operate with one of said slides L, and one of said slides M, during the widening operation to move said slides outward step by step, and means, such as springs, for maintaining the laterally-movable slides I, and M, in co-operative relation with the pattern cylinder substantially as set forth.



3. The latch needles of a latch needle knitting machine, and the reciprocating needle-actuating cam-bar thereof, in combination with a vertically-movable and laterally-swinging feed and tension bar, which rises, swings in toward the needles, feeds down a fresh course of stitches, swings back from the needles, and then bears down upon the knitted web, and means for moving said feed and tension bar vertically and for swinging the same to and from the needles, substantially as set forth.

4. The latch needles of a latch needle knitting machine, and the reciprocating needle-actuating cam-bar thereof, in combination with a vertically movable and laterally-swinging feed and tension bar which bears upon the knitted web during the stitch-forming operations, and which during the change of motion of said cam-bar rises, swings in toward the needles, feeds down the fresh course of stitches, swings back from the needles and then bears down upon the knitted web, and means for moving said feed and tension bar vertically and for swinging the same to and from the needles, substantially as set forth.

5. In combination with the needle cam of a knitting machine, the means specified for knitting a loose course of stitches, consisting essentially of the sliding grooved plate having the groove extension, the stop bar, the interposed movable finger, the pattern mechanism provided with a cam projection, and connecting mechanism between the pattern mechanism cam and the said movable finger, substantially as and for the purpose herein set forth.

6. The reciprocating needles of a knitting machine, and a needle shifter characterized by the following movements, (*a*) a movement to and from the needle adjacent thereto whereby said needle shifter is coupled to said needle and is uncoupled therefrom, (*b*) a reciprocating movement parallel with the reciprocating movement of the needle whereby the needle is moved in and out of action, and (*c*) a step-by-step lateral movement whereby said needle shifter is brought successively into co-operation with a plurality of the knitting needles, in combination with means for imparting to said needle shifter its several specified movements, substantially as set forth.

7. The vertically-reciprocating needles of a knitting machine, a vertically-movable holder, and means for moving said holder vertically, in combination with a needle shifter pivoted to said holder whereby said needle shifter partakes of the vertical movement of said holder, said needle shifter being adapted at one end to be coupled to

the adjacent one of said needles when moved thereto, and said needle shifter having at its other end a projecting stud or tappet, and a cam L, having no vertical movement and located in the path of the stud or tappet on said needle shifter, whereby the coupling end of said lever is moved toward the adjacent one of said needles, substantially as set forth.

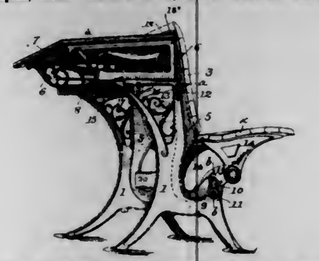
8. The laterally-movable slide I, having tappet *p*, in combination with a pattern cylinder having an intermittent rotary movement, said pattern cylinder having on one edge a series of receding steps *r*, *r*, with which said tappet *p*, engages and whereby said slide is allowed to move step by step in one direction, and a series of alternating cams *s*, and dwells *t*, on the same edge, with which said tappet *p*, engages, whereby said slide is moved step by step in the opposite direction, and means for maintaining said slide in co-operative relation with the pattern cylinder substantially as set forth.

9. The laterally-movable slide I, having tappet *p*, and the laterally-movable slide M, having tappet *y*, in combination with a pattern cylinder having an intermittent step-by-step rotary movement, said cylinder having on one edge a series of steps *r*, *r*, a series of alternating cams *s* and dwells *t*, and a dwell 3, between said two series of steps, said tappets *p*, and *y*, being located side by side and engaging said steps, cams and dwells, and means for maintaining said slides I, and M, in co-operative relation with said steps, cams and dwells the relations between said steps, cams and dwells, and the rotation of the pattern cylinder being as follows, (*a*) the circumferential extent of each of said steps *r*, being equivalent to two of the intermittent movements of the cylinder, whereby the cylinder must move twice before a tappet resting on one step will be advanced to the following step, (*b*) the circumferential extent of one cam *s*, and one dwell *t*, being equal to the circumferential extent of one of the steps *r*, and (*c*) the circumferential extent of the intermediate dwell 3, being equivalent to an uneven number of the intermittent movements of the pattern cylinder, substantially as set forth.

10. The reciprocating latch needles of a latch needle knitting machine, and the needle bar in which said needles are mounted, in combination with a web feed and tension bar characterized by the following movement, first a vertical movement to a position above the loops or stitches on the needles, second an inward movement toward the needles and into close proximity thereto, third a downward movement parallel with the needles whereby the loops are fed down, fourth an outward movement to enable it to swing clear of the upper edge of the needle bar, and fifth a downward movement onto the web, whereby the web is pressed and held down, and means for effecting said movements, substantially as set forth.

11. The combination of the movable cam-bar, the needle-cam thereon, a plate upon said cam-bar and movable thereon, said plate having means for moving said needle-cam to form a loose course, a loose-course finger movable into the path of said plate to move the same so as to form the loose course, a pattern mechanism, and means between said pattern mechanism and said finger for effecting the movement thereof, substantially as set forth.

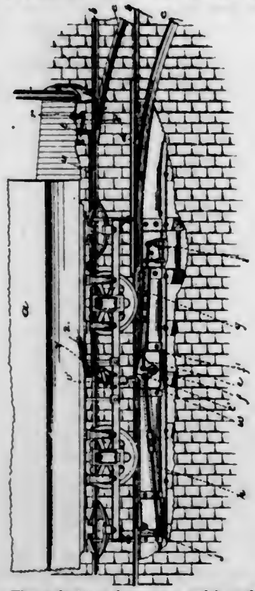
542,654. SCHOOL DESK AND SEAT. SEYMOUR W. PEREGRINE, Grand Rapids, Mich. Filed Nov. 13, 1894. Serial No. 528,660. (No model.)



Claim.—1. In a school seat the combination of the two standards, the castings having the seat back applied to their upper portions, curved backward below the seat back and then forward; forming outward projections, seat brackets having the seat applied thereto and pivoted to the outward projections on the castings, whereby the seat is adapted to fold partially beneath the seat back, connections between the castings and the standards located beneath the seat and comprising a bolt sustained by one part extending in a slot in the other, and guiding connections above the seat comprising a lug on one part entering a slot in the other.

2. The combination with the standards provided near their upper ends with substantially vertical slots, of the desk proper formed in its sides with substantially horizontal slots and seated between the standards, and the clamping rod extending through the slots in said parts, whereby the desk may be tipped and adjusted both horizontally and vertically, the through bolt serving as a pivot for the same and as a means for holding the desk proper firmly in position.

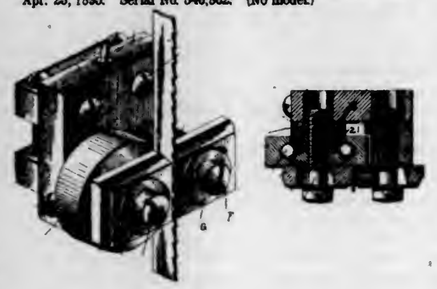
542,655. AUTOMATIC ATTACHMENT FOR SWITCHING CARS. JOSEPH PHELPS, Newark, N. J. Filed Nov. 23, 1894. Serial No. 529,692. (No model.)



Claim.—1. The switching device comprising the switch tongue *d*, the bell crank *i* pivoted adjacent thereto upon a fixed vertical stud *m* and having one arm connected to the switch tongue by the link *o*, the vertical sector *e* pivoted upon the fixed pin *f* and provided with the peripheral tooth *e'* backwardly inclined relative to the switch-tongue, the angular trip lever *j* pivoted upon a fixed horizontal pin and formed with the lateral bearing plate *q* and with a depending arm, links *g* and *h* connecting, respectively, the vertical arms of the bell crank *i* and the trip lever *j* with the adjacent sides of the sector *e* and formed each of two separate rods having their adjacent ends secured together by the adjustable clamps *k*, the whole arranged and operated as herein set forth.

2. The combination, with a railway car, of a switch operating device comprising the foot piece *r* upon the car platform having the depending stem *r'* projected through the said platform, the bell crank *s* mounted in a suitable bracket upon the car bottom with a laterally projecting arm having the concave bearing plate *s'* to receive the end of the stem *r'* and a depending arm, the bell crank *v* sustained in a suitable bracket upon the car bottom in the rear of the bell crank *s* and having an upwardly projecting arm connected with the depending arm of the bell crank *s* by the adjustable rod *u* and formed with a laterally projecting arm, the spring 2 secured at one end to the upright arm of the bell crank *v* and at the other end to the car bottom, and the vertical sliding bar *w* mounted in a suitable bearing upon the car frame and provided at its upper end with the eye *w'* to receive and engage the lateral arm of the crank *v*, the whole arranged and operated as and for the purpose set forth.

542,656. SAW-GUIDE. AUBREY M. PINEO, Gardner, Mass. Filed Apr. 23, 1895. Serial No. 546,862. (No model.)

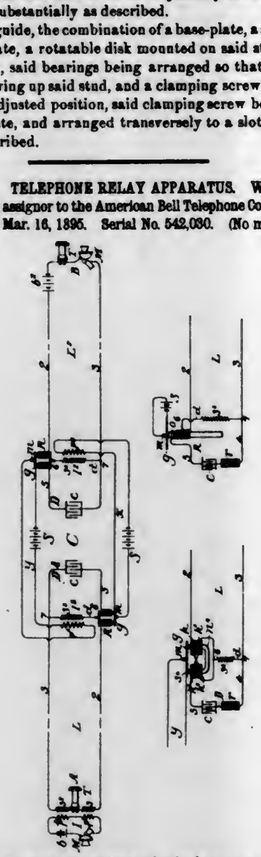


Claim.—1. In a saw guide, the combination of a guide for the rear edge of the saw, a pair of side-guides, said side-guides having bearing surfaces of different widths, and means for adjustably clamping said side-guides in position to present the desired bearing surfaces to the saw, substantially as described.

2. In a saw-guide, the combination of a base-plate, studs projecting from said base-plate, a disk journaled on one of said studs to form a guide for the rear edge of the saw, a pair of rectangular side-guides having their edges beveled to form bearing surfaces of different widths, and screws tapped into said studs for adjustably securing said side-guides in place, substantially as described.

3. In a saw-guide, the combination of a base-plate, a stud threaded into said base-plate, a rotatable disk mounted on said stud, ball-bearings for said disk, said bearings being arranged so that they may be adjusted by screwing up said stud, and a clamping screw for clamping said stud in its adjusted position, said clamping screw being threaded into the base-plate, and arranged transversely to a slot therein, substantially as described.

542,657. TELEPHONE RELAY APPARATUS. WILTON L. RICHARDS, Malden, assignor to the American Bell Telephone Company, Boston, Mass. Filed Mar. 16, 1895. Serial No. 542,030. (No model.)



Claim.—1. An automatic reciprocal telephone repeater or relay system, comprising two main line circuits; each being associated with the following instrumentalities; a transmitter induction coil having its secondary winding connected therein; a branch circuit including a condenser shunting the said secondary winding; a relay magnet having a portion of its winding included in the main, and the remaining portion thereof in the said branch circuit; and a repeating or local transmitter circuit containing a source of current, a variable resistance medium, and the primary winding of the said induction coil, the variable resistance connected with the induction coil of each main circuit, being placed in juxtaposition or operative relation to the relay magnet of the other main circuit, to be controlled by the varying attractive power thereof; substantially as described.

2. An automatic reciprocal telephone relay or repeater, consisting of two main line circuits extending to outlying stations; and an artificial line or balancing circuit including a condenser, for each; a transmitting induction coil for each, having its secondary winding connected in parallel with the said main and balancing lines, so that it forms a section of conductor common, and supplying current to both; a relay magnet for each, having a split or differential winding, the two sections thereof being included in the main and balancing circuits respectively; and two relay or local transmitting circuits, each containing a source of current, a variable resistance medium, and the primary winding of one of the said induction coils, the variable resistance of each relay circuit being associated with and controlled by the relay magnet of one of the said main circuits, while its primary winding is associated with the secondary of the induction coil of the other main circuit; substantially as described.

3. In a telephonic repeater apparatus, the combination of a relay system at a central station, in which the receiving magnets of both main circuits, are arranged in juxtaposition to the variable resistance transmitting medium of the other, and adapted to actuate the same: with an artificial balancing circuit associated with each main circuit, and connected with the receiving magnet thereof, in such manner that the relayed currents are balanced in its coils, and prevented thereby from exercising reactive effects.

4. The combination of two telephone main circuits converging from distant stations to a common terminal station; a relay magnet, and a transmitting induction coil connected with each, the relay magnet of each being adapted to operate a variable resistance medium in circuit with a battery, and the primary winding of the induction coil of the other, thereby transferring messages from one to the other; and an artificial balancing circuit of suitable resistance and capacity for each main circuit, in which a section of the relay of such main circuit is connected, whereby the said relay is prevented from responding to the currents impressed by its operation upon the second circuit.

5. In a telephone repeater system and apparatus, the combination of two main telephone circuits entering a central station, and extending therefrom to different outlying and distant stations, both closed at said central station through the secondary winding of their respective induction coils; and telephones at the said distant stations included in the said main circuits; with an artificial balancing circuit for each main circuit connected in parallel therewith, in respect to the said induction coil windings, and containing suitable resistance, and a condenser; a split coil of differential relay magnet for each telephone circuit, having the two sections of said coil included in its associated main and artificial circuits respectively, whereby the effect on said relay magnet of relayed currents is balanced and nullified, while the said magnet is left fully responsive to the distant transmitter of its own circuit; and two local battery circuits, each including a variable resistance medium operated by the relay magnet of one of the main circuits, and a primary winding acting upon the secondary winding of the induction coil of the other main circuit substantially as specified.

6. The combination in an automatic and reciprocal telephone relay apparatus, of two main telephone line circuits; and two independent artificial lines or balancing circuits associated with the said main circuits respectively; with repeating or relay electro-magnets, one for each set of circuits, each magnet having one half of its winding in the main line circuit, and one half in the associated artificial line or balancing circuit; substantially as described.

542,658. TELEPHONE REPEATING-CIRCUIT AND APPLIANCES. WILTON L. RICHARDS, Malden, assignor to the American Bell Telephone Company, Boston, Mass. Filed Mar. 16, 1895. Serial No. 542,031. (No model.)

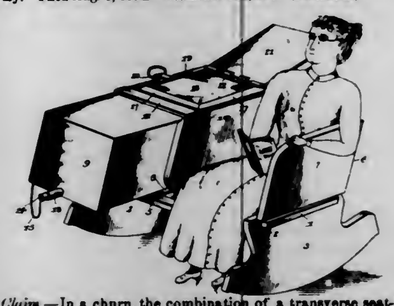


Claim.—1. In a telephone relay or repeater apparatus the combination of two main telephone circuits, each having two alternative terminal branches extending respectively through a relay magnet and the secondary winding of an induction coil; an electro-magnetic switch for each circuit controlling the relation of the said circuit to its said two branches; and current changing devices for each circuit, controlling the polarized switch of the said circuit substantially as described.

2. The combination in a telephone repeater, of two main telephone circuits, extending from the two outlying stations to a central station; two branch extensions for each, one containing a transmitting apparatus and the other a receiving apparatus, the transmitting apparatus of each being in operative relation to the receiving apparatus of the other; and a polarized switch in each main circuit responsive to a current reversing device at the outlying station of the said circuit, and acting to transfer the said circuit from either one of its branch extensions to the other.

3. The combination at a central station, of two main telephone circuits entering the said station from distant terminal stations; an extension branch for each containing the secondary winding of a transmitting induction coil; a second extension branch for each containing a relay or receiving magnet; a transmitting apparatus in circuit with the primary winding of the said induction coils, each placed in operative proximity to the relay magnet of the other; a current reversing device such as a reversing key for each circuit, placed at the outlying terminal station thereof; a polarized relay switch in each main circuit controlling the connection of the said circuit with its relay and induction coil windings respectively; and an electrostatic shunt round the electro-magnet of each of the said polarized switches, to facilitate the passage of voice currents substantially as specified.

542,659. ROCKING CHURN. JOSEPH F. RICHARDSON, Birk's City, Ky. Filed Aug. 8, 1894. Serial No. 519,754. (No model.)



Claim.—In a churn, the combination of a transverse seat-board provided at its extremities with rockers and constructed at one end to form a seat, parallel boards rising from the base-board at an interval to form a seat for a churn body, a churn body arranged in the interval between said vertical boards and elongated parallel with the planes of the rockers, said churn body being provided at its upper side with an opening, a channeled guide extending around three sides of said opening and open at its outer side, a transparent slide fitted at its edges in said guide, an opaque cover hinged to the rear side of the guide with the axis of its hinges above the plane of the guide, whereby said cover is adapted to fold parallel with the top of the churn body, and cleats connecting the upper edges of the vertical boards, respectively, in front and in rear of and in contact with the front and rear sides of the channeled guide and extending over the contiguous portions of the churn body, whereby said body is held from longitudinal movement and displacement, substantially as specified.

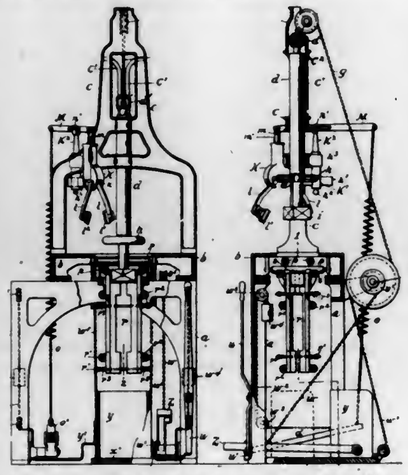
542,660. APPARATUS FOR MANUFACTURE OF CARDBOARD BOXES. EMIL SALTZKORN and LUDWIG NICOLAI, Dresden, Germany. Filed Feb. 27, 1893. Serial No. 463,852. (No model.) Patented in England Feb. 7, 1893, No 2,741; in Germany Feb. 8, 1893, No. 70,479; in Belgium Feb. 14, 1893, No. 103,434; in France Feb. 14, 1893, No. 227,893, and in Austria-Hungary July 24, 1893, No. 8,785 and No. 24,570.

Claim.—1. The combination of the former, a shaft carrying the same, pressing rolls between which such former is adapted to be passed, a guiding box comprising a series of angular strips, yielding connections between such strips, and stripping fingers provided at or at about the upper end of said guide box, substantially as specified.

2. The combination of the former, an axially movable and rotatable shaft carrying the same, a laterally projecting guiding pin carried by such shaft, guideways carried by the frame and to which such pin is adapted, pressing rolls between which such former is adapted to pass and a guiding box located below said pressing rollers, substantially as specified.

3. The combination of the former, a shaft carrying the same, a guiding box having outwardly movable walls into which such former is adapted to be forced and laterally yielding stripping fingers carried by the movable walls at the upper end of such guide box, substantially as specified.

4. The combination of the former, a rotatable shaft carrying the same, devices for raising and lowering such shaft, a hand wheel secured to the shaft and bearings provided in the frame and in which said shaft is movable, substantially as specified.



5. The combination of the former, *i*, a rotatable shaft, *d*, carrying the same, means for effecting the raising and lowering of such shaft, hand wheels secured to said shaft, a supporting frame, bearings provided in the frame for the reception of said shaft, a guiding pin secured to the shaft and guideways provided on the frame and adapted to act upon the said guiding pin, substantially as specified.

6. The combination with the box forming mechanism, of the guide, *r*, a delivery box, *y*, located beneath such guide and adapted to be moved toward the rear of the machine each time a completed box is forced from the guide, *r*, into said delivery box substantially as specified.

7. The combination of the former a carrying shaft therefor, a chain, *g*, having one end secured to such former carrying shaft and at its opposite end secured to a drum, *v*, a shaft carrying said drum, drums, v^3, on such shaft, a delivery box or slide, *y*, chains, *w'*, extending from said delivery box to the drums, v^3, an operating drum, *v'*, secured to such shaft, a treadle, Z, and a chain, *w*, extending from said treadle to the operating drum, substantially as specified.

8. The combination of the former a carrying shaft therefor, a chain, *g*, having one end secured to such former carrying shaft and at its opposite end secured to a drum, *v*, a shaft carrying said drum, drums, v^3, on said shaft, a delivery box or slide, *y*, chains, *w'*, extending from said delivery box to the drums, v^3, counterbalance weights, w^4, chains connecting such counterbalance weights to the delivery box, an operating drum, *v'*, secured to the shaft, a treadle, Z, and a chain, *w*, extending from said treadle to the operating drum, substantially as specified.

9. In combination with the former and its operating devices, a guide box comprising a series of corner sections, *r*, lugs, r^3, formed on such sections, holding bolts, *r'*, extending through such lugs and compression springs adapted to said bolts, substantially as specified.

10. A cutting device comprising a supporting frame, levers pivoted thereto and carrying at their free ends cutting mechanism, a spindle as *m*, guided by said frame, links as *k*, connecting said levers to the spindle, and a treadle operatively connected to said spindle, substantially as specified.

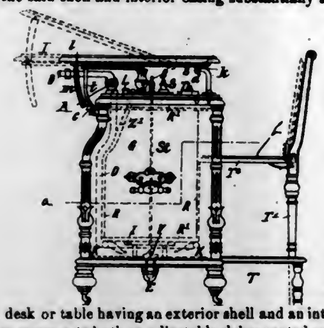
11. The combination of the frame, *k*, levers, *l*, pivoted thereto, a cutting blade, *l'*, carried by one of said levers, a cutting block, l^2, carried by its fellow, a spindle as *m*, links, *k*, connecting the levers to said spindle, a pivoted lever, M, connected at one end to said spindle and at its opposite end being operatively connected to a treadle, substantially as specified.

12. The combination of the frame, *k*, levers, *l*, pivoted thereto, a cutting knife, *l'*, carried by one of said levers, a cutting block, l^2, carried by its fellow, a spindle, *m*, links connecting said spindle to the levers, an operated lever as M, pivoted to said spindle and a spring extending from the fixed frame to the lever, M, and normally tending to separate the levers, *l*, substantially as specified.

542,661. FURNITURE. ROBERT H. THIELEMANN, Lichtenstein, Germany. Filed July 17, 1894. Serial No. 517,824. (No model.)

Claim.—1. A desk or table, having an outer shell or substructure, an inner chamber within said exterior shell to receive the occupant's legs and feet, a covering plate common to both shell and interior casing an adjustable slab mounted on and above said cover

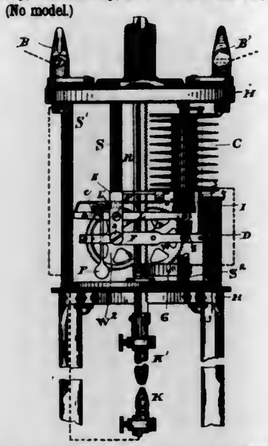
means to adjust the same and means for heating the space inclosed between the said shell and interior casing substantially as described.



2. A desk or table having an exterior shell and an interior chamber, a cover common to both an adjustable slab mounted on said cover, a steam distributer between the shell bottom and inner casing bottom, steam supply pipe to said distributer, means for regulating the steam supply and a condensed water cock arranged in the bottom of the exterior shell substantially as described.

3. A desk or table, having an outer shell or substructure, an inner chamber within said exterior shell, a covering plate common to both shell and interior casing means for heating the space between said shell and interior casing, an adjustable slab, sliding rails hinged to said slab, fixed guide rolls to said rails and means for arresting said rails in their forward or normal position, sector bars hinged to said slab, and guided in slots in the rail ends and means for clamping said sectors in any position substantially as described.

542,662. ELECTRIC-ARC LAMP. ELIHU THOMSON, Swampscott, and CHARLES E. HARTMAN, Lynn, Mass., assignors to the General Electric Company, Schenectady, N. Y. Filed June 25, 1894. Serial No. 515,695. (No model.)



Claim.—1. In an electric arc lamp, an arc-striking mechanism, a feeding mechanism, and electro-magnetic means for actuating the two devices, arranged to operate the arc-striking mechanism by its major movements, and to operate by its minor downward movements the feeding mechanism without moving the arc-striking device.

2. In an electric arc lamp, an arc-striking mechanism, a feeding mechanism, a lost motion connection between the two, and suitable electro-magnetic means for actuating the two devices, such means responding to varying electro-motive forces by movements of greater or less extent; the greater movements actuating the arc-striking mechanism and the lesser downward movements actuating only the feeding mechanism.

3. In an electric arc lamp, a series coil, a core therefor, an arc-striking mechanism operated by the coil and core, and a feeding mechanism having an elastic connection with the arc-striking device, and thus adapted to respond to movements of the core not sufficient to operate the arc-striking device.

4. In an electric arc lamp, an arc-striking mechanism, a feeding mechanism, a solenoid and a core operated thereby and actuating the feeding and arc-striking devices, and means for causing the major upward movements of the core to strike the arc, and its minor downward movements to feed the carbon, while its minor upward movements have no effect.

5. In an electric lamp a feed carrying train or support attached elastically to the core or armature of the electro-magnet, said feed controlling frame being pivoted at a point which permits the raising or lowering of the carbon rod or holder by the movements of said frame, a direct connection from said controlling core to a movable escapement whereby the escapement with relation to the feed wheel is adjusted automatically from the position of entire engagement and cessation of feeding to the position of entire clearance and free feeding, on movements of said core or armature to its extreme positions, and whereby in the intermediate positions and slight movements of said core such movements may determine the feeding of the teeth of the gear individually by the escapement.

6. In an electric arc lamp, a series coil, a core therefor, a lever connected to the core, a frame carrying gearing having an escapement, a second lever actuated by the first and controlling the escapement, and a spring, as Z, permitting a slight lost motion between the frame and the first lever, substantially as described.

7. In an electric arc lamp, a series coil, a core therefor, a lever connected to the core, a frame carrying gearing having an escapement, a second lever actuated by the first and controlling the escapement, a spring, as Z, permitting a slight lost motion between the frame and the first lever, and a dash-pot connected to the frame, substantially as described.

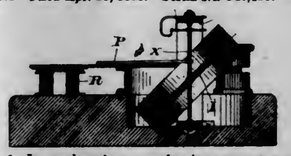
8. In an electric arc lamp a dash-pot composed of the following elements; a cylindrical case closed at both ends, a piston reciprocating therein, and a lateral attachment to the piston engaging with a frame carrying the feed mechanism.

9. In an electric arc lamp, a dash-pot comprising a cylinder, as D, a second cylinder within the first and acting as a piston, as P^3, the two cylinders provided with registering slots *n* and a pin *q'* extending through the piston and arranged to form an attachment for the feeding mechanism of the lamp.

10. In an electric arc lamp, a core for the series coil composed of a body of subdivided magnetic material having an insulating washer upon each end, and wrapped in insulating material, an insulating ring over each washer and a sheathing of iron having its ends crimped over the insulating rings and itself slotted to prevent the circulation of eddy currents.

11. In an electric arc lamp, a core for the series coil composed of a body of subdivided magnetic material having an insulating washer upon each end and wrapped in insulating material, an insulating ring over each washer, and a sheathing of sheet-iron having its ends crimped over the insulating rings and itself slotted to prevent the circulation of eddy currents, and an eye-plate, as P', secured in one end of the core between the insulating washer and the insulating ring.

542,663. ELECTRIC MEASURING-INSTRUMENT. ELIHU THOMSON, Swampscott, Mass., assignor to the General Electric Company, of New York. Filed Apr. 25, 1895. Serial No. 547,125. (No model.)



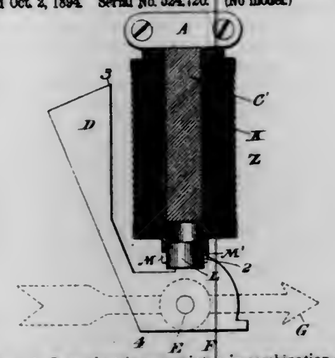
Claim.—1. In an electric measuring instrument, a coil or conductor traversed by the current to be measured, placed in an inclined or angular position with respect to the shaft carrying the indicator, and a bar or plate of magnetizable material carried on said shaft also at an angle with said axis, with means for bringing the indicator to zero when no current passes.

2. In an electric measuring instrument, an angularly mounted coil through the open interior of which passes a shaft forming an angle with the coil or conductor, a magnetizable body or plate mounted on the shaft at an angle thereto, an indicator and scale for reading the movements of the axis and magnetizable body within the coil, and means for controlling the return of the instrument to zero and opposing the movements of the magnetizable body under the action of the currents in the coil.

3. In an electric measuring instrument, a coil or conductor traversed by the current to be measured, in the open space of which is mounted a rotatable shaft at an angle with the plane of the coil or conductor, an indicator carried on said shaft, and a plate of magnetizable material, such as iron, mounted on the shaft with its plane at an angle thereto, the parts arranged and adjusted so that when the index of the instrument is at zero the plane of the magnetizable body is more nearly coincident with the plane of the coil than when the indicator has moved away from the zero position of the scale in registering current, while the plane of the magnetiable body is more nearly at right angles with the plane of the coil at the higher readings of the scale.

4. In an electrical instrument, a frame supporting a shaft, a coil or conductor surrounding said shaft with its plane at an angle thereto, a magnetizable body, such as a plate of iron, fixed to said shaft within the coil or conductor and at an angle with the shaft, an indicator and scale for indicating the rotatory movements of the shaft, and a spring or gravity control for opposing the movements and restoring the indicator to zero when no current traverses the coil or conductor.

542,664. ELECTRIC ANNUNCIATOR. HENRY C. THOMSON, Boston, Mass., assignor to the Electric Gas Lighting Company, Portland, Me. Filed Oct. 2, 1894. Serial No. 524,720. (No model.)

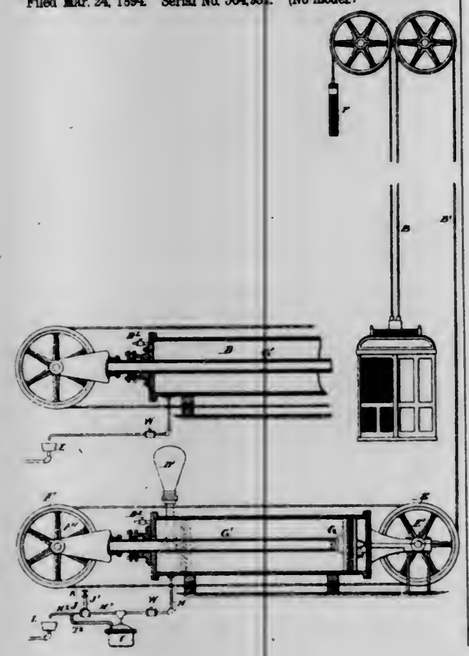


Claim.—1. In an electric annunciator, in combination with an index-finger and a weighted lever, each mounted upon a spindle supported within a sleeve, an electro-magnet having the fixed core C, the cylinder K having the notches M, M', and the drop L, substantially as described and shown.

2. In combination with an electro-magnet having a fixed core extending nearly to the lower end of its spool, a cylinder having opposite slots, inserted in the lower end of the spool, and a drop of about half the length of the cylinder, as a trigging device in an electric annunciator, substantially as described and shown.

3. In an electric annunciator, the combination of the index-finger G, mounted upon the spindle E, within the sleeve F, the weighted lever D mounted also upon the end of said spindle, the magnet Z properly fixed to said face plate, the fixed core C, the slotted cylinder K and the drop L, substantially as described and shown.

542,665. ELEVATOR. CHARLES R. WHITTIER, New York, N. Y. Filed Mar. 24, 1894. Serial No. 504,931. (No model.)



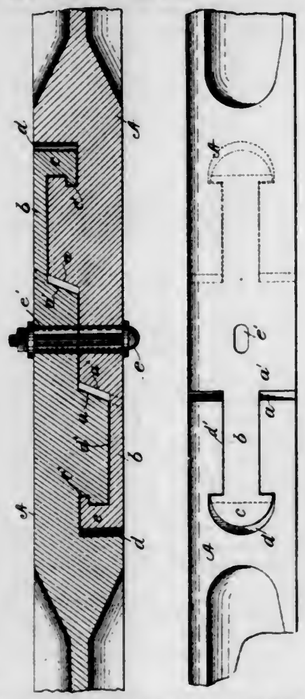
Claim.—1. In an elevator the cylinder A, having its end closed, the air-space being isolated between that end and the piston G, in combination with such piston, and with a hoist-rope B, B', and provisions for operating such piston, and with the pulleys C and E, and the counterbalance weight P and the rope M, M', and pulley therefor, arranged as shown, so that the plenum of air during the period while the car is near the top will tend to counterbalance the friction of the machine, and that there shall be a neutral period when the piston has performed a fraction of its traverse, and that the partial vacuum during the period while the car is performing the lower portion of its traverse will tend to balance the weight of the ropes. all substantially as herein specified.

2. In an elevator the cylinder A having its ends closed so as to isolate the air between one end and the piston G, in combination with such piston and with provisions for operating the hoist rope B, B' thereby, and with such rope and the pulleys C and E, and a suitable counterbalance weight and a rope and pulley therefor and with a loaded check valve J and means as a spiral spring and adjusting screw and hand wheel K for varying the load on the said valve, arranged to allow fluid to be driven out and forbid its entrance, and thus to automatically make and maintain a correct adjustment of the quantity of air inclosed, as herein specified.

3. In an elevator, a cylinder having its end closed, in combination with a check-valve adapted to allow fluid to be driven out and forbid its entrance, and a suitable hoist rope and a counterbalance weight and a rope and pulley therefor, and with a trap I arranged substantially as shown so as to allow water to be expelled while the air is retained and the quantity automatically adjusted, substantially as herein specified.

4. In an elevator, a cylinder having its ends closed, in combination with a check-valve J', and a load as a spring, arranged to allow the air to be driven out when the pressure attains a certain point, and forbid its entrance, and with a trap I arranged substantially as shown, so as to allow water to be expelled while the air is retained, and a suitable hoist rope and a counterbalance weight and a rope and pulley therefor, substantially as herein specified.

542,666. RAIL-JOINT. ORSON F. WICKHAM, Pentwater, Mich., assignor of one-half to William B. O. Sands, same place. Filed May 7, 1895. Serial No. 548,393. (No model.)



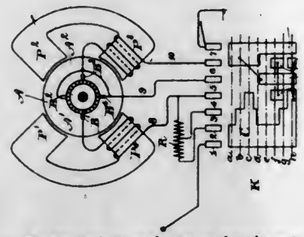
Claim.—1. In a railroad rail joint the combination with overlapping rails each formed with an undercut recess in respectively opposite sides thereof, of hooked extensions on the other sides of said rails adapted to engage said undercut recesses to prevent disconnection of the rails by lateral displacement thereof, substantially as described.

2. In a railroad rail-joint the combination with overlapping rails each formed with an undercut recess, and a groove intersecting said recess, of a tongue extending beyond the extremity of each rail on the other side thereof, a flanged block at the end of said tongue formed therewith a hooked extension on each rail, said extension on one rail lying in the groove and recess on the other when the parts are interlocked, the flange on the block engaging the undercut of the recess to prevent disconnection by lateral displacement of the rails, substantially as described.

3. In a railroad rail-joint the combination with overlapping rails each formed with an undercut recess, the wall overhanging said undercut being inclined, and a groove intersecting said recess, of a hooked extension on each rail engaging in the groove and recess of the other, the point of the hooked extension bearing against the inclined wall of the undercut to force the parts into more intimate contact and at the same time preventing disconnection by lateral displacement of the rails, substantially as described.

4. In a railroad rail-joint the combination with overlapping rails each formed with an undercut recess in respectively opposite sides thereof, of hooked extensions on the other sides of said rails engaging said undercut recesses, and a bolt passing through openings in the overlapping portions of the rails, substantially as described.

542,667. REGULATION OF CONTINUOUS-CURRENT MOTORS. MERLE J. WIGHTMAN, Scranton, Pa., assignor to the General Electric Company, of New York. Filed Apr. 2, 1895. Serial No. 544,133. (No model.)



Claim.—1. The method of regulating an electric motor herein set out, which consists in starting the motor as a two-pole motor, then changing it to a four-pole machine by shunting a portion of the motor, and then throwing the parts of the armature winding into multiple and running the motor as a four pole motor.

2. The method of running an electric motor herein set out, which consists in starting the motor with the two halves of its armature in series with a resistance in a two-pole field, then gradually cutting out the resistance, then including the resistance and shunting one-half the motor, then opening the circuit of the shunted half and throwing the two halves of the motor in multiple in a four-pole field, and finally, cutting out the resistance.

3. The method of operating an electric motor herein set out, which consists in changing the armature connections from series to multiple, then shunting part of the motor and at the same time changing the magnetic field of the motor from two-pole to four-pole.

4. The method of operating an electric motor herein set out, which consists in changing the armature connections from series to multiple, then shunting part of the motor and simultaneously or successively commuting the field poles.

5. The method of operating an electric motor herein set out, which consists in changing the armature connections from series to multiple, shunting part of the motor, simultaneously or successively commuting the field poles, and including a resistance in the circuit while making changes of connection.

6. The method of operating an electric motor herein set out which consists in changing the armature connections from series to multiple and changing the field from a two-pole to a four-pole field by shunting part of the motor, including a resistance while making the changes of connection, and gradually withdrawing the resistance until the motor is running without resistance in circuit.

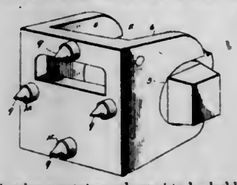
7. The method of operating an electric motor herein set out, which consists in starting the motor in a two-pole field with its armature winding in series, with a resistance in circuit, and then cutting out the resistance gradually, then reinserting the resistance and closing the circuit around one-half of the motor, then opening the circuit of the shunting half, then throwing the two halves of the motor in multiple, at the same time converting the motor into a four-pole machine, and then gradually cutting out the resistance.

8. In combination, an electric motor provided with a plurality of field poles, switching mechanism adapted to change the connections of the armature, to commute the field poles, and to shunt a part of the motor while making such changes.

9. In combination, an electric motor provided with a plurality of field poles, switching mechanism adapted to change the armature connections from series to multiple or vice-versa, to commute the field poles of the motor, to shunt a part of the motor while making the connections, and including a resistance in the circuit or cutting it out.

10. In combination, an electric motor provided with four field-magnet poles, switching mechanism adapted to change the armature connections from series to multiple, to shunt part of the motor while effecting such change, to commute the field-magnet from two-pole to four-pole or vice-versa, and to include a resistance in the circuit while making such changes and to cut it out gradually when the changes are completed.

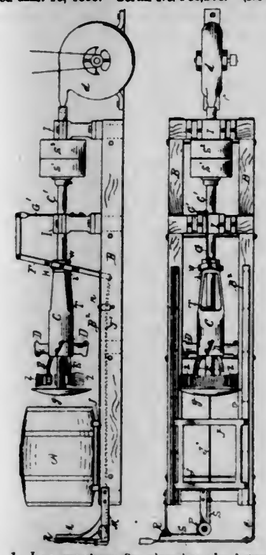
542,668. WIRE-TIGHTENER. EUGENE L. WILLIAMS and JOHN S. WILLIAMS, Jerseyville, Ill. Filed Oct. 10, 1894. Serial No. 525,518. (No model.)



Claim.—1. A wire stretcher adapted to be held against a fence-post by the tension of a fence-wire, and provided at its back with spurs adapted to engage a post, said spurs having tapering points and at the bases thereof enlargements forming stops, limiting the penetration of the points and forming an intervening space between the wire stretcher and the post, substantially as and for the purpose described.

2. The combination of a frame, provided with integral spurs having tapering points, and at the bases of the points enlargements forming stops to limit their penetration and to offset the frame from a post; a shaft journaled in the frame, and a pawl and ratchet for holding the shaft against retrograde rotation, substantially as described.

542,669. BARREL-WASHER. JOSEPH WINTERBOTHAM, Joliet, Ill. Filed Mar. 18, 1895. Serial No. 542,278. (No model.)

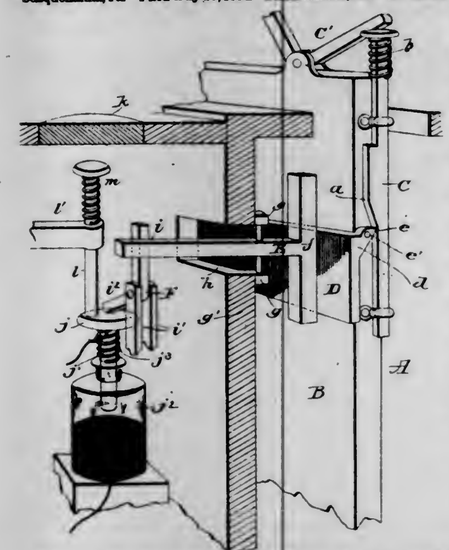


Claim.—1. In a machine for cleaning the interior of barrels, the combination of a hollow shaft mounted in bearings, arms secured to the shaft end, provided with brushes at their outer ends, a concave disk secured to the end of the shaft, a fan blower commmunicating with the other end of the shaft, a sleeve mounted on the shaft, and means for adjusting it, means for rotating the shaft, and means for rotating the fan blower, all substantially as described.

2. In a machine for cleaning the interior of barrels, the combination of a shaft mounted in bearings, arms secured to the shaft and provided with brushes at their outer ends a sleeve mounted on the shaft and means for adjusting it, blades or fans on said sleeve for removing refuse matter from the barrel being cleaned, means for

rotating the shaft, and means for supporting the barrel all substantially as described.

542,670. CABLE RAILWAY. WILLIAM M. WOOD and JAMES C. MILLER, Elmira, N. Y., assignors of one-third to Charles F. Wright, Susquehanna, Pa. Filed May 29, 1894. Serial No. 512,907. (No model.)



Claim.—1. In a cable railway, the combination with a conduit and a grip carried by a car, of contact devices located in the conduit, an arm mounted in the wall of the conduit adapted to be disposed between the contact devices and the grip, and a movable device carried by the grip for operating said arm to close an electric circuit through said contact devices, substantially as set forth.

2. In a cable railway, the combination with a conduit, and a grip carried by a car, of a circuit closer located in said conduit, a plate pivoted to the grip, a lever pivoted in the conduit, a bell-crank lever adapted to engage the circuit closer and to be engaged by said first-mentioned lever, and devices carried by said grip and adapted to be operated from the car for turning said pivoted plate and causing it to operate said levers to manipulate the circuit closer, substantially as set forth.

3. In a cable railway, the combination with a conduit, and a grip carried by a car, of a circuit closer, a bar connected to said grip and having an inclined shoulder, a bell-crank lever pivoted to the grip and adapted to be operated from the car for moving said bar, a plate pivotally connected to the grip and made with a shoulder to be engaged by the shoulder on said bar whereby to move said plate outwardly, a T-shaped lever pivoted between its ends in said conduit and adapted to be operated by the movement of said pivoted plate, a bell-crank lever pivotally supported between its ends adapted to engage said circuit closer and to be engaged by said T-shaped lever, said circuit closer being adapted to be connected in an electrical circuit with a stop mechanism at the power house, substantially as set forth.

4. In a cable railway, the combination with a conduit having hand-holes in its top, of a circuit closer located under each hand-hole and adapted to be connected in circuit with a stop mechanism at the power house, and a spring sustained rod over each circuit closer, whereby to permit the operation of said circuit closer through the hand hole, substantially as set forth.

542,671. THILL-COUPLING. ALFRED H. WORREST, Lancaster, Pa. Filed July 16, 1894. Serial No. 517,697. (No model.)



Claim.—1. The combination, with an axle, of horizontal jaws connected therewith and constructed to have a thill-iron inserted laterally between them, the upper jaw being curved both upward and forward, said jaws occupying a rigid position relative to each other, a thill-iron constructed to be engaged laterally between said jaws, and means for securing the thill iron between the jaws.

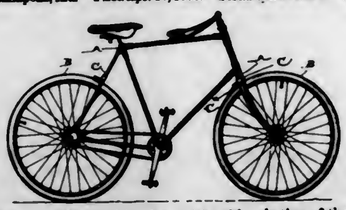
2. The combination, with an axle, of horizontal jaws connected therewith and constructed to have a thill-iron inserted laterally between them, said jaws occupying a rigid position relative to each other, a transverse rib formed on one of the jaws, a thill-iron constructed to be engaged laterally between said jaws and having a groove adapted to register with the transverse rib, and means for securing the thill-iron between the jaws.

3. The combination, with an axle, of horizontal jaws connected therewith and constructed to have a thill-iron inserted laterally between them, said jaws occupying a rigid position relative to each other, the top jaw curving both upward and forward, a transverse rib formed on the lower jaw, a thill-iron constructed to be engaged laterally between said jaws and having a groove adapted to register with the transverse rib, and means for securing the thill-iron between the jaws.

4. The combination, with an axle, of a clip, a plate disposed beneath the axle and engaging the ends of the clip, said plate having a forwardly projecting horizontal rigid jaw, a clip-plate located below the other plate and having a horizontal rigid jaw projecting beneath the other jaw, a thill-iron constructed to be engaged laterally between said jaws, and means for securing the thill-iron between the jaws.

5. The combination, with an axle, of a clip, a plate disposed beneath the axle and engaging the ends of the clip, said plate having a forwardly and upwardly projecting horizontal rigid jaw, a clip-plate located below the other plate and having a horizontal rigid jaw projecting beneath the other jaw, a transverse rib formed on the inner face of one of the jaws, a thill-iron constructed to be engaged laterally between said jaws and having a groove adapted to register with said transverse rib, and means for securing the thill-iron between the ribs.

542,672. TACK-CATCHER FOR BICYCLES. JOHN A. WRIGHT, Indianapolis, Ind. Filed Apr. 17, 1895. Serial No. 546,106. (No model.)

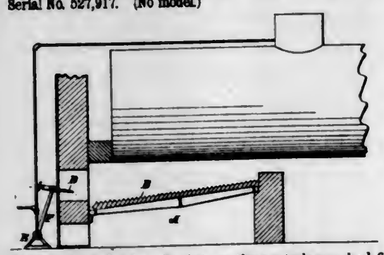


Claim.—1. The combination, with a bicycle tire of the class described, of a tack catcher consisting of a frame strip adapted to be secured to the forks of the bicycle frame above the tires, and a curved comb-like structure having pointed teeth extending out substantially parallel with the surface of the tire and adapted to catch and withdraw tacks which may have caught on the tire from said tire as the wheels revolve, all substantially as shown and described.

2. The combination, with a bicycle, of a tack catcher composed of a strip of metal adapted to be bent about the forks of the frame and there secured by bolts as shown, and a second toothed or comb-like piece of metal curved to correspond substantially with the contour of the tire and formed of hard metal not easily bent and secured to the strip attached to the frame forks, substantially as shown and described.

3. A tack catcher for bicycles consisting of a comb-like structure adapted to be attached to the frame of a bicycle above the surface of the tire and to catch and withdraw tacks from the tire as the wheel revolves, substantially as set forth.

542,673. FIRE-BOX CONSTRUCTION FOR BURNING HYDRO-CARBON OILS. JAMES S. ZERBE, Brooklyn, N. Y. Filed Nov. 5, 1894. Serial No. 527,917. (No model.)



Claim.—1. A fire box having on the grate bars a bed formed of fire brick nested together and inclined at an angle to the grate bars and provided with grooves to form air ducts between the ash pit and the combustion chamber, substantially as set forth.

2. A fire box having the rear ends of the grate bars elevated and provided with a single bed or tier of fire brick nested together at an angle to the grate bars, each brick having grooves to form air ducts between the ash pit and combustion chamber, substantially as set forth.

3. A fire box having the rear ends of the grate bars elevated, and provided with a single tier of fire brick over the entire surface, inclined at an angle to the grate bars, each fire brick having grooves on its front face, forming air ducts, substantially as set forth.

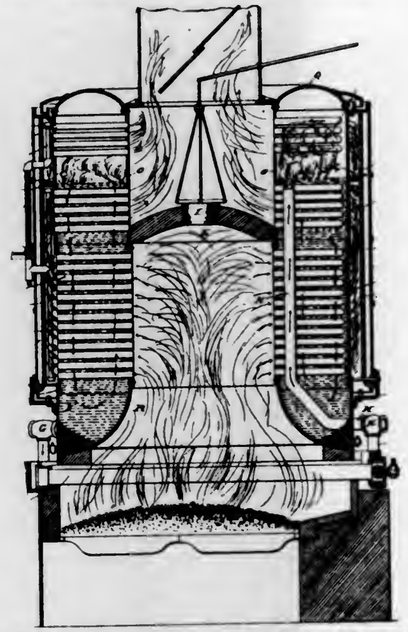
4. A fire box having the rear ends of the grate bars elevated, and the entire grate area covered by a serrated fire brick bed composed of a single tier or layer, each brick being disposed at an angle approximating forty-five degrees to the grate bars and inclined rearwardly, said bed having air ducts in its entire surface at regular intervals, substantially as set forth.

5. A fire box having on the grate bars a bed formed of fire brick nested together at an angle to the grate bars and provided with grooves to form air ducts between the ash pit and combustion chamber, in combination with an injector or pulverizer through the front wall of the fire box, substantially as set forth.

6. A fire box having the rear ends of the grate bars elevated and provided with a single bed or layer of fire brick nested together at an angle to the grate bars and having grooves to form air ducts between the ash pit and combustion chamber, in combination with an injector or pulverizer to inject a spray against the grooved face of said brick, substantially as set forth.

7. A fire box having the rear ends of the grate bars elevated and provided with a single layer or bed of fire brick over the entire surface, of the grate bars inclined rearwardly in regular order, each fire brick having grooves on its front face forming air ducts, in combination with an injector or pulverizer, substantially as set forth.

542,674. STEAM-BOILER. WILLIAM H. BERRY, Hoosick Falls, N. Y. Filed Apr. 16, 1894. Serial No. 507,701. (No model.)



Claim.—1. The combination, substantially as set forth, with a boiler having vertical cylindrical inner and outer shells, and horizontal fire tubes connecting them, of a fire chamber, a heating coil, between the fire chamber and the boiler, opening at one end into the lower end of the boiler through the outer shell, and a pipe leading from the other end of the coil and extending through the outer shell of the boiler across the water space and upwardly, near the inner shell, to a point near the water line, whereby the highly heated feed water is prevented from mixing with the boiler water until near the water line, and then allowed to mix with the slowly descending current, before coming in contact with the highly heated surfaces of the boiler, thus preventing scale by depositing the sediment in a part of the boiler protected from the fire.

2. The combination with a boiler having vertical cylindrical inner and outer shells, and horizontal fire tubes connecting them, of a heating coil opening at one end into the lower end of the boiler through the outer shell and exposed to the direct heat of the furnace, and a pipe leading from the other end of the coil and extending through the outer shell of the boiler, across the water space and upwardly, near the inner shell, to a point near the water line, substantially as and for the purpose specified.

3. The combination with a boiler having vertical, cylindrical, inner and outer shells, and horizontal fire tubes connecting them, of a heating coil opening at one end into the lower end of the boiler through the outer shell, a check valve in said coil near the point of connection, opening outwardly, a feed water supply pipe connected to the coil beyond the check valve, a pipe leading from the other end of the coil and extending through the outer shell, across the water space and upwardly, near the inner shell, to a point near the water line, a check valve opening inwardly in said pipe or coil near their connection, and a blow-off cock in the coil in front of the check valve, substantially as and for the purposes described.

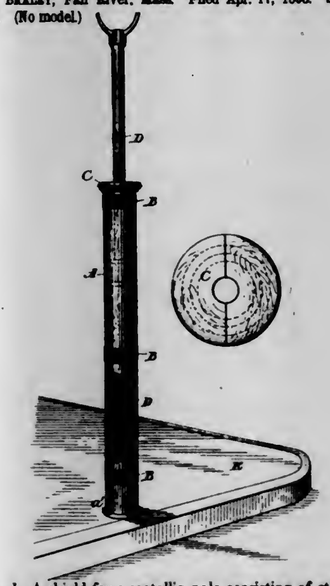
4. The combination with a boiler having vertical, cylindrical, inner and outer shells, and horizontal fire tubes connecting them, of a smoke jacket surrounding the outer casing, a draft check supported between the smoke jacket and the outer shell of the boiler near the water line, an arch or dome supported within the inner shell below said draft check whereby the products of combustion are deflected through the fire tubes, and a grate in said dome to permit their escape direct to the smoke stack, substantially as described.

5. The combination with a boiler having vertical, cylindrical, inner and outer shells, and a series of horizontal fire tubes connecting them through the water and steam spaces, a smoke jacket surrounding the outer shell, and a draft check supported between the smoke jacket and the outer shell of the boiler near the water line, said draft check having openings, substantially as and for the purpose specified.

6. The combination with a vertical cylindrical boiler having horizontal fire tubes, of a revoluble smoke jacket surrounding said boiler, a draft check supported between the boiler and the revoluble casing near the water line, two pipes supported by the revoluble casing one above and the other below the draft check, and each provided with nozzles adapted to register with the fire tubes, a pipe outside the casing to which the other two pipes are connected, and a three-way cock in said outer pipe which receives steam from the boiler, substantially as and for the purpose specified.

7. The combination with a vertical boiler and its furnace, of a continuous coil of tubing through which the feed water and the water in the boiler circulate, said coil supporting the furnace covering, substantially as and for the purpose specified.

542,675. INSULATING-SHIELD FOR METALLIC POLES. WILLIAM J. BRALEY, Fall River, Mass. Filed Apr. 17, 1895. Serial No. 546,070. (No model.)



Claim.—1. A shield for a metallic pole consisting of stave like sections of insulating material, assembled in the form of a tube adapted to surround said pole, and held together by a wrapping of wire, or the like, substantially as described.

2. A shield for a metallic pole, consisting of sections of longitudinal insulating material having their edges jointed together to form a tube, and bands of wire wrapped around said tube, substantially as described.

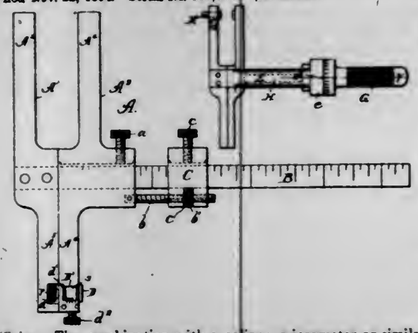
3. A shield for a metallic pole, consisting of sections of insulating material placed together to form a tube, and bands of wire wrapped around said tube at intervals, the turns of the wire being soldered together, substantially as described.

4. The combination with a metallic pole, of an insulating shield or jacket surrounding the lower portion thereof, with an air space between the pole and the jacket, substantially as described.

5. The combination with a metallic pole, of an insulating shield or jacket surrounding the lower portion thereof, and a cap made in halves and closing the upper end of the jacket, substantially as described.

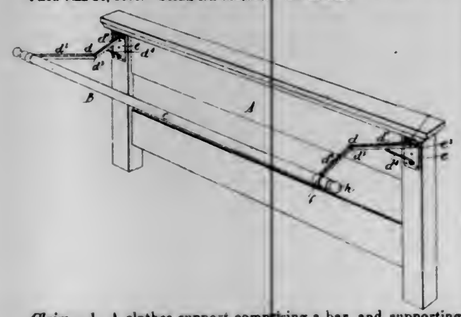
6. The combination with a metallic pole, of an insulating shield or jacket surrounding the lower portion thereof, composed of sections united by a feather joint, the whole wrapped with wire bands and provided with a two part cap rabbeted to fit into the top of the shield, substantially as described.

542,676. MICROMETER-CALIPER. JOHN BYSTROM, Chicago, Ill. Filed Nov. 22, 1894. Serial No. 529,574. (No model.)



Claim.—The combination with a caliper, micrometer or similar instrument adapted for both in and outside measuring of an adjustable block, set in one of said jaws, having on its face four marks or graduations, corresponding marks or graduations on the jaw wherein said block is set, said graduations on said block representing and, when set on either one, adapted to give, when a measurement is taken by the opposite jaws, the size required leaving allowance for shrinkage of the material operating upon, for a loose fit, the exact measurement taken by said opposite jaws, or for a tight fit, substantially as and for the purposes set forth.

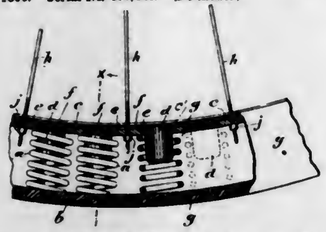
542,677. CLOTHES-HOLDER. GEORGE B. N. DOW, Manchester, assignor to Kirk D. Pierce and Charles M. Freeman, Hillsborough, N. H. Filed Jan. 21, 1895. Serial No. 535,688. (No model.)



Claim.—1. A clothes support comprising a bar, and supporting arms pivotally connected at one end with and longitudinally adjustable on said bar, and pivotally connected at its other end with an article of furniture, said arms being each formed in two parts connected together by a vertical pivot and adapted to fold together, substantially as and for the purpose set forth.

2. A clothes support comprising a bar and supporting arms connecting said bar to an article of furniture, each of said arms being formed in two parts hinged together, one of said parts being connected to the bar by a slidable hinge connection, and the other part having a brace and connected to a foot-board by a hinge connection provided with a stop for limiting the outward movement of said part, substantially as and for the purposes set forth.

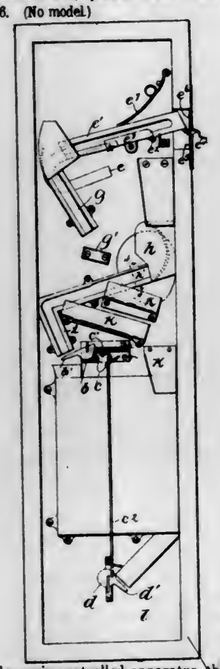
542,678. WHEEL. FRANCIS J. FREESE, Lowell, Mass. Filed Oct. 7, 1893. Serial No. 487,441. (No model.)



Claim.—1. A wheel tread formed of an outer continuous tire, an inner continuous metal bearing plate having circular sections of metal removed from the center thereof to form openings therein; guides in the form of sections of metal tubes formed of a less thickness of metal than said bearing plate, rigidly fitted or connected to the edges of the openings in said plates leaving the central spaces thereof open, and projecting radially outward within the tread; coiled springs arranged between said tire and plate and encircling said guide and a cover for the whole.

2. In a wheel tread, the combination of an outer continuous tire *b*, an inner continuous thin metal bearing plate *c* having screw threaded perforations *c'* therein; tubular metallic sections *d* screw threaded to take into said screw threaded perforations and adapted to project radially outward of the wheel axis into the space between said tire and bearing plate; coiled springs *a* encircling said tubular metallic sections and having their ends bearing upon both tire and bearing plate and a cover *g* for the whole as set forth.

542,679. COIN-CONTROLLED TELEPHONE. CHARLES R. HOPKINS and THOMAS H. ELSOM, Spokane, Wash. Filed Mar. 16, 1894. Serial No. 503,866. (No model.)



Claim.—1. In a coin controlled apparatus, the combination with the pivoted guide way *c'*, yieldingly held in an inclined position, of the magnet for arresting a magnetic slug in its travel, and the pivoted plate c^3 normally forming part of the bottom of said guide way, and adapted when the guide way occupies its alternate position to form a spout for the ejection of the slug, substantially as described.

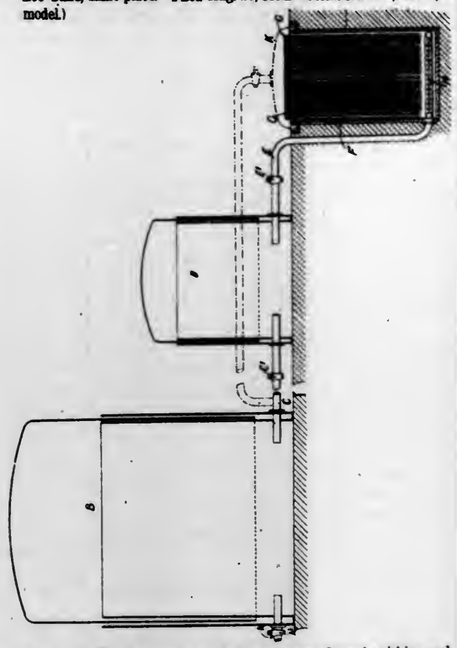
2. In a coin-controlled apparatus, the combination with the pivoted section *c'*, the entrance end thereof being elevated, of means for lowering said entrance and to permit the insertion of a coin, and a stationary plate extending through the bottom of said entrance end and of a height to prevent the entrance of a coin of greater than the predetermined diameter; whereby such coin upon depressing said entrance end will be ejected, substantially as described.

3. In a coin controlled telephone apparatus, the combination with the signal controlling passage way *a*, of the circuit closing blocks *b* and *c* actuated by triggers *b'* and *d'*, the guide way *c'* and magnet *e* for ejecting magnetic coins, the block *g'* for ejecting coins of inferior resiliency, the obliquely situated guide way provided with opening *A'*, and the guide way provided with the slot A^3, substantially as described.

4. In a coin-controlled apparatus, the combination with a passageway through which the coin is adapted to pass, of a circuit closer at the entrance to said passageway adapted to be actuated to close an electric circuit as the coin passes the same, and a circuit opener adapted to be actuated to open said circuit as the coin passes the same, substantially as described.

5. In a coin-controlled telephone apparatus the combination with a buzzer situated in proximity to the telephone transmitter and included in an electric circuit, of a passageway through which the coin is adapted to pass, a circuit closer at the entrance to said passageway adapted to be actuated to close said circuit as the coin passes the same, and a circuit opener adapted to be actuated to open said circuit as the coin passes the same; substantially as described.

542,680. PROCESS OF AND APPARATUS FOR TANNING. HENRY A. LEVERETT, London, England, assignor of one-fourth to Thomas Henry Lee Bake, same place. Filed Aug. 28, 1894. Serial No. 521,494. (No model.)



Claim.—1. The improvement in the process of tanning hides and skins, consisting in passing a gaseous compound consisting in part of hydrogen arsenide at intervals through the tanning liquor in the pit or vessel containing the hides and skins to be tanned, substantially as set forth.

2. The improvement in the process of tanning hides and skins, consisting in passing hydrogen containing hydrogen arsenide at automatically regulated intervals through the tanning liquor in the pit or vessel containing the hides and skins to be tanned, substantially as set forth.

3. In a tanning apparatus, the combination with a pit provided with a suitable cover, a support from which the hides or skins may be suspended and a perforated pipe at the bottom of said pit, of a main gas holder, an auxiliary gas holder of predetermined capacity, a pipe connecting the main and auxiliary gas holders, a pipe connecting the last named holder with the aforesaid perforated pipe, and means for controlling the flow of gas through said pipes, for the purposes set forth.

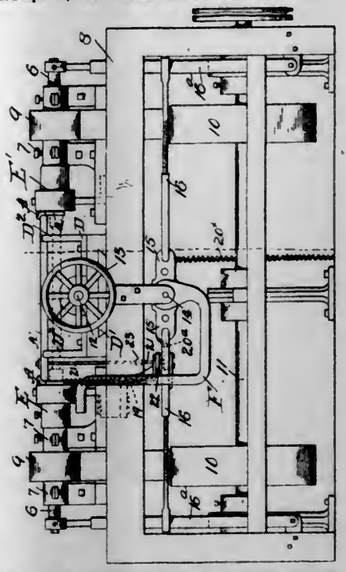
4. In a tanning apparatus, the combination with a pit, a support from which the hides or skins may be suspended, a perforated pipe at the bottom of the pit, a gas collector covering the mouth of said pit, and a main gas holder and a pipe connection between the same and the aforesaid gas collector, of an auxiliary gas holder of predetermined capacity, pipe connections between the main and auxiliary gas holders and between the latter and the aforesaid perforated pipe, and means for controlling the flow of gas through the pipe connections, for the purpose set forth.

5. In combination with a pit adapted to contain tanning liquor, of a device for distributing gas through the liquor in said pit, a gas holder, and suitable connections therewith, an intermediate pressure chamber between said gas holder and distributing device, and a gas collector over said pit with pipe connections to the gas holder, substantially as described.

6. In combination with a tanning pit adapted to contain tanning liquor, of a device for distributing gas through the liquor in said pit, together with a gas holder, suitable connections between the device and holder, an intermediate pressure chamber, and means for regulating the flow of gas from the gas holder to the pressure chamber and from the pressure chamber to the distributing device, substantially as described.

7. In combination with a pit adapted to contain tanning liquor, of perforated pipe at the bottom of the pit, and a removable gas collector adapted to close the mouth of said pit, a source of gas supply, pipe connections between the latter and the system of perforated pipe and said gas collector, and means for controlling the flow of gas to and from said source of supply, substantially as described.

542,681. MACHINE FOR TURNING AND BORING BRUSH-HEADS. ALLEN D. LINN and ALTON A. LYTLE, Grand Rapids, Mich., assignors to the Grand Rapids School Furniture Company, same place. Filed Apr. 17, 1895. Serial No. 546,088. (No model.)



Claim.—1. In combination with the operating tools and the interposed work holders, the guides extending over the faces of the tools, and arranged to center the blank, and means for removing the guides from in front of the faces of tools substantially as described.

2. In combination with the operating tools and the interposed work holders, the guides or calipers held normally over the faces of the tools and arranged to center the blank, means for advancing the tools to operate upon the blank, and means for automatically removing the guides at the beginning of the movement of the tools, substantially as described.

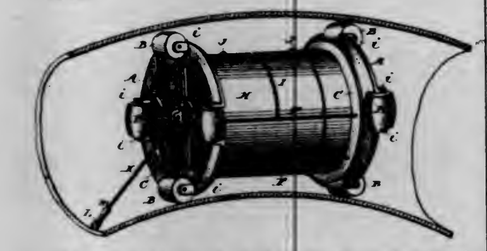
3. In combination with the longitudinally movable revolving tools, and the interposed work holder, the rocking shaft, guide arms or calipers extending from said shaft in front of the face of each tool and arranged to center the blank upon the holder, the means for reciprocating the cutters, and the connections therefrom to the rocking shaft for removing the guides from the face of the cutters, substantially as described.

4. A machine for trimming brush spindles comprising the longitudinally movable revolving shafts with means for driving them, the cutters carried thereby, the interposed work holders, the shaft having caliper arms extending normally in front of the faces of the cut-

ters, the rocking shaft having laterally extending arms, the rod and lever connections from said arms to the cutter shafts, the connections from one of said arms to the caliper shaft, means for rocking the shaft to lift the caliper arms and advance the cutters, and means for returning the parts to normal position, substantially as described.

5. In combination, the longitudinally movable revolving shaft carrying cutters, the interposed work holders, the shaft having caliper arms arranged to pass in front of the faces of the cutters, the spring for holding them away from said cutters, an arm extending rearwardly from the caliper shaft, a rod depending from said arm and suitably guided, a rocking shaft with connections to the cutters for advancing them, and an arm secured on said shaft and arranged to lift said rod to depress said caliper arms as the cutters are retracted by the reverse movement of the rocking shaft, substantially as described.

542,682. MAIL AND PARCEL PIPE-EXPRESS. ALEXANDER D. MOORE, Moore, Pa. Filed July 19, 1894. Serial No. 518,059. (No model.)



Claim.—1. In a mail and parcel express, the combination of a railless conduit consisting of two branches connected at one end by a continuous curve, a driving wheel at the opposite end, and an endless train of connected carriages free to turn axially within the conduit and passing over said wheel, substantially as described.

2. In a mail and parcel express, the combination of a railless conduit consisting of two branches connected at one end by a continuous curve, a driving wheel at the other end, the terminal portions of the conduit adjacent to the wheel being enlarged, lips extending from the bottoms of said enlarged portions to the wheel to form guides for the entrance to the conduit, and a series of connected carriages free to turn axially within the conduit and passing around the wheel, substantially as described.

3. In a mail and parcel express, the combination with the conduit, the driving wheel, and a series of connected carriages arranged within the conduit and over said wheel, of an endless belt compress extending in a curved line around part of the periphery of said wheel and bearing upon the carriages thereon, substantially as described.

4. In a mail and parcel express, the combination with the conduit, the driving wheel, and a series of connected carriages passing through the conduit and over said wheel, of an endless belt compress extending in a curved line round part of the periphery of said wheel, and bearing upon the carriages thereon, and adapted to be driven positively by engagement with said wheel, and means for tightening the compress to press the carriages against said wheel, substantially as described.

5. In a mail and parcel express, the combination with the conduit, the driving wheel having a peripheral groove and gear teeth at the sides, and a series of connected carriages passing through the conduit and over said wheel, of an endless belt compress extending partly around the wheel and in contact with the carriages thereon, cross-bars on the compress in position to engage said gear teeth, and means for tightening the compress to press the carriages against the wheel, substantially as described.

6. In a mail and parcel express, the combination with the conduit, the driving wheel, and a series of connected carriages passing through the conduit and over said wheel, of an endless belt compress extending partly around said wheel in contact with the carriages thereon, an auxiliary compress, and connections substantially as described whereby said endless belt compress and auxiliary compress are positively driven by said driving wheel, as set forth.

7. In a mail and parcel express, the combination with the conduit, the driving wheel having a peripheral groove and gear teeth at the sides, and a series of connected carriages passing through the conduit and over said wheel, of an endless belt compress extending partly around the wheel and in contact with the carriages thereon, a series of cross bars on the belt in position to engage said teeth, an auxiliary compress having a padded periphery and cog teeth at the sides adapted to engage the teeth on the driving wheel, and means for tightening said belt and for adjusting the auxiliary compress, substantially as described.

8. In a mail and parcel express, the combination with a conduit having a curve at one end and a driving wheel at the other, the periphery of the wheel having a semi-circular groove therein, the bottom of said groove being provided with depressions, and the side walls of the groove being formed into gear teeth, a compress around the periphery of the wheel opposite the ends of the conduit, cross bars on the compress fitting between the gear teeth, and a series of connected carriages in the conduit and around the wheel, the ends of which fit within the depressions in the bottom of said groove and are held therein by the compress, substantially as described.

9. In a mail and parcel express, the combination of a cylindrical railless conduit, a driving wheel, and a series of carriages free to turn axially within the conduit, and each having two heads of less diameter than the interior diameter of the conduit, rollers carried by said heads and projecting beyond the latter, and means for connecting the carriages into a train, substantially as described.

10. In a mail and parcel express, the combination with a cylindrical railless conduit, of a driving wheel at one end thereof, a series of carriages free to turn axially within the conduit, and each having two circular heads provided with axles, a cradle pivotally secured between the heads upon said axles, the ends of the cradle being of a less diameter than the diameter of the heads of the carriage, rollers journaled in the periphery of the carriage, a can within the cradle, and means for connecting the carriages into a train, substantially as described.

11. In a mail and parcel express, the combination with a cylindrical conduit, of a driving wheel at one end thereof, a series of carriages within the conduit and around the wheel, the heads of each carriage being circular and provided with peripheral rollers, a cradle within each carriage, the ends of which are of a less diameter than the diameter of the heads of the carriage, an axle through each of the ends of the carriage and the cradle, a ring upon the outer end of each axle, a can within the cradle, and a series of rods each having a snap-hook at its end for engaging with the ring of the axle to join the carriages together, one of the hooks being swiveled, substantially as described.

12. In a mail and parcel express, the combination with a cylindrical conduit, of a driving wheel at one end, a series of carriages within the conduit and around the wheel, the heads of each carriage being circular and provided with rollers, a cradle within each carriage, the ends of which are of a less diameter than the heads of the carriage and are joined together by means of rods, a can within the cradle, rings on the can for manipulating it, chains upon the rods of the cradle the ends of which are adapted to be secured together above the can to hold it in place, and rods for securing the carriages together substantially as described.

13. In a mail and parcel express, the combination with a railless conduit, of a driving wheel, at one end thereof, a series of carriages and dummies free to turn axially within the conduit, and swiveled rods for detachably connecting the carriages and dummies together, one of the dummies having a turn-buckle between its two end portions, and having a coupling rod with a spring in the line thereof, substantially as described.

14. The combination in a carriage of the character described of two heads having peripheral rollers, a cradle pivotally mounted to turn between the heads, and a receptacle within the cradle, substantially as described.

15. The combination in a carriage of the character described, of two circular heads having peripheral rollers, a cradle pivotally mounted to turn between the heads, a receptacle detachably supported within the cradle, and means for securing the receptacle in the cradle, substantially as described.

16. The combination in a carriage of the character described, of two heads having peripheral rollers, and a receptacle pivotally supported to turn between said heads, substantially as set forth.

542,683. BICYCLE-TIRE. JOHN NASH, Syracuse, N. Y., assignor of one-half to Austin R. Dickinson, same place. Filed Jan. 25, 1893. Serial No. 459,647. (No model.)



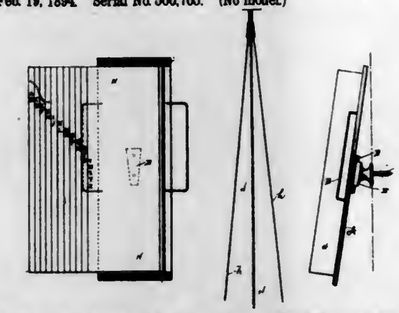
Claim.—1. The combination of the felly provided with outwardly turned flanges, the tire provided with circumferential ribs seated against said flanges, and laterally spreading plates clamping said ribs on the flanges of the felly as set forth.

2. The combination of the felly provided with outwardly turned flanges —*a*—*a*— concaved in the sides facing each other, rings —*b*—*b*— formed with flanges —*b'*—*b'*—, the tire provided with circumferential ribs —*c*—*c*— seated between the flanges —*a*— and —*b'*—, and the cam —*d*— forcing the said rings laterally from each other and clamping the aforesaid ribs between the flanges as set forth.

3. The combination of the felly formed with outwardly turned flanges —*a*—*a*—, rings —*b*—*b*— formed with flanges —*b'*—*b'*—, the tire provided with circumferential ribs —*c*—*c*—, seated between said flanges, and the cams —*d*— pivoted to the felly and having their stems protruding at the inner side of the felly for turning the cams as and for the purpose set forth.

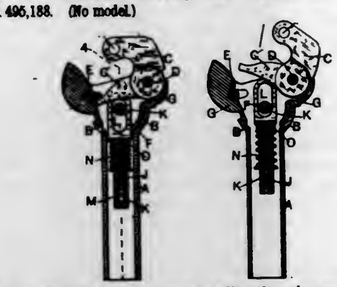
4. The combination of the felly formed with the flanges —*a*—*a*— and grooves —*c*—*c*—, the rings —*b*—*b*— provided with the flanges —*b'*—*b'*— entering said grooves, the tire provided with the ribs —*c*—*c*— seated between said flanges, and the cams —*d*— pivoted to the felly and forcing the rings laterally from each other and clamping the aforesaid ribs between the flanges, and the cross-bars —*i*— affixed to the stems at the inner side of the felly to lock said stems in their position, as set forth.

542,684. INDEX. FRANK L. PARKER, Worcester, Mass. Filed Feb. 19, 1894. Serial No. 500,705. (No model.)



Claim.—In a device of the character described, the combination of a base or support, a series of indexed sheets, a series of smaller supplemental sheets, and binding strips having one edge lapped over and cemented or secured both to the indexed sheet and to the supplemental sheet to fasten the supplemental sheet and indexed sheet together, and having other portions of said binding strip secured to the base or support, whereby the indexed sheets will be secured to the support at different points, and the supplemental sheets will turn therewith to form a complete index, substantially as described.

542,685. CAR-COUPLING. JOHN RAWLES, Randall, assignor of three-fourths to John L. Griffith and George H. McElvain, Bushnell, Ill., and Frank W. Rawles, Vicksburg, Miss. Filed Dec. 30, 1893. Serial No. 496,188. (No model.)



Claim.—The combination, with a hollow draw bar provided with two transverse openings, one in the head and the other in the shank, of a jaw pivotally secured to the head, the locking-arm of which extends in front of the hollow portion of the bar, a bolt within the bar, each end of which is provided with a slot and the intermediate portion is provided with a shoulder, a pin through each slot of the bolt and its respective openings in the bar, and a spring between the shoulder of the bolt and the rear pin, whereby the front end of the bolt is constantly held against the locking-arm of the pivotal jaw of the head and normally holds the jaw open, substantially as set forth.

542,686. SPROCKET-CHAIN. GEORGE T. RIBYN, Keokuk, Iowa. Filed Feb. 18, 1895. Serial No. 538,886. (No model.)

Claim.—1. The combination in a sprocket chain of suitable journal pins having annular enlargements on opposite sides of their central portions, rollers having smooth bored openings therein of the same diameter as said enlargements throughout their entire length, to admit said journal-pins, and links on the ends of the pins, substantially as set forth.



2. In an improved sprocket chain, the combination with suitable links and rollers mounted on said links, of journals extended through the links and rollers and having rounded annular enlargements on opposite sides of their central portions, for the purposes stated.

3. An improved sprocket chain comprising suitable links, journals for connecting them having rounded annular projections on opposite sides of their central portions, rollers mounted thereon having outwardly projecting flanges at their ends and rounded central portions and arranged in pairs, substantially as and for the purposes stated.

542,687. BOTTLE-STOPPER. MATHILDE SCHOTT, Brooklyn, N. Y. Filed Jan. 3, 1895. Serial No. 533,754. (No model.)



Claim.—1. As a new article of manufacture, a bottle stopper comprising a cap or body of sheet metal constructed with pendent legs and inwardly projecting feet, the sides of the legs being gradually bent or brought together in the direction of the feet, and the sides of the feet being bent closely together to adapt the feet to narrow vertical grooves in the neck of a bottle, substantially as described.

2. As a new article of manufacture, a bottle-stopper comprising a cap or body of sheet metal constructed with pendent legs and inwardly projecting feet, the sides of the legs being gradually bent or brought together in the direction of the feet, and the sides of the feet being brought closely together vertically and beveled on their upper edges, substantially as described.

3. The combination of the bottle having cam edges and formed with the narrow vertical grooves terminating upwardly in the enlarged rounded offset continuations, and the stopper comprising the cap formed or provided with pendent legs and inwardly projecting feet, the said feet being of a thickness to fit the grooves snugly but capable of vertical movement therein, and being of a height equal to the diameter of said offsets of the grooves, substantially as shown and for the purpose described.

4. The combination of the bottle having the inwardly beveled cam edges and formed with the narrow vertical grooves terminating upwardly in the enlarged rounded offset continuations, and the stopper comprising the cap or body of sheet metal provided with pendent legs and inwardly projecting feet, the said feet being of a thickness to fit the grooves snugly but capable of vertical movement therein, and being of a height equal to the diameter of the offsets of the grooves and notched or beveled on their upper edges, substantially as described.

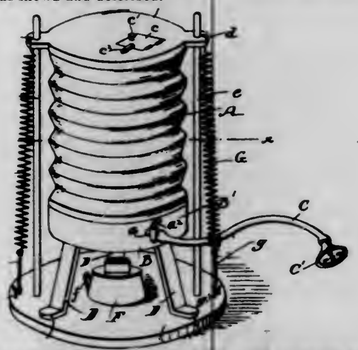
5. The combination of the bottle having the cam edges and formed with the narrow vertical grooves and their enlarged offset continuations, and also formed with the stops and notches at the ends of said cam edges, and the stopper comprising the cap constructed with the pendent legs and inwardly projecting feet, the said feet being of a thickness to fit the grooves snugly but capable of vertical movement therein and being of a height equal to the diameter of the enlarged offsets of the grooves, substantially as described.

6. The combination of the bottle having the cam edges and formed with the narrow vertical grooves terminating upwardly in the enlarged rounded offset continuations, and the stopper comprising the cap and an elastic plug, and constructed with the pendent legs and inwardly projecting feet, the said feet fitting the grooves snugly but capable of vertical movement therein and being of a height equal to the diameter of the enlarged offsets of the grooves, substantially as shown and for the purpose described.

542,688. PORTABLE SHOWER-BATH. WILLIAM H. SHACKLEFORD, Lake Wier, Fla. Filed Jan. 10, 1895. Serial No. 534,436. (No model.)

Claim.—1. A portable shower bath comprising a bellows-shaped collapsible body having a rigid base suitably supported, and a rigid top provided with a lid for the entrance of water thereinto, an outlet stem projecting from the base, a flexible pipe or tube mounted thereon,

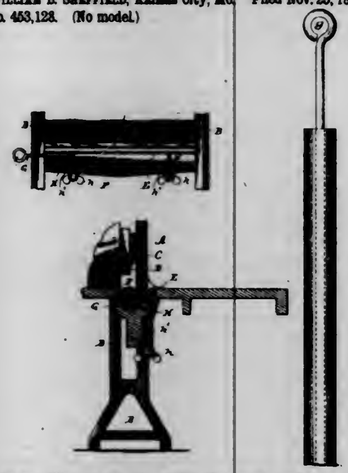
and a spray or shower nozzle secured upon the end of said pipe, substantially as shown and described.



2. A portable shower bath comprising a bellows-shaped flexible water-proof body having a flanged metallic base or pan secured thereto at the bottom and suitably supported, an outlet stem projecting therefrom, a rubber pipe or hose removably secured to said stem, a spray or shower nozzle upon the free end of said hose, a rigid top secured upon the upper end of the body having a lid therein for the entrance of water thereto, lugs projecting from said top, and standards at either side of the body extending through said lugs, whereby the same slide thereon, substantially as shown and described.

3. A portable shower bath comprising a collapsible cylindrical bellows-shaped body formed of rubber, having a flanged or pan-shaped metallic base secured thereto at the bottom, flanged legs supporting said base, a spear-pointed outlet or stem projecting from said base, a rubber pipe or hose removably secured thereon having an enlarged spray or shower nozzle secured to the free end thereof, a rigid top secured to the upper end of the body, having a lid therein for the entrance of water thereto, and means for securing said lid, lugs projecting from either side of said top, standards supported at each side of the body and inserted through said lugs, whereby the same slide thereon, and a spirit-lamp supported beneath the base, substantially as shown and described.

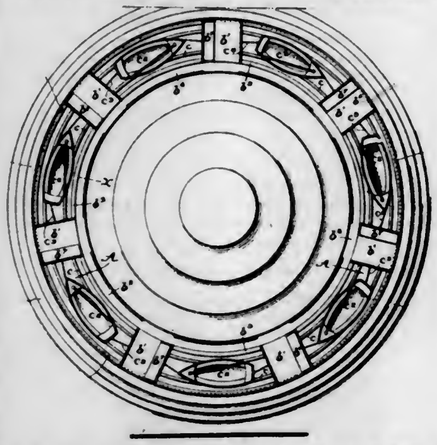
542,689. CUTTING-STICK FOR PAPER-CUTTING MACHINES. WILLIAM R. SHEFFIELD, Kansas City, Mo. Filed Nov. 25, 1892. Serial No. 453,123. (No model.)



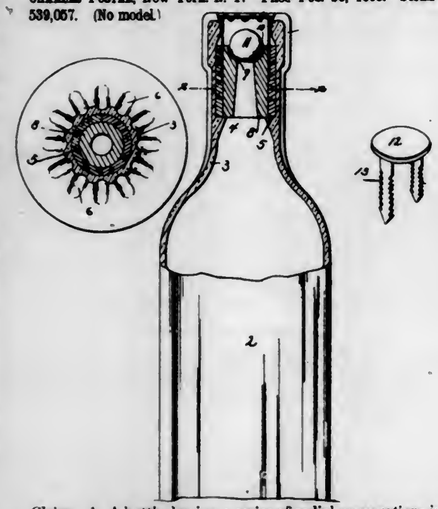
Claim.—The combination with the cutter and frame, of a substantially cylindrical cutting-stick having a projecting core provided with an eye, substantially as described.

542,690. MERRY-GO-ROUND. ROBERT STEEL, Philadelphia, Pa., assignor of one-half to Valentine D. Boot, same place. Filed Feb. 23, 1895. Serial No. 539,356. (No model.)

Claim.—A merry-go-round comprising a plane circular trackway, a series of platforms arranged at intervals apart in circular series and mounted upon said trackway, supports connecting the said platforms, an undulating circular trackway within said first-named trackway, a series of wheeled vehicles mounted upon the said undulating trackway and arranged in the open spaces intermediate the said platforms, and flexible connections loosely connecting the respective ends of the wheeled vehicles with the adjacent ends of the platforms, together with means for rotating the structure, substantially as described.



542,691. NON-FILLABLE BOTTLE. EMIL G. H. STEIN and CHARLES FOSTER, New York, N. Y. Filed Feb. 20, 1895. Serial No. 539,057. (No model.)



Claim.—1. A bottle, having a series of radial corrugations in its mouth, a tubular section securely fitted in the neck thereof and having a valve seat in its upper portion, a valve arranged above said tubular section and adapted to rest in the seat therein, and a stopper secured in the neck of the bottle and comprising a disk or plate arranged in the mouth of the bottle and above the inner ends of the corrugations in said mouth, substantially as described.

2. A bottle, having a tubular section fitted in the neck thereof, a ball valve seated in the upper portion of said tubular section, a stopper comprising the downwardly extending serrated prongs or spears adapted to take into the tubular section and a disk or plate secured to said prongs or spears and arranged to fit in the mouth of the bottle, and a series of radial corrugations in the mouth of the bottle opening into the neck thereof below said disk or plate, substantially as and for the purpose described.

3. The combination with a bottle having a series of vertical corrugations on the outer surface of the neck thereof, of a cork casing composed of two sections securely fitted within the neck of the bottle, a tubular section arranged within said casing and having a valve seat in its upper portion, a ball valve, a cap comprising two toothed or serrated prongs adapted to be forced between the casing and tubular section and a disk or plate secured to the prongs and arranged in the mouth of the bottle and a series of radial corrugations in the mouth of the bottle opening into the same partially below said disk or plate whereby the contents of the bottle may be withdrawn without removing the cap, substantially as described.

542,692. MANUFACTURE OF SOLID OR MASSIVE COMPOUND OF PYROXYLINE. JOHN H. STEVENS, Newark, N. J., assignor to the Celluloid Company, same place. Original application filed June 9, 1890, Serial No. 354,785. Divided and this application filed Dec. 21, 1893. Serial No. 494,298. (No specimens.)

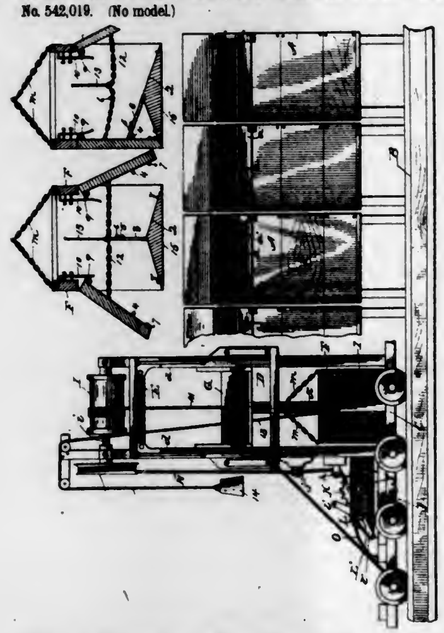
Claim.—1. The process of manufacturing solid or massive pyroxyline compounds which consists in mixing pyroxyline, di-nitro-toluol and camphor, and subsequently subjecting the resulting compound to heat and pressure sufficient to render the compound plastic, substantially as described.

2. The process of manufacturing solid or massive pyroxyline compounds which consists in mixing pyroxyline, di-nitro-toluol and camphor and a liquid solvent, and subsequently subjecting the resulting compound to heat and pressure sufficient to render the compound plastic, substantially as described.

3. As a new composition of matter, a solid or massive pyroxyline compound containing pyroxyline, di-nitro-toluol and camphor, substantially as set forth.

4. As a new composition of matter, a solid or massive pyroxyline compound containing pyroxyline, di-nitro-toluol camphor and a liquid solvent, substantially as set forth.

542,693. HOPPER AND MEANS FOR MOVING AND ELEVATING SAME. JOHN W. STONE, Merrill, Iowa. Filed Mar. 16, 1895. Serial No. 542,019. (No model.)



Claim.—1. In a corn elevator, the combination of a vertically movable hopper, for receiving the corn and depositing it in a crib, said hopper having an inclined bottom and a hinged gate, and a post engaging said gate and holding the same closed, said post terminating at the height at which the contents of the hopper are to be discharged, substantially as described.

2. In a corn elevator, the combination of the vertically-movable hopper, having its bottom formed of two inclined planes and its sides provided with hinged gates, and posts engaging said gates and holding the same closed, said posts terminating at the height at which the contents of the hopper are to be discharged.

3. The combination of the body of a hopper, having an inclined surface for directing the contents thereof toward the discharge opening, a gate for closing said discharge opening, means for holding said gate normally closed, and a spring tending to open said gate.

4. In a corn elevator, the combination with the vertically-movable hopper, having its bottom formed of two inclined planes and its sides provided with hinged gates, and a pivoted gate within said hopper, of posts engaging said first-mentioned gates and terminating at the height at which the contents of the hopper are to be discharged.

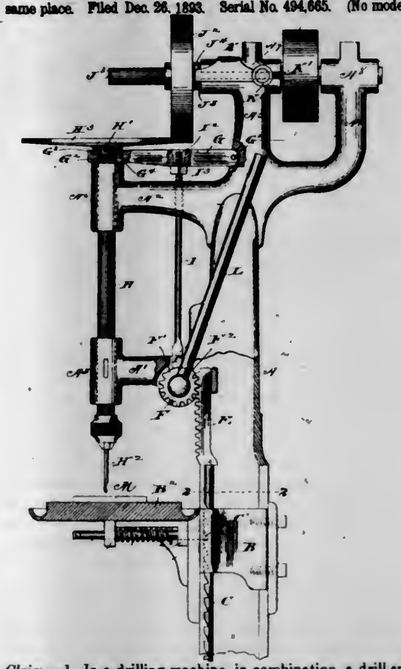
5. A hopper, having its bottom formed of a plurality of inclined planes and its sides provided with hinged gates having projections extending from their inner surfaces, and a pivoted gate within said hopper, adapted to be adjusted into either vertical or inclined position, said gate resting upon one of said projections when inclined, and a spring tending to open said gate substantially as described.

6. A hopper, having an inclined bottom, a hinged gate in its side provided at its hinged end with a projection having a curved surface, and a spring engaging said curved surface of the gate and serving to hold the gate open, substantially as described.

7. In a corn elevator, the combination with the vertically movable hopper, having its bottom inclined and its side provided with a hinged gate, said gate having a curved projection at its hinged end, and a spring engaging the curved surface of the projection and serving to hold the gate open, of a post engaging said gate and holding the same closed, said post terminating at the height at which the contents of the hopper are to be discharged, and a rope connected to said gate for closing the same when the hopper has unloaded its contents, substantially as described.

8. In a corn elevator, the combination with a shaft, two drums of different diameters mounted thereon, a cable engaging the smaller drum, and the elevating hopper secured to said cable, of a third drum, a cable secured at its end to said larger and third drums, a gear wheel mounted upon the shaft of said third drum, a pinion meshed with said gear, operating cranks at the ends of the shaft of said pinion, and a pawl for engaging said pinion, substantially as described.

542,694. DRILLING-MACHINE. DANIEL C. STOVER and FREDERICK W. HOEFER, Freeport, Ill., assignors to the Stover Novelty Works, same place. Filed Dec. 26, 1893. Serial No. 494,665. (No model.)



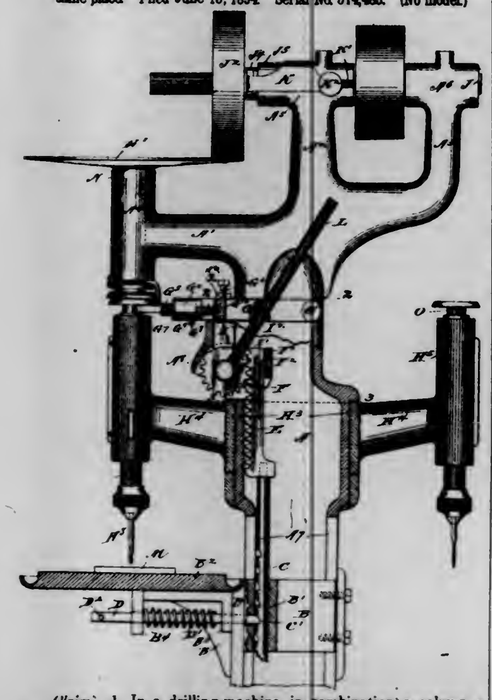
Claim.—1. In a drilling-machine, in combination, a drill-spindle provided with a friction driving-device, the members whereof are normally out of contact, a drill-spindle-supporting-arm, a cam, a rod adapted to communicate motion from the cam to the spindle-supporting-arm, and means for oscillating the cam, wherethrough the members of the friction-driving device may be maintained in operative contact independently of the application of upward pressure to the point of the drill-spindle by work on the platen, substantially as and for the purpose specified.

2. In a drilling-machine, in combination, a drill-spindle provided with a friction driving-device, the members whereof are normally out of contact, a cam, the devices connecting the cam with one member of the friction-driving-device, and means for operating the cam, whereby the members of the friction-driving device may be maintained in contact independently of the application of upward pressure to the drill-spindle, substantially as and for the purpose specified.

3. In a drilling-machine, in combination, a drill-spindle provided with a friction-driving-device, the members whereof are normally out of contact, a combined pinion and cam, the devices connecting the cam with one member of the friction-driving-device, the platen-bracket, the ratch passed through the platen-bracket, and provided with a detent, the rack forming an upward prolongation of the ratch

and meshing with the pinion, and means for operating the combined pinion and cam, all of said parts being constructed and arranged substantially as and for the purpose specified.

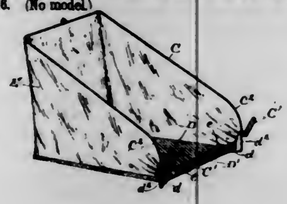
542,695. **DRILLING-MACHINE.** DANIEL C. STOVER and FREDERICK W. HOEFER, Freeport, Ill., assignors to the Stover Novelty Works, same place. Filed June 13, 1894. Serial No. 514,483. (No model.)



Claim.—1. In a drilling-machine, in combination, a column, a drill-spindle driving-shaft provided, at its upper end, with a friction driving-device, at its lower end, with one member of a friction-coupling, a rotatably-mounted turret, having radial arms furnished with spindle-bearings carrying spindles, each provided, at its upper end, with a counterpart member of said friction-coupling, the spindle-supporting-arm provided, at its free end, with means of connection with the drill-spindles, and means for operating the spindle-supporting-arm, wherethrough the members of the friction-driving and friction-coupling devices may be maintained in operative connection independently of the application of upward pressure to the point of the drill-spindle by work on the platen, substantially as and for the purpose specified.

2. In a drilling-machine, in combination, a column, a drill-spindle driving-shaft provided, at its upper end, with a friction driving-device, at its lower end, with one member of a friction-coupling, a rotatably-mounted turret, having radial arms furnished with spindle-bearings carrying spindles, each provided, at its upper end, with a counterpart member of said friction-coupling, the locking-pin, the spindle-supporting-arm, and means for operating the same, wherethrough the members of the friction-driving and friction-coupling devices may be maintained in operative connection independently of the application of upward pressure to the point of the drill-spindle by work on the platen, substantially as and for the purpose specified.

542,696. **ATTACHMENT FOR LAWN-MOWERS.** FREDERICK THIEL and FRANK EHRHARDT, Chicago, Ill. Filed Apr. 29, 1895. Serial No. 547,576. (No model.)

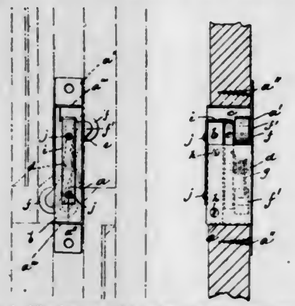


Claim.—1. The combination of a supporting frame, for the attachment or carrier, secured at its front part to the frame of the mower, and having at its ends horizontal arms and vertical projections to engage the bottom of the attachment, with said bottom having perforations therein, a piece uniting the bottom and supporting frame and forming a receptacle for the grass, and means to secure the ends of the frame to the bottom, substantially as described.

2. The combination of a supporting frame, for the attachment, provided at its front part with elongated loops to engage the frame of the mower, and horizontal and upturned parts to engage the floor of the attachment or carrier, with said floor having perforations therein, a piece uniting the floor and supporting frame and forming a receptacle for the grass, and means to secure the ends of the frame to the bottom or floor, substantially as described.

3. The combination of a supporting frame C, having the elongated loops C', at its front part to adjustably secure it to the frame of the mower, and having at its ends the horizontal arms *d*, and upturned screw-threaded projections *d'*, to engage the bottom of the attachment, the washers *f*, and *f''*, on the projections *d'*, and the set-screws *e*, to engage said projections, the bottom or floor D, having openings or perforations therein, and the piece E, uniting the supporting frame and bottom or floor, and forming a receptacle for the grass, substantially as described.

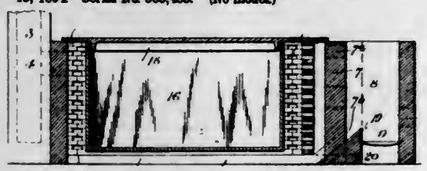
542,697. **BURGLAR-ALARM CIRCUIT-CLOSER.** ALBION A. VANDERPOOL, Newark, N. J. Filed Nov. 8, 1894. Serial No. 528,266. (No model.)



Claim.—1. The improved burglar alarm circuit changer for windows, in which is combined, with a case having a face plate and side extensions arranged at opposite sides of said face plate at right angles thereto and having a pin, *d*, between said extensions, a contact lever, *e*, arranged on said pin and at its opposite ends having pins *f''*, carrying rollers, *f*, *f*, which normally project, through openings, *c*, *c*, beyond said side extensions, and a block, *b*, of insulation also arranged between said side extensions and holding said lever in place and the said rollers *f*, on the said pins *f''*, of the lever, said block carrying a spring contact piece, substantially as set forth.

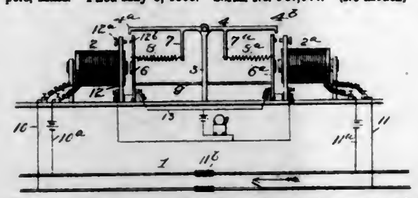
2. The improved burglar alarm circuit changer for windows, in which is combined with a case having a face plate and a pin *d*, at the back thereof, a lever arranged on said pin and projecting laterally at its opposite ends beyond the opposite edges of said face plate and at said opposite ends carrying rollers, a block of insulation back of said lever, and holding the same in place and a contact spring fastened to said block and extending into the path of the said lever, the latter scraping the edge of said spring longitudinally when forced to its abnormal position, substantially as set forth.

542,698. **ANNEALING-FURNACE.** WILLIAM J. VERNER, New Castle, Pa., assignor of five-eighths to Frank Felton, Charles S. Wallace, William L. Johnson, and Charles H. Johnson, same place. Filed Mar. 13, 1894. Serial No. 503,485. (No model.)



Claim.—The combination with the fire box, provided with a grate, of the combustion chamber consisting of the side and front walls provided with perforations, the flues in the bottom of the combustion chamber communicating with the fire box below the grate, the bridge wall provided with flues, and the annealing box located in the combustion chamber and provided with a cover having the downwardly extending rectangular flange, the construction being such that a space is formed between the combustion chamber and the walls of the furnace, substantially as described.

542,699. **RAILWAY-SIGNAL.** FREDERICK B. WETHERBEE, Walpole, Mass. Filed May 3, 1895. Serial No. 547,977. (No model.)

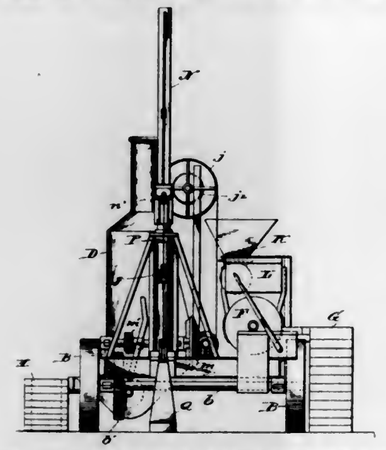


Claim.—1. In an electrical signal for railways, the two oppositely arranged magnets separately in electrical connection with the track, the two armatures therefor, the bell circuit arranged to be closed by the movement of the armatures, the vertical standard arranged between said magnets and the hooked bar pivoted intermediate of its length to said standard, said bar being adapted to be operated to lock either of said armatures, substantially as described.

2. In an electric signal for railways, two magnets separately in electrical connection with the track, the two armatures, the standard interposed between the same, and the rocking bar mounted on the standard having hooked ends overhanging the armatures and connections from said bar to each armature whereby the movement of one armature will rock the bar and lock the other armature, substantially as described.

3. In an electric railway signal, the oppositely arranged magnets and armatures, the vertical standard intermediate of the same, the rocking bar pivoted to said standard, the spring connecting said armatures to said bar whereby when one of said armatures is operated by the oncoming train, the bar will be tilted to lock the opposite armature.

542,700. **CONCRETE-MIXING MACHINE.** SAMUEL WHINERY, Wyoming, Ohio. Filed Dec. 17, 1892. Serial No. 455,489. (No model.)

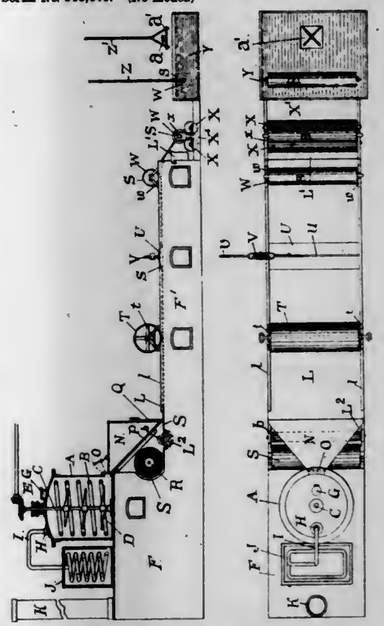


Claim.—1. The combination in a portable paving plant of an engine, a crank shaft, a secondary shaft driven thereby, a grooved wheel loosely mounted on the secondary shaft, means for automatically engaging and disengaging the wheel and the shaft, a crane carried by the frame, a carriage adapted to travel along the jib of the crane, a tamper traveling with the carriage and a rope adapted to support the tamper and connected with the grooved wheel, substantially as and for the purpose described.

2. The combination in a portable paving plant of an engine, a crank shaft, a secondary shaft driven thereby, a grooved wheel loosely mounted on the secondary shaft, means for automatically engaging and disengaging the wheel and the shaft, a crane carried by the frame, a carriage adapted to travel along the jib of the crane, and provided with sheaves, a tamper sheave connected with the tamper and a rope secured at one end to the crane, taking over a sheave on the carriage under the tamper sheave over another sheave on the carriage and secured to the grooved wheel, substantially as and for the purpose described.

3. The combination in a portable paving plant, of an engine a crank shaft, a shaft M driven thereby a grooved wheel R loosely mounted on the shaft, an arm m^3 carried by the shaft, a trippiug latch *r*, a releasing pin *a*, a crane N having jib *n*, a carriage O adapted to travel along the jib of the crane, a tamper Q and a rope P connected and arranged, substantially as and for the purpose described.

542,701. **APPARATUS FOR TREATING BITUMINOUS COMPOUNDS.** EUGENE F. BADGLEY, San Francisco, Cal. Filed May 31, 1894. Serial No. 513,079. (No model.)



Claim.—1. The combination of a furnace having a lateral extension or table, a mixer arranged over the furnace, a feeder at the end of the table adjacent to the furnace and receiving compound from the mixer, and a reel placed in rear of the feeder and below the mixer whereby it is brought close to the furnace and source of heat, said reel carrying a roll of suitable material adapted to pass under the feeder and receive the plastic compound therefrom.

2. The combination of a table, a feeder arranged over the table and discharging onto the same, a mixer located at the end of the table and above and discharging into the feeder, and a vertically adjustable ironing roller movable over the table to compress the compound thereon.

3. The combination of a table, a feeder arranged above the table, a mixer located at the end of the table above the feeder and discharging into said feeder, a reel located in rear of the feeder and carrying a roll of suitable material adapted to pass under the feeder and receive plastic compound therefrom, a mandrel at the opposite end of the table upon which said material and the compound deposited thereon is wound, an ironing roller mounted upon and movable over the table between the feeder and the mandrel, and means for heating the table, the mixer and the feeder.

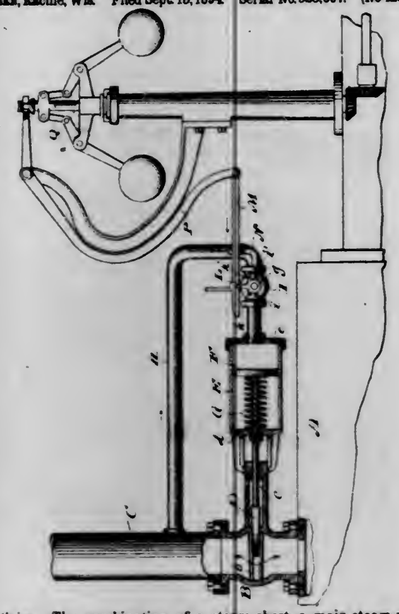
4. The combination of a table upon which compounds may be spread, a grooved scraper placed on said table, and a rotary cutter adapted to co-act with said scraper to cut the compounds.

5. The combination of a mixer, a hot table, a feeder receiving a compound from the mixer and discharging it onto the table, a mandrel for forming articles from the compound, a water-pan, and an absorbent roller arranged in the water-pan and adapted to receive moisture and transmit it to the article on the mandrel.

6. The combination of a hot table, a feeder, a sheet of suitable material adapted to pass under the feeder and to receive a plastic compound therefrom over the table, and an intermediate basin containing a lighter compound through which the material is passed.

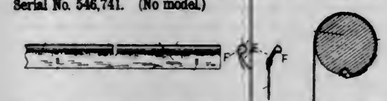
7. The combination of a hot table, a feeder, a roll of material adapted to pass under the feeder and to receive a plastic compound therefrom over the table, an intermediate basin also containing a plastic compound through which said material is passed, and auxiliary plates supporting the material through the compound in the basin and onto the table.

542,702. STEAM-ENGINE GOVERNOR. CHRISTIAN CHRISTENSEN, Racine, Wis. Filed Sept. 15, 1894. Serial No. 523,067. (No model.)



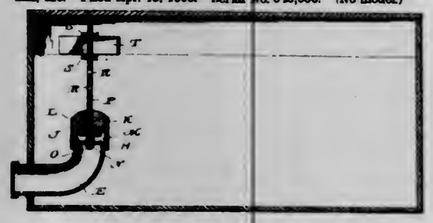
Claim.—The combination of a steam-chest, a main steam-pipe communicating with the chest and provided with guides, a slide valve operative in the guides at a right angle to the pipe, a cylinder a piston in the cylinder having a stem connected to the slide-valve, a spring on the stem intermediate of a piston and a head of said cylinder, a branch-pipe leading from the one aforesaid through the other cylinder-head and having a portion thereof in the form of a casing provided with an exhaust-port, a rock-valve in the casing controlling the inlet of the same and said port, a wing on the stem of the rock-valve provided with lateral lugs extending in opposite directions, stops on said casing in opposition to the wing-lugs, a guide-supported rod provided with a notch loosely engaging the point of the rock-valve wing, a governor, and a suitably supported elbow-lever connecting the rod with the governor shaft.

542,703. MEANS FOR ATTACHING WINDOW-SHADES TO ROLLERS. THOMAS A. FONTAINE, Chicago, Ill. Filed Apr. 22, 1895. Serial No. 546,741. (No model.)



Claim.—A means for attaching a window shade to the usual roller therefor, comprising a strip E to one side edge of which the shade is attached, the opposite edge of the strip having a fold upon itself which forms a longitudinal hollow cylindrical rib with transverse notches at intervals through the rib, a longitudinal groove at the surface of the roller into which is fitted the longitudinal rib of the strip, staples straddling the groove of the roller and secured thereto, and adapted to fit into the notches of the strip and a pivotal rod disposed longitudinally within the rib and under the heads of the staples which serves in combination with the staples and the strip for the purpose stated.

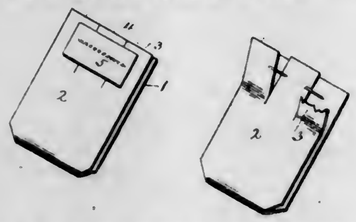
542,704. STOCK-WATERING TANK. ISAAC J. HARTFORD, Savannah, Mo. Filed Apr. 13, 1895. Serial No. 545,630. (No model.)



Claim.—1. In a stock watering tank, the combination of the supply pipe having the curved inner end, the ferrule or sleeve secured to said inner end, the curved valve seat carried by said sleeve, the strainer secured in said sleeve, the valve having the depending guide passing through the strainer and having the stem projecting above the same and carrying the float.

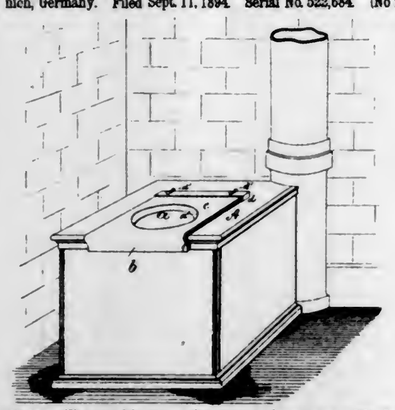
2. In a stock watering tank, the combination of the tank having the cover provided with the series of openings, the supply pipe having the strainer at its inlet end and having its exit end formed with an elbow, the sleeve connected to said elbow and carrying the strainer and valve seat, the valve fitting in said sleeve and having the depending guide arranged in the strainer and having the stem projected upward and formed with a series of openings, a float adjustable on said stem, and a movable pin for holding the float at any adjustment.

542,705. MARKING-TAG. MARGARET HIGGINS, Pittsburg, Pa. Filed Mar. 25, 1895. Serial No. 543,102. (No model.)



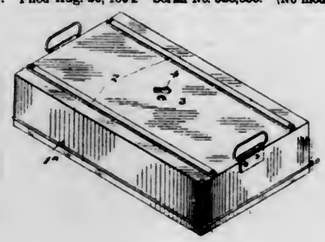
Claim.—The herein described marking tag, consisting of the folded card, the rear fold having its upper rear edge slitted or divided into three portions, with the side portions normally deflected at an angle to the middle portion, and of the staple passed through the front fold of said card and adapted to pass through the fabric and the middle portion of said rear fold and its ends to be bent laterally and covered by said side portions, said latter portions being connected by a binding piece or slip of paper, substantially as set forth.

542,706. PAD FOR WATER-CLOSETS. KARL HORFELMAYR, Munich, Germany. Filed Sept. 11, 1894. Serial No. 522,684. (No model.)



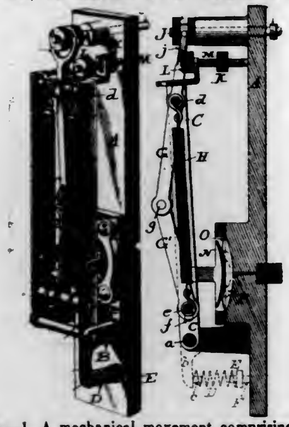
Claim.—The combination of a water closet seat with clasps *a'*, and with an annular pad *c*, having flanges *a'*, *b*, and a rear rail *d*, adapted to be engaged by the clasps, substantially as specified.

542,707. BAKING-PAN. CHARLES A. HUDSON, Schroon Lake, N. Y. Filed Aug. 20, 1894. Serial No. 520,853. (No model.)



Claim.—A baking-pan consisting of the upper and lower sections, and the hollow partitions arranged in the lower section and forming a series of combined heat conducting and baking chambers.

542,708. MECHANICAL MOVEMENT. WARREN S. JOHNSON, Milwaukee, Wis. Filed Feb. 8, 1895. Serial No. 537,689. (No model.)



Claim.—1. A mechanical movement comprising the following elements in combination: a swinging frame; means for moving said frame; a toggle carried by said frame and having one member pivoted and the other arranged to slide therein; a device to be moved; a connection between the toggle and said device; and a spring connected with and serving to bow the toggle.

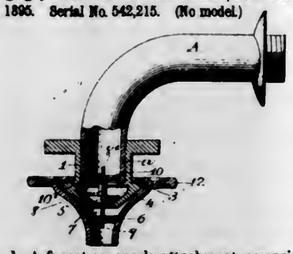
2. In combination with a movable device as J, provided with stops to determine its range of movement, mechanism for imparting a sudden movement thereto in opposite directions, consisting of a swinging frame, means for moving said frame, a toggle having one member pivotally attached to and the other arranged to slide in said frame, a spring connected with and tending to bow the toggle, and a connection between the toggle and the device to be moved, substantially as set forth.

3. In combination with a movable device as J, having a restricted range of movement, mechanism for moving the same suddenly in one and the other direction, consisting of a swinging frame, a motor for moving said frame, a toggle having one of its members pivoted in said frame and connected with the part to be moved, and having its other member arranged to slide in the swinging frame, and a spring connected with and serving to bow the toggle.

4. In combination with a member having a restricted range of movement, as J, and with a prime motor as N, O, P, a translating device interposed between the member to be moved and the motor, and comprising a swinging frame C, a toggle G G' carried therein by pivotal connection *d* and sliding connection *e*, a yoke *j* extending from the toggle to the member to be moved, and a spring H connected with and serving to bow the toggle when its three pivots are thrown out of alignment.

5. In combination with a member as J, having a restricted range of movement, a swinging frame C, stops to limit the play of said frame, a motor for moving said frame in one direction, a spring for returning said frame, a toggle carried by said frame and having its members respectively connected therewith by pivotal and by sliding connections, a spring acting upon and serving to bow the toggle, and a connection between the toggle and the member to be moved.

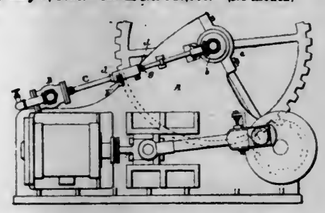
542,709. VALVE. THEODORE LINEK, New York, N. Y. Filed Mar. 13, 1895. Serial No. 542,215. (No model.)



Claim.—1. A faucet or nozzle attachment comprising a ferrule or collar having a valve-seat and an external shoulder, a rotatable tip fitted to said shoulder and having a cross-bar provided with a threaded opening, a valve having a screw-stem fitting said opening, and means for preventing rotation of the valve while permitting it to be raised and lowered by the rotation of the tip.

2. The combination of the collar 1 provided with the flange 2 to affix it to the pipe or faucet A, and having the shoulder 3 and the valve seat 4 and the barred ring 10 having a square hole to receive the square pin 8' of the valve, with the valve 7 having the square pin and the screw-threaded stem 9, and the tip 5 having the flange 12 and the cross-bar 6 provided with a screw-threaded opening to receive the stem 9, substantially as and for the purpose set forth.

542,710. TOWING-MACHINE. FREDERICK METCALF, Providence, R. I., assignor to the American Ship Windlass Company, same place. Filed May 2, 1895. Serial No. 547,909. (No model.)



Claim.—1. In a towing machine, the combination with a pressure regulating valve, located in the admission passage to the engine cylinder or cylinders, a screw spindle or shaft, a nut or sleeve containing projections which hit on suitably placed pawls, and gearing whereby the pressure in the engine cylinder or cylinders is increased as increased strain on the hawser causes the latter to be paid out, and is diminished as the strain on the hawser is lessened and the latter is hauled in, substantially as set forth.

2. In a towing machine the combination of a pressure regulating valve located in the admission passage to the engine cylinder or cylinders with a by-pass, a valve thereon, whereby admission may be had to the engine cylinder or cylinders without passing through the pressure regulating valve, substantially as set forth.

3. In a towing machine, the combination of a pressure regulating valve located in the admission passage to the engine cylinder or cylinders, a valve on a by-pass whereby admission may be had to the engine cylinders without passing through the pressure regulating valve, a screw spindle or shaft, a nut and sleeve containing projections which hit on suitably placed pawls, and gearing whereby the pressure of the engine cylinder or cylinders is increased as increased strain on the hawser causes the latter to be paid out, and is diminished as the strain on the hawser is lessened and the latter is hauled in, substantially as set forth.

4. In a towing machine, the combination of a pressure regulating valve located in the admission passage to the engine cylinder or cylinders, a valve on a by-pass, whereby admission may be had to the engine cylinder or cylinders without passing through the pressure regulating valve, and a reversing mechanism to change the direction of motion of the engine, substantially as set forth.

5. In a towing machine, the combination of a pressure regulating valve located in the admission passage to the engine cylinder or cylinders, with a valve on a pass-by whereby admission may be had to the engine cylinder or cylinders without passing through the pressure regulating valve, a screw spindle or shaft, a nut and sleeve containing projections which hit on suitably placed pawls and gearing, whereby the pressure of the engine cylinder or cylinders is increased as increased strain on the hawser causes the latter to be paid out, and is diminished as the strain on the hawser is lessened and the latter is hauled in, and a reversing mechanism to change the direction of motion of the engine, substantially as set forth.

542,711. SHOE-BUTTONER. DANIEL H. MUIR, Lincoln, Nebr. Filed Oct. 17, 1894. Serial No. 526,199. (No model.)

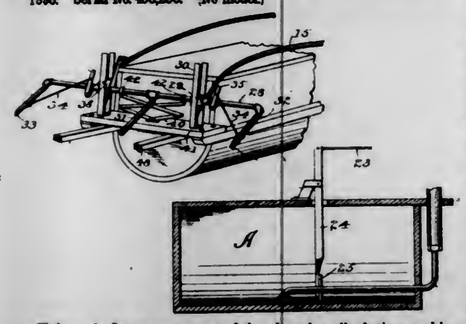


Claim.—1. The combination with a plate having a hook at one end and a handle on the other end, and a stop formed at a point between the hook and handle, of a sleeve comprising a piece of metal having collars thereon which surround the plate and by which the piece of metal is held on the plate, said collars adapted to strike the

stop whereby to limit the sliding movement of the sleeve, and a thumb-piece on the sleeve for its easy manipulation, substantially as set forth.

2. The combination with a plate having a hook on one end a handle on the other end and a stop formed at a point between the hook and handle, of a sleeve comprising a piece of metal folded around the sides and one edge of the plate, collars on the ends of the sleeve surrounding the plate, said collars adapted to hold the sleeve in place on the plate and strike the stop whereby to limit the sliding movement of the sleeve, and a thumb piece on the sleeve, substantially as set forth.

542,712. SPRAYING-MACHINE. GEORGE A. MYERS, Port Byron, N. Y., assignor to Theodore B. Myers, St. Paul, Minn. Filed Jan. 13, 1893. Serial No. 458,230. (No model.)



Claim.—1. In an apparatus of the class described, the combination of the transverse pipe connected to the source of supply and provided with lateral spray pipes, the vertical guides for said transverse pipe and means for adjusting its position in said guides.

2. In an apparatus of the class described, the combination of the transverse pipe connected with the source of liquid supply, the lateral spray pipes connected to said transverse pipe and having a swinging lateral adjustment, the vertical guides for said transverse pipe and means for supporting said pipe in adjusted positions in said guides.

3. In an apparatus of the class described, the combination of the transverse pipe connected with the source of liquid supply, the vertical guides, the bearing blocks for said pipe slidable in said guides, means for turning said pipe and holding it in adjusted angular positions in said bearings, means for supporting said pipe in vertically adjusted positions in said guides and the spraying devices carried by said pipe.

4. In an apparatus of the class described, the spraying devices comprising in combination, the vertically adjustable, rocking transverse pipe, and the branch or spray pipes connected therewith.

5. In an apparatus of the class described, the combination with the pump, of the vertically adjustable transverse pipe connected therewith, the branch spray pipes connected with said transverse pipe, means for laterally adjusting the direction of said branch pipes, and means for rocking said transverse pipe to vertically adjust the direction of said branch pipes.

6. In an apparatus of the class described, the spraying devices therefor, comprising in combination the transverse pipe, its branch spray pipes, means for laterally and vertically adjusting the direction of said branch pipes, the vertical guides for said transverse pipe, and the means for adjusting its position and supporting it in said guides.

7. In an apparatus of the class described, the combination of the transverse pipe, its branch pipes having pivotal connection therewith, the levers and rods for adjusting the lateral direction of said branch pipes, the vertically slidable bearings for said transverse pipe, and its rocking lever, and adjustable lazy-tong support.

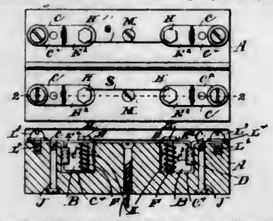
8. The combination with the tank, and the outlet pipe arranged along its bottom, of the cleft or bifurcated paddle arranged over said pipe, substantially as described.

9. The combination of the tank, the outlet pipe along its bottom, the bifurcated paddle arranged with one wing on each side of the pipe, and means for automatically actuating it as the liquid is drawn out through the pipe, substantially as described.

10. The combination of the tank, the eduction pipe arranged longitudinally of the same and near its bottom, the bifurcated paddle straddling said pipe and having pivotal support above said tank, and means for operating said paddle from the pump devices.

542,713. FUSE-HOLDER. LESLIE C. ORRELL, Bellevue, Ky. Filed Oct. 22, 1894. Serial No. 526,574. (No model.)

Claim.—1. In a fuse holder, the piece C^3, having the loop D, and the piece E having part E^3 sliding in loop D, and a contact as H over the piece E^3, and means for elastically pressing the piece E against the contact, substantially as and for the purposes specified.



2. In a fuse holder, the piece C^3, having the loop D, and the piece E having part E^3 sliding in loop D, and a contact as H over the piece E^3, and means for elastically pressing the piece E against the contact, and rod F passing through the piece E^3 and carrying the said contact, substantially as and for the purposes specified

3. The combination of the piece C^3, loop D thereof, piece E having pieces E^3 and E^3, the latter engaging the loop D, rod F extending through piece E^3, contact H on the said rod, and spring K embracing said rod behind piece E^3, substantially as and for the purposes specified.

4. The combination of the angulated pieces C^3 and C^3, secured together, and the wings C^3 in one with piece C^3, and piece E having parts E^3 E^3, of which E^3 engages the wings C^3, rod F through part E^3, and superincumbent contact H, spring K pressing piece E toward contact H, substantially as and for the purposes specified.

5. The combination of the angulated piece C having part C^3, and bottom extension C^4, and loop D, and sliding piece E, having parts E^3, E^3, the latter engaging the loop and rod F fixed in bottom C^4, and passing through the part E^3, and contact H, on the upper end of said rod, and spring for elevating said piece E, substantially as and for the purposes specified.

6. The combination of the angulated piece C having the piece C^3, part C^3, and bottom extension C^4, and loop D, and sliding piece E, having parts E^3, E^3, the latter engaging the loop and rod F fixed in bottom C^4, and passing through the part E^3, and contact H, on the upper end of said rod, and spring for elevating said piece E, and the line contact adjustment L fixed to piece C^3, substantially as and for the purposes specified.

7. The combination of the angulated piece C having the piece C^3, part C^3, and bottom extension C^4, and loop D, and sliding piece E, having parts E^3, E^3, the latter engaging the loop and rod F fixed in bottom C^4, and passing through the part E^3, and contact H, on the upper end of said rod, and spring embracing the rod F, for elevating said piece E, and the line contact adjustment L fixed to piece C^3, substantially as and for the purposes specified.

8. In a fuse holder, the block A having recesses B, the combination with the block of the following to wit: a piece C having top plate C^3 on top of block, vertical part C^3 at wall of recess, and having loop D, bottom extension C^4, at bottom of recess, and piece E whose part E^3 enters said loop D, rod F fixed to extension C^4, and extended through part E^3, and contact H thereon, a coiled spring K embracing the rod F between extension C^4 and part E^3, and located in said recess, substantially as and for the purposes specified.

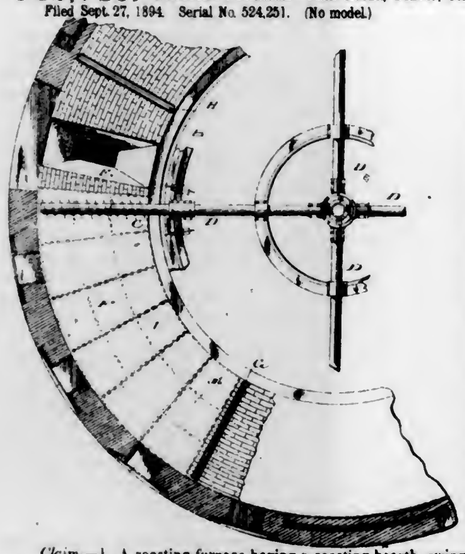
542,714. REFRIGERATOR. LAWSON O. READ, Chattanooga, Tenn. Filed Nov. 13, 1894. Serial No. 528,655. (No model.)



Claim.—1. In a refrigerator, the casing, a longitudinally inclined inverted V-shaped partition floor-plate arranged within the casing and having side drain gutters, and bottom drain openings formed at the lower ends of said gutters, drain pipes leading downwardly from said drain openings, inner metallic side flue plates spaced from the opposite inner sides of the casing and having a seam-connection at their upper edges with the side edges of said floor plate, the lower edges of said flue plates terminating short of the bottom of the casing to form inner side cold air flues communicating with the casing above and below the floor plate, warm air escape pipes arranged within opposite upper ends of the casing and communicating at their lower ends with the interior of the casing at the ends of the apex of the floor plate, and the top cover provided with an interior air circulating space, a top air escape opening, and oppositely located air circulating openings adapted to register with the upper ends of the warm air escape pipes, substantially as set forth.

2. In a refrigerator, the casing, a longitudinally inclined inverted V-shaped partition floor-plate arranged within the casing and narrower in width than the same, said floor plate being provided at its opposite side edges with vertically disposed integral side seams forming longitudinal drain gutters at the side edges of the floor plate, said side seams consisting of upwardly disposed flanges and depending flanges bent downward from the upper edges of the upwardly disposed flanges, drain pipes leading from the gutters of said floor plate, inner metallic side flue plates spaced from the opposite inner sides of the casing and fitted at their upper ends in the spaces between the flanges of said side seams of the floor plate, said flue plates terminating at their lower edges short of the bottom of the casing, the side lining plates arranged above the floor-plate and provided at their lower edges with outwardly inclined drip flanges overhanging the side edges of the floor-plate, and warm air escape pipes opening into the casing at the ends of the apex of said floor plate, substantially as set forth.

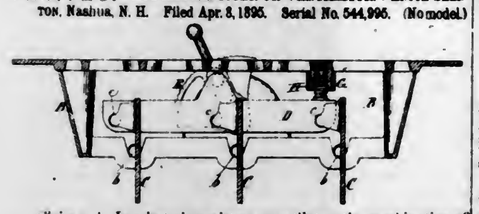
542,715. ROASTING-FURNACE. JOHN ROGER, Denver, Colo. Filed Sept. 27, 1894. Serial No. 524,251. (No model.)



Claim.—1. A roasting furnace having a roasting hearth, swinging doors arranged to divide a portion of said hearth from the remaining portion and to thereby form a cooling section, and means for cooling said section as described

2. A roasting furnace having a roasting hearth, revolving agitator or rabble blades, swinging doors arranged to divide a portion of said hearth from the remaining portion and to thereby form a cooling section, said doors being adapted to normally hang vertically and to swing upwardly to permit of the passage of the said blades, and means for cooling said section as described.

542,716. HOT-AIR REGISTER OR VENTILATOR. ENOCH SHERTON, Nashua, N. H. Filed Apr. 8, 1895. Serial No. 544,995. (No model.)

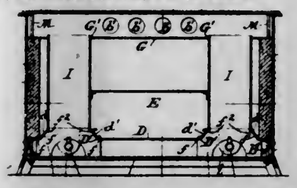


Claim.—1. In a hot-air register or ventilator, the combination of valves or shutters, a sliding bar or connecting-rod for operating the valves, a face-plate provided with a threaded aperture directly over the sliding bar, and a set-screw adapted for insertion in the aperture of the face-plate and to be screwed down on the connecting-rod to lock the same and hold the valves either in an open or closed position, substantially as set forth.

2. In a hot-air register or ventilator, the combination of valves or shutters, a sliding bar or connecting-rod for operating the valves, a face-plate provided with a threaded aperture directly over the sliding bar, and a set-screw adapted for insertion in the aperture of the face-plate and to be screwed down on the connecting-rod to lock the same and hold the valves either in an open or closed position, said screw, when turned down within its threaded aperture to lock the valves, having its head sunk below the surface of the face-plate to prevent it from being turned without the use of a key or implement adapted to enter said aperture, substantially as described.

3. In a hot-air register or ventilator, the combination with the valves or shutters, of a sliding bar or connecting-rod D, for operating said valves, a face-plate or register-top provided with a separate and independent block or bushing suitably secured thereto, and having a threaded aperture directly over the sliding bar, and a set-screw adapted for insertion in said threaded aperture and to be screwed down on the connecting-rod to lock the same and hold the valves either in an open or closed position, substantially as set forth.

542,717. GAS-STOVE. LOUIS STRIMBAN, New York, N. Y. Filed Nov. 22, 1894. Serial No. 529,573. (No model.)



Claim—1. In a gas stove, the combination of an outer shell having a top and bottom, a plate supported within the shell and extended from end to end and from side to side a short distance above the bottom, said plate having an aperture near each end, a second plate supported near the top similar to the first and having corresponding apertures, flues extending from the apertures in the lower plate to the corresponding apertures in the upper plate, burners placed below the flues, a door opening through the outer shell into the space between the plates, and a movable door at the junction of each flue with the lower plate and at the inner side of said flue to give access to the burners from the space between the plates and flues, substantially as shown and described.

2. In a gas stove, the combination of an outer shell having a top and bottom, vertical foot-plates to rest upon said bottom and having supporting shoulders, a lower plate having apertures to receive the upper ends of said foot-plates and resting upon the shoulders thereof, an upper plate supported within the shell near the top and having apertures corresponding to the apertures in the lower plate, flues extending from the apertures in the lower plate to the corresponding apertures in the upper plate, a door opening through the outer shell into the space between the upper and lower plates, and a burner below each flue, substantially as shown and described.

3. In a gas stove, the combination of an outer shell having a top and bottom, vertical foot-plates to rest upon the bottom and reduced at their upper ends to form shoulders and intermediate inclines, an apertured plate adapted to rest upon the lower shoulders, flues adapted to rest upon the upper shoulders and having ears to extend downwardly through their apertures, a gas pipe supported in said ears below each flue, plates supported on the inclines of the foot-plates to close the openings between the flues and the bottom plate, an upper plate having apertures corresponding with the flues and supported within the shell near the top, and a door opening through the outer shell into the space between the upper and lower plates, substantially as shown and described.

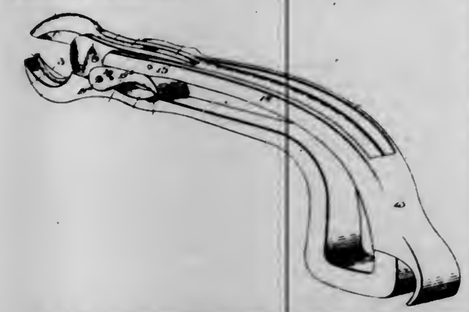
542,718. HOG-RINGER. WILLIAM S. TAYLOR, Rensselaer, Ind. Filed Sept. 4, 1894. Serial No. 522,120. (No model.)

Claim.—1. A hog ringer, consisting of a pair of jaws formed of an integral piece of spring metal and capable of receiving the ring and of holding it during the affixing operation, said jaws having an inherent spring tendency to close, which tendency is of sufficient strength to bend and affix the ring, substantially as described.

2. A hog-ringer, consisting of two spring jaws having a tendency toward each other and capable of having the ring placed between them, a link pivoted to one of the jaws and capable of engaging the remaining jaw, and a lever pivoted to one of the jaws and capable of engaging the link so as to move it in and out of engagement with

the jaws, whereby the jaws are spread or allowed to contract, substantially as described.

3. A hog-ringer, consisting of two spring jaws capable of having the ring placed between them, a link pivoted to one of the jaws and capable of engaging the remaining jaw, whereby they are spread, and a lever pivoted to the jaw having the link and capable of engaging the link to make it spread the jaws or allow them to contract, substantially as described.



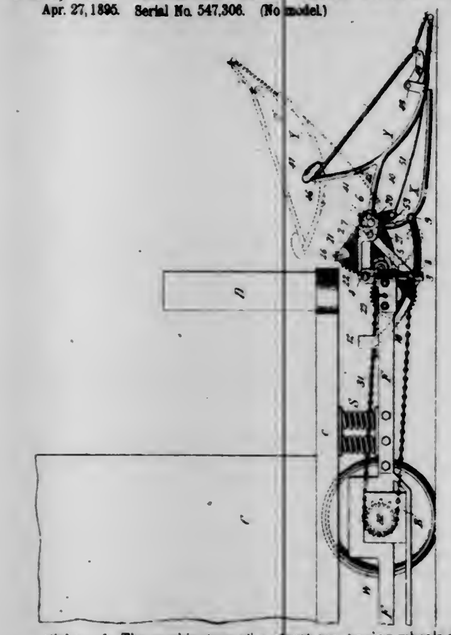
4. A hog-ringing device, consisting of two spring jaws adapted to have the ring placed between them, an oscillating head pivoted to one of the jaws and having a limited movement thereon, whereby the ring may be placed between the head and the companion jaw and held so, a link pivoted to one jaw and capable of engaging the remaining jaw, and a lever capable of engaging the link and provided with a bar capable of engaging the oscillating head substantially as described.

542,719. STRING FOR MUSICAL INSTRUMENTS. EMANUEL WÄHNER, Vienna, Austria-Hungary. Filed Mar. 5, 1895. Serial No. 540,674. (No model.)



Claim.—The combination with the string of a musical instrument, of a stud or button provided with a peripheral groove in which the end of the string is secured, said stud being provided with a hollow shank adapted to engage with the hitch pin or peg of the instrument, substantially as shown and described.

542,720. CAR-FENDER. MORRIS WEISS, New York, N. Y. Filed Apr. 27, 1895. Serial No. 547,306. (No model.)



Claim.—1. The combination of a street car, having wheels and axles, a car body frame, spring supported upon axle boxes, a frame journaled directly upon the axles, and a fender supported by or upon the last named frame only, a hinge joint between said fender and said truck frame and a curved bar pivoted to said fender at one end and supported on a spring cushion at its opposite end, substantially as described.

2. The combination with a street car of two fenders hinged to a car frame, a mechanical connection between a second point in one fender and the car frame, yielding in one direction only, and a mechanical connection between a second point on the second fender and the car frame, yielding in one direction only, all so arranged that, when striking an obstacle, the one fender moves upward and the other fender moves in a respectively opposite direction, substantially as described.

3. The combination with a street car of a fender hinged to a frame or stationary part thereof, an elevating device consisting of a driving and a driven wheel for gradually and regularly elevating the free end of the fender and means for automatically bringing the elevating device into operation, substantially as described.

4. The combination with a street car of a fender located on a rotating shaft, a toothed wheel supported on said shaft capable of free rotation, means for rotating said wheel, a locking device for securing said wheel and its shaft together, a movable contact on the fender and a mechanical connection between said contact and said locking device, whereby the fender is elevated, substantially as described.

5. The combination with a car of a fender frame, a shaft therefor, a wheel supported on said shaft, means for rotating said wheel, a suitable locking device for connecting and disconnecting said wheel and shaft, and a mechanical connection between said locking device and a contact point on said fender, substantially as described.

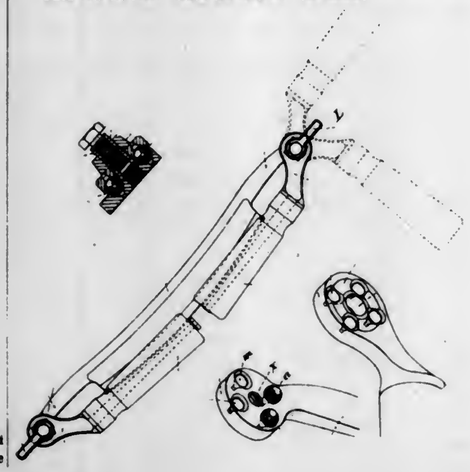
6. The combination with a car of a fender frame, a shaft therefor, a wheel supported on said shaft, means for rotating said wheel, a toothed rack in line with said wheel, a suitable locking device for connecting and disconnecting said wheel and shaft, and a mechanical connection between said locking device and an actuating point on said fender, substantially as described.

7. The combination with a car of a fender, a turning support therefor, a wheel, a rack and a pinion supported in line on said support and a driven wheel in position to engage with said wheel, rack and pinion successively, whereby said fender may be elevated, substantially as described.

8. The combination with a car of a fender, a turning or rotary support therefor, a wheel, a rack, and a pinion supported in line on said support, a driven wheel in position to engage with said wheel, rack and pinion, successively, and means for automatically bringing the driving and driven parts into engagement whereby said fender is elevated, substantially as described

9. The combination in a street car of suitable running gear composed of wheels and axles, a car body supported thereby, a shaft mechanically connected with a wheel or axle of the car and rotated thereby, a fender hinged or rotatably connected to a frame or stationary part of a car, a driving wheel carried by said shaft, a driven wheel connected with the fender and a suitable device for connecting and disconnecting said driving and said driven wheel to elevate the free end of the fender by a gradual rotary movement, substantially as described.

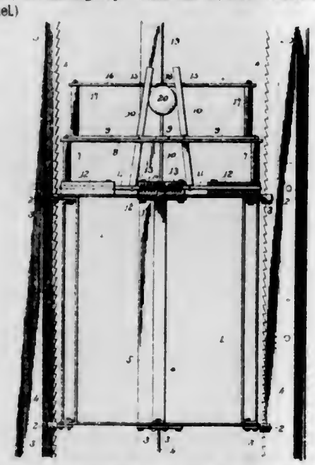
542,721. DRAW-KNIFE. JOHN G. YOUNG, Hyde Park, Mass. Filed Jan. 12, 1895. Serial No. 534,633. (No model.)



Claim.—1. A draw-knife having its handles pivoted to the tangs and rotatable upon the pivots in a plane substantially coincident with the plane of draft, tang-end and handle-end having adjacent surfaces substantially parallel to said plane of draft, the said surfaces containing cavities disposed about the pivot, detached locking members consisting of solids of revolution adapted to lie between said surfaces and to fit said cavities, and means whereby said locking members as they lie in said cavities may be pressed between tang-end and handle-end.

2. A draw-knife having its handles pivoted to the tangs and rotatable upon the pivots in a plane substantially coincident with the plane of draft, tang-end and handle-end having adjacent surfaces substantially parallel to said plane of draft, the said surfaces containing cavities symmetrically disposed about the pivot axis in a circle, an annular groove concentric with the pivot axis connecting the cavities, detached locking members consisting of solids of revolution adapted to lie between said surfaces and to fit said cavities and means whereby said locking members as they lie in said cavities may be pressed between tang-end and handle-end.

542,722. SAFETY ATTACHMENT FOR ELEVATORS. LUCIEN C. ALDORN, Greensburg, Ky. Filed Jan. 31, 1895. Serial No. 536,845. (No model.)



Claim.—1. The combination with rack bars arranged parallel with the path of an elevator car, of spring actuated pawls disposed in operative relation with the rack bars, intermediately pivoted levers connected at one end respectively to the pawls and converging toward their other ends, a supporting plate provided with radiating guide slots for the free ends of the levers, said slots communicating with a central opening, a hoisting cable extending through said opening in the supporting plate and a spreader attached to the end of the cable and arranged between the upper ends of the levers, whereby when the hoisting cable is strained said spreader is brought into contact with the supporting plate and separates the contiguous ends of the levers, substantially as specified.

2. The combination with rack bars arranged parallel with the path of an elevator car, of spring actuated pawls arranged in operative relation with the rack bars, intermediately pivoted levers connected at one end respectively to the pawls and converging toward their opposite ends, a supporting plate having radiating guide slots for the free ends of the levers, and a polished spherical spreader attached to a hoisting cable and disposed between the convergent upper portions of the lever, substantially as specified.

542,723. BLASTING-POWDER. FRANZ G. A. BROBERG, Emporium, Pa., assignor of one-half to David Lundy Wildrick, Dover, N. J. Filed Sept. 11, 1894. Serial No. 522,749. (No specimens.)

Claim.—1. In the art of making explosives, the improvement which consists in melting sulphur and resin and adding to this mixture, while in a melted state, dry pulverized nitrate of soda, and agitating the mixture until the particles of nitrate of soda are thoroughly covered with the mixture of resin and sulphur, as and for the purposes described.

2. As a new explosive, a free running powder, consisting of nitrate of soda, resin, and sulphur, substantially as and in the proportions described.

3. As a new explosive, a free running powder consisting of particles of nitrate of soda coated with a mixture of resin and sulphur, as described.

542,724. HIGH EXPLOSIVE. FRANS G. A. BROBERG, Emporium, Pa., assignor of one-half to David Lundy Wildrick, Dover, N. J. Filed Sept. 11, 1894. Serial No. 522,750. (No specimens.)

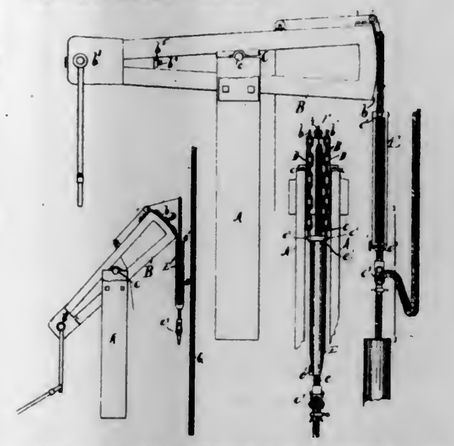
Claim.—1. A high-power explosive consisting essentially of nitro-glycerin, nitro-naphthalenes, wood pulp, nitrate of soda, and sulfur.

2. A high-power explosive consisting essentially of nitro-glycerin, nitro-cellulose, nitro naphthalenes, wood pulp, nitrate of soda, and sulfur.

3. A high-power explosive, consisting essentially of nitro-glycerin, nitro-napthalenes, wood pulp, and nitrate of soda.

4. A high-power explosive, consisting essentially of nitro-glycerin, nitro-cellulose, nitro-naphthalenes, nitrate of soda and sulfur.

542,725. WELL-DRILLING MACHINE. JESSE BUTTON, Springfield, Mass., assignor to George D. Loomis, Tiffin, Ohio. Filed Apr. 25, 1894. Serial No. 508,976. (No model.)



Claim.—1. In a well drilling machine the combination of a walking beam, B, a screw, *c*, a frame, E, adapted to support the screw and open to permit it to play through both ends, and chains, D, to support the frame, E, and hold the screw in a plane outside of the arc of travel of the walking beam, substantially as described.

2. In a well drilling machine, the combination of a walking beam; a screw; a frame suspended from the walking beam and open at its upper end to permit the screw to play therethrough; a split nut thereon adapted to engage or disengage with the screw, and a cord attached to the screw and carried over a sheave or sheaves to a position within reach of the operator whereby the temper screw may be raised, substantially as and for the purpose set forth.

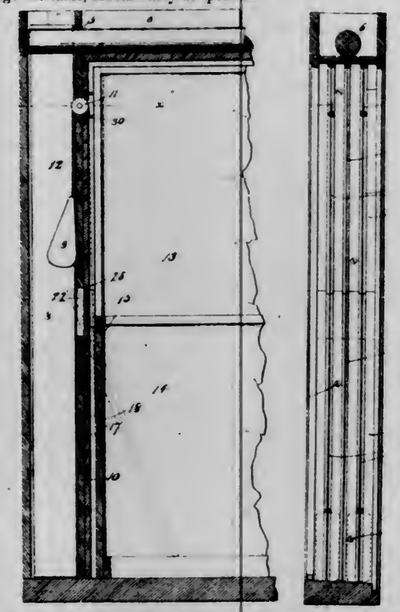
3. In a well drilling machine the combination of a walking beam, B; a screw, *c*; a frame, E; open at its upper end to permit the screw to play therethrough flexible supports, D, adapted to support the frame, E and hold the screw in a plane outside the arc of travel of the walking beam, a slip nut, c^3, on the frame adapted to engage or disengage the screw, and a cord, F, whereby the screw may be raised, substantially as and for the purpose set forth.

542,726. WINDOW. JUDSON A. CLEVELAND, Duluth, Minn. Filed Jan. 8, 1895. Serial No. 534,244. (No model.)

Claim.—1. The combination with the window-frame and the openings 22, the upper filling-board provided with guide-ribs having grooves, the lower filling-board meeting the upper filling-board opposite said opening and also provided with ribs having grooves, pulleys arranged above the openings, weight-wires arranged over the pulleys, weights at the inner ends of the wires and rings at the outer ends thereof, said wires lying within the grooved ribs of the upper filling-boards, the ends of which act as stops for the rings when the lower filling-boards are removed, of sashes removably arranged in the frame and grooved to receive the ribs and provided with circular recesses adapted to receive the rings in a removable manner and retain the same by contact of their walls with the rings, substantially as specified.

2. The combination with a window casing having its sides extended above its top sill, a transverse shaft loosely journaled in openings formed in said extended portions and terminating above the weight boxes of the frame, and a partition strip let into the ends of the shaft and depending loosely in the boxes, window sashes, pulleys, wires passing over the same and connected to the sashes, and weights connected to the wires within the boxes at opposite sides of the partition, substantially as specified.

3. The combination with a window frame its pulleys, weight-wires and weights, of sashes having circular recesses formed in their side-rails, split expanding rings connected to the wires and adapted to be compressed to enter the recesses and when released to expand and engage the same, substantially as specified.



4. A window-frame having its usual guide-ribs provided at their outer faces or edges with open contractible longitudinal grooves, in combination with sashes grooved to span the grooves of the ribs and to receive said ribs, substantially as specified.

5. The combination with a window frame having inner and outer stop-beads of an intermediate filling-board having guide and intermediate spacing-ribs grooved longitudinally, and window sashes having grooves to receive the guide-ribs substantially as specified.

6. The combination with a window frame having inner and outer stop-beads, of an inner filling-board provided with space and guide-ribs grooved at their inner edges and cone-shaped in cross-section and sashes grooved to receive the guide-ribs, substantially as specified.

7. The combination with a window frame having its inner face provided with grooved guide and spacing-ribs, of sashes grooved to receive the guide-ribs, substantially as specified.

8. The combination with a window frame the inner boards of which are provided with openings extending above their middles and independent filling-strips arranged removably on said board and meeting a distance above the meeting rails of the sashes equal to the depth of the bead of the window sill and provided with grooved guide ribs, of sashes grooved between their edges to receive said ribs pulleys arranged in the upper portion of the frame, and weight wires arranged on the pulleys, detachably connected to the sashes and arranged in said grooves, substantially as specified.

9. The combination with a window frame the inner board of which is provided with the openings 22, the upper and lower independent filling boards 23 and 24 the former being under-cut and terminating at the upper edge of the opening 22 and the latter beveled to correspond therewith and extending from such point to the lower sill, guide-ribs arranged on said filling-boards removably, and screws for retaining the boards in position, substantially as specified.

542,727. MECHANICAL TOY. WILLIAM S. COOPER, Newport, R. I. Filed Feb. 28, 1895. Serial No. 540,084. (No model.)

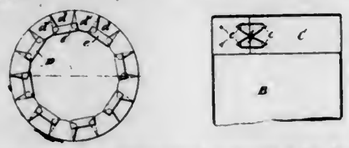


Claim.—1. A revoluble hoop provided with a centrally arranged axle, in combination with one or more figures or automatons pivoted to and adapted to be carried around with said axle, and means for propelling said figures or automatons and causing them to describe a circle around the axle, substantially as specified.

2. A revoluble hoop provided with a centrally arranged axle, in combination with one or more figures or automatons mounted upon said axle and adapted to be carried around with the same, and the stops or pins for propelling said figures in a circle around the axle and limiting the movements of said figures or automatons, substantially as described.

3. A hoop or wheel provided with a centrally arranged axle, in combination with one or more figures or automatons, having jointed arms and legs and pivoted upon and adapted to be carried around said axle, a stop carried by said axle, and a corresponding stop carried by each figure or automaton, said stops being adapted to co-operate, substantially as and for the purpose described.

542,728. PROTECTIVE GUARD FOR PAPER-ROLLS. CHARLES L. DUVAL, Bayonne, N. J. Filed Aug. 14, 1894. Serial No. 520,272. (No model.)

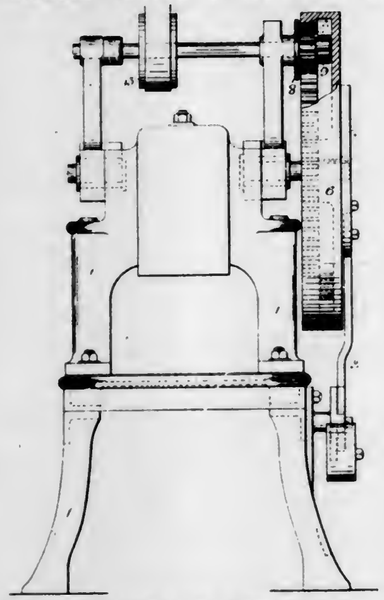


Claim.—1. The adjustable guard consisting of the flexible cylindrical portion C and the sectional turned-over portions *d d'* arranged to play upon each other and permit the adjustment of the guard, the ends of the portion *d* being turned over the alternate portions *d'* as at *e*, and hooks or fastening devices *c* being formed integrally with the said guard, substantially as set forth.

2. The flexible adjustable guard consisting of a metallic plate or blank having turned up sectional portions *d d'* interlocking and playing upon each other to permit the adjustment of the said guard, and means for securing the ends of the said guard together, substantially as set forth.

3. A guard for the purposes described consisting of a cylindrical portion C and the sectional end portion D, the sections of such end portion interlocking and playing upon each other to permit the adjustment of the said guard, substantially as set forth.

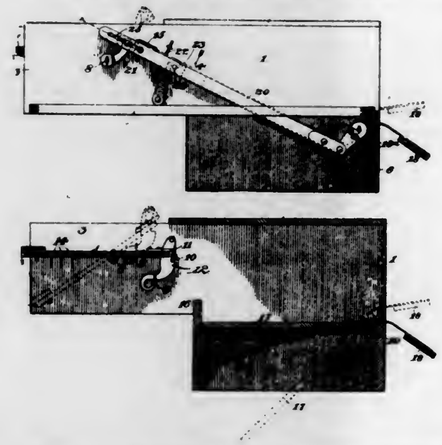
542,729. BRICK-PRESSING MACHINERY. THOMAS C. FAWCETT, Leeds, England. Filed Jan. 25, 1895. Serial No. 536,189. (No model.)



Claim.—1. In a brick pressing machine, the combination, with a driving shaft, and a toothed pinion secured thereon; of a toothed driving wheel gearing into the said pinion and provided with a cam and a stop block on its periphery, a slidable starting bar 16 for the said cam to engage with thereby automatically stopping the machine, and a pawl carried by the said starting bar and dropping behind the said stop block when the machine stops, thereby preventing any reverse movement of the driving wheel, substantially as set forth.

2. In a brick pressing machine, the combination, with a lower reciprocatory presser plate, and an indenting piston slidable in the said presser plate and provided with a depending stem; of the pivoted lever 29 under the said stem, a cam 35 operating to release the said lever when the said presser plate commences its upward movement, and operating mechanism—such as a weighted lever—for raising the aforesaid lever and piston, substantially as set forth.

542,730. ANIMAL-TRAP. CHRISTOPHER FLIEDNER, Portland, Oreg. Filed Apr. 30, 1895. Serial No. 547,683. (No model.)



Claim.—1. A trap, comprising a casing forming a longitudinal passage and open at the ends thereof, and having at the rear portion of the passage an opening or chute, a horizontally disposed lower trap door arranged at the opening or chute and provided with a counterbalancing weight holding it normally in a horizontal position, an upper pivoted trap door located at the front of the casing and provided at its front end with a weight for depressing it to close the mouth of the trap, a bait holding device connected with the inner end of the upper trap door and holding the latter normally in a horizontal position, and adapted to be released by an animal, a catch or latch mounted on the casing and arranged to engage the upper trap door for locking the same in its inclined position, and connections between the upper and lower trap doors for releasing the catch or latch and for returning the upper trap door to its horizontal position, substantially as described.

2 A trap, comprising a casing having at its inner portion a chute or opening, a lower horizontally disposed trap door hinged to the casing and provided with a counterbalancing weight and arranged normally in a horizontal position at the opening or chute, an upper pivoted trap door normally arranged in a horizontal position and located at the front portion of the casing, and adapted to tilt to close the opening of the casing, a latch for locking the upper trap door in its inclined position, a transverse projection arranged in the casing and located in advance of the lower trap door, and connections between the upper and lower trap doors for releasing the latch, and for resetting the upper trap door, substantially as described.

3. A trap, comprising a casing, a lower trap door pivoted at the bottom of the casing and designed to communicate with a cage or the like, an upper pivoted trap door arranged at the front of the casing and adapted to tilt to close the entrance of the trap, crank arms connected with the upper and lower trap doors, a pivoted latch arranged to engage the upper trap door to lock the same in its inclined position, and a connecting bar pivoted to the crank arm of the lower trap door, and having a limited movement independent of the other crank arm and arranged to engage the latch to release the upper trap door, substantially as described.

4. A trap, comprising a casing, a lower trap door, an upper trap door located at the front of the casing and pivotally mounted therein, crank arms connected with the upper and lower trap doors, a latch pivotally mounted on the exterior of the casing and provided with a beveled lug extending through the casing for engaging and locking the upper trap door, said latch being provided with an outwardly extending lug, and a connecting bar pivoted to the crank arm of the lower trap door and having a limited movement independent of the other crank arm, and provided with a projection for engaging the outwardly extending lug of the latch, substantially as described.

542,731. COFFEE OR TEA POT OR URN. CHARLES HALSTEAD, Brooklyn, N. Y. Filed July 1, 1890. Serial No. 357,353. (No model.)



Claim.—1. A coffee pot having a separate coffee receptacle therein, provided with false and main bottoms, having an intervening chamber, a percolator on said false bottom and a gate for said main bottom, said parts being combined substantially as described.

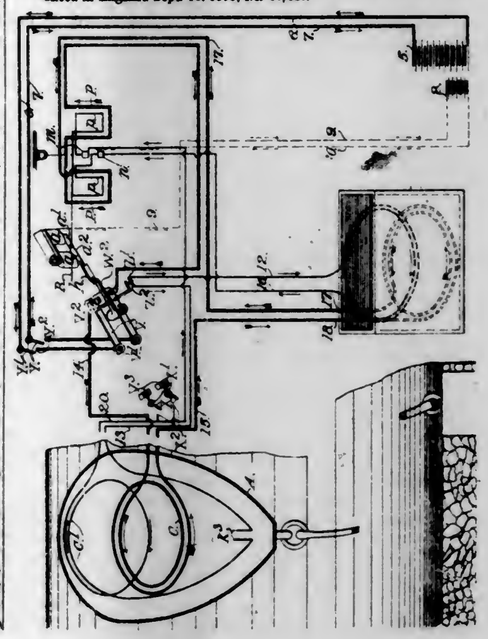
2. In a coffee pot a percolator, having a hollow body of foraminous material and a base or bottom with a liquid chamber between its upper and lower member and a discharge outlet between the walls of said body into said chamber with an outlet in its lower member substantially as and for the purpose described.

3. In a coffee pot, a separate coffee receptacle, a foraminous percolator thereon having a chamber between the double bottom thereof, the said bottom consisting of an upper false member and a lower true member, said false member being percolate, and the true member having openings with a common gate, said parts being combined substantially as described.

4. A percolator having a hollow foraminous wall of annular shape, and a supporting base or bottom with an outlet between the sides of said wall, substantially as and for the purpose described.

5. In a coffee pot, a spout having a cap, and a lifting lever within the spout conforming in cross section to the interior thereof, for automatically adjusting said cap, substantially as shown and described

542,732. SUBMARINE MINE. WILLIAM M. HUSKISSON, London, England. Filed Nov. 22, 1894. Serial No. 529,663. (No model.) Patented in England Sept. 16, 1893, No. 17,447.



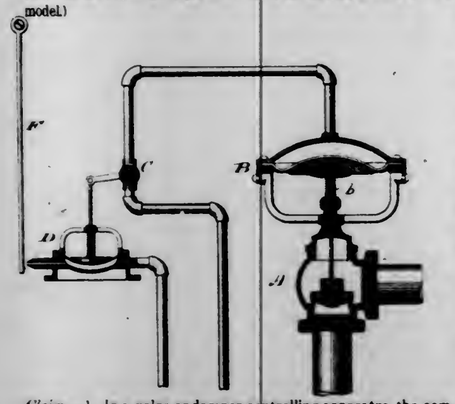
Claim.—1. In submarine mine apparatus, a vessel charged with explosive compound, a Hughes induction balance one part of which is contained within the vessel while another part thereof is situated at a distance, an electric fuse within the said vessel included in the secondary circuit of the said induction balance, a current generator at a distance whose circuit is connected with the primary circuit of said induction balance and means in connection with the secondary circuit thereof whereby when a current passes through said circuit, the circuit of the current generator is switched on to said secondary circuit and is thereby made to fire the electric fuse, substantially as described.

2. In submarine mine apparatus the combination of a mine or vessel charged with explosive compound, a Hughes induction balance, one primary and secondary coil of which is contained within said mine while the secondary primary and secondary coil thereof are situated at a distance therefrom, an electrical fuse within the mine, adapted to explode the charge thereof and connected to the secondary circuit of the said induction balance, a current generator at a distance from the mine, whose circuit is connected to the primary circuit of the Hughes induction balance, and an antomatic switching device whereby an induced current, produced in the secondary circuit of the induction balance by a ship passing within the operative distance thereof causes the switch to connect the current generator circuit onto the said secondary circuit so as to explode the fuse of the mine by the generator currents, substantially as described.

3. The combination with a submarine mine of a Hughes induction balance, the primary circuit of which is connected to the circuit of a current generator, while the secondary circuit (in which an electrical fuse contained in the mine is included) is connected to a switch apparatus, and means whereby when a current is induced in such secondary circuit, it will operate the switch so as to connect the circuit of the current generator, with the said secondary circuit, substantially as described

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542,733. HEAT-REGULATING APPARATUS. WARREN S. JOHNSON, Milwaukee, Wis. Filed June 4, 1894. Serial No. 513,497. (No model.)



Claim.—1. In a valve or damper-controlling apparatus, the combination of a primary, a secondary, and a tertiary valve; fluid pressure motors for actuating the primary and secondary valves; and a thermostatic motor for actuating the tertiary valve; the primary valve serving to regulate the heat supply: the secondary valve serving to control the delivery and release of fluid pressure to and from the primary valve motor; and the tertiary valve serving to open and close an outlet of the fluid pressure motor of the secondary valve and thereby to control the fluid pressure of the secondary valve motor.

2. In heat regulating apparatus the combination of a main heat-controlling valve or damper, a primary fluid pressure motor connected therewith, a secondary valve controlling the supply and release of fluid pressure to and from said motor, a secondary fluid pressure motor connected with said secondary valve, a tertiary valve controlling the release of fluid pressure from the secondary motor, and a thermostat arranged to actuate said tertiary valve, the main valve being arranged to close when the tertiary valve opens, and vice versa, substantially as and for the purposes set forth.

3. In combination with a main heat-controlling valve or damper, a fluid-pressure motor for actuating said valve or damper, a second valve controlling said fluid-pressure motor, a second fluid-pressure motor controlling said second valve, and a thermostat controlling the relative supply and waste of fluid in the second fluid-pressure motor.

4. In combination with a valve or like device, and with a slowly-acting motor having a movable member, a pivoted frame or lever connected with the movable member of said motor, a toggle joint carried by said frame and connected with the valve or like device, and a spring tending to carry the members of the toggle joint out of line with each other, substantially as and for the purpose set forth.

5. In combination with a valve or like device, and with a slowly-acting motor having a movable member, a pivoted frame or lever connected with the movable member of said motor, stops to limit the play of said frame, a toggle-joint carried by said frame and connected with the valve or like device, and a spring, tending to carry the members of the toggle-joint out of line with each other; whereby the initial action of the motor is caused to move the frame and to shift the toggle from one to the other side of its central line, without affecting the valve, and the spring is caused thereupon to throw the valve instantaneously its entire distance regardless of the continuing movement of the motor and frame.

6. In combination with valve C and fluid-pressure motor D, swinging frame O, toggle-joint o o' pivotally connected with frame O, and having an extension beyond its pivot to engage the stem of valve C, and a spring o^3 connected at one end with the toggle joint and at the other end with frame O,—all substantially as described and shown.

7. In heat regulating apparatus the combination with a main heat controlling valve or damper, and a fluid pressure motor connected therewith, of a thermostatic fluid pressure controlling instrument governing the operation of said motor, and comprising a supply and waste valve, a secondary fluid pressure motor connected therewith having a constant fluid pressure supply connection and an outlet of larger area, a valve controlling said outlet, and a thermal expansion strip arranged to actuate said valve, substantially as and for the purposes set forth.

8. In heat regulating apparatus the combination with a main heat controlling valve or damper, and a fluid pressure motor connected therewith, of thermostatic fluid pressure controlling mechanism governing the operation of said motor and comprising a supply and waste valve, a secondary fluid pressure motor connected therewith having an outlet, and a fluid supply connection provided with a regulating valve, a valve controlling said outlet and a thermostat arranged to actuate said outlet valve, substantially as and for the purposes set forth.

9. In heat regulating apparatus, the combination of a movable block or lever; an indicator arm connected with and serving to move said block; a scale over which the indicator moves; a stud pivotally connected with the movable block, a screw for adjusting said stud relatively to the block; and a thermostatic bar or strip carried by the stud; the screw serving to adjust the thermostatic bar or strip relatively to the indicator arm, and the indicator arm serving to adjust said bar or strip relatively to the scale, substantially as explained.

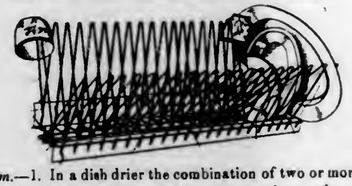
10. In heat regulating apparatus the combination with a heat-controlling valve or damper, and a fluid pressure motor connected therewith, of a thermostatic fluid pressure controlling instrument comprising a suitable base and cover, a supply and waste valve, a secondary fluid pressure motor connected therewith, a lever pivoted to said base, a thermal expansion strip pivotally connected with said lever and provided with a valve which controls the operation of the secondary motor, a cam engaging with said lever and provided with a key stem accessible through an opening in the cover, a scale exposed through an opening in the cover, an index connected with said cam, and arranged to indicate upon said scale the degree of temperature at which the instrument is set to open or close said thermostatic valve, an arm or plate attached to the pivotal connection of the expansion strip, and a screw arranged to turn the same and to adjust the thermostatic valve with reference to its seat, substantially as and for the purposes set forth.

11. In heat regulating apparatus, the combination with a source of fluid pressure, of an automatic governor for regulating such pressure, a fluid-pressure motor connected with said source of fluid pressure by a restricted passage and having a relief opening of normally greater area than its inlet, a valve controlling said relief opening, a thermostatic motor for operating said relief valve, a main valve or damper, and intermediate mechanism whereby said main valve or damper is operated and controlled through said fluid-pressure motor.

12. In heat regulating apparatus the combination of a motor for producing fluid pressure, an automatic governor for controlling said motor or pressure, an expansion chamber subject to the action of the fluid pressure produced by said motor, a restricted opening between said chamber and said fluid pressure motor, a relief opening from said expansion chamber having a greater normal opening than said inlet opening, a valve controlling said relief opening, a thermal motor for operating said relief valve, a main valve and intermediate mechanism between said expansion chamber and said main valve, whereby said main valve is operated through the movements of said expansion chamber, substantially as and for the purposes set forth.

13. In heat regulating apparatus the combination with a main heat controlling valve or damper and a source of fluid pressure supply, of a fluid pressure motor governing the operation of said main valve or damper, and having a constantly open restricted passage communicating with said source of fluid pressure supply, and an outlet or relief passage of greater area, a filter between said restricted supply opening and the source of fluid pressure, a relief valve controlling said outlet, and a thermal motor for operating said relief valve, substantially as and for the purposes set forth.

542,734. DISH-DRAINER. CHARLES N. JOHNSON, San Francisco, Cal. Filed Jan. 31, 1895. Serial No. 536,850. (No model.)



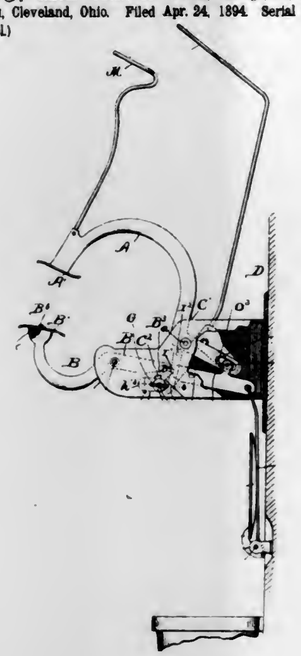
Claim.—1. In a dish drier the combination of two or more metal strips A A′ and a series of arms or fingers secured to and extending upward from each strip, each series of fingers being formed of one continuous wire, and means for securing said series of fingers together, substantially as set forth.

2. In a dish drier the combination of the metal parallel strips A A′ and a series of arms or fingers secured to and extending upward from each of said strips, said fingers of each series being formed of one continuous wire and means for securing said series of fingers together and at the same time permitting of their being folded together as set forth.

3. In a dish drier the combination of two or more metal strips A A′ having a series of parallel slots punched therein, and a series of triangular shaped arms extending upward from each strip, each series of fingers being formed of one continuous wire, the lower base of each of said triangular arms being bent inward or concaved, said strips being so constructed as to permit of a portion of each of said triangular arms protruding through the slots therein and a wire G passing between said protruding portions and the outer surface of said strips, and means for securing said series of fingers together substantially as set forth.

4. In a dish drier the combination of two or more metal strips A A′, having slots C C′ and a series of triangular shaped arms B B′ extending upward from and secured to each strip, and parallel wires H H′ threaded between overlapping vertices of the opposite series of triangular arms whereby said series of fingers are secured together and at the same time permitted to fold together substantially as set forth.

542,735. RACK. PHILIP H. JORDAN, Chicago, Ill., and JOHN O. HUFFMAN, Cleveland, Ohio. Filed Apr. 24, 1894. Serial No. 508,809. (No model.)



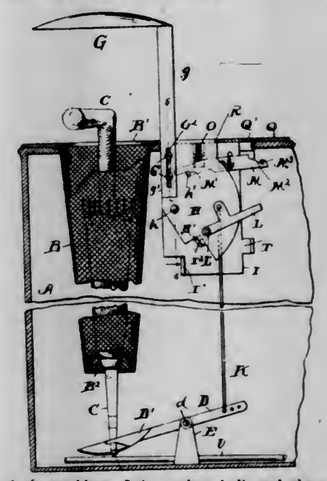
Claim.—1. A rack comprising a box or case C, two jaw-bearing-levers A and B pivotally secured within said case or box, said levers being arranged the one above the other and the fulcrum of the lower lever being located a suitable distance forward of the fulcrum of the upper lever, the box or case being slotted to accommodate the operation of said levers, the rear arm of the lower jaw-bearing-lever being operatively connected with the rear arm of the upper lever substantially as indicated, and key-actuated mechanism for locking the levers in the closed or operative position of the jaws, said key-actuated mechanism comprising an oscillating-barrel H provided with a groove or recess adapted to be engaged by the bit of a key, said barrel being located within the aforesaid box or case, below the rear arm of the lower jaw-bearing-lever and provided with a laterally-projecting arm H′, and the inclosing-case or box adjacent to the key-receiving end of the aforesaid barrel being slotted or perforated, as at C^2, to accommodate the insertion and withdrawal of the operating-key, all arranged and operating substantially as shown, for the purpose specified.

2. In a rack of the variety indicated, the combination of box or case C slotted as at C' C^2; jaw-bearing-levers A and B, the rear arms of said levers being operatively connected with each other substantially as indicated, and the rear arm of lever B being provided with a laterally-projecting lug or member B^4; oscillating-barrel H provided with a groove or recess for receiving a key for turning said barrel, and provided with laterally-projecting arms H′ and H^3, latch I notched or recessed at I′, and a spring L, all arranged and operating substantially as shown for the purpose specified.

3. A rack comprising a pair of levers provided with jaws adapted to engage and hold an article between them, suitable means establishing operative connection between the levers, a laterally-projecting lug or member on one of said levers, a latch or locking-lever having a notch adapted, in the inoperative or jaw-separated position of the levers, to engage said laterally-projecting lug or member of the respective lever and lock the levers in such inoperative position, a spring acting to retain said locking-lever or latch in its locking-position, a key-actuated oscillating-barrel provided with an arm for actuating said locking lever or latch to unlock and provided with another arm for effecting the operation of the aforesaid levers to close their jaws together, the parts being arranged substantially as and for the purpose set forth.

4. In a rack of the variety indicated, the combination with a pair of suitably-actuated jaw-bearing-levers A and B located the one A above the other and having their rear arms operatively connected with each other substantially as indicated, of a lever O operatively connected with the rear arm of the lower jaw-bearing-lever B, and a pair of jaws M and O located a suitable distance above the jaw-bearing-levers, jaw M being formed upon the free end of an upwardly-exteuding arm of lever A, and jaw O being formed upon the free end of an upwardly-extending arm of lever O′, all arranged and operating substantially as shown, for the purpose specified.

542,736. UMBRELLA OR CANE RECEIVING CABINET. PHILIP H. JORDAN, Chicago, Ill., and JOHN O. HUFFMAN, Cleveland, Ohio. Filed Apr. 24, 1894. Serial No. 508,810. (No model.)



Claim.—1. In a cabinet of the variety indicated, the combination of an inclosing case A, receptacle or holder B within said case and adapted to receive an umbrella or cane, a hood G adapted, in its

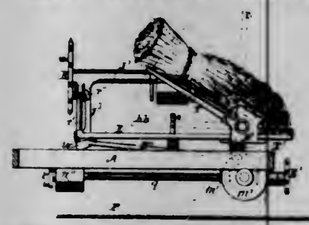
operative position, to overhang the receiving-end of said receptacle, pocket or holder and preclude the removal of the umbrella or cane, an oscillating weight H bearing said hood and located within the inclosing case, a tilting-lever D supported in the lower part of the cabinet, the one arm of said tilting-lever being adapted to be engaged and depressed by the umbrella or cane placed within the aforesaid pocket, receptacle or holder, lever-mechanism operatively connecting the other arm of said tilting-lever with the aforesaid weight and adapted to move the hood from an inoperative into an operative position, mechanism for locking the hood in its operative position and a key for actuating said mechanism to unlock, all arranged and operating substantially as shown, for the purpose specified.

2. In a cabinet of the variety indicated, the combination with an inclosing case A slotted, as at R, and the pocket, receptacle or holder B, hood G and oscillating-weight H bearing said hood, means for locking the hood in its operative position, a key for actuating said means to unlock, the tilting-lever D in the lower portion of the cabinet and lever-mechanism operatively connecting said tilting-lever with the aforesaid weight in such a manner that the weight is actuated, to bring the hood into an operative position, upon the depression of the cane or umbrella-actuated arm of said tilting-lever, all arranged and operating substantially as shown, for the purpose specified.

3. In a cabinet of the variety indicated, the combination with an inclosing case A slotted, as at R, and the pocket, receptacle or holder B, of an oscillating-hood and weight G and H, respectively, said weight being provided with a laterally-projecting lug or member H', tilting-latch M notched at or near one end, as at M', and provided, at its opposite end, with an incline M^3, means acting to retain said latch in its locking or operative position, a tilting-lever D in the lower portion of the cabinet and lever-mechanism operatively connecting said tilting-lever with the aforesaid weight in such a manner that the hood is actuated into an operative position upon the depression of the cane or umbrella-actuated arm of said tilting-lever, and a removable key adapted to engage and depress the incline-bearing end of the latch to effect the disengagement of said latch from lug or shoulder H' on the weight, all arranged and operating substantially as shown, for the purpose specified.

4. In a cabinet of the variety indicated, the combination with an inclosing case A, slotted as at R, and a pocket, receptacle or holder B, of an oscillating-hood and weight, G and H, respectively, said weight being provided with a laterally-projecting lug or member H', tilting latch or lever M notched at or near one end, as at M', and provided, at its opposite end, with an incline M^3 and shoulder M^4, spring O, latch or lever L and latch-plate T, link K, and tilting-lever D, all arranged and operating substantially as shown, for the purpose specified.

542,737. SELF-BINDING HARVESTER. MOSES A. KELLER, Batavia, N. Y., assignor to the McCormick Harvesting Machine Company, Chicago, Ill. Filed Sept. 24, 1887. Serial No. 250,617. (No model.)



Claim.—1. In a bundle discharging mechanism for binders, the combination, substantially as hereinbefore described, of the binder ejector, a supplemental discharger working in a plane at an angle to that of the binder ejector, and mechanism for operating the discharger relative to the ejector so that the bundle will be removed from the binder by the simultaneous action of the two devices and discharged from the machine in a direction at an angle to the line of movement of the binder ejector.

2. In a bundle discharging mechanism for binders, the combination, substantially as hereinbefore described, of the binder ejector, a pivoted oscillating supplemental discharger working in a plane at an angle to that of the binder ejector, and mechanism for operating the discharger relative to the ejector so that the bundle will be removed from the binder by the simultaneous action of the two devices and discharged from the machine in a direction at an angle to the line of movement of the binder ejector.

3. In a bundle discharging mechanism for binders, the combination substantially as hereinbefore described, of the binder ejector, a pivoted oscillating bundle discharger working in a plane transverse to that of the ejector, and mechanism for operating the discharger relative to the ejector so that the bundle will be lifted by the combined action of the two devices.

4. In a bundle discharging mechanism for binders, the combination substantially as hereinbefore described, of the binder ejector, a pivoted oscillating bundle discharger working in a plane transverse to that of the ejector, and operating mechanism for the discharger connected to and driven by the shaft of the ejector, the operation being timed so that the bundle is discharged from the binder by the simultaneous action of the two devices.

5. In a bundle discharging mechanism for binders, the combination substantially as hereinbefore described, of a pivoted discharger oscillating in a plane lengthwise of the bundle and adapted to rock on its longitudinal axis, tines projecting radially from said discharger, dogs projecting radially from the shank of the discharger, and a bracket having cams and recesses co operating with said dog to rock the discharger on said longitudinal axis positively in opposite directions.

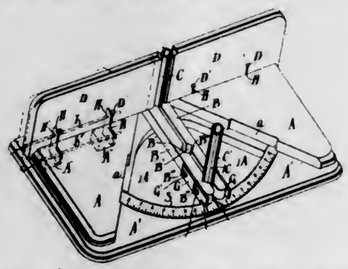
6. In a bundle discharging mechanism for binders, the combination substantially as hereinbefore described, of a pivoted discharger oscillating in a plane lengthwise of the bundle, and adapted to rock in a plane transverse thereto, tines projecting radially from said discharger, a fixed dog projecting radially from the shank of the discharger on one side of its pivot, a radial sliding dog projecting from the shank on the opposite side of its pivot, a bracket having a fixed cam face and a switch cam on one side of the pivot for co-operating with the sliding dog, and a stop or shoulder on the opposite side of the pivot for co-operating with the fixed dog, whereby the discharger is held against rocking during its discharge movement and rocked on its longitudinal axis on the return movement so as to properly present the tines to the bundle.

7. In a bundle discharging mechanism for binders, the combination substantially as hereinbefore described of the rotary binder ejector carried by the main binder shaft, a pivoted oscillating throw-off arm working in a plane transverse to that of the rotary ejector, and mechanism for operating the throw-off arm relatively to the rotary ejector so that the initial movement of discharging the bundle will be effected by the conjoint action of the two devices, the discharge being completed by the throw off arm.

8. In a bundle discharging mechanism for binders, the combination, substantially as hereinbefore described, of the binder ejector, a supplemental discharger, and mechanism for operating the discharger relative to the ejector so that the bundle will be first removed from the binder by the combined action of the two devices and afterward discharged from the machine in a direction at an angle to the line of movement of the binder ejector.

9. In a bundle discharging mechanism for binders, the combination substantially as hereinbefore described, of the binder ejector, a supplemental discharger, and mechanism for operating the discharger relative to the ejector so that it will first assist the ejector in removing the bundle from the binder, and afterward change the direction of movement of the outgoing bundle and complete its discharge from the machine.

542,738. MITER-BOX. SAMUEL LEVAN, Saginaw, Mich. Filed Mar. 23, 1895. Serial No. 542,882. (No model.)



Claim.—1. A miter box comprising a base, a two part movable back adjustably hinged to the base, pivoted guides for the saw adapted to be moved to any desired angle, a scale to indicate when the guides are set to the angle desired, substantially as described

2. In a miter box the combination with the base and the guides for the saw located on a pivotal support, of a support pivoted at one end to the back of the base and provided at the other with a catch adapted to engage as desired serrations on a scale of a longitudinally movable two part hinged back in line with the pivot of the guides, substantially as described.

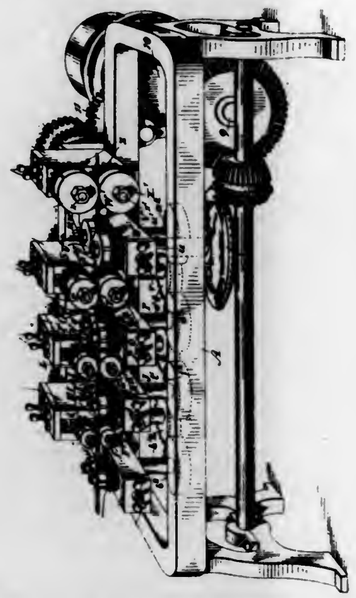
3. In a miter box of the class described, a longitudinally movable two part hinged back comprising a back piece on each side of a pivotal guide, the back hinged to the base by the hinge described and held in a vertical position by the catch N and adapted to move longitudinally on the rod I when desired, substantially as described.

4. In a miter box of the class described a hinge for securing the back to the base comprising L-shaped pieces H and rods I and I' passing through the ends thereof, respectively, and the back and the base, respectively, one end of the hinge H fitting into and adapted to move on the rod I' in the slot A", the other end of the hinge fitting into the groove D' in the back D and held therein by the rod I upon which the back D moves when turned down, substantially as described.

5. In a miter box of the class described, a pivotal guide for the saw comprising metal guide ways C and *l* C, supported upon the horizontal bars B, B, the guide C secured in the inner end of and passing through and below the bars B, B and into the base A, and forming a pivotal support for the bars B, B on the base, the guide *l* C being removable and adjustable to different positions in the bars B, B, the bars B, B being provided with means for receiving the guide *l* C in different places along their length in line with the guide C, and a spring catch G removably secured to the outer end of the bars B, B, having its front end serrated and adapted to engage corresponding serrations arranged upon the edge of a segment of a circle, upon which a scale is formed, the segment secured to the base, the catch G having a pointer in line with the guide ways and pointing to a figure of the scale on which the guide may be set, substantially as described.

6. In a miter box, the combination with the base, a two part laterally movable hinged back provided with longitudinal grooves D" upon the top edge thereof for receiving the saw when turned down and not in use, of pivoted guides for the saw comprising hollow metal guides supported upon a pivoted base, the inner guide forming a pivot of the base, a spring catch on the outer end of the base having serrations upon its outer end and a pointer on the line with the saw guides, a circular scale having serrations on its inner edge adapted to be engaged by serrations on the end of the spring catch, and removable standards fitting into metal guides, and a gage upon the standards for regulating the depth of the cut, substantially as described

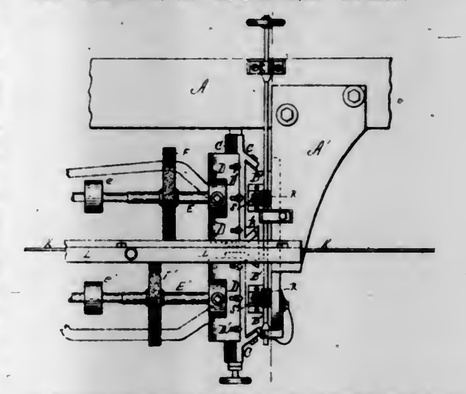
542,739. MACHINE FOR MAKING HORSESHOE-NAIL BLANKS. EDEN PERKINS, St. John, Canada. Filed June 7, 1894. Serial No. 513,790. (No model.) Patented in Canada Oct. 9, 1894. No. 47,214.



Claim.—1. A series of horizontally journaled pairs of rolls suitably driven, the upper one of each pair of which is provided with a series of notches extending across its peripheral face and the lower rolls being perfectly cylindrical, the rolls being of increased diameter and situated at increased distances apart from the point of feed of the rod, as and for the purpose specified.

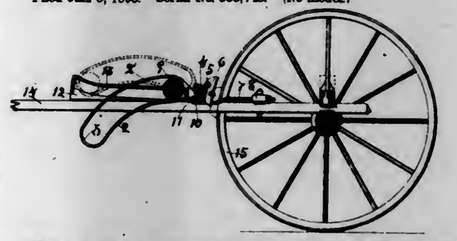
2. The combination with the vertically journaled pairs of rolls, each pair of which has suitably formed notches formed across the peripheral faces, of the horizontally journaled pairs of rolls, the upper roll of each pair of which has notches extending across its peripheral face, and the lower roll of each pair being perfectly cylindrical, the horizontally journaled rolls being interposed between those vertically journaled and so arranged that the co-acting arcs of the horizontally journaled rolls are in direct alignment with the co-acting arcs of the vertically journaled rolls, and all the rolls being of increased diameter from the point of feed of the rod and driven at a uniform speed, as and for the purpose specified.

542,740. GRINDING ADJUSTMENT FOR BELT-KNIFE LEATHER-SPLITTING MACHINES. JAMES ROBERTSON, Woburn, Mass. Filed Mar. 19, 1895. Serial No. 542,356. (No model.)



Claim.—In a grinding adjustment for belt-knife leather-splitting machines, the combination of the ways B B' secured to the frame of the machine, the horizontally moving slides C in said ways, the carriages D secured to said slides, the driving shafts E E' having bearings in said carriages, the grinding-wheels F F' fast on said driving shafts, the belt-knife K extending between said grinding-wheels, the vertical shaft P provided with the worms R R', and the screws V provided with the gears S S' which are engaged by said worms, said screws engaging said slides C by means of the nuts W, substantially as described.

542,741. AUTOMATIC VEHICLE-BRAKE. ALBERT C. SMITH, Blair, Nebr., assignor of one-half to Thomas Wilkinson, same place. Filed Jan. 3, 1895. Serial No. 533,743. (No model.)



Claim.—1. In an automatic vehicle brake the combination of a vehicle gear, brake-shoes connected to and normally rocked against the wheels by a rock-shaft having an arm actuated by a rolling weight to rock the shoes from the wheels substantially as described.

2. In an automatic vehicle brake the combination of a vehicle gear, brake-shoes normally carried against the wheels by arms on a rock-shaft having an arm actuated by a rolling weight on an inclined track to rock the shoes from the wheels substantially as described.

3. In an automatic vehicle brake the combination of a vehicle gear, brake shoes normally carried against the wheels by arms on a rock-shaft having a curved arm, and actuated by a rolling weight, on a rearwardly descending track, to impinge the curved arm and rock off the brake substantially as described.

4. In an automatic vehicle brake, the combination of the vehicle gear, brake shoes normally carried against the wheels by arms on a rock-shaft journaled in adjusting rods, a rearwardly descending track having an upward curve, at the forward end, a free rolling weight to travel on the track and impinge an arm on the rock-shaft and rock off the brake substantially as described.

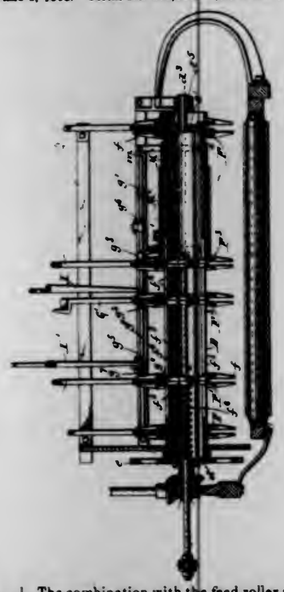
5. In an automatic vehicle brake the combination with the vehicle gear, of a rock-shaft carrying brake-shoes and having a slotted arm, and a rolling weight to run loosely in the slot and on a stationary track, substantially as described.

6. In an automatic vehicle brake, the combination of a vehicle gear, a rock-shaft carrying the brake-shoes and having a slotted arm, with a rolling weight to run loosely in the slot, and on a rearwardly

descending track having an upward curved inclination at its forward end substantially as described.

7. The combination of a wagon gear a rock-shaft having arms carrying parallel therewith a reinforcing brake beam, a slotted arm on the rock-shaft a rolling weight to run loosely in the slot and on a stationary track on the gear, substantially as described.

542,742. GRAIN-BINDER. SUMNER C. THOMPSON, Poughkeepsie, N. Y., assignor of one-half to the Adriance, Platt & Company, same place. Filed June 8, 1893. Serial No. 476,913. (No model.)



Claim.—1. The combination with the feed roller and a feed wheel capable of lengthwise movement thereon, of a shifting rod passing through said feed wheel and provided with a projection in rear thereof whereby the feed wheel is moved forwardly, and a spring whereby the feed wheel is moved backwardly, substantially as set forth.

2. The combination with the feed roller and a feed wheel capable of lengthwise movement thereon, of a shifting rod passing through said feed wheel and provided with a projection in rear thereof whereby the feed wheel is moved forwardly, a spring whereby the feed wheel is moved backwardly, and a stop whereby the rearward movement of said feed wheel is arrested, substantially as set forth.

3. The combination with the feed roller and the needle, of a feed wheel arranged in front of the needle and made lengthwise adjustable on the feed roller, a lengthwise adjustable feed wheel arranged in front of said feed wheel, a shifting rod secured to said first mentioned feed wheel and provided with a projection bearing against the rear side of said last mentioned feed wheel, and a spring bearing against the front side thereof, substantially as set forth.

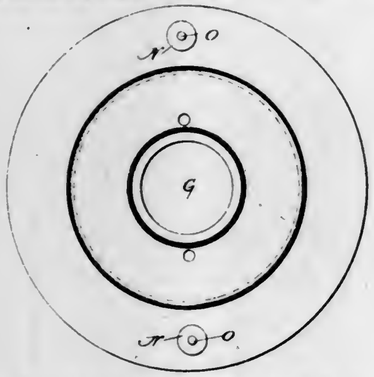
4. The combination with the feed roller and a feed wheel capable of adjustment lengthwise of the feed roller, of a non-rotatable cover arranged over the feed roller adjacent to said feed wheel, and also capable of adjustment lengthwise of the feed roller, substantially as set forth.

5. The combination with the feed roller and the rear feed wheels which are mounted thereon, one of which is capable of adjustment toward and from the other, of a telescopic non-rotatable cover arranged over the feed roller between said feed wheels, substantially as set forth.

6. The combination with the feed roller, the rear feed wheel, and the rear intermediate feed wheel and its scroll arm made lengthwise adjustable, of a stationary cover arranged over the rear portion of the feed roller, and an adjustable cover arranged over said stationary cover and secured to the adjustable scroll arm, substantially as set forth.

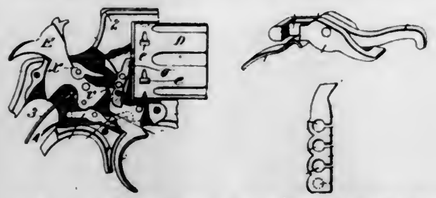
542,743. CYLINDER-HEAD FOR GAS OR GASOLINE ENGINES. FRANK M. UNDERWOOD, Upper Sandusky, Ohio. Filed Mar. 14, 1895. Serial No. 541,702. (No model.)

Claim.—1. The combination of the cylinder having the surrounding space or jacket, the cylinder head having the jackets or spaces communicating with the jacket of the cylinder, the tubes or sleeves for securing the head to the cylinder, and also forming the communication between the same, and the valves for controlling the communication between the cylinder and head.



2. The combination with the cylinder having the surrounding jacket, the cylinder head having the chambers or jackets communicating with the jacket of the cylinder, the gaskets or packings secured in the meeting edges of the cylinder and head, the rounded tubes or sleeves seated in said gaskets and forming a communicating connection between the cylinder and head, and the adjustable valves for controlling the communication through said tubes or sleeves.

542,744. REBOUND AND COCKING MECHANISM FOR REVOLVERS. DANIEL B. WESSON, Springfield, Mass. Filed Jan. 14, 1895. Serial No. 534,916. (No model.)



Claim.—1. In a revolving fire-arm, a longitudinally yielding hand engaging with the cartridge cylinder for rotating the same, substantially as set forth.

2. The combination with the lock-mechanism and cylinder of a revolving fire-arm of a longitudinally yielding hand pivotally attached to the trigger and having its free end engaging said cylinder, whereby the latter is rotated, substantially as set forth.

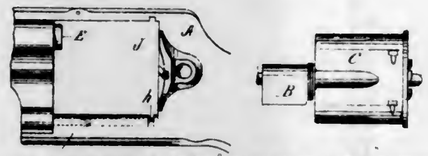
3. In a revolving firearm, the cylinder having a ratchet connected thereto, and a hand engaging said ratchet and operatively connected to the lock mechanism, said hand being a metal piece having one side continuous from end to end, the other side having surfaces separated by openings, whereby the piece becomes rigid when said openings are closed, all combined substantially as described.

4. In a gun lock, the pivoted hammer, the pivoted trigger having a cam or eccentric surface thereon, the rebounder spring, and the rebounder lever pivotally supported from the frame and between the rebounder spring and trigger, and having a cam surface engaging and rebounding the hammer from its extreme forward position when said lever is engaged by the cam on the trigger at about the extreme forward position of the trigger, all combined substantially as described.

5. In a gun lock, the pivoted hammer, the pivoted trigger, having a cam surface thereon, the rebounder spring, the rebounder lever supported on a pivot between said spring and the trigger, and having a cam surface in position for engagement with the hammer to rebound the same as described, the cam on the trigger engaging said lever, at about the extreme forward position of the trigger, and the cocking latch carried by the hammer and projected by a spring over the trigger when the hammer is in rebounded position.

6. The trigger having a projection on its rear edge, for engagement with one arm of a rebounding lever, a trigger-spring, a pivoted trigger-lever having one arm engaging with the trigger, and its opposite arm engaging said trigger-spring whereby the trigger is held normally in a forwardly swung position, combined with a rebounder lever whose upper edge at intervals has bearing contact with the lower end of the hammer, whose forward arm is alternately engaged with, and is free of, said trigger projection, and whose second arm is swung against said spring simultaneously with the said engagement of said forward arm with said projection.

542,745. LIMITING-STOP FOR REVOLVER-CYLINDERS. DANIEL B. WESSON, Springfield, Mass. Filed Feb. 23, 1895. Serial No. 539,379. (No model.)

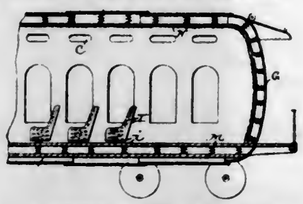


Claim.—1. In a revolving fire arm, the frame, a yoke supported in the frame and swinging to the side of said frame as described, and the cylinder supported on said yoke, and having a projecting rim near its rear end which enters a groove in the frame, substantially as described.

2. In a revolving fire-arm, the frame, a yoke supported in the frame and swinging sidewise, the cylinder supported on said yoke, said frame and cylinder having interlocking projections which engage and prevent longitudinal movement of the cylinder in both directions when swung outward to the side of the frame, substantially as described.

3. In a revolving fire arm, the frame, the cylinder supporting yoke pivoted in the frame so as to swing sidewise therein, and the cylinder carried by said yoke, said cylinder and frame having interlocking projections which engage the periphery of the cylinder with the frame and hold the cylinder against longitudinal movement in both directions and thereby relieve the yoke, substantially as described.

542,746. PASSENGER-CAR. CASPER ZIMMERMAN, Chicago, Ill. Filed Mar. 11, 1895. Serial No. 541,298. (No model.)



Claim.—1. A passenger car with a cylindrical body, formed of circular curved end plates, and circular bands, all lapping and riveted together, with ventilator openings near the top of the car, and with windows at the sides of the car, said car provided with flooring mounted on springs, and with the inside of the car lined with leather or plush, and springs interposed between said lining and the car, substantially as shown and described.

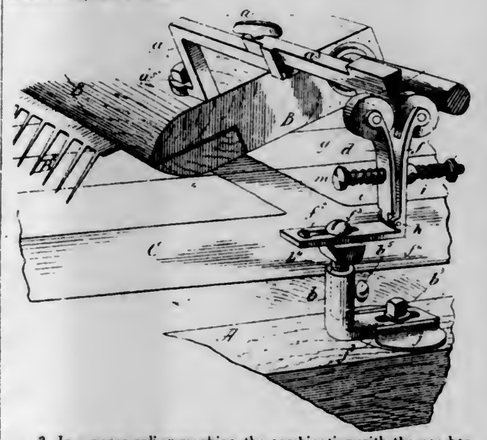
2. A railroad passenger car with a cylindrical body formed of circular curved end plates, said end plates provided with a door and circular bands, all lapping and riveted together with ventilator openings near the top, and windows and sides, a flexible hood over each end actuated by means of a spring roller, a means for providing a current of cold air when said car is in motion, substantially as shown and described.

3. A railroad passenger car with a cylindrical body, formed of circular curved end plates and circular bands, all lapping and riveted together with ventilators near the top, and windows on each side, a loose flooring in said car mounted on springs, a suitable number of spring chairs made with a single piece of bar steel with the seat of the spring made spirally and pivoted to said floor, the sides, ends and ceiling of said car provided with flexible lining, a suitable number of spiral springs between said lining and the shell of the car, substantially as shown and described.

542,747. ATTACHMENT FOR RULING-MACHINES. EDMUND H. ALGER, Holyoke, Mass. Filed Jan. 25, 1895. Serial No. 536,174. (No model.)

Claim.—1. In a paper ruling machine, the combination with the oscillating pen-bar, of paired rollers adjacent the pen-bar, mounted to move the one toward and away from the other and having a spring or springs for maintaining them yieldingly in their approached relations, and a wedge-shaped member supported by the pen-bar to move in conjunction therewith and arranged to have upon its descending movement a spreading impingement between and against the said rollers, substantially as and for the purpose described.

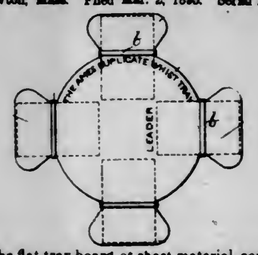
2. In a paper ruling machine, the combination with the pen-bar of the rollers, g, g, adjacent the pen-bar mounted to move the one toward and away from the other, and having a spring or springs for maintaining them yieldingly in their approached relations, and the standard, a, secured on the pen-bar, which has the extension bar, a^5, provided with the wedge, a^6, adjustable horizontally on the standard, substantially as described.



3. In a paper ruling machine, the combination with the pen-bar and the wedge-shaped member mounted thereon, of paired rolls adjacent the pen-bar and supports therefor which are movable the one toward the other and which are vertically adjustably mounted and a spring or springs applied to the roll supports for forcing the one toward the other, substantially as and for the purposes set forth.

4. In a paper ruling machine, the combination with the pen-bar and the wedge-shaped member, a^4, mounted thereon, of the two-part and vertically extensible standard, b, the plate, f^3, horizontally adjustable on the upper end of said standard, the arms, f, d, supported on said plate, f^3, the one being movable toward and away from the other, and carrying the opposing rollers, g, g, and a spring or springs applied for forcing the one arm toward the other, all substantially as and for the purposes set forth.

542,748. TRAY-BOARD FOR DUPLICATE WHIST. FISHER AMES, Newton, Mass. Filed Mar. 2, 1895. Serial No. 540,278. (No model.)



Claim.—The flat tray board or sheet material, composed of body a; four projections a', each of the width at its inner end of a playing card and wider at its outer end, and each of about half the length of a playing card; and bands b held in place by the shape of the projections a' and body a; all substantially as and for the purposes specified.

542,749. CAR-FENDER. ROBERT BATHGOE, Fall River, Mass. Filed May 3, 1895. Serial No. 547,990. (No model.)

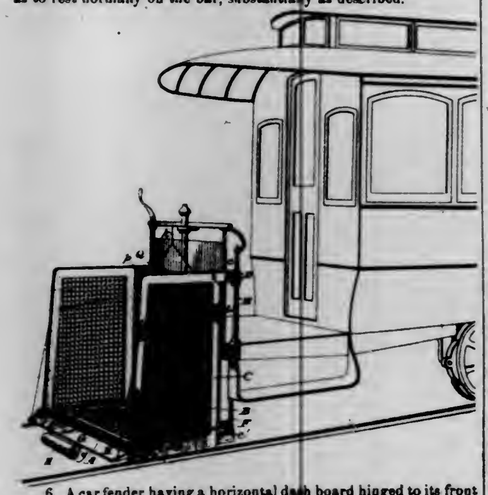
Claim.—1. A car fender having a fixed bottom and ends, and a yielding back, hinged at its upper edge substantially as described.

2. A car fender having a fixed bottom, a yielding back, a vertically movable front guard, and operating connections between said back and guard, substantially as described.

3. A car fender having a fixed bottom, a yielding back a vertically movable front guard, springs for raising said guard, and fingers on said back for holding down said guard, substantially as described.

4. A car fender having a fixed bottom, and ends, upright guides supported on said ends, a cross bar along the front edge of the bottom having eyes engaging said guides, and a flexible curtain attached at one edge to said bottom and at the other edge to said bar, as described.

5. A car fender having a fixed bottom and ends, a back hinged at its upper edge, a bar extending across the front of the fender, a flexible curtain attached to said bar and to the said bottom, springs for raising said bar, and fingers on said back extending forward so as to rest normally on the bar, substantially as described.



6. A car fender having a horizontal dash board hinged to its front edge, springs for holding down said dashboard, and means for raising said board at will, substantially as described.

7. A car fender having a horizontal dash board hinged to its front edge, a long roller mounted on the front of said dash board, springs to hold the dash board down, and chains running from said dash board over pulleys to a point convenient to the motorman, substantially as described.

8. The combination with a car, of hangers depending from the car platform, and a fender having rearwardly extending upper and lower arms, the latter being notched to hook over said hangers, and the former carrying hinged hasps to engage with the stanchions of the dashboard of the car, substantially as described.

542,750. INKSTAND. GABRIEL A. DOBRICK, Boston, Mass. Filed Jan. 16, 1895. Serial No. 535,090. (No model.)

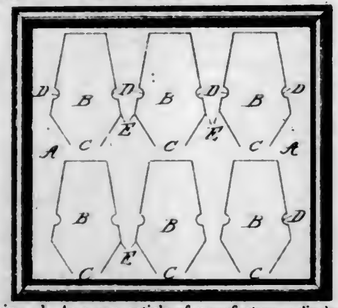


Claim.—1. An inkstand comprising a shell adapted to enter a counterbored hole in a desk top, an ink-well loosely supported within said shell, a recessed lid-carrier adapted to normally enter the counterbore in the desk top, a screw pivot eccentrically connecting it to the shell, loosening of said pivot permitting the lid-carrier to be tilted and swung laterally for removal or insertion of the ink-well, and a circular lid, having a pen-hole, pivoted to said lid-carrier and rotatable in its recess, the bottom of the lid carrier being shaped to leave an opening over the ink-well, to be covered or uncovered by rotation of the lid, substantially as described.

2. An inkstand comprising a shell having an external flange and adapted to enter a counterbored hole in a desk top, an internal shoulder on said shell, an ink-well loosely supported thereby, a recessed lid-carrier, a screw pivot therefor to connect it to the shell, whereby the carrier may be tilted and swung about its pivot when the latter is loosened, and a circular lid, having a pen-hole, pivoted to said lid-carrier and rotatable in the recess therein, the bottom of the lid-carrier being shaped to leave an opening over the ink-well, to be covered or uncovered by rotation of the lid, substantially as described.

3. An inkstand comprising a shell adapted to enter a counterbored hole in a desk top, an ink-well loosely supported within said shell, a lid-carrier adapted to normally enter the counterbore in the desk top, and shaped to leave an opening over the ink-well, a screw pivot eccentrically connecting said lid-carrier to the shell, a locking device to prevent lateral movement of said carrier when the screw is tightened, and a circular lid, having a pen hole, pivoted to and rotatable on said lid-carrier, rotation of the lid covering and uncovering the opening over the ink-well, the lid-carrier being adapted to be tilted and laterally swung about its pivot when the latter is loosened to permit insertion or removal of the ink-well, substantially as described.

542,751. CARD FOR DISPLAYING RINGS. FRANK S. BOYDEN, Chicago, Ill. Filed Nov. 14, 1894. Serial No. 528,708. (No model.)



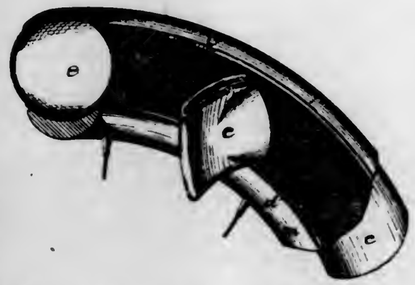
Claim.—1. As a new article of manufacture a display card consisting of a sheet of flexible material, one or more forms attached at their bases to said sheet, said forms having notches to engage and hold rings to be displayed thereon and being widened at a point between said notches and said base so that when the sides of the forms are bent backward, said wider parts are adapted to form supporting points for the forms and the rings displayed thereon, substantially as described.

2. In a display card, the combination of a sheet of flexible material, one or more flexible forms attached at their bases to the said sheet, being notched or recessed in opposite sides and widened between their bases and the recesses, said widened portion forming resting points for the forms, substantially as shown and described.

3. In a display card, the combination of a sheet of flexible material, flexible forms attached thereto at one side and normally resting at an angle to said sheet, and notches or recesses in two opposite sides, said forms being widened on opposite sides between the notches and the base, substantially as and for the purpose described.

4. In a display card, a sheet of flexible material, a series of forms cut therefrom but attached at their bases to the sheet, said forms being notched or recessed on opposite sides intermediate their length, widened between their bases and the recesses, and normally resting at an angle to the horizontal frame of said sheet, substantially as shown and described.

542,752. VEHICLE-TIRE. ALEXANDER T. BROWN, Syracuse, N. Y. Filed Oct. 11, 1894. Serial No. 525,564. (No model.)



Claim.—1. A body for a vehicle tire, consisting of a band or strip wound spirally with overlapping edges, and having the outer peripheral portion of said overlapping edges secured together, whereby inclined or oblique side pockets or openings are formed, substantially as and for the purpose specified.

2. A vehicle tire, consisting of an air-tube and a covering for the same having a series of inclined or oblique side pockets, whereby access may be had to any portion of said air-tube without entirely removing the same.

3. A vehicle tire, consisting of an air-tube and a covering for the same having a series of inclined or oblique side pockets formed by the overlapping edges in spirally winding said covering, as and for the purpose specified.

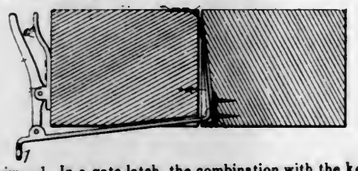
4. In a pneumatic tire, a covering for the air-tube, consisting of a band or strip spirally wound with overlapping edges, the outer and inner peripheral portions of said overlapping edges secured together, leaving inclined or oblique side openings, as and for the purpose specified.

5. A vehicle tire, consisting of an air-tube, a covering for the same having a series of inclined or oblique side pockets formed by spirally winding said covering, and a tread secured onto the covering.

6. A vehicle tire, consisting of an air-tube, a covering for the same having a series of inclined or oblique side pockets formed by spirally winding said covering, a tread formed on the outer periphery of the covering and a bearing on the inner periphery thereof, substantially as specified.

7. A vehicle tire, consisting of an air-tube and a covering for the same provided with a suitable tread and a bearing strip, and with a series of pockets extending in an inclined or oblique direction from said tread to said bearing strip, as and for the purpose specified.

542,753. GATE-LATCH. OTTO A. BURTON, Atlanta, Ga. Filed Oct. 2, 1894. Serial No. 524,740. (No model.)



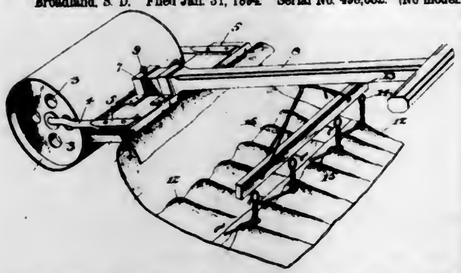
Claim.—1. In a gate latch, the combination with the keeper, of the latch proper, consisting of two arms formed integral and arranged at right angles with each other, one of said arms being thinner and narrower than the other to give the latch resilience, and the free end of the thicker arm of the latch having an integral outwardly extending arm by which the angle of the latch is withdrawn from engagement with the keeper, substantially as described.

2. In a gate latch, the combination with the keeper, and the horizontally-movable bent spring-latch, the angle of which is designed to engage said keeper, of an operating handle at the free end of said latch, and a horizontal lever, pivotally secured to said free end of the latch and fulcrumed intermediate of its ends, substantially as described.

3. In a gate latch, the combination with the keeper, and the horizontally-movable bent spring-latch, the angle of which is designed to engage said keeper, of a handle for operating the latch from one side of the gate, a horizontal lever for operating the latch from the other side of the gate, said lever being pivoted to said latch, and a casting upon which said lever is fulcrumed, said casting having a gripping piece, substantially as described

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542,754. PRAIRIE-FIRE EXTINGUISHER. JAMES DAWSON, Broadland, S. D. Filed Jan. 31, 1894. Serial No. 498,632. (No model.)



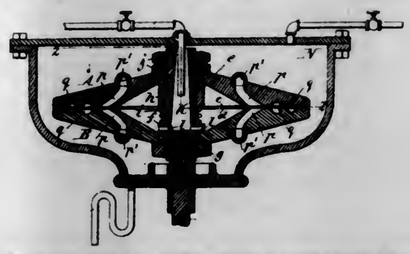
Claim.—1. In a prairie-fire extinguisher, the combination of a roller provided with a tongue, and a flexible apron arranged to drag in rear of said roller and provided with pockets for the reception of sand or other material to weight the apron, substantially as specified.

2. In a prairie-fire extinguisher, the combination of a framework, a roller journaled upon said framework, a tongue connected to the framework, a flexible apron secured at its front edge to the cross-bar of the framework, and an intermediate bar suspended flexibly from the tongue and connected to the apron near its rear free edge, substantially as specified.

3. In a prairie-fire extinguisher, the combination of a framework having a cross-bar provided at its rear edge with hooks, a roller journaled upon said framework, a tongue detachably connected to the cross-bar, a weighted apron detachably connected at its front edge to said hooks upon the cross-bar, a bar suspended loosely from the tongue near its free end, and hooks forming a detachable connection between said loosely-suspended bar and the apron, substantially as specified.

542,755. CENTRIFUGAL MACHINE FOR MIXING GASES WITH LIQUIDS. MARTIN EKENBERG, Stockholm, Sweden, assignor to the Aktiebolaget Separator, same place. Filed Apr. 13, 1894. Serial No. 507,361. (No model.)

Claim.—1. A centrifugal machine for mixing a gas with a liquid consisting of a rotating vessel which is provided with a central inlet for the liquid, a cavity surrounding said inlet and receiving the liquid therefrom, a peripheral discharge extending outwardly from said cavity and through which the mixture of liquid and gas is delivered from the vessel, and with one or more gas supply passages penetrating the wall of said cavity between said liquid inlet and said peripheral discharge, substantially as set forth.

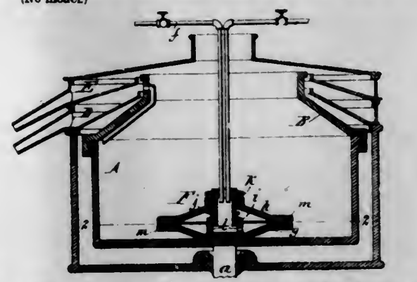


2. A centrifugal machine for mixing a gas with a liquid consisting of a rotating vessel which is provided with a cavity which receives the liquid, with a peripheral discharge extending outwardly from said cavity, and with one or more gas supply passages extending from the outer surface of the vessel into the interior thereof, said gas passages having their inlets arranged nearer the axis of rotation than their outlets, substantially as set forth.

3. A centrifugal machine for mixing a gas with a liquid, consisting of a rotating vessel which is provided with a cavity which receives the liquid, with a peripheral discharge extending outwardly from said cavity, and with one or more gas supply passages extending from the outer surface of the vessel into the interior thereof and provided at their receiving ends with gathering devices, substantially as set forth.

4. The combination with a rotating vessel which is provided with a cavity which receives the liquid, with a peripheral discharge extending outwardly from said cavity and with one or more gas supply passages extending from the outer surface of the vessel into the interior thereof, of a bowl forming a gas supply chamber inclosing said vessel and provided with a gas supply conduit and with a discharge for the liquid, substantially as set forth.

542,756. COMBINED CENTRIFUGAL EMULSOR AND SEPARATOR. MARTIN EKENBERG, Stockholm, Sweden, assignor to the Aktiebolaget Separator, same place. Filed Apr. 13, 1894. Serial No. 507,362. (No model.)



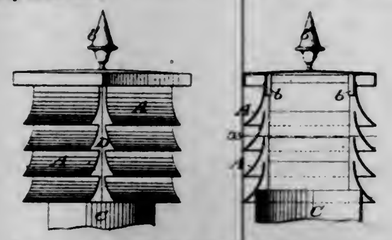
Claim.—An apparatus for continuously emulsifying two liquids and then separating the emulsion, said apparatus consisting of a rotating separating bowl, provided with discharges for the separated liquids, and a centrifugal emulsor arranged within said bowl and rotating therewith, said emulsor being provided with a central feed pipe which receives the liquids to be emulsified, with a cavity which surrounds the feed pipe and receives the liquids therefrom, and with a peripheral discharge slit extending outwardly from said cavity, whereby the liquids are emulsified and discharged into the bowl, in which the emulsion is then separated, substantially as set forth.

542,757. CHIMNEY-CAP. WILLIAM E. ESPERSON, Brooklyn, N. Y. Filed May 8, 1895. Serial No. 548,480. (No model.)

Claim.—1. A chimney cap, the body portion of which consists of series of superimposed louver slats and angular corner plates secured to each of the adjacent ends of the said louver slats for connecting them rigidly together, substantially as set forth

2. A chimney cap, the body portion of which consists of series of superimposed louver slats and angle plates, each of said angle plates securing the adjacent ends of two series of louver slats together, the

said corner plates being composed of sections secured together, substantially as set forth.



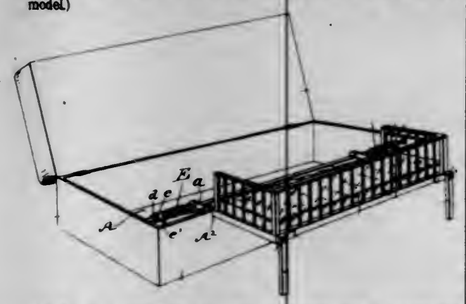
3. A chimney cap, the body portion of which consists of series of superimposed louver slats and angle plates, the one being provided with a tongue and the other with a slot engaging said tongue for fastening them securely together, substantially as set forth.

542,758. PROCESS OF PURIFYING OILS OR FATS. GEORGES A. FREYSS, Mulhouse, Germany, assignor to the Fabriques des Produits Chimiques de Thann et de Mulhouse. Filed June 5, 1893. Serial No. 476,559. (No specimens.)

Claim.—1. The herein described process for the purification of fats, oils and analogous products so as to render them fit for alimentary purposes, said process consisting in the treatment of the products in question at a temperature of from 110° to 220° centigrade, by means of a gaseous purifying agent, as specified, the entire process being conducted under exclusion of air, as set forth.

2. The herein described process for the purification of fats, and analogous products for alimentary purposes, consisting in forming an emulsion of the product with alkaline bisulphite, and then treating the emulsion at a temperature of from 110° to 220° centigrade, by means of a gaseous purifying agent, as specified, under exclusion of air, as set forth.

542,759. COMBINED BED-LOUNGE AND CRIB. DAVID FROHLICH, New York, N. Y. Filed Oct. 9, 1894. Serial No. 525,335. (No model.)

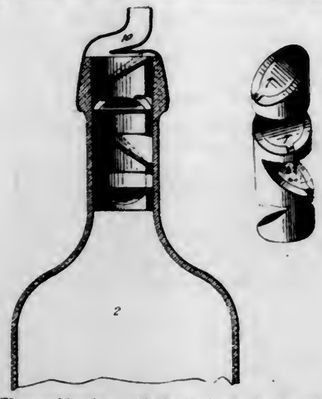


Claim.—1. A combined sofa and crib comprising a box-shaped base, a rod or shaft ranging longitudinally within the base, a crib having extended arms which are mounted upon the said shaft and rest upon the side of the base, springs surrounding the shaft and bearing upon the arms to normally project the crib, and arranged whereby they are wound up when the crib is inserted in the base, and an upper section pivotally secured to the base and resting thereon to hold the crib therein.

2. A combined sofa and crib, comprising a substantially oblong box or base having upwardly projecting sides, a crib open upon its inner side adjacent to the sofa, legs pivoted thereto at the rear and normally in the vertical position, shoulders or flanges upon the crib to limit the upward and outward movement thereof, arms extending from the crib and mounted upon the shaft, nuts secured to the said shaft at each end, expansible spiral springs surrounding the shaft, secured to the nuts at one end, and bearing upon and secured to the arms at the opposite end, whereby the crib is normally projected outwardly, and an upper section hinged to the rear wall of the box adapted to maintain the crib within the same, by its weight, substantially as shown and described.

542,760. NON-FILLABLE BOTTLE. WILLIAM J. GARDNER, Montgomery, Ala. Filed Apr. 9, 1895. Serial No. 545,058. (No model.)

Claim.—1. The combination, with the neck of a bottle, of a non-removable stopper secured therein, said stopper consisting of a tubular plug having notches or recesses cut in the walls thereof at right angles to each other, the lower walls of said notches or recesses being upwardly inclined, and a valve hinged to each of said inclined slots at the bottom thereof, the operation of said valves being to open and admit of the discharge of the contents of the bottle but close and prevent the refilling thereof, substantially as shown and described.



2. The combination, with the neck of a bottle, of a non-removable stopper secured therein, said stopper consisting of a tubular plug having notches or recesses cut in the walls thereof at right angles to each other, the lower walls of said notches or recesses being upwardly inclined, and a valve hinged to each of said inclined slots at the bottom thereof, the operation of said valves being to open and admit of the discharge of the contents of the bottle but close and prevent the refilling thereof, and a cap surrounding the nozzle of the bottle and secured thereto and provided with inwardly directed shoulder or projection and a discharge nozzle, substantially as shown and described.

3. The combination, with a bottle, of a non-removable stopper secured in the neck thereof, consisting of a tubular plug having a series of notches or recesses cut therein, one above the other, and each of said notches or recesses being practically at right angles to the one immediately below it, and the lower wall thereof being upwardly inclined, and a valve hinged to each of said lower walls at the bottom thereof, the construction and arrangement being such that the valves will open to admit of the discharge of the contents of the bottle but close and prevent refilling thereof, substantially as shown and described.

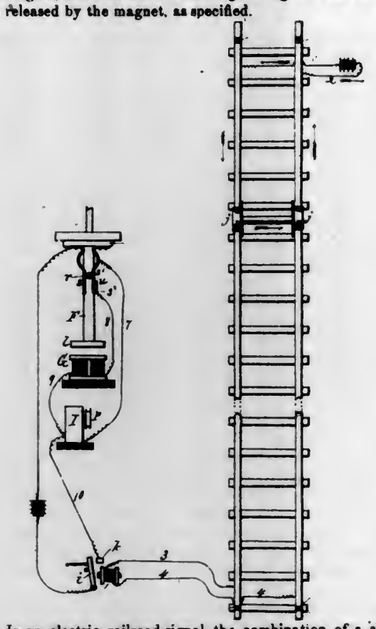
4. The combination, with the neck of the bottle, of a non-removable stopper consisting of a tubular plug the upper end of which is cut away at an inclination, the longer side of the plug extending practically to the neck of the bottle, a valve hinged to the shorter or lower side of said plug and adapted to close the opening therein, and a cap inclosing the upper end of said neck and provided with an inwardly directed shoulder or projection which extends over the free end of said valve and is provided with a discharge nozzle or opening, substantially as shown and described.

5. The combination, with the neck of a bottle, of a non-removable stopper consisting of a tubular plug which is provided with a series of notches or recesses, the lower walls of which are inclined forwardly, and a valve hinged to the lower portion of said lower walls and adapted to close the passage through said stopper the upper end of the plug being also cut away at an inclination, and having a valve hinged at the lower side thereof adapted to close the end of the opening in said stopper, and a cap secured to the upper end of the neck of the bottle having an inwardly directed shoulder or projection which extends over the free end of said end valve and is provided with a discharge nozzle or opening, substantially as shown and described.

542,761. ELECTRIC BLOCK-SIGNAL FOR RAILROADS. ANGUS C. GORDON, Rochester, N. Y., assignor to The Gordon Railway Signal Company, same place. Filed May 13, 1895. Serial No. 549,050. (No model.)

Claim.—1. In an electric railroad signal, the combination of a shifting signal, a magnet, a rod between the signal and magnet provided with an armature, a motor, a connection between the motor and rod whereby the latter is operated, and an electric circuit connected with the motor and magnet and provided with a switch, whereby when the circuit is closed the motor first draws down the armature, then stops, while the magnet continues to hold the armature in place, as described.

2. In an electric railroad signal, the combination of a shifting signal, a magnet, a rod between the signal and magnet provided with an armature, a motor, a connection between the motor and rod whereby the latter is operated, an electric circuit connected with the motor and magnet and provided with a switch, whereby when the circuit is closed the armature is drawn down by the motor and held by the magnet, and means for retracting the signal when the armature is released by the magnet, as specified.

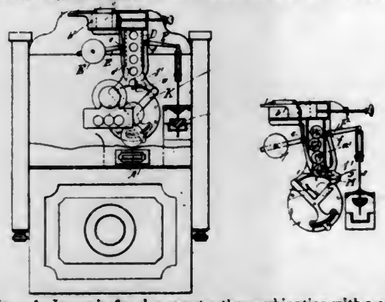


3. In an electric railroad-signal, the combination of a shifting signal, a magnet, a connection provided with an armature operating with the magnet, a motor, a circuit connected with the motor and magnet whereby the motor first draws the armature down to the magnet, and then stops while the magnet continues to hold the armature in place, and a circuit connected with the block controlling the main circuit, the whole arranged to operate in the manner and for the purpose specified.

4. The combination of a shifting signal, a rod for operating same provided with an armature at its end, an electro magnet for holding the armature when drawn in connection therewith, a motor connected with the rod to draw the same in contact with the magnet, electrical connections for giving motion to the motor and charging the magnet, and means for retracting the signal when released by the magnet, as specified.

5. The combination of a shifting signal, a rod for operating the same provided with an armature at its end, a magnet for holding the armature when in contact therewith, a rock lever to which the rod is pivoted, a motor with a connection for operating the rock lever, electrical connections for giving motion to the motor and charging the magnet, and means for retracting the signal when released by the magnet, as herein shown and described.

542,762. COIN-FREED GAS APPARATUS. LUDWIG HAAS, Mayence, Germany. Filed May 1, 1895. Serial No. 547,784. (No model.)



Claim.—1. In a coin freed apparatus the combination with a coin channel of a lever entering its lower extremity, a weight arranged to press the lowermost coin in the channel against the lever, and a disk under the coin channel gearing with a register mechanism and provided with supports for the coins substantially as described.

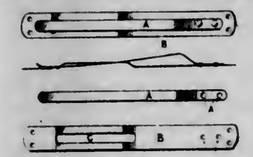
2. In a coin freed apparatus the combination with a coin channel of a lever entering its lower extremity, a weight arranged to press the lowermost coin against the lever, means to release the weight, and a disk under the coin channel gearing with a register mechanism and provided with supports for the coins substantially as described.

3. In a coin freed apparatus the combination with a coin channel of a lever entering its lower extremity, of an entrance channel opening in the side of coin channel, a sliding plate in the coin channel barring the said opening, a weight arranged to press the lowermost coin in the channel, against the lever, and a disk under the coin channel gearing with a register mechanism and provided with supports for the coins substantially as described.

4. In a coin freed apparatus the combination with a coin channel of a lever entering its lower extremity, a weight sliding along the channel, having a projection inside the channel capable of being raised to lift the barring plate and rest on the uppermost coin, and a disk under the coin channel gearing with a register mechanism and provided with supports for the coins substantially as described.

5. In a coin freed apparatus the combination with a coin channel of a lever entering its lower extremity, a weight arranged to press the lowermost coin in the channel against the lever, and a disk under the coin channel gearing with a register mechanism, and provided with supports adapted to carry the coin around the disk substantially as described.

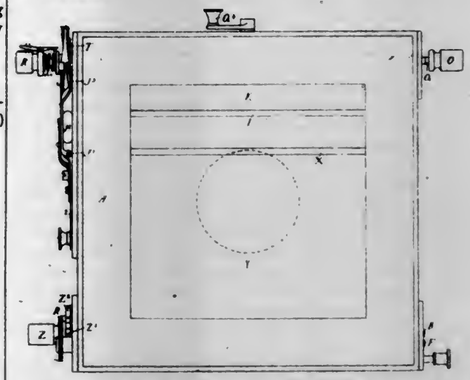
542,763. CUFF-HOLDER. EDWARD K. HEAPS, Sheffield, England. Filed Mar. 6, 1895. Serial No. 540,785. (No model.)



Claim.—1. A cuff holder comprising the plate B arranged to be secured to the shirt sleeve and having a central slit, and the supplemental plate A having one end riveted to the plate B, said plate A having an upturned end and an intermediate portion passing through the slit, the said plate A having its free end terminating on the same side of the plate B on which the said plate A is riveted substantially as described.

2. A cuff holder comprising the plate B and the spring plate A secured thereto at one end, said plate B having a central raised portion projecting on the side to which the plate A is attached, said raised portion having a slot therein and the said plate A having an intermediate portion extending in the slot in the raised part of the plate B and having an upturned free end terminating on the same side of the plate B to which plate A is attached.

542,764. PHOTOGRAPHIC SHUTTER. LODEWYK J. R. HOLST, Amsterdam, Netherlands. Filed Apr. 27, 1895. Serial No. 547,353. (No model.)



Claim.—1. In a photographic-camera shutter, the combination of two separate blind portions Y K, with two shafts B F placed on one side and working together by means of gear wheels D E, two loose spring barrels C G on said shafts B F, the one C of which to wind on the first Y of said blind portions and the other G to wind on

cords H and thereby to stretch out the second K of said blind portions, two shafts N Q placed on the opposite side, having each a knob O and R respectively for turning them, a loose drum L on said shaft N and to wind on said second blind portion K, two fast drums W on both sides of said drum L on said shaft N and to wind on strips W' and thereby to stretch out said first blind portion Y, means for transmitting the motion of said shaft N to said drum L in such a manner that said drum L makes either the same revolution as said drums W or runs quicker or slower, whereby the slit for instantaneous exposures is made either constant or to decrease or increase respectively during running-off, a loose disk T on said shaft Q gearing with said shaft N by means of two equal gear-wheels U V and having several holes, a movable claw wheel S on said shaft Q and having a pin S^3 to engage in either hole of said disk T, means for quickly releasing both said claw wheel S and said disk T, so that both blind portions Y K run off for instantaneous exposures, and for quickly disengaging first said claw wheel S from said disk T to release the latter and releasing afterward said claw wheel S so that said blind portions Y K run off one after the other for time exposures, substantially as set forth.

2. In a photographic-camera shutter, the combination of two separate blind portions Y K, with a frame A, two shafts B F placed near one side of same, two loose spring barrels C G on said shafts and revolving in opposite directions, the one C of said barrels to wind on the first Y of said blind portions and the other G to wind on cords H and thereby to stretch out the second K of said blind portions, means for checking said spring barrel G, after it has stretched out said second blind portion K, two equal gear wheels D E fixed to said shafts B F and gearing together, a knob Z fixed to one of said shafts for turning both shafts in opposite directions and thereby stretching the spiral springs inside said barrels C G, a ratchet wheel Z' fixed to one of said shafts B F to check same, and a spring-pressed pawl Z^3 gearing thereto, substantially as set forth.

3. In a photographic-camera shutter, the combination of two separate blind portions Y K, with two shafts B F, two loose spring barrels C G on same and revolving in opposite directions, the one C of said barrels to wind on the first Y of said blind portions and the other G to wind on cords H and thereby to stretch out the second K of said blind portions, a ratchet wheel G' fixed to said spring barrel G, a spring-pressed pawl G^3 adapted thereto to check said spring barrel G after it has stretched out said second blind portion K, and a key G^4 for moving said pawl G^3 out of engagement with said ratchet wheel G' when setting the blind shutter, substantially as set forth.

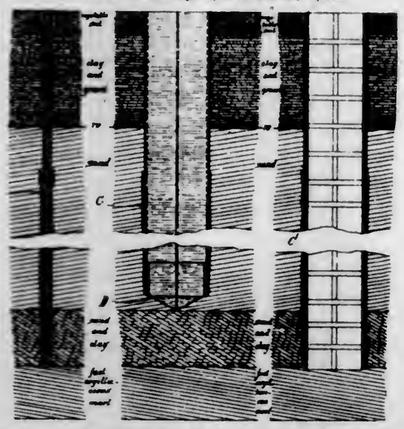
4. In a photographic-camera shutter, the combination of two separate blind portions Y K, with a frame A, two shafts N Q placed near one side of same and having each a knob O and R respectively for turning them, a loose drum L on said shaft N and to wind on the second K of said blind portions, two fast drums W on both sides of said drum L on said shaft N and to wind on strips W' and thereby to stretch out the first Y of said blind portions, two unequal gear wheels M M' fixed to the ends of said drum L, two loose gear wheels P P' gearing thereto and mounted on said shaft Q and having claws P^2 P^3, a movable sleeve Q' on said shaft Q and having at the ends claws Q^3 Q^4 capable of engaging with said claws P^2 P^3 whereby one of said gear wheels P P' may be coupled with said shaft Q, so that for instantaneous exposures the slit is made either constant or to decrease or increase respectively during running off, a shaft Q^7 pivoted in said frame A, an eccentric pin Q^6 fixed to said shaft Q^7 and engaging in a groove at said sleeve Q', and a crank Q^8 fixed to said shaft Q^7 on the outside, so that by turning said crank Q^7 the said sleeve Q' is shifted, substantially as set forth.

5. In a photographic-camera shutter, the combination of the two separate blind portions Y K, and the two shafts N Q, with a loose disk T on said shaft Q gearing with said shaft N by means of two equal gear wheels U V and having several holes, a movable claw wheel S on said shaft Q, having a pin S^3 to engage in either hole of said disk T, a spiral spring R^3 pressing said claw wheel S against said disk T, a spring-pressed catch R' for snatching said wheel S on moving the latter out of engagement with said disk T, means for quickly releasing said claw wheel S while it is engaged to said disk T, so that both shafts N Q revolve for instantaneous exposures and for quickly disengaging first said claw wheel S from said disk T to release the latter, so that said shaft N alone revolves, and releasing afterward said claw wheel S, while it is being snatched by said catch R', so that its shaft Q alone revolves for time exposures, substantially as set forth.

6. In a photographic-camera shutter, the combination of the frame A, the two separate blind portions Y K, the disk T and the claw wheel S on the shaft N, having claws S' on both sides, with a fork J adapted to be placed in either of two positions and to engage with said claw wheel S either on the one or on the other side, a pocket J^3 between said fork J and the frame wall, capable of being blown up and moving off said fork J, so as to either shift said claw wheel S out of engagement with said disk T or to release said wheel S, and a spring J^3 to press said fork J back, so as to release said claw wheel S, after it has been shifted and snatched, substantially as set forth.

542,765. METHOD OF SINKING BORE-HOLES AND SHAFTS IN WATER-LOGGED GROUND.

FRIEDRICH HONIGMANN, Aix la Chapelle, Germany. Filed Sept. 28, 1894. Serial No. 524,392. (No model.) Patented in Germany July 8, 1894, No. 80,113; in Belgium Aug. 8, 1894, No. 111,336; in England Aug. 10, 1894, No. 15,292; in France Aug. 11, 1894, No. 240,676, and in Austria Apr. 6, 1895, No. 45/1,194.



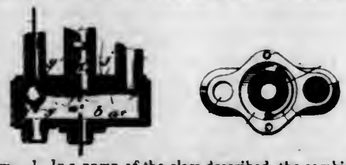
Claim.—1. The within described improvement in the sinking of bore holes and shafts consisting in first boring the hole or shaft to a certain depth, then inserting thereinto a tube which projects above the natural water level, next continuing the boring below said tube to the depth required and at the same time keeping the hole and the said tube supplied with water to a height above said level, and finally, after the completion of the boring, inserting a lining tube, substantially as herein set forth.

2. The within described improvement in the sinking of bore holes and shafts consisting in first boring the hole or shaft to a certain depth, then inserting thereinto a tube which projects above the natural water level, next continuing the boring below said tube to the depth required and at the same time keeping the hole and the said tube supplied with water to a height above said level, and finally, after the completion of the boring, inserting a lining tube through the first mentioned tube, substantially as herein set forth.

3. The within described improvement in the sinking of bore holes and shafts consisting in first boring the hole or shaft to a certain depth, then inserting thereinto a tube which projects above the natural water level, next continuing the boring below said tube to the depth required and at the same time keeping the hole and the said tube supplied to a height above said level with water containing clayey material for preventing ingress of water through the sides of the bore, and finally, after the completion of the boring, inserting a lining tube, substantially as herein set forth.

542,766. INTERCHANGEABLE PUMP.

LEVI A. HULTS, Napoleon, Ohio. Filed Dec. 21, 1893. Serial No. 494,244. (No model.)



Claim.—1. In a pump of the class described, the combination of a chamber, as B, provided with cylinder-receiving apertures with two series of cylinders of different diameters each of which is provided with a coupling adapted to the openings in the chamber, substantially as specified.

2. The combination with the main lift cylinders of a pump, of a chambered casting to which the same are removably connected, said casting having a recess in vertical line with the said main cylinder and a series of flanged collars all of the same diameter fitted to said recess and each carrying a cylinder of different diameter, substantially as specified.

3. In a pump of the class described, the combination of a series of lift cylinders, a casting having an opening in its upper side in line with an opening in its lower side which lower opening is adapted for the connection of lift cylinders, a series of flanged collars adapted to fit the upper opening and each carrying a force cylinder differing in diameter from the other cylinders of the series, a cap plate connected with and for closing the upper end of the cylinders carried by said collars and means for detachably connecting said cap plate to the casting for the purpose of holding said cylinders in position, substantially as specified.

4. In a pump of the class described, the combination of a casting, as B, having three openings in its upper side and two in its lower side, two of each being in line and all being adapted for the connection therewith of pipes and cylinders, a main cylinder removably secured to the opening of the lower side, which is opposite the central opening of the upper side a collared forcing cylinder secured over the central opening in its upper side and in line with the main cylinder, a pipe connected with said casting and extended upwardly to form an air chamber and pump-lever support a pipe extended to form an upper discharge and a pipe connected with the remaining opening on its lower side to form an underground discharge, together with means for changing the direction of the discharge from the chamber, substantially as specified.

542,767. CLAMP.

JOHN F. HUNT, Weymouth, Mass. Filed May 31, 1894. Serial No. 513,099. (No model.)



Claim.—1. The herein described clamp, consisting of two clamping members separable one from the other, positive locking mechanism for and to positively lock the same in both open and closed position, and a lock releasing device, independent of said clamping members, to operate substantially as described.

2. The herein described clamp, consisting of two clamping members, separable one from the other; springs to automatically close the clamping ends of said members, one toward the other; a lock supplementing said springs to lock the said clamping members positively in closed position; and a lock-releasing device independent of said clamping members to release the latter in order that they may be opened, substantially as described.

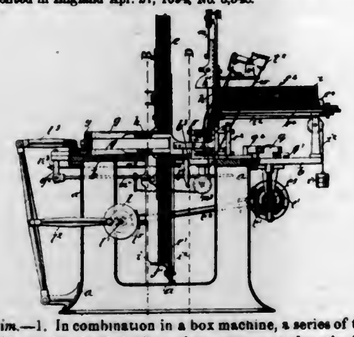
3. A clamp, comprising a base, two clamping members pivoted thereto and connected to cause movement of one by the other, a spreader, automatic locking mechanism to automatically and positively lock said clamping members in closed and open or spread position, and means independent of said clamping members to release said locking mechanism, substantially as described.

4. A clamp, comprising a base, two clamping members mounted thereon and separable one from the other, locking mechanism to lock said members in closed position, and a combined lock releasing device and spreader movement of which first releases said locking mechanism and thereafter moves or separates said clamping members one from the other, substantially as described.

5. A clamp, consisting of two clamping members separable one from the other, locking mechanism to lock the same in open or spread position, and a lock releasing device in the bottom of the opening between said members and in position to be acted upon and moved by a rope introduced between said members, to thereby release said locking mechanism.

542,768. MACHINE FOR MANUFACTURE OF CIGAR OR OTHER BOXES.

MARY JONES, ELIZA A. JONES, and JOHN W. BLUNDELL, Nottingham, England. Filed Nov. 26, 1894. Serial No. 529,994. (No model.) Patented in England Apr. 27, 1894, No. 8,348.



Claim.—1. In combination in a box machine, a series of troughs, for the sides and ends of the box, plungers arranged at the junction of said troughs, a nailing mechanism arranged adjacent to the path of the sides and ends as moved by the plungers and means for feeding a box bottom across said path and in front of the nailing mechanism whereby the box sides and ends will be forced against the bottom, substantially as described.

2. In combination, the troughs arranged in horizontal and vertical pairs and radiating from a central opening the plungers arranged to move through said opening, and the bottom feeding mechanism arranged to feed the bottom across the line of movement of the plungers, substantially as described.

3. In combination, the feeding troughs for the sides, the reciprocating plungers and the plates *k* carried by the plungers to contact with the box sections, said plates being adjustable lengthwise of the plungers, substantially as described.

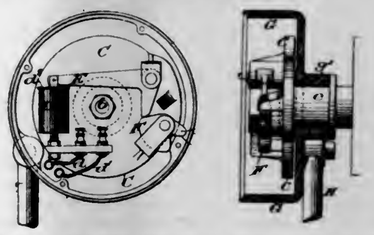
4. In combination, the troughs, the plungers arranged to move the blanks from said troughs, the nailing mechanism arranged to receive the blanks from the plungers, the pivoted table adjacent to the nailing mechanism and connections for controlling said table operated by the plunger, substantially as described.

5. In combination, the troughs, the plungers arranged to move the blanks from said troughs, the nailing mechanism arranged to receive the blanks from the plungers, the hinged table section arranged adjacent to the nailing mechanism and means for controlling the same, substantially as described.

6. In combination, the horizontally reciprocating nailing plunger having the driver, the feed trough leading to the driver to discharge the nail thereon, the discharge end of said feed trough being connected with the plunger to move forward therewith the shield covering the discharge end of the feed trough when the plunger and driver are retracted, said shield being carried by a piece *u'* arranged to bear on the work and hold the shield stationary as the driver moves forward and the spring *u* for pressing the piece *u'* forward.

542,769. ELECTRIC SIGNAL APPARATUS.

THADDEUS B. KEELER, Rahway, N. J., assignor to Arthur H. Johnson, same place. Filed Mar. 11, 1895. Serial No. 541,234. (No model.)



Claim.—1. The slot mechanism, comprising a rocking semaphore, parts mounted to move relatively to one another about the axis of the rocking semaphore, one of said parts being under the control of the semaphore operating mechanism and the other part connected with the semaphore, and a device under the control of an electric current for locking the said moving parts to and release them from one another, substantially as set forth.

2. In combination, a semaphore blade and a disk mounted to move therewith, a rocking piece mounted to move concentric with the said disk and semaphore, signal operating means connected with said rocking piece and means under the control of an electric current for locking the said rocking piece to and releasing it from the said disk, substantially as set forth.

3. A semaphore blade, a disk mounted to move therewith, an electromagnet carried by said disk, a part mounted to rock relatively to said disk, a swinging catch under the control of the electromagnet to lock the said rocking part to and release it from the disk and signal operating means connected with the said rocking part, substantially as set forth.

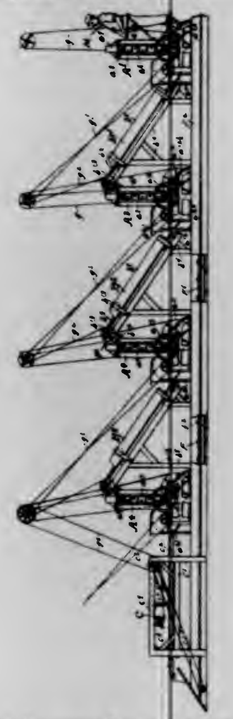
4. The semaphore blade, a disk mounted to move therewith, an electromagnet, a latch the said electromagnet and latch being carried by the said disk, a part mounted to move relatively to the said disk, a catch under the control of the latch to lock the said moving part to and release it from the disk and signal operating means connected with the said moving part, substantially as set forth.

542,770. FLAX-WORKING MECHANISM.

CEYLON E. LYMAN and GEORGE N. LYMAN, Jr., Minneapolis, Minn. Filed Feb. 23, 1895. Serial No. 539,440. (No model.)

Claim.—1. A mechanism for working flax straw or other material, comprising a series of combined brakes and pickers, each having steepled and staggered fluted rollers, and a picker or backle drum with cooperating concave or comb receiving from said rollers, a series of

separating conveyers, located one between each of said combined brakes and pickers and having endless carriers receiving from the foot of the advance member and delivering to the top of the rearward member thereof, a cleaner receiving from the last member of said combined brakes and pickers, and an endless carrier under-running all of said machines, for receiving and conducting off the shive dropped from said machines, substantially as described.



2. A mechanism for working flax straw or other material, comprising a series of combined brakes and pickers, each having a stack of steepled and staggered fluted rollers and a picker or hackle drum with co-operating concave or comb receiving from said rollers, a series of separating conveyers, located one between each pair of said combined brakes and pickers and having endless carriers receiving from the foot of the advanced member and delivering to the top of the rearward member thereof, a cleaner, provided with a shaking screen and a beater fan, receiving from the last member of said combined brakes and pickers, and an endless carrier under-running all of said machines, for receiving and conducting off the shives dropped from said machines, substantially as described.

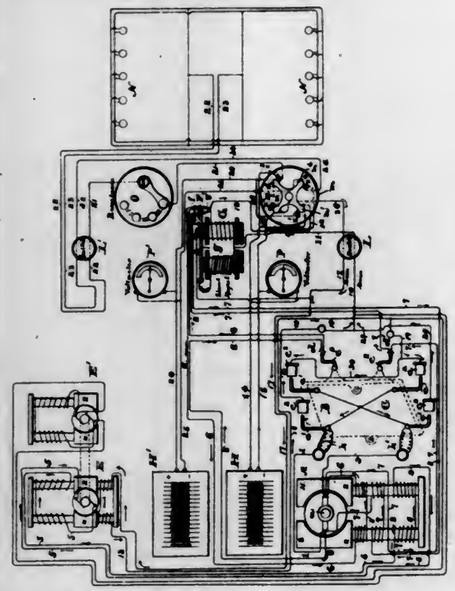
3. In a brake, for flax or other material, the combination with the series or stack of steepled and staggered and fluted rollers a^4, of the guides a^{14} pivoted in the angular slots a^{15}, whereby the said guides will both swing on their pivots and move bodily outward, to afford clearance to the stock, when necessary, to avoid clogging, substantially as described.

4. In a combined brake and picker, the combination with the picker drum a^{16}, of the hood a^{18}, having therein the toothed concave or comb a^{17}, and having slot and pin connection a^{19}, for permitting the hood to rise on a straight line under the pressure of the stock when necessary, to afford clearance, substantially as described.

542,771. MEANS FOR GENERATING ELECTRICITY FROM CAR-WHEEL AXLES. MORRIS MOSKOWITZ, Newark, N. J., assignor to The National Electric Car Lighting Company, of West Virginia. Filed Feb. 27, 1895. Serial No. 539,865. (No model.)

Claim.—1. The combination with a working and a lamp circuit, containing lamps or other translating devices, of a main dynamo operated under varying speeds and subject to armature reversal, a pole changer, and a dynamotor adapted to equalize the voltage of the dynamo in the main circuit, said main dynamo being self exciting at a slow speed, to energize said pole changer and the dynamotor, and said main dynamo, at a fast speed, having its fields excited and regulated independently by the dynamotor, substantially as and for the purposes set forth.

2. The combination with a working and a lamp circuit, containing lamps or other translating devices, of a pair of storage batteries, a main dynamo operated under varying speeds and subject to armature reversal, a switch for connecting either one of said batteries directly in circuit with the main dynamo and the other of said batteries in circuit with the lamp circuit, a pole changer, and a dynamotor adapted to equalize the voltage of the dynamo in the main circuit, said dynamo being self exciting at a slow speed, and, at a fast speed, having its fields excited and regulated independently by the dynamotor, substantially as and for the purposes set forth.



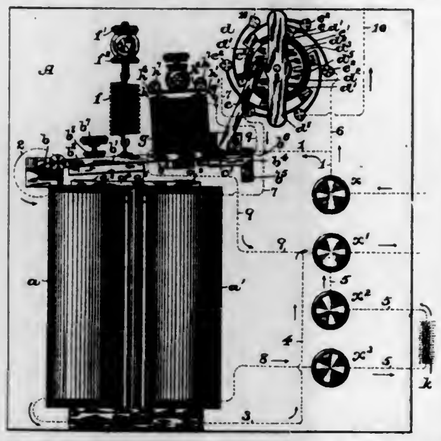
3. The combination with a working and a lamp circuit, containing lamps or other translating devices, of a main dynamo operated under varying speeds and subject to armature reversal, a pole changer in circuit with said main dynamo, said dynamo being wound for self-excitation, and a dynamotor, in circuit with said dynamo, said dynamotor being also wound for self-excitation in two separate circuits, an automatic switch F in said self-excited circuits, and said dynamotor being adapted to equalize the voltage of the dynamo in the main circuit, and the fields of the dynamo being excited independently by the dynamotor, substantially as and for the purposes set forth.

4. The combination with a working and a lamp circuit, containing lamps or other translating devices, of a pair of storage batteries, a main dynamo operated under varying speeds and subject to armature reversal, a switch connecting either one of said batteries directly in circuit with the main dynamo and the other of said batteries in circuit with the lamp circuit, a pole changer in circuit with said main dynamo, said dynamo being wound for self-excitation, a dynamotor in circuit with said dynamo, said dynamotor being also wound for self-excitation in two separate circuits, an automatic switch F in said self-excited circuits, and said dynamotor being adapted to equalize the voltage of the main dynamo in the main circuit, and the fields of said dynamo being independently excited by the dynamotor, substantially as and for the purposes set forth.

5. The combination with a working and a lamp circuit, containing lamps or other translating devices, of a main dynamo operated under varying speeds and subject to armature reversal, a pole changer in said main circuit, having magnets adapted to be energized by the feeble current induced by the residual magnetism in the dead fields of the dynamo, to complete the main circuit, and a dynamotor adapted to excite and equalize the voltage of the dynamo in the main circuit, said dynamotor being connected up in the main circuit, and also connected with the main dynamo by a self-excited circuit, whereby the main dynamo, at a slow speed, excites the said dynamotor, but at a fast speed, the dynamotor being adapted to excite the fields of the main dynamo, substantially as and for the purposes set forth.

6. The combination with a working and a lamp circuit, containing lamps or other translating devices, of a pair of storage batteries, a main dynamo operated under varying speeds and subject to armature reversal, a switch connecting either one of said batteries directly in circuit with the main dynamo, and the other of said batteries in circuit with the lamp circuit, a pole changer in said main circuit, having magnets adapted to be energized by the feeble current induced by the residual magnetism in the dead fields of the main dynamo, to complete the main circuit, and a dynamotor adapted to excite and equalize the voltage of the dynamo in the main circuit, said dynamotor being connected up in the main circuit and also connected with the main dynamo by a self-excited circuit, whereby the main dynamo, at a slow speed, excites the said dynamotor, but at a fast speed, the dynamotor being adapted to excite the fields of the main dynamo, substantially as and for the purposes set forth.

542,772. MAKE-AND-BREAK SWITCH. MORRIS MOSKOWITZ, Newark, N. J., assignor to The National Electric Car Lighting Company, of West Virginia. Filed Apr. 23, 1895. Serial No. 546,822. (No model.)



Claim.—1. In a make and break switch, an electro-magnet in shunt circuit and an electro-magnet in series, and a commutator controlled by said shunt magnet to establish a complete circuit through said series magnet and cut said shunt magnet out of circuit, said commutator comprising therein, commutator sections d' which are open-circuited, and commutator sections d^2 which are electrically connected, substantially as and for the purposes set forth.

2. In a make and break switch, an electro-magnet in shunt circuit, an electro-magnet in series, a combined armature bar, a commutator, and a link connection between said armature bar and commutator to establish a complete circuit through said series magnet and cut said shunt magnet out of circuit, substantially as and for the purposes set forth.

3. In a make and break switch, an electro-magnet in shunt circuit, an electro-magnet in series, a combined armature bar, a commutator, and a link connection between said armature bar and commutator to establish a complete circuit through said series magnet and cut said shunt magnet out of circuit, said commutator comprising therein, commutator sections d' which are open-circuited, and commutator sections d^2 which are electrically connected, substantially as and for the purposes set forth.

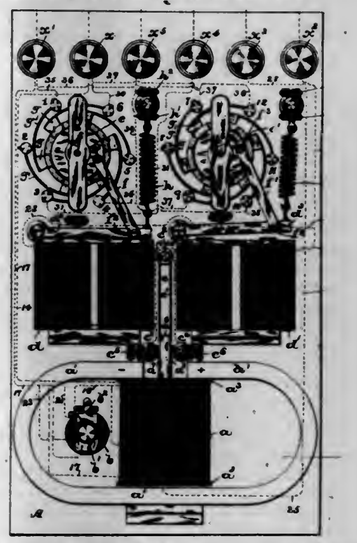
4. In a make and break switch, an electro-magnet in shunt circuit, an electro-magnet in series, a combined armature bar, a commutator, and means connecting said commutator with said armature bar to establish a complete circuit through said series magnet and cut said shunt magnet out of circuit, and a shunt magnet g on said armature bar in a shunt circuit, substantially as and for the purposes set forth.

5. In a make and break switch, an electro-magnet in shunt circuit, an electro-magnet in series, a combined armature bar, a commutator, and means connecting said commutator with said armature bar to establish a complete circuit through said series magnet and cut said shunt magnet out of circuit, a shunt magnet g on said armature bar in shunt circuit, spring contacts h—h' and h^2—h^3, and a resistance coil, all arranged, substantially as and for the purposes set forth.

542,773. POLARIZED COMPOUND SWITCH. MORRIS MOSKOWITZ, Newark, N. J., assignor to The National Electric Car Lighting Company, of West Virginia. Filed May 2, 1895. Serial No. 547,837. (No model.)

Claim.—1. In a polarized compound switch, the combination, with an electro-magnet subject to variable polarity, of a pair of electro-magnets adapted to be brought in circuit by the action of said electro-magnet of variable polarity, and a pair of commutators controlled by said pair of electro-magnets, said commutators comprising therein, commutator sections c^3 which are open-circuited, and commutator sections c^2 which are electrically connected, and means connecting said commutators with armature bars of said pair of electro-magnets, substantially as and for the purposes set forth.

2. In a polarized compound switch, the combination, with an electro-magnet subject to variable polarity, of a pair of electro-magnets d and d', having armature bars, a pair of commutators, and link connections between said armature bars and commutators to control said commutators and establish a complete circuit, when said electro-magnet of variable polarity has brought either of said magnets d or d' in circuit, substantially as and for the purposes set forth.



3. In a polarized compound switch, the combination, with an electro-magnet subject to variable polarity, of a pair of electro-magnets d and d', having armature bars, a pair of commutators, and link connections between said armature bars and commutators to control said commutators and establish a complete working circuit, when said electro-magnet of variable polarity has brought either of said magnets d or d' in circuit, said commutators comprising therein, commutator sections c^3 which are open circuited, and commutators c^2 which are electrically connected, substantially as and for the purposes set forth.

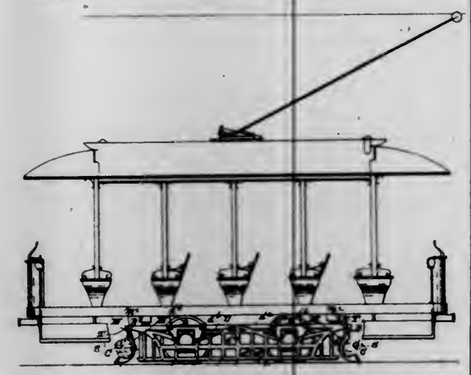
4. A polarized compound switch, consisting essentially of an electro-magnet a, a pivoted armature magnet a^6 subject to variable polarity, a permanent magnet a', a pair of electro-magnets d and d', adapted to be brought in circuit by the action of said magnet a^6, and a pair of commutators controlled by said electro-magnets d and d', said commutators comprising therein, commutator sections c^3 which are open-circuited, and commutator sections c^2 which are electrically connected and means connecting said commutators with the armature bars of said magnets d and d', substantially as and for the purposes set forth.

5. A polarized compound switch, consisting essentially, of an electro-magnet a, a pivoted and spring-actuated armature magnet a^6, subject to variable polarity, spring-contacts a^7 and a^8 on said magnet, contacts c^3 and c^2, a permanent magnet a', a pair of electro-magnets d and d', adapted to be brought in circuit by the action of said magnet a^6, and a pair of commutators controlled by said electro-magnets d and d', substantially as and for the purposes set forth.

6. A polarized compound switch, consisting essentially, of an electro-magnet a, a pivoted spring-actuated armature magnet a^6, subject to variable polarity, spring contacts a^7 and a^8 on said magnet, contacts c^3 and c^2, a permanent magnet a', a pair of electro-magnets d and d', adapted to be brought in circuit by the action of said magnet a^6, and a pair of commutators controlled by said electro-magnets d and d', said commutators comprising therein, commutator sections c^3 which are open-circuited, and commutator sections c^2 which are electrically connected, and means connecting said magnets d and d', substantially as and for the purposes set forth.

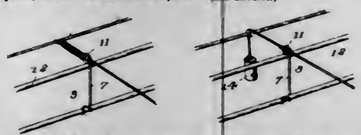
7. In a polarized compound switch, the combination, with a pair of electro-magnets d and d', having the respective armature bars d^2 and d^3, of a pair of commutators e and e', and links f and f', for operatively connecting said armature bars d^2 and d^3 with said commutators e and e' to control the same, substantially as and for the purposes set forth.

542,774. CAR-FENDER. WILLIAM E. MOULTON, West Troy, N. Y., assignor of one-half to Joshua Mors and George Caswell, same place. Filed Oct. 6, 1894. Serial No. 525,070. (No model.)



Claim.—The combination with the truck T, of the car-guard G', having a concave or scoop-form C, in cross section made with a fender F, on its lower edge and provided with the concave cross braces b^3, b^3, b^3, and the laterally arranged slats S and having its upper edge hinged or journaled on to said car truck in front of the wheels; and the spring M, downwardly projected from said truck and arranged back of said guard so as to engage with the latter, all constructed and arranged to operate substantially in the manner as and for the purposes set forth.

542,775. FIRE-ALARM. JOSIAH R. MCCOY, Marshalltown, Iowa. Filed Apr. 3, 1895. Serial No. 544,320. (No model.)



Claim.—1. In a fire alarm system, the combination with an electrical conductor in circuit with a battery, and an audible alarm mechanism, the legs of the conductor extending in parallel lines and being disconnected, of combustible leads arranged adjacent to exposed parts of a building, circuit closers having links pivoted upon one of the legs of the conductor and connected at their free ends, respectively, to the leads, and means for moving the free ends of the links into contact with the second leg of the conductor, the links being normally held out of contact with said second leg of the conductor by the tension of the leads, substantially as specified.

2. In a fire alarm system, the combination with an electrical conductor in circuit with a battery, and an audible alarm mechanism, the legs of the conductor extending in parallel lines and being disconnected, of circuit closers comprising links provided at their extremities with eyes, the eye at one end of each link being swiveled upon one leg of the conductor, continuous combustible leads arranged at the exposed points of a building and attached at their free ends, respectively, to the eyes at the free ends of the links, whereby said free ends are held out of contact with the other leg of the conductor, and means for normally straining the free end of the link toward the conductor in opposition to the resistance of the lead, whereby the leads are held under tension, substantially as specified.

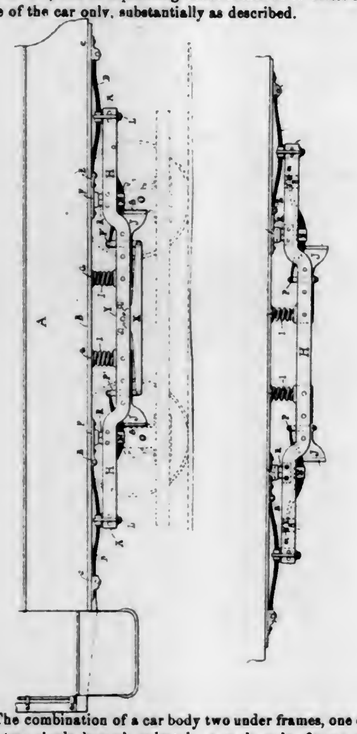
542,776. STREET-RAILWAY CAR. LOUIS T. PYOTT, Philadelphia, Pa., assignor of one-half to Daniel A. Waters and William G. Vernon, same place. Filed Mar. 12, 1895. Serial No. 541,443. (No model.)

Claim.—1. In a railway car, the car body, plates under the sills thereof, springs under the plates, frames under the springs and springs in the frames at the point of contact with the truck boxes, the springs being carried at their outer end by a rocker, and at their inner ends by links, secured to the frames, substantially as described.

2. In a railway car, a body part, plates under the sills thereof, and a frame connected therewith, carrying the riding springs and having pedestals, the pedestals extending below the beams and engaging with the truck boxes on one side, substantially as described.

3. In a street car, the car body, the outer sills thereof on plates, the plates on springs and guides connected thereto, an under framing also connected to and supporting the springs and guides, springs in the under framing to rest upon the axle boxes of the independent truck, pedestals to abut the axle boxes, shoes on the pedestals, and tongues and grooves in the shoes to engage the axle boxes of the independent truck on which the car is carried, substantially as described.

4. The combination with a car body of an under framing on each side of the car, and an equalizing beam attached to under frames of one side of the car only, substantially as described.



5. The combination of a car body two under frames, one on each side and two single legged pedestals on each under frame, substantially as described.

6. In a street car the combination of a car body with yielding support, and an under framing on which the yielding support is carried, having its central portion curved down and away from the car body, and single legged pedestals substantially as described.

7. In a street car, the combination of a car body having yielding support, with an under framing under each side having guides on the under framing, and the car body, to maintain the under framing and the car body in their relative positions, and single legged pedestals substantially as described.

8. In a street car, the combination of a car body having yielding mechanism and an under frame for carrying the same, yielding mechanism for carrying the under framing on a separate truck and pedestal legs to form contact with one side of the axle boxes of the independent truck, attached thereto, substantially as described.

9. In a street car, the combination of a car body, under framing on each side, yielding supports connecting the car body to each, the under framings having yielding mechanism for their support on the truck, and an equalizing beam connecting the yielding supports on one side of the car only, substantially as described.

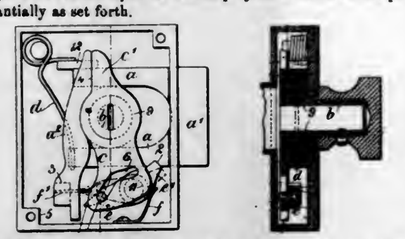
10. In a street car, the combination of a car yieldingly supported, and under framing carrying the yielding supports, pedestals for the under framing, adjustable shoes on the pedestals and corrugations on the shoes, substantially as described.

11. In a street car, the combination of a car body carried on multiple springs, an under framing supporting the springs, pedestals for the under framing adjustable shoes on the pedestals, and vertical tongues and grooves on the shoes, substantially as described.

12. In a street car, the combination of the body of the car with an under framing under each side having springs to support the car body, guides for lateral and longitudinal control of the car body, springs thereto for supporting the frames on its carrying truck, equalizing mechanism on one side of the car to connect the springs bearing on the truck and single legged pedestals, substantially as described.

542,777. LOCK. JOHN J. RIDGWAY, Brooklyn, N. Y. Filed Nov. 28, 1894. Serial No. 530,223. (No model.)

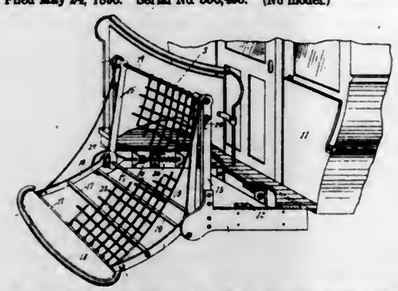
Claim.—1. The combination with a spring latch bolt and its tumbler, of a cam plate for acting upon and retracting the bolt and having a slot, means for turning the cam plate, a pin upon the tumbler operating in said slot for disconnecting and swinging the tumbler before the movement of the bolt, means connected to and moving with the latch bolt for holding the tumbler out of engagement with the latch bolt when the same is again projected and which means release the tumbler when the bolt is again retracted so that the tumbler may engage the latch bolt upon its second projection and lock the parts, substantially as set forth.



2. The combination with a spring latch bolt having a raised inner end, a notch 2 and a spring tail connected therewith, of a spring actuated tumbler having a dog or head at one end and a nose at the other end over-riding or under-riding the spring tail of the latch bolt, a spindle and means for operating the same, and means connected with the spindle and engaging the tumbler to operate the same and the spring latch bolt, substantially in the manner and for the purposes set forth.

3. The combination with the spring latch bolt *a* its raised inner end a^3 and the spring tail *f'* connected therewith and a notch 2 in its lower edge, of the spring actuated tumbler *e* having a dog or head *e'* at one end to engage the notch 2 and a nose 8 at the other end, and a pin 7 adjacent to the nose 8, the spindle *b*, the cam plate *c* connected therewith and having a curved slot 6 in its lower portion receiving the pin 7 of the tumbler *e* whereby with the movement of the spindle and the cam the tumbler is disengaged therefrom and turned to bring its back end above the spring tail and the latch bolt is simultaneously retracted said tumbler being kept out of engagement with the latch bolt when projected and is released when said latch bolt is again retracted so as to engage the latch bolt at its second projection, substantially as set forth.

542,778. CAR-FENDER. GEORGE B. RIGGINS, Brooklyn, N. Y. Filed May 24, 1895. Serial No. 550,495. (No model.)



Claim.—1. The combination with the car, of a pair of arms pivotally suspended in front of the dash-board of the car, a fender frame pivoted to the lower ends of the arms and projecting forwardly therefrom, the said frame comprising side pieces, cross braces and a cushioned front edge plate, a netting extending from the front part of the fender frame to a support near the tops of the posts, and spring buffer rods mounted beneath the car and pivoted to the rear part of the fender frame, substantially as described.

2. The combination with the car, of the supporting frame secured to the car bottom and projecting forward therefrom, posts secured to the frame and extending upward in front of the dash-board, a cross rod connecting the posts, a pair of arms suspended on the cross rod near opposite ends thereof, a forwardly extending fender frame, pivoted to the lower ends of the arms and provided with a cushion at its front edge, a netting extending from the front part of the fender frame to the cross rods at the top of the posts, and sliding spring pressed buffer rods mounted behind the fender frame and pivotally connected therewith, substantially as described.

3. The combination with the car, of the supporting frame secured to the car bottom and extending forwardly therefrom, upwardly extending posts carried by the supporting frame, a cross rod connecting the posts, a single pair of arms suspended from the cross rod near opposite ends thereof, a forwardly projecting fender frame pivoted to the arms and provided at its front edge with a cushion and on the under side with trucks, and sliding spring pressed buffer rods, mounted on the supporting frame behind the fender frame, and pivotally connected with the fender arms, substantially as described.

542,779. CAR-COUPLING. ARTHUR ROOT, Alexandria, Va. Filed July 18, 1894. Serial No. 517,902. (No model.)



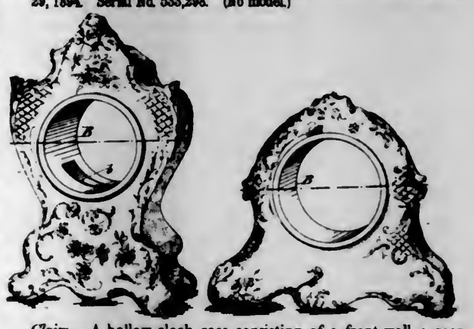
Claim.—1. In a car coupling of the kind described, the combination with the draw-head, having a chamber in the upper wall of the mortise, and a recess in the lower wall having a rearwardly and upwardly inclined bottom, and the knuckle member having a coupling arm held to swing rearward and between the chamber, and recess, of a coupling pin held for a partial rotation in its bearings, and having a wing member, extended vertically from the bottom of the recess into the upper chamber, and means for automatically holding such wing to abut the front edges of the said chamber and recess and to return it to such position after it has been turned backward by the coupling arm, all arranged substantially as shown and described.

2. The combination with the coupling or knuckle member having an extended arm, and the draw-head having a chamber at the top of its mortise and a recess in the bottom having a rearwardly and upwardly inclined bottom, of a pin held for a partial rotation in its bearings and having a wing member normally held in the path of the aforesaid arm and a combined torsional and tension spring device secured to the lower end of such pin, substantially as shown and for the purpose described.

3. The combination with the draw-head having a chamber C^x at the top of the mortise, and a recess C^3 at the bottom having a rearwardly and upwardly inclined bottom, and the knuckle coupling member D, all arranged substantially as shown, of the pin F having its lower portion extended below the bottom of the draw-head and having a wing member extended vertically across the mortise and held to engage the front wall of the chamber C^x and recess C^3, a mechanism, detachably secured to the lower exposed end of the said pin, adapted to turn the pin and arm to the coupled position and means for moving it to the uncoupled position attached to the upper end thereof, as set forth.

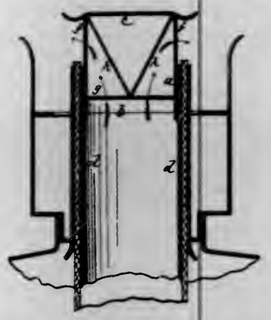
4. The combination with the draw-head, having a recess C^3 in the bottom having an upwardly and rearwardly inclined base, and an upper chamber C^x and the knuckle coupling member D, of the pin F held to partially rotate in its bearings, and having its lower end projected, said pin having a wing member operating in the recess C^3 and chamber C^x with its bottom edge resting on the inclined base of the recess C^3, means for moving it to its uncoupled position secured to the upper end thereof, and the coiled spring G disposed about the projected end of the pin, having its upper end secured to the draw-head and the lower secured fixedly to the pin, all substantially as shown and for the purposes described.

542,780. CLOCK-CASE. REINHOLD SCHLEGELMILCH, Suhl, Germany, assignor to George Borgfeldt & Co., New York, N. Y. Filed Dec. 29, 1894. Serial No. 533,298. (No model.)



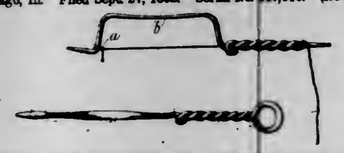
Claim.—A hollow clock case consisting of a front wall, a rear wall, a continuous side and top wall connected with the front and rear wall, a transverse tube extending through the case from the front to the rear wall, all of said parts being composed of one integral piece of burnt ceramic ware, substantially as set forth.

542,781. AIR-DISTRIBUTER FOR LAMPS. HENRY E. SHAFFER, Rochester, N. Y., assignor to the Shaffer Lamp Company, same place. Filed July 20, 1894. Serial No. 518,117. (No model.)



Claim.—As a new article of manufacture, an air distributer for center-draft lamps, consisting of the cylinder *a* perforated in its upper portion and adapted to fit closely in the air-tube of the lamp, the cone *h* starting from the upper edge of said cylinder and extending centrally downward nearly to the bottom of the cylinder, and the perforated disk *g* located wholly within the cylinder and abutting the lower end of the cone, forming a close connection therewith, the whole forming one integral body capable of being fitted to a lamp at one operation, as shown and described and for the purpose specified.

542,782. TOOTH-CLEANING IMPLEMENT. HENRY SIMONS, Chicago, Ill. Filed Sept. 27, 1892. Serial No. 447,016. (No model.)



Claim.—1. A dental instrument, comprising a resilient body-portion constituting a straining bow for a strand or thread and having end-portions extending angularly from its middle-portion, a handle extending outwardly from one of said end-portions of the bow and with an integral resilient extension twisted spirally around the handle, substantially as set forth.

2. A dental implement, comprising a body-portion or straining bow having end portions extending angularly from its middle-portion, a handle extending outwardly from one of said end-portions and an integral resilient extension twisted spirally around the handle and hooked at its extremity to embrace said handle, substantially as set forth.

3. A dental implement, consisting of a body-portion or straining bow and having end-portions extending angularly from its middle portion, a handle extending outwardly from one of said end-portions, and an integral resilient extension bent backward upon and crossed against the handle and then twisted spirally around the handle, substantially as set forth.

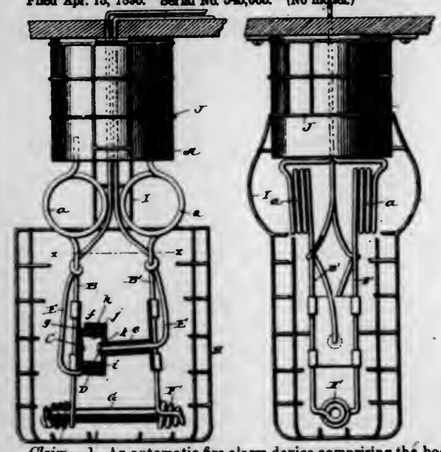
4. A dental implement, comprising a body-portion having angularly extending end-portions together constituting a straining bow for a thread or strand, a handle extending outward from one of said end-portions, and a resilient extension integral with the handle bent to form a ring at the outer end thereof, and then twisted spirally around the handle, substantially as set forth.

5. A dental implement, composed of a body-portion, having end-portions extending angularly from its middle portion, a notch or recess formed in one of said end-portions, and a handle extending outwardly from the opposite end-portion and formed with an integral resilient extension, the extension and handle being twisted spirally around each other, substantially as set forth.

6. A dental implement, comprising a resilient body-portion having angularly extending and normally divergent end-portions and a flattened and normally curved middle-portion, a spur or pick extending outwardly from one of said end-portions and a notch or recess formed in said end-portion, a handle extending outward from the opposite end portion, a resilient extension bent backward crossed against the handle and then twisted spirally around the handle, and finally hooked at its extremity to embrace the handle, and a strand or thread looped at one end around the notched end-portion so as to enter the notch thereof and also engaging the handle, substantially as set forth.

7. A dental implement, comprising a resilient body-portion having angularly extending and normally divergent end-portions and a flattened and normally curved middle-portion, a spur or pick extending outwardly from one of said end-portions and a notch or recess formed in said end-portion, a handle extending outward from the opposite end portion, a resilient extension bent backward to form a ring at the outer end of the handle, then crossed against the handle, and then twisted spirally around the handle, and finally hooked at its extremity to embrace the handle and a strand or thread looped at one end around the notched end-portion so as to enter the notch thereof and also engaging the handle, substantially as set forth.

542,783. FIRE-ALARM DEVICE. JOHN F. SNAPP, Frichton, Ind. Filed Apr. 13, 1895. Serial No. 545,603. (No model.)



Claim.—1. An automatic fire alarm device comprising the body, spring arms B, B', connected at one end to the body and having sockets at their free ends, a rigid bar of combustible material having its ends seated in the sockets of the spring arms so as to hold said arms apart, an inclosure carried by the arm B, and having an opening in one of its end walls, a contact C, arranged in said inclosure and adapted to be electrically connected with a generator and an electrical signal, a portion connected to the arm B', and extending through the opening in the wall of the inclosure, a contact D, carried by said portion of the arm B', and arranged in the inclosure and adapted to be electrically connected with the same generator and electrical signal as the contact C, and the wire cage connected with the body and surrounding the spring arms and their appurtenances, substantially as specified.

2. In an automatic fire alarm device, the combination of an inclosure comprising the wall *g*, having a non-conducting lining, and a non-conducting cover having a central aperture, a contact arranged in said inclosure and adapted to be electrically connected with a generator and an electrical signal, a spring arm having a projecting portion extending through the aperture of the inclosure cover, a contact at the end of said projecting portion adapted to be electrically connected with a generator and a signal and means for normally holding the contacts apart, substantially as specified.

3. In an automatic fire alarm device the combination of an inclosure having an opening in one of its end walls, a contact C, arranged in said inclosure and adapted to be electrically connected with a generator and an electrical signal, a piece *e*, extending through and occupying the opening in the wall of the inclosure, a contact D, carried by said piece *e*, and adapted to be electrically connected with the same generator and electrical signal as the contact C, a combustible device adapted to normally hold the piece *e*, so as to hold the contacts apart, and means for moving said piece *e* inwardly when released so as to bring the contacts C, D, together, substantially as and for the purpose set forth.

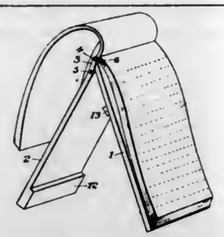
542,784. NOTE-BOOK HOLDER. REUBEN B. TERRILL, Newtown, Conn. Filed Jan. 11, 1895. Serial No. 534,566. (No model.)

Claim.—1. In a note-book holder, the combination of the boards 1, 2, the links 3 which hinge said boards together, the bale 6 for holding the note-book in position and the locking-clips 9, 11, substantially as set forth.

2. In a note-book holder, the combination of the boards 1, 2, the links 3, the bale 6, and the hand-rest 12, substantially as and for the purpose set forth.

3. In a note-book holder, the combination of the boards 1, 2, the links 3, the bale 6, the hand-rest 12, and the ledge 13, substantially as and for the purpose set forth.

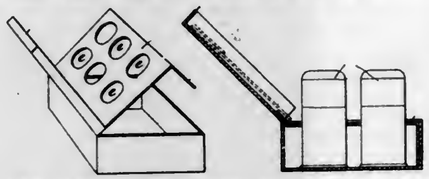
542,784.



542,785. PROCESS OF PRODUCING COLORED GELATINE PICTURES. FRANZ THURINGER, Nuremberg, Germany, assignor to Hermann Richter, same place. Filed Mar. 2, 1895. Serial No. 540,346. (No specimens.) Patented in Germany July 14, 1891, No. 61,051.

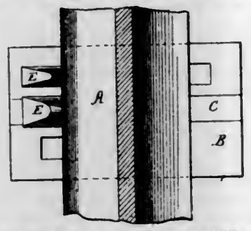
Claim.—The process herein described of making colored gelatine pictures, which consists in coating a sheet of transfer-paper with a waterproof transparent coating, mounting the gelatine-sheet on said coated backing, printing the colors on the so-mounted gelatine-sheet, and then applying another transparent water-proof coating to the face of the printed sheet, and lastly, removing the transfer-paper by moistening the same, substantially as set forth.

542,786. DISPLAY-BOX. BERNARD T. WILLIAMS, Glastonbury, Conn. Filed Jan. 25, 1895. Serial No. 536,159. (No model.)



Claim.—In combination in a display box, a cover hinged to one side of the upper edge thereof, a display frame hinged to the box near the upper back edge thereof and adapted to be swung upward within the cover and having a folded edge forming a strut, and also sockets for holding an article, all substantially as described.

542,787. TIE-PLATE. BENJAMIN WOLHAUPTER, Morgan Park, Ill. Filed Mar. 13, 1895. Serial No. 541,523. (No model.)

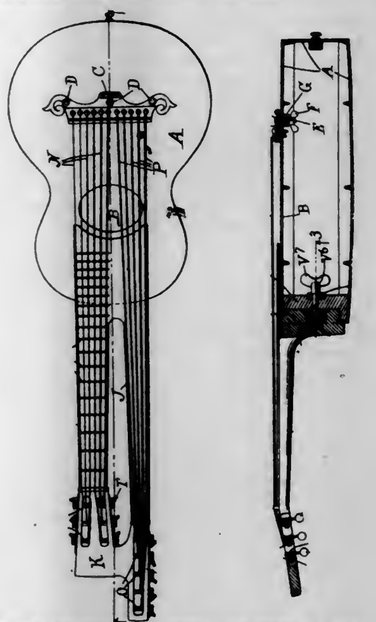


Claim.—1. A railway tie plate having a middle portion of the rail seat higher than the edges and a series of tie engaging flanges on the under side, the latter extending parallel with the grain of the tie, substantially as described.

2. A railway tie plate having a middle portion of the rail seat higher than those edges parallel with the tie, said raised portion extending throughout the width of the rail but forming a restricted bearing longitudinally of the rail and devices more or less sharpened on the under side of the plate for entering and engaging the tie, substantially as described.

542,788. MUSICAL INSTRUMENT. GERHARD ALMGRANTS, Chicago, Ill. Filed Oct. 17, 1894. Serial No. 526,169. (No model.)

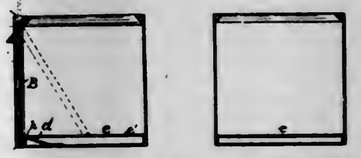
Claim.—1. In a musical instrument the combination of a body, a double neck consisting of a single piece with a part of its middle portion removed and provided with two sets of strings, the body and neck provided with dove-tailed interlocking portions by which they are removably connected together, so that one portion of the double neck is on each side of the center line of the instrument, a screw adapted to pass through the body of the instrument and into the dovetailed portionof the neck to hold the two together, the head of said screw projecting within the hollow of the body, whereby no part of the outside of the neck or body is mutilated by the fastening device, and a removable bridge placed equidistant from the sides of the instrument so as to bring the two sets of strings over the sound hole, said bridge attached to said body by screws having removable heads or nuts located within the hollow of the body of the instrument.



2. The combination in a musical instrument of a body, a double neck, provided with two sets of strings, and consisting of a single piece with a part of its middle portion removed so that neither neck will interfere with the fingering of the other, the body and neck provided with dovetailed interlocking portions by which both necks are removably connected to said body, so that the center line of the instrument passes between them, a screw adapted to pass through the body of the instrument and into the dovetailed portion of the neck to hold the two together, said screw adapted to be inserted into said neck from within the hollow of the body so that the outside of the neck will not be mutilated thereby, both necks being connected to the body of the instrument so that neither one of them comes in contact with the sound board: a removable bridge placed equidistant from the sides of the instrument, the two necks and the bridge being so arranged that both sets of strings are brought over the sound hole, said bridge attached to said body by screws having removable heads or nuts located within the hollow of the body of the instrument substantially as described.

3. The combination in a guitar of a body having a double neck consisting of a single piece with the central portion removed but connected together at the ends, said neck being secured to the body of the instrument so that the center line of the instrument passes between the two parts of the neck, a bridge fastened to the body of the instrument so that its ends will be equidistant from the sides thereof, a set of strings fastened to each part of the neck and connected to said bridge, an oval hole in the upper side of the body, said neck and bridge so positioned as to bring all of the strings substantially over said hole.

542,789. RECEPTACLE FOR SHIPPING MANUFACTURED RAKE GOODS. JAMES R. BARRY, Syracuse, N. Y. Filed Jan. 28, 1895. Serial No. 536,455. (No model.)



Claim.—1. A receptacle having a spring secured to its bottom, and an opening through its front, the edges of which opening are turned inwardly, combined with a vertically moving frame provided

with a pane of glass to close the opening in the receptacle, and which frame has its lower edge to catch between the inwardly turned edges of the opening and the spring, substantially as shown.

2. In a receptacle of the class described, a false bottom, having an opening in its front edge, a spring, and the receptacle having an opening through its front, the edges of which opening are turned inwardly; combined with the sliding frame which is placed in the end of the receptacle, and which has its lower edge to catch between the inwardly turned edges of the opening and the front edge of the false bottom, and the spring, substantially as shown.

3. A receptacle of the class described, provided with a cover, a cross bar upon one side forming a slot-way, a pane of glass having a frame, a slot-way in one edge of said frame, a spring or springs for holding said frame in position and a false bottom, as set forth.

542,790. **HEEL.** NIKOLAUS BECKER, Fuerth, Germany, assignor to Michael Schweiger, same place. Filed Feb. 6, 1895. Serial No. 537,461. (No model.)

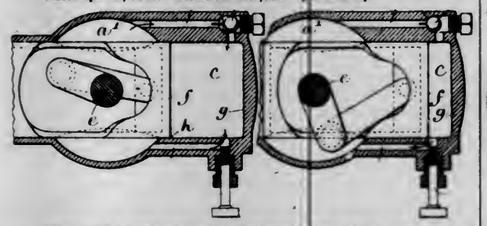


Claim.—1. A heel for boots and shoes, consisting of an outer shell provided with a screw-thread on its inner wall, a hollow wear-piece provided with a corresponding screw-thread on its outer periphery for engaging with the screw-thread of the outer shell, a cover-plate, means for securing the cover-plate within the hollow wear-piece, and means for securing the wear-piece in its adjustable position, substantially as set forth.

2. A heel for boots and shoes, consisting of an outer shell adapted to be attached to the boot or shoe, a post projecting downwardly into the shell from the top of the same, a wear-piece adapted to be adjusted outwardly in said shell and provided with a central opening receiving said post, a cover-plate, a set-screw for securing the cover-plate to the post and within the wear-piece, and means for securing the wear-piece in adjusted position, substantially as set forth.

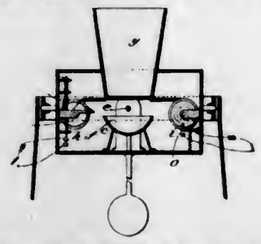
3. A heel for boots and shoes, consisting of an outer shell adapted to be attached to the boot or shoe, and provided with an interior screw-thread, a post projecting into the shell from the top thereof, a wear-piece provided with an exterior screw-thread adapted to take into the screw-thread of the shell, said wear-piece being constructed with a central opening adapted to receive said post and with a circular series of openings around the central opening, a cover-plate, a set-screw screwing into the post and securing the cover-plate within the wear-piece, and a locking-pin extending from the cover-plate and adapted to pass through one of the circular series of openings and to seat against the top of the outer shell, substantially as set forth.

542,791. **DOOR CHECK AND CLOSER.** EUGENE I. BLOUNT, Gardner, assignor to the Blount Manufacturing Company, Boston, Mass. Filed Apr. 15, 1895. Serial No. 545,814. (No model.)



Claim.—An apparatus of the character specified, comprising a casing having a liquid space, a cylinder extending outwardly from said space, a flow by-pass, and a return by-pass, said by-passes connecting the liquid space with the outer portion of the cylinder, the flow by-pass having a valve which permits free movement of liquid from said space to the outer end of the cylinder and prevents a return movement of said liquid, while the return by-pass permits a restricted flow of liquid from the outer end of the cylinder to the liquid space, a solid or valveless piston closely fitting said cylinder, a spindle operatively connected with the piston to reciprocate the latter, said cylinder constituting a closely fitting partition, whereby transfer of liquid is prevented excepting through said by-passes, and means of connection between the spindle and door whereby the opening of the door effects the retraction of the piston.

542,792. **AEROSTATIC ADVERTISING APPARATUS.** NEILSON BURGESS, Highlands, N. J. Filed Mar. 3, 1894. Serial No. 502,299. (No model.)



Claim.—In combination with an aerostat, a lantern supported thereon, a lantern slide located in front of the lantern and bearing display matter, rolls supporting the lantern slide, a ratchet secured to one of said rolls, a pawl held normally in engagement with the ratchet, a rod supporting the pawl, a stop device held normally in engagement with the opposite roll, and means for electrically reciprocating the rod, and for disengaging the stop device the two adapted to be operated simultaneously, all substantially as described.

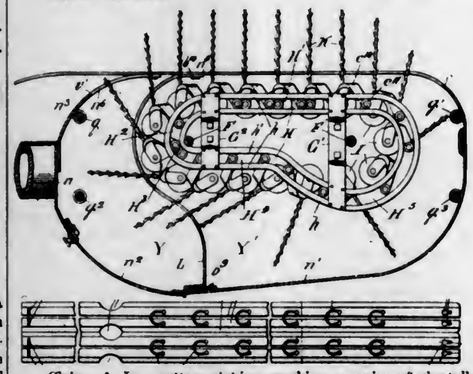
542,793. **ADVERTISING ILLUMINATED SIGN.** NEILSON BURGESS, Highlands, N. J. Filed June 14, 1894. Serial No. 514,533. (No model.)



Claim.—1. In combination in an illuminated sign, a box or like hollow receptacle having recesses at the end to receive electric arc lamps, the box provided with an irregular and broken reflecting surface, the electric lamps placed in the recesses in the box and a front wall or screen provided with slits formed to the desired outline, all substantially as described.

2. In combination in an illuminated sign, a box having an opening in one side, the interior surface covered with irregular reflecting surfaces, a flexible screen adapted to be drawn across the opening in the wall of the box and having narrow openings through the screen formed on the desired outline and the back of the screen provided with irregular reflecting surfaces, and the lights supported in the box, all substantially as described.

542,794. **COTTON-PICKING MACHINE.** ANGUS CAMPBELL, Chicago, Ill., assignor, by direct and mesne assignments, to the American Cotton Picker Company, same place. Filed Nov. 2, 1893. Serial No. 489,815. (No model.)



Claim.—1. In a cotton-picking machine, a series of pivotally mounted carriers, supported to travel in an endless course, oblong in the direction of the length of the machine and practically straight sided, picker-fingers on the carriers, means for rotating the picker-fingers on their longitudinal axes and for moving the carriers and turning them on their pivots in the forward progress of the machine, and operating to thrust the picker fingers, near the forward end of their backward course, longitudinally, to an extended position, into the plants, rotate and move the picker-fingers, during their prolonged period of such extension, in the backward direction, and withdraw

the picker-fingers, near the rear-end of their backward-course, longitudinally from the plants, substantially as described.

2. In a cotton-picking machine, a series of carriers journaled toward opposite ends in traveling bearings and linked together in endless series, to travel in rotation along an endless course, oblong in the direction of the length of the machine, and practically straight sided, driving means for the carriers, picker-fingers on the carriers, means for turning the carriers when near the forward end of their backward course, and operating in the forward progress of the machine to thrust the picker-fingers longitudinally, to an extended position, into the plants, means for maintaining the picker-fingers extended and for rotating them on their longitudinal axes during their prolonged travel in the backward direction, and means for turning the carriers when near the rear end of their backward course, and operating to withdraw the picker-fingers longitudinally from the plants, substantially as described.

3. In a cotton-picking machine, a series of carriers journaled toward opposite ends in traveling bearings and linked together in endless series, to travel in rotation along an endless course, oblong in the direction of the length of the machine, and practically straight sided, driving means for the carriers, picker-fingers on the carriers, means for turning the carriers, when near the forward end of their backward course, and operating in the forward progress of the machine to thrust the picker-fingers longitudinally, to an extended position, into the plants, means for maintaining the picker-fingers extended and for rotating them, on their longitudinal axes, during their prolonged travel in the backward direction, means for turning the carriers when near the rear end of their backward course and operating to withdraw the picker-fingers longitudinally from the plants, and stripper mechanism in the paths of and engaging the picker-fingers when they are withdrawn from the plants, substantially as and for the purpose set forth.

4. In a cotton-picking machine, the combination with the running gear, of a frame mounted thereon and having a central longitudinal passage adapted to straddle and override a row of cotton-plants, vertically disposed and pivotally mounted carriers connected together in series, the carriers of each series being connected with and actuated from the said running gear to travel an endless path in rotation at a speed approximating that of the progress of the machine, the backward courses of the series, respectively, being approximately straight and parallel at opposite sides of the passage, picker-fingers on the carriers, means for turning the carriers when near the forward ends of their backward courses and operating to thrust the picker-fingers longitudinally to an extended position and cause their outer ends to enter the plants in the progress of the machine in planes approximately at right angles to the plane of progress of the machine, and the picker-fingers of the two opposing series to intermesh in the plants, means for rotating the picker-fingers on their longitudinal axes during their backward progress, and means for turning the carriers, when near the rear ends of their backward courses, and operating to withdraw the picker-fingers longitudinally and cause their outer ends to leave the plants in planes approximately at right angles to the plane of progress of the machine, substantially as and for the purpose set forth.

5. In a cotton picking machine the combination with the main frame, running gear and driving mechanism, of a frame at each side of the machine provided at its inner side with longitudinal slots and each containing a series of vertically disposed traveling carriers, rotary picker-fingers extending from the said carriers in the planes of the said slots, projections on the said carriers, propelling means for each series of carriers connected with the said driving mechanism and operating to move the carriers of each series along an endless course oblong in the direction of the length of the machine and practically straight sided, and cam guides for the said carrier projections operating while the carriers are near the forward end of their backward course to turn them on their vertical axes and thrust the picker-fingers longitudinally through said slots, maintain the picker-fingers extended while the carriers move along their extended course in the backward direction, and then withdraw them longitudinally through the slots, mechanism for rotating the picker-fingers on their axes by the traveling movement of the carriers, and stripper mechanism for the picker-fingers, substantially as described.

6. In a cotton-picking machine, a series of carriers journaled toward opposite ends in traveling bearings and linked together in endless series, to travel in rotation along an endless course, oblong in the direction of the length of the machine and practically straight sided, driving means for the carriers, picker-fingers on the carriers, means for turning the carriers, when near the forward end of their backward course, and operating in the forward progress of the machine to thrust the picker-fingers longitudinally, to an extended position, into the plants, means for maintaining the picker-fingers extended and for rotating them, on their longitudinal axes, during their prolonged travel in the backward direction, means for turning the carriers when near the rear end of their backward course and operating to withdraw the picker-fingers longitudinally from the plants, and stripper mechanism comprising parallel strips having yielding edges between which the picker-fingers are drawn longitudinally in the movement of the carriers in the forward direction, substantially as and for the purpose set forth.

7. In a cotton-picking machine, the combination with the main frame, running gear and driving mechanism, of a frame at each side of the machine provided at its inner side with longitudinal strips separated to afford longitudinal slots between them, a series of vertically disposed traveling carriers in each side frame, rotary picker-fingers extending from the said carriers in the planes of the said slots, propelling means for the carriers connected with the said driving mechanism and operating to move the carriers along an endless course, oblong in the direction of the length of the machine and practically straight sided, a series of parallel stripper strips beyond the rear ends of the said courses on the said side frames, connected at one end with the said longitudinal strips, between the ends of the said longitudinal strips, and presenting slits which register with the said slots, picker-fingers on the carriers movable in the said slots and coincident stripper slits, means for turning the carriers, when near the forward end of their backward course and operating in the forward progress of the machine to thrust the picker-fingers longitudinally through the said slots to an extended position, means for maintaining the picker-fingers extended and for rotating them, on their longitudinal axes, during their prolonged travel in the backward direction, and means for turning the carriers when near the rear end of their backward course and operating to withdraw the picker-fingers longitudinally through the said slots to the stripper strips, the picker-fingers being drawn longitudinally through the stripper strips in the forward movement of the carriers, substantially as and for the purpose set forth.

8. In a cotton-picking machine, the combination of carriers I, each provided with a series of picker-fingers, extending from one side thereof, and supported to travel in an endless course oblong in the direction of the length of the machine and practically straight-sided, a shaft on each carrier geared to the said picker-fingers, a projection on each carrier, a cam in the path of said projections operating by its engagement with the said projections to turn the carriers on their axes at the forward end of their course to thrust the picker-fingers longitudinally into the plants, and turn the carriers on their axes at the rear end of their course to withdraw the picker-fingers longitudinally out of the plants, a pinion on each said shaft and a rack in the path of the said pinions, substantially as and for the purpose set forth.

9. In a cotton-picking machine, the combination with the driving power, of a series of carriers I connected pivotally together to travel an endless course, oblong in the direction of the length of the machine and practically straight sided, a series of picker-fingers journaled in and extending from one side of each carrier, a shaft in each carrier geared to the picker-fingers, an arm upon each carrier, a cam-guide H against which the said arms travel as the carriers are advanced, propelling mechanism connected with the said driving mechanism for advancing the said carriers, and means for rotating the carrier-shafts and through them the picker-fingers in the progress of the carriers, substantially as and for the purpose set forth.

10. In a cotton-picking machine, the combination of a series of carriers I mounted in drive-chains, supported to travel in an endless course oblong in the direction of the length of the machine and practically straight sided, a series of rotary picker-fingers extending from and journaled in one side of each carrier, a rotary shaft in each carrier to which the picker-fingers are geared, a pinion on each said shaft, a rack in the path of the pinions, driving means for the said drive chains, a projection on each carrier, and a cam-guide H in the path of said projections, whereby the picker-fingers are thrust longitudinally into the plants, maintained extended during their prolonged travel in the backward direction and then withdrawn longitudinally from the plants, substantially as and for the purpose set forth.

11. In a cotton-picking machine, the combination with the running gear of casings D E provided on their inner sides with longitudinal slots, shafts F F' journaled in the said casings, driving means for the shafts actuated from the said running gear, sprocket wheels on opposite end portions of the said shafts, drive chains mounted on said sprocket wheels to travel endless paths, oblong in the direction of the length of the machine, the backward courses of the paths being straight and parallel with the inner sides of the casings, carriers I journaled at opposite ends in the said drive chains, a series of picker-fingers in the planes of said slots extending from and journaled in one side of each carrier, means near the forward end of each backward course in the path of each carrier for turning it on its longitudinal axis and thrusting the picker-fingers longitudinally to an extended position through said slots, means near the rear end of each backward course in the path of each carrier for turning it on its longitudinal axis to withdraw the picker-fingers longitudinally through said slots, and means for rotating the said picker-fingers in the movement of the carriers in the backward direction, substantially as and for the purpose set forth.

12. In a cotton-picking machine, a series of carriers journaled toward opposite ends in traveling bearings and linked together in endless series, to travel in rotation along an endless course, oblong in the direction of the length of the machine and practically straight sided, driving means for the carriers, picker-fingers on the carriers, provided with spirally-projecting cotton-engaging points, shafts on the carriers to which the said picker-fingers are geared, means for turning the carriers, when near the forward end of their backward course, and operating in the forward progress of the machine to thrust the picker-fingers longitudinally, to an extended position, into the plants, means for maintaining the picker-fingers extended during their prolonged travel in the backward direction, means for turning the carriers when near the rear end of their backward course and operating to withdraw the picker-fingers longitudinally from the plants, means for rotating the carrier-shafts while the carriers are traversing a part of their course and operating to rotate the said shafts and turn the picker-fingers on their longitudinal axes only while the picker-fingers are being thrust into the plants, caused to move in the backward direction and withdrawn from the plants, and stationary strippers in the paths of the picker-fingers through which the said fingers are drawn longitudinally when withdrawn from the plants, the fingers being geared to turn in the backward direction and disengage their points from the cotton while passing through the strippers, substantially as and for the purpose set forth.

13. In a cotton-picking machine, the combination with the shafts F F' and driving-means therefor, sprocket wheels near opposite ends of said shafts, drive-chains traveling on said sprocket-wheels, carriers I journaled at opposite ends in the drive-chains, and caused thereby to travel an endless course oblong in the direction of the length of the machine and practically straight sided, a series of picker-fingers extending from and journaled in one side of each carrier, a drive-shaft I' on each carrier to which the picker-fingers are geared, cam-guide H, arm c^{10} on each carrier at its outer end traveling on the guide H, a roller c^{13} on each carrier, a cam-guide in the path of the said rollers, a projection on each shaft I', rotating means for the shaft I' with which the shafts I' engage during their movement in the backward direction, and a guide G^4 in the path of the said projection on each shaft I' engaging said projections during the forward movement of the carriers to hold the shafts I' against rotation, the whole being constructed and arranged to operate substantially as and for the purpose set forth.

14. In a cotton-picking machine, the combination with the traveling rotary picker-fingers of stripper mechanism for the picker-fingers, comprising a series of parallel and adjacent strips of stiff material provided with continuous projecting edges formed of longitudinally extending strips of flexible material, between which the fingers are drawn in the operation of the machine, substantially as described.

15. In a cotton picking machine the combination with the traveling rotary picker-fingers of stripper mechanism for the picker-fingers, comprising a series of adjacent strips, between which the fingers are drawn in the operation of the machine, each strip being formed of two parallel longitudinally extending sections, secured together by a yielding connection, substantially as described.

16. In a cotton-picking machine, the combination with the traveling rotary picker-fingers, of stripper mechanism for the picker-fingers comprising a series of adjacent strips each formed in longitudinal spring connected sections normally out of contact with each other, substantially as and for the purpose set forth.

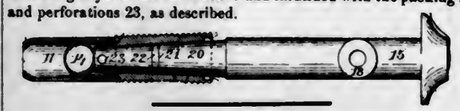
17. In a cotton-picking machine, the combination with the traveling rotary picker-fingers of stripper mechanism for the picker-fingers comprising a series of adjacent relatively yielding strips between which the fingers are drawn in the operation of the machine, the strips comprising longitudinally-extending strips of flexible material provided on one side with narrower longitudinally and centrally extending strips of stiff material, substantially as described.

18. In a cotton-picking machine, the combination with the traveling rotary picker-fingers, of stripper mechanism for the picker-fingers comprising a series of adjacent strips having flexible edges between which the picker-fingers are drawn in the operation of the machine, and coincident notches affording openings b^4 toward the rear ends of the strips, substantially as and for the purpose set forth.

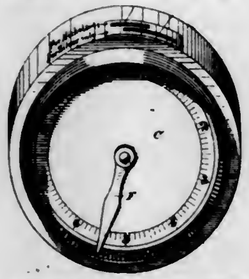
19. In a cotton-picking machine, the combination with the traveling rotary picker-fingers, of stripper mechanism for the picker-fingers comprising a series of adjacent strips each formed in two longitudinal sections normally separated from each other, each section comprising a strip b' of flexible material, and a narrower strip b^3 of stiff material fastened together, the sections being connected by springs b^3, substantially as and for the purpose set forth.

542,795. FAUCET. NATHANIEL S. CARY, Mapleville, R. I. Filed Mar. 8, 1894. Serial No. 502,796. (No model.)

Claim.—The combination with the screw-threaded sleeve 6 having the tapering-bore 8, the valve-seat 9, and the valve-chamber 11 furnished with the contracted opening 13, and the ball-valve 14 contained within the chamber, of the spigot 15 having the bore 19, the tubular member 18 connecting therewith, the tapering portion 20 extending beyond the valve seat 9 and furnished with the packing 22 and perforations 23, as described.



542,796. COIN RECEPTACLE AND REGISTER. ARTHUR W. COFFIN, San Francisco, Cal. Filed Jan. 14, 1895. Serial No. 534,861. (No model.)



Claim.—1. A device for receiving and registering the value of coins introduced, consisting of an exterior case, a dial with subdivisions and figures indicating amounts, a hand or pointer centrally pivoted and movable over said dial, interior mechanism by which said pointer is advanced in one direction by the introduction of a coin proportionally to its diameter, and a circular rack concentric with the dial so formed that the pointer will move freely over it in one direction, and will be prevented from returning in the opposite direction.

2. A device for receiving and indicating the amount of coins, consisting of a closed case having a dial, movable pointer, and a holding rack engaged by said pointer, a shaft extending through the dial having the pointer fixed upon its outer end, and the inner end loosely journaled, arms turnable about said shaft extending therefrom to the inner periphery of the case, slots made through the top of the case in the plane of movement of the arms, and a clutch or ratchet mechanism by which one of the arms engages the pointer shaft to advance it in one direction, and the arms are allowed to return freely in the opposite direction.

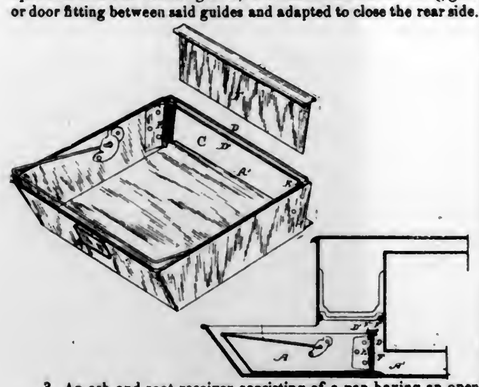
3. A device for receiving and indicating the amount of coins introduced, consisting of a closed receptacle having a dial upon one side with an indicating pointer movable over it and a ratchet with which said pointer engages to prevent its return after being advanced, a central shaft projecting through the dial to the outer end of which the pointer is fixed, the inner end of said shaft being journaled to turn freely, arms loosely turnable upon said shaft extending therefrom to the inner periphery of a case, slots made through the case approximately in the plane of movement of the arms, and a spring by which the arms are normally held to partially intercept the slots, an independent arm fulcrumed at one side of the case having a pin engaging one of the centrally pivoted arms, and extending across the slots through which the coins are introduced whereby the introduction of a coin will force the pin and the arm with which it contacts to move forward a distance corresponding with the varying diameters of the coins introduced, and a clutch mechanism whereby the movement of the arm is transmitted to the pointer shaft to move the latter forward.

4. A device to receive and indicate the value of coins introduced therein, consisting of a case having slots through its periphery for the introduction of the coins, a dial and an index pointer movable over it to register the amounts of the coins, a circular rack concentric with the dial over which the pointer is adapted to move freely in one direction, and is prevented from returning in the opposite direction, an arm so connected that its advance will advance the pointer, said arm standing normally in such relation to the slots, that it will be advanced by the passage of a coin, and having the contact edge curved so that it will be advanced in proportion to the value of the coins, whose diameters do not vary in proportion to their value.

542,797. ASH AND SOOT PAN. HERRMANN COLMAN, San Francisco, assignor of one-half to Julius Colman, Oakland, Cal. Filed May 3, 1895. Serial No. 548,035. (No model.)

Claim.—1. A combined ash and soot receiver consisting of a pan adapted to fit into the ash pit beneath the grate of a stove and having a rear side adjacent to the chamber beneath the oven, made removable.

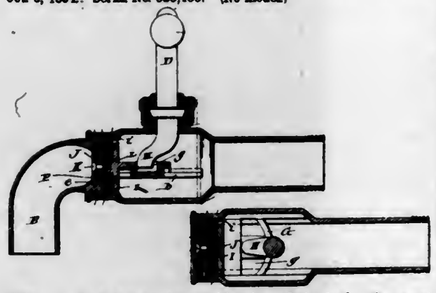
2. A combined ash and soot receiver consisting of a pan adapted to fit the ash-pit beneath the grate of a stove or range having an open rear side and vertical guides, in combination with a sliding gate or door fitting between said guides and adapted to close the rear side.



3. An ash and soot receiver consisting of a pan having an open rear side, and a vertically sliding gate adapted to close said side, said gate having transverse extensions across its top.

4. An ash and soot receiver consisting of a pan having an open rear end, guides upon the sides and top, and a sliding gate fitting said guides and adapted to close the rear end, the rear end of the bottom of the pan projecting and turned downwardly as described.

542,798. FAUCET. WILLIAM CURLETT, San Francisco, Cal. Filed Oct. 6, 1894. Serial No. 525,155. (No model.)

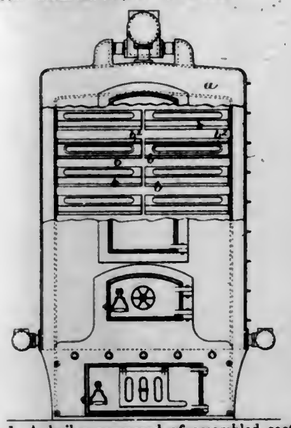


Claim.—1. In a faucet, the combination of the body, the spout or nozzle detachably connected to the body and having a valve seat at its inner end, an internally beveled ring arranged in the body, a slidable frame arranged in the body and having a disk at its forward end, a tapering plug adapted to enter the valve seat in the end of the spout, a beveled gasket interposed between the plug and the disk of the frame and means for connecting the plug and gasket to said disk of the frame, substantially as specified.

2. In a faucet, the combination of the body having the screw threads *a*, at its forward end, the removable spout or nozzle screw-threaded to engage the threads *a*, of the body and having the conical aperture *e*, the adjustable ring M, externally threaded to engage the threads *a*, of the body and having an internal bevel, a slidable frame arranged in the body and having the disk I, at its forward end, the tapering, elastic plug P', adapted to seat in the aperture *e*, of the nozzle or spout, the gasket interposed between the plug and the disk of the frame, the attaching screw taking through the plug and the gasket and into the disk I, and a suitable means for moving the slidable frame, substantially as and for the purpose set forth.

3. The herein described faucet comprising the body having the internal screw threads *a*, at its forward or outer end and also having the ways *b*, the externally-threaded and internally-beveled ring M, engaging the threads *a*, of the body, the slidable frame G, arranged in said ways and having the disk I at its forward end provided with a screw tapped aperture and also having the vertically-disposed transverse aperture *g*, the stem D, having the portion H, at its lower end arranged in the aperture or way *g*, of the slidable frame; the removable spout or nozzle screw-threaded to engage the threads *a*, of the body and having the conical aperture *e*, at its inner end, the tapering elastic plug P', adapted to seat in the aperture *e*, of the nozzle or spout, the gasket interposed between the plug and the disk of the frame and adapted to engage the ring M, and the attaching screw taking through the plug and the gasket and into the threaded aperture of the disk I, all substantially as and for the purpose set forth.

542,799. BOILER. EDWARD GURNEY, Toronto, Canada. Filed Mar. 1, 1895. Serial No. 540,189. (No model.)



Claim.—1. A boiler composed of assembled sections forming water and steam spaces inclosing a fire-space, and a plurality of water-circulating loops or tubes projecting from the walls of the sections into said fire-space, each comprising an upper and a lower division, some of said tubes being separated by spaces through which the products of combustion pass freely, while other tubes are provided with webs or flanges projecting laterally from the external surfaces of the upper division, said flanges with the tubes on which they are formed constituting a baffle-plate or partition.

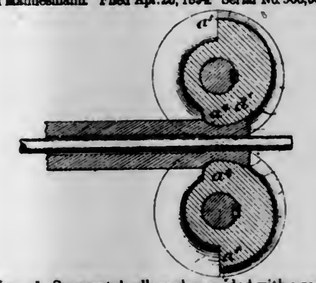
2. A loop or tube adapted to be attached at one end to the shell of a boiler, comprising two divisions communicating with each other at their ends, and laterally projecting longitudinal webs or flanges formed on the exterior of the upper division; said webs being substantially flush with the upper side or surface of the tube.

542,800. METHOD OF MAKING TWO-PRONGED RIVETS. ELEAZER KEMPSHALL, Sharon, assignor to the Boston Fast Color Eyelet Company, Boston, Mass. Filed Apr. 13, 1895. Serial No. 545,654. (No specimens.)



Claim.—That improvement in the art of making two-pronged rivets which consists in first cutting from a centrally thickened bar or strip a transverse blank with parallel edges and thereby shaping the prongs of the rivet, and then expanding or swaging the thickened portion of the blank and thereby shaping the head of the rivet.

542,801. ART OF AND MACHINE FOR ROLLING SEAMLESS METALLIC TUBES. MAX MANNESMANN and REINHARD MANNESMANN, Remscheid, Germany; said Max Mannesmann assignor to said Reinhard Mannesmann. Filed Apr. 23, 1894. Serial No. 508,609. (No model.)



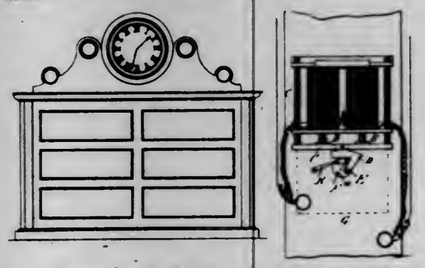
Claim.—1. Segmental rolls each provided with a reducing groove which is laterally flaring as herein described, and gradually diminishes in width and depth and merges into a finishing groove, in combination with a suitably proportioned mandrel interposed between said rolls, as and for the purposes set forth.

2. In apparatus for step by step rolling, the combination of two appropriately mounted eccentric rolls, the working faces of which are each provided with a longitudinally tapering groove semi-elliptical, or approximately semi-elliptical, in cross section, as herein described, and increasing in radius from one end to the other, in combination with a suitable mandrel appropriately interposed between the said rolls, as and for the purposes set forth.

3. The improvement in the art of rolling seamless metallic tubes into integrally united lengths of tubing of oval cross section, which consists in placing a mandrel loosely within a hollow ingot, introducing the mandrel and ingot to rolls having a pass of elliptical or approximately elliptical contour as herein described, and turning the ingot ninety degrees more or less as the rolls act step by step to reduce the same, substantially as set forth.

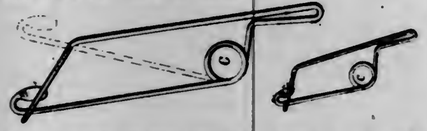
4. As a new article of manufacture, the seamless rolled metal tube herein described, the same composed of integrally united staggered oval sections substantially as set forth.

542,802. APPARATUS FOR AUTOMATICALLY DISPLAYING ADVERTISEMENTS. CHARLES K. MARR, London, assignor to Jonathan Redman, Salem Mills, Hebden Bridge, England. Filed Sept. 18, 1894. Serial No. 523,384. (No model.) Patented in England Sept. 1, 1893, No 16,450.



Claim.—In an automatically acting advertising machine, the combination with the spindle of the advertising cylinder or drum and contact making and breaking appliances operated by clockwork, of a solenoid including the cores B, a frame C constituting a magnet armature and connected to the cores B and capable of a vertical movement, pawl D centered on the lower member of said frame, a disk as F, secured on the spindle of said drum and provided with a series of pins adapted to be acted upon by said pawl when the electric current is transmitted through said solenoid by the action of the clockwork on the contact making and breaking appliances, substantially as set forth.

542,803. SET-LINE SNAP. GEORGE E. PALMER, Elmira, N. Y. Filed Sept. 4, 1894. Serial No. 522,059. (No model.)



Claim.—1. A set-line snap comprising a piece of wire bent first to form a loop —*a*—, thence bent to form a coil —*c*—, thence to form the hook —*d*—, the opposite end bent diagonally and to form an eye —*f*— with which the hook —*d*— engages, substantially described in the purposes set forth.

2. A set line snap, consisting of a piece of wire bent substantially centrally, first, to form a coil —*c*— thence having its end bent to form a hook —*d*—, said hook being provided with a lip upon its under side and the opposite end of the wire bent obliquely to form an eye with which the hook —*d*— engages, substantially as described for the purposes set forth.

542,804. OPTICAL TOY. HENRY V. PLAGET, Jersey City, N. J. Filed Apr. 3, 1895. Serial No 544,234. (No model.)



Claim.—1. In an optical toy, the combination with a casing of two prisms located in the same, both being triangular in cross section and held at an inclination to each other, the base of one prism being along the apex of the other prism, substantially as herein shown and described.

2. In an optical toy, the combination with a casing, provided in one face with sight openings and having part of its top uncovered, of two prisms held in said casing at an inclination to each other, both prisms being triangular in cross section and one prism having its base along the apex of the other prism, substantially as herein shown and described.

3. In an optical toy, the combination with a casing having sight openings in one wall and having part of its top uncovered, of triangular pieces secured to the inner faces of the ends of the casings, two prisms, each triangular in cross section, rested upon the edges of said triangular pieces the base of one prism being along the apex of the other prism, substantially as herein shown and described.

4. In an optical toy, the combination with a casing provided with sight openings in one wall, of a plain piece of glass placed against the inner surface of the wall provided with said openings, two prisms held at an angle to each other within said casing, and a wedge interposed between one of said prisms and the piece of plain glass, substantially as herein shown and described.

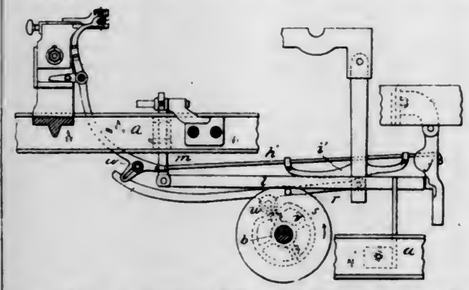
5. In an optical toy, the combination with a casing provided with sight openings in one wall and provided with a top of about half the width of the casing and connected with the top of the wall having the openings, of two prisms held at an inclination to each other in said casing and a flange on the free edge of said top, the bottom edge of said flange resting against the top parts of the prisms, substantially as herein shown and described.

542,805. STOCKING-SUPPORTER. JOSEPH H. PILKINGTON, Waterbury, Conn. Filed June 6, 1895. Serial No. 551,905. (No model.)



Claim.—A garment supporter consisting of a member B provided with studs 10 and 12 having enlarged heads, and a member A having a slot and a recess adapted to receive stud 10 and between said slot and recess a neck through which said stud may be passed and whereby it may be locked in said recess, an opening 5 adapted to receive the head of stud 12 freely together with a fold of garment and below said opening a slot 6 into which said stud may be passed, the head of stud 12 with a fold of garment lying upon the upper side of member A and stud 10 lying in recess 3 in which position it is locked by the neck, so that the members are held in position relatively to each other and the garment is held firmly.

542,806. STOPPING MECHANISM FOR PILE-WIRE LOOMS. GEORGE POOLE, Lowell, assignor to the Massachusetts Mohair Plush Company, Boston, Mass. Filed July 27, 1894. Serial No. 518,691. (No model.)



Claim.—1. In a pile-wire loom, in combination, a shaft (*b*) provided with a cam and a disk having a pin, a knock-off mechanism, a feeler-lever adapted at one end to rest against the wire when the latter is intact and being withdrawn, a pendent lever (*j*), a rod (*k'*) connecting the lever (*j*) with the other end of said feeler-lever, a movable bar (*m*) connected to said knock-off mechanism, a lever (*l*) connected to said bar (*m*) at one end, a lever (*t*) pivoted at one end and provided with a roller to engage said cam, the free end of the lever (*t*) being arranged to engage said feeler-lever and the free end of the lever (*l*) being arranged to be engaged by the lever (*j*) substantially as and for the purpose set forth.

2. In a pile wire loom in combination, a cam carried by a disk *v*, a feeler lever adapted at one end to bear against the wire, while the latter is intact and being withdrawn, and means actuated by said cam for operating said feeler lever to hold its above mentioned end out of the path of the said wire, while the latter is being inserted, substantially as and for the purpose set forth.

3. In a pile-wire loom in combination, a pin carried by a disk *s*, a feeler lever adapted at one end to bear against the wire, while the latter is intact and being withdrawn, a knock-off mechanism, a lever *k* connected to said feeler lever, a lever *l* connected at one end to said knock-off mechanism, and adapted at its free end to be engaged and held by the lever *k* when the latter is operated by the feeler lever on the failing of a wire, said pin being arranged to engage the lever *l* between its ends, whereby upon the breaking or failing of a wire, the knock-off mechanism will be operated, and whereby at other times the movements of the lever *l* will not affect the knock-off mechanism, substantially as and for the purpose set forth.

4. In a pile-wire loom in combination a feeler lever pivoted to a stationary support, and adapted at one end to bear against the wire, while the latter is intact and being withdrawn, a knock-off mechanism, a rotary member carried by the bottom shaft, and interlocking connections between the feeler lever and said rotary member, and between said rotary member and said knock-off mechanism, adapted to be operated by said feeler lever, whereby upon the failing of a wire, said knock-off mechanism will be operated to stop the loom through the medium of the rotary member, substantially as and for the purpose set forth.

542,807. COVER FOR JARS. GEORGE B. QUIGLEY, Braddock, Pa. Filed Mar. 29, 1895. Serial No. 543,691. (No model.)

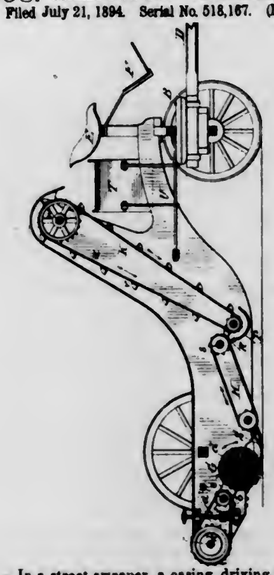


Claim.—1. The combination, with a vessel, as A, having an offset or rim *a*, of a cover B having catches *b* attached to its edge, a spider-like clamping or fastening device C adapted to operate said catches, and a handle secured to the cover and forming a guide for said fastening device.

2. The combination of a vessel A, a cover B having catches thereon, a clamping or fastening device C, and a handle D secured to said cover and passing through an opening in the center of said clamping device, whereby the latter is guided or held in place, substantially as shown and described.

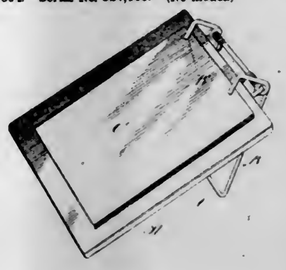
3. The combination of a vessel, a cover thereto, catches on said cover adapted to engage with said vessel, a clamping device C adapted to operate said catches, a hinged handle D secured to said cover and passing through an opening therein, and adapted to be folded and thus lock said clamping or fastening device, substantially as shown and described.

542,808. STREET-SWEEPER. ROBERT F. REAGAN, New Brighton, N. Y. Filed July 21, 1894. Serial No. 518,167. (No model.)



Claim.—In a street sweeper, a casing, driving wheels C, one being provided with a sprocket wheel *o*, a chain *p*, a sprocket *n*, a shaft *t*, provided with a sprocket wheel *k*, and the gear wheel *f*; the hangers *e*, journaled upon the shaft *c* and provided with toothed sectors upon their rear ends, the shaft *d*, journaled in the hangers and having its ends projecting through curved slots in the casing, one of the ends being provided with a pinion *g* meshing with gear wheel *f* the brush placed upon the shaft *d*; worm gears journaled in the casing and working in the toothed sectors, whereby the brush can be raised or lowered.

542,809. COPY-HOLDER. ARTHUR B REID, Chicago, Ill. Filed Oct. 29, 1894. Serial No. 527,163. (No model.)



Claim.—1. In a copy-holder, the combination of a bed and a spring-controlled supporting leg permanently connected pivotally with the bed at one end and extending thence downward to bear on the support for the device and sustain the bed resiliently in inclined position, said leg being extended over the upper edge of the bed into a spring clamping-jaw co-operating therewith and opened by pressing downward on the bed, substantially as described.

2. In a copy-holder, the combination of a bed and a spring-controlled holder therefor permanently connected pivotally with the bed at one end and sustaining it resiliently in inclined position for use, said holder comprising a single length of wire bent to afford legs B and extended into jaws B' overlapping the upper edge of the bed, substantially as described.

3. A copy-holder comprising, in combination, a bed A having a rod *r* fastened to it at one edge and means for sustaining the bed resiliently in inclined position and clamping the matter to be held, comprising a single piece of wire bent to form legs B and coiled about the rod *r* and thence extended to overlap the adjacent edge of the bed and form clamping-jaws B', and a spring resiliently controlling the parts, substantially as described.

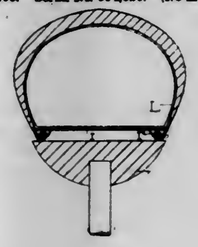
542,810. PROCESS OF CLEANING GREEN PEAS. ROBERT P. SCOTT, Cadiz, Ohio, and JOHN A. CHISHOLM, Oakville, Canada. Filed July 19, 1894. Serial No. 518,061. (No model.)



Claim.—1. The process of cleaning green peas which consists in first blanching them by subjecting them for a short time to the action of boiling water and thereafter to the action of a rotary screening cylinder having its working edges arranged longitudinally of the cylinder substantially as described.

2. The process of cleaning green peas which consists in first blanching them by subjecting them for a short time to the action of boiling water and thereafter to the action of a movable screening surface having its working edges arranged at an angle to the line of motion of the screening surface substantially as described.

542,811. PNEUMATIC TIRE. ROBERT P. SCOTT, Cadiz, Ohio. Filed Jan. 7, 1895. Serial No. 534,026. (No model.)



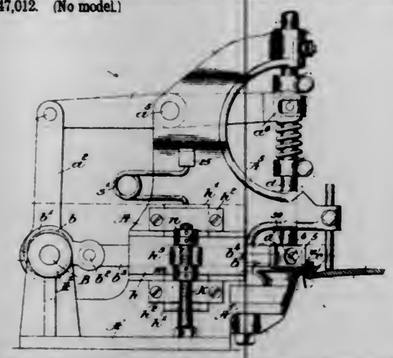
Claim.—1. The combination of a wheel rim, an annular plate, a flange making a re-entrant angle with the plate and forming a groove thereunder and an inflatable tire having a selvage seated within the groove, the arrangement being such that inflation of the tire causes the flange to stand more nearly normal to the rim and thus assists in securing the parts in place.

2. The combination of a wheel rim, an annular plate and a flange making a re-entrant angle with the plate and forming a groove therewith, the flange being provided with slits substantially as described.

542,812. METHOD OF MAKING SMOKELESS POWDER. JEAN V. SKOGLUND, Stockholm, Sweden. Filed Jan. 25, 1892. Serial No. 419,210. (No specimens.)

Claim.—The method herein specified of insuring the proper drying of the grains of powder containing nitrated cellulose, consisting in combining with the solvent, water and a vehicle such as alcohol and dissolving the nitrated cellulose in the liquid and rendering the material porous by the presence of the water as the solvent evaporates substantially as set forth.

542,813. MACHINE FOR INSEAM-TRIMMING AND BEATING OUT WELTS. ALVAH C. SPENCER, Boston, assignor of one-half to Adelbert P. Hanscom, West Medford, Mass. Filed Apr. 24, 1895. Serial No. 547,012. (No model.)



Claim.—1. In a machine for beating out welts and trimming the inseams of boots and shoes, a welt support to sustain the attached welt adjacent the upper, combined with a hammer to beat out the welt, a trimmer knife to trim the inseam, and means to automatically actuate the hammer and trimmer knife, substantially as described.

2. In a machine for beating out welts and trimming the inseams of boots and shoes, a welt support to sustain the attached welt adjacent the upper, combined with a vertically reciprocating hammer to beat out the welt, a trimmer knife movable in a path adjacent the hammer, to trim the inseam, and means to automatically actuate the hammer and trimmer knife, substantially as described.

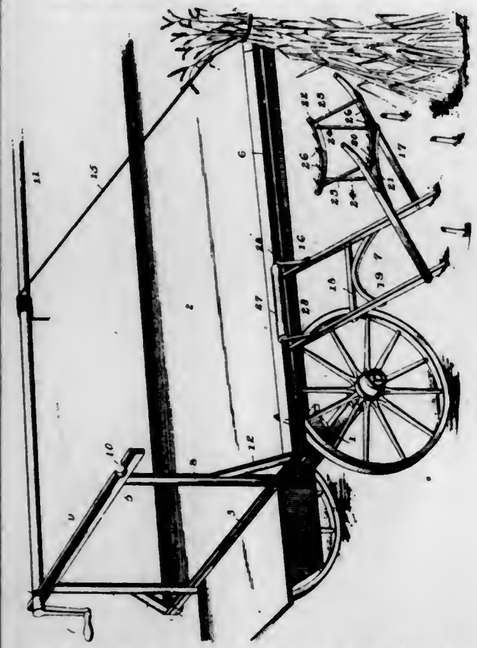
3. In a machine for beating out welts and trimming the inseams of boots and shoes, a welt support to sustain the attached welt adjacent the upper, combined with a reciprocating hammer to beat out and dwell upon the welt at each stroke, a trimmer knife having a diagonal cutting edge to trim the inseam with a shear cut, and means to automatically reciprocate the hammer and to operatively actuate the trimmer knife during the dwell of the hammer, substantially as described.

4. In a machine for beating out welts and trimming the inseams of boots and shoes, a welt-support to sustain the attached welt adjacent the upper, combined with an automatically reciprocated hammer to beat out the welt, a laterally reciprocating trimmer knife to trim the inseam, a carrier therefor, an adjustable bearing for the said carrier, and means to reciprocate the knife and its carrier, substantially as described.

5. In a machine for beating out welts and trimming the inseams of boots and shoes, a welt-support to sustain the attached welt adjacent the upper, and an automatically reciprocated hammer to beat out the welt, combined with a laterally reciprocating trimmer knife having a diagonal cutting edge, to trim the inseam with a shear cut, and means controlled by the operator to instantly vary the depth of cut, substantially as described.

6. In a machine for beating out welts and trimming the inseams of boots and shoes, a welt-support to sustain the attached welt adjacent the upper, and an adjustable work-support for the insole within the inseam, combined with a vertically reciprocating hammer to beat out the welt, a laterally reciprocating trimmer knife to trim the inseam, and means to automatically reciprocate the hammer and trimmer knife, substantially as described.

542,814. FODDER-LOADER. STEPHEN STOUT, Axtell, Kans. Filed May 22, 1895. Serial No. 550,224. (No model.)



Claim.—1. The herein-described device for loading fodder and similar growths upon a wagon, consisting of a frame adapted to be leaned against the side of the wagon and inclining outwardly and downwardly therefrom, a second frame pivotally connected at its lower end to the lower portion of the first-mentioned frame and normally inclining upwardly and outwardly, and provided at its upper end with a carrier consisting of similarly curved bars located at a distance apart and having spikes or teeth extending upwardly from their concaved sides for the purpose described, and hoisting mechanism consisting of a windlass and hoisting rope, substantially as set forth.

2. The herein-described loader for the purposes set forth, comprising a frame adapted to be leaned against the side of the wagon to be loaded and provided at its upper end with a roller, and a second frame having pivotal connection with the lower portion of the leaning frame and provided at its upper end with a carrier consisting of similarly curved bars located a distance apart and provided on their upper concaved sides with spikes or teeth, substantially as and for the purpose specified.

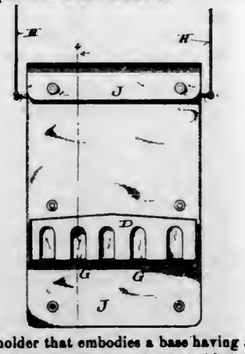
3. In combination, a fodder rack having side longitudinal sills spaced apart and provided with end stanchions comprising uprights which have their lower ends engaging with the sides of the wagon bed, and upper cross beams provided in their upper edges with notches in proximate relation to their extremities, a long windlass extending the entire length of the rack and having annular depressions near its ends which are fitted in corresponding notches in the cross beams, a hoisting rope adapted to wind upon the windlass, and a loading device comprising two frames pivotally connected together at their lower ends, one frame adapted to lean against and be supported by the wagon and the opposite frame having a carrier at its upper end, substantially as set forth.

4. The herein-specified loading device, comprising a frame adapted to be supported in a leaning position and having a roller at its upper end journaled in side brackets, a second frame hinged or pivoted to the lower portion of the first frame and adapted to incline in an opposite direction thereto and provided at its upper end with a carrier, the latter consisting of similarly curved bars located a distance apart and connected by end rods, braces for supporting the inner curved bar, and teeth or spikes extending upwardly from the concaved sides of the said curved bars, substantially as described for the purpose set forth.

542,815. COIN-HOLDER. MATHIAS STRACK, Milwaukee, Wis. Filed Jan. 14, 1895. Serial No. 534,742. (No model.)

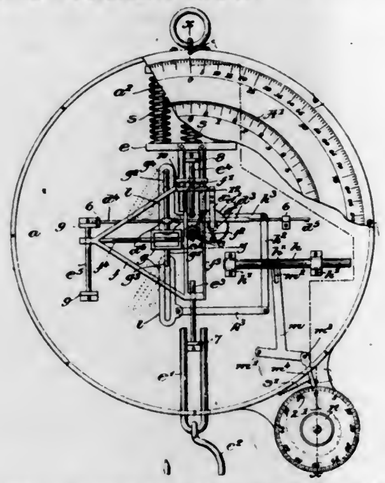
Claim.—1. A change-holder that embodies a series of vertical coin-channels having thumb-inlets at their lower ends, coin-stops within the channels flanking said inlets, springs arranged to normally

abut the coin-stops, and other springs having bent free ends that normally close the upper ends of said channels.



2. A change-holder that embodies a base having a beveled end, a series of longitudinal strips arranged at suitable intervals on the base, ears projecting laterally from the lower ends of the strips, an apertured cover-plate impinging said strips, and flat springs arranged in front of the beveled base-end to normally abut said ears.

542,816. PRICE-COMPUTING SCALE. HORACE E. SWIFT, Boston, Mass., assignor of one-half to Addison W. Jones, same place. Filed Nov. 21, 1894. Serial No. 529,459. (No model.)



Claim.—1. In a price computing apparatus the following instrumentalities, viz:—measuring mechanism movable in a right line, an actuator moved thereby in a parallel path and also movable at right angles thereto; a controlling device, adjustable according to the unit price, to govern the lateral movement of the actuator; price computing mechanism connected to said actuator and operated in a given ratio to the measuring mechanism by the resultant movement imparted to the actuator; and visual indicators for and operated respectively by said measuring and computing mechanisms, substantially as described.

2. In a price computing apparatus, the following instrumentalities, viz:—a counterbalanced measuring mechanism movable in a right line; an actuator moved thereby in a parallel path and also movable at right angles thereto; a controlling device, adjustable according to the unit price, to govern such lateral movement; price computing mechanism, including a rack connected to and given a variable throw by said actuator corresponding to the resultant movement imparted to the latter; fixed guides for said rack; a dial provided with unit and price indicating scales, and co-operating pointers having a relative movement thereover, controlled respectively by said measuring and computing mechanisms, substantially as described.

3. In a price computing apparatus the following instrumentalities, viz:—computing mechanism, an actuator therefor; measuring mechanism; connections between it and the actuator to transmit motion thereto in a right line; a controlling device, adjustable according to the unit price, to move the actuator at right angles to the fixed direction, whereby a variable resultant movement is given to the actuator, and a corresponding movement thereby to the computing mechanism; and unit and price indicating pointers moved respectively by the measuring and computing mechanisms in a determinable ratio, substantially as described.

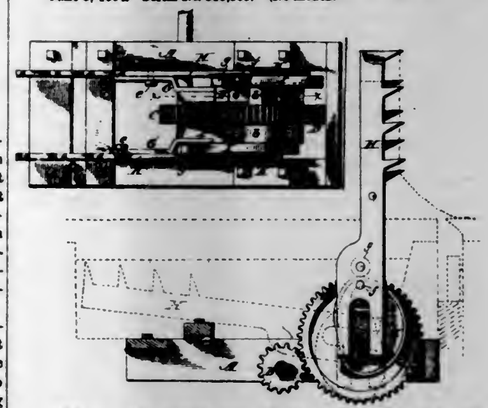
4. In a price computing apparatus, the following instrumentalities, viz:—a counter-balanced measuring mechanism movable in a right line, a carriage moved thereby, and guides for the carriage; an actuator movable on the carriage at right angles to its path of movement, price computing mechanism including a rack connected to and given a variable throw by said actuator, a controlling device adjustable according to the unit price to govern the lateral movement of the actuator on the carriage, a spindle, a surrounding sleeve, each having secured thereto a pinion and an indicating hand, said pinions being geared respectively to the computing and measuring mechanisms, and a dial provided with scales to be traversed by said pointers respectively, substantially as described.

5. In a price computing apparatus, the following instrumentalities, viz:—measuring mechanism, a carriage moved thereby, in a right line, computing mechanism, an actuator therefor laterally movable on said carriage, slotted links to govern the lateral movement of the actuator, means to adjust said links in accordance with the unit price of the article measured, and a locking device for said means, substantially as described.

6. In a price computing apparatus, the following instrumentalities, viz:—measuring and computing mechanisms, each including as an element a rack having a variable throw, indicating pointers connected by gearing to and to be rotated by said racks to indicate the measurement and the computed price of an article, an actuator for the computing mechanism, connections between it and the measuring mechanism to move said actuator in a right line, and a controlling device adjustable according to the unit price to determine the lateral movement of the actuator, substantially as described.

7. In a price computing apparatus, the following instrumentalities, viz:—counterbalanced measuring mechanism movable in a right line, a carriage movable in unison therewith, an actuator movable on said carriage at right angles to its path, slotted links pivoted in the normal path of movement of the actuator, pivotally extended arms on the actuator and downturned to engage said links, a controlling device to swing the links through equal arcs according to the unit price, said controlling device including a rotatable plate having an evolute periphery notched to correspond to a given number of unit prices, and a co-operating finger, and mechanism to compute the aggregate price of the article measured, said mechanism being operated by the resultant movement of the actuator due to the action of the measuring mechanism and controlling device, substantially as described.

542,817. DEVICE FOR ROLLING LOGS. JOHN VANDERVORT, JAMES D. OWEN, and ARTHUR L. VANDERVORT, Laceyville, Pa. Filed June 5, 1894. Serial No. 513,535. (No model.)



Claim.—1. The toothed bars, having slots in their ends, and means for engaging with the cams, the shaft passing through the slots, the cams secured to the shaft, and the operating wheels, the toothed bars being made to move in opposite directions, all combined to operate substantially as shown.

2. The shaft *a*, the toothed bars, and means secured to the shaft for causing the toothed bars to reciprocate, combined with the friction blocks or sections applied to the shaft, and connected at their outer ends to the bars, so as to move them into and out of action, substantially as described.

3. The toothed bars, slotted at their inner ends and each provided with a pin, or stud, and a friction roller; combined with the cams, secured to the operating shaft and which move the toothed

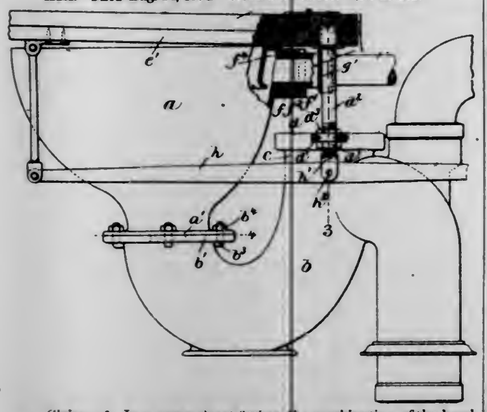
rods in opposite directions; the shaft, provided with a driving wheel; and friction blocks applied to the shaft, and loosely connected at their outer ends to the toothed bars, so as to form supports therefor, substantially as set forth.

4. In a log roller the shaft *a* provided with the enlarged parts *b*, and having the wheel D, and the two cams I secured thereto; combined with the friction blocks secured to the enlarged parts of the shaft, and having slotted arms at their outer ends, and the toothed bars, slotted at their inner ends so as to pass over the shaft, provided with means for engaging with the cams, and loosely connected to the slotted arms of the friction blocks, substantially as specified.

5. A device for rolling logs, consisting of a suitable frame, a rotatable shaft having cams connected thereto, tooth-bars connecting with the cams, and frictional boxes or devices connecting the tooth-bars with the shaft, substantially as and for the purpose specified.

6. A device for rolling logs, consisting of a suitable frame, a rotatable shaft having cams connected thereto, tooth-bars connecting with the cams, whereby a vertically and alternately reciprocating motion is imparted thereto, and sectional friction boxes connecting the shaft with the tooth-bars, and suitable gearing for imparting to the shaft a rotary motion, substantially as and for the purpose set forth.

542,818. WATER-CLOSET FITTING. JAMES BARRETT, Boston, Mass. Filed Aug. 24, 1894. Serial No. 521,163. (No model.)

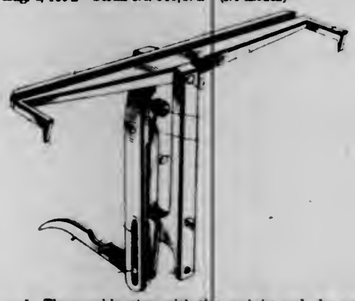


Claim.—1. In a water-closet fitting, the combination of the bowl, the ogee trap, studs rising from the upper bend of said trap at opposite sides of the same and supported thereby, a seat-piece having sockets which fit over said studs, and seats attached to said seat-piece and extending over the bowl.

2. In a water-closet fitting, the combination of a trap having a clean-out opening at the upper side of its top-bend, a cover for said opening having ears at opposite sides, vertical studs supported by said ears, and a seat-piece having sockets fitting over said studs.

3. In a water-closet fitting, the combination of a trap having a clean-out opening at the upper side of its top-bend, a cover for said opening having ears at opposite sides, vertical studs supported by said ears, a seat-piece having sockets fitting over said studs, and valve connections including a lever pivoted to one of the said studs.

542,819. SAW-CLAMP. AARON T. BUKKERD, Allegheny, Pa. Filed Aug. 4, 1894. Serial No. 519,474. (No model.)



Claim.—1. The combination with the upright and the arm pivotally supported therefrom, of the pivoted clamping jaws, mounted to fold parallel with the upright, as set forth.

2. A saw clamp provided with pivoted folding clamping jaws, one of which is provided with spurs at right angles to its length, substantially as specified.

3. A saw clamp provided with independently pivoted foldable clamping jaws, provided with bench engaging spurs, substantially as specified.

4. The combination with the upright, of the clamping jaw pivoted thereon and having lateral extensions provided with spurs, substantially as specified.

5. The combination with the upright provided with a spur, of the clamping jaw pivoted thereon and having lateral portions terminating in spurs, substantially as specified.

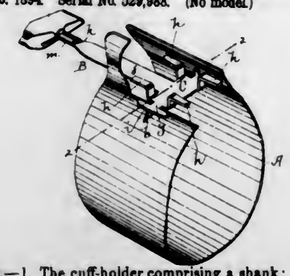
6. The combination with the upright and its arm, of the pivoted arm with slot, the pivoted clamping jaws and the elbow lever pivoted at the end of its short arm and having at its bend a pin working in the slot of said arm, substantially as specified.

7. The combination with the upright, the pivoted arm and the clamping jaws pivoted on said upright and arm, of the operating lever having a recess, and the spring arm carrying a sound-deadener substantially as specified.

8. A saw clamp comprising an upright, independently pivoted clamping jaws, mounted to fold parallel with said upright, means for actuating one jaw toward and from the other, and a sound deadener substantially as specified.

9. The combination with the upright, the jaws and the pivoted arm, of a spring arm secured at one end, wound between its ends around a stud and at its free end embracing in a series of convolutes a sound deadener, substantially as specified.

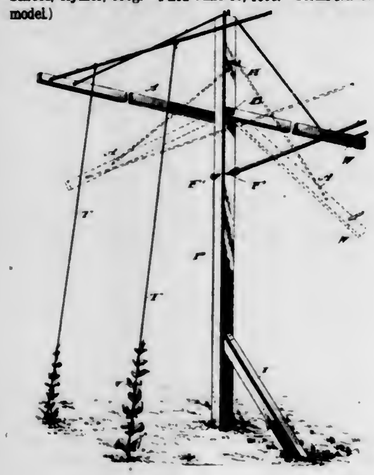
542,820. CUFF-HOLDER. LYNN M. BLYTHE, Salem, Mass. Filed Nov. 26, 1894. Serial No. 529,988. (No model.)



Claim.—1. The cuff-holder comprising a shank; a laterally projecting head formed integral therewith and having devices for engaging in the button-holes of a cuff; vertically arranged spreading arms on said head; and devices for attaching the holder to a wrist-band.

2. The holder, B, comprising a shank, *f*, having the head, C, provided with the T-pieces, *i*, and vertically arranged spreading arms, *h*, formed integral with said head, and the clasp, D, swiveled to said shank, all being arranged to operate substantially as described.

542,821. HOP-TRELLIS. HENRY S. BROUGHTON and CALVIN BRIGGS, Clymer, Oreg. Filed June 16, 1893. Serial No. 477,813. (No model.)



Claim.—1. A support of the character described, consisting of an upright, arms pivotally connected with and extending from opposite sides of said upright at a point near its upper end, an open notch at the upper extremity of the upright, and a stay-wire connected at its ends with said arms and leading intermediate its ends removably through said notch, and of a length to then hold the arms horizontal, as and for the purpose set forth.

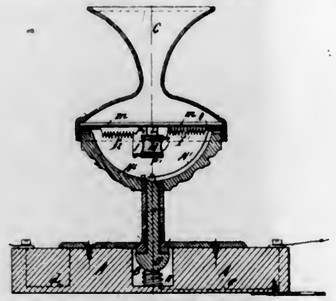
2. A support of the character described, consisting of an upright, arms pivotally connected with and extending from opposite sides of said upright at a point near its upper end, a notch at the upper extremity of the upright, a stay-wire connected at its ends with said arms and leading intermediately through said notch, and a hook in the upright between said pivotal point and notch, as and for the purpose set forth.

3. In a hop trellis, the combination with a pair of uprights, arms pivotally connected at their inner ends with each upright, and a stay for supporting said arms in horizontal position or allowing them to be dropped from such position; of horizontal wires connecting the outer extremities of the corresponding arms of the two uprights, and braces for the uprights opposing the tension of the horizontal wires, as and for the purpose set forth.

4. In a hop trellis, the combination with a pair of uprights, arms pivotally connected at their inner ends with each upright, and a stay for supporting said arms in horizontal position or allowing them to be dropped from such position; of horizontal wires connecting corresponding arms of the two uprights, and an additional wire connecting the uprights below the pivotal point of the arms, as and for the purpose set forth.

5. In a hop trellis, the combination with a pair of uprights, a pair of arms having their inner ends passing to opposite sides of each upright below its upper extremity, a bolt through said inner ends and through the upright, a notch in said upper extremity, a hook in the upright between said notch and bolt, and a stay connected at its ends with said arms and of a length to hold the same horizontal when it is passed through said notch; of horizontal wires connected with corresponding arms of two uprights at points remote from their pivots, as and for the purpose set forth.

542,822. MICROPHONE. HENRI CARBONELLE, Brussels, Belgium. Filed Oct. 9, 1894. Serial No. 525,421. (No model.)



Claim.—1. In combination, the vibrating diaphragm, the carbon button having the disks connected by the flexible tube and the filling of carbon granules, the conductors connecting with the disks said carbon button being suspended from the vibrating diaphragm by an intermediate flexible connection, substantially as described.

2. In combination the vibrating plate, the casing G, the bell mouth casing H fitted thereto, the carbon button connected with the vibrating plate, the contacts secured between the meeting parts of the casings G and H, the conductors leading from said contact leaves to the disks of the carbon button, the shank upon which the casing G is supported and the conductors N' N^2 extending from the said shank to the contacts.

542,823. MITTEN AND METHOD OF KNITTING SAME. JEAN C. FARNAM, La Crosse, Wis., assignor to the Star Knitting Company, same place. Filed Nov. 14, 1893. Serial No. 490,881. (No model.)

Claim.—1. The herein described method of knitting mittens and similar articles with a gusset in which the stitches are identical with the stitches of the main portion of the hand which consists in first knitting the article to the thumb; secondly, knitting a round of a less length than the last round and forming a portion of it out of a different and removable thread; third, then finishing the hand and forming the gusset by narrowing the courses adjacent the thumb portion; fourth, removing the removable thread, and finally knitting the thumb upon the stitches formed thereby and upon the stitches in the base of the thumb, substantially as set forth.

2. As a new article of manufacture, a knit mitten having a gusset in which the stitches are identical with the stitches of the main portion of the hand, consisting of the wales between the thumb and the hand and having the base of the thumb formed upon the stitches of these wales and upon the stitches of a portion of the wales of the hand above these wales, substantially as set forth.



542,824. WITHDRAWN.

3. An upright grooved-board rising at or near the rear line of a horizontal sounding-board, and the double-valve board attached to the rear face of the grooved-board to allow easy access to the double-valves from the rear of instrument.

4. A two-port pneumatic valve with a horizontal valve-rod guided by having the one port perpendicularly out of center with the other.

5. A valve-rod having its portion which is within the valve-hole bent into an eye to touch at one time two opposite points on the circumference of the valve-hole and thereby guide the rod and its valve or valves to their positions to control the port or ports.

6. An external valve free from the valve-rod, the valve-rod adjustably connected to the inner valve and pneumatic and adjustable from the outside.

7. A return-vent connected with the duct nearer to the operating-vent than to the pneumatic.

8. A return-vent placed in line with or adjacent to operating-vent and accessible through operating vent.

9. A pneumatic board having several lines of pneumatics alternated on the face of the board toward the valve-board, the pneumatics operating the valves by levers having fulcra between the pneumatics and the valves.

10. A pneumatic board inside the main wind-chest to operate the sounding-valves, the pneumatic board communicating at the edge of main wind-chest to primary valves outside the chest.

11. An action-lever inside a chest, having its fulcrum extending through the wall of the chest to allow adjustment from outside.

12. A valve-lever operated by a key-tracker at one end and by a pneumatic at the other, a fulcrum placed between, the lever bearing against the fulcrum when worked by the pneumatic, but bearing away from fulcrum when worked by key, to allow free movement of the key.

13. An adjustable check to limit the throw of a lever inside a chest, the check extending through the wall of the chest for adjustment from the outside.

14. A sounding valve operated by a pneumatic and seated by a spring, the same valve also worked by a pushpin and key, an extra spring to uphold the key from pushpin, and the coupler working from the key to the octave pushpin and valve without moving octave key and its spring.

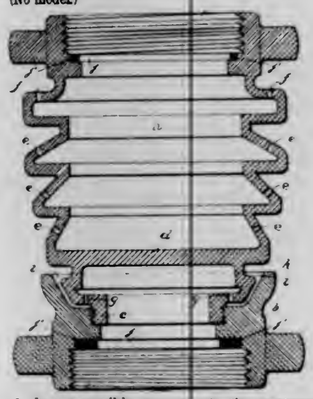
15. A spring placed to directly uphold a manual-key, the spring being checked in its rise, and the key resting on the spring and held to its normal level thereby.

16. A spring placed to uphold a manual-key, the spring being checked in its rise by an adjusting-screw, and the key being held to its normal level thereby.

17. A spring acting on a bellows by means of leverage, the movement of the bellows-board shifting the leverage to alter the force of the spring against the bellows to compensate the change of area or position of the bellows-fold or the increased tension of the spring.

18. A bellows-spring having its bearing points on a line at an angle to the line described by the moving point, the angle being changed by the movement of the bellows, thereby altering the spring-force against the bellows and compensating the change of area or position of the bellows fold or the increased tension of the spring.

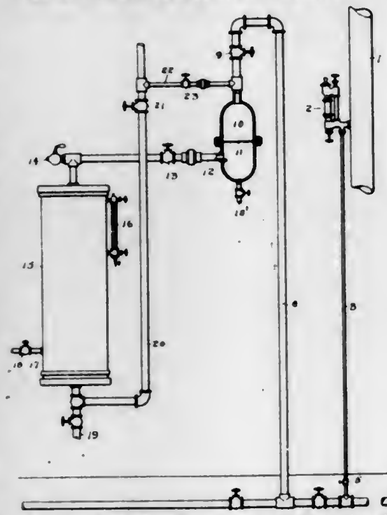
542,825. REVERSIBLE SPRAY-NOZZLE. MICHAEL HANNIGAN and MICHAEL MCKENNA, Pittsburg, Pa. Filed Jan. 5, 1895. Serial No. 533,966. (No model.)



Claim.—1. In a reversible spray nozzle, the combination of two or more tubular sections, screw threaded together, each of the terminal sections adapted to be connected to a hose, one section being provided with portions inclined to the axis of the sections in which portions are diverging perforations, and with perforations parallel to said axis, and the section attached thereto having a funnel shaped flange forming a passage between the two sections, and a communication between said passage and the interior of the nozzle, and one of said sections having a transverse partition, as and for the purpose set forth.

2. In a reversible spray nozzle, the combination of two or more tubular sections, screw threaded together, each of the terminal sections adapted to be connected to a hose, one section being provided with portions inclined to the axis of the sections in which portions are diverging perforations, and the section attached thereto having a funnel shaped flange forming a passage between the two sections, and a communication between said passage and the interior of the nozzle, and one of said sections having a transverse partition, as and for the purpose set forth.

542,826. LUBRICATOR. CHARLES HENOLD, Fort Worth, Tex. Filed Oct. 17, 1894. Serial No. 526,141. (No model.)



Claim.—In a lubricator, a reservoir for lubricating oil having an oil discharge pipe, a pipe adapted to feed water or condensed steam thereto to displace the oil, a sediment receptacle provided with a valved discharge outlet in its bottom and with a filtering medium and adapted to receive oil from said discharge pipe below said filtering medium, a pipe 22 communicating with said sediment receptacle above the filtering medium to admit a fluid under pressure to cleanse the same and blow out the sediment from the bottom of the sediment receptacle said latter pipe communicating with the steam pipe above the level of the oil reservoir and cocks 21 and 23 whereby the oil reservoir and the hydrostatic column in pipe 20 may be cut out during the cleansing operation, substantially as set forth.

542,827. FENCE-BUILDING TOOL. SAMUEL W. HORST, Hummelstown, Pa. Filed Nov. 24, 1894. Serial No. 529,870. (No model.)

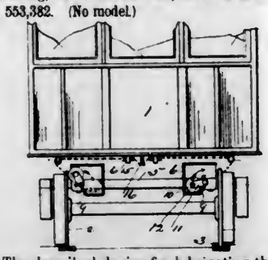


Claim.—1. A tence building tool, comprising a body-portion or handle provided at one end with a central integral spring hook having a contracted mouth or opening, and upstruck webs arranged upon opposite sides of said hook to engage the free ends of a tie-wire, and provided at the other end with twin lateral hooks and an intermediate point or projection to engage a tongue of a fence stay or picket, substantially as specified.

2. In a device of the class described, a body-portion or handle provided with a central spring engaging hook to engage a fence runner, and lateral upstruck engaging webs 4 arranged upon opposite sides of said hook to engage the loose end of a tie-wire, substantially as specified.
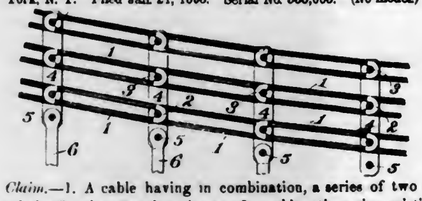
3. In a device of the class described, a handle or body-portion provided with twin engaging hooks 11, and an intermediate point or projection 12 to engage an upstruck tongue of a picket or stay, substantially as specified.

542,828. RAILWAY-TRACK LUBRICATOR. ALEXANDER T. IRWIN, Pittsburg, Pa. Filed Nov. 27, 1893. Renewed June 19, 1895. Serial No. 553,382. (No model.)



Claim.—The described device for lubricating the rails of a railway-track, consisting of lubricant boxes, the lubricant-applying rollers arranged in said boxes, shafts bearing said rollers, a segmental or semi-circular wheel fixed to each of said shafts, means connected to said segmental wheels for throwing said lubricant-applying rollers into contact with the flanges of the car wheels, and springs applied to said shafts and adapted to return the rollers to the lubricant boxes and to retain them immersed in the lubricant therein, substantially as set forth.

542,829. CABLE FOR BRIDGES. GUSTAV LINDENTHAL, New York, N. Y. Filed Jan. 21, 1895. Serial No. 535,663. (No model.)

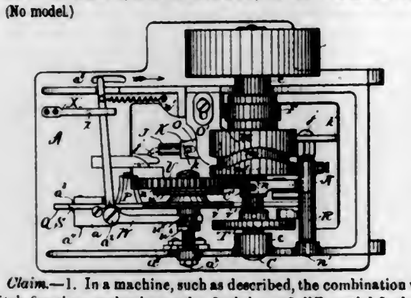


Claim.—1. A cable having in combination, a series of two or more chains forming strands or layers of equal length, each consisting of a series of wire links connected by bolts, the bolts at the ends of each panel being in the same vertical plane, and metal plates connecting the bolts in the several chains and holding the latter parallel, or approximately parallel, with each other, substantially as set forth.

2. A cable having in combination a series of two or more chains forming strands or layers, of equal length, each consisting of a series of wire links connected by bolts, the bolts at the ends of each panel being in the same vertical plane, metal plates connecting the bolts in the several chains, and holding the chains parallel, or approximately parallel, with each other, and suspenders connected to said plates, substantially as set forth.

3. The combination of a cable and a metal casing surrounding the cable and supported by the metal plates connecting the suspenders to the cable, substantially as set forth.

542,830. WORK-FEEDING MECHANISM FOR CROCHETING OR OVEREDGE SEWING-MACHINES. JOSEPH M. MERROW, Mansfield, Conn. Filed Nov. 1, 1888. Renewed May 10, 1895. Serial No. 548,837. (No model.)



Claim.—1. In a machine, such as described, the combination with a stitch forming mechanism and a feed dog, of differential feed controlling mechanisms arranged for dissimultaneous application to the feed dog, one of said feed mechanisms being arranged to effect a feeding movement of the feed-dog once for several complete actions of the stitch forming devices while the other is arranged to effect a greater number of feeding movements during the formation of an equal number of stitches, whereby the number of intermitting movements of the fabric occurring during the formation of a given number of stitches may be changed from a higher to a lower number or vice versa; substantially as described.

2. In a machine, such as described, the combination with a stitch forming mechanism and a reciprocating feed dog, two dissimilar pattern cams for elevating the feed-dog into operative position, each of said pattern cams being arranged to elevate the feed dog one or more times during the formation of a series of stitches, and translating devices for alternately shifting said cams into operative relation with the feed dog, to change the feed motion from one alternating in its action with the stitch forming devices, to one whose action is suspended during two or more stitch forming operations, substantially as described.

3. In a machine, such as described, the combination with a feed-dog and devices operating thereon to reciprocate it, of a plurality of elevating cams, each provided with a different number of elevating points for engaging the feed-dog carrier to effect one or more feed operations at each rotation of the cam, and devices for shifting said cams to bring either into operative position with relation to the feed dog, substantially as described.

4. In a machine, such as described, provided with a thread carrier and looper cooperating to form stitches around the edge of a fabric, the combination therewith of a feed-mechanism provided with differential feed controlling mechanism adapted for dissimultaneous application, substantially as described, whereby the number of feeding actions can be changed from one for each stitch to one for a series of stitches as explained.

5. In a machine, such as described, the combination with the looper and a thread carrier, and a feeding mechanism for advancing the fabric intermittingly in one direction only, of a differential feed controlling mechanism, one section or member of said feed controlling mechanism being constructed to actuate the feed once during the formation of a stitch, and the other at intervals occurring after the formation of several stitches; substantially as described.

6. In a machine, such as described, the combination with the feeding mechanism provided with laterally movable pattern-cams for controlling the feed movements, of a locking device engaging and restraining the lateral movements of the cam shifting devices during a partial rotation of the cams and releasing them at predetermined points only, whereby the shifting of the cams, to change the feed is limited to occur only at predetermined times, substantially as described.

7. In a machine, such as described, the combination with the laterally movable pattern-cams controlling the feed mechanism, of a spring actuated shipper engaging the cams to move them laterally, and a detent cooperating with a notched collar on the cams, substantially as described.

8. In a machine, such as described, and in combination with the feeding mechanism provided with duplex pattern-cams controlling the feed movement, of the notched collar, a movable detent engaging said collar, and a spring actuated shifting lever connected to the cams and provided with a lock; substantially as described.

9. In a machine, such as described, the combination with the duplex feed-controlling cams, movable laterally to bring either into cooperative relation with the feed mechanism, a movable detent engaging the cams to resist movement in one direction only, and a shifting lever for the cams; substantially as described.

10. In a duplex feed-controlling mechanism, such as described, and in combination with the lateral movable pattern cams thereof, a shifting lever for the cams, a spring operating on said lever to press it in one direction, and a lock operating to hold the lever against the pressure of the spring; substantially as described.

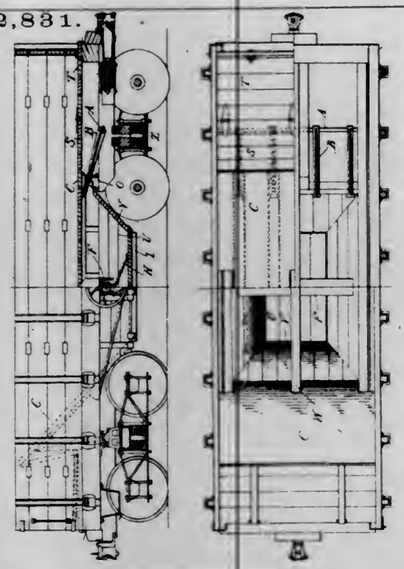
11. In a crochet machine, such as described, and in combination with the stitch forming mechanism thereof and its work plate, a differential feed mechanism provided with two independent and differently timed actuating devices controlling the movements of the feed dog toward and from the work plate, and a shifter engaging said actuating devices to throw them into operation alternately whereby the number of feed movements per stitch may be changed as and for the purpose described.

542,831. ORE-CAR. DANIEL C MULVIHILL, Marquette, Mich. Filed June 13, 1894. Serial No. 514,421. (No model.)

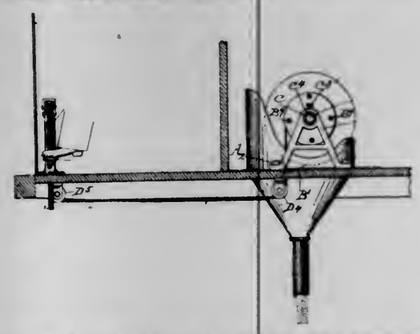
Claim.—1. In a car, the combination with the sides, of a flat bottom comprising an intermediate series of removable horizontally disposed sections, hinged connections between the outer movable sections and fixed portion of the bottom, crank arms on the car frame connected at their upper ends to the central movable sections and having a limited vertical movement, rests adjacent to the outer ends of the central movable sections, and a hopper below the bottom having inclined sides with which the central movable sections register when elevated, substantially as described.

2. In a convertible car, the combination with the frame, of a bottom normally horizontal and composed of end hinged and independently movable central sections, a hopper below the bottom, and means for longitudinally shifting the independently movable sections, and simultaneously tilting the end sections, substantially as described.

542,831.



542,832. SAND-BOX FOR CARS. HENRY MCPHERSON, Troy, N. Y., assignor of one-half to William Sleicher, Jr., same place. Filed May 1, 1895. Serial No. 547,794. (No model.)



Claim.—1. In a sand-box, the combination with a trunnion-supported sand-drum having a perimetrical spout, and fixed bearing-supports, of a drum-pulley consisting of an annular rib on one side of the sand-drum embracing the trunnion, a retraction-spring coiled about the trunnion within the rib, secured at its inner end to a fixed support and at its outer end to a support on the sand-drum, a draw-chain fixed to the pulley, and means for actuating the chain, substantially as described.

2. In a sand-box, the combination with a trunnion-supported sand-drum having a perimetrical spout, and fixed bearing-supports, of a bearing-sleeve rotary within the support and upon a drum-trunnion, means for imparting to the sleeve a rotary movement, means for locking the sleeve against rotary movements, and a retraction-spring secured at one end to the sleeve and at the other end to the drum, substantially as described.

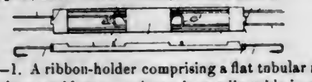
3. In a sandbox for cars, the combination with a rotary sand-drum having a perimetrical spout, and an actuating drum-pulley on one side of the drum, of a slotted tubular slideway-post bolted to the car-platform, a slide-piece reciprocatory in the slideway; a foot-rest on the slide-piece projected through the slideway-slot; guide-pulleys between the slide-piece and drum-pulley; an offsetting bracket on the upper end of the slideway-post containing bearings for one of the guide-pulleys; and a draw-chain connection between the drum-pulley and upper end of the slide-piece in engagement with the several guide pulleys, substantially as described.

542,833. ANNUNCIATOR. JOHN W. OLSON, Chicago, Ill. Filed Nov. 21, 1894. Serial No. 529,437. (No model.)

Claim.—In an annunciator, the combination with the magnet core, of a coil *a* provided thereon, a vertical extension b^3 being provided upon one end of said core, a straight bar *c* of magnetic material pivoted near the middle to the upper end of said extension b^3, said bar *c* being adapted to lie parallel to and close against the coil *a*, one end of said bar resting opposite an extension provided upon the opposite end of said core, and an annunciator drop normally engaged by the opposite end of said bar, the end of the bar engaging the drop being of greater weight than the opposite end, whereby an annunciator of compact structure is produced, substantially as described.



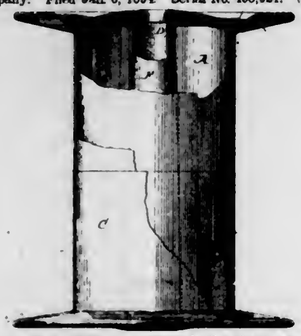
542,834. RIBBON-HOLDER. BENJAMIN F. OREWILER, Shelby, Ohio. Filed May 25, 1895. Serial No. 550,619. (No model.)



Claim.—1. A ribbon-holder comprising a flat tubular metal body portion forming a guideway, and two bars adjustable in opposite directions in said tubular guideway and said bars provided at their outer ends with hooks.

2. A ribbon-holder comprising a flat tubular body portion consisting of top and bottom sides, *b*, *b'*, the former provided with openings or cut-away parts; and two wire bars each having two prongs and adjustable in opposite directions in said tubular slideway and provided at one end with stop-shoulders, *c'*, which move in said openings or cut-aways and take against the edge of the center of top side and limit the outward extension movement of the bars, and also provided at their outer ends with hooks.

542,835. BOBBIN. GURDON PENDLETON, Jr., New York, N. Y., assignor, by direct and mesne assignments, to the Pendleton Manufacturing Company. Filed Jan. 6, 1894. Serial No. 495,921. (No model.)



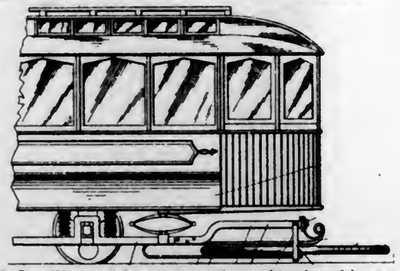
Claim.—1. The bobbin constructed of a sheet-metal cylindrical shell, sleeves formed with inner head plates surrounding said shell, the ends of said shell being bent outward upon said inner head plates, and outer head plates, the peripheries of which are secured to those of the inner head plates by a fold, B^3, and which are provided with central hubs and intermediate annular bearings *D* binding the said bent-over ends of the shell upon the inner head-plates, the said shell rigidly connecting the united head plates on both ends near their peripheries and the said hubs serving as the center-bearings of the bobbin.

2. The bobbin herein described formed of a sheet-metal cylindrical shell, two sleeves having annular head-plates on their outer ends, surrounding said shell, the ends of the shell being bent outward over and upon said head-plates, outer head-plates over and upon which the edges of the inner head-plates are bent, and which are provided with inwardly projecting tubular hubs, and an inner axial tube, the respective ends of which surround said hubs, substantially as described.

3. The bobbin constructed of a sheet metal cylindrical shell, sleeves provided with inner head plates, surrounding said shell, the ends of which shell are bent laterally over and upon the inner head plates, and outer head plates fixed to said inner head plates and formed with central hubs, substantially as and for the purpose set forth.

542,836. LIFE-GUARD FOR STREET-RAILWAY CARS. MICHAEL RILEY, London, Ohio. Filed Mar. 25, 1895. Serial No. 543,019. (No model.)

Claim.—1. In a life guard for street cars the combination with a car body and truck framework, of a spring frame supported from said truck frame and a bumper wheel horizontally journaled in said spring frame, substantially as and for the purpose specified.



2. In a life guard for street cars the combination with a car body and its truck frame, of a spring frame supported from said truck frame and a bumper wheel detachably and adjustably supported in said spring frame, substantially as and for the purpose specified.

3. In a life guard for street cars the combination with a car body and truck frame, of a truck frame extension 1, a hanger pivotally connected with and suspended from said frame extension, a rod 13 having a spring connection with the frame extension 1, a yoke one arm of which is connected with said rod 13 and the remaining arm of which is connected with said hanger and a bumper wheel rotatively supported between the arms of said yoke, substantially as and for the purpose specified.

542,837. WINDOW-SASH VENTILATOR. WILLIAM SCHARNWEBER, St. Louis, Mo. Filed Mar. 5, 1895. Serial No. 540,584. (No model.)



Claim.—1. The herein described window sash rail for receiving a ventilator, said rail being formed with chambers opening on the under side, a groove on its inner side face, and an opening or openings which connect the groove with the chambers, substantially as described.

2. The herein described sash rail for receiving a ventilator, said sash rail being formed with chambers which open on the under side of the rail, said chambers being separated by a strengthening partition wall, a groove on the inner side face of the rail, and communicating openings between the grooves and chambers, substantially as described.

3. The combination with a window sash rail which is formed with chambers opening on its under side, a groove on its inner face, and communications between the groove and chambers, of a ventilator, comprising a main frame formed with an offset or deflector integral therewith, said offset being open at its top, rearwardly extending flanges from the main frame which are received in the groove of the sash rail, a sliding ventilator plate which is provided with openings to control openings in a stationary back plate, and a back plate; substantially as described.

4. The combination with a main frame, which is formed with a rearwardly extending flange, of a sliding ventilator plate, a yielding stationary back plate, and springs for holding said back plate in yielding contact with the sliding ventilator plate, the shanks of said springs being received in grooves on the rearwardly extending flange, and secured in position by a confining plate, substantially as described.

5. The combination with a window sash rail, which is formed with chambers opening on its under side, a groove on its inner face, and communications between the groove and chambers, of a ventilator, comprising a main frame, which is formed with a rearwardly extending flange which is received in the groove in the sash rail, a sliding ventilator plate, which is provided with openings to control openings in a stationary back plate, and a yielding back plate, substantially as described.

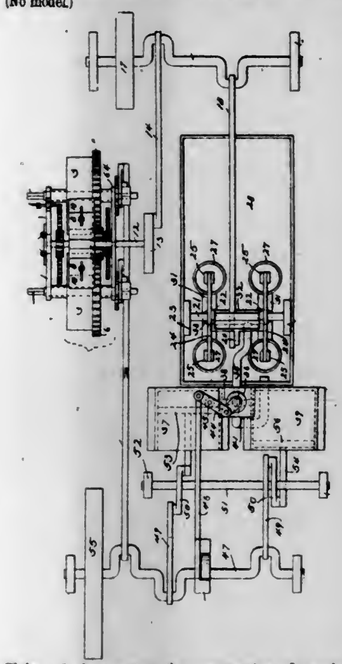
542,838. SUPPORTING-STRAP FOR CARS, &c. MARTIN L. SENDERLING, Jersey City, N. J. Filed Nov. 30, 1894. Serial No. 530,312. (No model.)

Claim.—1. A supporting strap, comprising an upper portion adapted to be secured to the supporting bar, a hand strap, a stop between the upper portion and the hand strap, and a loop spring secured at its ends to the stop, the said stop serving to prevent the arms of the spring from being extended beyond their elastic limit, substantially as set forth.

2. A supporting strap, comprising an upper portion secured to the supporting bar, a hand strap, a stop between the upper portion and the hand strap, a loop spring, the arms of the spring being secured to the stop so as to cause the slack portion of the stop to extend within the loop, the said stop serving to limit the extension of the spring, substantially as set forth.



542,839. SPRING-OPERATED MOTOR OR APPARATUS. EMIL G. H. STEIN, New York, N. Y. Filed Feb. 14, 1895. Serial No. 538,346. (No model.)



Claim.—1. In a motor, the combination of a spring-mechanism, adapted to be wound through the medium of the spindles 5, a pumping mechanism, a power-shaft, and operative connections between the spring mechanism and pumping apparatus operated by said mechanism, and means connecting the power shaft and pumping mechanism for operating said power shaft by said pumping mechanism, substantially as shown and described.

2. In a motor, the combination of a spring mechanism, adapted to be wound through the medium of the spindles 5, a pumping apparatus and a power shaft, means for operating the pump by the spring mechanism, means for operating the power shaft by the pumping mechanism, and a connection between the power shaft and spring mechanism for winding the latter, substantially as shown and described.

3. In a motor, the combination of a spring mechanism, adapted to be wound through the medium of the spindles 5, a pumping apparatus and a power shaft, means for operating said pumping apparatus by the spring mechanism, means for operating the power shaft by the pumping mechanism, and a governor for regulating the movement of the spring mechanism, substantially as shown and described.

4. In a motor, the combination of a spring mechanism adapted to be wound through the medium of the spindles 5, with a series of pumps arranged in pairs, a series of cylinders in communication with said pumps, a power shaft in communication with each of said cylinders, and means for operating said pumps alternately, whereby the power thereof is transmitted through said cylinders to the power shaft, substantially as shown and described.

5. In a motor, the combination, with a spring mechanism, adapted to be wound through the medium of the spindles 5, a pumping apparatus and a power shaft, of a series of cylinders in communication with said pumping apparatus, a series of pistons, one of which is located in each of said cylinders and connected with the power shaft,

and means for operating said pumps and transmitting the power thereof through said cylinders to said power shaft, substantially as shown and described.

6. In a motor, the combination of a spring mechanism, adapted to be wound through the medium of the spindles 5, a pumping apparatus consisting of a series of pumps arranged in pairs, a series of cylinders in communication with said pumps, a piston located in each of said cylinders and connected with said power shaft, and means for transmitting motion from the spring mechanism to the pumps, substantially as shown and described.

7. In a motor, the combination of a spring mechanism, adapted to be wound through the medium of the spindles 5, a pumping apparatus and power shaft, said parts being in operative connection and adapted to be operated by the spring mechanism, and means for winding the spring mechanism, connected with the power shaft, substantially as shown and described.

8. In a motor, the combination of a spring mechanism, adapted to be wound through the medium of the spindles 5, a pumping apparatus operatively connected with the said spring mechanism and adapted to be operated thereby, a power shaft operatively connected with said pumping apparatus and adapted to be operated thereby, means for winding the spring mechanism, connected with and operated by the power shaft, and a governor for said spring mechanism, substantially as shown and described.

9. In a motor, the combination of a spring mechanism, adapted to be wound through the medium of the spindles 5, a pumping apparatus and a power shaft, each of said parts being in operative connection and adapted to be operated by the spring mechanism, and means for winding up the springs during the operation of the motor, said means consisting of a pivoted rod or arm in connection with the power shaft and provided with pivoted cranks, one of which is revolubly connected with each spring shaft of the spring mechanism, and a ratchet and pawl mechanism connected with each shaft and crank, whereby the spring mechanism is wound during the operation of the motor, substantially as shown and described.

10. In a motor, the combination of a spring mechanism, adapted to be wound through the medium of the spindles 5, a pumping apparatus and a power shaft, said pumping apparatus consisting of a series of pumps arranged in pairs in operative connection with the spring mechanism, and adapted to be alternately operated thereby, a series of water cylinders provided with pistons and in communication with said pumping apparatus by means of a four-way valve, said pistons being in operative connection with the power-shaft, and a bar pivotally connected with said valve for operating the same and with said power shaft, substantially as shown and described.

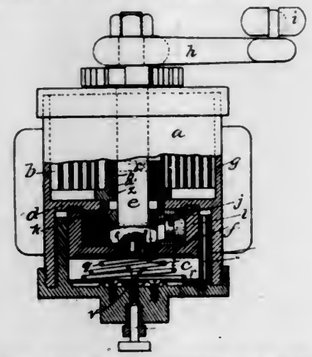
11. In a motor, the combination of a spring mechanism, adapted to be wound through the medium of the spindles 5, a pumping apparatus and a power shaft, two water cylinders in communication with said pumping apparatus by means of a four-way valve, pistons located in said cylinders in operative connection with said power shaft, and a valve controlling the communication between said pumping apparatus and said cylinders, operated by said power shaft, substantially as shown and described.

12. In a motor, the combination of a spring mechanism, adapted to be wound through the medium of the spindles 5, a pumping apparatus, and a power shaft, two water cylinders in communication with said pumping apparatus by means of a four-way valve, pistons located in said cylinders in operative connection with said power shaft, a valve controlling the communication between said pumping apparatus and said cylinders, operated by said power shaft, and winding devices for the spring mechanism in operative connection with the power shaft, substantially as shown and described.

13. In a motor, the combination of a spring mechanism, adapted to be wound through the medium of the spindles 5, a pumping apparatus and a power shaft, the pumping device consisting of a series of pumps arranged in pairs and adapted to be operated by the spring mechanism, two water cylinders in communication with said pumping mechanism, said communication being controlled by a valve provided with operative connections with the power shaft, each of said water cylinders being also provided with a piston having operative connections with said power shaft, winding devices for the spring mechanism connected with the power shaft and operated thereby, and a governor for said spring mechanism, substantially as shown and described.

542,840. DOOR CHECK AND CLOSER. EUGENE I. BLOUNT, Gardner, Mass., assignor to the Blount Manufacturing Company, Portland, Me. Filed Dec. 27, 1893. Serial No. 494,869. (No model.)

Claim.—1. A door-check and closer comprising in its construction a casing having a spring chamber and a fluid chamber, a rotatively spring-actuated spindle extending through the spring chamber and into the fluid chamber, said spindle arranged for operative connection with the door, a piston longitudinally and rotatively movable in the fluid chamber, a crank and link connection between the said piston and the spindle whereby they are rotatively connected and longitudinal movement of the piston permitted, cam-devices for imparting longitudinal movement to the piston under rotation of the spindle, and provisions for permitting unrestricted communication of fluid from one side of the piston to the other in one direction, and restricted communication in the opposite direction.

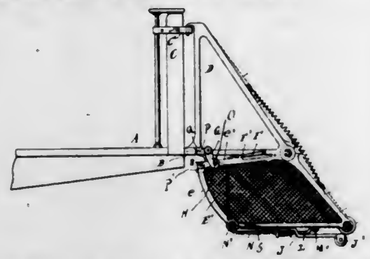


2. A door-check and closer comprising in its construction a rotatively spring-actuated spindle arranged for operative connection with the door; an inclosing casing having a fluid-chamber; a piston longitudinally and rotatively movable in said chamber, and formed with a cam-flange; a stationary cam for co-action therewith to produce longitudinal movement of the piston under rotation thereof; a curved link pivoted at one end to the flange of the piston and at the other end to a projection or crank on the spindle; and means for permitting unobstructed communication between opposite sides of the piston in one direction and restricted communication in the opposite direction.

3. A door check and closer comprising in its construction a spring chamber, a liquid chamber, a spring-actuated spindle extending through the spring chamber into the liquid chamber, a piston connected with the spindle, a cam surface on said piston, a co-operating cam surface on a fixed part of the device, and a spring for raising the piston, as set forth.

4. A door check and closer comprising in its construction a spring chamber, a liquid chamber, a spring-actuated spindle extending through the spring chamber into the liquid chamber, a piston connected with the spindle and adapted to be actuated in line therewith, a bottom and a false bottom, a chamber between the bottom and the false bottom, a free valve-controlled port in the said piston, a restricted valve-controlled port in the false bottom communicating with the chamber therebelow, and ports communicating with the chamber below the false bottom and the space above the piston, as set forth.

542,841. CAR-FENDER. JOSEPH BRAUTIGAM, Brooklyn, N. Y. Filed Apr. 17, 1895. Serial No. 546,018. (No model.)



Claim.—1. In a car fender, the combination with frames projecting from the dash board of a car, of two swinging side frames hinged to said projecting frames, a netting covered frame hinged to the rear parts of said swinging frames at the bottom and a netting secured to the projecting frames and to the swinging frames, substantially as herein shown and described.

2. In a car fender, the combination with frames projecting from the dash board of a car, of swinging frames hinged to said projecting frames, a hook for holding the swinging frames in raised position, a netting covered frame hinged to the lower front ends of the swinging frames, means for locking said frame to the swinging frame means for automatically releasing said frame when the swinging frames swing down, and a netting secured to the projecting frames and the rear lower corners of the swinging frames, substantially as herein shown and described.

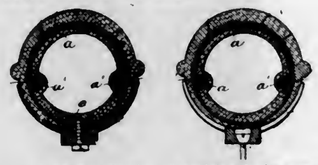
3. In a car fender, the combination with two frames projecting from the dash board of a car, of swinging frames hinged to said projecting frames, a frame hinged to the front bottom parts of the swinging frames, means for holding said swinging frames and the frame hinged thereto, in raised position, means for automatically releasing said frames and a spring attached to the projecting frames and to the swinging frames and a netting secured to the projecting frames and the rear bottom parts of the swinging frames substantially as herein shown and described.

4. In a car fender, the combination with the frames D of the frames E hinged thereto, the spring W secured to the frames D and E, the netting U the frame J hinged to the frames E, means for holding the frames E and J, in raised position means for automatically releasing them and latches F and S for locking the frames E and J in lowered position substantially as herein shown and described.

5. In a car fender, the combination with the frames D, of the frames E hinged thereto, the spring W secured to the frames D and E, the netting U, the frame J hinged to the frames E, means for holding the frames E in raised position and automatically releasing them, a sliding bolt on the frame J for locking the same in raised position on the frames E, a chain connected with said bolt and means for automatically pulling said chain, when the frames E, are released, substantially as herein as shown and described.

6. In a car fender, the combination with the frames D of the frames E hinged thereto the netting U the frame J hinged to the frames E, the spring W secured to the frames D and E, means for holding the frames E in raised position and automatically releasing them, the bolt L on the frame J, the chain N connected with said bolt, the forked lever O attached to said chain and the pin Q on the frame D, substantially as herein shown and described.

542,842. PNEUMATIC TIRE. JAMES BUCKNER, Allston, Mass., assignor of one-half to Frank E. Wingate, same place. Filed Mar. 2, 1894. Serial No. 502,112. (No model.)



Claim.—1. A pneumatic tire comprising in its construction an air cushioned inner tube, resilient tread-protecting strips arranged in two series on the outer portion of said tube, the strips of one series overlapping those of the other series so that the strips *f* constitute a double thickness of armor along the tread surface, each strip having one end provided with a head or enlargement and a sheath or shoe formed to inclose the tube and its protecting strips.

2. A pneumatic tire comprising in its construction an air-cushioned inner tube having continuous side grooves with resilient tread-protecting strips, each having a head at one end formed to engage one of said grooves, its other end being free, said strips being arranged in two series, the free ends of one series overlapping the free ends of the other series over the tread portion of the tube; and the sheath or shoe formed to inclose the tube and its protecting strips.

3. A pneumatic tire comprising in its construction an air-cushioned inner tube the walls of which increase in thickness from the tread to the inner portion; a sheath or shoe formed to inclose said tube and having side protuberances and overlapping edges, said shoe decreasing in thickness from its tread portion to its edges; and means for securing the edges of the shoe to the tube.

4. A pneumatic tire comprising in its construction an air-cushioned inner tube provided at opposite sides of its tread portion with continuous grooves, a series of resilient tread-protecting strips having heads or projections fitting the said grooves of the inner tube, and an inclosing sheath or shoe confining the strips with their heads in said grooves.

5. The combination of a pneumatic tire, sectional saddles formed to support the sides of said tire, and a wheel rim to which said saddles are detachably connected.

6. The combination of a pneumatic tire, sectional saddles formed to support the side of said tire and having dove-tail ends and a wheel rim having saddle seats with dove-tail ends formed to engage the ends of the saddles.

542,843. GRUBBER. GEORGE W. CAMERON, Garfield, Tex., assignor to Cameron & Norwood, same place. Filed Oct. 3, 1894. Serial No. 524,776. (No model.)

Claim.—1. In a grubber and analogous device, a frame, and a transverse blade carried thereby, pivotally connected thereto, and adjustable and freely movable toward and from the horizontal on its pivotal connection therewith.



2. In grubbers and analogous implements, a frame, having downwardly extended legs, two upright cutters carried thereby, pivotally connected at their lower ends to said legs and adjustably connected at their upper parts to said frame, forwardly projecting points at the lower ends of said cutters, and a transverse cutter between said upright cutters.

3. In grubbers and analogous implements, a frame, and upright and transverse cutters carried thereby, said transverse cutter pivotally connected to said frame, and separate handles for said frame and transverse cutter.

4. In grubbers and analogous implements, the frame, in combination with upright cutters, and a transverse cutter carried thereby and movable independently thereof, and separate handles for said frame and said transverse cutter.

5. In grubbers and analogous implements, the frame A having penetrating legs *f*, points E at the extremities of said legs, and tilting transverse blade F between said legs, and a pivotal connection between said legs and blade in advance of and in substantially the same plane as the edge of the cutter.

6. In grubbers and analogous implements, the frame A having penetrating legs *f*, in combination with points E at the extremities of said legs having slotted bodies receiving the ends of the latter, upright cutters D in front of said legs, entering at their lower ends the bodies of said points, and a transverse cutter extending between said legs.

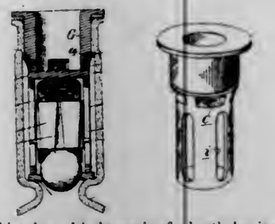
7. In a grubber or analogous implement, a frame, a substantially horizontal blade having a cutting edge at front, and a pivotal connection between said frame and blade permitting movement of the latter relatively to the former, said connection having a substantially horizontal axis at front of and substantially in the horizontal plane of the cutting edge of said blade.

8. In grubbers and analogous implements, a frame, in combination with a substantially horizontal blade having a forward cutting edge, a pivotal connection between said blade and frame having a substantially horizontal axis at front of said edge and in substantially the same horizontal plane as the latter, and handles for said blade and frame respectively, substantially as and for the purpose set forth.

9. In grubbers and analogous implements, the combination with a substantially horizontal blade, of a frame A connected thereto for moving it, and consisting of a U-shaped bar *d* having substantially parallel side parts *e*, an intermediate transverse part K constituting a brace, and downturned legs *f* connected to the said blade, and an angular front bar *a* bent on itself at *b* and having ends *c* embracing and fixed to the sides *e* of said bar *d*, and a brace L between said sides *e* at rear of said brace K, substantially as and for the purpose set forth.

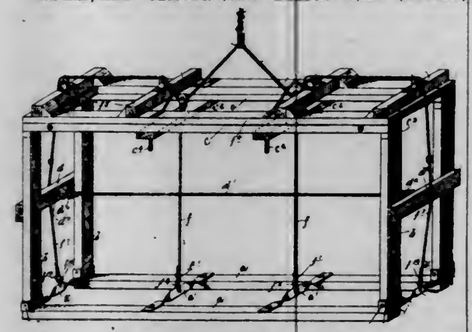
542,844. DEVICE FOR PREVENTING FRAUDULENT REFILLING OF BOTTLES. CLEMENT CLARK, Sandusky, Ohio, assignor of one-half to John S. Clark, Detroit, Mich. Filed Jan. 14, 1895. Serial No. 534,866. (No model.)

Claim.—1. The combination of a bottle neck, of a check valve therein adapted to close the inlet, a sliding block resting on the valve in the erect position of the bottle, having lateral projections thereon, vertical guides in which said projections slidingly engage, and a spring located above and arranged to hold the block upon the valve, substantially as described.



2. The combination with the neck of a bottle having contracted top and bottom sections, of an independent valve seat resting on the lower contraction a bushing fitted in the neck to make a tight joint at the top, a ball check-valve at the bottom of the bushing, a transverse partition across the bushing near the top, a spring actuated block slidingly secured in the bushing and resting upon the valve and means for preventing the rotation of the block substantially as described.

542,845. WOOD-BALING CRATE. WILLIAM A. DICKSON, Bonniwell Mills, Minn. Filed Mar. 9, 1895. Serial No. 541,127. (No model.)



Claim.—1. The combination with a suitable base plate, of end plates pivoted to the base plate and provided with draw bolts extending from their upper ends, and a top plate having slots engageable with said draw-bolts, for uniting and drawing said plates together about a mass or load of wood placed between said plates and thereby forming a bale, substantially as described.

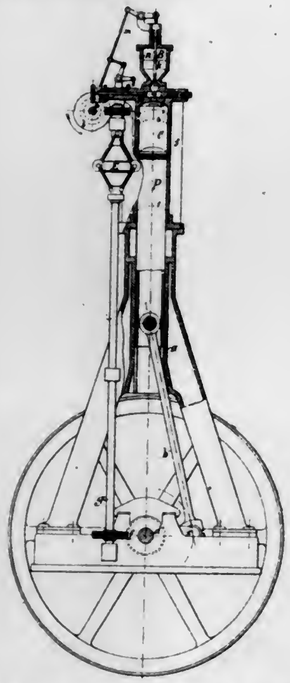
2. The combination with a wood baling crate, of loading devices, for handling the bale, comprising the vertical cables *f* having the sheave block lugs f^3 at their upper ends, the false top f^4 f^5 f^6 having cable guide sheaves, f^{13}, and the top cable f^7 having the sheaves f^9 and sheave blocks f^{10} with slots f^{11}, engageable with said lugs f^3 on the vertical cables and provided with the end rings f^{14}, engageable with the end cross-ties of the crate bottom, substantially as and for the purpose set forth.

3. The combination with a suitable base plate, of end plates pivoted to the base plate and provided with draw bolts, of a top plate having slots engageable with said draw bolts, cross-bars connected to the side-bars of said top plate by draw-bolts and cables connecting said cross-bars to said base plate, substantially as and for the purpose set forth.

542,846. METHOD OF AND APPARATUS FOR CONVERTING HEAT INTO WORK. RUDOLF DIESEL, Berlin, Germany. Filed Aug. 26, 1892. Serial No. 444,246. (No model.) Patented in Germany Feb. 28, 1892, No. 67,207; in Switzerland Apr. 2, 1892, No. 5,221, and in England Apr. 14, 1892, No. 7,241.

Claim.—1. The herein described process for converting the heat energy of fuel into work, consisting in first compressing air, or a mixture of air and neutral gas or vapor, to a degree producing a temperature above the igniting point of the fuel to be consumed, then gradually introducing the fuel for combustion into the compressed air while expanding against a resistance sufficiently to prevent an essential increase of temperature and pressure, then discontinuing the supply of fuel and further expanding without transfer of heat.

2. In an internal combustion engine, the combination with the cylinder and piston, of a valved suction inlet for air or a mixture of air and neutral gas, a valved fuel feed constructed to gradually discharge the fuel into the cylinder, and means in operative connection with the feed valve for opening the same at the commencement of the working stroke of the piston and for closing the same at a predetermined part of the stroke, substantially as described.



3. In an internal combustion engine of the character specified, the combination of a combustion cylinder provided with means for gradually introducing fuel therein up to the point of cut-off, a compressor for air, a reservoir connected with the latter and with the cylinder, and an expansion chamber for the exhaust gases, substantially as described.

542,847. MANUFACTURE OF FLONGS FOR PRODUCING MATRICES FOR STEREOTYPING. GEORGE EASTWOOD, London, England. Filed Feb. 23, 1895. Serial No. 539,468. (No specimens.) Patented in England Nov. 27, 1893, No. 22,732, and in France Dec. 4, 1893, No. 234,529.

Claim.—1. A flong for producing matrices or molds for stereotyping consisting of a thick sheet of dry bibulous paper having on its face a dry composition, substantially as hereinbefore described.

2. A flong for producing matrices or molds for stereotyping consisting of a thick sheet of bibulous paper having a normal unimpregnated interior and having on its face a coating of a dry paste composed of a saccharine liquor, glue, flour, whiting, borax, and water in approximately the proportions specified.

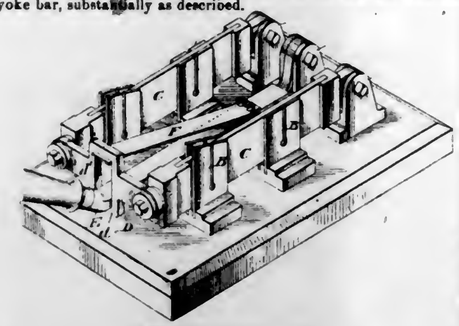
3. A composition for coating the bibulous paper of flongs used for producing matrices or molds for stereotyping, the said composition consisting of treacle, glue, flour, whiting, borax and water in approximately the proportions specified.

542,848. ELECTRIC SWITCH. GEORGE T. EVANSON, Philadelphia, Pa. Filed May 10, 1895. Serial No. 548,800. (No model.)

Claim.—1. In a switch, the combination of circuit terminals, a blade adapted to be engaged with and disengaged from the same, a yoke or open frame piece connected with said blade, a pivoted operating arm extending freely through said yoke or frame piece so as to have vertical play therein, and a spring coacting with said arm and yoke or frame piece, substantially as described.

2. In a switch, the combination of circuit terminals, a pivoted connecting blade therefor, a yoke or open frame piece on the free end of said blade, a pivoted operating arm extending freely through said yoke or frame piece, a flat spring one end of which is secured to the arm and the other end thereof is extended into engagement with the yoke or frame piece, substantially as described.

3. In a switch, the combination of two pairs of circuit terminals, pivoted connecting blades therefor, an open yoke bar connecting the blades, an intermediate operating arm extending through said yoke bar, and a flat spring connected with the arm and engaged with the yoke bar, substantially as described.



542,849. PROCESS OF REFINING PETROLEUM. HERMAN FRASCH, Cleveland, Ohio, assignor to the Solar Refining Company, of Ohio. Filed Nov. 29, 1889. Serial No. 331,959. (No specimens.)

Claim.—1. The process of purifying petroleum of the Canadian or Lima class from sulphur compounds consisting in subjecting such sulphur-bearing petroleum to the action of nitrous acid fumes at the temperature and during the process of distillation; substantially as described.

2. The process of purifying petroleum of the Canadian or Lima class from sulphur compounds consisting in placing a mixture of alkaline nitrate and sludge acid in a still with such sulphur-bearing petroleum, and then (by heating the still) producing nitrous acid fumes and distilling over the petroleum, the oil in the sludge acid being utilized to reduce the nitrous acid fumes and the decomposition of oil in distillation for this purpose being avoided or lessened, and the oil being subjected to the nitrous acid fumes at the temperature and during the process of the distillation thereof; substantially as described.

3. The process of purifying sulphur-bearing petroleum of the Canadian or Lima class, previous to the final treatment by distillation and washing with sulphuric acid, consisting in subjecting such sulphur-bearing petroleum to nitrous acid fumes until the sulphur compounds have been sufficiently acted upon, as indicated by the change of the original green color to yellow; substantially as described.

4. The process of purifying sulphur-bearing petroleum of the Canadian or Lima class, by treatment with nitrous acid fumes, in conjunction with a distillation after an action of said fumes upon such oil or the sulphur-containing impurities therein, said treatment being effected under conditions of elevated temperature (such as that of the distillation itself) or of prolonged exposure (such as effects a change of the original green color to yellow), whereby the sulphur compounds are sufficiently acted upon, and a decomposition of resulting nitrogen products being effected by the distillation; substantially as described.

5. The improvement in purifying sulphur-bearing petroleum of the Canadian or Lima class, consisting in subjecting such petroleum to nitrous acid fumes, and effecting a decomposition of resulting nitrogen products with formation of ammonia by a distillation of the treated oil in the presence of lime; substantially as described.

6. The improvement in purifying sulphur-bearing petroleum of the Canadian or Lima class, consisting in subjecting such petroleum to nitrous acid fumes, distilling in the presence of lime the oil which has been thus treated, and recovering the ammonia from the distillation products; substantially as described.

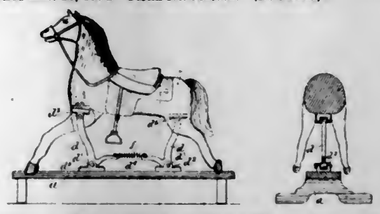
7. The improvement in purifying sulphur-bearing petroleum of the Canadian or Lima class, consisting in subjecting such petroleum to the action of nitrous acid fumes, and distilling the so-treated oil in presence of a reagent which aids the distillation to effect a decomposition of nitrogen products; substantially as described.

8. The improvement in purifying sulphur-bearing petroleum of the Canadian or Lima class, consisting in subjecting such petroleum to the action of nitrous acid fumes, and without neutralization distilling the so-treated oil; substantially as described.

9. The process of purifying sulphur-bearing petroleum of the Canadian or Lima class, consisting in subjecting such petroleum, in conjunction with distillation, to the action of nitrous acid fumes and of sulphuric acid; substantially as described.

10. The improvement in purifying sulphur-bearing petroleum of the Canadian or Lima class, by distilling such petroleum, subjecting it to the action of nitrous acid fumes at the temperature and during the process of the distillation, and effecting a decomposition of nitrogen products in the resulting distillate with formation of ammonia therefrom by distilling said distillate in the presence of lime; substantially as described.

542,850. HOBBY-HORSE. ADOLPH F. C. GARBEN, Chicago, Ill. Filed Mar. 10, 1894. Serial No. 503,085. (No model.)



Claim.—1. The combination with a hobby-horse or other body, and a base of support, of bell-crank levers, located one or more under each end of said body, with their lower arms facing each other, their elbows pivoted to said support, and their upper arms pivoted to the hobby and a spring or springs connecting the lower and facing arms of said levers, substantially as and for the purposes set forth.

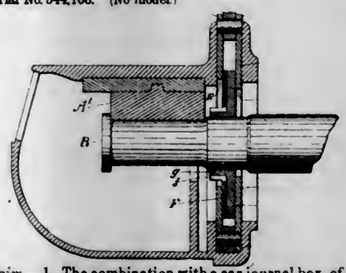
2. The combination with a base of support, as *a*, of the hobby-horse *b*, the bell-crank levers *d*, located, one under each end of the horse, with their elbows pivoted to said support, their lower or short arms facing each other and provided with hooked extremities and their upper arms pivoted between the legs of the horse, and the coiled spring *f* detachably connecting the short arms of said lever, substantially as and for the purpose set forth.

542,851. GARMENT-SUPPORTER. AGNES E. HARRIS, New York, N. Y. Filed Mar. 15, 1895. Serial No. 541,894. (No model.)



Claim.—A garment fastener and supporter consisting of a suspensory safety-pin and one or more eyes complemental thereto; said safety-pin and eye or eyes being connected by means of a piece of flexible material substantially as and for the purpose set forth.

542,852. DUST-GUARD FOR CAR JOURNAL-BOXES. EDWARD HARRIS and THEODORE PHELPS, Brewster, N. Y. Filed Apr. 1, 1895. Serial No. 544,108. (No model.)



Claim.—1. The combination with a car journal box, of plates provided with openings through which the car axle passes, a washer clamped between the plates and extending beyond the edges of the same to form a tight joint with the box, a second plate held between the first mentioned plates and capable of a sliding movement relatively to the same, the second plate having an opening for the entrance of the car axle and means for forming a tight joint between the edges of the opening in the second plate and the car axle, substantially as specified.

2. A dust guard for insertion in a car axle box, comprising side plates provided with openings through which the car axle passes, a washer securely held between the plates and extending beyond the edges of the same to form a tight joint with the box and a second plate held between the side plates and capable of a sliding movement relatively to the same, the second plate having an opening whose edges are extended laterally to form a tight joint with the axle, substantially as specified.

3. The combination with a car journal box, of a dust guard comprising side plates, a washer interposed between the plates, a composite plate sliding between the side plates which is composed of a plate of metal on one face and a plate of raw hide on the opposite face and circular flanges extending from the composite plate, encircling the car-axle and forming a tight joint therewith substantially as specified.

542,853. FENCE-POST. WILLIAM P. HITCHCOCK, Lake, Muscatine County, Iowa. Filed Nov. 28, 1894. Serial No. 530,256. (No model.)

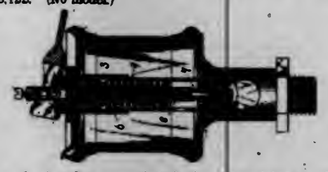


Claim.—1. A metallic fence post formed of a metal plate bent upon itself so as to be L-shaped in cross section and beveled at its lower end, and also having the outer edge of one side portion bent upon itself and a series of transverse slots in said bent edge substantially as described the portions between the slots forming loops, substantially as and for the purpose specified.

2. A metallic fence post formed of a metal plate bent upon itself so as to be L-shaped in cross section and beveled at its lower end, and also having the outer edge of one side portion bent upon itself and a series of transverse slots in said bent edge, the portions between the slots forming loops;—and an anchor plate D, attached to the lower end of the post, having bent end *d*, all substantially as and for the purpose specified.

3. In a wire fence the combination of a metallic fence post L-shaped in cross section, having one side beveled at its lower end, and its outer edge bent upon itself and transversely slotted substantially as described, and an anchor plate D, attached to lower end of the other side; with the wires W and wire-fastenings *w*, all constructed and arranged substantially as and for the purpose specified.

542,854. OIL-CUP. THEODORE JAMES, North Adams, assignor to William H. Wilkinson & Co., Boston, Mass. Filed May 4, 1895. Serial No. 548,122. (No model.)



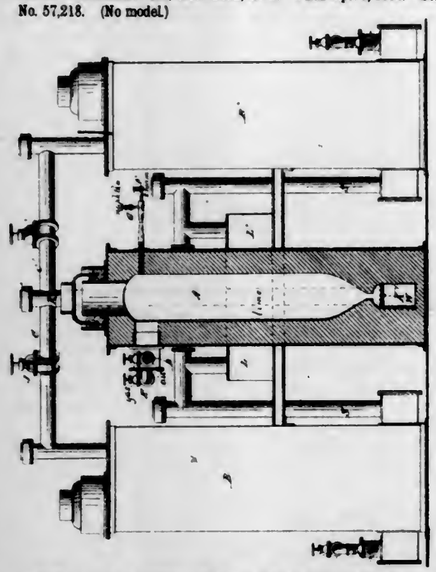
Claim.—1. A valve operating device comprising a valve having a valve spindle slotted at one end, a valve lever secured to said spindle by a bolt movable in said slot, and means to regulate the movement of the bolt in the slot to determine the extent of the movement of the valve, substantially as explained.

2. In combination with a fluid reservoir, a valve having a valve spindle slotted at one end, a rocking valve lever secured to the spindle by a bolt movable in the spindle slot, and a regulating device which is positively clasped by the valve lever at stated times, substantially as set forth.

3. The combination with an oil cup, a spring actuated valve, a valve spindle having a slot therein, and a bifurcated valve lever, of a bolt secured to the lever and which engages said slot in the valve spindle, and an adjusting feed screw to serve as a bearing for the bolt, when the valve is to be opened, substantially as described.

4. A valve operating device comprising a valve, a valve spindle slotted in part at one end, a feed screw adjustable longitudinally of the valve stem and projecting into said slot, and a forked valve lever which incloses the feed screw and locks the same at stated times and provided with a bolt extending into the slotted end of said spindle, substantially as specified.

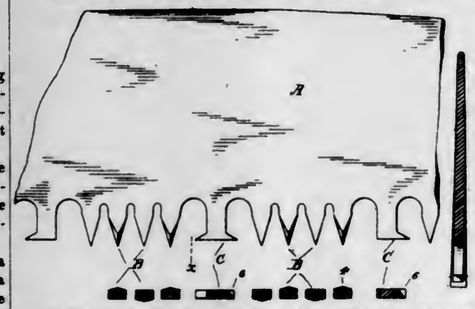
542,855. PROCESS OF AND APPARATUS FOR PRODUCING GAS. ERAZM J. JERMANOWSKI, New York, N. Y. Filed Apr. 3, 1882. Serial No. 57,218. (No model.)



Claim.—1. In an apparatus for producing hydrogen, a converter having feed and discharge pipes in combination with absorbers having discharge pipes, the independent connecting pipes between the converter and the said absorbers, provided with suitable valves, the steam and hydrocarbon supply pipes leading to the converter, means for heating the converter and means for heating the absorbers or purifiers, substantially as specified.

2. The herein described process of producing hydrogen, consisting of, first charging a converter with calcareous material, next passing the products of combustion of combined gas and air through said calcareous material to heat the same, permitting the products of combustion to escape through a suitable valve, next bringing combined steam and naphtha or liquid hydrocarbon into conjunction with said heated calcareous material and passing the resultant gases to and through a body of cooler calcareous material in absorbers, to free the hydrogen contained in said gases from carbonic acid, next passing the free hydrogen from said absorber to a suitable receptacle, next bringing the calcareous material within the absorber to a state of incandescence to expel the carbonic acid, and finally bringing cold air into conjunction with said incandescent calcareous material to cool the same, substantially as described.

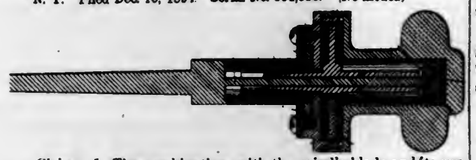
542,856. CROSSCUT-SAW. JAMES W. JOHNSON, Truckee, Cal. Filed Nov. 22, 1894. Serial No. 529,560. (No model.)



Claim.—1. As a new article of manufacture a cross cut saw having its drag teeth of a less thickness than the cutting teeth.

2. As a new article of manufacture a cross cut saw, the drag teeth of which are of a uniform thickness, but of less thickness than the cutting teeth, whereby the cutting edge of the cutting teeth projects beyond the sides of the drag teeth.

542,857. SPINNING-SPINDLE. HENRY D. KLOTS, New York, N. Y. Filed Dec. 10, 1894. Serial No. 531,353. (No model.)

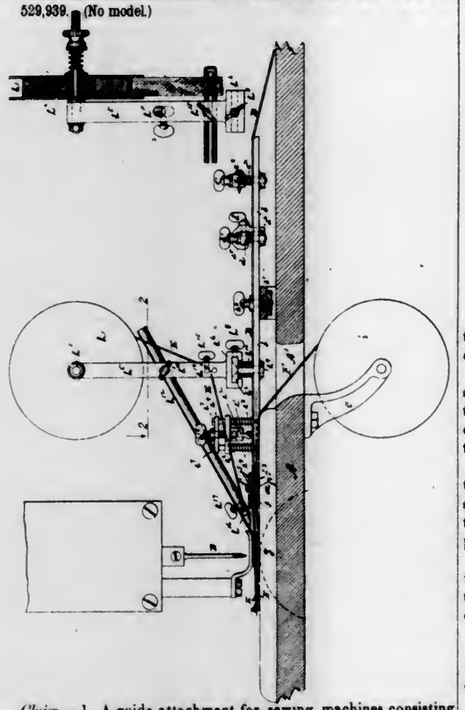


Claim.—1. The combination, with the spindle-blade and its supporting and bearing tube provided with an annular flange, of a base-piece formed with a circular box to contain said flange, a detachable cover to be screwed upon said box, formed with a neck to surround the tube, and cushions compressed between said annular flange and the bottom and the cover of the box, substantially as hereinbefore set forth.

2. The combination, with the spindle blade constituted with a spring intermediate its bobbin-holding and bearing portions, and its supporting and bearing tube provided with an annular flange, of a base-piece formed with a box to contain said flange, a cover for said box and cushions interposed between said flange and the bottom and the cover of the box, substantially as hereinbefore set forth.

3. The combination, with the spindle blade and its whirl having a flange and the spindle-bearing, of a flange retaining piece pivoted at the side of the spindle and having a slot in its free end and a fixed headed stud to engage said slot and hold said retaining piece and hence whirl vertically and laterally, substantially as hereinbefore set forth.

542,858. GUIDING ATTACHMENT FOR SEWING-MACHINES. FRANZ KOSCHTIAL, Hoboken, N. J. Filed Nov. 26, 1894. Serial No. 529,939. (No model.)



Claim.—1. A guide attachment for sewing machines consisting of a guide plate, a vertically yielding tension bar, a rail, extending across the guide plate at a distance above the same, gages adjustable on said rail, a cloth feeding device, and a stitch forming mechanism, substantially as specified.

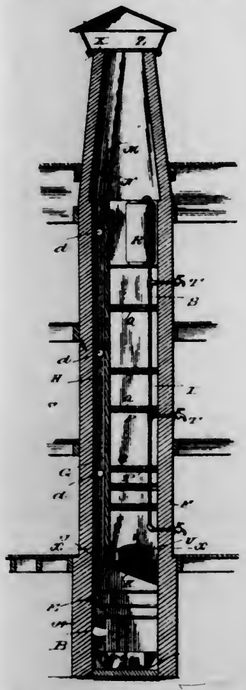
2. The combination of a slotted guide plate with a guide rail and a pair of adjustable gages having depending lugs d^6, that engage the slot in the guide plate, substantially as specified.

3. The combination of a guide plate with a rail h^7, a standard h^5, adjustable thereon, a reel-supporting shaft secured to the standard, a forwardly projecting arm h^{13}, and a pair of ribbon guides secured to the standard and the arm respectively, substantially as specified.

4. The combination of a main guide plate with a stitch forming mechanism, a lower reel, a slotted guide plate *f*, having teeth, and located between the main guide plate and the stitch forming mechanism and a gage f^6, having a finger that is adapted to engage said teeth, substantially as specified.

5. A guide attachment for sewing machines composed of a main guide plate, a tension bar, a guide bar, gages adjustable thereon, an upper and lower ribbon support, and an upper and lower ribbon guide, substantially as specified.

542,859. PROVISION-SAFE. JACOB L. KUECHLER, Kuechler's Roost, Pa. Filed Feb. 26, 1895. Serial No. 539,799. (No model.)



Claim.—1. A device for the purposes described consisting essentially of a tower-like structure provided with an internal partition dividing it into a narrow smoke flue and a larger or cold air flue.

2. A device for the purposes described consisting of a tower-like structure having a smoke chamber at its lower end, a vertical partition rising from the smoke chamber, and a deflector in the upper end of the smoke chamber extending from one side of the same to the lower end of the partition.

3. A device for the purposes described consisting essentially of a tower-like structure, an internal partition dividing the same into a smoke flue and a cold air flue, and a water tank in the upper end of the cold air flue having a pipe depending therefrom provided with a plurality of faucets.

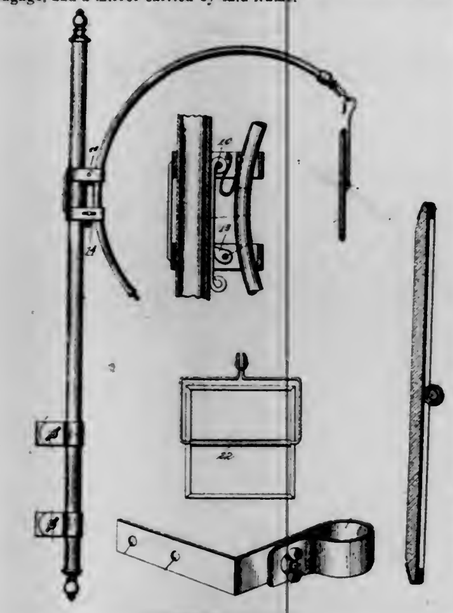
4. In a structure of the character described, the combination with the outer walls, and a vertical partition forming two flues of a tie-frame covering the upper edges of the same and carrying a screen covering the top of one of the flues.

542,860. MIRROR ATTACHMENT FOR DRESSERS, &c. TOWNSEND W. NOXON, St. Louis, Mo. Filed May 6, 1895. Serial No. 548,200. (No model.)

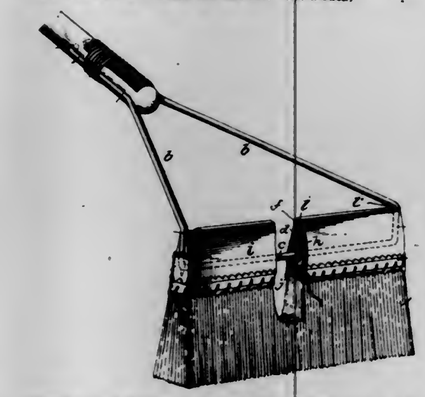
Claim.—1. In a device of the class described, a pair of straps adapted to be rigidly fixed to a stationary object, a standard held by and vertically adjustable in said straps, a pair of loops fixed for vertical adjustment upon said standard, a semi-circular arm adjustably carried by said loops, a hanger carried by the outer end of said arm, and a mirror adjustably connected to said hanger.

2. In a mirror attachment for dressers, the combination of a vertically adjustable standard, a pair of loops arranged to slide upon said standard, a tongue pivoted in the upper loop, an eccentric arranged in the lower loop for causing said tongue to engage the vertical standard, and a mirror-carrying arm adjustably held in the forward ends of said loops.

3. The combination of a vertically adjustable standard, a pair of loops adjustable vertically upon said standard, a semi-circular arm adjustably carried by the forward ends of said loops, a hanger carried by the outer upper end of said arm, the inwardly bent ends of said hanger being split, a mirror-frame, a loop extending horizontally across the rear side of said frame in which the split ends of the hanger engage, and a mirror carried by said frame.



542,861. BROOM. THERON H. PALMER, San Bernardino, Cal. Filed Jan. 8, 1895. Serial No. 534,247. (No model.)

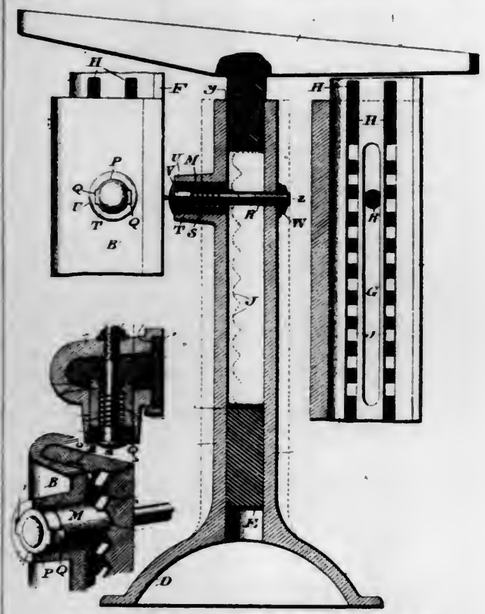


Claim.—1. A broom of the class described, comprising the combination of a cap, a frame secured to a suitable handle and having a portion formed into a fixed cross-bar which passes through the cap, a filling block within the cap and above the cross-bar, fibers looped over the cross-bar and held against the filling block, and fastening devices for securing the fibers to the cap, substantially as described.

2. A broom of the class described, comprising the combination of a handle, a frame formed of side pieces and a fixed cross bar, the upper extremities of the side pieces being secured to the handle, fibers looped over the cross-bar, a cap covering the looped portion of the fibers, a filling block interposed between the apex of the cap and the fibers, a protecting band, and a binding wire passing through the cap and band below the cross-bar of the frame, substantially as described.

542,862. ADJUSTABLE SUPPORT FOR SCHOOL FURNITURE. JOHN PEARD, Bucyrus, Ohio. Filed Apr. 2, 1895. Serial No. 544,142. (No model.)

Claim.—1. In an adjustable support for school furniture, a grooved pedestal, an adjusting bar movable in said groove, ratchets on said bar, a socket or hole in said pedestal, a cup freely movable in said socket, check-stops or projections attached to said cup, and adapted to engage said ratchets, a spring seated within said cup, and means for varying the tension of said spring, substantially as described.



2. In an adjustable support for school furniture, a pedestal, a slotted adjusting bar movable freely therein, ratchets on said bar, a boss having a hole or socket therein, attached to said pedestal, a cup having check-stops thereon, movable in said socket, a spring seated within said cup, a cap adapted to rest on said spring, a bolt or similar device passing through said cap, bar and pedestal, means for preventing said cap and bolt from rotating, and means for varying the tension of said spring, substantially as described.

3. In an adjustable support for school furniture, a pedestal composed of side pieces suitably joined together, and having an open back with ways therein, a slotted adjusting bar movable in said pedestal and ways, ratchets in said bar located in grooves on each side of said slot, the tops of said ratchets being below the face of said bar, a socket in said pedestal, a cup movable in said socket, check-stops on said cup, adapted to engage said ratchets, a spring seated in said cup, a cap for holding said spring in place, lips on said cap adapted to engage recesses adjacent said ratchet, a bolt having a squared portion passing through a squared hole in said cap, said adjusting bar and pedestal, and means for tightening said bolt, substantially as described.

4. In an adjustable support for school furniture, a pedestal, an adjusting bar having ratchets thereon, a hollow cup seated in said pedestal, and having check stops thereon, adapted to engage said ratchets, a cap adapted to rest upon said cup, a spring held within the latter, one end of said spring abutting against the bottom of said cup, while the other end thereof is in contact with said cap, and a bolt common to said cap, cup and pedestal, said bolt having a nut or similar device engaging therewith whereby the tension of said spring can be varied, substantially as described.

5. In an adjustable support for school furniture, an adjusting bar having ratchets located thereupon, a hollow cup having check stops thereon, which are adapted to engage said ratchets, a cap supported on said cup, means for preventing said cap from rotating, a spring held within said cup in contact with said cap, and means for moving said cap toward or away from said spring according to requirements, substantially as described.

6. In an adjustable support for school furniture, a pedestal, an adjusting bar, having ratchets thereon, in combination with a locking device for the above parts, the same consisting of the cup M, having the hollowed out portion N, the base L, with a hole therein, and the check stops K attached to said base, and means for holding said cup in position, substantially as described.

7. In an adjustable support for school furniture, the cap P, having a squared hole therethrough, the lips Q attached to said cap, and a cup on which said cap is adapted to be supported, in combination with a suitable pedestal, having a socket therein for the reception of said cup, said socket having recesses adapted to be engaged by said lips, substantially as described.

8. In an adjustable support for school furniture, the U-shaped pedestal B, having the ways C, and the flange D, an adjusting bar E, having the flanges F adapted to contact with said ways, a longitudinally extending slot in said bar, ratchets on each side of said slot, a cup having projections thereon engaging said ratchets, a spring adjacent said cup, a cap for holding said spring in place, and means for holding said cap, spring, and cup in position, substantially as described.

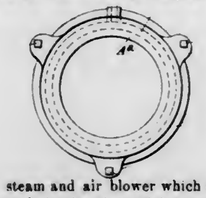
542,863. ESCAPEMENT-CRUTCH FOR CLOCKS. WILSON E. PORTER, New Haven, Conn., assignor to the New Haven Clock Company, same place. Filed May 13, 1895. Serial No. 549,129. (No model.)



Claim.—1. A crutch for the escapement mechanism of clocks, formed from a single piece of sheet-metal, and comprising a reach or body-portion, and a yoke located at the upper end thereof, and comprising a central portion adapted to have a verge connected with it, and two perforated arms, the perforations of which are located in line for the reception of the pin or stud upon which the crutch oscillates, substantially as and for the purpose set forth.

2. A crutch for the escapement mechanism of clocks, formed from a single piece of sheet-metal and comprising a reach or body-portion, a forwardly projecting integral eye located at the lower end thereof, and a yoke located at the upper end thereof, and comprising a central portion adapted to have a verge connected with it, and two perforated vertically arranged arms, the perforations of which are located in line for the reception of the pin or stud upon which the crutch oscillates, substantially as and for the purpose set forth.

542,864. STEAM AND AIR BLOWER FOR FURNACES. WILLIAM J. THOMAS, Tamaqua, Pa., assignor of one-half to Isaac Christ, same place. Filed Feb. 20, 1895. Serial No. 539,102. (No model.)



Claim.—1. A steam and air blower which consists of an outer interiorly unobstructed circular air-receiving section which in its inner extremity is provided with an end-recess for the passage of steam; an inner unobstructed circular section which is rigidly and non-revolubly secured to the outer section; and an intermediate section which overlies, in part, both the outer section and the inner section, and is revoluble thereon, in connection with the end-recess, to either permit, or prevent the inflow of steam; substantially as set forth.

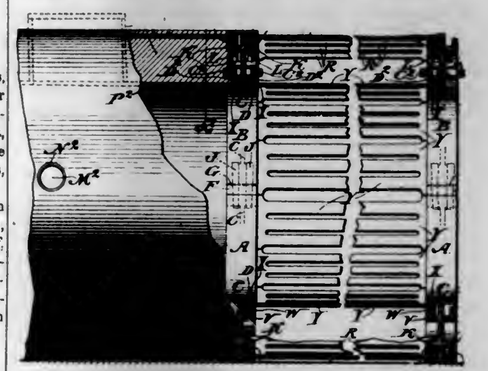
2. A steam and air blower which consists of an outer annular interiorly-unobstructed section which is provided in its inner end with a circumferential recess; an intermediate section which in one part projects inwardly and encircles the outer section, and which in another part overlies the end recess in the outer section, and forms in connection therewith a circular steam-passage; and an inner section which is peripherally embraced by the intermediate section, and which is secured to the outer section; the intermediate section being operative, in the manner described, either to admit steam in a circular unbroken sheet-blast of varying thickness, or to wholly cut off the inflow of steam, as may be desired.

3. In a steam and air blower the combination of an outer annular section which is provided in its inner extremity with a circumferential steam-receiving groove or recess; an inner annular section which rests in contact with the outer section, and is rigidly secured thereto; an intermediate three-part section which by two of its parts incloses and is adjustably movable upon the outer section and the inner section, and which by its third part projects from the peripheral portion of the section inwardly, and overlies the groove or recess in the outer section, to constitute in connection therewith an annular steam-passage, and to permit, or to prevent the passage of steam therethrough: the three sections being interiorly unobstructed; substantially as described.

4. In a steam and air blower for furnaces, the outer section A^3, having securing-lugs a, a^2, a^3, and having also inner and outer walls which embrace a circular steam-passage which is formed in the face of the inner end of the section; the intermediate annular section B, which engages the inner wall and the outer wall of the steam passage: and the inner section C, encircled by the intermediate section, provided with engaging lugs, and secured to the outer section: in combination, substantially as described.

5. The herein-described steam and air blower, consisting of the outer annular section A^3, having the end recess or groove a^4, inlet-passage a', securing-lugs and bolts, and exteriorly-threaded face a^5; the inner annular section C, having machine-faced outer peripheral surface c, and securing-lugs as specified: and the intermediate annular section B, having the beveled face b^2, the inner threaded surface b^4, the inner unthreaded surface b^5, and the exterior peripheral engaging-openings b^7.

542,865. CONDUIT FOR SEWERS, &c. WILLIAM WALTER, Bridgeport, Pa. Filed Aug. 8, 1894. Serial No. 519,743. (No model.)



Claim.—1. A conduit having a skeleton frame consisting of semi-circular end sections having locking tongues, and inner and outer plates connected to said end sections, said parts being combined substantially as described.

2. In a conduit for sewers, &c. the bottom rings or sections having the lugs V and K, on both sides of the webs of said rings in combination with the upper ring B, and means for locking said sections A and B together, and the plates N and Y connected with said lugs, and between which mortar is adapted to be placed, said parts being combined substantially as described.

3. The upper and lower sections A and B, means for locking the same together, plates N and Y for the purpose of holding mortar in place, and means for locking the last of said plates which are placed in position, substantially as described.

4. A conduit having a skeleton frame consisting of semi-circular end sections, each consisting of a central web with inner and outer flanges, and having the series of lugs V and K, tongues connected with said rings for uniting the same, and inner and outer plates having flanges for engaging said lugs, said parts being combined substantially as described.

5. In a conduit, the upper and lower rings or sections having the lugs K and V, and the tongues and grooves and locking devices substantially as described, in combination with the series of plates N and Y having the flanges M and X the recessed ends and the lugs engaging therewith, the space between said plates being filled with mortar, and the above parts combined substantially as described.

6. A conduit having a skeleton frame consisting of end portions having lugs thereon, and inner and outer plates, each having flanged ends adapted to engage said lugs, said parts being combined substantially as described.

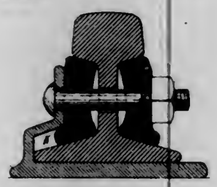
7. In a conduit, a plate consisting of central and end portions connected by bars, the end portions being recessed, and the inner face of the said plate having projecting lugs with an adjacent opening, in combination with end sections having flanges thereon and provided with projecting lugs substantially as described.

8. In a conduit the end sections, the inner and outer plates N and Y, secured at their ends to their end sections having lugs thereon, and the links B^4 adapted to brace said plates, said parts being combined substantially as described.

9. In a conduit, the plates Y the semi circular ring B having the recessed projections C^3 thereon on each side of the web thereof, in combination with the key D^3 for locking the said plates Y in place, substantially as described.

10. In a conduit the plates N, the semi-circular ring B having an outer flange with the transverse lips E^3 near its top, in combination with the key F^3 for locking the said plates N in position, substantially as described.

542,866. RAIL-JOINT. GEORGE A. WEBER, New York, N. Y., assignor to the Weber Railway Joint Manufacturing Company, of West Virginia. Filed Dec. 27, 1893. Renewed Jan. 7, 1895. Serial No. 534,132. (No model.)

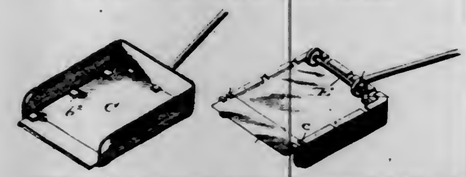


Claim.—1. The combination of the rail A, chair B having re-entering portion C integral therewith, fish-plate D having extension K passing beneath the re-entering portion C of chair B and out of contact therewith, and bolt F connecting the rail, fish-plate and chair, substantially as described.

2. The combination of the rail A, fish plate D having horizontal portion B and upward extending re-entering portion C, fish-plate D having extension K passing beneath the re-entering portion C but out of contact therewith and extending to the base of the chair B, and bolt F, substantially as described.

3. The combination of the rail A, chair B having horizontal portion B and vertical extending re-entering portion C, fish-plate D having extension K, the re-entering portion C being out of contact with the extension K, and before drawn to position being in contact with the fish-plate D only at its upper edge or portion, and the bolt F which when set up tends to draw the vertical extension of the chair into contact with the outside of the fish-plate, substantially as described.

542,867. STREET-SCRAPER. WILLIAM H. WYMAN, Washington, D. C. Filed May 15, 1895. Serial No. 549,456. (No model.)



Claim.—1. A street scraper having a frame provided with an inward-extending flange having lugs or projections thereiu occupying a plane above that occupied by the flange proper, and a bottom held in place between the lugs and the flange.

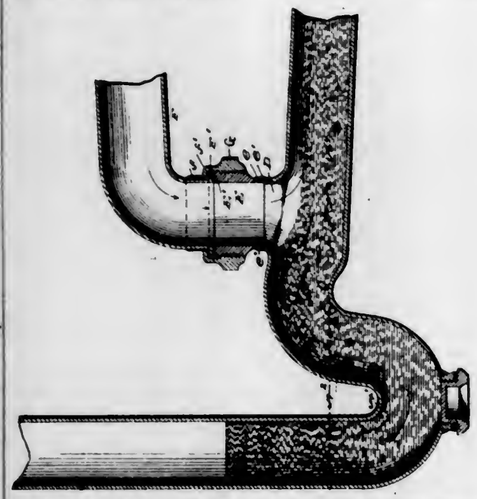
2. A street scraper having a frame provided with an inward extending flange, and a series of lugs or projections formed by separating sections of the flange, a bottom held in place between the lugs and the flange, fastening devices for retaining the bottom and frame assembled, and a removable scraping edge held in place between two of the lugs and the bottom, and lying flush with the latter.

3. A street-scraper comprising a frame provided with an inward-extending flange having lugs or projections therein occupying a plane above that occupied by the flange proper, a bottom held in place between the lugs and the flange, hangers secured to the under side of the bottom inside the flange, an axle loosely journaled in the hangers, supporting-wheels loosely mounted on the axle, and means for propelling the scraper, substantially as described.

542,868. PLUMBER'S TRAP. NICHOLAS BARRY, Jr., Muscatine, Iowa. Filed May 24, 1894. Serial No. 512,325. (No model.)

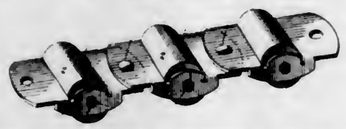
Claim.—1. The herein described plumber's trap having a downwardly bent portion above and just beyond the water seal; a discharge leg extending from such portion substantially at right angles to the inlet leg, and lying below the top of such bent portion substantially as described, and a vent pipe connected to the top side of the discharge leg at the junction of the bent portion therewith and below the crown of such downwardly bent portion, so that the water passing into the discharge leg will be directed across the mouth of but away from the vent pipe, substantially as specified.

2. The combination of the nipple having one end ribbed and its other end tapered substantially as described, with the lead pipe having a hard metal flanged collar wiped on its end, and its end flanged over the flange of the collar, a union coupling fitting on said collar, and screwed onto the nipple, whereby the lead flange on the pipe constitutes a compressible washer interposed between the collar and nipple, substantially as described.



3. The herein described lead trap, having straight inlet leg A, U-shaped water seal, a discharge leg lying substantially at right angles to the inlet leg, and an inverted curved bend A^3, connecting the water seal and discharge leg all formed in one piece substantially as described; in combination with the nipple E, vent pipe F, and union coupling G, all constructed and arranged substantially as shown and for the purpose set forth.

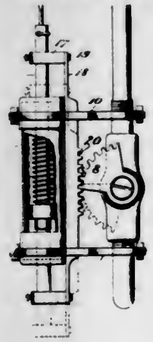
542,869. ROLLER-BEARING. HENRY A. BERGER, Brooklyn, N. Y. Filed June 10, 1895. Serial No. 552,210. (No model.)



Claim.—1. A roller-bearing, consisting of a plurality of pivotally connected links having laterally projecting ears or lugs, and orifices between their boundary edges, and rotatable bearings arranged in said orifices and having journals supported by the laterally projecting ears or lugs of the pivotally connected links, substantially as described.

2. A roller-bearing, consisting of a plurality of links lapping at their extremities and connected by pins or rivets, and each link formed integral with laterally projecting ears or lugs, and orifices between its boundary edges, and cylindrical rotatable bearings arranged in said orifices and having journals supported by the laterally projecting ears or lugs of the connected links, substantially as described.

542,870. AUTOMATIC CUT-OFF FOR GAS SYSTEMS. FRANCIS L. COOK and JAMES F. CRANSTON, Springfield, Mass.; said Cranston assignor to said Cook. Filed Dec. 15, 1894. Serial No. 531,937. (No model.)



Claim.—1. The combination with the gas pipe, the valve or cut-off and the segmental arm connected to the same, of the adjacently located cylinder, the rod arranged for reciprocation within and extending beyond the ends thereof, the spring for actuating the rod and the rack bar carried by the rod and engaging the teeth of the segment and the fusible cord connected with the upper end of the rod and to the pipe there-above substantially as specified.

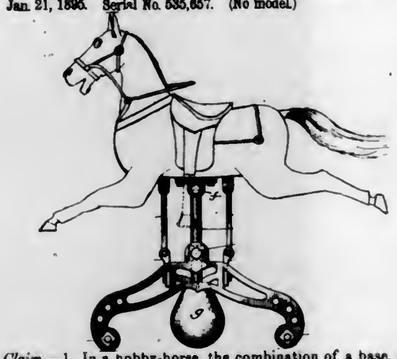
2. The combination with the pipe, the rotary cut-off and the toothed segmental arm connected therewith, of bracket-plates extending from the pipe above and below said cut off, a cylinder arranged in said bracket-plates, a rod mounted for reciprocation within and extending beyond the ends of said cylinder, a spring for normally drawing the rod in one direction, and a fusible cord connected with the upper end, of the rod and with the pipe and serving to draw the rod in a direction against the tendency of the said spring, and a rack bar carried by the rod and having its teeth engaging with those of the segment substantially as specified.

3. In a device of the class described, the combination with the cut-off mechanism and the pipe there-above, of a fusible cord consisting of an inner core of fibrous material knotted at intervals and an external of metal adapted to fuse at a low degree of heat.

4. In a device of the class described, a combination with a gas pipe having an intermediate valve case and rotary valve arranged therein, a toothed segmental arm connected to the stem of the rotary valve, perforated plates arranged above and below the valve case upon the pipe and having openings, a cylinder arranged in the openings and extending above and below said plates, a rod mounted for reciprocation within the cylinder and extending beyond the ends thereof, collars arranged on the rod above and below the cylinder, and extending toward the pipe beyond the vertical plane of said cylinder, a toothed rack bar connecting the collars and engaging the teeth of the segment and a fusible cord connected to the upper end of the rod and adapted to be connected to a fixed point above the same for suspending said rod, a head arranged upon the rod within the cylinder and a coil spring interposed between the head and upper end of the cylinder.

5. The combination with the pipe 4 having an eye 28, the pipe 9, the intermediate valve case 7, the rotary valve therein and segmental arm 8 of the casing 6 having the openings 23, 22 and 26, the plates 10 extending from the pipes 4 and 9 within the casing 6, the cylinder arranged within the casing, the rod arranged for reciprocation within the cylinder, the spring for depressing the rod, the collars 18 connected to the rod, the toothed rack bar 18 connecting the collars, and a fusible cord 30 substantially as specified.

542,871. HOBBY-HORSE. JESSE A. CRANDALL, Brooklyn, N. Y., assignor, by direct and mesne assignments, of one-half to Schuyler Walter Leslie, same place, and Robert Harding, Kings county, N. Y. Filed Jan. 21, 1895. Serial No. 535,657. (No model.)

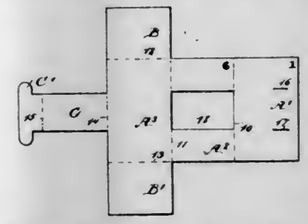


Claim.—1. In a hobby-horse, the combination of a base, a vertical swinging support pivoted on the base and carrying at its lower end below its pivotal point a counter balancing weight, a horse pivotally supported centrally on said support, and means for maintaining its horizontality during its swinging movements, substantially as described.

2. In an oscillating hobby-horse, the combination of a base, a vertical support *d* provided with trunnions journaled in the base, said support extending below the trunnions and provided with a weight at its lower end, a horse pivotally supported on the upper end of said support, and a pair of upright links connecting the base to the under side of the horse, as and for the purpose specified.

542,872. ADVERTISING DEVICE. JOSEPH T. CRAW, Jersey City, N. J. Filed Jan. 4, 1895. Serial No. 533,832. (No model.)

Claim.—1. In an advertising device, a blank comprising a body section divided into panels capable of being folded one upon the other, the central panel being provided with an opening, and a tongue located at one end of the body and adapted to be passed through the central opening as the panels are folded one upon the other, and to be secured upon the outer panel, substantially as shown and described.



2. In an advertising device, a blank consisting of a body of greater length than width and divided into three panels of equal area, a central opening being made in the central panel extending from side to side, and a tongue projected from the outer edge of the outer panel, centrally thereof, said tongue being adapted to be passed through the opening in the central panel as the panels are folded, and to be secured upon the outer panel opposite that from which it is projected, substantially as shown and described.

3. In an advertising device, a blank comprising a body section divided into panels capable of being folded one upon the other, the central panel being provided with an opening, wings projected from opposite sides of one of the end panels and capable of being folded upon the said panel, and a tongue projected from the outer edge of one of said end panels and adapted to be passed through the opening in the central panel and to be secured upon the opposite end panel, substantially as shown and described.

4. As an improved article of manufacture, a card or case comprising several members formed of a single piece of material the said card or case being unfolded or opened from either side, presenting different surfaces at each opening, as and for the purpose specified.

5. A card or case comprising several members, said card or case being opened from opposite sides in opposite directions, the central member being slotted and the end members connected by a tongue projecting through the slot of the central member, as and for the purpose specified.

6. As an improved article of manufacture, a card or case, comprising three leaves folded one upon the other, the folds of the leaves being at opposite sides, the central leaf having an opening produced therein, and a tongue connected with one side of one outer leaf, extending through and having movement in the opening of the central leaf, the said tongue having connection also with the opposite side of the opposite outer leaf, substantially as shown and described.

7. As an improved article of manufacture, a card or case comprising three connected leaves folded one upon the other, the folds of the leaves being at opposite sides, the central leaf having an opening produced therein, and a tongue connecting opposite sides of the outer leaves and extending through said opening, substantially as shown and described.

8. As an improved article of manufacture, a card or case comprising three connected leaves, folded one upon the other, the folds of the leaves being at opposite sides, the central leaf having an opening produced therein, and a pocket formed upon sundry of the leaves, as and for the purpose specified.

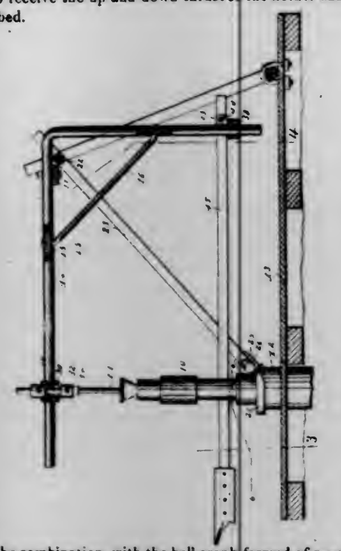
542,873. PUMPING-JACK. EMMETT R. CURTIN, St. Mary's, Ohio. Filed Aug. 4, 1894. Serial No. 519,463. (No model.)

Claim.—1. The combination with the bell crank, of a pump-rod holder having a bearing through which the outer end of the horizontal member of the bell crank freely slides, a vertical enlarged opening through which the pump rod freely passes, and upper and lower pump rod collars between which the holder is held and adapted to receive the up and down thrust of said holder, substantially as described.

2. The combination, with the pump having the usual pump rod, of the oscillating bell crank formed of parallel pipes connected together, and a holder held loosely on the pump rod and provided with holes to receive the pipes of the bell crank, substantially as described.

3. The combination, with the pump having the usual pump rod, of the oscillating bell crank formed of parallel pipes connected together, the holder and guide held loosely on the pump rod and provided with holes to receive the pipes of the bell crank, the clamp secured to the lower end of the bell crank, and the pitman connected to the clamp, substantially as described.

4. As an improved article of manufacture, a pumping jack, comprising an oscillating bell crank formed of parallel angular members, a saddle bolted to the bell crank near the elbow and pivoted on a suitable support, a clamp at the lower end of the bell crank to connect with a pitman, and a holder and guide to slidably connect the bell crank with a pump rod, the said holder having parallel holes through which the bell crank members freely slide, a central vertical enlarged aperture for the pump rod and upper and lower pump rod collars to receive the up and down thrust of the holder substantially as described.



5. The combination, with the bell crank formed of parallel pipes, of the saddle grooved to fit the pipes and provided with a box to receive a pivot pin, substantially as described.

6. In a pumping jack, the combination, with the bell crank formed of parallel pipes connected together, of the saddle grooved to fit the pipes, the box on the saddle, the crossing braces mounted on suitable supports, and the pivot pin or fulcrum extending through the braces and the saddle box, substantially as described.

7. In a pumping jack, the bell crank formed of parallel angular members, provided with tie plates at opposite sides of their angles, inclined braces secured to said braces, and an adjustable bearing bolted adjustably to said members adjacent to their angles, substantially as described.

8. The combination with the bell crank formed of parallel angular members secured together, and provided at their angles with an adjustable bearing saddle, of the two jaws bolted to the lower ends of the two perpendicular members of the bell crank and having sockets on their inner faces receiving said members, the outer jaw being provided with a transverse box, the pitman rods at opposite ends of the box and a bolt extending through the said rods and box, substantially as described.

9. The combination, with the pump, having the usual pump rod and the bell crank formed of parallel pipes, of the holder loosely mounted on the pump rod and provided with holes to fit the pipes on the bell crank and with a concave side, a convex washer on the pump rod to fit the concavity of the holder, and guide, and collars above and below the holder, substantially as described.

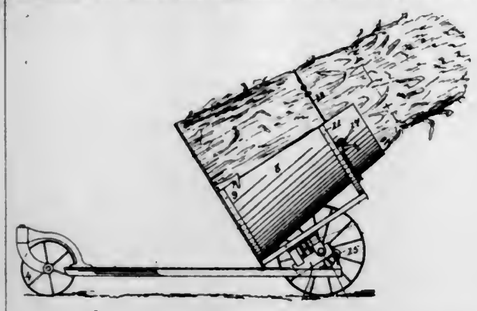
542,874. CORN CUTTER AND SHOCKER. BENJAMIN J. DETRICK, Springfield, Ill., assignor of one-half to Martin Heineke, same place. Filed Mar. 14, 1895. Serial No. 541,667. (No model.)

Claim.—1. In a corn cutter and shocker, the combination of a platform, a shock-former horizontally swingable and vertically tiltable with relation to the platform, and a plate hinged to the platform and adapted to fit against the bottom end of the shock-former, substantially as set forth.

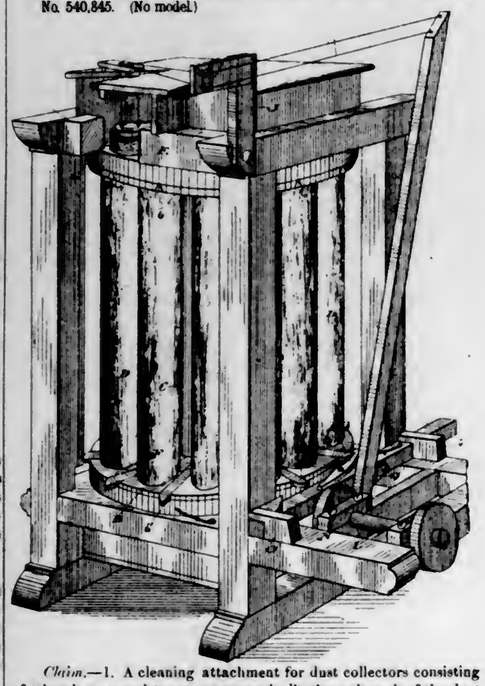
2. In a corn cutter and shocker, the combination of a platform, a shock-former horizontally swingable and vertically tiltable with relation to the platform, a plate hinged to the platform and adapted to fit against the bottom end of the former, a cleat on the plate adapted to fit over the upper edge of the bottom end of the former, and fastenings connecting the plate and the shock-former detachably together, substantially as set forth.

3. In a corn cutter and shocker, the combination of an axle-frame carrying a horizontally swingable shock-former, carrying-wheels on spindles of the axle frame, and a platform swung under the axle-frame and hinged thereto, substantially as set forth.

4. In a corn cutter and shocker, the combination of an axle-frame carrying a horizontally swingable shock-former, carrying-wheels on spindles of the axle frame, and a platform swung under the axle-frame and hinged thereto at points in the rear of the wheel spindles when the shock-former is in corn-receiving position, substantially as set forth.



542,875. CLEANING ATTACHMENT FOR DUST-COLLECTORS. ALEXANDER DOBSON, Beaverton, Canada. Filed Mar. 7, 1895. Serial No. 540,845. (No model.)



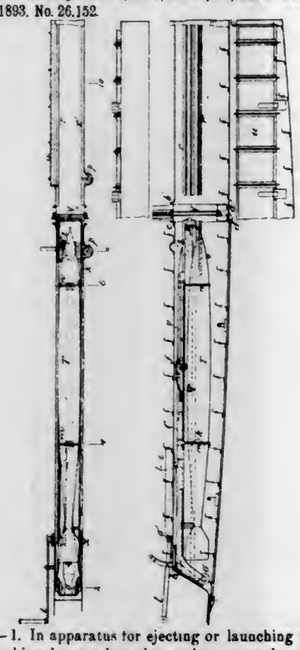
Claim.—1. A cleaning attachment for dust collectors consisting of a brush arranged to move automatically through each of the dust collecting tubes, and mechanism for moving the brush through one or more of the tubes on each partial revolution of the dust collecting cylinder, substantially as specified.

2. A cleaning attachment for dust collectors consisting of a brush arranged to be moved through each of the dust collecting tubes during the revolution of the dust collecting cylinder, the driving shaft, a cam on the driving shaft, a rocking lever arranged to be moved by the cam, and a connection between the end of the rocking lever and the brush whereby the brush is raised and lowered during the movement of the said arm, substantially as specified.

3. In a dust collector the combination of the dust collecting cylinder, consisting of a series of dust collecting tubes, a driving shaft, a cam mounted on the driving shaft, a rocking lever adapted to be operated by the revolution of the cam, a brush, cords connected to the brush and to the rocking lever, substantially as specified.

4. In a dust collector the combination of an intermittently revolving dust collecting cylinder, composed of a series of dust collecting tubes, means for closing off the current of air from one of the tubes on each partial revolution of the cylinder, a cleaning brush adapted to be lowered and raised through the said tube, a driving shaft for the dust collector, a cam mounted on the driving shaft, a rocking lever adapted to be operated by the cam, cords connected to the rocking lever and to the brush whereby the brush may be raised during the return movement of the rocking lever, substantially as specified.

542,876. APPARATUS FOR EJECTING OR LAUNCHING TORPEDOES. STEPHANE DRZEWIECKI, Paris, France. Filed Oct. 24, 1894. Serial No. 526,830. (No model.) Patented in France June 1, 1892, No. 222,062; in England May 6, 1893, No. 9,041; in Germany May 14, 1893, No. 73,174; in Italy June 30, 1893, No. 34,028, and in Austria-Hungary Dec. 5, 1893, No. 26,152.



Claim.—1. In apparatus for ejecting or launching torpedoes, a pivoted launching beam adapted to swing outward and backward from the torpedo boat, and carrying the torpedo, and means for automatically releasing the torpedo from the said beam directly the latter has moved through a predetermined angle, substantially as set forth.

2. In apparatus for ejecting or launching torpedoes, a pivoted launching beam adapted to swing outward and backward from the torpedo boat, and carrying the torpedo, means for automatically releasing the torpedo from the said beam directly the latter has moved through a predetermined angle, and means for adjusting this angle according to the direction to be given to the torpedo, substantially as set forth.

3. In a torpedo boat, the combination of a launching recess open to the exterior and a charging recess, with a movable frame adapted to be transferred from one recess to the other, and a launching beam pivoted to the said frame, substantially as set forth.

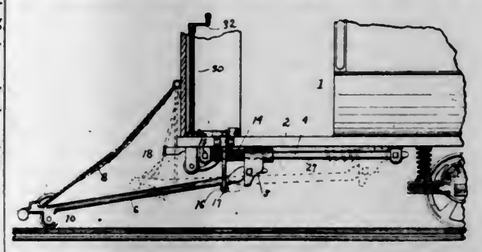
4. In a torpedo boat, the combination of a pivoted launching beam, with a launching lever engaging with the said beam to start the beam until the resistance of the water, due to the forward movement of the boat automatically completes the required movement on the hinge.

5. In a torpedo boat, the combination of a pivoted launching beam adapted to swing outward and backward, movable arms on the said beam to embrace the torpedo, with a hawser, adjustable in length, adapted to limit the movement of the beam, and means actuated by the hawser when the beam has reached the end of its movement to open the said arms to release the torpedo and the motor of the torpedo simultaneously, substantially as set forth.

6. In a torpedo boat, the combination of a pivoted launching beam provided with a series of clips for the hawser, with a windlass drum and a hawser attached at one end to the windlass drum and at the other to the said beam, substantially as and for the purpose set forth.

7. In a torpedo boat, the combination of a launching beam provided with upper and lower claws, with a charging chamber provided with rails to guide the lower claws, the upper claws being capable of being raised to admit of the introduction of the torpedo, substantially as set forth.

542,877. LIFE-SAVING NET FOR CARS. LAWRENCE DULLIGAN, Rochester, N. Y. Filed Sept. 16, 1893. Serial No. 485,712. (No model.)



Claim.—1. The combination with the vehicle, of the ways thereon, the slides movable on the ways, the net-frame pivoted to said slides, springs for moving the slides forward, and retaining devices for holding the net-frame retracted against the tension of the springs, substantially as described.

2. The combination with a vehicle, of the net-frame movable on ways, the net having the aperture, and the supplemental apron or net connected to the forward part of the frame and the vehicle, and adapted to cover the aperture in the main net when the frame is moved outward and uncover it when moved inward: substantially as described.

3. The combination with a vehicle, of the net-frame movable on ways, the net having the aperture, the supplemental apron or net connected to the vehicle, and adapted to cover the aperture in the main net, and the rods connected to the end of the apron and to the front of the main frame, whereby the aperture will be covered when the frame is projected and uncovered when retracted: substantially as described.

4. The combination with a vehicle the frame movable on ways, the net connected thereto, and to the vehicle having the aperture and the frame around it, of the supplemental apron or net, the frame connected to it and to the forward part of the main net frame, whereby when the net is projected the apron will cover the aperture, but when retracted it will be uncovered: substantially as described.

5. The combination with the vehicle, the net frame, having the rock shaft at the front provided with the rearwardly-extending retaining arms, of the net attached at one end to the rock shaft whereby the weight of a body in the net will rotate the rock shaft and elevate the arms: substantially as described.

6. The combination with the vehicle, the net frame having the rock shaft at the front provided with the retaining arms, and the spring for rotating it and holding the arms down, of the net attached at one end to the rock shaft, whereby the weight of a body in the net will rotate the rock shaft and elevate the arms: substantially as described.

7. The combination with a vehicle, a frame movable thereon, a net connected to said frame and springs for projecting the frame, of a shaft adapted to be rotated by the operator, and a retaining device therefor, and separable connections between said shaft and the net frame, whereby the net-frame may be retracted by the operation of the shaft and then released allowing the springs to project it, substantially as described.

8. The combination with a vehicle, guides thereon, a frame sliding on said guides, and springs for projecting said frame, of the rotatable shafts, cords connecting them with the frame, and retaining devices for holding the frame retracted against the tension of the springs, substantially as described.

9. The combination with a vehicle, a frame movable thereon, springs for projecting it and a net connected to said frame, of the shafts having the gears and the pulleys thereon, the cords connecting the pulleys and net frame, the rotatable shaft having the gear, retaining devices therefor, and means for disconnecting the gear on said shaft from those on the pulley shafts: substantially as described.

10. The combination with a vehicle, a frame movable thereon, springs for projecting it and a net connected to the frame, of a shaft having a pulley and a gear thereon, a cord connecting the pulley and net frame, a shaft having a gear meshing with the first mentioned one and a lever for disconnecting the gears under the control of the operator: substantially as described.

11. The combination with a vehicle, a frame movable thereon, springs for projecting it and a net connected to the frame, of a shaft having a pulley and a gear thereon, a cord connecting the pulley and net frame, a shaft having a gear meshing with the first mentioned one, a bolt holding the gears in engagement, and a lever operating to withdraw the bolt and disconnect the gears: substantially as described.

12. The combination with a vehicle, a frame movable thereon, springs for projecting it and a net connected to the frame, of a rotary shaft and connections between it and the frame for retracting

the latter, a second shaft and retaining devices therefor, and a detachable clutch between said two shafts: substantially as described.

13. The combination with a vehicle, of the frame movable thereon, having the inclined pivoted side bars and the net connected to said frame, of the projections engaging the side bars of the frame, and adapted to lift their forward ends as the frame is retracted: substantially as described.

14. The combination with a vehicle, of the frame movable thereon, having the inclined pivoted side bars, the rollers at the front and the net connected to the frame, of the rock shafts having the projecting arms adapted to be turned in line with or away from the side bars of the frame, whereby the bars may be lifted as the frame is retracted, when desired: substantially as described.

15. The combination with a vehicle, of the pivoted frame movable on ways, springs for projecting said frame, and retaining devices for holding the frame retracted against the tension of the springs, substantially as described.

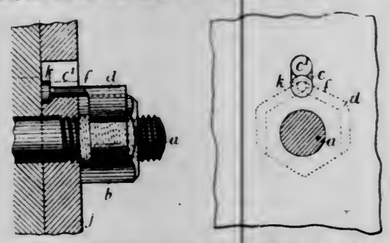
542,878. LOCKING NUTS. JULIUS EVINOF, London, England. Filed Nov. 19, 1894. Serial No. 529,294. (No model.)



Claim.—1. A nut lock comprising a strap having bifurcated portions for engaging a nut to hold it from movement and a split pin formed integrally therewith and lying in a plane parallel with the plane of said bifurcated portions substantially as described.

2. The combination with a bolt provided with a transversely extending aperture and a nut, of a nut lock comprising a strap having bifurcated portions for engaging the nut, to hold it from movement and a split pin lying in a plane parallel with the plane of the bifurcated portions for engaging the transversely extending aperture in the bolt, substantially as described.

542,879. NUT-LOCK. JULIUS EVINOF, London, England. Original application filed Nov. 19, 1894, Serial No. 529,294. Divided and this application filed May 2, 1895. Serial No. 547,869. (No model.) Patented in England Feb. 8, 1894, No. 2,798; in France Nov. 20, 1894, No. 243,021; in Belgium Nov. 22, 1894, No. 112,840; in Canada Jan. 14, 1895, No. 47,382, and in India Feb. 23, 1895, No. 345.

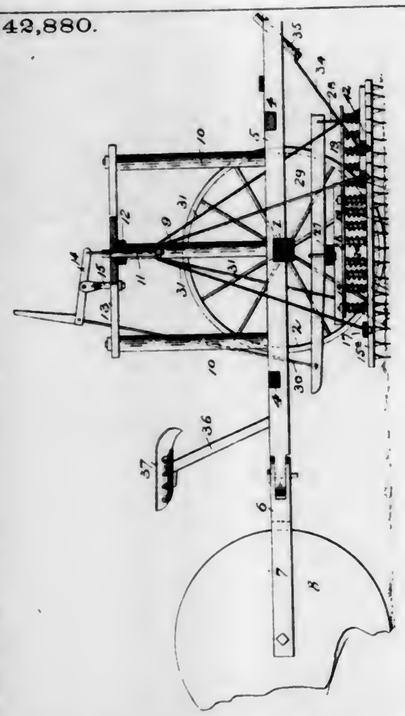


Claim.—The combination with the parts to be joined including a plate provided with a recess having its front wall provided with a key hole slot, of a bolt and nut, and a locking device comprising a bifurcated portion for engaging the sides of the nut to prevent it from turning and a stem having a headed portion for engaging said key hole slot and recess, substantially as described.

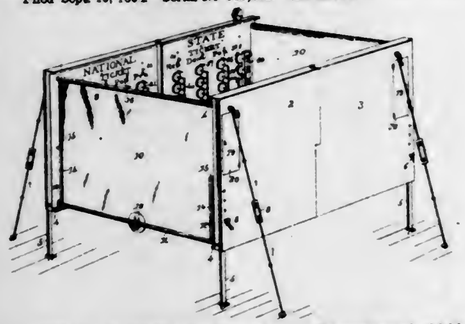
542,880. HARROW. JOHN W. FARIS, Round Rock, Tex. Filed Sept. 20, 1894. Serial No. 523,608. (No model.)

Claim.—In a harrow, the combination with the central beam, the axle supporting the same, the uprights secured to said beam, the connecting bar, the vertically movable rod passing therethrough, the lever to which said rod is pivotally secured, and the downwardly depending wires secured to the lower end of said rod, of the transverse bars to which said wires are secured, the teeth bars connected therewith, provided with teeth, the plates located underneath said bars and provided with apertures through which the teeth pass, the vertically movable pins passing through the teeth bars and secured to said plates, the coiled springs, the transverse bars to which the upper ends of said pins are secured, the horizontal bars secured thereto, the cross bar, the lever pivotally connected therewith, the bail secured to two of the teeth bars and pivotally connected with the front end of the lever and the rod connecting said lever with the upper lever, substantially as described.

542,880.



542,881. VOTE-REGISTER. THOMAS G. FERGUSON, Colby, Kans. Filed Sept. 19, 1894. Serial No. 523,482. (No model.)



Claim.—1. A voting booth having side walls constructed of folding sections, and swinging end gates having horizontal fulcrums and journaled at their extremities, respectively, in the side walls to form the connection therebetween, substantially as specified.

2. A voting booth having side walls constructed of connected folding sections each provided contiguous to its outer end with an extension leg to hold the lower edge of the section above the surface upon which the legs rest, and means for locking the legs at the desired extension, and swinging end gates having their journals arranged in a common horizontal plane and mounted, respectively, in the end walls and forming the connections therebetween, substantially as specified.

3. A booth having side walls and end gates constructed of crank shafts journaled in the side walls, and spring actuated guards or curtains attached to the crank shafts and mounted upon spring rollers, substantially as specified.

4. In a voting booth, the entrance and exit gates having spring-rolled guards or curtains connected at one end to spring-actuated rollers, and rotary members or frame-pieces connected to the other ends of said guards or curtains to extend the latter and hold them in their normal position, substantially as specified.

5. In a voting booth, the entrance and exit gates comprising spring-actuated rollers, guards or curtains attached at their upper ends to said rollers and adapted to be reeled thereon when released, and frame-pieces connected to the lower ends of the guards or curtains to normally hold the latter extended and to return the same to their extended position after having been reeled, and connections between said gates, whereby the entrance gate is locked after each operation and is released by the subsequent operation of the exit gate, substantially as specified.

6. The combination with a booth having entrance and exit gates including rotary members, of ratchet wheels carried by the rotary members, a locking pawl arranged in operative relation with the ratchet wheel carried by the entrance gate, a projection on said ratchet to engage the locking pawl and move the same to its locking position, and connections between said locking pawl and the ratchet wheel of the exit gate, whereby the movement of the latter trips said pawl, substantially as specified.

7. The combination with a booth having entrance and exit gates, of ratchet wheels carried by said gates, a locking pawl having a locking arm to engage a projection on the ratchet wheel carried by the entrance gate, and an operating arm arranged in the path of a cam on said ratchet wheel, a bell crank lever having one of its arms arranged in the path of a pin on the ratchet wheel carried by the exit gate, and connections between said bell crank lever and the locking pawl whereby when the exit gate is operated the locking pawl is moved to disengage its locking arm from the projection on the ratchet wheel of the entrance gate, substantially as specified.

8. A counting-mechanism having a rotary part or member consisting of a pivoted shell or casing, means for limiting the rotary movement of this shell or casing, a series of disks arranged within and inclosed by the shell or casing, and a single pawl mounted within and carried by the shell or casing and adapted to engage one or more of the disks to communicate forward or backward rotary movement thereto from the shell or casing, and means for tripping the pawl to disengage it from all of the disks, substantially as specified.

9. A counting mechanism having a rotary part or member, means for limiting the rotary movement thereof, a registering wheel concentric with the rotary part and provided with parallel sided peripheral notches, a pawl carried by the rotary part and provided with a radially disposed nose for engagement with said notches, whereby the registering wheel may be turned in either direction by the manipulation of the rotary part, and means for tripping the pawl, substantially as specified.

10. A counting mechanism having a rotary part or member, means for limiting the rotary movement thereof, a series of co-axially mounted registering wheels of graded diameters provided with peripheral parallel sided notches, the major and intermediate wheels having elongated notches which extend inward to the depth of the notches in the minor wheel, a pawl carried by said rotary part for engagement with said notches, and means for tripping the pawl, substantially as specified.

11. A counting mechanism having a rotary part or member, means for limiting the rotary movement thereof, co-axially mounted registering wheels of graded diameters provided with peripheral parallel sided notches, a pawl carried by the rotary part to engage said notches, means for communicating motion to the wheels of higher denomination when those of lower denomination have completed a revolution, and a tension device for preventing excessive movement of the wheels, substantially as specified.

12. In a voting apparatus, the combination with counting mechanisms arranged in operative relation with slots for exposing the registered numbers, of rotary face plates adapted to close said openings and provided with slots to register therewith, means for attaching a designating card to each face plate, and means for turning the face plates simultaneously to cause the registration of said openings, substantially as specified.

13. In a voting apparatus, the combination with a booth and counting mechanisms arranged therein in operative relation with openings for exposing the registered numbers, slotted plates arranged adjacent to said openings to normally close the same, and capable of adjustment to cause registration of their slots with the openings, a rock-shaft, connections between said rock-shaft and the plates, a pawl arranged in operative relation with a ratchet wheel on the rock shaft, and means for tripping said pawl and turning the rock-shaft to expose the registered numbers, substantially as specified.

14. In a voting apparatus, the combination with a plurality of counting mechanisms arranged in horizontal series and having rotary shells or casings, inclosed registering wheels, and pawls carried by the shells or casings to engage said wheels, of a horizontal closed guide arranged contiguous to and equal in length with each series of counting-mechanisms, balls or rollers arranged loosely in said guide and limited in movement by the ends of the latter, locking tongues connected, respectively, with said shells or casings, extending through openings in the upper and lower sides of the guide and provided with enlarged lower extremities, whereby when one of the rotary parts is operated the enlarged end of the tongue connected thereto is brought between contiguous balls or rollers in the guide and forces said balls or rollers into locking engagement with the tongues connected to the other shells or casings of the series, and connections between each shell or casing of a series and corresponding shells or casings of the other series, whereby the corresponding mechanisms of a plurality of series may be simultaneously operated, substantially as specified.

15. In a voting apparatus, the combination of counting mechanisms having rotary parts, means for operating said rotary parts independently, rotary registering wheels, pawls carried by said rotary parts to engage the registering wheels, bell crank levers mounted co-axially with the rotary part and provided with projections to engage projecting extremities of said pawls, and connections between said levers, substantially as specified.

16. In a voting-apparatus, the combination with counting-mechanisms having rotary parts capable of a limited rotary movement, means for operating said parts independently, rotary registering-wheels co-axial with the rotary parts, and pawls carried by the rotary parts to engage the registering wheels and communicate forward and backward movement thereto, of limiting guides secured to the rotary-parts, bell-crank levers mounted co-axially with the rotary-parts, with one arm operating in said guides and capable of movement through an arc of double the extent of the guides, whereby said levers or the rotary parts may be moved independently through an arc equal to the length of said guides and whereby motion may be communicated from the levers to the rotary parts when the arms of the levers, which are arranged in the guides, come in contact with the extremities of such guides, means carried by the bell-crank levers to engage and trip said pawls when backward motion is communicated by said levers to the rotary parts, and connections between the levers whereby they may be operated simultaneously to communicate simultaneous forward or backward movement to the rotary-parts, substantially as specified..

17. In a voting-apparatus, the combination with counting-mechanisms having rotary parts capable of a limited rotary movement, means for operating said parts independently, rotary registering-wheels coaxial with the rotary-parts, and pawls carried by the rotary-parts to engage the registering-wheels and communicate forward and backward movement thereto, of limiting guides secured to the rotary-parts, bell-crank levers mounted co-axially with the rotary-parts, with one arm operating in said guides and capable of movement through an arc of double the extent of the guides, whereby said levers or the rotary parts may be moved independently through an arc equal to the length of said guide and whereby motion may be communicated from the levers to the rotary-parts when the arms of the levers, which are arranged in the guides, come in contact with the extremities of such guides, means carried by the bell-crank levers to engage and trip said pawls when backward motion is communicated by said levers to the rotary-parts, rods connecting the other arms of said bell-crank levers, gears connected respectively, to said rods, means for communicating forward or backward rotation to one of the gears to actuate the series of bell-crank levers connected with the rod affected by said gear, and thereby communicate motion to the rotary parts in connection with which the several bell-crank levers are arranged, said means consisting of pinions, meshing, respectively, with the gear-wheels and having exposed cranks, and said pinions being adapted to communicate motion to the gears through the arc of a circle, swinging-arms mounted co-axially with said gears and having slotted connections with the gears, whereby a gear and the swinging-arm with which it is connected are capable of independent relative movement through an arc of one-half the extent of rotation of the gear, and connections between said swinging-arms, whereby they may be operated simultaneously to return the gears to their normal positions and thereby re-set the counting-mechanisms, substantially as specified.

18. In voting apparatus, the combination of a booth having a gate, a rotary-wheel connected with the gate and adapted to be turned through a complete revolution when the gate is opened and closed, counting-mechanisms having rotary-parts capable of a limited rotary movement, registering-wheels, means for communicating motion from the rotary parts to the registering-wheels, levers mounted co-axially with the rotary-parts and having a limited movement independently of such parts, said levers being arranged in operative relation with the means for communicating motion from the rotary-parts to the registering-wheels and being capable of movement through an arc of double the extent of movement of the rotary parts, rods connecting said levers in series to communicate simultaneous motion thereto, gears connected to said rods and capable of limited rotary movement, independent means for communicating motion to said gears, swinging-arms mounted co-axially with the gears and provided with studs engaging slots in the gears, said slots being adapted to allow independent movement of the gears and the swinging-arms through an arc of one-half the extent of movement of the gears, a rod connecting said swinging arms, whereby simultaneous motion may be communicated thereto and from them to the gears, and a connecting-rod between one of said arms and the wheel which is actuated by the gate, said wheel being adapted to impart to the swinging-arms, during each revolution, a forward movement through an arc which is equal in extent to the movement of the gears and a subsequent re-

turn movement of equal extent, whereby each rotation of the wheel, which is actuated by the gate, returns all of the gears which are in operative relation with the connected swinging-arms to their normal positions, and then moves the swinging-arms forward a distance equal to the length of the slots, by which, connection is effected between the swinging-arms and the gears to provide for subsequent forward movement of the gears independently of said swinging arms, substantially as specified.

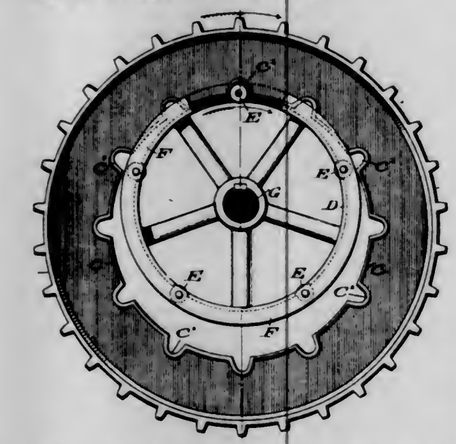
19. In a voting apparatus, the combination with counting mechanisms, levers, and connections between the levers and the counting mechanisms, of a gear, connections between the gear and said levers, an arm mounted co-axially with the gear and having a sliding connection with the gear, and means for operating the gear, substantially as specified.

20. In a voting apparatus, the combination with a gate, counting mechanisms, and levers arranged in operative relation with the counting mechanisms and having limited movement independently thereof, of a gear connected with said levers, an arm mounted co-axially with said gear and having a limited movement independently of the gear, and connections between said arm and the gate, substantially as specified.

21. The combination with counting mechanisms having rotary parts capable of limited movement, said counting mechanisms being arranged in parallel series, and locking devices for said rotary parts, whereby when the rotary-part of one counting mechanism of a series is actuated the rotary-parts of the other counting mechanisms in the series are locked, said locking devices comprising a guide or way, a plurality of balls or rollers arranged in the guide or way, and locking tongues connected, respectively, to the rotary parts of the counting mechanisms and provided with shouldered or enlarged portions which are adapted to enter the guide or way and expand the contained balls or rollers when the rotary part, to which the tongue is connected, is operated, of a ballot-box having an inlet opening, a chute adapted to register with said opening and normally held out of registration therewith, a rotary-part operatively connected with said chute to adjust the latter in or out of registration with the inlet opening, and a locking tongue corresponding in construction with those connected with said counting-mechanisms and arranged in operative relation with the said guide, whereby when the rotary part of the ballot box mechanism is operated to cause registration of the chute with the inlet opening of the box, the rotary parts of the counting mechanisms are locked against movement, a ballot-box and connections, as described, being arranged in connection with each series of counting-mechanisms, substantially as specified.

22. The combination with a ballot box having a horizontally elongated inlet opening, of a pivotal chute adapted to register with said opening and mounted upon a horizontal pivot whereby when out of alignment with the opening it is inclined downward toward its inner end to discharge a contained ballot, a stationary stop plate adapted to close the inner end of the chute when the outer end of the latter is in communication with the opening, a guard depending from the outer end of the chute to close the opening when the chute is out of alignment therewith, and means for operating the chute, substantially as specified.

542,882. GEARING. AUSTIN A. FISHER, Allentown, Pa. Filed Jan. 19, 1895. Serial No. 535,471. (No model.)



Claim.—1. In a device of the character described, the shaft or axle G, the wheel D mounted thereupon, and having rollers mounted on its periphery, in combination with an outer wheel having an exterior toothed periphery B, and an inner circle C with recesses C' therein, adapted to be engaged by said rollers, said inner wheel forming the only support for said outer wheel, and said shaft G being adapted to receive the initial power alone, substantially as described.

2. The herein described gearing consisting of the shaft G, the wheel D attached thereto and rotatable in unison therewith, the rollers E mounted on said wheel, the outer wheel A having the exterior toothed periphery B, and the inner recessed circle C adapted to be engaged by said rollers and one of said wheels being provided with flanges, whereby any lateral displacement relatively to each other is prevented said inner wheel affording the only support for said outer wheel, and said shaft G being adapted to receive power initially, substantially as described.

542,883. VEHICLE-AXLE POINT. WILLIAM G. FORD, Tyler, Tex. Filed Sept. 5, 1894. Serial No. 522,198. (No model.)

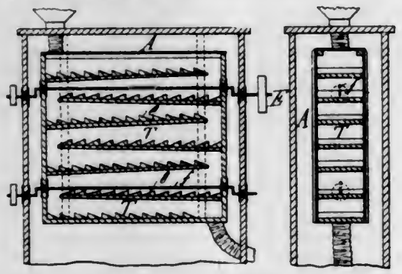


Claim.—1. A vehicle axle point, consisting of a thimble adapted to fit over and around an axle point, and having an enlargement d', to fit over the enlargement a', of the axle; a flange d^2, to extend over the shoulders of said axle; and flange d^3, adapted to be bent down around the square part of the axle, substantially as shown and described and for the purposes set forth.

2. A vehicle axle point, consisting of a thimble adapted to fit over and around an axle point, and having an enlargement d', to fit over the enlargement a', of the axle; a flange d^2, to extend over the shoulders of said axle; and flange d^3, adapted to be bent down around the square part of the axle, a portion of said shrunken part extending back on the face of said axle and adapted to be secured thereto, substantially as shown and described and for the purposes set forth

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542,884. SIFTING APPARATUS. OTTO FUCHS, Buttstaedt, Germany. Filed June 20, 1894. Serial No. 515,087. (No model.) Patented in Germany Nov. 28, 1892, No. 74,950; in Switzerland May, 14, 1894, No. 8,478; in Luxemburg May 15, 1894, No. 2,028; in England May 17, 1894, No. 9,703; in Belgium May 17, 1894, No. 110,010; in Norway May 19, 1894, No. 3,825; in Italy May 28, 1894, No. 36,469; in Portugal May 30, 1894, No. 1,904; in Spain June 1, 1894, No. 15,899; in Canada June 26, 1894, No. 46,929; in Hungary Sept. 12, 1894, No. 1,100, and in Austria Oct. 11, 1894, No. 44/5,411.



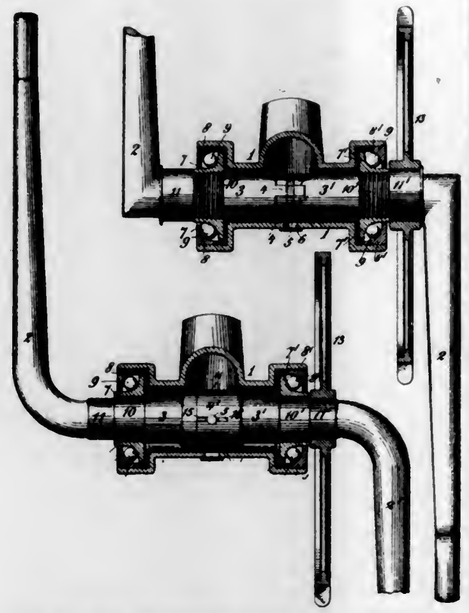
Claim.—1. A sifting-apparatus comprising a gauze-inclosed box, a casing tightly inclosing said box, one or more shafts, having cranked portions on which said box is mounted, and means for imparting continuous revolution to said shafts, substantially as described.

2. A sifting apparatus, comprising a gauze-inclosed box, a tightly closed casing within which said box is arranged, a plurality of shafts having cranked portions on which said box is mounted, and means for revolving said shafts continuously and in unison, substantially as described.

542,885. CRANK. WILLIAM E. GARD, Brooklyn, N. Y. Filed Mar. 5, 1895. Serial No. 540,634. (No model.)

Claim.—1. In a crank, the combination, with two crank arms, and two crank shaft sections, secured each to one of said crank arms, and having ends adapted to interlock, of independent bearing cones mounted upon said crank shaft sections, and facing toward the crank arms, and other bearing cones, suitably supported and adapted to engage with said shaft cones, and facing toward the center of the crank-shaft, substantially as described.

2. In a crank, the combination, with two crank arms, and two crank shaft sections, secured each to one of said crank arms, and having ends adapted to interlock, of independent bearing cones mounted upon said crank shaft sections, and facing toward the crank arms, other bearing cones, suitably supported and adapted to engage with said shaft cones, and facing toward the center of the crank shaft, and a key, passing through the interlocking ends of said shaft sections and adapted to hold the same together, substantially as described.



3. In a crank, the combination, with two crank arms, and two crank shaft sections, secured each to one of said crank arms, and having mortised and tenoned ends adapted to interlock, of independent bearing cones mounted upon said crank shaft sections, and facing toward the crank arms, other bearing cones, suitably supported and adapted to engage with said shaft cones, and facing toward the center of the crank shaft, and a screw passing through the interlocking ends of said shaft sections and adapted to hold the same together, substantially as described.

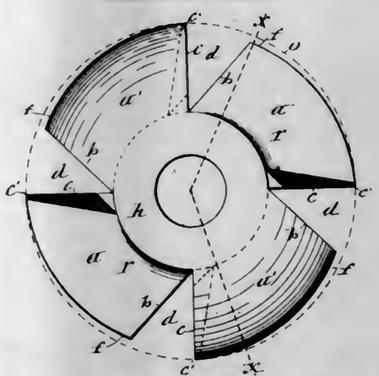
4. In a crank, the combination, with two crank arms, and two crank shaft sections, secured each to one of said crank arms, and having ends adapted to interlock, of independent bearing cones mounted upon said crank shaft sections, and facing toward the crank arms, other bearing cones, suitably supported and adapted to engage with said shaft cones, and facing toward the center of the crank shaft, and means for stiffening the joint between said crank shaft sections at said joint and preventing flexure thereat, substantially as described.

5. In a crank, the combination, with two crank arms, and two crank shaft sections, secured each to one of said crank arms, having ends adapted to interlock, and having in said ends longitudinal and registering slots adapted to receive keys, of bearing cones mounted upon said crank shaft sections, other bearing cones suitably supported and adapted to engage with said shaft cones, flat keys, lying within the slots in the ends of said shaft sections, and arranged to stiffen the joint between said shaft sections and prevent flexure thereat, and a key, passing through the interlocking ends of said shaft sections and holding the same together, substantially as described.

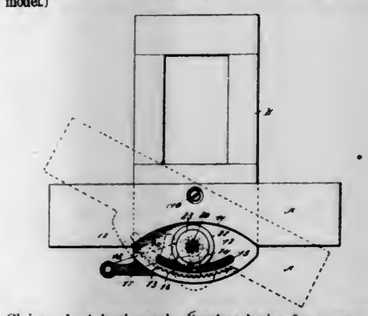
6. The herein described crank, consisting of two separable crank sections, each consisting of a crank arm having secured rigidly thereto or formed integrally therewith a section of the crank shaft, the ends of said crank-shaft sections being adapted to interlock and being provided with an equal number of corresponding and registering mortises and tenons, whereby both of said crank sections may be made alike, and means for holding said crank sections together, substantially as described.

542,886. ROTARY CUTTER FOR WOODWORK. GEORGE D. GILLETTE, Oswego, N. Y., assignor to Thomson Kingsford, same place. Filed Dec. 10, 1894. Serial No. 531,304. (No model.)

Claim.—The within described rotary cutter consisting of the hub —*h*—, having radially extending from it the blades —*a*—*a'*—, each of which blades is beveled on one side from the hub to the periphery uniformly throughout said side of the blade and formed at the opposite side with a straight faced rabbet —*r*— extending likewise over the entire side of the blade and having on its front the straight cutting-edge —*c*— extending from the periphery to the hub and beveled from the beveled side of the blade rearward to the rabbeted side thereof, said bevels and rabbets with their cutting edges being reversed on alternate blades, and said edge of each blade projecting laterally beyond the rabbeted face of the blade immediately in front of it while the bevel of the cutting edge stands mostly behind the body of the blade forward of it, substantially as shown and described.



542,887. SWING-BACK ADJUSTER FOR CAMERAS. HENRY J. HALL, Wickford, R. I. Filed May 16, 1895. Serial No. 549,556. (No model.)



Claim.—1. A horizontal adjusting device for cameras, the same consisting of a support, a sill pivoted thereon, the sill and support being provided with extensions one above the other, both extensions being provided each with a transverse slot similarly located, and one of the extensions with a longitudinal slot, a rack located adjacent to the longitudinal slot, a lever, a pin carried by the lever and adapted to travel in the slots of the extensions; a pinion carried by the pin, and means for locking the pinion, as and for the purpose set forth.

2. The combination, with a support, a sill pivoted on said support, extensions from the support and sill, located one above the other, both extensions being provided with a similarly located transverse slot, and a partition projected from the sill, having a longitudinal slot meeting the transverse slot, of a lever fulcrumed upon the support, a pin carried by the said lever and adapted to travel in the slots of the extensions, a rack formed upon the sill extension adjacent to its longitudinal slot, a pinion carried by the said pin, adapted for engagement with the said rack, and a locking device carried by the pin, whereby the pinion may be held stationary at any desired point in the length of either of the slots, as and for the purpose specified.

3. A horizontal adjusting device for cameras, the same consisting of a sill, a support, extensions from the rear of the sill and support, located one above the other, the said sill and support being pivotally connected, a lever fulcrumed upon the support, carrying a pin adapted to travel in transverse slots in the said extensions and in a longitudinal slot in one of the extensions, a pinion and locking device carried by the pin, and a rack attached to the extension having the longitudinal slot, being adapted for engagement with the said pinion, as and for the purpose specified.

542,888. MOISTENER AND PAPER-WEIGHT. HARVEY R. HARRIS, Michigan City, Ind. Filed Nov. 22, 1894. Serial No. 529,618. (No model.)

Claim.—1. A moistening device, consisting of a casing having a compartment formed in it to receive moisture-retaining material, the

bottom of said compartment having an opening to expose the moisture-retaining material, and a support arranged under the casing, the opening in the bottom of the compartment being exposed on one side of said support, substantially as set forth.



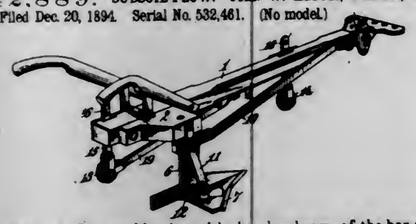
2. A moistening device consisting of a casing having an open-topped compartment formed in it to receive moisture-retaining material, the bottom of said compartment having an opening to expose the moisture-retaining material, a support arranged under the said casing, the opening in the bottom of the compartment being exposed on one side of the said support, and a cover for the open top of the compartment, substantially as set forth.

3. A moistening device consisting of a casing having a lower part, and an overhanging upper portion the bottom of which is open, said casing having a compartment adapted to receive absorbent material formed in it, said compartment extending into the overhanging portion of the casing and having an inclined bottom the lower end of which is arranged adjacent to the open bottom of said overhanging portion of the casing, substantially as set forth.

4. A moistening device consisting of a casing having a compartment formed in it to receive moisture-retaining material, said compartment having its bottom provided with an opening to expose the moisture-retaining material and means for supporting said casing with the bottom of the compartment in an inclined position and with the opening therein exposed, substantially as set forth.

5. A moistening device consisting of a casing having a lower part and an upper part provided with an overhanging rounded projecting portion, the bottom of which is open, said casing having formed in its upper part a compartment, the bottom of which is inclined and has its lower end arranged adjacent to the opening in the bottom of the overhanging part of the casing, and a base plate secured to the lower part of the casing and projecting therefrom under the open bottom of the casing, substantially as set forth.

542,889. SUBSOIL-PLOW. JOHN W. HEDGES, Danville, Ky. Filed Dec. 20, 1894. Serial No. 532,461. (No model.)



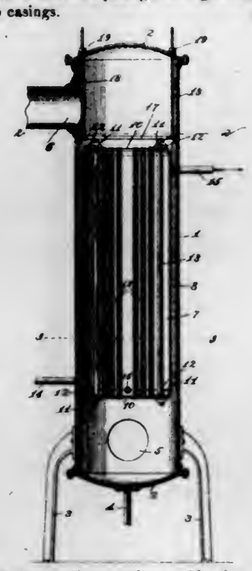
Claim.—1. The combination with the plow beam, of the bar secured to the under side of the beam, in close bearing contact therewith, and extended from the forward end of the beam to near its rear end and provided with an offsetting or laterally projecting arm having integral therewith a depending standard for attachment of a plow share or point, substantially as described.

2. The combination with a plow beam having the vertically adjustable wheels and a vertically adjustable clevis, of the bar secured to the under side of the plow beam and provided with an offsetting or laterally projecting arm formed with a depending standard, the plow share or point secured to said standard, and a scraper supported above and in rear of the point or share, substantially as described.

3. The combination of the plow beam having a laterally projecting arm near its rear end, the bar secured to the under side of the beam from its forward end to near the rear end of the beam and provided with a laterally projecting arm secured to and beneath the arm of the beam, a standard depending from the outer end of the arm on said beam, a plow point or share on said standard, the scraper, and the vertically adjustable wheels connected with the plow beam, substantially as described.

542,890. FEED-WATER HEATER. SAMUEL G. HILL and PRESTON M. MCCORMICK, St. Louis, Mo. Filed Apr. 8, 1895. Serial No. 544,893. (No model.)

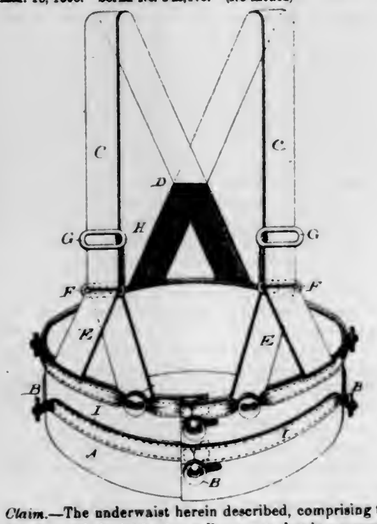
Claim.—1. In a feed water heater, a vertically arranged casing closed at both ends and constructed with suitable inlet and outlet connections, a casing having closed ends located within the first mentioned casing in such a manner as to form an annular space between said casings, suitable water inlet and discharge connections to said inner casing, a series of tubes passing through said inner casing, a blow-off pipe discharging from the interior of said inner casing, and a valve adapted to close the passage through the annular space between the two casings.



2. In a feed water heater, the combination of an outer casing closed at both ends, suitable inlet and outlet connections for said casing, an inner casing closed at both ends and so located within the outer casing as that an annular space is formed between said casings, and a ring located above the inner casing and adapted to be so manipulated as to close the passage through the annular space between the two casings.

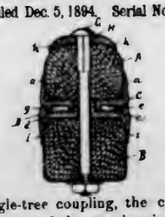
3. In a feed water heater, the combination of the outer casing 1, the inner casing 7 so located as that an annular space is formed between said casings, a ring located above the casing 7 and moving vertically within the casing 1, rods 18 passing through the top cap of the outer casing, the ends of said rods being screw-threaded, and nuts mounted upon said screw-threaded ends outside the cap, for raising and lowering said rods and ring.

542,891. UNDERWAIST. GEORGE W. HOYT, Chicago, Ill. Filed Mar. 18, 1895. Serial No. 542,175. (No model.)



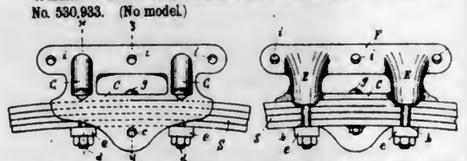
Claim.—The underwaist herein described, comprising the broad waistband provided with horizontally arranged strips or rows of braid stitched upon the outer face thereof parallel to each other, one strip along the upper edge of said waistband, and having a series of buttons slipped upon each strip of braid, and provided with shoulder-straps secured to said waistband between it and the upper strip of braid by the stitches which secure said upper strip or row to the waistband.

542,892. SINGLETREE-COUPLING. WILLIAM J. KAUFFMAN, Miamisburg, Ohio. Filed Dec. 5, 1894. Serial No. 530,932. (No model.)



Claim.—In a single-tree coupling, the combination with the single-tree and double-tree, of the step-bearing D having the hub *d*, upturned peripheral flange *g* and the lips *i*, the single-tree bearing-plate C provided with inner and outer annular flanges *c c* on its under side and having on its upper side the lips *a* provided with ribs *a'*, the single-tree cap plate H provided with lips *h* and lugs *k*, and the through bolt G, all constructed and arranged substantially as and for the purposes described.

542,893. BRACKET FOR ATTACHING SPRINGS TO VEHICLES. WILLIAM J. KAUFFMAN, Miamisburg, Ohio. Filed Dec. 5, 1894. Serial No. 530,933. (No model.)

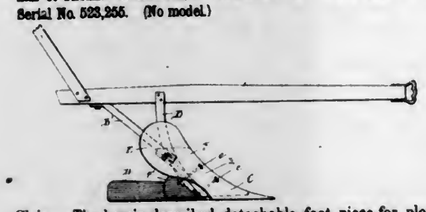


Claim.—1. A spring bracket composed of the base plate C, the top plate F, one or more bosses E, connecting the parts together, and the spring seat formed between the plates and bosses, substantially as specified.

2. An angle bracket composed of the top plate F, the bosses E, E, connecting the same to the base plate, C, and a shield *c* formed integral therewith, substantially as specified.

3. A spring bracket formed of the plates C, F, having plane face and adapted to be attached to the inclined vehicle body, and a spring seat formed of the base plate C, the bosses E, E, and means for bolting the spring in its seat, substantially as specified.

542,894. PLOW. JACKSON R. MILLER, Lincolnton, assignor of one-half to Thomas H. Remsen, Lincoln county, Ga. Filed Sept. 17, 1894. Serial No. 523,255. (No model.)

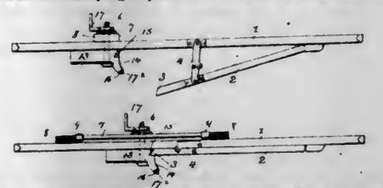


Claim.—The herein described detachable foot piece for plows, comprising an integral block or casting of suitable form, having a triangular, vertical flange upon one side which is rabbeted at its lower portion to form a seat for a land side, and a mold board flange which is upwardly and rearwardly, and downwardly and laterally inclined, and formed with a deep concave, said flanges meeting at the front in a sharp, rearwardly inclined edge *b*, the under face of said mold board flange being convexed to form a seat for a plow standard, and a bolt seat through said flange which is designed to be in line with a corresponding seat of the standard, and also with a bolt seat of the mold board, substantially as specified.

542,895. WINDOW-SCAFFOLD. DAVID W. MILLER, Harrisburg, Pa. Filed Feb. 21, 1895. Serial No. 539,276. (No model.)

Claim.—1. In a window scaffold, the combination with the main board or platform, and an outside brace attached to the under side thereof, and an adjustable sill block on the under side of the platform to engage the inner side of the window sill, of the adjustable cross beam 7 having enlarged outer ends 8, the clips 9 fixed to their inner ends, and inner projections 10, secured in position by a clamping bolt, substantially as shown and described.

2. A window scaffold consisting of the main board or platform 1 having the central longitudinal slot 5; the folding brace 2; side hinges 4; the adjustable cross bars 7; the sill block 13 having the central slot 14 and the clamping bolt 6, substantially as shown and described.

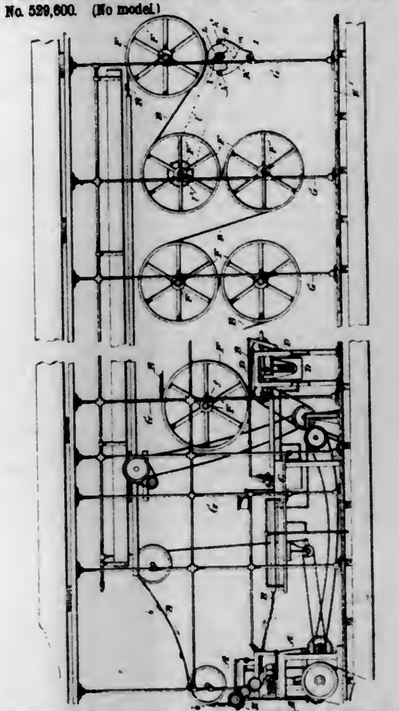


3. A window scaffold consisting of the platform 1; the folding brace 2; the hinges 4; the adjustable cross beams 7; the sill block 13; the slotted catch 16 on the inner end of the sill block adjustable by the screw 17, and the clamping bolt 6, substantially as shown and described.

4. In a window scaffold, the combination with a slotted main board or platform, and an outside brace attached to the under side thereof, of adjustable cross beams on the upper side thereof adapted to engage the window frame, a slotted adjustable sill block on the under side thereof adapted to engage the inner window sill, and a single clamping bolt engaging the cross beams with the main board or platform and passing through the slots in said main board or platform and the sill block for adjustably connecting the main board or platform, the cross beams, and the sill block together, substantially as shown and described.

5. In a window scaffold, the combination of the platform 1; the folding brace 2 having the legs 3; the beams 7, and the clamping bolt 6, with the sill block 13 having the recesses 15 adapted to receive and retain the ends of the legs 3 of the brace 2 when the parts are folded up for transportation or storage, substantially as shown and described.

542,896. APPARATUS FOR AND PROCESS OF MAKING COLORED MATCHES. CHARLES H. PALMER, Akron, Ohio, assignor to the Diamond Match Company, Chicago, Ill. Filed Nov. 22, 1894. Serial No. 529,600. (No model.)



Claim.—1. In a match making machine in combination with a suitable carrying holder for the splints and means for moving the holder to bring the splints successively past a given point, composition applying mechanism, and a color applying device in the paths of the portions of composition on the splints, as the latter are moved along by the carrier, adapted to come in contact with the sides as

well as the ends of such portions of composition, as they are moved past the color applying device, substantially as and for the purpose specified.

2. In a match making machine, in combination with a moving splint holding carrier, and means for moving the same, the composition applying mechanism to and past which the splints are carried by the movement of the carrier, a roller in the path of the heads, after they are applied to the splints, having a yielding surface adapted to take up and carry coloring matter, and arranged so that the portions of composition on the splint ends will be pressed into it, as the splints are moved along by the carrier, and means for supplying such matter to the roller, substantially as and for the purpose set forth.

3. In a match making machine, in combination with a moving splint holding carrier, and means for moving the same, the composition applying mechanism, a vat holding coloring matter and a roller revolving therein, having its periphery yielding, and adapted to take and convey the coloring material from the vat, situated so that such periphery is in the path of the heads placed upon the splints by the composition applying devices, and the heads on the splints will be pressed down into it as the splints are moved along by the carrier, substantially as and for the purpose specified.

4. In a machine for making matches, in combination with a moving splint holding carrier, the composition applying mechanism, to and past which the splints are carried by the carrier, and the head coloring mechanism placed beyond the composition applying devices, and consisting of a roller having its periphery in the path of the heads on the splints, made of soft absorbent material, as felt, situated so that the heads on the splints will be pressed down into it as the splints are moved along by the carrier and supplied with coloring material from a source of supply, substantially as and for the purpose shown.

5. In a match making machine in combination with a moving splint holding carrier carrying a body of splints traveling in different lines, as the holder is moved along, the composition applying mechanism and a series of color applying devices in the paths of different splints in the holder, and sources of supply of coloring matter of different colors for the different color applying devices, substantially as and for the purpose described.

6. In a match making machine, in combination with a moving splint holding carrier carrying a body of splints traveling in different lines, as the holder is moved along, the composition applying mechanism, and the transverse series of rollers, revolving in separate vats containing coloring matter, having their peripheries adapted to take up and carry the coloring matter, situated so that the heads applied to the splints by the composition applying mechanism, come in contact with, and take up coloring matter from the roller peripheries, substantially as and for the purpose specified.

7. In a match making machine, in combination with a moving splint holding carrier carrying a body of splints traveling in different lines as the holder is moved, the composition-applying mechanism, the transverse series of rollers beyond such mechanism having their peripheries in position to be engaged by the heads on the splints, and vats of different colored coloring materials into which the different rollers dip, substantially as and for the purpose described.

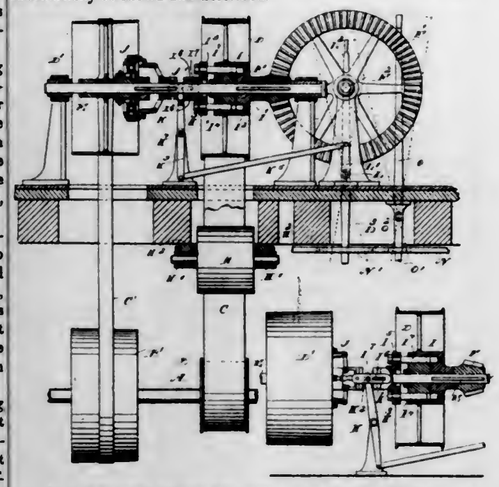
8. In combination with a splint carrying holder carrying a body of splints traveling in different lines as the holder is moved, a suitable support, the shaft carrying a series of color applying rollers to apply colors to heads on the splints and the separate color containing vats, in which the rollers revolve, having guard plates extending up between and above the rollers and between the lower ends of rows of matches in the holder to keep the colors on adjoining rollers from mingling and prevent the heads of any matches from receiving two colors, substantially as and for the purpose shown.

9. As an improvement in the art of making matches with colored heads, the process which consists in placing the splints in a moving holder adapted to hold a quantity of splints, so that the latter will travel in different lines, as the holder is moved, and applying to the heads of different parts of the body of splints as they are moved along, different colored coloring materials, substantially as and for the purpose described.

542,897. COMPOUND DRIVING-GEAR. THOMAS H. SAVERY, Wilmington, Del. Filed Aug. 23, 1894. Serial No. 521,114. (No model.)

Claim.—1. A compound driving gear, comprising a fast speed pulley and a slow speed pulley, both adapted to be connected with the driving shaft, a friction clutch for locking the fast speed pulley to the driving shaft, and a positive clutch for locking the slow speed pulley to the driving shaft, the said clutches being so arranged that when the speed is changed from the slow to the fast, the positive clutch will not be unlocked from the driving shaft until and after such instant of time as the fast speed pulley becomes locked by its friction clutch to the driving shaft, substantially as shown and described.

2. A compound driving gear, comprising a driven shaft carrying a large and a small pulley, a fast speed pulley connected by a belt with the said large pulley, a slow speed pulley connected by a belt with the small pulley, a driving shaft on which the said fast speed pulley and slow speed pulley are held loosely, a friction clutch for locking the fast speed pulley to the said driving shaft, and a positive clutch for locking the slow speed pulley to the said driving shaft, the said clutches being so arranged that when the speed is changed from the slow to the fast, the positive clutch will not be unlocked from the driving shaft, until and after such instant of time as the fast speed pulley becomes locked by its friction clutch to the said driving shaft, substantially as shown and described.



3. A compound driving gear, comprising a driven shaft carrying a large and a small pulley, a fast speed pulley connected by a belt with the said large pulley, a slow speed pulley connected by a belt with the said small pulley, a driving shaft on which the said fast speed pulley and slow speed pulley are held loosely, a friction clutch for locking the fast speed pulley to the said driving shaft, and a positive clutch for locking the slow speed pulley to the said driving shaft, the said positive clutch being arranged in such a manner that when the friction clutch locks its fast speed pulley to the driving shaft, the said positive clutch is automatically thrown out of gear to disconnect the slow speed pulley from the driving shaft, substantially as shown and described.

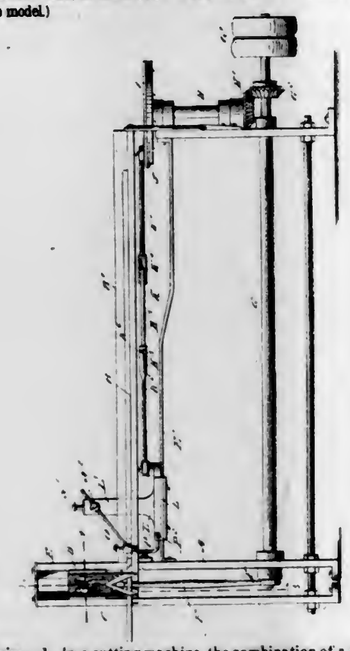
4. A compound driving gear, comprising a driven shaft carrying a large and a small pulley, a fast speed pulley connected by a belt with the said large pulley, a slow speed pulley connected by a belt with the said small pulley, a driving shaft on which the said fast speed pulley and slow speed pulley are held loosely, a friction clutch for locking the fast speed pulley to the said driving shaft, and a positive clutch for locking the slow speed pulley to the said driving shaft, the said positive clutch being arranged in such a manner that when the friction clutch locks its fast speed pulley to the driving shaft, the said positive clutch is automatically thrown out of gear to disconnect the slow speed pulley from the driving shaft, and a shifting device common to both clutches for actuating the same from a single lever, substantially as shown and described.

5. A compound driving gear, comprising a driven shaft carrying a large and a small pulley, a fast speed pulley connected by a belt with the said large pulley, a slow speed pulley connected by a belt with the said small pulley, a driving shaft on which the said fast speed pulley and slow speed pulley are held loosely, a friction clutch for locking the fast speed pulley to the said driving shaft, and a positive clutch for locking the slow speed pulley to the said driving shaft, the said positive clutch being arranged in such a manner that when the friction clutch locks its fast speed pulley to the driving shaft, the said positive clutch is automatically thrown out of gear to disconnect the slow speed pulley from the driving shaft, and a tightening pulley for the belt connecting the small pulley with the slow speed driving pulley, substantially as shown and described.

6. A compound driving gear, comprising a driven shaft carrying a large and a small pulley, a fast speed pulley connected by a belt with the said large pulley, a slow speed pulley connected by a belt with the said small pulley, a driving shaft on which the said fast speed pulley and slow speed pulley are held loosely, a friction clutch for locking the fast speed pulley to the said driving shaft, a positive clutch for locking the slow speed pulley to the said driving shaft, the said positive clutch being arranged in such a manner that when the friction clutch locks its fast speed pulley to the driving shaft, the said positive clutch is automatically thrown out of gear to disconnect the slow speed pulley from the driving shaft, a shifting device common to both clutches for actuating the same from a single lever, and a shifting bar connecting with the several shifting devices to permit the operator to simultaneously start all the machines in the series, substantially as shown and described.

7. A compound driving gear, comprising a shaft, two wheels loosely mounted thereon and adapted to be rotated at different rates of speed and connected clutches held to rotate with the shaft and slidable thereon to engage the said loose wheels, one of the clutches having a limited sliding movement on the part connecting it to the other clutch, substantially as described.

542,898. CUTTING-MACHINE. ROBERT SCHLEICHER and CHARLES HEINKELDINGER, Louisville, Ky. Filed Oct. 25, 1894. Serial No. 526,975. (No model.)

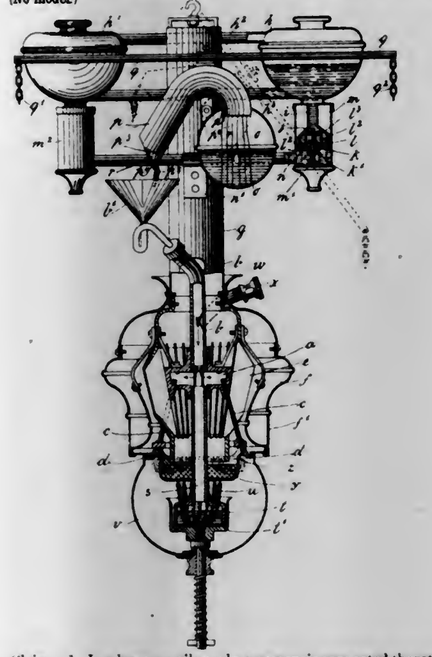


Claim.—1. In a cutting machine, the combination of a table having a raised longitudinal portion, the opposite sides of which form, respectively, longitudinal guides for the inner adjacent sides of two strips of material to be cut, a vertically reciprocating cutter head having cutters to cut the material fed along the respective guides, said cutter head being arranged between the guides with its cutters projecting in opposite directions across planes of said guides and having inclined cutting edges, the outer portions of which are lowermost and are adapted to engage the outer sides of the material on the table and hold the same firmly against the guides during the cutting operation, substantially as set forth.

2. In a cutting machine, the combination of a table having a raised slotted longitudinal portion, the opposite sides of which form, respectively, longitudinal guides for the inner adjacent sides of two strips of material to be cut, vertical guideways at one end of said table, aligned with the raised portion thereof, a cutter head vertically movable in the guideways and having at opposite sides knives projecting in opposite directions across the planes of said longitudinal guides on the table, a longitudinal guide bar located under the table, a slide on said guide bar having a post extending up through the longitudinal slot in the raised portion of the table, arms extending in opposite directions from the post over the respective longitudinal guides on the table, pawls secured to said arms and adapted to engage the material fed along said guides, a horizontal shaft journaled below the table and extending longitudinally of the machine, a vertical shaft at one end of the machine geared to said horizontal shaft and provided with a crank disk, a connecting rod connected at one end to the crank disk and at the other end to the slide, a crank on the opposite end of the horizontal shaft and a pitman connected at its lower end to said crank and at its upper end to the cutter head, substantially as set forth.

3. In a cutting machine, the combination of a table having two longitudinal guides for the inner adjacent sides of two strips of material to be cut, a vertically reciprocating cutter-head having cutters to cut the material fed along the respective guides, means for feeding the material, said cutter-heads being arranged between the guides with its cutters projecting from its opposite sides in opposite directions beyond the planes of said guides, and having inclined cutting edges the outer portions of which are lowermost and are adapted to engage the outer sides of the material opposite the guides on the table and hold the same firmly against the guides during the cutting operation, substantially as set forth.

542,899. REGENERATIVE HYDROCARBON-LAMP. JULIUS SCHULER, Berlin, Germany. Filed July 19, 1894. Serial No. 517,958. (No model.)



Claim.—1. In a lamp, an oil supply, a reservoir connected thereto, a pivoted pipe connected to the top of the reservoir, a wick placed in the pipe and extending down into the reservoir, and means connected to the pipe for tilting it, combined with a pipe, into which the oil drips, and a burner where the oil is vaporized and burned, substantially as shown.

2. In a lamp, an oil supply, provided with a valve in its lower end, a chamber into which the lower end of the oil supply projects; a reservoir connected to said chamber, a pipe, provided with a wick, and pivoted in the top of the reservoir, a rod connected to the pipe, and cords, chains, or wires connected to the ends of the rod for operating it; combined with a pipe into which the oil drips, and burner at the lower end of the pipe, substantially as described.

3. A main reservoir, a pipe leading therefrom, a second reservoir connected to the main one, by the pipe, and a curved pipe pivoted above the reservoir *o*, and having a wick placed therein, combined with a tilting rod for adjusting the curved pipe, and a pipe, connecting with the retort, and into which the oil is fed, substantially as shown.

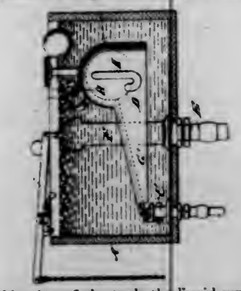
4. The second reservoir *o*, the tilting curved pipe pivoted above the reservoir, and the wick placed in the pipe, combined with a receptacle for holding spirits, and the pipe *b*, the receptacle being connected with the pipe, substantially as specified.

542,900. CONTROLLING DEVICE FOR TANK SUPPLY-VALVES. AUGUSTUS E. SMITH, Brookville, Pa. Filed Dec. 21, 1894. Serial No. 532,588. (No model.)

Claim.—1. The combination of the tank, the valve controlling the supply of liquid thereto, the fixed casing apertured in its lower part so as to permanently communicate with the tank, and provided with an air escape of reduced diameter, whereby the liquid will be caused to rise slower in the casing than in the tank when the supply valve is open, and a float contained in the casing and operatively connected to the said valve, substantially as described.

2. A controlling device for tank supply valves, consisting in the combination, with the supply valve, of a fixed pneumatic casing hav-

ing an air escape, a float contained in the casing controlling the supply pipe valve to retard the closing of the latter as the water accumulates in the tank, and means for automatically controlling the said air escape of the fixed pneumatic casing, substantially as shown and described.



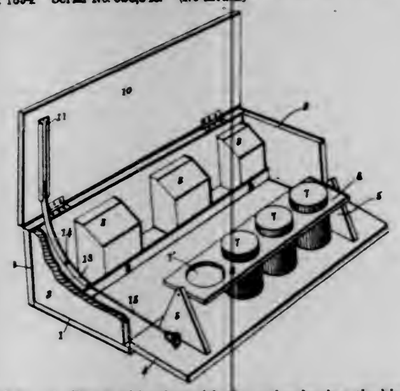
3. The combination of the tank, the liquid supply valve, the casing permanently communicating with the tank and provided with an air cock in its upper part, and a float contained in the casing and operatively connected to the said valve, substantially as described.

4. A controlling device for tank supply valves, comprising a supply valve and a float for controlling the same, a pneumatic casing arranged within the flush tank, and adapted to contain the said float, an air cock held in the top of the said casing, and a second float provided with a valve adapted to open and close the said air cock, the said second float being arranged to rise and fall with the water in the tank, the latter nearly reaching or receding from the point of over-flow, substantially as shown and described.

5. The combination of the tank, the supply valve, the float controlling said valve, the casing in which said float is contained, said casing being provided with an air escape, and a float controlling the said air escape, substantially as described.

6. The combination of the tank, the supply valve, the float controlling said valve, the casing in which said float is contained, and a vent pipe leading from the casing into the tank proper, substantially as described.

542,901. CABINET. WILLIE A. SPEAR, Byron, N. Y. Filed Nov. 9, 1894. Serial No. 528,348. (No model.)

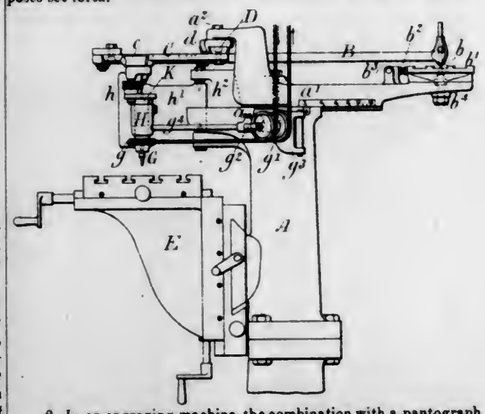


Claim.—1. The combination with the casing having the hinged lid and the front piece pivoted at its lower edge, of the arms on the front, the support loosely pivoted thereon having the apertures and the removable spice receptacles therein, the lever pivoted in the casing and connected to the lid and to the front for causing their simultaneous operation, whereby when the lid is raised the front will be turned down and the receptacles be readily accessible substantially as described.

2. The combination with the casing, the hinged lid, having the slotted guide thereon, and the front piece pivoted at its lower edge to the casing, of the arms on the front, the weighted support thereon, the lever pivoted in the casing, one end cooperating with the guide on the lid and the link connecting the lever and the front piece, substantially as described.

542,902. ENGRAVING-MACHINE. WILLIAM TAYLOR, Leicester, England, assignor of two-thirds to Thomas Smithies Taylor and Herbert William Hobson, same place. Filed May 23, 1894. Serial No. 512,790. (No model.) Patented in England Mar. 30, 1894, No. 6,420, and in Germany Apr. 5, 1894, No. 80,915.

Claim.—1. An engraving machine having a column carrying on its side a slide rest and at its top a bracket to which is pivoted one of two jointed arms carrying a drill spindle bearing, having also on its top an adjustable slide having pivoted on it a pattern table and adjustably pivoted on it a pantograph of which one arm carries a tracer over the pattern table, and another arm is adjustable in a slide pivoted to the drill spindle bearing, substantially as and for the purposes set forth.



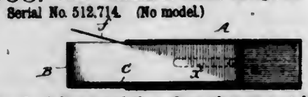
2. In an engraving machine, the combination with a pantograph of the drill spindle G carried thereby, a driving pulley g mounted on said spindle, a stay rod g^4 pivotally connected at one end to the bearing of the drill spindle, a fork g^5 adjustably mounted on the opposite end of said stay rod, means for locking said fork in its adjusted position on the stay rod, two guide pulleys mounted in said fork and a horizontally swinging link g^3 hinged at one end to said fork and at its other end to the frame of the machine, substantially as described.

3. In an engraving machine, the combination with the centrally apertured disk f^3 provided with a segment adjustably mounted in a segmental bearing, of the work holding disk f' mounted on a spindle f^2 loosely passing through the apertured disk f^3 and provided at its rear end with a fixed collar f^4, a sleeve f^5 mounted on said spindle and freely passing through the apertured disk f^3 but keyed against rotation therein, and a hand-nut f^6 fitted over the screw-threaded end of said sleeve and operating to draw the disks f' and f^3 together, substantially as described.

4. In an engraving machine, the combination with the chuck for holding circular work, of a gage wheel W provided upon its periphery with a slotted flange, a split annular spring arranged within said flange, a stop W^2 arranged upon the interior of said flange, and a flexible band encircling said flange and secured at its ends between said spring and stop, substantially as described.

5. In an engraving machine the electrical feed apparatus consisting of the sliding sleeve K carrying the drill spindle, its iron collar k and coil forming an electromagnet m, its armature n^4 hinged to ring n^3, the feed screw n, its disk n' and hand ring n^2 adjustable thereon, substantially as described.

542,903. BOX. CHARLES H. TRUAX, Chicago, Ill. Filed May 28, 1894. Serial No. 512,714. (No model.)



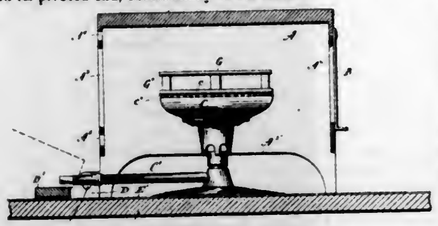
Claim.—1. A box consisting of a casing open at both ends and having an indentation at one side, combined with a drawer having a groove in the side opposite to and receiving the indentation, the said drawer being cut away to form a flap, substantially as described.

2. A box consisting of a casing A open at both ends, a drawer sliding therein, and corresponding indentations and projections permitting the drawer to be partially drawn out at one end only and limiting the movement thereof, substantially as described.

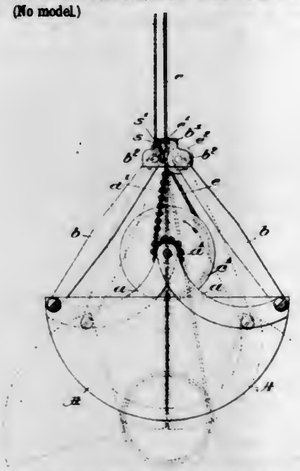
3. The combination in a box, of a casing open at both ends, a box sliding therein, a projection upon the casing or the box and a corresponding longitudinal groove or recess in the opposite side of the box or casing, substantially as and for the purpose set forth.

542,904. APPARATUS FOR STEAMING VELVETS, &c. JOSEPH H. ULLMAN, New Haven, Conn. Filed Apr. 1, 1895. Serial No. 544,013. (No model.)

Claim.—An apparatus for steaming velvets, feathers, &c., consisting in the combination with a standard or base, of a burner applied thereto, and a heavy, cast-metal box or drum pivotally connected with the base, having a smooth unincumbered operating surface or top and inclosing the burner when in its normal position and exposing the same for independent use when tilted on its pivot and supported upon its pivoted end, substantially as set forth.

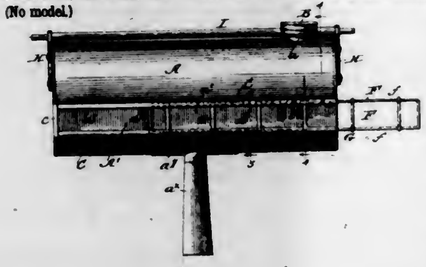


542,905. BUCKET OR GRIP FOR DREDGING OR OTHER PURPOSES. COLOORD UPTON, Salem, Mass. Filed Jan. 25, 1895. Serial No. 536,206. (No model.)



Claim.—A bucket or grip of the class described, containing the following instrumentalities, viz:—a plurality of jaws adapted to be opened and closed, an operating sheave, and an operating cable passed about the same to effect the opening and closing of the jaws, and a retarding device, to operate, substantially as described.

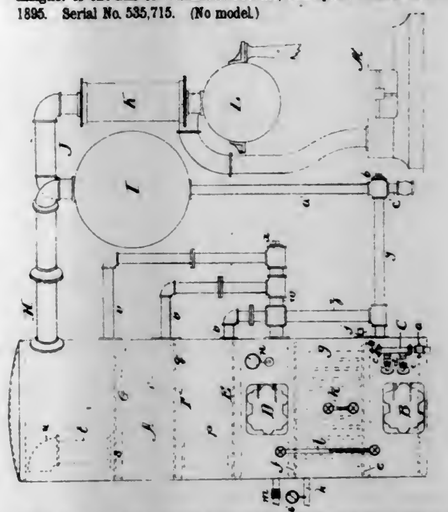
542,906. WINDOW-CLEANER. THEODORE URBAN and ALOIS KADLOWEC, Cleveland, Ohio. Filed Mar. 23, 1895. Serial No. 542,927. (No model.)



Claim.—1. The combination with the reservoir having a flat face provided with jet openings and guide flanges at the upper and lower edges of the flat portion, of a sponge holder formed of a rectangular wire frame having a series of semi-circular bail portions of wire clamped thereto, said wire frame having its longitudinal members so spaced as to fit and slide in the aforesaid guide members on the reservoir substantially as shown and for the purposes described.

2. As an improvement in window washers and driers the combination with the reservoir having bracket members H, of a drying member detachably held in the said brackets, said member comprising an inner tubular rod having an external groove extending lengthwise thereof, a rubber or analogous strip fitted over the said tube, and an external tubular spring metal clamp member having one end formed with a longitudinal head adapted to press the rubber into the aforesaid groove, and having its opposite end terminating in a head portion all arranged substantially as shown and for the purposes described.

542,907. EVAPORATOR. JOSEPH VAN RUYMBEKE, Chicago, Ill., assignor of one-half to William F. Jobbins, same place. Filed Jan. 21, 1895. Serial No. 535,715. (No model.)



Claim.—1. An evaporating apparatus, consisting of an evaporating chamber, means for heating the liquid therein, two or more dash plates within the evaporator above the level of the liquid therein, the openings in said dash plates being so arranged as to interrupt the free passage of the vapors, and independent return pipes placed externally connecting the spaces above said dash plates with the lower part of the evaporating chamber, whereby the vapors condensed on said dash plates will be returned for re-evaporation, substantially as set forth.

2. An evaporating apparatus, consisting of an evaporating chamber, means for heating the liquid therein; two or more dash plates within the evaporator above the level of the liquid therein, the openings in said dash plates being so arranged as to interrupt the free passage of the vapors; independent return pipes placed externally connecting the spaces above said dash plates with the lower part of the evaporating chamber, whereby the vapors condensed on said dash plates will be returned for re-evaporation, and a catch-all on one side of the evaporator and connected therewith, substantially as set forth.

3. An evaporating apparatus, consisting of an evaporating chamber, means for heating the liquid therein, two or more dash plates within the evaporator above the level of the liquid therein, the openings in said dash plates being so arranged as to interrupt the free passage of the vapors, independent return pipes placed externally connecting the spaces above said dash plates with the lower part of the evaporating chamber, whereby the vapors condensed on said dash plates will be returned for re-evaporation, a catch-all at one side of the evaporator, and connected therewith, and a condenser connected with said catch-all, substantially as set forth.

4. An evaporating apparatus, consisting of an evaporating chamber, means for heating the liquid therein; two or more dash plates within the evaporator above the level of the liquid therein, the openings in said dash plates being so arranged as to interrupt the free passage of the vapors, independent return pipes placed externally connecting the spaces above said dash plates with the lower part of the evaporating chamber, a catch-all at one side of the evaporator and connected therewith; a condenser connected with said catch-all, and a vacuum pump connected with said condenser for maintaining a vacuum in the apparatus, substantially as set forth.

5. An evaporating apparatus, consisting of an evaporating chamber, a steam drum in said evaporator, a salt chamber beneath said drum, a door for said salt chamber, two or more dash plates within the evaporator, the openings in said dash plates being so arranged as to interrupt the free passage of the vapors, and return pipes connecting the spaces above said dash plates with the lower part of the evaporating chamber, whereby the vapors condensed on said dash plates will be returned for re-evaporation, substantially as set forth.

6. An evaporating apparatus, consisting of an evaporating chamber, a steam drum in said evaporator, a salt chamber beneath said drum, a door for said salt chamber, two or more dash plates within

the evaporator, the openings in said dash plates being so arranged as to interrupt the free passage of the vapors, and independent return pipes placed externally leading from the spaces above said dash plates into the lower part of the evaporator for the purpose mentioned, substantially as set forth.

7. An evaporating apparatus, consisting of an evaporating chamber, means for heating the liquid therein, a dash plate mounted in said evaporator, an opening in said dash plate, a pipe extending up from said opening and a curved pipe at the upper end of said pipe, the mouth of said curved pipe being adjacent to the interior wall of the evaporator, substantially as set forth.

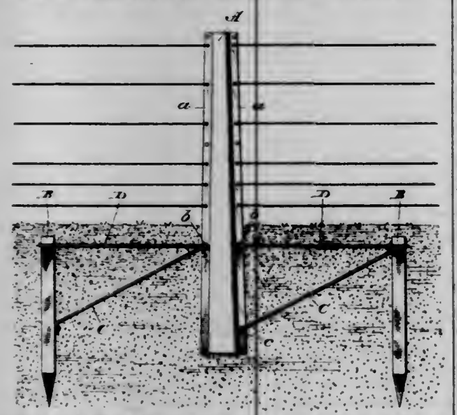
8. An evaporating apparatus, consisting of an evaporating chamber, means for heating the liquid therein, two or more horizontal dash plates arranged one above the other in said evaporator, the openings in said dash plates being so arranged as to interrupt the free passage of the vapors, pipes extending up from said openings with their upper open ends adjacent to the dash plates immediately above the same, and a curved pipe on the end of the upper pipe, the mouth of said curved pipe being adjacent to the interior walls of the evaporator, substantially as set forth.

9. An evaporating apparatus, consisting of an evaporating chamber, means for heating the liquid therein, two or more dash plates within the evaporator above the level of the liquid therein, the openings in said dash plates being so arranged as to interrupt the free passage of the vapors, return pipes *v*, *v*, *v* leading from the spaces above said dash plates, a pipe *w* with which the pipes *v* are connected, a screw plug *x* in the pipe *w*, a pipe *y* leading into the lower part of the evaporator, and a pipe *z* connecting the pipes *w* and *y*, substantially as set forth.

10. An evaporating apparatus, consisting of an evaporating chamber, means for heating the liquid therein, two or more dash plates within the evaporator above the level of the liquid therein, the openings in said dash plates being so arranged as to interrupt the free passage of the vapors, return pipes *v*, *v*, *v* leading from the spaces above said dash plates, a pipe *w* with which the pipes *v* are connected, a pipe *y* leading into the lower part of the evaporator, a pipe *z* connecting the pipes *w* and *y*, and a catch-all to one side of the evaporator and connected with the same, substantially as set forth.

11. An evaporating apparatus, consisting of an evaporating chamber, means for heating the liquid therein, two or more dash plates within the evaporator above the level of the liquid therein, the openings in said dash plates being so arranged as to interrupt the free passage of the vapors, return pipes *v*, *v*, *v* leading from the spaces above the said dash plates, a pipe *w* with which the pipes *v* are connected, a pipe *y* leading into the lower part of the evaporator, a pipe *z* connecting the pipes *w* and *y*, a vertical catch-all drum N to one side of the evaporator and connected therewith, a pipe O extending into said catch-all drum with its upper open end above the vapor pipe from the evaporator and with its lower end connected with a condenser, and a pipe *a'* connecting said condenser with the pipe *y*, substantially as set forth.

542,908. BRACE FOR FENCE-POSTS. WILLIAM VAN WERT, Irene, Ill. Filed Apr. 5, 1895. Serial No. 544,670. (No model.)

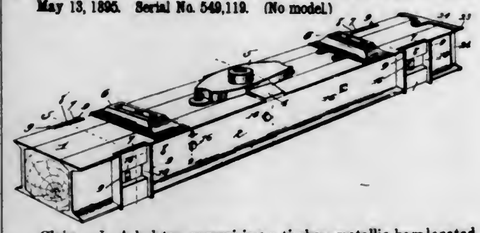


Claim.—1. In combination with a post, an underground brace therefor consisting of a pair of anchor-posts planted on opposite sides of the fence-post on a line with the fencing, brace-bars C C connecting the fence-post to the anchor-posts, one of the brace-bars being attached to the lower end of the fence-post and to the upper end of the anchor-post and the other brace-bar being connected to the fence-post directly beneath the surface of the ground and to the intermediate portion of the anchor-post, together with loops which are connected to the upper ends of the anchor-posts and to the fence-posts so as to lie on a horizontal plane, substantially as shown and for the purpose set forth.

2. In combination with a fence-post constructed substantially as shown and provided with flanges or webs *a a* on a line with the fencing, of anchor-posts B B planted beneath the surface of the ground on a line with said flanges or webs, brace-bars C C connected to the anchor-posts and to the flanges of the fence post, one of the bars inclining upwardly from the lower end of the fence-post and the other bar inclining downwardly from a point above the lower end thereof; together with loops D D connected to the fence-post and to the upper ends of the anchor-post, the pair of anchor-posts, brace-bars and loops being all positioned underground substantially as shown and for the purpose set forth.

3. In combination with a fence-post having side flanges, of anchor-posts positioned underground on a line with said flanges, brace-bars C C having bent ends for attachment to the anchor-posts, and loops D D adapted to engage with the upper ends of the anchor-posts, the terminals of said loops having eyes for attachment to the flanges of the fence-post, substantially as shown and for the purpose set forth.

542,909. CAR-BOLSTER. JOHN C. WANDS, St. Louis, Mo. Filed May 13, 1895. Serial No. 549,119. (No model.)



Claim.—1. A bolster, comprising a timber, metallic bars located upon the sides of said timber, means for holding said timber and bars together, and means for proportioning the expansion and contraction of one material relative the other.

2. A bolster, composed of two I-beams lying parallel with each other, a timber located between said I-beams, end-plates for said I-beams and timber, said I-beams being constructed with vertically aligned slots or cut-away portions in their outwardly extending flanges, vertical guides located in said vertically aligned slots, and suitable center and side-bearings for said bolster.

3. A bolster composed of two I-beams lying parallel with each other, a timber located between said I-beams, end-plates for said I-beams and timber, said I-beams being constructed with vertically aligned slots or cut-away portions in their outwardly-extending flanges and adjacent their ends, and with slots or cutaway portions in their top pair of outwardly extending flanges at the centers thereof, vertical guides having their ends engaged in the pairs of vertically aligned slots or cutaway portions, a center-bearing constructed with arms, the ends of which engage in the central pair of slots, and means for proportioning the expansion and contraction of the I-beams relative the timber and vice versa.

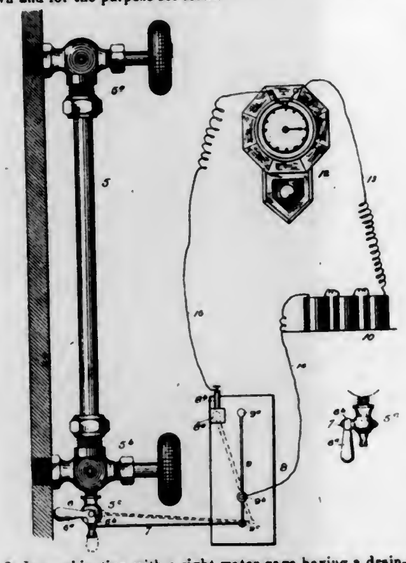
4. In a bolster, a pair of I-beams having pairs of vertically aligned slots or cutaway portions formed in their outwardly extending flanges adjacent their ends, and slots or cutaway portions formed in the outwardly extending flanges at the centers of said I-beams, for the purposes herein specified.

5. In a bolster, a pair of I-beams, a timber located between said I-beams, screw-threaded sockets located in the sides of the timber adjacent the I-beams, said sockets having rectangular recesses in their rear ends, nuts located within said recesses, bolts passing through the webs of the I-beams and the sockets, and having their ends located in said nuts, and keys for said sockets.

6. In a bolster, a pair of I-beams, a timber located between said I-beams, vertical guides, a center and side-bearings located upon said bolster, screw-threaded sockets located in the sides of the timber adjacent the I-beams, suitable locking pins for preventing the withdrawal of said sockets, said sockets having recesses formed in their rear ends, nuts located in said recesses, and bolts passing through the webs of the I-beams, through the sockets and into the nuts for locking the I-beams onto the timber.

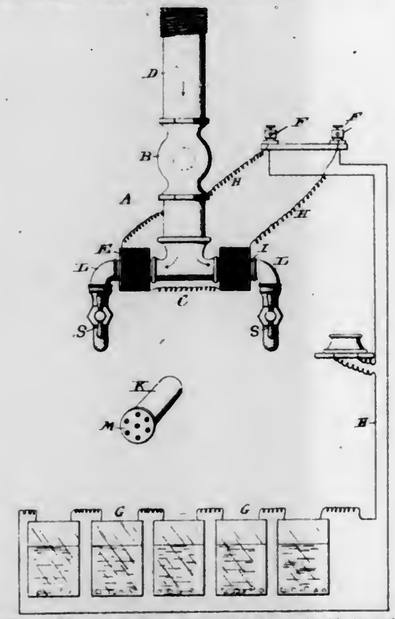
542,910. TIME-RECORDER FOR WATER-GAGES. EDWARD P. WELLS, Highlands, and EDWARD R. HUBBARD, Walden, Colo. Filed Feb. 25, 1895. Serial No. 539,592. (No model.)

Claim.—1. The combination of a water gage having a drain-cock the handle of which is provided with a projecting portion together with a circuit breaker, having a pivoted arm, a rod connected to the projecting portion of the handle of the drain cock and with one end of the pivoted arm of the circuit breaker, a contact point pivoted in the path of the arm, and a time-recorder, located in the electric circuit, the wires being connected to the contact point and to the stud upon which the pivoted arm is mounted substantially as shown and for the purpose set forth.



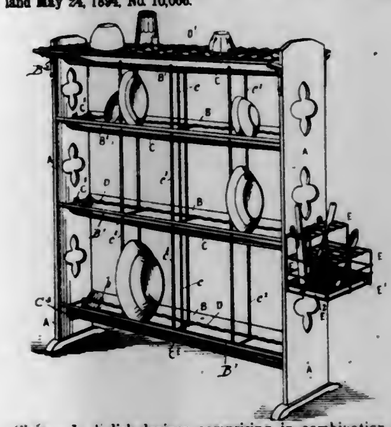
2. In combination with a sight water-gage having a drain-cock the turning-plug of which is provided with a projecting portion as shown, of a circuit breaker having an arm, a rod connecting the pivoted arm to the projecting portion of the drain-cock, a contact point positioned in the path of the arm of the circuit breaker, and an electric time-recorder, battery and connecting wires, attached to the stud or pivot of the arm of the circuit breaker and to a binding post attached to the contact point substantially as shown and for the purpose set forth.

542,911. SEPARATING METALS FROM FOREIGN SUBSTANCES. HARVEY H. WHITACRE and ANDREW C. WOLFE, Wellsville, Ohio. Filed Feb. 14, 1895. Serial No. 538,386. (No model.)



Claim.—The combination of a supply pipe, a double branch pipe having electro-magnetic coils wound thereon and faucets at the free ends thereof, a valve in said supply pipe, and a pipe for cleansing connected to said supply pipe between the said valve and said branch pipe connection, substantially as and for the purposes set forth.

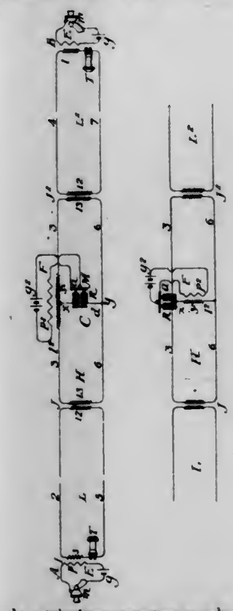
542,912. DISH-DRAINER. ROBINA WOOD, Glasgow, Scotland. Filed Jan. 22, 1895. Serial No. 535,788. (No model.) Patented in England May 24, 1894, No. 10,066.



Claim.—1. A dish drainer comprising, in combination, vertical end standards, inclined shelves, liquid receiving gutters provided each with a hole and a draining rod passing through the holes, substantially as set forth.

2. In dish drainers, the combination comprising vertical end standards, inclined shelves, corrugated wires on said shelves, liquid receiving gutters, each provided with a hole, automatically draining away vertical rod passing through the holes in the gutters, substantially as set forth.

542,913. TELEPHONIC RELAY OR REPEATING SYSTEM. CHESTER H. ARNOLD, Boston, Mass., assignor to the American Bell Telephone Company, same place. Filed Mar. 16, 1895. Serial No. 542,059. (No model.)

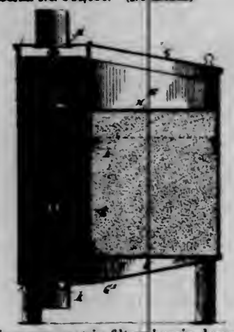


Claim.—1. In a telephone repeating or relay system, the combination of two main telephone circuits or section of circuits; an associated auxiliary circuit inductively connected with and between the said main circuits or sections to constitute with them a compound through circuit; a receiving electro-magnet in the said associated auxiliary circuit; a local repeating circuit including a variable resistance medium controlled by the said repeating magnet; and an induction coil with its primary and secondary windings included in the

local circuit and the through circuit respectively, whereby the variations of current set up in the local repeating circuit, by the action of the receiving magnet, are enabled to induce similar and reinforced varying currents in the said compound through circuit; substantially as described.

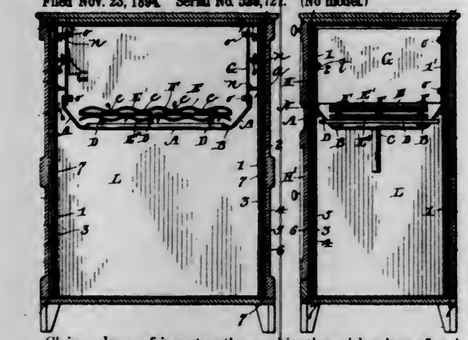
2. In an automatic telephone repeating apparatus, the combination of a compound through telephone circuit comprising two main line sections extending from outlying stations to a repeating station, and a short central section located at said repeating station; repeating induction coils uniting the said central section to the main line sections respectively; a bridge uniting the conductors of the said central section, and a receiving magnet included therein; a local repeating circuit containing a repeating transmitter responsive to the said receiving magnet, and a battery; and a repeating induction coil having a primary winding in said local circuit, and a secondary winding included in the central main line section on the two sides of the bridge respectively substantially as described.

542,914. FILTER. CHARLES ASBURST, Paris, Ky., assignor of two-thirds to Ephriam B. January and Nicholas Connell, same place. Filed Apr. 1, 1895. Serial No. 544,036. (No model.)



Claim.—The improvement in filters herein described comprising the casing the partitions dividing it into the inlet, outlet and filtering compartments, the filtering compartments communicating at its lower end with the inlet and at its upper end with the outlet compartment and having an inclined bottom leading downward toward the discharge opening of the inlet compartment, the bucket fitted in the inlet compartment and having the valve and its rod, the guide bar on the rod between the bucket and valve and having depending end portions the keepers on the walls of the inlet compartment receiving said end portions, the lever supporting such bucket having a projecting arm and the latch device engaging such arm all substantially as and for the purposes set forth.

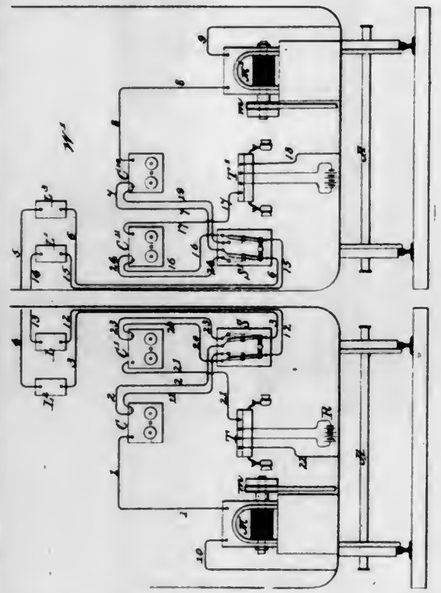
542,915. REFRIGERATOR. JOHN BANDEROB, Oshkosh, Wis. Filed Nov. 23, 1894. Serial No. 529,721. (No model.)



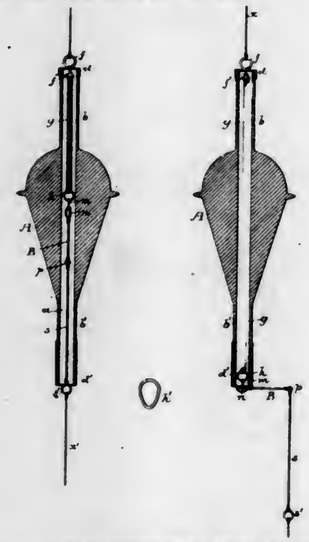
Claim.—In a refrigerator, the combination with a box of an ice chamber comprising a permanently attached tray forming a drip receiving gutter, a removable ice supporting tray supported upon the same, removable side walls provided with spacing pins to hold them away from the side of the refrigerator, and means for fastening said walls rigidly in position, substantially as described.

542,916. ELECTRICAL SYSTEM FOR SIGNALING BETWEEN TRAINS. ALEJANDRO BASANTA Y BAQUE, Madrid, Spain. Filed Jan. 21, 1895. Serial No. 535,579. (No model.)

Claim.—An electrical system for signaling between trains, comprising insulated conductors in sections, a magneto machine carried by each train and means whereby said magneto-machine is set in motion by the movement of the train, contacts carried by each train to make contact with the said conductors, telephonic apparatus and signal bells and a switch carried by each train to throw the telephone apparatus or the signal bells to line and connections whereby at the moment of closing the circuit between two trains going either in the same direction or in opposite directions the two trains will receive a signal at the same time and telephonic communication established, all substantially as set forth.



542,917. ATTACHMENT FOR FISHING-LINES. EDWARD E. BARDSLEY, Philadelphia, Pa., assignor of two-thirds to Winfield S. Bardsley, William H. Forster, and Henry Baurmeister, same place. Filed May 20, 1895. Serial No. 549,910. (No model.)



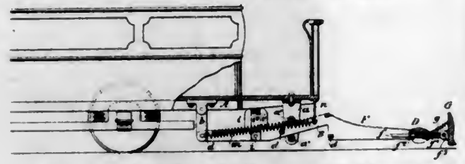
Claim.—1. A spring attachment for fishing lines, consisting of a tubular float, an expansible spring contained therein, and a trigger connected to said spring and to the lower portion of the line, said trigger being adapted to engage with or to be drawn into the hollow float, substantially as specified.

2. A spring attachment for fishing lines, consisting of a casing containing an expansible spring, a trigger having an elongated eye with its shorter axis less and its longer axis greater than the diameter of the opening in the end of the casing, and a pivotal connection between said trigger and the expansible spring, substantially as specified.

3. A spring attachment for fishing lines, consisting of a casing containing an expansible spring, a trigger having an elongated eye whose shorter axis is less and whose longer axis is greater than the diameter of the opening in the end of the casing, and a connection between said trigger and the expansible spring, said connection being of a size partly greater and partly less than that of the opening in the end of the casing, substantially as specified.

4. A spring attachment for fishing lines, consisting of a casing, an elastic band contained within said casing, an open eye with which one end of said band engages, a split ring engaging with the other end of the band, a trigger adapted when in one position to lie across the end of the casing, and when tripped, to be drawn into said casing, and means for hanging the trigger to the split ring at the lower end of the band, substantially as specified.

542,918. STREET-CAR FENDER. WILLIAM BARKER, Philadelphia, Pa. Filed June 11, 1894. Serial No. 514,200. (No model.)



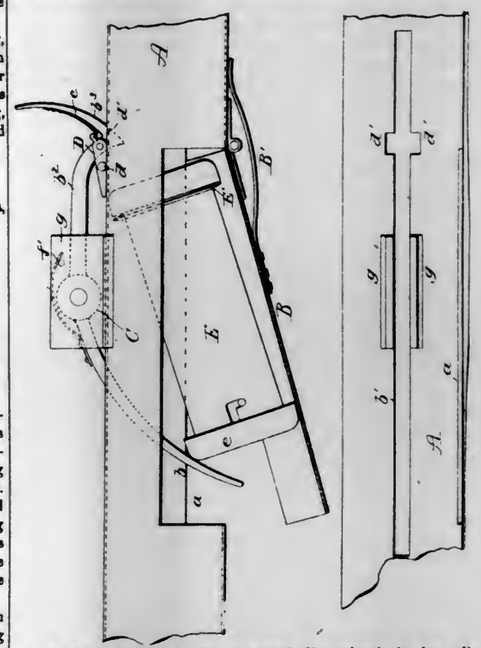
Claim.—1. A street car fender having rearwardly projecting levers, fixed guides therefor, one of said parts having inclined portions engaging the other, whereby the front end of the fender will be depressed as the same is forced rearward, and a spring for projecting the fender and causing its front end to rise, substantially as specified.

2. A street car fender having rearwardly projecting levers, fixed guides therefor, one of said parts having inclined portions engaging the other, whereby the front end of the fender will be depressed as the same is forced rearward, and links whereby the rear ends of the levers are suspended from the car body and are caused to rise as the levers are moved rearward, substantially as specified.

3. A car fender having rearwardly projecting levers, guides in which said levers can move backward and forward, and suspending links for the rear ends of the levers, said levers being divided in the rear of the guides, and said divided portions being connected by pivot pins and provided with projecting arms with interposed springs, whereby a yielding joint is formed which permits of the rise of the forward end of the fender, substantially as specified.

4. The combination of the fender frame having a transverse buffer bar at the front, a pick-up bar, rods guided in the buffer bar and having pivotal connection with said pick-up bar, springs for projecting said rods, a spring for maintaining the pick-up bar in the vertical position, and stops on the guide rods for restricting the movement of the pick-up bar under the action of said spring, substantially as specified.

5. The combination with a pneumatic dispatch tube having a discharge opening therein, said tube also having an elongated slot and notches communicating with said elongated slot, of a car ejecting lever pivoted between its ends and having one arm curved to enter the tube in proximity to the forward end of the opening in the tube, a pivoted locking lever carried by the other arm of said lever and adapted to enter said elongated slot, pins projecting from said locking lever and adapted to pass through said notches in the tube and ride on the face thereof out of alignmeat with the notches, when the device is operated to eject a car or box, substantially as set forth.



6. The combination with a pneumatic dispatch tube having a discharge opening therein, said tube also having an elongated slot and notches communicating with said elongated slot, of a car ejecting lever pivoted at a point between its ends and adapted at one end to enter said tube, a heel at the other end of said lever adapted to enter said tube, a spring to retain said lever normally in operative position, a pivoted locking lever projecting from said lever, a spring for normally retaining said locking lever in operative position, and pins projecting from said locking lever and adapted to pass through the notches in the tube and ride on the face of the tube when the device is operated to eject a car or box, substantially as set forth.

7. The combination with a pneumatic dispatch tube having a discharge opening formed therein, of a pivoted car ejecting lever, and a locking lever in position to be struck and operated by a car to cause the ejecting lever to assume a position to eject the car, said devices being constructed and arranged to eject a certain predetermined car or box, substantially as set forth.

542,919. PNEUMATIC DISPATCH DEVICE. SAMUEL W. BARR, Mansfield, Ohio. Filed Apr. 12, 1893. Serial No. 470,046. (No model.)

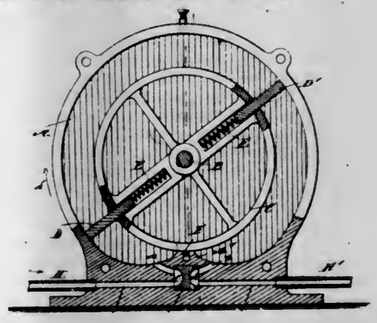
Claim.—1. The combination with a pneumatic dispatch tube having a discharge opening therein, of a pivoted car ejecting lever and a locking lever carried by said lever, said devices being constructed and arranged to eject a certain predetermined car or box, substantially as set forth.

2. The combination with a pneumatic dispatch tube having a discharge opening therein, and an elongated slot, of a pivoted car ejecting lever adapted to pass through said elongated slot, and a locking lever carried by said lever and adapted to enter said slot, said devices being constructed and arranged to operate to automatically eject a box or car, substantially as set forth.

3. The combination with a pneumatic dispatch tube having a discharge opening therein, of a pivoted car ejecting lever, a locking lever carried by said pivoted lever, and a spring actuated gate adapted to normally close the opening in the tube, substantially as set forth.

4. The combination with a pneumatic dispatch tube having a discharge opening therein, said tube also having an elongated slot, and notches communicating with said elongated slot, of a pivoted car ejecting lever adapted to enter the tube, a locking lever pivoted to the lever and adapted to pass through said slot, and pins on said locking lever adapted to pass through the notches in the tube or ride on the face thereof out of alignment with the notches, whereby to lock the lever and cause the ejectment of a car or box, substantially as set forth.

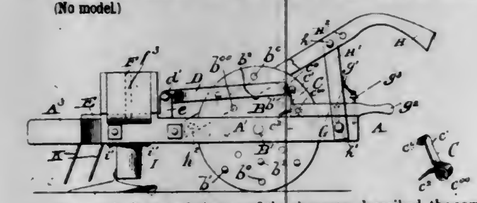
542,920. ROTARY ENGINE. DAVID BERRY, Fish Rock, Cal. Filed Nov. 12, 1894. Serial No. 528,500. (No model.)



Claim.—1. In a rotary engine, the combination with a cylinder having an abutment and provided with a port on each side of the abutment and with ports in its base, and a wheel mounted in the cylinder and provided with yielding pistons, of a slide valve below the abutment, and provided with ports in its sides and with diagonally arranged ports in rear of the side ports and extending through the valve in opposite directions, substantially as described.

2. In a rotary engine, the combination with a cylinder having an abutment and provided with the ports *a b* leading from opposite sides of the abutment and with the ports *e f* in its base, and a wheel mounted in the cylinder and provided with yielding pistons, of the slide valve G mounted in the base of the cylinder and provided with the ports *c d* for connecting the ports *e f* with ports *a b*, and with the diagonally arranged ports *g h* extending through the valve, the port *g* adapted to connect port *e* with port *b*, and port *h*, the port *f* with port *a*, substantially as herein shown and described.

542,921. SEED-PLANTER. WILLIAM E. BERRY and WILLIAM A. MEDLIN, Blue Mountain, Miss. Filed Mar. 21, 1895. Serial No. 542,691. (No model.)



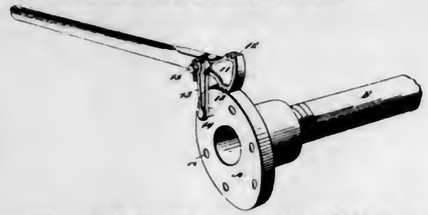
Claim.—1. In a seed planter of the character described, the combination with a horizontal frame, a wheel mounted in said frame and provided with two sets of radially arranged perforations, having an even number of perforations in each set; a pin or pins fitting in one or more of the perforations in the outer set at equal intervals; and a similar number of pins fitting in the intermediate hole or holes of the inner set; of a seed hopper mounted on said frame in front of said wheel; a slide moving beneath said hopper and adapted to discharge seed therefrom; a pitman pivoted to the rear end of said slide; and a bell-crank lever pivoted to the side of the frame and to the rear end of said pitman, one arm of which bell crank lever is adapted to engage the outer pins in said wheel to push the pitman forward, and the other arm of which is adapted to engage the inner set of pins to draw said pitman backward, as the wheel revolves, and thus operate said slide, substantially as and for the purposes described.

2. In a seed planter of the character described, the combination with a horizontal frame, a wheel mounted in said frame and provided with two sets of radially arranged perforations extending entirely through said wheel, and having an even number of perforations in each set; a pin or pins fitting in one or more of the perforations in the outer set on either side of said wheel, and at equal intervals; and a similar number of pins fitting in the intermediate hole or holes of the inner set on either side; of a seed hopper mounted on said frame in front of said wheel, and composed of two separate compartments; a slide moving beneath each compartment of said hopper, and adapted to discharge seed therefrom independently of the other; a pitman pivoted to the rear end of each of said slides; and a bell crank lever pivoted to the side of the frame and to the rear end of each of said pitmen, on either side of said wheel; one arm of each bell crank lever being adapted to engage the outer pins in its side of said wheel to push its pitman forward, and the other arm of each bell crank lever being adapted to engage the inner set of pins in said wheel to draw said pitman backward, as the wheel revolves, substantially as and for the purposes described.

3. In a seed planter of the character described, the combination with a horizontal frame, a wheel mounted in said frame and provided with two sets of radially arranged perforations, having an even number of perforations in each set; a pin or pins fitting in one or more of the perforations in the outer set at equal intervals; and a similar number of pins fitting in the intermediate perforation or perforations of the inner set; of a seed hopper mounted on said frame in front of said wheel; a slide moving beneath said hopper and adapted to discharge seed therefrom; a pitman pivoted to the rear end of said slide; a bell crank lever pivoted to the rear end of said pitman and to the forward end of a swinging arm on said frame by means of which swinging arm the said bell crank lever may be thrown into or out of engagement with the pins in said wheel; one arm of said bell crank lever being adapted to engage the outer pins in said wheel to push the pitman forward, and the other arm of which is adapted to engage the inner set of pins to draw said pitman backward, as the wheel revolves, substantially as and for the purposes described.

4. In a seed planter of the character described, the combination with a horizontal frame, a wheel mounted in said frame and provided with two sets of radially arranged perforations extending entirely through said wheel, and having an even number of perforations in each set; a pin or pins fitting in one or more of the perforations in the outer set on either side of said wheel, and at equal intervals; and a similar number of pins fitting in the intermediate hole or holes of the inner set on either side; of a seed hopper mounted on said frame in front of said wheel, and composed of two separate compartments; a slide moving beneath each compartment of said hopper, and adapted to discharge seed therefrom independently of the other; a pitman pivoted to the rear end of each of said slides; and a bell crank lever pivoted to the side of the frame and to the rear end of each of said pitmen, on either side of said wheel; one arm of each bell crank lever being adapted to engage the outer pins in its side of said wheel to push its pitman forward, and the other arm of each bell crank lever being adapted to engage the inner set of pins in said wheel to draw said pitman backward, as the wheel revolves, substantially as and for the purposes described.

542,922. FLANGE-WRENCH. WILLIAM H. BROCK, Brooklyn, N. Y. Filed Nov. 20, 1894. Serial No. 529,386. (No model.)

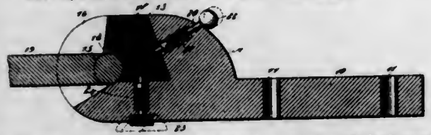


Claim.—1. A flange wrench, comprising a handled head, an arm pivoted thereto, and a stud projected from the arm substantially parallel to its pivot, the arm connecting the pivot to the stud being located entirely to one side of the handle, so that when the stud is swung to either side of the handle, there will always be a free space between the stud and the head to permit the tool to be engaged with a flange, substantially as described.

2. A flange wrench comprising a head having a biting face on each side and provided with a handle and an arm pivotally connected to the head and extending beyond the biting faces and provided with a stud projecting from its free end substantially parallel to its pivot pin, substantially as set forth.

3. A flange wrench comprising a head having a lug projecting from one face and having a biting face on each side of the lug, and being also provided with a handle and an arm having a perforation to receive said lug, the end of said arm extending beyond the end of the head and having a stud projecting from it parallel to the said lug on the head, substantially as set forth.

542,923. THILL-COUPLING. WILLIAM H. BYRNE, Piedmont, Wyo. Filed Apr. 15, 1895. Serial No. 545,751. (No model.)



Claim.—1. A thill coupling, the same consisting of a body section, having a substantially dove-tail recess produced longitudinally therein, and a vertical recess in the front, meeting the dove-tail recess, a block adapted to be slid into the said dove-tail recess, conforming substantially to the shape thereof, and bolts engaging the said block to hold it against lateral displacement, as and for the purpose set forth.

2. In a thill coupling, a body section having a substantially dove-tail longitudinal recess or opening in its upper surface and a front vertical opening communicating with the dove-tail opening, the latter opening being provided with a semi-circular recess at the forward portion of its bottom, a block shaped to slide in and to conform to the shape of the dove-tail recess, having a recess in its forward face registering with that in the front wall of the main recess, and bolts engaging the block and holding it against lateral displacement, as and for the purpose specified.

3. In a thill coupling, a body section provided with a substantially dove-tail recess made horizontally in its upper face, the rear wall of the recess being transversely inclined and the body being further provided with a vertical front opening meeting the dove-tail recess, a block held to slide in and fitted to the contour of the dove-tail recess, and spring-controlled bolts carried by the body and engaging with the said block, as and for the purpose specified.

4. In a thill coupling, a body section provided with an under-cut recess having one of its walls transversely inclined, the said body being provided also with an opening in its front communicating with the under-cut recess, a block held to slide in the under-cut recess, conforming to the contour thereof, a spring-controlled bolt carried by the upper portion of the body and entering the said block, and a spring controlled bolt located in the lower portion of the body, having a head adapted to enter a recess in the said bottom portion of the body, substantially as and for the purpose specified.

542,924. HOUSE-WIRING FIXTURE. CHARLES F. CASE, Akron, Ohio. Filed Apr. 20, 1895. Serial No. 546,568. (No model.)

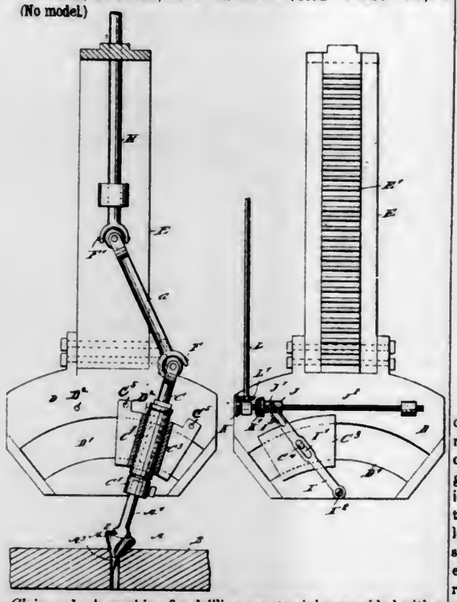


Claim.—1. The herein described article of manufacture comprising an insulator having a tube for inclosing electric wires and a laterally projecting attaching plate disposed intermediate of its length.

2. The herein described article of manufacture comprising an insulator having a pair of tubes for inclosing electric wires and a laterally projecting attaching plate rigidly connecting the said tubes.

3. The herein described article of manufacture comprising an insulator having a pair of tubes for inclosing electric wires and a laterally projecting attaching plate disposed intermediate of their length and another tube for the passage of a gas pipe located between the said pair of tubes.

542,925. MACHINE FOR DRILLING COUNTERSINKS. LEMUEL CHURCHILL, Three Oaks, Mich. Filed Nov. 23, 1894. Serial No. 529,704. (No model.)



Claim.—1. A machine for drilling countersinks, provided with a drilling tool formed with a conical cutting head, and a smooth non-cutting conical point extending from the apex of the said cutting head and forming a fulcrum for the tool, substantially as shown and described.

2. In a machine for drilling countersinks, the combination of a revoluble drilling tool having its lower end fulcrumed in the hole to be countersunk, and means for oscillating the tool, substantially as described.

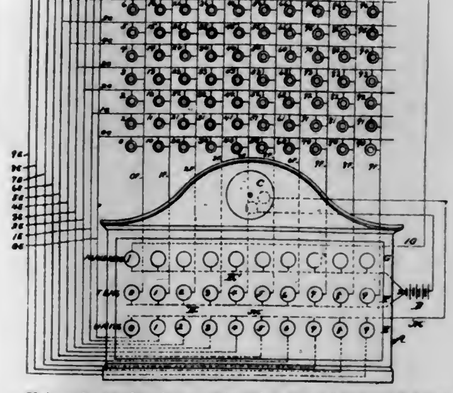
3. In a machine for drilling countersinks, the combination of a drilling tool having a projection beyond its head to serve as a fulcrum for the tool, and means for swinging the tool from side to side, substantially as described.

4. In a machine for drilling countersinks, the combination with a a supporting frame, of a slide block mounted thereon, a sleeve mounted to turn and slide in the slide block, a drill shaft mounted to turn in the sleeve, and carrying a tool having its lower end fulcrumed in the hole to be countersunk and means for reciprocating the slide block, substantially as described.

5. In a machine for drilling countersinks, the combination with a supporting frame, a block fitted to slide on the frame, and a drill shaft mounted in the said block, of a screw rod, gear wheels on the said rod, a rotary shaft, a gear wheel on the said shaft and adapted to alternately mesh with the gear wheels of the screw rod, a nut on the screw rod, and a lever connected with the said block and nut, substantially as described.

6. In a machine for drilling countersinks, the combination with a supporting frame having a segmental slot, and a block fitted to slide in the said block, of a drill shaft mounted in the block, and carrying a tool having its lower end fulcrumed in the hole to be countersunk a drive shaft, a link having a universal joint connection with the drill shaft and drive shaft, and means for reciprocating the block in the slot of the supporting frame, substantially as described.

542,926. ELECTRIC ANNUNCIATOR. WILLIAM J. CLARKE, Trenton, Canada. Filed Feb. 5, 1895. Serial No. 537,366. (No model.)



Claim.—1. An electric annunciator having its face provided with drops or indications segregated decimally into groups of ten each, representing different denominations for the different groups; in combination with a series of ten "unit" wires leading from one group of drops to all the rooms, but having one set of branches leading to the first hundred rooms and another set of branches leading to the second hundred rooms and so on; another series of ten wires leading from the "tens" series of drops to all the rooms, a third single wire leading from each of the third or "hundreds" series to each of the groups of one hundred rooms after the first hundred rooms, a battery and a bell substantially as and for the purpose described.

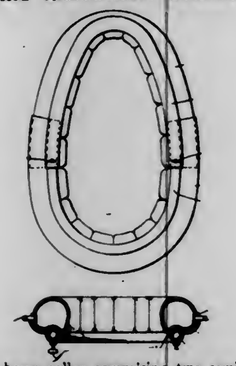
2. In an electric annunciator, the combination of a face provided with drops or indications segregated decimally into groups of ten each representing different denominations for the different groups, and the groups having wires running to the separate rooms as shown and described; relay bells arranged in each room, a set of return call keys segregated decimally into groups of ten each representing different denominations, one of said groups having a separate set of return call wires running to the rooms, the other set of return call keys being connected with the rooms through the circuits of the annunciator drops, a battery for the indicator drop circuits and relays, a separate battery for the return call circuit and room bells, the bell for each room being provided with a relay arranged in the circuit of the return call keys and adapted as described to co-operate with the

circuits of the annunciator drops, substantially as and for the purpose described.

3. The combination with the annunciator drop circuits and their battery, and the annunciator return call circuits and their battery; of a bell for each room comprising magnets with a vibrating armature, three binding posts and circuit wires, a relay connected with two of the binding posts and the return call circuits and having a switch armature controlling the bell ringing circuit through the other two posts by the action of said relay substantially as and for the purpose described.

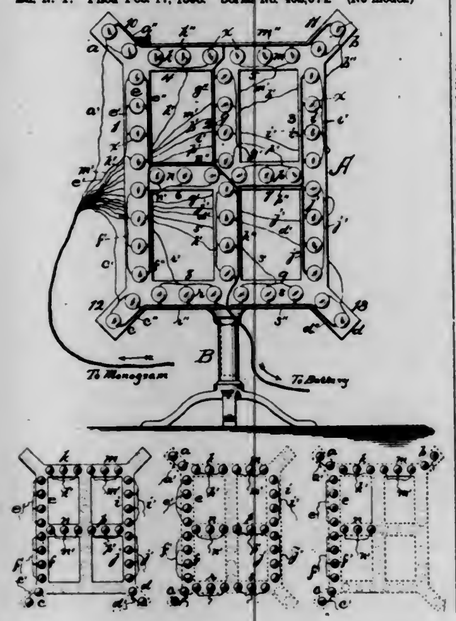
4. The combination with the two batteries B and B^2 and their circuit wires M^1 and B^3, the return call keys F' and E', the fire alarm switch or push button H connecting the circuits M^2 and B^4, and the relays, and alarm bells in the rooms, and circuit wires leading thereto substantially as and for the purpose described.

542,927. HORSE-COLLAR. JAMES CORRIGAN, New York, N. Y. Filed Oct. 9, 1894. Serial No. 525,324. (No model.)



Claim.—A horse collar comprising two semi-circular metallic bodies turned inwardly to form tubular rims, one of the rims extending into the other at their points of junction, whereby the collar is telescopically extensible, thumb-screws securing the same, a plurality of independent substantially cubical and rounded rubber receptacles secured to the rear of each body and projecting inwardly therefrom and forming air cushions when inflated, and air valves extending from each cushion through the metallic bodies to secure the said cushion thereto, substantially as shown and described.

542,928. SIGNALING APPARATUS. LUCIEN S. CRANDALL, Parish, N. Y. Filed Feb. 17, 1893. Serial No. 462,674. (No model.)

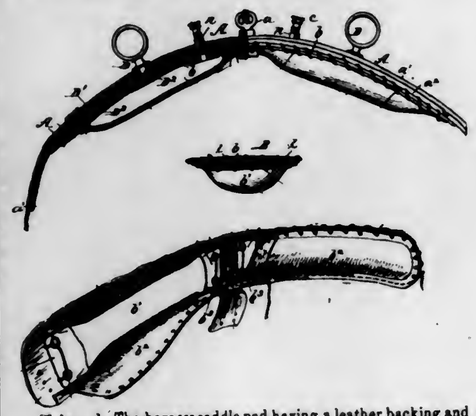


Claim.—1. The combination with a monogrammic display-frame of rectangular form and having central cross-bars and corner extensions and also having series of incandescent lamps disposed thereon, of a key-board comprising a series of spring-controlled key-bars, each having a series of contact-points, a contact-board comprising a series of insulated contact-bars, a battery, and electrical connections between the battery and display-frame, between the battery and key-board, and between the contact-board and display-frame; substantially as described

2. The combination with a display-frame having series of incandescent lamps disposed thereon, of a key-board comprising a series of spring-controlled key-bars, each having a series of contact-points disposed longitudinally thereof, an oscillating contact-board comprising a series of insulated contact-bars arranged transversely of the key-board, whereby is insured the practically simultaneous making of all of the contacts, by any key, a battery, and electrical connections between the battery and display-frame, between the battery and key-board, and between the contact-board and display-frame; substantially as described.

3. The herein described monogrammic display-frame, consisting of end and side bars, central, bisecting cross-bars and corner extensions, the respective bars having disposed along their lengths illuminable signaling devices, whereby on the one device the several letters of the alphabet or other predetermined symbols may be produced; substantially as described.

542,929. HARNESS-SADDLE. JOHN D. FLETCHER, Murfreesborough, assignor of one-half to John B. Ransom, Nashville, Tenn. Filed Nov. 1, 1894. Serial No. 527,658. (No model.)



Claim.—1. The harness saddle pad having a leather backing and a detachable leather lining b^3 united thereto by lacing cords, and two inflatable rubber cushions b' arranged one on each side of the middle line of the pad within the lining, said cushions being provided with a valved nipple, and solid ends with eyelets b^3 through them, and cords passing through these eyelets to hold them in place within the outer case, substantially as and for the purpose described.

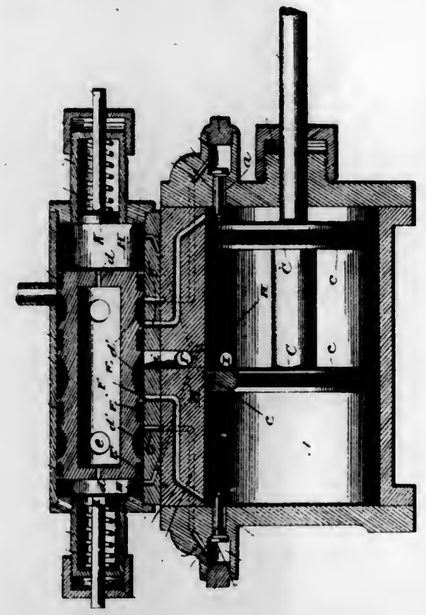
2. The combination of the harness saddle A, the saddle pad B consisting of the leather backing and lining united by lacings and having two inflatable cushions b' therein one on each side of the middle line, and provided each with a valved nipple c extending through the saddle, and eyelets b^3 in their ends, lacings for securing the inflatable cushions, and terrets D D passing through the saddle and anchored within the leather backing of the pads substantially as and for the purpose described.

542,930. STEAM-ENGINE. RUSSEL W. GUILFORD, Auburn, Ind., assignor to the Auburn Iron Works, same place. Filed Nov. 9, 1894. Serial No. 528,326. (No model.)

Claim.—1. The combination with the steam cylinder having end extensions forming chambers communicating with the cylinder and having independent passages therefor toward the center of the valve chest, valves located in said chambers with their stems guided in openings in the ends of the cylinder, and the steam chest, of a hollow steam valve fitted therein and provided with peripheral depressions and with steam ports at its ends and ports leading from the end peripheral depressions into the interior of the valve, substantially as specified.

2. The combination with the steam cylinder having end extensions forming chambers communicating with the cylinder and having independent passages therefor toward the center of the valve chest, valves located in said chambers with their stems guided in openings

in the ends of the cylinder, and the steam chest, of a hollow steam valve fitted therein and provided with peripheral depressions and with steam ports at its ends and ports leading from the end peripheral depressions into the interior of the valve and peripheral packing rings upon opposite sides of said peripheral depressions, substantially as specified.



3. The combination with the steam cylinder having at each end an exterior chamber communicating with the interior thereof, valves in said chambers, removable caps to said chambers, ports leading to the steam space of the peripheral depressions of the steam valve, a hollow steam valve with peripheral depressions, a steam chest with exhaust ports from the ends to a point near the longitudinal center of the cylinder, substantially as specified.

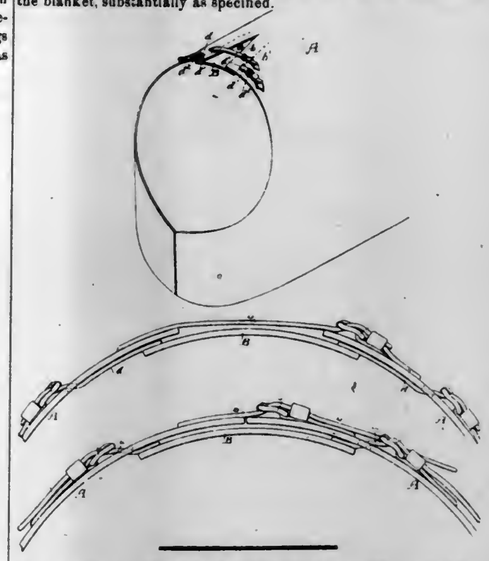
4. The combination with the steam cylinder having at each end an exterior chamber communicating with the interior thereof, valves in said chambers, removable caps to said chambers, ports leading to the steam space of the peripheral depressions of the steam valve, a hollow steam valve with peripheral depressions, a steam chest with exhaust ports from the ends to a point near the longitudinal center of the cylinder, said valve having steam passages at its ends and passages leading from its interior to the peripheral depressions and removable extensions to the steam chest provided with spring cushions for the valve, substantially as specified.

5. The combination with the steam cylinder and its ports, piston and exterior chambers with valves, of the steam chest with its ports and hollow valve with ports and openings, the extensions on the ends of the steam chest with removable stuffing boxes and the spring actuated pistons in said extensions and constructed to serve as yielding cushions for the valve, all substantially as shown and described.

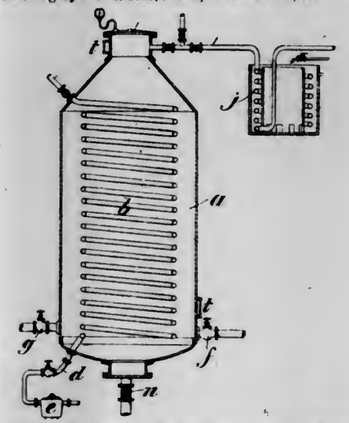
542,931. HORSE-BLANKET. JAMES HAND, Philadelphia, Pa., assignor to William M. Ayres & Sons, same place. Filed May 27, 1895. Serial No. 550,809. (No model.)

Claim.—1. The combination of a horse blanket having at the neck end a slit or divided portion provided with means for adjusting the same, the under flap for closing the gap formed by said slit or divided portion of the blanket, means for securing one edge of said flap to the blanket and a strap connected to the other edge portion of said flap near the front end of the same, said strap passing through an opening in the side of the blanket and being adjustably secured upon the outer face of the same, substantially as specified.

2. The combination of a horse blanket having at the neck end a slit or divided portion with means for adjusting the same, an under flap covering the gap formed by said slit or divided portion of the blanket, and straps extending from each edge portion of said flat near the front end of the same through openings in the blanket on opposite sides of the slit or divided portion of the same, each of these straps being provided with adjustable securing means on the outer side of the blanket, substantially as specified.



542,932. PROCESS OF PRODUCING CELLULOSE. CARL KELLNER, Vienna, Austria-Hungary. Filed Dec. 5, 1891. Serial No. 414,206. (No specimens.) Patented in England July 31, 1891, No. 12,970, and in Austria-Hungary Dec. 8, 1891, No. 33,685 and No. 56,889.



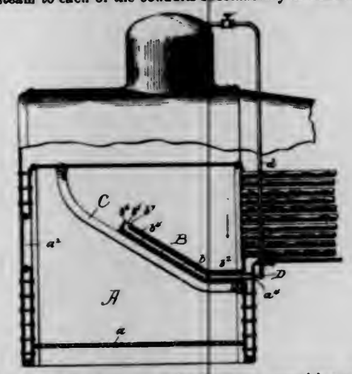
Claim.—1. In the manufacture of cellulose by the sulfite process, the mode of preventing the formation of monosulfite of calcium in the digesters during the heating of the sulfite solution from a normal to the required temperature, which consists in heating the solution in a separate vessel, separating therefrom the monosulfite of calcium formed during such heating, and introducing the hot solution into the digester, substantially as set forth.

2. In the manufacture of cellulose by the sulfite process, the mode of preventing the formation of monosulfite of calcium in the digesters during the heating of the sulfite solution from a normal to the required temperature, which consists in heating the solution in a separate vessel, separating therefrom the monosulfite of calcium formed during such heating, introducing the hot solution into the digester, collecting and condensing the sulfurous acid gases evolved and utilizing the same as a solvent for the separated monosulfite, substantially as set forth.

542,933. SMOKE AND GAS CONSUMER FOR FURNACES. JAMES C. KEYS, Blackville, S. C., and CHARLES L. PAGENHART, Augusta, Ga. Filed Feb. 23, 1895. Serial No. 539,498. (No model.)

Claim.—1. A smoke and gas consumer for furnaces, comprising a hollow arch-flue having a series of conduits and a discharge mouth into which all the conduits open, said mouth operating to deflect the products of combustion toward the flue-sheet, substantially as described.

2. A smoke and gas consumer for furnaces, comprising an arch-flue having a series of conduits and a transversely arranged discharge-mouth into which the conduits open, in combination with means for supplying steam to each of the conduits substantially as described.



3. A smoke and gas consumer for furnaces, comprising an arch-flue having a series of conduits and a transversely arranged discharge-mouth into which the conduits open, in combination with a steam-supplying device connecting with the flue, and automatically operating mechanism for controlling the feed of steam to the flue, substantially as described.

4. A smoke and gas consumer for furnaces, comprising a hollow arch-flue having its front end provided with a series of draft-openings arranged next to the flue-sheet, and its rear portion with a transversely arranged discharge-mouth, substantially as described.

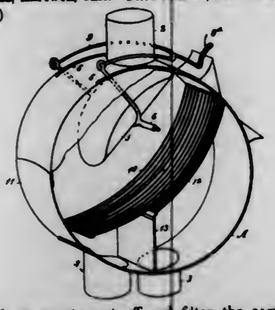
5. In a smoke and gas consumer for furnaces, an arch-flue having a series of conduits extending from the front to a point near the rear thereof and opening into a transversely arranged discharge-mouth, the front wall of the said mouth being curved toward the flue-sheet, substantially as described.

6. In a smoke and gas consumer for furnaces, a hollow arch-flue having its front end provided with a series of draft-openings arranged next to the flue-sheet, and its rear end with a discharge-mouth located in the upper face of the flue and extending transversely across the same, substantially as described.

7. In a smoke and gas consumer for furnaces, an arch-flue having a series of conduits, a series of draft openings at its front end between the conduits and next to the flue-sheet, and a discharge-mouth on the upper face of its rear portion, substantially as described.

8. In a smoke and gas consumer for furnaces, the combination with the flue-sheet of a boiler, of an arch flue having a series of conduits, a series of draft openings at its front end between the conduits next to the flue-sheet, and through which draft from the fire-box is free to pass, and a discharge-mouth on the upper face of its rear portion, substantially as described.

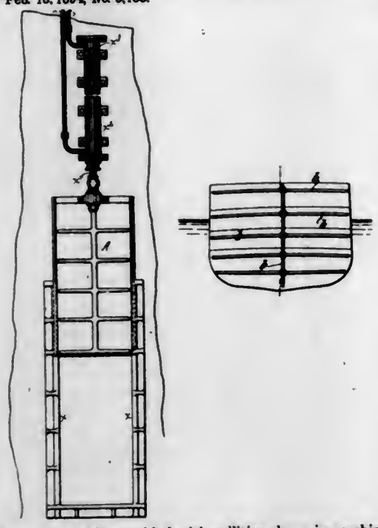
542,934. FILTER AND CUT-OFF FOR RAIN-WATER. CHARLES J. KLEESPIES, Hartwell, Ohio. Filed Mar. 14, 1895. Serial No. 541,689. (No model.)



Claim.—1. In a water cut off and filter, the combination with the drum, the inlet pipe and the outlet pipes of the reversible cut off, pivoted to the drum and the yoke connected therewith provided with a finger hold, of the curved bars with spaces therebetween, the screen located below said bars and extending from one side of the drum to about the center thereof and the partition located between the outlet pipes, substantially as described.

2. In a water cut off and filter, the combination with the drum, the inlet and outlet pipes, the peripheral approximately triangular shaped stops, the pivoted reversible cut-off and the yoke provided with a finger hold, of the curved bars with spaces therebetween, the screen located below said bars and extending from one side of the drum to about the center thereof, the partition located between the outlet pipes and the trap door, substantially as described.

542,935. MECHANISM FOR CLOSING BULKHEAD-DOORS ON SHIPBOARD. ALEXANDER W. MONTGOMERY-MOORE, London, England. Filed Apr. 10, 1895. Serial No. 545,228. (No model.) Patented in England Feb. 13, 1894, No. 3,133.

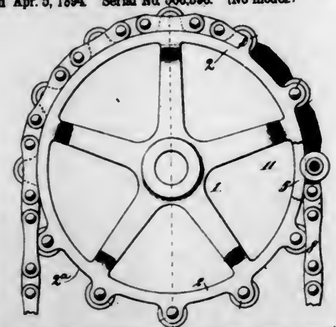


Claim.—1. A ship provided with collision doors in combination with blocking mechanism for holding the doors open and a system of breakable pipes connected with the blocking mechanism containing a fluid, the pressure of which differs from the external pressure, the arrangement being such that the breakage by collision of the pipes releases the blocking mechanism and allows the doors to close.

2. A ship provided with collision doors in combination with door-closing mechanism, and a system of breakable pipes arranged around the ship connected to the door-closing mechanism and charged with a fluid to a pressure differing from the external pressure, the arrangement being such that the opening or breakage by collision of the pipes starts the door-closing mechanism.

3. A ship provided with collision doors in combination with means for closing the doors, fluid-containing cylinders, pistons connected with the doors and working in the cylinders, and devices distributed around the ship and connected with the fluid-containing cylinders for automatically releasing the fluid to permit the doors to close.

542,936. DRIVE-CHAIN WHEEL. JOHN MOORE, St. Louis, Mo. Filed Apr. 5, 1894. Serial No. 506,398. (No model.)



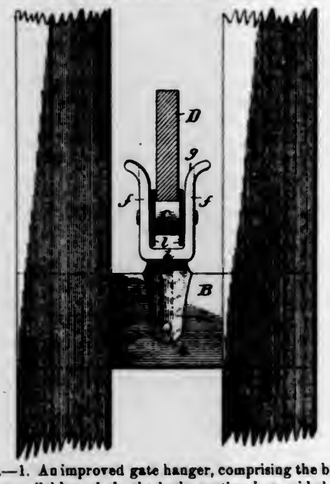
Claim.—1. The combination of a wheel constructed with a rim having a deep channel and the flanges formed with paired lips and edges having flat surfaces between the paired lips, the pins extending across the paired lips, the rollers encircling the pins, and a chain consisting of paired links embracing the said rollers and the said paired lips, independent of the rim, the blocks fitting between the paired lips and seating on the flat surfaces of the flanges, and the pivot-pins connecting the paired links with the blocks, and having their axes located

in the same circumferential line as the axes of the roller-pins when passing around the wheel; substantially as described.

2. The combination of a wheel constructed with a rim having a deep channel, and the flanges formed with paired lips and edges having flat surfaces between the paired lips, the pins extending across the paired lips, the rollers encircling the pins, and a chain consisting of paired links embracing the said rollers and the said paired lips, outside of the rim, the blocks fitting between the paired lips and seating on the flat surfaces of the flanges, and the pivot-pins connecting the paired links with the blocks and having their axes located in the same circumferential line as the axes of the roller-pins when passing around the wheel; substantially as described.

3. The combination of a wheel constructed with a rim having a deep channel, the flanges formed with paired lips and edges having flat surfaces between the paired lips, the bushings forming distance blocks within the paired lips, the pins extending across the paired lips whereby the bushings are clamped to the latter, the rollers of less width than the length of the bushings and mounted on the latter, and a chain consisting of paired links embracing the said rollers and the said paired lips, independent of the rim, the blocks fitting between the paired lips and seating on the flat surfaces of the flanges, and the pivot-pins connecting the paired links with the blocks, and having their axes located in the same circumferential line as the axes of the roller-pins when passing around the wheel; substantially as described.

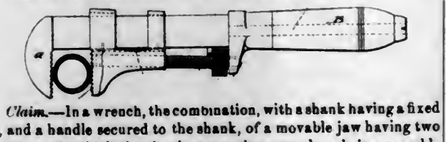
542,937. GATE-HANGER. ANDREW MUNGER, Evansville, Wis. Filed July 5, 1894. Serial No. 516,641. (No model.)



Claim.—1. An improved gate hanger, comprising the base *a* provided with parallel legs *d*, *d*; the body portion *b*, provided with vertical arms *f*, *f*, parallel for the greater part of their length, and curving outwardly at their upper ends; a slot *j* in the main portion of each arm *f*; a recess *k* above said slot in the curved portion of each arm; a roller *c* mounted on an axle *l* bearing in said slots; and a spindle *i* on the body portion *b* engaging with the base *a*, substantially as set forth.

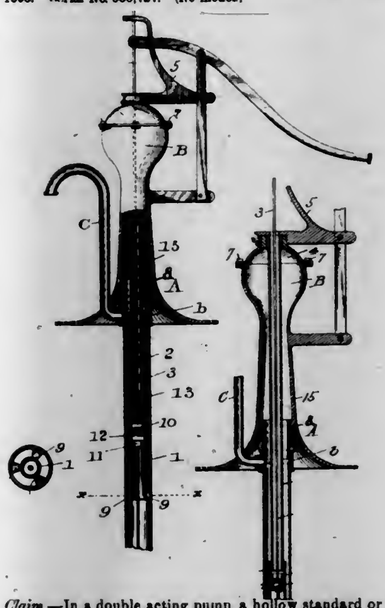
2. An improved gate hanger, comprising the base *a* provided with parallel legs *d*, *d*; the body portion *b*, provided with vertical arms *f*, *f*, parallel for the greater part of their length, and curving outwardly at their upper ends; a slot *j* in the main portion of each arm *f*, a recess *k* above said slot in the curved portion of each arm; a roller *c* mounted on an axle *l* bearing in said slots, said axle extending on each side of the arms *f*, *f*, for the purpose mentioned, substantially as set forth.

542,938. WRENCH. HARRY MCELROY, Palestine, Tex. Filed Jan. 30, 1895. Serial No. 536,634. (No model.)



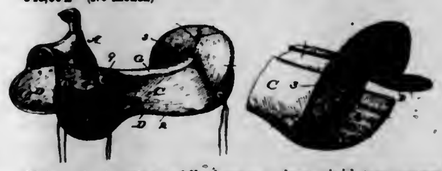
Claim.—In a wrench, the combination, with a shank having a fixed jaw, and a handle secured to the shank, of a movable jaw having two loops through which the shank passes, the upper loop being movable laterally on the shank, a spring between the movable jaw and the shank, a ferrule secured to the upper end of the handle and having an elongated opening, an adjusting screw threaded into the movable jaw and having its lower end inserted in the elongated hole in the ferrule, said adjusting screw being provided with a milled collar and a pin secured to the shank and engaging the collar, all substantially as and for the purpose described.

542,939. PUMP. OLOF P. OLSON, Oshkosh, Wis. Filed Jan. 3, 1895. Serial No. 533,727. (No model.)



Claim.—In a double acting pump, a hollow standard or support having an upper globular portion forming an air space, a removable cap or cover for said globular portion, an interior flange formed near the bottom of said standard, a well tube supported by said flange, a pipe or tube extending through said standard and supported by said cap or cover, said pipe or tube being extended downward into said well tube, a barrel or cylinder secured on the lower end of said pipe or tube, centering lugs projecting from the exterior of said barrel or cylinder, a piston rod working in said pipe or tube and projecting through the upper end thereof, a guide bracket for said piston rod supported by said standard, a piston secured on said piston rod and adapted to work in said barrel or cylinder, means for operating said piston rod, and a discharge spout removably secured to said well tube and communicating therewith, substantially as set forth.

542,940. RIDING-SADDLE. JESSE D. PADGITT, Dallas, Tex., assignor to Padgitt Brothers, same place. Filed May 4, 1895. Serial No. 548,094. (No model.)



Claim.—1. A riding saddle, having a short, rigid tree arranged at its front end, and its body and rear portion formed of leather or other flexible pieces alone, substantially as shown and described.

2. A riding saddle, having a short, rigid tree, flexible leather pieces secured to the rear edge of the same and extending the length of the body of the saddle, to serve as a filling and stiffening therefor, and top and under pieces of leather which are sewed together at their edges and inclose such filling, as shown and described.

3. A riding saddle, having a short, rigid tree whose rear end has a beveled shoulder, as shown, flexible leather pieces which are secured on such shoulder and extend rearward, to form the filling for the body of the saddle, the top and under pieces, which inclose such filling and extend over and cover the arms of said tree, and a leather "strainer," which connects such top and under pieces and lies between and is sewed to the inner edges of the same, as shown and described.

4. A riding saddle, having a short, rigid tree at its front end, and its body and cantle portion consisting solely of leather pieces, the

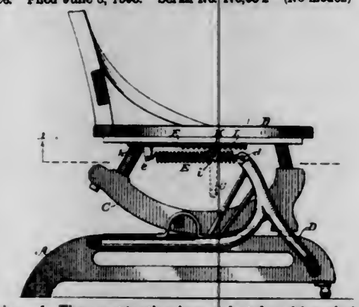
rounded rear ends of the top leather pieces being cut at an angle on their inner sides and secured together as shown and described, whereby such ends are drawn up and form a self-supporting cantle, as specified.

5. In a riding-saddle, the combination, with the leather top pieces, having upwardly-projecting cantle portions, of an angular brace and finish piece which is applied and secured to the rear side of such cantle portion, and extends rearward therefrom, substantially as shown and described.

6. In a riding-saddle, the combination of the acute-angled cantle brace, composed of leather, with the cantle portion of the top-finish, leather piece, the under sweat piece, and the leather cantle filling, which is inclosed and secured between the cantle portions of the finish pieces, as shown and described.

7. The improved riding-saddle, composed of a short, rigid tree, the leather side extensions, or filling pieces, secured thereto, the top finish pieces, of leather, having rounded cantle portions which are secured together and project upward at an angle, the under sweat pieces, and the angular leather cantle brace secured to the top and under pieces, as shown and described.

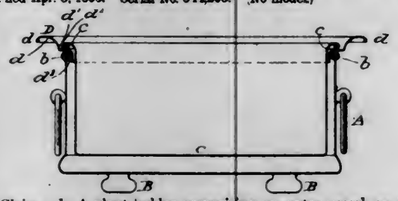
542,941. SPRING ROCKING-CHAIR. ROBERT PARKER, Philadelphia, Pa., assignor to Jacob F. Assenheimer and Dennis White, same place. Filed June 8, 1893. Serial No. 476,934. (No model.)



Claim.—1. The combination in a pedestal rocking chair, of the pedestal, the chair having rockers resting thereon, an adjustable slide carried by said chair, means for locking said slide in its adjusted position and a coiled spring connected at one end to the pedestal and at the other end to the slide, substantially as specified.

2. The combination, in a pedestal rocking chair, of the pedestal, the chair having rockers resting thereon, a slide guided on said chair, a rack on said slide, a pinion adapted to engage with said rack, a shaft carrying said pinion, a crank on said shaft, locking mechanism for said crank, and a spring extending between the slide and the pedestal, substantially as specified.

542,942. PLANT-HOLDER. WILLIAM A. PELTON, Meriden, Conn. Filed Apr. 3, 1895. Serial No. 544,295. (No model.)

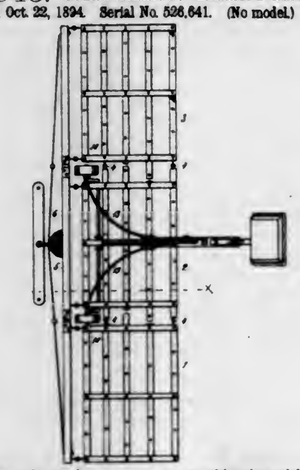


Claim.—1. A plant holder comprising an outer vessel, an inner vessel of a depth less than the depth of the outer vessel and having an outwardly extending marginal flange, and a single piece detachable rim comprising a flange projecting beyond the outer vessel, a single horizontal seating flange below and forming an extension or continuation of the other flange resting on the upper edge of the outer vessel and on which the flange on the inner vessel rests, and a depending flange on the horizontal flange, substantially as described.

2. A plant holder comprising an outer vessel having a beaded upper edge, a single piece detached rim comprising the outwardly extending flange d, the vertical portion d' the inwardly extending horizontal flange d^2 at the lower edge of the vertical portion having a curved inner edge fitting on the bead, a depending flange d^3 and a pot having a marginal flange resting on the seating flange d^2, substantially as described.

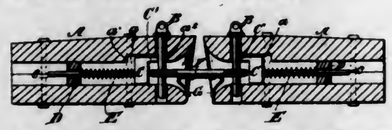
3. In a plant holder, the combination with an outer vessel, of an inner vessel of uniform diameter having a marginal flange at its top, a single piece detached rim having a seating flange resting directly on the outer vessel, and on which the flange of the inner vessel rests, and an outwardly projecting flange above the seating flange projecting beyond the outer vessel, substantially as described.

542,943. SULKY-HARROW. MERRITT L. ROGERS, Exeter, Nebr. Filed Oct. 22, 1894. Serial No. 526,641. (No model.)



Claim.—In a sulky harrow, the combination with the three flexibly united frame sections, the beam, the yoke pivotally connected therewith, and the caster wheel, of the divergent braces, secured to said beam, the oscillatory crank shaft journaled to said braces, the wheels journaled on said shaft, the lever, the chain secured thereto and to the said shaft and the chain connected with the rear end of the central frame section and with said lever, substantially as described.

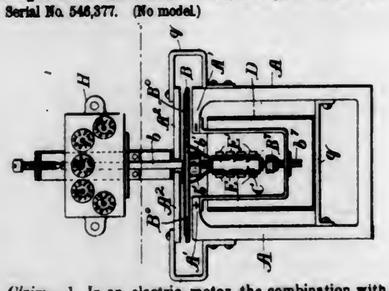
542,944. CAR-COUPLING. JOHN R. ROWELL, Emory, Tex. Filed Apr. 20, 1894. Serial No. 508,360. (No model.)



Claim.—1. In a car coupling, the combination of the drawhead A, the sliding pin support block C provided at its upper forward edge with a laterally projecting flame C', said block and flange resting within a suitable recess formed in the upper interior wall of the drawhead and having a longitudinal movement therein, the rod c carried by said block and passing through a perforated head D fixed in the drawhead, a coiled spring arranged around said rod between said block and head, the coupling pin B, and the link F provided with downwardly and inwardly projecting spring guides G, substantially as shown and described.

2. A car coupling link provided with the spring guides G projecting downwardly and inwardly in opposite directions, substantially as described and for the purpose specified.

542,945. ELECTRIC METER. HENRY A. ROWLAND, Baltimore, Md., assignor of one-half to Louis Duncan, same place. Filed Apr. 19, 1895. Serial No. 546,377. (No model.)



Claim.—1. In an electric motor, the combination with a magnetic field, of a non-magnetic conducting body revolubly mounted in said field, and a plurality of coils of wire mounted on said non-magnetic conducting body, substantially as described.

2. An armature for an electric motor consisting of a plurality of coils of wire mounted on a non-magnetic conducting body which body is adapted both to furnish a support for the wire winding, and to effect the retardation of its own motion, due to the currents induced therein, substantially as described.

3. In an electric motor, an armature consisting of a mass of conducting non-magnetic metal, formed into a surface of revolution, and supporting a plurality of coils of wire for carrying an electric current, the said mass serving not only as a support to the coils, but as a retarding influence due to the currents induced therein substantially as described.

4. In an electric meter, the combination with a magnetic field, of a non-magnetic conducting body revolubly mounted in said field, a plurality of coils of wire mounted on said non-magnetic conducting body, and a registering device actuated by said conducting body, substantially as described.

5. In an electric meter, the combination with an armature consisting of a non-magnetic conducting body supporting a plurality of coils of wire for carrying an electric current, the said body serving not only as a support to the coils, but as a retarding influence due to the currents induced therein; of a registering device operated by said armature, substantially as described.

6. In an electric meter, the combination with an armature consisting of a mass of conducting non-magnetic metal, formed into a surface of revolution, and supporting a plurality of coils for carrying an electric current, the said mass serving not only as a support to the coils, but as a retarding influence due to the currents induced therein; of a commutator connected to said coils, conducting wires and brushes for connecting the source of electricity to said commutator, and a shunt interposed between said conducting wires, substantially as described.

7. In an electric meter, the combination with an armature consisting of a mass of conducting non-magnetic metal, formed into a surface of revolution, and supporting a plurality of coils of wire for carrying an electric current, the said mass serving not only as a support to the coils, but as a retarding influence due to the currents induced therein; of a source of electricity, and conductors for carrying the same into and out of said armature, and a shunt with means for regulating the same inserted between said conductors, substantially as described.

8. In an electric motor the combination with a source of electricity, of an armature consisting of three coils of wire mounted on a non-magnetic conducting body which body is adapted both to furnish a support for the wire winding, and to effect the retardation of its own motion, due to the currents induced therein, and conductors connecting said armature with source of electricity, substantially as described.

9. In an electric motor, the combination with an armature consisting of a disk-shaped mass of conducting non-magnetic metal supporting a plurality of coils of wire for carrying an electric current, the said mass serving not only as a support to the coils, but as a retarding influence due to the currents induced therein, substantially as described.

10. In an electric meter, the combination with an armature consisting of a disk-shaped mass of conducting non-magnetic metal, and supporting a plurality of coils of wire for carrying an electric current, the said mass serving not only as a support to the coils, but as a retarding influence due to the currents induced therein; of a registering device operated by said armature, substantially as described.

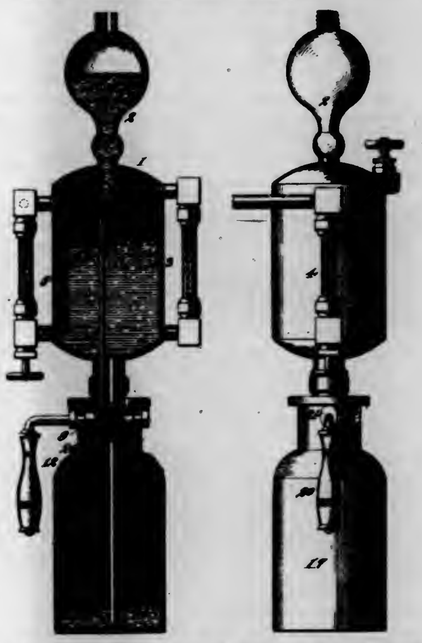
11. In an electric motor, the combination of a source of electricity, an armature consisting of a disk with chambers in the face thereof, with coils of wire mounted in said chambers, which disk is adapted to furnish a support for the said coils and also to effect the retardation of its own motion, due to the currents induced therein, and conductors connecting said armature with said source of electricity, substantially as described.

12. In an electric motor, the combination of a source of electricity, an armature consisting of a non-magnetic conducting disk with chambers in the face thereof, with coils of wire mounted in said chambers, which disk is adapted to furnish a support for the said coils, and to effect the retardation of its own motion, due to the currents induced therein, conductors connecting said armature with said source of electricity, and a shunt interposed between said conductors, substantially as described.

13. In an electric meter, the combination with an armature consisting of a mass of conducting non-magnetic metal, supporting a plurality of coils for carrying an electric current, the said mass serving not only as a support to the coils, but as a retarding influence due to the currents induced therein; of a commutator connected to said coils, conducting wires and brushes for connecting the source of electricity to said commutator, and an automatically regulated shunt interposed between said conducting wires, substantially as described.

14. In an electric meter, the combination with an armature consisting of a mass of conducting non-magnetic metal, supporting a plurality of coils of wire for carrying an electric current, the said mass serving not only as a support to the coils, but as a retarding influence due to the currents induced therein; of a source of electricity, and conductors for carrying the same into and out of said armature, and a fixed shunt and an antomatically adjustable shunt inserted between said conductors, substantially as described.

542,946. LUBRICATOR. WILLIAM J. RUFF, Quincy, Ill. Filed July 25, 1894. Serial No. 518,538. (No model.)



Claim.—1. The combination of a lubricator having a nipple at its lower end formed with water and oil passages, a tube connected with the oil passage and extending upward into the lubricator, a tube connected with the water passage and extending downward, and an oil supply cup having means for removably connecting it with the lubricator, and a valve located in the nipple having water and oil perforations and adapted to shut off communication between the supply cup and the lubricator; substantially as described.

2. The combination of a lubricator, a valve located at the lower end thereof, a removable supply cup located beneath the valve, means for forcing the oil, and suitable passages between the cup and the lubricator, whereby the oil is caused to pass from the lubricator to the part to be lubricated, and from the cup into the lubricator, and means whereby the cup can be removed and replenished without interfering with the passing of the oil from the lubricator; substantially as set forth.

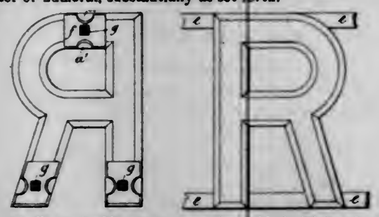
3. The combination of a lubricator, having a tube at its lower end, a valve in said tube, a cup removably applied to said tube operating in connection with said valve, means for forcing the oil, and suitable pipe connections, between the cup and the lubricator, whereby oil is caused to pass from the cup into the lubricator and from the lubricator to the part to be lubricated; substantially as set forth.

4. The combination of a lubricator having a tube at its lower end formed with water and oil passages, a valve fitted in said tube, having passages adapted to register with passages in the tube, pipes extending from the passages in the tube, eccentrics on the stem of said valve, and a cup adapted to fit over said tube, and to be tightened by said eccentrics; substantially as set forth.

5. The combination of a lubricator, having a tube at its lower end formed with a perforated barrel, a valve fitting in said barrel, eccentrics on the stem of said valve, pipes extending from the perforations in the barrel, and a cup provided with bayonet slots and adapted to fit over said tube with the valve stem fitting in said slots; substantially as and for the purpose set forth.

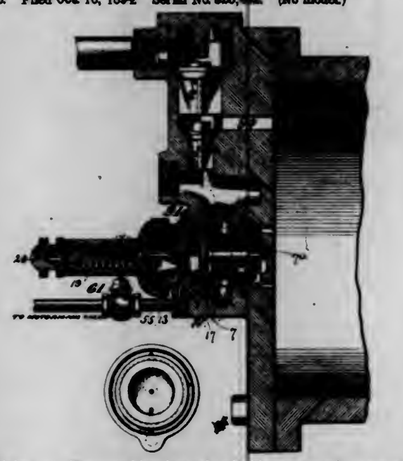
542,947. LETTER OR NUMERAL FOR SHOP-FRONTS, OFFICES, SIGNS, &c. ARTHUR STANDRING, Harpurhey, Manchester, England. Filed Oct. 23, 1894. Serial No. 526,747. (No model.)

Claim.—1. A hollow raised letter or numeral provided with lugs bent back out of sight, a cross piece held by the said lugs to form a space for a bolt head, a bolt passing through the cross-piece to secure the letter or numeral, substantially as set forth.



2. A hollow raised letter or numeral provided with lugs bent back out of sight, and a cross piece provided with slots into which the lugs are forced, in combination with a sliding clip A and a bolt passing through the cross-piece and the clip, all substantially as and for the purposes set forth.

542,948. AIR-BRAKE SYSTEM. GEORGE F. STEEDMAN, St. Louis, Mo. Filed Oct. 10, 1894. Serial No. 525,462. (No model.)



Claim.—1. The combination of suitable constantly operating pumping mechanism adapted to be operated by the rotation of a car axle, and a compressed air reservoir, with an automatic governor adapted to stop the compressing action of the pump at a given pressure in the reservoir, and a device adapted to stop the compressing action of the pump at the will of the operator, substantially as set forth.

2. In a pump governor to control the compressing action of a pump, a valve seated in a port leading from the interior of the pump cylinder to the atmosphere, a compressed air mechanism capable of raising said valve when compressed air is admitted to it, a compressed air port leading to said mechanism opened or closed by an automatic spring regulated valve, and a compressed air port leading to said mechanism opened or closed by voluntary action of attendant.

3. In a pump governor, the combination of a pump adapted to be operated by the rotation of a car axle, a major valve seated in a port which connects the interior of the pump with the outside, a piston moving in a cylinder and unseating said valve when compressed air is admitted behind said piston, a chamber connected with the reservoir into which the pump discharges, closed on one side with a yielding cover, carrying a minor valve, a port and valve seat under said valve on the cover, leading into the chamber behind the piston, and a regulating spring over the yielding cover.

4. In a pump governor to control the pumping action of a pump, a valve closing when seated a passage connecting the interior of the pump with the atmosphere, a piston moving in a cylinder and raising the valve from its seat when pressure is admitted behind the piston, opening said passages, a valve for automatically admitting pressure behind said piston when pressure reaches a certain maximum limit in compressed air reservoir, and a valve to admit or release at will, pressure to or from a pipe leading from said voluntary valve into the cylinder behind the piston, and a check valve in said pipe to prevent pressure leaving said cylinder through said pipe, as shown.

5. An air compressing pump adapted to be actuated by the rotation of a car axle and provided with induction and eduction valves, a piston and cylinder raising and holding the induction valve from its seat when compressed air is admitted behind said piston, and an automatic compressed air valve that will admit air to said cylinder behind said piston when pressure in the reservoir reaches a certain desired limit for purposes enumerated.

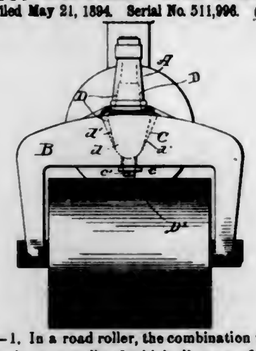
6. The combination, in a pump governor of a pump operated by the rotation of a car axle, a valve, when seated, closing the passage leading from interior of the pump to the open air, a piston in a cylinder raising said valve from its seat, and opening said passage when compressed air is admitted behind said piston in the cylinder, a spring over said piston of such strength as to determine the minimum pressure at which governor will act, in combination with an automatic spring pressed valve to admit air behind the piston, which determines the maximum pressure at which the pump shall operate, substantially as set forth.

7. In an air brake system for railway cars, the combination of a constantly operating pump operated by the rotation of the car axle, a reservoir, a brake cylinder, an automatic compressed air governor adapted to control the pumping action of the pump, a motorman's valve to operate the air brakes, and a port in said valve to admit compressed air to said governor device, independently of its automatic action, as set forth.

8. In an air brake system for railway cars, the combination of a constantly operating pump operated by the rotation of a car axle, a reservoir, a brake cylinder, an automatic compressed air governor adapted to control the pumping action of pump, a motorman's valve to operate the air brakes, and a valve to admit compressed air to said governor device independently of its automatic action, as set forth.

9. In a motorman's valve a valve seat, a disk valve, a hollow stem separate from the valve, a housing screwed over the valve seat, and a spring in the hollow stem, bearing against the hollow stem at its upper end and against the disk valve at the lower end as and for the purpose stated.

542,949. ROAD-ROLLER. GEORGE E. TOWNSEND, Wellington, Ohio. Filed May 21, 1894. Serial No. 511,996. (No model.)



Claim.—1. In a road roller, the combination with a yoke having a socket therein, two walls of which diverge, of a king bolt fitting two walls of this socket and capable of vibrating between the other two walls, and an integral bearing shank adapted to turn in the saddle of the roller, substantially as set forth.

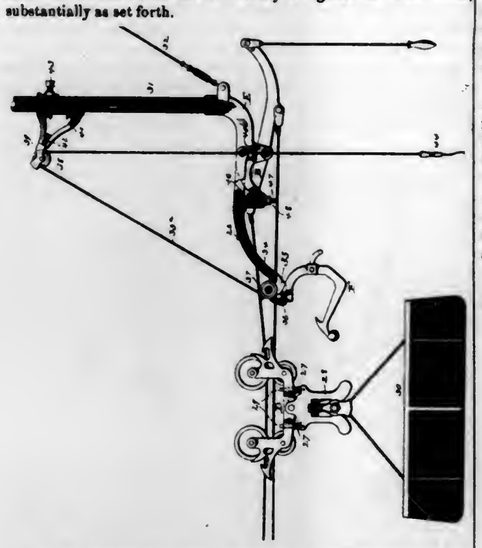
2. In a road roller, the combination with a yoke having a socket formed therein, two walls of which diverge, and said yoke having elongated slot extending from the bottom of the socket through the yoke, of a king bolt fitting two of the walls of this socket and vibrating between the diverging walls, an integral upwardly projecting bearing shank adapted to be swiveled in the saddle of the roller, a projection extending from the lower end of the bolt through the elongated slot, and means attached to this projection for holding the bolt in the yoke, substantially as set forth.

542,950. CASH AND PACKAGE CARRIER APPARATUS. HENRY M. WEAVER and SAMUEL W. BARR, Mansfield, Ohio. Filed Oct. 31, 1894. Serial No. 527,530. (No model.)

Claim.—1. In a cash and package carrier apparatus, the combination, with a home plate, of a clamp fitted to the plate, and a bolt passed through the ends of the clamp to secure the latter fast upon the plate, an arm support attached to said bolt and a propelling lever pivoted to the support, substantially as set forth.

2. In a cash and package carrier apparatus, the combination with a home plate, of a clamp fitted to the plate, and a bolt passed through the ends of the clamp to secure the latter fast upon the plate, the head of the bolt having an opening constructed to receive the arm support for one of the propelling levers of the apparatus, substantially as set forth.

3. The combination with a sleeve, of a lever sustaining arm the shank of which passes through said sleeve, and means for adjusting said arm endwise in the sleeve whereby to tighten the track wires, substantially as set forth.



4. The combination with a sleeve, of a lever sustaining arm, the shank of which passes through the sleeve, said shank screw threaded a nut thereon for moving the arm endwise to tighten the track wires, the shank having a longitudinal groove, and a set screw in the sleeve adapted to enter the groove, substantially as set forth.

5. The combination with a suitable sustaining arm, of a lever pivotally connected thereto, track wires connected to the lever, said lever having collars thereon, an extension arm removably held in said collars and means attached to the outer end of the extension arm for raising the latter, substantially as set forth.

6. The combination with a suitable sustaining device, of a catch having sliding connection with the sustaining device, said catch constructed to have up and down vibrating movement in its bearings, substantially as set forth.

7. The combination with a suitable sustaining device, of a catch comprising a bail and block, the block having a conical opening whereby the bail may vibrate, substantially as set forth.

8. The combination with a lever, and a rod connected with the lever, of a catch mounted to slide on the rod, a portion thereof straddling the lever whereby to prevent the catch from rocking axially, substantially as set forth.

9. The combination with a support, and a rod thereon, of a catch mounted to slide on said rod, said catch having a tapering opening through which the rod passes, and a spring bearing against the catch at an angle whereby the catch is yieldingly cushioned and normally inclined, substantially as set forth.

10. The combination with a suitable sustaining device having a rod thereon, of a catch mounted to slide on the rod, said catch having a cone shaped hole for the rod and inclined front and rear faces, and spiral springs on the rod on each side of the catch and bearing on the two inclined faces thereof whereby to normally incline the catch substantially as set forth.

11. The combination with a wire spreading lever, and a rod secured thereon, of a catch mounted to slide on the rod, said catch comprising a block which straddles and bears on the sides of the lever whereby to prevent axial turning of the catch and a bail adjustably held in the straddling portions of the said block, substantially as set forth.

12. The combination with a car for cash and package apparatus, said car having holes therein, of a fork hinged to the car, rods hinged to the fork and passed loosely through the holes in the car, and a spring on each rod between the car and the fork, substantially as set forth.

13. The combination with a supporting foot, basket hook, and cord connected therewith for raising the hook, of cord weights hinged to the foot for depressing the cords and guiding the basket hook, substantially as set forth.

14. The combination with a supporting foot, and cord weights hinged thereto, of cushions for receiving the impact of the cord weights, substantially as set forth.

15. The combination with a supporting foot, and cord weights hinged thereto, of cushions on which these weights rest, and means for adjusting these cushions, substantially as set forth.

16. The combination with a foot, of basket hooks having knuckles thereon, cords connected to these hooks, cord weights hinged to the foot, having sockets therein to receive and form bearings for the knuckles, and cords extending through these weights to a convenient place to be pulled, substantially as set forth.

17. The combination with a hanger rod, a foot, basket hooks, and cords connected to the hooks, of cord weights hinged to the foot, and an adjustably supported yoke on the hanger rod, said yoke having pulleys therein over which the cords pass, substantially as set forth.

18. The combination with a foot, a hanger rod to which it is connected, of a bracket adjustably secured to the hanger rod, a yoke adjustably secured to the bracket and having pulleys thereon, basket hooks and cords extending from these hooks over the pulleys, substantially as set forth.

542,951. MEANS FOR PROMOTING PERSPIRATION, &c. JEAN L. R. WEISS, Suresnes, France. Filed May 8, 1895. Serial No. 548,497. (No model.)



Claim.—An improved apparatus or means for promoting perspiration and for heating beds or the like consisting of two plates joined together by hinged arms so that the said plates may be caused to approach each other when desired the base plate having a socket or sconce for a candle or lamp or the like and a surrounding metal guard or chimney and the upper plate an extinguisher, the said apparatus being hung from legs constituting a support and capable of being folded together and supporting a covering or coverings under which the person wishing to induce perspiration may be placed as in a sudatory substantially as hereinbefore described.

542,952. DRIVE-CHAIN. WILLIAM N. WHITELEY, Springfield, Ohio. Filed Dec. 17, 1885. Serial No. 185,923. (No model.)



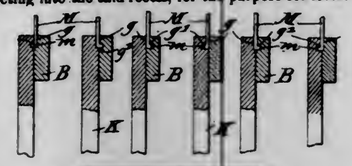
Claim.—1. A driving chain composed of counterpart links detachable when in line with each other, each link consisting of a perforated end bar and two perforated side bars adapted to receive between them the end bar of the next link, in combination with transverse pins, each pin being provided with a head, the remainder of the pin being adapted to pass freely through both the perforations of the side bars and of the end bar when the links are in line, the pin being provided with a fastening device at the end opposite the head, and with a rib at the end next the head, and the corresponding side bar having a slot for said rib, substantially as described.

2. A drive chain link provided with parts as follows: a perforated cross-bar to engage the wheel sprocket; projecting from said cross-bar, two side arms or jaws to receive between them the cross-bar of the adjacent link; transverse perforations in said arms near their extremities; an enlargement or slot in one of said perforations; projections *b*, *b*, on the inner sides of said arms, to resist the thrust of the adjoining link; combined with a coupling pin provided at one end with a rib or feather to fit into the enlargement or slot, and provided at the other end with a fastening device to prevent displacement or withdrawal of said pin.

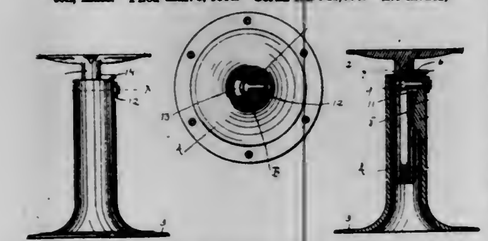
542,953. ELEMENTS OF GALVANIC BATTERIES. FRANZ A. VON ALIMONDA and NINO VON ALIMONDA, Castello Alimonda, near Sagrado, Austria-Hungary. Filed Oct. 30, 1894. Serial No. 527,473. (No model.)

Claim.—1. The combination of a carbon electrode, a retaining plate of the same material as and forming practically an integral part of the electrode, and a leading in wire having its end bent at right angles to form an anchor, said wire anchored in the material between the electrode and retaining plate, for the purpose set forth.

2. The combination with a carbon electrode provided with a semi-cylindrical groove *g* and a retaining plate of the same material as and forming practically an integral part of the electrode, said plate having a corresponding groove and a recess *g'* at the lower end thereof at right angles thereto, of a leading in wire having one end bent at right angles, said wire seated in the aforesaid grooves with its bent end projecting into the said recess, for the purpose set forth.

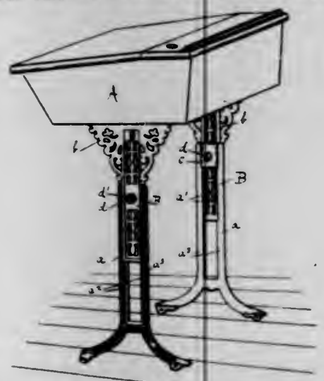


542,954. STANDARD FOR FURNITURE. JOSEPH J. FEELY, Walpole, assignor to the Chandler Adjustable Chair and Desk Company, Boston, Mass. Filed Mar. 8, 1895. Serial No. 541,060. (No model.)



Claim.—A standard for furniture comprising in combination a hollow base, a supporting rod adjustable therein and forming with one side thereof a tapering recess, said rod being provided with a longitudinal slot and with serrations substantially as described, a wedge fitted to said tapering recess and having a limited movement therein, said wedge being provided with a slot and with serrations located opposite the corresponding parts in the adjustable rod, and a bolt passing through the slots in the wedge and rod, and secured to the hollow base, all substantially as described.

542,955. STANDARD FOR FURNITURE. JOSEPH J. FEELY, Walpole, assignor to the Chandler Adjustable Chair and Desk Company, Boston, Mass. Filed Mar. 8, 1895. Serial No. 541,061. (No model.)

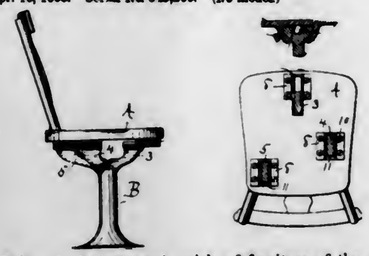


Claim.—1. A standard for furniture comprising in combination a lower part or base, an upper part adjustable thereon, racks on one of said parts, pawls secured to the other of said parts, a rat-trap spring substantially as described secured by its ends to the pawls, and means for operating said pawls consisting of a vertically movable rod connected to the loop of the spring and extending upwardly on the inside of the standard, it being bent outward at its upper end through a slot to form a handle which is integral with the rod and is also wider than the slot, all substantially as described.

2. A standard for furniture comprising in combination a lower part or base provided with racks, an upper part adjustable thereon and carrying locking pawls, means for disengaging the pawls from said racks, and a plate secured to the upper part of the standard by means of a bolt and nut, or its equivalent and arranged to clamp the lower part of the standard between itself and the upper part of the standard, all substantially as described.

3. A standard for furniture comprising in combination a lower part or base provided with racks, an upper part adjustable thereon and carrying locking pawls, means for disengaging the pawls from said racks, and a plate secured to the upper part of the standard and arranged to clamp the upper and lower parts of the standard together when adjusted, said plate being provided with inwardly turned flanges at its ends, whereby the locking pawls are completely inclosed, all substantially as described.

542,956. CHAIR. JOSEPH J. FEELY, Walpole, assignor to the Chandler Adjustable Chair and Desk Company, Boston, Mass. Filed Apr. 10, 1895. Serial No. 545,269. (No model.)



Claim.—1. An improved article of furniture of the class described comprising in combination a standard formed at its upper end with a plurality of separate supporting arms, plates arranged to slide transversely on the upper ends of said arms, a seat or its equivalent to which the plates are secured in such manner that at least one arm is slid wholly into its plate in either of the extreme positions of adjustment of the seat, and means for clamping said seat in any position of adjustment, all substantially as described.

2. An improved article of furniture of the class described comprising in combination a standard formed at its upper end with a plurality of separate supporting arms, each arm having a groove formed in its upper face, a plate for each arm provided with flanges which embrace the upper end of said arm, a loose ball in each groove, a seat or its equivalent to which the plates are secured, and means for clamping said seat in any position of adjustment, all substantially as described.

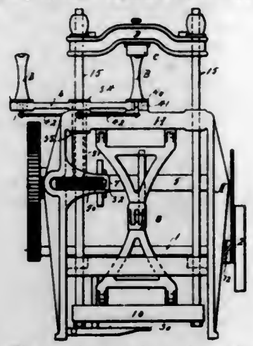
3. An improved article of furniture of the class described comprising in combination a standard formed at its upper end with three separate supporting arms, one of the rear arms being slightly in advance of the other rear arm and being provided with a transversely acting clamping device, and a seat or its equivalent adjustable on the tops of said arms and arranged to be secured in any position of adjustment by said clamping device, all substantially as described.

542,957. LUBRICATOR. WILLIAM J. FERGUSON, Baltimore, Md., assignor of one-half to William G. H. Stump, same place. Filed Apr. 11, 1895. Serial No. 545,356. (No model.)



Claim.—A lubricator having, in combination, a cup or receptacle open at top and provided with an outlet passage; a cap closing the open top of the cup and having an opening; a plunger-stem movable loosely in said opening and having an unoccupied air passage or round bore extending longitudinally; a plunger, L', provided with a socket into which the lower end of the plunger-stem fits; a screw-plug closing the lower end of the socket and having an opening; and a ball-valve occupying the said socket and adapted to open and close the said round bore in the stem but when seated on the said screw-plug leaving small openings for downward passage of air to the cup, substantially as described

542,958. BEATING-OUT MACHINE. WILLIAM B. FORSTER and ERASTUS B. WINKLEY, Lynn, Mass.; said Winkley assignor to said Forster. Filed July 12, 1894. Serial No. 517,381. (No model.)

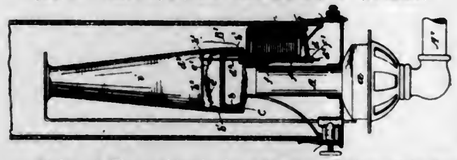


Claim.—1. The combination of a reciprocating mold, a pair of lasts or jacks revolubly mounted upon opposite ends of an oscillating bar, a cam and connected mechanism for reciprocating the mold, an oscillating vertical shaft and suitable connections for actuating the bar and revolving the lasts or jacks upon the bar, substantially as described.

2. An oscillating bar carrying at or near its opposite ends a revoluble last, and an oscillating vertical shaft and connecting levers for revolving the lasts upon the bar, substantially as described.

3. The combination of a mold, a horizontally movable last carrier and last mounted thereon, a vertical shaft arranged to oscillate in suitable bearings, a cam and connecting gears for actuating said shaft, and suitable connections between the last carrier and shaft whereby the oscillation of the shaft moves the last carrier and its last toward and from the mold, substantially as described.

542,959. ELECTRIC GAS-LIGHTER. HARRY G. GRIER, Philadelphia, Pa. Filed May 31, 1895. Serial No. 551,122. (No model.)



Claim.—1. The combination in an electric gas lighter, of the shade holder carrying a crown, the outer portion of the crown being insulated from the inner portion and forming one terminal of the lighter, a magnet carried by the shade holder, an armature and a movable terminal carried by the armature and adapted to come into contact with the portion of the crown forming the other terminal, substantially as described.

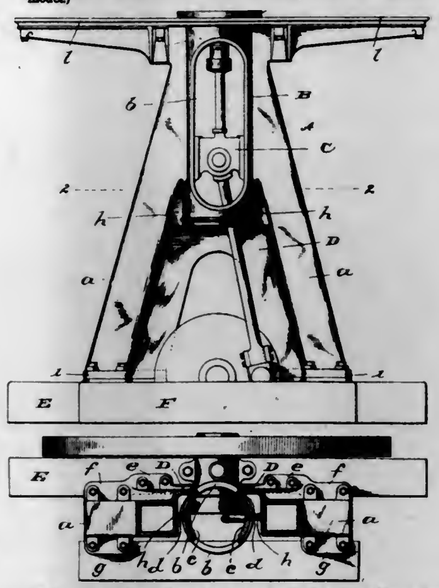
2. The combination in an electric gas lighter, of the fixed portion of the gas burner, the detachable shade holder, a two part crown carried thereby, one part of the crown being insulated from the other and having a turned in flange forming a terminal, a magnet supported by the shade holder, a pivoted armature, the vertical rod passing up through the crown and overhanging its flange, said rod being attached to the armature and a spring for holding the movable terminal down upon the fixed terminal, substantially as described.

3. The combination of the burner, a screen, a channeled flange above the screen in which the gas circulates, electric contacts at the channel and means for creating a spark at the contacts, substantially as described.

4. The combination of a burner of the Welsbach type consisting of a central tube for the mixture of air and gas, a crown having an internal flange around its periphery, a screen mounted within the crown some distance below the flange forming a gas channel, the crown forming one terminal of an electric gas lighter, a movable terminal adapted to come into contact with the fixed termical and means for actuating the movable terminal, substantially as described.

5. The combination in a burner, of the crown having an internal flange at its periphery and an internal rib some distance below the flange, a screen mounted within the crown upon the rib forming with the flange a gas channel, substantially as described.

542,960. FRAME FOR ENGINES OR COMPRESSORS. BENJAMIN W. GRIST, Philadelphia, Pa., assignor to the Pennsylvania Iron Works Company, same place. Filed Feb. 28, 1895. Serial No. 539,965. (No model.)



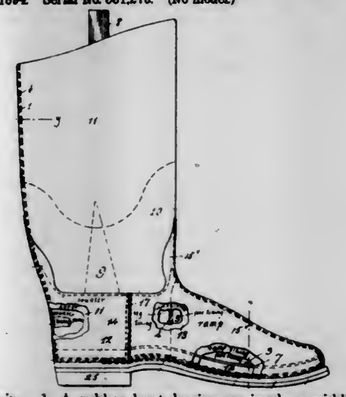
Claim.—1. A frame for engines having its legs joined by an intermediate web provided with flanges at its lower end.

2. A frame for engines having its legs joined by a cylinder and a web, the latter extending to the lower end of the frame and provided with flanges.

3. A frame for engines having its legs joined at their upper ends by a cylinder, a web on one side of the legs, extending to the lower end of the frame and joined to said cylinder.

4. A vertical frame for engines having converging legs joined by a web intermediate and on one side of the legs and provided with laterally extending flanges at the lower end of the web.

542,961. RUBBER BOOT. SAMUEL J. HARRIS, Millville, Mass., assignor of one-half to William F. Steinbach, Mystic, Conn. Filed Dec. 8, 1894. Serial No. 531,276. (No model.)



Claim.—1. A rubber boot, having an insole, a middle sole cemented to said insole, and formed of canvas or cloth saturated with a rubber solution, this sole being of sufficient thickness to fill the hollow of the insole and render the bottom flat, a rubber sole cemented to the middle sole and made up of an upper and a lower section of rubber and an intermediate portion of canvas saturated with a rubber compound, the whole being cemented and rolled, or pressed, together, and a leather sole stitched to a welt of said rubber sole, except at the heel portion which is stitched through the said sole to the inside of the boot, substantially as specified.

2. As a new article of manufacture, a rubber boot having the strip 12 running continuously around the bottom thereof underneath

the vamp and counters and lapped at its lower edge upon the insole, a middle sole of canvas saturated with rubber cement and coated with a rubber compound, a rubber sole built up of an upper and lower thickness of rubber and an intermediate thickness of rubber saturated canvas, the three thicknesses being cemented and rolled together, said rubber sole having an edge extension beyond the boot, a leather sole stitched to said extension and a leather heel, substantially as specified.

542,962. WITHDRAWN.

542,963. ANIMAL-TRAP. HENRY G. KLEBER, Great Falls, Mont., assignor of two-thirds to Thomas C. Simpson and Oliver F. Wadsworth, Jr. Filed Mar. 13, 1895. Serial No. 541,580. (No model.)



Claim.—1. An animal trap having a base, a barrel or casing mounted thereon, a spring-impelled shaft mounted in said barrel and having a lower arm, a swinging arm connected to the upper end of said shaft, a locking lever normally holding said lower arm and a trip or trigger extending over said base and designed to release said locking-lever and lower arm, substantially as set forth.

2. An animal-trap having a base, a barrel or casing thereon, a spring-impelled shaft mounted in said barrel and having a lower arm, a swinging arm connected to the upper end of said shaft, a locking lever having a shoulder with which said lower arm is designed to engage, a trip or trigger engaging said lever, and means for returning said locking lever and trigger to their normal positions after said lever has been tripped and said shaft has completed one revolution, as set forth.

3. An animal trap having a base, a barrel or casing thereon, a shaft mounted in said barrel or casing, a lower arm carried by said shaft, a swinging arm connected to the upper end of said shaft, a spring in said barrel attached to said shaft, a locking device for holding said lower arm at the end of each revolution of said shaft, and a trip or trigger for releasing said locking device, as set forth.

4. An animal trap having a base, a barrel or casing thereon, a shaft mounted in said barrel or casing, a lower arm carried by said shaft, a swinging arm connected to the upper end of said shaft, a spring in said barrel attached to said shaft, a lever fulcrumed in said barrel having a shoulder at one end, a spring bearing against the other end of said lever for throwing said shouldered end out of the line of travel of said lower arm, and a trip or trigger for normally holding said shouldered end in the line of travel of said lower arm, substantially as set forth.

5. An animal trap having a base, a barrel or casing thereon, a shaft mounted in said barrel or casing, a lower arm carried by said shaft, a swinging arm connected to the upper end of said shaft, a spring in said barrel attached to said shaft, a lever fulcrumed in said barrel having a shoulder at one end, a spring bearing against the other end of said lever for throwing said shouldered end out of the line of travel of said lower arm, a trip or trigger having an inner cam-like end pivoted to said barrel and having a groove or recess and a flat portion, and a spring for normally holding said trip or trigger lowered, whereby when said trip or trigger is moved upward at its outer end said locking lever will lower in said groove or recess, freeing said lower arm, said locking lever being returned to position to be engaged by said lower arm when the latter contacts with the spring-pressed end of said lever, said trip or trigger being also returned to its normal position throwing its flat portion in engagement with said locking lever thereby holding the latter in place, substantially as set forth.

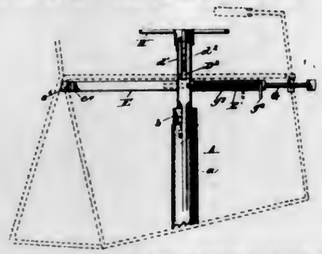
6. An animal trap having a circular base, a spring-impelled swinging arm centrally mounted over said base and having an outer bent or angular end designed to travel around the periphery of said base, a trip or trigger designed to hold a bait and extended over a portion of said base, and guides on either side of said trip or trigger, substantially as set forth.

7. An animal trap having a barrel, a spring impelled shaft mounted in said barrel, a swinging arm secured at its inner end to said shaft and provided with an extension, and an indicating wheel mounted on said barrel and having teeth designed to be engaged by said extension, whereby said wheel is partially rotated at each revolution of said arm, substantially as set forth.

8. An animal trap having a barrel, a spring impelled shaft mounted in said barrel, a swinging arm secured at its inner end to said shaft and provided with an extension, and an indicating wheel having a series of teeth on its periphery and also a toothless segmental portion, said teeth and segmental portion being designed to be engaged by said extension, whereby said wheel is partially rotated at each revolution of said arm, substantially as set forth.

9. The herein-described animal trap consisting of the circular base, the barrel centrally mounted thereon, a spring in said barrel, a vertical rotary shaft to which one end of said spring is connected, a swinging arm connected to said shaft having an outer curved or bent portion, a lower arm on said shaft, a pivoted locking lever having a shouldered end, a spring bearing against the other end of said lever, a trip or trigger having a cam-end provided with a flat portion and a groove or recess and having its outer end toothed, a spring bearing down on said trip or trigger, and the guide-frames secured to said base and between which said trip or trigger is located, substantially as set forth.

542,964. BICYCLE-STAND. NEVIN R. LE FEVER, Littlestown, Pa. Filed Nov. 26, 1894. Serial No. 529,950. (No model.)



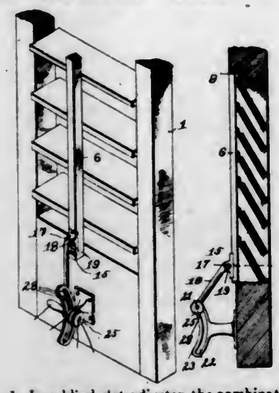
Claim.—1. In a bicycle stand, a standard, an arm or lever hinged to said standard, and a cross arm connected to said hinged arm, or lever, and stirrups connected to said cross arm to hold a bicycle frame, substantially as described.

2. In a bicycle stand, a standard, a swinging arm or lever hinged to said standard, a cross arm, connected to said swinging arm, or lever, a sliding spring pressed bar, connected to said cross arm, and stirrups to hold a bicycle frame, substantially as described.

3. In a bicycle stand, a tubular standard, a shaft within said standard, a plate connected to said shaft, and detents upon said plate, in combination with a swinging arm, or lever, a latch bar connected to lock said swinging arm or lever in elevated position, a cross arm on said swinging arm, or lever, a spring pressed rod on said cross arm, and stirrups to hold a bicycle frame, substantially as described.

4. In a bicycle stand, a tubular standard, a shaft within said standard, a shelf connected to said shaft to hold tools, &c., an arm, or lever hinged to said shaft, a cross arm connected to said hinged arm or lever, and stirrups connected to said cross arm substantially as described.

542,965. BLIND-STOP. MICHAEL MCMAHON, Toledo, Ohio. Filed Apr. 6, 1895. Serial No. 544,739. (No model.)



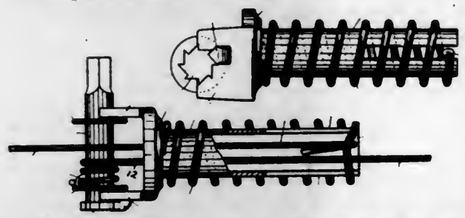
Claim.—1. In a blind slat adjuster, the combination with a lever pivoted at its upper end to the slat rod, of a bracket formed with a segmental slot curving outwardly at its ends from the blind frame, and means for securing the lower end of said lever to its adjusted position in said slot, substantially as described.

2. In a blind slat adjuster and lock, the combination with a lever pivoted at its upper end to the slat rod, of a bracket formed with a segmental slot curving outwardly at its ends from the blind frame,

and recesses formed in the wall of said slot at its upper end and adapted to engage the lower end of said lever, substantially as described.

3. In a blind slat adjuster and lock, the combination of a plate having pivoting lugs thereon secured on the slat rod, a lever pivoted to said plate at its upper end, a bracket secured to the blind frame, a slot in said bracket extending outwardly at both ends from its center, a lateral screw threaded projection on said lever, and an interiorly screw threaded thumb nut on said projection and adapted to clamp the projection at various adjustments in said slot, substantially as subscribed.

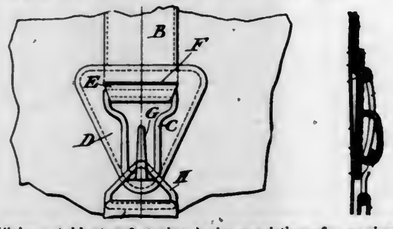
542,966. WIRE FENCE. FREDERICK T. RIGHT, Fort Wayne, Ind., assignor of one-half to John N. Neal, Coldwater, Mich. Filed Feb. 21, 1895. Serial No. 539,201. (No model.)



Claim.—1. In a wire fence a tension device for the purpose described comprising a tubular casing having at one end longitudinal and diametrical slots as shown and provided at its other end with an annular flange having opposite lateral lugs for the winding drum, a coil spring loosely mounted upon the said casing with one end bearing against the said annular flange and the other end loosely secured in the said slots as described, and a winding drum rotatably mounted in said lateral lugs having annular flanges 7 to prevent longitudinal displacement thereof provided upon one end with the ratchet wheel 8 adapted to engage a holding detent 9, as shown and adapted upon its other extended end to receive a proper wrench.

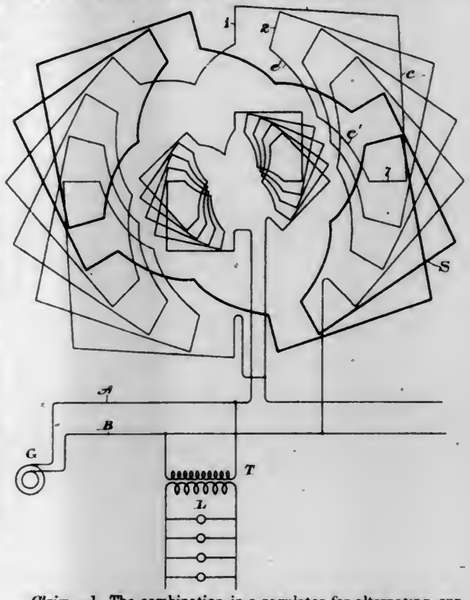
2. In a wire fence a tension device for securing the proper tension of the wires and for increasing said tension at pleasure, said tension device consisting of a cylindrical tubular shaft with a collar or flange at one end with lugs rigidly attached to said collar upon opposite sides with proper journaled bearings to receive the journals of a winding drum having a ratchet wheel upon one end of the drum shaft exterior to said lugs and adapted to engage a ratchet attached to said lug, the other end of said drum extended exterior to the lug in which the journal rests adapted to receive a wrench for turning said winding drum, the said tubular shaft at the end opposite the end collar being slotted and a spiral spring fitted loosely over said tubular shaft, one end of the spring resting against said collar and the other end bent and adapted to fit into and work freely in said slot, the end of one wire securely fastened to an end post and at the other end carried through the said tubular shaft and secured to the bent part of the spiral spring in the slotted part of said shaft, and the end of a like wire secured to another post and the other end carried through said hollow shaft and secured to said winding drum, and so arranged that when said drum is turned upon its bearings the last described wire will be wound upon the drum, and a proper tension be secured to both of said meeting wires, substantially as described, in said specification and shown in said drawings.

542,967. HORSE-BLANKET. WILLIAM B. RILEY, Philadelphia, Pa., assignor to Wm. B. Riley & Co., same place. Filed Mar. 3, 1893. Renewed June 12, 1895. Serial No. 552,597. (No model.)



Claim.—A blanket fastening device consisting of a surcingle secured to said blanket, and having a looped end with a buckle thereon, a guard piece between said buckle end and the said blanket, said guard piece having an opening through which said looped end passes, and means on the other end of said surcingle for securing said end to the buckle on the looped end, substantially as described.

542,968. REGULATOR FOR ALTERNATING ELECTRIC CIRCUITS. CHARLES P. STEINMETZ and ALBERT H. ARMSTRONG, Schenectady, N. Y., assignors to the General Electric Company, same place. Filed Feb. 16, 1895. Serial No. 538,630. (No model.)



Claim.—1. The combination in a regulator for alternating current circuits of a primary or inducing member having a winding coupled in shunt across the regulated circuit, an induced or secondary member having a corresponding winding in series with one of the circuit mains, and means for adjusting the two members so that the field and armature poles may stand at a desired angle to one another, as set forth.

2. The combination in a regulator for alternating circuits, of an inducing member having a face winding coupled in shunt across the circuit, with an armature mounted on a central shaft having a corresponding winding in series with one of the circuit mains, and means for rotating the armature so that its poles may stand at any desired angle to the field poles, as set forth.

3. The combination in a regulator for alternating current circuits, of a field winding coupled in shunt across the circuit, an armature winding in series with one of the mains, a short-circuited winding upon the primary member for neutralizing the self induction in the armature, and means for adjusting the relative positions of the primary and secondary members, as set forth.

542,969. PRICE-COMPUTING SCALE. HORACE R. SWIFT, Boston, Mass., assignor to the Jones-Swift Manufacturing Company, Portland, Me. Filed Mar. 19, 1895. Serial No. 542,339. (No model.)

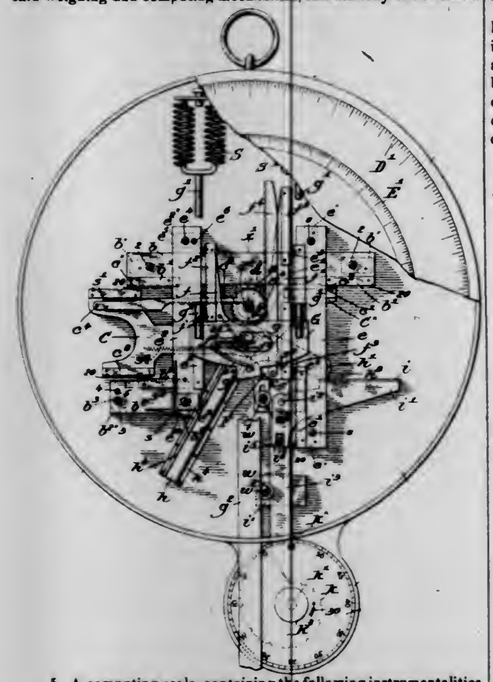
Claim.—1. A computing scale, containing the following instrumentalities, viz:—weighing mechanism; price computing mechanism operatively connected therewith and actuated thereby; a controlling member to determine by its angular position the extent of movement of said computing mechanism; and manually operated means to fix the angularity of said controlling member, substantially as described.

2. A computing scale, containing the following instrumentalities, viz:—weighing mechanism movable in a right line; price computing mechanism operatively connected to and actuated by the weighing mechanism; a controlling member to determine by its position the extent of movement of said computing mechanism; and manually operated means to fix the position of the controlling member, substantially as described.

3. A computing scale, containing the following instrumentalities, viz:—weighing mechanism movable in a right line; price computing mechanism operatively connected to and actuated by the weighing mechanism; a controlling member to determine by its angular position the extent of movement of said computing mechanism; and means to fix the angularity of the controlling member in accordance with the unit price, substantially as described.

4. A computing scale, containing the following instrumentalities, viz:—weighing mechanism; price computing mechanism operatively connected therewith and actuated thereby; a controlling member to

determine by its angular position the extent of movement of said computing mechanism; means to fix the angularity of said controlling member; and visual indicators for and operated respectively by said weighing and computing mechanisms, substantially as described.



5. A computing scale, containing the following instrumentalities, viz:—weighing mechanism; price computing mechanism operatively connected therewith and actuated thereby; a controlling member to determine by its angular position the extent of movement of said computing mechanism; means to fix the angularity of said controlling member; a dial provided with unit and price indicating scales, and co-operating pointers having a relative movement thereover, controlled respectively by the weighing and computing mechanisms, substantially as described.

6. A computing scale, containing the following instrumentalities, viz:—weighing mechanism; price computing mechanism operatively connected therewith and actuated thereby; a controlling member to determine by its angular position the extent of movement of said computing mechanism; and means to alter the angularity of the controlling member; and a locking device to maintain such angular position, substantially as described.

7. A computing scale, containing the following instrumentalities, viz:—weighing mechanism; price computing mechanism, including a rack movable in a right line by operation of the weighing mechanism; a controlling member to determine by its position the extent of movement of said rack; and means to manually fix the position of said controlling member, substantially as described.

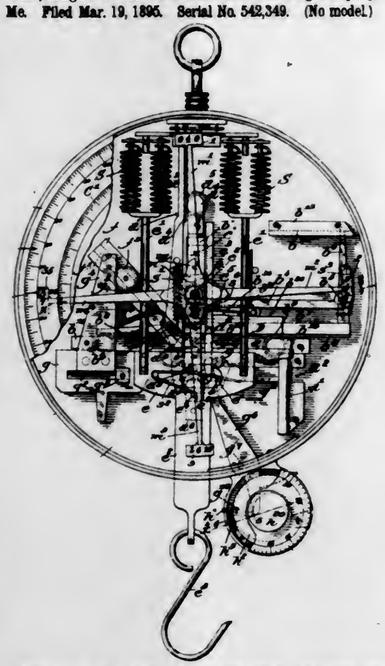
8. In a price computing scale the following instrumentalities, viz:—weighing mechanism movable in a right line; price computing mechanism, including a traveler movable at right angles to the path of the measuring mechanism; a controlling member carried by the traveler and movable angularly relative thereto; and connections between said member and the measuring mechanism, whereby the computing mechanism is operated by the measuring mechanism and the extent of its movement determined by the angular position of the controlling member, substantially as described.

9. In a price computing scale the following instrumentalities, viz:—measuring and price computing mechanisms, each including a member movable in a right line, and a rack mounted on each of said members; concentric pinions engaged respectively by said racks, and pointers rotatable by said pinions, combined with a controlling member connecting the said members in the two mechanisms, and means to fix the position of said controlling member, whereby one mechanism is moved by and in a fixed ratio to the movement of the other mechanism, substantially as described.

10. In a price computing scale, weighing and computing mechanisms; a carriage forming a part of one mechanism and a traveler forming a part of the other, movable in paths at right angles to each other; combined with a controlling member pivotally mounted on one, and co-operating friction rolls on the other, to thereby connect the two mechanisms by a movable connection; and means to change the angular position of the controlling member and thereby vary the path of the connection, substantially as described.

11. In a price computing scale, a carriage movable in a right line; and a fixed and an adjustable bridge provided with ball bearings for the carriage; combined with a traveler movable at right angles to the carriage; fixed and adjustable bridges provided with ball bearings for said traveler; a movable connection between the carriage and traveler; and means to change the path of movement of said connection, to thereby vary the ratio of movement of said carriage and traveler, substantially as described.

542,970. PRICE-COMPUTING SCALE. HORACE E. SWIFT, Boston, Mass., assignor to the Jones-Swift Manufacturing Company, Portland, Me. Filed Mar. 19, 1895. Serial No. 542,349. (No model.)



Claim.—1. In a price computing scale, weighing mechanism; computing mechanism operated by movement thereof; a controlling member carried by the weighing mechanism and to determine by its angular position the extent of movement of the computing mechanism; and means to manually move said member relative to its supporting mechanism, to fix its angularity, substantially as described.

2. In a price computing scale, weighing mechanism, including a carrier-plate movable in a right line; computing mechanism operated by the movement of said carrier-plate; a controlling member pivotally connected to said plate; a connection between said weighing and computing mechanisms, movable along said member; and means to turn said member on its pivot to adjust its angle relative to the path of movement of the carrier-plate, to thereby fix the path of said connection, substantially as described.

3. In a price computing scale, weighing mechanism; a controlling member movable therewith; means to fix the angularity of said member relative to the path of movement of said mechanism; computing mechanism, including a carriage movable in a right line; and a moving connection between said carriage and controlling member, to move the computing mechanism in a given ratio to the measuring mechanism, substantially as described.

4. In a price computing scale, weighing and computing mechanisms, each including a pinion and a spring-controlled rack in mesh therewith; a controlling member connecting said mechanisms and determining by its position the relative movements thereof; means to manually fix the position of said member; and visual indicators actuated by said weighing and computing mechanisms respectively, to indicate the weight and price of an article, substantially as described.

5. In a price computing scale, weighing and computing mechanisms; a controlling member connecting them and determining by its position the extent of movement of the computing mechanism; a graduated unit price dial, locking plate, and evolute shaped actuator, connected to be simultaneously rotated; and connections intermediate said actuator and controlling member, to fix the position of the latter according to the unit price of the article, substantially as described.

6. In a price computing scale, a carrier-plate movable in a right line; a counterbalancing device connected thereto, and having an interposed spring to take up shock; an adjustable stop to limit the inward movement of the carrier-plate, and a buffer on said plate, substantially as described.

7. In a scale, indicating mechanism, including a rotatable hand or pointer; a dial having a plurality of apertures therein and graduated equally intermediate said apertures; a character carrier beneath the dial and having separated series of characters thereon, one of said series being adjacent each aperture; and means controlled by the movement of said indicating mechanism to automatically display at each aperture a character of its particular series corresponding to the rotative movement of the hand or pointer, substantially as described.

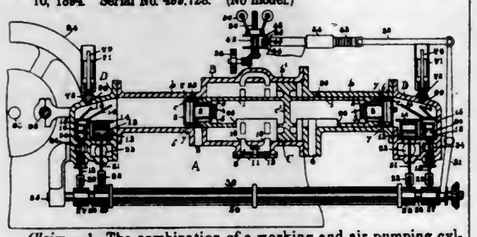
8. In a scale, indicating mechanism, including a rotatable hand or pointer; a dial having an aperture therein; a spring-actuated character-carrier beneath the dial and having one or more characters thereon; a detent therefor, and a cam plate for and against which the detent rests, said detent and cam plate regulating the movement of the character-carrier, the movement of said cam plate by the indicating mechanism permitting proportional movement of the detent and character carrier, substantially as described.

9. In a price computing scale, weighing mechanism; computing mechanism operated by movement thereof; a controlling member to determine by its position the extent of movement of the computing mechanism; means to fix the position of said member; a dial having an aperture therein; a spring actuated character carrier having one or more characters thereon adapted to be displayed at said aperture; and means actuated by said computing mechanism to automatically permit proportional movement of said character carrier to display a character at the aperture, substantially as described.

542,971. PROCESS OF TAWING. OTTO P. AMEND, New York, N. Y. Filed Apr. 5, 1894. Serial No. 506,397. (No specimens.)

Claim.—The process of tanning and dyeing which consists in subjecting the material to be treated to the action of a chromic acid solution, and then to the reducing action of an aromatic amine or a compound thereof, substantially as set forth.

542,972. GAS-ENGINE. JAMES BRYAN, Lynn, Mass. Filed Feb 10, 1894. Serial No. 499,728. (No model.)



Claim.—1. The combination of a working and air pumping cylinder arranged in line, connected working and air pumping pistons, a port for the admission of air from the air pumping cylinder to the working cylinder, a valve arranged to close said port during a portion of the stroke of the air pumping piston, and means for connecting the compression side of the air pumping piston, back of the working piston, with the atmosphere as the pistons approach the limit of their compression stroke, substantially as described.

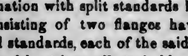
2. The combination of two working cylinders and an interposed air pumping cylinder arranged in line, rigidly connected air pumping and working pistons, suitably controlled ports connecting the working and air pumping cylinders, connected ports in the air pumping cylinder for passing air from the compression to the suction side of the air pumping piston, and suitably controlled air induction and exhaust ports in the working cylinder adjacent to the air pumping cylinder, substantially as described.

3. The combination of two working cylinders and an interposed air pumping cylinder arranged in line, connected air pumping and working pistons, suitably controlled ports connecting the air pumping and working cylinders, means for exhausting from the compression to the suction side of the air pumping piston at or near the center of its stroke, and means for exhausting from the compression side of the air pumping piston to the atmosphere at or near the limits of its stroke substantially as described.

4. The combination of two working cylinders and an interposed air pumping cylinder arranged in line, connected air pumping and working pistons, suitably controlled ports connecting the air pumping and working cylinders and a series of air induction ports located at or near the center and opposite ends of the air pumping cylinder, substantially as described.

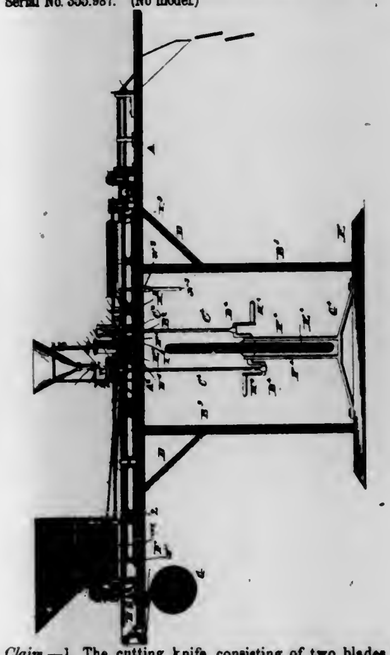
5. The combination of two working cylinders and an interposed air pumping cylinder arranged in line, connected air pumping and working pistons, suitably controlled ports connecting the air pumping and working cylinders, air induction and exhaust ports adjacent to the opposite ends of the air pumping cylinder, connected ports in the air pumping cylinder on each side of and adjacent to its center, and a suitably controlled air induction port communicating with the connected ports in the air pumping cylinder, all substantially as described.

542,973. AX. JAMES W. CARVER, Granville, N. Y. Filed Feb. 10, 1894. Renewed Dec. 19, 1894. Serial No. 532,374. (No model.)



Claim.—The ax head herein shown and described, having the narrow flat longitudinal rib extending from the butt toward the bit of the head, having the curved cutting edge tapered and merging into the said rib and having the edges tapered from the sides of the rib the entire length of the head, for the purpose stated.

542,974. CIGARETTE-MACHINE. FLORENCE J. D. CHAPPELL, Baltimore, Md., assignor of one-half to S. C. Slade, same place; Amelia E. Slade administratrix of said Chappell, deceased. Filed June 19, 1890. Serial No. 355,987. (No model.)



Claim.—1. The cutting knife, consisting of two blades having slotted shanks, in combination with the knife actuating shaft having a squared journal, over which the slotted shanks of the blades fit, and the clamping nut whereby the blades are adjustably secured to the shaft, substantially as specified.

2. The combination with split standards having adjusting bolts B', of a guide consisting of two flanges having their lower ends clamped in the said standards, each of the said flanges having its upper end concaved and bent inwardly to hold a paper ribbon, substantially as described.

3. The combination with a chamber having slots in the rear side thereof, a sliding rocker shaft, fingers projecting through the said slots and having their ends secured to the said shaft, an elbow lever having its lower end pivoted and its elbow pivoted to an arm projecting rearwardly from the said shaft, and a revoluble eccentric having a collar thereon secured to the rear end of the said elbow lever, substantially as described.

4. The combination with a chamber having slots in the rear side thereof, of slotted standards, a shaft mounted in the slots of the said standards, fingers projecting through the slots in the said chamber and having their ends secured to the said shaft, an elbow lever hav-

ing its lower end pivoted and its elbow pivoted to an arm projecting rearwardly from the said shaft, and a revoluble eccentric having a collar thereon secured to the rear end of the said elbow lever, substantially as described.

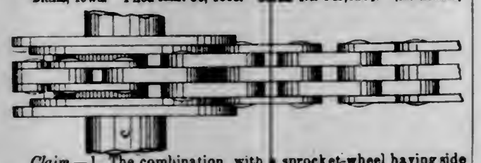
5. The combination with a suitable curved guide having edges bent inwardly, of a former fitting thereto and having its one end corresponding in shape to the said guide and tapered therefrom to its opposite end at which point one edge thereof projects over the other and is bent back upon itself, the said guide having at an intermediate point scallops c^3 below the level of the bent edges of the guide, substantially as described.

6. The combination with a disk having a perforated paste receptacle mounted thereon, and a liquid receptacle adapted to deliver its contents directly upon the said disk, substantially as described.

7. The combination with a disk having a perforated paste receptacle mounted thereon, a liquid receptacle adapted to deliver its contents directly upon the said disk, and a distributing roller bearing upon the said disk, substantially as described.

8. The combination with a driven transverse shaft having drawing rollers thereon, of a mutilated gear wheel mounted on the said shaft, and a longitudinal shaft having a knife blade thereon and having rigidly secured thereto a pinion engaging the mutilated gear wheel upon the transverse shaft, substantially as described.

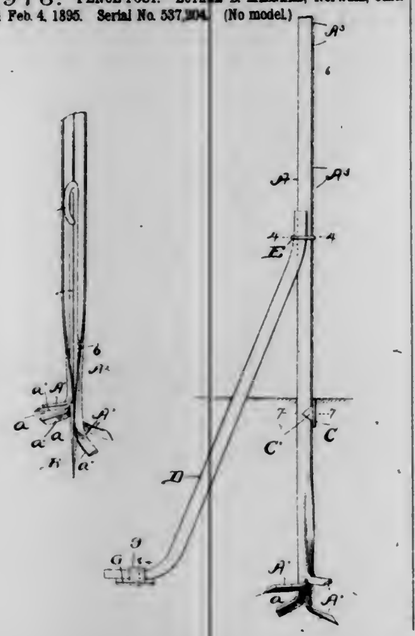
542,975. ELEVATING-MACHINE. CHARLES R. KIMBALL, Council Bluffs, Iowa. Filed Mar. 30, 1895. Serial No. 543,920. (No model.)



Claim.—1. The combination, with a sprocket-wheel having side flanges thereon extending radially beyond the outer circle of the engaging sprockets, of a chain normally adapted to be engaged by said sprockets and wider than the space between said side flanges in parts of its length, whereby said chain is raised out of engagement with the wheel at those points of its travel comprising said wider parts, substantially as set forth.

2. The combination, with the sprocket wheel having side flanges extending radially beyond the outer circle of the sprockets, of a chain normally adapted to engage the wheel and supplementary links attached to the sides of chain in parts of its length, whereby said parts are made wider than the space between said side flanges, substantially as set forth.

542,976. FENCE-POST. LUTHER B. MERNARD, Norwalk, Ohio. Filed Feb. 4, 1895. Serial No. 537,304. (No model.)



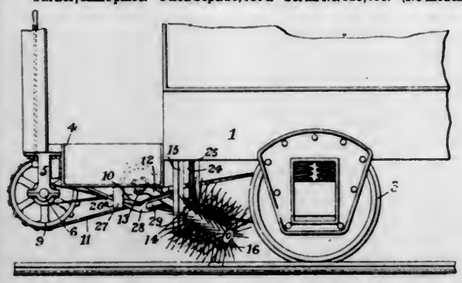
Claim.—1. A metallic fence-post, slotted or slitted upwardly from its lower extremity to form blades that are bent outwardly and are arranged in a spiral path about the axis of the post, substantially as set forth.

2. A metallic fence-post slotted or slitted upwardly from its lower extremity to form blades that are bent to project outwardly and are arranged in a spiral path about the axis of the post, said blades having cutting-edges, substantially as and for the purpose set forth.

3. A metallic fence-post the body-portion whereof is composed of plate or sheet metal and V-shaped or U-shaped in cross-section, and is slotted or slitted upwardly from its lower extremity to form blades that are arranged in a spiral path about the axis of the post, substantially as set forth.

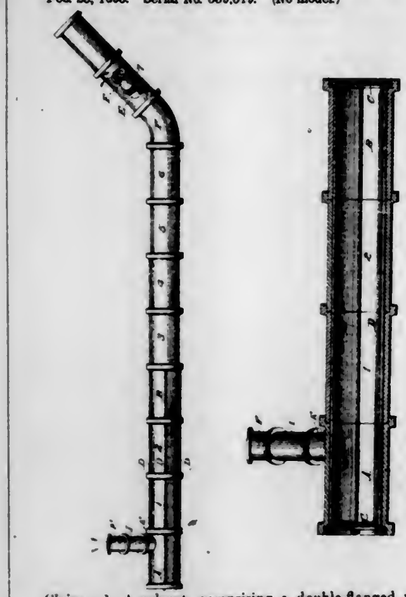
4. The combination with a metallic fence post V or U-shaped in cross-section, and provided at its lower end with outwardly-projecting blades arranged in a spiral path about the axis of the post, of a centering-bar adapted to be placed within the post during the introduction of the latter into the ground said centering-device being provided with an eye for the reception of the bar or tool employed in turning the post, substantially as set forth.

542,977. TRACK-SWEEPING ATTACHMENT FOR STREET-CARS. WILLIAM H. PENNY, Danbury, Conn., assignor of one-half to Henry H. Turner, same place. Filed Sept. 21, 1894. Serial No. 523,735. (No model.)



Claim.—In a street car track sweeping machine, the transverse driving shaft, the inclined shafts connected by universal joints at the outer ends thereof and supported in vertically movable bearings and carrying brushes, and separate rock shafts having slotted crank arms through the slots of which the brush shafts pass, and means for rotating said rock shafts and thereby raising or lowering the brushes, all combined substantially as described.

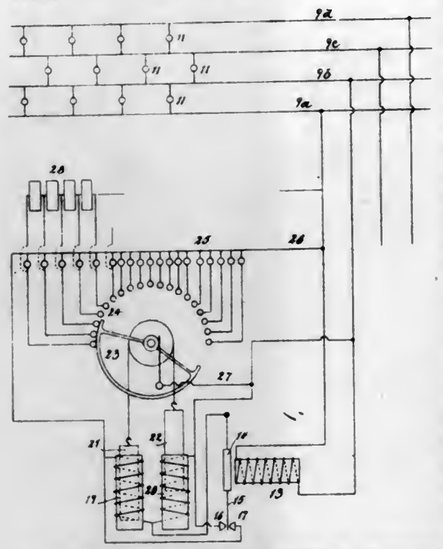
542,978. CULVERT. BENJAMIN P. SAUNDERS, Dye, Mo. Filed Feb. 23, 1895. Serial No. 539,519. (No model.)



Claim.—1. A culvert, comprising a double-flanged pipe, and a number of single-flanged pipes, the unflanged ends of all but one of which fit in the flanged ends of the others, and the remaining one having its unflanged end fitting in one of the flanged ends of the double-flange pipe, substantially as set forth.

2. A culvert, comprising a double-flanged pipe, provided with a branch pipe or arm composed of any desirable number of sections, and a number of single-flange pipes, the unflanged ends of all but one of which fit in the flanged ends of the others, and the remaining one having its unflanged end fitting in one of the flanged ends of the double-flange pipe, substantially as set forth.

542,979. SYSTEM OF ELECTRICAL DISTRIBUTION. GEORG W. VON SIEMENS, Berlin, Germany. Filed Apr. 26, 1893. Serial No. 471,972. (No model.) Patented in Belgium Jan. 28, 1888, No. 84,457; in Germany December 13, 1888, No. 50,578; in France Dec. 28, 1888, No. 195,045; in Italy Dec. 28, 1888, No. 24,650; in Sweden Dec. 28, 1888, No. 3,023; in Austria-Hungary Dec. 28, 1888, No. 20,779 and No. 69,346; in England Mar. 1, 1889, No. 3,674, and in Switzerland Mar. 2, 1889, No. 528.



Claim.—1. In an electrical distribution system, the combination of a source of energy, feeder conductors therefrom, main distributing conductors, translating devices arranged in parallel series of said conductors, and devices for automatically regulating the potential of the current between a pair of the distributing conductors by the counter-electromotive force of said regulating devices.

2. In an electrical distribution system, the combination of a source of energy, feeder conductors therefrom, main distributing conductors, translating devices arranged in parallel series of said conductors, and devices arranged in parallel series in the distributing conductors for automatically regulating the potential of the current between said conductors by the counter-electromotive force of said regulating devices.

3. In an electrical distribution system, the combination of a source of energy, a plurality of feeder conductors leading therefrom, distributing conductors connected to said feeder conductors, translating devices arranged in parallel series with said distributing conductors, and means consisting of controlling electro-magnetic mechanism subordinate electro-magnetic mechanism controlled thereby and resistances, for automatically regulating the potential of the current between the various distributing conductors.

542,980. SWITCH-ACTUATING APPARATUS. GEORGE T. JANVRIN and FRANK J. COMLON, Brooklyn, N. Y. Filed Dec. 12, 1894. Serial No. 531,565. (No model.)

Claim.—1. In switch operating attachments to a car, the combination with roll carrying staffs pivoted to the car body, of the guard employed in the front of the car wheels, fixed in the relation to the said roll staffs to support the staffs in the working position substantially as described.

2. In switch operating attachments to a car, the combination with the rolls, and the roll carrying staffs pivoted to the body of the car, of the guard employed in front of the car wheels, mounted on pivots and in the relation to said roll staffs to support them in the working position, substantially as and for the purpose set forth.

3. In switch operating attachments to a car, the combination with the rolls, and the roll carrying staffs pivoted to the body of the car, of the guard employed in front of the car wheels, arranged in the relation to said staffs, and provided with the stops for supporting said staffs against the thrusts of the push-studs of the switch apparatus substantially as described.

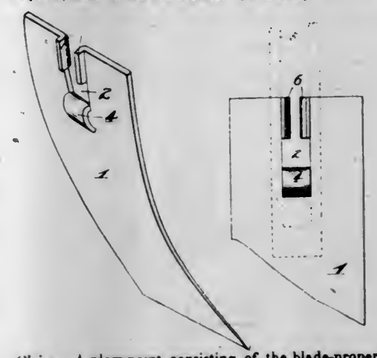
4. In switch operating attachments to a car, the combination with the rolls and the roll carrying staffs pivoted to the body of the car, of the guard employed in front of the car wheels, the keepers on the roll staffs, and the keeper engaging and holding jaws on the guard substantially as described.

5. In switch operating attachments to a car, the combination with the rolls and the roll carrying staffs pivoted to the body of the car, of the guard employed in front of the car wheels, mounted on pivots and in the relation to said roll staffs to support them in the working position, the keepers on the roll staffs, the keeper engaging holding and automatically detaching jaws on the guard, and means to actuate said guard for restoring the roll staffs to the normal positions substantially as described.

6. In switch operating attachments to a car, the combination with the rolls and the roll carrying staffs pivoted to the body of the car, of the guard employed in front of the car wheels, mounted on pivots and in the relation to the roll staffs to support them in the working position, and to restore them to the normal position, the hooks for engaging and retaining the roll staffs in the normal position, the elbow lever connected with the guard for operating it, and the push-pin for operating the elbow lever substantially as described.

7. In switch operating attachments to a car, the combination with the rolls and the roll carrying staffs pivoted to the body of the car, of the guard employed in front of the car wheels, mounted on pivots and in the relation to the roll staffs to support them in the working position and to restore them to the normal position, the hooks for engaging and retaining the rolls staffs in the normal position, the elbow lever connected with the guard for operating it, the push-pin for operating the elbow lever, and the hook detaching chains and foot lever connected with said hooks substantially as described.

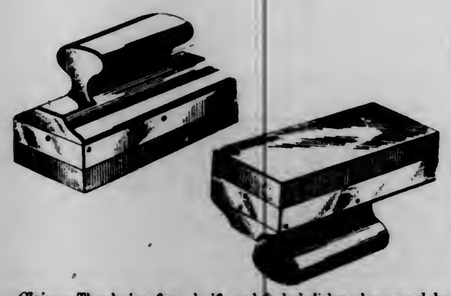
542,981. PLOW-POINT. REUBEN JONES, Kirkwood, Ga. Filed Sept. 21, 1894. Serial No. 523,725. (No model.)



Claim.—A plow-point consisting of the blade-proper, having a hole for the heel-bolt punched therein, a lug on the back side of said blade below the hole, and metal being slit from said hole upward and lips turned back therefrom, said lugs and lips being adapted to fit between the side-pieces of the standard, substantially as and for the purpose specified.

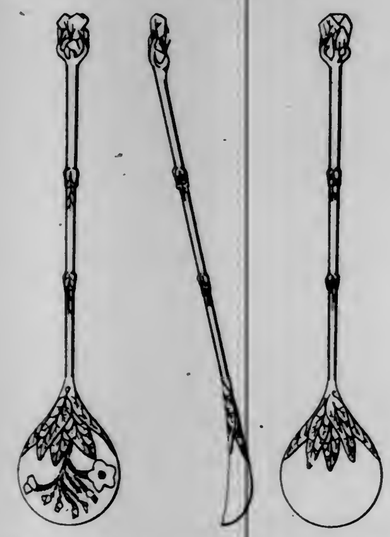
DESIGNS.

24,466. KNIFE AND FORK POLISHER. HENRY S. ROSENSTOCK, Baltimore, Md. Filed June 18, 1895. Serial No. 553,236. Term of patent 7 years.



Claim.—The design for a knife and fork polisher shown and described.

24,467. SPOON. ALFRED PIETLE, Louisville, Ky. Filed Mar. 23, 1895. Serial No. 542,990. Term of patent 3½ years.



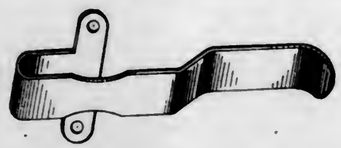
Claim.—The design for a spoon, as herein described and shown.

24,468. BOTTLE. JOHN H. GAULT, Philadelphia, Pa. Filed Jan. 16, 1895. Serial No. 535,151. Term of patent 14 years.



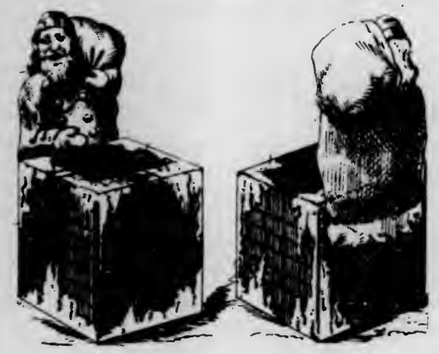
Claim.—The design for a bottle, as herein described and shown.

24,469. HAT-SUPPORTER. JOHN R. HIRSH, Syracuse, N. Y. Filed May 15, 1895. Serial No. 549,442. Term of patent 3½ years.



Claim.—The design for a hat supporter, substantially as described and shown.

24,470. BOX. THEODORE E. WIEDERSHEIM, Jr., Philadelphia, Pa. Filed May 23, 1895. Serial No. 550,456. Term of patent 3½ years.



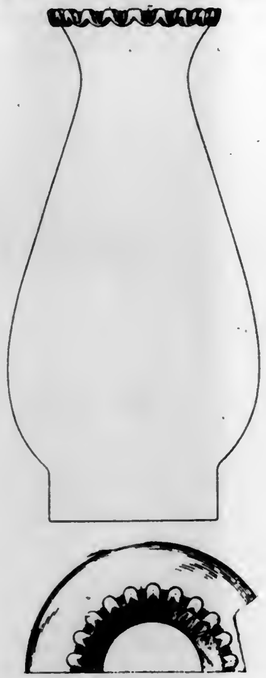
Claim.—The design for a box, substantially as described and shown.

24,471. LAMP-CHIMNEY. WILLIAM BUTTLER, Redkey, Ind. Filed May 31, 1895. Serial No. 551,329. Term of patent 14 years.



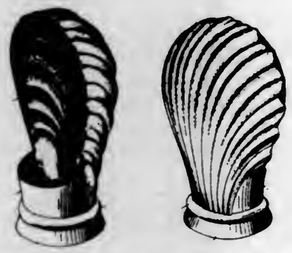
Claim.—The design for lamp-chimneys substantially as herein shown and described.

24,472. LAMP-CHIMNEY. WILLIAM BUTTLER, Redkey, Ind. Filed May 21, 1895. Serial No. 550,141. Term of patent 14 years.



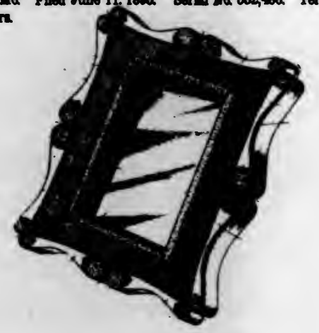
Claim.—The design for lamp chimneys and similar articles substantially as herein shown and described.

24,473. ELECTRIC-LIGHT SHADE. HARRISON D. MCFADDIN East Orange, N. J. Filed June 10, 1895. Serial No. 552,341. Term of patent 7 years.



Claim.—The design for an electric light shade, substantially as herein shown and described.

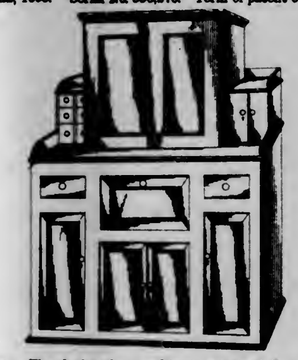
24,474. PICTURE-FRAME. CHARLES H. SHIRL and FRED L. SHIRL, Craig, Mo. Filed June 11, 1895. Serial No. 552,436. Term of patent 14 years.





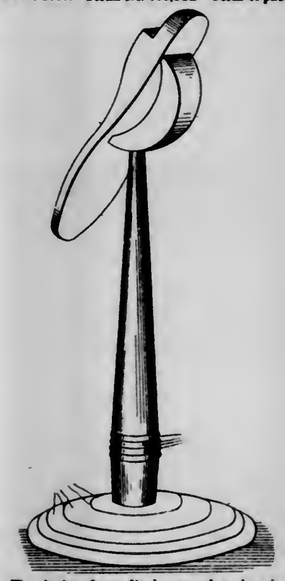
Claim.—The design for a picture frame herein shown and described.

24,475. CABINET. THOMAS J. SHEPHERD, Rainey, Okla. Filed May 22, 1895. Serial No. 550,270. Term of patent 3½ years.



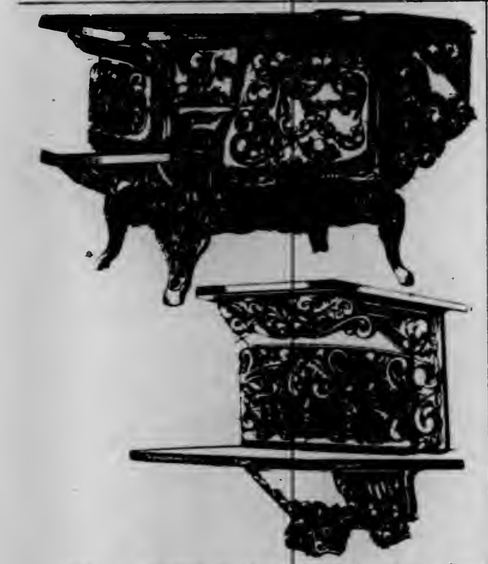
Claim.—The design for a cabinet, substantially as herein shown and described.

24,476. DISPLAY-STAND. JESSE W. TURNER, Louisiana, Mo. Filed June 17, 1895. Serial No. 553,144. Term of patent 14 years.



Claim.—The design for a display-stand, as herein shown and described.

24,477. COOKING-STOVE. EDWARD J. KING and THOMAS R. KENNEDY, Rochester, N. Y., assignors to the Cooperative Foundry Company, same place. Filed May 23, 1895. Serial No. 550,457. Term of patent 7 years.



Claim.—1. The design for stoves substantially as herein shown and described.

2. In the design for stoves, the design for the base and legs, substantially as shown and described.

3. In the design for stoves, the design for the oven-door, substantially as shown and described.

4. In the design for stoves, the design for the ash-pit section F, substantially as shown and described.

5. In the design for stoves, the design for the front, comprising panel M, and the vertical panels N, substantially as shown and described.

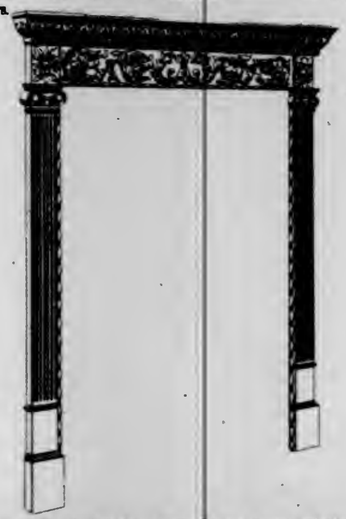
6. In the design for stoves, the design for the front ash-pit door L, substantially as shown and described.

7. In the design for stoves, the design for the reservoir panel O, substantially as shown and described.

8. In the design for stoves, the design for the oven-shelf Q, substantially as shown and described.

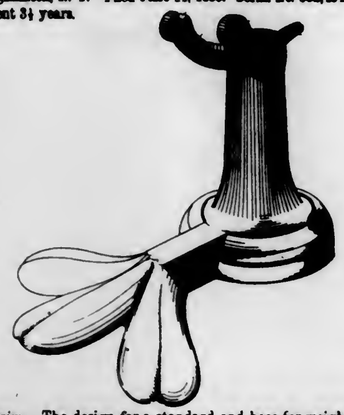
9. In the design for stoves, the design for the fire-pot door K, substantially as shown and described.

24,478. FRAME FOR FIRE-GRATES. CHARLES H. PORTER, Rockford, Ill. Filed May 31, 1895. Serial No. 551,328. Term of patent 7 years.



Claim.—The design for a frame for fire grates substantially as herein shown and described.

24,479. STANDARD OR BASE FOR SCALES. EDWARD F. JONES, Binghamton, N. Y. Filed June 11, 1895. Serial No. 552,484. Term of patent 3½ years.



Claim.—The design for a standard and base for weighing scales, herein shown and described.

24,480. SCALE-BEAM. PERLEY F. HASEN, St. Johnsbury, Vt., assignor to the E. & T. Fairbanks & Company, same place. Filed May 31, 1895. Serial No. 551,333. Term of patent 14 years.



Claim.—The design for a scale beam as herein shown and described.

24,481. FOLLOWER FOR CULINARY VESSELS. MATEJ KRATKY, Hemingford, Nebr. Filed June 20, 1895. Serial No. 553,472. Term of patent 14 years.



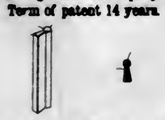
Claim.—The design for an internal cover or follower, herein shown and described.

24,482. MEAT-CHOPPER. WILLIAM C. MAYNARD, Canton, Ohio. Filed June 10, 1895. Serial No. 552,343. Term of patent 14 years.



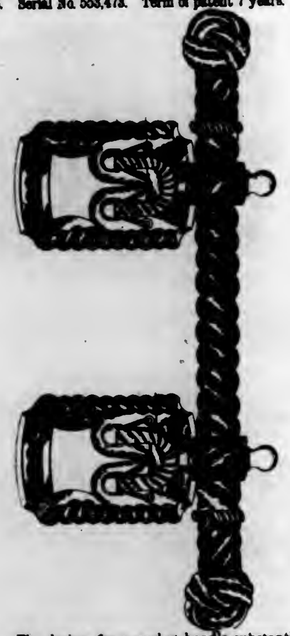
Claim.—The design for a meat chopper, substantially as set forth.

24,483. NAIL OR SLUG. JOHN C. DAGGETT, Boston, Mass., assignor to the Champion Nailing Machine Company. Filed Apr. 27, 1895. Serial No. 547,412. Term of patent 14 years.



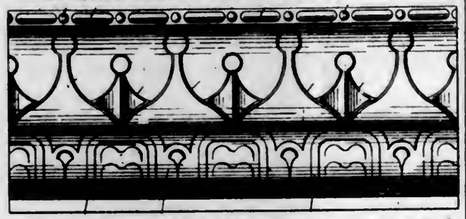
Claim.—The design for a nail or slug, substantially as set forth.

24,484. CASKET-HANDLE. JAMES T. MORGAN, Winsted, Conn., assignor to the Morgan Silver Plate Company, same place. Filed June 20, 1895. Serial No. 553,473. Term of patent 7 years.



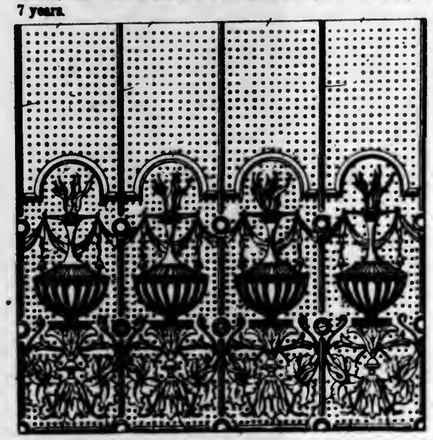
Claim.—The design for a casket handle substantially as herein shown and described.

24,485. MOLDING. EDWARD A. LANGENBACH, Canton, Ohio. Filed June 10, 1895. Serial No. 552,344. Term of patent 7 years.



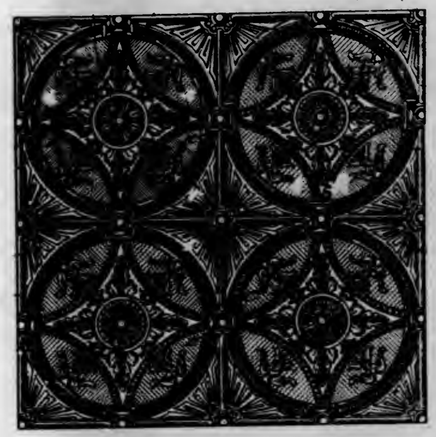
Claim.—The design for a molding herein shown and described.

24,486. METALLIC SIDING-PLATE. EDWARD A. LANGENBACH, Canton, Ohio. Filed June 3, 1895. Serial No. 551,574. Term of patent 7 years.



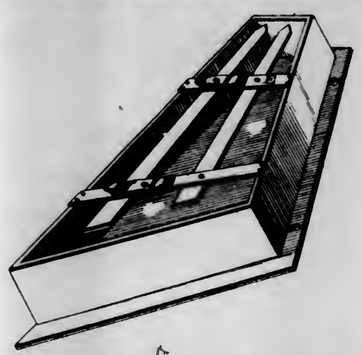
Claim.—The design for a metallic siding-plate herein shown and described.

24,487. METALLIC CEILING-PLATE. EDWARD A. LANGENBACH, Canton, Ohio. Filed June 3, 1895. Serial No. 551,575. Term of patent 7 years.



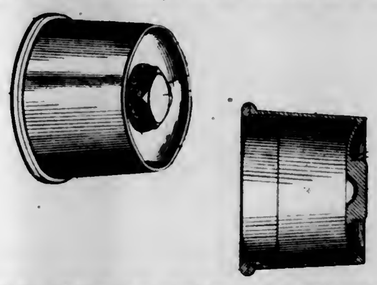
Claim.—The design for a metallic ceiling plate herein shown and described.

24,488. TRAY FOR BICYCLE-CASES. MARX GARLIC, Philadelphia, Pa. Filed Oct. 30, 1894. Serial No. 527,489. Term of patent 14 years.



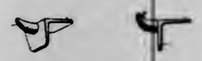
Claim.—The design for a tray of a bicycle or tricycle case, substantially as shown and described.

24,489. VEHICLE-HUB CAP. ANDREW C. FARNSWORTH, Chicago, Ill., assignor to the Imperial Ball Bearing Axle Company, same place. Filed Feb. 21, 1895. Serial No. 539,288. Term of patent 14 years.



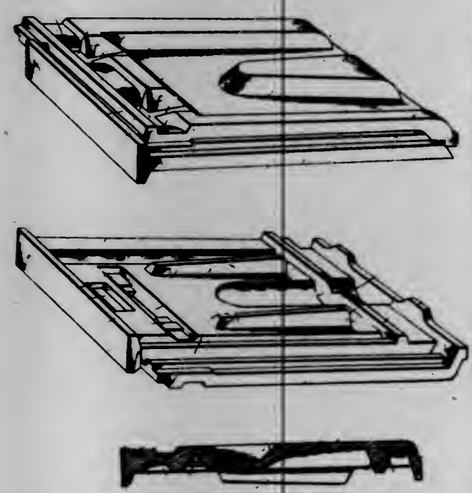
Claim.—The design for vehicle hub caps or bands substantially as herein described and shown.

24,490. SHELF-SUPPORTING BRACKET. JAMES MACPHAIL, Blue Island, Ill. Filed May 17, 1895. Serial No. 549,703. Term of patent 14 years.



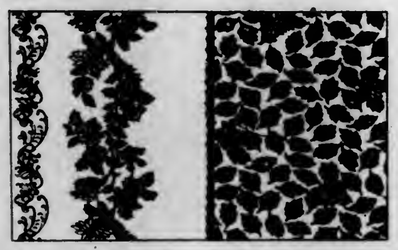
Claim.—The design for shelf-supporting brackets, substantially as herein shown and described.

24,491. ROOFING-TILE. JOHN M. MCCABE, Fairmount, Ill. Filed Apr. 20, 1895. Serial No. 546,568. Term of patent 14 years.



Claim.—The design for a roofing tile herein shown and described.

24,492. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed June 8, 1895. Serial No. 552,177. Term of patent 3½ years.

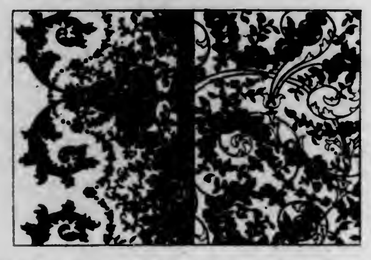


Claim.—1. In a design for a carpet, the body A, substantially as shown.

2. In a design for a carpet, the border B, substantially as shown.

3. The design for carpets, consisting of the body A, and the border B, substantially as shown.

24,493. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed June 8, 1895. Serial No. 552,178. Term of patent 3½ years.



Claim.—1. In a design for a carpet, the body A, substantially as shown.

2. In a design for a carpet, the border B, substantially as shown.

3. The design for carpets, consisting of the body A, and the border B, substantially as shown

TRADE-MARKS

REGISTERED JULY 16, 1895.

26,809. TROUSERS. SHAUER BROS. & Co., Chicago, Ill. Filed June 7, 1895.



Essential feature.—The representation of a bicycle bearing a keystone on which is a monogram of the letters "S S S." Used since February 1, 1895.

26,810. WOOL GOODS IN THE PIECE. D. C. APPERLY, CARSON & Co., London, England. Filed Mar. 26, 1895.



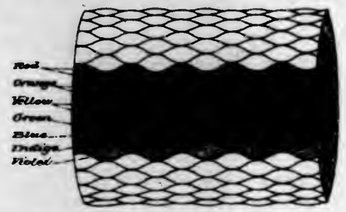
Essential feature.—The representation of a ventilator having a bell-shaped body with a cosiform top surmounted by a ball and spear. Used since August, 1894.

26,811. WATERPROOF FABRICS. HEPTON BROS., Leeds, England. Filed June 1, 1895.

'HEPTONETTE'

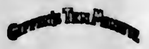
Essential feature.—The word "HEPTONETTE." Used since December, 1887.

26,812. WOVEN-FABRIC HOSE. BENJAMIN L. STOWE, Jersey City, N. J. Filed May 13, 1895.



Essential feature.—A stripe composed of the seven rainbow primary colors extending lengthwise of a hose. Used since April 1, 1895.

26,813. REMEDY FOR HEADACHE. BARTON L. BROWN, Philadelphia, Pa. Filed May 31, 1895.



Essential feature.—The words "GIFFIN'S TEN MINUTE." Used since January 2, 1890.

26,814. REMEDY FOR CATARRH AND OTHER NASAL, HEAD, AND THROAT AFFECTIONS. GEORGE B. EVANS, Philadelphia, Pa. Filed June 18, 1895.

BRINTINE

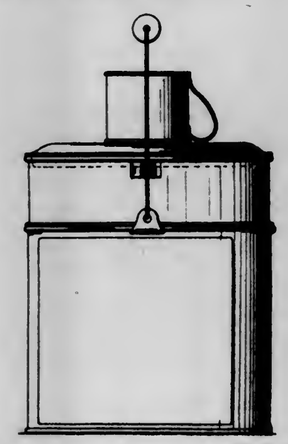
Essential feature.—The word "BRINTINE." Used since March 1, 1894.

26,815. SMOKING AND CHEWING TOBACCO. J. J. HICKOX & Co., Richmond, Va. Filed May 17, 1895.

TWELVE O'CLOCK BUCKET

Essential feature.—The words "TWELVE O'CLOCK BUCKET." Used since April 3, 1895.

26,816. SMOKING AND CHEWING TOBACCO. J. J. HICKOX, & Co., Richmond, Va. Filed May 17, 1895.



Essential feature.—A pictorial representation of a lunch-bucket having a handle, a cover, and an inverted drinking-cup upon said cover. Used since April 30, 1895.

26,817. SMOKING-TOBACCO. TERRELOOT BROS. & Co., Meridian, Miss. Filed June 20, 1895.

Hoo-Hoo

Essential feature.—The compound word "Hoo-Hoo." Used since June 21, 1893.

26,818. TOBACCO, CIGARS, AND CIGARETTES. JOSEPH OURSLER, New York, N. Y. Filed Nov. 1, 1894.

MIDWAY PLAISANCE

Essential feature.—The words "MIDWAY PLAISANCE." Used since May 1, 1893.

26,819. CHAMPAGNES. VEUVE LAURENT & CIE., Tours, France. Filed May 31, 1895.



Essential feature.—The representation of a barrel with a cluster of vines and grapes issuing therefrom. Used since January 23, 1894.

26,820. WHISKY. REEVES, POOLE & CO., Washington, D.C. Filed June 12, 1895.

REOMA

Essential feature.—The word "REOMA." Used since April 8, 1895.

26,821. LAGER-BEER. FIRM OF G. PRÖBOR, Munich, Germany. Filed May 10, 1895.



Essential feature.—The representation of sprays of grain forming a background for a star bearing a monogram of the letters "G P," and which is of greater diameter than, and projects beyond, the periphery of a circular band which partly incloses it. Used since April 15, 1894.

26,822. MINERAL WATERS. VERONICA MINERAL WATER COMPANY, Santa Barbara, Cal. Filed May 31, 1895.

VERONICA



Essential feature.—The word "VERONICA" and the representation of an old Mission church. Used since September 6, 1893.

26,823. COFFEE. SMITH BROS. & COMPANY, LIMITED, New Orleans, La. Filed Jan. 26, 1895.

CRESCENT CITY



Essential feature.—The words "CRESCENT CITY" and the representation of a crescent moon. Used since November 29, 1894.

26,824. SAUCES OR RELISHES FOR USE WITH FOOD. BRAND & Co., London, England. Filed June 1, 1895.

INTERNATIONAL
SAUCE
THE
A.1.

Essential feature.—The word, letter, and numeral "THE A.1.," in connection with the words "INTERNATIONAL SAUCE." Used since 1862.

26,825. CRACKERS, CAKES, AND BREAD. UNITED STATES BAKING COMPANY, Pittsburg, Allegheny, and Williamsport, Pa.; Cincinnati, Columbus, Zanesville, Dayton, Newark, Cleveland, Toledo, Mansfield, Akron, and Springfield, Ohio; Detroit, Bay City, Jackson, Muskegon, and Lansing, Mich.; Indianapolis, Fort Wayne, Richmond, Evansville, and Terre Haute, Ind.; Wheeling, W. Va.; Buffalo and Rochester, N. Y., Boston, Mass., and Louisville, Ky. Filed Jan. 31, 1895.



Essential feature.—A series of red bands or stripes encircling the body of a natural-wood barrel. Used since May, 1894.

26,826. WHEAT-FLOUR. PILLSBURY-WASHBURN FLOUR MILLS COMPANY, (LIMITED,) Minneapolis, Minn. Filed June 17, 1895.

REFORM

Essential feature.—The word "REFORM." Used since 1874.

26,827. PREPARED CODFISH. WILLIAM HENRY LORD, Dedham, Mass. Filed May 27, 1895.



Essential feature.—The representation of a fisherman, sailor, or "old salt" standing alone and wearing a tarpaulin and oilskins, with one hand shading his eyes and the other holding a coil of rope thrown over his shoulder. Used since February, 1895.

26,828. MATCHES. THE DIAMOND MATCH COMPANY, Chicago, Ill., Wilmington, Del., Detroit, Mich., and Westville, Conn. Filed May 28, 1895.



Essential feature.—A parallelogram with the portions within the boundary-lines which are on opposite sides of a diagonal made of contrasting colors. Used since December, 1871.

26,829. LAUNDRY SOAP. FRANK E. COULTER, Omaha, Nebr. Filed June 1, 1895.

LAUNDROID

Essential feature.—The word "LAUNDROID." Used since January 1, 1895.

26,830. SHEEP-WASH. LEVI ERIG, Woodview, Ohio. Filed Feb. 5, 1895.



Essential feature.—The representation of a Rocky-Mountain sheep in red upon a yellow background. Used since April 13, 1893.

26,831. WHITE PIGMENT. WINSOR & NEWTON, LIMITED, London, England, and New York, N. Y. Filed May 22, 1895.

ALBANINE.

Essential feature.—The word "ALBANINE." Used since November 17, 1894.

26,832. PORTLAND CEMENT. SOCIÉTÉ ANONYME UNION FRATERNELLE, Calonne, Lez Antoing, Belgium. Filed June 22, 1895.

PARROT

Essential feature.—The word "PARROT." Used since May 1, 1895.

26,833. PORTLAND CEMENT. SOCIÉTÉ ANONYME UNION FRATERNELLE, Calonne, Lez Antoing, Belgium. Filed June 22, 1895.



Essential feature.—The figure or representation of a parrot. Used since May 1, 1895.

26,834. WINDOW-GLASS AND GLASSWARE. THOMAS WIGHTMAN, Pittsburg, Pa. Filed June 5, 1895.



Essential feature.—The letters "T W G Co" in monogram. Used since November 10, 1894.

26,835. WATCH-MOVEMENTS. HAMPDEN WATCH COMPANY, Canton, Ohio. Filed June 3, 1895.



Essential feature.—The representation of a waving pennant bearing the word "HAMPDEN," whose initial letter incloses the letters "C O." Used since January 1, 1895.

26,836. BICYCLES AND ATTACHMENTS. S. F. MYERS & CO., New York, N. Y. Filed Apr. 29, 1895.



Essential feature.—The representation of a bust of Columbus and the word "COLUMBUS." Used since August 10, 1894.

26,837. STOVES, RANGES, AND HEATERS. SOUTHARD, ROBERTSON & CO., Peekskill, N. Y. Filed May 24, 1895.



Essential feature.—The representation of a tiller-wheel whose hub is a mariner's compass and rim bears the word "MAGNETIC," with the phrase "TRUE AS THE MAGNET" inscribed upon a scroll beneath the hub. Used since April 15, 1895.

26,838. STOVES AND RANGES. STAMFORD FOUNDRY COMPANY, Stamford, Conn. Filed June 14, 1895.

SHIPMATE.

Essential feature.—The word "SHIPMATE." Used since January, 1881.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS

U. S. Circuit Court of Appeals—First Circuit.

CONSOLIDATED ELECTRIC MANUFACTURING COMPANY *et al. v.* HOLTZER.

Decided April 16, 1895.

1. HOLTZER—ELECTRIC BATTERY—NO INVENTION—VOID.
   Letters Patent No. 327,878, issued October 6, 1885, to C. W. Holtzer, for an electric battery, *Held* void as to claims 1 and 2 for want of invention. [Decree of circuit court (60 Fed. Rep., 748) reversed.]
2. SAME—SAME—SOLID CASTINGS—NOT PATENTABLE.
   The right to improve upon prior devices by making solid castings in lieu of construction of attached parts is so universal in the arts as to have become a common one.

Before PUTNAM, NELSON, and WEBB, Judges.

Mr. Anthony Pollok and *Mr. Philip Mauro* for the appellants.

Mr. F. P. Fish and *Mr. W. K. Richardson* for the appellee.

PUTNAM, *J.:*

The first claim covers, in an electric battery, a negative electrode, including cup, cover, and lip cast solid, with an opening in the cover for the positive electrode. The phraseology of this claim is too clear to be limited to any special material as the constituent element of the negative electrode, so that the device of the appellant, defendant below, infringes, notwithstanding its cup is formed of a simple carbon, and not of agglomerate material.

The second claim is like the first, except that it limits the inclosure of the battery to a glass jar and adds the elements of an insulating-bushing surrounding the opening in the cover. The only advance alleged to be covered by either claim is in the fact that the cover, cup, and lip are cast solid instead of being made of several parts soldered together or otherwise secured to each other.

There is no question on the score of utility, and a cup cast solid with a cover and lip was novel in connection with an electric battery. Therefore the only issue is whether the device in suit contains invention within the meaning of the statutes touching patents for mechanical devices.

The right to improve on prior devices by making solid castings in lieu of constructions of attached parts is so universal in the arts as to have become a common one; so that the burden rests on any one who sets up this improvement in any particular instance as patentable to show especial reasons to support his claim. Livermore, the complainant's expert, states that he does not know that any one of the features of complainant's device was of "substantial novelty," but that, so far as he knew, a battery containing all these features was new. This covers only the matter of mere novelty, and so much as this may be said of any combination, in any of the arts, in which for the first time two or more parts are cast as one.

The complainant relies on the rule applied by this court in *Watson* v. *Stevens*, (60 O. G., 1884; 51 Fed. Rep., 757, 760, 761,) and claims that prior workers in this art had sought to devise means for avoiding the necessity of joints between the negative electrode and the cover or lip, but had never succeeded. We fail to find any evidence of this in the record. He also claims that the Holtzer battery speedily superseded all others of its general type, which claim is sustained by the proofs; but all such considerations are applied with caution to a very limited class of cases otherwise doubtful, as is made clear in *Watson* v. *Stevens*, and in the opinions of the Supreme Court therein cited, and in cases decided by that Court since *Watson* v. *Stevens*, of which the latest is *Olin* v. *Timken*, (69 O. G., 1361; 155 U. S., 141, 155.) We also, in *De Loriea* v. *Whitney*, (63 Fed. Rep., 611, 621,) referred to the rule in the following words:

> The appellants rely on the fact that the patented machine was the first successful one, and on the fact that it had great commercial success. The decisions touching the effect of these propositions are so numerous and modern that they need not be referred to specifically; but they limit the application of them to doubtful cases turning on questions of utility or patentable invention.

In the suit at bar there are not facts enough of the character applied in these cases to justify this court in giving complainant a monopoly in this particular art of the privilege of replacing jointed parts by solid castings, a privilege so common and so constantly exercised in all other arts.

But it is said a new result has been accomplished. This is a proposition which sometimes throws light on questions of this character, sometimes does not, and occasionally so appeals to the imagination as to be misleading. Every novelty in some sense brings a new result; but whether the new result is such within the meaning of the decisions is a very different question. These words are very far from furnishing a universal solvent. Sometimes the character of the new result is such as appeals directly to the trained mind as well as to the ordinary one; but usually the novelty of the result is only one fact to be weighed in the mass with others. In the case at bar it is of an unimportant character in one aspect urged by the complainant, and in the other aspect urged by him is so common and universal as not to be of any weight. The patent, in its specifications, looks only to the re-

sults of "fewer parts and more simple construction" and of producing an electrode "very strong and durable," which may be "handled without fear of separation." These are not new results, but are the ordinary consequences of dispensing with joints by casting solid, well known in all the arts.

The counsel and the expert suggest alleged new results not spoken of in the specifications—namely, those arising from the fact that every joint in a structure through which electricity is to pass causes a certain amount of resistance, and also from the fact that the corrosive liquid in the battery attacks the joints, and thus increases the resistance, besides weakening the structure.

As to the first, there is no evidence in the record, except the general statement of complainant's expert, that the absence of joints secures "greater electrical efficiency and durability." There are no facts given by which the court can determine whether this word "greater" is used in a minimized comparative sense or broadly. There is nothing to show that there was in the prior batteries any loss of efficiency on this score which was taken as of any account or regarded as a mischief to be overcome.

As to the second proposition, the complainant put in no proof, and apparently looked upon it as so incidental that he was content to rest it on two or three questions put to one of appellant's witnesses at the close of his cross-examination. He refers us to no other proof on this topic. This evidence was as follows:

Q. What is the advantage of the form of battery shown in Exhibit Defendants' Battery over the Burns form, after the batteries have gone into use?—A. The principal advantage that my experience has discovered, consists in the fact that the connections to the electrode being brought up further from the solution, there is less liability of the connecting-wire becoming corroded off.

Q. You mean that capillary attraction tends to draw up the liquid in the battery between the carbon and the metallic ring in the Burns form, and so produces corrosion. Is that correct?—A. No; that is not what I intended. In handling batteries it is an easy matter to allow a little of the solution to remain on the tops of the batteries, and if the connection was made even with the surface of the cover, it would tend to corrode the connection; but in this exhibit this could not occur, as the metal connections are all above the surface.

Q. Do you know whether or not, when the batteries of this type had gone into use, they tended to become corroded between the metal ring and the carbon?—A. In my last answer I think I stated that if the metal connection was even with, or below, the top of the battery, there would be such liability.

This proposition is thus left with the same indefiniteness as the other; but beyond this the whole topic is disposed of by the fact that these alleged new results are the same as those from time immemorial common to all the arts using corrosive liquids whenever metallic and other joints have been dispensed with, whether in buckets for transporting the liquids or in any article used with them or exposed to them. These facts are so ordinary, common, and immemorial that courts, as well as juries, must take notice of them.

In *Potts* v. *Creager* (70 O. G., 494; 155 U. S., 597, 606) the Court was considering especially the principle of so-called "double use;" but the language employed by it by necessity, touches the question we are considering and affords much practical assistance in the determination of what is a new result within the purview of the patent law. The Court said:

In such cases we are bound to inquire into the remoteness of relationship of the two industries; what alterations were necessary to adapt the device to its new use, and what the value of such adaptation has been to the new industry. If the new use be analogous to the former one, the Court will undoubtedly be disposed to construe the patent more strictly, and to require clearer proof of the exercise of the inventive faculty in adapting it to the new use—particularly if the device be one of minor importance in its new field of usefulness. On the other hand, if the transfer be to a branch of industry but remotely allied to the other, and the effect of such transfer has been to supersede other methods of doing the same work, the Court will look with a less critical eye upon the means employed in making the transfer.

In the case at bar it cannot be said that there has been a transfer to a "branch of industry remotely allied" of the use of solid in lieu of jointed work, because this substitution has been practiced in every industry, unless it be the particular one at bar, and it cannot be said that the latter is remotely allied to all others, though it may be to some. Whatever has become free and common to the field of practical arts as a whole must be free to every part of that field, except under extremely exceptional circumstances.

The decree of the circuit court is reversed, and the case remanded to that court, with directions to dismiss the bill, with costs.

U. S. Circuit Court—Western District of Pennsylvania.

CONSOLIDATED VAPOR STOVE COMPANY *v.* ELLWOOD GAS-STOVE AND STAMPING COMPANY.

Decided October 19, 1894.

WHITTINGHAM—GASOLINE-STOVE—NARROW IMPROVEMENT—NOT INFRINGED BY A DEVICE DIFFERENT IN SEVERAL FEATURES.

Claim 1 in Patent No. 235,600, dated December 14, 1880, to Charles and Joseph Whittingham, for improvements in gasoline-stoves, examined and construed to be for a narrow invention, and *Held* not infringed by a device which departed from it in several features.

Mr. George H. Christy and *Messrs. Hoyt & Dustin* for the complainant.

Mr. John R. Bennett and *Mr. Harold Binney* for the defendant.

BUFFINGTON, *J.*, (ACHESON, *C. J.*, concurring:)

The Consolidated Vapor Stove Company, of Cleveland, Ohio, (assignee of the patent,) files this bill against the Ellwood Gas-Stove and Stamping Company, of Ellwood, Pa., for alleged infringement, in the manufacture of gasoline-stoves, of Letters Patent No. 235,600, issued December 14, 1880, to Charles and Joseph Whittingham. The answer denies patentability and infringement. The device described in the Whittingham patent is, in the parts needful to now consider, described as follows: From an elevated oil-fount a pipe leads to one or two chambered ears or projections on opposite sides of a burner-plate and connected by a conduit across the lower side and at one side of the central tube of said plate. From the second chamber depends a pipe having an arm with a socket, in which a valve-stem is screwed for controlling a jet-orifice, which is located directly under and a short distance from the central tube. Surmounting the plate is a burner-cap provided with two rows of jet-holes, the lower one being just above the upper surfaces of the chambers.

After the burner is initially started, the mode of doing which is not material to the present inquiry, its workings are as follows: The upper surfaces of the chambers being highly heated by direct action of the flames from the lower row of jet-holes and the connecting-conduit by conduction through the heater-plate, the oil passes to the first or vaporizing chamber,

where it is vaporized. This vapor then passes through the conduit, where it is superheated, and into the second or "fixing" chamber, where it is still further superheated and becomes "fixed" or a sort of fixed gas. It then passes through to the jet-orifice and spurts into the central tube, carrying with it a supply of air up to the burner-cap, and passes out the rows of holes, where combustion takes place. The flames from the lower row serve the double purpose of furnishing heat for cooking, a vessel being placed above the burner-cap and of vaporizing the oil and fixing the gas by means of the chambered projections and the connecting-conduit.

The only claim in question is the first, which is for—

the circular plate B, having the chambered projections C D and connecting-conduit E, and provided with the central tube, F, surmounted by the perforated cap S, in combination with the vertical tube A and angular pipe G H and socket I, provided with orifice K, controlled by the valve J, as shown and described, and for the purpose specified.

At the date of the patent, the—

angular pipe, the vertical feed-tube, with its socket, orifice, and controlling-valve—

were old and were used in connection with a vertical commingling-tube. As touching the chambered projections, the specification says:

Surmounting the plate B is a perforated cap, S. The flames from the lower row of perforations supply heat to the upper surfaces of the chambered projections C and D. These two points are where the generation of vapor takes place, and is therefore perfect, being the hottest place, and without detracting from the heat of the burner for the other uses to which it is designed.

And to distinguish it from Kell's patent, to which reference has been made, the patentees added:

We are aware that a rectangular chamber located between the two jets of flame from the perforated cap has been used, and that said chamber has been connected with an induction oil-pipe and an eduction vapor-pipe; but this has detracted materially from the efficiency of the burner because of its interference with the flames. This objection is entirely overcome by the use of the chambered projections at the side of the perforated combustion-cap, and just below the level of the lower row of flame-jets.

The departure from former methods will thus be seen in so locating the flame which was used for vaporizing and fixing that its efficiency for cooking purposes was not diminished, and this result the patentees secured by placing the chambers where they were impinged from above by the flames—viz., at the two points—

where the generation of vapor takes place, and is therefore perfect, being the hottest place, and without detracting from the heat of the burner for the other uses to which it is designed.

That is plainly shown by a detail study of the patent. The claim specifies "the chambered projections C D," "as shown and described," and "for the purpose specified." "As shown and described" in the specifications and drawings, they extend laterally from and on the plane of the heater-plate. They are described as "hollow ears" or "projections on opposite sides." While the term "projections" may apply indifferently to either a downward or lateral one, the term "hollow ear" is limited to a lateral connection. Webster defines an ear, in a mechanical sense, as "a projecting part from the *side* of anything." Then, too, the word "projection" is qualified by the limitation "on opposite sides," and to further emphasize it the "ears" or "projections" are described as "connected by a conduit *across* the under side of said plate," and across does not mean half or three-quarter way, but *quite over* the whole width of the heater-plate, all of which is shown in the illustrated drawing. That the location shown and described was specific and functional and not indifferent will appear from "the purpose specified." In this respect the specification is explicit. The two points are claimed to be "where the generation of vapor takes place," as "the hottest place," as "therefore perfect," and as "not detracting from the heat of the burner for the other uses."

This language cannot be explained away by saying it is a statement of the best mode in which the patentees thought to apply their principle. It is more than that. It is a description of the essential and functional elements necessary to the application of their principle and is rather a compliance with the statutory requirement to particularly point out and distinctly claim the part, improvement, or combination which they claim as their invention or discovery.

But a much broader construction of the claim is contended for. Complainant's expert testifies that—

the whole gist of the Whittingham invention, as set forth in the first claim of the patent at issue, is the casting of the downwardly-projecting chambers C D and the conduit E integral with the heater plate and so locating and directing them that they can be formed economically without the use of coring and be within the best, or practically the best, position to get the effect of the waste heat of the burner.

It is contended that the chambered projections in the claim are downward projections, and downward projections only; that they need not project sidewise to fulfill the object of the inventor; that the novelty consists not only in these downwardly-projecting chambers—

but in the way they are located on the plate forming the base of the burner-cap, so as at the same time they can be economically formed integral with that cap and at one and the same time, and for this purpose they must necessarily project downwardly, in order that they may be cast without coring;

that by this method of casting they avoid particles of sand sticking to the casting which wash out from the flow of gas and clog the jet-orifice. Such a reading of the clause is more ingenious than sound. As opposed to the construction now made by the expert we have the significant silence of the patent on these points. Indeed, if the gist of the invention was what is now alleged, the patentees were signally successful in not disclosing it. Nor is such a construction proper in view of the prior art, for to so construe it is to work its destruction. The Whittinghams were not pioneers in the field nor their invention of a primary character. Numerous patents are cited in anticipation, a large number of which were urged as such on argument; but for present purposes it suffices us to discuss but two—viz., Kells', No. 231,674, issued August 31, 1880, and Prentiss's, Reissue No. 7,636, dated April 24, 1877.

The Prentiss patent shows a vaporizing-chamber at the side of the heater. Though it is claimed to be heated by direct impingement of the flame, we are inclined to the view that it is by conduction. From it a conduit leads along the lower side of the heater-plate to a fixing-chamber located on said lower side and heated by conduction. Both chambers are on the same side of the central tube. The specification states "surmounting the central tube and beneath the cone" (burner-top)—

is a plate, upon which the flame from the lower row of perforations in said cone impinges. This plate is denominated a "heater-plate" and serves to conduct heat to the generating-chamber and surrounding parts of the burner, thereby facilitating the conversion of the oil or fluid into gas.

While the device differs from the Whittingham pat-

ent, the process of vaporizing and fixing by two chambers is the same. The fixing-chamber, located on the lower side of the heater-plate and heated by conduction, is identical with that of the respondent's device, as we shall see, save that it is on the same side of the central tube with the vaporizing-chamber. As far as function goes, the locations are substantially identical, and it clearly anticipates the fixing-chamber of the Whittingham device, should that patent have the broad construction contended for.

In the Kells patent an induction-pipe leads to and an eduction one from a central gas-generator, which is formed by four conduits at right angles with each other. Above and below the generator was a row of burner-jets so located that the flames from the two rows impinged on them respectively from above and beneath for vaporization purposes. Upper and lower rows were necessary to vaporize the heavier grades of hydrocarbon, for which the burner was designed; but it is admitted if the lighter grades were used the lower row could be dispensed with and the device operated by simply enlarging the upper row of jet-holes. The chamber and conduit connections of this device may be cast integral and coring dispensed with.

The prior art being as above it is clear the advance set forth in the Whittingham patent was not great. Whether it involved patentability we do not feel called upon to decide. It is sufficient for present purposes to pass upon the question of infringement only. The respondent's device has a heating-chamber identical with that of the Whittingham patent; but the fixing-chamber does not project laterally from the opposite side of the heater-plate. It is located on the lower side of that plate, within the periphery of the flame-jet row. The connecting-conduit does not lead across the heater-plate, but part way only. Consequently the flames from the lower jet do not impinge on it, but it is heated by the conduction through the heater-plate.

Giving the Whittingham claim what we regard as its reasonable and proper construction, it is clear it is not infringed by this device. The bill must therefore be dismissed at complainant's cost.

Our attention has been called to the case of the present complainant against The National Vapor Stove and Manufacturing Company, where the present patent was sustained by the Circuit Court for the Northern District of Ohio, Eastern Division. The facts now before us and the issues to be passed upon are wholly different from those in that case, and for that reason the present case must be decided without reference to the conclusion reached upon different proofs.

Let a decree be drawn dismissing the bill, with costs.

U. S. Circuit Court—Eastern Division of the Eastern Judicial District of Missouri.

OSGOOD *v.* A. S. ALOE INSTRUMENT COMPANY.

Decided June 15, 1895.

1. OSGOOD—COPYRIGHT—WHAT IS LAWFUL NOTICE OF.

A notice of copyright in the following language, "Copyright, 1891. All rights reserved," is insufficient under the law, which requires the copyright notice to state the name of the person by whom the publication is copyrighted.

2 SAME—SAME—SECTION 4956, UNITED STATES REVISED STATUTES, REQUISITE TO MAKE OUT A PRIMA FACIE CASE.

Under the provisions of section 4956 to make out a *prima facie* case of copyright it is only necessary for a complainant owner of a copyright to allege and show that he deposited with the Librarian of Congress on or before the date of publication a printed copy of the title-page of his book, also two copies of the book, and that he has given the lawful copyright notice.

ON exceptions to answer.

Mr. Paul Bakewell for the complainant.

Mr. M. B. Jonas and *Mr. A. C. Fowler* for the defendants.

ADAMS, *J.:*

This is an action for an alleged infringement of a copyright. An answer was filed and complainant excepts to several of its parts. The particulars will appear hereinafter.

First. The first exception is taken because, as is said, the answer is not entitled in the case so as to agree with the names of the parties as they appear in the amended bill. This, if true, is not ground for exception at all. The remedy for such failure is to move to take the answer from the files; but, as a matter of fact, the answer is not defective in the particular complained of, as there appears to be an appropriate heading, as follows: "The Answer of the Aloe Instrument Company, Defendant, to the Amended Bill of Complaint of Adelaide H. Osgood, Complainant." This is a perfect title, and it is not rendered imperfect by the fact that the pleader premised this heading by the style "Osgood *v.* Aloe." The first exception is therefore disallowed.

Second. The second exception is taken because, as is said, the answer filed in the cause does not appear to be sworn to by any officer or representative of defendant corporation. If such were, in fact, true, it does not afford ground for exception to the answer, either for insufficiency, scandal, or impertinence. The proper remedy for this also is to move to take the answer from the files. However, I do not think the allegation in the exception is true for the following reasons. The answer referred to concludes as follows:

In testimony whereof the said defendant, the Aloe Instrument Company, has caused its corporate name and seal to be hereto affixed by Sidney Aloe, its president.

The affidavit is made by Sidney Aloe, in which he states that he has read the foregoing answer and knows the contents thereof, and that the same is true of his own knowledge, &c. Preceding this affidavit at the end of the answer he signs himself as president of the A. S. Aloe Instrument Company. This exception is therefore disallowed.

Third. The third exception is for impertinence and excepts to that part of defendant's answer, which reads as follows:

The defendant, further answering, denies that the book marked "Complainant's Book," of which profert is made in the said amended bill of complaint, is a true and substantial copy of the said copyrighted book, but avers that the title-page of the book so marked had been removed and another page substituted therefor, which substituted page contains matter materially and vitally different from the matter contained on the title-page and the page immediately following the title page of the copyrighted book, the matter on said pages of the said copyrighted book being fatally defective.

This part of the answer, so far as it can be claimed to be responsive to any allegations of the amended bill, is responsive to that part of the amended bill reading as follows:

And your orator marks one of her books "Complainant's Book" and is ready to produce the same in court if required.

So far as the portion of the answer excepted to consists of a denial it is manifestly broader than the averments of the bill itself and is manifestly an attempt to involve an affirmative defense in a denial of averments of the bill itself. It is not clearly apparent for what purpose the allegation of the bill above quoted is made. It is not clear that the complainant intends to state that the book marked "Complainant's Book" is a true or substantial copy of her copyrighted book. It is certain, however, that the defendant cannot enlarge the scope and meaning of the averment of the bill by expanding the denial beyond the allegations of the bill.

The remaining part of the answer excepted to, as above quoted, manifestly is intended to state new matter constituting an affirmative defense. In this I think the pleader has failed. His averments are not specific enough.

In order to state an affirmative defense in the respect contemplated in this part of the answer, the pleader should make it appear affirmatively that the title-page of the book of which profert is made was removed by or at the instance of the complainant and another page substituted therefor after the publication of the book was made, for if this change were made prior to the publication it might have been entirely proper and necessary so to do to conform to the true and legal notice of copyright. The pleader should also state the facts and particulars in respect of which the matter on the title and next following pages of the copyrighted book are fatally defective rather than to state, as he does, that the above-mentioned matter is "fatally defective."

I think the portion of the answer criticised by the third exception as pleaded constitutes no defense, and that the exception thereto for this reason also is well taken. It is therefore allowed.

Fourth. The fourth exception relates to that portion of the answer which denies that the complainant has given notice of her copyright, as required by law, in this, that she did not insert on the page immediately following the title-page nor at any other place a notice, as follows:

Copyright, 1891, by Adelaide H. Osgood, New York. All rights reserved.

For the balance of the answer excepted to reference may be had to Exception 4. Inasmuch as a large part of the matter excepted to in this fourth exception consists of a denial of averments of the bill, it is manifest that the exception cannot be allowed, as the answer is, so far at least, responsive to the averments of the bill.

An exception for impertinence must be allowed in whole or not at all; but as counsel have argued the exception on other grounds I will add that immediately following the denials in that part of the answer excepted to appears an affirmative statement of facts which, if true, support the prior denial. This affirmative statement is as follows:

First. That the notice of copyright contained in said book was and is as follows: "Copyright, 1891. All rights reserved." * * *

And, after specifying what elements of a lawful notice are omitted, the pleader proceeds and says—

that the books deposited with the Librarian of Congress contained copyright notice as last stated—that is, "Copyright, 1891. All rights reserved;" and that the said books published and sold by complainant contain this latter notice of copyright and not the notice of copyright as alleged by the complainant in her said bill.

This, in my opinion, is a sufficient statement that the books published and sold by complainant contain a notice of copyright in the following language: "Copyright, 1891. All rights reserved." This being no sufficient notice under the law, it is the equivalent of pleading that the complainant published and sold books without any lawful copyright notice, inasmuch as the law requires that a lawful copyright notice must state the name of the person by whom the book is copyrighted.

The portion of the answer complained of in this fourth exception, which states that—

the books deposited with the Librarian of Congress contain copyright notice as last stated—that is, without the name of the person by whom the book was copyrighted,

even if impertinent and immaterial, cannot be expunged on this exception, as the exception itself must be overruled on the principle above announced. Yet I have examined fully the elaborate briefs of counsel on the question whether the books deposited by the persons seeking copyright must themselves contain copyright notice. It seems to me that the act of transmitting to or depositing with the Librarian of Congress two copies of the book for which copyright is sought is an act required by the Act of Congress to secure a copyright, and that under the statute it is not necessary that those books should contain any notice of the copyright itself.

I have no knowledge, except that stated in the argument of counsel, that these books, when deposited with the Librarian of Congress, are treated by the Librarian of Congress as published or are subject to the inspection or use of the public. Even if that were so, I should not hold, under the authorities shown or under the language of the Act of Congress itself in relation to copyright, that the depositing of the two books in question for the purposes *of* securing the copyright was, in itself, such a publication of the book as would destroy the copyright if there were no proper notice of copyright in them.

That portion of the answer, therefore, which alleges that the books deposited with the Librarian of Congress contain improper or unlawful copyright notice would not, by itself, constitute a defense to the complainant's action; but for that reason only the averment should not necessarily be held impertinent, as it is an averment which, taken with others, might be very proper in answering a bill containing the averments which the complainant's bill contains. The fourth exception must be disallowed.

Fifth. The fifth exception is predicated upon that part of the defendant's answer wherein the defendant says that its said catalogue (referring to a catalogue published by the defendant) is copyrighted and contains proper copyright notice required by law. This averment of the answer is strictly responsive to the allegations of the bill, which in terms allege that the defendant published its catalogue without the proper copyright notice required by law. It is therefore not impertinent. The fifth exception is disallowed.

Sixth. The sixth exception assails that part of the answer in which the defendant says—

he has no information whether or not the two copies of the said book delivered or deposited as alleged in the bill of complaint in the office of the Librarian of Congress, were printed from type set within the limits of the United States, or from plates made therefrom, or from negatives or drawings on stone made within the limits of the United States, or from transfers made therefrom, as required by section 4956 of the Revised Statutes, in force July 1, 1891, and therefore the defendant requires strict proof thereof.

The exception to this part of the answer is for alleged impertinence and, according to the argument of counsel, is intended, primarily, to raise the question whether the burden rests upon the complainant to allege and prove that the work above mentioned was done within the limits of the United States.

The Act of Congress in question does not in terms or by fair implication make the doing of this work within the limits of the United States a condition precedent to securing a valid copyright.

Section 4956 (*supra*) merely prohibits—

during the existence of such copyright, the importation of any book * * * so copyrighted or any plates of the same, not made from type set * * * within the limits of the United States, etc.

It is necessary for the complainant to allege and show that she deposited with the Librarian of Congress, on or before the day of publication, a printed copy of the title-page of her book and also two copies of her book, and that she has given the lawful copyright notice. Further than this complainant is not required to go in making out a *prima facie* case of legal copyright. For another reason, also, this exception ought to be allowed.

The bill does not allege that the books in question were printed from type set within the limits of the United States. It contains no allegations on the subject.

If the defendant's views are correct that the burden is upon the complainant to aver and prove such fact in order to establish a copyright, the bill is fatally defective and the defendant's remedy is by demurrer. The defendant cannot make an issue by denying averments not made. Exception six is therefore allowed.

Court of Common Pleas No. 3 of Allegheny County, Pennsylvania.

RUSSELL *v.* LUNDEEN *et al.*

Decided May, 1895.

1. INJUNCTION—GRANTING—SECRET INVENTION.
   Where the defendants do not intend to use a secret invention, an injunction cannot harm them; but if the injunction be refused and the secret be divulged all harm possible will be done and the law will be powerless to afford plaintiff any remedy.
2. SAME—SAME—ENFORCING.
   The mere fact that the plaintiff may be injured by enforcing the injunction is not sufficient reason for refusing it.
3. SAME—USE OF INJUNCTION TO HARM DEFENDANTS.
   Should plaintiff use the injunction to injure the defendants' business, without regard to their use of the invention, his standing in a court of equity will be destroyed and the injunction promptly dissolved.

MOTION to continue preliminary injunction.

Messrs. Kay, Totten & Cook for the plaintiff.

MCCLUNG, *J.*:

We are of opinion that this injunction should be continued. Admitting that it is not clear that the defendants intend to use plaintiff's secret processes, we must take into account the fact that if they do not so intend an injunction cannot harm them, while if we make a mistake in refusing the injunction and the secrets are divulged all the harm possible will then be done and the law will be practically powerless to afford the plaintiff any remedy.

It is suggested that the fact of the granting of an injunction might be used by plaintiff to injure defendants in their business without regard to their use of the secret processes. There is some force in this suggestion, and it will be proper to so frame the injunction as to affirmatively and expressly exclude the idea of prohibiting the use of any secret or other processes except those communicated in confidence by the plaintiff to Lundeen. Besides, if at any time it be made to appear that the plaintiff is directly or indirectly attempting to make such use of the injunction his standing in a court of equity will be destroyed and the injunction will be promptly dissolved.

It is further suggested that an injunction should not be granted, because it could not be enforced without causing the disclosure of the processes of both parties. If we could not enforce the injunction, we could not grant it; but this is not the difficulty here. The mere fact that the enforcing of it may injure the plaintiff is not sufficient reason for refusing.

In addition to this, we cannot conclude that the enforcement of it will necessarily involve the trouble suggested.

We are of opinion that the preliminary injunction should be continued.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 72.—No. 4. TUESDAY, JULY 23, 1895. PRICE—$5 per year.

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., July 15, 1895.

SIR: The Secretary of the Interior has ordered that Mary E. Hansee, of Ellenville, N. Y., be not recognized after this date as agent or attorney in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,

E. WOMACK,
Chief Clerk.

The Commissioner of Patents.

DISCLAIMERS.

328,019.—*Thaddeus Fowler*, Bridgeport, Conn. IMPROVEMENT IN SAWS. Patent dated October 13, 1885. Disclaimer filed July 18, 1895, by *Henry G. Thompson*, *H. Grant Thompson*, and *Samuel E. Mower*, *assignees*.

Enter their disclaimer to so much of said claims as cover circular saws and back-saws, leaving said claims to include only hack-saws and band-saws.

382,280.—*Nikola Tesla*, New York, N. Y. IMPROVEMENT IN ELECTRICAL TRANSMISSION OF POWER. Patent dated May 1, 1888. Disclaimer filed July 17, 1895, by the assignees, the *Westinghouse Electric and Manufacturing Company*, Pittsburg, Pa., and the *Tesla Electric Company*, New York, N. Y.

Enter their disclaimer to such part of the claim of the said patent as might by construction include the use of reversed currents for acting upon both elements of a motor, it being the intent and purpose of this disclaimer to limit the said claim to the use of alternating currents, whether acting on one element or both elements of the motor, as distinguished from reversed currents or currents which, while continuous and direct, are shifted from coil to coil by any form of commutator, reverser, or interrupter; and in furtherance of this purpose your petitioners, and each of them, enter their disclaimer to the following parts of the specification of said Letters Patent—viz, in the last sentence but one preceding the claim, the words:

In so far, then, as the plan of acting upon one element of the motor is concerned;

and also the words composing the last sentence of the specification, as follows:

With regard to that part of the invention which consists in acting upon both elements of the motor simultaneously, I regard the use of either alternating or reversed currents as within the scope of the invention, although I do not consider the use of reversed currents of any practical importance.

The Official Gazette.

THE OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $10; single copies, 10 cents, if mailed to foreign countries 10 cents additional for postage; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Amendment to the Rules of Practice

The following regulations for the conduct of proceedings in the Patent Office are established:

65. An applicant will be considered to persist in his claim for a patent without altering his specification in case he fail to act in prosecution of the same for six months after the Office action thereon, and thereupon the Examiner will make a re-examination of the case.

134. In appealable cases in which no limit of appeal is fixed, no appeal will be entertained by any tribunal in the Office unless taken within six months from the action which puts the case in condition for appeal, unless it be shown to the satisfaction of the Commissioner that such delay was unavoidable.

68. In every case pending before the Office more than five years, in which the record raises the presumption that there have been intentional delays in prosecution, the Examiner may require the applicant to show cause why the case was not more rapidly prosecuted, and at the hearing thereon, or upon failure of the applicant to appear, the Examiner will determine, under all the circumstances of the case, whether there have been intentional and unreasonable delays in prosecution, and upon finding the fact to be so, he will reject the case for that reason. Present Rules 65, 69, and 134 are repealed, and present Rule 68 is renumbered 69.

The foregoing rules will be in effect on and after April 15, 1895, and will affect pending cases as though the last Office action were upon said date.

Publishers' Catalogues.

This Office would be pleased to receive from manufacturers and publishers such catalogues, circulars, price-lists, or other advertisements relating to the sciences and mechanical arts as are published by them for gratuitous distribution; but notice is hereby given such manufacturers or dealers who feel disposed to send their publications that not less than three copies should be forwarded in order that the subjects may be properly indexed, classified, and subclassified in the Scientific Library for convenient and ready reference.

Issue of July 23, 1895.

Patents	475	No. 542,982 to No. 543,456, inclusive.
Designs	12	No. 24,494 to No. 24,505, inclusive.
Trade-Marks	37	No. 26,839 to No. 26,875, inclusive.
Labels	None.	
Prints	None.	
Reissues	1	No. 11,504.
Total issue	525	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Prints.	States.	Patents and Designs.	Trade-Marks and Prints.
Alabama	1	....	New Hampshire	2	1
Arizona Territory	....	....	New Jersey	21	2
Arkansas	....	....	New Mexico Territ'y	....	....
California	15	1	New York	93	7
Colorado	5	....	North Carolina	1	....
Connecticut	11	....	North Dakota	....	....
Delaware	1	....	Ohio	32	1
District of Columbia	2	....	Oklahoma Territory	....	....
Florida	....	....	Oregon	3	....
Georgia	....	1	Pennsylvania	49	3
Idaho	....	....	Rhode Island	3	....
Illinois	47	2	South Carolina	1	....
Indian Territory	....	1	South Dakota	3	....
Indiana	12	....	Tennessee	2	....
Iowa	7	....	Texas	7	....
Kansas	5	....	Utah Territory	....	....
Kentucky	3	1	Vermont	1	3
Louisiana	1	....	Virginia	5	1
Maine	2	1	Washington	3	....
Maryland	6	1	West Virginia	1	....
Massachusetts	42	1	Wisconsin	13	....
Michigan	14	1	Wyoming	1	....
Minnesota	8	1	U. S. Army	....	....
Mississippi	1	....	U. S. Navy	....	....
Missouri	9	3	Total to citizens of the United States	434	32
Montana	....	....			
Nebraska	1	....			
Nevada	....	....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries	Patents and Designs.	Trade-Marks and Prints.	Countries	Patents and Designs.	Trade-Marks and Prints.
Argentine Republic	....	....	Mexico	....	....
Austria-Hungary	2	....	Netherlands	....	....
Barbadoes	....	....	Newfoundland	....	....
Belgium	....	....	New South Wales	....	....
Bermuda	....	....	New Zealand	....	....
Brazil	....	....	Norway	....	....
Canada	16	1	Portugal	....	....
Chile, Republic of	....	....	Queensland	....	....
Colombia	....	....	Roumania	....	....
Cuba	....	....	Russia	....	....
Denmark	....	....	Scotland	1	1
Ecuador	....	....	South Australia	....	....
Egypt	....	....	Spain	....	....
England	7	1	Sweden	....	....
France	5	....	Switzerland	2	1
Germany	19	1	Turkey	....	....
Guatemala	....	....	Victoria	1	....
Hawaii	....	....	West Australia	....	....
India	....	....			
Ireland	....	....	Total to citizens of foreign countries	53	5
Italy	....	....			
Japan	....	....			

APPLICATIONS UNDER EXAMINATION.

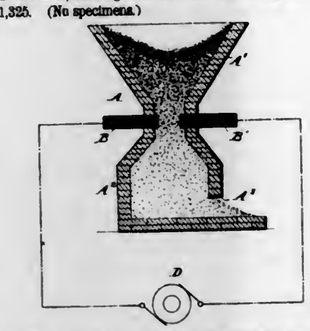
Condition at Close of Business July 16, 1895.

Division No.	Subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears.—Under one month.			
15	Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	June 17	July 15	72
12	Mechanical Engineering, Store-Service, etc.	July 2	July 8	91
4	Civil Engineering, Fire-Proof Buildings, Fire Escapes and Ladders, etc.	June 28	July 8	64
21	Textiles, etc.	June 18	July 8	115
31	Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	June 17	July 8	93
13	Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	June 17	July 6	101
23	Instruments of Precision, Acoustics, etc.	June 17	July 6	135
2	Farm Stock, Products, etc	June 16	July 6	145
3	Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	June 18	July 5	131
20	Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	June 17	July 5	172
8	Furniture, Beds, Store Furniture, etc.	June 17	July 5	205
16	Telegraphy, Telephony, Electric Lighting and Signaling.	June 17	July 2	123
18	Steam-Engineering, etc	June 17	July 2	125
25	Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone-Working, Vegetable Cutters and Crushers.	June 18	July 1	149
34	Railway Brakes, Draft Appliances, and Rolling-Stock.	June 17	July 1	152
27	Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	June 17	July 1	192
32	Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels, etc.	June 17	July 1	208
29	Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	June 17	June 29	162
17	Paper-Manufactures and Printing.	June 17	June 26	155
10	Carriages and Wagons	June 17	June 26	174
6	Chemistry, Explosives, Medicines, Fertilizers, Preserving, Photography, Sugar and Salt, Surgery.	June 17	June 21	208
19	Stoves and Furnaces	June 16	June 19	332
30	Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, Optics.	June 17	June 19	278
	Between one and two months.			
11	Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	June 10	July 9	195
14	Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	June 10	July 6	118
22	Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	June 15	July 5	135
5	Fine Arts, Stationery, Book-Binding, Music, etc.	June 10	June 26	183
7	Harvesters, Games and Toys, and Velocipedes.	June 10	June 20	433
26	Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	June 11	June 14	147
28	Pneumatics, Refrigeration, Air and Gas Engines, etc.	June 10	June 12	220
9	Hydraulics, Fire-Extinguishers, etc.	June 5	June 11	392
1	Tillage and Fences	June 10	June 10	328
24	Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	June 4	June 10	237
	Total number of applications awaiting action			5,965
	Under one month in arrears.			
	Designs	July 5	July 5	99
	Trade-Marks	July 10	July 13	28

PATENTS

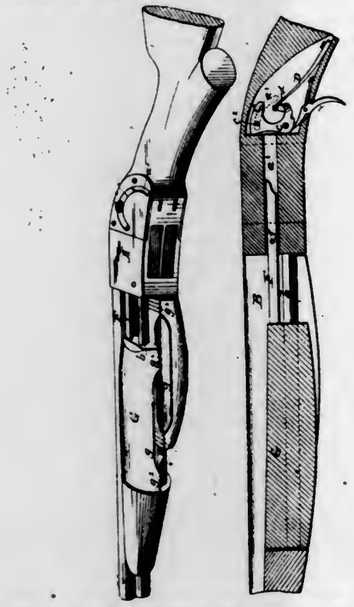
GRANTED JULY 23, 1895.

542,982. PRODUCING PURE ELECTRIC-LIGHT CARBON. EDWARD G. ACHESON, Monongahela City, Pa. Filed Aug. 25, 1894. Serial No. 521,325. (No specimens.)



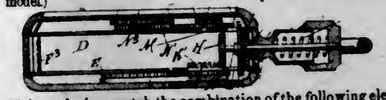
Claim.—The method, substantially as above described, of producing pure electric light carbon, which consists in granulating coke, and subjecting it to the required degree of temperature necessary to volatilize the impurities associated with it.

542,983. OPERATING-SLIDE FOR BREECH MECHANISMS. ALBERT W. ASHWORTH, St. Cloud, Minn. Filed Mar. 18, 1895. Serial No. 542,109. (No model.)



Claim.—In a double barrel breech loader gun, the combination of two barrels, two hammers concealed within the breech of the gun, two hammer-cockers consisting of flat rods F having their inner ends received in grooves within the caps of the breech, two handles G carrying the rods F, and tubular guides for said handles, the handles G having serrations g^2 on their inner faces adapted to become interlocked and grooves g in their under sides substantially as described.

542,984. STEM WINDING AND SETTING WATCH. JOHN G. BLESSING, La Salle, Ill., assignor to the Western Clock Manufacturing Company, same place. Filed Aug. 31, 1894. Serial No. 521,800. (No model.)



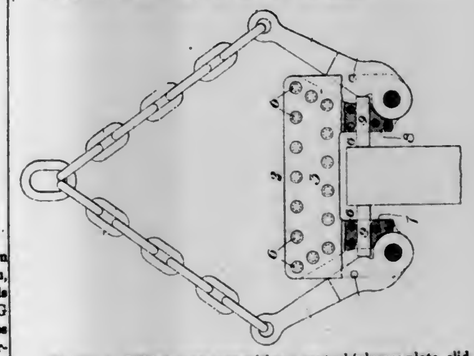
Claim.—1. In a watch the combination of the following elements: a winding gear, a hand-setting pinion of greater diameter than the gear, the centers of the pinion and gear being substantially in the same vertical line passing through their planes, a reciprocating stem having two pinions rigid thereon one adapted normally to engage the winding gear the other adapted to engage the hand-setting pinion when the stem is moved so as to move the winding pinion out of engagement with the winding gear.

2. In a watch the combination of the following elements: a winding gear having an inwardly projecting crown gear adapted to rotate in an aperture in one frame plate and an outward laterally projecting toothed flange adapted to engage the barrel, a hand-setting pinion provided with a hub adapted to be received and to rotate in an aperture in the other plate, suitable supports to retain the gear and pinion in position, a reciprocating stem having two pinions rigid thereon and reciprocating in a plane substantially midway between the gear and the pinion, one of said pinions adapted to engage the crown gear and the other adapted to engage the hand setting pinion when the stem is moved so as to move the first pinion out of engagement with the crown gear.

3. In a watch the combination of a case containing a single aperture through the edge thereof, with a watch mechanism attached to a frame entirely separate from the case and adapted to be received into the case and a part having an enlarged portion exterior to the case with a screw-threaded portion adapted to pass through the aperture and be screw-threaded into the frame of the works, whereby the case is clamped between the enlarged portion and the works frame and thus the parts are separably attached together.

4. In a watch the combination of a case consisting of a central band having curved sides slightly overhanging the band, with a movement frame having two plates separated by about the width of the band and entirely separate from the case, said band provided with an aperture and said movement frame with a screw-threaded hole opposite said aperture, and a stem provided with an exterior enlarged portion to bear against the outside of the ring or band and a screw-threaded inner portion to pass through the aperture in the band and be received into the screw-threaded hole in the movement frame.

542,985. LIFTING-TONGS. CYRUS W. BOLSINGER, Munhall, Pa. Filed May 8, 1895. Serial No. 548,476. (No model.)



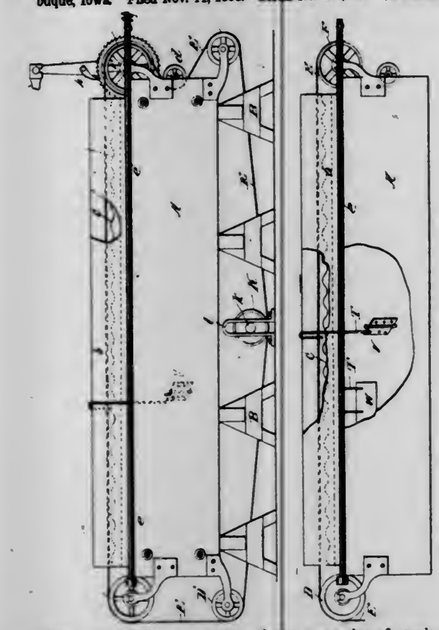
Claim.—1. Lifting tongs comprising a central fulcrum plate, slid-

able gripping-pins mounted therein, and levers having cam-faces arranged to contact with said pins; substantially as described.

2. Lifting tongs comprising a central fulcrum plate, having a recess to receive the body to be lifted and provided with holes on opposite sides of said recess, pins loosely mounted in said holes, and levers arranged to force said pins inwardly; substantially as described.

3. Lifting tongs comprising a central fulcrum plate, slidable pins mounted therein, levers arranged to contact with said pins, and means for preventing the inward movement of the levers; substantially as described.

542,986. **ELECTRODEPOSITING DEVICE.** JOHN BOSHARD, Dubuque, Iowa. Filed Nov. 11, 1893. Serial No. 490,643. (No model.)



Claim.—1. An electro-depositing device, consisting of a tank and depositing bath therein, a bridge over said tank, hooks from which the articles to be deposited upon are suspended, electric connections between said bridge and hooks an endless belt traveling outside of the bath and engaging with the said hooks by means of which the articles are automatically drawn through the bath, and means for imparting an intermittent motion to said belt while drawing the articles through the bath for the purposes shown.

2. An electro-depositing device of the character described, consisting of a tank containing a depositing bath, one or more anode bars supported in said bath, hooks above the bath for supporting the articles to be deposited upon, one or more crooked cathode bars, along and against which the said hooks engage while passing through the bath, and an endless belt engaging with the aforesaid hooks for causing the article to travel through the bath, whereby said articles are given an undulatory or crooked movement for the purpose shown.

3. In an electro-depositing device of the character described, a tank containing a depositing bath, one or more anodes suspended in said bath, one or more cathode bars arranged above said bath, hooks supporting the articles to be deposited upon and resting against the said cathode bars and means for increasing and decreasing the anode surfaces to any extent and at any place at will along the line of travel of the articles through the bath, as and for the purposes shown.

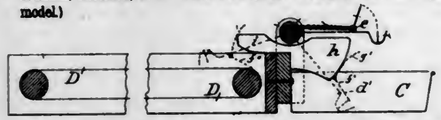
4. An electro-depositing device, consisting of a tank containing a depositing bath, an endless belt for moving the articles to be deposited upon through the bath, one or more cathode bars above said bath, hooks for carrying the articles to be deposited upon and connected to the said belt one or more anodes suspended in said bath and a switch attached to each anode whereby the electric current may be directed to any one or more points along the line of travel of the articles in the bath at will, for the purposes shown.

5. An electro-depositing device, consisting of a tank and depositing bath therein, a bridge over said bath from which the articles to be deposited upon are suspended, a belt above said bridge, means for causing said belt to travel above said bridge and outside of the bath, whereby the articles to be deposited upon are advanced through the bath and a cathode bar above said bath and having an undulatory or crooked bearing face for causing the articles to be deposited upon to take an undulatory or crooked movement through the bath for the purpose shown.

6. An electro-depositing device, consisting of a tank containing a depositing bath, a bridge spanning said bath longitudinally and above the bath, means for suspending the articles to be deposited upon in the bath and from said bridge and an endless belt traveling above said bridge and outside of the bath for advancing the articles through the bath for the purposes shown.

7. An electro-depositing device, consisting of a tank containing the depositing bath, one or more anodes suspended within the bath, means for connecting and disconnecting at will, one or more anodes with the electrical current without connecting or disconnecting the remaining anodes, one or more crooked cathode rods above the bath, a bridge from which the articles to be deposited upon are suspended, an endless belt for advancing the articles through the bath with their supporters bearing against said cathode bar, and means for determining the rate of speed the articles shall travel through the bath, for the purposes shown.

542,987. **DEVICE FOR COATING CONFECTIONS.** CHARLES BREITKRAMM, Paterson, N. J. Filed Feb. 4, 1895. Serial No. 537,151. (No model.)



Claim.—1. In a device for coating bon-bons and other like confections, a dish or receptacle for holding liquid coating substance, a frame secured to one side thereof, a shaft mounted and adapted to turn in bearings on said frame, hands or pockets secured to said shaft and adapted to hold bon-bons or other confections to be coated, arms, shorter than the arms of hands or pockets, also secured to said shaft, a bar fulcrumed at each end to the short arms or bars secured to the shaft, and a bow of wire or other suitable material secured to the bar which is fulcrumed on said short arms and almost at right angles thereto and adapted when bent downwardly to cover the bon-bons contained in the pockets and to hold them therein, a stationary cam centrally located under shaft, and on the frame secured to the end of the liquid receptacle, said cam extending over the liquid receptacle, a tongue secured to the central portion of bar which is fulcrumed on said short arm and springs secured to said tongue at one end and the other ends of springs being attached to the shaft and adapted to hold said tongue, when shaft is not being operated, on the top of the stationary cam which projects over the liquid receptacle, and also adapted to keep the holding down device free from the hands or pockets, when device is not in operation, said cam when the shaft is turned adapted to govern the motion of the tongue, holding down wire and bar which is fulcrumed on short arms, substantially as shown and described and for the purpose specified.

2. In a device for manufacturing bon-bons and other like confections, the combination with a liquid receptacle, a box or frame, rollers mounted to turn therein, and an endless belt of suitable fabric stretched around said rollers, of a shaft suitably mounted on bearings on said frame and adapted to turn therein, hands or pockets secured to said shaft, arms secured to said shaft, which are shorter than arms of pockets a bar fulcrumed at each end to said short arms, a holding down wire secured to said last mentioned bar, a tongue secured to the central portion of said last mentioned bar, springs connecting said tongue and shaft, stationary cams secured to the central portion of the frame, under said shaft, one cam projecting over the liquid receptacle, the other projecting over the box containing the endless belt, the whole constructed and adapted to be operated substantially as shown and described and for the purpose specified

542,988. **FENCE-MAKING MACHINE.** BENJAMIN C. BRINEY and SOLOMON C. GERON, Paris, Tex. Filed Apr. 10, 1895. Serial No. 545,215. (No model.)



Claim.—1. In a fence making machine, a sprocket wheel having a hollow hub provided with a wedge extending through said hub, substantially as described.

2. In a fence making machine, a twisting head comprising a sprocket wheel with a hollow hub, and a wedge extending lengthwise of and through the hub with openings for the wire upon opposite sides thereof, substantially as described.

3. The combination with a sprocket wheel having a hollow hub with notches at one end, of a wedge extending into the hub and having a portion held in said notches, substantially as described.

4. The combination with a sprocket wheel having a hollow hub with notches at one end, of a wedge extending into the hub and having a portion held in said notches and having an opening upon each side of the wedge, substantially as described.

5. The combination with the uprights and the transverse pieces, of a sprocket wheel held between said pieces with one end in a socket in one of them and having notches, and a wedge extending into the hub and having a piece provided with openings and seated in said notches, substantially as described.

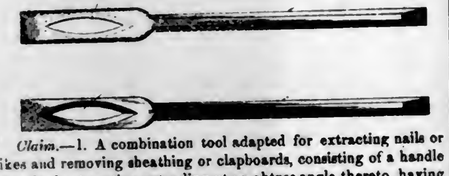
6. In a fence making machine, a twisting head comprising a wheel with a hollow hub and a wedge mounted to rotate with said hub and extended through and beyond the same, substantially as shown and described.

7. A removable wedge for a twister head tapered to a point and having at its larger end a transverse piece with openings combined with a twister head, substantially as described.

8. The combination with the uprights and the twisting device carried thereby, of an inclined arm pivoted to one of said uprights and carrying a guide wheel, and a bar pivotally connected with said inclined arm and having a longitudinal slot and adjustably connected to said upright, substantially as described.

9. The fence making machine described, comprising the frame, the sprocket wheels, and twister heads with wedges, extending lengthwise of, through and beyond the hubs of said heads the sprocket chain and means for actuating the same, means for adjusting the inclination of the machine, and an adjustable picket gage, all substantially as shown and described.

542,989. **COMBINATION STEEL BAR.** JESSE S. BROOKS, Cedar Bayou, Tex. Filed Dec. 4, 1894. Serial No. 5[illegible]4. (No model.)



Claim.—1. A combination tool adapted for extracting nails or spikes and removing sheathing or clapboards, consisting of a handle bar and a bent portion extending at an obtuse angle thereto, having a slot extending lengthwise thereof, the side walls of which converge toward the ends, where they meet, forming an acute angle at each end of said slot, said bent portion being flat upon its under side and terminating in a straight edge, and its upper side terminating in a rounded end, substantially as shown and described.

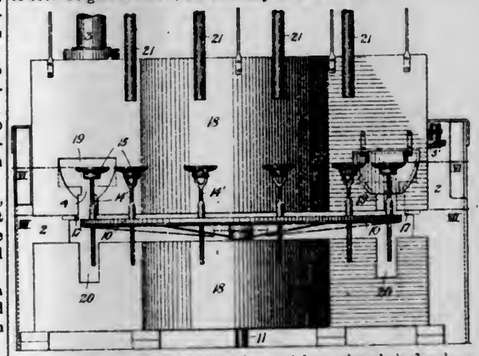
2. A combination tool adapted for cutting and extracting nails or spikes, consisting of a handle bar having a bent portion extending at an obtuse angle thereto, and provided with a slot extending lengthwise thereof, the side walls of which form an acute angle at each end and are beveled to form cutting edges with upper face of said bent portion, substantially as shown and described.

542,990. **GLORY-HOLE FURNACE.** GEORGE CLEIS, Pittsburg, Pa., assignor to the Atterbury Glass Company, same place. Filed Mar. 25, 1895. Serial No. 543,041. (No model.)

Claim.—1. In apparatus for finishing glass articles, a glory-hole flue, a holder having a recess of the shape to be given to the blank, means for moving the holder through the flue, and a vertically extending burner arranged to discharge the flame downwardly directly upon the blank and cause it to assume the shape of the recess or cavity; substantially as described.

2. In apparatus for finishing glass articles, a glory-hole flue, having therein burners discharging from above directly upon the glass articles, a burner or burners discharging horizontally into the flue, and means for carrying the glass articles through the glory-hole flue under the burners; said means having recesses of the shape to be given to the articles, substantially as described.

3. In apparatus for finishing glass articles, a glory-hole flue, having therein burners discharging from above directly upon the glass articles, said flue being formed on a circular arc and having a bottom slot, a wheel provided with standards which project through the slot into the flue and revoluble to carry the glass articles therethrough, said standards having recesses of the shape to be given to the articles, and cold-air pipes situated outside the flue and adapted to cool the glass articles; substantially as described.



4. In apparatus for finishing glass articles, a glory-hole flue, having therein burners discharging from above directly upon the glass articles, said flue being formed on a circular arc and having a bottom slot, and a wheel provided with standards which project through the slot into the flue and revoluble to carry the glass articles therethrough, said standards having recesses of the shape to be given to the articles, said burners and standards being so placed relatively to each other that the wheel may be moved step by step and at its intervals of rest stopped beneath the burners; substantially as described.

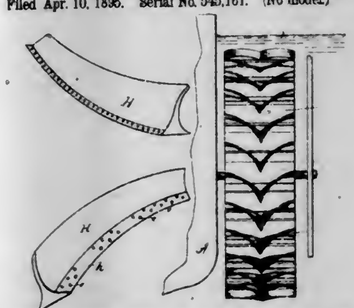
5. In apparatus for finishing glass articles, a glory-hole flue, having therein burners discharging from above directly upon the glass articles, said flue being formed on a circular arc and having a bottom slot, and a wheel provided with standards which project through the slot into the flue and revoluble to carry the glass articles therethrough, said standards having holders provided with recesses of the shape to be given to the blanks; substantially as described.

542,991. **DRESS-SHIELD.** SALLIE G. CROUT, Philadelphia, Pa. Filed May 17, 1895. Serial No. 549,611. (No model.)



Claim.—A dress shield, comprising a body and an arm flap united to each other at the concave upper edges thereof, the body flap being extended above the said concave edges to form a shoulder strap, joined by an elastic band, and a waterproof shield of substantially crescent shape secured to the outer face of each of said flaps and covering the said concave upper edges, the construction being such that when the waterproof shield becomes soiled it may be readily removed from the body and arm flaps without destroying the same and replaced by another and the shield as so arranged presenting double thicknesses of material between the parts of the secured waterproof shield to said flaps to afford additional means for absorption of moisture given off in the use thereof.

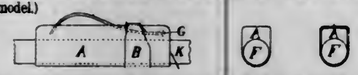
542,992. **PADDLE-WHEEL.** DANIEL S. DARK, New York, N. Y. Filed Apr. 10, 1895. Serial No. 545,161. (No model.)



Claim.—In a submerged paddle wheel, the combination of annular members E and buckets carried thereby, the said buckets consist-
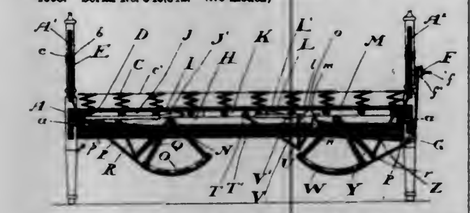
ing of the curved blades H angularly disposed to one another and joined at the point I, the said blades being disposed radially to the axis of the annulæ at their points of greatest divergence from their junction point I, and thence gradually inclined away from the radial line in the direction of the said point I, so that the blades present progressively warped surfaces whose inclination to the axis of the annulæ continually departs from the radial line of the annulæ, substantially as described.

542,993. DEVICE FOR BABY-FOOD REGULATORS. AUGUSTUS A. DAVIDSON, Victoria, Canada. Filed Apr. 11, 1895. Serial No. 545,397. (No model.)



Claim.—An improved device to be attached to the rubber tubes of feeding bottles for the purpose of regulating the consumption of food therein, consisting of a mainpiece having an opening at the top and at each end; a slide, having two tongues, to move back and forth on the mainpiece; and a tongue having a joint at one end which is connected to the mainpiece by a pivot substantially as described.

542,994. INVALID-BED. WILLIAM J. DAWSON, RICHARD H. DAWSON, and RICHARD HENRY DAWSON, Cannington, Canada. Filed Mar. 4, 1895. Serial No. 540,512. (No model.)



Claim.—1. In an invalid bed, a lower frame H, in combination with section J of the upper sectional frame I; slats D; spindle N; quadrant O; pulleys p, p'; rope P, and means for winding and holding the same when wound; the crank arms Q; pivoted links R; and means for sliding the heels of section J, on the lower frame H, substantially as described and for the purpose specified.

2. In an invalid bed, a lower frame H, in combination with section J, of the upper sectional frame I; spindle N; quadrant O; pulley p; rope P; and means for winding and holding the same when wound; the crank arms Q; pivoted links R; and means for sliding the heels of section J on the lower frame H, substantially as described and for the purpose specified.

3. In an invalid bed, a lower frame H, capable of being tilted sidewise and means for holding the same in position when so tilted, in combination with section J, of the upper sectional frame I; slats D; longitudinal braces T'; spindle N; quadrant O; rope P; pulleys p, p'; guide pulley G; spindle f, journaled in the drum frame F, and operated by a crank handle; drum f'; ratchet wheel f^2; pawl f^3; crank arms Q; pivoted links R; pin j; slotted piece S, and links J', substantially as described and for the purpose specified.

4. In an invalid bed, a lower frame H, in combination with section L, and section M, of the upper sectional frame I, and the said sections having beveled ends l and m respectively; means for sliding the heels of section L, on the lower frame H; the hinges o; slat D; longitudinal braces T'; bar T; bars V'; pivoted stay V; pulley n; rope U; and means for winding and holding the same when wound, substantially as described and for the purpose specified.

5. In an invalid bed, a lower frame H, capable of being tilted sidewise, and means for holding the same in position when so tilted, in combination with section L, and section M, of the upper sectional frame I, and having beveled ends l and m respectively; the pin k; slotted piece S'; pivoted links L'; the hinges o; slats D; longitudinal braces T'; bar T; bars V'; pivoted stay V; pulley n; rope U; guide pulley G; spindle f, journaled in the drum frame F, and operated by a crank handle; drum f'; ratchet wheel f^2; and pawl f^3, substantially as described and for the purpose specified.

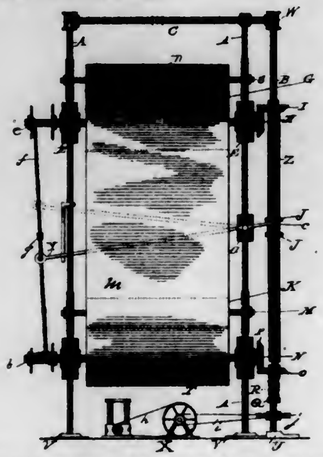
6. In an invalid bed, a lower frame H, in combination with section M, of the upper sectional frame I; slats D; spindle X; quadrant W; crank arms Y; links Z; the rope r; and means for winding and holding the same when wound, substantially as described and for the purpose specified.

7. In an invalid bed, a lower frame H, capable of being tilted sidewise, and means for holding the same in position when so tilted, in combination with section M, of the upper sectional frame I, and which is hinged to section L; slats D; longitudinal braces T'; spindle X; quadrant W; crank arms Y; links Z; rope r; guide pulley G; spindle f, journaled in the drum frame F, and operated by a crank handle; drum f'; ratchet wheel f^2; and pawl f^3, substantially as described and for the purpose specified.

8. An invalid bed comprising the following elements: main frame A, with head board A' and foot board A^1; slotted semi-circle E; carriage bolt b; thumb screw c; lower frame H, with gudgeons a; sections J, K, L and M respectively; of the upper sectional frame I; beveled ends l and m on sections L, and M; spindle N; quadrant O; rope P; pulleys p, p'; crank arms Q; pivoted links R; pins j; slotted pieces S; pivoted links J'; pins k; slotted pieces S'; pivoted links L'; slats D, carrying springs C; bar T; longitudinal braces T'; rope U; pivoted stay V; bars V'; pulley n; hinges o; quadrant W; spindle X; crank arm Y; links Z; rope r; guide pulleys G; spindles f; journaled in drum frame and operated by a crank handle; drums f'; ratchet wheels f^2; and pawls f^3, substantially as described and for the purpose specified.

9. An invalid bed comprising the following elements:—main frame A, with head board A' and foot board A^1; lower frame H, suitably supported on the main frame; sections J, K, L and M respectively; of the upper sectional frame I; beveled ends l and m on sections L and M; spindle N; quadrant O; rope P; pulleys p, p'; crank arms Q; pivoted links R; pins j; slotted pieces S; pivoted links J'; pins k; slotted pieces S'; pivoted links L'; slats D, carrying springs C; bar T; longitudinal braces T'; rope U; pivoted stay V; bars V'; pulley n; hinges o; quadrant W; spindle X; crank-arm Y; links Z; rope r; guide pulleys G; spindles f, journaled in drum frame F, and operated by a crank handle; drums f'; ratchet wheels f^2; and pawls f^3, substantially as described and for the purpose specified.

542,995. MECHANISM FOR GIVING RECIPROCATING MOTION TO CANVAS. BURTON S. DE BALL, Chicago, Ill. Filed Apr. 15, 1895. Serial No. 545,725. (No model.)



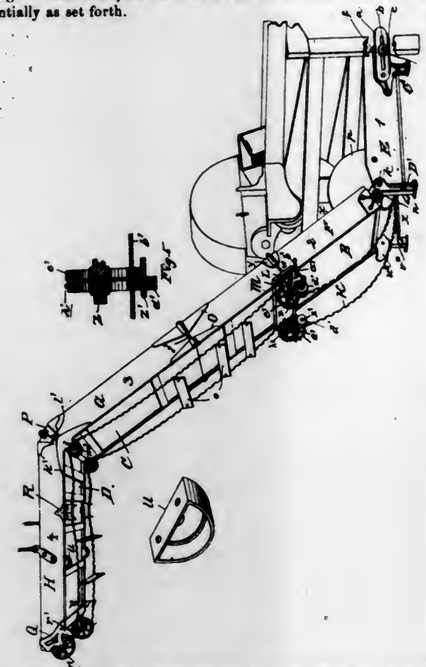
Claim.—Improvement in mechanism for giving motion to canvas, consisting of the posts A, A, supporting the bearings to the shafts to the drums G, T, rollers D, K, the slotted bearings to the shafts M, N,—slotted as shown, the post-shaft B, the sleeve Z, provided with toothed ends and the rings J, J, in combination with the toothed collars to the gears I and O, the gears N, P, the lever C, Y, the cord f, drums e, b, and stops g, as and for the purpose specified.

542,996. CONVEYER FOR FODDER-CUTTERS. JOSEPH DICK, Canton, Ohio. Filed July 30, 1894. Serial No. 518,972. (No model.)

Claim.—1. The combination, with a conveyer trough, and flight chain, of means for regulating the tension of the flight chain, said means comprising a support having a fixed rack and elongated slot, a spindle upon one end of which is supported a pulley, the opposite end of said spindle projecting through the elongated slot, a pinion engaging said rack, and means for clamping the parts together, substantially as set forth.

2. The combination, with a conveyer trough and chain, of means for regulating the tension of the chain, said means comprising a support having a fixed rack and elongated slot and a recess in its inner face, a spindle having a disk to take into said recess, a pulley carried by one end of said spindle, a pinion in engagement with said rack, a bolt passed through said spindle, support, and pinion, and a nut upon its ends, to draw the parts together in fixed relation, substantially as set forth.

3. The combination with the conveyer trough and chain, of the support D', having lug k secured to the side E of the stationary or lower section of the trough, a lug l, the hinge piece m, a cross-rod n supported by lug l, said rod n serving as a pivot or hinge pin about which the hinge piece m may be swung, to raise or lower the second section of the trough, the chain guides u^2 v^2 and the segment p to bridge or close the space between the ends of the sides E and F, substantially as set forth.



4. The combination with a conveyer trough and chains, of a chain driving mechanism comprising a supporting bracket M, a driving shaft b' having mounted on one end a sprocket wheel c' and near each end pinions f'' f'', gear wheels c' c', supported by said bracket and in mesh with said pinions f'' f'', said gear wheels provided with integral spur wheels k' k', to engage the chains and rollers, d' d', journaled below the wheels, k' k', to hold the chains in contact therewith, substantially as set forth.

5. The combination in a fodder conveyer, comprising two or more sections, of the clamp O consisting of two flanged plates for embracing the adjacent ends of the sections and a bolt inserted through eyes in said plates for drawing the plates in fixed relation with the sides of the trough sections, substantially as set forth.

6. The combination in a fodder conveyer, of a trough comprising a plurality of sections, a clamp the flanges of which project at angles and grasp the edges of the adjoining trough sections, a roller carried by each lower clamp section and adapted to support the return side of the conveyer chain, and a bolt for drawing the clamp sections together, substantially as set forth.

7. The combination with a conveyer chain or apron, of a trough having an apertured bottom, trap-doors hinged intermediate their ends in said apertures and provided on their under sides with curved blocks which project into and partially close said apertures when the trap-doors are open and assist the chain and the flights to pass freely over the apertures, substantially as set forth.

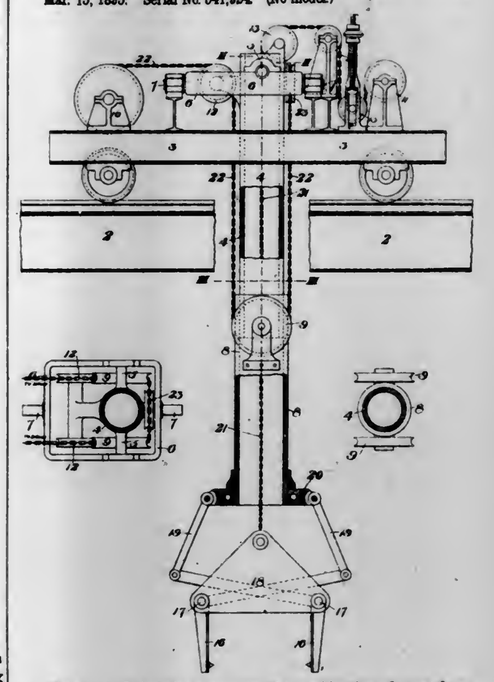
8. The combination in a fodder conveyer of the conveyer chain and trough, the chain guide R, having side projections, v' v', to form a way, a clamp, and bolt whereby the guide may be secured to the trough, substantially as set forth.

9. The combination in a fodder conveyer of the trough comprising a plurality of sections, a clamp comprising sections having angularly extending flanges to embrace the edges of the adjacent trough sections, a bolt for clamping the sections of the clamp to the edges of the trough sections, said clamp having a lip n' on its inner side, a curved guide o' seated on said lip and held thereon by a bolt, substantially as set forth.

10. The combination of a conveyer chain and a flight, a link of said chain having a right angle plate projecting from the side thereof, said plate being inclined forward and provided with a neck portion to pass through the flight and a hook portion to rest on the front face thereof and support the flight in an inclined position, substantially as set forth.

11. In a conveyer chain, the combination of a link A' having a side plate 2, a neck portion 3, a hook 4, and a flight having an opening through which the neck projects, substantially as set forth.

542,997. CRANE-TONGS. ALVA C. DINKEY, Munhall, Pa. Filed Mar. 15, 1895. Serial No. 541,924. (No model.)



Claim.—1. In hoisting apparatus, the combination of a post forming a head or stock for tongs or carriers, a hollow sleeve sliding telescopically thereon and carrying the tongs or carriers, hoisting mechanism, and flexible connections extending from the hoisting mechanism to the sliding section and adapted to raise and lower the same; substantially as described.

2. In hoisting apparatus, the combination of a post forming a head or stock for tongs or carriers, a sliding sleeve carrying the tongs or carriers, an elevated jib or bridge on which the post is supported by a double pivotal connection, and hoisting mechanism situate on the jib or bridge and connected with said sleeve; substantially as described.

3. In hoisting apparatus, the combination of a post forming a head or stock for tongs or carriers, a sliding sleeve carrying the tongs or carriers, an elevated jib or bridge on which the post is supported, and hoisting mechanism situate on the jib or bridge and connected with said sleeve; substantially as described.

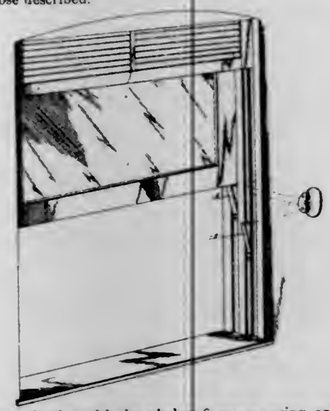
4. The combination of a post, a sliding section thereon, carriers carried by the latter, flexible connections extending around a sheave or sheaves on the sliding section, and to the carriers respectively; and hoisting mechanism; substantially as described.

5. The combination of a hollow post, a sliding section thereon, carriers carried by the latter, flexible connections extending around a sheave or sheaves on the sliding section, and through the post to the carriers respectively; and hoisting mechanism; substantially as described.

542,998. SASH-FASTENER. HENRY M. DINNING, Montreal, Canada. Filed Jan. 15, 1894. Serial No. 497,013. (No model.)

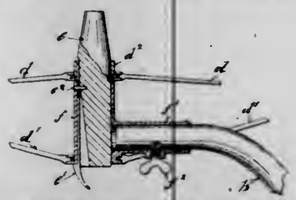
Claim.—1. The combination with the frame or casing of a car window and with two or more spring catches arranged within the path of the window sash and blind, of a crank shaft suitably mounted upon, or adjacent to the window frame or casing, said shaft being provided with crank arms extending in opposite directions therefrom and disposed in different planes or at different points longitudinally thereof corresponding to the different vertical planes in which said spring catches are arranged, suitable flexible connections between said crank arms and their respective catches, and means for manipulating said

crank shaft, whereby either one of said spring catches may be operated independently of the other, substantially in the manner and for the purpose described.



2. The combination with the window frame or casing, and with the spring catches mounted thereon for upholding the window sash or blind, of a crank shaft provided with oppositely extending cranks disposed in different planes corresponding to the planes in which the spring catches are arranged, a thumb piece or finger grip adapted to pass through the casing and having a squared or polygonal shank engaging a correspondingly formed socket in the adjacent end of the crank shaft, and a retaining collar surrounding a reduced portion of said shank and secured in place by suitable fastening devices for preventing disengagement between said shank and the crank shaft, substantially as and for the purpose specified.

542,999. FOLDING TOP FOR VEHICLES. HEMAN F. DOUGLASS and WILLIAM J. SLYDER, Troy, Ohio, assignors to Troy Carriage Sun Shade Co., same place. Filed Oct. 12, 1893. Serial No. 487,972. (No model.)



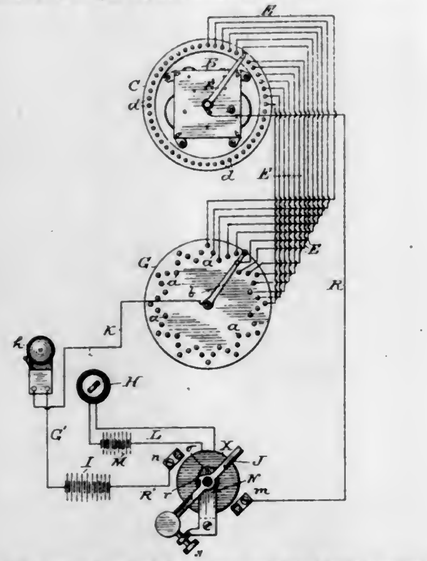
Claim.—1. In a folding top for vehicles a central stem having stationary connecting devices to which are pivoted ribs as described, pivoted braces on said ribs and a runner on said stem to which the other ends of said braces are connected, said runner being substantially of the same length as the portion of said stem which is below said stationary connecting devices, a laterally extending projection formed on said runner at a point between the inner connections of said ribs and braces, and a support adapted to be connected to said projection, substantially as specified.

2. The combination with a central stem, ribs pivoted thereto, a movable runner on said stem and braces extending from said runner to said ribs, a laterally projecting sleeve formed on said runner and arranged above the inner ends of said braces, a spring catch on said stem to engage said runner and a supporting standard to engage in said laterally projecting sleeve, substantially as specified.

543,000. ELECTRICAL TIME-ANNUNCIATOR. EDWARD M. EDGERTON, Chicago, Ill. Filed Feb. 12, 1892. Serial No. 421,352. (No model.)

Claim.—1. The combination with an electric circuit, clock work, annulus, an arm F, switch-board, and brushes *m* and *n*, of a switch-bar J normally connecting said brushes which constitutes the terminals of a break in said circuit, a magnet, an auxiliary electric circuit, and a push-button for closing said auxiliary circuit, thereby vitalizing said magnet and causing the release of said switch-bar so as to open the main circuit, as set forth.

2. The combination with an electric circuit, clock work, annulus, arm F, and switch-board, of a switch-bar J suitably pivoted about its center of length and having one of its ends weighted, which normally connect the terminals of a break in the said circuit, a magnet, an auxiliary electric circuit, and a push-button for closing said auxiliary circuit, thereby vitalizing said magnet and causing the release of said switch-bar so as to open the main circuit, as set forth.

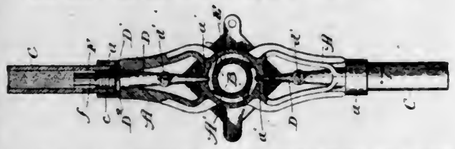


3. The combination with an electric circuit, clock work, annulus, arm F, and switch-board, of the pivoted switch-bar J normally connecting the terminals of a break in said circuit and provided with the spur *r*, a magnet, and armature provided with a pin *o* an auxiliary electric circuit, and a push-button for closing said auxiliary circuit thereby vitalizing said magnet and causing the release of the switch-bar so as to open the main circuit, as set forth.

4. The combination with an electric circuit, clock work, annulus, arm F, a series of contact-points arranged in a circular manner around the brush *b*, and said brush pivoted in the center of said series of contact-points and capable of contact therewith, and, together with said points, constituting the terminals of a switch in said circuit, of a switch-bar J normally connecting the terminals of a break in said circuit, a magnet, an auxiliary electrical circuit, and a push-button for closing said auxiliary circuit thereby vitalizing said magnet and causing the release of said switch so as to open the main circuit, as set forth.

5. The combination with an electric circuit, clock work, annulus, arm F, a series of contact-points arranged in a circular manner around the brush *b*, and said brush pivoted in the center of said series of contact-points and capable of contact therewith, and, together with said points, constituting the terminals of a switch in said circuit, of the switch-bar J, spindle c on the rear end of which said switch-bar is mounted, an indicator i on the forward end thereof normally connecting the terminals of a break in said circuit, an auxiliary electrical circuit, and push-button for closing said auxiliary circuit thereby vitalizing said magnet, and cause the release of said switch-bar so as to open said main circuit, as set forth.

543,001. AUTOMATIC OILER FOR SCREW-CUTTING DIES. ALBERT ELMENDORF, Chicago, Ill., assignor of one-half to Clinton Weeks, same place. Filed Nov. 14, 1894. Serial No. 528,823. (No model.)



Claim.—1. An automatic oiler for cutting dies and the like comprising an oil reservoir arranged upon the tool, means for conducting the oil from the reservoir to the dies and a winged valve adapted to travel up and down in the reservoir as the dies are rotated whereby oil is fed automatically to the dies.

2. An automatic oiler for cutting dies comprising a hollow cylindrical oil chamber forming the handle of the tool and open only at that end which is removably secured in the stock, means for conducting the oil from the chamber to the dies and a loose winged valve adapted to travel in said chamber and thereby force the requisite amount of oil therefrom as the tool is operated.

3. In combination with the stock of a cutting die a hollow handle closed at one end and having its opposite end adapted to be attached to said stock a nozzle D screwing into the open end of said handle and provided with a passage or channel *d* communicating with the interior of the handle, said nozzle extending to a point adjacent to the cutting dies, and a valve F having feathers *f* and adapted to travel within the handle.

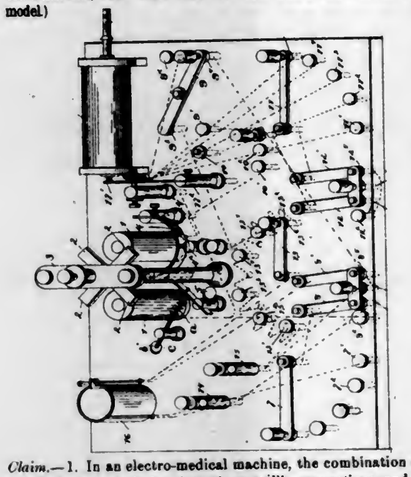
4. In an oiler for a cutting tool, the combination with an oil reservoir arranged upon the tool, means for conveying the oil therefrom to the dies, a loose weight adapted to travel up and down in the oil chamber as the dies are rotated and having a base of smaller diameter than the reservoir, said reservoir being provided at its inner end adjacent to the stock of the tool with a socket or seat adapted to receive such base whereby as the weight descends its lower portion will enter said socket and force the oil therefrom upon the dies.

543,002. PROCESS OF MAKING FERRIC SULFATE. STEPHEN H. EMMENS, London, England. Filed Mar. 29, 1894. Renewed Dec. 22, 1894. Serial No. 532,734. (No specimens.)

Claim.—1. The method of manufacturing ferric sulfate, which method consists in bringing sulfurous anhydrid and air into contact with ferric hydrate and water.

2. The method of manufacturing ferric sulfate, which method consists in passing the gases from a sulfuret or sulfate roasting or calcining furnace into water in which ferric hydrate is suspended.

543,003. ELECTROMEDICAL APPARATUS. JACOB R. ETTER, Crawfordsville, Ind. Filed June 19, 1893. Serial No. 478,208. (No model.)



Claim.—1. In an electro-medical machine, the combination in a switch-board of the switch-points, the metallic connections, and the switch-levers comprising a battery lever, a double galvanic lever, a single galvanic lever, a selecting lever, a controlling lever, a pole-changing lever, and a cautery lever, for the purpose of regulating and minutely controlling the electric currents, substantially as specified.

2. In an electro medical machine, an induction coil producing the induced current and a rheostat controlling the galvanic current, embodied in one instrument, the same having the form of an induction-coil constructed in the ordinary manner, the sections of the secondary layer being connected with a suitable, circular switch and points for the purpose of placing said layer in the galvanic circuit and for cutting on and off resistance in sections, the resistance of the sections of the secondary layer being controlled more minutely by means of the longitudinal adjustment of the non-magnetic controlling slide whereby all the sections or any fractional part of a section may be cut in and out of the galvanic circuit, the secondary layer being non-usable and not performing any function when the instrument is in use as an induction-coil and the primary layer being non-usable and not performing any function when the instrument is in use as a rheostat, substantially as specified.

3. In an electro medical machine, the combination in a switch-board of the switch-points, the metallic connections, the switch-levers, a rheotome, and an induction-coil producing the induced current and a rheostat controlling the galvanic current embodied in one instrument, the same having the form of an induction-coil constructed in the ordinary manner and adapted to perform the functions of each as and when desired, substantially as specified.

543,004. KEY FOR OPENING SHEET-METAL CANS. OLIN S. FELLOWS, Middletown, N. Y. Filed Nov. 12, 1894. Serial No. 528,565. (No model.)



Claim.—1. A key for opening sheet metal cans consisting of a piece of sheet metal having a middle portion formed with extensions of less width, so that when the blank is folded double said middle portion will constitute a transverse head stiffened by the fold, the extensions of less width constituting a shank formed, with coinciding slots in the superposed ends for the reception of a stripping tongue of a can, substantially in the manner and for the purpose described.

2. A key for opening sheet metal cans consisting of a piece of sheet metal having a middle portion formed with extensions of less width which are embossed so that when the blank is doubled upon itself the middle portion forms a transverse head and the extensions form a hollow shank, said shank being slotted to receive the stripping tongue of a can, substantially in the manner and for the purpose described.

3. A key for opening sheet metal cans consisting of a piece of sheet metal having a middle portion formed with extensions of less width which are stamped into semi-cylindrical shape, so that when the blank is folded with the concave surfaces and the extensions opposed to each other a cylindrical shank will be formed, which shank is slotted to receive the stripping tongue of a can substantially in the manner and for the purpose described.

4. A key for opening sheet metal cans consisting of a piece of sheet metal having a middle portion formed with extensions of less width, said middle portion being embossed transversely and the extensions being embossed longitudinally, the blank being folded upon itself with the convex surfaces opposed, and the shank being slotted to receive the stripping tongue of a sheet metal can, substantially in the manner and for the purpose described.

5. A key for opening sheet metal cans, consisting of a piece of sheet metal having a middle portion formed with extensions of less width which are embossed longitudinally so that when the blank is doubled upon itself the middle portion forms a transverse head and the extensions form a hollow shank, said shank being slotted to receive the stripping tongue of a sheet metal can, and the opposed portions of the blank being held together as folded by a tongue upon one portion overlapping the other portion, substantially in the manner and for the purpose described.

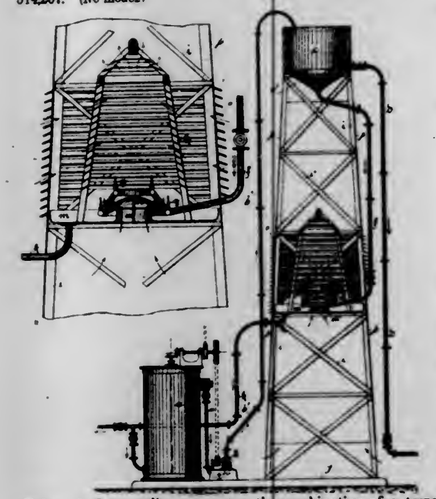
6. A key for opening sheet metal cans, consisting of a piece of sheet metal having a middle portion formed with extensions of less width which are embossed longitudinally so that when the blank is doubled upon itself the middle portion forms a transverse head and the extensions form a hollow shank, said shank being slotted to receive the stripping tongue of a sheet metal can, and the opposed portions of the blank being held together, as folded, by tongues on one portion overlapping the other portion substantially in the manner and for the purpose described.

7. A key for opening sheet metal cans, consisting of a piece of sheet metal having a middle portion formed with extensions of less width which are formed with laterally projecting lugs and are embossed longitudinally so that when the blank is doubled upon itself the middle portion forms a transverse head and the extensions form a hollow shank the halves of which are held in proper relation to each other by the said lateral lugs, said shank being slotted to receive the stripping flange of a sheet metal can substantially in the manner and for the purpose described.

8. A key for opening sheet metal cans consisting of a piece of sheet metal having a middle portion formed with extensions of less width which are formed with laterally projecting lugs and are embossed longitudinally, so that when the blank is folded upon itself the middle portion forms a transverse head and the extensions form a hollow shank the two halves of which are held in proper relation to each other by the said lateral lugs and bound together by tongues on one portion overlapping the other portion, said shank being slotted to receive the stripping tongue of a sheet metal can, substantially in the manner and for the purpose described.

9. A key for opening sheet metal cans consisting of a piece of sheet metal having a middle portion formed with extensions of less width which are embossed longitudinally, so that when the blank is doubled upon itself the middle portion forms a transverse head and the extensions form a hollow shank, said shank being slotted to receive the stripping tongue of a sheet metal can and having the edges of the slot upset internally to strengthen them, substantially in the manner and for the purpose described.

543,005. COOLER FOR CONDENSING WATER. JOHANNES FLEISCHER, Frankfort-on-the-Main, Germany, assignor of one-half to James Kohlsaat, Milwaukee, Wis. Filed June 11, 1894. Serial No. 514,207. (No model.)



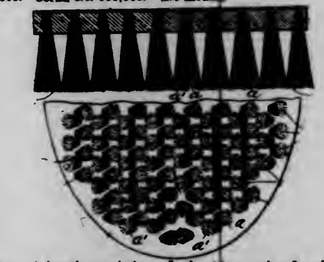
Claim.—1. In a cooling apparatus, the combination of a tower and an auxiliary tower severally provided with shutter-like openings, a basin located below the auxiliary tower, a spraying apparatus located above the basin and discharging into one of the towers, and means for conveying the fluid to the spraying apparatus, substantially as described.

2. In a cooling apparatus, the combination of an apertured auxiliary tower *h*, a basin located below said tower, a spraying apparatus located above the basin and provided with a pipe for conveying liquid thereto, and a tower as i inclosing the first mentioned tower, and provided with shutter-like openings, substantially as described.

3. In a cooling apparatus, the combination of an auxiliary tower *h*, a perforated basin located below the tower, a spraying apparatus located above the basin, and provided with means for conveying the fluid thereto, and a tower surrounding the auxiliary tower, substantially as described.

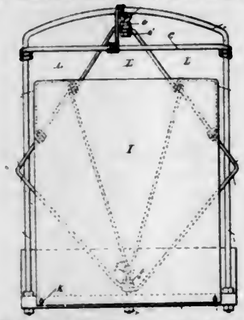
4. In an apparatus for cooling water, the combination of a tower, incased nearly to its top and bottom by heat insulating packing, movable shutter slats forming a portion of the tower casing, and located intermediate of the height of the tower, an auxiliary tower *h* having fixed shutter slats, and located within the first mentioned tower and in proximity to the slatted section thereof, a spraying apparatus located within the auxiliary tower *h*, a reservoir located above the level of the spraying apparatus and connected thereto by a pipe, and a basin beneath the said spraying apparatus having a flanged opening in its bottom, substantially as described.

543,006. BRUSH. WILLIAM C. FLINT, Chicago, Ill. Filed Feb 25, 1895. Serial No. 539,688. (No model.)



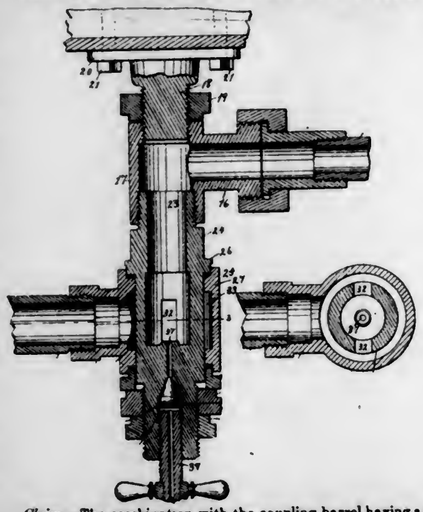
Claim.—A brush consisting of a backing and tufts of bristles all of which are inclined, said tufts all being of substantially equal length and arranged in single rows, the tufts in each row being in substantially the same line at their bases in said backing but being alternately inclined in opposite directions so that each tuft is inclined in a direction opposite to that of its adjacent tuft or tufts in the same row, thereby forming a brush which is open at its back, so as to be readily cleaned, but which presents a well-covered face, substantially as set forth.

543,007. STORM-DOOR FOR WAGONS. DANIEL FULLER, Topsfield, Mass. Filed Dec. 7, 1894. Serial No. 531,123. (No model.)



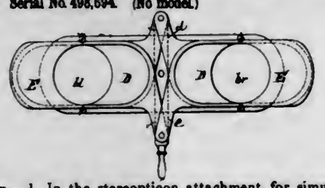
Claim.—The herein described portable storm door for wagons consisting of a pair of pivoted skeleton frames D, D, pivoted at their upper and lower ends to the wagon front or its connections combined with self closing springs G, G, and a cover I, substantially as and for the purpose set forth.

543,008. CARRIAGE-WASHING APPARATUS. MOSES F. GALE, Brooklyn, N. Y. Filed Feb. 16, 1895. Serial No. 538,733. (No model.)



Claim.—The combination with the coupling barrel having a longitudinal bore in its lower end, of the sleeve journaled on the barrel and adapted to receive the discharge therefrom, the sleeve having a suitable discharge nipple, the side ports to receive the discharge from the bottom bore of the barrel, and a drain cock screwed into the lower end of the barrel, the cock having a longitudinal bore and a transverse bore connecting with the said longitudinal bore and registering with the ports in the barrel bottom, substantially as described.

543,009. ATTACHMENT FOR MAGIC LANTERNS OR STEREOPTICONS. CHARLES GOODYEAR, Jr., New York, N. Y. Filed Feb. 1, 1894. Serial No. 498,694. (No model.)

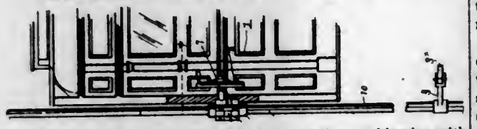


Claim.—1. In the stereopticon attachment, for simultaneously opening one lantern and closing the other, a plate or other carrier provided with two semi-transparent portions of gradnated opacity reversely placed at a distance corresponding to the distance between the axes of the lantern, whereby the movement of the said plate or carrier in either direction may simultaneously and gradnally open one lantern and close the other whereby dissolving view, color changes, and other effects may be produced, substantially as set forth.

2. In the stereopticon attachment, for simultaneously opening one lantern and closing the other, a pair of screens D therefor each having an opaque portion and a semi-transparent portion reversely placed upon each of the screens or slides and also reversely placed as regards the co-operating portions on the two slides, for each lantern, whereby the movement of the two slides or screens will cause the gradnal diminution of light, substantially uniformly, over one entire picture and the gradual increase substantially uniformly over the other picture, substantially as set forth.

3. In combination in a dissolving view attachment for stereopticons, two or more oppositely-moving and cooperating screens or plates, an operating lever therefor, and pivotal or other connections between the said lever and the said screens or plates, the said screens or plates being so arranged that each lantern of the said stereopticon will be opened by the movement of the lever, before the other lantern begins to close, substantially as and for the purposes set forth.

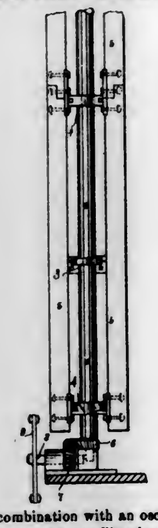
543,010. ELEVATOR-CONTROLLER. LORENZO S. GRAVES, Rochester, N. Y., assignor to the Graves Elevator Company, same place. Filed Aug. 1, 1894. Serial No. 519,195. (No model.)



Claim.—1. In a controller for elevators, the combination with the vertical rock-shaft arranged in the elevator well and adapted to be oscillated on its vertical axis, said shaft being composed of two series of connected flat strips, the strips of each series having interlocking tongues and recesses and the points of connection of the strips of each series breaking joints with those of the other series and a motor-controlling mechanism connected to and actuated by said shaft, of the car, and the devices on the car having a running hold on said rock-shaft for causing its oscillation on its center, substantially as described.

2. In a controller for elevators, the combination with the vertical rock-shaft arranged in the well, the sleeve secured thereto, the collar loosely engaging the shaft, the vertical screws on the sleeve engaging the collar, the supporting plate and antifriction devices between it and the collar, of the car and devices on the car having a running hold on the rock-shaft for causing its oscillation, substantially as described.

543,011. ELEVATOR-CONTROLLER. FRED B. GRAVES, Rochester, N. Y., assignor to the Graves Elevator Company, same place. Filed Apr. 2, 1895. Serial No. 544,189. (No model.)



Claim.—1. The combination with an oscillatory shaft in an elevator well, adapted to actuate controlling devices, of the elevator car, the two shoes supported on the car and engaging the opposite sides of the oscillatory shaft, the connecting bar to which said shoes are pivoted, and means for oscillating said bar, substantially as described.

2. The combination with an oscillatory shaft in an elevator well, adapted to actuate controlling devices, of the elevator car, the two shoes having a running hold on the opposite sides of the shaft, the connecting bar to which the shoes are pivoted, and the two actuating rods, and means on the car for moving said rods in opposite directions simultaneously, substantially as described.

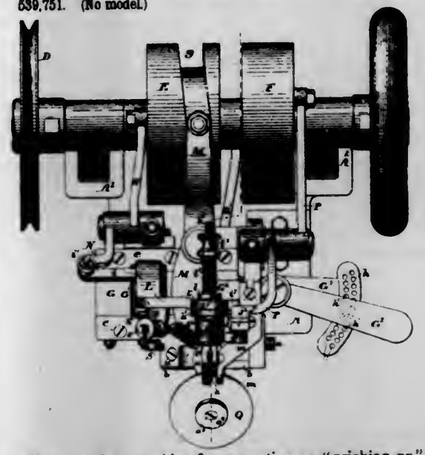
3. The combination with an oscillatory shaft in an elevator well, adapted to actuate controlling devices, of the elevator car, the two shoes having a running hold on the opposite sides of the shaft, the connecting bar to which said shoes are pivoted, the actuating rods, the guides on the car loosely supporting the rods, and the pivoted lever connected to the rods, substantially as described.

4. The combination with an oscillatory shaft in an elevator well, adapted to actuate controlling devices, of the elevator car, the two shoes having a running hold on the opposite sides of the shaft, the connecting bar to which said shoes are pivoted, the actuating rods, the pivoted lever for operating them, and a loose connection between the lever and car, substantially as described.

5. The combination with an oscillatory shaft in an elevator well composed of a central portion and two guides on opposite sides thereof, of the elevator car, the two shoes having a running hold on the guides, the connecting bar and actuating rods each rod being connected to its shoe and to the connecting bar by a single pivot, the pivoted lever on the car connected to the actuating rods and permitted a lateral movement on its pivot, substantially as described.

6. The combination with an oscillatory shaft in an elevator well, composed of a central portion and two guides on opposite sides of the center thereof, and a support in which the central portion of said shaft is journaled intermediate its ends, of the elevator-car, the two shoes mounted thereon and engaging the guides on the shaft, a means on the car for positively pushing and pulling said shoes in opposite directions simultaneously, substantially as described.

543,012. STITCH-SEPARATING AND INDENTING MACHINE. JOHN B. HADAWAY, Brockton, Mass. Filed Feb 26, 1895. Serial No. 539,751. (No model.)



Claim.—1. In a machine for separating or "pricking up" the stitches on boot and shoe soles the combination of a work support; a vertically and laterally movable separator for locating the intervals between the stitches whether of uniform or varying lengths; means for imparting to said tool a plurality of lateral movements to locate the interval between the stitches, and another lateral movement to feed the work; and means for frictionally holding said separator in the position to which it is vibrated in either direction, till moved by a resistance applied to its working end.

2. In a machine for separating the stitches on boot and shoe soles the combination of a work support; a vertically and laterally movable separator for locating the intervals between the stitches whether of uniform or varying lengths; means for imparting to said tool a plurality of lateral vibratory movements to locate the intervals between the stitches, and another lateral movement to feed the work; means for frictionally holding said separator in the position to which it is vibrated, in either direction, till moved from said position by a resistance applied to its working end and means for forcing said separator between the stiches when the point of said separator has located itself between two stitches.

3. In a machine for separating the stitches on a boot or shoe sole, the combination of a work support; a horizontally reciprocating slide; a separating tool carried by said slide and movable vertically

relative thereto; a cylinder cam provided with the path *g* having the throws and standstills as set forth; a cam lever operated by said path and connected to said slide, whereby said separator is moved toward the right a distance equal to the length of the standard stitch, then toward the left a distance equal to one-third of the length of said standard stitch, then toward the right a distance equal to two thirds the length of the standard stitch and then toward the left a distance equal to one third the length of said standard stitch to locate the interval between and then toward the left a distance equal to the length of the standard stitch to feed the work; means for frictionally holding said separator in the position to which it is vibrated, in either direction, till moved from said position by a resistance applied to its working end; means for depressing said separator, to cause it to rest lightly upon the work, after the first movement thereof toward the right; and means for forcing said separator between the stitch, when its point has been located between two stitches, and just preceding the movement toward the left for feeding the work.

4. In a machine for separating the stitches on boot and shoe soles the combination of the feed slide; the tool stock carrying lever provided with the truck *j*; the tool stock provided with the arm O′ and the truck j^3; the separating tool *k*; a spring for depressing the tool stock; a lever connected at one end to said slide; the cylinder-cam path *g* having the throws and rests as set forth and arranged to act upon and vibrate said lever; a lever and cam for raising said tool stock and tool; the lever P provided with the plate *j* on its front end with the cam-shaped lug j^3 constructed and arranged to act upon the trucks *j* and j^3 as set forth; and a cam for vibrating said lever P.

5. In a machine for separating the stitches on boot and shoe soles the combination of a horizontally reciprocating slide; a vibratiog lever carried by said slide; a tool stock pivoted to said lever, means for frictionally holding said tool stock in the position to which it is vibrated, in either direction, till moved from said position by a resistance applied to its working end; a separating tool for locating the intervals between the stitches, whether of uniform or varying lengths, carried by said stock.

6. In a machine for separating the stitches on boot and shoe soles, the combination of a horizontally reciprocating slide; the lever L pivoted thereto and provided with the slotted ear i^5; the tool stock O pivoted thereto and carrying the separating tool *k*, and provided with the friction pad or upward extension k'; the rod k^2 set in said pad and extending through the slotted ear i^5 of the lever L; the frictional washer l, l'; the spring l^2; and the thumb nut l^3.

7. In a machine for separating the stitches on boot and shoe soles the combination of a revoluble main lower work support having a frusto-conical upper surface provided with a plurality of annular grooves formed in said conical upper surface near its peripheral edge, said support being mounted upon an inclined axis; a fixed upper work support to bear upon the welt of the boot or shoe; and a gage to bear against the sole edge.

8. In a machine for separating the stitches on boot and shoe soles the combination of a main lower work support as Q having a frusto-conical upper surface and mounted upon an inclined axis; and an auxiliary support as o^4 revolubly mounted upon a bearing in axial line with the main support and adjustable to and from said main support.

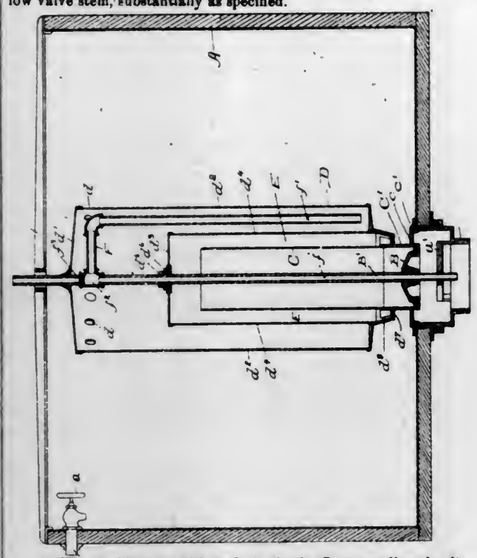
9. The combination in a stitch separating machine of a vertically movable bar having an outwardly and downwardly projecting arm or ear; a tubular stud set in said inclined ear; a frusto conical disk mounted upon and revoluble about said tubular stud; a threaded bolt fitted to and adjustable endwise in said tubular stud: a screw stud set in the upper end of said bolt; and an auxiliary supporting disk mounted upon and revoluble about said screw stud.

543,013. AUTOMATIC FLUSHING-TANK FOR WATER-CLOSETS, &c. AUGUST HAGEN, Chicago, Ill., assignor to the L. Wolff Manufacturing Company, same place. Filed Jan. 21, 1895. Serial No. 535,606. (No model.)

Claim.—1. The combination with a flushing tank provided with an upwardly projecting tube surrounding its discharge opening, of a movable valve at the lower discharge end of said tube for closing said tube, a cup or float surrounding said tube and forming therewith a siphon passage or discharge for the water, and a supplemental siphon tube having its short leg extending into said cup or float and its long leg extending through said valve for emptying the water from said cup or float, substantially as specified.

2. The combination with a flushing tank provided with an upwardly projecting tube surrounding its discharge opening, of a movable valve at the lower discharge end of said tube for closing said tube, a cup or float surrounding said tube and forming therewith a siphon passage or discharge for the water, a supplemental siphon for emptying the water from said cup or float having its short leg extending into said cup or float and its long leg extending through said valve, and means for connecting said valve with said cup, substantially as specified.

3. The combination with tank A of tube C surrounding the discharge opening of the tank, a movable valve B, hollow valve stem B′, annular cup D secured to said valve stem and having an opening near its upper end, and a supplemental siphon having its short leg extending into said annular cup D and communicating with said hollow valve stem, substantially as specified.



4. The combination with tank A of tube C surrounding the discharge opening of the tank, of a movable valve B, hollow valve stem B′, annular cup D secured to said valve stem and having an opening near its upper end, and a supplemental siphon having its short leg extending into said annular cup D and communicating with said hollow valve stem, said tube C having a valve-seat *c* near its lower end, substantially as specified.

5. The combination with tank A of tube C surrounding the discharge opening of the tank, of a movable valve B, hollow valve stem B′, annular cup D secured to said valve stem and having an opening near its upper end, a supplemental siphon having its short leg extending into said annular cup D and communicating with said hollow valve stem, and coupling A^3 furnished with a guide arm or bridge *a′* for said valve stem, substantially as specified.

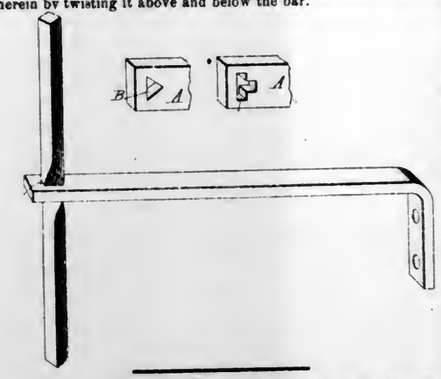
6. The combination with tank A of tube C surrounding the discharge opening of the tank, of a movable valve B, hollow valve stem B′, annular cup D secured to said valve stem and having an opening near its upper end, a supplemental siphon having its short leg extending into said annular cup D and communicating with said hollow valve stem, coupling A^3 furnished with a guide arm or bridge *a′* for said valve stem, and said tank A having a guide arm or bridge a^2 for said valve stem, substantially as specified.

7. The combination with a flushing tank provided with an upwardly projecting tube surrounding its discharge opening, of a movable valve for closing said tube, a cup or float surrounding said tube and forming therewith a siphon passage or discharge for the water, a supplemental siphon having its short leg extending into said float and its long leg extending through said valve for emptying the water from said cup or float, means for connecting said valve with said cup or float, and said cup or float being furnished near its lower end with a guide or collar surrounding said tube, substantially as specified.

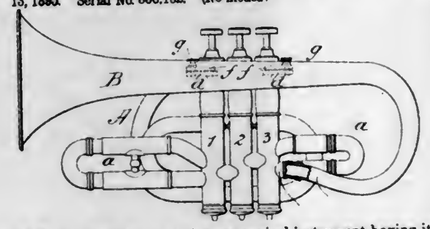
8. The combination with a tank provided with a siphon discharge, of a valve at the lower end of said siphon for closing said discharge, and a cup or float adapted to be filled with water at intervals and connected with said valve for operating the same, and means for discharging the water from said cup or float at intervals, consisting of a supplemental siphon having its short leg extending into said float and its long leg extending through said valve, substantially as specified.

543,014. BONDING AND TYING DEVICE. WILLIAM C. HANNA, Jr., New York, N. Y. Filed Apr. 19, 1895. Serial No. 546,357. (No model.)

Claim.—As a new article of manufacture, a bonding or tying device comprising a rod or bar provided with an angular opening at one end,—the opposite end being adapted to be secured to the structure in connection with which it is to be used; and a pin or spear passing through said angular opening,—said pin being permanently secured therein by twisting it above and below the bar.



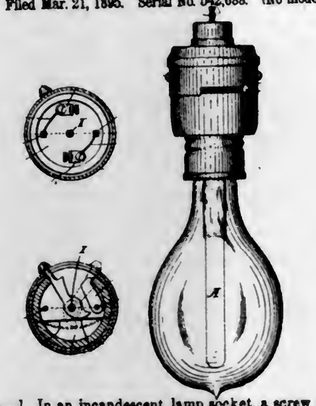
543,015. CORNET. JOHN HEALD, Springfield, Mass. Filed Feb. 13, 1895. Serial No. 538,182. (No model.)



Claim.—1. A cornet or analogous musical instrument having its main portion comprising the passages and one or more tuning slides as usual, combined with a detachable open-mouthed terminal bell, whereby the same may be substituted by similarly applied bells of different dimensions, substantially as described.

2. A cornet or analogous musical instrument having its main portion comprising the passages and one or more tuning slides as usual, and having that portion thereof which comprises the passage which carries the tone into the bell constructed with a socket adapted to receive the smaller end of interchangeable, substitute bells, having open-mouthed terminals, substantially as described.

543,016. INCANDESCENT-LAMP SOCKET. EDGAR H. HEATH, Grand Rapids, Mich., assignor of one-half to John H. Beamer, same place. Filed Mar. 21, 1895. Serial No. 542,688. (No model.)

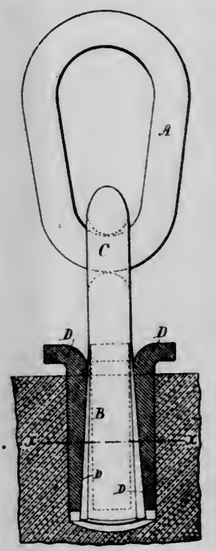


Claim.—1. In an incandescent lamp socket, a screw or stud in the axis of said socket, and adapted to engage the inner electrode of the lamp, a lever pivoted on said screw and exteoding outside said socket, a spring electrode engaging said lever when the circuit is closed, and electric circuits from the outer electrode of the lamp and from the said spring electrode to the main circuit, substantially as described.

2. In an incandescent lamp socket, a diaphragm in said socket a bolt passing through the same, having a flexible strip of conducting material attached to engage the outer electrode of the lamp, a central stud in said diaphragm, a lever pivoted on said stud, a bolt through said diaphragm, having a spring electrode attached to engage said lever, and conductors connecting said bolts with the main circuit, substantially as described.

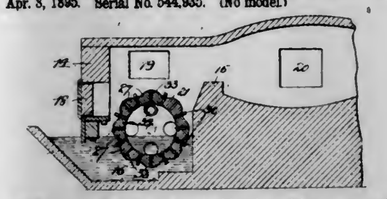
3. In an incandescent lamp socket, a screw threaded socket having a chamber in its side, a diaphragm above said socket, bolts through said diaphragm near its opposite sides, and a central stud in said diaphragm, a lever pivoted on said stud spring electrodes on said bolts, one of which is in said chamber, and fusible wires extending from said bolts to binding posts on said diaphragm, substantially as described.

543,017. STONE-LIFTER. JAMES HENDERSON and FRANCIS McCONAUGHY, Somerville, N. J. Filed June 23, 1894. Serial No. 515,538. (No model.)



Claim.—The combination in a stone lifting device, of a central bolt having an eye at the upper end to which the lifting device is applied, a square lower end and sides tapering uniformly, four separate wedges fitting against the tapering sides of the bolt and adapted to fit within a uniformly circular hole drilled in the stone, substantially as set forth.

543,018. FURNACE. ALFRED M. HEWLETT, Kewanee, Ill. Filed Apr. 8, 1895. Serial No. 544,935. (No model.)



Claim.—1. In a furnace, the combination with a water-sealed ash-pit, of a rotary grate, and means for introducing a blast into the furnace below the active surface of the grate, said blast having communication with the water in the ash-pit, whereby the steam generated from such water will be carried through the bed of fuel with the blast, substantially as described.

2. In a furnace, the combination with a water-sealed ash-pit, of a cyliudrical rotary grate partly submerged in the water in the ash-pit, said grate being provided with perforations, and means for introducing a blast of air into said grate and in communication with the water in the ash-pit, whereby the steam generated by the heated grate will be carried with the blast through said grate, substantially as described.

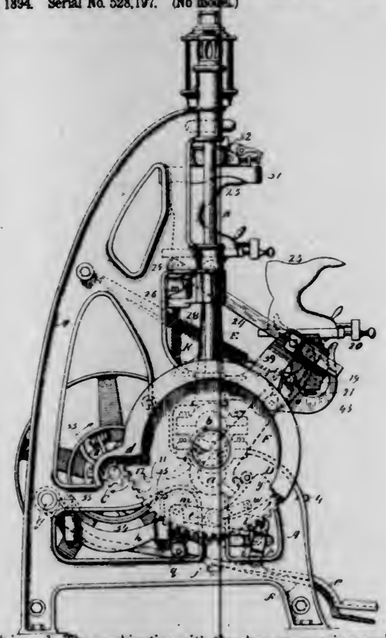
3. In a furnace, the combination with a rotary grate, of a water-sealed ash-pit arranged thereunder, said ash-pit having an external opening whereby the ashes may be removed without interrupting the operation of the furnace, and means for introducing a blast into the space between the upper surface of the grate and the water in the fire-box, such blast having access to such water, whereby the steam

generated by the heated grate will be carried with the blast through said grate, substantially as described.

4. In a furnace, the combination with a bridge wall and a front wall forming a fire-box, of a rotary cylindrical grate in said fire-box, said grate having perforations in its surface, a water-sealed ash-pit under said grate, said ash-pit having an external opening, and means for introducing a blast into said grate, said blast having access to the water in the ash-pit, substantially as described.

5. In a furnace, the combination with a water-sealed ash-pit, of a grate, and means for introducing a blast into the furnace below said grate, said blast having communication with the water in the ash-pit, whereby the steam generated from such water will be carried through the bed of fuel with the blast, substantially as described.

543,019. BEATING-OUT MACHINE. JOHN J. HEYS, Lynn, Mass., assignor of one-half to Maurice V. Brosnehan, same place. Filed Nov. 8, 1894. Serial No. 528,197. (No model.)



Claim.—1. The combination with the shoe compressing mechanism, consisting of the crank shaft with means for rotating it, the last carrying arms mounted on the cranks of said shaft, the lasts carried by said arms, a pair of coacting molds and means substantially as described for guiding the movement of said arms in their ascent and descent, and mechanism for starting, running and stopping said compressing mechanism, all substantially as specified.

2. In a beating out machine the combination of the crank shaft, the levers E, F connected with and carried by said shaft, and the lasts arranged to be moved by said levers: an extension 11 of said levers below the throw of the crank shaft, the rolls 12, carried by said extension 11, flanges 36 and 37 arranged to guide said rolls to cause a downward movement of the lasts carried by levers E, F, to cause the roll 12, to assume a position at the intersecting angles of flange 36 when the crank throw is at the lowest point and roll 15 is in the seat in flange 38, as specified.

3. In a beating out machine of the class specified the arms E, F that carry the lasts, extended as at 11 below the crank shaft and rolls 12 pivoted in said extensions, and a flange 36 arranged for said roll to travel upon when the arm that extends above the crank shaft is moving rearward and upward, substantially as specified.

4. In a beating out machine, provided with arms E, F the combination of rolls 15 arranged on said arms above the crank shaft the guide plate 18 curved hook like at its front end to form a seat for said roll, and the projection 17 around which said roll moves, substantially as specified.

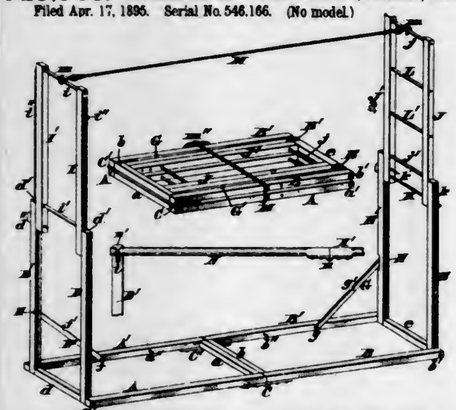
5. In a beating out machine, the combination of arms E, F carried by the crank shaft, the last blocks 20 pivoted to the top of said arms, the block 19 and its guide 21, the oblique arm 24 on which block 19 is arranged to slide and spring 28 arranged to cause the rising of the last block when said arms are moved upward by the crank, substantially as specified.

6. In a beating out machine the combination of blocks 19, the last block 20, the bars 24, arranged to support and guide said blocks 19 in their rising and falling motion substantially as specified.

7. In combination with last blocks 20, the slides 21, guides 19, in which slides 21 move, the rolls 46 and coupling 27 in the groove of which said roll 46 enters to coact with slide 21 in holding said block 20 in proper alignment, substantially as specified.

8. In a beating out machine, the combination of a crank shaft, the rigid arms E, F, carried by the crank shaft; and a last block mounted at the top of said arms, and arranged to be thereby moved into contact with a mold, and to the front, out of such contact, substantially as specified.

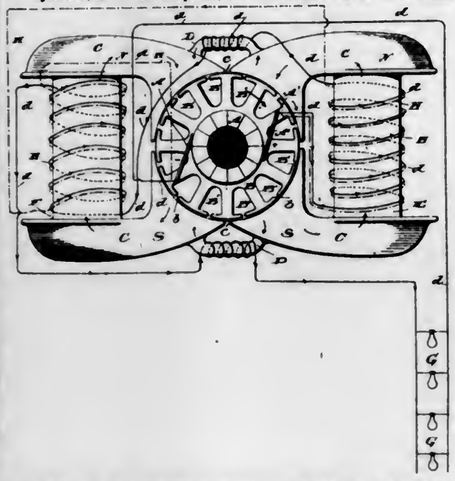
543,020. CLOTHES-DRIER. BETTIE F. HOLMES, Avondale, Ohio. Filed Apr. 17, 1895. Serial No. 546,166. (No model.)



Claim.—1. A folding clothes-rack consisting of a base; main sections coupled to the outer ends of said base; devices for maintaining these main sections in place; extensible sections applied to said main sections; devices for maintaining these extensible sections in place; and a coupling that unites their upper ends, in the manner described, and for the purpose stated.

2. A folding clothes-rack consisting of a pair of base sections A A′ *a*, B B′ *b*, hinged together at their inner ends, as at C, C′; main upright sections D D′ *d*, E E′ *e*, coupled to the outer ends of said base sections, as at *a′*, *b′*; braces F, G, that maintain said main sections in place; extensible-sections I I′ *i i′*, J J′ *j j′*, applied to said main sections; pins for maintaining said extensible-sections in place; and a connection engaged with the stretchers *i j*, of said extensible-sections, all as herein described and for the purpose stated.

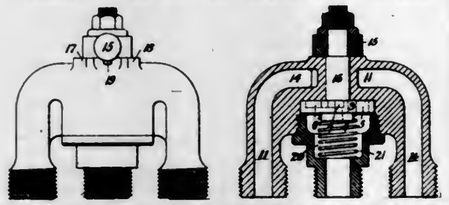
543,021. DYNAMO-ELECTRIC MACHINE. THOMAS HOOKER, Syracuse, N. Y. Filed Apr. 26, 1894. Serial No. 509,090. (No model.)



Claim.—1. In a dynamo or motor, and in combination with the armature thereof, field magnets having severed pole pieces forming independent working faces of like polarity connected by a yoke having a coil connected in series with the field magnets and polarized in such direction as to reinforce the entering horn of the field magnet and decrease the trailing-horn of the same, substantially as specified.

2. In a dynamo or motor, and in combination with the armature thereof, field magnet pole pieces severed centrally forming working faces of like polarity and a yoke connecting said working faces and extending beyond the space between the same and a coil on said yoke connected in series with the field magnets, polarized in such direction that the oversaturation of a trailing horn and the demagnetization of an entering horn of said field magnets are materially prevented, substantially as specified.

543,022. AIR-BRAKE-VALVE APPARATUS. HERBERT E. HUNT, Pittsburg, Pa. Filed May 1, 1894. Serial No. 509,644. (No model.)



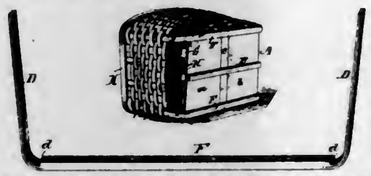
Claim.—1. An air-brake valve comprising a valve-casing having a seat with ports leading respectively to the exhaust and to the brake-cylinder, and a rotary disk-valve having a port or ports adapted to register with the brake-cylinder port or ports in the valve-seat and having a passage or passages adapted to connect the brake-cylinder port of the valve seat with the exhaust-port, a valve stem projecting through the seat and an air-supply communication leading from the air reservoir into the valve casing on the side of the valve opposite to the valve-seat said valve having three positions, namely, one position connecting the cylinder port or ports with the exhaust port or ports, a middle position in which the cylinder ports are disconnected both from the exhaust port or ports and air-supply port or ports, and a third position in which the cylinder port or ports are connected with the air-supply port or ports substantially as described.

2. An air-brake valve comprising a valve-casing having a ported seat, a rotary ported disk valve seated thereon and having a stem projecting through the seat, and an air-supply pipe leading to the valve on the opposite side to the seat and stem, whereby packing of the valve and stem is avoided; substantially as described.

3. An air-brake valve comprising a valve-casing having a seat with three ports leading to the brake-cylinder and two ports leading to the exhaust, a rotary valve having two ports adapted to register with two of the brake-cylinder ports in the valve-seat, and having two passages adapted to connect two of said brake-cylinder ports with the exhaust-ports, a valve stem projecting through the seat and an air-supply communication leading from the air reservoir into the valve casing on the side of the valve opposite to its seat; substantially as described.

4. The combination with an air reservoir, a brake cylinder and a pipe connecting them, of a rotary valve interposed in said pipe, said valve having an air inlet on the side opposite to its seat and a stem projecting through the seat and having three positions, namely, one position connecting the cylinder port or ports with the exhaust port or ports, a middle position in which the cylinder ports are disconnected both from the exhaust port or ports and air-supply port or ports, and a third position in which the cylinder port or ports are connected with the air-supply port or ports.

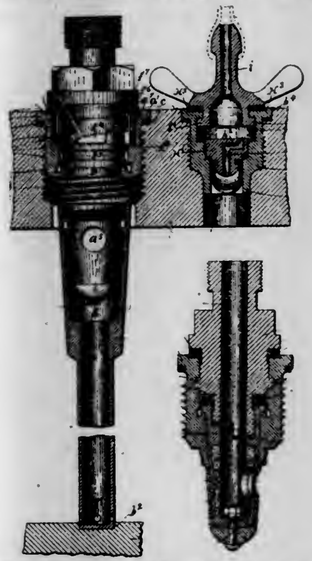
543,023. BASKET. JAMES J. KEYES, Peru, Ind. Filed Nov. 19, 1894. Serial No. 529,299. (No model.)



Claim.—1. In a basket, the bottom formed of two sections separated at their inner end by the cross brace, combined with the central support, the cross brace, and the corner guards or protectors which have their central portions to extend along opposite edges of the bottom sections, substantially as shown.

2. In a basket, the corner guards or protectors, having their ends split and reduced in thickness by cutting away one of the split portions; the central portions being made to extend under the bottom of the basket, while their ends are bent so as to extend upwardly and have the splints woven around them, substantially as described.

543,024. TAPPING APPARATUS. JUDSON N. KNAPP, Onondaga, N. Y. Filed Jan. 26, 1895. Serial No. 536,315. (No model.)

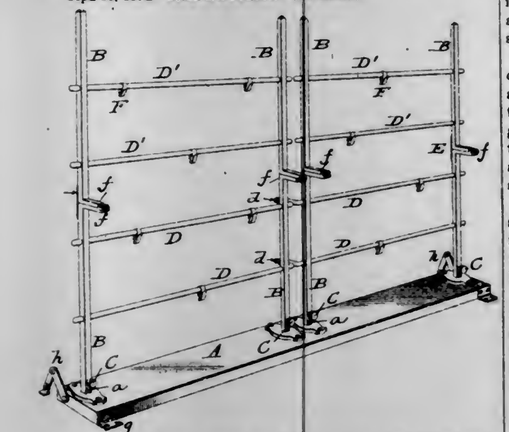


Claim.—1. In a tapping apparatus, the combination of a supporting wall provided with an aperture, a tap or bushing having an enlarged cylindrical extremity secured within the aperture and formed with a bearing face surrounding the outer end of its inner chamber and a reduced tapering extremity projecting beyond the inner face of the supporting wall and provided with an aperture in its side wall and having its outer end closed and formed with a flat inner face, a pivotal pin projecting from said inner face, a hollow tapering key or valve piece within the tap or bushing having one end formed with an annular bearing face and its other end closed and provided with a perforation for receiving the pivotal pin, and a flat outer face engaged with said inner face, a nut arranged within the key or valve piece and removably engaged with said pivotal pin, a plug detachably engaged with the key or valve piece and formed with bearing faces adjacent to the former bearing faces, flexible washers interposed between said bearing faces, and cam faces on the tap or bushing and the plug for forcing the plug endwise and compressing the flexible washers, substantially as and for the purpose set forth.

2. In a tapping apparatus, the combination of a supporting wall provided with an aperture, a tap or bushing having an enlarged cylindrical extremity secured within the aperture and formed with a bearing face surrounding the outer end of its inner chamber and a reduced tapering extremity provided with an aperture in its side wall and having its outer end closed and formed with a flat inner face, said tap or bushing having opposite partially circular grooves in its inner face and lengthwise opposite grooves of substantially equal width extending from its outer end face to the former grooves, the lengthwise grooves having corresponding sides extending beyond their diametrically opposite portions a greater distance than their opposite sides, a pivotal pin projecting from the inner face of the closed outer end of the reduced extremity of said bushing, a hollow tapering key or valve piece within the tap or bushing having one end formed with an annular bearing face and its opposite end closed and provided with a perforation for receiving the pivotal pin, and a flat outer face engaged with said inner face, a nut arranged within the key or valve piece and removably engaged with said pivotal pin, a plug detachably engaged with the key or valve piece and formed with bearing faces adjacent to the former bearing, and opposite laterally projecting lugs, for entering said lengthwise grooves, said lugs being formed of substantially equal width and having corresponding sides extended beyond their diametrically opposite portions a greater distance than their opposite sides, whereby the plug is moved lengthwise, and flexible washers interposed between said bearing faces, substantially as described.

3. In a tapping apparatus, the combination of a supporting wall provided with an aperture, a tap or bushing having an enlarged cylindrical extremity secured within the aperture, and a reduced extremity and provided with an aperture in its wall, a key or valve piece within the reduced extremity of the tap or bushing for closing the aperture, and a pipe having one end secured to one extremity of the tap or bushing above the aperture therein and formed of less diameter than the aperture in the supporting wall; said extremity of the pipe being provided with a chamber of greater diameter than the reduced extremity of the tap or bushing, substantially as and for the purpose specified.

543,025. DISPLAY-RACK. FREDERICK KNOPF, Chicago, Ill. Filed Sept. 29, 1894. Serial No. 524,508. (No model.)



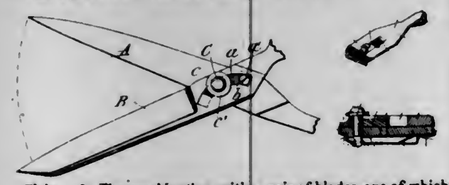
Claim.—1. A rack consisting of two sections, each comprising a pair of upright posts adapted to fold upon themselves; and two sets of transverse suspending rods extending between the posts of the respective sections,—the lower set of suspending rods being hinged together.

2. In combination with the posts made in two parts hinged together; the suspending rods D and D′, the former, D, being hinged together; and hooks F mounted and free to turn upon the rods whereby the articles are held in a pendent position during the folding of the rack.

3. In combination with posts B B made in two parts and provided with arms *f f* hinged together; the suspending rods D and D′ extending from post to post; and the links and pins *d e*, connecting the contiguous ends of the rods D.

4. In combination with the hinged two-part posts B B; rods D connecting the upper parts of the posts; and rods D connecting the lower parts of the posts,—said rods D being hinged together.

543,026. JOINT FOR SHEARS. ALFRED J. KRANK, St. Paul, Minn. Filed Apr. 6, 1895. Serial No. 544,795. (No model.)



Claim.—1. The combination, with a pair of blades, one of which has a segmental slot, of a segmental block shorter than the slot in the blade and located therein, said block being secured, at one end, to the other blade, a pin passing through both blades and through the block, said pin being provided with a head engaging the slotted blade, and a fastening device at the opposite end of the pin, substantially as set forth.

2. The combination, with a pair of blades, of a pin passing through both blades, and a spring plate engaging the pin and provided with an inclined surface bearing on the surface of one of the blades, substantially as set forth.

3. The combination, with a pair of blades, one of which has an inclined surface, of a pin passing through both blades and provided with notches at one end, and a spring plate engaging the notches in the pin and provided with an inclined surface engaging the inclined surface on the blade and movable thereon, whereby the tension of the spring plate may be adjusted, substantially as set forth.

4. The combination, with a pair of blades, one of which has an inclined surface, of a pin passing through both blades and provided with notches at one end, a spring plate engaging the notches in the pin and provided with an inclined surface engaging the inclined surface on the blade and movable thereon, said spring plate also having an arm arranged to rest in frictional contact with one of the blades, substantially as set forth.

5. The combination, with a pin provided with notches, and a pair of blades through which the pin passes, one of which is provided with an inclined surface on one side of the pin, and a roughened surface on the other side of the pin, of a spring plate provided with tongues engaging the notches in the pin and with an inclined surface engaging the inclined surface on the blade, said spring plate also having an arm engaging the roughened surface on said blade, substantially as set forth.

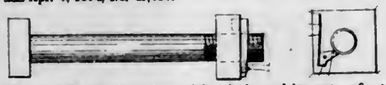
6. The combination, with a pin provided with notches, and a pair of blades through which the pin passes, one of which is provided with an inclined surface on one side of the pin and a series of notches on the other side of the pin, of a spring plate provided with tongues engaging the notches in the pin and with an inclined surface engaging the inclined surface on the blade, said spring plate also having an arm engaging any one of the notches on said blade, substantially as set forth.

7. The combination, with a pair of blades, of a pin passing through said blades at an angle and provided with a head at one end and with notches at the other end, and a spring plate provided with tongues engaging said notches and with a cam surface engaging one of the blades, substantially as set forth.

8. The combination, with a pair of blades, one of which has a cam surface, of a pin passing through both blades at an angle and provided with a head at one end and with notches at the other end, and a spring plate engaging the notches in the pin and provided with a cam surface engaging the cam surface on the blade, substantially as set forth.

9. The combination, with a pair of blades, one of which has a cam surface and a series of grooves, of a pin passing through both blades at an angle and provided with a head at one end and a series of notches at the other end, a spring plate having tongues engaging the notches, a cam surface on the blade, and an arm engaging the grooves in the blade, substantially as set forth.

543,027. NUT-LOCK. JOSEPH LACHANCE, St. François, Canada. Filed June 8, 1894. Serial No. 513,974. (No model.) Patented in Canada Apr. 7, 1894, No. 45,737.



Claim.—The combination, with a bolt, and its nut; of a toothed catch pivoted to the nut and provided with a rectangular projection, and a spring secured at one end to the nut with its free end bearing against the side of the catch and its projection and normally pressing its teeth against the screw-thread on the bolt, the said catch being disengaged when the said projection is pressed back until the spring bears against the end portion of the said projection, substantially as described and shown.

543,028. TOOTH-BRUSH. FRANK LAWS, Tama, Iowa. Filed Oct. 16, 1894. Serial No. 526,027. (No model.)



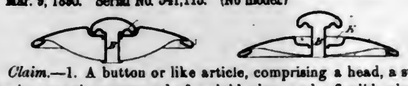
Claim.—1. An attachment for tooth brushes, consisting of a shield or guard and a clamp hinged to said guard, adapted to receive the handle of a tooth brush, substantially as described.

2. An attachment for tooth brushes, consisting of a clamp, a shield hinged to said clamp, and receptacles on the clamp and shield for toilet articles, for the purpose described.

3. An attachment for tooth brushes, consisting of a clamp having a flange, the shield hinged to said flange, adapted to fit over the bristles of the tooth brush, and means for securing the shield over the brush, substantially as described.

4. An attachment for tooth brushes, consisting of a shield, spring catches on the shield to receive and hold the receptacle containing soap or the like, a clamp having spring arms to receive the handle of the tooth brush and provided with flanges to which the shield is hinged, a receptacle adapted to contain tooth powder and means on the shield for engaging the tooth brush to retain it normally closed, substantially as described.

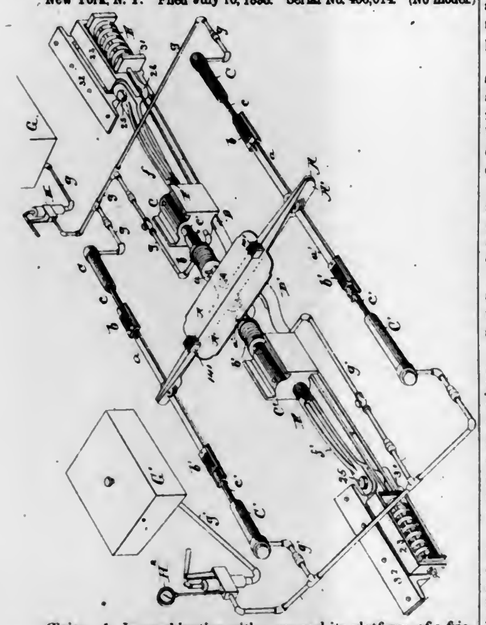
543,029. BUTTON. ALFREDO LEBLANC, Stamford, Conn. Filed Mar. 9, 1895. Serial No. 541,113. (No model.)



Claim.—1. A button or like article, comprising a head, a stem, and a base-portion composed of a rigid plate and a flexible plate—the head being attached to one of said plates whereby pressure exerted upon the base will cause the head to project from said base as set forth.

2. A button or like article comprising a head, a stem, a spring disk secured to the end of said stem, and a second disk, located above the spring disk, and centrally perforated to permit the passage of the said stem, as set forth.

543,030. DEVICE FOR UNITING CARS. ARTHUR G. LEONARD, New York, N. Y. Filed July 10, 1893. Serial No. 480,014. (No model.)



Claim.—1. In combination with a car and its platform, of a friction plate having stems movable in the platform, a tank on the car for containing inelastic liquid, a pump on the car for taking the liquid from the tank and moving it under pressure, means for determining the pressure, a pipe system connected with said pump, a plurality of cylinders in connection with said pipe system provided with plungers in line with said stems, a spring co-operating with each of the plungers and stems, the hydraulic pressure operating to project the friction plate, compress the springs and maintain them under compression during the evolutions of the friction plate, substantially as described.

2. In combination with a car body, a friction plate thereon, a tank for containing a supply of an inelastic liquid located on the car, a draw bar, hydraulic cylinders connecting with the draw bar and friction plate, rams in the cylinders, springs interposed between the rams and the draw bar and friction plate, a pipe system connecting the cylinders with forcing means adapted to force the liquid from the tank upon the car body into the pipe system, and cylinders to operate the rams, said forcing means being carried by the car body and operative therefrom, substantially as described.

3. The combination with the frame of the car body and a friction plate in front of the platforms at each end of the car, and means for movably supporting the friction plates upon said platforms, of a tank carried by the car body, and a pump located at or near each end of the car and adapted to force an inelastic liquid from the tank, separate and independent pipe systems on each end of the car body to receive said liquid under pressure, a plurality of hydraulic cylinders secured to the car at each end thereof communicating with said pipe systems, the cylinders at each end being connected, rams in the cylinders operating in connection with the friction plate to project the same, and springs interposed between the plate and the rams, and means for determining the pressure applied to the springs at one end of the car independently of the other, whereby the pressure in the individual systems at the two ends of the car is made independently-regulable, substantially as described.

4. The combination of a car body with two reservoirs for water or the like, one at each end of the car, a pump in connection with each reservoir, friction plates lying transversely of the car platforms at each end, springs for backing up said friction plates, plungers for operating the springs, hydraulic cylinders secured to the car at the platforms, two systems of piping, each system forming a direct communication from the pump and reservoir to the cylinders at its respective car end, whereby each system is made independent of the other, substantially as described.

5. In a car uniting device, the combination with the platform beams, of the friction plate, the coupling hook and its draw bar, springs for resisting the forward and rearward movement of the draw bar, springs for resisting the inward movement of the friction plate, an independently movable abutment located between the draw bar and friction plate springs, and means for simultaneously operating the abutment for moving the draw bar and friction plate in opposite directions, compressing their springs, and maintaining the springs compressed, substantially as described.

6. The combination, in a device for uniting cars, of a coupler, springs for the coupler, a friction plate and springs for the same, movable abutments for the friction plate and coupler springs, and means for moving the abutments and compressing the springs, said means being independent of the coupling, buffing, or drawing action of the device to press outwardly on the friction plate and inwardly on the coupler, substantially as described.

7. The combination of a friction plate and coupler and their respective springs, with hydraulic cylinders, the rams of which form movable abutments for the springs of both the friction plate and coupler in the system, whereby said plate and coupler may be simultaneously moved in opposite directions, substantially as described.

8. The combination with the coupler, friction plate, its stems and springs, of abutments controlled by hydraulic cylinders and arranged to act simultaneously on the coupler and stems, a pump, tank, and a sealed circuit connecting the cylinders, substantially as described.

9. The combination with the friction plate supported upon the platform of a car, of the devices at both ends of the plate for projecting it and maintaining it in a projected position, devices adapted to operate the center of the said plate in a like manner, all of said devices being connected with a primary source of power whereby they can perform their several functions simultaneously, said primary source of power comprising a tank for containing an inelastic liquid, a pump, and connections from said pump and tank to said devices for operating them through the instrumentality of said inelastic liquid under pressure substantially as described.

10. The combination of a car platform, with a continuous friction plate, a plurality of stems extending therefrom at opposite sides of the center of the plate, springs acting on said stems, and a rigid abutment to press against the springs of each stem, said abutment being adapted to primarily compress said springs and to follow the fore and aft movements of said stems and springs correspondingly, and a device localized on the car on which the said plate is mounted for operating said abutments, said device comprising a tank, a pump, a liquid, and pipes connecting the pump with said abutments, substantially as described.

11. The combination of a car platform, with a friction plate, stems connected with said plate near its outer ends, springs connected with said stems, a draw bar, a spring connected therewith, and a rigid abutment arranged to compress the springs connected with said stems and draw bar, and to follow the movements of said stems and draw bar correspondingly, as well as to retract the draw bar simultaneously with the compression of the springs on said stems, substantially as described.

12. The combination of a platform, with a friction plate, a central stem pivotally connected therewith, a spring acting on said stem, other stems pivotally connected with said plate near its ends, a draw bar, a spring acting thereon, and a movable rigid abutment connected with and acting on said stems and on the draw bar, and arranged to compress said springs and advance said stems while simultaneously acting to retract said draw bar, said abutment being further arranged to follow the movements of said stems and to keep a rigid abutment against the springs in the several positions assumed as well as to keep a rigid abutment against the draft of the draw bar, as and for the purposes specified.

13. The combination of a platform, with a friction plate, stems extending from said plate near its ends, springs acting on said stems, plungers or rams acting on said springs, sealed cylinders in which said plungers or rams work, a sealed pipe connecting said cylinders, and a column of inelastic liquid in said pipe and cylinders, and means comprising a tank, force pump and visual gage localized as to each plate and independent of the others of the train for creating pressure on said fluid to move said plungers or rams to compress said springs, the parts being so arranged that the movement of one stem will correspondingly move said column of liquid and thus retain a rigid abutment behind the stems in their several positions, substantially as described.

14. The combination with the buffer beam, of a friction plate, a stem pivoted to the plate and movable in the beam, a spring acting on the stem, a plunger or ram acting on said spring, a sealed cylinder for said plunger or ram, a column of non-compressible fluid under pressure in said cylinder to act on said plunger or ram, and a tank, force pump, and visual gage all local to the car on which said plate is located, and independent of any other source of supply and pressure, as and for the purpose specified.

15. The combination of a platform, with a friction plate, a stem extending therefrom, a spring acting on said stem, a plunger or ram acting on said spring, a cylinder receiving said plunger or ram, another cylinder, a passageway between said cylinders, a plunger or ram in the second mentioned cylinder, and a draw bar connected with the second mentioned plunger or ram, and means for maintaining a column of non-compressible fluid under pressure in said cylinders and in the passageway, as and for the purpose specified.

16. The combination of a platform, with a friction plate, a stem extending therefrom, a spring acting on said stem, a plunger or ram acting on said spring, a cylinder for said plunger or ram, another cylinder, said cylinders being made in a single piece of metal and having openings extending in opposite directions, a passageway in said piece of metal leading to said cylinders, a plunger or ram in the second mentioned cylinder and connected to a draw bar, and means for maintaining a column or body of non-compressible fluid under pressure in said cylinders and passageway, as and for the purpose specified.

17. The combination of a platform, with a friction plate, a stem extended therefrom, a cross head, and guides on the platform for said cross head, said cross head receiving said stem, a spring between said cross head and an abutment on said stem forward of the cross head, a plunger or ram engaging the rear of said cross head, a cylinder for said ram, and locally controlled means for maintaining a liquid pressure against said plunger or ram, as and for the purpose specified.

18. The combination of a platform and its buffer beam, with a friction plate, a stem pivotally carried thereby and guided by said beam, a spring surrounding said stem, an abutment in front of the spring on said stem against which said spring presses, a cross head to the rear of the spring having a recess to receive said stem and against which cross head said spring acts, a guide on the platform for the cross head, a ram bearing against the rear of the cross head, a cylinder for the ram, and locally controlled means for moving said ram and cross head forward to compress the spring against a resistance applied to the friction plate, said means comprising a local tank, force pump, and a non-compressible fluid, as and for the purpose specified.

19. The combination of a longitudinally movable draw bar, with a cylinder, and a rearwardly and independently movable plunger or ram, a push bar connecting the ram and bar, springs connected with the rear of said draw bar to be compressed by the ram and resist the forward movement of the bar, abutments for said springs, and a hydraulic device for placing a body of liquid under pressure in the cylinder to coact with said plunger or ram to form a rigid abutment for the draw bar, as and for the purpose specified.

20. The combination of a draw bar, a housing carried thereby, a spring in said housing, and abutments to resist said spring, with a push bar connected with said draw bar, and a hydraulic device to cooperate with said push bar, as and for the purpose specified.

21. The combination of a draw bar, a housing connected therewith and having a lip 24, a spring in said housing, and abutments for said spring, with a push bar carried by said draw bar and having a shoulder 40 to rest against said lip, and a hydraulic device to co-operate with said push bar, as and for the purpose specified.

22. The combination of a draw bar and its spring, with a push bar pivotally connected with said draw bar, and a hydraulic device to co-operate with said push bar, substantially as and for the purpose specified.

23. The combination of a casing having double cylinders directly connected and superposed one above the other, rams or plungers movable in opposite directions in said cylinders, a draw bar connected with the lower and rearwardly moving ram, a friction plate connected with the other ram, and means for maintaining fluid under pressure behind said rams, substantially as described.

24. The combination of a casing having double cylinders directly connected, movable rams or plungers of unequal sizes and movable in opposite directions, a draw bar connected with the larger of the rams, a friction plate connected with the other ram, and devices for maintaining fluid under pressure behind said rams, substantially as described.

25. The combination of a platform and a friction plate, with a stem extending from said plate, said stem having a slot, a cross head receiving said stem, a pin in said cross head passing through the slot in said stem, a spring on said stem, and a movable abutment to bear against and compress said spring, substantially as described.

26. The combination with the platform and buffer beam, of the friction plate, a stem secured thereto and movable in the beam, a spring cap on the stem, a spring on the stem to the rear of the cap, an apertured cross head at the rear of the spring in which said stem has longitudinal play, guides on the platform for said cross head, a ram at the rear of the cross head, a cylinder for the ram, and means for maintaining fluid under pressure behind the ram, whereby said spring can be compressed without necessitating a projection of the stem and friction plate, substantially as described.

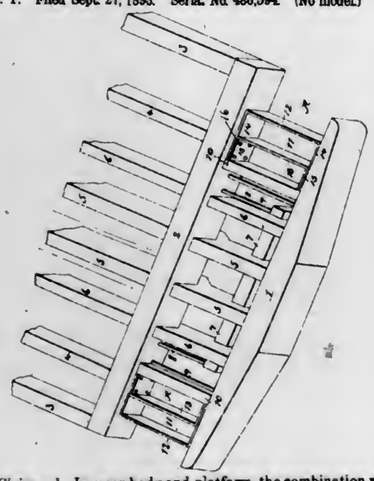
27. The combination with the platform and its buffer beam, of the friction plate, a stem pivotally secured to the plate and movable in said beam, a slot in said stem, an apertured cross head, guides on the platform for the cross head, a spring on said stem confined within the cross head, a pin passing through the cross head and slot in the stem, a ram at the rear of the cross head, a cylinder for the ram, and a hydraulic device co-operating with said ram, substantially as described.

28. The combination with the platform and its buffer beam, of the continuous friction plate, a central stem pivoted to said plate and movable in said beam, side stems likewise connected, a slot in each of the side stems, apertured cross heads in which the side stems work, a spring on the side stems confined within the cross heads, guides on the platform at each side of the central stem for the cross heads, a pin passing through each cross head and slot in the side stems, rams at the rear of the cross heads, cylinders for the rams, a pipe connecting both cylinders, and a hydraulic device co-operating through said pipe with the rams, substantially as described.

29. The combination with the platform, its buffer beam and door sill, of the friction plate, a stem supporting the friction plate in the buffer beam, a cylinder secured in the door sill, a plunger movable therein, bracing guides extending between the buffer beam and the door sill near the side of the platform, a cross head movable in the guide receiving the end of the stem, and a spring about the stem within the cross head, the plunger engaging said cross head, and means for moving the plunger, substantially as described.

30. The combination with the platform, its buffer beam and door sill, of the friction plate and its stem, a cross head, a spring about the stem in the cross head, guides for the cross head comprising plates having bent ends which are secured respectively to the buffer beam and door sill, a cylinder and plunger to move the cross head, and means for operating the plunger, substantially as described.

543,031. CAR-PLATFORM. ARTHUR G. LEONARD, New York, N. Y. Filed Sept. 27, 1893. Serial No. 486,594. (No model.)



Claim.—1. In a car body and platform, the combination with the buffer beam 1, the door sill 2, the intermediate longitudinal sills extending between said beam and sill, the step-sill 10 located exteriorly of the intermediate sills, and an auxiliary sill composed of juxtaposed

angle plates 12, 13, secured together and "end on" to said door sill and beam, and located between the ends of said door sill and beam, and the step sill 10, substantially as described.

2. In a car platform, the combination with the buffer beam and door sill, of the brace 11 comprising the plates 12, 13 having bent ends 14, 15, the plate 13 and its ends 15 lying within the bent ends 14 of the plate 12, said ends forming means for securing the plates to said beam and door sill, substantially as described.

3. In a car platform, the combination with the door sill and buffer beam, of the brace 11 comprising the plates 12, 13 having bent ends 14, 15, the plate 13 lying within the ends of the plate 12, both plates being disposed at a distance from each other greater than the thickness of the plate, substantially as described.

543,032. DEVICE FOR UNITING CARS. ARTHUR G. LEONARD, New York, N. Y. Original application filed July 10, 1893, Serial No. 480,014. Divided and this application filed Mar. 9, 1894. Serial No. 503,018. (No model.)



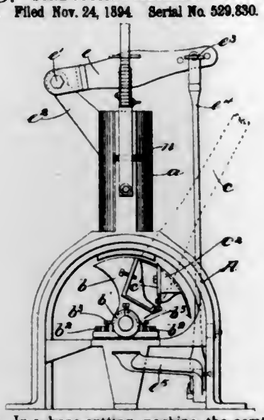
Claim.—1. In a car uniting device, the combination of a buffer beam, a friction plate extended therefrom, a stem extending from said plate, and a hydraulic device to act on said stem, with a draw bar, devices connecting said draw bar with said cylinder, and means for firmly uniting said draw bar with said stem, substantially as described.

2. In a car uniting device, the combination of a buffer beam, a friction plate extended therefrom, a stem extending from said plate, a cross head connected with said stem, and means for advancing said cross head, said cross head having an aperture, with a draw bar provided with an apertured pillar or arm, and a pin to pass through said apertures to unite said parts together, substantially as described.

3. In a car uniting device, the combination of a buffer beam, a friction plate extended therefrom, a stem connected with said plate, a cross head connected with said stem, said cross head being provided with an aperture, and means for advancing said cross head, stem and plate, with a draw bar, a pillar carried thereby, said pillar having an aperture, and a pin to enter said aperture to firmly unite said parts, substantially as described.

4. In a car uniting device, the combination of a buffer beam, a friction plate extended therefrom, a cross head, a resilient element between said stem and cross head, and means for advancing said cross head, stem and plate, with a draw bar, and means for firmly uniting said draw bar with said friction plate devices, substantially as described.

543,033. BONE-CUTTING MACHINE. HUGH H. V. LILLEY, Milford, Mass. Filed Nov. 24, 1894. Serial No. 529,830. (No model.)



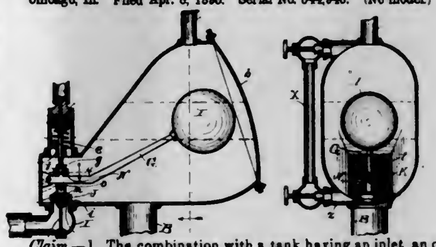
Claim.—1. In a bone cutting machine, the combination of the arched frame having at its upper end the vertical cylinder *a*, the sector *b* journaled below said cylinder carrying the knife *c* and reciprocating on an axis coincident with the center of the arched frame, a hand lever *e* secured to said sector by means of which it is moved, and adjustable journal boxes for the journals of said sector, whereby the position of the knife with relation to the lower open end of the cylinder may be adjusted, substantially as described.

2. In a bone cutting machine, the combination of the arched frame A, vertical cylinder *a* thereon, knife-carrying sector *b*, journaled beneath it turning on an axis coincident with the center of the arched frame, hand lever *e* for rocking said sector, plunger *d*, having feeding mechanism connected therewith for advancing it, and a treadle connected with the feeding devices, substantially as described.

3. In a bone cutting machine, the combination of the arched frame, and knife-carrying sector, and treadle operated feeding devices for the plunger of the cylinder, consisting of the lever *e*, pawl bearing block e^2 depending therefrom, guide pieces on said block, pawls d^3 for preventing backward movement of the plunger, and means for disengaging said pawls d^3, substantially as described.

4. The combination of the arched frame adapted to be secured to the floor, a vertical cylinder *a* thereon, a knife-carrying sector journaled beneath it, turning on an axis coincident with the center of the arched frame, a hand lever secured to said sector, a plunger *d*, and feeding mechanism therefor, and a treadle detachably connected with the feeding mechanism, substantially as described.

543,034. AUTOMATIC WATER-REGULATOR. EBEN W. LONG, Chicago, Ill. Filed Apr. 8, 1895. Serial No. 544,946. (No model.)



Claim.—1. The combination with a tank having an inlet, an outlet drain in the bottom of said tank opposite said inlet, and a distributing pipe, of a valve normally closing said inlet, having a vertical spindle depending therefrom, and a valve closing said drain having a sleeve projecting upward into the bore of which the lower portion of said spindle extends, and a float lever and float, said float-lever extending through elongated opening and slots in said valve spindle and sleeve and opening the drain valve when moving upward, and opening the inlet valve when moving downward.

2. The combination with a suitable tank having an inlet, an outlet drain in the bottom of the same opposite said inlet, and a distributing outlet, of a valve normally closing said inlet having a vertical spindle depending therefrom that has a longitudinally elongated opening, a valve for closing said drain and a sleeve arising therefrom into which said spindle extends and having longitudinal slots therein, an adjustable block connected to said sleeve and extending through said slots and through the elongated opening in said spindle, a float, a float-lever passing through said elongated opening in said spindle and the slots of the sleeve, as set forth.

3. The combination with a suitable tank having an inlet therein, an outlet in the bottom thereof opposite said inlet and a distributing outlet, of a valve normally closing said inlet having a vertical spindle depending therefrom which is provided with a longitudinally elongated opening in the lower portion thereof, a valve for closing said drain which has a sleeve having longitudinal slots therein into the bore of which said spindle extends and having a portion of said sleeve depending below said valve, a post arranged below said valve and projecting into the depending portion of said sleeve, a float and float-lever, said float-lever extending through the slots and elongated opening of said sleeve and spindle, as set forth.

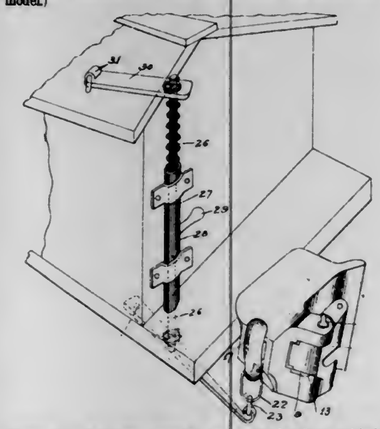
4. The combination with a tank having an inlet, an outlet drain in the bottom of the tank opposite said inlet, and a distributing pipe, of a valve normally closing said inlet having a vertical spindle depending therefrom, having an elongated opening in its lower portion, a spring for keeping said valve normally closed, and a valve closing said drain having a sleeve projecting upward into the bore of which the lower portion of said spindle extends, and a float lever and float, said float-lever extending through elongated openings and slots in said valve spindle and sleeve and opening the drain valve when moving upward, and opening the inlet valve when moving downward.

5. The combination with a tank having an inlet, an outlet drain in the bottom of the tank opposite said inlet, and a distributing pipe, of a valve normally closing said inlet having a vertical spindle depending therefrom having an elongated opening in its lower portion, a spring for keeping said valve normally closed, devices for regulating the pressure of said spring, and a valve closing said drain having a sleeve projecting upward into the bore of which the lower portion of said spindle extends, and a float-lever and float, said float-lever extending through elongated openings, and slots in said valve spindle and sleeve and opening the drain valve when moving upward, and opening the inlet valve when moving downward.

6. The combination with a tank having an inlet, an outlet drain in the bottom of the tank opposite said inlet, and a distributing pipe, of a valve normally closing said inlet having a vertical spindle depending therefrom having an elongated opening in the lower portion, a spring for keeping said valve normally closed, devices for regulating the pressure of said spring, a valve for closing said drain and a sleeve arising therefrom into which said spindle extends and having longitudinal slots therein, an adjustable block connected to said sleeve and extending through said slots and through the elongated opening in said spindle, a float, a float-lever passing through said elongated opening in said spindle and the slots of the sleeve, as set forth.

7. The combination with a suitable tank having an inlet, an outlet drain in the bottom of the same opposite said inlet, and a distributing outlet, of a valve normally closing said inlet having a vertical spindle depending therefrom that has a longitudinally elongated opening, a valve for closing said drain and a sleeve arising therefrom into which said spindle extends and having longitudinal slots therein, an adjustable block connected to said sleeve and extending through said slots and through the elongated opening in said spindle, a float, a float-lever passing through said elongated opening in said spindle and the slots of the sleeve, and a fulcrum-pin extending from the end of said tank and the end of the lever pivoted between said lugs, as set forth.

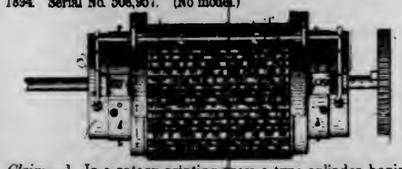
543,035. CAR-COUPLING. FELIX J. MACHALOSKY and JOHN STAWARS, Pittsburg, Pa. Filed Feb. 20, 1895. Serial No. 539,083. (No model.)



Claim.—1. In a car coupler, a gravity latch provided with a hooked portion and upwardly extending ear, in combination with a gravity pawl, said gravity latch being adapted to engage a locking arm, substantially as described.

2. In a car coupler, a gravity latch having a hooked portion, said hooked portion provided with a gravity pawl, in combination with locking arm carrying a hook, substantially as described, and for the purpose set forth.

543,036. PRINTING-PRESS. JOHN H. MASTER, Minersville, assignor of one-half to James W. Sallade, Pottsville, Pa. Filed Apr. 25, 1894. Serial No. 508,957. (No model.)



Claim.—1. In a rotary printing press a type cylinder having in combination annular movable flanges, between which the form is adjusted, metallic bands embracing the projecting ends of the leads, clamps attached to the annular movable flanges and end supports to the form, as and for the purposes specified.

2. In a rotary printing press a type cylinder in combination with a feeding spring, extending across the face of the type cylinder and attached to the type cylinder at its ends and a groove located longitudinally on the type cylinder into which the feeding spring may be retired, as and for the purposes set forth.

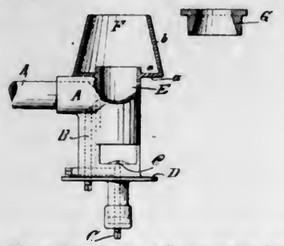
3. In a rotary printing press a type cylinder in combination with a feeding spring extending across the face of the type cylinder and attached to the type cylinder at its ends, a groove located longitudinally on the type cylinder into which the feeding spring may be retired and a presser roller substantially as described.

4. In a rotary printing press a type cylinder in combination with a feeding spring extending across the face of the type cylinder and attached to the type cylinder at its ends, a groove located longitudinally on the type cylinder into which the feeding spring may be retired, a presser roller and inking rollers having rims to prevent the feeding spring from coming in contact with the inking rollers, substantially as described.

5. In a rotary printing press in combination the herein described type cylinder, a feeding spring extending across the face of the type cylinder attached at its ends to the type cylinder for the purpose of moving the paper forwardly from a roll, a groove located longitudinally of the type cylinder into which the type cylinder may be retired, a presser roller actuated by rotating the type cylinder and a cutter mediately actuated by a rotary movement of the type cylinder to sever the paper at predetermined intervals after each impression of the type, substantially as described.

6. In a rotary printing press in combination the herein described type cylinder, a feeding spring attached at its ends to the type cylinder for the purpose of moving the paper forwardly from a roll, a presser roller actuated by rotating the type cylinder a pawl adjustable upon a wheel attached to the projecting end of the shaft of the type cylinder and a cutting knife mediately actuated by the pawl substantially as described.

543,037. HYDROCARBON-BURNER. JOSEPH H. MATHEWS, Canton, Ohio. Filed Feb. 6, 1893. Renewed Dec. 19, 1894. Serial No. 532,372. (No model.)

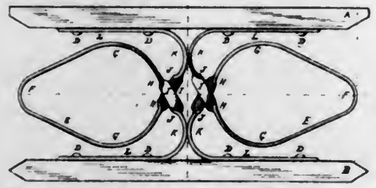


Claim.—1. The combination in a hydro-carbon burner of the mixing chamber E, the lateral injector A' and pipe leading from a hydro-carbon supply, by which fluid hydro-carbon may be injected into the chamber E under pressure, and the truncated conical chamber F, formed integral with the chamber E and the mixing chamber near its bottom having openings for the admission of air to support combustion, substantially as specified.

2. The combination in a hydrocarbon burner, of the mixing chamber E, the truncated conical burning chamber F, at the upper end thereof the lateral injector A' for injecting hydrocarbon under pressure into the mixing chamber, the tube B, valve C and pan D, whereby a hydrocarbon in regulated quantity may be admitted to the pan and fired to heat the mixing chamber so as to vaporize the hydrocarbon in said chamber, substantially as specified.

3. The combination in a hydrocarbon burner of the truncated conical chamber F, the mixing chamber E, projected a distance into said chamber, a pipe A, leading from a hydrocarbon supply to the vaporizing chamber A', a pipe leading from said vaporizing chamber to the mixing chamber and valve C, whereby the flow of vaporized hydrocarbon into the mixing chamber may be regulated.

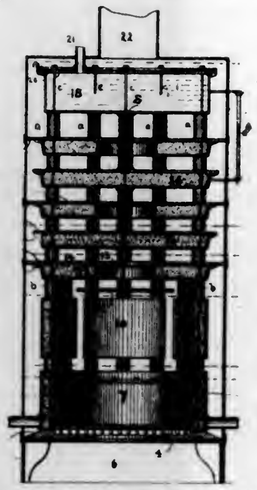
543,038. VEHICLE-SPRING. ALEXANDER L. H. MESSMER, Gardner, Mass., assignor to Heywood Bros. & Co. Filed Feb. 21, 1895. Serial No. 539,232. (No model.)



Claim.—A vehicle spring of substantially uniform cross section having the bend F, the bends G, the overlapping one quarter turned sections I, in combination with bends K, and with terminals L, lying substantially parallel with each other and inclosing the bended portions F and G, by which disposition of parts two of such springs are adapted to be grouped together with their corresponding bends K,

placed adjacent to each other, and their terminals L secured to common parallel supports A and B substantially as shown.

543,039. HEATER. JOSEPH MICHAELSON, New Brighton, Pa., and WILLIAM REID, Geneva, N. Y. Filed June 23, 1894. Serial No. 515,537. (No model.)



Claim.—1. In heaters the combination of an inclosing shell; a fire chamber; a horizontal water section with a peripheral flue; a horizontal water section with an internal flue, said latter section having a detachable cover extending to the wall of the casing, and acting as a flue ring.

2. In heaters, the combination of a water section forming the walls of the fire chamber; a horizontal water section with central flue, above said first section, a horizontal section with peripheral flue above said first horizontal section; a flue plate surrounding said first horizontal section, and water tubes connecting the several sections.

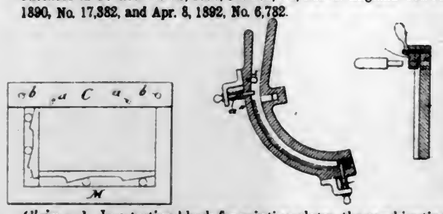
3. In heaters, the combination of a water section forming the walls of the fire chamber; a horizontal water section with central flue, above said first section; a horizontal section with peripheral flue above said first horizontal section; a flue plate surrounding said first horizontal section; a projecting plate below said first horizontal section, and water tubes connecting the several sections.

4. In sectional heaters, a horizontal section consisting of a ring-shaped dish with flue opening in the center and suitable opening for vertical water tubes and a detachable cover.

5. In sectional heaters, a horizontal dish-shaped section having a flue opening in the center and suitable openings for vertical water tubes and a cover united to said section by a tongue and groove joint.

6. In heaters, the combination of a steam and water dome; concentric rings resting upon said dome; horizontal water sections beneath said dome; vertical rods connecting said sections and bolted to said rings.

543,040. METHOD OF AND APPARATUS FOR PRODUCTION OF PLATES FOR COLOR-PRINTING. JULES MICHAUD, Paris, France. Filed Aug. 4, 1892. Renewed June 17, 1895. Serial No. 553,152. (No model.) Patented in France Oct. 28, 1890, No. 209,139, and in England Oct. 30, 1890, No. 17,382, and Apr. 8, 1892, No. 6,782.



Claim.—1. In a testing block for printing plates, the combination of a block having recesses therein, spiral springs resting on the bottom of said recesses, pins projecting above said recesses and provided with collars resting on said springs said pins being adapted to enter holes in the printing plates.

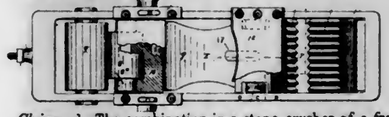
2. In a device for forming holes in an engraved plate, the combination of a block provided with holes near one side, a recessed bar resting on one side thereof, means comprising a screw and a handle for adjustably pressing said bar against said block so that said bar can be raised and lowered for the insertion of a plate under the recess thereof, said bar being provided with holes registering with the holes in the block, and punches for working in said holes in the bar and block.

3. The art of making a printing plate containing letter press and illustrative matter consisting in forming a matrix, the molding face of which is in part plain and in part letter press, then placing an engraved plate over the plain portion of said matrix, then applying to the back of said engraved plate a sheet of metal fusible at a lower temperature than the metal of the engraved plate, then casting a printing plate over the letter press portion of said matrix and over said engraved plate, the engraved plate being embedded in and united with the body of the printing plate flush with the letter press matter thereof.

4. The method of making a printing plate for register printing in colors of an area corresponding to another printing plate having letter press matter, consisting in forming a mold having a raised surface opposite that part of the printing plate which corresponds to the letter press in the original plate, placing in the depressed portion of said mold an engraved plate, and casting over the back of said engraved plate and over the raised portion of said mold a printing plate in which the said engraved plate is embedded.

5. The method of making a printing plate for register printing colors of an area corresponding to another printing plate having letter press matter, consisting in forming a mold having a raised surface opposite that part of the printing plate which corresponds to the letter press in the original plate, placing in the depressed portion of said mold an engraved plate having registering devices, outside the printing surface thereof, and casting over the back of said engraved plate and over the raised portion of said mold a printing plate in which the said engraved plate is embedded.

543,041. STONE-CRUSHER. GEORGE N. MILLER, Utica, N. Y., assignor to Frederick C. Austin, Chicago, Ill. Filed Sept. 8, 1894. Serial No. 522,522. (No model.)



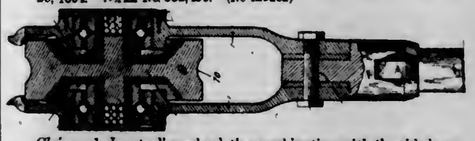
Claim.—1. The combination in a stone crusher of a frame and fixed roller mounted in one end of the frame, a fixed jaw in the opposite end of the frame, a reciprocating jaw between the roller and fixed jaw and the reciprocating mechanism adapted to move substantially at right angles to the axial line between the roller and fixed jaw and engaging the roller and rear end of the jaw respectively.

2. The combination in a stone crusher of a frame and fixed roller in one end of the frame, a fixed jaw in the opposite end of the frame a movable jaw between the roller and fixed jaw a reciprocating pitman 10 having a friction roller 8 mounted therein and engaging with the rear end of the movable jaw, combined substantially as set forth.

3. The combination in a stone crusher of a frame, a reciprocating jaw mounted on rocking bearing pieces 20 and 23 projecting from the upper and lower sides of the jaw adjacent to the face of the jaw and engaging with the frame, and means for reciprocating the jaw, substantially as set forth.

4. In a stone crusher, a frame, a fixed jaw in one end of the frame, a reciprocating jaw having V-shaped recesses in its corners adjacent to its face, wedge-shaped rocking bearing pieces located in the recesses and supporting the face end of the jaw by engagement with the frame, and jaw reciprocating mechanism connecting with the rear end of the jaw, substantially as set forth.

543,042. TROLLEY-WHEEL. CHARLES MITCHELL, Yonkers, N. Y., assignor of five-eighths to Harry A. Archibald, same place. Filed Dec. 20, 1894. Serial No. 532,450. (No model.)

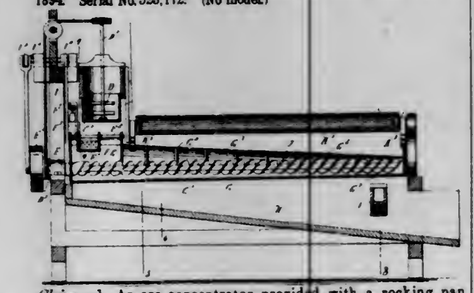


Claim.—1. In a trolley wheel, the combination with the side bearing frames; of the wheel having opposite axle projections and spaces beyond the ends of said axle projections, contact balls arranged in said spaces in contact with the ends of the axle projections, and side contact plates attached to the side bearing frames and fitting over said spaces in contact with the contact balls therein, substantially as set forth.

2. In a trolley wheel, the combination of opposite side bearing frames having threaded bearing openings, exteriorly threaded bearing sleeves fitted in said bearing openings and provided with interior annular V-shaped bearing grooves, the wheel arranged between the bearing frames and provided with central axle projections extended from both sides thereof and exteriorly threaded, interiorly threaded flanged insulator collars fitted on said axle projections, bearing collars fitted exteriorly on the insulator collars and provided with exterior annular V-shaped bearing grooves arranged opposite the grooves of the bearing sleeves, and bearing balls arranged in the space confined within the grooves of the bearing sleeves and collars, substantially as set forth.

3. In a trolley wheel, the combination with the side bearing frames, of the wheel having opposite central axle projections, insulator collars fitted on the axle projections and of a greater length than the same, contact balls arranged within the insulator collars in contact with said axle projections, and side contact plates attached to the side bearing frames and provided with central contact bosses fitting in the outer open ends of the insulator collars and contacting with said contact balls, substantially as set forth.

543,043. ORE-CONCENTRATOR. WILLIAM H. MOORE, Deadwood, S. D., assignor of one-half to Kittie Kidd, same place. Filed Sept. 17, 1894. Serial No. 523,172. (No model.)



Claim.—1. An ore concentrator provided with a rocking pan having a curved bottom and side wings extending therefrom, each side wing being provided with transverse partitions, substantially as shown and described.

2. An ore concentrator provided with a rocking pan having a curved bottom and side wings extending therefrom, each side wing being provided with transverse partitions, and a conveyer screw mounted to rotate in the curved bottom of the pan, substantially as shown and described.

3. In an ore concentrator, the combination with a rocking pan, of a pivoted sieve above the upper end of the pan, and means for imparting a sudden jerk or shake to the sieve, substantially as described.

4. In an ore concentrator, the combination with a rocking pan, of a sieve pivoted in the pan at the upper end thereof, and means for imparting a sudden jerk or shake to the sieve as the pan is rocked, substantially as described.

5. In an ore concentrator, the combination with a rocking pan, of a sieve pivoted in the pan, and a counter-balance carried by the sieve, substantially as and for the purpose set forth.

6. In an ore concentrator, the combination with a rocking pan and a screw conveyer in the bottom of the pan, of a sieve pivoted in the pan at the upper end thereof, and means for imparting a sudden jerk or shake to the sieve as the pan is rocked, substantially as described.

7. In an ore concentrator, the combination with a rocking pan having wings provided with partitions, and a conveyer screw in the bottom of the pan, of a pivoted sieve at the upper end of the pan, means for imparting a sudden jerk or shake to the sieve as the pan is rocked, and a water distributing device above the pan, substantially as described.

8. In an ore concentrator, the combination with a feed hopper, of a stirrer in the hopper, a rocking pan, a conveyer screw in the bottom of the pan, an oscillating sieve in the pan below the hopper, and a water distributing device above the pan, substantially as described.

9. In an ore concentrator, the combination with a rocking pan, of a water trough supported above the pan, and means for imparting a transverse swinging motion to the trough as the pan is rocked, substantially as described.

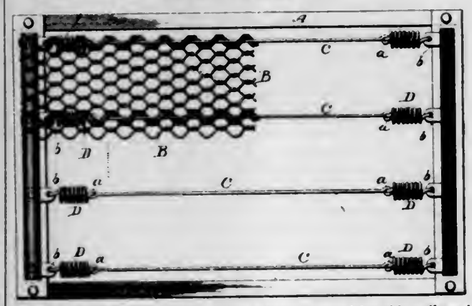
10. In an ore concentrator, the combination with a rocking pan, of an oscillating sieve at the upper end of the pan and adapted to strike one side of the pan as the said pan is rocked, a water trough supported above the pan and means for imparting a transverse swinging motion to the trough when the pan is pivoted, whereby when the sieve strikes one side of the pan, the trough will be at the opposite side, substantially as described.

11. An ore concentrator provided with a rocking pan having side wings provided with partitions, and a rocking water trough adapted to discharge alternately on the said side wings, substantially as shown and described.

12. An ore concentrator comprising a rocking pan having a curved bottom and side wings provided with transverse partitions, a conveyer screw mounted to turn in the curved bottom of the said pan, and an oscillating clear water trough for alternately discharging jets of water on the said side wings, substantially as shown and described.

13. An ore concentrator comprising a rocking pan having a curved bottom and side wings provided with transverse partitions, a conveyer screw mounted to turn in the curved bottom of the said pan, an oscillating clear water trough for alternately discharging jets of water on the said side wings, and means, substantially as described, for imparting a rocking motion to the said trough from the said pan, as set forth.

543,044. REINFORCEMENT FOR MATTRESSES. WILLIAM H. MOORE, Gardiner, Me., assignor to George R. Moore, Franck C. Plaisted, Edwin S. Plaisted, and Howard N. Plaisted, Boston, Mass. Filed Jan 30, 1895. Serial No. 536,695. (No model.)



Claim.—The combination with a frame comprising side rails and ends rigidly secured thereto, cleats secured to these ends, a spirally woven wire fabric stretched from end to end of the frame and the ends thereof inserted and secured between the heads and the ends of the frame, of several reinforcing wires extending from end to end of the frame and connected with the fabric at intervals and yieldingly connected with the frame, for giving support and added strength to the fabric throughout its area, substantially as set forth.

543,045. ROTARY STEAM-JOINT. JOHN B. MORGAN, Rockland, assignor to the Morgan Air System Company, Boston, Mass. Filed Aug. 2, 1894. Serial No. 519,281. (No model.)

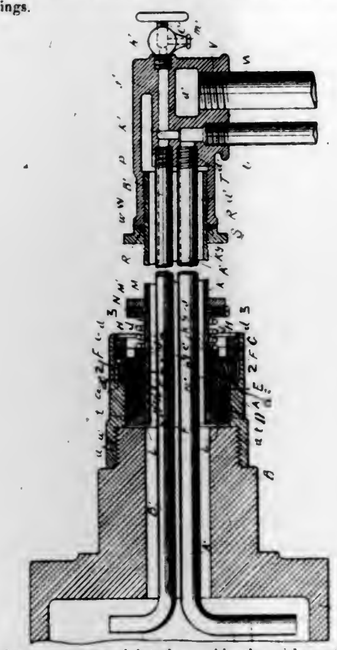
Claim.—1. In a rotary steam joint, the combination with a rotatable shell or casing of a ring of wood within the casing provided with a curved bearing, a stationary flanged tube having a bearing corresponding to and engaging the curved bearing on the wood ring and arranged to be secured together.

2. In a rotary steam joint, in combination, a shell or casing, a ring of wood within the casing, a bearing on one end of said wood ring, a metal ring adapted to be secured in said shell or casing, a tube or pipe extending through the metal ring, and a flange on its inner end having a bearing to fit the bearing of the wood ring.

3. In a rotary steam joint, in combination, a shell or casing, a ring of wood within the casing, a bearing on one end of said wood ring, a metal ring adapted to be secured in said shell or casing, a tube or pipe extending through the metal ring, a flange on its inner end having a bearing to fit the bearing of the wood ring, a ring on said tube, an annular screw nut next said ring and a spring between said tube ring and the ring in the casing.

4. In a rotary steam joint, in combination, a shell or casing, a ring of wood within the casing, a circumferential groove in said wood ring, a metal ring in two parts loosely fitting in said wood ring provided with internal and external lugs or projections to engage with said wood ring and the shell or casing, a bearing on one end, a tube or pipe extending through the wood ring and flange on its inner end having a bearing to fit the bearing on the wood ring adapted to be secured together.

5. In a rotary steam joint, in combination, a shell or casing, a ring of wood within the casing, a circumferential groove in said wood ring, a metal ring in two parts loosely fitting in said wood ring provided with internal and external lugs or projections, a socket in said wood ring and a socket in the shell or casing open on one side to the end for said inner and outer projections respectively of the wood and metal rings.



6. In a rotary steam joint, the combination with a rotatable shell or casing having a shoulder a^2 of a ring of wood within the casing provided with a corresponding shoulder a^3, a gland securing the wood ring in place and a stationary flanged tube engaging said ring of wood.

7. In a joint for rotary shafting or pipe, the cylindrical body having the interiorly screw threaded mouth in combination with the flanged gland, a packing disposed against a shoulder a^3, in said body, a screw nut turned into said mouth against said packing.

8. In a joint for rotary steam shafting or pipe, the cylindrical body having the interiorly screw threaded mouth in combination with the flanged gland, a packing disposed against a shoulder a^3, of said body, a screw plug turned into said mouth against said gland, a spring pushed washer on said gland, and a flanged tube extending through said gland, a screw nut on said tube, and a friction washer interposed between said screw nut and spring.

9. In a rotary steam joint, in combination, a shell or casing, a ring D within the casing, having a bearing surface thereon, a ring D' adapted to be secured in said shell or casing, a tube or pipe extending through the rings, a flange on its inner end to fit the bearing of the former ring, a ring N on said tube, an annular screw nut M' next said ring N and a spring between said ring N and the ring D.

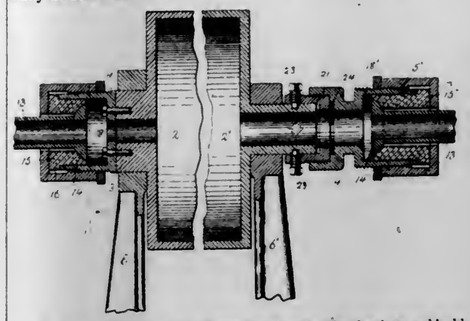
10. In a joint for rotary steam mechanism, in combination, a ring abutting the end of the joint, a groove in said ring, a stationary tube with a flange, a nut on the tube, a ring next said nut, a spring between the rings, and a packing interposed between said tube flange and the end of the joint.

11. In a joint for rotary steam mechanism, in combination, an annular washer or washers abutting the end of the joint, a ring next said washer, a groove in said ring, a stationary tube with a flange, a nut on the tube, a ring next said nut, a spring between the rings, and a packing interposed between said tube flange and the end of the joint.

543,046. WATER-LUBRICATED STEAM-JOINT. JOHN B. MORGAN, Rockland, Mass., assignor to the Morgan Air System Company, of Maine. Filed Feb. 5, 1895. Serial No. 537,353. (No model.)

Claim.—1. In combination with a revoluble steam cylinder, a stuffing-box affixed to the face of the journal, an adjustable gland, and a flanged packing grasped between the stuffing box and the gland, an interconnecting flanged tube provided with a head which is contained within the packing, said packing extending circumferentially about the head and interposed between said head and the walls of the stuffing-box, substantially as herein stated.

2. The combination with a rotating steam cylinder, a stuffing-box affixed thereto, its gland, a flanged packing grasped by said box and gland, and a recess at one end of said packing, of a stationary supply pipe, an interconnecting flanged tube having a head at one end to fit the recess in the packing and screw-threaded at the opposite end to engage a fixed pipe, and means to allow said tube to be revolved at times to compensate for the wear of the packing, substantially as described.



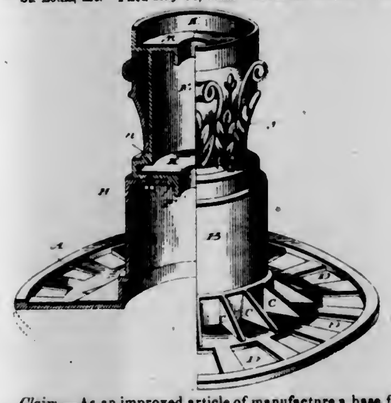
3. In combination a cup-shaped stuffing-box having internal holding screws to affix it to a revolving cylinder, a gland, and an annular packing for liquid absorption recessed at one end, an interconnecting tube flanged at one extremity with a straight screw-thread on the opposite end portion, a fixed pipe which engages the screw-thread on the tube, and a check nut to prevent said tube from rotating, substantially as specified.

4. In a steam joint, a cup-shaped stuffing-box, a gland therefor, and an annular packing recessed at one end and grasped between the gland and the stuffing-box, combined with a tube fitted with a flange to be contained in said recess, the tube and the packing extending in part within said stuffing box and thereby creating a chamber for condense water, substantially as and for purposes explained.

5. In combination with a hollow revoluble vessel, and a stationary flanged tube, a stuffing box which interconnects said cylinder and flanged tube, said stuffing box comprising a short screw-threaded cup, a gland movable upon said screw threads, and an annular packing, the base of said cup being bored for the passage of steam, and adapted for attachment to the journal, substantially as set forth.

6. The combination with a revoluble steam cylinder, a stuffing box affixed thereto, its gland, and an annular packing recessed at one end, of a stationary supply pipe, a tube united at one end with said supply pipe and formed with a head at the opposite end to fit the recess in the packing, the diameter of said tube being less than the bore in said packing to permit rocking movement of said tube, substantially for purposes specified.

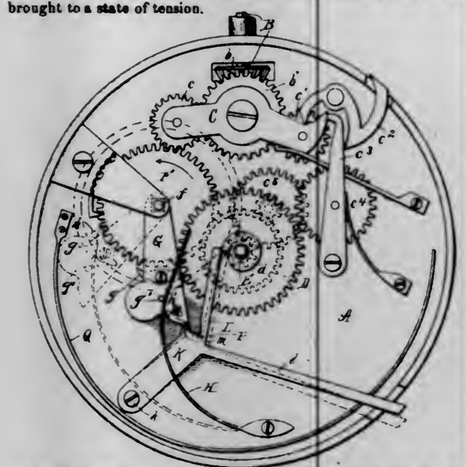
543,047. BASE FOR BARBERS' CHAIRS. ARNOLD J. NASAHL, St. Louis, Mo. Filed May 31, 1895. Serial No. 551,189. (No model.)



Claim.—As an improved article of manufacture a base for chairs consisting of the portion B, having a flanged floor engaging portion A, the brackets C, the cylindrical portion E having a shoulder F designed to snugly fit an aperture in the upper end of the portion B, means for holding the two portions together, the mandrel receiving apertures K, K, and the strengthening plates N, all combined, substantially as shown and described.

543,048. ALARM-WATCH. JOHN W. NUNAMAKER, Chicago, Ill. Filed Aug. 9, 1894. Serial No. 519,814. (No model.)

Claim.—1. In an alarm watch the combination with the mechanism for winding the watch, of independent mechanism for actuating the alarm constructed and arranged to cooperate with the winding mechanism so that in winding the watch the alarm spring is also brought to a state of tension.



2. In an alarm watch the combination with a swinging arm for actuating the alarm, of a spring for throwing the arm, means for connecting the swinging arm with the winding mechanism of the watch whereby the arm is swung in opposition to the spring when the watch is wound, and a detent for holding the alarm actuating mechanism in a state of tension.

3. In an alarm actuating mechanism for watches the combination with the main spring ratchet and arbor, of a swinging arm pivoted upon the arbor and constructed and arranged to actuate the alarm, means for making and breaking connection between the arm and the ratchet, a spring bearing upon the arm in opposition to the movement of the ratchet, and a detent for holding the arm when released from the ratchet.

4. In an alarm watch the combination with a spring controlled swinging arm for actuating the alarm and with a convolute cam having a rotary motion, of a detent lever bearing upon the cam and having a shoulder for engaging the end of the arm, the parts being so proportioned that when the lever bears upon the enlarged part of the cam it holds the arm, and when it bears upon the short radius of the cam the arm is released.

5. In an alarm watch the combination with a spring controlled swinging arm for actuating the alarm, a convolute cam for timing the alarm action and a detent lever bearing upon the cam and adapted to hold the arm, of a shoulder on the lever and having its outer end flattened and its forward side beveled, and a toe at the end of the arm adapted to the shoulder, the parts being so proportioned that when the lever bears upon the enlarged portion of the cam the toe and the shoulder overlap when their forward edges meet, and their outer faces are brought together when their rearward sides approach, and are freed from contact when the lever bears upon the short radius of the cam.

6. The combination in an alarm watch, of a spring controlled swinging arm for actuating the alarm and a pivoted lever having a recess or notch for engaging the end of the arm, the combined length of the arm and of lever to the recess being greater than the distance between their pivotal points, whereby the arm is locked against the action of its spring.

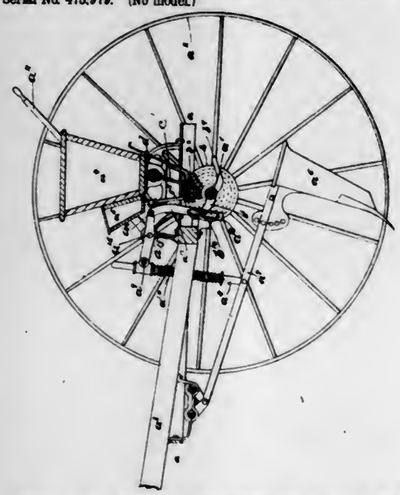
7. In an alarm mechanism for watches the combination with the main spring ratchet, of mechanism for actuating the alarm and means for making and breaking connection between said actuating mechanism and the ratchet, a spring bearing upon said actuating mechanism in opposition to the ratchet, and a detent for holding the mechanism when released from the ratchet.

8. In an alarm watch, the combination with the main-spring arbor *f*, the ratchet F, fixed upon such arbor, the stem B, and train gears for connecting the stem with the ratchet F, of a swinging arm G, mounted loosely upon the arbor *f*, and adapted to actuate the alarm, a rocking pawl *g*, carried by the arm, a stud *h*, for forcing the pawl into engagement with the ratchet, a stud L′, for releasing the pawl, a spring H, bearing against the arm so as to be compressed as the arm is swung by the ratchet, a detent for holding the arm G, against the pressure of the spring when the pawl is released from the ratchet, and means for releasing the arm from the detent, substantially as described.

9. In an alarm watch the combination with the winding and setting mechanism of a watch comprising a stem B, the gears *b*, *b′*, a yoke or rock bar C, pivoted upon the arbor of the gear *b′*, and pinions *c*, *c′*, carried upon the opposite ends of the yoke and in mesh with the gear *b′*, and adapted respectively to co-operate with the main spring ratchet and the hands, of a lateral extension at one end of the yoke and having an inclined inner face and a notch or step thereon, a lever for rocking the yoke by engaging the inclined face of its extension, an alarm cam, a gear wheel D, mounted with the cam, a spring controlled swinging lever having a lateral extension adapted to bear against the outer surface of the yoke extension, a gear wheel c^4, carried by the lever and adapted to intermesh with the pinion *c′*, and wheel D, when the yoke is depressed to release the extension of the lever.

10. In an alarm watch the combination with winding and setting mechanism comprising pinions *c*, *c′*, carried by a rock bar or yoke for actuating respectively the main spring ratchet and the gear of the hands, and means for driving such pinions, of an alarm cam, a gear wheel D mounted with the cam and a gear wheel c^4, for transmitting motion from the pinion *c′*, to the wheel D, a swinging lever for carrying the wheel c^4, and having a lateral extension at its free end for bearing against the end of the yoke and thereby holding the wheel c^4, out of engagement with the pinion *c′*, and wheel D, a spring for forcing the swinging lever against the yoke, a rock lever c^5, adapted to rock the yoke and thereby release the swinging lever from its end to permit the wheel c^4 to come into mesh with the pinion *c′* and wheel D before the pinion *c′* comes into engagement with the setting gear, and to throw the swinging lever back when the yoke is sufficiently depressed to bring the pinion *c′*, into engagement with the setting gear, substantially as described and for the purpose set forth.

543,049. GRAIN-DRILL. CHARLES E. PATRIC, Springfield, Ohio, assignor to the Superior Drill Company, same place. Filed May 12, 1893. Serial No. 473,979. (No model.)

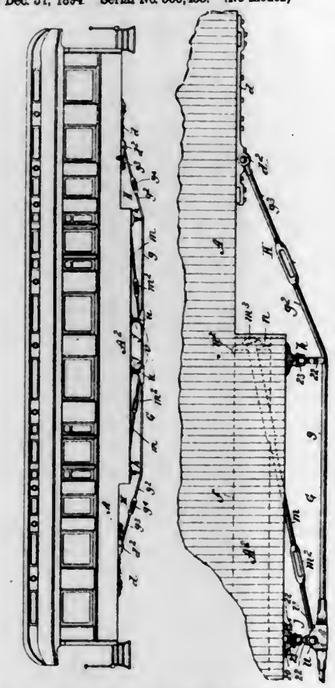


Claim.—1. In a grain drill, the combination of a rock shaft and lifting lever, connections from said rock shaft to a series of shoes or hoes, a main shaft having a laterally movable disk wheel forming a driving connection from said main shaft to the feeding devices, a clutch lever adapted by a movement thereof to produce a lateral movement of said disk wheel to throw it into or out of gear, as described, a crank arm on the rock shaft, and a link connection from said crank arm to said clutch lever, said link being provided with a slotted opening adapted to permit an independent movement of the clutch lever, but cause said clutch lever to move by the movement of said rock shaft when moved to a predetermined position, substantially as specified.

2. The combination with a revolving shaft and a gear thereon, a pinion adapted to engage said gear, a shaft on which said pinion is slidingly mounted, said gear and pinion being formed with inclined or spirally-shaped teeth, the inclination of said teeth being such as to draw the gear and pinion into closer engagement by the driving force of said gear, substantially as specified.

3. The combination with a seed hopper having a movable sliding plate in the bottom thereof, perforations in said plate arranged in series at intervals in the length thereof, one series of perforations being arranged on the plate so as to extend beyond the end of the hopper and adjacent thereto, an endless chain mounted wholly within said hopper and adapted to travel therein with the respective strands of said chain passing in opposite directions from end to end of said hopper, with one of said strands above the line of the respective series of perforations, said chains being formed of a series of links having flat sides and wedge-shaped openings, substantially as and for the purpose specified.

543,050. RAILWAY-CAR. HENRY PEARSON, Springfield, Mass. Filed Dec. 31, 1894. Serial No. 533,435. (No model.)



Claim.—1. In a railway car having at its sides, the main sills, B, and constructed with the depressed intermediate portion or well, A^2, which has along its bottom at its sides the sub-sills, C, a main truss at each side of the car body constructed, as to its upper chord by the main sill, and comprising the lower chord, G, ranging horizontally below the sub-sill, struts, *h*, *h*, between the lower chord and the end portions of the sub-sill, the ties extending obliquely between the lower chord and main-sill, and supporting members between intermediate portions of the lower chord and intermediate portions of the sub-sill, substantially as described.

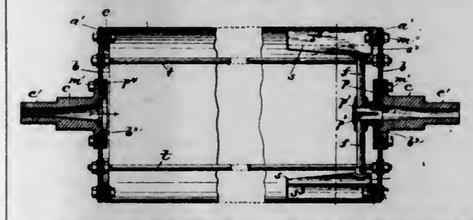
2. In a railway car, the car-body having the main sills and constructed with the intermediate well, A^2, which has the sub-sills, C, a main truss and a secondary truss at each side of the car, the main truss having the top chord thereof constituted by the main sill, and having the lower chord, G, the struts, *h*, *h*, between the end portions of the sub-sill and the ends of the lower chord and the ties, H, H, obliquely connecting the lower chord with the main sill, and the secondary truss comprising the ties, *m*, *m*, connecting intermediate portions of chord, G, with the end portions of the well, and one or more struts, *j*, substantially as described.

3. In a railway car, the car-body having the main sills, and constructed with the intermediate well, which has the sub-sills; the longitudinal channel-irons, *f*, *f*, between the main and sub-sills; the struts, *h*, *h*, depending from the ends of the sub-sill; the lower chord, G, of the main truss ranging below the sub-sill, and engaged by said struts; the ties, H, H, extending obliquely from the points of engagement of said struts with the main truss lower chord to the main sill at points endwise outside of the aforesaid well; one or more intermediate struts, *j*, between the aforesaid chord, G, and the sub-sills; and the tie-bars, *m*, *m*, connecting the points of engagement of the intermediate struts with chord, G, and the ends of the channel-irons,—the several struts and tie-members being extensible, substantially as described.

4. In a railway car, in combination with the car-body having the main sills and constructed with the depressed intermediate portion which has the sub-sills, C, the longitudinal channel-irons between the main and sub-sills, the main truss comprising main sill, lower chord, G, struts, *h*, *h*, and ties, H, H, the plates resting against the ends of the channel-irons, and having the aperture extending from one edge thereof, the tie-members, *m*, comprised in the secondary truss having enlarged heads which engage the said apertured plate and extend obliquely between the channel-irons to connection each with an intermediate point of the aforesaid lower chord members, G, and the struts *j*, *j*, substantially as described.

5. In a railway car in combination, the car-body having the intermediate well, A^2, from end portions of which are the depending struts, *h*, *h*, and the chord member, G, which is constructed with the upwardly standing ear-lugs, *v*, *v*, and having the obliquely turned terminals, g^3, the rods, g^3, and the turn-buckles which connect them with said terminals, g^3, whereby the tie members, H, are constituted which are connected to the bottom of the car, proper, the intermediate struts, *j*, depending from the base of the well at intermediate points thereof, and having their lower ends in bearing engagements against the tops of said ear-lugs, and the tie-members, *m*, *m*, having connections with the base of the well near the end portions thereof and extending diagonally therefrom to connections with and between the said ear-lugs, of the chord member, G, substantially as described and shown.

543,051. DRYING-CYLINDER. GEORGE R. PHILLIPS, Providence, R. I. Filed June 11, 1891. Serial No. 395,853. (No model.)

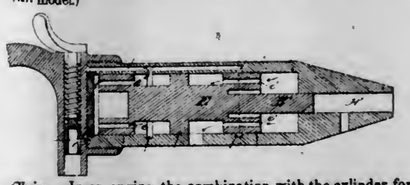


Claim.—1. The drying-cylinder, substantially as hereinbefore described, the same consisting of the sheet metal barrel portion *a* having inturned ends or flanges *a′*, outer and inner annular sheet metal plates *b*, *c*, located at each end of the cylinder having the said flanges *a′* interposed between and rigidly secured to the said plates, hollow central trunnions secured to the said outer plates *b*, tie-bolts or braces *t* extending longitudinally of the cylinder and uniting the heads, and buckets or scoops removably secured to the discharge end of the cylinder and communicating with the discharge trunnion thereof, substantially as set forth.

2. In a drying-cylinder, the combination of the oppositely arranged double chambered buckets *s* removably secured to the cylinder-head, discharge tubes *f* leading from the buckets, and a double chambered central head member *p* communicating with the discharge trunnion having the inner ends of said discharge tubes movably mounted in the head *p*, substantially as and for the purpose set forth.

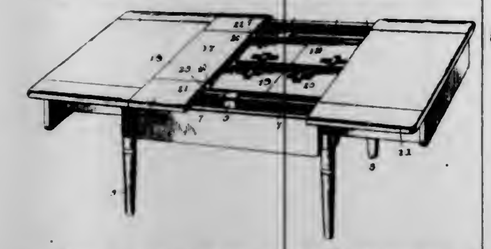
3. The combination, in a drying-cylinder constructed and arranged substantially as hereinbefore described, of longitudinally divided removably-secured buckets *s*, and freely expanding discharge tubes *f* uniting the buckets to a chambered head communicating with the discharge trunnion.

543,052. ENGINE. FRANK C. RINSCHE, St. Louis, Mo., assignor to Pierre Chouteau, same place. Filed Feb. 25, 1895. Serial No. 539,627. (No model.)



Claim.—In an engine, the combination with the cylinder formed with an exhaust opening in its side, and a reduced bore at its front end, of a handle secured to the rear end of the cylinder, an inlet passage in the base of the handle which inlet passage extends along the side of the engine-cylinder and opens thereinto at two points, a valve located in the handle base for controlling the passage of motive fluid to the engine, a three-headed piston which co-operates with the cylinder ports, the end heads of said cylinder being perforated, and a stem E′ on the piston which projects into the reduced bore in the front end of the cylinder, where it is adapted to deliver impacting blows upon the shank of a tool, likewise inserted in said bore; substantially as described.

543,053. EXTENSION-TABLE. RUDOLPH H. RIPKING, Aurora, Ind. Filed May 31, 1895. Serial No. 551,208. (No model.)



Claim.—1. In a table, the combination of a frame provided with supporting legs, main leaves or table-top sections supported by said frame, drop leaves connected to the lateral edges of said main leaves or sections, lateral slides mounted upon the frame and having boards or plates arranged with their upper edges flush with the lower surfaces of said main leaves or sections, and removable leaves adapted to be arranged between the inner edges of the main leaves or sections and provided with terminal extensions or folding sections, said extensions or folding sections of the removable leaves and the drop leaves carried by the main leaves or sections being adapted to be supported by said lateral slides, substantially as specified.

2. In an extension table, the combination with a main frame having supporting legs, of main leaves or sections, main slides mounted upon the frame and supporting said main leaves or sections, said slides having limited outward movement, fixed guides or keepers being arranged at the sides of the frame to receive the inner extremities of the main slides, and supporting bars being arranged near the ends of the frame to support said slides at intermediate points, drop leaves carried by the main leaves or sections, removable leaves adapted to be arranged between the inner edges of the main leaves or sections and provided with terminal folding sections, and lateral slides mounted upon the frame and having boards or plates arranged with their upper edges flush with the lower surfaces of the main leaves or sections and adapted to support the drop leaves and folding sections of the removable leaves, said lateral slides having arms fitted in keepers in the frame, substantially as specified.

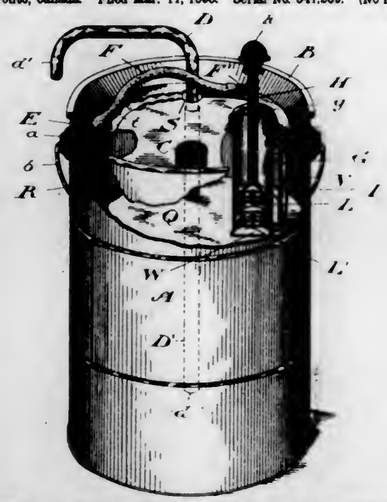
3. In an extension table, the combination with a frame and supporting legs, and main leaves having slides mounted upon the frame, of a removable leaf having an intermediate section of less length than the interval between the supports provided for said leaf whereby it is adapted to fit therebetween, and folding sections connected to the extremities of the intermediate section, and connections between the extremities of the intermediate and folding sections consisting of hinge-plates pivotally connected at their extremities to the side edges of said sections and provided with transverse slots for the reception of limiting pins carried by one of the sections at each joint, substantially as specified.

4. In an extension table, the combination with a frame and supporting legs, and main leaves or sections having slides mounted upon the frame, of lateral slides mounted upon the frame and adapted to be arranged at intervals from the sides thereof, removable leaves adapted to be arranged between the inner edges of the main leaves or sections, each removable leaf having an intermediate section and connected folding sections, the folding sections being adapted to rest upon the said lateral slides for support, and hooks carried by the lateral slides for engaging the removable leaves, substantially as specified.

5. In an extension table, the combination with a frame and supporting legs, and main leaves or sections having slides mounted upon the frame, of removable leaves adapted to be arranged between the inner edges of the main leaves or sections, each removable leaf comprising an intermediate and connected folding sections, the intermediate section being less in length than the interval between the points of support provided for the leaf whereby when folded the leaf may be arranged between said points of support, adjustable means for supporting the folding sections of the removable leaf, and supporting arms foldably connected to the intermediate section of the removable leaf and adapted to engage studs on the main frame, substantially as specified.

6. In an extension table, the combination with a frame and supporting legs, of main leaves or sections provided with slides mounted upon said frame and having limited outward movement, drop leaves connected to the lateral edges of the main leaves or sections, lateral slides mounted upon the frame and having boards or plates adapted to be adjusted toward and from the frame, the length of said boards or plates being in excess of the interval between the inner edges of the main leaves or sections when the latter are arranged at the limit of their outward extension, and removable leaves adapted to be arranged between the inner edges of the main leaves or sections and adapted to be supported by the upper edges of said lateral slides, substantially as specified.

543,054. OIL-CAN AND LAMP-FILLER. JOSEPH P. ROGERS, Toronto, Canada. Filed Mar. 11, 1895. Serial No. 541,289. (No model.)



Claim.—1. In an oil can and lamp filler, the combination of the gutter *t*; eccentric opening S; oil ejecting pipe D; pin *s*; waste oil chamber T; and oil ejecting tube D'; substantially as described and for the purpose specified.

2. In an oil can and lamp filler, the combination with the can A, of the air pump cylinder G; cap *g*; hollow piston rod H; piston head I; air valve L; pipe V; air chamber W; valve L'; hollow stem F'; flexible tube F; and air inlet pipe E, substantially as described and for the purpose specified.

3. In an oil can and lamp filler, the combination of the can A; air inlet pipe E; flexible tube F; hollow stem F'; hollow piston rod H; gutter *t*; eccentric opening S; pin *s*; oil ejecting pipe D; waste oil chamber T; oil ejecting tube D'; screw cap C; air pump cylinder G; cap *g*; piston head I; air valve L; packing U; spring *v*; flange K; pipe V; air chamber W, and valve L', substantially as described and for the purpose specified.

4. In an oil-can and lamp-filler, the combination of an oil-can, an air-pump cylinder, a hollow piston-rod H communicating with said oil-can and working in said pump-cylinder and having a piston-head I and air-valve L, air-chamber W and valve L', and a pipe V affording communication between said chamber W and the upper part of the air-pump cylinder, whereby air is drawn through said pipe V, and by means of the piston-head I and valves L and L' is forced through the hollow piston-rod H into the oil-can, substantially as described.

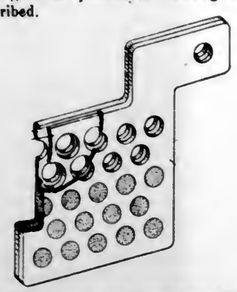
5. In an oil-can and lamp-filler, the combination of an oil can, a pump cylinder and a hollow piston-rod, a flexible air-passage between the interior of the can and the interior of said hollow piston-rod, means for pumping air through the piston-rod and flexible air passage so as to compress the air above the oil, and an oil ejecting pipe, substantially as described and for the purpose specified.

6. In an oil-can and lamp filler, the combination of the can A, flexible tube F, air-pump cylinder G, hollow piston-rod H, and means for pumping air through the flexible tube from said air-pump cylinder G to the interior of the can above the oil; and the oil ejecting pipe D fitted into ejecting tube D', substantially as described and for the purpose specified.

7. In an oil-can and lamp filler, the combination of an oil-can, an oil ejecting pipe, an air-pump cylinder, a piston-head provided with an upwardly opening valve, a hollow piston-rod communicating at one end with the interior of the piston-head above the valve and open at the other, means for admitting air below the piston-head on the up stroke and a flexible tube communicating with the hollow piston-rod and with the interior of the can above the oil, substantially as described.

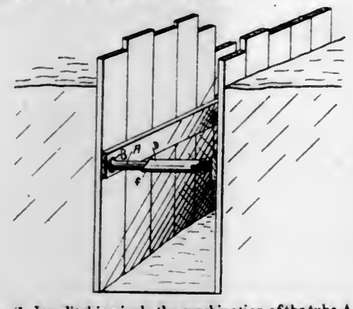
543,055. SECONDARY-BATTERY PLATE. JOHN J. ROONEY, Brooklyn, N. Y. Filed Nov. 19, 1894. Serial No. 529,264. (No model.)

Claim.—1. A composite grid consisting of a perforated base plate and perforated coating plates, the perforations in the coating plates being smaller than those in the base plate, and the plates being united with their perforations registering concentrically so as to form openings through the grid and pockets surrounding the openings, substantially as described.



2. A secondary battery electrode consisting of a perforated base plate and perforated coating plates, the perforations in the coating plates being smaller than those in the base plate, the plates being united with their perforations registering concentrically to form a grid having openings therethrough and pockets surrounding the openings, and active material or material to become active packed in the pockets and openings of the grid, substantially as described.

543,056. DITCHING-JACK. ROSS RUE, Alliance, Ohio. Filed Jan. 14, 1895. Serial No. 534,812. (No model.)

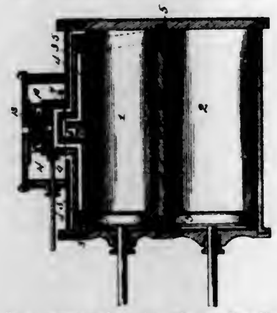


Claim.—1. In a ditching jack, the combination of the tube A, having attached thereto the head or disk B, and provided with the screw-threaded portion *b*, the screw-threaded shaft C, engaging the screw-threaded portion *b*, the tube D, provided with the flange E, having the ears *d*, the pivoted handles *e*, the oil chamber or receptacle G, located in the tube A, and the pivoted head or disk F, substantially as and for the purpose specified.

2. The combination of the tube A partially located within the tube D, and provided with the screw-threaded portion *b*, the screw-threaded shaft C, secured to the tube D, and the tube D provided with the shear end *f*, substantially as and for the purpose specified.

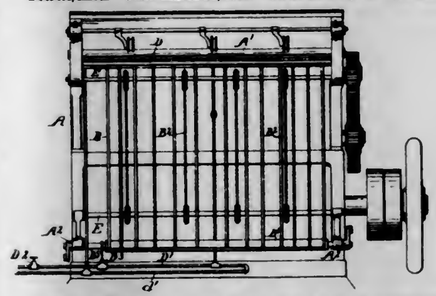
3. The combination of the tube A, and the tube D, one located partially within the other, and the inner tube provided with a screw-threaded portion, and an oil receptacle, a screw-threaded shaft, provided with the angular head *e*, the pivoted handles *e*, the disks B and F, substantially as and for the purpose specified.

543,057. COMPOUND STEAM-ENGINE. CHARLES SCHLARBD, Columbus, Ohio. Filed Sept. 25, 1893. Serial No. 486,406. (No model.)



Claim.—In a compound engine, the small cylinder 1 and the large cylinder 2 independent of each other and arranged one above the other, a valve seat in the cylinder 1, the two passages 5 5 extending from the ends of cylinder 2 in nearly vertical planes upward and around the ends of the cylinder 1, the two passages 3 3 and the two passages 4 4 arranged horizontally in parallel planes one above the other in the upper part of the cylinder 1, each of the passages 3 3 extending from a port near the middle of the valve seat to the extreme ends of the cylinder 1 and each of the passages 4 4 extending from a port near the middle of the valve seat to the upper ends of the passages 5 5, exhaust port 6, a valve 7 having a single passage 9 for connecting the ports 3 3 and 4 4 and a recess 8 for connecting the ports of passages 4 4, the ports of the passages 3 3 and 4 4, port 6, recess 8, and passage 9 being arranged so that they are intersected by a plane passing through the axes of both cylinders, as shown and described.

543,058. PRINTING-PRESS ATTACHMENT. PAUL SCHNEIDER, Detroit, Mich. Filed March 21, 1895. Serial No. 542,641. (No model.)



Claim.—1. The combination with a printing press provided with an oscillatory fly having an oscillatory rod B', of a perforated steam pipe arranged at the rear end of the machine adjacent to the upper end of the fly to discharge steam upon the paper as it is delivered to the fly, said steam pipe provided with a pipe D' leading thereto having a portion located toward the base of the machine adjacent to the oscillatory rod B', a valve in said portion of the steam pipe, a flexible strap connecting the stem of said valve upon said oscillatory rod of the fly whereby as the fly ascends to upright position the strap will be wound upon said rod to open the valve and hold it open while the fly is in an upright position and whereby when the fly is thrown downward the strap will be unwound permitting the valve to be seated and held closed while the fly is in a downward position, substantially as and for the purpose set forth.

2. The combination with a printing press of a perforated steam pipe arranged transversely toward the rear end of the machine to discharge steam upon the printed paper, a trough located below said steam pipe adjacent thereto, and a discharge pipe leading from said trough to carry off the water of condensation from said trough, substantially as set forth.

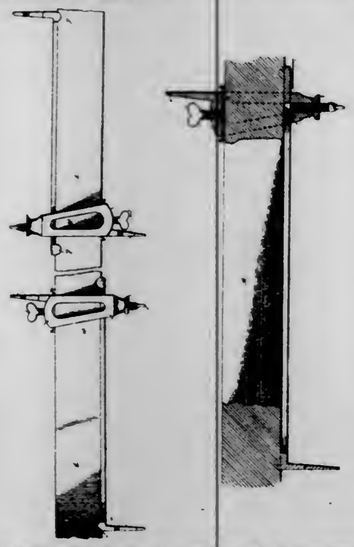
543,059. AXLE-SETTING DEVICE. JACOB F. SHULTS, San Jacinto, Cal., assignor of one-half to E. B. Knapp, same place. Filed Oct. 20, 1894. Serial No. 526,491. (No model.)

Claim.—1. In an axle setting device, the combination with a longitudinal bar, of the gaging mechanism located at each end thereof and comprising the adjustable gage bar provided at its outer end with a gage point, and the adjustable gage head receiving said bars, and provided at one end with a rigid gage point, and having at the opposite end an adjustable gage point located at the same side of the longitudinal bar as the gage point of the adjustable gage bar, substantially as described.

2. In an axle setting device, the combination of a longitudinal bar, an adjustable gage bar provided at its outer end with a gage point located at one side of the longitudinal bar, a gage head slidingly mounted on the longitudinal bar and receiving the gage bar and provided at one end with a rigid gage point located at the opposite side of the longitudinal bar, an adjustable gage point mounted on the other end of the gage head located at the same side of the longitudinal bar as the gage point of the gage bar, and a set screw mounted on the gage head and arranged adjacent to the rigid gage point thereof and securing the parts in their adjustment, substantially as described.

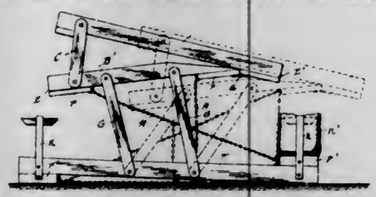
3. In an axle setting device, the combination of a longitudinal bar, an adjustable gage bar slidingly mounted on the longitudinal bar and disposed longitudinally thereof and provided at its outer end with a gage point located at one side of the longitudinal bar, a gage head having an opening receiving the said bars, said gage head being provided at one end with a rigid gage point and having at the opposite end a threaded socket located at the same side of the lon-

gitudinal bar as the point of the gage bar, and the said rigid point of the head being located at the opposite side of the longitudinal bar, a set screw mounted on the gage head adjacent to the rigid gage point thereof and securing the parts in their adjustment on the longitudinal bar, an adjustable gage point having a threaded shank arranged in the socket of the gage head, and a nut mounted on the threaded socket for checking the inward movement of the adjustable gage point, substantially as described.



4. In an axle setting device, the combination of a longitudinal bar 1, a gage bar disposed longitudinally of the bar 1 and slidingly arranged thereon and provided with inward extending lips and having a longitudinal opening, a rigid gage point 3 located at the outer ends of the gage bar, a gage head receiving said bars and located at one side of the longitudinal bar and composed of opposite sides, the end 13 having a threaded socket located at the same side of the longitudinal bar as the point 3 and the end 12 having a threaded opening and provided with a rigid gage point located at the opposite side of the longitudinal bar, a set screw arranged in the threaded opening, an adjustable gage point having a threaded shank fitted in the socket of the gage head, and the wear plate interposed between the set screw and the bar 1, substantially as described.

543,060. POTATO-SORTING MACHINE. EDWARD A. SMITH, Greeley, Colo. Filed June 13, 1894. Serial No. 514,454. (No model.)

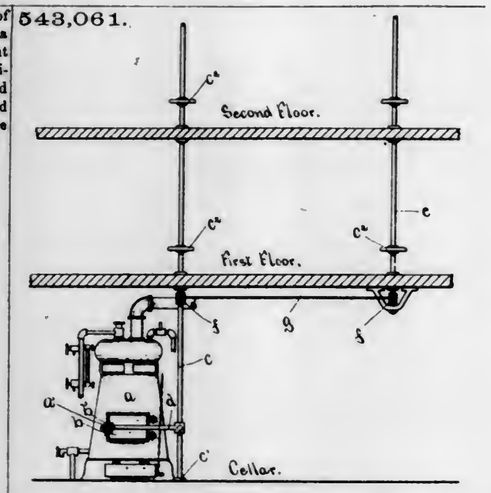


Claim.—The herein described potato sorting machine, comprising a stationary base, an inclined rectangular screen frame A, its screen B, a second and shorter oppositely inclined frame underneath the first and hinged thereto at its upper end, its screen, a link bar C connecting said frames toward the opposite ends thereof, the parallel link bars connecting the lower frame with said base, the crossed stop chains connected to said lower frame and to the base and a separate discharge for each of said screens, substantially as specified.

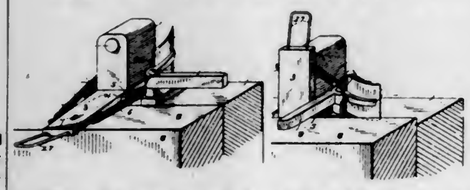
543,061. FURNACE-REGULATOR. WILLIAM R. SMITH, Norwich, Conn. Filed Mar. 15, 1895. Serial No. 541,950. (No model.)

Claim.—In combination with a furnace having a hinged door with an eye b', means for controlling said door consisting of a shaft c and an arm d secured thereto, the latter engaging said eye as set forth; the eye being provided with an inclined wall b^3 by means of which the arm d is caused to lift the door before swinging the same, all being substantially as specified.

543,061.

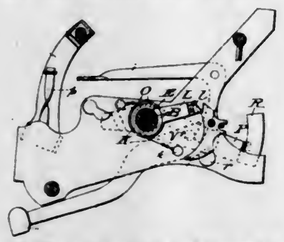


543,062. DETONATING LOCKING DEVICE. THOMAS C. SMITH, Bridgeport, Conn. Filed May 14, 1895. Serial No. 549,252. (No model.)



Claim.—In a combination lock and alarm of the character described, comprising in combination, an upright or support, a cartridge holding chamber therein, a passageway leading from said chamber through the base of said upright and a side vent therefor, a pivotally-supported hammer carrying a firing pin, operating springs therefor, a locking lever pivotally supported to said base, one arm of said lever carrying a plate adapted, when the hammer is lowered over the top of the lower meeting rail of a window, to stand in front of the vent hole so that when the cartridge is exploded the gases escaping from the said vent hole will throw the other arm of the said lever around and lock the window, combined with a hole in the meeting rail or other support registering with such passageway of the upright so as to carry the surplus gases into the outer atmosphere, as described and for the purpose hereinbefore set forth.

543,063. FIRE-ALARM BOX. JOHN T. STACK, Chicago, Ill., assignor to The Gamewell Fire-Alarm Telegraph Company, New York, N. Y. Filed Jan. 2, 1894. Serial No. 495,432. (No model.)



Claim.—1. The combination in a fire-alarm box of an external handle, an alarm sounded thereby, a releasing mechanism for the box actuated by said handle, and consisting of an angle lever having one arm adapted to engage the releasing lever of the box when the other end is engaged by an arm on the shaft of the said handle.

2. The combination in a fire-alarm box of an external handle, an alarm sounded thereby, connecting devices between the said handle and the releasing lever of the box, and means for controlling the non-interference mechanism of the box by the movement of said handle.

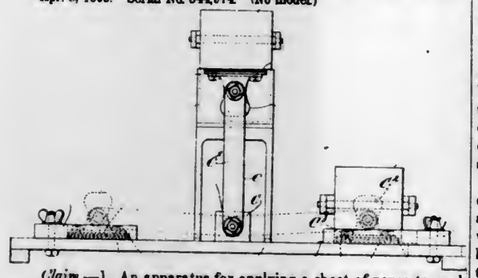
3. The combination in a fire-alarm box of an external handle, non-interference devices for the box controlled by the first movement of said handle, and a releasing lever for the box controlled by subsequent movement of the handle.

4. The combination in a fire-alarm box of an external handle, a cut-out, non-interference devices for the box controlled by the first movement of the said handle, and a releasing device controlled by the subsequent movement of the handle.

5. The combination in a fire-alarm box of an external handle, a piece carrying a pin acting upon the non-interference mechanism of the box and provided with a retractile spring, and an arm on the shaft of the said handle, bearing against the said piece, normally forcing it against the tension of the said spring, but adapted to release the said piece on the movement of the said handle.

6. The combination in a fire-alarm box of an external handle, an alarm sounded thereby, an arm carrying a pin adapted to engage with the non-interference mechanism of the box and to be itself engaged by an arm on the shaft of the said handle, and a releasing device for the mechanism of the box consisting of a lever adapted to engage with the releasing hook and be itself engaged by a pin on the said arm.

543,064. APPARATUS FOR APPLYING SHEETS TO PHOTOGRAPHIC CARDBOARD. SAMUEL H. STINSON, Philadelphia, Pa., assignor to the A. M. Collins Manufacturing Company, same place. Filed Apr. 8, 1895. Serial No. 544,974. (No model.)



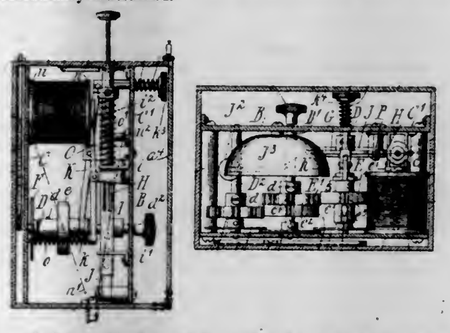
Claim.—1. An apparatus for applying a sheet of paper to card-board, comprising a table or support having a frame wherein moistened paper is confined and a frame for receiving the card-board, arms pivotally connected with the table or support midway between the paper and card-board frames, a flat faced sucker-plate or plunger pivotally connected with the free ends of said arms in such a manner as to permit the revolution of the plate about its pivot, said plate adapted to rest in one position flatly upon a sheet of moistened paper to permit of its adherence to said plate, and so as to afford transfer of said sheet to the other position of said plate in which the plate rests flatly upon the card-board and deposits the sheet in a flat condition upon the card-board, substantially as and for the purposes described.

2. An apparatus for applying a sheet of paper to card-board, comprising a table or support having a frame wherein the paper is confined and a frame for receiving the card-board, arms pivotally connected at one end to said table midway between the paper and card-board frames, a flat faced sucker-plate or plunger pivotally connected with the free ends of said arms, means for heating the face of said plate or plunger, said heated plate adapted to rest in one position flatly upon a sheet of paper and to cause the same to adhere to the plate, and to transfer the paper to the other position of the plate in which the same rests flatly upon the card-board, whereby the paper is deposited in flat condition upon the card-board, substantially as and for the purposes described.

3. In an apparatus of the character described, a table provided with frames to receive paper and card-board, arms pivoted to the table midway between said frames, a flat faced sucker-plate pivoted in the free ends of said arms in such a manner as to permit the revolution of the plate about its pivot, said plate having three defined positions controlled by said arms and pivotal connections, the plate in one position adapted to rest face downward upon a sheet of paper and lift the same by adhesion, in the second position adapted to rest face upward to permit the sheet of paper to be gummed and in the third position with the gummed face of the paper downward upon a sheet of card-board upon which the paper is deposited and secured in flat condition thereon, substantially as and for the purposes described.

543,065. ELECTRICALLY-CONTROLLED VOTING-MACHINE. CHARLES A. STITZER, Central City, Nebr. Filed Nov. 27, 1893. Serial No. 492,122. (No model.)

Claim.—1. The combination with a registering device and locking mechanism adapted to lock said registering device against operation, of an electric circuit controlling the locking mechanism, a contact device in the said circuit for opening and closing the same, and means actuated by the registering device for operating said contact device, substantially as described.



2. The combination with a plurality of registering devices and locking mechanism adapted to lock each of said registers against operation, of an electric circuit controlling said locking mechanism, and contact devices in the said circuit arranged to open and close the same, and means actuated by each of said registers for operating said contact device, substantially as set forth.

3. The combination with a registering device, of an electro-magnet provided with a vibratory armature lever, said armature lever being arranged to lock said registering device from operation when the circuit is open and to permit its free operation when closed, and contact devices actuated by the registering device and arranged to open said circuit when the register is operated, substantially as described.

4. The combination with a registering device and an electrically controlled locking device adapted to lock said registering device against operation, a contact device actuated by the registering device and arranged to open or close the circuit which controls said locking device, and an electrically controlled switch device operating to throw out of circuit that part thereof containing said contact device when the registering device is operated, so as to prevent the re-establishment of the circuit therethrough after it has been once broken, substantially as set forth.

5. The combination with a registering device and an electrically controlled locking device adapted to lock said register from operation when the circuit is broken, contact devices actuated by the registering device and arranged to open and close the circuit which controls said locking device, an electrically controlled switch device operating to throw out of circuit that part thereof containing said contact devices when the registering device is operated, so as to prevent the re-establishment of said circuit therethrough after it has been once broken, and an independent, normally broken circuit arranged to return the switch to a position to re-establish the circuit through the locking device of the register by the closing of said independent circuit, substantially as set forth.

6. The combination with a plurality of registering devices each provided with an electrically controlled locking device adapted to lock said register from operation, contact devices arranged to open and close the circuits which control said locking devices, means actuated by each of said registering devices for operating said contact devices, and electrically controlled switches arranged to throw out that part of the circuit passing through any register which is operated while retaining the circuit through the locking devices of succeeding registers, substantially as described.

7. The combination with a plurality of registering devices arranged in groups, each of said registering devices being provided with an electrically controlled locking device adapted to lock said register from operation, contact devices arranged to open and close the circuits which actuate said locking devices, means actuated by each of said registering devices for operating said contact devices, and electrically controlled switch devices adapted for actuation by all of the registering devices of each group and arranged to throw out the actuating circuit of the locking devices embraced in any group without breaking the circuits which actuate the locking devices of a succeeding group or groups of registers, substantially as set forth.

8 The combination with a plurality of registering devices arranged in groups and each provided with an electrically controlled locking device, of an electric circuit controlling all of said locking devices, contact devices arranged to open and close the said circuit, means actuated by each of said registering devices for operating said contact devices, electrically controlled switch devices each adapted to throw out the parts of said circuit which operate the locking devices

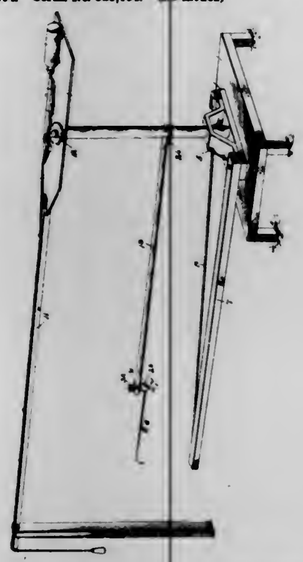
of one group of registering devices, said switch devices being each adapted for actuation by all of the registering devices of the group to which it belongs, substantially as described.

9. A plurality of electrically controlled switches for cutting out successive parts of an electrical circuit, each comprising an electromagnet located in said circuit, an armature lever controlled by said magnet, and yielding and fixed contact points, said parts being so connected and arranged that upon the breaking of the circuit through any switch its armature lever will first close a circuit through the yielding contact point and through the succeeding switches, and thereafter through the fixed contact point, thereby retaining in circuit the coils of the succeeding switches of the circuit, substantially as set forth.

10. A plurality of electrically controlled switches for cutting out successive parts of an electrical circuit, each comprising an electromagnet located in said circuit, an armature lever controlled by said magnet, and two back contact points arranged to come into contact with said armature lever in its backward movement consecutively, said parts being so connected that upon the breaking of the circuit in that part thereof controlled by any switch its armature lever will drop back and cut out or short circuit said controlled part, but will close the circuit through the proximate back contact point and through the coils of the succeeding switch or switches, thereby returning said succeeding switches to their former forward position, whereby the remainder of the circuit is retained in closed circuit, substantially as described.

11. A plurality of electrically controlled switches for cutting out successive parts of an electrical circuit, each comprising an electromagnet located in said circuit, an armature lever controlled by said magnet, two back contact points arranged to come into contact with said armature lever in its backward movement consecutively, and circuit breaking devices located in that part of the circuit controlled by said switch, said devices being actuated by the backward movement of the armature lever and arranged to break contact after said armature lever has closed the circuit through the proximate back contact point, said parts being so connected that upon the breaking of the circuit in that part thereof controlled by any switch its armature lever will drop back and cut out or short circuit said controlled part, but will close the circuit through the proximate back contact point and through the coils of the succeeding switch or switches, thereby returning said succeeding switches to their former forward position, whereby the remainder of the circuit is retained in closed circuit, substantially as described.

543,066. HORSE-POWER. JORDAN S. TUTTLE, Burns, Kans. Filed Oct. 6, 1894. Serial No. 525,131. (No model.)



Claim.—1. The combination of a rotary post or standard, a sweep connected to said post or standard, a driving or whip arm loosely connected to and carried by the post or standard, a spring for holding said arm in its normal position, and means for retarding the movement of the arm at intervals, and releasing the same to allow said spring to advance the arm, substantially as specified.

2. The combination with a rotary post or standard of tubular construction, a sweep connected to said post or standard, a core or stem fitted in the bore of the post or standard, a whip or driving arm attached to the core or stem and extending through a horizontal slot in the post or standard, a spring for holding said arm in its normal position, a ratchet wheel attached to the upper end of the core or stem, and a toothed arm adapted to be arranged to cause frictional engagement of its teeth with those of the ratchet wheel, substantially as specified.

3. The combination of a rotary post or standard of tubular construction, a core or stem mounted therein, a sweep connected to the post or standard, a driving or whip arm attached to the core or stem and extending through a horizontal slot in the post or standard, a spring for holding the said arm in its normal position, a ratchet wheel attached to the upper end of the core or stem, and a pivotal arm provided with teeth for frictional engagement with the teeth of the ratchet wheel to retard the rotation thereof, substantially as specified.

4. The combination of a rotary post or standard of tubular construction, a core or stem mounted therein, a sweep connected to the post or standard, a driving or whip arm attached to the core or stem and extending through a horizontal slot in the post or standard, a spring for holding said arm in its normal position, a ratchet wheel carried by the core or stem, a spring actuated bolt, and a toothed arm pivotally connected to said bolt, the teeth of said arm being adapted to engage the teeth of the ratchet wheel to retard the rotation of the latter, substantially as specified.

5. The combination with a rotary post or standard and a sweep connected thereto, of a driving or whip arm loosely connected to and carried by the post or standard, means for alternately retarding and forcibly advancing said arm, a whip, and a clamp for securing said whip to the arm, the clamp comprising a head having an opening in which one end of the lash is fixed, a stem fitted in an opening in the arm, and means for removably securing said stem in the opening, substantially as specified

6. The combination of a rotary post or standard, a sweep connected to said post or standard, a driving or whip arm loosely connected to and carried by the post or standard, a spring for holding said arm in its normal position, a ratchet connected to the whip or driving arm, and a movable pawl arm for engaging and retarding the rotary movement of the whip or driving arm, substantially as specified.

7. The combination of a rotary post or standard, a sweep connected to said post or standard, a driving or whip arm loosely connected to and carried by the post or standard, a spring for holding said arm in its normal position, a ratchet carried by the whip or driving arm, a movable pawl arm for engaging and retarding the rotary movement of the whip or driving arm, and a cord or wire connected to the pawl arm and passing through suitable guides to a point beyond the circle described by the outer end of the sweep, substantially as specified.

543,067. LOGGING-SLED. HENRY VANDERHEI, Vesper, Wis. Filed Sept. 27, 1894. Serial No. 524,268. (No model.)

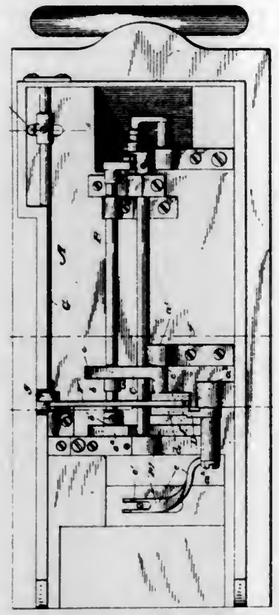


Claim.—1. In a logging-sled comprising a tubular metal bow having its ends compressed to increase their bearing surface, wooden runners fitted on the compressed ends of the bow, tie-plates bolted to the bow and runners, a bunk mounted on said runners, and a drag-chain eye connected to said bow, substantially as set forth.

2. A logging sled comprising a tubular metal bow having its ends compressed to increase their bearing surface, wooden runners fitted on the compressed ends of the bow, tie-plates bolted to the bow and runners, stay-bolts transversely arranged in the forward ends of the runners, a bunk mounted on said runners, and a drag-chain eye connected to said bow.

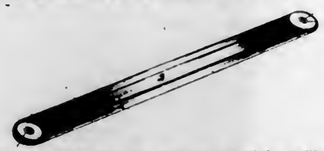
543,068. FEEDING MECHANISM FOR SEWING-MACHINES. JASPER VANNETTE, Tiffin, Ohio, assignor to The Singer Manufacturing Company, of New Jersey. Filed June 27, 1892. Serial No. 438,168. (No model.)

Claim.—1. In a sewing machine, the combination with a rotating shaft arranged beneath the work plate thereof and provided with two cams, of a transverse lever pivoted between its ends one arm of said lever having a yoke embracing one of said cams and the other arm of said lever being provided with a groove, a bell-crank lever having a grooved arm arranged adjacent to the grooved arm of the said transverse lever, an adjustable pin forming the connection between said grooved arms of said levers, a frame connected to said bell-crank lever and provided with an arm carrying the feed dog said frame also having a yoke embracing the other of said cams, and means for adjusting said pin so as to vary the throw of the said bell crank lever, and thereby regulate the horizontal movements of the said feed dog.



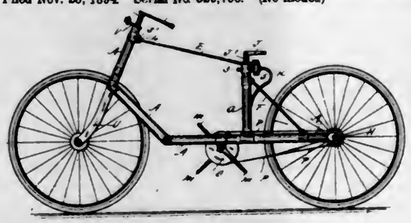
2. In a sewing machine, the combination with the rotating shaft B provided with the cams *b* and *b'*, of the transverse lever C having a yoke embracing the said cam *b*, and having a grooved arm *c'*, a bell-crank lever D having a grooved arm *d*, a pin *f* forming a connection between the said grooved arms of said levers, the link F by which said pin is carried, the feed regulating shaft G having the arms *g* and *g'*, the latter provided with a set nut co-operating with a fixed abutment to hold said shaft in any position of adjustment, and the frame E connected to said lever D and provided with the arm *e* carrying the feed dog *e'*, said frame being also provided with a yoke e^3 embracing the said cam *b'*.

543,069. DRESS-STAY. DE VER H. WARNER, Bridgeport, Conn. Filed July 21, 1894. Serial No. 518,243. (No model.)



Claim.—In a dress stay, the combination of the resilient portion, the disks arranged upon both sides of the resilient portion and projecting beyond the ends thereof, means for securing said disks to the resilient portion, and a covering for said resilient portion secured thereto by means of said disks, the ends of said covering projecting beyond the ends of the resilient portion and the edges of the disks, substantially as described.

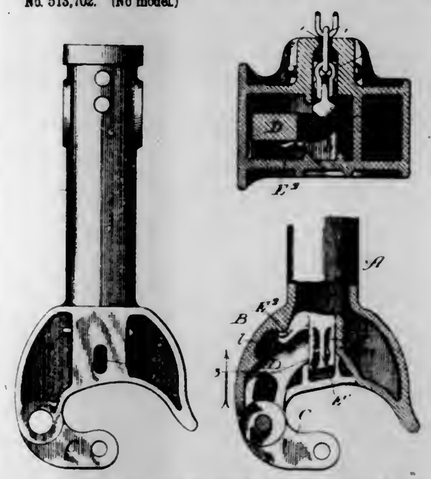
543,070. BICYCLE. ALBERT S. WEAVER, Hamilton, Canada. Filed Nov. 23, 1894. Serial No. 529,700. (No model.)



Claim.—1. The combination of the two sided tubular frame A, with the central front tubular part A', to receive shank of fork U, and connected together by means of the cross braces B, and C, each side of said frame having a vertical tubular standard, *a*, which are capable of supporting the seat supports J, provided with slots 2, by means of their shanks J', and held in position by means of set screws 3, the curved cross brace K, connected to said standards and having a central hub of same height adapted to receive the shank J', of seat support J, the brace E, its forward end pivoted to lugs 4, its radial center, and its rear end capable of attachment to either of the upper ends of said standards or the said hub of cross brace K, by means of the insertion of one said shank J', or of pin 5, the brace F, the crank pedals M, and the ground wheels, substantially as described.

2. The combination of the two sided frame A, with the central front part A', of tubular construction to admit the shank of fork U, in connection with ground wheel T, and connected together by cross braces B, and C, said frame having tubular standards, *a*, capable of receiving and allowing of adjustment the shanks of seat supports J, the rearward curved brace K, connected to said standards and having a central hub of same height capable of receiving a shank of seat support J, the brace E, pivoted to lugs 4, and to either one of said standards, or to the hub of brace K, by means of pin 5, or said shank J', the pedals M, the through rigid axle H; provided with ground wheel N, having central hub N', and extension hubs S, having openings 6, and sprocket wheels R, as a part thereof, the sprocket wheels O, and chains i', the two pairs of detachable handles W, having shanks W', capable of insertion in upper tubular front of both sides of frame and also in the tubular shank of fork U, the two side levers V, secured to shanks of said handles the lever V', the forward ends of said levers secured to the cross rod Y, and the ground wheel T, journaled to the said fork U, substantially as described.

543,071. CAR-COUPLING. WILLIAM F. WHITE, Chicago, Ill., assignor to Joseph E. Forsyth, same place. Filed June 6, 1894. Serial No. 513,702. (No model.)

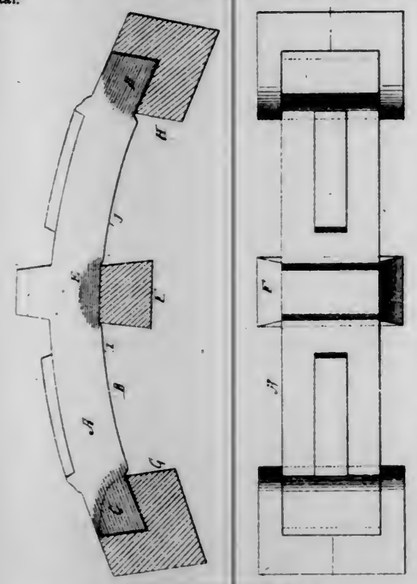


Claim.—1. In a car-coupler, means for locking the pivotal knuckle and forcing it outward by the unlocking operation, comprising a generally bell-crank shaped body E supported near its angle on a horizontally disposed pivot in the draw-head to swing in a vertical plane, said body forming a locking head E' having the extension E^3 diverted laterally toward its lower end, there to extend in a plane lateral to that of the said head and affording a downward and outward projecting cam-like finger, substantially as described.

2. In a car-coupler, means for locking the pivotal knuckle and forcing it outward by the unlocking operation, comprising a generally bell-crank shaped body E supported near its angle on a horizontally disposed pivot in the upper part of the draw-head to swing in a vertical plane, said body forming a locking head E' beveled as at *v* and carrying a pivotal clevis *g* and having the extension E^3 diverted toward its lower end, there to extend in a plane lateral to that of said head and affording a downward and outward projecting cam-like finger, substantially as described.

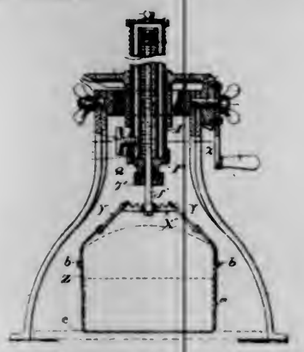
543,072. BRAKE-SHOE. CHARLES F. WOELFARTH, Bloomfield, N. J., assignor to the Lappin Brake Shoe Company. Filed Mar. 28, 1894. Serial No. 505,380. (No model.)

Claim.—A brake shoe having the metal at its extremities chill-hardened through the entire mass, in contradistinction to being hardened only through a fractional portion thereof; whereby, at all times during the life of the shoe, the effects of abrasion are resisted by hard metal.



543,073. APPARATUS FOR MANIPULATING GRAVE-VAULTS.

JOSEPH A. WORK, Springfield, Ohio. Filed Apr. 4, 1895. Serial No. 544,382. (No model.)



Claim.—1. In an apparatus for manipulating vaults, the combination with suitable standards, of a cylinder supported by said standards, and a piston rod and piston in said cylinder, devices to suspend the vault from the rod, and means to slowly discharge from the cylinder a quantity of contained liquid to allow the piston to lower its suspending devices and load into the grave.

2. In an apparatus for manipulating grave vaults, the combination with suitable standards adapted to stand over a grave, of a cylinder supported by the standards through a universal joint or connection and adapted to slowly discharge a quantity of liquid therefrom, and a piston and rod arranged to work in the cylinder to descend as the liquid is discharged.

3. In an apparatus for manipulating grave vaults, the combination with suitable standards adapted to stand over a grave, of a case supported by the standards, a cylinder communicating with the case and adapted to discharge a quantity of liquid therefrom into the case, and a piston and its rod working in the cylinder and adapted to be lowered as the liquid escapes.

4. In an apparatus for manipulating a grave vault, the combination with suitable standards adapted to stand over a grave, of a case supported thereby through a universal joint or connection, a cylinder in the case arranged to discharge a quantity of liquid therein, and a piston and rod working in the cylinder and adapted to descend as the liquid escapes.

5. In an apparatus for manipulating a grave vault, the combination with two pairs of standards, an annulus with trunnions fitted to the standards, a second annulus with trunnions mounted in the first annulus, a case supported by the second annulus and a cylinder supported within the case with a controlled communication between the cylinder and case, and a piston and rod working in the cylinder adapted to descend when the communication is opened and discharging liquid from the cylinder and to draw the liquid back into the cylinder on the reverse movement.

6. In an apparatus for manipulating grave vaults, the combination with suitable standards, of a cylinder supported thereby, a piston and rod in said cylinder, means to lessen the quantity of liquid contained in the cylinder on one side of the piston as it moves in lowering its load, and devices which suspend the vault from the piston.

7. In an apparatus for manipulating a grave vault, the combination with standards adapted to stand over a grave, of a vertical traveling device supported by said standards through a universal joint or connection, a gearing connected therewith to raise and lower it when suspended over a grave.

8. In an apparatus for manipulating a grave vault, the combination with standards adapted to stand over a grave, of a vertical sliding device supported by said standards, and having an exterior screw-thread, of a gear wheel supported by the standards and screwed upon said device, and a crank geared to said gear wheel to rotate the latter and raise and lower said device.

9. In an apparatus for manipulating a grave vault, the combination with standards adapted to stand over a grave, and a vertical sliding device connected therewith by a universal joint or connection, and having an exterior screw-thread, of a gear wheel supported by the standard and carried upon said device, and a crank connected with a pinion meshing with the gear-wheel to rotate it to raise or lower said device.

10. In an apparatus for manipulating a grave vault, the combination with standards adapted to stand over a grave, an annulus with trunnions fitted to the standards, a second annulus with trunnions mounted in the first annulus, and a case slidingly mounted in the second annulus and having an exterior screw-thread, of a gear wheel resting upon the second annulus and screwed upon said case and a crank with a pinion meshing with the gear wheel, and a device for connecting the case with the grave vault.

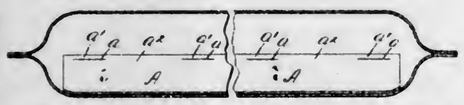
11. In an apparatus for manipulating a grave vault, the combination with standards adapted to stand over a grave, a case supported thereby and a cylinder by the case and adapted to discharge liquid into it, gearing to raise and lower the case, and a piston and rod fitted to the cylinder and adapted to descend when the liquid runs out and to draw the liquid back when forced in.

12. In an apparatus for manipulating a grave vault, the combination with said standards, an annulus trunnioned thereto, a second annulus trunnioned to the first, a case mounted in the second annulus and having a screw threaded exterior, a gear wheel resting upon the second annulus and screwed upon the case, and a crank with a pinion meshing with the gear wheel, and a cylinder in the case, with a controlled communication discharging into it, and a piston and rod in the cylinder for the purpose set forth.

13. In an apparatus for manipulating a grave vault, the combination with a piston rod and a cross-bar, of a vault holder adapted to embrace the vault and detachably connect it with the cross-bar.

543,074. PNEUMATIC TIRE.

ERNEST W. YOUNG, Austin, assignor to the Morgan & Wright, Chicago, Ill. Filed May 22, 1895. Serial No. 550,292. (No model.)



Claim.—1. The combination with a pneumatic tire, of an internally and longitudinally arranged patching ply or strip provided at intervals along its length with attaching portions which are partially independent of the body of the ply or strip and secured to the inner wall of the tire so as to provide flexible hinge-connections between the inner-wall of the tire and the body of the patching ply or strip, substantially as set forth.

2. The combination with a pneumatic tire, of an internally and longitudinally arranged patching ply or strip provided at intervals along its length with elastic attaching portions which are partially independent of the body of the ply or strip and secured to the inner wall of the tire so as to provide elastic and flexible hinge-connections between the inner wall of the tire and the body of the patching ply, substantially as described.

3. An inflatable inner tube for a pneumatic tire, provided with an internally arranged flexible patching ply or strip having attaching portions which are partially separate from the body of the ply or strip by cuts or slits formed in such ply or strip, and said attaching portions being attached to the inner wall of the said air-tube so as to form flexible hinge connections, substantially as set forth.

4. An inflatable inner-tube for a pneumatic tire provided with an internally arranged flexible patching ply or strip having elastic attaching portions which are partially separated from the body of the ply or strip by cuts or slits formed in the latter, and which are attached to the inner wall of said tube so as to provide flexible and elastic hinge connections, substantially as set forth.

5. An inflatable inner tube for pneumatic tires having closed ends and provided with an internally arranged flexible patching-ply or strip having cuts or slits along its longitudinal edge portions and having its marginal portions *a'* alongside the cuts or slits attached to the inner wall of the said tube, substantially as described.

6. The within described method of preparing repairable inner elastic tubes for pneumatic tires, consisting in distending the tube, arranging thereon a patching-ply or strip, partially stretching the strip at intervals along its longitudinal edge portions, cementing parts of the stretched portions to the tube so as to leave stretched parts between the points of securement and the body of the ply or strip, and turning the tube so as to bring the ply or strip within the same.

543,075. TRACTION-WHEEL.

GUSTAF A. ANDERSON, Waynesborough, Pa., assignor to the Geiser Manufacturing Company, same place. Filed Dec. 1, 1894. Serial No. 530,611. (No model.)

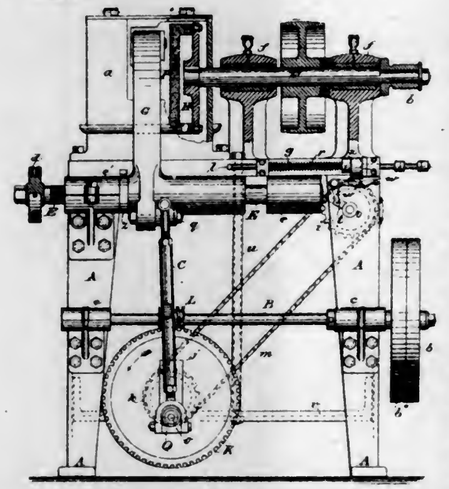


Claim.—1. A wheel rim provided with a circumferential rib, lateral ribs on each side thereof, and pockets formed between the lateral ribs and having their bottom portions inclined downwardly and outwardly in opposite directions upon opposite sides of the circumferential rib, whereby the tread of the wheel engages with the surface of a road to a greater or less extent proportionate to the softness of the surface, substantially as set forth.

2. The combination, with the two supporting rings B, of the wheel rim secured to the said rings and provided with ribs and pockets on its periphery for engaging with the surface of the road, substantially as set forth.

543,076. MACHINE FOR GRINDING CUTLERY.

ALFRED F. BANNISTER, Newark, N. J. Filed May 24, 1894. Serial No. 512,375. (No model.)



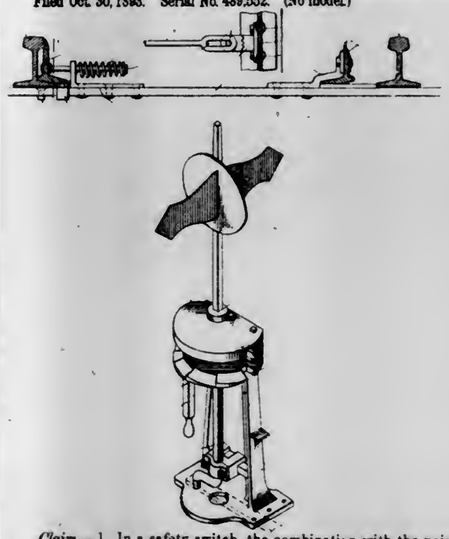
Claim.—1. A machine for grinding cutlery, saws and other articles of hardware requiring a flat surface, or a flat even bevel comprising a supporting stand, a grinding wheel mounted thereon, an oscillating arm provided with a lever and lever pin, a longitudinally adjustable bar supporting the said arm, a worm and worm-wheel, a crank pin on the latter, a rod connecting the said crank pin and lever pin and means for application and transmission of power, all arranged and co-operating substantially as described.

2. In a machine for grinding cutlery, saws and other articles of hardware requiring a flat surface or a flat even bevel, in combination with a grinding wheel, a work holding arm oscillating in a plane substantially at right angles to the grinding wheel shaft, a bar pivotally supporting the said arm, the said bar having a longitudinally adjustable feed movement, the said arm being hung thereon and secured from endwise movement on the same, substantially as described.

3. A machine for grinding cutlery, saws and other articles of hardware requiring a flat surface or a flat even bevel, comprising a supporting stand, a grinding wheel mounted thereon, an oscillating arm provided with a lever and lever pin, a longitudinally adjustable bar supporting the said arm, a worm and worm wheel, a crank pin on the latter, a rod connecting the said crank pin and lever pin, an automatic arm stopping device comprising sprocket wheels *k* and *i* and chain *m* thereon, a spring actuated belt shifting rod *g* retaining pawl *s* and tripping stud *t* on sprocket wheel *i* arranged and coöperating as a whole, substantially as described.

543,077. SAFETY-SWITCH.

GEORGE BESSER, Minneapolis, Minn. Filed Oct. 30, 1893. Serial No. 489,552. (No model.)



Claim.—1. In a safety switch, the combination with the points, of a head rod having a rigid connection with one of said points and a spring connection with the other, substantially as described.

2. In a safety-switch, the combination with the points, of the switch-stand, the throw-rod, a connection between said throw-rod and the points, and a ratchet device on the switch-stand arranged to automatically anchor the points so as to prevent them from moving in the direction for setting to the side-track but not interfering with the movement in the opposite direction, substantially as described.

3. The combination, with the points and the head-rod, of the switch-stand provided with the ratchet-teeth, the throw-rod to which said head-rod is connected, the arm on said throw-rod, and the gravity-handle pivoted on said arm and adapted to automatically engage said ratchet-teeth, substantially as described.

4. The combination, with the movable points, of the head-rod, a spring connection between said head-rod and one of said points, and a ratchet locking device arranged to automatically anchor said points to prevent movement in one direction, for the purpose set forth.

5. The combination, with the movable points 5 and 7 the head-rod, a spring connection between the head-rod and the points, and the series of rail braces 29 arranged to be engaged by the point 5 before the point 7 reaches the limit of its movement, for the purpose set forth.

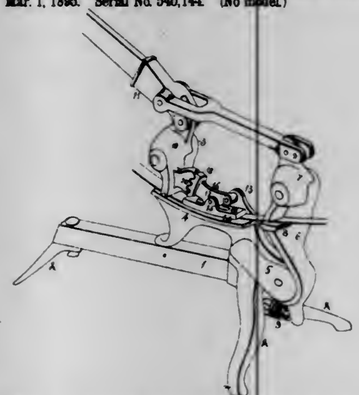
6. The combination, with the main or stock rails, of the points 5 and 7, the extensible tie-rods, the head-rod rigidly secured to the point 7, the spring bracket on the head-rod, a spring arranged to hold the point 5 against said bracket, and the braces 29 arranged to be engaged by the point 5 before the point 7 is brought against the rail 3, substantially as described.

7. The combination, with the point 5, the head-rod 11, a spring connection between said head-rod and said point, the strap 22 on the point through which said head-rod passes, and a lug on the head-rod adapted to engage said strap in case of breakage or failure of said spring connection, for the purpose specified.

8. The combination, with the points, of the extensible tie-rods connecting said points, and the projections 51' suitably supported and adapted to be engaged by projections on the tie-rods, for the purpose of anchoring one of said points against outward pressure, substantially as and for the purpose specified.

9. The combination, with the movable points and the head-rod, of the switch-stand provided with the plates 43 and 45 provided with the recesses 47 and with suitable ratchet teeth, the throw-rod 37, the arm 39 on said throw-rod extending between the plates 43 and 45, and the gravity-handle 41 on said arm adapted to engage the recesses 47 when the points are set for the side or the main track and to engage said ratchet-teeth when the points are in a neutral position, substantially as and for the purpose specified.

543,078. TIRE-UPSETTER. GEORGE S. BRIGGS, Rockford, Ill. Filed Mar. 1, 1895. Serial No. 540,144. (No model.)



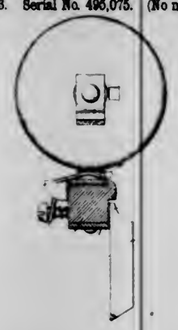
Claim.—In a tire shrinker, the combination of a suitable frame, a support for the tire, two pivoted dogs, a hand lever pivotally connected with one of the dogs, a link pivotally connected at one end to the other dog, and at its other end to the hand lever, a vertically movable shoe overlying that portion of the tire located between the dogs, and means forming a connection between the shoe and movable portion of the shrinker for operating the shoe automatically.

543,079. PROCESS OF PURIFYING OILS OR FATS. FREDERICK BURTON, London, England, assignor to the Aluminium Company, Limited, same place. Filed Nov. 17, 1894. Serial No. 529,154. (No specimens.)

Claim.—1. The herein described process for purifying oils or fats by treating same with an acid and a salt of an alkaline earth, and then adding thereto sodium peroxide as described.

2. The herein described process for purifying oils or fats by treating same with an acid and a salt of an alkaline earth, then adding thereto sodium peroxide and subsequently alcohol or like spirit, substantially as described.

543,080. TUFT-YARN CARRIER FOR LOOMS. JOHN A. CLARK, Worcester, Mass., assignor to the Crompton Loom Works, same place. Filed Dec. 29, 1893. Serial No. 496,075. (No model.)



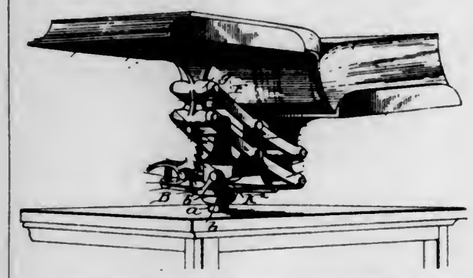
Claim.—1. In a tuft yarn beam carrier, a cross bar having a guard or shield, combined with a series of metallic quills having their upper ends secured to said cross bar and partially covered by said guard, substantially as described.

2. In a tuft yarn beam carrier, a cross bar having a guard or shield, combined with a series of metallic quills composed of blanks closed at their front sides, and having their central upper ends partially covered by said guard or shield, substantially as described.

3. The herein described quill composed of a sheet metal blank having central of its upper end a projection *d* and having its side edges overlapped and provided with a downwardly and backwardly tapering point, substantially as described.

4. The herein described quill composed of a sheet metal blank having central of its upper end a projection *d* and having its side edges overlapped and provided with a downwardly and backwardly tapering point, the said point being pinched or brought together to form a beak, substantially as described.

543,081. BOOK-HOLDER. JAMES W. CLARK, Janesville, Wis., assignor to Henry Palmer, same place. Filed Sept. 17, 1894. Serial No. 523,251. (No model.)



Claim.—1. In a book support, the combination with a plate having lugs *b'*, of a central casting or support pivoted between said lugs and carrying the book supporting mechanism, said casting having a pawl projecting therefrom, the lugs b^3, also formed upon the plate and a ratchet faced catch pivoted between said lugs b^3, and a spring held between the plate and catch to maintain the catch normally in engagement with the pawl, substantially as shown and described.

2. In a book holder, the combination with the plate adapted to be mounted upon a suitable support, the rectangular casting pivoted upon said plate and adapted to rock thereon and having upright arms projecting upward from each end, the upper and lower equalizing bars pivoted upon each upright arm, the opposing upper and lower bars being connected intermediate their ends by integral horizontal cross bars, the brackets pivoted between the ends of the equalizing bars, said brackets comprising the heavy tubular portions, the connecting web and the horizontal bracket arm to which the book supporting leaves are attached, substantially as shown and described.

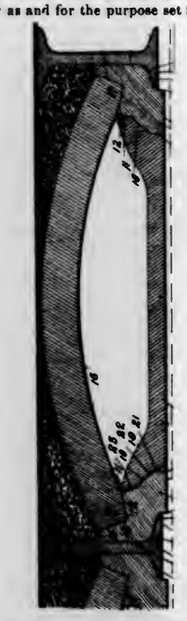
543,082. FIREPROOF CONSTRUCTION OF FLOORS AND CEILINGS. ARCHIBALD C. CUMMINGS, Brooklyn, assignor to Merton S. Mosher and Edwin H. Mosher, New York, N. Y. Filed Dec. 8, 1894. Serial No. 531,246. (No model.)

Claim.—1. A fire-proof ceiling section made of pressed concrete or other fire-proof material having enlarged ends, which taper to the body portion thereof, and having on its outer ends a vertical surface 21, inclined surface 22, and vertical surface 23, a sheet of perforated metal or the equivalent thereof embedded within the center, substantially as and for the purpose set forth.

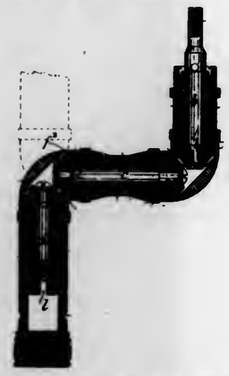
2. A skew-block for supporting a fire-proof arch for floors, and ceilings, having an angular groove on its upper surface for supporting said arch and a seat for said ceiling, substantially as and for the purpose set forth.

3. In a fire proof construction for floors and ceilings the combination with the skew blocks, having surfaces 9, 10 and 11, grooves 12—13, the continuous arch, for supporting the floors having angular ends, and adapted to be seated in the groove 12—13, and a ceiling section, having enlarged ends, said ends having surfaces 21, 22 and 23, conforming with and adapted to be seated within the surfaces 9, 10 and 11, in the skew block, substantially as and for the purpose set forth.

4. In a fire-proof construction for floors and ceilings, the combination with the I-beams, of skew blocks resting on the flanges thereof, and made of pressed concrete, having surfaces 9, 10 and 11, and grooves 12—13, an arch made of pressed concrete having angular ends seated within the grooves 12—13, in the skew blocks, and a ceiling section having surfaces 21, 22 and 23, corresponding with and adapted to be seated within the surfaces 9, 10 and 11, in the skew block, substantially as and for the purpose set forth.

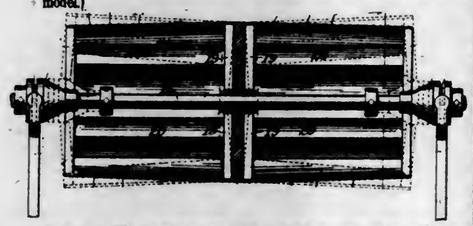


543,083. UNIVERSAL DRILL-SHAFT. MAGNUS S. P. DAHL, Chicago, Ill. Filed Mar. 5, 1895. Serial No. 540,585. (No model.)



Claim.—The combination with three end-connected shafts, whereof two revolve in their places around the third, of superimposed inclosing shells for said shafts and elbows connecting the ends of the shells, substantially as specified.

543,084. CLOTH-STRAIGHTENING MACHINE. CHARLES L. DAWSON, Brooklyn, N. Y. Filed Dec. 5, 1894. Serial No. 530,881. (No model.)

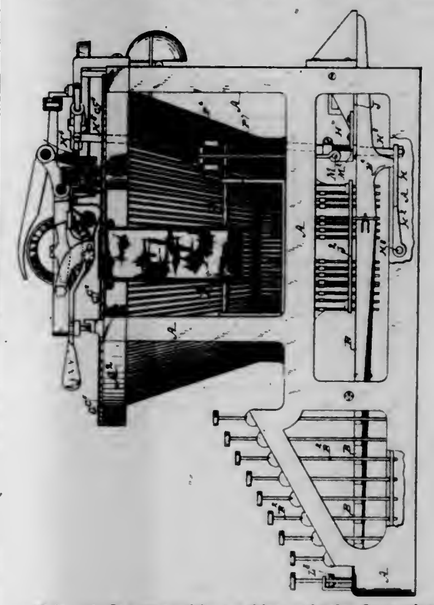


Claim.—1. The combination with a cloth straightening roll having expansible ends and means to expand said ends independently, of guide rolls to direct the fabric about said straightening rolls, a roughened collar applied to the middle of one of said guide rolls, and means to draw the fabric over said roll, substantially as shown and described.

2. A cloth straightening device comprising a shaft, a fixed middle portion, movable sections composing each end portion hinged to the fixed middle portion, conical sleeves upon which the outer ends of said sections rest, said sleeves being longitudinally movable, and independent levers engaging said sleeves respectively to effect longitudinal movement thereof, substantially as shown and described.

3. A cloth straightening device comprising a shaft, a disk or wheel fixed thereon, longitudinally divided sections composing each end portion and separately hinged to said disk or wheel, and conical sleeves upon which the outer ends of said sections rest, said sleeves being longitudinally movable, and springs normally drawing the ends of said section together, substantially as shown and described.

543,085. TYPE-WRITING MACHINE. ADOLPHUS S. DENNIS, Des Moines, Iowa. Filed Apr. 14, 1894. Serial No. 507,621. (No model.)



Claim.—1. In a type writing machine mechanism for moving the sliding carriage backward, comprising a rock shaft in a horizontal position having an arm at its front end and a key on the outer end of the arm, an arm at the rear end of said rock shaft, a rock shaft extended at right angles to said horizontal rock-shaft and having an arm at its lower end connected with the arm on the rear end of the horizontal rock shaft and an arm at its top end connected with the journal of a sliding pawl carrier, a sliding pawl carrier, a spring for reversing the motion of the sliding pawl carrier and a sliding carriage connected with the sliding pawl carrier by means of pawls carried by the pawl carrier, arranged and combined to operate in the manner set forth for the purposes stated.

2. In spacing mechanism for type writing machines, the combination of a bifurcated pawl bearer, a spring actuated flanged plate pivoted in the bifurcated end of the pawl bearer, a pawl adapted to engage a rack rigidly connected with the pawl bearer, a pawl having a projection on its edge to engage one of the flanges of said pivoted plate and a stud on its top face adapted to traverse a slot in an overlying pawl and a pawl having a slot to admit said stud, and the two pawls connected by means of the stud and slot, jointly pivoted with the flanged plate to the pawl bearer to engage a rack, and a rack carried by a sliding carriage to operate in the manner set forth, for the purposes stated.

3. In a type writing machine, the arrangement and combination of a sliding carriage adapted to carry paper, a right hand series of type bars, and a left hand series of type bars, a right hand series of levers connected with the right hand series of type bars, a left hand series of levers connected with the left hand series of type bars, a right hand alphabet connected with a right hand series of levers and a left hand alphabet connected with the left hand series of levers to operate one lever of the right hand series by means of the right hand and one lever in the left hand series with the left hand simul-

taneously spacing mechanism, and means for moving the carriage backward and retaining it stationary by pressing upon a key and reversing the motion of the carriage by relaxing the pressure upon the key in the manner set forth for the purposes stated.

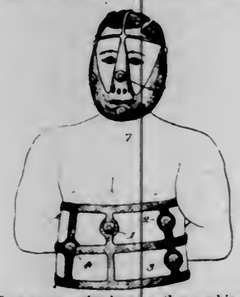
4. In a type writing machine having two common centers and adapted to print two letters or characters simultaneously, a set of letters or characters on the right hand side of the key board connected with type bars arranged on the right hand semicircle and a set of letters or characters on the left hand side of the key board connected with type bars arranged on the left side of the key board connected with type bars arranged on the left hand semi-circle of the machine and a sliding carriage adapted to carry paper, means for moving the carriage forward by pressing upon a key, and means for moving a carriage backward and retaining it stationary by pressing upon a key and reversing the motion of the carriage by relaxing that pressure, to operate in the manner set forth, for the purposes stated.

5. In a duplex type-writer adapted for printing two letters or characters simultaneously, a right hand set of letters located on the right of the center of the key board, a left hand set of letters on the left of the center of the key board, levers adapted to actuate the spacing mechanism as required to advance a sliding carriage two spaces at each operation of a lever, mechanism to move a carriage backward one space and retaining it stationary by pressing upon a key and reversing the motion of the carriage by relaxing the pressure, spacing mechanism and a sliding carriage adapted to carry paper, arranged and combined to operate in the manner set forth, for the purposes stated.

6. In a type writing machine, two sets of type bars and each set having a common and distinct focal center for striking the types carried thereby upon paper carried by a sliding carriage, a sliding carriage adapted to carry paper, an upper case and also a lower case alphabet on key stems connected with the left hand set of type bars, and a lower case alphabet a series of punctuation marks, and a series of numerals on key stems, connected with the right hand set of type bars, spacing mechanism for advancing the carriage and spacing mechanism for moving the carriage backward and retain it stationary by finger pressure upon a key and advancing the carriage by relaxing that pressure, arranged and combined relative to each other as and for the purposes shown and described.

7. A duplex type writing machine comprising a right hand series of levers having key stems upon which are fixed the letters of a complete alphabet, a left hand series of levers having key stems upon which are fixed the letters of a complete alphabet, type bars connected with each series of said levers and carrying letters or characters corresponding with the letters or characters on the key stems, and the type bars of the right hand series of levers and the type bars of the left hand series of levers arranged to strike at two distinct and contiguous centers, a sliding carriage carrying a platen and a rack, mechanism for engaging the rack and regulating and spacing the motions of the sliding carriage, means for moving the carriage backward and retaining it stationary by pressing upon a key and advancing the carriage by relaxing that pressure, mechanism for supporting and adjusting an inking ribbon laterally and longitudinally, and also reversing its motion, and means for retaining and adjusting paper on the platen carried by the sliding carriage, all arranged and combined with a suitable frame work to operate in the manner set forth, for the purposes stated.

543,086. REGISTERING-ARMOR FOR BOXERS. JOSEPH DONOVAN, Chicago, Ill. Filed Dec. 19, 1894. Serial No. 532,297. (No model.)



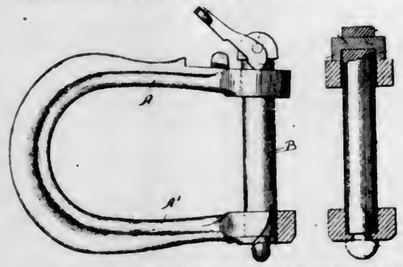
Claim.—1. In an armor for boxers, the combination of a jacket or jackets, having a cushion or cushions located over the vulnerable parts of a wearer in use, and means for indicating the number of times each or all of such cushions have been struck, substantially as described.

2. In an armor for boxers, the combination of a jacket or jackets having a plurality of cushions located over the several vulnerable parts of a wearer when in use, electric contact points at each of said vulnerable parts, an indicating register, a bell, and an electric circuit embracing such contact points, indicating register, bell, and a source of electric energy, to register the number of times each and all of such parts have been struck, substantially as described.

3. In an armor for boxers, the combination of a body jacket or harness, and a head jacket or hood, having a plurality of cushions located over the several vulnerable parts of a wearer when in use, and means for indicating the number of times each and all of such parts have been struck, substantially as described.

4. In an armor for boxers, the combination of a body and head jacket provided with a plurality of cushions located over the several vulnerable parts of a wearer when in use, electric contact pieces at each of such vulnerable parts, an indicating register or registers, a bell, and an electric circuit or circuits embracing such contact pieces, indicating register or registers, bell, and a source of electrical energy, to register and ring up the number of times each or all of such parts have been struck, substantially as described.

543,087. CLEVIS. HENRY L. FERRIS, Harvard, Ill. Filed May 6, 1895. Serial No. 548,259. (No model.)

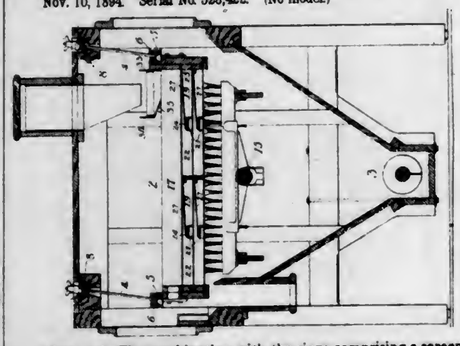


Claim.—1. The combination with a clevis of suitable form having in its ends corresponding openings approximately in the same line, of a pin adapted to pass through one of said openings and having at one end a neck and a head adapted to pass through the other of said openings when in suitable angular relation thereto and a lever pivoted near one end to the opposite end of said pin and adapted to be oscillated in the plane of the length of the pin, the pivoted end of the lever being formed with a cam substantially as set forth whereby the oscillation of the lever from its normal position may spring the members of the clevis toward each other.

2. The combination with the clevis having the members, A, A', formed with openings substantially as described, of the pin, B, having at one end the non-circular head, *b'*, and the lever, C, pivoted to the opposite end of the pin and formed with cams adapted to resist oscillation of the lever; substantially as shown and described.

3. The combination with the clevis having the members, A, A', formed with openings substantially as shown and described, of the pin, B, having the neck, *b*, and head, *b'*, and the lever, C, connected to the pin, B, by a transverse pivot, the clevis and the lever being formed with co-acting parts adapted when in the proper position to engage each other and prevent oscillation of the lever about the axis of the pin: substantially as described.

543,088. BOLTING-MACHINE. WILLIAM D. GRAY, Milwaukee, Wis., assignor to the Edward P. Allis Company, of Wisconsin. Filed Nov. 10, 1894. Serial No. 528,422. (No model.)



Claim.—1. The combination with the sieve comprising a screening surface and a rectangular surrounding frame, of a bar sustained by the frame above the screening surface, and a thin metal partition bent into zig-zag form with alternately converging and diverging faces, said partition being sustained by said bar and depending therefrom into contact with the screening surface.

2. In a bolting machine the combination of a horizontal sieve, means for moving the same in a substantially circular path in a horizontal plane, a partition corrugated on both sides and extending from one end of the sieve toward the opposite end to form two communicating compartments, and connections for imparting to the sieve a rising and a falling movement during its lateral movements, from and to a central position whereby the material at one side of the partition is thrown against the same during each lateral reciprocation.

3. In a bolting machine the combination with a horizontal sieve of a partition having on each side a series of oppositely inclined conveying faces, the said partition extending from one end of the screen toward, but not to, the opposite end to form two longitudinal compartments communicating at one end, means for imparting horizontal movement to the sieve, means for supplying material to the sieve, and a shield overlying one of said compartments and arranged to direct the material into the other compartment.

4. In a bolting machine, the combination with a horizontal sieve, of a partition overlying the screening surface thereof and formed on opposite sides with inclined conveying faces, said partition dividing the sieve into two compartments, means for moving said sieve in a substantially circular path in a horizontal plane, and a shield covering one of said compartments and inclining downward toward the other; whereby the material delivered from above will all be caused to enter the open compartment.

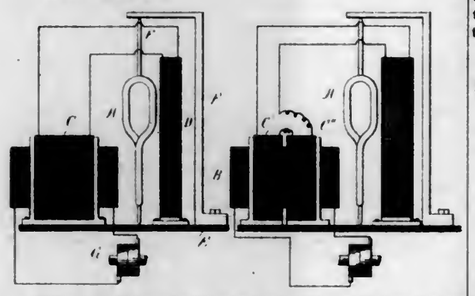
5. In a bolting machine, the combination with a horizontal sieve, of a partition overlying the screening surface thereof and formed on opposite sides with inclined conveying faces, said partition dividing the sieve into two communicating compartments, means for moving the sieve in a substantially circular path in a horizontal plane, a shield covering one of said compartments and inclining downward toward the other, and a sieve overlying that first named and arranged to deliver its siftings to the underlying sieve.

6. In a bolting machine the combination of a horizontal sieve provided with a partition overlying the screening surface and formed on opposite sides with a series of inclined conveying faces, said partition dividing the sieve into two compartments communicating with each other at one end, means for moving the sieve in a circular path in a horizontal plane, means for feeding the material solely to one of the compartments, a second sieve located beneath that first named and fixed with relation thereto, a partition overlying the screening surface of the second sieve and formed on opposite sides with inclined conveying faces and a shield covering one compartment of said lower sieve and inclining toward the other compartment to feed the material thereinto.

7. In a bolting machine the combination with a horizontal sieve, of a feed spout arranged thereover, and a horizontally movable distributing device located between the end of the spout and the sieve the said distributing device being adapted to be adjusted relatively to the screen to deliver the material thereto at different points.

8. In a bolting machine the combination of a sieve provided with partitions dividing the same into compartments, a feed spout terminating above the sieve, a horizontally movable distributing device sustained by the sieve below the spout, and comprising two hoods extending at an upward inclination toward each other, their outer edges terminating over two adjacent partitions of the sieve and their inner edges terminating a slight distance apart over the compartment between said partitions.

543,089. METER FOR ALTERNATING ELECTRIC CURRENTS. LUDWIG GUTMANN, Pittsburg, Pa. Filed May 20, 1890. Serial No. 352,435. (No model.)



Claim.—1. In an electric meter, the combination with two or more energized coils of an armature whose winding or windings lie in two planes, of a retarding device mounted on the armature shaft, and means such as gears for registering or integrating the current passed through the meter.

2. In an electric meter system, the combination with a suitable source, of a supply circuit containing translating devices and a meter consisting of energizing coils connected in the supply circuit, secondary coils in inductive distance to the former, an armature having its winding lying in two or more planes to one another, a retarding device mounted on said armature and a registering device geared to the shaft of said armature.

3. In an electric meter system, the combination with a circuit and translating devices, of an armature having its winding or windings located in two or more planes, of one set of coils included in circuit with said translating devices and acting on one part of the armature, one or more other sets of coils acting on another part of said armature, a retarding device rigidly mounted on said armature, and a registering device connected and operated by the rotating armature shaft.

4. In an electric meter system, the combination with an armature having a part of its conductor lying in a given plane and the remaining part in another plane, of a primary energizing or electro magnet coil connected electrically to a suitable generator, and a secondary coil in inductive proximity to the former, all stationary, the primary and secondary energizing coils having their axes lying parallel to each in the same plane.

5. In an electric meter, the combination of an armature having one or more closed windings lying in two or more planes, two or more sets of windings each of which is adapted to influence a different portion of the winding with respect to the other, a retarding device rigidly attached to said armature and a registering device geared to said armature.

6. In an electric meter the combination of an armature having closed windings lying in two or more planes, a shaft for said armature, a registering device connected to said shaft, a retarding device rigidly attached to said shaft and coils acting on said armature by magnetic fields in non-intersecting planes.

7. In an electric meter, the combination with two or more stationary energizing coils, of an armature whose windings lie in different planes rigidly mounted on a shaft adapted to rotate and fans and a registering train for the purpose described.

8. In an electric meter system, the combination of a circuit connected to a suitable source and containing translating devices, an armature having one or more closed circuits adapted to rotate, a retarding device and a counting mechanism connected to said armature and two sets of energizing windings one being in series with the translating devices and acting on one portion of the armature, and the second set of energizing windings being located so as to permanently influence a different portion of the armature.

9. In an electric meter, the combination with two or more sets of energizing coils, retarding device, armature shaft and counting train, of an armature having two or more closed circuits all of which are mounted rigidly on said armature shaft.

543,090. RUG-FASTENER. GRACE H. DE GRASSI HARRIS, Toronto, Canada. Filed Jan. 28, 1895. Serial No. 536,473. (No model.)



Claim.—In combination, the lower disk having a horizontally extending lip, the upper disk removably hinged thereto by a depending tongue, and the prongs depending from said upper disk for holding the rug in position, substantially as described.

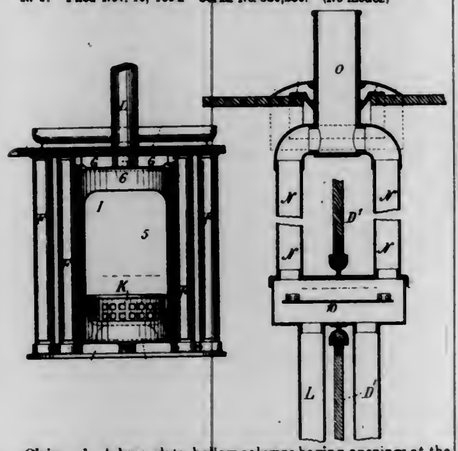
543,091. WATER-CLOSET TANK. KASPAR HERRMANN, Columbus, Ohio. Filed May 11, 1895. Serial No. 548,903. (No model.)



Claim.—1. A watercloset tank having a back and a bottom of wood with rounded front corners, and its front and sides of a veneer of wood lined with fabric secured together, substantially as described.

2. A water-closet tank having a back and a bottom of wood with rounded front corners, and its front and sides of a veneer of wood lined with fabric secured together, and a strip of molding or wood secured to the upper edge of the veneer front and sides, substantially as described.

543,092. COTTAGE-HEATER. TIMOTHY HOLLAND, New York N. Y. Filed Nov. 19, 1894. Serial No. 529,239. (No model.)



Claim.—1. A base plate, hollow columns having openings at the upper and lower portions for air to circulate through the same, and a top frame, in combination with a rotatable hearth having pivots received by the frame and base plate, such rotatable hearth having a closed back and an opening for the escape of the products of combustion, a top plate or mantel with openings through the same to coincide with the opening or openings in the top of the rotatable hearth, and flue pipes extending upwardly from such mantel, substantially as set forth.

2. A base plate, hollow columns having openings at the upper and lower portions for air to circulate through the same, and a top frame in combination with a rotatable hearth having pivots received by the frame and base plate, such rotatable hearth having a closed back and an opening for the escape of the products of combustion, a top plate or mantel with openings through the same to coincide with the opening or openings in the top of the rotatable hearth, and flue pipes extending upwardly from such mantel, such flue pipes passing through the ceiling and floor, and a drum with which such flue pipes are connected, substantially as set forth.

3. A base plate, hollow columns having openings at the upper and lower portions for air to circulate through the same, and a top frame, in combination with a rotatable hearth having pivots received by the frame and base plate, such rotatable hearth having a closed back and an opening for the escape of the products of combustion, a top plate or mantel with openings through the same to coincide with the opening or openings in the top of the rotatable hearth, and flue pipes extending upwardly from such mantel, such flue pipes passing through the ceiling and floor, and a drum with which such flue pipes are connected, and a pipe passing from the drum and a chimney top with which such pipe is connected, substantially as set forth.

543,093. MANDREL FOR FORMING PNEUMATIC TIRES. WILLIAM HOLMES, Chicago, Ill., assignor to Fred W. Morgan and Rufus Wright, same place. Filed Apr. 2, 1895. Serial No. 544,130. (No model.)

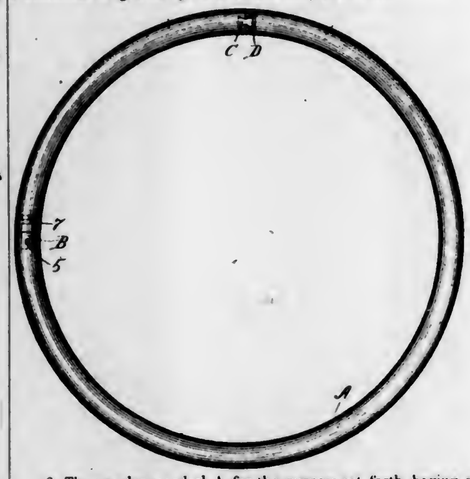
Claim.—1. An annular mandrel having a swiveled section and adapted for the formation of an annular pneumatic tire-sheath, whereby the bore is determined by the transverse sectional area of the mandrel, substantially as described.

2. An annular, cylindric, metal mandrel having a swiveled section, and adapted for the formation of an annular, tubular pneumatic tire-sheath whereof the bore is determined by the transverse sectional area of the mandrel, substantially as described.

3. The annular mandrel A for the purpose described, having a swiveled section connected with the main portion of the mandrel by a swivel joint comprising a swivel pin engaging in recesses in the section and main portion of the mandrel and having a groove which receives a stop, substantially as set forth.

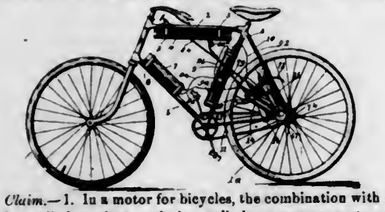
4. The annular mandrel A for the purpose described, having a section which is swiveled at one end, the opposite end of the swiveled section and the adjacent end of the main portion of the mandrel being provided with latching means, substantially as set forth.

5. The annular mandrel A for the purpose set forth, having a swiveled section, and means for connecting the free end of the swiveled section with the remaining portion of the mandrel, consisting of a dovetailed tongue and groove, substantially as set forth.



6. The annular mandrel A for the purpose set forth, having a section which is swiveled at one end, and means for holding and locking together the free end of the section and the adjacent end of the main portion of the mandrel, comprising a dovetailed tongue and groove and a latch, said tongue and latch being concealed when the swiveled section is held and locked in place, substantially as described.

543,094. MOTOR FOR BICYCLES. NELSON S. HOPKINS, Williamsville, N. Y. Filed Dec. 12, 1894. Serial No. 531,558. (No model.)



Claim.—1. In a motor for bicycles, the combination with a compression cylinder, of an explosion cylinder set at an acute angle to the compression cylinder, both cylinders being provided with a piston and the two pistons being connected by connecting rods with a single crank-pin, a pipe communicating with the two cylinders, a valve held in its normal position by a spring for allowing the explosive material to be drawn into the compression cylinder by the withdrawal of the compression cylinder piston a valve kept closed by a yielding spring force, for allowing the compression cylinder piston to force the explosive material into the communicating pipe without permitting it to return, a valve connected with the explosion cylinder having a metallic contact slip at the bottom, an insulated contact slip below it, means connected with an eccentric and a trip mechanism for opening said valve against the force of a closing spring, and admitting the explosive material to the explosion chamber, thereby making and breaking an electric circuit and thus causing an explosion and operating the motor substantially as described.

2. In a bicycle motor, the combination with a motor secured to a bicycle frame, of a pinion rigidly attached to the driving shaft of said motor, a spur gear wheel movably attached to the hub of the driving bicycle wheel means for keeping it on said hub while permitting it to turn freely thereon, and means consisting of removable pins for rigidly securing it to the bicycle wheel or releasing it therefrom, whereby the bicycle may be driven by the pedals independent of the motor, or by the motor instead of the pedals substantially as described.

3. In a bicycle motor, the combination with a pinion rigidly attached to the driving shaft of said motor, of a removable hub-sleeve adapted to be secured on the hub of the driving bicycle wheel, a spur gear wheel mounted on the hub-sleeve so as to turn easily thereon while its teeth are in engagement with the teeth of said pinion without moving the bicycle wheel, and means for rigidly securing the spur wheel to the bicycle wheel or releasing it therefrom, substantially as described.

4. In a motor for bicycles, a motor frame consisting of the compression and explosive cylinders 14 and 15 connected at an angle to each other, the clamping portions 12 and 13, connecting brace 16, and the portion 96, carrying a part of the box in which the main shaft is mounted, all formed in one integral piece, substantially as described.

5. In a motor for bicycles, the combination with a compression cylinder, of an explosion cylinder set at an acute angle to the compression cylinder, both cylinders being provided with a piston and the two pistons being connected by connecting rods with a single crank pin, a pipe communicating with the two cylinders, a valve held in its normal position by a spring for allowing the explosive material to be drawn into the compression cylinder by the withdrawal of the compression cylinder piston, a valve kept closed by a yielding spring force, for allowing the compression cylinder piston to force the explosive material into the communicating pipe without permitting it to return, a valve connected with the explosion cylinder, means connected with an eccentric and a trip mechanism for opening said valve against the force of a closing spring, and admitting the explosive material to the explosion chamber, means for igniting the explosive material and thereby causing an explosion and operating the motor, substantially as described.

6. In a motor for bicycles, a trip mechanism consisting of a vertical valve bar adapted to move in a slideway at the upper end of the cylinder and having a side depression and an overhanging arm connected with the valve stem, a spring for holding said bar upward and the valve to its seat with a yielding force, a vertical pawl bar also mounted in a vertical slideway and having its lower end connected by a connecting rod with an eccentric for operating it, and a trip pawl centrally pivoted at the top of the pawl bar having one end in said side depression and the opposite end resting against a stationary bar for tripping the pawl, whereby, as the bar is drawn downward by the eccentric, the valve bar is also moved downward and opens the valve, and when the pawl bar reaches its releasing point the trip releases the valve bar and the spring reverses the motion of said bar and closes the valve, substantially as described.

7. In a motor for bicycles, the combination with the compression cylinder, its piston, and parts for operating it, of an inlet vaporizing pipe having an open end in which the air enters, an opening in the upper side of said pipe through which the gasoline passes to a suitable absorbing material located below said opening within the pipe, and means substantially as above described for conducting a supply of gasoline to said pipe or shutting it off, substantially as above set forth.

8. In a motor for bicycles, a curved inlet pipe for receiving air and gasoline connected with the compression cylinder and having its inlet end open and slightly inclined upward above the opening in the upper side through which the gasoline is admitted, and beyond said opening, an upwardly inclined portion which connects with the compression cylinder and means for conducting and admitting gasoline to said pipe, in combination with compression cylinder and its piston and operative connections for drawing air and vaporized gasoline through said pipe into the cylinder, substantially as described.

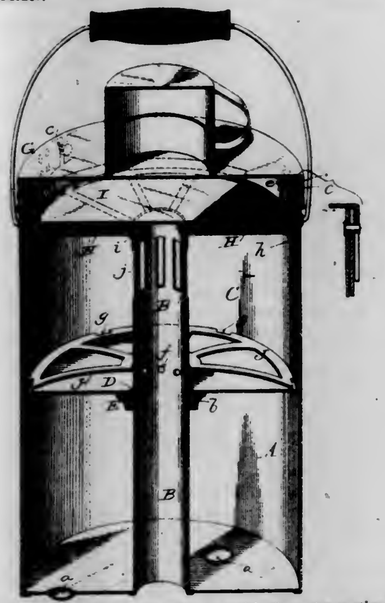
9. In a motor for bicycles, a trip mechanism consisting of a vertical valve bar mounted in a slideway so as to be easily moved and having a connection with the valve so that when it is moved the other moves, and a depression in the side of the valve bar, in combination with a substantially vertical trip bar also mounted in a slideway and a connecting vertical trip bar also mounted in a slideway and a connecting rod connecting it with an eccentric for giving it a substantially vertical reciprocating movement, a trip pawl pivoted near the top of the trip bar having one end in the side depression of the valve bar, and the other end projecting over a stationary support, for opening or operating the valve in one direction, a spring for closing the valve after being released by the trip pawl, and a spring for keeping the pawl in its normal position, substantially as described.

543,095. LUNCH-CAN. WILLIAM E. HOWELL, Los Angeles, Cal., assignor of one-half to Charles D. Stingle, Philipsburg, Mont. Filed Jan. 28, 1895. Serial No. 536,467. (No model.)

Claim.—1. A lunch can comprising two sections; the outer section adapted to hold liquid in its lower portion and having feet or projections formed on its base; the inner section supported within the upper portion of the outer section; and a continuous ventilating tube extending from the bottom of the can and discharging into the inner section.

2. A lunch can comprising two sections; the outer section adapted to hold liquid in its lower portion; the inner section supported within the upper section; an open ventilating tube extending from the bottom of the outer section up into the upper section; and means for forming a tight joint at the junction of the tube and the upper section.

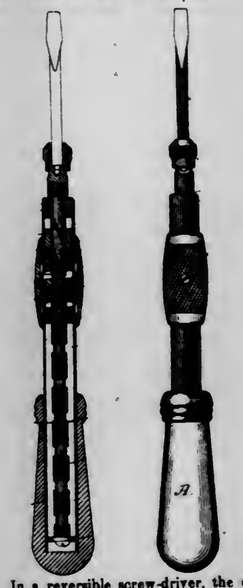
3. A lunch can comprising two sections, the inner section supported within the upper portion of the outer section; an open tube extending through the bottom of the outer section and extending and discharging into the inner section, said tube being reduced at its upper end to form a shoulder; and a tray within the can supported upon said shoulder.



4. In a lunch can, the combination with the outer section provided with feet or projections upon its bottom, an air tube and with openings at its upper end; an inner section provided with openings to register with those in the outer section; and a cover.

5. In a lunch can, the combination with the outer section provided with an air tube, with openings, and with notches *d*; the inner section provided with openings and with lugs *c*; and a cover also provided with openings to register with those in the outer and inner sections.

543,096. SCREWDRIVER. JAMES W. JONES, Belfast, Me. Filed Feb. 20, 1895. Serial No. 539,117. (No model.)



Claim.—1. In a reversible screw-driver, the combination with the spindle having right and left hand intersecting spiral grooves, the tubular socket or sleeve and two rotary longitudinally sliding nuts

adapted to fit the right and left hand grooves respectively of the spindle, of two clutch-collars provided with notches with which said rotary nuts are adapted to engage, lugs or projections on the inside of the tubular socket fitting within the notches of the clutch-collars and adapted to close the same when said collars are moved within the socket and thereby prevent the engagement of the rotary nuts therewith, and means for moving said clutch-collars within the tubular socket to close or open their notches, substantially as set forth.

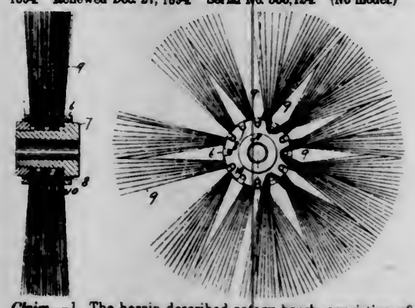
2. In a reversible screw-driver, the combination with a tubular socket or sleeve secured to the tool-handle and having two separate and independent chambers, of a spindle having right and left hand intersecting spiral grooves, two rotary longitudinally sliding nuts adapted to fit the right and left hand grooves respectively of the spindle and placed within the two chambers of the socket, said nuts being each provided with clutch-teeth or projections, two sliding clutch-collars located within the tubular socket and provided with notches adapted to respectively engage the projections or teeth of the rotary nuts when the latter are brought into coctact therewith, lugs or projections on the interior of the tubular socket fitting within the notches of the clutch-collars, and serving to close the said notches of the clutch-collars when the latter are drawn backward within the socket to prevent the engagement of the rotary nuts with said clutch-collars, a sleeve fitting the exterior of the tubular socket and adapted to be partially rotated thereupon, and provided with cam-slots engaging studs projecting from the clutch-collars, whereby when said sleeve is partially rotated in either direction, one of said clutch-collars is moved forward to enable one of the rotary nuts to engage therewith, and the other clutch-collar simultaneously moved backward to prevent the other rotary nut from engaging therewith, all operating substantially as and for the purpose described.

3. In a reversible screw-driver, the combination of the spindle having right and left hand intersecting spiral grooves, the tubular socket or sleeve, two rotary longitudinally sliding nuts adapted to fit the right and left hand grooves respectively of the spindle, the two sliding clutch-collars provided with notches with which said rotary nuts are adapted to engage, lugs or projections on the inside of the tubular socket fitting within the notches of the clutch collars and adapted to close the same when said collars are drawn backward within the socket, the sleeve M, fitting the exterior of the tubular socket and adapted to be partially rotated thereupon, and provided with cam-slots engaging studs projecting from the clutch-collars, and the outer sleeve N, fitting over the sleeve M, and detachably secured thereto, and forming a handle for turning said sleeve M, substantially as described.

4. In a screw-driver of the character described, the combination with the spirally grooved spindle and the tubular socket, of the rotary longitudinally sliding nut placed upon the spindle and adapted to engage a clutch within said tubular socket, said nut being provided with a friction device bearing against the said spindle, substantially as and for the purpose described.

5. In a screw-driver of the character described, the combination with the spirally grooved spindle and the tubular socket, of the rotary longitudinally sliding nut placed upon the spindle and adapted to engage a clutch within said tubular socket, said nut being provided with a friction pin extending through a hole therein and bearing against the said spindle, and a spring secured to said nut within a groove therein and exerting an inward pressure on said pin to force the same against the spindle, substantially as and for the purpose described.

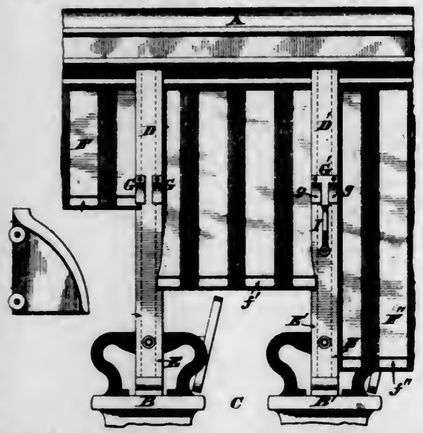
543,097. SCRATCH-BRUSH. CHARLES L. JOY, New Haven, assignor of one-half to Milton S. Tracy, Glastonbury, Conn. Filed Jan. 20, 1894. Renewed Dec. 27, 1894. Serial No. 533,124. (No model.)



Claim.—1. The herein described rotary brush, consisting of the hub A having a flange 6 and a circular series of pins 8, the several rows of filling, the intervening notched washers extending diametrically beyond said circle of pins, and the nut B, substantially as described and for the purpose specified.

2. The herein described brush head consisting of the hub A having a flange 6 and circular series of pins 8, and the nut B screwed upon the end of said hub and having on its inner face the annular groove to receive and hold the ends of said pins, substantially as described and for the purpose specified.

543,098. STREET-CAR CURTAIN. JOHN KILGOUR, Cincinnati, Ohio. Filed Jan. 10, 1895. Serial No. 534,467. (No model.)

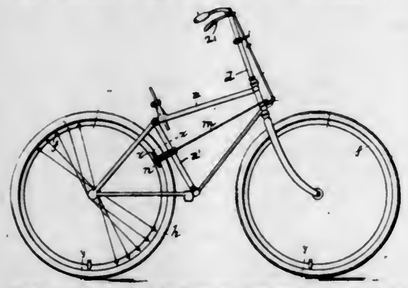


Claim.—1. A curtain-frame consisting of a pair of posts D, D', having longitudinal grooves E, E', in their opposing faces; a lateral passage *e*, in the external wall of each groove; and chutes G, having ascending passages with inlets at bottom, which chutes are secured to the outer sides of said posts, and above said lateral passages *e*, for the purpose described.

2. The combination, in an open car, of a pair of posts D, D', having longitudinal grooves E, E', in their opposing faces; a lateral passage *e*, in the external wall of each groove; chutes G having ascending passages with inlets at bottom, which chutes are secured to the outer sides of said posts, and above said lateral passages *e*; and a flexible curtain or screen F, whose free edges traverse said chutes, passages and grooves, in the manner described, and for the purpose stated.

3. As a new article of manufacture, the curtain-chute G", having an ascending passage with an inlet at bottom, and an outlet at rear, and provided with an integral lateral lug *g'*, at the back of said inlet, all as herein described, and for the purpose stated.

543,099. BICYCLE-WHEEL. GILBERT J. LOOMIS, Westfield, Mass. Filed Apr. 2, 1892. Serial No. 427,477. (No model.)



Claim.—1. In a wheel for bicycles, the combination with the rim having substantially a V-shape in cross-section, of a series of bars passed transversely through said rim near its apex, and means substantially as described for connecting the outer ends of two of the wheel-spokes to each of said bars, upon opposite sides of the apex of said rim, substantially as set forth.

2. In a wheel for bicycles, the combination with a rim having substantially a V-shape in cross-section and having its two sides bent in opposite directions to substantially a horizontal position and then bent inwardly upon themselves to form rounded edges for the rim, of a tire composed of an inner, elastic air-tube resting against said rim between the rounded edges of the latter, a lining composed of horse-hide or other similar, impenetrable material, covering the outer side of said air-tube, and an outer, tread-covering of soft-rubber embracing said air-tube and lining, and having its edges joined to said rim at each side of the apex of the latter, substantially as described.

3. The combination with a wheel-rim and pneumatic tire encircling said rim, said rim being provided with a tubular nipple upon its inner side, of a tube passing through said nipple into the air-tube of said tire, said tube having its inner end provided with a flanged shoulder faced with elastic material, and having at its outer end a removable cap, a valve-plug adapted to close the inner end of said tube by its engagement with the flanged shoulder on the latter, and a spring connecting said plug to said tube, substantially as and for the purpose described.

4. In a wheel for a bicycle, the combination with the substantially V-shaped rim *f*, of the series of bars 4 passing transversely through said rim near its apex, nipples 5 seated in said bars near each end thereof, and spokes *g* having their outer ends seated within said nipples, substantially as set forth.

5. The combination with a wheel-rim and a pneumatic tire applied to said rim, said tire having an inner elastic air-tube, of an inflating tube passing through said rim into said air-tube and having its inner end provided with a check-valve, and a reinforce tube surrounding said inflating tube and positivety fastened thereto, said reinforce extending into the air-tube and having its inner end positively fastened thereto, substantially as and for the purpose described.

6. The combination with a wheel-rim, as *f*, having a nipple, as 10, and a pneumatic tire applied to said rim and having an inner air-tube, as 6, of the tube 9 passing through the nipple in said rim into said air-tube and having a check-valve at its inner end, and the reinforce tube 16 of soft rubber, surrounding said tube 9, said reinforce tube having its inner end flared and secured to the inner surface of the air-tube by cement and having its inner surface cemented to said tube 9, substantially as and for the purpose set forth.

543,100. WIRE-WORKING TOOL. JAMES O. MITCHELL, Basic City, Va., assignor of one-half to Sarah Elizabeth Rankin, same place. Filed Oct. 29, 1894. Serial No. 527,327. (No model.)



Claim.—1. The combination in a wire working tool, of a jaw recessed in the form of a staple to support the same at its bend and at its ends; the said recess being deeper midway than at the ends; the same jaw being notched across the line of the staple recess about midway thereof and to a depth less than the recess in that region; and an opposite jaw having a straight bearing surface over the line of the said notch, substantially as described, whereby a staple laid in the said recess and overlaid by a stringer wire will be bent part way around the said stringer wire by closing the said jaws, the stringer being forced to do the bending and yet being kept straight itself by the notched jaws.

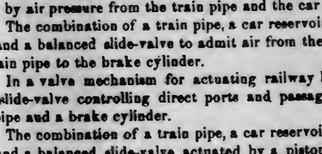
2. The combination of a pair of wire working tool jaws pivoted together, one of them having a plain face and the other recessed in the form of a staple with its legs pointed in the direction of the pivot; the said recess being deeper midway than at the ends; the same jaw being notched across the midway region of said recess; and a third jaw located within the said two jaws, and journaled upon the same pivot, and having curved working faces substantially as described whereby the closing of the first pair of jaws will bend the staple partly around the stringer and then the closing of the third jaw will complete the bending and closing of the staple upon the stringer.

3. The combination of a pair of wire working tool arms pivoted together, each arm having two jaws facing in opposite directions relative to movement around the pivot; one jaw of one arm adapted to approach and coact with one jaw of the other arm when the two arms approach each other, and the other jaw of one arm adapted to approach and coact with the other jaw of the other arm when the two arms recede from each other, substantially as described, whereby each pair of jaws may cooperate unlimited by the movement of the other pair.

543,101. TEMPORARY BINDER. CYRUS E. MOREHOUSE, Milwaukee, Wis., assignor to the Morehouse Manufacturing Company, same place. Filed Dec. 8, 1894. Serial No. 531,199. (No model.)

Claim.—1. A temporary-binder comprising a pair of clamping-strips, rack-stems connected to the clamping-strips, and slide-bands that serve to maintain the rack-stems of one of said strips in engagement with those of the other.

2. A temporary-binder comprising a pair of clamping-strips provided with bearings, rack-stems trunnioned in the bearings, and slide-bands that serve to maintain the rack-stems of one of the strips in engagement with those of the other.

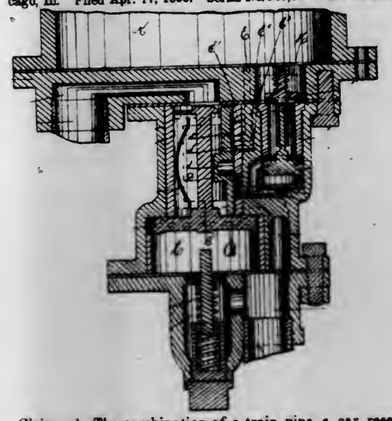


3. A temporary-binder comprising a pair of clamping-strips having end-ears bent to form bearings, rack-stems having trunnions engaging the bearings, and slide-bands that serve to maintain the rack-stems of one of said strips in engagement with those of the other.

4. A temporary-binder comprising a pair of clamping-strips provided with rack-stems, slide-bands that serve to maintain the rack-stems of one of the strips in engagement with those of the other, hollow posts on one of said strips, and stems on the other engageable with the posts.

5. A temporary-binder comprising a pair of clamping-strips constituting parts of stiff right-angle rear cover-sections, rack-stems connected to the clamping-strips, and slide-bands that serve to maintain the rack-stems of one of said strips in engagement with those of the other.

543,102. FLUID-PRESSURE BRAKE. HARVEY S. PARK, Chicago, Ill. Filed Apr. 17, 1895. Serial No. 546,145. (No model.)



Claim.—1. The combination of a train pipe, a car reservoir, a brake cylinder, and a single balanced slide-valve arranged to set the brakes by air pressure from the train pipe and the car reservoir.

2. The combination of a train pipe, a car reservoir, a brake cylinder and a balanced slide-valve to admit air from the car reservoir and train pipe to the brake cylinder.

3. In a valve mechanism for actuating railway brakes, a balanced slide-valve controlling direct ports and passages between a train pipe and a brake cylinder.

4. The combination of a train pipe, a car reservoir, a brake cylinder and a balanced slide-valve actuated by a piston, the preliminary travel of the valve admitting air from the car reservoir to the brake cylinder, and its further travel admitting air from the train pipe direct to the brake cylinder.

5. In a railway brake mechanism, the passage G, balanced slide-valve D, recess *d*, passage G', chamber F, valve F', piston F^2, passage H, passage *g*, passage *g'*, recess d^2, and passage E^2, substantially as described.

6. In a brake mechanism, the combination of a chamber or casing communicating respectively with the car reservoir, brake cylinder and train pipe, a piston adapted to travel within the chamber, a passage leading from the train pipe directly to the brake cylinder, and a balanced slide-valve, actuated by the piston and adapted to govern the ports and passages leading to the brake cylinder from the chamber and train pipe respectively.

7. In a brake mechanism, the combination of a chamber or casing communicating with the auxiliary reservoir and brake cylinder, a passage leading from the train pipe and communicating directly with the brake cylinder, a piston adapted to travel in the chamber, and a slide-valve actuated by the piston and balanced by the train pipe pressure and reservoir pressure respectively, the valve being adapted to govern the ports and passages to the brake cylinder respectively, from the chamber and train pipe.

8. In a brake mechanism, the combination of a chamber or casing communicating with the auxiliary reservoir and brake cylinder, a passage leading from the train pipe and communicating directly with the brake cylinder, a piston adapted to travel within the chamber and provided with a stem, and a slide-valve arranged within the piston chamber, and connection to the piston stem, such valve being balanced by reservoir and train pipe pressure respectively upon its opposing faces, and adapted to govern ports and passages to the brake cylinder respectively from the chamber and train pipe.

9. In a railway brake mechanism, a balanced slide-valve in combination with a train pipe and a brake cylinder, arranged to have air pressure in the port from the train pipe to the slide-valve, and in the port from the slide-valve to the brake cylinder to be always of such pressure that the valve will at all times be in a balanced condition, with means for actuating the valve for venting the air direct from the train pipe to the brake cylinder.

10. In a fluid brake mechanism, a slide-valve arranged to vent fluid under pressure from a train pipe to a brake cylinder through a direct passage from the train pipe, and a valve located in the passage and adapted to maintain an equal pressure in the ports governed by the slide-valve in such direct passage, with means for actuating the slide-valve.

11. In a railway brake mechanism, a slide-valve arranged to vent air from a train pipe to a brake cylinder, through a passage from the train pipe to the brake cylinder, a valve located in the passage and adapted to maintain a balanced pressure on the slide-valve; a passage to the atmosphere governed by the slide-valve and suitably fixed to move the valve in the passage from the train pipe to the brake cylinder, with means for actuating the slide-valve.

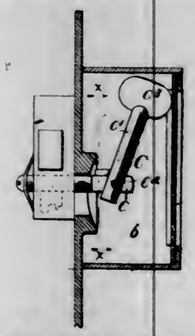
12. In a railway brake mechanism, for actuating railway brakes a slide-valve arranged for venting train pipe air into the brake cylinder, in combination with a balancing valve.

13. In a brake mechanism, the combination of a chamber communicating with the auxiliary reservoir and brake cylinder, a passage leading from the train pipe and communicating with the brake cylinder, a slide-valve adapted to travel within the chamber and govern the ports to the brake cylinder from the auxiliary reservoir and from the train pipe respectively, and means for balancing the slide-valve against the pressure in the chamber.

14. In a brake mechanism, the combination of a chamber communicating with the auxiliary reservoir and brake cylinder, a passage leading from the train pipe and communicating with the brake cylinder, a slide-valve adapted to travel within the chamber and govern the ports to the brake cylinder from the auxiliary reservoir and from the train pipe respectively, and ports opening against the slide-valve and communicating with the train pipe whereby the pressure on both sides of the valve will be the same per square inch area.

15. In a brake mechanism, the combination of a chamber communicating with the auxiliary reservoir and brake cylinder, a passage leading from the train pipe and communicating with the brake cylinder, a slide-valve adapted to travel within the chamber and govern the ports to the brake cylinder from the auxiliary reservoir and from the train pipe respectively, passages opening against the slide-valve and communicating with the train pipe, such passages forming a local circuit fed with train pipe air, and a balancing valve located in such circuit.

543,103. FIRE-ALARM BOX. CHARLES A. ROLFE, Chicago, Ill. Filed May 10, 1895. Serial No. 548,818. (No model.)

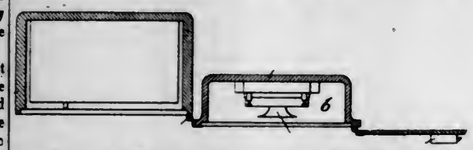


Claim.—1. A fire-alarm box provided with a key-guard consisting of a casing having a frangible portion which is to be broken preparatory to operating the key and an extensible key adapted for opening the box, and having its extensible handle-portion normally confined within the casing and arranged to project therefrom when the frangible portion of the casing is broken, substantially as set forth.

2. A fire-alarm box provided with a key-guard consisting of a casing having a frangible plate which can be broken through so as to expose the interior of the casing, and an extensible key for opening the box having its handle portion normally confined within the box and bearing against the rear side of the frangible plate, said handle portion of the key being arranged to automatically project through an opening in the frangible plate when the latter is broken through, substantially as set forth.

3. A fire-alarm box provided with a key-guard consisting of a casing provided with a frangible plate which can be broken through so as to expose the interior of the casing, and a key having a hinged swinging handle portion which is normally confined within the casing and arranged to project from the same when the frangible plate is broken, substantially as described.

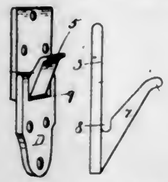
543,104. FIRE-ALARM BOX. CHARLES A. ROLFE, Chicago, Ill. Filed May 10, 1895. Serial No. 548,819. (No model.)



Claim.—1. A fire-alarm box containing suitable signal transmitting means, and provided with a door having a chamber containing a telephone instrument, and a door for closing such chamber, whereby the telephone can be used, only by opening the door of the fire-alarm box and then opening the door for the chamber in which the telephone is contained, substantially as described.

2. A fire-alarm box containing suitable signal transmitting means, and provided with a hinged door having a chamber containing a telephone instrument, and a door for closing such chamber, the telephone circuit being carried from the said chamber into the box, and being arranged to include insulated hinges between the box and the main door for the same, substantially as set forth.

543,105. HINGE-HANGER. ANTON SCHROEDER, St. Paul, Minn. Filed Jan. 22, 1894. Serial No. 497,602. (No model.)



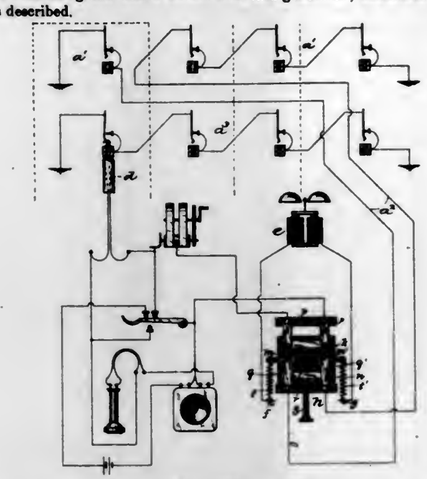
Claim.—The hinged hanger composed of the plate provided with the hook having its inside face inclined at an oblique angle to the face of the plate and formed with a socket at the lower end of the inclined face, in combination with the plate having the pintle to lie in said socket and the shoulder to bear against the under side of the hook, substantially as and for the purposes described.

543,106. VILLAGE TELEPHONE SYSTEM. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed July 2, 1886. Serial No. 206,978. (No model.)

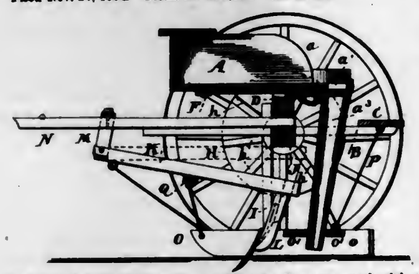
Claim.—1. Telephone lines each extending to each of several stations, each of said stations including an outfit consisting of a telephone set, a bell and loop switch therefor, the said loop switch normally bringing said bell into the circuit of the particular line of the station, in combination with a looping device connected with the bell and its switch at each station, whereby the bell of any station may be temporarily included in the circuit of any line of the station other than the one in which the bell is normally included.

2. The combination, with telephone lines, each including normally the bell of one or more stations and each line connecting with a different loop spring jack switch at each station, of a loop switch and calling apparatus at each station whereby the bell may be disconnected from the line in which it is normally included and brought into the circuit of either of the other lines and any station of the system put into telephonic communication with any other station.

3. The combination with a number of telephone lines extending to a sub-station, of a bell normally in circuit with one of said telephone lines, a generator at said substation adapted to be looped into circuit with any one of said telephone lines, and a switch for removing said bell from the line with which it is normally in circuit, and for connecting said bell in circuit with said generator; substantially as described.



543,107. POTATO-PLANTER. MELVEN J. SMITH, Bayport, Mich. Filed Nov. 27, 1894. Serial No. 530,124. (No model.)



Claim.—The swinging pole-yoke M pivotally connected with the front of beam K, in combination with the axle guides I I; whereby said beam may be adjusted between said guides to regulate the depth of furrow in the manner described.

543,108. MANUFACTURE OF SOLID OR MASSIVE COMPOUNDS OF PYROXYLINE. JOHN H. STEVENS, Newark, N. J., assignor, by mesne assignments, to the Celluloid Company, same place. Filed June 9, 1890. Serial No. 354,785. (No specimens.)

Claim.—1. The process of manufacturing pyroxyline compounds which consists in intimately mixing pyroxyline and di-nitro-toluol and subjecting such mixture to heat and pressure sufficient to render the compound plastic, substantially as described.

2. The process of manufacturing solid or massive pyroxyline compounds, which consists in mixing pyroxyline, di-nitro-toluol and a liquid menstruum or liquid menstrua and subsequently subjecting the resulting compound to heat and pressure sufficient to render the compound plastic, substantially as set forth.

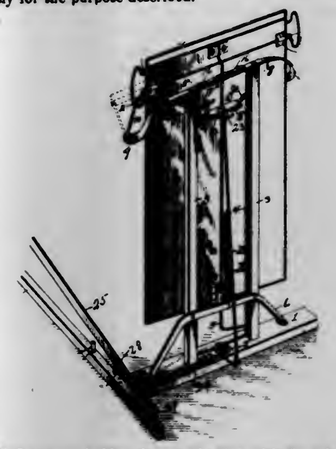
3. The product resulting from the process of manufacturing the solid or massive pyroxyline compounds which consists in mixing pyroxyline and di-nitro-toluol and subsequently subjecting the resulting compound to heat and pressure sufficient to render the compound plastic, substantially as described.

4. The product resulting from the process of manufacturing solid or massive pyroxyline compounds, which consists in mixing pyroxyline, di-nitro-toluol and a liquid menstruum, or liquid menstrua, and subsequently subjecting the resulting compound to heat and pressure sufficient to render the compound plastic, substantially as described.

5. As a new composition of matter, a solid or massive pyroxyline compound, of the variety employed for imitating natural substances, containing pyroxyline and di-nitro-toluol, substantially as set forth.

543,109. COPY-HOLDER. SCOTT STEWART, Rivesville, W. Va., assignor of two-thirds to George M. Price and H. J. Price, same place. Filed Mar. 6, 1895. Serial No. 540,791. (No model.)

Claim.—1. In a copy holder, the combination with a table, a rod secured thereto and working in an aperture of a clutch base, duplicate clamping members arranged on the base, and having upwardly curved outer ends to abut a trip, a fixed clutch to hold the table in its advanced position and means for elevating the members of the fixed and movable clutches out of engagement with the rod simultaneously for the purpose described.

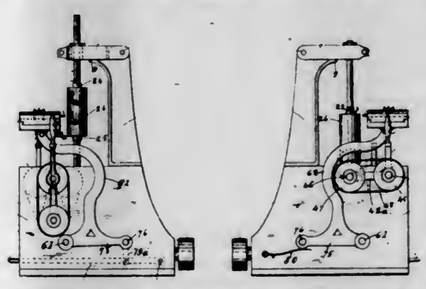


2. In a copy holder, the combination with the table having suitable supports, of a stationary clutch secured on the bridge piece of the support, a movable clutch consisting of a base, and duplicate clamping sections with upturned ends adapted to abut the bridge piece, and means for elevating the stationary clutches out of contact with the supporting rod at the time the movable clutch releases its hold thereon as and for the purpose described.

3. In a copy holder, the combination with the table having a rod to be engaged by clutches, of a stationary clutch consisting of two members, a projection depending from one of said members, a traveling clutch consisting of duplicate members, the said stationary clutch being tripped by the movable clutch engaging said projection the movable clutch being simultaneously released by a trip abutting the ends of the members of the movable clutch, an operating spring pressed lever, a gage for limiting its movement and means whereby the lever may be moved out of contact with the gage, depressed and automatically returned to its normal position, for the purpose described.

4. In a copy holder the combination with a table having suitable clamps and supports, of a traveling clutch formed of duplicate members arranged on a base and having upturned ends to abut a trip, a fixed clutch, a projection secured thereto and means whereby the ascent of the movable clutch will engage the projection of the stationary clutch and the ends of the movable clutch will abut a trip to release both automatically as and for the purpose described.

543,110. ROUTING-MACHINE. GEORGE W. SYMONDS, Buffalo, N. Y. Filed Sept. 28, 1894. Serial No. 524,378. (No model.)



Claim.—1. In a routing machine, the combination of a printing roller shaft mounted in vertical bearings in the supporting frame so as to be capable of a combined vertical and rotary movement, means for securing a printing-roller thereon or removing it therefrom, friction gear for giving the roller shaft a varying up and down movement, a lever handle for operating and controlling the action of the said friction gear, and means for giving said roller shaft a varying rotary movement, in either direction consisting of a variable friction gear and lever handle, substantially as described.

2. In a routing machine, the combination of a printing roller-shaft mounted in vertical bearings on the machine frame, means for securing a printing roller thereto, a vertical screw shaft mounted in boxes below the top of the machine table, a bracket having one side in engagement with the screw thread on the vertical screw shaft and the other side connected with the foot of the printing roller shaft and secured between shoulders on said shaft so that while said printing roller shaft has a free rotary movement it cannot move longitudinally either way from said bracket, a horizontal friction disk secured near the top of and to the vertical screw shaft, a driving friction disk, in frictional contact with the horizontal friction disk and means substantially as above set forth, for giving the driving friction disk a rotary movement, and a vertical or lengthwise movement to the printing roller-shaft as described.

3. In a routing machine, the combination with a swinging frame pivoted to the lower portion of the supporting frame, of a spindle carriage at the top of the swinging frame having a routing or cutting tool spindle mounted in suitable bearings thereon and carrying a routing or cutting tool, means for giving the same a rapid rotary motion, means for adjusting the routing tool carriage laterally toward or from either side of a radial line from the center of the printing roller for the purposes set forth and a foot-step pivoted to the machine frame, connected by a link with the swinging frame for bringing the routing or cutting tool up to its work, substantially as described.

4. In a routing machine, the combination with a swinging frame pivoted to the base of the supporting frame, of a spindle carriage at the top of the swinging frame mounted in suitable bearings thereon and carrying a routing or cutting tool, means for giving the routing tool spindle a rapid rotary motion, means for adjusting the routing tool carriage laterally either side of a radial line from the print roller, means for adjusting the routing tool carriage longitudinally toward or from the print roller and a foot step pivoted to the machine frame and connected by a connecting link with the swinging frame for bringing the routing tool to its work, substantially as described.

5. In a routing machine, the combination with a printing roller shaft mounted in vertical bearings on the machine frame, means for securing a printing roller thereto, a vertical screw shaft mounted in boxes within the machine frame, a bracket having one side in engagement with the screw thread on said vertical screw shaft and the other side secured between shoulders to the foot of the printing roller shaft so that while it has a free rotary movement it cannot be drawn therefrom, a horizontal driven friction disk secured near the top of and to the vertical screw shaft, a driving friction disk mounted in horizontal bearings and in frictional contact with the driven friction disk, means for giving the driving friction disk a rotary movement, and means connected with a hand lever for moving the driving friction disk across the face of the driven friction disk and thereby directing and varying the up or down movements of the printing roller-shaft, substantially as described.

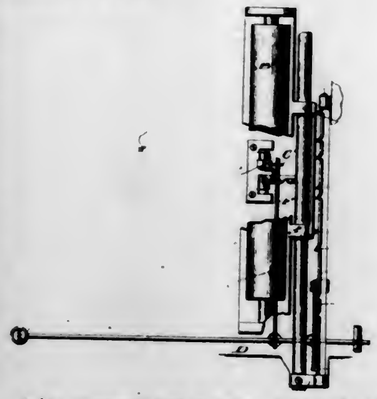
6. In a routing machine, a printing roller shaft mounted in bearings on the machine frame, and means for moving it longitudinally up and down, in combination with a worm gear wheel mounted in a bearing on the under side of the machine table so that it can rotate but not be drawn therefrom and through which the vertical shaft reciprocates during its up and down movements but is prevented from turning therein by means of a feather, a worm wheel mounted on a horizontal shaft in bearings on the inner side of the frame of the machine, and adapted to engage with the worm gear wheel, a driven friction disk rigidly secured to the outer end of said shaft a combined driving friction disk and pulley, in engagement therewith, and mounted on a swinging arm having its lower end connected with the driving shaft, a pulley on said driving shaft directly under the driving friction disk the two being connected by a belt, and a driving pulley secured to the outer end of said driving shaft, for the purposes described.

7. In a routing machine, the combination with the vertical printing roller shaft and its supporting mechanism, of a pivoted overhanging arm adapted to swing over back of the supporting standard out of the way, a removable journal box in said overhanging arm adapted to receive the vertical printing roller shaft and means substantially as above described for tightening said box when in place, for the purposes described.

543,111. TYPE-WRITING MACHINE. CHARLES SPIRO, New York, N. Y. Filed Jan. 6, 1894. Serial No. 495,996. (No model.)

Claim.—1. The combination with a paper carriage of a type writing machine having a rigid projection independent of the rack-bar thereon, of a special feed device embodying a pivotally mounted special rack bar and means connected with the key-lever for simultaneously throwing said special feed into operative connection with the paper carriage and throwing the ordinary feed out of operative position, substantially as specified.

2. The combination with the paper carriage of a type writing machine having a lateral projection rigid with the carriage frame independent of the rack-bar, of a special feed device embodying a pivoted rack bar, a key-lever and intermediate connections for tilting said rack bar and for throwing out the pawl of the ordinary feed, substantially as specified.



3. The combination with the paper carriage of a type writing machine having a projection rigid with the carriage frame independent of the rack-bar, of a special feed device embodying a pivotally mounted special rack bar, a key-lever, interposed mechanism for depressing the rack bar of the special feed and for throwing out the pawl of the ordinary feed, substantially as specified.

4. The combination with a paper carriage of a type writing machine having a lateral projection rigid with the carriage frame independent of the rack-bar, of a special feed device embodying a pivotally mounted special rack bar having provision for varying the point of stoppage of the carriage by contact with said projection and intermediate devices connected with the key-lever for simultaneously throwing out the ordinary feed and throwing into operative position the rack bar of the special feed, substantially as specified.

5. The combination with the paper carriage of a type writing machine having a lateral projection rigid with the carriage frame independent of the rack-bar, of a special feed device embodying a pivotally mounted rack, means connected with a key-lever for throwing out the pawls of the ordinary feed and for yieldingly bringing said rack into the path of said projection by the depression of a key-lever and returning it to its normal position as the key-lever returns to its normal position, substantially as specified.

6. The combination with the paper carriage of a type writing machine, of a special feed device embodying a pivotally mounted special rack, a key-lever a pivoted lever connected with said key-lever for throwing the special rack into operative position and a pivoted lever connected to said key lever for throwing the step by step feed out of operation, substantially as specified.

7. The combination with the paper carriage of a type writing machine, of a special feed device having means for varying the stoppage of the carriage, means for bringing said special device into operative position, simultaneously operated means for throwing the step by step feed out of operation and a key-lever having independent connection with both of said means, substantially as specified.

8. The combination with the key-lever and special rack, of a lifting lever for the special rack, a pivoted part connected with the key-lever for actuating the pawl of the step by step feed and a yielding connection between the lifting lever and special rack-bar, substantially as specified.

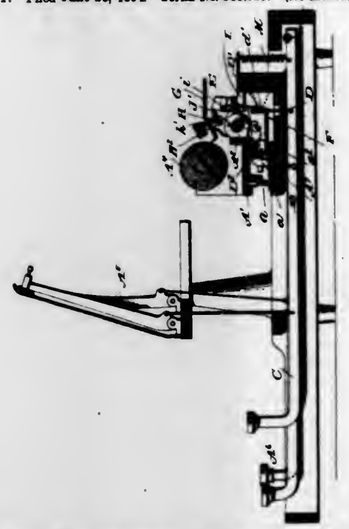
9. The combination with the paper carriage of a type writing machine, of a rearward projection on said carriage, a special feed rack bar pivotally mounted to the rear of said projection and normally in a plane out of the path of said projection and means for actuating said special rack bar to throw the same into the path of the projection to stop the carriage, substantially as specified.

10. The combination with the paper carriage of a type writing machine, of a rearward projection on said carriage, a special feed rack bar pivotally mounted to the rear of said projection and normally in a plane out of the path of said projection and means pivotally connected with the key levers for actuating said special rack bar to throw the same into the path of the projection to stop the carriage, substantially as specified.

11. The combination with a key lever, the paper carriage and step by step feed mechanism, of a type writing machine, of a special feed rack bar pivotally mounted to the rear of the carriage and having forwardly projecting pin and a pivotally mounted lever having one end arranged to engage said pin and between its ends connected with a key lever, substantially as specified.

12. The combination with a key lever, the paper carriage and step by step feed mechanism of a type writing machine, of a special feed rack bar pivotally mounted to the rear of the carriage and having forwardly projecting pin and a pivotally mounted lever having one end arranged to engage said pin and between its ends connected with a key lever and a yielding connection between said lever and the special feed rack bar, substantially as specified.

543,112. TYPE-WRITING MACHINE. CHARLES SPIRO, New York, N. Y. Filed June 28, 1894. Serial No. 515,925. (No model.)



Claim.—1. The combination with the relatively fixed step-by-step feed rack-bar, and the pawls cooperating therewith, of a special rack-bar on the carriage independent of the step by step feed rack bar, a rocking pawl for cooperation with the special rack, a rocking rack bar carrying said pawl and a lever and connections for actuating said rocking pawl, substantially as specified.

2. The combination with a rack-bar, a rack bar E independent thereof and movable with relation thereto a rocking pawl, and a lever, of an interposed bar and connections for rocking said pawl, as set forth.

3. The combination of the carriage rack-bar and its pawls, of a pivoted rack bar independent of and movable with relation to said pivoted rack bar, a rocking pawl and special rack-bar, a lever and an interposed rocking part, as set forth.

4. The combination of the carriage rack-bar and its pawls, of a special rack-bar on the carriage, a rocking pawl for engagement therewith, a lever and an interposed rocking part E and connections for simultaneously throwing the first named pawls out of action and the other into engagement, as set forth.

5. The combination with the special rack bar and the rocking pawl, of a rocking part having a projecting tooth and a cam portion independent of said tooth, said cam portion being designed for actuating said pawl, substantially as described.

6. The combination with the special rack-bar and the rocking pawl, of a lever and a rocking part connected therewith and having a portion independent of its part that serves as a pawl, said portion being designed to engage and actuate said pawl, as set forth.

7. The combination with the special rack-bar of the rocking pawl, a rocking rack-bar with adjustable stop block, a rocking pawl having a projecting tooth a lever and connections between the same and the lever, as set forth.

8. The combination with the special rack-bar and a rocking pawl for engagement therewith, of a rocking rack-bar a rocking pawl with projecting tooth, a lever and a connection between the same and the rocking rack-bar for rocking the latter and actuating said pawl, substantially as specified.

9. The combination with the usual rack-bar and the rack-bar F, of the rocking pawl, the ordinary pawls, the lever and connections between the lever and special rack-bar and means for actuating all of the pawls as set forth.

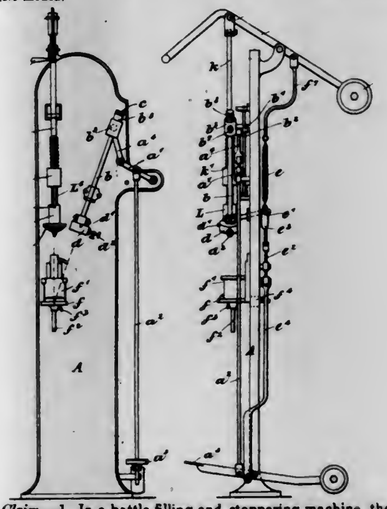
10. The combination with the special rack bar and the rocking pawl having a depending portion, of the rocking rack having a cam portion to engage said depending portion of the pawl and means for rocking the rocking rack, substantially as specified.

11. The combination with the special rack bar, of a rocking pawl for engagement with said rack, a pivotally mounted rocking part having a cam portion, a pivotal arm connected with the pivotally mounted rocking part and having a lateral arm and a lever connected with said pivoted arm, substantially as specified.

12. The combination with the special rack-bar, of a bracket, a pawl pivoted thereon and having a depending portion, a spring bearing on the under side of the pawl, a cam portion for engagement with the depending portion, and means for actuating the cam portion to rock the pawl, as set forth.

13. The combination of a relatively fixed pivoted rack bar, of a paper table, a special rack bar independent of the pivoted rack and interposed devices actuated by the movement of the pivoted rack for engaging the special rack, substantially as specified.

543,113. FILLING AND STOPPERING MACHINE FOR BOTTLING. TOM SUTCLIFFE, London, England, assignor to the Ryder & Company, Limited, same place. Filed Feb. 7, 1895. Serial No. 537,579. (No model.)



Claim.—1. In a bottle filling and stoppering machine the combination of a pivoted bottle-holder with a filling and stoppering device, each arranged in a line radial from the pivot of the bottle-holder, the bottle-holder being adapted to be turned from one to the other and filled and corked without removing it from the holder.

2. In a bottle filling and stoppering machine the combination of a pivoted bottle-holder with a weighted lever for moving the same, with a bottle filling device consisting of a bottle cap and filling tube reciprocating therethrough and an independent lever for thrusting the filling tube into the bottle, substantially as described.

3. In a bottle stoppering machine the combination of a revolving shaft provided with a quick thread thereon which passes through a stationary nut fixed on a suitable frame, with a stopper-holding chuck on the lower end of said shaft, provided with one or more cams arranged upon the lower side of said chuck adapted to grasp and hold a stopper as the shaft is rotated in one direction but release it when it is turned in the opposite direction.

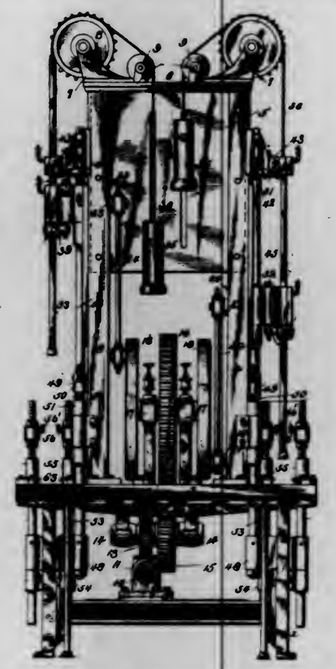
4. In a bottle stoppering machine the combination of a revolving shaft provided with a quick thread thereon which passes through a stationary nut fixed on a suitable frame, with a stopper-holding chuck on the lower end of said shaft, provided with three cams arranged upon the lower side of said chuck, and means for pressing the cams against the stopper, said cams being so arranged as to grasp and hold the stopper when the chuck revolves in one direction but release it when the chuck revolves in the opposite direction.

543,114. RAG-PACKING MACHINE. WASHINGTON I. TUTTLE, Baltimore, Md. Filed Apr. 25, 1895. Serial No. 547,074. (No model.)

Claim.—1. In a packing machine the combination of a reciprocating cross-head and a rod reciprocating therethrough, means for pressing the rod down by the cross-head, means for locking the presser-rod when down, and means for unlocking the presser-rod, operated by the cross-head and means to withdraw the presser-rod substantially as described.

2. In a packing or pressing machine the combination of a reciprocating cross-head with a reciprocating presser-rod passing there-

through, a collar or lug on the presser-rod engaged by the cross-head for pressing the rod downward, means for locking the presser-rod when down, and means for unlocking the presser-rod and counterbalancing devices for raising the presser-rod when unlocked.



3. In a pressing or packing machine the combination of a reciprocating cross-head, two rods reciprocating therethrough, one pressed downward by the cross-head and the other lifted by it, means for locking the presser rod when down means for unlocking and lifting the presser-rod, and means for releasing the lifted rod from the cross-head when it has reached a desired elevation.

4. In a packing or pressing machine the combination of a reciprocating cross-head with two rods passing therethrough, one pressed down by the cross head and the other lifted by it, means for locking the presser-rod down and means for unlocking it, actuated by the cross-head when the lifted rod has reached a desired elevation, and means for releasing the lifting rod when it has reached a desired elevation.

5. In a packing or pressing machine the combination of a reciprocating cross-head having the presser-rod passing therethrough and adapted to be pressed down by the cross-head, and provided with counterbalancing devices for raising it, and a dash pot and piston for checking its upward motion.

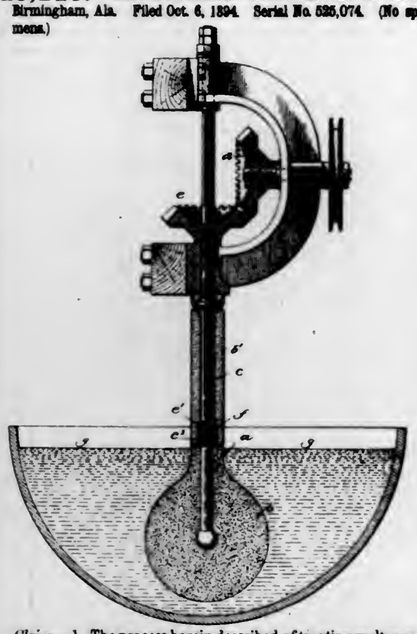
6. In a packing or pressing machine, a reciprocating cross-head, two rods passing therethrough, one adapted to be pressed down by the cross-head, and the other lifted thereby, means for disengaging the latter from the cross-head, and one or more dash pots adapted to check the downward motion of the lifted rod when dropped.

7. In a packing or pressing machine the combination of a reciprocating cross-head, two rods reciprocating therethrough, one adapted to be pressed down by the cross-head, the other to be lifted thereby, and means connected to the lower end of the lifted rod for carrying a packing funnel or form substantially as described.

8. In a packing or pressing machine the combination of a mold containing a bag carrying funnel inserted therein, with a presser-rod reciprocating within the funnel to press the contents of the funnel into the bag, means for withdrawing the funnel while its contents are held firmly down by the presser-rod, means for withdrawing the presser-rod, and means for throwing the mold out of the path of the presser-rod, substantially as described.

9. In a packing or pressing machine the combination of a mold containing a bag carrying funnel inserted therein, with a presser-rod reciprocating through the funnel to press the contents of the funnel into the bag, means for withdrawing the funnel while its contents are held firmly down by the presser-rod, means for withdrawing the presser-rod and a horizontally reciprocating rod means for moving the same to push the mold out of the path of the presser-rod when it and the funnel have been withdrawn, substantially as described.

543,115. TREATING MOLTEN METAL. EDWARD A. UEHLING, Birmingham, Ala. Filed Oct. 6, 1894. Serial No. 525,074. (No specimens.)



Claim.—1. The process herein described of treating molten metal with suitable re-agents, which consists in molding or compacting the re-agents into a body having a form suitable for rotating about an axis, submerging said body into the molten metal and revolving the said body on its axis of rotation whereby it is dissolved for the purpose stated.

2. For use in the treatment of molten metal, a body composed of the re-agents employed in such treatment having the form of a solid of revolution molded or compacted about a core or hanger whose end terminates in a rigid detachable coupling adapted for attachment with a mechanically rotating device.

3. For the treatment of molten metal, a body having a form suitable for rotating about an axis molded or compacted of the re-agents employed in said treatment about a core, a suspending device upon which said body is molded, and suitable means for mechanically revolubly operating said suspending device, substantially as described.

4. The process herein described of treating molten metal with suitable re-agents, which consists in molding or compacting the re-agents into a body having a form suitable for rotating about an axis and suspending, submerging and revolving said body on its axis of rotation within the molten metal to effect its dissolving and assimilation therewith.

5. For treating molten metal, the combination, with a body composed of the re-agents employed in effecting such treatment having the form of a solid of revolution and molded or compacted about a core or hanger, of a suitably suspended shaft rigidly connecting said body, and suitable means for revolving said shaft with its body of re-agents immersed within the molten metal, substantially as described.

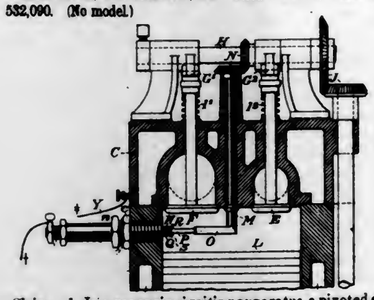
6. For treating molten metal, the combination with a body composed of the re-agents employed in effecting such treatment having the form of a solid of revolution and molded upon a central core terminating in a screw-stem external to said body, of a suitably suspended shaft having a screw socket for engaging the screw-stem of said body-core, and suitable means for revolving said shaft and its suspended body to effect the assimilation of the latter uniformly within the body of the molten metal.

7. For treating molten metal, a body having the form of a solid of revolution compacted or molded of the re-agents employed in effecting such treatment, rigidly mounted on a mechanically revolubly shaft for operation in suspension within the body of the molten metal.

8. For treating molten metal, the combination with a body composed of the re-agents employed in effecting such treatment having a form suitable for rotating about an axis and molded about a core provided with suitable means for rigidly connecting said body, of a properly mounted shaft, with which said rigid connection is made, provided with a sleeve of refractory material inclosing and protecting such connection, and suitable means for revolving said shaft with its body of re-agents immersed within the molten metal, whereby the re-agent is dissolved.

9. The herein described process of treating molten metal with suitable re-agents, which consists in reducing the re-agents into a mastic, molding or compacting the same into a body, submerging said body into the body of the metal and dissolving the said immersed body of re-agents by the revolution of one of said bodies on its axis of rotation.

543,116. GAS-ENGINE IGNITING APPARATUS. GEORGE W. WALTENBAUGH, San Francisco, Cal. Filed Dec. 17, 1894. Serial No. 532,090. (No model.)



Claim.—1. In a gas engine igniting apparatus, a pivoted electrode, inflexible or rigid in section, mounted on an adjustable hollow stem passing out through the walls of the cylinder, or the combustion chamber thereof; a movable rod passing through the supporting stem, provided with a flat face on its inner end bearing on a similar face on the electrode, so the latter will be elastically held in alignment with the stem, substantially as described.

2. In a gas engine igniting apparatus, a pivoted electrode of inflexible section, pivoted on a stem passing out through the side of the engine cylinder, or the combustion chamber thereof; a central rod therein, bearing on an electrode in the cylinder, and a spring at the outer end of the rod, the latter placed in a closed shell and removed from the engine cylinder, so as to not be affected by heat of the burning gases, in the manner substantially as described.

3. In gas engine igniting apparatus, a pivoted electrode within the cylinder, supported by a sliding stem, the latter supported and guided by a tapering insulated shell, and a nut to draw the shell outward in its conical seat, and thus clamp and confine insulating material at the sides and outer end of the conical shell, in the manner substantially as herein specified.

4. In gas engine igniting apparatus, a pivoted electrode; a supporting hollow stem moving in an insulated shell at one end, and in a hollow chamber or plug at the other end, the latter adjustable with the hollow stem, and containing a spring connecting to and operating or adjusting an electrode in the engine cylinder, in the manner substantially as described.

543,117. TYPE-WRITING MACHINE. CHESTER G. WARRINER, Arlington, N. J., assignor to the Wyckoff, Seamans & Benedict, New York, N. Y. Filed Nov. 13, 1894. Serial No. 528,613. (No model.)

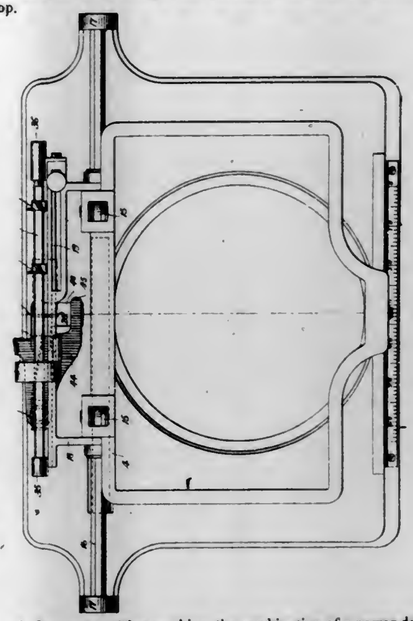
Claim.—1. In a type writing machine, the combination of a power-driven paper carriage having one or more column stops, a feeding-mechanism, the parts of which are adapted to be entirely disengaged, one part being on the carriage and the other mounted in the frame work, and a movable abutment on the frame work adapted to be brought into the line of movement of the column stop by that part of the escapement mechanism mounted in the frame work.

2. In a type writing machine, the combination of a power-driven paper carriage having one or more column stops and a feed rack, a vibratory dog to co-operate with said rack, and a movable abutment adapted to be brought into the line of movement of the column stop by said dog when the feed rack is released.

3. In a type writing machine, the combination of a power-driven paper carriage having one or more column stops and a feed rack, a vibratory dog to co-operate with said rack, and a vibratory abutment actuated in one direction by said dog and in the opposite direction by a spring.

4. In a type writing machine, the combination of a power-driven paper carriage having one or more column stops and a feed rack, a vibratory spring-pressed plate connected to be actuated by said dog and carrying an abutment adapted to engage the column stops on the carriage.

5. In a type writing machine, the combination of a power-driven paper carriage having a feed rack and one or more column stops, a vibratory dog to co-operate with said rack, a vibratory spring-pressed plate having an arm in the path of vibration of said dog, and an abutment adapted to be brought into the line of movement of the column stop.



6. In a type writing machine, the combination of a power-driven paper carriage having a feed rack and one or more column stops, a vibratory dog to co-operate with said rack, a vertically pivoted plate having the arm 45, the finger 46 and the abutment 47 and actuated by said dog, and a returning spring.

7. In a type writing machine, the combination of a power-driven paper carriage having a feed rack and a column stop consisting of a perforated block having a flange, a column stop rod on said carriage, means for securing said column stop to said rod, a vibratory dog to co-operate with said rack, and a movable abutment actuated by said dog.

8. In a type writing machine, the combination of a power driven paper carriage having a feed rack and a column stop rod, a column stop mounted adjustably upon said rod and consisting of a perforated block, a flange and a set screw, a vibratory dog to co-operate with said rack, and a vibratory plate connected to be actuated by said dog and provided with an abutment.

9. In a type writing machine, the combination of a power-driven paper carriage having a feed rack and an endwise movable cushioned column stop rod, a column stop mounted upon said rod, and a movable abutment connected to be operated by the escapement dog.

10. In a type writing machine, the combination of a power-driven paper-carriage having a feed rack, tubular brackets, a column stop rod mounted to move endwise in said brackets and provided at one end with cushioning means, a column stop mounted on said rod, and a movable abutment connected to be operated by the escapement dog.

11. In a type writing machine, and in a column stop mechanism, the combination of a rod mounted to move endwise in tubular brackets, a coiled spring, and a supplemental cushion arranged in one of said brackets to oppose the right hand end thrust of the said column stop rod.

12. In a type writing machine, the combination of a power-driven paper carriage having one or more column stops and a feed rack, a vibratory escapement dog, a spacer bar, and a movable abutment connected to be actuated by said escapement dog.

13. In a type writing machine, the combination of a power-driven paper carriage having one or more column stops and a feed rack, a vibratory dog, a spacer bar connected thereto, and a vibratory spring-actuated abutment connected to be actuated by said escapement dog.

14. In a type writing machine, the combination of a power-driven paper carriage having one or more column stops and a feed rack, an escapement dog, a movable abutment connected to be actuated thereby, and a key for rocking said dog out of engagement with the rack and simultaneously moving the abutment into the line of movement of the column stop.

15. In a type writing machine, and in a column stop mechanism connected to the spacing bar of the machine, in substantially the manner shown and described, a stop rod mounted in the frame work and

adapted to be turned to a position to limit the depression of said spacing bar and thereby throw out of action the column stop mechanism.

16. In a type writing machine, and in a column stop mechanism connected to the spacer bar of the machine, in substantially the manner shown and described, a cranked stop rod pivoted in the frame work and provided with a hand piece, as and for the purposes set forth.

17. In a typewriting machine, the combination with a separable escapement mechanism, and a power driven paper carriage having a column stop or stops, of a movable abutment to engage said column stop or stops, a spacing key for actuating the escapement mechanism and spacing normally between words, and a means for limiting the depression of said key for word-spacing, and movable to permit a further depression thereof for column stop action.

18. In a typewriting machine, the combination with a separable letter-space escapement, and a column stop mechanism, of a single spacing key, and a movable stop thereunder; the combination operating in substantially the manner described for the purposes set forth.

19. In a typewriting machine, the combination with a power driven carriage having a column stop, a feed rack, a feed dog, a column stop abutment moving with and controlled by said dog, and a spacing key having a variable depression to either cause the abutment to co-operate with said stop or effectuate merely the letter-spacing between words.

543,118. ROTARY PLOW. ELIAS C. ATKINS, Indianapolis, Ind., and NATE H. ROBERTS, Pasadena, Cal. Filed Dec. 6, 1894. Serial No. 531,013. (No model.)



Claim.—1. The combination, in a rotary plow, of the axle A, the bolster A^5 thereon provided with an annular recess to receive the beam, the bent frame beam B fitted into said recess, and bolts a^5 by which the axle, bolster and beam are united together, all substantially as shown and described.

2. The combination, in a rotary plow, with the frame, of a caster wheel E, a housing E' therefor having a stem E^2, a bearing E^3 through which said stem passes, said stem being provided with adjustable collars e^3 e^3 alongside of said bearing, and a bearing B^2 on the frame B to which said bearing E^3 is adjustably secured by bolts b^3, substantially as shown and described.

3. The combination, in a rotary plow, with the frame and the plowing disks, of a staggered guide wheel G, a bent shaft G^2, which in itself embodies a vertical pivot, a horizontal arm and an inclined spindle for the wheel, and provided at the point where it is bent with an angle block G^3 constituting a shoulder for the guide wheel, and the base for a weight-supporting pin, said weight-supporting pin and the weights thereon, substantially as set forth.

4. The combination, in a rotary plow, with the frame and plowing disks, of a staggered guide wheel mounted on a swinging arm which swinging arm has a vertical portion forming a pivot, a stop arm secured to said vertical portion, a pivoted stop H secured to the frame in front of said stop-arm, and a connecting rod H' and a lever H^3 whereby said pivoted stop is operated, substantially as shown and described.

5. The combination, in a rotary plow, with the plowing disks, of weed hooks I secured to the frame and curved inwardly to approximately the contour of the inner surfaces of the plowing disks until they reach a point nearly central the plowing disks, and bent thence outwardly across the line of travel of the plow, substantially as shown and described.

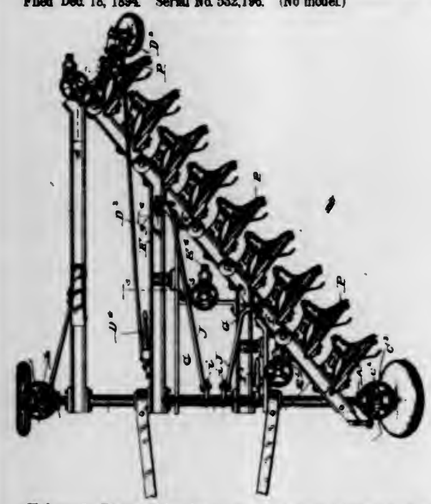
6. The combination, in a rotary plow, with the plowing disks, of weed hooks I secured to the frame in front of the plowing disks and extending transversely across in front of the plowing disks and thence back along the inner surface thereof a certain distance and outwardly across the line of travel of the plow substantially as set forth.

7. The combination, in a rotary plow, with the plowing disks, of scrapers J mounted on arms J', which said arms are secured to the frame by means of knuckle joints, whereby they may be adjusted in any direction desired, substantially as set forth.

8. The combination, in a rotary plow, with the plowing disks, of scrapers J having stems j' which are pivotally mounted in arms J', and said arms J' which are adjustably secured to the plow frame, substantially as set forth.

9. The combination, in a rotary plow, with the plowing disks, of the scrapers J, arms J' therefor, projections b^3 on the frame to which said arms are secured, bolts j' by which said arms are secured to said projections, ears on said arms extending above adjacent portions of the frame, and adjusting screws j^3 passing through said ears and adapted to bear on the surface of such adjacent portions, substantially as set forth.

543,119. ROTARY PLOW. ELIAS C. ATKINS, Indianapolis, Ind. Filed Dec. 18, 1894. Serial No. 532,196. (No model.)



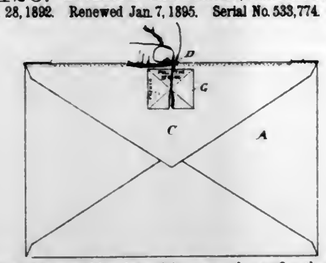
Claim.—1. The combination, in a rotary plow, of a common axle, several frame sections secured to said axle, rotary plows mounted upon each of said sections, contact pieces secured to the adjacent portions of the several sections whereby the side draft will be communicated from each to a common support, and a staggered guide-wheel forming such common support.

2. The combination, in a rotary plow, of an axle, a frame consisting of several sections secured to said axle, plows mounted upon each of the sections, a support for the side draft secured to the rear end of that section at the land side of the plow, and contact-pieces secured to the adjacent faces of said frame-sections whereby the side draft of the whole plow will be transmitted to said common support and the sections themselves permitted vertical variation.

3. The combination, in a rotary plow, of an axle, several frame-sections secured thereto, and movable attaching devices secured to the adjacent portions of the several sections, whereby said sections can be locked together and independent vertical movement prevented, and unlocked and independent vertical movement permitted, substantially as set forth.

4. The combination, in a rotary plow, of the axle, the frame-work, the plowing disks mounted on said frame-work, a wheel or disk pivoted at the rear of said frame-work, an arm extending up from the swinging bearing-piece carrying said staggered guide-wheel, a spring connecting said arm to a point on the rigid frame-work whereby its weight is substantially counterbalanced, a rod running from said arm to the forward portion of the plow, and a lever at the forward end of said rod whereby through said rod said guide-wheel may be raised and lowered, this operation being aided by said spring, substantially as set forth.

543,120. ENVELOPE. JOSEPH BACHER, Santa Monica, Cal. Filed Sept. 28, 1892. Renewed Jan. 7, 1895. Serial No. 533,774. (No model.)



Claim.—The combination with an envelope of a thread or wire B, which is passed through the envelope at or about the center of the upper portion of the same and extended along inside of the envelope to a point near one end of the latter and upward through the flap and around the outer edge of the same and again passed beneath the flap to a point near the opposite end of the envelope where it is extended outwardly and again carried over the edge of the flap and returned to the center, and a label adapted to be pasted over the central meeting ends of the said thread or wire, substantially as described.

543,121. PORTABLE HOOK. HENRY H. BATES, Washington, D. C. Filed May 13, 1895. Serial No. 549,139. (No model.)



Claim.—1. A portable garment hook, having at one end a folding gimlet pointed screw by which it may be securely attached to a wainscot or wall when opened, or safely carried in the pocket when closed, substantially as specified.

2. A portable hook having a hollow or recessed stem, as A, with a gimlet pointed screw pivoted at one end thereof and folding into the recess of the stem, whereby the device is made convenient for pocket carriage, substantially as specified.

3. A portable garment hook consisting of a recessed body or stem, a folding stop jointed hook, and a folding screw as a means of attachment to a wall, wainscot, door or partition, substantially as specified.

4. The pocket utensil herein described, comprising the recessed body or stem A, hook B, and folding spring controlled screw C, substantially as specified.

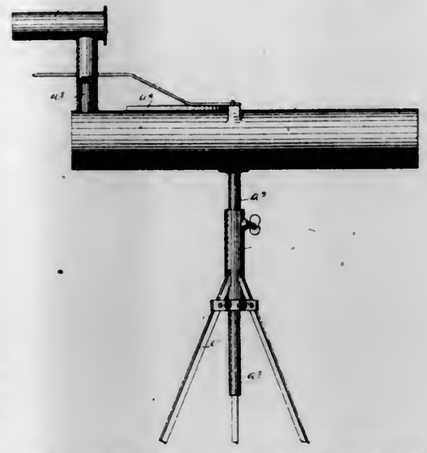
5. The portable utensil herein described, consisting of the recessed body or stem A, folding stop jointed hook B, pivoted folding screw C, square jointed and stop jointed as at *c*, and spring *a*, substantially as specified.

6. The new article of manufacture herein described, comprising the stem or body A, pivoted screw C, and folding hook B, pivoted and stop jointed as at *d*, and formed with curved outer extremity covering and protecting the square jointed upper end of the stem when folded, substantially as specified.

543,122. THEODOLITE. THORWALD H. BERGH and ANDREW M. JOHNSON, Minneapolis, Minn. Filed Jan. 25, 1895. Serial No. 536,201. (No model.)

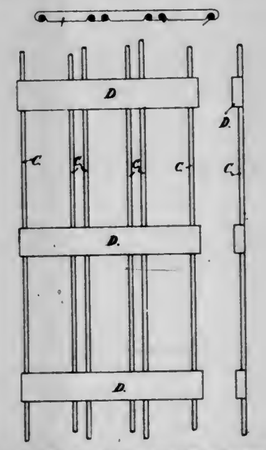
Claim.—1. In a theodolite, the combination with a suitable support, of the sighting-tube, pivoted thereto, having an open outer end, and the centrally located sight-hole at its inner end, cooperating with said open outer end to give a predetermined cone of vision, substantially as, and for the purposes set forth.

2. In a theodolite, a pair of sighting-tubes pivoted one upon the other, each of said tubes having open outer ends, centrally located sight-holes at their inner ends, which sight-holes cooperate with the open ends of their respective tubes, to give predetermined cones of vision, and an indicating device for measuring the angle of rotation of said tubes substantially as, and for the purpose set forth.



3. In a theodolite, the combination with a pair of sighting-tubes pivoted one upon the other, each of said tubes having open outer ends, and centrally located sight-holes at their inner ends, which sight-holes cooperate with the open ends of their respective tubes, to give predetermined cones of vision, of an indicator-scale and pointer, carried one with each of said tubes, said scale being marked with notations which denote distances represented by different angular adjustments, substantially as described.

543,123. BELTING FOR TRANSMISSION OF POWER. ROBERT I. BROWN, New York, N. Y. Filed Aug. 26, 1891. Serial No. 403,818. (No model.)

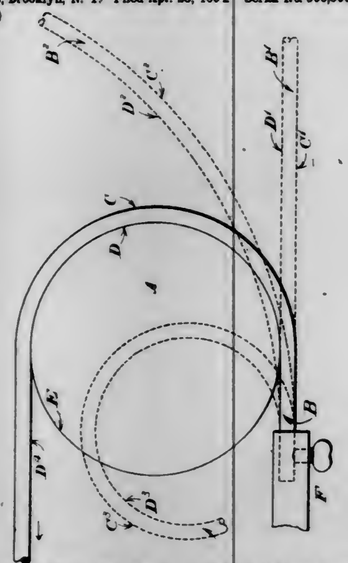


Claim.—1. A belt for the transmission of power composed of two or more wires arranged parallel to each other, and securely united together by means of clips, or other suitable fastening devices, which are rigidly attached to said wires at intervals only of their length and leave the inner face of the belt without projections.

2. A belt for the transmission of power composed of two or more separate, drawn wires arranged parallel to and prevented from having frictional contact with each other, and rigidly united together without materially reducing their sectional area and without projections, in the line of the wire, on the inner face of the belt.

3. A belt for the transmission of power, composed of separate, drawn wires arranged parallel to each other, and securely united together, without materially reducing their sectional area, by means of clips or other suitable fastening devices which are rigidly attached to said wires at intervals of their length, said wires being prevented from having frictional contact with each other and having an uninterrupted side adapted to ride directly on the same pitch line over wheels or pulleys.

543,124. BELTING FOR TRANSMISSION OF POWER. ROBERT L. BROWN, Brooklyn, N. Y. Filed Apr. 23, 1894. Serial No. 508,599. (No model.)



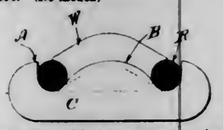
Claim.—1. A metal band for the transmission of power composed of two or more parallel tension members united at intervals and adapted to ride directly on wheels, which band has a permanent curvature of its own more nearly equalizing the strains in the part curved to the wheel with the strains in the part not curved to the wheel.

2. A metal band for the transmission of power composed of two or more parallel tension members united at intervals and adapted to ride directly on wheels, which band has a permanent curvature of its own facilitating the removal of the neutral axis when bent to a wheel and strained.

3. A band for the transmission of power, composed of metal having a spring temper, and which is free from internal longitudinal mobility and ductility, and having a permanent curvature of its own assisting in the removal of the neutral axis when bent to a wheel and strained.

4. A band for the transmission of power, composed of two or more parallel tension members united at intervals, which band has a permanent curvature of its own on a radius not greater than that of a wheel on which it is to run.

543,125. MEANS FOR FASTENING PARALLEL WIRES TOGETHER. ROBERT L. BROWN, Brooklyn, N. Y. Filed July 28, 1894. Serial No. 518,396. (No model.)



Claim.—1. A clip for uniting one or more pairs of wires or ropes, comprising the combination of a main or body part with lugs to confine each pair of wires or ropes and a toggle strut separating each of said pairs of wires or ropes and forcing them rigidly against the confining lugs.

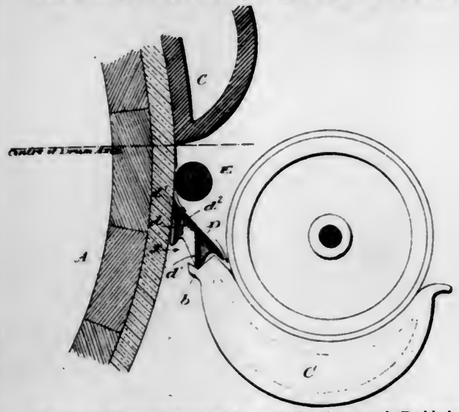
2. A clip for uniting one or more pairs of parallel wires or ropes, consisting of a body part from which lugs project to confine said wires or ropes, and a self locking toggle strut separating each pair of wires or ropes and forcing them rigidly against the confining lugs.

3. A clip to unite two or more parallel wires, ropes or the like together, which consists of a main or body portion, having its sides or edges recessed to partially embrace the wires or ropes, and toggle wedges inserted between the wires or ropes, adapted to engage with each other and with the wires or ropes so as to rigidly lock them together and to the clip, substantially as set forth.

4. A clip to unite two or more parallel wires, ropes or the like together, which consists of a main or body portion having its sides or edges recessed to partially embrace the wires, and toggle wedges interposed between the wires or ropes, adapted to engage with each other and with the wires or ropes, one end of each of said wedges being recessed or concaved to partially embrace the wires or ropes, and the other end of one wedge being concaved and the other end of the other wedge being convexed and adapted to fit into the concaved end of the first wedge, so as to securely lock them together and to the clip, and to the wires or ropes, substantially as set forth.

5. A clip comprising the combination of the body, C, having lugs, A, to partially embrace wires, ropes or the like, toggle-wedges, W, W, which are adapted to lock themselves when they pass the dead center, and the side pieces, B, to prevent longitudinal motion of the wedges, substantially as and for the purpose set forth.

543,126. DOFFER MECHANISM. EDWARD W. BUELL and SIVERT MOE, Chicago, Ill., assignors to the Troy Laundry Machinery Company, Limited, Troy, N. Y. Filed Nov. 3, 1894. Serial No. 527,799. (No model.)



Claim.—1. The combination of a revoluble cylinder, a doffer blade and means interposed between the blade and the horizontal axial line of the cylinder to turn the goods from the cylinder between the doffer and the last ironing device, substantially as described.

2. The combination of a revoluble cylinder, a doffer blade, and an idler roll mounted to act against the cylinder above the doffer blade, as set forth.

3. The combination with a revoluble cylinder, of a doffer blade, and an idler roll arranged to act against the cylinder between the said blade and the horizontal axial line of the cylinder, as set forth.

543,127. CARRYING-CASE. THOMAS J. BYERS, Eganville, Canada. Filed Mar. 14, 1895. Serial No. 541,671. (No model.)

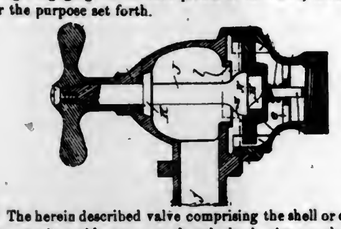


Claim.—1. A carrying case, provided with a removable bottom from the edge of which arms protrude radially, and engage in gaps formed in the vertical wall of the case, and in which said arms are held by a stiffening wire fixed in the edge of the circular wall of the case, and a suitable locking device, substantially as herein set forth.

2. A carrying case having a closed top and handle, and a cylindrical wall, in the bottom edge of which are made gaps C and in which a stiffening wire B, having the loops D, is fixed crossing said gaps; and a removable bottom having the feet or bows *g*, and the radial arms F; and a spring H attached to the wall of the case, and having formed in it a notch I taking over the arm F, substantially as shown and described.

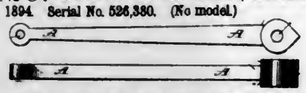
543,128. GLOBE-VALVE. WILLIAM CURLETT, San Francisco, Cal. Filed Nov. 3, 1894. Serial No. 527,797. (No model.)

Claim.—1. In a valve, the combination of a shell or casing having a passage for a stem or key and also having a valve-seat, a valve having the central depression and the two inclined planes H, I, arranged in said central depression, a spring adapted to normally press and hold the valve against its seat, and the key or stem having a blunt chisel edge engaging the inclined planes of the valve, substantially as and for the purpose set forth.



2. The herein described valve comprising the shell or casing having the opposite guides or ways *d*, and also having a valve seat, the valve having lugs arranged and adapted to move in the guides or ways *d*, and also having a central depression and the inclined planes or cams H, I, arranged in said depression, a spring adapted to press and hold the valve against its seat, and the key or stem having a blunt chisel edge engaging the inclined planes H, I, of the valve and also having a shoulder to prevent leakage, substantially as specified.

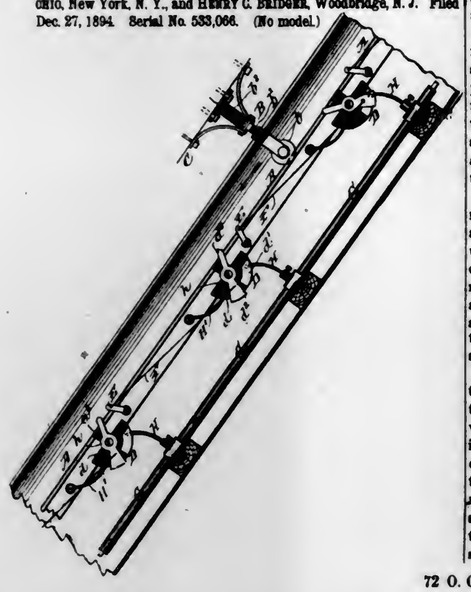
543,129. ANCHOR. HERBERT O. DUNN, Baltimore, Md. Filed Oct. 19, 1894. Serial No. 526,380. (No model.)



Claim.—1. In an anchor having two spread flukes integral with an elongated crown piece containing a central longitudinal opening contracted on the fluke side; an enlarged headed shank with a wedge shaped point having two plane bearing faces forming an acute angle at end of shank head, one face of which bears against the inside of central longitudinal opening of crown while neck of shank takes against the other side to relieve bolt strains, said shank head actuating in longitudinal crown opening and containing a transverse cylindrical opening in combination with an axial bolt passing transversely through both shank head and crown piece allowing flukes to actuate each side of shank substantially as specified.

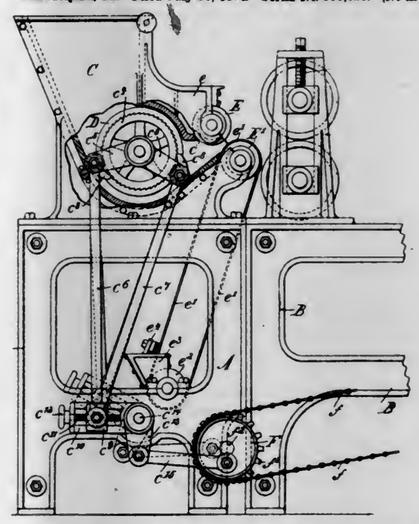
2. In an anchor having a locking shank head with a wedge shaped point having two plane bearing surfaces, actuating in a central longitudinal opening or crown piece by means of an axial bolt passing transversely through crown piece and cylindrical opening of shank head; an elongated crown, integral with two spread flukes, having transverse projections in plane of flukes performing the functions of a stock, the flukes actuating on each side of shank in combination with axial bolt substantially as specified.

543,130. UNDERGROUND-TROLLEY SYSTEM. NOEL B. GINOCHIO, New York, N. Y., and HENRY C. BRIDGER, Woodbridge, N. J. Filed Dec. 27, 1894. Serial No. 533,066. (No model.)



Claim.—The combination with a main line wire and a contact line, of the switches secured to the contact line and comprising the plates of insulating material, the segmental contact plates thereon, the levers having the upwardly extending arms, the connections between the contact plates and the main line wire, and the resilient electrical connections between the contact line and levers, the said resilient connections serving also as retarding devices for the levers, substantially as specified.

543,131. CAKE OR BISCUIT MACHINE. PEMBROKE D. HARTON, Philadelphia, Pa. Filed July 30, 1894. Serial No. 518,923. (No model.)



Claim.—1. In a cake or biscuit machine, a hopper provided with a force feed and rolls journaled to said hopper about the outlet throat thereof, the construction being such that a dough-like mass is adapted to be forced by said feed against said rolls to rotate the same and said rolls to thereby cause said mass to be condensed and delivered in sheet form, substantially as and for the purposes described.

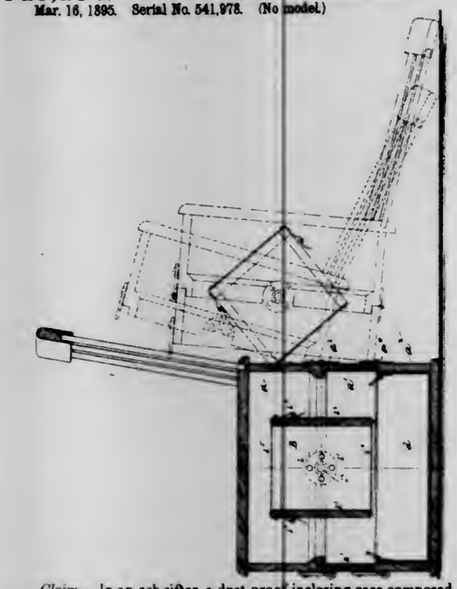
2. In a cake or biscuit machine, a hopper provided with a force feed, rolls journaled to the hopper about the outlet throat thereof, said feed adapted to force a dough-like mass into contact with the peripheries of said rolls and the latter to condense the said mass and deliver the same in sheet form, a pawl-and-ratchet mechanism connected with said feed and controlled by eccentrics, substantially as and for the purposes described.

3. In a cake or biscuit machine, a hopper having a rotary force feed therein, rolls journaled about the outlet throat of said hopper, said feed adapted to force a dough-like mass into contact with the peripheral surface of each roll to rotate the same and so that the said mass may be condensed thereby and delivered therefrom in a continuous sheet form, a pawl-and-ratchet mechanism connected with said feed and provided with means in swivel connection with cranks and eccentrics for controlling the movement of the same, substantially as and for the purposes described.

4. In a cake or biscuit machine, a hopper having a force feed, rolls journaled about the outlet throat of said hopper, said feed adapted to force a dough-like mass into contact with said rolls to actuate the same and thereby to condense the mass into a continuous sheet, one of said rolls provided with an endless apron engaging a complemental roll journaled to a box, a brush adapted to contact with said apron, and a pawl-and-ratchet adjustable mechanism to permit of the actuation of said feed and means connected therewith and adapted to permit of an increase or decrease of the speed of said feed, substantially as and for the purposes described.

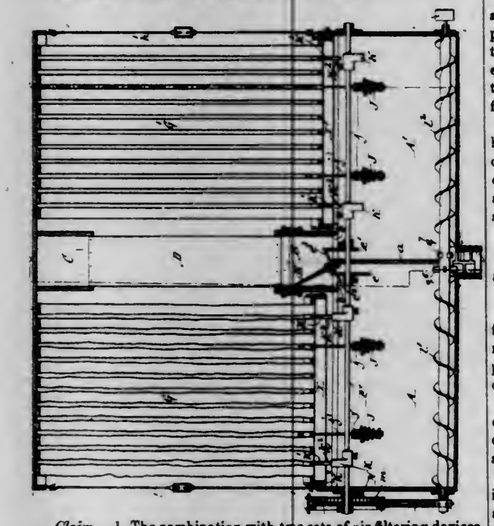
5. In a cake or biscuit machine, a hopper provided with a rotary force feed, rolls journaled to said hopper about the outlet throat thereof, said feed adapted to force a dough-like mass into contact with said rolls to rotate the same and said rolls condensing the mass into a continuous sheet, an endless belt or apron connected with one of said rolls and with a roll journaled to a box for applying matter to said mass at the point of condensation of the same into a sheet, mechanism connected with said feed and controlled by eccentrics and swivel connections between said mechanism and eccentrics adapted to permit of an increase or decrease of the speed of said feed, substantially as and for the purposes described.

543,132. ASH-SIFTER. JOHN H. HAYNER, Brooklyn, N. Y. Filed Mar. 16, 1895. Serial No. 541,978. (No model.)



Claim.—In an ash sifter, a dust proof inclosing case composed of three sections, combined with a revolving ash sifter which is journaled between the upper two sections, and an ash receiver placed in the lower section; the upper two sections being adapted to be turned back carrying the sifter with them, or to be opened to allow the sifter to be removed, substantially as described.

543,133. DUST-COLLECTOR. AUGUST HEINE, Silver Creek, N. Y. Filed Mar. 5, 1895. Serial No. 540,591. (No model.)



Claim.—1. The combination with two sets of air filtering devices, conduits for the dust laden air leading thereto, and a valve which controls said conduits, of a cam mechanism actuating said valve and constructed with concentric face portions whereby the valve is held normally open to admit the dust laden air to both conduits and with projections and depressions whereby the valve is shifted to close said conduits alternately at intervals for cutting off the air from the two sets of filtering devices alternately, substantially as set forth.

2. The combination with two sets of air filtering devices and conduits for the dust laden air leading thereto, of a rock valve supported by a horizontal pivot in said conduits and adapted to exclude the air current from either set of filtering devices, arms projecting laterally from opposite sides of said valve, and actuating cams which are arranged on opposite sides of the pivot of said valve, and upon which the arms of the valve rest loosely, substantially as set forth.

3. The combination with two sets of air filtering devices and conduits for the dust laden air leading thereto, of a pivoted valve adapted to exclude the air current from either set and provided on opposite sides with arms, and two rotary cams engaging respectively with said arms for actuating the valve, each cam having its face provided with a projection, a recess arranged diametrically opposite the projection, and two concentric portions between opposite sides of the projection and the recess, the two cams being arranged with the projection of one cam in line with the recess of the other cam, substantially as set forth.

4. The combination with two dust receiving chambers arranged side by side, two sets of filtering tubes arranged above the same, vertically movable heads to which the lower ends of said tubes are secured and which are arranged within said dust receiving chambers, a valve which is arranged between said chambers and which controls the air current flowing to said chambers, of a horizontal cam shaft arranged in said chambers, a cam mechanism mounted on said shaft within said chambers and actuating said valve, and cams mounted on said shaft within said chambers and actuating said movable heads, substantially as set forth.

5. The combination with two sets of air filtering devices air conduits leading thereto, and a valve which controls said conduits, of a cam mechanism which shifts said valve, and a variable ratchet mechanism which actuates the cam mechanism and which imparts to the same a slow movement for holding the valve open and a quick movement for shifting the valve, substantially as set forth.

6. The combination with two sets of air filtering devices, air conduits leading thereto, and a valve which controls said conduits, of a cam and shaft by which said valve is shifted, a ratchet wheel secured to said shaft, a pawl lever, and an endless chain or belt by which said ratchet wheel is turned directly and by which said pawl lever is actuated, substantially as set forth.

7. The combination with two sets of air filtering devices, air conduits leading thereto and a valve which controls said conduits, of a cam and shaft by which said valve is shifted, an actuating wheel secured to the cam shaft and provided with an internal ratchet rim and external teeth, a pawl lever engaging with said ratchet rim, and a drive chain or belt provided with a projection which is adapted to engage with said pawl lever and with the external teeth of said actuating wheel, substantially as set forth.

8. The combination with a receiving chamber, a conveyer shaft arranged therein, and the discharge spout, of a rotary discharge valve provided with wings forming pockets which receive and discharge the material, and actuating teeth secured to said conveyer shaft and engaging between the wings of the valve, said teeth serving to rotate the valve by direct contact with its wings and also to promote the filling of the pockets between the wings with material to be discharged.

9. The combination with the discharge spout of a receiving chamber and a shaft arranged in said chamber, of a rotary discharge valve composed of a disk and two sets of wings arranged on opposite sides of said disk out of line with each other, and two sets of actuating arms secured to said shaft side by side out of line with each other and engaging between the wings of the valve, substantially as set forth.

543,134. GARBAGE-FURNACE. WILLIAM S. HULL, Dallas, Tex. Filed June 28, 1894. Serial No. 515,916. (No model.)

Claim.—1. In a garbage furnace, the combination with a platform of bricks arranged loosely to absorb fluids, of means for feeding material thereto and means by which the material is destroyed, said platform being arranged to be subjected to the heat from the fire and combustion chambers, as set forth.

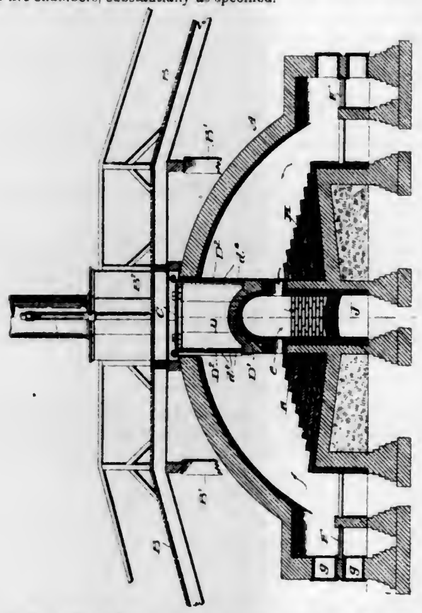
2. In a garbage furnace, the combination with a platform formed of bricks laid in inclined planes with crevices to conduct fluids to evaporating points, of means for feeding material thereto and means as the fire chambers for destroying such material, as set forth.

3. In a garbage furnace, the combination with bricks laid loosely in pyramidal form, of means for feeding material thereto, and means as the fire chambers for destroying such material, said bricks being arranged to be subjected to the heat from said chambers, as set forth.

4. In a garbage furnace, the combination with bricks laid loosely in pyramidal form upon inclined beds, of means for feeding material thereto and means as the fire chambers by which the material is destroyed, said means being located so that the bricks are subjected to the heat therefrom, as set forth.

5. In a garbage furnace, the combination with central combustion chamber, of an inclined platform therein composed of bricks set inclinedly and a base therefor having passages, the fire chambers upon opposite sides of said platform, and the flue leading beneath the base and communicating with the chimney, said passages being designed to establish communication between the space above the base and the flue below it, substantially as specified.

6. In a garbage furnace, the combination with the fire chambers and a central combustion chamber between the same, of pyramidal foraminous platforms upon opposite sides of the central chamber upon inclined beds the upper surfaces of the platforms being oppositely inclined to the beds, the walls of the central chamber having passages above said platforms and provided with openings communicating with the fire chambers, substantially as specified.



7. In a garbage furnace, the combination with the fire chambers and a central combustion chamber, of an inclined platform within the central chamber, a base therefor with passages for the liquid a tunnel beneath the same and communicating with the stack, and pyramidal platforms upon opposite sides of the central chamber extending at right angles to the platform in the central chamber, and means for introducing liquid matter into the central chamber, substantially as specified.

8. In a garbage furnace, bricks laid loosely in pyramidal form with inclined beds and the loose course or courses laid in mortar upon said beds, combined with means for feeding material thereto and with means as the fire chambers for burning such material, substantially as specified.

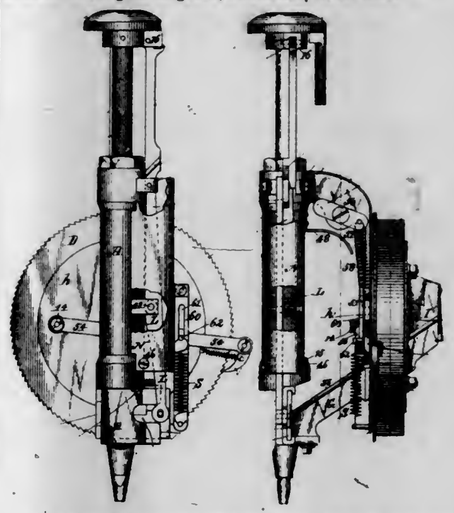
9. In a garbage furnace, a foraminous pyramidal evaporating surface having its upper face inclined oppositely from its bed, and the central chamber and its inclined platform, combined with means for feeding material to the above mentioned evaporating surface, a foraminous base and the fire chambers upon opposite sides of the said surface for destroying the material, substantially as specified.

543,135. HAND MAGAZINE TACK-DRIVING MACHINE. JOHN HYSLOP, Abington, assignor of one-half to William B. Arnold, North Abington, Mass. Filed Feb 28, 1895. Serial No. 540,086. (No model.)

Claim.—1. In a hand tack-driving machine having a single straight channel within which the nail-driver operates, the combination of a plunger carrying a tack-driver, a rotary tack-magazine or reservoir free to revolve independently of its actuating mechanism, a raceway or chute leading from said magazine directly into the channel in which the nail-driver operates, and means controlled by the plunger for intermittently rotating the tack-magazine, substantially as described.

2. In a hand tack-driving machine having a single straight channel within which the nail-driver operates, the combination of a plunger carrying a tack-driver, a rotary tack-magazine free to revolve independently of its actuating mechanism, an inclined raceway or chute leading from the magazine directly into the channel in which the nail-driver operates, and means for taking a single tack from the raceway, placing it directly within the single straight channel under the tack-driver and driving the same tack so placed, all at a single downward movement of the plunger, substantially as described.

3. In a hand tack-driving machine having a single straight channel within which the nail-driver operates, the combination of a plunger carrying a tack-driver, a rotary tack-magazine free to revolve independently of its actuating mechanism, an inclined raceway or chute leading from the magazine directly into the channel in which the nail-driver operates, a transferring device at the delivery end of the raceway for separating the tacks and transferring them directly into the straight channel in which the nail-driver operates, and suitable connections whereby the downward movement of the plunger operates the tack-separating and transferring device, and the mechanism for rotating the magazine, substantially as set forth.



4. In a hand tack-driving machine having a single straight channel within which the nail-driver operates, the combination with the plunger carrying the tack-driver, and the tack-chute or raceway communicating directly with the straight channel within which the nail-driver operates, of a slide carrying the tack-separating and transferring device for taking the tacks from the raceway and placing them within the said straight channel and directly beneath the tack-driver, a lever and spring for operating said transferring device, and means connected with the plunger for operating the lever against the resistance of the spring and permitting it to return to its normal position at each downward movement of the plunger, substantially as described.

5. In a hand tack-driving machine, a rotary tack-magazine or reservoir free to revolve independently of its actuating mechanism, combined with a spring-actuated propelling device adapted to impart a spring or elastic impulse to the magazine to intermittently rotate the same without limiting the range or amount of its movement derived from said impulse, substantially as set forth.

6. In a hand tack-driving machine, the combination with a plunger, carrying a tack-driver, a raceway or chute, a rotary tack-magazine or reservoir free to revolve independently of its actuating mechanism, and means for imparting a spring or elastic impulse to said magazine for the purpose of intermittently rotating the same without limiting the amount of its movement derived from said impulse, substantially as described.

7. In a hand tack-driving machine, the combination with the plunger carrying the tack-driver, the rotary magazine, the chute or raceway leading from the magazine to the tack-channel, a hammer adapted to strike the raceway and produce a concussion for the purpose of displacing any tacks not in proper position upon the raceway, and means controlled by the plunger for intermittently rotating the magazine and operating the hammer, substantially as set forth.

8. In a hand tack-driving machine, the combination with the plunger carrying the tack-driver and provided with a vertical stud or pin Q, extending downward from the upper end of the plunger, the rotary magazine provided around its periphery with ratchet teeth, the raceway or chute, the lever R, adapted to be acted upon by the pin Q, on the descent of the plunger, the slotted hammer-bar 51, the lever 54, provided with a stud 53, fitting within the slot of the bar 51, and carrying at its outer end a spring-actuated pawl engaging the ratchet teeth of the rotary magazine, and the springs S, and 58, all operating substantially as and for the purpose set forth.

9. In a hand tack-driving machine, the combination with the plunger carrying the tack-driver, the raceway or chute communicating with the tack-channel, the slide carrying the tack separating and transferring device for taking the tacks from the raceway and placing them in the tack-channel, the lever L, pivoted at its lower end to said slide, and provided with a wedge-shaped block or projection

43, the spring-actuated swinging lever M, pivoted to the upper end of the plunger and provided with a wedge-shaped block 42, adapted to co-operate with the wedge-shaped block 43, to actuate said lever L, and thereby move the slide in one direction, and a spring for returning said slide and lever to their normal positions, substantially as described.

10. In a hand tack-driving machine, the combination with the tack-magazine free to revolve independently of its actuating mechanism, and provided with a spring-actuated propelling device for intermittently rotating the same, of a stationary friction or brake spring adapted to bear upon the rotating portion of said magazine, substantially as and for the purpose set forth.

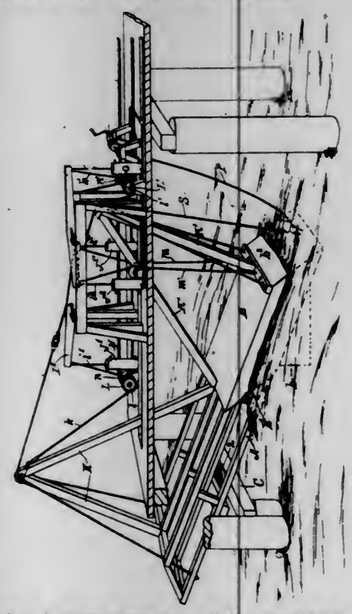
543,136. DIE FOR CUTTING SCREW-THREADS. NATHAN R. MARTIN, Greenfield, Mass. Filed Oct. 30, 1894. Serial No. 527,469. (No model.)



Claim.—1. In combination with a collet having a lateral bearing flange, die sections contained within the same, the opposing ends of said sections having a double incline—namely, an incline extending from the inner faces of the sections to the outer faces and an incline extending from the front faces rearwardly to the flange, and conical screws passing through the wall of the collet and contacting with the opposing ends of the die sections, said screws by reason of the double inclines serving to adjust the parts and to hold them in place, substantially as described.

2. The combination with the collet having the bearing flange, of the die sections having their abutting end faces converging toward said flange and having inclined grooves in their peripheral faces, the conical screws extending between the conical end faces, and the bearing screws impinging against the inclined bottoms of the grooves, substantially as described.

543,137. WAVE-MOTOR. JAMES A. MOORE, Lancaster, Cal. Filed Dec. 27, 1894. Serial No. 533,053. (No model.)

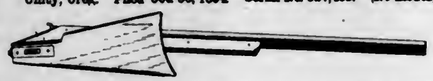


Claim.—1. A wave motor comprising a pivoted lever; a rectangular floating weight attached to the lower end of such lever, and having its flat bottom arranged oblique to the surface of the water, and having its shoreward end beveled from the flat bottom of the float upward to form with such bottom, a sharp point to dip into the water, and having its seaward end beveled from the bottom upward, to cause the float to ride upon the incoming wave, substantially as set forth.

2. A wave motor provided with a floating weight which is arranged upon a sloping pivoted lever and has its bottom arranged oblique to the surface of the water, and has its ends oblique to the bottom and also oblique to the surface of the water in the same general direction as the slope of the lever and provided with a keel or centerboard arranged on the bottom of the floating weight parallel with the axis of the lever.

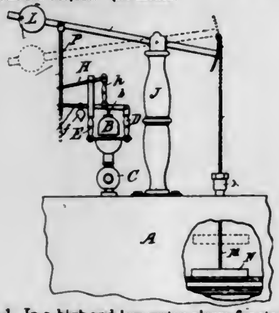
3. The combination of the sloping pivoted lever provided with a floating weight; the walking beams; the depression pulleys; the truss standards extending above the pulleys; the cables respectively passing under said pulleys and connecting said standards respectively with one end of each walking beam, and the cables arranged connecting the other end of each walking beam with the weight.

543,138. FOLDING STOCK FOR FIREARMS. ARCHIE J. MURRAY, Unity, Oreg. Filed Oct. 30, 1894. Serial No. 527,463. (No model.)



Claim.—A fire-arm having its stock made in two parts suitably hinged together adapting the same to be folded down one upon the other, a projecting lug upon one of the parts fitting a corresponding cut-away portion on the adjoining part, a spring locking-bolt moving in a slot in said cut-away portion and adapted to engage said projecting lug and means for moving said locking bolt to release the parts, substantially as and for the purpose described.

543,139. HIGH OR LOW WATER ALARM FOR STEAM-BOILERS. GEDEON PIERRARD and VICTOR GUINET, Montreal, Canada. Filed Mar. 25, 1895. Serial No. 543,116. (No model.)



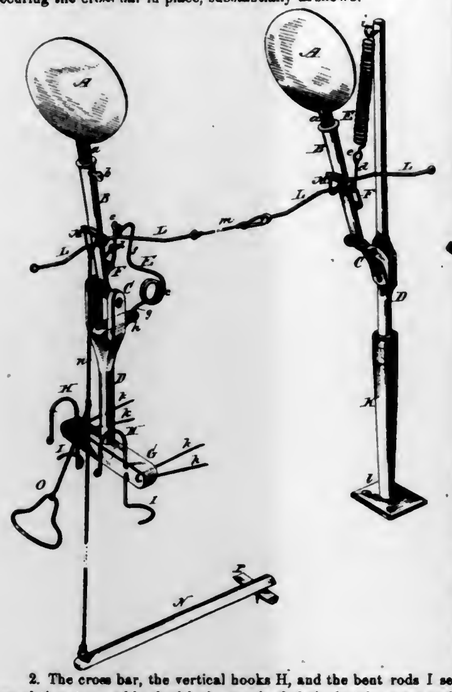
Claim.—1. In a high and low water alarm for steam boilers, the combination with a whistle secured on and connected with a steam boiler, standards secured, one on one side and one on the other side of the said whistle, one shorter than the other, a lever pivoted by one end in the shorter of the said standards, a weight carried near the free end of the said lever, adapted to press the lever down on the valve stem of the steam whistle and close it, a double lever pivoted in the longer of the said standards, a link connecting one end of the lever with the lower lever before mentioned, of means for raising the lower lever when the water in the said boiler is low or depressing the upper lever when the water is too high, substantially as set forth.

2. In a high and low water alarm for steam-boilers, the combination with the float N having secured thereto the rod M, secured by a short chain to a grooved segment on a lever K, the lever K pivoted in a standard secured on a boiler, a weight L carried at or near the end of the said lever, a depending rod O pivoted near the weight L, two pins P secured in the said depending rod O, of the steam whistle having standards D and E, one on either side, the lever F pivoted in the shorter standard D, a weight carried near the free end of the said lever, a loop G at its free end, the said lever passing over and pressing down the valve stem *b* of the whistle, when the said lever is in its normal position, the lever H carried in the standard E having a loop I at one end and a link *h* at the other, the link *h* connecting the lever H to the lever F, substantially as set forth.

3. In a high and low water alarm for steam boilers, the combination with the lever K, having a float N secured thereto by a chain passing over a grooved segment on the end of the said lever, pivoted depending rod O, pins P secured in the said rod, of the loops G and I carried by the levers F and H and through which the said rod O passes, the link *h* connecting the said levers F and H, and the valve stem *b* of a steam whistle adapted to be operated by the said lever F, substantially as set forth.

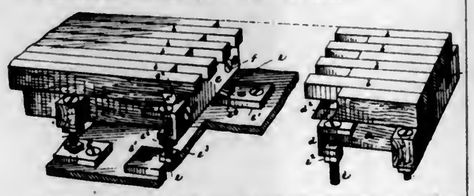
548,140. AUTOMATIC FAN. LEANEY REGHY, Platte City, Mo. Filed June 30, 1894. Serial No. 516,207. (No model.)

Claim.—1. In a fan attachment, the cross bar G, the vertical hooks H secured thereto, and which catch over the top of the chair and support the bar, and the rods I, which extend straight down from the bar a suitable distance and then have their ends curved horizontally outward, combined with the fan mounted on the bar, and strings K for securing the cross bar in place, substantially as shown.



2. The cross bar, the vertical hooks H, and the bent rods I secured thereto, combined with the standard, forked at its upper end, the tubular socket pivoted to the standard, the plate *h*, secured to the standard, the spring C, the flexible connection secured at one end to the spring, and at the other to the tubular socket; and the fan, adjustably held in said socket, substantially as described.

548,141. BOWLING-ALLEY. JOHN A. RIEPER, New York, N. Y. Filed Dec. 5, 1894. Serial No. 530,872. (No model.)



Claim.—1. A bowling alley composed of foundation beams, floor boards supported thereby, and interlocking cross girders secured to the ends of the beams, substantially as specified.

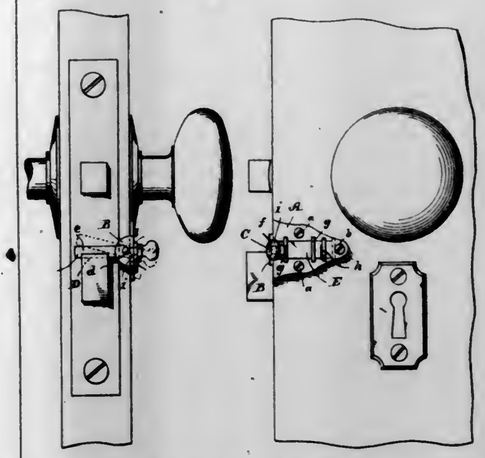
2. A bowling alley composed of foundation beams, floor boards supported thereby, and U-shaped end girders, of which one has an outwardly projecting beveled nose, and the other has an interlocking inwardly projecting beveled nose, substantially as specified.

3. A bowling alley composed of foundation beams, floor boards supported thereby, interlocking laterally projecting end girders, floor plates, and screw bolts that secure the girders to the floor plates, substantially as specified.

4. The combination in a bowling alley of the following elements: foundation beams, floor boards supported thereby, laterally projecting interlocking girders, screw bolts engaging the girders, floor plates engaged by the screw bolts, and gutters that are supported by the free ends of the girders, substantially as specified.

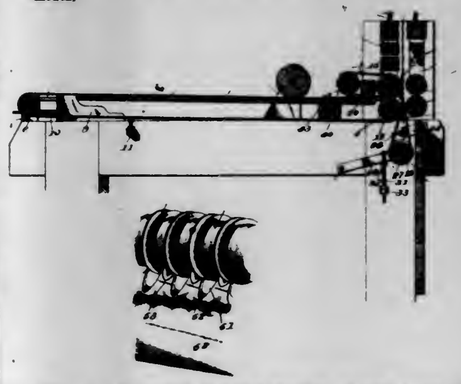
548,142. SAFETY DEVICE FOR LOCK-BOLTS. CHARLES F. ROBERTS, Bridgeport, Conn., assignor of one-fourth to Charles J. Milton, same place. Filed Feb. 16, 1895. Serial No. 538,651. (No model.)

Claim.—1. In a safety device for locking bolts the combination in an attachable device, consisting of a plate, a lever pivoted thereto and provided with a weighted end, a slide mounted on the plate and adapted to be moved in the path of the lever to hold the latter into engagement with the locking bolt.



2. In a locking device of the class described the combination with a locking bolt having a recess therein, of a plate having an angular extension thereon, a lever pivoted thereto and extending through an orifice *c* in said plate to engage with the locking bolt, and means for the disengagement of said lever from said bolt as described.

543,143. TOBACCO-STEMMING MACHINE. JOSEPH R. UNDERWOOD, Fayetteville, N. C. Filed Nov. 19, 1894. Serial No. 529,334. (No model.)



Claim.—1. In a tobacco stemming machine, the combination of contacting superposed stripper rolls, the upper of which is provided with peripheral stem grooves, guide belts arranged to pass between the rolls intermediate of the grooves of the upper roll, and superposed drawing rolls arranged at one side of the stripper rolls, substantially as set forth.

2. In a tobacco stemming machine, a pair of contacting stripper rolls, the upper of which is provided with peripheral stem grooves, guide belts passing between the stripper rolls intermediate of said stem grooves and partly around the lower roll, feeding mechanism leading up to the stripper rolls, and a pair of contacting stem drawing rolls arranged at one side of the stripper rolls, substantially as set forth.

3. In a tobacco stemming machine, the combination of a pair of superposed stripper rolls having means to retard the body of the leaf and to permit a free passage of the stem, a pair of superposed drawing rolls arranged at one side of the stripper rolls, and means for delivering the tobacco leaf in a different direction from the passage of the stem between the drawing rolls, substantially as set forth.

4. In a tobacco stemming machine, the combination of a pair of superposed stripper rolls, the upper of which is provided with peripheral stem grooves, a pair of superposed drawing rolls arranged at one side of the stripper rolls, a grooved feed roll arranged at one side of

the upper stripper roll, and a series of guide belts passed around the feed roll and partly around both the upper and lower stripper rolls between said stem grooves, substantially as set forth.

5. In a tobacco stemming machine, the frame or stand, a pair of contacting stripper rolls mounted in said frame, and having means to retard the body of the leaf and to permit a free passage of the stem, an upper feed roll mounted within the frame at one side of the upper stripper roll, a tension roller supported within the frame below the stripper rolls, a series of spaced guide belts passed around the feed and tension rolls and partly around said stripper rolls, and a pair of superposed drawing rolls mounted at one side of the stripper rolls, substantially as set forth.

6. In a tobacco stemming machine, the combination of the frame or stand, a pair of superposed contacting stripper rolls, having means to retard the body of the leaf and to permit a free passage of the stem, a feed belt passing partly around the lower stripper roll, an upper feed roll supported beyond one side of the upper stripper roll, a pair of pivoted bearing arms mounted within the frame or stand below the stripper rolls, means for adjusting said arms, a tension roller journaled between the moving ends of said arms, a series of spaced guide belts passed around the feed and tension rolls and partly around said stripper rolls, and a pair of superposed drawing rolls mounted at one side of the stripper rolls, substantially as set forth.

7. In a tobacco stemming machine, the frame or stand, a pair of upper and lower contacting stripper rolls mounted in said frame, the upper of said rolls having peripheral stem grooves, an upper feed roll arranged beyond one side of the upper stripper roll and having peripheral stem grooves shallower than those of the stripper roll, a tension roller adjustably supported below the stripper rolls and provided with a series of peripheral flanges, a series of spaced guide belts passed around the feed and tension rolls and partly around the stripper rolls, said guide belts working between the stem grooves of the upper stripper and of the feed roll, and a pair of superposed contacting stem drawing rolls mounted at one side of the stripper roll, substantially as set forth.

8. In a tobacco stemming machine, the combination of the frame, a pair of superposed contacting stripper rolls mounted within the frame, the lower of said rolls being fixed and the upper of said rolls being adjustable, said upper stripper roll being provided with a parallel series of circular stem grooves and reduced belt portions intermediate of said grooves, a feed belt passed partly around the lower stripper roll, an upper feed roll arranged beyond one side of the upper stripper roll and similar in construction thereto, the stem grooves of said feed roll being shallower than the similar grooves of the upper stripper roll, a series of spaced guide belts passed partly around the stripper rolls and around said feed roll, and a pair of superposed drawing rolls, substantially as set forth.

9. In a tobacco stemming machine, the combination of the frame, a pair of superposed contacting stripper rolls mounted within the frame, the upper of said rolls being vertically adjustable and provided with alternate peripheral grooves and reduced belt portions, an upper feed roll located beyond one side of the upper stripper roll and provided with alternate peripheral grooves and reduced belt portions, a feed belt passing around the lower stripper roll, a series of spaced guide belts passing around the upper feed roll and partly around the stripper rolls, a stem guide arranged over the feed belt and under the feed roll and guide belts, a self-adjusting presser roller arranged over and in contact with the feed belt near said feed roll, and a pair of drawing rolls arranged at one side of said stripper rolls, substantially as set forth.

10. In a tobacco stemming machine, the combination of the frame, a pair of superposed contacting stripper rolls, the upper of which is provided with spaced peripheral stem grooves, a lower tension roller adjustably supported below the stripper rolls, a feed roll arranged beyond one side of the upper stripper roll and provided with a series of peripheral stem grooves, a series of spaced guide belts passed around the feed roll and tension roller and partly around the stripper rolls, a feed belt passed around the lower stripper roll under the guide belts and a stem guide arranged over the feed belt under the feed roll and provided with a series of projecting guide fingers, the notches between which are in line with the stem grooves of the feed and upper stripper rolls, and the drawing rolls, substantially as set forth.

11. In a tobacco stemming machine, the combination with the feed belt and the adjacent peripherally grooved feed roll and the stripper rolls the upper of which stripper rolls is also peripherally grooved; of the transverse guide plate arranged over the feed belt below said feed roll and provided with top stem grooves, a longitudinal series of V-shaped beveled guide notches at one edge and leading into said grooves, and triangularly shaped guide fingers projected beyond and from the V-shaped projections forming said notches, and the guide belts arranged to pass over the stem grooves of said plate, substantially as set forth.

12. In a tobacco stemming machine, the combination of the frame, a pair of superposed contacting stripper rolls mounted within the frame and having means to retard the body of the leaf and to permit a free passage of the stem, an upper feed roll supported beyond one side of the upper stripper roll, a feed belt passing around the lower stripper roll, a pair of superposed contacting drawing rolls for the stem of the leaf, a series of spaced guide belts passed around said feed roll and partly around the stripper rolls, a transverse guide arranged under the feed roll and having a series of projecting guide fingers alternating with the spaces between the guide belts passing around said feed roll, and a transverse guide bar arranged between the upper and lower portions of the guide belts and between the feed roll and upper stripper roll, said bar being provided in its lower edge with a series of transverse grooves to receive the portions of the guide belts below the bar, substantially as set forth.

13. In a tobacco stemming machine, the combination of the frame, a pair of superposed contacting stripper rolls mounted in said frame, the upper of said rolls being provided with a series of spaced stem grooves, the feed belt arranged to pass over the lower stripper roll, a series of guide belts arranged to pass partly around the upper side of both stripper rolls intermediate of said stem grooves, and a stationary transverse stripper plate arranged within the frame at one side of the lower stripper roll and provided at its upper edge with an edge series of stem notches in alignment with the stem grooves of the upper stripper roll, substantially as set forth.

14. In a tobacco stemming machine, the combination with the frame, the superposed contacting stripper rolls, the upper of which is provided with a series of alternate circular stem grooves and reduced belt portions, the feed belt, and the spaced guide belts; of a stationary transverse stripper plate arranged within the frame at one side of the lower stripper roll and provided at its upper edge with a series of U-shaped stem notches aligned with the stem grooves of the upper stripper roll, and inwardly curved or bent retaining tongues intermediate of said notches and projecting into the spaces of the upper stripper roll between the grooves thereof, substantially as set forth.

15. In a tobacco stemming machine, the combination of the frame, a pair of superposed stripper rolls, the upper of which is provided with a series of spaced peripheral stem grooves, a pair of contacting drawing rolls located adjacent to the stripper rolls, a notched stripper plate arranged between the pairs of stripper and drawing rolls, a series of spaced guide belts passed partly around the stripper rolls and traveling below the same, a stationary cleaner plate arranged at one side of the upper stripper roll and provided at its lower edge with a series of inwardly bent spaced lugs projecting into the grooves of said roll, and a cleaning brush arranged to project between the separate guide belts at a point below the stripper rolls, substantially as set forth.

16. In a tobacco stemming machine, the combination of a pair of superposed stripper rolls having means to retard the body of the leaf and to permit a free passage of the stem, and a pair of adjacent superposed drawing rolls adapted to grasp and pull the stem from the body of the leaf held by the stripper rolls, substantially as set forth.

17. In a tobacco stemming machine, the combination of a pair of superposed contacting stripper rolls the upper of which is provided with a series of peripheral stem grooves adapted to receive the leaf stem pressed thereinto by the lower stripper roll, said lower stripper roll being also adapted to bind the tobacco leaf at the side of the stem against the flange edges of said grooves to sever the leaf from the stem, and a pair of superposed contacting drawing rolls arranged at one side of the stripper rolls and adapted to grasp and pull the stem from the leaf held by the latter rolls, substantially as set forth.

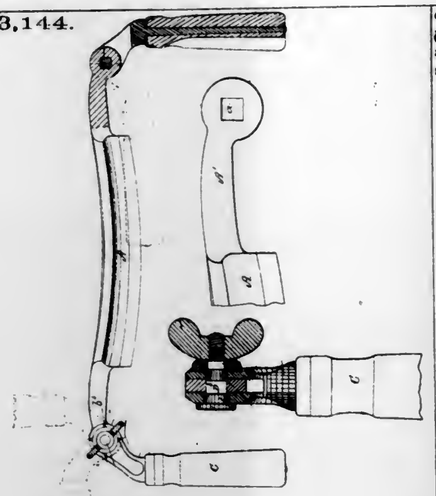
18. In a tobacco stemming machine, a pair of superposed contacting stripper rolls having means to retard the body of the leaf and to permit a free passage of the stem, and a pair of adjacent superposed faster-rotating drawing rolls adapted to grasp and pull the stem from the body of the leaf while held by the stripper rolls, substantially as set forth.

19. In a tobacco stemming machine, the combination of a pair of superposed stripper rolls having means to retard the body of the leaf and to permit a free passage of the stem, and a pair of superposed adjacent rubber or rubber covered drawing rolls adapted to grasp and pull the stem from the body of the leaf while held by the stripper rolls, substantially as set forth.

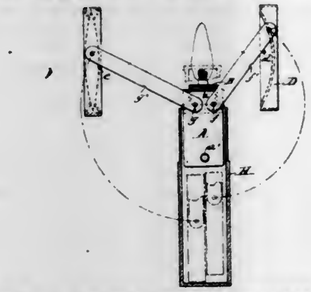
543,144. DRAWING-KNIFE. ALBAN ANDRÉN, Beverly, Mass. Filed May 11, 1895. Serial No. 548,896. (No model.)

Claim.—The herein described adjustable handle device for edge tools, consisting of a tool blade having a polygonal perforation, combined with a bifurcated handle shank having cylindrical perforations through its wings and a pivot bolt journaled in the wings of the shank and rigidly engaging the edge tool, and a longitudinally adjustable corrugated locking washer interlocking with the pivot-bolt and handle shank, substantially as and for the purpose set forth.

543,144.



543,145. POCKET-LARYNGOSCOPE. JULIUS BOEKEL, Philadelphia, Pa., assignor to William Boekel & Co., same place. Filed Mar. 21, 1895. Serial No. 542,701. (No model.)



Claim.—1. A pocket laryngoscope, embodying an illuminating device, and a reflector, a lens, separate pairs of links each pivoted at their inner ends to the illuminating device and at their onter ends to the reflector and lens respectively, and stops upon the several parts to fix their relative operative positions, substantially as set forth.

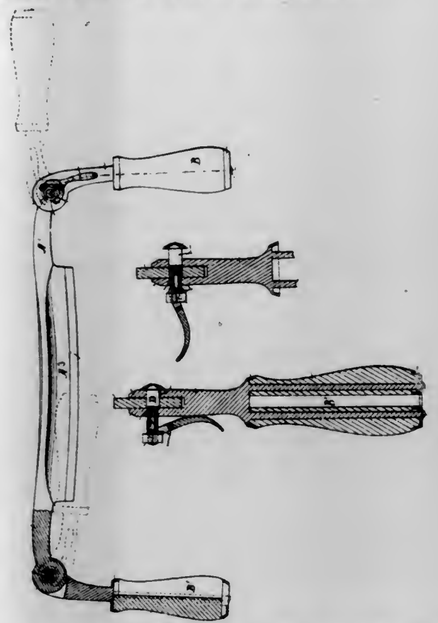
2. The combination with a frame, of links pivoted thereto, and a reflector and lens pivoted to the outer ends of said links, whereby the reflector and lens may be folded together into the plane of said frame.

3. The combination with a frame, provided with an illuminating device, of links pivoted thereto, and a reflector and lens pivoted to the outer ends of the respective links, said links being so arranged that when open the reflector and lens will be on opposite sides of the illuminating device and will fold together so as to lie in the same plane as said frame, substantially as described.

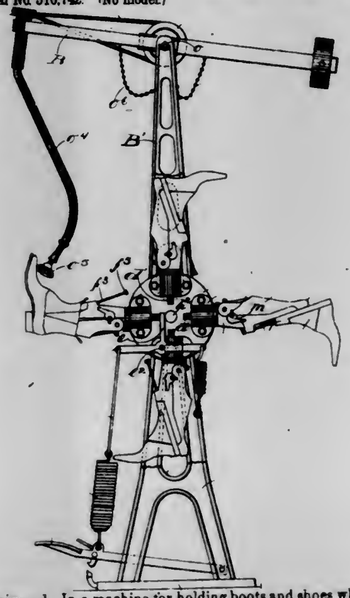
543,146. DRAWING-KNIFE. JOHN S. CANTELO, Boston, Mass. Filed Nov. 11, 1893. Serial No. 490,667. (No model.)

Claim.—1. A drawing knife having in each of its ends a square or equivalent perforation combined with a handle having a forked hinge piece one lip of which has a perforation like that in the blade end and the other lip having a circular perforation, and a longitudinally adjustable pivot and locking bolt having a square or equivalent locking portion and a cylindrical pivot portion substantially as and for the purpose set forth.

2. A drawing knife having in each of its ends a square or equivalent perforation combined with a handle having a forked hinge piece one lip of which has a perforation like that in the handle end and the other lip having a circular perforation a longitudinally adjustable pivot and locking bolt having a square or equivalent locking portion and means for longitudinally adjusting the position of said locking and pivot bolt substantially as and for the purpose set forth.



543,147. MACHINE FOR HOLDING BOOTS OR SHOES WHILE BEING OPERATED UPON. GEORGE H. CLARK, Boston, Mass., assignor to the Clark Manufacturing Company, same place. Filed May 10, 1894. Serial No. 510,742. (No model.)



Claim.—1. In a machine for holding boots and shoes while being operated upon, the combination of two or more separable rotatable holders or trees, a rotatable hub supporting them, a separating wedge for the parts of each tree, a treadle, and means operated by it for moving any one of the wedges that may be brought into engagement therewith, and an independent locking device for each tree, which holds the parts separated when moved out of co operative relation with the treadle mechanism, said locking device having a hand engaging portion, substantially as described.

2. In a machine for holding boots and shoes while being operated upon, the combination of two or more separable rotatable holders or trees, a rotatable hub supporting them, a separating wedge for the parts of each tree, a treadle, and means operated by it for moving any one of the wedges that may be brought into engagement therewith, and a locking device upon each tree, for retaining the parts thereof separated when moved out of co-operative relation with the treadle mechanism, said locking devices each consisting of a spring actuated cam having a hand piece, substantially as described.

3. In a machine for holding boots and shoes while being operated upon, the combination of several rotatable holders or trees, a rotatable hub supporting them, a wedge block for each tree for separating the parts thereof, a pin connected to each block and projecting axially through and beyond the inner end of the tree, a bell-crank lever pivoted to the frame and having an inturned end which acts upon any pin that may be brought into engagement therewith, a treadle, and treadle rod connected with said bell-crank lever, substantially as described.

4. In a machine for holding boots and shoes while being operated upon, the combination of a tree comprising two separable members, movable one with relation to the other, one of which has a heel piece, a block sliding longitudinally upon the other member, a fore part detachably connected with and supported by said slide block, and a spring actuated locking device for said slide block, substantially as described.

5. In a machine for holding boots and shoes while being operated upon, the combination of a tree comprising two separable members, movable one with relation to the other, one of which has a heel piece, a slide block supported upon the other member, a removable fore part adapted to be connected with and supported by said slide block, and a spring actuated locking device for said slide block, operated by the means employed for separating the members of the holder, substantially as described.

6. In a machine for holding boots and shoes while being operated upon, the combination of a tree comprising two separable members, movable one with relation to the other, one of which has a heel piece, a block sliding longitudinally upon the other member, a fore part, and a spring-actuated locking device detachably connecting it with said slide block, substantially as described.

7. In a machine for holding boots and shoes while being operated upon, the combination of a tree comprising two separable members, movable one with relation to the other, one of which has an inclined face, a heel piece upon the other member having an inclined face in continuation of the inclined face of the aforesaid member, a slide block extending over said inclined faces, a guide therefor, and a pin connected thereto passing through a projection on one of the members for limiting its withdrawal, and a removable fore part likewise having an inclined face adapted to be connected with and supported by said slide block, substantially as described.

8. In a machine for holding boots and shoes while being operated upon, the combination of a tree comprising two separable members, movable one with relaton to the other, one of which has an inclined face, a heel piece upon the other member likewise having an inclined face in continuation of the inclined face of the aforesaid member, a slide block extending over both of said inclined faces, a guide therefor, and a removable fore part likewise having an inclined face and adapted to be connected with and supported solely by and therefore movable with said slide block, substantially as described.

9. A boot or shoe tree having a recessed back leg part b with a heel b^3, and front leg part c, entering the recess in the back leg part, a sliding block f, supported by and movable upon the part c, and fore-part detachably connected thereto.

10. The tree herein described comprising two separable parts, a block mounted upon one of said parts and movable longitudinally in a diagonal direction, a spring acting tongue having a perforated end, a removable fore part having a headed stud to engage said spring acting tongue, substantially as described.

11. The tree herein described comprising two separable parts, a sliding block mounted upon one of said parts, adjacent the heel of the tree, and movable longitudinally in a diagonal direction, a removable fore part g having attached to its upper end a shin piece g^{10}, means for attaching it to and preventing it from twisting upon said sliding block.

12. The removable fore part g herein described having attached to its upper face the shin piece g^{10}, shaped substantially as shown, and having projecting from its rear end the headed stud g'.

13. The removable fore part g herein described having attached to its upper face the shin piece g^{10}, shaped substantially as shown, and having projecting from its rear end the headed stud g', combined with the shouldered slide block f, located adjacent to the heel and supporting said fore part, substantially as described.

14. The removable fore part g, and the shin piece g^{10} recessed at its rear side, as at g^{12}, and attached to the upper face of the fore part g by screw g^{13}, the head of which is confined within said recess.

15. The removable fore part g, having an oblique rear end, and having attached to its upper face the shin piece g^{10}, also having an oblique rear side, in continuation of the oblique rear end of the part g.

16. The removable fore part g herein described having attached to its upper face the shin piece g^{10}, shaped substantially as shown, and having projecting from its rear end the headed stud g', combined with the shouldered slide block f, having a socket near its outer end for the headed stud, and means for connecting the upper end of the shin piece with the shoulder of said block f.

543,148. FORE PART FOR BOOT OR SHOE TREES. GEORGE H. CLARK, Boston, Mass., assignor to the Clark Manufacturing Company, same place. Filed Dec. 3, 1894. Serial No. 530,690. (No model.)



Claim.—1. The fore-part for boot and shoe trees, consisting of a body portion, recessed at one side from top to bottom, the rear wall of said recess extending transversely to the body, and the side wall extending longitudinally obliquely from the rear wall to the toe, a block fitting said recess, and connected with the body by a sliding connection, substantially as described.

2. The fore-part for boot and shoe trees, consisting of a body portion, recessed at one side from top to bottom, the rear wall of said recess extending transversely to the main body and obliquely from the instep to the shank, and the side wall being vertical and extending longitudinally in a straight line obliquely from the rear wall to the toe, a block fitting said recess, which includes at its forward end the whole toe portion, and a sliding connection by means of which the block is connected with the main body, substantially as described.

3. The fore part for boot and shoe trees, consisting of a body portion, recessed at one side from top to bottom, the rear wall of said recess extending transversely to the main body and obliquely from the instep to shank, and the side wall being vertical, and extending longitudinally in a straight line, obliquely from the rear wall to the toe, a block fitting said recess, a curved guideway formed in the side wall of the recess, a piece sliding in said recess, and means for securing the slide block to said piece, substantially as described.

4. The fore-part for boot and shoe trees, consisting of a body portion, recessed at one side from top to bottom, the rear wall of said recess extending inwardly transversely on the long shank side, and the side wall extending on an oblique line terminating at the opposite side of the toe, substantially as described.

5. A fore-part for boot and shoe trees, consisting of a body portion having a recess at one side extending from top to bottom and from shank to toe, a block fitting said recess, a sliding connection between the parts and single connecting pin c^3, whereby the block may slide, and also turn on a pivot, substantially as described.

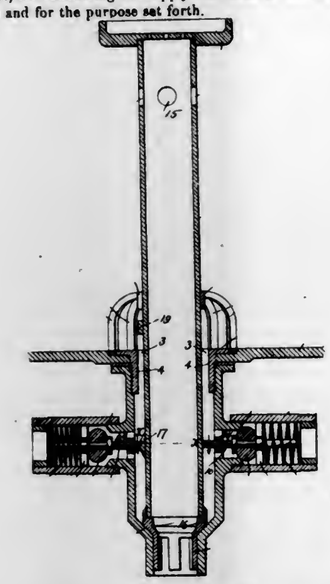
543,149. ATTACHMENT FOR BATH-TUBS, WASHBASINS, &c. ANDREW FIEDLER, Chicago, Ill., assignor of one-half to George Joseph Fiedler, Jr., same place. Filed Feb. 1, 1895. Serial No. 536,903. (No model.)

Claim.—1. In a bath tub, wash basin, or the like, provided with a single opening in the bottom thereof, a hollow casting arranged adjacent to said opening, and provided with a valve seat, an overflow pipe arranged in said opening and carrying a valve adapted to be received in the seat formed in said casting, a supply pipe communicating with said casting, and means operated by said overflow pipe for controlling said supply; as and for the purpose set forth.

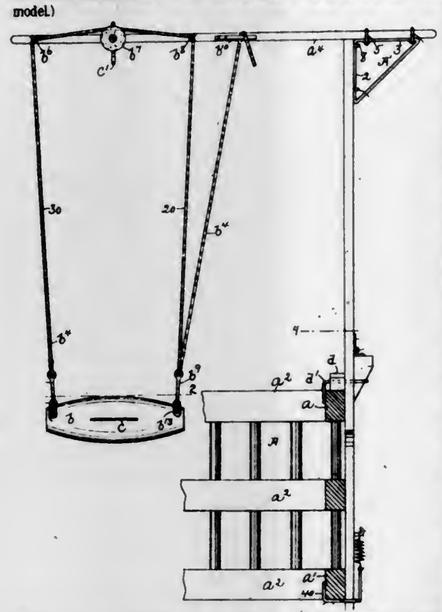
2. In a bath tub, wash basin, or the like, provided with a single opening in the bottom thereof, a hollow casting arranged to communicate with said tub or the like through said opening, and provided with a valve seat, a standing overflow pipe arranged in said tub, and having its lower end arranged to pass through said opening, and carrying a valve adapted to be received in the seat formed in said casting, a supply pipe communicating with said casting at a point intermediate said opening and valve seat, and means whereby the supply to said tub or the like is controlled by said overflow pipe; as and for the purpose set forth.

3. In a bath tub, wash basin, or the like, provided with an opening, an overflow pipe arranged in said opening, and means operated by said overflow pipe for controlling the supply to and exhaust from the tub or basin through said opening; as and for the purpose set forth.

4. In a bath tub, wash basin, or the like, provided with a single opening in the bottom thereof, a supply pipe and an exhaust pipe communicating with said opening, means arranged to pass through said opening, and adapted to be operated from within the tub, basin or the like, for controlling the supply and exhaust from said tub or basin: as and for the purpose set forth.



543,150. NURSING-BOTTLE-SUPPORTING APPARATUS. WILLIAM GILL, Boston, Mass. Filed June 29, 1894. Serial No. 516,078. (No model.)

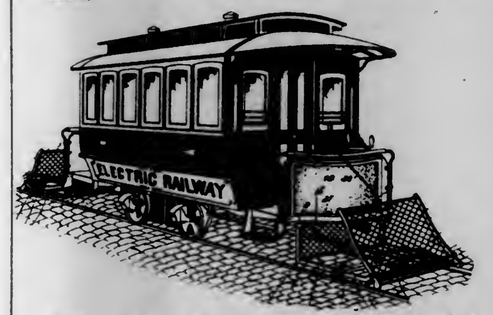


Claim.—1. In a support for nursing bottles, the combination with a horizontally disposed arm, of a flexible suspension consisting of a cord or like flexible body secured to said arm to form depending legs 20—30 and capable of adjustment to vary the length of the said legs with relation to the said arm and to each other, a hollow bottle holder adapted to receive the nursing bottle and provided with devices at or near its ends for attachment to the flexible suspension, and means carried by the legs 20—30, to detachably engage the said devices and permit of horizontal adjustment of the bottle holder, substantially as described.

2. The combination with a cradle, of a bottle supporting apparatus comprising an upright member secured to the cradle, a horizontally disposed arm or member secured to the upright member and adjustable longitudinally thereon, a flexible suspension b^4 secured to the said horizontal arm to form legs 20—30 and capable of adjustment to vary the length of the said legs with relation to the said arm and to each other, a hollow bottle holder to receive the nursing bottle and provided with devices at or near its ends for attachment to said flexible suspension, and clasps carried by the legs 20—30, to detachably engage the said devices and permit of horizontal adjustment of the bottle holder, substantially as described.

3. In a support for nursing bottles, a horizontally disposed arm provided with eyes b^6 b^5 and with a tension device, a bottle holder, and a flexible support connected to the said holder and engaging the said eyes and tension device, substantially as described.

543,151. CAR-FENDER. FRANK GOFF, Camden, and THOMAS H. JOINER, Burlington, N. J. Filed Jan. 2, 1895. Serial No. 533,618. (No model.)



Claim.—1. In a car fender, the combination with a car, of an L-shaped supporting frame connected with the car, and adapted to extend forward therefrom, an inclined fender frame pivotally connected to the front of the supporting frame and normally arranged in an inclined position, and yielding connections between the fender frame and the brake mechanism, whereby the fender frame will be cushioned and the brake automatically applied, substantially as described.

2. In a car fender, the combination with a car, of a supporting frame, a fender frame hinged to the front of the supporting frame and arranged at an inclination and provided with rearwardly extending lugs located adjacent to the bottom of the fender frame and depending therefrom and rigid therewith, and the transverse guard secured to the lugs and forming a vertical shield when the fender is folded, substantially as described.

3. In a car fender, the combination with a car provided with ways, a supporting frame slidingly mounted on the ways and adapted to be moved inward under the car, an inclined fender frame hingedly connected with the front of the supporting frame, and the rearwardly inclined transverse guard located at the bottom of the fender frame and arranged to swing forward when the fender frame is folded, substantially as and for the purpose described.

4. In a car fender, the combination with a car, of a supporting frame, an inclined fender frame hingedly connected with the supporting frame and provided with lugs located at its bottom and adapted to engage the supporting frame to limit the forward swing of the fender frame, a transverse guard secured to the lugs, and a yielding connection between the guard and the brake mechanism said connections being provided with means whereby its tension may be adjusted, substantially as described.

543,152. COFFIN. DENNON R. GOULD, Glens Falls, N. Y. Filed June 30, 1894. Serial No. 516,188. (No model.)



Claim.—In a coffin, the combination of a wooden box body, lower batten rails 11 extending continuously around the lower outer edge

of the box body and secured in position at a distance from the outside of the box body to leave an intervening filling space, said lower batten rails also projecting at their lower edges below the plane of the bottom of the box body, upper inner and outer batten rails 13 arranged inside and outside of the box body at the upper edge thereof and secured in position at a distance, respectively, from the inner and outer sides of the box body to leave intervening filling spaces, said upper inner and outer batten rails also projecting at their upper edges above the plane of the upper edge of the box body, and a cement or plastic covering facing the entire inside and outside of the box body and filled in the intervening spaces formed between the box body and the upper and lower batten rails, said cement or plastic filling being also lined up flush with the outer sides of the outer batten rails, the inner sides of the inner batten rails, the lower projecting edges of the lower batten rails, and the upper projecting edges of the upper batten rails, substantially as set forth.

543,153. SAFETY DEVICE FOR ELEVATORS. WELLINGTON P. KIDDER, Boston, Mass., assignor to the Kidder Elevator Interlock Company, New York, N. Y. Filed May 8, 1895. Serial No. 548,596. (No model.)



Claim.—1. The combination in an elevator and with a well-door and the valve mechanism thereof, of a door-fastener, a valve-lock operating directly upon said valve mechanism and independent of the operating rope, and intermediate connections between the valve-lock and door-fastener for holding the valve locked when the fastener is in position to allow the door to be opened, substantially as described.

2. The combination in an elevator and with a well-door and the valve mechanism thereof, of a door-fastener, a valve-lock operating directly upon said valve mechanism and independent of the operating rope, intermediate connections between the valve lock and door-fastener for holding the valve locked when the fastener is in position to allow the door to be opened, and a car provided with means for operating the door-fastener, substantially as described.

3. The combination in an elevator and with a well-door and the valve mechanism thereof, of a door-fastener, a valve-lock operating directly upon said valve mechanism and independent of the operating rope, intermediate connections between the valve-lock and door-fastener for holding the valve locked when the fastener is in position to allow the door to be opened, and a car provided with means operated by the foot for operating the door-fastener, substantially as described.

4. The combination in an elevator and with a well-door and the valve-operating mechanism thereof, of a door-fastener, a valve-lock, intermediate connections between the valve-lock and door-fastener for holding the valve locked when the fastener is in position to allow the door to be opened, a car, a foot-lever thereon, and a notched catch carried and operated by said foot lever and operating on the fastener, substantially as described.

5. The combination in an elevator and with the well-door and the fastener thereof, of a car, a foot-lever and a toothed catch for operating the fastener, substantially as described.

6. The combination in an elevator and with a well-door and the valve-operating mechanism thereof, of a door fastener, a valve-lock, intermediate connections between the valve-lock and the door-fastener, and a projection on the well-door to hold the fastener in a raised position, substantially as described.

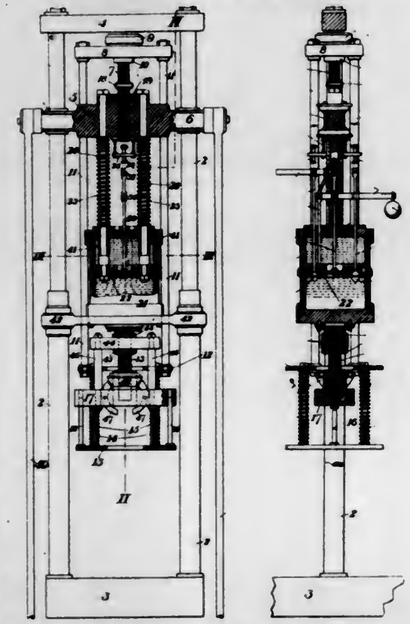
7. The combination in an elevator and with a well-door and the valve-operating mechanism thereof, of a door-fastener, a valve-lock, intermediate connections between the valve-lock and door-fastener, a projection on the well-door to hold the fastener in a raised position and the locking device in engagement, substantially as described.

8. The combination in an elevator and with a well-door and the valve mechanism thereof, of a door-fastener, a valve-lock operating directly upon said valve mechanism and independent of the operating rope, a detent-operator moved by said fastener and operating the valve-lock, substantially as described.

9. The combination in an elevator and with a well-door and the valve-operating mechanism thereof, of a door-fastener, a detent-operator moved by said fastener, and a detent connected with the detent-operator, and a disk on the valve-shaft or stem having a notch to receive the detent, substantially as described.

10. The combination in an elevator and with the well-doors and car thereof, of a wire 7 running parallel with said doors, blocks 26 on said wire, latches 8 for fastening the doors closed operated by said blocks, a tension device for keeping the wire taut, a lever 13 provided with a detent 13', and a disk 16 on the valve-shaft having a notch 16' to receive the detent, all substantially as described.

543,154. GLASS-PRESS. CORNELIUS KUHLEWIND, Rochester, Pa. Filed Aug. 15, 1894. Serial No. 520,363. (No model.)



Claim.—1 In a press, a reciprocating two-part former, one part being secured to a cylinder having closed ends, and the other to a valved piston within the cylinder; the positively actuated part being arranged to move the other part in both directions, substantially as described.

2. In a press, a reciprocating two-part former, one part being secured to a cylinder having closed ends, and the other to a piston therein, and a valve in said piston having a weighted stem; the positively actuated part being arranged to move the other part in both directions, substantially as described.

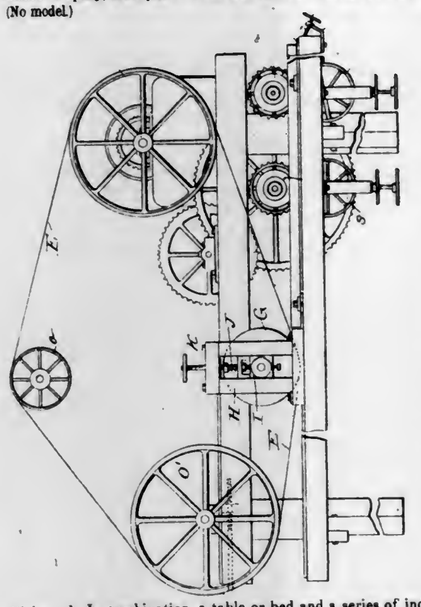
3. In a press, a two-part former, one part being secured to a cylinder, and the other to a piston within the cylinder, and a valve in the piston having a weighted stem and independent of the former; substantially as described.

4. A power press having a yielding connection with the plunger, and a separate positive connection which actuates the plunger after it has moved a certain distance; substantially as described.

5. A press having a moving cross-head, springs between the cross-head and the plunger, and a projection upon the cross head arranged to engage the plunger and move it positively after the cross-head has moved a certain distance; substantially as described.

6. A press having a two-part former, one part being secured to a cylinder and the other to a piston or plunger within the cylinder, a downwardly opening valve in the piston head having a stem provided with a lever, and an upwardly opening valve also connected to the lever; substantially as described.

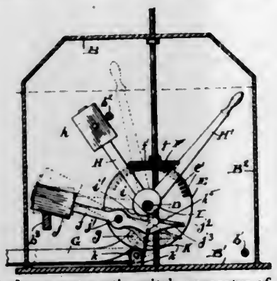
543,155. SANDING-MACHINE. ALLEN D. LINN and ALTON A. LYTLE, Grand Rapids, Mich., assignors to the Grand Rapids School Furniture Company, same place. Filed Mar. 21, 1895. Serial No. 542,703. (No model.)



Claim.—1. In combination, a table or bed and a series of independently vertically movable bars fitting grooves or recesses in said bed, each of said bars having a series of inclines on its under face engaging corresponding inclines in the bottom of the recess, a bracket secured to the bed or table, and adjusting means carried by said bracket and engaging the bars, substantially as described.

2. In combination with a belt E having a sanding surface, a roller G for pressing said belt upon the surface to be sanded; a table or bed and a series of independently adjustable bars forming the bearing surface whereby irregular articles may be supported, substantially as described.

543,156. AUTOMATIC RAILROAD-SWITCH. ELLSWORTH A. LOOMIS, Chicago, Ill. Filed Mar. 23, 1895. Serial No. 542,962. (No model.)

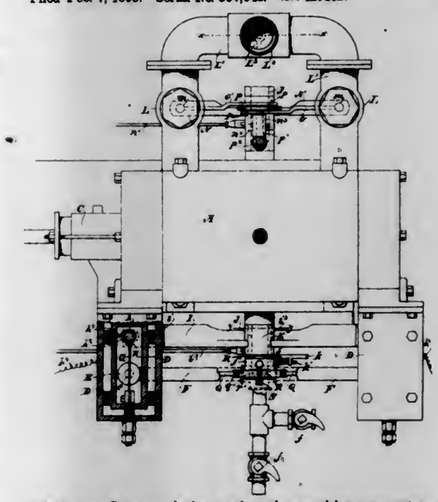


Claim.—1. In an automatic switch apparatus of the class described, the switch bar G having one end connected with the switch rails, an operating wheel pivotally connected with the opposite end of said switch bar and mounted on an operating shaft, a hand lever and weights in connection with said operating shaft, an eccentric cam on said shaft and a weighted locking lever in connection with said cam substantially as specified.

2. In an automatic switch apparatus of the class described, the combination of a pair of hinged pieces forming part of the track, of a link and crank mechanism in connection therewith, a weight adapted to hold said hinged pieces down and a pair of jackets connected with the track for protecting said hinged pieces as specified.

3. In an automatic switch apparatus of the class specified, switch operating mechanism connected by a switch bar with the switch rails, a hand lever and weights for operating said switch mechanism, locking mechanism in connection with the switch mechanism, a pair of hinged pieces forming part of the track, gravity operated link and crank mechanism in connection therewith and a cable connecting the switch locking mechanism with said gravity operated link and crank mechanism whereby said hinged pieces may be elevated when the switch is opened and set in position to trip said switch locking mechanism on being depressed, substantially as specified.

543,157. EXPLOSIVE ENGINE. MICHAEL L. MERY, Chico, Cal. Filed Feb. 7, 1895. Serial No. 537,648. (No model.)



Claim.—1. In an explosive engine, the sparking apparatus, consisting of the fixed electrode, mounted upon edge and having its outer extremity only bent to an inclination, and the movable electrode, also on edge and correspondingly inclined to the bent extremity of the fixed electrode, whereby it is adapted to pass up and in contact with one side of the fixed electrode, and down on the opposite side.

2. In an explosive engine, the sparking apparatus, consisting of a fixed electrode mounted upon edge and having its outer extremity only bent to an inclination, a movable electrode adapted to reciprocate past the fixed electrode and make and break contact therewith, and a means independent of the electrodes for closing the battery circuit when the movable electrode passes in one direction and opening it on the return movement comprising a contact on the stem of the movable electrode and a fixed contact in the battery circuit.

3. In an explosive engine, the sparking apparatus consisting of the fixed electrode, mounted upon edge and having an inclined extremity, and the movable electrode, correspondingly inclined to the extremity of the fixed electrode, whereby it is adapted to pass up and in contact with one side of the fixed electrode and down on its other side, and a means for closing the battery circuit on one movement of the movable electrode and opening it on the return movement, consisting of a contact on the stem of the movable electrode, and a fixed spring in the battery circuit, with which the contact makes and breaks electrical connection.

4. In a double acting explosive engine, a fixed and a movable electrode within each explosion chamber, in combination with means for operating the movable electrodes alternately consisting of a pivoted rocking lever having its ends adapted to alternately come in contact with the ends of the movable electrode, and a means for regulating the rocking lever consisting of an eccentric sleeve on which said lever is pivoted.

5. In a double acting explosive engine, a fixed and a movable electrode within each explosion chamber, in combination with means for operating the movable electrodes, consisting of a pivoted rocking lever, having its ends adapted to alternately come in contact with the ends of the movable electrode, the eccentric sleeve on which said lever is pivoted and by which it is regulated, and the means for adjusting said sleeve consisting of its arm having the spring-controlled locking pin and the collar on the pivotal shaft having the sockets with which the pin engages.

6. In combination with the movable electrodes of an explosive engine, said electrodes having projecting stems, a rocking lever having the end pieces with horizontal slots in which the ends of the electrode stems are secured, and the steadying blocks on said stems fitted in the ends of the rocking lever.

7. In combination with the movable electrodes of an explosive engine, said electrodes having projecting stems, a rocking lever having the end pieces with horizontal slots in which the ends of the electrode stems are adjustably secured by a cross pin, and the set screws for adjusting the contact of the lever with the stems of the movable electrodes.

8. In an explosive engine, the combination of the explosion chamber wall having a downwardly extending conical flange *d*, a conical sleeve fitting within said flange, an insulating material between the sleeve and flange, a movable electrode having a stem passing through the sleeve, a nut d^3 threaded on the lower portion of the sleeve and bearing up under the flange and a gland engaging said sleeve, substantially as herein described.

9. In an explosive engine and in combination with a valve therein having a stem, a pawl for engaging said stem to regulate the operation of the valve, and a means dependent upon the speed of the engine for operating the pawl, consisting of a rocking arm, a shaft pivoted in said arm and having a pendulum upon one end and a disk upon the other end, said disk having a pin upon which the handle of the pawl rests.

10. In an explosive engine, the exhaust valves thereof, having reciprocating stems, with shoulders, in combination with pivoted pawls adapted to make and break engagement with said shoulders for holding open and relieving the valves, and a means, dependent upon the speed of the engine for operating said pawls, consisting of a rocking lever by which the valves are normally operated, an arm rising from said lever, a shaft pivoted in the upper end of the arm and having a pendulum upon one end and a disk upon the other end of said shaft having a pin upon which the handles of the governing pawls rest.

11. In an explosive engine, the inlet valves thereof, in combination with the means for controlling them to regulate the charge admitted, consisting of the pivoted bell crank levers having the series of notches adapted to be thrown in the path of movement of the valve stems to limit said movement at different distances, and means, comprising a vertically movable device operated by a governor and an extension from the device to operate the lever, dependent upon the speed of the engine for swinging said bell crank levers.

12. In an explosive engine, the inlet valves thereof, in combination with the means for controlling them to regulate the charge admitted, consisting of the pivoted bell crank levers having the series of notches adapted to be thrown in the path of movement of the valve stems to limit said movement at different distances, and means, dependent upon the speed of the engine for swinging said bell crank levers, consisting of a vertically movable plate adapted to be operated by a suitable governor, and an arm upon said plate adapted to operate under the arms of the bell crank levers.

13. In an explosive engine, the branches from the exhaust chambers thereof, uniting in a common exhaust pipe and the inwardly opening valve in said branches whereby fresh air is drawn into the engine when the exhaust valves are opened.

14. In an explosive engine and in combination with its exhaust valve and exhaust pipe, an inwardly opening valve in said pipe beyond the exhaust valve through which fresh air may be drawn into the cylinder through the open exhaust valve.

543,158. CAR-COUPLING. ALVIN C. MCCORD, Chicago, Ill. Filed Apr. 13, 1894. Serial No. 507,447. (No model.)



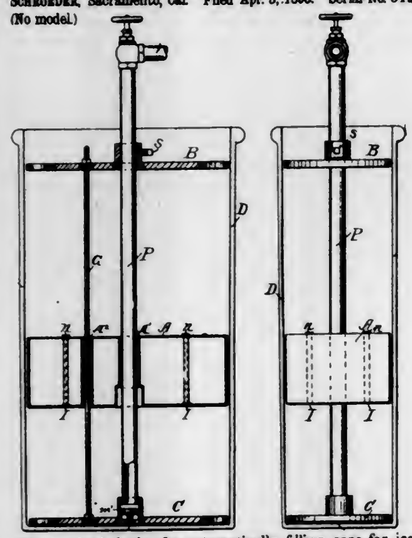
Claim.—1. In an automatic car coupler, the combination of a coupler head, a coupling hook or knuckle provided with suitable upper and lower bearing surfaces, and a vertically moving locking pin having a shoulder adapted to be engaged by the upper bearing surface of the hook or knuckle, and an inclined or rounded surface adapted to engage the lower bearing surface of said coupling hook or knuckle, substantially as set forth.

2. An automatic car coupler, a coupler head, and a coupling hook or knuckle having an extension or heel piece provided with suitable upper and lower bearing surfaces, combined with a vertically moving locking pin having a shoulder adapted to be engaged by the upper bearing surface of the heel piece, and a lower inclined or rounded surface adapted to engage the lower bearing surface of the said heel piece, substantially as set forth.

3. In an automatic car coupler, the combination of a coupler head, a coupling hook or knuckle having an extension or heel piece provided with suitable upper and lower bearing surfaces, and a vertically moving locking pin provided with a shoulder adapting it to be lifted by an inward pivotal movement of said heel piece and having a lower inclined or rounded surface adapted, when the pin is vertically lifted, to engage the lower bearing surface of said heel piece and positively throw the coupling hook or knuckle forward to the uncoupling position, substantially as set forth.

4. In a car coupler, a sliding locking pin, having a projection, to be engaged and lifted by means of a coupling hook or knuckle, and a projection inclined on its top face to engage and move the said coupling hook or knuckle, in combination with a coupler head and a coupling hook or knuckle pivoted thereto, substantially as and for the purposes stated.

543,159. CAN-FILLER FOR ICE-MACHINES. RICHARD F. SCHROEDER, Sacramento, Cal. Filed Apr. 5, 1895. Serial No. 544,648. (No model.)



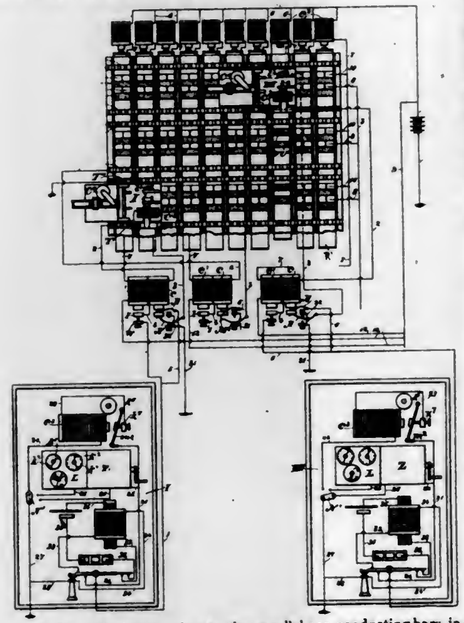
Claim.—1. A device for automatically filling cans for ice machines consisting of a central vertical pipe, spiders fitting the can at top and bottom respectively and secured to the pipe, a valve chamber and valve in the lower spider, the stem of which valve rests upon the bottom of the can so as to retain the valve open while the spider is at the bottom, a float fitting loosely over the pipe and movable in the space between the two spiders so as to rise as the can is filled with water said float acting to lift the apparatus and allow the inlet valve to close when the can is filled.

2. A device for filling cans for ice making machines consisting of a vertical central supply pipe, a spider at the bottom of the can into the center of which the supply pipe is fixed, a valve chamber into which the pipe discharges, a downwardly closing valve with a stem resting upon the bottom of the can whereby the valve is kept open while the spider is at the bottom, a second spider fixed to the supply pipe near the top of the can, a float fitting the interior of the can and movable loosely therein and about the central pipe and the guide rod, said float being raised as the can is filled with water, and acting to raise the upper spider and connected pipe and lower spider when the can is filled, whereby the supply valve is closed and the surface of the water is kept out of contact with the air.

3. In a device for filling cans for ice making machines, a vertically movable supply pipe adapted to discharge at the bottom, spiders fixed to it at top and bottom and movable with it, a float fitting the interior of the can, loosely movable between the spiders and chambered at the bottom to fit down over the lower spider.

543,160. TELEPHONE-EXCHANGE. WADA Y. SHIBATA, San Francisco, Cal. Filed Oct. 11, 1894. Serial No. 525,615. (No model.)

Claim.—1. In a telephone exchange system, parallel non-conducting bars having independent metallic conducting plates extending across them and connected in alternate groups with the line wires as shown, tracks having their upper surfaces toothed, extending across above the bars and plates, cars having gear-wheels adapted to engage the teeth of said tracks, electro magnets, means for transmitting a current through the electro magnets, swinging permanent magnets movable between the cores of the electro magnets and caused to oscillate about their fulcrum points by the energiziug and de-energizing of the electro magnets, pawls hinged to the lower end of the swinging permanent magnet adapted to engage the teeth of the track, and non-conducting cords connected with the pawls and with arms upon the swinging magnet, said cords passing through guides whereby the swinging of the magnet to one side will disengage one of the pawls and engage the other so that the car will be moved constantly in one direction, and the reversal of the current will reverse the position of the pawls so as to move the car in the opposite direction.



2. In a telephone exchange, the parallel non-conducting bars, independent metallic conducting plates secured thereto and connected with the subscribers' telephones of the system, cars movable upon the tracks transversely above the plates, electro magnets, with means for energizing and de-energizing, and swinging permanent magnets movable between the cores of the electro magnets, pawls fulcrumed upon the electro magnets and non-conducting cords connected with the pawls and with arms upon the permanent magnets, whereby the movements of said magnets in one direction will raise one of the pawls and engage the other with the teeth of the rack bars upon which the cars travel, and circuit breakers d' d^2 by which the opening and closing of the circuit of the electro magnet is effected.

3. In a telephone exchange system, a series of parallel non-conducting bars, independent metallic plates secured transversely thereto, tracks mounted transversely above said bars cars adapted to travel upon the tracks, arms depending from the cars adapted to form contact upon the various plates, non-conducting shields and magnets by which they are movable in conjunction with the movements of the car so as to expose only the points through which communication is to be made, hinged swinging permanent magnets carrying pawls which engage toothed racks whereby the car is advanced in one direction or the other, and devices whereby either of the pawls are disengaged and the others engaged with the rack to advance the car in either direction, circuit breakers whereby the opening and closing of the circuit of the electro magnets are effected and a horizontal centrally fulcrumed tilting permanent magnet, and a second electro magnet whereby it is tilted to act through circuit breakers to open and close the circuit of the first named electro magnet.

4. In a telephone exchange system, a series of parallel non-conducting bars with the independent metallic plates, tracks, cars adapted to travel thereon and mechanism for advancing the cars in either direction, horizontal tilting magnets and corresponding electro magnets with circuit breakers whereby the electrical circuit is opened or closed to advance the car, said horizontal permanent magnets having inclined troughs and balls adapted to roll therein to and from the center as the magnet is tilted about its fulcrum point.

5. In a telephone exchange system, the circuit breaking coil $c c'$, the movable armatures I, with the holding springs I^3 and adjusting screw W in combination with the movable projecting strips and the magnet c^3 and lever arms whereby said strips are alternately moved to cover the contact surfaces or expose them.

6. In a telephone exchange system, the series of parallel non-conducting bars, independent metallic plates secured transversely thereto, tracks mounted above said plates, cars adapted to travel upon said tracks with arms depending from the cars adapted to form contact between the plates, shields movable with reference to the metallic conducting plates so as to allow or prevent connection between said plates and the cars which are movable upon the tracks above them, one of the protectors in each set being made entirely of non-conducting substance, and the other having the lower portion made non-conducting and the upper of conducting substance so as to ground the current of any other subscriber attempting to communicate with one already in communication.

7. In a telephone exchange system, a series of parallel non-conducting bars, independent metallic plates secured transversely thereto, tracks mounted transversely above the plates, cars adapted to travel upon said tracks, arms depending from the cars adapted to form contact between the various plates, non-conducting shields and means whereby the cars and shields are moved, exchange boxes located at the station of each subscriber, indicators movable over dials upon the boxes at the subscribers' stations, with switches and contacts whereby the cars at the central station are moved upon their corresponding tracks until communication with any desired subscriber is obtained.

543,161. MACHINE FOR DRESSING CAR-WHEELS. FRED E. VAN CISE, Lancaster, N. Y., assignor of one-half to Henry Hagan, same place. Filed June 28, 1894. Serial No. 516,013. (No model.)

Claim.—1. In a machine for cleaning car wheels, the combination of means for supporting the wheel, a bed or frame capable of movement toward and from said means, a driven pulley on said bed or frame, a shaft arranged within the pulley and capable of independent longitudinal movement therein, the said shaft being connected with the pulley so as to revolve therewith, an emery-wheel fixed to the shaft and adapted to engage and to dress the car wheel, and a lever fulcrumed to the frame of the machine and pivotally connected to the shaft, whereby the shaft may be moved independently of the bed or frame, and made to engage or disengage the car-wheel substantially as described.

2. In a machine for dressing car wheels, the combination of means for mounting the car wheel, a bed or frame movable toward and from said means, a shaft mounted in said bed and having thereon a longitudinal rib, a pulley mounted upon the shaft so that the shaft will be capable of independent longitudinal movement therein, the pulley having an annular groove in its periphery, a rib arranged on the bed and fitting in the groove, whereby the pulley is kept from longitudinal movement, mechanism for revolving the pulley, an emery-wheel fixed to the shaft and adapted to engage the car wheel, and a lever fulcrumed to the frame of the machine and slidably connected to the shaft, whereby the shaft may be moved independently of the frame or bed, substantially as described

3. In a machine for dressing car wheels, the combination of means for mounting the car wheel, a bed or frame capable of movement toward and from said means, a driven emery-wheel on the bed and adapted to engage and disengage the car wheel, a rack-bar fixed to each side of the bed or frame, and on the under side thereof and extending longitudinally thereon, a shaft extending transversely across and beneath the bed or frame and pinions on the shaft and respectively engaging said rack-bars whereby the bed or frame may be moved, substantially as described.

4. In a machine for dressing car wheels, the combination of means for mounting the car wheel, a frame movable toward and from said means, an auxiliary frame capable of slight independent movement in the main frame and mounted thereon, a shaft revolubly mounted in said auxiliary frame and having a longitudinal rib thereon, a pulley mounted on the shaft so as to turn therewith and so that the shaft will be capable of independent movement within the pulley, means for driving the pulley, an emery-wheel fixed to the shaft, and a lever pivoted to the frame of the machine and capable of connection with the auxiliary frame, whereby said frame may be reciprocated within the main sliding frame, substantially as described.

5. In a machine for dressing car wheels, the combination of means for supporting the car wheel, a horizontal bed or frame movable toward and from the said means and having a detent thereon, a vertical shaft provided with an arm engaging the detent and operated thereby, clutch mechanism connected to the shaft and thrown in and out of engagement by the operation thereof, whereby the operative parts of the machine are set in motion, and dressing devices on the bed or frame and connected with the operative parts of the machine, substantially as described.

6. In a machine for dressing car wheels, the combination of means for mounting the wheel, a bed or frame movable toward and from said means, dressing devices on the bed or frame, a detent arising from the frame or bed, two curved arms of different lengths adapted to be engaged by the detent as the bed or frame moves and to be swung by such engagement, clutch mechanism to which said arms are connected, whereby the movements thereof are transmitted to the clutch mechanism, and a system of shafts and belting capable of connection with the clutch mechanism and with the dressing devices of the bed or frame, whereby said dressing devices may be operated, substantially as described.

7. In a machine for dressing car wheels, the combination of means for supporting the car wheel, a tool-carrying frame movable toward and from said means and having a detent arising therefrom, a pair of curved arms adapted to be engaged by the detent and to be moved by said engagement, and clutch mechanism actuated by said arms and adapted to throw the machine in and out of gear, substantially as described

8. In a machine for dressing car wheels, the combination of means for supporting the car wheel, a tool-carrying bed or frame movable toward and from said means and having a detent arising vertically therefrom, a vertical rock-shaft having its lower end adjacent to the detent of the bed or frame, curved arms of different lengths fixed to the lower end of said vertical shaft, a revoluble shaft connected to the operative parts of the machine and adapted to transmit movement thereto, and a clutch member to which the power for driving the machine is primarily imparted, said member being in connection with the vertical shaft and adapted to be moved thereby so as to engage or disengage with the revoluble power-transmitting shaft, substantially as described.

9. In a machine for dressing car wheels, the combination of means for supporting the car wheel, a reciprocating bed or frame capable of movement toward and from said means, and a driven brush on said bed or frame and adapted to engage the car wheel and to dress or clean the same, substantially as described.

10. In a machine for dressing car wheels, the combination of means for mounting the car wheel, two plates located adjacent to the wheel and having an oval-shaped slot in each, a frame having trunnions arranged respectively in said slots and adapted to move throughout the same, and a driven brush mounted upon said frame and adapted to engage the car wheel, substantially as described.

11. In a machine for dressing car wheels, the combination of means for mounting the car wheel, two plates located adjacent thereto and having oval-shaped slots in their contiguous faces, a frame arranged in the space between said plates and having trunnions fitting in the grooves thereof, a brush on said frame and adapted to engage and dress the car wheel, means for driving the brush, a pitman connected to the frame, and a driven crank-disk connected to the pitman, whereby the frame is caused to move throughout the slots of the plate, substantially as described.

12. In a machine for dressing car wheels, the combination of means for mounting the car wheel, a pair of plates arranged adjacent thereto and having slots therein, a frame arranged between the plates and provided with trunnions respectively located within the slots of the plates and adapted to move throughout the extent thereof, means for moving the frame, and a driven brush mounted on the frame and adapted to engage the car wheel, substantially as described.

13. In a machine for dressing car wheels, the combination of means for mounting the car wheel, a pair of slotted plates arranged adjacent thereto, a brush-carrying frame located between the plates and having trunnions arranged in the slots thereof, means for driving the brush, a shaft having a crank-disk thereon and in connection with the frame, whereby the frame is caused to traverse the slots of the plates, a pulley loosely mounted on the shaft and having a rotary movement continuously imparted thereto, a ratchet-wheel fixed to the shaft, and a pawl pivoted to the ratchet-wheel and capable of being engaged with the pulley, whereby the said pulley may be fixed to the shaft and the shaft caused to revolve, substantially as described.

14. In a machine for dressing car wheels, the combination of means for mounting the car wheel so that it will be capable of a rotary movement, two slotted plates arranged adjacent to said means, a brush-carrying frame having trunnions located within the slots of said plates, means for driving the brush, a revoluble shaft, a crank-disk thereon and connected to the frame, a loose pulley on the shaft and having power continuously imparted thereto, clutch mechanism for engaging and disengaging said shaft and pulley, and a lever connected to said clutch mechanism and adapted to operate the same, said lever being adapted to be engaged by the car wheel as it revolves, whereby the lever is operated, substantially as described.

15. In a machine for dressing car wheels, the combination of means for revolubly mounting the car wheels, a brush adapted to engage the car wheel, a frame in which said brush is mounted, means connected to the frame whereby it is moved toward and from the car-wheel, clutch mechanism for throwing said means in and out of gear, and a lever connected to the clutch mechanism and adapted to be engaged by the car wheel, whereby the clutch mechanism is operated substantially as described.

16. In a machine for dressing car wheels, the combination of means for mounting the car wheel, a frame capable of movement toward and from the car wheel, a brush revolubly mounted in the frame and adapted to engage the car wheel, a plate hinged to a stationary portion of the machine, a revoluble shaft mounted in said plate, a belt connecting said shaft and the brush, a second revoluble and driven shaft mounted off the plate and at the hinged end thereof, and a belt connecting the first and second shafts, substantially as described.

17. In a machine for dressing car wheels, the combination with means for supporting a car wheel, of a dressing-tool-carrying bed movable toward and from the said wheel-supporting means, driving mechanism for imparting movement to the operative parts of the machine, and a clutch actuated by the bed and adapted to be thrown in and out of engagement upon the movements thereof, whereby upon the advancement of the bed the machine may be automatically set in operation, substantially as described.

18. In a machine for dressing car wheels, the combination with means for supporting a wheel, of a bed movable toward and from the same, a brush revolubly mounted on the bed and adapted to engage the car wheel, driving mechanism mounted on the frame of the machine and off the bed, a loose belt connecting the brush and said driving mechanism, and a lever fulcrumed on the frame of the machine and adjacent to said belt and having one end weighted and the other provided with an idler pulley adapted to be pressed into engagement with the belt and to keep the same taut notwithstanding the reciprocations of bed, substantially as described.

19. In a machine for dressing car wheels, the combination of means for supporting a wheel, of two duplicate and slotted plates, a frame provided with trunnions fitted in the slots of said plates and movable therein, a shaft journaled in the frame and capable of longitudinal movements in its bearings, means for driving the shaft, a spring arm fixed to the frame and having a loose connection with the shaft whereby the shaft is given a tendency to a predetermined position, a brush on the shaft, and a flange fixed to the shaft and adapted to engage the car wheel whereby the shaft is made to move longitudinally, substantially as described.

20. In a machine for dressing car wheels, the combination of means for mounting a car wheel, a brush capable of cleaning the spaces between the strengthening ribs thereof, and an additional brush extending radially with the wheel and capable of and adapted to clean the more exposed portions of the wheel, substantially as described.

21. In a machine for dressing car wheels, the combination with means for supporting a car wheel, of a frame, a brush mounted therein, guide-plates for the frame whereby it may move in a line parallel with the spaces between the strengthening ribs of the wheel, means for continuously revolving the brush, a pitman connected to the brush-frame, a crank-shaft for furnishing movement to the pitman, clutch mechanism operating with the shaft to throw it in and out of gear, and a lever having one end connected to the clutch mechanism and the remaining end in position to be engaged by the strengthening ribs of the car wheel, whereby as each rib passes said end the clutch mechanism will be operated and the position of the brush-carrying frame changed, substantially as described.

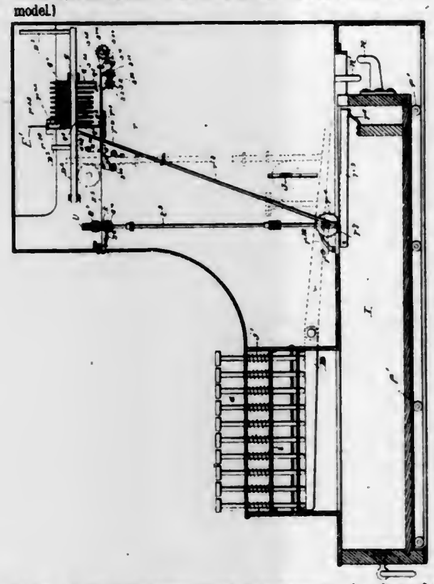
22. In a machine for dressing car wheels, the combination of two vertical frame-standards slotted longitudinally, means for supporting a car wheel, a brush-frame, a driven brush thereon, two guide-plates within which the brush-frame is movable, and two bars supporting the guide-plates and having their ends arranged in the slots of the frame-standards and adjustably held therein, substantially as described.

23. In a machine for dressing car wheels, the combination with means for supporting a wheel, of a brush-frame, means for moving the brush-frame so that it may cover the extent of the car-wheel, a driven brush on said frame, a guide plate formed with an oval-shaped slot therein in which slot the brush-frame is arranged, and an inclined spring-pressed pawl arranged in the slot and having an abrupt shoulder normally aligned with the sides of the slot, whereby the brush-frame is forced to move throughout the slot in a specific direction, substantially as described.

24. In a machine for dressing car wheels, the combination with means for supporting a car wheel, of a brush-frame capable of moving toward and from the wheel, a brush thereon, a plate hinged to the frame of the machine, a shaft revolubly mounted in its free end, a belt connecting said shaft with the brush on the brush-frame, a shaft at the base or hinged end of the plate and in connection with the shaft at the free end thereof, and means for driving the shaft at the base or hinged end of the plate, substantially as described.

25. In a machine for dressing car-wheels, the combination with a frame capable of having a car wheel mounted thereon, of a shaft extending radially with the car wheel, a diagonally-extending beam fixed on the frame and having a transversely elongated slot therein in which the lower end of the shaft is arranged, a pulley mounted at the lower end of the shaft and below the diagonally-extending beam, whereby power may be applied to the shaft, the diagonally-extending beam having two dove-tailed ribs extending parallel with and on each side of the slot, a plate mounted on the ribs and adjustable thereon, means for holding the plate stationary, the plate having a box therein in which the shaft is journaled, a bearing for the upper end of the shaft, and a brush fixed to the shaft substantially as described.

543,162. CASH-INDICATOR. HENRY G. WALTER and CHARLES F WALTER, Scranton, Pa. Filed May 6, 1893. Serial No. 473,299. (No model.)



Claim.—1. The combination with a framework, a key lever fulcrumed at or near its middle, sliding spring cushioned key bars located in position to vibrate the lever when slid inward, of targets, means for shifting them to different positions, and means extending from the key lever to one of the targets whereby to operate one of the targets with each operation of the lever, substantially as set forth.

2. In a cash indicator, the combination with a sliding spring sustained key-bar having ratchet teeth projecting therefrom and integral therewith, and a large tooth also projecting therefrom, of a pivoted dog adapted to engage said ratchet teeth to prevent the return of the key-bar after a partial depression of the same, said dog having an arm or ear projecting therefrom adapted to be struck by the large tooth on the key-bar to release the dog from the ratchet teeth when the key-bar shall have completed its downward movement, substantially as set forth.

3. In a cash indicator, the combination with a key lever and a horizontally movable bar having perforations therein, of a series of target bars passing through said perforations, a vertically movable lifting bar, and mechanism interposed between said key lever and the horizontally and vertically movable bars for sliding said horizontally movable bar and raising the vertically movable lifting bar, substantially as set forth.

4. The combination with a horizontally movable bar, targets having sliding connection therewith, and means for sliding the target bar, of key lever, a pair of vertically sliding rods, one of which is adapted to raise the target located above it, and means connecting these sliding rods whereby one is operated by the other, substantially as set forth.

5. The combination with a horizontally movable bar, targets having sliding connection therewith and means for sliding the movable bar, of key lever, key rod, a sliding rod for raising the target located in its path, a spring actuated slide rod in position to be slid by the key lever, and a pair of connected levers for communicating motion from one slide rod to the other, substantially as set forth.

6. In a cash indicator, the combination with a key lever and means for operating the same, of a horizontally movable toothed bar, a series of target bars carried by said horizontally movable bar, a lifting bar adapted to force said target bars upwardly, devices controlled by the key lever for operating said lifting bar, a pinion adapted to mesh with the teeth of the horizontally movable bar, and devices controlled by the key lever for rotating said pinion, substantially as and for the purpose set forth.

7. In a cash indicator, the combination with a key lever and means for operating the same, of a horizontally movable toothed bar, a series of target bars carried by said horizontally movable bar and adapted to have a vertical movement, a pinion adapted to mesh with the teeth of the horizontally movable bar, a vertical toothed bar adapted to mesh with said pinion, devices controlled by the key lever for raising said vertical bar, a lifting bar adapted to force said target bars upwardly, and means for automatically operating said lifting bar, substantially as set forth.

8. In a cash indicator, the combination with a key lever and means for operating the same, of a horizontally movable bar, a series of vertically movable target bars carried thereby, a vertically movable bar, means for transmitting motion from said vertically movable bar to the horizontally movable bar, means for retaining said vertically movable bar elevated, devices for automatically releasing said vertically movable bar, a spring for returning it to its normal position, a lifting bar adapted to raise the target bars and means for automatically operating said lifting bar, substantially as set forth.

9. In a cash indicator, the combination with a key lever and means for operating the same, of a horizontally movable bar, a series of vertically movable targets carried thereby, a vertically movable bar, means for transmitting motion from the vertically movable bar to the horizontally movable bar, a friction clutch to retain the vertically movable bar elevated, means for operating said clutch to release the vertically movable bar, a lifting bar and means for operating said lifting bar to elevate the target bars, substantially as set forth.

10. In a cash indicator, the combination with a key lever and means for operating the same, of a horizontally movable bar, a series of vertically movable target bars carried thereby, a vertically movable bar, means for transmitting motion from the vertically movable bar to the horizontally movable bar, an eccentric adapted to retain the vertically movable bar elevated, means for automatically turning said eccentric to release the vertically movable bar when the machine is again operated, a lifting bar and means for operating said lifting bar to raise the target bars, substantially as set forth.

11. In a cash indicator, the combination with a key lever and means for operating the same, of a vertically movable bar adapted to normally rest on said key lever, a spring for returning said bar to its normal position, a vertical toothed bar, a horizontally movable toothed bar carrying a series of target bars, a pinion interposed between said toothed bars, a spring for returning the vertically movable toothed bar to its normal position, a lifting bar, and means for operating said lifting bar to raise a target bar, substantially as set forth.

12. In a cash indicator, the combination with a key lever, and a vertically movable spring-sustained bar resting on said key lever, of a vertically movable lifting bar, a series of target bars, means for automatically moving said target bars over the lifting bar, and means connected with and operated by the vertically movable spring-sustained bar for operating said lifting bar to raise and lower the target-bars, substantially as set forth.

13. In a cash indicator, the combination with a key lever, and a vertically-movable spring-sustained bar resting on said key lever, of

a vertically movable lifting bar, a series of target bars, means for automatically moving said target bars over the lifting bar, a pivoted lever adapted to sustain said lifting bar, a link pivotally connected to said lever, a lever pivoted between its ends and connected at one end to said link and at its other end adapted to be engaged by projections on the vertically movable spring sustained bar, substantially as set forth.

14. In a cash indicator, the combination with a drawer, and a lever pivoted above the point where the inner end of the drawer stops when the latter is closed, one end depending behind the drawer and the other projecting forward over the rear end of the drawer of a locking bar, its free end normally in engagement with the drawer and in the same plane with said lever whereby to rock the latter when it is struck by the locking bar, a key-lever, lever J having one end extending in close proximity to the key lever, and means for connecting the lever J to the locking bar, substantially as set forth.

15. In a cash indicator, the combination with a key lever, a horizontally movable bar, and means comprising a toothed bar and a toothed wheel interposed between the horizontally movable bar and the key lever and operated by the latter for causing said bar to move when the key lever is operated, of a series of vertically movable type bars carried by said horizontally movable bar, a plate under said type bars against which paper is carried, and means for moving said type bars to cause the type thereon to print on the paper on said plate, substantially as set forth.

16. In a cash indicator, the combination with a key lever, a horizontally movable bar, and means interposed between the horizontally movable bar and the key lever for moving said bar when the key is operated, a series of target bars carried by said horizontally movable bar, means for forcing said target bars upwardly, a series of type bars also carried by a horizontally movable bar, type carried by said type bars, a plate or table, against which paper is carried, and means for causing the type to print on said paper a figure corresponding with that displayed by the elevated target, substantially as set forth.

17. In a cash indicator, the combination with a key lever, a horizontally movable bar and means comprising a toothed bar and a toothed wheel interposed between the horizontally movable bar and the key lever and operated by the latter for moving said bar back and forth, of a series of movable type bars carried by said horizontally movable bar, type on said type bars, a plate adapted to support paper, a yoke adapted to engage said bars when moved in line therewith, and means for operating said yoke to cause the type to print on the paper on said plate, substantially as set forth.

18. In a cash indicator, the combination with a key lever, a horizontally movable bar and means comprising a toothed bar and a toothed wheel interposed between the horizontally movable bar and the key lever and operated by the latter for moving said bar back and forth, of a series of movable type bars carried by said horizontally movable bar, type carried by said type bars, a yoke adapted to engage said type bars when moved in line therewith, a plate or table adapted to support paper, a shaft, and means connected with said shaft to cause said yoke to pull a type against the paper on said plate or table, substantially as set forth.

19. In a cash indicator, the combination with a key lever, a horizontally movable bar and means comprising a toothed bar and a toothed wheel interposed between the horizontally movable bar and the key lever and operated by the latter for moving said bar back and forth, of a series of movable type bars, type carried by said type bars, a yoke adapted to engage said type bars when moved in line therewith, and means for automatically operating said yoke to depress the type bars, substantially as set forth.

20. In a cash indicator, the combination with a key lever, a horizontally movable bar and means comprising a toothed bar and a toothed wheel interposed between the horizontally movable bar and key lever and operated by the latter for causing said bar to move back and forth, of a series of movable type bars, type carried thereby, a plate or table over which said type bars are adapted to be moved, said plate or table being adapted to support paper, a yoke adapted to engage the type bars when moved in line therewith, guides f r said yoke, and means for operating said yoke to cause a type to print on the paper on said plate or table, substantially as set forth.

21. In a cash indicator, the combination with a horizontally movable bar, a key lever and means comprising a toothed bar and a toothed wheel interposed between said bar and key lever and operated by the latter for causing the bar to move back and forth, of a series of spring sustained vertically movable type bars carried by said horizontally movable bar, a type carried by each type bar, a plate or table adapted to support paper and means for causing said type to print on said paper, substantially as set forth.

22. In a cash indicator, the combination with a horizontally movable bar, a key lever and means comprising a toothed bar and a toothed wheel interposed between said bar and key lever and operated by the latter for causing the bar to move back and forth, of a series of spring sustained vertically movable type bars carried by said horizontally movable bar, a type carried by each type bar, a plate or table adapted to support paper and means for automatically causing said type to print on said paper when the drawer is opened, substantially as set forth.

23. In a cash indicator, the combination with a bar carrying a series of type bars having type thereon, a sliding yoke adapted to depress said type bars, means for supporting paper and a drawer, of a rod projecting from said yoke, a shaft, a crank arm carried by said shaft and connected to said rod, a ratchet wheel also carried by said shaft and a ratchet bar carried by the drawer and adapted to mesh with said ratchet wheel, substantially as set forth.

24. In a cash indicator, the combination with a bar carrying a series of type bars having type thereon, a sliding yoke adapted to depress said type bars, means for supporting paper, and a drawer, of a rod projecting from said yoke, a shaft, a crank arm carried by said shaft and connected with said rod, a ratchet wheel also carried by said shaft, a ratchet bar pivoted at one end to the drawer and adapted to mesh with said ratchet wheel, and a spring secured at one end to the drawer and bearing at its other end against the free end of the ratchet bar, substantially as set forth.

25. In a cash indicator, the combination with a drawer and a series of type, of means for supporting a strip of paper, friction wheels between which said strip is adapted to pass, mechanism intermediate of one of the friction wheels and the drawer, whereby, when the drawer is opened, said friction wheel will be operated to slide the paper to be fed, means for severing said strip and means carried by said friction wheel for operating said cutting mechanism, substantially as set forth.

26. In a cash indicator, the combination with type and a drawer, of means for supporting two strips of paper and an ink ribbon below the type, devices adapted to be operated automatically by the movement of the drawer, and a cutting device adapted to automatically cut one of said strips, substantially as set forth.

27. In a cash indicator, the combination with type, a table and a drawer, of a drum adapted to carry a strip of paper, friction wheels adapted to draw the strip of paper over said table, a bevel pinion carried by one of said friction wheels, a shaft carrying a pinion to mesh with a pinion on the friction wheel, a horizontal shaft mounted near the drawer, a pinion carried by said horizontal shaft and adapted to mesh with a pinion on the lower end of the first mentioned shaft, a ratchet wheel carried by the horizontal shaft and a ratchet bar carried by the drawer and adapted to mesh with said ratchet wheel, substantially as set forth.

28. In a cash indicator, the combination with several series of key rods or bars, of a single key lever for each series of key rods or bars, several series of target bars carrying targets, the targets of one series corresponding with the key buttons on the key rods or bars of the same series, and mechanism interposed between each key lever and the corresponding series of targets for operating the same, when a key is depressed, substantially as set forth.

543,163. EXPLOSIVE ENGINE. CARL W. WEISS, Brooklyn, assignor to himself and August Mietz, New York, N. Y. Filed Mar. 15, 1894. Serial No. 503,683. (No model.)

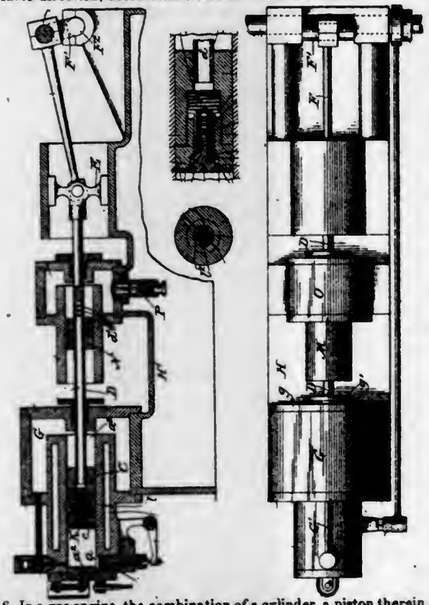
Claim.—1. In a gas engine, the combination of a motor cylinder, a second or pump cylinder in line with the first, pistons in said cylinders connected to move together and a conductor through which the charge is forced from the pressure chamber of the pump cylinder and is delivered into the motor cylinder through the motor piston, substantially as shown and described.

2. In a gas engine, the combination of a motor cylinder, a piston having a port therein, a hollow piston rod, a second cylinder in line with the first, a second piston fixed to said rod and adapted to move in said second cylinder, said hollow rod having inlet ports in advance of the second piston, and a chamber communicating with the forward end of the second cylinder and having an inwardly opening port, substantially as shown and described.

3. In a gas engine, the combination of a motor cylinder, a piston having a port therein, a chamber communicating with the inclosed space in front of the piston and tightly closed to prevent reduction of pressure by escape of its contents, a second cylinder in line with the first, a second piston connected to the first and adapted to move in said second cylinder, said pistons being connected by a conductor having inlet ports, and an inwardly opening valve to permit the admission of gas to said second cylinder, substantially as shown and described.

4. In a gas engine, the combination of a cylinder having an exhaust port at its rear end and having its forward end tightly closed, a hollow piston rod passed through the front end of said cylinder, a piston in said cylinder having an inlet port communicating with the hollow piston rod, a valve closing said port and opening toward the rear end of said cylinder, a perforated plate secured to the head of said valve and covering said piston, its perforations communicating with said port whereby the incoming charge is evenly distributed, and means to introduce the charge into the hollow piston rod, substantially as shown and described.

5. In a gas engine, the combination of a cylinder, a piston therein, said piston having a single port formed through it and said single port having two valve-seats formed in its walls, a valve plug adapted to rest upon the innermost seat and an independent valve plug having a stem entered in and guided by the first valve plug and adapted to rest upon the second valve-seat, both of said valve plugs opening in the same direction, substantially as shown and described.



6. In a gas engine, the combination of a cylinder, a piston therein, said piston having a single port formed through it and said single port having two seats formed in its walls, and a two-part valve in said port, one part independent of and covering the other, and opening in the same direction, and each part adapted to close said single port, substantially as shown and described.

7. The combination of a motor cylinder, a piston having a port therein, an independent pump cylinder, means to conduct the charge from the pump cylinder to the port in the piston, and wire gauze interposed between the port and the conductor to prevent lighting back, substantially as shown and described.

8. In a gas engine, the combination of a motor cylinder having at its end behind the piston an exhaust port for the burned gases, a tightly closed compression chamber communicating with the front end of said cylinder, and a pump cylinder communicating with the space behind the motor piston for the delivery of the explosive charge thereto, whereby the fresh charge may be delivered under pressure to the motor cylinder without necessitating openings through the wall of the motor cylinder which would reduce by leakage the efficiency of the compression chamber substantially as shown and described.

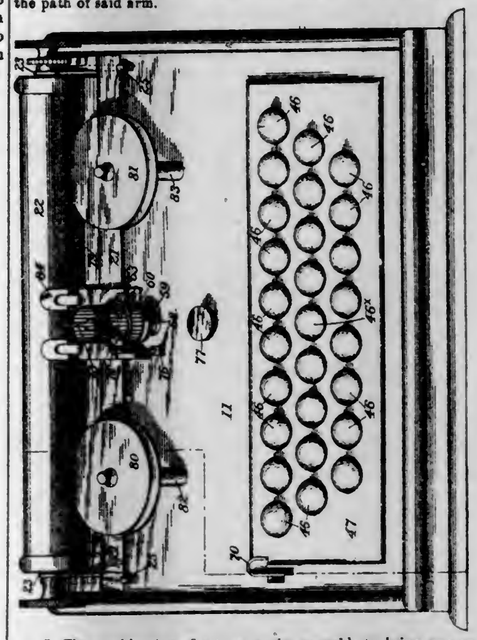
543,164. TYPE-WRITING MACHINE. CARL W. WEISS, Brooklyn, assignor to himself and August Mietz, New York, N. Y. Filed Apr. 26, 1894. Serial No. 509,060. (No model.)

Claim.—1. A typewriting machine having a type-carrier movable to bring one or another of the type characters to the line of print, a series of compressors adapted to be actuated by the operator means actuated thereby to determine the extent of movement of said type carriers and a motor independent of the compressors to impart movement to the type carrier.

2. A typewriting machine having a series of compressors adapted to be operated by the fingers, a type carrier movable to bring one or another of the type characters to the line of print, an arm moving with said type carrier, and stops adapted to be moved into the path of said arm by the operation of said compressors.

3. The combination of a type carrier movable to bring one or another of the type characters to the line of print, a motor to impel the same in one direction, an escapement device to hold or release said type carrier, a series of compressors adapted to be operated by the fingers, and means actuated thereby to operate said escapement device.

4. The combination of a type carrier movable to bring one or another of the type characters to the line of print, an arm moving with said type carrier, a series of cylinders, a series of plungers movable in said cylinders, and a series of compressors connected with said cylinders, whereby any one of said plungers can be moved into the path of said arm.



5. The combination of a type carrier movable to bring one or another of the type characters to the line of print, a motor to impel the same in one direction, an arm moving with said type carrier, a series of cylinders, a series of compressors connected to said cylinders, a series of plungers movable by the operation of said compressors into the path of said arm, and an escapement device to hold or release said type carrier and adapted to be operated by the movement of any one of said plungers.

6. The combination of a shaft, a motor to impel said shaft, a type carrier borne by said shaft, an arm carried by said shaft, a series of cylinders arranged about the axis of said shaft, a series of compressors connected to said cylinders and a series of plungers any one of which is movable by the operation of a corresponding compressor into the path of said arm.

7. The combination of a shaft, a motor to impel said shaft, a type carrier borne by said shaft, a finger rotating with said shaft, an escapement plate having a stop to engage said finger, a series of cylinders, a series of compressors connected to said cylinders and a series of plungers any one of which is movable by the operation of the corresponding compressor to strike said plate and open the escapement.

8. The combination of a shaft, a type carrier borne by said shaft, a pinion frictionally mounted on said shaft, motor and intermediate gearing for driving said pinion, and means to check positively the rotation of said shaft while permitting the pinion to continue its rotation.

9. The combination of a shaft, a type carrier borne by said shaft, a pinion frictionally mounted on said shaft, a motor and intermediate gearing for driving said pinion, an escapement finger carried with said pinion, an escapement stop movably supported and means to shift said stop, whereby the pinion is permitted to have a complete rotation at each operation of the escapement regardless of the movement of the shaft.

10. In a typewriter having a movable paper carriage and a motor therefor and means to hold the carriage temporarily from movement, an air compressor and means operated thereby to release the carriage for movement by the motor.

11. The combination of a paper carriage, a shaft geared thereto, a motor to impel said shaft, a gear mounted loosely on said shaft, a clutch to couple said gear to said shaft, and means to operate said clutch to permit movement of the shaft independently of said gear.

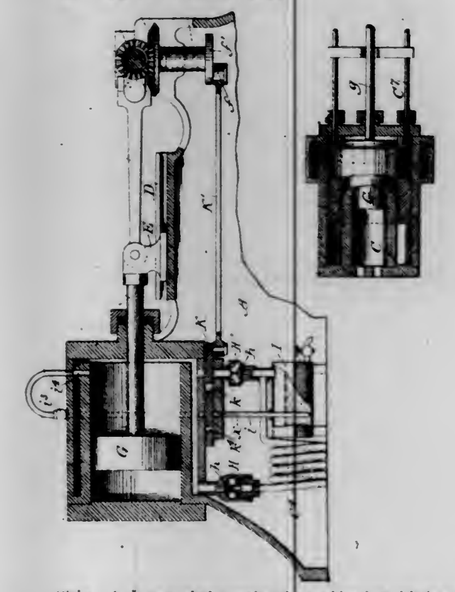
12. The combination of a paper carriage, a shaft geared thereto, a motor to impel said shaft, a gear mounted loosely on said shaft, a clutch to couple said gear to said shaft, a compressor and means actuated by the operation of said compressor to open said clutch

13. The combination of a paper carriage, a shaft geared thereto, a motor to impel said shaft, a gear mounted loosely on said shaft, and having a series of lugs upon one face thereof, an escapement lever carried by said shaft and adapted to engage said lugs and means to shift said lever to release said shaft from said gear.

14. The combination of a paper carriage, a shaft geared thereto, a motor to impel said shaft, a gear mounted loosely on said shaft, and having a series of lugs upon one face thereof, an escapement lever carried by said shaft and adapted to engage said lugs, a spring to force said lever into engagement with said lugs, a cylinder fixed in line with said shaft, a plunger in said cylinder and a compressor connected with said cylinder and adapted to operate said plunger to shift said lever and to release the shaft from the gear.

15. A type carrier for typewriting machines composed of a hub having a notched periphery with an outer flange and a series of spring strips notched at one end to engage the notches of said hub and bearing type characters at their free ends, each strip having a rib on its outer face near its notched end to rest against said flange.

543,165. EXPLOSIVE ENGINE. CARL W. WEISS, Brooklyn, assignor to himself and August Mietz, New York, N. Y. Filed Oct. 19, 1894. Serial No. 526,345. (No model.)



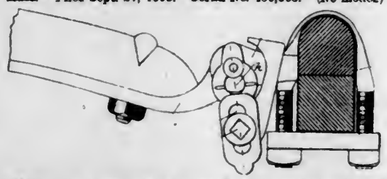
Claim.—1. In an explosive engine, the combination with the cylinder, of a jacket surrounding the cylinder with a space between which communicates with the forward end of the cylinder, the forward end of the cylinder and said space being tightly closed so that the contained gas or gases shall be compressed by the forward movement of the piston to expand and do work upon the piston as it makes its return movement, means to displace the air or gases in said space as the engine is operated, and a cooling device, whereby the air or gas is cooled as it is compressed during the forward stroke of the piston and is returned to contact with the heated cylinder for further expansion by increase of temperature as the piston makes its return stroke, substantially as shown and described.

2. In an explosive engine, the combination with the cylinder, of a jacket surrounding the cylinder with a space between which communicates with the forward end of the cylinder, the forward end of the cylinder and said space being tightly closed, a pipe having its ends respectively connected to the space inclosed by the jacket near the respective ends of the cylinder, a check-valve opening away from the jacketed space in the pipe near the rear end of the cylinder and a check-valve opening toward the jacketed space near the forward end of the cylinder, substantially as shown and described.

3. In an explosive engine, the combination with the cylinder having its forward end tightly closed, of a chamber communicating with the forward end of the cylinder, a valve controlling the communication between the chamber and forward end of the cylinder, and means for operating said valve at successive movements of the piston, whereby communication is open to permit compression and subsequent expansion of the inclosed gases during certain movements of the piston and whereby said communication is closed during other movements of the piston to hold the gases inclosed in the chamber under compression and to relieve the front of the piston of their pressure, substantially as shown and described.

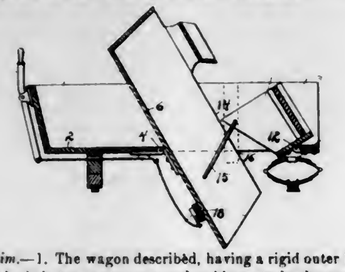
4. In an engine, the combination with the cylinder having its end closed to permit of compression of the inclosed air or gases by the piston, of a closed chamber communicating with the cylinder and adapted to receive a lubricant, a pipe entering said chamber with its end below the surface of the lubricant therein and having its other end communicating with an opening into said cylinder, and two check-valves in said pipe separated by some distance from each other and both opening from said chamber, substantially as shown and described.

543,166. THILL-COUPLING. JOSEPH E. WHIDDEN, Whitman, Mass. Filed Sept. 27, 1893. Serial No. 486,605. (No model.)



Claim.—In a carriage thill coupling, the combination of the pad P and pad holding frame E, having an extension E^3 adapted to receive the clamp screw H^2; with the clamp screw H^2 hasp H^3 and pin H having an annular groove H′ adapted to interlock with the said hasp H^3 substantially as and for the purpose set forth.

543,167. DUMPING-WAGON. NEWTON BATE, Cleveland, Ohio. Filed Dec. 13, 1894. Serial No. 531,687. (No model.)



Claim.—1. The wagon described, having a rigid outer body and an inner body in two parts supported on hinges to be dumped, a pivot link connection between said parts, catches on the outer body and a lock on one of the pivoted parts to engage the said catches, substantially as set forth.

2. A wagon having a dumping body with bottom and sides formed in two sections of different lengths and the shorter section in the rear, and a link connecting the free ends of said sections and arranged to tilt and hold the shorter section in all its positions, substantially as set forth.

3. A dumping wagon having an outer body, an inner body composed of two sections of varying lengths, the longer section pivoted midway its length near the center of the outer body, the shorter section pivoted on the rear of the outer body, a link connection between said sections at their discharging ends and pivoted in each, whereby the shorter section is controlled through the longer one, and a lock to engage and hold up the longer section, substantially as set forth.

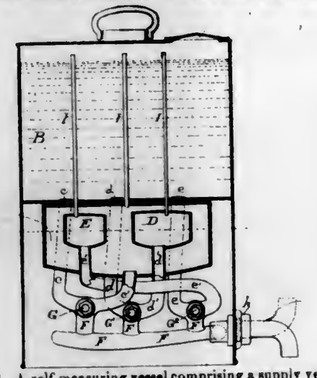
543,168. POTATO-SEED CUTTER AND DROPPER. ISAAC A. BORDNER, Tiro, Ohio, assignor of one-half to Anthony Bender, same place. Filed May 23, 1895. Serial No. 550,466. (No model.)



Claim.—1. In combination in a seed cutter, the receptacle A having mounted therein on a central shaft the plates H, L, O and S having registering elongated recesses, the guard or guide members K and L′ and T, for regulating the size of the aperture through which the potato is to be fed a cutting knife between the said plates, and means for revolving the said plates within the receptacle, substantially as shown and described.

2. In combination with the receptacle A, the plates H and L, the integral pins N carried on the latter, the members K and L′ secured to the ends of elongated apertures in said plates, the plates O and S, having the registering apertures and the guards or guides T, the cutting knife having an integral spring bar R, located between the plates, and means for adjusting the size of the apertures and operating the device, substantially as shown and described.

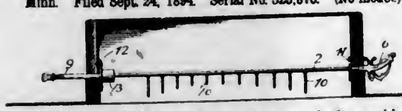
543,169. SELF-MEASURING LIQUID-TANK. CHRISTOPHER M. BRIDGES, Seattle, Wash., assignor of one-half to John S. Fanning, San Francisco, Cal. Filed Mar. 14, 1895. Serial No. 541,799. (No model.)



Claim.—1. A self measuring vessel comprising a supply vessel, an independent measuring vessel in the lower portion of the shell thereof, a second measuring vessel within the main measuring vessel, and of a different capacity, a pipe leading from the supply vessel and connecting with a pipe leading from the main measuring vessel, and a second pipe leading from the main supply vessel and connected with a pipe leading from the junction of both series of pipes, and a single discharge pipe in connection with the discharge of said series of pipes and controlled by said cocks.

2. An improved self measuring tank comprising a main supply vessel, a main measuring vessel of known capacity, in the lower portion of the shell thereof, other vessels of known and different capacities contained within the main measuring vessel, a pipe leading from the main supply and connected with a pipe leading from the main measuring vessel, other pipes leading from the main supply vessel and connected with pipes leading from the interior measuring vessel through the wall of the main measuring vessel, cocks at the junction of each pair of pipes and a single discharge pipe into which the contents of the one or all of the measuring vessels may be discharged singly or collectively.

543,170. HAT-FASTENER. HENRY L. CARPENTER, Minneapolis, Minn. Filed Sept. 24, 1894. Serial No. 523,870. (No model.)



Claim.—1. A hat fastener, comprising the shaft, provided at its ends with means for rotatably securing it to the opposite sides of a hat crown, and between its ends with a series of laterally projecting fingers, substantially as described.

2. A hat fastener, comprising a shaft or wire provided at its ends with means for rotatably securing the same to the opposite sides of a hat crown, and also provided between its ends with a series of laterally projecting fingers, and a locking mechanism to prevent backward rotation of said shaft, substantially as described.

3. A hat fastener, comprising a shaft, having its ends loosely secured on the opposite sides of the hat crown, removable means arranged on the end of said shaft for rotating the same, said shaft being provided between its ends with a series of curved laterally projecting fingers, substantially as described.

4. A hat fastener, comprising a shaft, having its ends rotatably secured in the opposite sides of a hat crown, and a series of curved fingers projecting laterally from said shaft between its ends, and said fingers diminishing in length with respect to one another toward the middle of said shaft, substantially as described.

5. A hat fastener, comprising a pin or wire, having its ends secured to and projecting through opposite sides of a hat crown, the ends of said shaft outside of said crown being removable and said shaft being arranged to rotate and being provided with a series of laterally projecting curved fingers between its ends, and a locking mechanism to prevent the backward rotation of said pin or wire, substantially as described.

6. A hat fastener, comprising a shaft having flatteued or square ends, said ends being arranged to project through the opposite sides of a hat crown and rotatably secured thereto, the removable parts attached to said ends, the end portions of the shaft being provided with a series of notches or teeth, said removable ends having detents to engage the same, a ratchet mechanism to prevent backward rotation of said shaft, and a series of curved fingers or teeth projecting laterally therefrom between its ends, substantially as described.

543,171. PIN-SHIELD. ESTELLA CASE, New York, N. Y. Filed Dec. 19, 1893. Serial No. 494,076. (No model.)



Claim.—1. As an improved article of manufacture, a pin shield provided at one end with a keeper for the point of the pin, and at the other end with means of attaching a pin, the under side of the shield provided at its central portion with means lying wholly between the base of the shield and the pin when applied for holding the material in engagement with the pin and also for holding the pin in engagement with the guard or keeper, substantially as described.

2. As an improved article of manufacture, a pin shield provided at one end with a keeper for the point of the pin, and at the other end with means for detachably securing a pin, the under side of the shield provided at or near its center with means lying wholly between the base of the shield and the pin when applied for holding the material in engagement with the pin and also for holding the pin in engagement with the guard or keeper substantially as described.

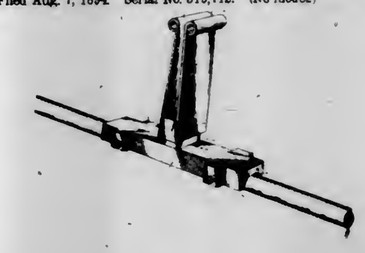
3. A pin shield, provided at one end with a keeper for the point of the pin, and at the other end with means for attaching the pin, and a spring located centrally and wholly between the under side of the shield and the pin when applied, as a means for holding the material in engagement with the pin and also holding the pin in engagement with the keeper, substantially as described.

4. A pin shield, provided at one end with a keeper for the point of the pin, and at the other with means for attaching the pin, and a spring lying wholly between the under side of the shield and the pin when applied, said spring being provided with a roughened surface, for holding the material in engagement with the pin, said spring also holding the pin in engagement with the keeper, substantially as described.

5. A pin shield provided at one end with a keeper for the point of the pin, and at the other end with means for attaching a pin, said shield having one end thereof bent over upon itself and extended forward over the base of the shield to form a spring which holds the material in engagement with the pin, and the pin in its keeper, substantially as described.

6. A pin shield provided at one end with a keeper for the point of the pin, said shield having one end bent over upon itself and extended forward over the base of the shield to form a spring for holding the material in engagement with the pin, and the pin in its keeper; the bend in said shield formed as a seat for the head of the pin and provided with an elongated slot for the insertion of the pin, substantially as described.

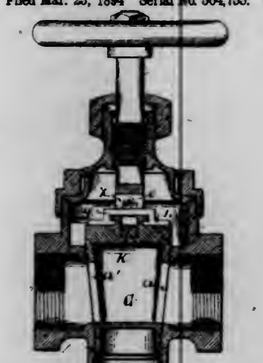
543,172. REIN-HOLDER. EDWARD CAVANAUGH, Lowell, Mass. Filed Aug. 7, 1894. Serial No. 519,712. (No model.)



Claim.—1. A rein holding device comprising an oppositely disposed pair of spring arms, a common base uniting said arms, and a pendent threaded shank formed integrally with said base, in combination with a grooved or recessed clamping base provided with a threaded socket for the reception of said shank, and set screws for clamping said base portion to the upper edge of the dash board independently of the rein holding member, substantially as and for the purpose specified.

2. A rein holding device comprising a grooved or recessed base, set screws for engaging said base with a dash board, an independent rein holding member comprising a pair of spring arms united to a common base and a screw threaded connection between the rein holding member and the base member, whereby the latter may be clamped permanently to the dash board and the rein holding member may be detached or disengaged therefrom, substantially in the manner and for the purpose set forth.

543,173. STRAIGHTWAY VALVE. JOSEPH M. COALE, Baltimore, Md. Filed Mar. 23, 1894. Serial No. 504,755. (No model.)



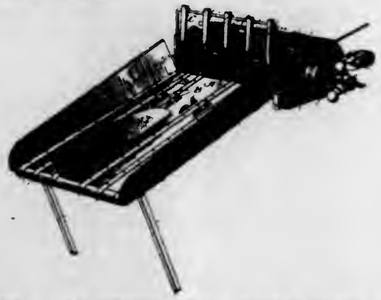
Claim.—1. In combination, forming a straight-way valve, the containing shell or casing having an annular rim above its ports, a valve mounted in said casing having ports registering with those of the casing, a valve spindle, a cap or journal mounted on said casing, screw threads between the journal and spindle, connecting devices between the spindle and the valve operating to raise the valve but permit of the rotation of the spindle independently of the valve and cam mechanism between the valve and spindle and the rim of the casing, consisting essentially of a horizontally arranged pin or bar adapted to be moved freely in a transverse groove in the head of the valve, devices upon the end of the valve spindle adapted to contact therewith on a further rotation of the spindle, and an eccentrically pivoted cam piece actuated by the final rotation of the spindle and operating to lock the valve thereto and cause it to rotate therewith; substantially as described.

2. The combination with the casing, having inlet and outlet ports, an extended hollow cylindrical base, and an annular rim above the ports; a valve having openings adapted to register with those of the casing, a closing cap or journal secured to the rim of the casing, a valve spindle, screw threads between the journal and spindle, with connecting devices between the spindle and the valve consisting of a collar on the head of the valve and a hollow cap on the end of the spindle adapted primarily to raise the valve while permitting the independent rotation of the spindle, and devices operating to lock the valve to the spindle on the continued rotation of the latter, consisting of a loose horizontal bar adapted to slide freely in a transverse groove in the head of the valve, a pivoted cam adapted to actuate said bar when brought into contact therewith, a lug upon the end of the valve-spindle adapted to actuate the pivoted cam, and a cam recess upon the end of the valve spindle with which the end of the locking bar is arranged to register when actuated by the cam; substantially as described.

3. In combination, forming a straight-way valve, the shell or casing having an annular rim B provided on its interior with rib T, a pin s' mounted thereon, stop lugs t t' constructed as described to form a recess w at one end of the rib, a cam-piece S mounted on said pin; a valve provided with a transverse groove A, a locking bar K adapted to slide in said groove and be actuated by the cam piece S, a valve spindle having a projection or lug adapted to actuate the cam piece S and a recess below the same adapted to receive the lug of the locking bar, connecting devices between the valve and its spindle adapted to permit of the rotation of the spindle independently of the valve, a closing cap or journal resting on the annular rim of the casing, and screw threads between the spindle and journal primarily operating independently to raise the valve without rotation, and finally in connection with the cam mechanism described to rotate the valve and bring its ports into register with those of the casing; substantially as described.

4. The combination, forming a straight-way valve, of the casing having inlet and outlet ports and an annular rim above said ports forming a chamber for the valve actuating mechanism, a valve mounted on said casing and having ports adapted to register with those of the casing, a closing cap or journal secured to the rim of the casing, a valve spindle, screw threads between the valve spindle and journal, a collar upon the head of the valve and a transverse groove passing through said head-end and through the collar, a locking bar adapted to slide in said groove and project beyond the end thereof, an enlarged annular end upon the spindle having a hollow interior adapted to fit the collar of the valve, and a recess on its external periphery adapted to receive the lug of the locking bar, a projection upon the spindle above said recess, a rib T and pin s' on the interior of the casing, stop lugs t, t' on each side of said rib arranged to form a recess w between the rib and the lug t', and a cam piece S adapted to rotate above the said rib and having a recessed inner face and a groove on its under face; said parts being constructed, arranged and operating substantially as described.

543,174. BAND-CUTTER AND FEEDER. JOHN T. COLLINS and SAMUEL W. COLLINS, Kokomo, Ind. Filed Jan. 29, 1895. Serial No. 536,519. (No model.)



Claim.—1. The combination with a thrashing machine, and a feeder operated from a moving part of the thrashing machine, of a governor comprising a continuously rotated band pulley supported upon a sleeve, a second sleeve operatively connected with the feeder and mounted upon the same spindle with the first sleeve, weighted arms mounted upon the said first sleeve, a friction disk mounted to turn with and move upon the said second sleeve and having a hub provided with an annular groove, a collar encircling the hub and having projections to enter the annular groove therein, and rods passing through the band pulley and connecting the weighted arms with the said collar, substantially as and for the purpose described.

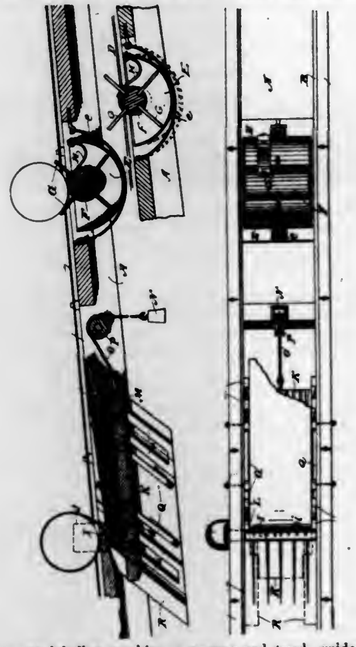
2. In a band cutter and feeder for thrashing machines, the combination with a table having the bundle feeding and the band cutting devices, and a feeder for receiving the loose grain from the said table and delivering it to the thrasher, of a regulator intermediate of the said table and the feeder, the same comprising vertically adjustable side standards, a cross bar connecting the upper ends of the standards and arms mounted upon the said cross bar and having their lower ends curved and adapted to be turned upon the cross bar to any required angle and be held in the adjusted position substantially as set forth.

543,175. CAN-LABELING MACHINE. DAVID COX, Sacramento, Cal. Filed Dec. 15, 1894. Serial No. 531,944. (No model.)

Claim.—1. In a can labeling machine, a runway and tracks upon which the cans are caused to travel, raised guides exterior to the line of track and between which the ends of the cans pass, whereby they are retained in position, a paste receptacle adjustably suspended beneath the line of tracks having a roller journaled transversely upon it, with radially projecting arms in the path of the can, whereby the passage of each can causes the roller to be rotated and paste transferred from its surface to that of the can.

2. In a can labeling machine, a runway having tracks upon which the ends of the can travel, raised guides exterior to the tracks which serve to guide the can as it rolls, a paste receptacle having a roller journaled upon it so that the lower side dips into the paste, radial arms projecting from the roller in the path of travel of the can, whereby the roller is rotated a part of a revolution by the passage of each can, a tension spring or springs by which the rotation of the roller is regulated, and a means for suspending the paste receptacle so that it will be always held close to the line of travel of the cans, but is allowed to yield to any pressure brought upon the top.

3. In a can labeling machine, the runway having the tracks and guides, a paste receptacle yieldingly suspended and carrying a roller provided with radial arms arranged in the path of the can, whereby the roller is rotated by the can in its passage and paste transferred from its surface to that of the can, a label-holding table adjustable in vertical planes and having the pile of labels thereon arranged to present a rhomboidal outline, and means for adjusting the table.



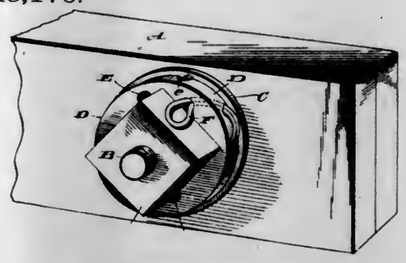
4. In a can labeling machine, a runway and track, guides over which the cans pass, a paste receptacle yieldingly suspended and provided with a roller by which paste is transferred from the receptacle to each can, said roller being automatically rotated by the cans as they pass to the label table, a diagonally movable label table upon which the labels are placed in the same diagonal position, a tubular holder against which the rear ends of the labels are pressed as the table is made to rise, said holder being connected with the paste supply and having openings made in it whereby the paste is delivered upon the rear end of the uppermost label.

5. In a can labeling machine, a runway or track and guides upon and between which the cans are movable, an adjustable paste receptacle, a roller journaled across the receptacle having radial arms projecting upward in the line of travel of the cans whereby the roller is partially rotated by each passing can and paste applied thereto, a label table adjustable in vertical planes, guides at the rear end of the table against which the rear ends of a pile of labels are placed whereby the label pile is made to assume a rhomboidal shape in side elevation with the front edge of the uppermost label always projecting slightly beyond the next below, whereby the can will separate each label from the others when its pasted surface arrives and is rolled over the label pile, a paste supply and holder beneath which the rear edges of the labels are retained and from which the uppermost label is drawn by the tension caused by the rolling of the passing can to which its front edge has already been pasted whereby the label is stretched smoothly upon the can and the rear edge is pasted thereon as it leaves the holder.

543,176. NUT-LOCK. JAMES C. CRUM, Ladiesburg, Md. Filed Jan. 24, 1895. Serial No. 536,098. (No model.)

Claim.—A nut lock having in combination with a bolt a washer D having an integral lug designed to engage in apertures in the beam or plate and the washer C, the said washer D having a plurality of spirally inclined apertures terminating in recesses about the periphery of the washer, and the wrought iron pin or key F adapted to be inserted in one of the said apertures E, and present its head in the path of one of the corners of the nut, as it loosens from the shank of the bolt, all substantially as shown and for the purpose set forth.

543,176.



543,177. WATER-BAG. WILLIAM H. DALY, Bayonne, N. J. Filed Nov. 28, 1894. Serial No. 530,210. (No model.)



Claim.—1. The device for local application of heat or cold to any part of the body at the will of the patient herein described, consisting of a water proof receptacle, for holding water formed and constructed to be attached to the human hand and supplied on its exterior with means for receiving the hand as described, with its heat conducting surface outward, substantially as shown and specified.

2. A device for communicating heat or cold to parts of the human body at will of the patient, consisting of a water pad or receptacle with means for filling and emptying the same, means for fitting and securing it to the human hand, and a heat non-conducting material applied over that part of the wall of the receptacle designed to come next the palm of the hand, for protecting the same, substantially as shown and specified.

3. A water proof receptacle, having means for filling and emptying the same, and a cavity outside of the liquid-containing cavity, adapted by size and form for the insertion of the human hand, whereby the said water holding receptacle may be conveniently applied at will to portions of the body of the user, and thus impart or abstract heat to or from the part so treated in a measure governed by the sensations of the user, for hygienic purposes, substantially as shown and specified.

4. A water bag, forming a cavity into which hot or cold liquids can be introduced, provided on one side with a glove or mitten-shaped receptacle formed to fit the human hand, whereby the said water bag may be applied by the hand of the user to portions of the body for the purpose of imparting heat thereto or abstracting it therefrom in a measure governed by the sensations of the user, substantially as described.

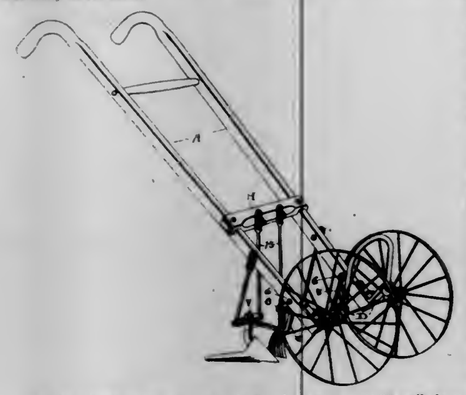
5. A water bag, forming a cavity into which hot or cold liquids can be introduced, provided on one side with a glove or mitten shaped receptacle formed to fit the human hand, the side of the said water bag next the glove portion being provided with a heat non-conducting layer for protecting the hand, and the outer wall being formed of relatively good heat conductive material substantially as described.

6. In a water pad for local application of heat or cold to the person of the operator, a fluid-containing cavity having an outer impervious conductive wall, an inner impervious non-conductive wall, and means for attaching and holding the non-conductive wall in close contact with the palm of the hand of the operator, substantially as shown and specified.

543,178. STRADDLE-ROW HAND-CULTIVATOR. JOSEPH J. DAVET and JULIUS F. DAVET, North Madison, Ohio. Filed Apr. 11, 1895. Serial No. 545,302. (No model.)

Claim.—1. In a hand cultivator, an arched axle having the spindles starting immediately from the base of the arch, in combination

with the handle bars and brackets fixed to said bars and provided with clamps engaging the vertical side portions of the arch, whereby the handle bars are adjusted up or down at their forward ends, substantially as set forth.



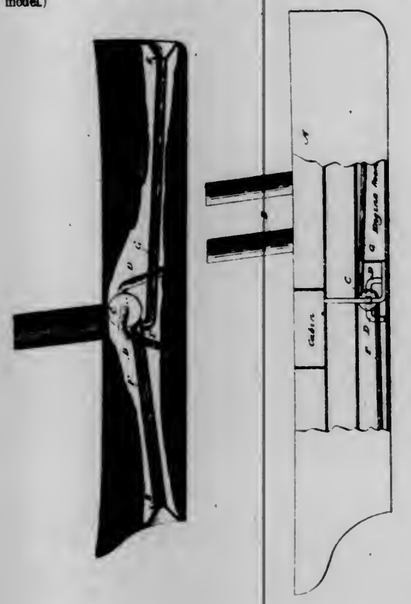
2. In a hand cultivator, an arched axle and a pair of handle bars, a substantially L-shaped bracket for each bar provided with a clamp at its upper end and engaged upon said axle near the wheel spindle whereby the said handle bars are brought below the plane of the wheel spindles, substantially as set forth.

3. In a hand cultivator, a pair of handle bars, an arched axle, and a drag bar pivoted to each handle bar, said drag bar bent to form an elbow substantially midway of its length and having transverse slotted portion —8— rigid therewith at its rear, and supporting rods therefor, substantially as set forth.

4. The hand cultivator described having a pair of hand bars supported with their front ends below the wheel spindles, a pair of drag bars pivoted on said hand bars near their front ends and bent to form horizontal portions, and having slotted cross bars —8— at their rear and adjustable supporting rods, substantially as set forth.

5. The combination of the arched axle, the handle bars and the right angled clamp brackets by which the said bars are secured to the said axle, in combination with the elbow shaped drag bars pivoted on said handle bars and having the transverse portion —8— at their rear, the cultivator shovel or scraper, and the slotted supporting rods fixed to the said parts —8— and attached to the handle frame, substantially as set forth.

543,179. MEANS FOR PROPELLING VESSELS. BENJAMIN A. DAVIS, New York, N. Y. Filed July 13, 1894. Serial No. 517,424. (No model.)

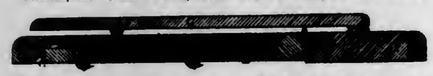


Claim.—1. In combination with the blower C and air conduits F, G, pipes D, connecting with the cargo space, and the eye of the blower, to ventilate the cargo and supply air for compression, substantially as and for the purpose set forth.

2. In combination with the blower C and air conduits F, G, the pipe E connected at one end with the smoke stack B, and at the other end with the blower C, substantially as and for the purpose set forth.

3. A vessel having one or more air conduits F G extending from a blower C, said air conduits being continuous and uniform in diameter, and terminating in enlarged or bell shaped mouths, in combination with exhaust pipes communicating with the cabins, engine room or smoke stack, substantially as and for the purposes set forth.

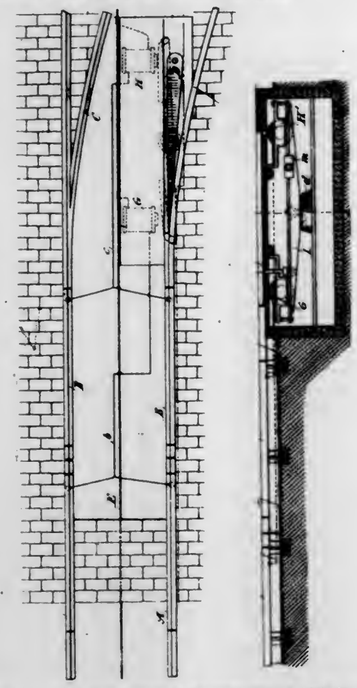
543,180. WATER-CLOSET SEAT. JOHN C. FERIGER, Jr., New Orleans, La. Filed Feb. 13, 1895. Serial No. 538,312. (No model.)



Claim.—1. A water-closet seat consisting of a non-porous base plate having the usual opening and being recessed on its upper face from the front to a point near the rear of said opening, a permanent nonconductive lining disposed on the recessed portion of said base plate.

2. A water closet seat composed of a base plate composed of impermeable material and having the usual opening, and a permanent rim composed of nonconductive material and disposed at the front and sides of said opening, the back of said opening being non-absorbent.

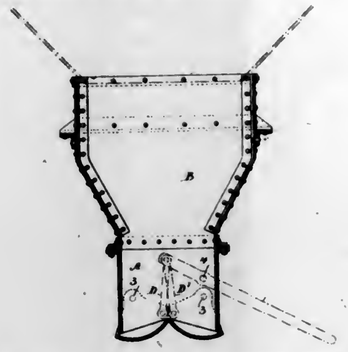
543,181. ELECTRIC SWITCH. JOHN W. HEARN, Brooklyn, N. Y. Filed Oct. 3, 1893. Serial No. 487,072. (No model.)



Claim.—In an electric switch, the combination with the insulated rails A, B, magnets G, H, connected with said rails and with a ground wire, a switch tongue D, indirectly connected with armatures G', H', the several parts being constructed and arranged substantially as described, whereby the switch is operated by the current which propels the car, substantially as described.

543,182. CUT-OFF DEVICE FOR CHUTES AND HOPPERS FOR DELIVERY OF COAL, ORE, &c. CHARLES W. HUNT, West New Brighton, N. Y. Filed Mar. 29, 1895. Serial No. 543,618. (No model.)

Claim.—1. The combination with a stationary delivery spout or chute having an open lower end, of two cut-off sections formed as segments of cylinders, pivots above such sections and upon which they swing, said pivots being near the centers of the cylinder segments and located nearly above the center portion of each cut-off section when closed and means for opening and closing such cut-off sections, substantially as and for the purposes set forth.



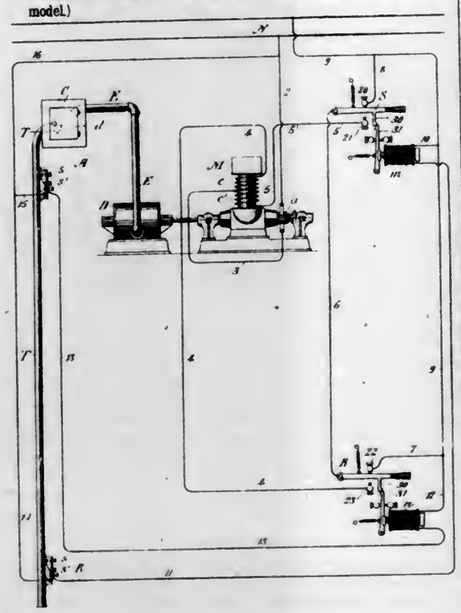
2. The combination with a stationary delivery spout or chute having an open lower end, of two cut-off sections formed as segments of cylinders, stationary pivots above the middle portions of such cut-off sections when closed and near the centers from which such cylinder segments are described, a lever, and connections for swinging the cut-off sections upon their pivots in opposite directions, substantially as set forth.

543,183. COUPLING FOR RODS OR PIPES. SAMUEL M. JONES, Toledo, Ohio. Filed Nov. 16, 1894. Serial No. 528,990. (No model.)



Claim.—A rod or pipe coupling, comprising rods or pipes having heads or enlarged portions at their meeting ends, a sleeve or ferrule having a slotted and chambered bore adapted to receive said pipes or rods and their heads, in combination with means for securing said pipe or rods within said chambered bore in fixed relation with said sleeve, substantially as and for the purpose specified.

543,184. PNEUMATIC-TRANSFER-TUBE SYSTEM. FRANCIS W. JONES, New York, N. Y. Filed Apr. 15, 1895. Serial No. 545,688. (No model.)



Claim.—1. In a pneumatic transfer system the combination of a single tube or pipe connecting separated points, an air pump located at one point or station; a motor for operating said pump located in proximity thereto, an electric circuit connecting both points or stations; a switch in said circuit at each station, and means for starting, stopping or reversing the pump, substantially as described.

2. In a pneumatic transfer system the combination of a single tube for transferring a carrier in either direction between two points or stations, an air pump at one point or station, a suitable electrically controlled motor to start, stop or reverse the direction of movement of said pump, an electrical circuit uniting both stations, and switches in said circuit, one at each station, for controlling said circuit, substantially as described.

3. In a pneumatic transfer system the combination of a single tube for transferring a carrier in either direction between two points or stations, an air pump connected with said tube at one station, an electro-magnetic device for starting and stopping the pump, an electrical circuit connecting both stations with said electro-magnetic device and a circuit controller at each station whereby the pump may be started and stopped, substantially as described.

4. In a pneumatic transfer system the combination of a single tube for transferring a carrier in either direction between two points or stations, an air pump connected with said tube at one station, an electro-magnetic device for starting and stopping the pump, an electrical circuit connecting both stations with said electro-magnetic device and an automatic circuit closer operated by the passage of a carrier controlling said circuit, to stop the pump substantially as described.

5. In a pneumatic transfer system the combination of a single tube for transferring a carrier in either direction, an air pump connected with said tube at one point only, two or more stations on the line of said tube, an electric circuit uniting said stations, a motor for operating said pump; an electro-magnetic device for reversing said pump, included in said circuit, and a switch at each station for controlling said circuit, to stop and start the pump substantially as described.

6. In a pneumatic transfer system the combination of a single tube for transferring a carrier in either direction, an air pump connecting with said tube at one point only; an electric motor having field coils in two sections, two or more stations in the line of said tube, an electric circuit including one field coil section and a switch at one station and an electric circuit including the other field coil section and a switch at the other station whereby the operation of a switch at either station starts, stops or reverses the motor, substantially as described.

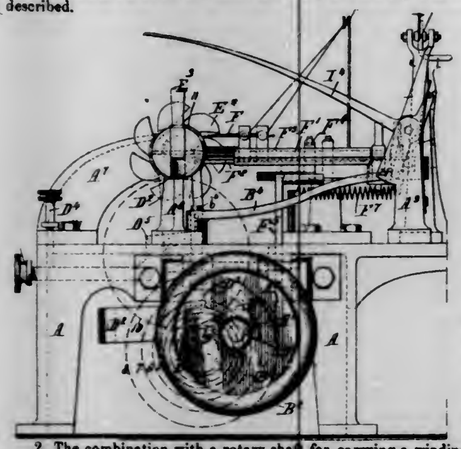
7. In a pneumatic transfer system the combination of a single tube for transferring a carrier in either direction, an air pump connecting with said tube at one point only: two or more stations in the line of said tube; an electric motor consisting of a fixed and a rotating coil for operating said pump, located in proximity thereto, a switch at each station consisting of two fixed contacts and one movable contact, an electrical conductor connecting a switch contact at one station with a corresponding contact at the other station, a source of electric current, an electrical connection between one switch contact at each station and one terminal of said source and an electrical connection between the remaining contact at each station and the second terminal of said source, all arranged and operating substantially as described.

8. In a pneumatic transfer system the combination of a single tube for transferring a carrier in either direction, an air pump connecting with said tube at one point only; two or more stations on the line of said tube, an electric motor for operating said pump located in proximity thereto, a switch at each station and electrical conductors uniting said switches with said motor and with a source of electricity, all arranged and operating substantially as described.

9. In a pneumatic transfer system the combination of a single tube for transferring a carrier in either direction, an air pump connecting with said tube at one point only; two or more stations on the line of said tube, an electric motor for operating said pump located in proximity thereto; switches at each station consisting of fixed contacts and a spring retracted contact, electrical conductors uniting said switches with said motor and with a source of electricity; an arm or catch to hold the spring retracted switch arm of each switch, an electro-magnet controlling said catch arm at one station; an automatic circuit closer operated by a moving carrier at a second station, and an electric circuit including said circuit closer and electro-magnet, substantially as described.

543,185. MACHINE FOR WINDING THREAD UPON STAR-SHAPED HOLDERS. JOHN KEATS, Bagnall, assignor to the Keats Featherweight Spool Company, Limited, London, England. Filed Dec. 5, 1893. Serial No. 492,815. (No model.) Patented in England Jan. 14, 1893, No. 878; in France Sept. 27, 1893, No. 233,031, and in Canada June 20, 1894, No. 46,397.

Claim.—1. The combination with a rotary shaft for carrying a winding disk, of a slide slotted for the entrance into it of a portion of the disk and movable from said shaft by the accumulation of thread on the disk, an oscillating thread layer on said slide, means of producing the oscillation of said thread layer and a spring for moving said slide and thread layer toward said shaft, substantially as herein described.

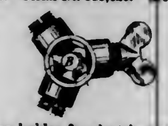


2. The combination with a rotary shaft for carrying a winding disk, a pressing device movable toward and from said shaft in line therewith, a slide carrying an oscillating thread layer and movable toward and from said shaft transversely thereto, the said slide having an inclined extension at the end next said shaft to be operated upon by said pressing device for pushing back the slide and thread carrier by the act of moving said pressing device away from the said shaft, substantially as herein set forth.

3. The combination with a rotary shaft for carrying a winding disk, of a pressing device movable toward and from said shaft in line therewith, a slide movable toward and from said shaft transversely thereto and carrying an oscillating thread layer, and means of locking back said slide to a fixed point, substantially as and for the purpose herein set forth.

4. In a thread winding machine, the combination with a measuring apparatus deriving motion from the thread undergoing the measuring operation, a driving shaft for driving the winding mechanism of the machine, a clutch for engaging said shaft with and disengaging it from the winding mechanism and a notched cam carried by said measuring apparatus, of the clutch lever B^5 for operating the movable member of said clutch furnished with an inclined lateral projection b and having a turned-up end b', the T-headed starting lever I^4 for operating on the said projection b of the clutch lever to produce the engagement of the clutch, the spring I^6 for disengaging said starting lever from the clutch lever, the upright lever I^3 for engaging with the turned-up end of the clutch lever to hold the clutch in engagement, the rocking lever I' having a wedge-shaped end for disengaging the said upright lever from the clutch lever, the spring i for throwing said rocking lever I' into operation under the control of the said notched cam, and the spring B^6 for operating on the lever B^4 to disengage the said clutch, all substantially as and for the purpose herein described.

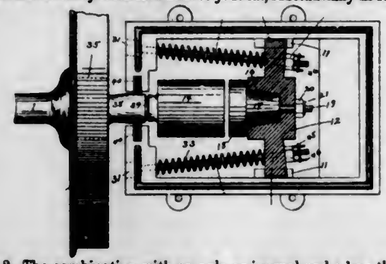
543,186. CARBON-HOLDER. JOHN C. KNIGHT, New York, N. Y. Filed Jan. 15, 1895. Serial No. 535,023. (No model.)



Claim.—A carbon holder for electric arc lamps, consisting of a socket provided with means for securing it to the rod or frame of a lamp and with dust discharge openings at its bottom, and set-screws extending through bosses located on the walls of the socket at one hundred and twenty degrees apart two of which screws are adapted to be set for a particular size of carbon while the third is in the form of a thumb-screw for frequent manipulation.

543,187. JOURNAL AND BEARING THEREFOR. IDDON METZGER, Louisa County, Iowa. Filed Jan. 20, 1894. Serial No. 497,507. (No model.)

Claim.—1. The combination with an axle or journal and a box therefor, of an adjustable follower having an abutment for limiting the end thrust of said axle or journal, and a cushion acting to hold said follower away from said axle or journal, substantially as set forth.



2. The combination with an axle or journal and a box therefor, of a bushing in said box, a rigid adjustable follower, and a revoluble abutment carried by said follower for limiting the end thrust of said axle or journal, said follower being provided with a projection for holding said bushing in place, substantially as set forth.

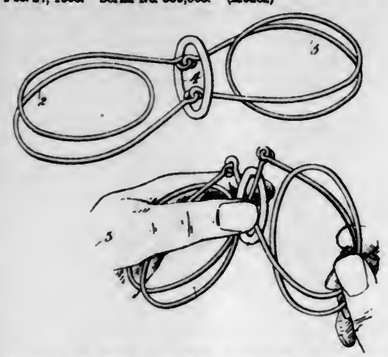
3. The combination with an axle or journal and a box therefor of a follower arranged in said box and having an abutment for limiting the end thrust of said axle or journal, screw rods for adjusting said follower and springs arranged on said rods for holding said follower away from the axle or journal, substantially as set forth.

4. The combination with an axle or journal and a box therefor, of a bodily movable follower having an abutment arranged opposite the end of said journal for limiting its end thrust, springs for holding said follower and abutment normally away from said journal, and means for forcing said follower toward said journal, substantially as set forth.

5. The combination with an axle or journal and a box therefor, of a bodily movable follower having an abutment arranged opposite the end of said journal, screw rods passing through the end of said box and said follower and having nuts thereon and springs coiled on said rods between the end of said box and said follower and holding the said abutment normally away from the said journal, substantially as set forth.

6. The combination with an axle or journal and a box therefor, of a bushing arranged in said box over said journal, an adjustable follower having an abutment arranged opposite the end of said journal and being provided with a projection extending over the said abutment toward but not touching the said bushing for arresting end movement of the latter, substantially as set forth.

543,188. PUZZLE. HERBERT E. NELSON, Brooklyn, N. Y. Filed Feb. 27, 1895. Serial No. 539,863. (Model.)

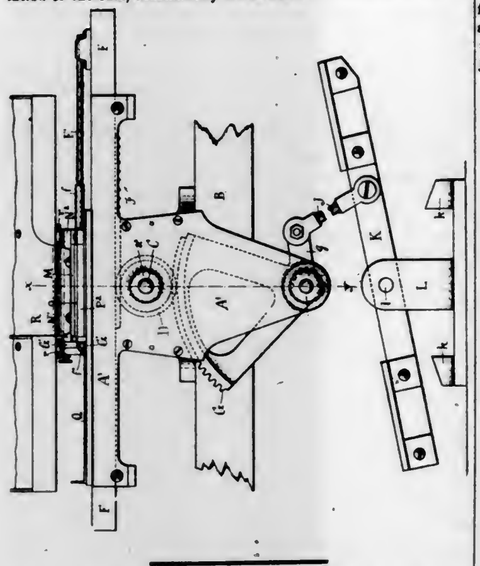


Claim.—1. A puzzle, consisting of two pieces of spring wire, each of which is curved or folded upon itself, forming a double ring or loop, the separate ends of each piece or loop being united by means of rings or loops formed thereon, and a ring surrounding the said ends at the point of union, substantially as shown and described.

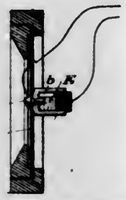
2. The combination, in a puzzle, of two divided loops or links, as 2 and 3, each being composed of a single piece of spring wire folded or curved upon itself, and the separate ends being united as shown, and a ring, as 4, surrounding the joint or point of union, substantially as shown and described.

543,189. CIGARETTE-MACHINE. CHRISTOPHE OLLAGNIER, Geneva, Switzerland. Filed Mar. 29, 1895. Serial No. 543,659. (No model.) Patented in Switzerland Oct. 4, 1894, No. 9,065.

Claim.—In a machine for making cigarettes a mold composed of two parts one of which is stationary and the other movable, a cam having a spiral groove, a pin connection to the moving part of the mold, the groove of the cam being formed so as to first close the mold and compress the tobacco and then slightly to retract the moving side of the mold for lessening the pressure upon the tobacco and then to open the mold and hold the same during the remainder of the rotation of the cam, substantially as described.



543,190. ART OF TELEPHONING. ARTHUR E. PAIGE, Philadelphia, Pa. Filed Feb. 25, 1895. Serial No. 539,544. (No model.)



Claim.—1. The hereinbefore described improvement in the art of telephoning, which consists in disturbing, by means of sound vibrations, and in conformity therewith, a liquid conductor interposed and supported between two separated electrodes, without varying the position of said electrodes relatively to one another, said electrodes and interposed conductor constituting a part of a telephone circuit, substantially as described.

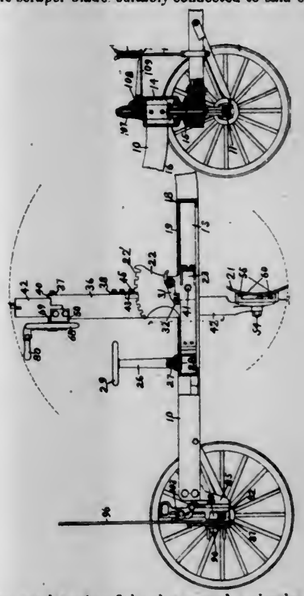
2. The combination of a pair of electrodes maintained in unvarying relation to each other and provided with an intermediate receptacle; a liquid conductor contained in said receptacle and completing the circuit between said electrodes; and means substantially as set forth whereby said liquid conductor may be disturbed by, and in conformity with sound vibrations, substantially as described.

3. The combination of a diaphragm; a pair of electrodes maintained in unvarying relation to one another; a receptacle arranged at the interspace between said electrodes; and a liquid conductor contained within said receptacle and completing the circuit between said electrodes, said receptacles being suitably supported to permit disturbance of the liquid conductor by sound vibrations, substantially as described.

4. The combination of a pair of electrodes maintained in unvarying relation to each other and provided with an intermediate receptacle; a liquid conductor coated with a film, substantially as set forth, said coated conductor completing the circuit between said electrodes; and means substantially as set forth whereby said coated liquid conductor may be disturbed by and in conformity with sound vibrations, substantially as set forth.

543,191. ROAD-GRADER. BRITTON POULSON, Fort Wayne, Ind. Filed Aug. 13, 1894. Serial No. 520,112. (No model.)

Claim.—1. In a road grader of the class named, a frame for the support of the scraper blade and its mechanism, consisting of two side bars extended from the rear to the front axle, the forward ends being brought together and suitably secured to the front axle, and curved so as to form a goose neck under which the front wheels may pass; the said side bars being expanded or curved outwardly near their center part and adapted to support and be firmly attached to a circular frame: a circular frame firmly attached to said side bars, and forming part of the main frame and adapted to support the mechanism for elevating and rotating and the lateral adjustments of the scraper blade: and mechanism for elevating, rotating and laterally adjusting the scraper blade suitably connected to said circular frame.



2. In a road grader of the class named, a circular frame made of channel iron, with the flanges on the inner periphery, and rigidly attached to the main frame of the machine: cogs formed upon one of the flanges of said circular frame around the entire periphery: mechanism for supporting the scraper blade and providing for its various adjustments mounted in the said circular frame: a hand wheel, shaft, and pinion, suitably mounted with the pinion meshing with the cogs of said circular frame and adapted to rotate the said mechanism.

3. In a road grader of the class named, a circular frame secured rigidly to the main frame of the machine, and provided with rack gear around its periphery: a rotating frame for operating the mechanism for the various adjustments of the scraper blade, consisting of two main supports or standards therefor, and guided in place within said circular frame by suitable mechanism, and adapted to be rotated therein: means to rotate said frame in said circular frame: mechanism for the various adjustments of the scraper blade secured to said rotating frame: and a scraper blade suitably attached to said mechanism.

4. In a road grader of the class named, a circular frame rigidly attached to the main frame of the machine, and provided with rack gear around its periphery: a rotating frame for operating the mechanism for the various adjustments of the scraper blade, consisting of two main supports or standards therefor, held and guided in place on the sides of said circular frame, and adapted to be rotated therein: means to rotate said frame in said circular frame: mechanism for the various adjustments of the scraper blade secured to said rotating frame: a scraper blade suitably attached to said mechanism: a rocking rod journaled in the bearings in the main standards and extending beyond them and provided on each end on the ontside of the main standards with a falling segment adapted to engage the circular frame so as to lock the rotating frame in place at any point of angular adjustment: and means to operate said rod.

5. In a road grader of the class named, a main frame consisting of two side bars extending from the front to the rear axles: a circular frame fixed rigidly to said side bars: a rocking frame adapted to be revolved within said circular frame, consisting essentially of two main standards held and guided in the opposite sides of said circular frame: and a rocking frame pivotally mounted between and attached to said standards, consisting of two vertical standards adapted to form guides for the lifting arms of the scraper blade extended above the

circular frame and held or braced rigidly in place by suitable braces: lifting arms adapted to slide upon said standards and be secured thereto: a scraper blade attached to the lower ends of said lifting rod: and means to lock the frame and lifting rods at any angle or pitch of the blade.

6. In a road grader of the class named, a circular frame suitably fixed and secured to the main frame, provided with rack gear extending around its inner periphery: a rotating frame mounted revolubly in said circular frame, having main standards for the support of the mechanism for the adjustment of the scraper blade and its upper ends expanded in segment form and provided with serrations or cogs: a rocking frame pivotally mounted and attached to and between the main standards, consisting of two curved standards held on opposite sides to each other by suitable braces: mechanism attached to said curved standards adapted to lock the rocking frame in place by engaging the cogs upon the upper ends of said main standards so as to hold the curved standards rigidly at any vertical angle at which they may be placed.

7. In a road grader of the class named, a circular frame secured rigidly to the main frame and provided with rack gear extending around its inner periphery: a rotating frame mounted revolubly in said circular frame, having main standards for the support of the mechanism for the adjustment of the scraper blade, the upper ends of the main standards being expanded in segment form and provided with serrations or cogs: a rocking frame pivotally mounted and attached to and between the main standards, consisting of two curved standards held on opposite sides to each other by suitable braces: mechanism attached to said curved standards adapted to lock the same in place by engaging the cogs upon the upper ends of said main standards, so as to hold them at any vertical angle at which they may be placed: curved elevating arms mounted in guides attached to said curved standards and held and guided thereby, and provided at their upper ends with rack gear: mechanism to operate said rack gear: and a scraper blade attached to the lower ends of said lifting arms.

8. In a road grader of the class named, a circular frame rigidly secured to the main frame and provided with rack gear extending around its inner periphery: a rotating frame mounted revolubly in said circular frame, having main standards for the support of the mechanism for the adjustment of the scraper blade, the upper ends of the main standards being expanded in segment form and provided with serrations or cogs: a rocking frame pivotally mounted and attached to and between the main standards, consisting of two curved standards adapted to form guides for the lifting arms and held on opposite sides of the circular frame by suitable braces: mechanism attached to said curved standards adapted to lock the same in place by engaging the cogs upon the upper ends of said main standards, so as to hold them at any required vertical angle: curved lifting arms for the scraper blade mounted in guides attached to said curved standards and held and guided thereby, and provided at their upper ends with rack gear: mechanism to operate said rack gear: rocking blocks pivotally attached to the lower ends of the lifting arms provided with recesses, the upper and lower sides of which are half V-shaped inwardly, so as to form a dove-tailed guide or slot: a scraper blade provided with flanges secured to the back part thereof, adapted to form guides or ways to slide in and be held by the half V-shaped projections on the rocking blocks: and means to secure said scraper blade in place in said blocks.

9. In a road grader of the class named, a circular frame rigidly secured to the main frame and provided with rack gear extending around its inner periphery: a rotating frame mounted revolubly in said circular frame and provided with main standards for the support of the mechanism for the adjustment of the scraper blade: a rocking frame pivotally mounted and attached to and between the main standards, consisting of two curved standards held on opposite sides to each other by suitable braces: mechanism adapted to lock the main standards and curved standards at any angle to each other when required: curved lifting arms mounted in guides attached to said curved arms, and held and guided thereby, and provided at their upper ends with rack gear: mechanism to operate said rack gear for raising and lowering said lifting arms: a scraper blade attached to the lower ends of said lifting arms: rocking blocks pivotally attached to the lower ends of the lifting arms and provided with recesses, the upper and lower sides of which are half V-shaped inwardly, so as to form a dove-tailed guide or slot: a scraper blade provided with flanges secured to the back part thereof, and adapted to form guides or ways to slide in and be held by the half V-shaped projections on the rocking blocks: perforations in one of the flanges of the scraper blade, and dogs adapted to engage said perforations, and means to operate the dogs.

10. In a road grader of the class named, a circular frame rigidly secured to the main frame of the machine: a rotating frame mounted in and adapted to be revolved therein upon said circular frame and provided with two standards on opposite sides adapted to support the mechanism for supporting the scraper blade: a rocking frame consisting of two vertically arranged supports held in place by suitable braces and pivotally attached at their lower ends to said standards of said rotating frame: lifting arms adapted to slide upon said vertical supports and be held in place thereby: a scraper blade attached to the lower ends of the lifting arms: a shaft and pinion mounted in projections attached to the upper end of said standards, and held in engagement with a rack on the upper end of said arms: a crank wheel mounted upon the end of said shaft: a nut adapted to clamp said wheel and a collar to said shaft firmly against the bearing between them, for the purpose of locking said shaft: a stirrup placed upon the outer face of said wheel, provided with a rack upon one side, which engages the teeth formed on said nut: a slotted projection on one end of said stirrup through which a bolt passes to assist in holding the stirrup movably to the face of the wheel: an extension bar on the other end of the stirrup having rack teeth on its end and extending between two lugs attached to the rim of the wheel: a handle provided at one end with a segmental rack and pivoted between said two lugs, so as to be held in engagement with the said rack on said extension; as and for the purpose substantially as described.

11. In a road grader of the class named, brackets securely attached to the rear ends of the side bars forming the main frame and extended downward: a cross bar rigidly secured to the lower ends of said brackets and provided with segment racks on top at each end: a tilting block mounted on a pivot bolt secured to the ends of said cross bar, the center or axis coinciding with the center of the segment rack, the tilting blocks being recessed through their center part and each adapted to receive therein a half axle and a wedge block: two half axles placed within said recess of said tilting blocks: wedge blocks placed within said recesses on one side of said half axles and having the upper side inclined or beveled and adapted to bind the axle firmly in said tilting block when forced into the recess. means to force said wedge firmly into said block and bind the parts securely to the tilting block: and means to move said axles in or out from the main frame: and means to tilt said block so as to place the half axles at any incline to the main frame which may be required, and secure the block firmly in the position required.

12. In a road grader of the class named, two half axles secured in blocks attached to the rear end or cross bar of the frame, said blocks being recessed to receive and hold said axles: wedge blocks adapted to bind said half axles in said blocks: means to force said wedge blocks in place and means to extend said half axle in and out from the main frame as described.

13. In a road grader of the class named, an upright shaft attached to the front axle or to the mechanism supporting the frame thereon: a bracket mounted on said frame so as to turn with the tongue: an arm to said bracket extending out over the tongue and provided with an orifice in its end: a rod suitably secured to said tongue and passing up through said orifice, and provided with a thread and thumb nut above said bracket: and a spiral spring placed around said rod between the thumb nut and said bracket, for the purpose and substantially as described.

14. In a road grader of the class named, a frame consisting of two side bars brought together in front and suitably pivoted to the front axle, adapted in the center part to inclose a circular frame: brackets attached to the rear ends of said side bars extending downward: a cross beam secured to said brackets: a circular frame securely attached to the side bars and provided with a segment rack: a rotating frame mounted revolubly in said circular frame: a hand wheel, shaft and pinion mounted upon said rotating frame with the pinion engaging the teeth of said segment rack: standards attached to the rotating frame for supporting the mechanism operating the scraper blade laterally and vertically: and mechanism supporting the scraper blade, and adapted to lower and raise the same at the will of the operator and to laterally adjust the same mounted in said rotating frame.

15. In a road grader of the class named, a frame consisting of two side bars brought together in front and suitably pivoted to the front axle—adapted in the center part to inclose a circular frame: brackets attached to the rear ends of said cross bars, extending downward: a cross bar or beam secured to said brackets: a circular frame securely fixed to said side bars and provided with a segment rack: a rotating frame mounted revolubly in said circular frame: a hand wheel, shaft and pinion mounted upon said rotating frame with the pinion engaging the teeth of the segment rack: supports or standards for the attachment and support of the mechanism operating the scraper blade secured to and forming part of said rotating frame: a rocking frame consisting of standards to support and guide the lifting arms suitably braced and mounted pivotally in and between the standards attached to the rotating frame: guides formed on said standards of said rocking frame: lifting arms for the scraper blade held in and guided by said guides, their lower ends attached to the scraper blade: and means to elevate and lower the lifting rods at will.

16. In a road grader of the class named, a circular frame secured rigidly to the main frame and provided with a segment rack: brackets attached to the rear ends of the main frame and extended downward: a cross beam secured to said brackets: blocks secured on either end of said cross beam, provided with recesses for two half axles to be held and moved inwardly or outwardly from the frame: means to bind or lock said half axles at any given place in said blocks: a rotating frame provided with supports or standards for the mechanism operating the scraper blade, mounted revolubly in said circular frame, and provided with a shaft and pinion meshing in said segment rack: means to operate said pinion: mechanism attached to the standards of said rotating frame adapted to support the scraper blade and elevate and lower the same at either end at the will of the operator.

17. In a road grader of the class named, a circular frame securely fixed to the main frame and provided with a segment rack: brackets attached to the rear ends of said main frame: a cross beam securely attached to the brackets below the plane of the main frame and extended the full width of the frame: blocks attached to said cross beam at either end, provided with recesses to hold and permit a sliding movement of two separate half axles: means to hold and lock said half axles in place at any given point of extension: means to extend said half axles separately at will of the operator: and means to rotate said blocks with their attached axles so as to place the axles separately at any given angle to the plane of the frame: a rotating frame mounted revolubly in said circular frame and provided with means to rotate the same: mechanism for the support of the scraper blade attached to said rotating frame and adapted to lower or elevate the scraper blade on either side separately at will of the operator.

18. In a road grader of the class named, a circular frame securely fixed to the main frame and provided with a segment rack: a rotating frame mounted revolubly in or upon said circular frame, and provided with standards for the support of the mechanism operating the scraper blade laterally and vertically: a hand wheel, shaft, and pinion mounted in said rotating frame with the pinion meshing with the teeth of said segment rack: a rocking frame provided with two curved standards pivoted at their lower ends on either side to the standards of said rotating frame: guides formed on said curved standards to receive and hold in place the lifting arms of the scraper blade: lifting arms to the scraper blade mounted in guides: means to elevate and lower said lifting arms separately at will and lock them in place vertically: blocks attached to the lower ends of the lifting arms, provided with means to hold the scraper blade adjustably in or to them: means to bind said scraper blade in place in the blocks, and to release them separately so as to permit a lateral movement of the scraper blade.

19. In a road grader of the class named, a circular frame securely fixed to the main frame: a rotating frame mounted in said circular frame adapted to be rotated or revolved therein: means to rotate said frame and lock it in place when the proper angular adjustment has been secured: standards attached to said rotating frame and forming part of it, adapted to support the mechanism of the scraper blade for lateral and vertical adjustment: a rocking frame consisting of two vertical standards pivoted at their lower ends to the standards of said rotating frame: means to incline the same backward or forward and lock them in place at any suitable angle: guides upon said vertical standards adapted to support and guide the lifting rods of the scraper blade: lifting rods for the scraper blade mounted in guides: means to elevate and lower them at will, separately: blocks attached to the lower ends of said lifting rods, provided with recesses adapted to hold projections upon the scraper blade: a scraper blade provided with projections adapted to move in and be guided by the recesses of said blocks: means to lock the scraper blade in said blocks separately: brackets attached to the rear ends of the frame of said machine on either side thereof: a cross bar attached to the lower end of said brackets and securely bracing the same: blocks attached to either side of said cross bar provided with recesses adapted to secure a sliding movement therein of the two half axles: two half axles mounted in said blocks: means to lock and bind them in place in said blocks: and means to extend them in and out from the frame at will, separately.

20. In a road grader of the class named, the combination of the side bars 10 with the circular frame 13: the upper flange 13 provided with cogs: the scraper blade: a rotating frame adapted to be revolved within the circular frame, provided with standards 22: a segment rack 22: means to rotate the frame in or upon the circular frame: means to lock the rotating frame in position when the proper angular adjustment has been secured: a rocking frame consisting of the curved standards 36: brace bars securing the same in place: the flange 40: pivot bolts 41 securing the lower ends of the standards to the rotating frame: lifting arms 42: the locking bar 43, provided with means to lock the rocking frame in place: guides 50 for the lifting arms of the scraper blade: rack gear 52 on the lifting arms: rocking blocks 53 on the lower ends of the lifting rods, pivotally attached thereto—the blocks being provided with V-shaped recesses: flanges 60 on the scraper blade: perforations 61 in said flanges: dogs 62 pivoted to the blocks: connecting rods 63 connected to the dogs for operating: means to elevate and lower the lifting arms of the scraper blade: brackets 85 attached to the rear end of the frame: a cross bar 84 attached to the dogs: tilting blocks 87 provided with recesses adapted to hold half axles: half axles 82 sliding in recesses in said tilting blocks: wedge blocks 89: the pivot bolt 88 passing through the tilting blocks and provided at its end with a foot nut 90: a rocking lever 92: the segmental rack 93 on said lever: connecting rod 94: hand lever 96: projection 98 on said lever: teeth 99 on the inner side of said projection: the extension 100 on top of the rocking block provided with a slot at its upper end and also with a slotted projection 102: flat dog 103 provided with a handle: lugs 106 on the inner side of the hand lever, substantially as and for the purpose described.

21. In a road grader of the class named, a frame for the support of the scraper blade and its mechanism, consisting of two side bars extended from the rear to the front axle, the forward ends being brought together and suitably secured to the front axles, and the rear ends provided with brackets attached thereto and suitably braced: a cross bar secured to said brackets rigidly holding them in place: the said side bars being expanded or curved outwardly near their center part and adapted to support and be firmly attached to a circular frame: a circular frame firmly attached to said side bars and formed of channel iron, and provided with rack teeth on the upper channel: a rotating frame consisting of two main supports or standards suitably braced and adapted to be guided and rotated within the channel of said circular frame: a hand wheel, shaft, and pinion mounted in said rotating frame, the pinion meshing with the teeth of said circular frame: a rocking rod journaled in the bearings in the main standards and extending beyond them, and provided on one end, on the outside of the main standards, with a falling segment adapted to engage the cogs in the circular frame, so as to lock the rotating frame at any point of angular adjustment: a rocking frame consisting of two curved standards adapted to form guides for the lifting arms of the scraper blade, suitably braced in place, the lower ends being pivotally attached to the standards of the rotating frame: cogs formed on the upper ends of the main standards: a locking bar attached to said curved standards and adapted to lock the rocking frame in place by engaging the said cogs on the main standards: curved lifting arms for the scraper blade mounted in guides attached to said curved standards and held and guided thereby, and provided at their upper end with rack gear: a shaft and pinion meshing in the projections attached to the upper end of said curved standards and held in engagement with the rack on the upper end of said lifting arms: a hand wheel mounted on the end of said shaft: a nut adapted to clamp said wheel and collar to said shaft firmly against the bearing between them, to lock said shaft in place: a stirrup placed upon the outer face of said wheel, provided with a rack upon one side, which engages the teeth formed on said nut: a slotted projection on one end of said stirrup through which a bolt passes to assist in holding the stirrup movably to the face of the wheel: an extension bar on the other end of the stirrup having rack teeth on its end and extended between two lugs attached to the rim of the wheel: a handle, provided at one end with a segmental rack and pivoted between said lugs so as to be held in engagement with said rack on said extension: rocking blocks pivotally attached to the lower ends of said lifting arms and provided with recesses, adapted to hold flanges attached to the scraper blade and permit a lateral motion: a scraper blade provided with flanges secured to the back thereof and adapted to form guides or ways and to slide in and be held by the recessed portion of the rocking blocks: perforations in one of the flanges of said scraper blade: dogs adapted to engage said perforations: a connecting rod attached to said dogs extending upward and provided with a handle in easy reach of the operator, to operate said dogs: segment racks formed on the ends of the cross bar attached to said brackets at the end of the frame: tilting blocks mounted on pivot bolts through the end of said cross bar, the centers or axis coinciding with the center of the segment racks—the tilting blocks being recessed through their center part and each adapted to receive therein a half axle and a wedge block: two half axles placed within said recesses outside of the tilting blocks: wedge blocks placed within said recesses on one side of said half axles and having the upper sides inclined or beveled, and adapted to bind said axles firmly in the tilting blocks when forced into the recesses: a foot nut on the end of the pivot bolt upon which the tilting blocks turn, and adapted to clamp and force the wedge block into place: half axles 82 adapted to slide in and be held in the tilting blocks 87: the rocking lever 92 provided with a segmental rack 93: the connecting rod 94 pivoted to the rocking lever at one end and to the inner end of the half axles at the other end: a hub or boss on the inner side of the rocking lever through which the pivot bolt 88 passes: a hand lever 96 provided with a longitudinal slot mounted on said hub or boss, and also provided with a

projection extended over and down upon the segmental rack 93, and provided with a tooth 99: the extension 100 on top of the tilting blocks, provided with a slotted projection 102: the flat dog 103 provided with a handle, held and guided in the slotted parts of said extension 100 and projection 102: the upright shaft 107 on top of the head block: the bracket 108 provided with its arms 109 and having an orifice 110 in its end: a lifting rod 111 attached to the tongue at one end and provided with a thread and thumb nut 112 at the other end: the spiral spring 113 placed between the thumb nut and the end of the bracket 108, all substantially as and for the purpose described.

543,192. PROCESS OF MANUFACTURING BIMETALLIC PLATES, SLABS, &c. ADOLF RODIG, Laband, Germany. Filed Sept. 23, 1893. Serial No. 486,278. (No specimens.)



Claim.—1. The improved process for manufacturing plates, sheets, slabs, bands, and the like, from two or more metals welded together, which consists in forming the core piece with temporary overhanging projections at its edges for engaging and retaining the surface metal, then casting the surface metal on two opposite surfaces only of the core piece and into the overhanging projections thereof, whereby the surface metal and core piece are held firmly together by the said projections, and subsequently welding said metals together by heat and pressure, substantially as set forth.

2. The improved process for manufacturing plates, sheets, slabs, bands, and the like, from two or more metals, which consists in forming a core piece of one metal with temporary overhanging projections at its edges extending longitudinally and transversely thereof, then casting the surface metal on two opposite surfaces of the core piece and into said projections, whereby the surface metal and core piece are held fast together by said projections against relative longitudinal or lateral movement, and then welding said metals together, substantially as set forth.

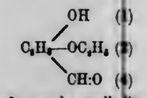
3. The improved process for manufacturing plates, sheets, slabs bands, and the like, from two or more metals welded together, which consists in forming a core piece of one metal with temporary overhanging projections at its edges, then casting the surface metal on two opposite surfaces of said core piece and into engagement with the projections thereof, whereby said core piece and surface metals are held fast together, then rolling the compound ingot thus formed and thereby welding said metals together, and then removing the portions of said metals in engagement at said overhanging projections, substantially as set forth.

4. The improved process of manufacturing plates, sheets, and the like from two or more metals welded together, which consists in forming a core piece of one metal with provisional overhanging projections at its edges for engaging and retaining on its surface another metal, applying to such core piece a coating of another metal with reciprocal overhanging projections at its edges engaging those of said core piece and firmly holding the two together, subjecting the compound member thus formed to heat and pressure, rolling the resulting member to the desired thickness, and destroying the interengaging portions thereof, substantially as and for the purpose set forth.

543,193. PRODUCTION OF PROTOCATECHUIC ALDEHYDE-META-ALKYL ETHERS. ALBRECHT SCHMIDT, Berlin, Germany. Filed July 21, 1894. Serial No. 518,242. (Specimens.)

Claim.—1. The process of obtaining protocatechuic aldehyde-meta-alkyl ether, which consists in causing a suitable compound of the type of benzenesulfo chlorid to act upon a mono-metallic salt of protocatechuic aldehyde, alkylating a salt of the so formed compounds of the type of para-benzenesulfoprotocatechuic aldehyde and splitting off from the compounds of the type of para-benzenesulfoprotocatechuic aldehyde-meta-alkyl ether obtained in that way by means of known saponification agents such as potassium or soda lye, the protocatechuic aldehyde-meta-alkyl ethers, substantially as set forth.

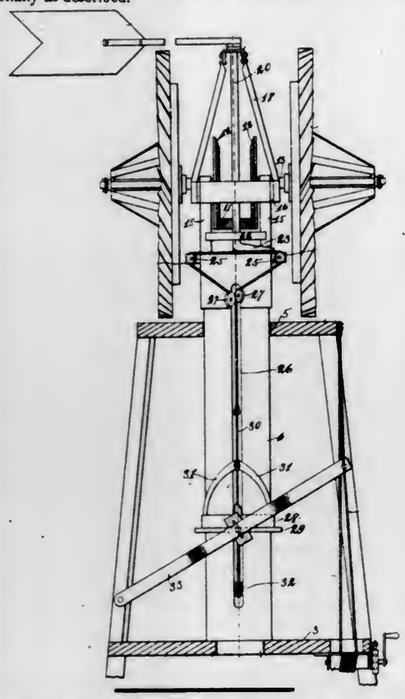
2. As a new product, protocatechuic aldehyde-meta-ethyl-ether having the formula:



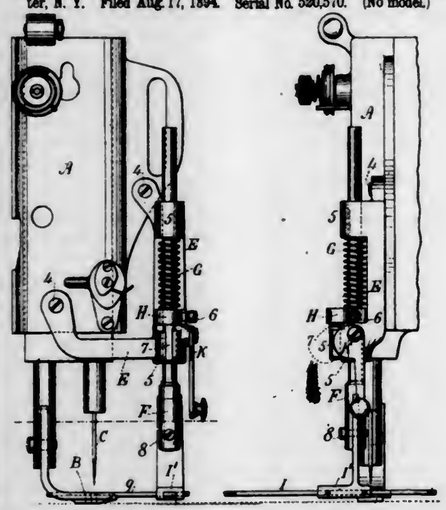
which crystallizes out of water in small glittering scales and melts at about 77.5° centigrade, as specified.

543,194. WINDMILL. REINAR SCHMIDT, Hayton, Wis. Filed Sept. 12, 1894. Serial No. 522,903. (No model.)

Claim.—In a windmill, the combination with the wind wheels 14 mounted upon a revoluble spindle, of a vane carried by an upright shaft 20 mounted in bearings upon said spindle, an arm 23 secured to the lower end of said shaft 20, cords 26 secured to said arm 23 and running over pulleys 25 mounted in bearings in the ends of arms 24 secured to said spindle and over pulleys 27 secured to said spindle, one of said cords being connected at its other end to the end of an arm 30 secured to a collar 28 on said spindle, and the other of said cords 26 passing over a pulley 32 secured to said spindle at its lower end portion and passing thence upwardly and secured at its other end to said arm 30, and means for raising and lowering said collar 28 consisting of a lever 33 pivotally mounted upon the frame of the machine and engaging an annular flange on said collar, said lever 33 being adapted to be turned upon its pivot to raise and lower said collar during its revolution by a cord connected at its ends to the end of said lever 33 and adapted to be operated by a reel 37, substantially as described.



543,195. GAGE FOR HEMMING. ALFRED S. SIMONS, Port Chester, N. Y. Filed Aug. 17, 1894. Serial No. 520,570. (No model.)

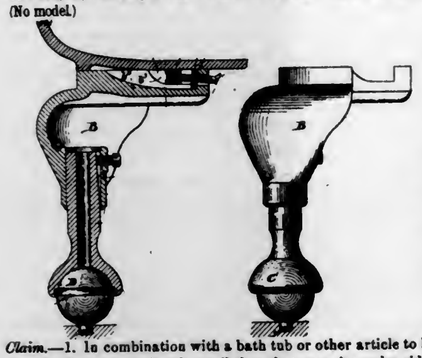


Claim.—1. The combination in a sewing machine with the presser foot and a turner for the edge of the fabric, of a hem spreader, a vertical gage bar for carrying such hem spreader, a frame connected with the head of the sewing machine and having bearings through which the gage bar can slide vertically, and means for sustaining the gage bar and the hem spreader above and not pressing upon the fabric that rests on the sewing machine bed, substantially as specified.

2. The combination in a sewing machine with the presser foot and a turner for the edge of the fabric, of a hem spreader, a vertical gage bar for carrying such hem spreader, a frame connected with the head of the sewing machine and having bearings through which the gage bar can slide vertically, and an adjustable collar upon the gage bar for sustaining the same and the hem spreader above and not pressing upon the fabric that rests upon the sewing machine, and a spring to hold the parts down in position but to allow unusual thicknesses to pass beneath the gage bar, substantially as set forth.

3 The combination with a sewing machine of a vertical frame removably connected to the head of the sewing machine, a gage bar sliding through bearings upon the frame, and a hem spreader or gage carried at the lower end of such bar, a collar surrounding the gage bar and having a guide in a slot upon one of the bearings, and a clamping screw whereby the collar is made to suspend the gage bar and gage above and not pressing upon the fabric that rests upon the sewing machine bed, substantially as set forth.

543,196. LEG FOR BATH-TUBS OR OTHER ARTICLES. JOHN H. STEVENS, Jr., Cambridge, Mass. Filed Oct. 29, 1894. Serial No. 527,283. (No model.)



Claim.—1. In combination with a bath tub or other article to be supported having a tapering dovetailed socket upon its under side; a leg provided with a tapering dovetailed arm or shank to fit said socket, and projecting inward beyond said socket and having a notch formed in its upper surface; a bar resting in said notch and against the inner end of said socket; and a set-screw carried by said arm and operating against said bar to clamp it against said socket and secure said leg in position.

2. A metal leg for supporting bath tubs or other articles having a hemi-spherical inverted cup formed on its lower end with an annular groove or enlargement formed in its interior near its rim; in combination with a ball of glass, porcelain, or other non-corrodible material set in said cup having a circumferential groove formed thereon; and a gasket of lead or other suitable packing filling said groove and the groove in the cup as set forth.

3. The combination in a leg for supporting bath tubs or other articles, of a main body provided with a vertical cylindrical socket in its lower end; a lower section fitted to and adjustable vertically in said socket, and provided with a longitudinal groove having an inclined bottom in its upper portion; and a set-screw set in said main body and impinging upon the inclined bottom of said groove to clamp said lower section in position in said main body.

4. A metal leg for supporting bath tubs or other articles having a recess or cavity in its lower end; in combination with an annular groove or enlargement in the interior of said recess or cavity, near its rim; a foot of non-corrodible material fitted to said recess; a circumferential groove formed in the outer surface of said foot; and a packing of suitable material filling the grooves in said recess and said foot to secure said foot in position.

543,197. COMPOUND OF PYROXYLIN. JOHN H. STEVENS, Newark, N. J., assignor to the Celluloid Company, New York, N. Y. Filed May 31, 1895. Serial No. 551,285. (No specimens.)

Claim.—1. The process of manufacturing compounds of pyroxyline which consists in intimately mixing pyroxyline, camphor and napththalene, and subjecting the resulting compound to heat and pressure, substantially as set forth.

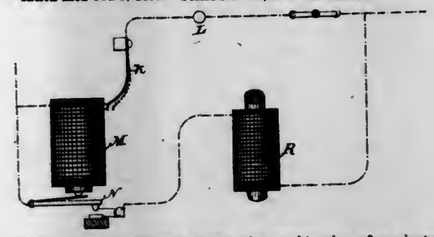
2. The process of forming compounds of pyroxyline which consists in mixing pyroxyline, camphor, naphthalene and a liquid menstruum, or liquid menstrua, and then subjecting the resulting compound to heat and pressure, substantially as set forth.

3. The process for the manufacture of compounds of pyroxyline which consists of the following steps: first, intimately mixing pyroxyline, camphor, naphthalene and a liquid menstruum or liquid menstrua; second, drying out the liquid menstruum or liquid menstrua; third, subjecting the dry compound to heat and pressure.

4. As a new composition of matter, a pyroxyline compound consisting of pyroxyline, camphor and naphthalene, substantially as described.

5. As a new composition of matter, a pyroxyline compound consisting of pyroxyline, camphor, naphthalene, and a liquid menstruum or liquid menstrua, substantially as described.

543,198. ELECTRIC-CURRENT DISTRIBUTER. ELIHU THOMSON, Swampscott, and EDWIN W. RICE, Jr., Lynn, Mass., assignors to the Thomson-Houston Electric Company, of Connecticut. Original application filed Apr. 24, 1884, Serial No. 127,792. Divided and this application filed Oct. 3, 1892. Serial No. 447,604. (No model.)



Claim.—1. In an electric circuit, the combination of an electro-magnetic coil subject to overheating under abnormal conditions, a fusible material arranged to receive heat from the said coil when overheated and serving to retain the circuit controller in its normal position during normal work in the coil, and means for causing the operation of the circuit controller on the softening or melting of the fusible material owing to the heat accumulated in the coil.

2. In an electric circuit, the combination, of an electro-magnet and an armature controlled thereby, of a biased circuit breaker in the circuit of the coil of the magnet, and soft solder holding said circuit breaker against its bias in electrical contact with the coil.

3. The combination with a switch and a circuit controlled by the same, of an artificial resistance connected to the said circuit and consisting of a coil wound upon a tube of conducting material open at both ends to provide a circulation of air and to prevent sparking, substantially as set forth.

543,199. EGG-COOKER. CHARLES TILLBERG, Tell City, Ind., assignor of one-half to Albert P. Fenn, same place. Filed July 9, 1894. Serial No. 516,932. (No model.)



Claim.—1. In an egg cooker, the combination of the air tight vessel, the graduated alcohol cup, and means such as shown for supporting the eggs within the vessel, substantially as shown and described.

2. The combination of the air tight vessel, the alcohol cup having within it graduating points, and means such as shown for supporting the eggs, substantially as shown and described.

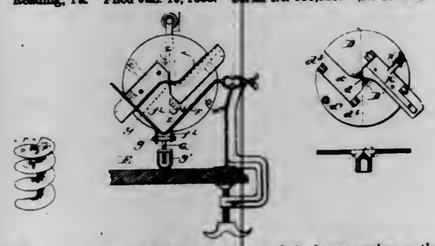
543,200. BLACKING-RECEPTACLE FOR BLACKING-BRUSHES. HENRY R. VERPILLIER and JAMES V. PRIOR, Newark, N. J. Filed Oct. 24, 1894. Serial No. 526,818. (No model.)

Claim.—The combination with a blacking receptacle, of a series of downwardly extending elastic tubes firmly secured in the bottom of said receptacle, a screw threaded stem arranged in the center of

said receptacle and secured to its bottom, a lid or cover arranged in said receptacle, and a thumbscrew loosely connected with said lid or cover and arranged on said screw threaded stem, all said parts substantially as and for the purposes described.



543,201. VEGETABLE CUTTER AND GRATER. JULIUS WAGNER, Reading, Pa. Filed Jan. 19, 1895. Serial No. 535,525. (No model.)



Claim.—1. A cutter disk having a central shaft connection on the rear face thereof, the inner end of the shaft connection being beveled, knives with the inner ends of their cutting edges abutting at the central line of the shaft, and knife openings uniting at the center of the disk and extended outward with the knives, substantially as and for the purpose set forth.

2. A cutter disk having a central shaft connection on the rear face thereof and a knife opening or openings extending to the center of the disk, the inner end of said shaft connection being beveled to guide the central cuttings, substantially as and for the purpose set forth.

3. A cutter disk having a central shaft connection, and a knife opening extending to the center of the disk, said shaft connection having a beveled portion communicating with the knife opening, a series of grooving prongs or edges projecting from the front face of the disk at different distances from the center thereof and a slicing knife in front of said opening operating in connection with said grooving prongs, substantially as and for the purpose set forth.

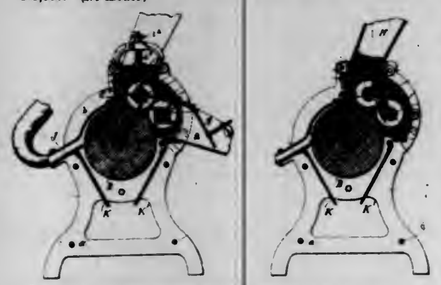
4. The combination with the rotary disk and its supporting frame, of a feed box carried by said frame and capable of adjustment in the plane of the disk, substantially as and for the purpose set forth.

5. The combination with the rotary disk and its supporting frame, of a feed box carried by said frame and capable of adjustment in the plane of the disk, and also at right angles thereto, substantially as and for the purpose set forth.

6. The combination with the rotary disk and its supporting frame, of a feed box, pivoted to said frame at a point beyond the disk and means for adjustably securing the same in varying positions with relation to said disk, substantially as and for the purpose set forth.

7. The combination with the rotary disk and its supporting frame, of the feed box, pivoted to the said frame at a point beyond the disk and adapted to swing in a vertical plane in front of said disk, and an adjustable support fixed to the under side of said box, substantially as set forth.

543,202. MACHINE FOR DELINTING COTTON-SEED. GEORGE W. WASHBURN, Memphis, Tenn., assignor to the National Cotton Seed Oil and Huller Company, same place. Filed May 24, 1893. Serial No. 475,339. (No model.)

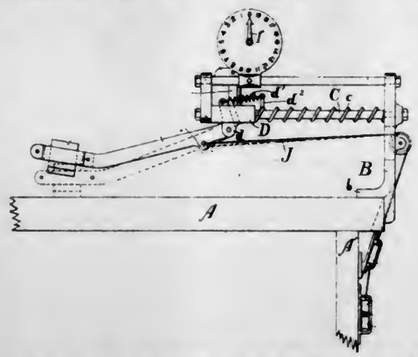


Claim.—1. In a cotton seed delinting machine of the character described, the combination of the case, the abrading cylinder mounted therein, the check plate dividing the case into the seed chamber upon one side of the plate, and the lint chamber upon the opposite side, a feed spout for the lint bearing seed at one end of the seed chamber, and a discharge spout for the delinted seed at the opposite end of said chamber, two shafts, having their axes parallel with the axes of the abrading cylinder and geared to revolve in opposite directions within the seed chamber, spiral conveyers mounted upon each of said shafts, underneath the feed spout, to force the seed toward the delivery end of the seed chamber, the floats secured upon said shafts and extending inward to near the path of the abrading cylinder and from the conveyers to the delivery end of the seed chamber, to repeatedly return the seed passing through the seed chamber to the abrading cylinder, and an exhaust flume connected to the lint chamber to convey the lint from the machine, substantially as shown and described.

2. The combination, substantially as hereinbefore set forth, of the end standards, A, the abrading cylinder and float and conveyer shafts mounted to revolve therein, the concave, C, the lower plate, c^3, at the bottom of the concave extending into near the abrading cylinder, the check plate and a spring pressed top, forming the seed chamber, the feed spout, H, leading into the top of said chamber at one end and discharge spout for the delinted seed at the bottom of the seed chamber at the opposite end, the spiral conveyers mounted upon shafts below the feed spout, the floats F and F', extending from the conveyers to the delivery end of the machine to repeatedly return the seed to the abrading cylinder, the lint chamber opposite the seed chamber, the air exhaust spout to strip the lint from the cylinder, and the open bottom case partially inclosing the lower half of the abrading cylinder for the admission of air to the lint chamber.

3. In a cotton seed delinting machine, the combination of the delinting cylinder and inclosing casing, the feed spout H, the agitator shaft M arranged across said spout, the hooked pins *m* secured therein, the feed rolls L and L' arranged below the agitator and parallel therewith, the seed rolls being circumferentially grooved to form annular rings, and said rings serrated to form teeth, the teeth upon the opposite rolls being arranged in opposite directions, and the rolls geared to move at different speeds, substantially as shown and described.

543,203. CLOTH-MEASURING DEVICE. MAX ACKERLAND, Cincinnati, Ohio. Filed May 18, 1895. Serial No. 549,751. (No model.)

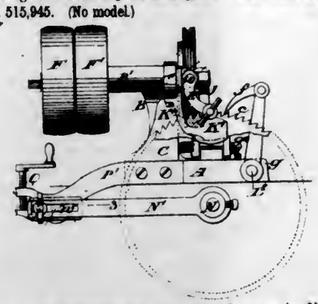


Claim.—1. In a cloth marking attachment the table over which the cloth is drawn, the standard secured to the edge of the table, having rods or arms projecting over the table, a sliding head mounted upon said arms, a marking arm carried by said head, a spring to hold the arm and marker normally above the table, and an actuating cord or wire connected to said arm within convenient reach of the operator at the end of the table to pull the marker down upon the cloth and across it when the desired length of cloth has been drawn under the marker, substantially as shown and described.

2. In a cloth marking attachment, the combination of the standard having arms to project over the table, a spring pressed head mounted to slide upon said arms, a vibrating arm carrying the marker mounted in said sliding head, a spring to hold the marking arm normally above the table, an indicator mounted rigidly above the sliding head, an upward projection from the sliding head, a pawl carried by said sliding head to actuate the indicator when the marker is drawn down and across the table, and means to draw the marker down across the table, substantially as shown and described.

3. In a cloth marker, the combination of the standard, B, the head, G, and rods, E and C, passing through the standard, a head rigidly secured thereto, forming the frame of the marker, a head mounted to slide upon the rods, C, the arm, H, journaled in said rod, the spring, *d*, to hold the arm normally above the table, a spring, *c*, coiled around the rods, C, to normally press the sliding arm carrier against the head, G, the pulleys, *j* and *j'*, journaled in bearings in the standard and table support, and the cord, J, secured to the marker arm and passing around said sheaves for the purpose of drawing the marker down upon the table and across the cloth, substantially as shown and described.

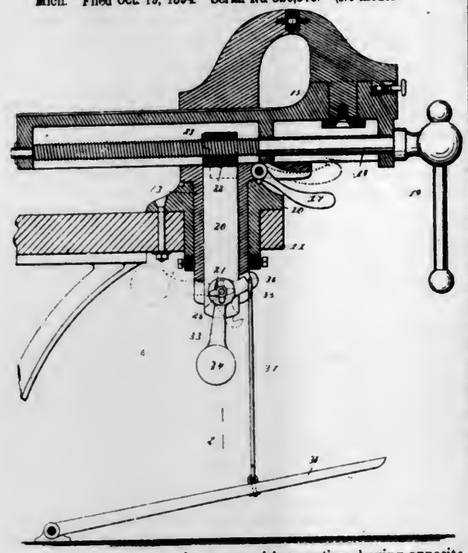
543,204. SAW-FILING MACHINE. RICHARD BAUER, New York, N. Y., assignor to Paul Pryibil, same place. Filed June 28, 1894. Serial No. 515,945. (No model.)



Claim.—1. The combination with a saw clamp and a file carriage, of a lever which is adjustable lengthwise relatively to its fulcrum and transversely to the path of the file carriage and a saw supporting pivot carried by said lever, substantially as herein set forth.

2. In a machine for filing circular saws, the combination with a saw clamp and a file carriage, of a saw carrying lever consisting of a stock and a bar adjustable lengthwise therein, the said stock having a fixed relation to the fulcrum of the lever and the said bar carrying a pivot for the saw and being adjustable lengthwise within said stock, substantially as and for the purpose herein set forth.

543,205. SECTIONAL NUT. JOHN E. BORGEN, South Bay City, Mich. Filed Oct. 19, 1894. Serial No. 526,378. (No model.)



Claim.—1. A sectional nut comprising sections having oppositely threaded jaws at one end and cam slots at the other end, oppositely arranged cams one in each slot and normally bearing at diametrically opposite points in the respective cam slots, said bearing points being aligned with the longitudinal axis of the nut, said cams being adapted when turned, to bear on the cam surfaces in the slots at points diametrically opposite to the points at which they bear normally, and means for rotating said cams, substantially as set forth.

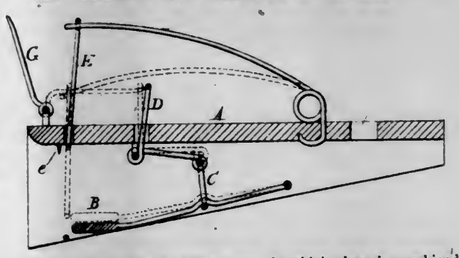
2. A sectional nut comprising sections having oppositely threaded jaws and each provided with a cam slot, oppositely arranged cams, one in each cam slot, each of said cams having two bearing points located at quadrants to one another, each of said points being arranged diametrically opposite to a similar point on the other cam, and means for simultaneously turning each of said cams one-fourth of a rotation, substantially as set forth.

3. A sectional nut comprising sections having oppositely arranged threaded jaws and each provided with a cam slot, a pivot pin extending through said slots, a lever fulcrumed on the pivot pin, and having at one end a weight, cams on the pivot pin, one in each slot, each of said cams having two bearing points located at quadrants to one another, each of said points being arranged diametrically opposite to a similar point on the other cam, a treadle connected to the end of the lever opposite the weighted end thereof, and a stop to limit the throw of the lever, substantially as set forth.

4. A sectional nut comprising sections having oppositely arranged threaded jaws, means for moving said jaws toward and from one another, and means for automatically locking said jaws together when in their extreme positions, substantially as set forth.

5. A sectional nut comprising sections having opposite threaded jaws each provided with a cam slot, oppositely arranged cams, one in each cam slot, means for rotating said cams, whereby the sections may be moved toward and from one another, said cams being adapted to lock the respective sections against movement when in their extreme positions, substantially as set forth.

543,206. POCKET-GOPHER TRAP. ALBERT BUTNER, Deer Park, Wash. Filed Nov. 6, 1894. Serial No. 528,057. (No model.)



Claim.—1. A pocket gopher trap, in which there is combined a tapered frame portion provided with a substantially tapered receiving chamber and having an opening near its narrow portion, an engaging loop near its large entrance or opening, an actuating spring for operating such loop, latch mechanism to hold such spring under tension and the loop in its depressed set position, a pivoted treadle adjacent to such loop and arranged to release the latch mechanism as it is depressed to spring the trap, substantially as described.

2. A pocket gopher trap in which there is combined, a substantially pyramid-shaped frame open on one end and its "base" and provided with an aperture at *a'*, to concentrate light at the narrowest end of its tapered chamber, an engaging loop near its open end an actuating wire spring connected with the engaging loop to operate the same, a trigger to hold the engaging spring under tension and the loop in its depressed set position, a pivoted latch to hold the trigger and other parts in their set position, and a pivoted treadle connected with the pivoted latch with its free end arranged adjacent to the engaging loop so that its depression will release the latch and spring the trap, substantially as described.

3. A pocket gopher trap, in which there is combined, a substantially tapered frame portion having a corresponding shaped chamber and provided with an aperture near its narrow end, an engaging loop near the entrance, impaling projections on the under side of the frame adjacent to the loop, an actuating spring for operating such loop, latch mechanism for holding the spring under tension and the loop in its set position, a treadle portion adjacent to such loop and arranged to release the latch mechanism as it is depressed to spring the trap, substantially as described.

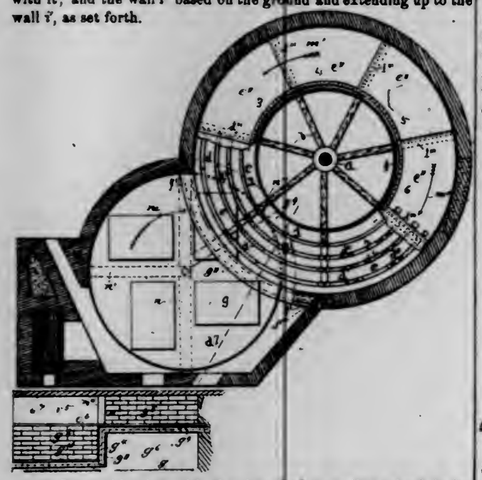
543,207. GLASS-ANNEALING FURNACE. JAPHUS GEORGE and CHRISTOPHER M. SHORTLE, Ithaca, N. Y. Filed June 11, 1892. Serial No. 436,410. (No model.)

Claim.—1. In the described annealing furnace and chamber, the described annealing wheel; constructed of a vertical shaft, a central hub, radial arms, extending horizontally outward to near the inclosing wall of the chamber, and a series of circular circumferential interspaced bars, attached to the outer portions of the arms, as set forth.

2. In the described annealing wheel, and chamber, the bed sections with intervals between them, composed of segments of circular bars, fast to the outer ends of the arms of the wheel; the division of the bars into sections being for the purpose of the introduction and withdrawal of the flattener's fork, as set forth.

3. In the described annealing chamber, the three heat confining walls *i*, *i'*, *i''*, situated one over the other and co-operating with each other; the wall *i* being fast to the roof of the annealing chamber, and extending down to the inner edge of the beds of the wheel; the wall

i' being fast to the wheel, next to the annealing beds, and revolving with it; and the wall i'' based on the ground and extending up to the wall i', as set forth.



4. In combination with the described annealing wheel, in its chamber, with beds of bars, on which the sheets of glass are annealed; the boxing constructed of sheet metal, about and inclosing each bed space; fast to and revolving with the wheel, as set forth.

5. In the described glass flattening and annealing furnace, the division wall, constructed between the flattening and annealing chambers, supported by the girdle g^4 spanning the space between, and supported by the abutments f', f''; the wall being provided with the aperture e^7, which opens into the flue e^6, in the upper part of the annealing chamber; and with an aperture g^6, through which the sheets of glass are transferred from the flattening wheel and chamber, to the annealing chamber and beds; the wall being adapted to cause the products of the combustion of fuel to enter the flue e^6, as set forth.

6. In combination, and as a part of the described annealing wheel, the transverse, metallic, mantel walls, placed over, and fast to, and revolving with the beds of bars of the annealing wheel, in the intervals between the beds of bars; whereby the heated air is confined, and conveyed about the chamber, with the sheets of glass while cooling, as set forth.

543,208. INGRAIN CARPET FABRIC. BENJAMIN H. GLEDHILL, Philadelphia, Pa., assignor to Maurice H. Masland and Frank E. Masland, same place. Filed Apr. 6, 1895. Serial No. 544,835. (Model.)

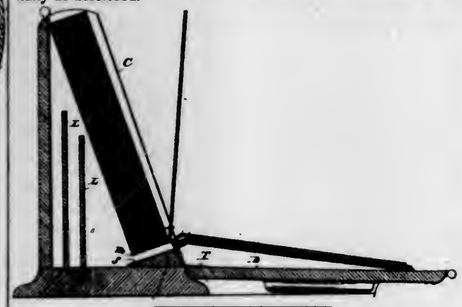


Claim.—A two weft-plane ingrain carpet fabric, consisting of warp-threads, weft-threads and a filler or stuffer, the warp threads being arranged in sets of two in a set and the weft threads in sets of five in a set and the filler or stuffer being a heavy thread and bound between the two planes throughout the fabric to separate one plane from the other and to give body thereto, the two weft-threads of one face of each set being in separate sheds and bound by the two warp-threads extending from face to back of the fabric throughout the same and the three weft threads of the other face of each set being alternately in singles and in pairs in the sheds and bound by said warp-threads extending from face to back of the fabric throughout the same to constitute by the respective warps, wefts and filler or stuffer a solid and homogeneous fabric.

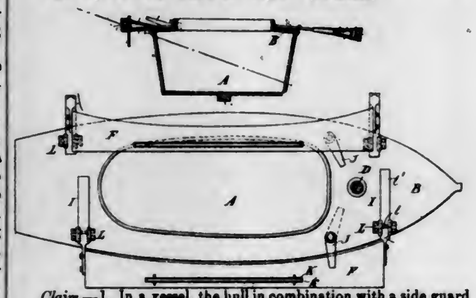
543,209. COMBINED ALBUM AND WRITING-DESK. WILLIAM A. HOLMAN, Philadelphia, Pa. Filed Nov. 27, 1894. Serial No. 530,195. (No model.)

Claim.—1. A combined album and writing desk, consisting essentially of a box frame, having a base A, back B, and inclined sides C, C, with a front and an outwardly inclined base rest R secured to the inner surface of the base A of the box frame; in combination with an album composed of a pack of leaves flexibly connected to each other at their binding edge and hinged to said base rest by a textile strip between the same and the outside leaf of said pack of album leaves; substantially as described.

2. In combination a supporting stand composed of the vertical back piece B and the horizontal base A, the outwardly inclined book rest R secured to said base, an album composed of a pack of leaves flexibly connected to each other at the binding edge and a hinge between the said inclined book rest R and the outer leaf of the pack of album leaves whereby the book may be normally maintained in a vertically inclined position and be permitted to be opened and thrown down leaf by leaf or as a whole, for the purpose mentioned; substantially as described.



543,210. VESSEL. NATHAN C. JESSUP, Westhampton, N. Y. Filed Sept. 19, 1892. Serial No. 446,341. (No model.)



Claim.—1. In a vessel, the hull in combination with a side guard carried at the side of the hull and contacting with the water when the vessel heels, and a connection between said guard and hull permitting free movement of said guard when the latter is in one position, and holding said guard rigidly relatively to the hull when said guard is in another position.

2. In a vessel, the combination with the hull of a side guard connected to the upper part thereof above the water line and having a substantially horizontal portion contacting with the water when the vessel heels and preventing capsizing and a substantially vertical face beneath this portion serving as a lee-board.

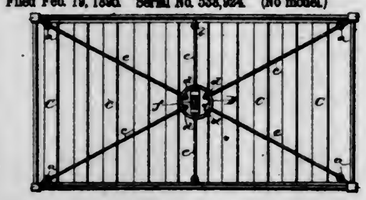
3. In a vessel, the combination with the hull A, of the side guard E, consisting of a hollow closed buoyant shell F, and a resisting face G, said guard connected to the hull and contacting with the water when the vessel heels and preventing capsizing and leeway.

4. In a vessel, the hull in combination with the side guard E, shoes L, carried by the vessel, and rods carrying the side guard said shoes engaging said rods and thereby connecting the side guard to the vessel, said rods permitting the adjustment of the side guards laterally toward and from the vessel.

5. In a vessel, the combination with the hull and a side guard pivoted thereto and contacting with the water when the vessel heels, of a stop J, limiting the upward movement of said guard.

6. In a vessel a side guard consisting of a hollow buoyant closed shell, having a socket *k*, in combination with a lee-board K mounted in said socket when in use.

543,211. BEDSTEAD-BRACING. JAMES T. C. JONES, Starr, S. C. Filed Feb. 19, 1895. Serial No. 538,924. (No model.)



Claim.—In combination with a bedstead, substantially as shown and described, the eye screws *a*, and *b*, perforated central ring D; rods *c*; nuts *d*, rods *e*, and buckle nut *f*, substantially as shown and described and for the purposes set forth.

543,212. AZO DYE. RICHARD KORNFF, Prague, Austria-Hungary. Filed Feb. 7, 1895. Serial No. 537,635. (Specimens.) Patented in England Mar. 12, 1894, No. 5,143; in France Mar. 27, 1894, No. 237,358, and in Austria June 15, 1894, No. 44/2,468.

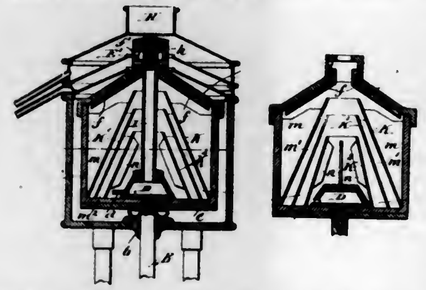
Claim.—1. The process, which consists in causing a tetrazo derivative of an amido base containing no imid group or groups to act upon an amin or phenol or their sulfo or carbonic acids.

2. The process, which consists in causing one molecule of a tetrazo derivative of an amido base containing no imid group or groups, to act upon four molecules of an amin or phenol or their sulfo or carbonic acids.

3. The process of obtaining red dyes, which consists in causing one molecule of the tetrazo derivative of an amido base, as the base resulting from the condensation, in concentrated sulfuric acid, of formaldehyde with tolidin, to act upon four molecules of an amin or phenol or their sulfo or carbonic acids as naphthionic acid, substantially as set forth.

4. The herein, described azo-dye derived from formaldehyde tolidin, pulverulent in a dry state, of a red-brown color, forming, when dissolved in water (in which it is readily soluble) a red solution, dyeing cotton red in an alkaline bath, and yielding, when dissolved in sulfuric acid, a blue solution.

543,213. CENTRIFUGAL SEPARATOR. CARL J. LUNDSTROM, Little Falls, N. Y., assignor to D. H. Burrell & Co., same place. Original application filed Jan. 24, 1893, Serial No. 459,533. Divided and this application filed Nov. 28, 1894. Serial No. 530,227. (No model.) Patented in Canada July 6, 1893, No. 43,500.



Claim.—1. The combination with the separating bowl, having an inlet for the full milk and discharges for the separated cream and skim milk, of an outer separating cone extending diagonally through the liquid space from the bottom of the bowl toward the cream outlet, and a preliminary separating cone of smaller diameter arranged within the outer cone, substantially as set forth.

2. The combination with the separating bowl having an inlet for the full milk and discharges for the separated cream and skim milk, of hollow separating cones of different diameters arranged loosely upon the bottom of the bowl around the inlet for the full milk and extending diagonally through the liquid space of the bowl toward the cream outlet, whereby the milk is separated first within the innermost cone and then successively in the surrounding spaces, the separated cream passing directly from the small upper end of each cone toward the cream outlet, while the skim milk of the first separation passes past the lower end of the innermost cone and successively through the separating spaces surrounding the latter, substantially as set forth.

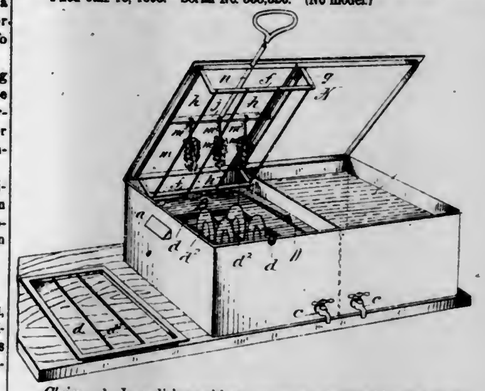
543,214. AROMATIC GLYCOCOL DERIVATIVE. WILHELM MAERT, Berlin, Germany. Filed July 7, 1891. Serial No. 398,729. (No specimens.) Patented in England Mar. 24, 1891, No. 5,269; in Luxemburg Mar. 24, 1891, No. 1,426, and in Italy Mar. 31, 1891, XXV, 29,336, and LVII, 351.

Claim.—1. The process of obtaining aromatic glycocol derivates which consists in treating a suitable amine with a haloid combination of a hydrocarbon compound such as described, in the presence of an excess of ammonia, driving off the ammonia, boiling in water, filtering, alkalizing the filtrate, and crystallizing the glycocol derivative out of the filtrate by means of an excess of ammonia, substantially as set forth.

2. The process of obtaining glycocol derivates, which consists in treating a glycocol compound such as described with an aqueous or alcoholic solution of a primary aromatic amin, and separating the derivative by means of an excess of ammonia, substantially as described.

3. The herein-described crystallizable or crystalline glycocol derivatives having but one acetamid remainder bound to one nitrogen atom and containing the group $NHCOCH_2NH_2$ the free bases of said derivatives having strong chemical affinities and being set free from their compounds by ammonia at low temperatures, and liberating ammonia from its compounds when heated.

543,215. DISH-CLEANER. BRIDGET R. MANN, Holyoke, Mass. Filed Jan. 18, 1895. Serial No. 535,326. (No model.)



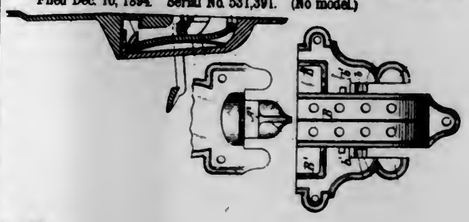
Claim.—1. In a dish washing apparatus, the combination with a tank having a washing compartment, and provided with a frame or cover to be set thereupon, of a removable dish-holding receptacle to be set into the washing compartment, and a part carrying one or more dish washers, which is mounted for a reciprocatory movement by and under said cover and having a handle for imparting thereto its movements, substantially as described.

2. In a dish washing apparatus, the combination with a tank having a washing compartment, and provided with a frame or cover to be set thereupon, of a removable dish-holding receptacle to be set into the washing compartment which has the lugs, *b*, *b*, on its inner walls and the slatted frame, *d*, supported thereon, and a like slatted frame at the bottom of the receptacle, and a part having one or more dish washers, which is supported for a reciprocatory movement by and under said cover, and having a handle for sliding it, substantially as described.

3. In a dish washing apparatus, the combination with a tank having a washing compartment, and provided with a frame or cover to be set thereupon, of a removable dish-holding receptacle to be set into the washing compartment and which has the apertures, *x*, *x*, the bail, *a*, the lugs, *b*, *b*, on its inner walls, and the slatted frame, *d*, supported by said lugs, and a support having one or more dish washers, which is supported for a reciprocatory movement on said cover and having a handle for sliding it, substantially as described.

4. In a dish washing apparatus, the tank comprising the washing and rinsing compartments, B, C, and the cover, G, having at one end half at its under side the rigid opposite depending frames, *f*, *f*, with the traversing rods, *g*, *g*, near the plane of the cover and the series of traversing rods, *h*, *h*, below and parallel with said rods, *g*, the support bar, *j*, supported by and movable along said rods, *g*, *g*, and carrying the dish washers, *m*, *m*, the stems of which have sliding bearings along said rods, *h*, *h*, and the operating handle-bar, *n*, combined with the removable dish receptacle which has therein the traversing rods, d^3, d^3, above its bottom, all substantially as described and shown and for the purposes set forth.

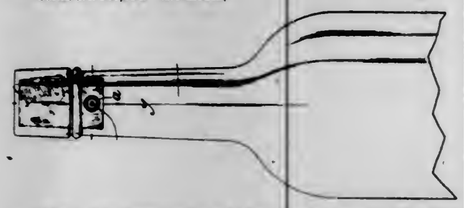
543,216. TRUNK-FASTENER. WILLIAM F. MILLER, Boston, Mass. Filed Dec. 10, 1894. Serial No. 531,391. (No model.)



Claim.—1. In a trunk fastener the combination of the box piece B as described having a receptacle adapted to hold the hook plate C, and two wings cast integral with the receptacle but leaving spaces S S between them and the said receptacle, adapted to admit the cam lever, each of said wings having bearings adapted to engage with, and hold the cam lever: with the cam lever, the hook plate and the catch plate substantially as described and for the purpose set forth.

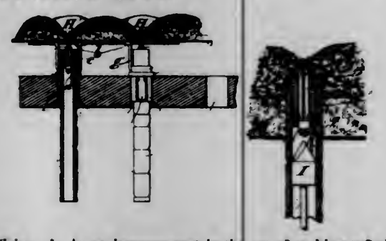
2. In a trunk fastener the combination of the catch plate having a hook A rounded off as described, and having a directing rib A′ adapted to engage with a central depression *c′* in the hook C of the hook plate C; with the hook plate C having a hook C′ and depression *c′* substantially as and for the purpose set forth.

543,217. MEANS FOR DETECTING WITHDRAWAL OF BOTTLE-STOPPERS. BENITO NICHOLS, New York, N. Y. Filed Oct. 24, 1894. Serial No. 526,854. (No model.)



Claim.—The combination, of a bottle and a compressed stopper tightly inserted therein, whereby it is incapable of turning or manipulation, having a conspicuous mark formed or branded thereon, and said bottle being etched upon its exterior to form a mark thereon in exact alignment with the mark upon the stopper within the same, substantially as shown and described.

543,218. PROCESS OF AND APPARATUS FOR MAKING TUFTED UPHOLSTERY. JOHN F. ORR, Cincinnati, Ohio. Filed Jan. 19, 1895. Serial No. 535,440. (No model.)

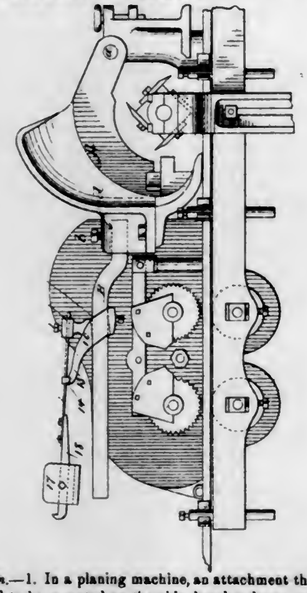


Claim.—1. As an improvement in the art of making tufted upholstery, the herein-described method of making and securing the several draft or tuft pits and preventing the matting of the stuffing or filling between said tuft-pits and the backing, which consists in first providing vertical draft holes or spacing-wells in the said stuffing or filling directly beneath the several draft-points in the facing or cover, for the respective tuft-pits; then depressing or drawing the said draft-points in the facing downward through the said spacing-wells in the filling till they reach the bottom burlaps or backing, without any of the material comprising said filling intervening between the facing and backing in the draft-wells; and then suitably wiring or anchoring the facing at the bottom of said pits to the backing, substantially as herein set forth.

2. A tufting-apparatus for use in making upholstery, the same comprising an upright draft-standard; a collar having one or more spring-pawls and adapted to receive and yieldingly hold said standard in the upholstery-filling with its upper end in engagement with the under-side of the facing or cover at the point where the draft-pit is to be; a suitable support for said collar, beneath the upholstery-backing; and a suitable catch or hook device, mounted at the said upper end of the standard and adapted to be attached to the under-side of the facing; the whole being constructed, arranged, and adapted to be operated, substantially as and for the purpose specified.

3. In a tufting-apparatus for use in making upholstery, the combination of an upright, hollow spindle or standard having a jaw or hook at its upper end engaging a draft and binding loop-hook in the cover or facing; a shouldered or collared bearing-sleeve having one or more spring-pawls thereon successively engaging shoulders on the face of said standard; and a work board or table having perforations or holes made at intervals therein to suit the desired design of tufts or pads between draw-pits, and to receive a series of said standards, substantially in the manner and for the purpose herein set forth.

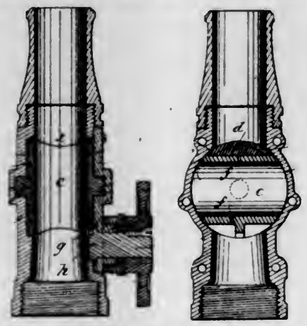
543,219. ANTIVIBRATING ATTACHMENT FOR WOODWORKING-MACHINES. ALBERT PRENO, Springfield, Mass. Filed Mar. 7, 1895. Serial No. 540,827. (No model.)



Claim.—1. In a planing machine, an attachment therefor which is adapted to be mounted on the chip breaker lever, consisting of a bracket attached to said lever, a spring secured at one end to the bracket and having an intermediate bearing thereon, and a weight mounted directly upon the free end of the spring and supported entirely thereby, substantially as shown.

2. An attachment for the presser bar lever of a planing or similar machine, consisting of a bracket that is adjustably fastened to the bar lever, and provided with securing means, and a separate bearing surface, combined with a spring attached to the bracket, by said securing means, and supported by the bearing at a point between its ends; and a weight applied to the outer free end of the spring and supported entirely thereby, and which spring has a free vibratory motion independently of the presser bar lever, substantially as set forth.

543,220. VALVED NOZZLE FOR FIRE-HOSE. HENRY W. ROSS, Springfield, Mass. Filed Feb. 23, 1895. Serial No. 539,333. (No model.)



Claim.—1. The combination with the nozzle having the valve-box, comprising the chamber of cylindrical form the opposite walls of which have the sockets, *b*, *b*, of the valve-body, of a diameter slightly less than the valve-box-chamber having the transverse waterway, and the endwise extended bosses which closely fit in said sockets, and provided with the supplemental and independently movable seating portion, *d*, said valve body receiving its entire support by said journal-bosses whereby it is relieved from frictional contact against the wall of the chamber within which it rotates, and the nozzle being so constructed that when the valve is closed a water passage is formed leading from the pressure to access behind said supplemental independently movable seating portion in the valve, substantially as described.

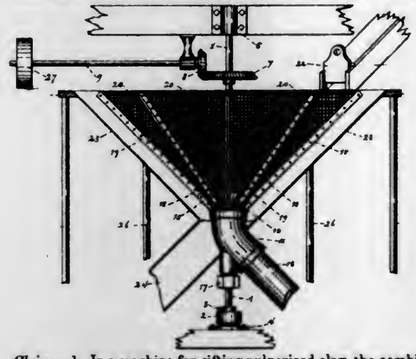
2. In combination, the nozzle having the valve-box with a cylindrical chamber therein, one side of which is constituted by the removable cap, C, the cylindrical valve-body, having the water way transversely through it rotatably mounted within the box and having gear-teeth, *g*, at its one end, a pinion adapted to mesh with said gear-teeth of the valve and having its operating shaft supported by and journaled through said cap, and having its outer end provided with an operating handle, substantially as described.

3. In combination, the nozzle having the valve-box, one side of which is constituted by the removable cap, C, which has the hollow externally threaded boss, *m*, the valve-body having the water way rotatably mounted within the box and having the gear-teeth, the shaft, *i*, having the pinion, *h*, at its inner end, and journaled through said boss, the gland, *n*, surrounding the pinion-shaft and bottoming against the cap, and the hand-wheel, keyed upon the outer extremity of the shaft and having its hub in bearing against the outer end of the gland, substantially as and for the purposes specified.

4. The combination with the nozzle having the intermediate valve-box comprising the single cylindrical chamber one side of which is constituted by the removable cap, and said cap and the opposite side having the sockets, *b*, *b*, of the cylindrical transversely apertured valve-body loose within the box and having the end bosses closely fitting in the said sockets and having the gear teeth at its one end, a shaft, *i*, supported by and journaled through the cap, having the pinion, *h*, at its inner end in mesh with said gear teeth and concealed by the applied cap, and the operating handle at the outer end of the shaft, substantially as described.

5. The combination with the nozzle having the intermediate valve-box, of the cylindrical valve-body rotatably mounted within the box and having a portion thereof comprised in a separately constructed disk which is edgewise gear-toothed and which is attached to the end of the valve-body and the pinion mounted in the nozzle and in mesh with the teeth of said disk, together with means for turning the pinion, substantially as described.

543,221. MACHINE FOR SIFTING PULVERIZED CLAY. FRANK S. SLATTERY, Bradford, Pa., assignor of one-half to Lemuel W. Young, same place. Filed Jan. 21, 1895. Serial No. 535,745. (No model.)



Claim.—1. In a machine for sifting pulverized clay, the combination with the vertical screen shaft and the foot box adapted to bear on anti friction balls, of the funnel formed with the cross-bars, collar, outside ribs and annular flange, the screen bars 18, fixedly secured to the ribs, and the screen bars 19, bearing on the top of the ribs, and means for securing them to the screen bars 18 substantially as shown and described.

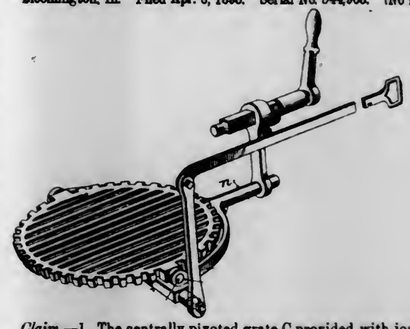
2. In a machine for sifting pulverized clay the combination with the vertical screen shaft and the foot-box adapted to bear on anti-friction balls, of the funnel formed with the cross-bars, collar outside ribs, and annular flange, the screen bars 18, fixedly secured to the ribs, and the screen-bars 19, bearing on the top of the ribs, the said screen bars being adapted to receive between them the adjoining edges of the sections of screen, and means whereby the sections of screen can be held securely therein, or readily removed for the purpose of repairing substantially as shown and described.

3. In a machine for sifting pulverized clay, the combination with the vertical screen shaft, and the foot box adapted to bear on anti-friction balls of the funnel having integral therewith the cross-bars, collar, outside ribs and annular flange, the screen bars 18, fixedly secured to the ribs, and the auxiliary screen bars 19, said screen bars being provided with both holes in alignment for the purpose of securing together the edges of the adjoining tapering sections of screen by means of bolts, substantially as shown and described.

4. In a machine for sifting pulverized clay, the combination with the vertical screen shaft and the foot box, of a funnel having integral therewith, the cross-bars, collar, outside ribs and annular flange, and the casting formed with a cylindrical projection on its lower side, said projection being provided with a packing nut, and said casting being adapted to engage at its upper end with the annular flange and at its lower end with the tailings chute substantially as shown and described.

5. A machine for sifting pulverized clay, comprising a vertical screen shaft provided with a foot-box adapted to bear on antifriction balls, a funnel having integral therewith inside cross-bars—a collar adapted to be secured to the vertical screen shaft and an annular flange adapted to fit on the inside of the tailings chute casting, said casting being formed with a curved passageway and a cylindrical projection provided with a packing nut and connected with the tailings chute, each of the outside ribs provided with a pair of screen-bars of unequal length, the longer bar being bolted to the ribs, the shorter bar being adapted to rest on top of the rib and to be bolted to the longer bar, several tapering sections of screen the adjoining sides of which are adapted to be placed between the pairs of screen bars and held firmly therein by means of bolts, the outside funnel shaped casing connected at its lower orifice to the delivery chute and formed with a flange at its upper orifice, and the supporting frame consisting of a rim composed of several courses of wooden cants supported by standards, preferably of pipe, substantially as shown and described.

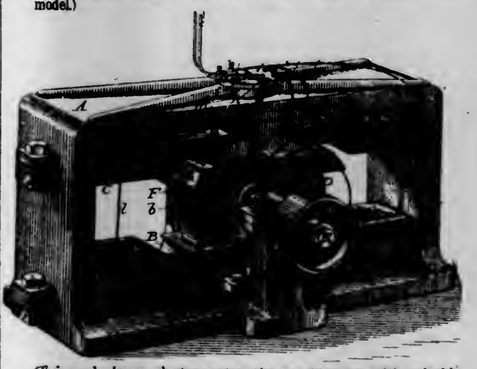
543,222. SHAKING AND DUMPING GRATE. CLINTON P. SOPER, Bloomington, Ill. Filed Apr. 8, 1895. Serial No. 544,963. (No model.)



Claim.—1. The centrally pivoted grate C provided with journals at its opposite sides, in combination with the yoke E provided with the projecting arm *n*, and rock shaft G having the arm F detachably secured thereto and having its opposite end loosely connected to the projecting arm of the yoke, substantially as shown and described.

2. The combined shaking and dumping grate, consisting of the pivoted bar D having a rigid arm L and rod *o* for tipping the same, the grate C centrally pivoted to said bar D and having journals *a* at its opposite sides, the yoke E pivoted to said journals and having its projecting arm *n* supported loosely by the pendent arm E secured to the rock shaft G, all constructed and arranged to operate as and for the purpose set forth.

543,223. ALTERNATING ELECTRIC MOTOR. JOSEPH A. G. TRUDEAU, Ottawa, Canada. Filed Apr. 6, 1894. Serial No. 506,557. (No model.)

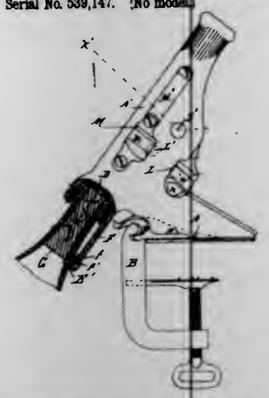


Claim.—1. In an electro-motor, the combination with suitable field magnets, of a rotatable armature having a circumferential iron hoop and a non-magnetic central portion, and an energizing coil encompassing the armature, and having its outer folds within the inner

circumference of said hoop, substantially as set forth, whereby that portion of the hoop outside the coil will be of one polarity through its entire thickness.

2. In combination with an electro-motor, a switch comprising connected contacts *d*, *e* and *f*, *g*; conducting bar *h*, contact bars *i*, *j*, and binding post *k*, all constructed and arranged to operate substantially as set forth.

543,224. CORK-PULLER. EDWIN WALKER, Erie, Pa. Filed Feb. 20, 1895. Serial No. 539,147. (No model.)



Claim.—1. The combination in a cork-puller, of an extension at the lower end of the frame, substantially in line with the travel of the cork screw, adapted to receive the upper end of a bottle neck, with an arm or support at one side of and substantially in line with one side of said tubular extension adapted to engage one side of the lower part of the bottle neck, and operate as a lateral support therefor, substantially as and for the purpose set forth.

2. The combination in a cork-puller, of an extension at the lower end of the frame, at one side of and substantially in line with the traverse of the cork screw, and adapted to engage one side of the upper end of a bottle neck, and a pivoted arm adapted to engage and support the opposite side of both the upper end and the lower part of a bottle neck, substantially as and for the purpose set forth.

3. The combination in a cork-puller, of an extension at the lower end of the tubular part A' of a cork puller frame, a cushion of resilient material therein adapted to receive the upper end of a bottle, an arm projecting from the under portion of the lower end of said extension, substantially in line with one side thereof, and a cushion in the top of the lower end of said arm adapted to engage the lower part of a bottle neck, substantially as and for the purpose set forth.

4. The combination in a cork puller, of a cork screw carrier, a nut carrier, an operating lever, a stud pin on said lever, adapted to engage and operate the cork screw carrier, a stud pin on said lever adapted to engage and operate the nut carrier of said cork screw, and a cam surface thereon adapted to engage a lug on the nut carrier, substantially as and for the purpose set forth.

5. The combination in a cork puller, of a cork screw carrier M' having a projection M thereon, and a slot *m* in said projection, a nut carrier N having a projection N' thereon and a slot *n'* in said projection, and a lug *n* on said nut carrier N, an operating lever I having a semi-disk K thereon, an inwardly projecting cam *k* on the periphery of said semi-disk, and stud pins L and L' in said disk, substantially as and for the purpose set forth.

543,225. TRACE CONNECTION FOR VEHICLE-SHAFTS. JACOB H. WISEHEART, Sacramento, assignor to John Mason, Petaluma, Cal. Filed Nov. 30, 1894. Serial No. 530,472. (No model.)

Claim.—1. A connection between trace and shaft consisting of a housing secured under the shaft and having a slot in its side, a slide within the housing having a lug projecting through and operating in



the slot thereof, and adapted to receive the trace or tug, a spring seated within the housing and controlling the slide, a second spring on the other side of the slide to prevent rattling and a loop extending rearwardly from the housing with its free end secured to the shaft; said loop adapted to receive the hold back strap.

2. A trace and shaft connection consisting of a guide mounted under the shaft and provided with a loop at its rear end the free end of said loop passing rearwardly and secured to the under side of the shaft, and said loop being adapted for the attachment of the hold back strap, a slide carried by the guide and having means for attaching to it the trace or tug and a spring for controlling the slide.

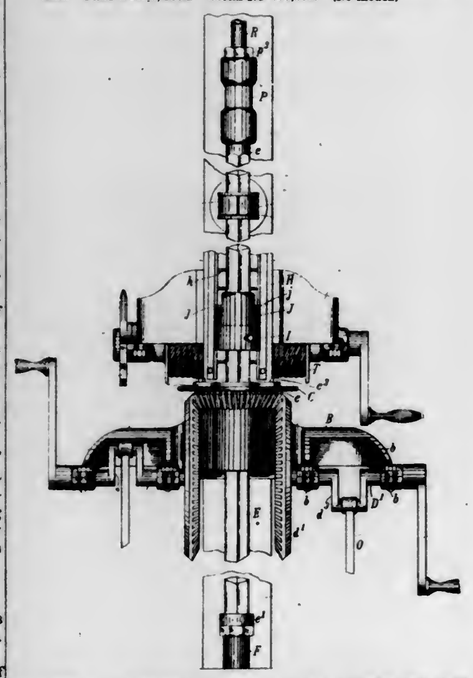
543,226. SASH-FASTENER. ISABELLE I. ATWOOD, Exeter, N. H. Filed Feb. 1, 1895. Serial No. 536,910. (No model.)



Claim.—1. The improved sash-fastener consisting of a frame formed with a slot 14 and the recesses 15, 151 the bolt 6 movable endwise in said frame, and the pin 13 inserted loosely through a hole in the said bolt, the said pin having its outer end extended through the slot 14 and its inner end having an enlargement, and also being adapted to enter the respective recesses 15, 151 to lock the bolt 6 at the opposite extremes of its movement, substantially as described.

2. The improved sash-fastener consisting of a frame having a slot 14 and the recess 15, the bolt 6, the spring 24 acting to project the bolt, and the pin 13 inserted loosely through a hole in the bolt, the outer end of said pin extending through the slot 14 and the inner end thereof having an enlargement and also being adapted to enter the recess 15 to serve as a detent to hold the bolt retracted, substantially as described.

543,227. CORE-DRILLING MACHINERY. MOSES BEAL, Elyria, Ohio. Filed Feb. 6, 1894. Serial No. 499,255. (No model.)



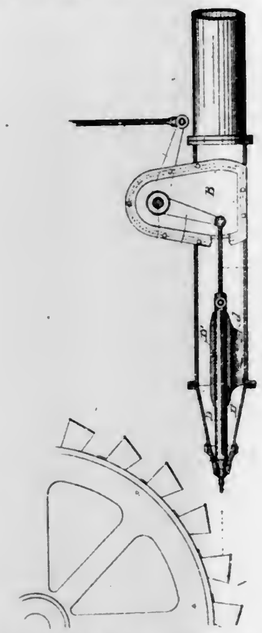
Claim.—1. In a core drill, in combination, a revoluble drill wheel having a square axial hole, mechanism for revolving said drill wheel, a square tubular drill stem longitudinally movable through said hole, a collar I secured to said drill stem, a collar J revoluble on said drill stem resting on the collar I having flattened sides and the shoulders *j j*, a rack fixed behind said drill stem, and a fork lever adapted to embrace the flattened sides of said collar, and to engage with said rack and with the shoulders *j j*, substantially as and for the purpose specified.

2. In a core drill, in combination, a post A, a bracket B, bolted to its front side, having the four forwardly projecting arms *b* integral with said bracket and arranged two on each side thereof, a drill wheel mounted in said bracket on a vertical axis, two shafts mounted one on each side of the drill wheel in the ends of said arms

b and having each a crank d^3, meshing bevel gears on the drill wheels and the inner ends of the said crank shafts, a longitudinally movable drill stem passing axially through the drill wheel, and mechanism connecting the drill wheel and stem whereby both revolve in unison, substantially as and for the purpose specified.

3. In a core drill, in combination, a post A, a bracket B secured thereto, a drill wheel mounted with its axis vertical, in said bracket, a crank shaft mounted in said bracket, bevel gears connecting said drill wheel and crank shaft, a tubular drill stem longitudinally movable through said drill wheel, a water supply pipe swiveled to the upper end of said drill stem, a bracket secured to the rear side of said post, a rope drum mounted on said bracket, a sheave mounted at the upper end of said post, and a rope secured at one end to the water supply pipe, and passing over the said sheave to said rope drum, substantially as and for the purpose specified.

543,228. NOZZLE-REGULATOR. ANDRE CHAVANNE, Grass Valley, Cal. Filed Apr. 8, 1895. Serial No. 544,991. (No model.)



Claim.—1. A nozzle regulator consisting of a nozzle having a conical tip a plug mounted within the nozzle and slidable in the line of the axis thereof said plug having a head corresponding to and adapted to fill, when projected, the conical exit of the nozzle or its tip, and having also an extension beyond said head, formed in portions of successively smaller diameters, whereby the issuing water is caused to assume an annular form concentric with the end of the plug, and its volume and force may be varied.

2. A nozzle regulator consisting of a nozzle having a conical tip, a plug slidable in the axis of the nozzle, and having a conical head conforming to and adapted to close, when projected, the conical tip of the nozzle, and having also an extension beyond said head formed in portions of successively smaller diameters, said portions joining each other by inclined or beveled shoulders.

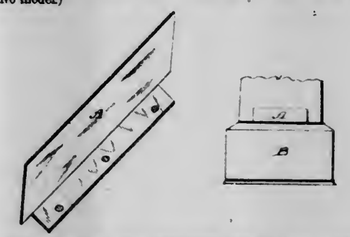
3. A nozzle regulator consisting of a nozzle having a conical tip, a plug lying and adapted to be moved in the line of the axis of the nozzle, and having a head with a forward extension formed in portions of successively smaller diameters, adapted to control the nozzle exit, and the means for operating said plug consisting of an oscillating shaft having a crank arm connected with said plug and a second crank arm and an operating rod connected with said second crank arm.

4. In combination with the nozzle having a conical tip, the water casing or chamber and water connection, a regulator for said nozzle consisting of a plug slidable in the line of the axis of said nozzle and having a head formed in portions of successively smaller diameters, adapted to control its exit, an oscillating shaft mounted within the casing or chamber and extending through a suitable stuffing-box to the outside, a crank arm on said shaft within the chamber or casing and having a connecting rod attaching it to the plug, a crank arm on the outer end of said shaft and an operating rod connected with said crank arm.

5. In combination with the nozzle having a conical tip, the water chamber or casing and water connection, a guide sleeve in the line of the axis of said nozzle, and lying within it, a plug mounted and adapted to slide in said guide sleeve and having a conical forward end with an extension therefrom formed in portions of successively smaller diameters adapted to control the nozzle tip, the oscillating shaft mounted within the casing or chamber and extending through a suitable stuffing-box to the outside, a crank arm on said shaft within the chamber or casing and having a connecting rod attaching it to the plug, a crank arm on the outer end of said shaft, and an operating rod or connection connected with said crank arm.

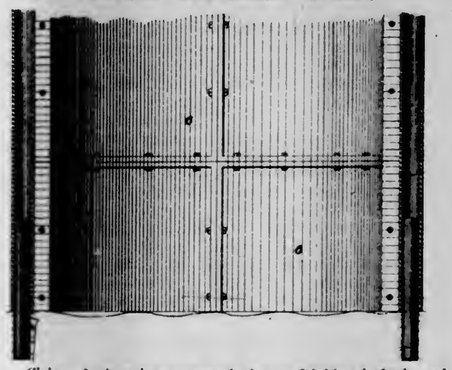
6. The water nozzle, the chamber or casing, and the water connection as described, in combination with a regulator for the nozzle consisting of a sleeve within said nozzle and in the line of its axis, a plug or valve adapted to slide in said sleeve and having a forward end or head with a conical portion, and an extension formed with portions of successively smaller diameters, said head or end being adapted to control the exit of the nozzle tip, the oscillating shaft within the chamber or casing of the nozzle and extending through a suitable stuffing-box to the outside, a crank arm on said shaft within the chamber or casing and having a connecting rod attaching it to the plug or valve, a crank arm on the outer end of said shaft, and an operating rod connected with said crank arm.

543,229. NAME-PLATE FOR TOMBSTONES, &c. HOUSTON K. COTTON, Mount Vernon, Ohio. Filed May 2, 1894. Serial No. 509,811. (No model.)



Claim.—A tombstone or monument, made of two or more pieces, and the pieces of lead placed between the parts, combined with an angular name plate made of elastic material, having its outer vertical portion bent back out of a right angle, so that when the plate is forced into position between the two parts of the monument the vertical portion will be made to hug its face, substantially as shown and described.

543,230. SINKING SHAFTS. JESSE A. DUBBS, Pittsburg, assignor of one-fourth to Charles T. Russell, Allegheny, Pa. Filed Dec. 21, 1893. Renewed Dec. 20, 1894. Serial No. 532,506. (No model.)



Claim.—1. As an improvement in the art of sinking shafts through quicksands, &c., the method herein described, which consists in forcing down and inclosing series of casings or hollow piles to the underlying strata and securing the lower ends of such casings or piles as against lateral movement, substantially as set forth.

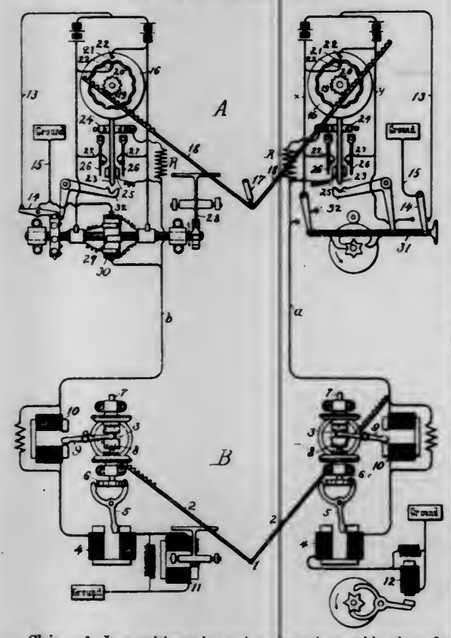
2. As an improvement in the art of sinking shafts through quicksands, &c., the method herein described, which consists in forcing down an inclosing series of casings or hollow piles to the underlying strata securing the lower ends of such casings or piles as against lat-

eral movement, and then placing a lining shell within the piles, substantially as set forth.

3. As a means for sinking shafts through quicksands or other mobile material, the combination of a series of casings or hollow piles extending down through the quicksand to the subjacent rock or solid material, and a like series of bars projecting from the lower ends of the casings and into the subjacent material for holding the piles as against lateral movement, substantially as set forth.

4. A lining for shafts having in combination a series of casings or hollow piles, provided with interlocking guides, and a bar projecting from the lower ends of the casings or piles for holding the piles as against lateral movement, substantially as set forth.

543,231. WRITING-TELEGRAPH. THOMAS EWING, Jr., Yonkers, assignor to William R. Gump, Brooklyn, N. Y. Filed Jan. 9, 1894. Renewed Dec. 24, 1894. Serial No. 532,892. (No model.)



Claim.—1. In a writing telegraph system, the combination of a wire joining two stations, a suitable device at the receiver station for controlling the movements of the receiver pen, both in extent and direction, and a pen lifting and lowering device, and at the transmitter station means for transmitting over the line currents which control the movements of the receiver pen in extent, stronger currents that control its movements in direction and still stronger currents which effect the lifting and lowering of the receiver pen, substantially as described.

2. In a two wire writing telegraph system the combination of two wires joining the two stations, a suitable device at the receiver station in the two lines for controlling the movements of the receiver-pen both in extent and direction, a pen lifting and lowering device in one of the lines, and a paper shifting device in the other line, and at the transmitting station means for transmitting over the two lines currents which control the movements of the receiver pen in extent and direction, means for transmitting over one of the lines currents which control the lifting and lowering of the receiver pen, and means for transmitting over the other of the lines currents which control the shifting of the paper at the receiving station, substantially as described.

3. In a two wire writing telegraph system the combination of two wires joining the two stations, a suitable device at the receiver station in the two lines for controlling the movements of the receiver pen both in extent and direction, a pen lifting and lowering device in one of the lines and a paper shifting device in the other line, and at the transmitting station means for transmitting over the two lines currents which control the movements of the receiver pen in extent and direction, means for transmitting over one of the lines currents which control the lifting and lowering of the receiver pen, and means for transmitting over the other of the lines currents which control the shifting of the paper at the receiver station, the said pen-lifting and lowering and paper shifting currents being stronger than the said other currents, substantially as described.

4. In a writing telegraph the combination of a transmitting and receiving pen, two circuits in each of which is a half of a transmitter and a half of a receiver, each half of the transmitter being connected up with the transmitting pen, and each half of the receiver being connected up with the receiving pen; in one of the circuits at the receiver station a paper shifting magnetic device and at the transmitter station a switch for controlling it, which when operated, closes the circuit around and cuts out the half transmitter; and in the other circuit at the receiver station a pen lifting and lowering magnetic device and at the transmitter station a switch for controlling it, which, when operated, closes the circuit around and cuts out the half transmitter, substantially as described.

5. In a writing telegraph the combination at a transmitter station of devices for sending to line two sets of currents, and means for returning to its neutral position the device for sending one of the sets of currents upon each operation of the device for sending the other set of currents, substantially as described.

6. In a writing telegraph the combination at a transmitter station of devices for sending to line two sets of currents of different strengths, and means for returning to its neutral position the device for sending the weaker set of currents with each operation of the device for sending the stronger set of currents, and at the receiver station apparatus operated by the weaker set and controlling the direction of movement of the receiver pen, and subject to untimely operation by the stronger set of currents, substantially as described.

7. In a writing telegraph the combination at the transmitter station of a switch which is moved by the transmitter pen to either side of its neutral position, and when so moved sends distinctive currents to line with each reversal of the direction of motion of the transmitter pen, a second switch for sending to line stronger currents, apparatus at the receiver station operated by the weaker currents and controlling the direction of movement of the receiver pen and subject to untimely operation by the stronger currents, and means at the transmitter for returning the switch for sending to line the weaker currents to its neutral position with each closure of the switch for sending the stronger currents, substantially as described.

8. In a writing telegraph a transmitting pen connected to a transmitter attached to which is a switch in a branch line which follows the movements of the pen and is constructed to send to line distinctive currents with each reversal of direction of movement of the pen, a second switch for closing a branch to line around the said transmitter, and means for returning the first named switch to neutral position upon each operation of the second switch, substantially as described.

9. In a writing telegraph a transmitter pen connected to a transmitter attached to which is a switch which follows the movements of the pen to close and then by farther movement in the same direction to open a connection to line which when closed sends to line an increased current, such increased current being of opposite polarity with each reversal of direction of the pen, a second switch for closing a branch around the said transmitter, and means for returning the first named switch to neutral position upon each operation of the second switch, substantially as described.

10. In a writing telegraph the combination of a transmitting and receiving pen, two line wires in each of which is a half of a transmitter and a half of a receiver, each half of the transmitter being connected up with the transmitting pen and by it moved in opposite directions, a resistance in the circuit with each of said half transmitters, a switch controlled by each of said half transmitters which closes the line around said resistance and changes the polarity of the current with each reversal of the direction of movement of the transmitting pen, a second switch for closing the line around the said transmitter, and means for returning the first named switch to neutral position upon each operation of the second switch; and each half of the receiver being connected up with the receiving pen and including a magnetic device for moving the pen along a given line operated by the current when the aforesaid resistance is in the circuit, and a second magnetic device for controlling the direction of movement of the pen operated whenever the said transmitter switch is moved in either direction from its neutral position, and a paper shifting magnetic device or a pen lifting magnetic device operated only when the said second switch is operated, substantially as described.

11. In a writing telegraph the combination of a transmitting and a receiving pen, two lines in each of which is a half of a transmitter and a half of a receiver, each half of the transmitter being connected up with the transmitting pen and by it moved in opposite directions, and being so constructed as to send varied currents to line when so operated, a resistance in the circuit with each of said half transmitters, a switch controlled by each of said half transmitters which momentarily closes the line around said resistance and changes the polarity of the current with each reversal of the direction of movement of the transmitting pen, and a second switch constructed to cut out of line the foregoing device and send an increased current to line.

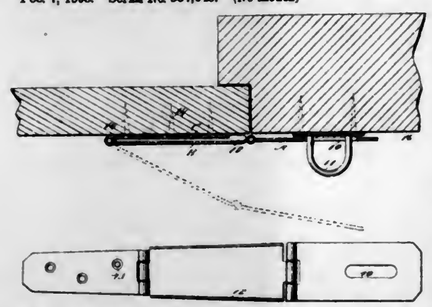
and means for returning the first named switch to neutral position upon each operation of the second switch; and each half of the receiver being connected up with the receiving pen and including a magnetic device for moving the pen along a given line operated by the current when the said resistance is in the circuit, and a second magnetic device for controlling the direction of movement of the pen operated only when the said resistance is cut out of the circuit, and a paper shifting or pen lifting magnetic device operated only when the said second switch is operated, substantially as described.

12. In a writing telegraph a transmitter pen constructed to send to line currents of both polarities and having attached to it a switch in a branch to line which follows the movements of the pen, and through which are sent to line distinctive currents with each reversal of movement of the pen, a second switch for closing a branch to line around the said transmitter, and means for returning the first named switch to neutral position upon each operation of the second switch, substantially as described.

13. In a writing telegraph transmitter constructed to send to line currents of both polarities, a combination of two switches each in a separate branch to line, one switch being in a branch with a pulsator, and connected through the pen with a switch in another branch, the co-operation of the switches when operated by the pen being such that with each operation of the switches the latter switch closes, and again breaks its branch before the former switch is closed, a third switch in a third branch to line and means connected with the third switch whereby when the third switch is closed the other two switches are open, substantially as described.

14. In a writing telegraph transmitter constructed to send to line currents of both polarities, the combination of a transmitter pen, a current pulsator operated thereby through mechanism to which is attached a switch arm having two contact points insulated from each other, two sets of contacts co-operating with these two points on the switch arm, one member of each of these sets of contact points lying on either side of the switch arm, two branches, one through the pulsator and switch arm, and one set of contacts and the other through the switch arm and the other set of contacts, the two sets of contacts being so constructed and adjusted relatively to each other that the second branch is closed, and then broken before the first branch is closed, each time that the switch arm is moved in either direction from its neutral position, a third switch in a third branch to line, and means connected with the third switch whereby when the third switch is closed the switch arm is brought back to its neutral position opening the other two switches, substantially as described.

543,232. HASP. WILLIAM FIRFIELD, Perth Amboy, N. J. Filed Feb. 7, 1895. Serial No. 537,645. (No model.)



Claim.—A hasp consisting of pivotally connected sections, one outer section being adapted for attachment to a support, the other outer section to receive a keeper, and the intermediate section being adapted to be folded over and to conceal the outer section adapted for attachment to a support, the said intermediate section being provided with flanges upon its inner face between which the said outer section is received, as and for the purpose specified.

543,233. SCROLL-FORMER. PETER C. FORRESTER, Leavenworth, Kans. Filed Jan. 23, 1895. Serial No. 535,879. (Model.)

Claim.—1. A scroll forming tool, comprising a handle, and a helical body the central coil of which is of the greatest width, the coils being separated one from the other a predetermined distance forming a corresponding helical shaped opening between the walls of the coils, as and for the purpose set forth.

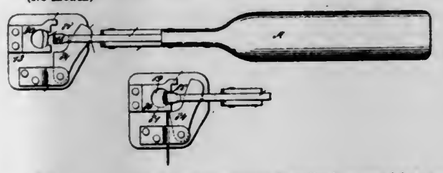
2. A scroll former, the shaping section of which is of a helical formation, the scrolls diminishing in width from the inner coil outward, the inner and longest coil being provided with a pocket to receive one end of the material to be shaped, the coils being separated one from the other a predetermined distance forming an opening between the walls of the coils, substantially as shown and described.



3. A tool for forming scrolls, the same comprising a shaping section and a support therefor, the said shaping section being of helical formation, the coils being spaced one from the other forming an opening between the adjacent walls of the coils and the coils diminishing in width from the innermost outward, the said innermost coil being provided with a pocket extending from top to bottom, as and for the purpose set forth.

4. A tool for forming scrolls, comprising a handle and a body, the said body being constructed of a strip of rigid material having its under edge straight and its upper edge inclined, whereby it is wider at one end than at the other, the said strip being provided with a pocket extending from top to bottom formed near its wider end, the material of the strip being coiled around the pocket, whereby the said body is shaped substantially as a helix, and means, substantially as described, for securing the said body to the said handle, as and for the purpose set forth.

543,234. TOOL FOR BINDING METAL STRIPS. PETER C. FORRESTER, Leavenworth, Kans. Filed Jan. 23, 1895. Serial No. 535,880. (No model.)



Claim.—1. A tool for the purpose described, comprising two handles, one of which is provided with upwardly-extending ears at its sides forming a yoke, a removable support having a shaping surface and provided with an extension engaging a slot in the bottom portion of the said yoke, a plunger having movement in the yoke to and from the shaping surface, and a second handle pivoted at its outer end in the said yoke and having a shank extending downward within the yoke and engaging the said plunger, substantially as shown and described.

2. In a metal working tool, pivotally connected handles, a removable support having a shaping surface and provided with an extension engaging a slot formed in one of said handles, a plunger having movement on the said support to and from the shaping surface, and means for actuating the plunger from the other handle, substantially as shown and described.

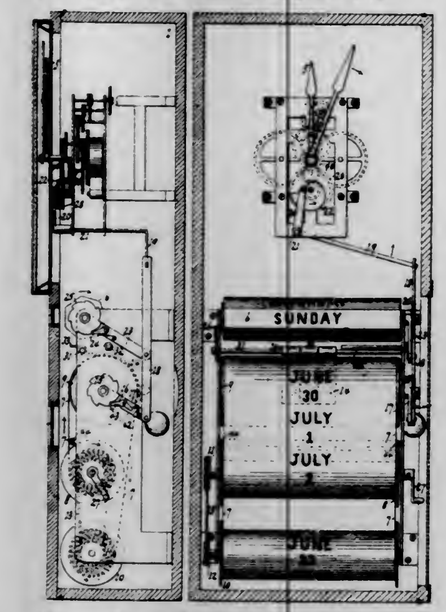
3. A metal-working tool comprising pivotally connected handles, a table secured to one handle having a die located thereon, a knife mounted on the table adjacent to the die, a plunger having sliding movement to and from the die, the said plunger being constructed to operate the knife, and means, substantially as shown and described, for operating the plunger by the manipulation of the handles of the tool, as and for the purpose specified.

4. In a metal-working tool, the combination, with an upper and a lower handle pivotally connected, the lower handle being provided with a yoke, a table removably connected with the yoke of the lower handle and provided with an opening therein, and a die secured upon the handle adjacent to the opening, of a knife mounted upon the table adjacent to the said die, a plunger held to reciprocate in the yoke of the said handle, actuated by the upper handle, the said plunger being provided with an opening receiving an extension from the knife,

whereby when the plunger is forced in direction of the die the knife will be brought into action, as and for the purpose specified.

5. In a metal-working tool, the combination, with pivotally connected handles, a plunger having an overhanging extension from its outer surface, and a reciprocating connection, substantially as shown and described, between one of the handles and the plunger, of an anvil bar upon which the plunger has movement, the said anvil bar being provided with an overhanging extension of its head adapted to meet the extension from the plunger, whereby the anvil bar and plunger will jointly have the action of clamping jaws, as and for the purpose specified.

543,235. CALENDAR-CLOCK. CHARLES I. FOWLER, New York, N. Y. Filed Jan. 3, 1895. Serial No. 533,721. (No model.)



Claim. -1. The combination in a calendar movement, of a delivery roll, a take-up roll, a driving-roll arranged above the delivery roll, a strip extending from the delivery-roll over the driving-roll and to the take-up roll, and weighted, gravitating pivoted arms adapted to swing in the arcs of circles and extending partially around the driving-roll to hold the strip in engagement therewith, substantially as described.

2. A calendar movement comprising a delivery roll and a take-up roll, in combination with a strip made to extend from the delivery to the take-up roll and a driving roll for the strip, said delivery and take-up roll being provided with a pulley and belt connection, the pulleys of said connection being of varying diameters substantially as described.

3. A calendar movement comprising a delivery roll and a take-up roll, in combination with a strip made to extend from the delivery to the take-up roll and a driving roll for the strip, a ratchet and pawl for the driving roll, a weighted arm made to carry the pawl, a lifting connection for said weighted arm, and a clock movement for actuating said lifting connection, said delivery and take-up roll being provided with a pulley and belt connection, the pulleys of said connection being of varying diameters substantially as described.

4. A calendar movement comprising a delivery roll and a take-up roll, in combination with a strip made to extend from the delivery to the take-up roll and a driving roll for the strip, a ratchet and pawl for the driving roll, a spring catch for holding the pawl out of action, a weighted arm made to carry the pawl, a lifting connection for said weighted arm, and a clock movement for actuating said lifting connection, said delivery and take-up roll being provided with a pulley and belt connection, the pulleys of said connection being of varying diameters substantially as described.

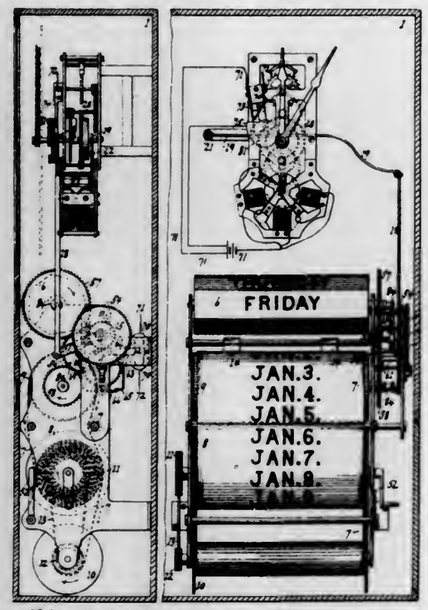
5. A calendar movement provided with a day cylinder, a driving pawl for said cylinder, and a ratchet secured to one end of said cylinder and engaged by the driving pawl, said cylinder being provided at its other end with eyes or perforations, and a spring pressed lug or detent adapted to engage said eyes, said eyes being sunk into an end of the cylinder in a longitudinal direction, and said lug being rounded to permit a springing of the lug out of the eyes by a rotation of the cylinder in either direction while preventing accidental rotation of said cylinder substantially as described.

6. A calendar movement comprising a delivery roll and a take-up roll, in combination with a strip made to extend from the delivery to the take-up roll, a driving roll for the strip and a weighted swinging arm or arms made to rest about the driving roll for holding the strip in engagement with said roll, said arm being made laterally movable, and a finger placed in proximity to said arm and over which said arm can be moved to be held out of action thereby substantially as described.

7. The combination in a calendar movement, of a day-cylinder 6 having a ratchet 25, a date-strip propelling cylinder 9 having a ratchet 15, pivoted swinging pawl arms 23 and 17 provided with pawls which respectively engage the ratchets of the day and date-strip propelling cylinders, a link 18 connecting the said pawl arms, and a clock movement for actuating said link to vibrate the pawl arms, substantially as described.

8. A calendar movement provided with a date strip propelling cylinder, an actuating ratchet and pawl arm for said cylinder, and a lever and clock movement for actuating the pawl arm, said pawl-arm being provided with a detent spring placed in proximity to the pawl for engaging and holding the latter in its releasing position, substantially as described.

543,236. CALENDAR-CLOCK. CHARLES I. FOWLER, New York N. Y. Filed Feb. 19, 1895. Serial No. 538,998. (No model.)



Claim.—1. A clock movement, combined with a calendar movement, a motor for the calendar movement, a detent for said motor, a release for said detent, an electro-magnet for actuating the detent, an electric-motor circuit for actuating the clock movement, and a circuit-closer for vitalizing the electro-magnet, comprising a pair of contact fingers normally out of contact and a studded oscillating weight alternately raised and dropped by the clock movement, said studded weight in its ascent being made to glide along the contact side, and when dropping being made to glide along the outer side of one of said fingers, so that in its descent it moves said last named finger into contact with the other finger, substantially as described.

2. A calendar movement and a driving gear and motor therefor, combined with a detent for the driving gear provided with an armature, an electro-magnet for said armature, a lock for holding the detent out of action, a release for the lock, carried by said driving gear, and a clock movement for winding said motor and for vitalizing the electro-magnet to attract said armature and release the detent, substantially as described.

3. A calendar movement and a motor therefor, combined with a ratchet and pawl for winding said motor, a lever for actuating said pawl, a clock movement having a driving spring drum, and an electric motor for winding said drum at stated periods during each day, said drum being studded and said lever being engaged by said studded drum so as to be actuated to wind the calendar motor by successive steps during each day substantially as described.

4. A clock movement, combined with a calendar movement, a motor for the calendar movement, a detent for said motor, a release for said detent, an electric magnet for actuating the detent, an electric motor circuit for actuating the clock movement, and a circuit closer for vitalizing the electro magnet substantially as described.

5. A clock movement, combined with a calendar movement, a motor for the calendar movement, an actuator or winding arm moved by the clock movement for winding the calendar motor, a detent for the calendar motor, a release for said detent and an electric motor circuit for actuating the clock movement and for releasing the detent substantially as described.

6. A clock movement, a spring for said movement, and an electric motor circuit for winding the spring, combined with a lever actuated by said spring, a pawl and ratchet actuated by said lever, a second spring wound by said pawl and ratchet, a calendar movement actuated by said second spring, and a release for said second spring actuated by the electric motor circuit substantially as described.

7. A calendar movement comprising a day cylinder and a date strip propelling cylinder, combined with driving gears for the cylinders, said cylinders being detachably secured to the gears so as to be capable of setting independently of the gears substantially as described.

543,237. CALENDAR-CLOCK. CHARLES I. FOWLER, New York, N. Y. Filed Apr. 18, 1895. Serial No. 546,228. (No model.)

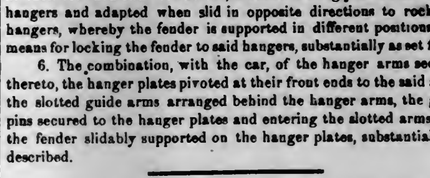
Claim.—1. A calendar movement and a motor train therefor, provided with a fly, combined with a winding arm for winding the motor, and fly detents and releasing mechanism substantially as described, one of said fly detents being carried by said arm substantially as described.

2. A calendar movement and a motor therefor, combined with a winding ratchet and pawl for said motor, a driving gear actuated by said motor, and a detent lever made to extend past the ratchet and into engagement with the driving gear, said ratchet having a releasing stud for the detent lever substantially as described.

3. A calendar movement and a motor therefor, combined with a winding ratchet and pawl for said motor, a driving gear actuated by said motor, and a detent for said driving gear, said ratchet having a releasing stud for the detent, and said detent having an incline or nose placed in the path of the releasing stud substantially as described.

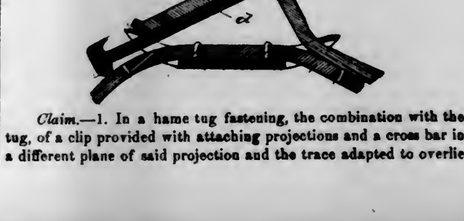
543,238. METHOD OF THREADING SPLIT TUBES. WILLIAM C. FRICK, Danville, Pa. Filed Dec. 3, 1894. Serial No. 530,677. (No model.)

Claim.—1. The process herein described of cutting an external thread on a split tube, said process consisting in first securing a clamp upon the tube so as to draw the edges of the tube toward each other, second, applying a threaded die to the tube, third, turning the die and cutting a thread on the tube, said die pushing the clamp before it, substantially as described.



2. The process herein described of threading split tubes, said process consisting in placing a plug within the tube, securing a clamp on the tube a short distance from the end and applying a die to the projecting end of the tube and feeding said die forward on the tube and forcing the clamp forward as the die proceeds, substantially as described.

543,239. CAR-FENDER. SAUL GARLICK, Brooklyn, N. Y. Filed Oct. 29, 1894. Serial No. 527,186. (No model.)



Claim.—1. In a car fender, the combination of rocking hangers mounted under the car, and a fender slidingly mounted in said hangers and adapted when slid in opposite directions to rock said hangers, whereby the fender is supported in different positions, substantially as set forth.

2. In a car fender, the combination of rocking hangers pivoted at their forward ends under the car, a fender slidingly mounted in the hangers and adapted when slid in opposite directions to rock the hangers, whereby the fender is supported in different positions, and means for locking the fender in its different positions, substantially as set forth.

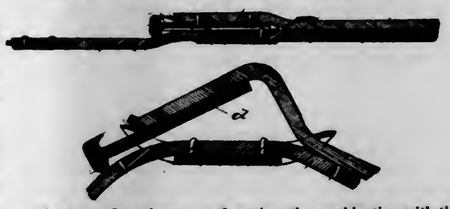
3. The combination with the car, of the oscillating hanger plates hung beneath the car and provided with inwardly-projecting guide flanges, and a fender having side frames to slide between the guide flanges, and a connecting sack or net, substantially as described.

4. The combination, with the car, of the hanger plates suspended thereon, the inwardly-projecting guide flanges on the hanger plates, and the fender comprising longitudinally slotted side frames, their slots receiving the lower guide flanges of the hanger plates, a sack or net connecting the side frames, and a cross apron overlapping the front ends of the side frames, substantially as described.

5. In a car fender, the combination of rocking hangers pivoted at their forward ends to the car, a fender slidingly mounted in the hangers and adapted when slid in opposite directions to rock the hangers, whereby the fender is supported in different positions and means for locking the fender to said hangers, substantially as set forth.

6. The combination, with the car, of the hanger arms secured thereto, the hanger plates pivoted at their front ends to the said arms, the slotted guide arms arranged behind the hanger arms, the guide pins secured to the hanger plates and entering the slotted arms, and the fender slidably supported on the hanger plates, substantially as described.

543,240. HAME-TUG FASTENING. WILLIAM F. GILBERT, Sweet Springs, Mo., assignor of one-half to William T. Prigmore, same place. Filed Apr. 16, 1895. Serial No. 545,852. (No model.)



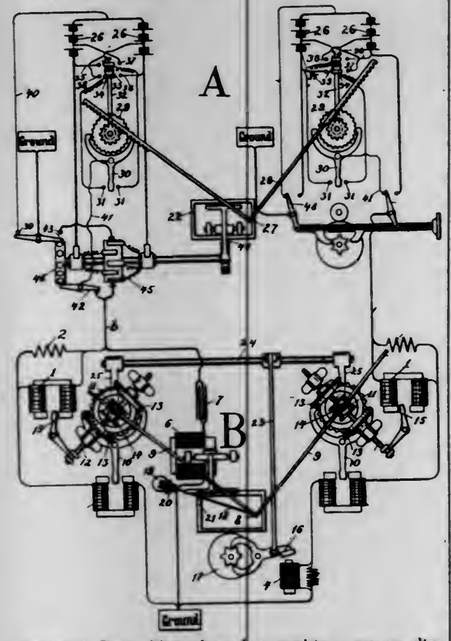
Claim.—1. In a hame tug fastening, the combination with the tug, of a clip provided with attaching projections and a cross bar in a different plane of said projection and the trace adapted to overlie

the ends of said projections and provided with a hook for engaging said cross bar, substantially as described.

2. In a hame tug fastening, the combination with the tug, of a clip provided with attaching projections and cross bars in a different plane from said projections, and the trace adapted to pass beneath said cross bars and to overlie the ends of said projections, said trace having a hook for engaging one of said cross bars, substantially as described.

3. In a hame tug fastening, the combination with a hame tug, of a clip provided centrally with a face having attaching projections, and at each end with a cross bar in a different plane from said face, the trace, and a hook secured to said trace adapted to engage one of said cross bars, and having a locking rib on its rear face for engaging a portion of the hame tug, substantially as described.

543,241. WRITING-TELEGRAPH. WILLIAM E. GUMP, Brooklyn, N. Y. Filed Feb. 24, 1894. Renewed June 25, 1895. Serial No. 554,050. (No model.)



Claim.—1. In a writing telegraph transmitter, a pen, an alternating pulsator, a suitable source of energy, means for connecting up the pulsator to line so as to send strong pulsations of one polarity and weak pulsations of the other polarity, and means for reversing the polarities of the two sets of currents on reversal of direction of movement of the pen, substantially as described.

2. In a writing telegraph system, suitable receiving mechanism, in combination with a transmitter comprising a pen, two lines, two alternating pulsators, one arranged to be connected up to one and the other to the other of the two lines, suitable sources of energy, means for connecting up each pulsator to its line in such manner as to send strong pulsations of one polarity and weak pulsations of the other polarity, and means for reversing the polarities in these sets of currents with reversal of direction of movement of the pen, substantially as described.

3. In a writing telegraph system, suitable receiving mechanism consisting of a receiving pen, polarized pen moving devices, and polarized direction controlling devices, in combination with two lines, and a transmitter comprising a pen, two alternating pulsators, one arranged to be connected up with one and the other with the other of the lines, suitable sources of energy, means for connecting up each pulsator to its line in such manner as to send strong pulsations of one polarity and weak pulsations of the other polarity, and means for reversing the polarities in these sets of currents with reversal of direction of movement of the transmitter pen, substantially as described.

4. In a writing telegraph transmitter, a pen, an alternating pulsator driven thereby, suitable sources of energy, two pairs of contacts connected to opposite sides of the pulsator, and each connected to a strong and weak source of energy, one member of each pair of contacts being carried on a carrier pivoted intermediately with respect to said members, means operated by the pen for closing one or the other of these pairs of contacts, and thus connecting the pulsator up to a strong positive and weak negative source of energy or to a weak positive and strong negative source of energy, according as the pen is moved in one direction or the other, substantially as described.

5. The combination of a transmitter pen a shaft revolved thereby, an arm frictionally attached to the shaft and carried thereby in one direction or the other according to the direction of movement of the pen, a contact bearer pivoted to the arm intermediately with respect to the contact members on the bearer, two pairs of contacts of which these contact members are a part, the contact members and the other contact points which co-operate therewith to form the pairs of contacts being so located with respect to each other that one pair of contacts or the other is closed according as the pen is moved in one direction or the other, a suitable source of energy, and connections through the pairs of contacts whereby strong positive and weak negative or weak positive and strong negative currents are sent to line, according as one or the other of the pairs of contacts is closed, substantially as described.

6. The combination of a shaft, means for revolving it, a friction arm, a contact bearer pivoted thereto intermediately with respect to its contact members, and one or more pairs of contacts closed by movement of the friction arm and contact bearer, substantially as described.

7. In a writing telegraph transmitter, the combination of a transmitter pen, a shaft revolved thereby, a friction arm attached to the shaft and carried thereby in one direction or the other, according to the direction of movement of the pen, a contact bearer pivoted to the arm intermediately with respect to its contact members, and one or more pairs of contacts closed upon movement of the pen and corresponding movement of the friction arm and contact bearer in one direction or the other, substantially as described.

8. In a two wire writing telegraph system, at the receiver, the combination of a pen moving and direction controlling device in each line, a pen lifting and lowering magnetic device in a loop connected to one of the lines as a shunt around the pen moving and direction controlling magnets of that line, and a paper shifting magnetic device in the other line, substantially as described.

9. In a writing telegraph receiver, a unison device for bringing the receiver pen to a fixed point when the paper is shifted, which consists in the combination of the receiver pen, a cord and weight attached thereto, a stop guide, and means for releasing the pen from the driving escapement, substantially as described.

10. In a writing telegraph receiver, a unison device for bringing the receiver pen to a fixed point when the paper is shifted, which consists in the combination of a receiver pen, a cord and weight attached thereto, a stop guide, a paper shifting magnetic device, means operated by the paper shifting magnet for releasing the receiver pen from the driving mechanism, substantially as described.

11. In a writing telegraph receiver, the combination of a pair of miter wheels, a pen-driving drum, a shaft on which the pair of wheels and the drum are all rigidly mounted, the drum being mounted between the wheels, a third miter wheel, which is power-driven and is mounted to engage with one or the other of the wheels of the said pair of miter wheels, means for throwing the said power-driven miter wheel out of engagement with one of the pair of wheels and into engagement with the other of the pair, and means for throwing the power-driven miter wheel out of engagement with both wheels of the pair, when the paper is shifted, substantially as described.

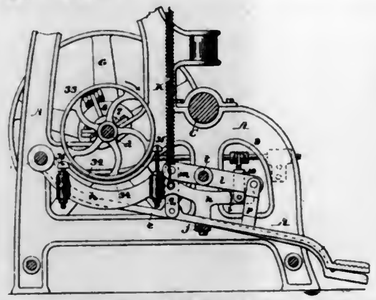
12. In a writing telegraph receiver, the combination of two sets of miter wheels of three wheels each, one of the wheels of each set being power-driven and engaging with the other two, a pen driven by the two sets of miter wheels, the power-driven wheel of each set being movable into and out of engagement with the other wheels of the set, and means for throwing both of the power-driven wheels out of engagement with the other wheels at the same time, substantially as described.

13. In a writing telegraph receiver, the combination of two sets of miter wheels of three wheels each, one of the wheels of each set being power-driven and engaging with the other two, a pen driven by the two sets of miter wheels, the power-driven wheel of each set being movable into and out of engagement with the other wheels of the set, a paper shifting magnet, and means operated by this magnet for throwing both of these power-driven wheels out of engagement with the other wheels at the same time, substantially as described.

543,242. STARTING OR STOPPING MECHANISM. JOHN J. HEYS, Lynn, Mass., assignor of one-half to Maurice V. Brosnahan, same place. Filed Mar. 13, 1895. Serial No. 542,065. (No model.)

Claim.—1. In combination, the main shaft C, gear D secured thereon, shaft *d*, its pulley G, a clutch on said pulley shaft, and pinion *c* meshing in gear D, the treadles *e*, *f*, independently mounted, the oscillating frame consisting of bars *h*, *i*, united by bar *j*, rock shaft

t with its arm *y*, and the trundles 2, 3, arranged on gear D to move said arm in opposite directions, arms *l*, *m*, extended in opposite directions from shaft *t*, to which the treadles are respectively pivoted: a reacting spring K to raise said oscillating frame when released, a brake pulley carried by shaft *d*, and a brake shoe carried by frame A, and stirrup 10 connecting said oscillating frame with arm 9 of the pulley clutch device, whereby the machine is put in motion by depression of a treadle and is automatically stopped when a half revolution of gear D is made.



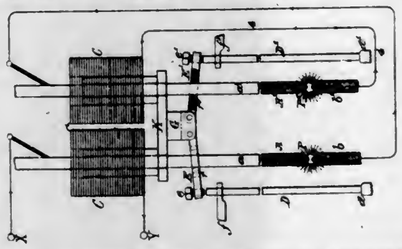
2. The combination of rock-shaft *t* having arm *y*, gear D provided with trundles 2, 3, arranged to actuate said arm alternately in opposite directions; treadles *e*, *f*, respectively connected with arms *l*, *m*, extending from opposite sides of shaft *t*: the vibrating frame having bar *j* arranged to raise said treadles, a stirrup by which said frame is connected with arm *g* of shaft 4, said shaft, provided with an arm that engages the hub of a clutch that renders the mechanism operative, and the said clutch, all substantially as specified.

3. The combination of gear D carried by shaft C, the trundles 2, 3, arranged on opposite sides of said gear and at unequal distances from the center thereof, an arm *y* mounted on shaft *t* and arranged to be vibrated in opposite directions, alternately, by said trundles, and a treadle mechanism connected with and arranged to be actuated by shaft *t* as the same is moved by the action of arm *y*, all substantially as specified.

4. The combination of gear D provided with trundles 2, 3, shaft *t* having arm *y* arranged to be moved in opposite directions alternately by said trundles, treadles *e f* attached to arms *l*, *m*, extended from opposite sides of said shaft, rocking frame *h*, *i*, which is depressed by said treadles, the brake pulley mounted on shaft *d*, and a brake shoe carried by said rocking frame and arranged to engage said brake pulley, substantially as specified.

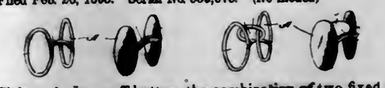
5. The combination in a starting and stopping mechanism of a pair of treadles duly pivoted; a rock-shaft having arms extended from opposite sides thereof and respectively connected with said treadles; a rigid arm extended from said rock-shaft, two trundles mounted on a wheel at unequal distances from the axis thereof and so as to respectively encounter said arm on opposite sides and thereby move the same in opposite directions and thus alternately raising said treadles, after the same have been depressed; a stirrup connected with the treadle mechanism and an arm with which said stirrup connects, a rock-shaft from which said arm extends; a yoke carried by said last named rock-shaft; and a clutch mechanism connected with and actuated by said yoke all substantially as specified.

543,243. ELECTRIC-ARC LAMP. DANIEL HIGHAM, Boston, Mass. Filed May 2, 1895. Serial No. 547,858. (No model.)



Claim.—An electric arc lamp, having electric arcs connected in series, suitable feeding mechanism provided with series magnet windings controlling the same to regulate the current at the desired or normal amount and means whereby the normal lengths of said arcs are maintained by the heat given out by said arcs, substantially as described.

543,244. CUFF-BUTTON. JAMES E. HILLS, New York, N. Y. Filed Feb. 20, 1895. Serial No. 539,078. (No model.)

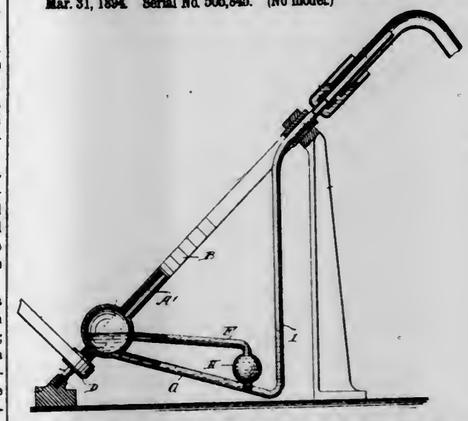


Claim.—1. In a cuff button, the combination of two fixed heads set at an angle to each other, and a connecting post or bar, the latter being secured eccentrically to the heads at or near their outer edges and at that point on said edges where the heads come nearest together; substantially as described.

2. In a cuff button, the combination of two fixed heads set at an angle to each other, a connecting post or bar secured eccentrically to said heads at or near their outer edges and at that point on said edges where the heads come nearest together, and a projection from said connecting post or bar extending inwardly in the direction of the button hole and adapted to engage the rear part of said hole and retain the heads in position; substantially as described.

3. In a cuff button, the combination of two fixed heads set at an angle to each other, a connecting post or bar secured to said heads at or near their outer edges and at that point on said edges where the heads come nearest together, a projection from said connecting post or bar extending outwardly toward the edges of the cuff and adapted to hold said edges apart, and a projection from said connecting post or bar extending inwardly in the direction of the button hole and adapted to engage the rear part of said hole and retain the heads in position; substantially as described.

543,245. REVOLVING AIR-PUMP. VATSLAV A. HLASKO, New York, N. Y., assignor of one-half to Paul Hanslick, same place. Filed Mar. 31, 1894. Serial No. 505,845. (No model.)



Claim.—1. An air pump, comprising a bulb mounted to turn about an inclined axis passing approximately through the center of the bulb, the latter being adapted to contain a pumping liquid, and a pipe adapted for connection with the article to be exhausted and connected with the bulb to turn therewith, and arranged at an angle to the said inclined axis, so that by turning the bulb with the pipe the liquid will be caused to flow outward from the bulb, or to return into the same, substantially as described.

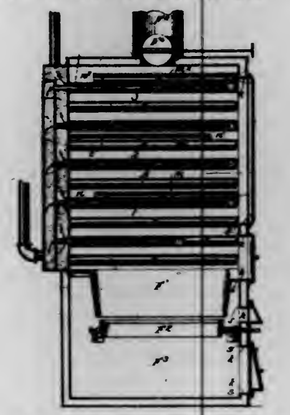
2. An air pump comprising a bulb mounted to turn about an axis passing approximately through the center of the bulb, the latter being adapted to contain a pumping liquid, and a pipe connected to the bulb to turn therewith, the free or suction end of the said pipe being adapted for connection with the article to be exhausted, the said suction end being located in alignment with the axis about which the bulb is mounted to turn, while the intermediate portion of the pipe deviates from the said axis, substantially as described.

3. A revolving air pump comprising a revoluble fountain bulb adapted to contain a pumping liquid, an air pipe adapted to be connected with the vessel to be exhausted, a liquid return pipe connected with the said air pipe and with the said bulb, and an air trapping pipe connected with the said bulb and with the said liquid return pipe, substantially as shown and described.

4. A revolving air pump comprising a revoluble fountain bulb adapted to contain a pumping liquid, an air pipe adapted to be connected with the vessel to be exhausted, a liquid return pipe connected with the said air pipe and with the said bulb, an air trapping pipe connected with the said bulb and with the said liquid return pipe, and a bulb for connecting the air trapping pipe with the said liquid return pipe, substantially as shown and described.

5. A revolving air pump comprising a revoluble fountain bulb adapted to contain a pumping liquid, an air pipe adapted to be connected with the vessel to be exhausted, a liquid return pipe connected with the said air pipe and with the said bulb, an air trapping pipe connected with the said bulb and with the said liquid return pipe, a bulb for connecting the air trapping pipe with the said liquid return pipe, and a sealing vessel held on the said air pipe to seal the end of the air supply pipe, substantially as shown and described.

543,246. WATER-HEATER. GEORGE A. HOUSTON, Beloit, Wis. Filed Aug. 1, 1892. Serial No. 441,823. (No model.)

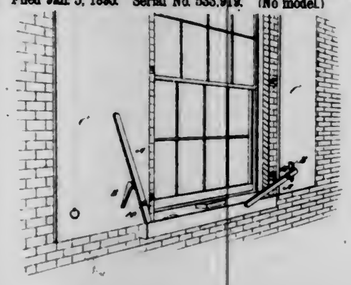


Claim.—1. In a water heater, the combination with the vertically arranged water chamber having the outflow pipe leading from the upper portion thereof, and the series of horizontal pipes A, closed at one end and all opening into the said chamber at the opposite end, and a fire pot beneath said parallel pipe A, of a vertically arranged inflow water chamber lying outside of and parallel with the outflow water chamber, a return flow water pipe connected with said chamber, a series of pipes passing from said chamber through the outflow water chamber into the series of pipes A and discharging near the ends thereof, and horizontal baffle plates extending through between the pipes A and separating them into relatively small distinct groups located at different levels, the openings in the baffle plates between the groups being located out of line with each other and at opposite sides of the heater, whereby a series of chambers are formed, the horizontal pipes A in each of which will be heated to a uniform temperature; substantially as described.

2. The combination of a furnace; a jacket surrounding it, and inclosing between itself and the furnace walls an air-space J'. closed to the external air, and communicating at its upper end with the smoke-escape flue through a passage always open and unobstructed; and narrow slits or passages *s. s.*, leading from the interior of the furnace into the air-space J'., and always open; substantially as described.

3. The combination of a furnace; a jacket surrounding it, and inclosing between itself and the furnace-walls an air-space J'., closed to the external air and communicating at its upper end with the smoke-escape flue through a passage always open and unobstructed; door-openings through the furnace-wall and jacket; doors attached to the jacket to close said openings; and flanges *k.* around said openings, arranged so as to nearly but not quite close communication between the interior of the furnace and the air space J'.; substantially as described.

543,247. SHUTTER-FASTENER. ASTON HULMAN, Terre Haute, Ind. Filed Jan. 5, 1895. Serial No. 533,919. (No model.)

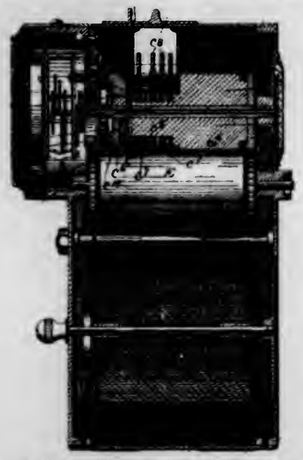


Claim.—1. A shutter-fastener, comprising an arm pivoted at one side of its center to a shutter near its hinged edge, and a stop on the shutter beyond the pivot of the said arm and with which stop the shorter member of the arm engages to hold the longer arm in contact with a window-sill, substantially as described.

2. A shutter-fastener, comprising an arm pivoted near one end to a shutter near its hinged edge, and a beveled and headed stop secured to the shutter beyond the pivot of the arm and against and under the head of which the shorter member of the arm rests to hold the longer member in contact with a window-sill, substantiallly as described.

3. The combination, with a shutter, of a shutter-fastener, the same consisting of a bolt secured to the shutter and provided with a collar, a locking-arm mounted to turn on said bolt and to engage with its collar, the arm being mounted between its center and one of its ends, and a keeper secured to the shutter and adapted for engagement with the shorter end of the locking arm, the longer end of said arm being adapted for engagement with a fixed object at the outer side of the building, substantially as described.

543,248. TIME-STAMP. WALTER S. JARBOE, Pittsburg, Pa., assignor to the Time Transfer Printer Manufacturing Company, Chicago, Ill. Filed July 24, 1893. Serial No. 481,310. (No model.)



Claim.—1. The combination with printing mechanism, of a device for representing a time scale upon each impression from the printing mechanism, and means for partially or wholly separating the scale in a manner to indicate the time of issue.

2. The combination with inking and driving mechanism, of a printing cylinder, comprising concentric and eccentric type-carriers and a continuously rotating time-ring, the carriers and ring being mounted on a common spindle, as specified.

3. A time stamp, comprising a time movement and a time printing wheel, gearing for imparting motion to the movement and wheel whereby they rotate in unison, and a link connection by which continuous and independent motion is transmitted from the movement to the disk.

4. The combination with a concentrically mounted time-movement, of an eccentrically mounted time printing wheel, and a yielding connection between the movement and the wheel, as specified.

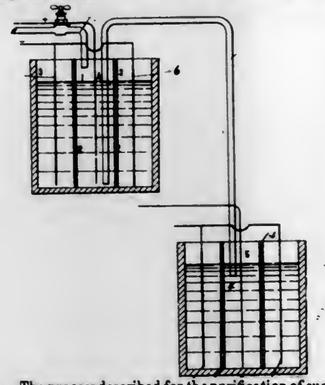
5. A stamping device for representing a time scale, and means for partially or wholly separating the scale in a manner to indicate the time of issue, as specified.

6. The combination with inking and driving mechanism, of a printing cylinder, comprising concentric and eccentric type carriers, devices for adjusting the type carriers and a continuously rotating time ring, the carriers and ring being mounted on a common spindle, for the purpose described.

7. A time stamp comprising a time movement, an eccentrically mounted device for representing a time scale, gearing for imparting motion to the time movement and the device for representing the time scale, whereby they rotate in unison, a link connection by which continuous independent motion is transmitted from the movement to the disk, and means for partially or wholly separating the scale, in a manner to indicate the time of issue, as and for the purpose described.

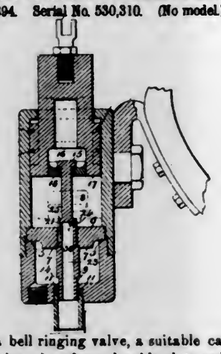
8. The combination with a concentrically mounted time movement, of a printing wheel eccentrically mounted in a manner to represent, when rotated, a time scale, a yielding connection between the movement and the wheel and means for partially or wholly separating the scale, in a manner to indicate the time of issue, as and for the purpose described.

543,249. PROCESS OF REFINING SUGAR BY ELECTROLYSIS. EMILE JAVAUX and CHARLES F. GALLOIS, Paris, France. Filed May 26, 1894. Serial No. 512,536. (No specimens.) Patented in France Jan. 16, 1894, No. 235,542; in Belgium Jan. 19, 1894, No. 108,138; in Austria Jan. 24, 1894, No. 44/1,877; in Spain Jan. 24, 1894, No. 15,403, and in Germany Jan. 25, 1894.



Claim.—The process described for the purification of sugar-juices, which consists in adding lime in excess, to neutralize the acid constituents, precipitate the organic impurities, and prevent the formation of salts of lead, then treating the alkaline juice by an electric current introduced from anodes of lead in two separate tanks simultaneously, and drawing said juice from one tank into the other, during said treatment, substantially as described.

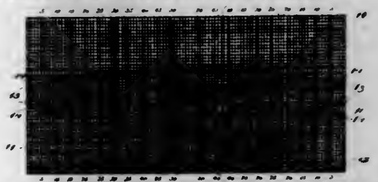
543,250. BELL-RINGING VALVE. SAMUEL A. JENNINGS, St. Louis, Mo., assignor of one-third to Edward C. Meissner, same place. Filed Nov. 30, 1894. Serial No. 530,310. (No model.)



Claim.—1. In a bell ringing valve, a suitable casing having an upper and lower section, a perforated guide plate and valve seat separating the two sections, a stem having a hollow portion operating within the guide plate, an exhaust passage in said hollow portion establishing communication between the upper section and the outer air, a superficial groove on the hollow portion for establishing communication between the two sections, and a piston in the upper section controlling the action of the stem, substantially as set forth.

2. A bell ringing valve comprising a casing having a lower and an upper section, a guide plate separating the two sections, a stem having a solid and hollow portion passing through the guide plate, a terminal head carried by the solid portion of the stem, a reciprocating piston within the upper section of the casing having a cavity for the reception of the head of the stem, a retaining nut having a lateral opening for securing the stem to the piston, a shoulder at the juncture of the solid and hollow portions against which the nut is adapted to strike, a superficial longitudinal groove having lateral basal extensions on the hollow portion of the stem, a central exhaust passage in the hollow portion of the stem, ports leading from said passage and adapted to establish communication between the upper section and the outer air, an exhaust tubular extension leading from the base of the lower section, a suitable air inlet opening for the lower section, and a shoulder on the exterior of the hollow portion of the stem in the lower section for limiting the movement of the stem in one direction, substantially as set forth.

543,251. GAME APPARATUS. JOSEPH JESSUP, Woodbury, N. J. Filed Oct. 19, 1894. Serial No. 526,386. (No model.)



Claim.—1. A game apparatus, comprising a game board marked off in imitation of a football field, and a movable block adapted for use on the board and having the position of opposing teams indicated thereon, substantially as described.

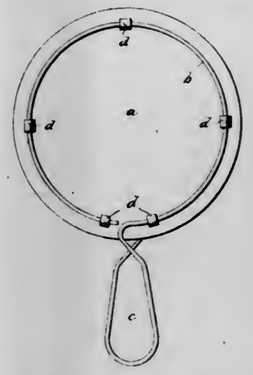
2. A game apparatus, comprising a game board, marked off in simulation of a football field, a movable block for use on the board and having the position of the opposing teams indicated thereon, and a series of dies marked to indicate different players, character of play and distances on the field, substantially as described.

3. In a game apparatus of the kind described, the game board having transverse regularly spaced yard lines thereon and longitudinal lines to mark a space indicating "Region of goal from field," substantially as described.

4. In a game apparatus, the movable block having a transverse center line, parallel lines at right angles to the said center line, and marks to indicate the respective positions of players in relation to the said lines, substantially as described.

5. In a game apparatus of the kind described, the series of dice marked respectively to indicate positions on the field, the character of plays to be made and numerals to indicate distances on the field, substantially as described.

543,252. FAN. HORACE D. JONES, Portsmouth, Ohio, assignor of two-thirds to Sample B. McKerrihan and Samuel L. Hanes, same place. Filed Dec. 6, 1894. Serial No. 531,036. (No model.)



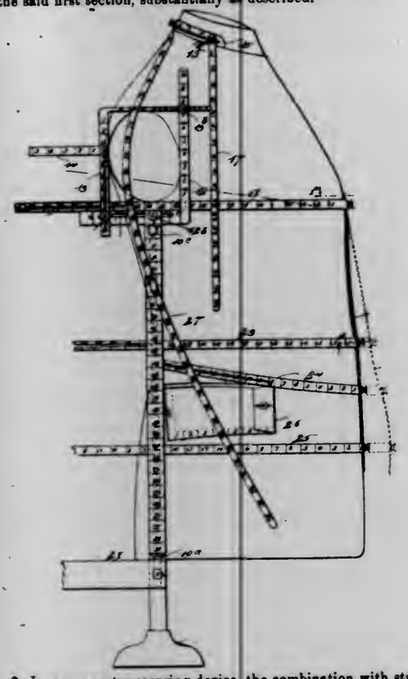
Claim.—1. The fan comprising a fan body, suitable frames on opposite sides thereof formed of a single piece of wire bent laterally between said frames to form a lateral loop and handle for the fan.

2. The herein described fan comprising a fan body, wire supporting frames on opposite sides thereof clamped together by clips passed through the fan body, and a lateral loop extending from said supporting frames and forming the handle of the fan, substantially as described.

543,253. DEVICE FOR MEASURING GARMENTS. HARRIS KANTOROVITZ, Walla Walla, Wash., assignor of one-half to George Retzer, same place. Filed July 21, 1894. Serial No. 518,171. (No model.)

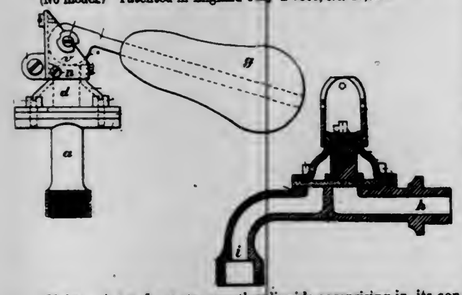
Claim.—1. In a garment measuring device, the combination with standards adapted to project beneath the arm pits of the person to be measured, of a sleeve hole measuring device carried by one of the standards, a strip projecting horizontally from the sleeve hole measuring device, a breast strip supported by the standards, a neck plate, a back strip secured to the neck plate, breast strip and to the strip carried by the sleeve hole device, a shoulder tape secured to the breast strip at the front and rear, the attachment at the rear being at the point where the back strip unites with the breast strip, and a shoulder strip secured to the shoulder tape at the front and to the breast strip at the rear, substantially as described.

2. In a garment measuring device, the combination with standards adapted to project beneath the arm pits of the person to be measured, of a sleeve hole measuring device, adjustably secured to one of the standards, and consisting of a right angle section having its horizontal member slotted and its vertical member apertured, and a similarly shaped section having its vertical member slotted and adjustably secured to the horizontal member of the first named section and its horizontal member adjustably secured to the vertical member of the said first section, substantially as described.



3. In a garment measuring device, the combination with standards, of graduated flexible strips having one end secured to the upper ends of the standard, encircling measuring strips engaging the flexible strips, and means for supporting said encircling strips, substantially as and for the purpose set forth.

543,254. TAP FOR WATER OR OTHER LIQUIDS. JOHANN H. LANDGREBE, Cassel, Germany. Filed Oct. 14, 1893. Serial No. 488,201. (No model.) Patented in England July 4, 1893, No. 13,084.



Claim.—A tap for water or other liquids comprising in its construction an inlet and outlet port each having threaded ends, a valve-seat *a* located about midway between said ports, a flexible valve *e* screwed to the tap and adapted to lie flat upon the seat, a bell-shaped casing *b* screwed to the tap above the flexible valve, a plunger *d*, inclosed by the casing and operating upon the valve, a bracket *c* secured to the upper portion of the casing by means of clamps *m* and having a portion thereof cut away, at an angle a lever *f*, journaled in said bracket and provided at its pivoted end with a cam face adapted to act upon the plunger, a weighted handle mounted upon the opposite end of said lever, and an adjustable set screw *n'* tapped in the upper portion of said bracket and operating to limit the vertical movement of said lever and plunger, substantially as described.

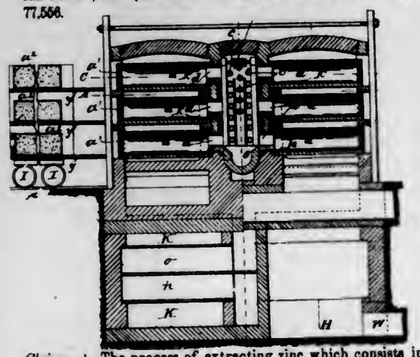
543,255. NAIL-HOLDING ATTACHMENT FOR HAMMERS. HARRY J. LEWIS, Rusk, Tex., assignor to himself and Wade B. Neely, same place. Filed Apr. 24, 1895. Serial No. 547,001. (No model.)



Claim.—1. A nail holding attachment for hammers, comprising a clip band adapted to be attached to a hammer handle, and provided with a longitudinally extending projection having an aperture formed therein, transverse arms on the front end of said projection, jaws pivoted on the said arms and adapted to extend over the side of the hammer head, springs normally closing the said jaws and extending into the aperture in the projection, and a screw passing through the said projection and securing the attachment in place on the hammer, substantially as shown and described.

2. A nail holding attachment for hammers, comprising a clip band adapted to be attached to a hammer handle and provided with a longitudinal projection having an aperture formed therein, transverse arms on the front end of the said projection, jaws pivoted on the said arms and adapted to extend over the side of the hammer head, springs normally closing the said jaws and extending into the said aperture, a pin passing through the aperture to hold the springs in place, and a screw passing through an opening in the said projection and adapted to pass through the hammer head ferrule and screw into the hammer handle, substantially as shown and described.

543,256. PROCESS OF AND APPARATUS FOR EXTRACTION OF ZINC. LEO V. J. LYNEN, London, England. Filed Dec. 22, 1893. Serial No. 494,371. (No model.) Patented in Germany Aug. 23, 1893, No. 77,556.



Claim.—1. The process of extracting zinc which consists in inclosing the ore in non metallic carbonizable envelopes, placing said envelopes in retorts, applying heat and condensing the zinc vapors, substantially as described.

2. The process of extracting zinc which consists in inclosing the ore in a series of non metallic carbonizable envelopes, placing said envelopes in retorts, applying heat, condensing the zinc vapors, drawing off the uncondensed zinc into a dust chamber and retarding the passage of the same through said chamber to allow the zinc-dust to settle, substantially as described.

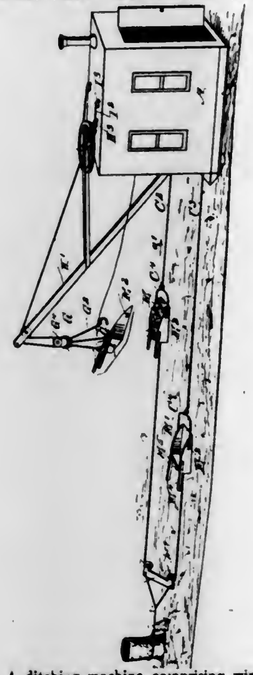
3. In a zinc reducing furnace the combination with the retorts, of non metallic carbonizable envelopes adapted to be placed within said retorts, whereby the removal of slag is facilitated and the contamination of the retort walls is prevented, substantially as described.

4. In a zinc reducing furnace the combination with the retorts, of charging envelopes composed of pasteboard treated with water glass adapted to be placed within said retorts, substantially as described.

5. In a zinc reducing furnace, the combination with a series of retorts, of a condensing chamber communicating with all of said retorts and provided with means for conveying off the condensed metal, and a series of pipes for a circulating medium located within said condenser for positively regulating the temperature thereof, substantially as described.

6. In a zinc reducing furnace, the combination with a series of retorts, of a condensing chamber communicating with all of said retorts and provided with means for conveying off the liquid portions of the condensed metal, a series of pipes for a circulating medium located within said condenser for positively regulating the temperature thereof, and a dust box provided with serpentine passages communicating with the condenser for collecting uncondensed metallic particles, substantially as described.

543,257. DITCHING-MACHINE. ALEXANDER MANN, Berkshire, Mich. Filed May 1, 1894. Serial No. 509,671. (No model.)



Claim.—1. A ditching machine, comprising winding drums, a carrier rope having its ends secured to the drums, a scraper detachably secured in each run of the carrier rope, and a hoisting device provided with hooks for engaging the front and rear of the scrapers when detached from the carrier rope, substantially as described.

2. In a ditching machine, the combination with the winding drums, of a carrier rope provided with a bail and a hook, and a scraper provided with eyes on the sides of its front and with which the bail engages and with an eye on its back with which the hook engages, substantially as described.

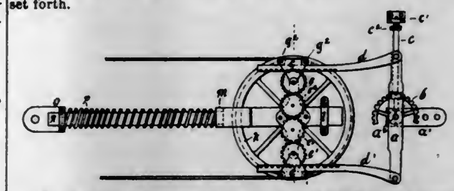
3. In a ditching machine, the combination with winding drums, a carrier rope, and scrapers carried by the said rope and provided with eyes on its back, of a hoisting device provided with three hooks, one to engage the front edge of the scraper and the other two the eyes on the scraper, substantially as described.

4. In a ditching machine, the combination with a pair of winding drums, a carrier rope, and scrapers detachably secured in the runs of the rope, of a pivoted boom, a hoisting rope carried by the boom and provided with means for engaging the scrapers, a wheel on the pivot of the boom, a second pair of winding drums, a rope secured to the wheel and having its ends secured to the last named drums, and means for operating both pairs of drums, substantially as described.

543,258. MECHANICAL MOVEMENT. JOSEPH E. S. MEDSKER, New Florence, Pa. Filed May 6, 1895. Serial No. 548,268. (No model.)

Claim.—1. In a mechanical movement for providing for the expansion and contraction, or variations between the terminal points of operating wires, cables or rods, the combination of a swinging bar, rack-bars connected thereto, a yielding frame, an even number of pinions mounted in said frame, said pinions meshing with each other, and with said rack-bars, and connections between said yielding frame and the contrivance to be operated, substantially as set forth.

2. In a mechanical movement for providing for the expansion and contraction, or other variations between the terminal points of operating wires, cables, or rods, the combination of a swinging bar, rack-bars connected thereto, a spring actuated yielding frame, an even number of pinions mounted in said frame, said pinions meshing with each other and with said rack-bars, and connections between said yielding frame and the contrivance to be operated, substantially as set forth.



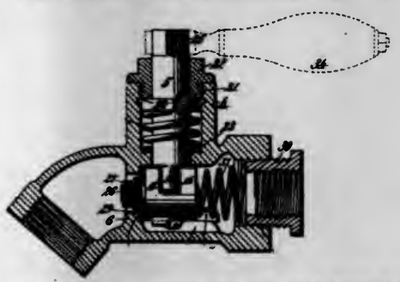
3. In a mechanical movement for providing for the expansion and contraction or variations between the terminal points of operating wires, cables, or rods, the combination of a swinging bar, rack-bars connected thereto, a spring actuated yielding-frame, a pinion-frame journaled in said yielding frame, an even number of pinions mounted in said pinion frame, said pinions meshing with each other and with said rack-bars, and connections between said yielding frame and the contrivance to be operated, substantially as set forth.

4. In a mechanical movement for providing for the expansion and contraction, or variations between the terminal points of operating wires, cables or rods, the combination of a swinging-bar, rack-bars connected thereto, a spring actuated yielding frame, a pinion frame journaled in said yielding frame, an even number of pinions mounted in said pinion-frame, said pinions meshing with each other and with said rack-bars, a pulley wheel on said pinion-frame, and connections from said pulley wheel to the contrivance to be operated, substantially as set forth.

5. In a mechanical movement for providing for the expansion and contraction, or variations between the terminal points of operating wires, cables, or rods, the combination of a swinging bar, a curved rack-bar connected to said swinging bar, a gear wheel meshing with said rack-bar, rack-bars connected to said swinging bar, a yielding frame, an even number of pinions mounted in said frame, said pinions meshing with each other and with said rack-bars, and connections between said yielding frame and the contrivance to be operated.

6. In a mechanical movement for providing for the expansion and contraction, or variations between the terminal points of operating wires, cables, or rods, the combination of a swinging bar, rack-bars connected thereto, a yielding frame, an even number of pinions mounted in said frame, said pinions meshing with each other and with said rack-bars, sliding clamps for holding said pinions and rack-bars in engagement, and connections between said yielding frame and the contrivance to be operated, substantially as set forth.

543,259. CUT-OFF VALVE. JOSIAH W. MELVIN, Houston, Tex. Filed Mar. 23, 1895. Serial No. 542,948. (No model.)



Claim.—1. The combination of a valve-casing having an inlet 2, an outlet 3, a valve-seat 7, and an upwardly-projecting portion 4, a valve-plug 14 guided in the valve-casing, a spring arranged in rear of the valve-plug and serving to force the same longitudinally against the valve-seat, a valve-stem having a flange 20, and a crank or eccentric-pin 19 engaging the valve-plug, a nut 22 engaging the upwardly-projecting portion 4, and having a seat 21 to receive the flange on the valve-stem, and a spring 24 which presses the stem upwardly and forces the flange thereof against the nut, substantially as and for the purposes described.

2. The combination of a valve-casing having an inlet 2, an outlet 3, a valve-seat 7, a nut 22, and a plurality of longitudinal ribs 8, 9, and 10 to create longitudinal water passages, a longitudinally-movable, cylindrical valve-plug engaging and guided by one of the said longitudinal ribs, a spring arranged in rear of the valve plug and acting to press the same against the valve-seat, a valve-stem having a crank or eccentric-pin 19 engaging the valve-plug, and a flange 20

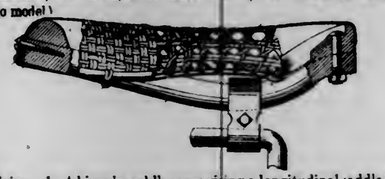
seated against the nut, and a spring 24 acting to press the valve-stem upwardly and force the flange 20 against the nut, substantially as described.

3. The combination of a valve-casing having an inlet 2, an outlet 3, a valve-seat 7, a nut 22, and an upwardly-projecting portion 4 having a washer 23, a cylindrical valve-plug 14, a rotary valve-stem 5 having a crank or eccentric-pin 19, and a flange 20, a spring 24 acting to press the valve-stem upwardly and force the flange 20 against the nut, a spring 31 arranged in rear of the valve-plug and acting to force the latter against the valve-seat, and a reducer 30 inserted into the inlet end of the valve-casing and bearing against the spring 31, substantially as and for the purposes described.

4. The combination of a valve-casing having a valve seat 7, a cylindrical valve-plug 14 adapted to reciprocate in the valve-casing and provided with a valve-face, a rotary valve-stem having a crank or eccentric-pin for shifting the valve-plug, a spring arranged in rear of the valve-plug and pressing against one end thereof, and an internally screw-threaded reducer screwed directly into and adjustable to and fro in the inlet end of the valve-casing, and bearing against one end of said spring, for varying the tension of the spring and connecting with a pipe.

5. The combination with a valve-casing having a valve-seat 7, and a fixed longitudinal guide-rib 9, of a cylindrical valve-plug 14 having guide-flanges or ribs 15, movable along said fixed rib, a screw-stud 26 carrying a nut 27, a removable and replaceable valve-face 29 supported by the screw-stud and nut, a spring 31 arranged in rear of the valve-plug and acting to force the latter against the valve-seat, and a reducer 30 screwed directly into, and adjustable to and fro in the inlet end of the valve-casing and bearing against one end of the said spring, substantially as described.

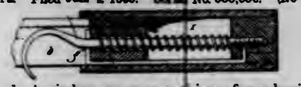
543,260. BICYCLE-SADDLE. HENRY MESINGER and FREDERICK MESINGER, New York, N. Y. Filed Feb. 8, 1895. Serial No. 537,695. (No model.)



Claim.—1. A bicycle saddle comprising a longitudinal saddle bar, a transverse cantle plate secured to the rear end thereof, a pin arranged at the forward end of said bar, and a rattan seat composed of transverse and longitudinal strips, the longitudinal strips being secured at their rear ends to the cantle-plate and having their forward ends converging and looped around the said pin, substantially as set forth.

2. A bicycle saddle comprising a longitudinal saddle bar having at its forward end an upwardly projecting pommel, a transverse cantle plate secured at its central part to the rear end of the saddle bar, a pin arranged at the forward end of the saddle bar, and a rattan seat composed of transverse and longitudinal strips, the longitudinal strips being secured at their rear ends to the cantle plate, and having their forward ends converged around the pommel at the front end of the saddle bar and looped around said pin, substantially as set forth.

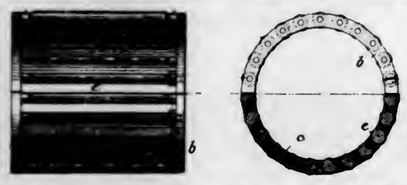
543,261. ADJUSTABLE WINDOW-SCREEN. FRANK C. MILLER, Easton, Pa. Filed Jan. 4, 1895. Serial No. 533,856. (No model.)



Claim.—1. A window screen comprising a frame having the wire fabric, the slidable end panels which inclose the ends of the frame and have the sides *c*, *c'* adapted to slide over the end rails thereof, the stop bars E, F, arranged between one side, *c*, of each panel and the end rail, *a*, of the frame, the outer ends of said bars fastened to the panels and the inner free ends having hooks or lugs *f* that extend inwardly in the path of the end rails and abut against the inner edge thereof, the pull bars and pressure springs, substantially as and for the purposes described.

2. A window screen comprising a rigid frame having the wire fabric, the box-like panels C, D, fitted to the ends of said frame to inclose the end rails thereof, the central pull bars H passing loosely through the end rails of the frame, having their outer ends fastened to the panels, and provided at their inner ends with the right angled finger pieces that extend outward from the wire fabric, the coiled springs fitted on said pull bars, and the pair of stop bars E, F, for each panel, which stop bars are disposed on opposite sides of the pull bar but within the side rails of the frame, and each stop bar having a prong which is fastened to the panel and said bar passing between the end rail of the frame and one side of the box-like housing, and having at its free end a hook or lug *f* which extends toward the screen fabric and is adapted to bear against the inner edge of the end rail of said frame, all arranged and combined substantially as and for the purposes described.

543,262. ANTIFRICTION-BEARING. FRANK MOSSBERG, Attleborough, Mass. Filed Jan. 5, 1895. Serial No. 533,938. (No model.)



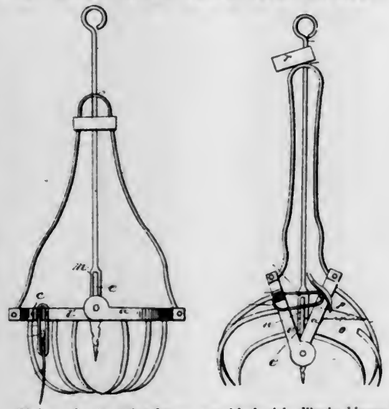
Claim.—1. A roller bearing consisting of a series of rollers and a frame composed of a series of intermediate bars, end rings and separate distance pieces secured fixedly between the ends of the bars and the ends of the rollers, and serving as bearings for the latter substantially as set forth.

2. The combination in a roller bearing, of a series of rollers, separate end rings and bars, and blocks *a* fitting between the bars and connected to the rings, substantially as set forth.

3. The combination of the rollers, end rings, bars with grooved sides, blocks fitting the said grooved sides between the bars and provided with studs projecting into openings in the rings, substantially as described.

4. In a roller bearing comprising end rings, and a series of grooved bars and intermediate parallel rollers, the combination of threaded cylindrical blocks adapted to screw into threads in opposite curved faces of adjacent bars, and means for uniting or securing the rings to the blocks, substantially as described.

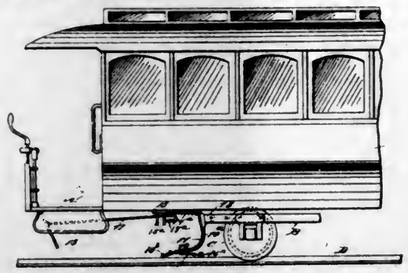
543,263. ANIMAL-TRAP. WILLIAM H. MCWHIRTER, Pontotoc, Miss. Filed Apr. 19, 1895. Serial No. 546,393. (No model.)



Claim.—1. An animal trap, provided with elliptical jaws *a* and *b'*, having end hinges *d*, and pivoted together by the central curved rod *e;* the V-shaped spring *j* having its free ends pivoted to said jaws near their middle; lock *g*, loosely secured to jaw *b'*, by a link *f;* curved tine teeth *i*, secured in said jaws, their points adapted to come together when the trap is thrown; rod *l*, working through a perforation in the apex of the spring *j*, having near its lower end a perforation *m*, through which works the curved central rod *e;* bait-holder *o*, provided with a notch *p*, and pivoted to the lower end of the rod *l*, substantially as shown and described and for the purposes set forth.

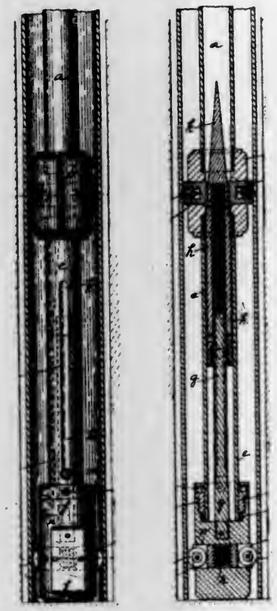
2. An animal trap, provided with elliptical jaws *a* and *b'*, having end hinges *d*, and pivoted together by the central curved rod *e;* the V-shaped spring *j*, having its free ends pivoted to said jaws near their middle; lock *g*, loosely secured to jaw *b'*, by a link *f;* curved tine teeth *i*, secured in said jaws, their points adapted to come together when the trap is thrown; rod *l*, working through a perforation in the apex of the spring *j*, having near its lower end a perforation *m*, through which works the curved central rod *e;* bait-holder *o*, provided with a notch *p*, and pivoted to the lower end of the rod *l;* and band *r*, adapted to be moved up and down on the spring *j*, substantially as shown and described and for the purposes set forth.

543,264. CAR-FENDER. DANIEL F. NIAL, Troy, N. Y. Filed Nov. 23, 1894. Serial No. 529,713. (No model.)



Claim.—In a car-fender, the combination of L-shaped brace bars pivoted at their upper ends and perforated near their lower ends, a fender having a border frame bent to an L shape and having its front rail secured in the perforations in the extremity of the brace-bars, means for holding the front edge of said fender normally above the track, and means actuated by contact with an obstruction on the track for releasing said fender, substantially as set forth.

543,265. CASING-CUTTER. GEORGE PALM, Butler, Pa. Filed Feb. 1, 1894. Serial No. 498,743. (No model.)



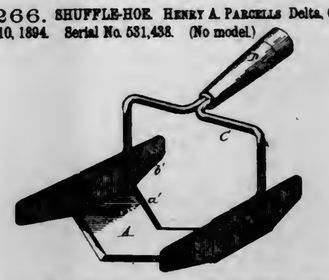
Claim.—1. In casing cutters, the combination of a cutter head carrying cutters, a body portion having a swiveling connection therewith and held from turning, a threaded bar, a nut, and a wedge above the same having its larger end connected to the nut and extending between the cutters, substantially as set forth.

2. In casing cutters, the combination of a cutter head carrying cutters, a base having a swiveling connection therewith and held from turning, a threaded bar held by the base, and a nut rotating with the head and connected to the larger end of a wedge, which extends between the cutters, substantially as set forth.

3. In casing cutters, the combination of a cutter head carrying cutters, a tube extending below the same, a base with which said tube has a swiveling connection, a threaded bar secured to the base, a nut within the tube extending below the cutter head and having a sliding connection therewith, and a wedge having its larger end connected to the nut and engaging with the cutters, substantially as set forth.

4. In casing cutters, the combination of a cutter head carrying cutters, a tube extending below the same and having longitudinal slots therein, a base having a swiveling connection with the tube, a threaded bar secured to the base, a nut within the slotted tube and having lugs extending within the slots thereof, said nut engaging with the threaded bar, and a wedge having its larger end connected to the nut and extending between the cutters, substantially as set forth.

543,266. SHUFFLE-HOE. HENRY A. PARCELLS, Delta, Colo. Filed Dec. 10, 1894. Serial No. 531,438. (No model.)



Claim.—1. A shuffle hoe comprising a horizontal cutting blade and an immovable side wing located at each end of the cutting blade and extended beyond the cutting edge thereof, the lower edges of said wings being flush with said cutting blade, substantially as described.

2. A shuffle hoe comprising a horizontal blade, and an immovable side wing at each end of and having their lower edges flush with said blade, the ends of said wings being extended beyond the front and rear edges of said cutting blade, substantially as described.

3. A shuffle hoe comprising a horizontal blade having cutting edges arranged diagonal to the line of operation, and side wings extended beyond the edge of the cutting blade, the lower edges of said wings being flush with said cutting blade substantially as described.

4. A shuffle hoe comprising a horizontal blade having cutting edges arranged diagonal to the line of operation, and side wings having their lower edges flush with the cutting blade and their ends extended beyond the front and rear edges of said cutting blade, substantially as described.

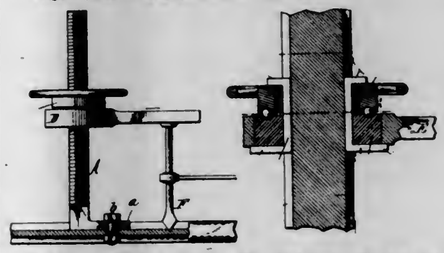
5. A shuffle hoe comprising a horizontal blade, side wings extended beyond the edge of the cutting blade, and a guide blade carried by the extended end of a wing, substantially as described.

6. A shuffle hoe comprising a horizontal cutting blade, side wings extended beyond the edges of said blade and a guide knife adjustably secured to an extended end of a wing, substantially as described.

7. A shuffle hoe comprising a horizontal cutting blade, side wings extended beyond the edges of said blade, and an adjustable guide knife secured to the extended end of a blade, substantially as described.

8. A shuffle hoe comprising a horizontal cutting blade, and an immovable side wing attached to each end of and extending beyond the edges of said cutting blade, the lower edges of said wings being tapered upward from a point in line with the edges of the cutting blade, substantially as described.

543,267. DRILL-BRACE. ENOS B. PETRIE, Buffalo, N. Y. Filed Sept. 15, 1894. Serial No. 523,115. (No model.)



Claim.—1. The combination with a feed screw, of a non-rotary head or disk capable of longitudinal movement on said feed screw and carrying a brace arm, a rotary feed collar engaging with said feed screw, and a coupling connecting said head or disk with said feed collar, substantially as set forth.

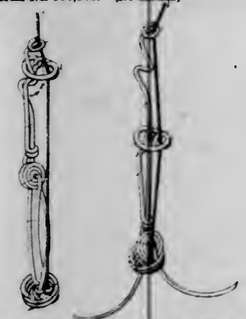
2. The combination with a feed screw or externally threaded stem, of a non-rotary head or disk capable of sliding lengthwise on said screw or stem and carrying a laterally extending brace-arm, a feed collar engaging with said feed screw, whereby said carrying head or disk is moved on the feed screw, and a ball bearing interposed between the feed collar and said head or disk, substantially as set forth.

3. The combination with a flat-sided screw stem, of a disk or head capable of longitudinal movement on said stem and having a flat-sided bore, a brace arm arranged on said head or disk, and a rotary feed collar or nut engaging with said screw stem and connected with said head or disk, substantially as set forth.

4. The combination with a screw-stem provided with a longitudinal groove, of a head or disk sliding on said screw stem and carrying a brace-arm, a rotary feed collar or nut engaging with said screw stem, and a connecting key arranged in the groove of the screw stem and having lips which overlap the feed collar and said head or disk, substantially as set forth.

5. The combination with a supporting stem, of a non-rotary head or disk capable of longitudinal movement on said stem, a ring or collar capable of circumferential adjustment on said head or disk and carrying a brace arm, and a feed device for moving the head or disk on said stem, substantially as set forth.

543,268. FISH-HOOK. FRANK D. PETTEY, Hampshire, Ill. Filed Dec. 1, 1894. Serial No. 530,572. (No model.)

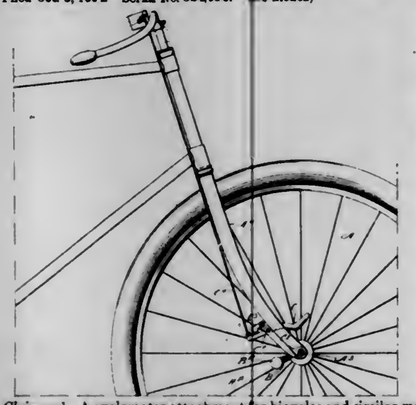


Claim.—1. A fish-hook, comprising a rod formed with a device for holding bait, self-opening hooks adapted to be closed and held concealed at their points by and within the said device, and a device for locking the hooks in their closed position, said locking device being adapted to be released by tension of the line substantially as shown and described.

2. A fish-hook, comprising a rod formed with a device for holding bait, self-opening hooks adapted to be closed and concealed at their points by and within the said device, a slide arm for carrying the said device, means substantially as described, for locking the arm to the rod while the device is used, and a fish line connected with the said device and passing through eyes on the said rod and slide arm, substantially as shown and described.

3. In a fish-hook, the combination of two elastic hooks adapted when released, to spring in opposite directions, a ring adapted to receive said hooks, and a locking device for locking said hooks to said ring, said locking device being adapted to be released by tension on the line, substantially as set forth.

543,269. CYCLOMETER. ALEXANDER D. RUFF, Owingsville, Ky. Filed Oct. 5, 1894. Serial No. 524,950. (No model.)



Claim.—1. A cyclometer attachment for bicycles and similar machines, provided with an actuating gear comprising a clamping arm adapted to be fulcrumed on the hub of the front wheel of the machine, a pin extending from the said clamping arm between adjacent spokes of said wheel, a friction roller carried at the outer end of the said pin, and a lever having a curved end adapted to be engaged by the said friction roller, as the latter is carried around by the said front wheel, substantially as shown and described.

2. In a cyclometer or the like the combination of a rotatively mounted "units" disk, a rotatively mounted "tens" disk, means for driving the "units" disk, means for locking the "tens" disk to the "units" disk, and a stop-device for holding the "units" disk while said locking mechanism is being actuated, substantially as set forth.

3. In a cyclometer or the like the combination of a rotatively mounted "units" disk, a rotatively mounted "tens" disk, means for driving the "units" disk, means actuated by the driving mechanism of the "units" disk for locking the "tens" disk to the "units" disk, and a stop device for holding the "units" disk while the locking mechanism is being actuated, substantially as set forth.

4. In a cyclometer or the like, the combination of a casing, a shaft rotatively mounted therein, a "units" indicating disk, means for driving the same from said shaft, a "tens" indicating disk, a locking device for locking said "tens" indicating disk to the "units" indicating disk during one-tenth of a rotation and a stop device adapted to hold the "units" indicating disk against rotation while said locking device is being operated, substantially as set forth.

5. In a cyclometer or the like, the combination of a casing, a shaft rotatively mounted therein, a "units" indicating disk, means for driving the same from said shaft, a "tens" indicating disk, a locking device arranged between said disks and provided with means for holding the same normally out of operation, and means actuated from said shaft for holding said "units" disk against rotation while said locking device is being operated, substantially as set forth.

6. In a cyclometer or the like, the combination of a casing, a shaft mounted therein, a "units" crown-wheel, a "tens" wheel a locking device for locking the two crown-wheels together during one-tenth of each rotation of "units" wheel and an arm on the shaft to engage the teeth of the "units" wheel, whereby the same is actuated, said arm being also adapted to actuate the said locking device, substantially as set forth.

7. In a cyclometer or the like, the combination of a casing, a shaft mounted therein, an arm on said shaft, a "units" wheel having its teeth adapted to be engaged by said arm, a "tens" wheel, a locking device adapted to be operated from said arm once during each rotation of the "units" wheel and adapted to lock "units" and "tens" wheels together and a stop device for holding the "units" wheel against rotation while the locking device is being operated, said stop device being provided with means for holding it normally out of operation, substantially as set forth.

8. In a cyclometer or the like, the combination of a casing, a shaft mounted therein, an arm on said shaft, a "units" crown-wheel having its teeth adapted to be engaged by said arm, a "tens" crown-wheel, a movable dog having one end arranged in the path of said arm and its other end adapted, when moved to engage the teeth of the "tens" crown-wheel, whereby the same is locked to the "units" wheel, and means for holding said dog normally out of its locking position and in position to be engaged by said arm, substantially as set forth.

9. In a cyclometer or the like, the combination of a casing, a shaft mounted therein, an arm mounted on said shaft, a "units" crown-wheel having its teeth adapted to be engaged by said arm, a "tens" wheel, a movable dog having one end arranged in the path of said arm and its other end adapted, when moved, to engage the "tens" wheel, means for moving said dog whereby said wheels are locked together, and means for holding the "units" wheel against rotation during the movement of said dog, substantially as set forth.

10. In a cyclometer or the like, the combination of a casing, a shaft mounted therein, an arm mounted on said shaft, a "units" crown-wheel having its teeth adapted to be engaged by said arm and provided with a perforation, a "tens" crown-wheel, a dog mounted movably on the "units" crown-wheel with one branch extending through the perforation therein and having its other branch adapted, when the dog is moved, to engage the teeth of the "tens" crown-wheel, whereby the two crown-wheels are locked together, means for moving said dog, means for holding the "units" wheel against rotation while the dog is being moved and means for holding said dog normally out of engagement with the teeth of the "tens" crown-wheel, substantially as set forth.

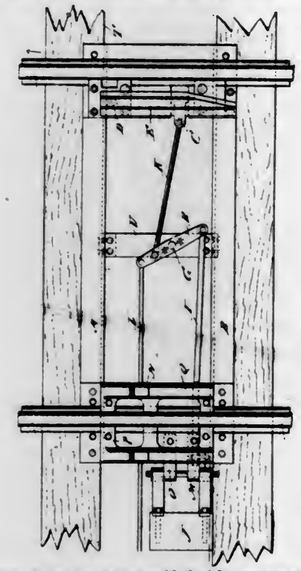
11. In a cyclometer or the like, the combination of a casing, a shaft mounted therein, an arm on the shaft, a "units" crown-wheel having its teeth adapted to be engaged by said arm and provided with a perforation, a "tens" crown-wheel and a dog having an elastic stem mounted on the "units" wheel with a T-shaped head, one branch of which is beveled and extends through the perforation in the "units" wheel between two teeth thereof and in position to be engaged and pressed in by the arm on the shaft when the same engages the adjacent teeth of the said "units" wheel, the other branch of said T-shaped head being adapted when the head is pressed in, to engage the teeth of the "tens" crown-wheel, whereby the "units" and "tens" wheels are locked together, substantially as set forth.

12. In a cyclometer or the like, the combination of a casing, a shaft mounted therein, a wheel on the shaft, an arm on the wheel, a pin on the wheel, a "units" crown-wheel arranged with its teeth in position to be engaged by said arm, a "tens" crown-wheel, a dog movably mounted on the "units" wheel with one branch in the path of said arm and adapted to be pressed back thereby and its other branch adapted when the dog is moved, to engage the teeth of the "tens" crown-wheel, whereby the two crown-wheels are locked together, a detent adapted to hold said "units" crown-wheel against rotation, when the arm engages the dog and means for withdrawing the detent when the dog has been moved, whereby rotation of the two disks is permitted, substantially as set forth.

13. In a cyclometer or the like, the combination of a shaft, means for rotating the same, an arm on the shaft a "units" crown-wheel having its teeth arranged to be engaged by the arm, and having a perforation located between two of its teeth, a dog mounted on the "units" wheel with one end extending through the perforation and beyond the face thereof whereon said teeth are formed and adapted to be engaged and moved by the arm on the shaft when the same engages the teeth of the "units" crown-wheel, and a "tens" wheel adapted to be engaged by said dog when moved whereby the "units" and "tens" wheels are locked together, substantially as set forth.

14. In a cyclometer or the like the combination of a rotatively mounted "units" disk, a rotatively mounted "tens" disk, means for locking the "tens" disk to the "units" disk and a stop-device actuated by the driving mechanism of the "units" disk for holding the "units" disk while the locking mechanism is being actuated, substantially as set forth.

543,270. CAR-ARRESTER. PAUL SCHUSTER, New York, N. Y., assignor of one-half to Edward Hennig, Jr., same place. Filed Jan. 28, 1895. Serial No. 536,420. (No model.) Patented in Germany Dec. 9, 1888, No. 47,797.



Claim.—1. A car arrester, provided with a transversely movable rail arranged along the inner side of one of the track rails and adapted to be moved into contact with the said track rail, or separated therefrom, so as to be out of contact therewith substantially as described.

2. A car arrester, provided with a transversely movable rail disposed along the inner side of one of the track rails and having a wedge shaped end adapted to be brought in contact with the said track rail or separated therefrom, the upper face of said rail being inclined upwardly from the pointed end toward the opposite end, substantially as described.

3. A car arrester provided with a pivoted rail arranged along the inner side of one of the track rails and having a wedge shaped end, the upper face of the pivoted rail being inclined downwardly toward the pointed end, substantially as described.

4. The combination of the movable rail disposed along the inner side of one of the track rails, the movable block arranged adjacent to the other track rail, and an operative connection between the block and the movable rail, whereby they may be simultaneously moved toward the respective track rails to form obstructions in the path of the car wheels, substantially as described.

5. The combination with the track rail forming a continuous support for the car wheels, of the transversely movable arresting rail arranged along the inner side of the track rail and adapted to be moved into or out of contact with the said track rail, substantially as described.

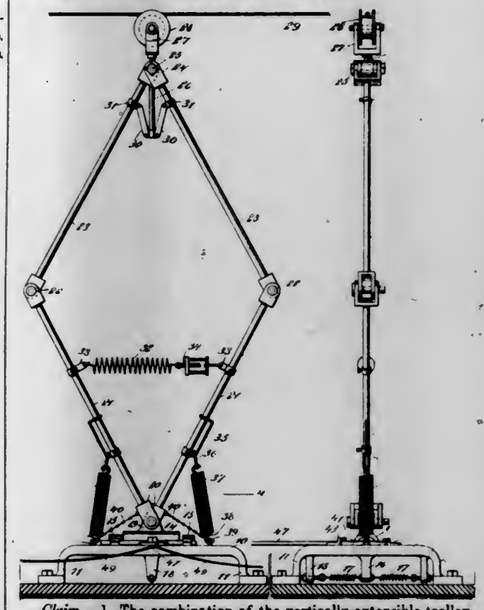
6. The combination of the movable rail adapted to abut against the inner side of one of the track rails and to assume an oblique position relatively thereto, the block pivoted to swing transversely of the track and adapted to be swung over the other track rail, and an operative connection between the block and the movable rail, substantially as described.

7. The combination of the block pivoted to swing transversely of the track and adapted to be swung over one of the track rails, and a supporting plate on which the block is adapted to rest when it extends across the track rail, substantially as described.

8. The combination of the block pivoted to swing transversely of the track and adapted to be swung over one of the track rails, and a supporting plate provided with ribs disposed longitudinally of the rail and on which the block is adapted to rest when it extends across the track rail, substantially as described.

9. The combination of the transversely swinging block, and the ribs arranged adjacent to the track rail to support the block when it extends across the said rail, the ribs being provided with lugs serving as a backing for the block, substantially as described.

543,271. TROLLEY STAND AND POLE. LAWRENCE C. SEELYE, Fort Edward, assignor of one-half to George W. Burnham, Luzerne, N. Y. Filed Jan. 2, 1895. Serial No. 533,604. (No model.)



Claim.—1. The combination of the vertically extensible trolley pole, the trolley carried at the upper end thereof, and a device actuated by the upward extension of the trolley pole to pull the pole over, substantially as described.

2. The combination, with the trolley pole, comprising oppositely arranged spring-pressed toggle arms, the trolley wheel carried at the upper end of the toggle arms, and a device actuated by the upward extension of the trolley pole to pull the pole over, substantially as described.

3. The combination with the trolley pole, comprising the oppositely arranged spring-pressed toggle arms, of the springs secured to opposite toggle arms and to an adjacent support, a device actuated by the swinging of the toggle arms to disengage the springs, and a lock to alternately fasten the springs, substantially as described.

4. The combination, with the oppositely arranged toggle arms pivoted together at top and bottom, of the trolley wheel, the supporting fork of the same having its shank extending downward through the upper pivot of the toggle arms, and the links pivotally connected to the shank and to the toggle arms, substantially as described.

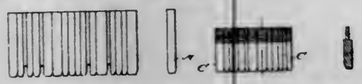
5. The combination, with the extensible trolley pole, of the base supporting it, the springs connected with the opposite sides of the pole and with the base, releasing chains connecting the lower ends of the springs with the trolley pole, and a slide to alternately lock the springs, substantially as described.

6. The combination, with the base, the oscillating cross bar thereon and the trolley pole mounted on the cross bar and comprising oppositely arranged spring-pressed toggle arms, of the springs connected with the opposite toggle levers and hooked to staples on the base, and the slide mounted on the base and adapted to alternately lock the hooks to the staples, substantially as described.

7. The combination, with the base and the trolley pole comprising oppositely arranged spring-pressed toggle arms, of the springs secured to opposite toggle arms and hooked to staples on the base, the chains connecting the spring hooks with the toggle arms, and the slide movable on the base and adapted to alternately lock the springs to the staples, substantially as described.

8. The combination, with the trolley pole, its supporting base, the springs secured to the pole and connected to the base, of the slide to lock the springs to the base, of the lever fulcrumed on the base and connected with the slide, and the oppositely extending cords to work the lever, substantially as described.

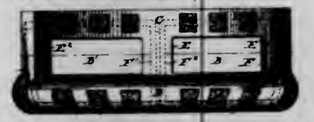
543,272. TYPE AND MATRIX. CORLETTIN SKATULLA, Brooklyn, assignor of one-half to Frank Schmidt, New York, N. Y. Filed Apr. 4, 1895. Serial No. 544,458. (No model.)



Claim.—1. The herein-described method for forming matrices, consisting in first casting short type and placing the same one alongside the other, to form words separated by space bars, then removing one set of space bars, and finally casting a backing on the said short type, to make the matrix the proper height, and to fill the spaces between the words, substantially as shown and described.

2. A line matrix, comprising single short type, and a backing cast on the said type, to make the matrix the proper height, at the same time filling the spaces between the words formed by the short type, substantially as shown and described.

543,273. BRAKE-SHOE. WILLIAM W. SNOW, Hilburn, N. Y., assignor of one-half to the Ramapo Iron Works, same place. Filed Apr. 8, 1895. Serial No. 544,997. (No model.)



Claim.—1. A brake-shoe having wearing surfaces to bear upon those portions of the wheels which do not make contact with the rail and having web portions connecting said bearing portions, and provided with strengthening pieces extending through said web portions and into the bearing portions, substantially as described.

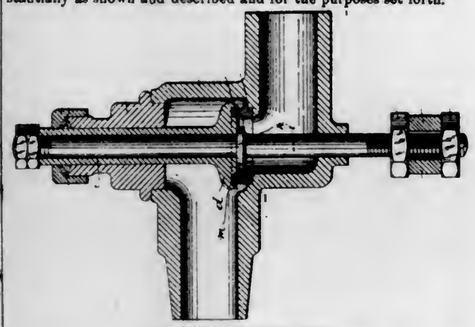
2. A cast metal brake-shoe having wearing surfaces to bear on those portions of the wheels which do not make contact with the rail and having web portions uniting said bearing portions, and provided with wrought metal strengthening portions extending through the web portions and into the bearing portions, substantially as described.

3. A cast metal brake-shoe having wearing surfaces to bear upon those portions of the wheels which do not make contact with the rail, said wearing surfaces comprising wearing blocks mounted in said wearing surfaces, webs connecting the bearing portions, and strengthening bars of wrought metal extending through the web portions and into the bearing portions below the wearing surfaces, substantially as described.

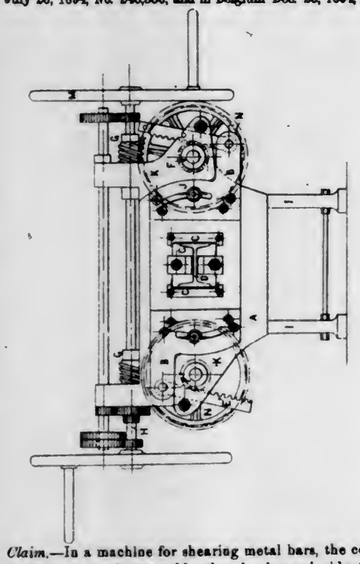
543,274. VALVE. GEORGE F. SPEER, Tyler, Tex. Filed June 18, 1894. Renewed May 27, 1895. Serial No. 550,871. (No model.)

Claim.—1. The combination of the shell A, provided with the usual water inlet and water outlet, and perforation for the valve stem to work through; tempered steel or other hard material gable-shaped seat *l*, fitted into said shell; valve stem *i*, adapted to work up and down through said shell and provided with shoulder *h*; valve *d*, provided with a hollow neck passing up through guide and cap B; soft contact ring *m*, fitted in the face of the valve *d*, and adapted to come in contact with the edge of the gable-shaped seat *l*; guide and cap B, fitting on the upper part of said shell; stuffing-box nut C, fitting on the upper end of said guide and cap; and stem nut *g*, working against the upper end of the neck *f*, and holding the valve *d*, firmly and securely against the upper face of the shoulder *h*, substantially as shown and described and for the purposes set forth.

2. In a valve, substantially as shown and described, the valve *d*, provided with a hollow neck *f*, adapted to work up and down through the guide B, and stuffing-box nut C; rod *i*, running through said valve *d*, and holding said valve firmly between its shoulder *h*, and nut *g*, substantially as shown and described and for the purposes set forth.

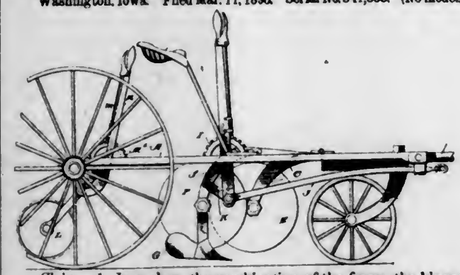


543,275. SHEARS. JOSEPH A. VERNET, Dijon, France. Filed Feb. 9, 1895. Serial No. 537,817. (No model.) Patented in France July 23, 1894, No. 240,356, and in Belgium Dec. 28, 1894, No. 113,376



Claim.—In a machine for shearing metal bars, the combination with a stationary and a movable plate having coincident apertures of the shape of and adapted to receive the bar to be cut, of means for turning said movable plate about said bar as an axis, and means for finally moving said plate transversely to the axis of said bar, substantially as described.

543,276. PLOW. ROBERT H. WALKER and DAVID S. BEATTY, Washington, Iowa. Filed Mar. 11, 1895. Serial No. 541,353. (No model.)

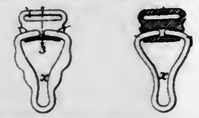


Claim.—1. In a plow, the combination of the frame, the hinged beam, the disks carried thereby, the adjusting lever for the disks, the draft rod pivoted to said lever and the link pivoted to the lever and the beam, substantially as described.

2. In a plow, the combination of the frame, the hinged beam, the disks carried thereby, the disk arms secured to the beam, the draft pole, and the coupling link, substantially as described.

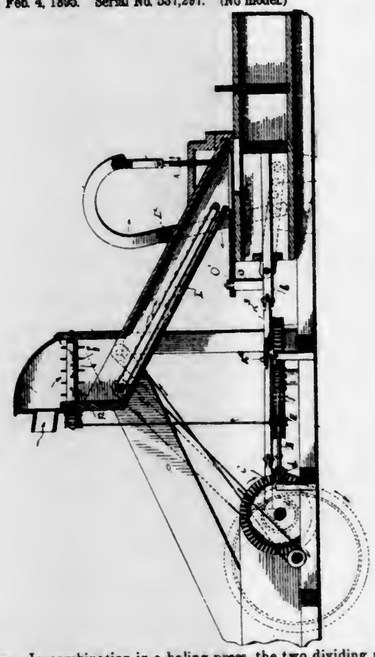
3. The combination of platform A, beam D, disks E and F, said disks being supported in arms *e* and *f*, secured to the beam D, the breaking plow G carried by the lower end of arm *f*, and the draft pole J.

543,277. GARMENT-SUPPORTER. DE VER H. WARNER, Bridgeport, Conn. Filed Oct. 15, 1894. Serial No. 525,987. (No model.)



Claim.—In a garment supporter, the combination of a spring loop formed with the curved fingers *c'*, *c'*, and a guard adapted for attachment to a tape and provided with an opening for the reception of said fingers, and which is curved in conformity thereto to permit the fingers to slide longitudinally therein, substantially as described.

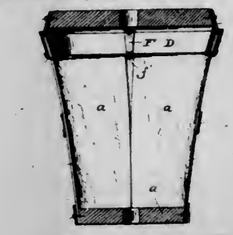
543,278. BALING-PRESS. JOHN M. WASHBURN, Attica, Ind. Filed Feb. 4, 1895. Serial No. 537,297. (No model.)



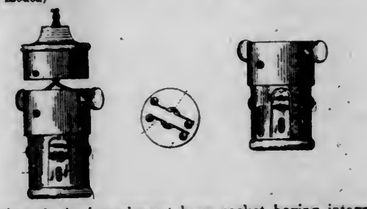
Claim.—In combination in a baling press, the two dividing rollers journaled in the walls F^2, means for revolving same in opposite directions, a conveyer box, an endless carrier traveling over rollers one of which is journaled underneath said dividing rollers, the other adjacent to the lower end of said conveyer box, the press box, the adjustable levers L pivoted near their centers to a cross-bar L^2, the follower bars M having a series of apertures *m*, each bar connected at one end to the follower shaft *k*, at its other end to the lower portion of said lever L, and the feeder X pivoted to a shaft *p*, carried by the cross bar P journaled in the upper depending ends of the levers L, and means for operating the device, substantially as shown and described.

543,279. BASKET-COVER. HIRAM WEED, Lloyd, N. Y. Filed Mar. 21, 1895. Serial No. 542,601. (No model.)

Claim.—A fruit basket or receptacle having openings in its sides and hoops secured to the top of said basket on the inner and outer sides thereof, the upper edges of said hoops extending above the top of the walls of said basket to form an annular groove, in combination with a cover provided with a depending flange forming the edge of said cover and adapted to fit in said annular groove and be supported by the upper end of the walls of said basket, when the basket is closed, and flexible catches secured to said cover, said catches extending downward and adapted to spring outward through the openings in the basket and under the hoops with which they engage, substantially as and for the purposes described.



543,280. INCANDESCENT ELECTRIC LAMP. GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa. Filed Aug. 29, 1892. Serial No. 444,398. (No model.)

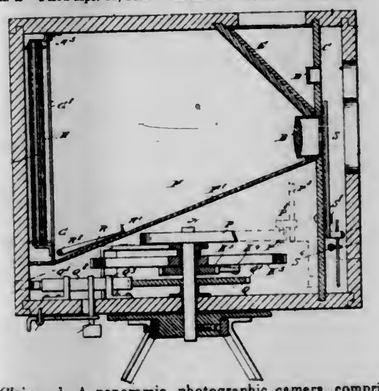


Claim.—1. An incandescent lamp socket having integral leaf springs, the free ends of which extend inwardly toward the base of the socket and are provided with bends for engagement with a flange on the neck of the lamp bulb, substantially as described.

2. An incandescent lamp-socket having a continuous outer end or rim and provided with integral springs having bends near their free ends and a bulb provided with an integral flange adapted to be supported in said bends.

3. An incandescent lamp-socket having a continuous outer end or rim and integral springs provided with bends near their free ends and containing clipping springs, in combination with a bulb having an integral flange for engagement with said bends and leading-in wires provided with thickened outer portions projecting from the seal of said bulb and adapted to engage with said clipping springs.

543,281. PANORAMIC CAMERA. HORATIO G. WOOD, Newport, R. I. Filed Apr. 12, 1895. Serial No. 545,482. (No model.)



Claim.—1. A panoramic, photographic camera, comprising a revoluble camera casing, provided with a dark chamber and a lens, a removable slide in the back of the said chamber and having a slot adapted to be opened wide or partly closed by a plate, the said slide being also provided with a guide in the rear of the said slot, and a feeding device outside of the said chamber and within the casing, the said device being adapted to feed the film over the said slide guide, substantially as shown and described.

2. A panoramic, photographic camera, provided with a removable guide formed with a vertically disposed slot, a plate held adjustable on the said guide over the said slot, and a guide forming part of the said plate and arranged in the rear of the said slot, substantially as shown and described.

3. A panoramic, photographic camera, comprising a camera casing, a shaft on which the said casing is mounted to turn, a ratchet wheel secured on the said shaft, a gear wheel carrying a pawl engaging the said ratchet wheel, a film feeding roller having a gear wheel in mesh with the said pawl gear wheel, a notched wheel secured on the said shaft, and a spring-pressed bolt under the control of the operator, and adapted to engage the notches in the said wheel, substantially as shown and described.

4. In a photographic camera, a casing mounted capable of rotary movement, a dark chamber within the casing, a lens, a spur wheel fast on the axis of the camera, a film roller revolved by the spur wheel, and a second film roller co-operating with the first, substantially as described.

5. In a photographic camera, a revolubly mounted casing, a dark chamber contained therein, a lens within the casing, the dark chamber having a slot formed in one side, a guide outside of the dark chamber and directly opposite the slot, a roller capable of carrying the film, a second roller for unwinding the film on the first roller, said second roller having movable bearings, springs for pressing on the bearings of the second roller, an idler roller against which the second roller is pressed by the springs of its bearings, and a spur wheel fixed on the axis of the camera and meshing with the idler roller, substantially as described.

6. In a photographic camera, a casing mounted capable of rotary movement, a dark chamber within the casing a lens, film feeding mechanism, a disk fixed to the axis of the casing and having peripheral notches therein, and a spring-pressed bolt within the casing and operating with the notches of the disk, substantially as described.

7. In a photographic camera, having a casing, a dark chamber within the casing, a lens, film feeding mechanism, a shaft revolubly mounted within the dark chamber and projecting outside of the casing, and an arm fixed to the shaft and having a spur on its extremity, said spur being capable of movement with the shaft to mark the film, substantially as described.

8. In a photographic camera, a casing mounted capable of rotary movement, a dark chamber contained within the casing, a lens, film feeding mechanism, a coil spring fixed to the axis of the casing and having an eye at its free end, a vertically movable rod within the casing, an arm projecting therefrom, and a pin fixed to the arm and capable of removable connection with the eye on the spring, substantially as described.

9. In a photographic camera, a casing mounted capable of rotary movement, a dark chamber within the casing, a lens, film feeding mechanism, a coil spring fixed to the axis of the casing, a vertically movable rod in the casing, and a pin on the rod and capable of removable connection with the free end of the coil spring, substantially as described.

10. In a photographic camera, a casing mounted to be capable of rotary movement, a dark chamber within the casing, a lens, film feeding mechanism, a coil spring having one end fixed to the axis of the casing, and a vertically movable pin in the casing and capable of removable connection with the free end of the coil spring, substantially as described.

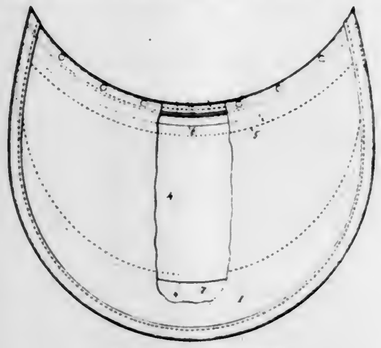
11. In a photographic camera, a casing mounted capable of rotary movement, a dark chamber within the casing, a lens, a slide forming one side of the dark chamber and having a slot therein, the said slot and the lens being arranged on opposite sides of the axis of the casing and at equidistant points therefrom, and film feeding mechanism capable of passing the film by the slot in the slide, substantially as described.

12. In a photographic camera, a revolubly mounted casing, a dark chamber within, a lens, film feeding mechanism, a disk fixed to the axis of the casing and having peripheral notches formed therein, a spring-pressed bolt capable of movement toward and from the disk and operating with the notches therein, a knob fixed to the bolt and projecting outside of the casing, and an arm mounted outside of the casing and capable of removable connection with the knob, substantially as described.

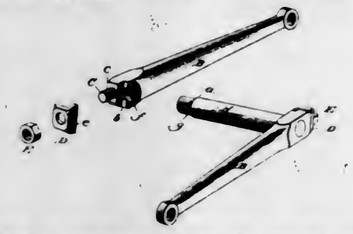
13. In a photographic camera, a casing having a lens orifice, a shutter pivotally mounted on the casing and capable of swinging to open and close the lens orifice, a spring fixed to the casing and having a sliding connection with the shutter, the tendency of the spring being to keep the shutter over the lens orifice, and a reciprocal rod mounted in the casing and having a pin thereon capable of engagement with the spring and of moving the same against its tendency, substantially as described.

543,282. DRESS-SHIELD. DAVID BAUCH, New York, N. Y. Filed Jan. 29, 1895. Serial No. 536,553. (No model.)

Claim.—A dress shield comprising a water repellent lining and a textile fabric cover in each of the two flaps, and provided with an absorbent between the lining and cover and which is sewed or secured at a distance from its upper edge to form a gutter or ledge, said cover being provided with perforations located above and allowing the perspiration to pass to the gutter or ledge substantially as described.

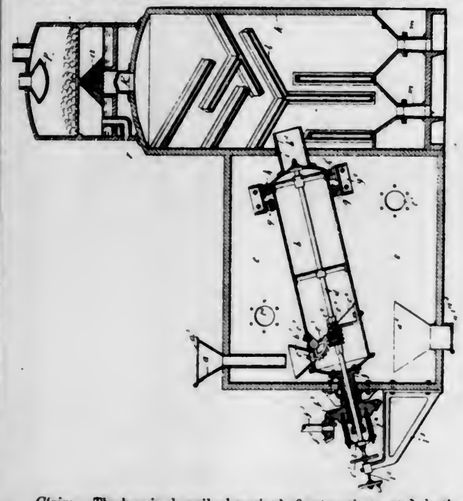


543,283. LOCK-CLAMP FOR SECURING CRANKS TO AXLES. GEORGE W. BENNETT, Toledo, Ohio. Filed May 22, 1895. Serial No. 550,242. (No model.)



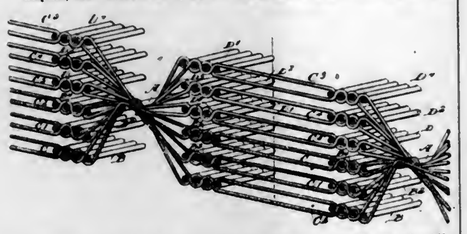
Claim.—In combination with the axle A provided with one or more grooves *a* and the crank B, cut-away as at *b* and provided with the threaded prolongation C, the clamp D provided with one or more wings *e*, and the locking nut E, substantially as and for the purpose set forth.

543,284. PROCESS OF DECOMPOSING SUBSTANCES BY MEANS OF AMMONIA SALTS. EDUARD R. BESENFELDER, Gross Mochbern, Germany. Filed Dec. 27, 1893. Serial No. 494,335. (No specimens.)



Claim.—The herein-described method of extracting metals in the form of chlorides from ores and other materials, which consists in exposing the said materials, in an air-tight tank and in the presence of sal ammoniac, to a sufficient degree of heat to produce dissociated vapors of the said sal ammoniac and thus allow the free ammonia contained in the said vapors to act upon the materials and combine with the foreign matter allied to the metal or metals to be extracted, while the chlorine combines with the said metal or metals, substantially as described.

543,285. WOVEN CHENILLE FABRIC. LEEDHAM BINNS, Philadelphia, Pa. Filed Mar. 7, 1894. Serial No. 502,650. (No specimens.)



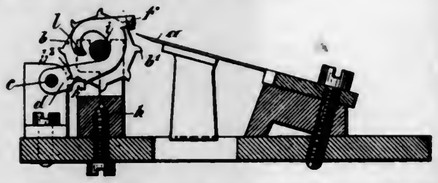
Claim.—1. As a new article of manufacture, a woven chenille fabric, comprising a central warp, separate sets of warps on opposite sides of the said central warp, and wefts binding the said central warp and the said separated sets of warps, some of the wefts passing upward to the said central warp, then over the same, and then downward on the other side thereof, while other wefts pass downward to the central warp, then under the same, and then upward on the other side thereof, the ends of the wefts projecting from the outermost warp threads in the several sets to form tufts or loops, substantially as shown and described.

2. As a new article of manufacture, a woven chenille fabric, comprising a central warp, separate sets of warps on opposite sides of the said central warp, and wefts binding the said central warp and the said separated sets of warps, some of the wefts passing upward to the said central warp, then over the same, and then downward on the other side thereof, while other wefts pass downward to the central warp, then under the same, and then upward on the other side thereof, the ends of the wefts projecting from the outermost warp threads in the several sets to form tufts or loops, some of the corresponding sets of warps bound by the same wefts being arranged in different horizontal planes, substantially as shown and described.

3. As a new article of manufacture, a woven chenille fabric, comprising a central warp, separate sets of warps on opposite sides of the said central warp, and wefts binding the said central warp and the said separate sets of warps, the wefts being so interwoven with the sets of warps on opposite sides of the central warp as to pass over or under the said central warp and form a bend where they bind the same, the ends of the wefts projecting from the outermost warp threads to form tufts or loops, substantially as described.

4. As a new article of manufacture, a strand of chenille, comprising separated sets of warps, a central warp, and wefts extending radially from the separate sets of warps to the central warp, said wefts binding the central warp and the separate sets of warps, and forming bends where they pass over or under the central warp, the ends of the wefts projecting from the outermost warp threads to form tufts or loops, substantially as described.

543,286. DAMPING DEVICE FOR MUSIC-BOXES. CHRISTIAN H. R. BOCK and EMIL M. A. WACKER, Leipsic-Gohlis, Germany. Filed Mar. 23, 1895. Serial No. 542,977. (No model.)

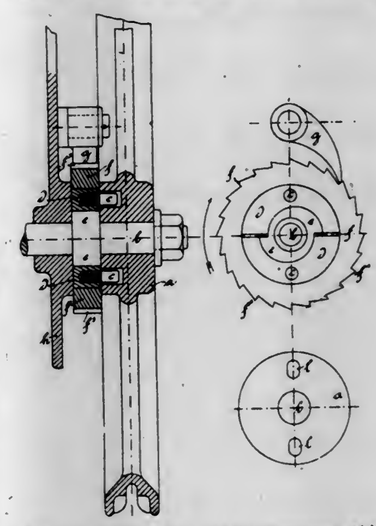


Claim.—1. In a music box having a tuned comb and wheels with radial projections to temporarily engage and sound the prongs of the said comb, a lever or levers, each having a laterally projecting lug or portion extending into the line of movement of the wheel projections and each extending with its free end, to a point near a prong of the comb and opposite to that side thereof on which the prong is engaged by the projections of the said wheel, substantially as and for the purpose set forth.

2. The combination, with a steel comb and a wheel adapted with its projections to engage the prongs of the said comb, of a lever, having a laterally projecting lug or portion extending into the line of movement of the wheel projections, a part on the free end of the said lever extending to a point near a prong of the comb and opposite to that side thereof on which the prong is engaged by the wheel projections, substantially as and for the purpose set forth.

3. The damping lever *d* having the lateral comb projection *k*, the projecting portion *f* and the curved and laterally bent portion *l*.

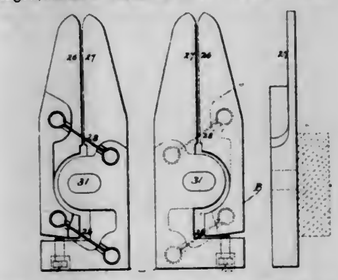
543,287. BRAKE FOR LIFTING APPARATUS. ANTON BOLKART, Berlin, Germany. Filed Mar. 30, 1895. Serial No. 543,849. (No model.)



Claim.—1. In lifting apparatus, the combination, with a support, and a driving shaft journaled therein and having cams *e* revolving with it; of two revoluble and slidable semicircular wedges mounted on the said cams, a driving device mounted on the said shaft and operatively connected to the said wedges, a brake ring encircling the said wedges and provided with ratchet teeth, and a pawl pivoted to the said support and engaging with the said ratchet teeth, substantially as set forth.

2. In lifting apparatus, the combination, with a support, and a driving shaft journaled therein and provided with a collar and a screw-threaded portion; of the cams *e* engaging with the said screw-threaded portion, two slidable semicircular wedges mounted on the said cams, a driving device mounted on the said shaft and operatively connected to the said wedges, a brake ring encircling the said wedges and provided with ratchet teeth on its periphery and a flange bearing against the said collar, and a washer interposed between the said flange and the ends of the said cams, substantially as set forth.

543,288. ADJUSTABLE YARN-CLEARER. THOMAS A. BOYD, Glasgow, Scotland. Filed Dec. 3, 1894. Serial No. 530,665. (No model.)

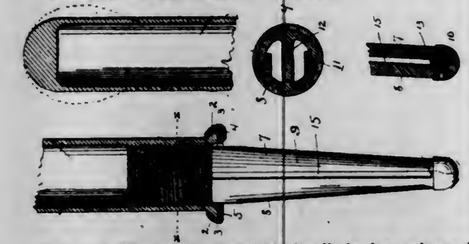


Claim.—1. An adjustable clearer for clearing yarn in the process of winding, comprising a stationary plate and a movable plate having contiguous clearing edges, in combination with parallel links connecting the two plates and means for adjusting the movable plate, substantially as set forth.

2. An adjustable clearer for clearing yarn in the process of winding, comprising a stationary plate and a movable plate having contiguous clearing edges, in combination with parallel spring links connecting the two plates and means for adjusting the movable plate against the action of the spring links, substantially as set forth.

3. An adjustable clearer for clearing yarn in the process of winding comprising a stationary plate and a movable plate having contiguous clearing edges in combination with parallel spring links connecting the two plates, and an adjusting screw carried by one plate and bearing against the other plate in opposition to the action of the spring links, substantially as set forth.

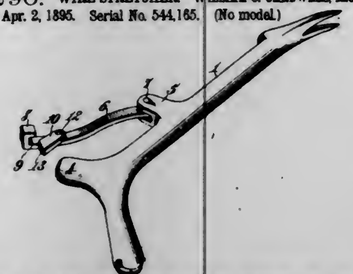
543,289. SAW-HANDLE. PERRY BROWN, Wilmington, Del. Filed Nov. 10, 1894. Serial No. 528,400. (No model.)



Claim.—1. The combination with a handle having an internal thread, of a two part fastener 7, one part having ridges 11 fitting within the other part and the two united at bottom by a ring and threaded at top to enter the handle, substantially as described.

2. In combination with a saw handle having an internal thread, a fastener 7 comprising two side pieces 8, 9, one piece having ridges 11 fitting within the other piece and the two externally threaded and secured together by a rivet at one end and a ring at the other, substantially as described.

543,290. WIRE-STRETCHER. WILLIAM C. CARDWELL, Rice, Tex. Filed Apr. 2, 1895. Serial No. 544,165. (No model.)



Claim.—1. A hand-implement or tool for constructing wire-fencing, consisting of a shank having at one end a bifurcated head or claw, and at the opposite end laterally projecting arms, one of which is slotted to serve as a wire-kinker or twister, said shank being provided between the bifurcated head or claw and the lateral heads with projecting ears or lugs, and a stretcher-arm pivoted to said ears or lugs, curved downward to pass under one of the lateral arms of the shank, and having at its outer, unpivoted end a fixed jaw and a pivoted pawl for gripping a fence-wire, substantially as described.

2. A hand-implement for constructing wire-fencing, consisting of a shank having at one end oppositely projecting arms 3 and 4 constructed of different length and curved between their extremities, one of the arms being slotted at its outer extremity to form a wire kinker or twister, and the other arm adapted to lie against a fence post, and a stretcher-arm pivoted to said shank, curved downward to pass beneath one of the arms of the shank, and provided at its outer, unpivoted end with a rigid head and a pivoted pawl for gripping a fence-wire, substantially as described.

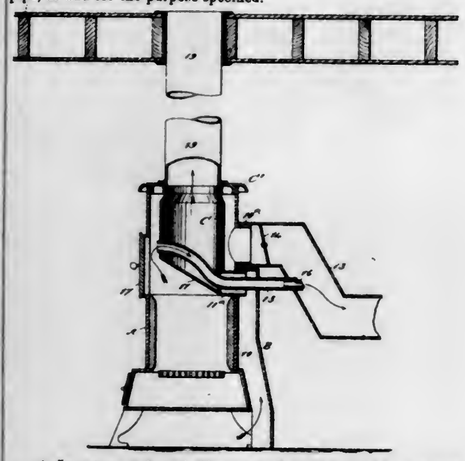
3. A hand implement for constructing wire fencing, consisting of a shank provided intermediate its ends, with a bifurcated ear or lug, a downwardly curved stretcher-arm pivoted to said lug, and having its end bent in angular form a pawl pivoted to the stretcher-arm and having its free end acting within said bent portion, and two oppositely projecting arms arranged upon one end of the shank, the outer edges of said arms being curved in such manner that the instrument is adapted to rest uniformly against a cylindrical fence-post, substantially as described.

543,291. STOVE. JAMES A. CARROLL and WILLIAM BROOKS, Brooklyn, N. Y. Filed Apr. 16, 1895. Serial No. 545,885. (No model.)

Claim.—1. In a stove, a drum, a cold air supply therefor, and a gas escape pipe extending through the drum from side to side and communicating with a smoke flue as and for the purpose set forth.

2. In a stove of the character described, a drum located above the bed of the fire and provided with an extension extending through the outside of the stove, a cold air supply trough communicating with the said drum, a smoke pipe, a damper located therein capable of entirely closing the said pipe, and a gas escape flue leading transversely through the drum and communicating with the smoke pipe as and for the purpose specified.

3. In a stove, a drum, a radiator secured in the said drum above the fire pot, a cold air supply trough or chamber connected with the said drum, a smoke pipe provided with a damper capable of closing the same, and a gas escape pipe extending transversely through and entirely across the drum and communicating with the said smoke pipe, as and for the purpose specified.



4. In a stove, a drum held over the fire pit thereof, having communication with the outside, a cold air supply chamber in communication with the said drum, and a gas escape pipe passing through the drum and through the cold air chamber and communicating with the flue at its outer end, as and for the purpose set forth.

5. In a stove, a drum held over the fire pit thereof, having communication with the outside, a cold air supply chamber in communication with the said drum, and a gas escape pipe passing through the drum and communicating with the flue at its outer end and provided with adjustable reducing devices at its outlet end, as and for the purpose specified.

6. The combination, with a stove, a drum suspended therein over the fire pot and communicating with the exterior, a cold air chute communicating with the said drum, a smoke pipe located above the receiving end of the drum and provided with a damper capable of closing the same, and a gas escape pipe extending from the forward portion of the drum through the drum and into the said smoke pipe at the rear of its damper, as and for the purpose specified.

7. The combination with a stove, of an air heating drum suspended therein above the fire chamber, and having its lower wall inclined downward and rearward from the side adjacent to the stove door, an air flue communicating with the interior of the drum, a smoke flue communicating with the interior of the stove, a damper in the smoke flue and a gas escape pipe extending entirely across the lower portion of the drum and having its inlet adjacent to the stove door and its outlet in the smoke flue as and for the purpose specified.

8. In a stove, the combination with an air heating drum suspended therein, of an open top piece therefor consisting of a metal rod or bar extended spirally upward, as and for the purpose specified.

543,292. METHOD OF REFINING KAOLIN, &c. DAVID H. CHAMBERS, Pittsburg, Pa. Filed Oct. 22, 1894. Serial No. 526,661. (No specimens.)

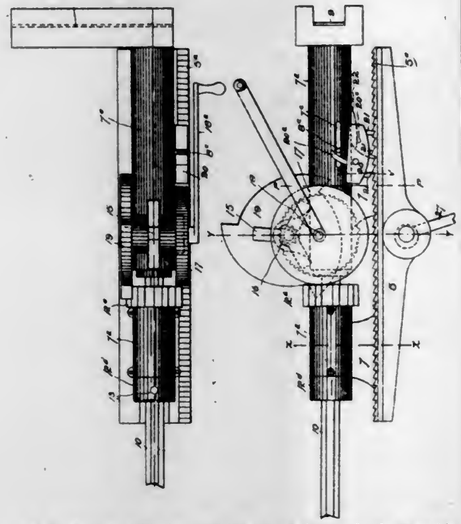
Claim.—1. The method of refining kaolin and similar earths, consisting in disintegrating and drying the same, heating them to prevent their absorbing moisture, and then separating the larger particles of silica and other impurities from the powder; substantially as described.

2. The method of refining kaolin and similar earths, consisting in disintegrating and drying the same, passing them through a heater and drier, and then screening to remove the larger particles of silica and other impurities, substantially as described.

543,293. HAND ROCK-DRILL. THERON W. CHAPMAN, Lakewood, Colo. Filed Sept. 17, 1894. Serial No. 523,211. (No model.)

Claim.—1. In a rock drill, the combination with the track, of the frame movably mounted thereon and carrying a tubular casing, the spring-actuated hammer located in the casing, the shaft journaled in the movable frame and carrying a spider having arms adapted to engage the hammer and force it backward against the spring, and suitable feed mechanism composed of a keeper pivoted on the frame and carrying a dog engaging the toothed rack of the track, said keeper having an arm lying in the path of a projection on the hammer, and a spring engaging a lug on the keeper, substantially as described.

2. In a rock drill, the combination with the track, of the movable frame mounted thereon and carrying a tubular casing, a hammer located in said casing, a leaf-spring engaging the rear extremity of the hammer, the chuck located in the casing and carrying the drill-bit in line with the hammer, the chuck being provided with a toothed collar, a shaft journaled in the frame above the tubular casing, a spider made fast on the shaft and engaging the hammer, a cam provided with faces corresponding with the number of the spider's arms, said cam being adapted to engage the toothed collar of the chuck, and feed mechanism composed of a keeper pivoted on the frame and carrying dog engaging the toothed rack of the track, said keeper being actuated by the hammer, and a spring engaging a lug on the keeper, substantially as described.



3. In a rock drill, the combination of the track, the movable frame mounted thereon and carrying the tubular casing, the hammer located in said casing, a leaf-spring having one extremity made fast to a suitable holder attached to the movable frame, while the opposite extremity of the spring lies in the path of the hammer, a shaft journaled in the frame above the tubular casing, a spider centrally located on said shaft and carrying arms adapted to engage an off-set in the hammer, a pinion made fast on the spider shaft, a crank shaft journaled in the frame, a gear having an interiorly cogged rim engaging the pinion, the chuck carrying the drill-bit lying in the path of the hammer, and suitable feed mechanism composed of a keeper pivoted on the frame and carrying dogs engaging the toothed rack of the track, said keeper having an arm lying in the path of a projection on the hammer, and a spring engaging a lug on the keeper, substantially as described.

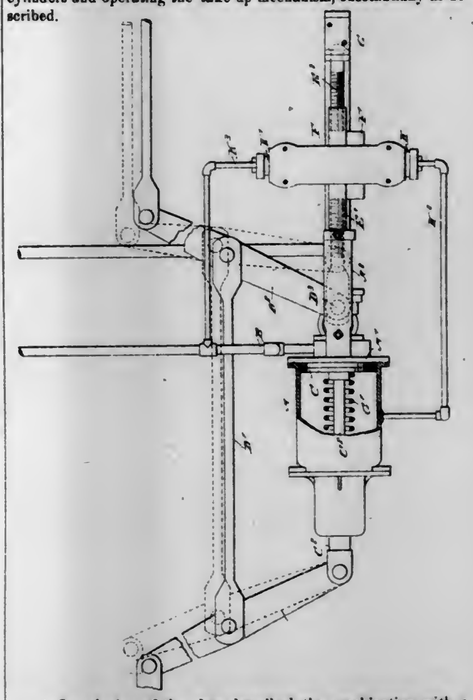
4. In a rock drill, the combination of the track having a toothed rack, the movable frame mounted on the track and having the tubular casing, the hammer located in said casing, the leaf-spring engaging one end of the hammer, the rotating spider adapted to force the hammer against the spring, a pinion carried by the spider shaft, a gear mounted on the crank shaft and engaging the pinion, the chuck carrying the drill-bit lying in the path of the hammer, said chuck having a toothed collar mounted thereon, a cam mounted on the spider shaft and adapted to engage the toothed wheel, a keeper pivoted on the frame and carrying dogs engaging the toothed rack of the track, said keeper having an arm lying in the path of a projection on the hammer, and a spring engaging a lug on the keeper, substantially as described.

543,294. SLACK-ADJUSTER. ALONZO CHUBB, Jr., La Crosse, Wis. Filed Jan. 28, 1895. Serial No. 536,422. (No model.)

Claim.—1. A fluid pressure air brake, provided with a device for automatically controlling the travel of the piston in the brake cylinder, the said device being controlled by fluid pressure from the brake cylinder and auxiliary reservoir, acting alternately substantially as shown and described.

2. In a device of the class described, the combination with a ratchet take up mechanism, of means for operating the ratchet of the take up mechanism in its forward movement by fluid pressure from the auxiliary reservoir when the brakes are released, substantially as described.

3. In a device of the class described, the combination with a take up mechanism, of two cylinders, one in communication with the brake cylinder and the other with the auxiliary reservoir, and pistons in the cylinders and operating the take up mechanism, substantially as described.



4. In a device of the class described, the combination with a ratchet take up mechanism of two cylinders, one in communication with the brake cylinder and the other with the auxiliary reservoir, and pistons in the cylinders connected together and engaged by the ratchet lever, substantially as described.

5. A device of the class described, comprising two connected pistons of different area and connected with a part of the brake rigging, one of the said pistons being controlled by fluid pressure from the brake cylinder, and the other by fluid pressure from the auxiliary reservoir, substantially as shown and described.

6. A device of the class described, comprising a turn-buckle for taking up the slack in the brake rigging, a pawl and ratchet mechanism for turning the said turn-buckle, a cross-head engaging the lever of the said pawl and ratchet mechanism, and connected pistons of different area and carrying on their piston rod the said cross head, the larger piston being controlled by fluid pressure from the brake cylinder, and the other, smaller piston by fluid pressure from the auxiliary reservoir, substantially as shown and described.

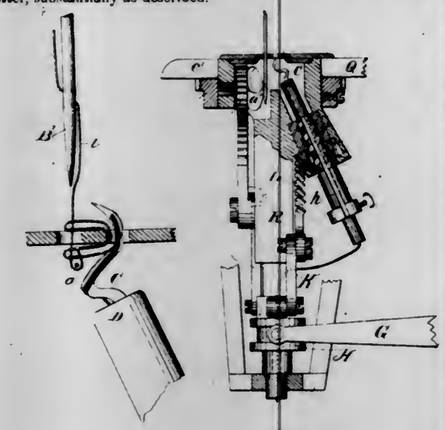
543,295. OVEREDGE SEWING-MACHINE. EMILE CORNELY and ROBERT CORNELY, Paris, France. Filed Jan. 21, 1895. Serial No. 535,706. (No model.)

Claim.—1. In a sewing machine, the combination with the reciprocating eye-pointed straight needle and its complemental loop-taker, and means for operating the same to form a seam, of the helicoidal eye-pointed needle and means for giving the latter longitudinal reciprocating movements and axial oscillating movements, whereby a series of loops are formed on both sides of the fabric and said loops secured to the fabric by said seam, as set forth.

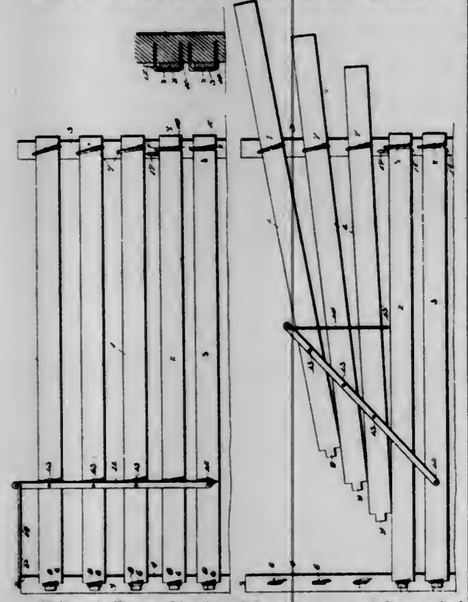
2. In a sewing machine, the combination, with the reciprocating eye-pointed straight needle and a complemental lock-stitch loop-taker, and means for operating the same to form a seam, of the helicoidal eye-pointed needle and means for giving the latter longitudinally reciprocating movements and axial oscillating movements, whereby a series of loops are formed on both sides of the fabric and said loops secured to the fabric by said seam, as set forth.

3. In a sewing machine, the combination with a universal feed-mechanism of a reciprocating eye-pointed straight needle and its complemental loop-taker, means for operating the same to form a seam, a helicoidal eye-pointed needle, means for giving the latter longitudinally reciprocating movements and axial oscillating movements

whereby a series of loops are formed on both sides of the fabric and secured to the fabric by said seam, a rotatable frame carrying the helicoidal needle, its complemental loop-taker and their operating mechanism, and connections between said frame and the controlling handle of the feed-mechanism whereby the frame is operated by the latter, substantially as described.



543,296. SLIDING BAR FOR FENCES. JONATHAN CREECH, Paint Lick, Ky. Filed Nov. 30, 1894. Serial No. 530,405. (No model.)



Claim.—1. The combination of fence posts 4 and 5, a vertical series of keepers arranged on the post 4, a series of keepers mounted on the post 5, the upper ones being arranged at an inclination, the upper series of rails mounted in keepers of the post 4 and arranged in the inclined keepers of the post 5 and adapted to be lowered without twisting the latter and being held rigid by the same when in a horizontal position, the bottom rail, the operating lever fulcrumed on the bottom rail and pivotally connected to the upper rails, and the removable rail located between the bottom rail and the series of upper rails, and mounted independently of the lever and being entirely free of the same, whereby it may be removed to afford a passageway at the bottom of the fence without disturbing the other rails, substantially as described.

2. The combination of fence posts, a series of keepers 6 arranged on one of the fence posts, the keepers 7 and 8 arranged on the other post, the keepers 7 being disposed at an inclination, the rails 1, 2 and 3 arranged in the keepers 7 and 8 and provided with tongues or tenons for engaging the keepers 6, the rails 2 and 3 being provided at their lower edges with notches engaging the keepers 8, a pivoted button located above the rail 2 for securing the latter against upward movement to hold the notch thereof in engagement with the keeper, an operating lever fulcrumed on the rail 3 and pivotedly connected to the rails 1, and means for locking the lever against accidental movement, substantially as described.

543,297. VALVE FOR PNEUMATIC TIRES. JOSEPH E. DAVIS, Lynn, assignor to the Boston Woven Hose and Rubber Company, Boston, Mass. Filed Nov. 23, 1894. Serial No. 529,717. (No model.)



Claim.—1. A pneumatic-tire valve-case comprising a locking section 3 formed to engage and pass through a hole in the wheel-rim, an outwardly projecting central collar or washer 6 arranged to bear on the outer side of the wheel-rim, and a section or extension 2, adapted to be held outside the wheel-rim by said collar and presenting an elongated surface projecting into the space occupied by the tire for engagement with a nipple on the tire.

2. The combination with a pneumatic tire having an elongated outwardly projecting flexible nipple, of a valve-case comprising a locking section 3 formed to enter and pass through a hole in the wheel-rim, an outwardly projecting central collar or washer 6 arranged to bear on the outer side of the wheel-rim, and an elongated section or extension 2 inserted in and detachably secured to the said nipple, the said section 2 and the nipple thereon being held within the space occupied by the tire by the bearing of the collar on the wheel rim, so that the section 2 cannot be withdrawn from the nipple, said section and nipple forming an elongated air-tight connection between the valve-case and tire which is maintained by the engagement of the locking section of the valve-case with the wheel-rim and by the bearing of the collar 6 on said rim, as set forth.

3. The combination with a wheel-rim having a square or equivalently shaped hole, and with a pneumatic tire surrounding said rim and having a nipple projecting toward the rim, of a valve-case comprising a locking section 3 formed to fit said hole in the wheel-rim, an outwardly projecting central collar or washer 6 arranged to bear on the outer side of the wheel-rim, and an elongated section or extension 2 inserted in and detachably secured to the said nipple, the said section 2 and the nipple thereon being held within the space occupied by the tire by the bearing of the collar on the wheel-rim, so that the section 2 cannot be withdrawn from the nipple, said section and nipple forming an elongated air-tight connection between the valve-case and tire which is maintained by the engagement of the locking section of the valve-case with the wheel-rim and by the bearing of the collar 6 on said rim, as set forth.

543,298. TREE-PROP BRACKET. BRUCE E. DOUGLAS, Riverside, Cal. Filed Mar. 30, 1895. Serial No. 543,880. (No model.)



Claim.—1. A tree prop bracket made from a wire blank bent at its central portion to form an open link for striding or embracing a pole or prop, a pocket or hook portion adapted to underlie and uphold the limb of a tree, and one or more pointed prongs or tines formed by the terminals of said blank having their pointed extremities arranged beneath the pocket or hook portion and adapted to penetrate and engage said pole or prop, substantially as specified.

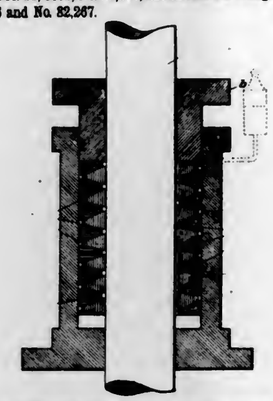
2. A tree prop bracket made from a single piece of wire bent to form an open loop at the center of its length for engaging a pole or prop, with its ends bent to form prongs or tines for engaging said pole or prop, and the hook for supporting the limb of a tree formed between said open loop and the prongs or tines, substantially as described.

3. A tree prop bracket made from a wire blank bent at its central portion to form an open loop for striding or embracing the pole or prop, a pair of converging prongs or tines formed by the terminals of said blank for penetrating and engaging said pole or prop, and an intermediate pocket or hook formed by said terminals and located between said open loop and the prongs or tines, substantially as specified.

543,299. COFFEE SURROGATE. JEREMIAH R. DRAKE, Bolivar, Mo. Filed May 7, 1895. Serial No. 548,453. (No specimens.)

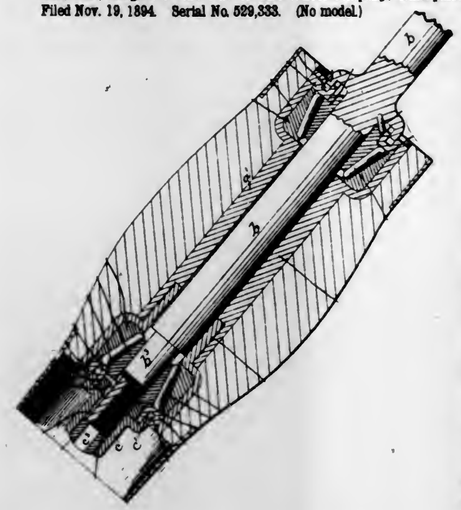
Claim.—The coffee compound herein described, consisting of sugar, caffeine, cream of tartar, caffeol, and corn starch, mixed and roasted in or about the proportions described.

543,300. METALLIC PACKING FOR STUFFING-BOXES. HERMANN FRIESE, Dortmund, Germany. Filed Feb. 20, 1894. Serial No. 500,871. (No model.) Patented in Germany Nov. 7, 1892, No. 9,357; in England Dec. 22, 1892, No. 23,597, and in Austria-Hungary Nov. 3, 1893, No. 18,286 and No. 82,267.



Claim.—A metal packing consisting of two spirals adapted to fit one within the other, the coils of said spirals having inclined engaging faces, and the diameters of the outer and inner peripheral portions of the inner spiral being less than the diameters of the outer and inner peripheral portions of the outer spiral, forming a spiral oil receiving channel on the outer and inner portions of the packing, extending continuously from one end of the packing to the other substantially as described.

543,301. ANTIFRICTION-BEARING. ARTHUR W. GRANT, Springfield, Ohio, assignor to the Rubber Tire Wheel Company, same place. Filed Nov. 19, 1894. Serial No. 529,333. (No model.)



Claim.—1. In an antifriction bearing, a chamber having therein an inclined or tapered seat, a bearing sleeve within said chamber, and a series of tapered rollers disposed around said sleeve and within said chamber, the small ends of said rollers being arranged opposite the small end of said sleeve so that the rollers travel uniformly around said sleeve, and means as described for retaining said sleeve and rollers in said chamber and for adjusting the parts of the same to compensate for the wear thereon, substantially as specified.

2. In an antifriction bearing, a chamber having therein a bearing ring, a spindle extending through said chamber having thereon a movable conical sleeve, tapered rollers between said bearing ring and sleeve, the small end of each of said rollers being opposite the small end of said sleeve, a retaining ring having an annular groove and secured in said chamber so as to close the opening between said sleeve and bearing ring within which the rollers are inserted and a cap at the end of said chamber having a laterally-projecting flange to fit in said groove, substantially as specified.

3. The combination with a chamber having therein a bearing ring with a tapered opening to form an inclined bearing surface, a sleeve arranged within said ring and tapered rollers between said sleeve and ring, of a spindle around which said sleeve is mounted, and means, as described, for securing said sleeve on said spindle in different positions of adjustment around said spindle, substantially as specified.

4. The combination with an outer chamber, and a spindle extending through said chamber, a tapered seat in said chamber, and a conical sleeve on said spindle, intermeshing parts on said sleeve and spindle to cause said sleeve to retain the same relative position with reference to said spindle when the device is in operation, tapered rollers between said sleeve and seat, said intermeshing parts being so constructed as to permit of an adjustment of said sleeve about said spindle, substantially as specified.

5. The combination with a vehicle hub having a chamber at each end thereof with tapered seats therein, of a spindle extending through said hub and through said chambers, conical bearing sleeves on said spindle adapted to extend into said tapered seats, tapered rollers between said sleeves and seats, grooved retaining rings for holding said sleeves and rollers in said chambers, a stationary collar on said spindle having a lateral flange to engage with the grooved ring at one end of said hub, and a movable collar having a flange to engage with the grooved ring in the opposite end of said hub, and means, substantially as described, for retaining said movable collar in different positions of adjustment on said spindle, substantially as specified.

6. The combination with a vehicle hub having at each end thereof a chamber with a tapered or inclined inner wall therein adapted to form a bearing seat, a spindle extending through said hub, a conical sleeve at each end of said spindle adapted to project into one of said chambers, tapered rollers between said sleeves and bearing seats, a stationary collar on said spindle adapted to contact with the sleeve at one end thereof, and a screw-threaded nut on said spindle adapted to move the conical sleeve at the other end of said spindle, intermeshing parts on the spindle and sleeves, respectively, to prevent said sleeves from turning on said spindle when the devices are in position for operation, said parts being so constructed that the sleeves may be placed in different positions around said spindle, substantially as and for the purpose specified.

7. The combination with a spindle and a hub having a chamber therein, a tapered seat in said chamber, and a conical sleeve on said spindle, tapered rollers between said seat and sleeve, and a grooved retaining ring secured in said chamber so as to close the opening between said sleeve and seat and retain the rollers therein, a movable cap screwthreaded on said spindle and provided with a laterally projecting flange to engage in said grooved ring, said cap being provided with an auxiliary adjusting nut by means of which its position on said spindle may be determined, substantially as specified.

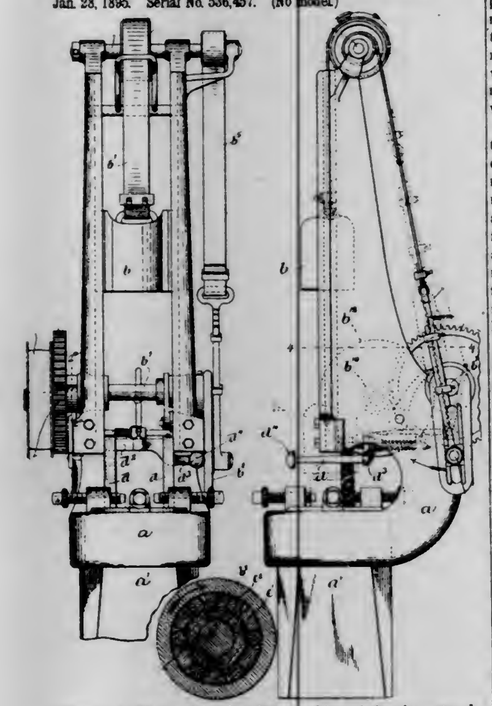
8. The combination with a vehicle hub and a spindle therefor, a conical sleeve on said spindle, and a conical or tapered seat in said hub, conical rollers between said sleeve and bearing surface, said sleeve being shouldered down to receive a grooved ring which fits thereon, said ring being also adapted to close the end of said hub and retain said rollers, engaging parts on said spindle and sleeve respectively by means of which said sleeve may be retained in different positions of adjustment about said spindle, a screwthreaded cap on said spindle having a projecting flange to engage in said grooved ring and adapted to bear against the end of said conical sleeve, and an auxiliary nut screwheaded in said cap so as to contact with the end of said spindle and thus determine the adjustment of said cap on said spindle, substantially as specified.

9. A vehicle hub having a chamber at each end, and a spindle adapted to extend through said hub, said spindle being shouldered down or reduced and screwthreaded at one end, a stationary collar having a projecting flange at the inner end of said spindle, a movable cap having a projecting flange at the outer or screwthreaded end of said spindle, conical sleeves arranged on said spindle between said stationary collar and movable cap, one of said sleeves being fitted

onto the main body of said spindle and the other on the reduced portion thereof, an inclined bearing seat within each of said chambers, tapered rollers within said chambers between the conical sleeves and tapered seats respectively, grooved retaining rings in the ends of said chambers, each of said rings being fitted to the end of one of said sleeves which is shouldered down to receive the same, and projecting flanges on the respective collars to engage said grooved rings, intermeshing parts on said spindle and sleeves respectively, said intermeshing parts being so formed as to permit of an adjustment of said sleeves around said spindle, substantially as specified.

10. The combination with a chamber and an inclined seat therein, a spindle having a conical sleeve thereon to project into said chamber, tapered rollers between said sleeve and seat, a grooved retaining ring secured in the end of said sleeve and adapted to bear against a shoulder or projection on said sleeve, a movable cap having a laterally projecting flange to engage in said groove, a movable collar on said spindle between said cap and sleeve, said collar having a projection to engage said spindle and sleeve respectively, and said sleeve being provided with a series of notches adapted to engage said collar in different positions of adjustment, substantially as specified.

543,302. DROP-HAMMER. JAMES A. HORTON, Reading, assignor to the Mossberg Manufacturing Company, Attleborough, Mass. Filed Jan. 28, 1895. Serial No. 536,457. (No model.)



Claim.—1. The combination, in a machine of the character described, of the following elements, namely, first, a driving-wheel; secondly, a drop-hammer; thirdly, intermediate wheel and hammer connecting mechanism comprising a shaft on which the driving-wheel is loosely mounted, a wheel and shaft connecting clutch organized to prevent a backward rotation of the shaft and to permit a free or accelerated forward rotation thereof, a crank affixed to said shaft, and a flexible connection between the crank and hammer, said mechanism positively connecting the driving-wheel with the hammer to raise the latter during a part of a rotation of the crank-shaft and releasing the hammer during the remainder of said rotation; and fourthly, a stop which arrests the crank-shaft and makes the clutch inoperative when the crank is in its depressed position and the hammer raised.

2. The combination of a crank-shaft having a detent or projection, a driving-wheel or gear mounted loosely on said shaft, a clutch comprising members affixed respectively to the said wheel and shaft and organized substantially as described to prevent backward rotation of the shaft and to permit the shaft to rotate forward more rapidly than the wheel, a stop arranged to simultaneously engage the detent or projection on the shaft and a projecting portion of the clutch and thereby make the clutch inoperative and lock the shaft when the crank thereof is in its lowest position, a drop-hammer movable in suitable guides, a shaft having a pulley connected by a strap with the hammer, the arrangement being such that the hammer is held in its raised position by the said detent through the crank-shaft, straps, and pulleys when the crank-shaft is locked by the detent, and when the detent is displaced the crank-shaft, clutch, and hammer are released, the clutch permitting the crank-shaft to rotate more rapidly than the driving-wheel while the hammer is descending and then acting to automatically arrest the hammer at the end of its rebound and to cause the rotation of the crank-shaft to its hammer-raising position.

3. The combination of a crank-shaft having a detent or projection, a driving-wheel or gear mounted loosely on said shaft, a clutch comprising members affixed respectively to the said wheel and shaft and organized substantially as described to prevent backward rotation of the shaft and to permit the shaft to rotate forward more rapidly than the wheel, a stop arranged to simultaneously engage the detent or projection on the shaft and a projecting portion of the clutch and thereby make the clutch inoperative and lock the shaft when the crank thereof is in its lowest position, a drop-hammer movable in suitable guides, a shaft having a pulley connected by a strap with the crank and another pulley connected by a strap with the hammer, the clutch and driving-wheel acting as a safety device to prevent backward movement of the crank-shaft and downward movement of the hammer when the latter is being raised by the rotation of the crank-shaft, and an auxiliary safety device such as a ratchet affixed to the crank-shaft and a dog on the supporting frame whereby backward rotation of the crank-shaft and downward movement of the hammer are prevented in case of accident to the driving-wheel or clutch.

4. The combination, in a machine of the character described, of the following elements: namely, first, a driving-wheel; secondly, a drop-hammer; thirdly, intermediate wheel and hammer connecting mechanism comprising a shaft on which the driving-wheel is loosely mounted, a wheel and shaft connecting clutch organized to prevent a backward rotation of the shaft and to permit a free or accelerated forward rotation thereof, a crank affixed to said shaft, an intermediate shaft having a larger pulley connected by a strap with the hammer and a smaller pulley connected by a strap with the crank; and fourthly, a stop whereby the crank-shaft is arrested and the clutch made inoperative when the crank is in its depressed position and the hammer is raised.

5. The combination of a crank-shaft having a detent or projection, a driving-wheel loosely mounted on the shaft, a clutch composed of a member affixed to the shaft, a member affixed to the wheel, and an intermediate member which normally co-operates with the other members in preventing backward rotation of the shaft and is provided with an external operating device, said clutch being organized to permit an independent forward rotation of the shaft, a drop-hammer movable in suitable guides, two connected pulleys, straps connecting said pulleys respectively with the hammer and with the crank, and a stop adapted to co-operate simultaneously with the said operating device and with the detent on the crank-shaft when the hammer is raised.

6. The combination of a drop-hammer, a driving-wheel, a crank-shaft, a clutch comprising members affixed respectively to the said wheel and shaft and organized substantially as described to prevent backward rotation of the shaft and to permit the shaft to rotate forward more rapidly than the wheel, connections such as a crank and a flexible strap between the crank-shaft and hammer, said connections, clutch and crank-shaft acting to raise the hammer during a part of the rotation of said shaft and to release the hammer during another part of said rotation, a stop which automatically arrests the crank-shaft and makes the clutch inoperative when the hammer is raised, and a movable safety device which is normally interposed between the hammer and its bed to prevent the descent of the hammer upon the bed.

7. The combination of a drop-hammer, a driving-wheel, a crank-shaft, a clutch comprising members affixed respectively to the said wheel and shaft and organized substantially as described to prevent backward rotation of the shaft and to permit the shaft to rotate forward more rapidly than the wheel, connections such as a crank and a flexible strap between the crank-shaft and hammer said connections, clutch, and crank-shaft acting to raise the hammer during a part of the rotation of said shaft and to release the hammer during another part of said rotation, a stop which automatically arrests the crank-shaft and makes the clutch inoperative when the hammer is raised, a movable safety device which is normally interposed between the hammer and its bed to prevent the descent of the hammer upon the bed, and a detent which holds said guard out of the path of the hammer when the guard is displaced by the operator.

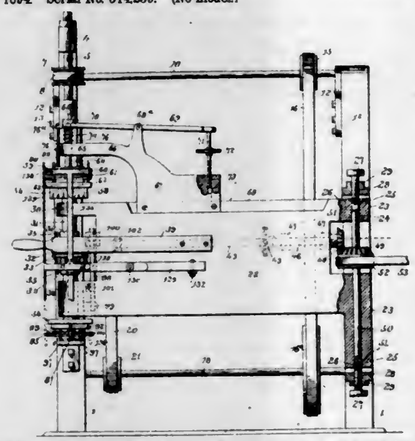
8. The combination of a drop-hammer, a driving-wheel, a crank-shaft, a clutch comprising members affixed respectively to the said wheel and shaft and organized substantially as described to prevent backward rotation of the shaft and to permit the shaft to rotate forward more rapidly than the wheel, connections such as a crank and a flexible strap between the crank-shaft and hammer said connections, clutch, and crank-shaft acting to raise the hammer during a part of the rotation of said shaft and to release the hammer during another part of said rotation, a safety device which is normally interposed between the hammer and its bed, a stop adapted to arrest the crank-shaft and make the clutch inoperative when the hammer is raised, and connections between said safety device and stop whereby the stop is locked when the safety device is in its operative position.

9. The combination of a drop-hammer, a driving-wheel, a crank-shaft, a clutch comprising members affixed respectively to the said wheel and shaft and organized substantially as described to prevent backward rotation of the shaft and to permit the shaft to rotate forward more rapidly than the wheel, connections such as a crank and a flexible strap between the crank-shaft and hammer said connections, clutch, and crank-shaft acting to raise the hammer during a part of the rotation of said shaft and to release the hammer during another part of said rotation, a safety device which is normally interposed between the hammer and its bed, a stop adapted to arrest the crank-shaft and make the clutch inoperative when the hammer is raised, connections between said safety device and stop whereby the stop is locked when the safety device is in its operative position, a detent which holds the safety device out of the path of the hammer when the safety device is displaced by the operator, and automatic means whereby the safety device is released and caused to lock the detent at a given point in the rotation of the crank-shaft.

543,303. METHOD OF FINISHING METALS. DANIEL J. HURLEY, New Haven, Conn., assignor to the New Haven Clock Company, same place. Filed Dec. 8, 1894. Serial No. 531,235. (No specimens.)

Claim.—A method of finishing metals in similitude of smoked pearl, consisting in first applying to the metal a body coating of paint, then in subjecting said body coating to the action of a smoking flame before it is quite dry, and then varnishing and finishing the smoked surface, substantially as set forth.

543,304. SOLE-ROUNDING MACHINE. FREDERICK W. KALLUSCH and FREDERICK M. JURUICK, Rochester, N. Y. Filed June 11, 1894. Serial No. 514,259. (No model.)



Claim.—1. In a cutting or rounding machine for soles and heels, the combination of a fixedly positioned rotary cutter, a pattern roller removably supported in axial alignment with and below the cutter, a vertically arranged table shaft, a rest table for blanks adjustably mounted on the upper end of said table shaft, said rest table being adapted to be adjusted independently of the shaft and at right angles thereto, a pattern plate connected to the end of the table shaft opposite the rest table for blanks and having a corresponding adjustment to said rest table independently of and at right angles to the length of the table shaft, and an adjustable gage frame adapted to contact with the pattern plate and the blanks on the rest table to align the same, substantially as set forth.

2. In a rounding machine for soles and heels, the combination with the frame or stand and the rotary cutter; of a swinging side arm pivotally connected at one end to said frame or stand, the vertical table shaft journaled at the free end of the side arm and carrying a rest table at its upper end and a pattern plate at its lower end, the pattern roller supported in axial alignment with the cutter, separate gear wheels mounted on said table shaft, and a combined gear and lock device adapted to connect with either of said wheels to provide for a complete or half revolution thereof, substantially as set forth.

3. In a rounding machine for soles and heels, the combination with the frame or stand and the rotary cutter; of a swinging side arm supported at one side of said frame or stand, a vertical table shaft journaled at the free end of said side arm and carrying a rest table at one end and a pattern plate at the opposite end, interchangeable pattern rollers, separate worm gear wheels adjustably mounted on said table shaft to turn therewith, one of said wheels being provided with diametrically opposite lock notches and the other of said wheels being provided with a lock notch at one point, a worm shaft adjustably supported at one side of said side arm to engage either of said worm gear wheels, and a spring handle arm connected with said worm shaft and having a lock point or stud adapted to normally engage the lock notches of either one of said worm gear wheels when said worm shaft is held out of gear therewith, substantially as set forth.

4. In a rounding machine for soles and heels, the combination with the frame or stand and the rotary cutter; of a swinging side arm supported at one side of the frame or stand, the vertical table shaft journaled at the free end of said side arm and carrying a rest table and a pattern, separate worm gear wheels adjustably mounted on said table shaft, one of said wheels being provided with diametrically opposite lock notches and the other wheel being provided with a similar notch at one point, a short operating shaft journaled in fixed bearings at one side of the side arm, an adjustable worm shaft universally jointed at one end to said operating shaft and provided at its other end with a worm adapted to engage either of said worm wheels, a spring handle arm attached at one end to the said side arm and provided with a lock point or stud adapted to normally engage the lock notches of either of said worm wheels, and a link bar connecting said spring handle arm and said worm shaft, substantially as set forth.

5. In a rounding machine for soles and heels, the combination of the frame or stand having off-standing bracket arms projected from the front side thereof, the rotary cutter, a swinging side arm provided at one end with opposed pivot collars provided with bearing openings or perforations therein, a combined drive and pivot shaft journaled in the bearing openings or perforations of said pivot collars and provided with pointed pivot sockets at its upper and lower ends, pointed pivot screws arranged to work in said off-standing bracket arms and to engage in the pointed pivot sockets of said shaft to pivotally support one end of said swinging side arm, the table shaft journaled at the other free end of said side arm and carrying a table for blanks and a pattern, and gearing connections between said combined drive and pivot shaft and said table shaft, substantially as set forth.

6. In a rounding machine for soles and heels, the combination with the frame or stand, and the rotary cutter; of the side arm pivotally supported at one side of the frame or stand, the pattern roller, a vertical table shaft mounted at the swinging end of the side arm and provided at its upper and lower ends with right angularly disposed grooved head plates, a rest table having a tongue adjustably sliding in the groove of the head plate at the upper end of the shaft, a stud plate having a tongue adjustably sliding in the groove of the head plate at the lower end of the table shaft, and a pattern plate detachably fastened to said stud plate, substantially as set forth.

7. In a rounding machine for soles and heels, the combination with the frame or stand and the vertically arranged rotary cutter; of the swinging side arm, the pattern roller, a vertical table shaft journaled at the swinging end of said side arm and carrying a rest table at its upper end and at its lower end provided with a grooved head plate, a stud plate adjustably connected with said grooved head plate and provided with a depending attaching stud having a threaded opening and engaging pins at both sides of said opening, the pattern plate having a central screw opening and stud openings adapted to fit over said pins, and a clamping screw arranged to pass through the screw opening of the pattern plate and to engage the threaded opening of said stud, substantially as set forth.

8. In a rounding machine of the class described, the combination with the swinging support and the vertical table shaft journaled on said support and carrying a table at its upper end, of a clamp head mounted for a longitudinal adjustment on said support, a normally spring elevated clamp spindle arranged for support on said adjustable clamp head and carrying a clamp plate at its lower end disposed over said table, and an adjusting device mounted on said clamp head and connected with said clamp spindle, substantially as set forth.

9. In a rounding machine for soles and heels the combination with the swinging support having a tongue at its upper edge, and the vertical table shaft journaled at one end of said swinging support; of the adjustable clamp head fitted on the tongue of said swinging support and having a bracket arm adapted to extend over the table of

said shaft, a normally spring elevated clamp spindle mounted in said bracket arm and carrying at its lower end a clamp plate, an adjustable clamp lever mounted on said clamp head and connected at one end with said clamp spindle, and an adjusting screw connected with the other end of said lever, substantially as set forth.

10. In a rounding machine for soles and heels, the combination with the frame or stand and the vertically disposed rotary cutter; of the vertical table shaft supported at one side of the frame or stand, and a segmental edge clamp adjustably supported in position at the front side of the rotary cutter above the plane of the upper end of the table shaft, substantially as set forth.

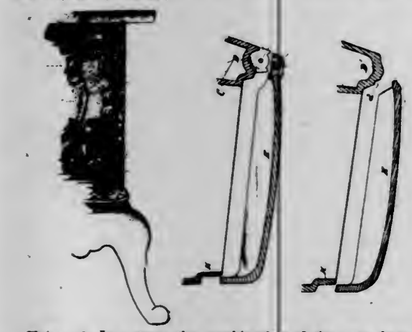
11. In a rounding machine for soles and heels, the combination with the frame or stand and a vertically disposed rotary cutter; of an adjustable table shaft carrying a table at its upper end, a clamp for blanks arranged above the table, and a swinging segmental edge clamp supported on the frame or stand at the front side of the rotary cutter above the table of said table shaft, substantially as set forth.

12. In a rounding machine for soles and heels the combination with the frame or stand and the vertically disposed rotary cutter therein; of the vertical adjustable table shaft carrying a table at its upper end, parallel supporting rods attached at their upper ends to the frame or stand at opposite sides of the rotary cutter, a pair of segmental clamp plates pivotally connected at one end to one of said rods and provided with hooks at the other end adapted to detachably engage the other of said rods, guide rods attached at their lower ends to the lower of said plates and passing through perforations in the upper plate, brace plates connected at one end to the upper ends of the guide rods and at their other ends to said supporting rods, one of said brace plates being provided with a hook at the end engaging one of said supporting rods, and clamp springs arranged on the guide rods between said brace plates and the upper clamp plate, substantially as set forth.

13. In a rounding machine for soles and heels, the combination with the vertical table shaft having a table at one end and a pattern at the other end, and a support for said shaft; of a gage frame comprising a sectional extensible supporting arm pivotally and adjustably connected at one end to the support for the table shaft and provided at its other end with a bearing collar, an upright gage rod mounted for a turning self-adjustment in said bearing collar and provided at its upper and lower ends above and below said supporting arm with T-shaped gage arms extending from both sides thereof, and a supplemental gage arm adjustably connected at its inner end to said supporting arm near the bearing collar and provided at its outer end with an upwardly and downwardly extending gage bar, substantially as set forth.

14. The herein-described pattern plate for sole and heel rounding machines provided in the toe and heel portions thereof with longitudinally disposed guide slots, opposite pairs of toe and heel plates arranged on the toe and heel portions thereof, stud pins pivotally connecting the outer ends of said plates and working in said slots, a pair of adjusting links pivotally connected at one end to the inner ends of said plates and at their other ends to a common pivot, and clamp screws arranged to work between the plates of each pair to clamp them in their adjusted positions, substantially as set forth.

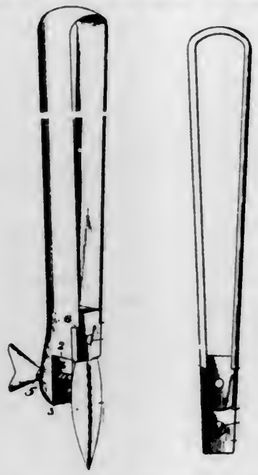
543,305. STOVE. WILLIAM J. KEEP, Detroit, Mich., assignor to the Michigan Stove Company, of Michigan. Filed May 31, 1893. Serial No. 476,046. (No model.)



Claim.—1. In a stove, the combination of the rear door post, having alternate concave and convex portions, and a door having rearwardly extended hollow projections adapted to engage in the concave portions of the door post, and perforated pintle ledges, for the reception of the hinge pintles, substantially as described.

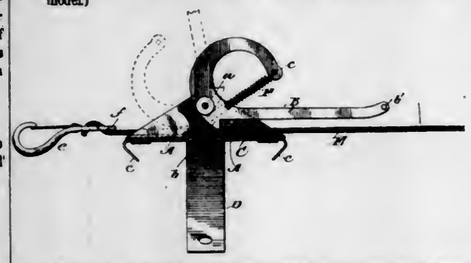
2. In combination with an oven door, a door frame having an irregular seat for said door; the said seat being at the rear substantially flush with the main surface of the door, and the top and front being removed back and the top and front of the door being dished or bent inward to correspond therewith, substantially as and for the purpose specified.

543,306. CAN-OPENER. HOWARD J. KELDER, Ellenville, N. Y. Filed May 4, 1895. Serial No. 548,130. (No model.)



Claim.—In a can opener, the handle thereof provided with a downward extension formed integrally therewith and projecting below the bearing shoulder of the device, a pointed blade disposed opposite to said downward extension and secured to the handle, and a rounded shoulder arranged at the lower end of the handle between said blade and downward extension, in combination with an adjustable thumb screw operating through a threaded perforation in said downward extension, whereby the distance which said blade cuts from the edge of the can may be regulated, substantially as specified.

543,307. HORSE CHECKING OR UNCHECKING DEVICE. FELIX H. KITTRELL, Loco, Tenn. Filed Apr. 24, 1895. Serial No. 546,998. (No model.)



Claim.—1. A checking and unchecking device comprising a frame plate, a fulcrumed cam lever, a strap arranged to be pinched beneath the cam, and a spring arranged with one end connected to the lever in rear of its fulcrum, and its other end anchored to the frame plate in front of the lever's fulcrum to cause said spring to move from one side of the fulcrum of the cam to the other to positively strain the cam in either position substantially as and for the purposes described.

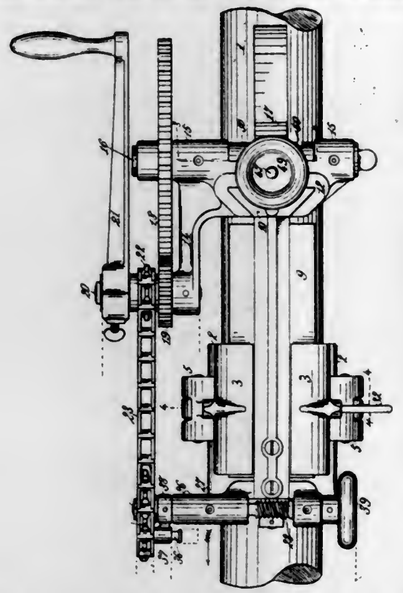
2. A checking and unchecking device comprising a frame plate with inclined front edges, a cam lever fulcrumed between the same, and a check strap passing beneath the cam lever and provided in front of the same with a cross bar extending across and adapted to ride up on the inclined edges of the frame plate and throw back the cam lever, substantially as and for the purpose described.

3. The combination of the frame plate having triangular sides; a cam lever fulcrumed between them and having its front end curved over its fulcrum, and its rear end extended straight and provided with a cross bar, and a cam surface beneath its fulcrum; one or more springs fastened to the frame plate connected to the rearwardly curved front end of the lever, and a strap substantially as shown and described.

543,308. PAINT COMPOUND. PAUL KWARNEBERG, Chicago, Ill. Filed May 5, 1894. Serial No. 510,423. (No specimens.)

Claim.—A paint mixture or compound consisting of boiled linseed oil, litharge, turpentine, stearine, japan, and sugar of lead, substantially in the proportions specified.

543,309. MACHINE FOR CUTTING KEY-SEATS. LEON LAKE and DAVID LAKE, Philadelphia, Pa.; said David Lake assignor to Hattie I. Lake, same place. Filed Oct. 1, 1894. Serial No. 524,618. (No model.)



Claim.—1. In a portable machine for cutting key-seats in shafting, the combination with a supporting base, of means for clamping the same upon a shaft, a slide movable in said base and carrying the cutter-shaft, an independent yoke and set screw forming a vertically adjustable attachment on brackets on the slide, a longitudinal threaded shaft mounted on the slide, a vertically movable feed nut, and means for throwing said feed-nut out of and into mesh with the threaded shaft, substantially as described.

2. In a portable machine for cutting key-seats in shafting, the combination with a supporting base of a yoke detachably connected thereto, a set-screw tapped through the yoke to bear against the shaft, a slide carrying the cutter-shaft, and an independent yoke and set-screw forming a vertically adjustable attachment on brackets of the slide, substantially as described.

3. In a machine for cutting key-seats in shafting, the combination with a supporting base, of a slide movable in jaws forming part of said base, a cutter-shaft vertically adjustable in jaws on the end of said slide, a threaded shaft in bearings on said slide, a vertically movable feed-nut arranged in a seat in the base, means for moving said feed-nut, a lever having its point lying in a recess in said feed-nut, and gearing connecting the cutter shaft with mechanism for operating the threaded shaft, substantially as described.

4. In a portable machine for cutting key-seats in shafting, the combination with a supporting base and with means for clamping the same to the shaft, of a slide carrying the cutter-shaft, a longitudinal threaded shaft in bearings on said slide, a vertically movable feed-nut arranged in a seat on the supporting-base, a lever having its point lying in a recess in said feed-nut, and a spring-pressed bolt engaging a notch in the same, substantially as described.

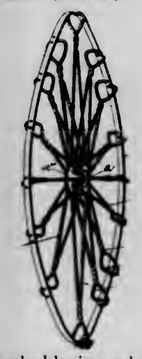
5. In a portable machine for cutting key-seats in shafting, the combination with a supporting-base of a yoke having an extension link pivotally connected therewith, a cross brace having its ends connected to said link and to the opposite side of the yoke, and a set-screw tapped through the middle part of the yoke and lying in a seat in the cross-brace, its end abutting against the shaft, substantially as described.

543,310. VEHICLE-WHEEL. GODFRIED LAUBE, Huron, S. D., assignor of one-half to Joseph Hymans, Del Rio, Tex. Filed Mar. 24, 1894. Serial No. 504,911. (No model.)

Claim.—In a vehicle wheel, the combination with the felly, having a central groove and formed with outwardly extending flanges, the outer edges of said flanges being curved to form a tread should the tire enter a rut, and a tire on said felly as and for the purpose specified.

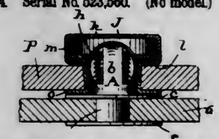


543,311. VEHICLE-WHEEL. GODFRIED LAUBE, Huron, S. D., assignor of one-half to Joseph Hymans, Del Rio, Tex. Filed Mar. 24, 1894. Serial No. 504,913. (No model.)



Claim.—A vehicle wheel having spokes composed of duplicate wires twisted together with diverging extremities, which are bent inwardly near the felly to form shoulders, substantially as described.

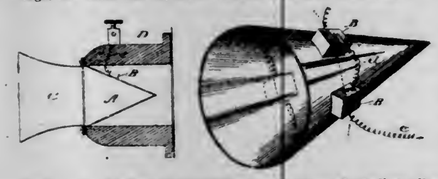
543,312. BUTTON. ORMSBY L. MAHON, Baltimore, Md. Filed Sept. 20, 1894. Serial No. 523,560. (No model.)



Claim.—1. In a separable button, a spring stud having a shank, D, provided at one end with a flange, *c*; a dome-shell having spring bows, *b*, a ring-shaped flange, *c*, and a collar, *f*, uniting said spring-bows and flange,—the shell, bows and collar all being integral, and said collar being contracted to pinch or grip the shank and thus secure the shell and shank together; in combination with a socket into which the spring stud enters.

2. As a new article of manufacture, a separable button comprising a spring stud member having a dome-shell provided with spring-bows, *b*, which at their base are integral with a collar, *f*, having a ring-shaped flange, *c*, and a shank, D, provided with annular beads or grooves and at one end a flange, *e*, and said shank secured to the dome-shell by contracting the said collar to pinch or grip said beads or grooves on the shank; and an anvilless socket member having a cap-head, J, provided with an inturned base-flange, *l*, and a flaring eyelet, I, whose flared end is in the cap-head and expanded and flattened down so as to engage said inturned base-flange, and said socket having no anvil but only an unfilled space between the said flattened end of the eyelet and the top of the cap-head.

543,313. TELEPHONE-TRANSMITTER. ZORAH E. PATRICK, Chicago, Ill. Filed Jan. 18, 1895. Serial No. 535,412. (No model.)



Claim.—1. A telephone transmitter, consisting of a hollow vibratory shell, a body of variable resistance mounted rigidly upon the side walls of said shells, and an electric circuit passing through the body of variable resistance, the said shell serving to support the body of variable resistance, and transmit modified mechanical vibrations thereto, but being wholly without the electric circuit substantially as and for the purpose described.

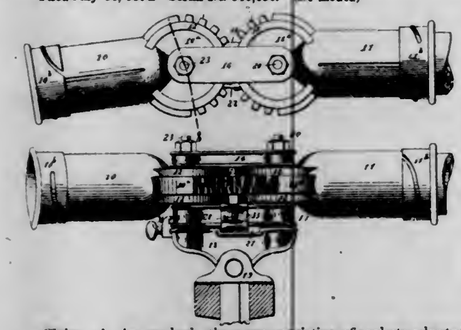
2. A telephone transmitter, consisting of a hollow conical shell, a body of variable resistance mounted rigidly upon the side walls of the cone, and an electric circuit passing through the body of variable resistance, the said cone serving to support the body of variable resistance and transmit modified mechanical vibrations thereto, but being wholly without the electric circuit substantially as and for the purpose described.

3. A telephone transmitter, consisting of a hollow conical shell, a box containing electrodes and an interposed body of variable resistance mounted rigidly upon the side walls of the cone, and an electric circuit passing through the electrodes and body of variable resistance, the said cone serving to support the body of variable resistance and transmit modified mechanical vibrations thereto, but being wholly without the electric circuit substantially as and for the purpose described.

4. A telephone transmitter, consisting of the combination with an inclosing case; of a conical shell having its base fastened to the front of the case, a body of variable resistance fixed rigidly upon the side wall of the conical shell and within the inclosing case, and an electrical circuit passing through the body of variable resistance substantially as and for the purpose described.

5. A telephone transmitter, consisting of the combination with an inclosing case; of a conical shell having its base fastened to the front of the case, a body of variable resistance fixed rigidly upon the side wall of the conical shell and within the inclosing case, an electrical circuit passing through the body of variable resistance, a flanged mouth piece arranged in front of the conical shell, and a ring with clamp screws passing through and securing both the mouth piece and conical shell to the case substantially as and for the purpose described.

543,314. OAR-LOCK. JACOB PETERSON, Two Harbors, Minn. Filed July 31, 1894. Serial No. 519,068. (No model.)



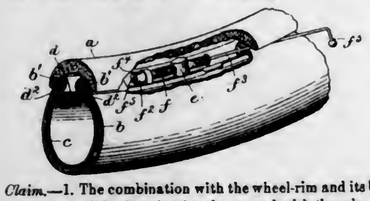
Claim.—1. An oar lock, the same consisting of sockets adapted to receive sections of an oar, toothed sectors connected with the sockets, said sectors being in mesh, a horizontally swinging frame in which the sectors are pivoted, a vertically swinging base upon which the sector frame is pivotally supported, and a locking device whereby the sectors may be held rigidly connected and their frame released to swing on the base, or the frame locked to the rocking base, and the sectors released to turn on their axes substantially as shown and described.

2. In an oar lock, the combination, with a horizontally swinging frame, toothed and meshing sectors pivoted in the said frame, and sockets secured to the said sectors and adapted to receive sections of an oar, of a vertically swinging base adapted for attachment to the gunwale of a boat, and to which said frame is pivoted, a latch mounted on the frame and adapted to enter recesses in the sectors and rigidly connect the same, and having a handle provided with a locking device, capable of rigidly connecting the frame with the rocking base, substantially as and for the purpose specified.

3. In an oar lock, the combination, with a frame, comprising a top and a bottom plate, the bottom plate being provided with a recess in its under face and a keeper at one of its ends, toothed sectors pivoted between the plate frames, the teeth of the sectors being in mesh, each sector being provided with a bottom flange at the rear of its teeth, and a socket adapted to receive a section of an oar, of a rocking base provided with a keeper, a pivotal connection between the sector frame and the base, a latch adapted to enter recesses produced in the flanges of the sectors, and a handle connected with the said latch and adapted for locking engagement with the keepers in the bottom plate of the frame and in the rocking base, substantially as and for the purpose set forth.

4. The combination with the vertically rocking base adapted for connection with the gunwale and having an undercut recess 22 in the upper face of its outer end, of the horizontally swinging frame provided with inner and outer pivot bolts, the latter of which has a T head 21 below the frame and mounted removably in the saw recess 22 to serve as the axis of said frame, segments pivoting on said bolts and provided with interlocking teeth, and a locking device mounted on the horizontally swinging frame and adapted to lock the segments together and simultaneously unlock the swinging frame from the rocking base to permit it to swing on the base, or vice versa, substantially as set forth.

543,315. WHEEL-TIRE. LUCIUS J. PHELPS, Belmont, Mass. Filed Feb. 5, 1895. Serial No. 537,411. (No model.)

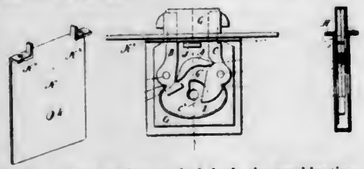


Claim.—1. The combination with the wheel-rim and its U-shaped tire, of a contractible clamping-band engaged with the edge-portions of the tire and provided with a fixed nut, a nut-engaging adjusting screw having a socket, and a longitudinally movable flexible operating-rod or screw-driver extending from the screw to the exterior of the wheel.

2. A flexible clamping-band formed to engage the marginal portions of a tire and provided with a fixed nut, a tubular adjusting-screw engaged with said nut, and a flexible operating-rod longitudinally movable in said tubular screw and provided with a head formed to engage and rotate the screw.

3. The combination with the wheel rim or felly and its U shaped tire having marginal lips or beads of the clamping-band, having flanges engaged with said lips, and transverse corrugations between said flanges.

543,316. DESK-LOCK. JAMES ROCHE, Terryville, Conn., assignor to the Eagle Lock Company, same place. Filed May 6, 1895. Serial No. 548,277. (No model.)

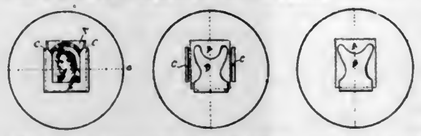


Claim.—1. In a cabinet or desk lock, the combination with two hooked locking-bolts, of a doubly pointed sliding tumbler interposed between the said bolts, and engaging with them at points on opposite sides of their pivots respectively, whereby motion imparted to one bolt will be transmitted to the other, one of the bolts being constructed with an operating face for engagement by a key, substantially as described.

2. In a cabinet-lock, the combination with two pivotal key-bolts, a housing receiving the upper ends of the said bolts, a spring applied to the lower ends of the bolts below their pivotal points, and exerting a constant effort to throw their hooked ends outward, and a doubly pointed, sliding tumbler interposed between the bolts and taking into notches formed therein at points above and below the studs, on which they are pivoted respectively, one of the bolts being constructed with a depending operating face for engagement by a key, substantially as described.

3. In a cabinet lock, the combination with the face plate thereof, of a housing projecting through the said plate and open at its ends, hooked locking bolts having their hooked ends extending into the said housing and projecting from the ends thereof, means for operating the said bolts, and a case-plate secured to the face-plate, and provided with two outwardly projecting guard fingers extending through the housing-opening in the face-plate and into the open ends of the housing, which they partially close, and guard against the insertion of picking tools thereinto, substantially as described.

543,317. WATCHCASE. WILLIAM M. RUSH, Jr., St. Joseph, Mo. Filed Oct. 22, 1894. Serial No. 526,624. (No model.)



Claim.—1. As a new article of manufacture, a watch case having, inside of the same and attached to one of its lids or disks, a holder for stamps, consisting of a thin piece of material overlapping and retaining the stamps against lateral displacement substantially as and for the purpose described.

2. A watch case provided with a stamp holder in one of its lids or disks, and a corresponding recess or depression in the adjacent lid or disk to accommodate the stamp holder, substantially as shown and described.

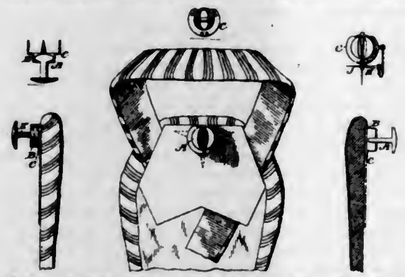
3. As a new article of manufacture, a watch case having, inside of the same and attached to one of its lids or disks, a holder for stamps, consisting of a thin piece of material fixed to the lid or disk in central position and overlapping and retaining the stamps against lateral displacement substantially as shown and described.

4. As a new article of manufacture, a watch case having, inside of the same and attached to one of its lids or disks, a holder for stamps, consisting of a thin piece of elastic or springing material fixed to the lid or disk in central position and overlapping and retaining the stamps against lateral displacement substantially as shown and described.

5. As a new article of manufacture, a watch case having, inside of the same and attached to one of its lids or disks, a holder for stamps, consisting of a thin piece of elastic or springing material fixed to the lid or disk in central position and overlapping and retaining the stamps, and side flanges on each side of said holder, substantially as and for the purpose described.

6. As a new article of manufacture, a watch case having, inside of the same and attached to one of its lids or disks in central position, an overlapping stamp holder, and having this same lid or disk recessed or depressed at a point opposite such holder substantially as and for the purpose described.

543,318. CRAVAT-FASTENING. ERNST SCHANNEL, Buda-Pesth, Austria-Hungary. Filed Feb. 17, 1894. Serial No. 500,532. (No model.)



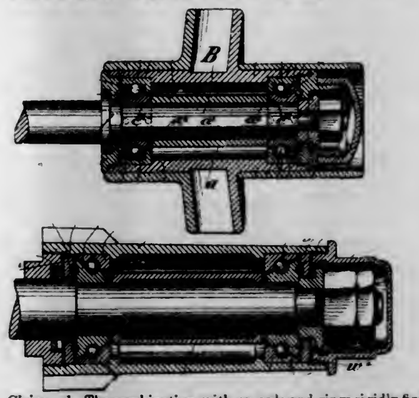
Claim.—An improved necktie fastener consisting of a collar-stud having a shank with a cross-head tapered at each end, and a closed circular case or barrel attached to the necktie, said case being of an interior diameter exactly equal to the length of said cross-head, and being formed in its top or closing plate with a diametrical slot to receive the cross-head, and of sufficient size to allow turning of the barrel when oblique to the stud, the engagement of the cross-head with the walls of the barrel preventing lateral movement of the latter.

543,319. PNEUMATIC TIRE. JULIUS SCHIPKOWSKY, Milwaukee, Wis., assignor of one-half to Walter P. Hatch, same place. Filed July 14, 1894. Serial No. 517,620. (No model.)

Claim.—In a pneumatic tire, the outer case or cover thereof having a diagonal split extending longitudinally around its inner face and forming overlapping edges and thickened adjacent to said split in order to afford sufficient body and stiffness to render the tire self-supporting, and a series of fastening plates arranged in pairs throughout the length of said case or cover, the members of each pair being oppositely disposed to each other and riveted to the thickened inner face of the tire upon each side of the split therein and slightly removed therefrom, each of said fastening plates being made from sheet metal having a perforated base portion adapting it to be riveted to said outer case or cover and also having a perpendicular portion disposed at a right angle to the base and extending inwardly toward the rim, said perpendicular portion being slotted to engage teeth on the rim, in combination with a bicycle wheel rim formed from a strip of sheet metal having its opposite edges overturned and disposed outwardly and extending in parallel relation to the main portion or body of the rim, said bent over portions or edges being substantially of U-shape in cross section and projecting inwardly toward each other sufficiently to form a seat for the tire, and a series of projections or teeth formed integrally with the inwardly projecting edges of the rim and disposed oppositely to each other, said projections or teeth being formed at regular intervals throughout the length of the rim and adapted to engage the fastening plates carried by the outer case or cover of the tire, substantially as and for the purpose specified.



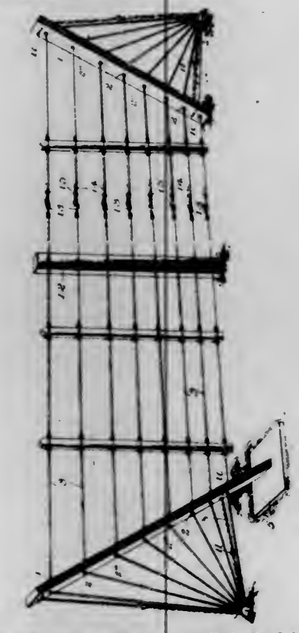
543,320. AXLE-BOX FOR CARRIAGE-WHEELS. HERMANN SCHUPPISER, Zurich, Switzerland, assignor to Kugler & Co., same place. Filed Oct. 29, 1894. Serial No. 527,282. (No model.)



Claim.—1. The combination, with an axle and rings rigidly fixed thereon, provided with peripheral grooves and with annular grooves in their outer faces, of a hub, rings fixed inside of the hub and provided with grooves registering with the peripheral grooves of the axle-rings, additional rings secured in the hub and provided with grooves in their inner flat faces registering with the grooves in the adjacent faces of the axle-rings, a series of balls received in the registering-grooves of the axle and hub-rings, and a series of auxiliary balls received in the registering-grooves of the axle rings and additional rings, substantially as set forth.

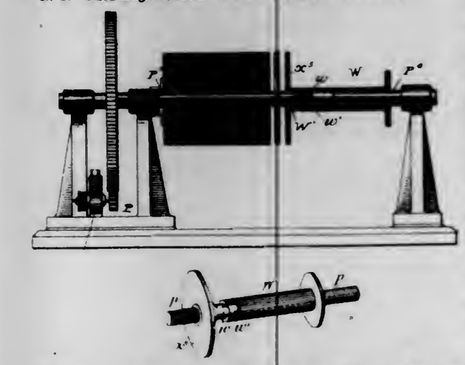
2. The combination, with an axle and triangular rings fixed thereon and provided with grooves in their ends and in their inclined outer faces, of a hub, rings fixed inside of the hub and provided with grooves in their inclined faces registering with the grooves of the axle-rings, additional rings secured in said hub and provided with grooves in their inner faces registering with the grooves in the ends of the axle-rings, a series of balls received in the registering grooves of the axle rings and hub-rings, and a series of auxiliary balls received in the registering grooves of the axle rings and additional rings, substantially as set forth.

543,321. FENCE. EDMOND M. SHAKFFER, Amberly, Va. Filed Feb. 14, 1895. Serial No. 538,402. (No model.)



Claim.—The combination with an outwardly inclined fence post provided with perforations, horizontal fence wires passing through the perforations and converging downward beyond the end post, a common anchor receiving and holding the terminals of the wires, and a base arranged beneath and supporting the fence post and adapted to hold the same against downward movement, of the diverging braces extending from the anchor to the top and bottom of the post and permanently secured at their outer ends to the anchor, and at their inner ends to the post and holding the latter in its inclined position, substantially as and for the purpose described.

543,322. RAILWAY-SIGNAL. JOSEPH R. STEWART, Haverstraw, N. Y. Filed Aug. 24, 1894. Serial No. 521,233. (No model.)



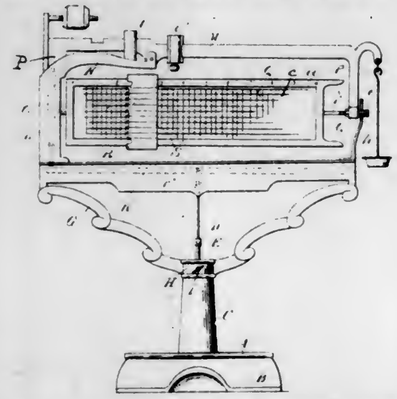
Claim.—1. An electro-magnetic clutch, comprising a shaft, a portion of which is of magnetic material and forms the core of the magnet of the clutch, a coil or helix mounted thereon, and a winding drum also loosely mounted on said shaft, a portion of which drum is of magnetic material, substantially as described.

2. An electro-magnetic clutch, comprising a shaft, a portion of which is of magnetic material and forms the core of the magnet of the clutch, a coil or helix mounted thereon, the shaft being extended to form an extended pole-piece, and a drum, also mounted on said shaft, a portion of which is of magnetic material and operates as an armature for the pole-piece, substantially as described.

3. An electro-magnetic clutch, comprising a shaft, a part of which is of magnetic material and part of non-magnetic material, a coil loosely mounted on the magnetic portion of the shaft which portion forms the core of the magnet of the clutch, and a winding drum loosely mounted on the non-magnetic portion of the shaft, the drum being provided with magnetic material to form an armature, substantially as described.

4. In an electro-magnetic clutch, the combination with the shaft composed of magnetic material and non-magnetic material, of a coil or helix loosely mounted on the magnetic portion of the shaft which portion forms the core of the magnet of the clutch, an extended pole-piece for said magnetic portion of the shaft, a winding drum loosely mounted on the non-magnetic portion of the shaft, a section or collar having magnetic material forming an armature, and means for connecting the section and drum so that they will rotate together, substantially as described.

543,323. COMPUTING-SCALE. WALTER F. STIMPSON, Milan, Mich. Filed Sept. 25, 1894. Serial No. 524,107. (No model.)



Claim.—1. In a computing scale, the combination with the platform and base, of a pillar on the base, the supporting arms G, a sleeve connecting the lower ends of the arms and loosely fitted on the pillar, means for securing the sleeve in position, the shelf F supported on the arms, the shelf lever K, the rod D having a swivel section, and connected with the lever K and the platform, the tare beam M supported on the shelf, and the pivotally supported computing panel Q' carried by the tare beam, substantially as described.

2. In a computing scale, the combination with the platform, of the supporting arm O at one end thereof having the forwardly extending arm N at a point substantially midway between the center and end, the tare beam pivotally supported on the arm N and having depending projections at opposite ends, the computing panel pivotally secured at the center of its ends to the projections on the beam, means for limiting the movement of the beam, and the poise R on the panel, substantially as described.

3. In a computing scale, the combination with the tare beam, of a computing panel, pivotal connections between the beam and panel comprising pins loosely engaging projections on the beam, and a fixed slotted standard through which one of the pins passes, substantially as described.

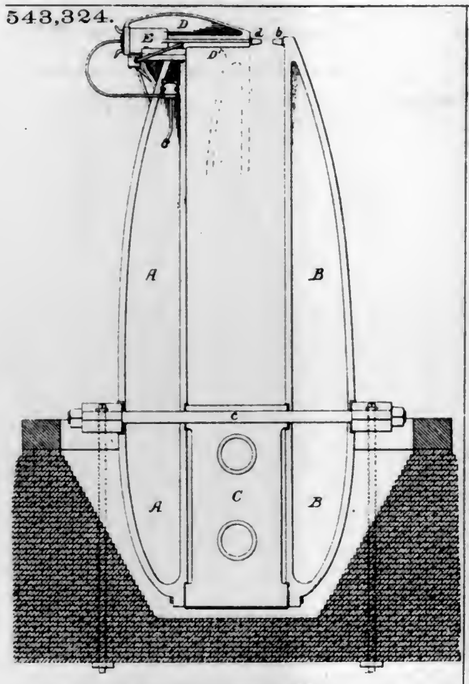
4. The combination with a tare beam pivotally supported intermediate its ends and having vertical end extensions, and a computing panel extending on both sides of the pivot of the tare beam and pivoted in the extensions, substantially as described.

5. In a price scale, the weighing panel consisting of an open frame pivoted centrally at the ends, and having the weight indications on both sides of both edges, a panel having marked thereon computations on both sides, detachably secured in the frame, and a double poise sliding on the frame and having on both faces a progressive series of price per pound marks, substantially as described.

543,324. RIVETING-MACHINE. SAMUEL M. VAUCLAIN, Philadelphia, Pa. Filed Mar. 23, 1893. Serial No. 467,269. (No model.)

Claim.—The combination of the standards A and B arranged a distance apart to allow the fire box of a locomotive boiler to swing between them, a spacing block C mounted between the standards, a bolt securing the standards together, an anvil on the standard B, a riveting head D on the standard A and overhanging the space between the standards A and B to a point near the anvil, riveting mechanism in said head, the overhanging portion of the head being flat on the under side, substantially as and for the purpose set forth.

543,324.



543,325. CANNON-PINION FOR WATCHES. JACOB S. BAKER, Glen Rock, and ALLEN J. BAKER, Stewartstown, Pa. Filed Apr. 9, 1895. Serial No. 545,055. (No model.)



Claim.—The center arbor; a sleeve on the arbor and split at one end; a cannon pinion around said split sleeve; and a screw device engaging the extremity of the arbor to retain both the cannon pinion and sleeve.

543,326. PROCESS OF PRODUCING POTASSIUM CHLORATE. KARL J. BAYER, Woburn, Mass. Filed Apr. 3, 1895. Serial No. 544,255. (No specimens.)

Claim.—1. The process herein described of producing potassium chlorate, which consists in mixing zinc oxid and water with potassium chlorid, and subjecting the solution to the action of chlorin so as to produce directly potassium chlorate and zinc chlorid, substantially as set forth.

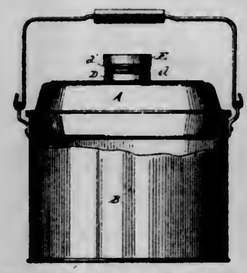
2. The process herein described of producing potassium chlorate, which consists in mixing zinc oxid and water with potassium chlorid, heating the solution to near the boiling temperature and then subjecting the heated solution to the action of chlorin so as to produce potassium chlorate and zinc chlorid, substantially as set forth.

3. The process herein described of producing potassium chlorate, which consists in mixing zinc oxid and water with potassium chlorid, heating the solution to near the boiling temperature, subjecting the heated solution to the action of chlorin, separating the potassium chlorate from the liquor by crystallization and concentrating the zinc-chlorid in the remaining liquor, substantially as set forth.

543,327. DINNER-PAIL. CHARLES E. BERTELS, Wilkes-Barré, Pa. Filed Oct. 1, 1894. Serial No. 524,672. (No model.)

Claim.—1. As an improved article of manufacture, a liquid holder, having a collar or neck with means for engaging a cup, a plain annular space above said means, and a flange or shoulder, in combination with a shouldered cup provided with an enlarged lower part and fitted inside of the collar or neck with corresponding means for engaging the latter and a plain annular surface which is in close contact with the collar when the same is closed, substantially as and for the purposes described.

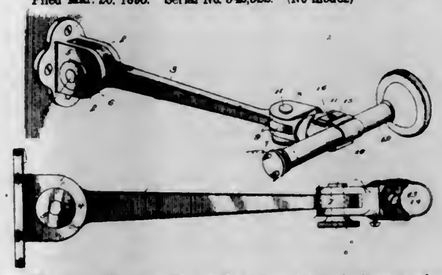
2. As an improved article of manufacture, a liquid holder having a collar or neck with locking means for securing a cup, a plain annular space above said means, and a flange or shoulder, in combination with a cup having a shoulder and an enlarged lower portion, fitted inside of the collar or neck, with corresponding means to engage the latter and a plain annular surface which is in close contact with the collar when the same is closed, substantially as and for the purposes described.



3. As an improved article of manufacture, a liquid holder having a collar or neck with a threaded portion and a plain annular surface above the same, in combination with a cup having a correspondingly threaded portion and a plain surface, the cup having a shoulder and an enlarged lower portion and fitted inside of the collar and the plain surfaces in close contact when the cup or cover is screwed home, substantially as and for the purposes described.

4. As an improved article of manufacture, a liquid holder having a collar or neck with a plain annular surface at the top with a folded or beaded edge, and a cup having a shoulder and an enlarged lower portion and with a like plain surface fitted in the collar and in contact when closed, and the two members being provided with means for locking them together, substantially as and for the purposes described.

543,328. TELEPHONE ATTACHMENT. CHARLES E. BERTELS, Wilkes-Barré, Pa., assignor of one-half to Hedley Pedlar, same place. Filed Mar. 20, 1895. Serial No. 542,522. (No model.)

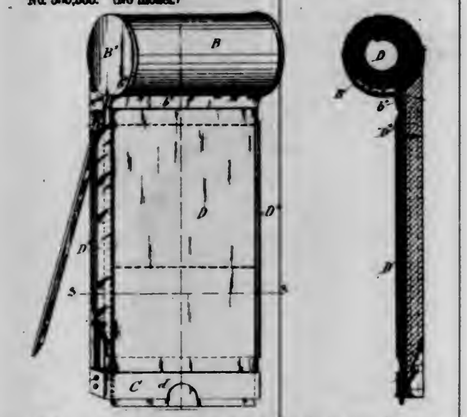


Claim.—1. In an attachment for supporting a telephone receiver, a stationary wall bracket or support, an inner pivoted arm hinged thereto on a horizontal pivot, an outer pivoted arm hinged to the inner arm on a vertical pivot, a swiveled clamping arm having grooves or recesses in opposite sides thereof and journaled to the end of the outer arm on a horizontal axis at right angles to the horizontal pivot of the inner arm, a thin flexible metal band adapted to embrace and accommodate itself to a telephone receiver, and the clamping plate engaging and binding the terminals of said flexible band within the grooves or recesses in the clamping arm, in the manner and substantially as set forth.

2. An attachment for supporting a telephone receiver, comprising a wall bracket, a pivoted and horizontally swinging and adjustable plate secured thereto, a thumb nut for adjusting the angle of said pivoted section and holding the same at any angle, two pivoted arms having a hinged connection with each other and with the hinged section of said wall bracket, a clamping arm swiveled to the end of the outer pivoted arm, a flexible metallic clamping band adapted to embrace and hold a telephone receiver, and the clamping plates for engaging and binding the terminals of said band upon the clamping arm, substantially as specified.

3. An attachment for supporting a telephone receiver, comprising two pivoted arms having a hinged connection with each other and with a stationary wall bracket or support, a clamping arm swiveled to the end of the outer pivoted arm so as to be capable of being revolved relatively thereto and adapted to receive and hold a telephone receiver, and a set screw carried by said clamping arm for holding it at the desired angle, substantially as specified.

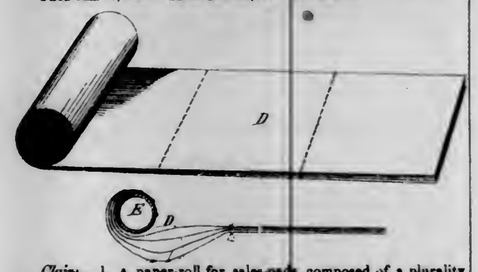
543,329. SALES-PAD. WILLIAM H. BREAKSPEAR, OTTO SPANNAUS, and CHARLES WEBBECKER, New York, N. Y. Filed Jan. 18, 1895. Serial No. 535,336. (No model.)



Claim.—1. A sales-pad, consisting of a foundation-board, an open-ended box or case arranged at one end of said board and provided with a transverse aperture and with a retaining-flange along said aperture, a cover or cap having a flange to compress the box or case and thereby hold the retaining-flange in operative position, and retaining-devices arranged along the sides of the board for clamping the side edges of the carbon-sheets, substantially as set forth.

2. A sales-pad, consisting of a foundation-board, an open ended box or case arranged at one end of said board and provided with a transverse aperture and with a retaining flange along said aperture, a cover or cap having a flange to compress the box or case and thereby hold the retaining-flange in operative position, a transverse retaining-device rigidly fastened at the opposite end of the foundation-board, and retaining-devices arranged along the sides of the board for clamping the side edges of the carbon-sheets, substantially as set forth.

543,330. PAPER-ROLL FOR SALES-PADS. WILLIAM H. BREAKSPEAR, OTTO SPANNAUS, and CHARLES WEBBECKER, New York, N. Y. Filed Jan. 18, 1895. Serial No. 535,336. (No model.)

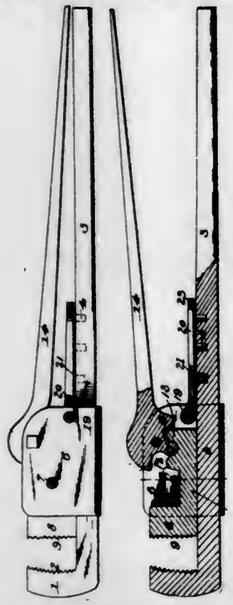


Claim.—1. A paper-roll for sales-pads, composed of a plurality of superposed record-strips printed in blank with the required sales-checks, or other blank forms, said individual layers being set off in such a manner that at the interior of the roll each projects a certain proportionate length beyond the next lower strip, whereby in unwinding the roll the outermost ends of the sales-checks register with each other, substantially as set forth.

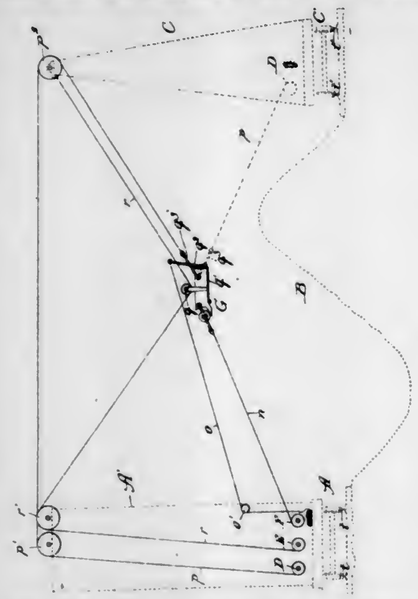
2. A paper-roll for sales-pads, composed of a core, a plurality of superposed record-strips printed in blank with the required sales-checks, or other blank forms, and secured to the core at their inner ends, said individual layers being set off in such a manner that at the interior of the roll each projects a certain proportionate length beyond the next lower strip, whereby in unwinding the roll the outermost ends of the sales-checks register with each other, substantially as set forth.

543,331. PIPE-WRENCH. JAMES C. BURGESS, Yountsville, assignor of three-fourths to Tunis Neading, St. Louis Crossing, Ind. Filed Apr. 26, 1895. Serial No. 547,233. (No model.)

Claim.—The combination with the stationary jaw and the handle formed with holes or recesses, of the slidable frame, the movable jaw, the shank formed integral therewith and located in said frame, the lugs formed integral with said shank, the lever pivoted to said frame and formed with lugs adapted to engage with the lugs of the shank and the pivoted adjusting lever having a pin adapted to engage with the holes in the handle; substantially as described.



543,332. SCRAPER-OPERATING APPARATUS. HENRY G. BUTLER, Kenosha, Wis. Filed Aug. 11, 1894. Serial No. 520,065. (No model.)



Claim.—In an apparatus of the nature set forth, the combination of winding-drums D, E and F on a movable support A carrying a mast A', a tower C on a movable support C' distantly located from the support A, guide-pulleys p' and r' on the mast and a guide-pulley p^3 on said tower, a cable r extending from the drum E over said pulley r' fastened to the tower, a traveling conveyer G suspended on said cable between its ends, a cable p extending from the drum D over said pulleys p' and p^3 and fastened to the conveyer, a cable n connecting the conveyer with the drum F, and a dumping-rope o leading from the conveyer-catch to said support A, the whole being constructed and arranged to operate substantially as described.

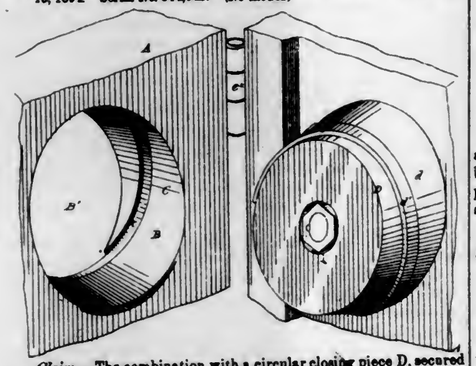
543,333. FOLDING-SEAT CHAIR. SANFORD W. CARTER, Denver, Colo., assignor of one-half to Timothy Edward Donovan, same place. Filed June 12, 1894. Serial No. 514,267. (No model.)



Claim.—1. The combination in a chair having a folding seat, of the standards provided with studs or journals formed with peripheral grooves, the seat arms having downwardly depending brackets provided with ogee shaped flanges forming oval recesses, the half-round boxes, loosely seated in said recesses, and provided with ribs, and the tightening screw passing through said flange and bearing against the lower box, substantially as described.

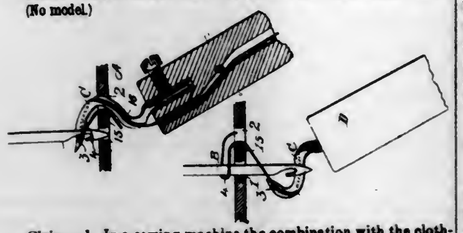
2. The combination, in a folding chair, of the standards formed with studs or journals having peripheral grooves and provided with elastic stop blocks, the seat arms formed with lugs and having downwardly depending brackets, formed with ogee shaped flanges forming oval recesses, the half round boxes loosely seated in said recesses and formed with wedge shaped ribs fitting in said grooves, and the tightening screws passing through said flanges, bearing against the lower box and forcing the upper one into contact with the contracted upper ends of the flanges, substantially as described.

543,334. SAFE. GEORGE B. CAVERT, Albany, N. Y. Filed June 18, 1894. Serial No. 514,945. (No model.)



Claim.—The combination with a circular closing piece D, secured to a revolving journal and working into a corresponding circular opening provided in a wall of a safe, a spiral tongue and a corresponding spiral groove provided respectively with said closing piece and edge portion of said opening, the closing piece holder having with it a bearing within which the journal of the closing piece works, the incline A provided with said bearing, and incline A' provided with said journal, and a locking bolt, locking said closing piece secure with a wall of the safe whereby the former will be held from being turned in relation to the latter, substantially as and for the purposes set forth.

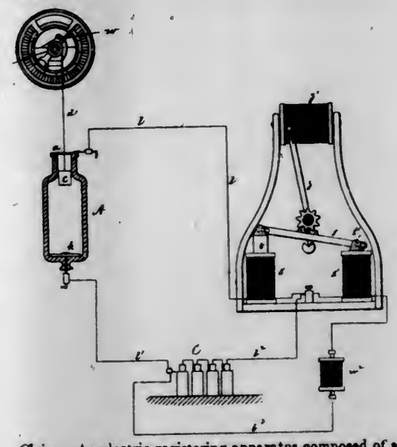
543,335. OVEREDGE SEWING-MACHINE. EMILE CORNELY and ROBERT CORNELY, Paris, France. Filed Oct. 5, 1894. Serial No. 525,145. (No model.)



Claim.—1. In a sewing machine the combination with the cloth-plate, a reciprocatory needle on one side of the cloth plate, a cork-screw shaped or helicoidal eye-pointed thread-carrying needle on the other side thereof, mounted obliquely to the reciprocatory needle and adapted to pierce and carry its thread through the fabric and to wind it around the reciprocatory needle below the cloth-plate, and means for imparting to the helicoidal needle a longitudinal reciprocatory movement and an axial oscillatory movement, substantially as described.

2. In a sewing machine, the combination with a universal feed mechanism, of a reciprocating needle, an eye-pointed helicoidal needle, driving mechanism for imparting to the latter oscillating and reciprocating movements, a rotatable frame carrying the helicoidal needle and its operating mechanism, and connections between the said frame and the controlling handle of the feed-mechanism whereby the former is operated by the latter, substantially as described.

543,336. ELECTRIC REGISTERING APPARATUS. ALPHONS CUSTODIS, Dusseldorf, Germany. Filed Mar. 19, 1895. Serial No. 542,329. (No model.)



Claim.—An electric registering apparatus composed of a vessel, an inclosed suspended movable contact, a pair of coils of which one is connected to the contact and the other to a fixed resistance, a pointer controlled by the coil-cores and a battery, substantially as specified.

543,337. PNEUMATIC TIRE. WILLIAM DRIESBACH, Williamsport, Pa. Filed Sept. 18, 1894. Serial No. 523,400. (No model.)



Claim.—1. The combination with an inflatable tube, of a protective inclosing shoe having its separable edges arranged at the inner side of the tube, clips detachably secured to said edges to hold them in their proper relative positions, and means for detachably securing the clips to the outer surface of the rim of a wheel, substantially as described.

2. The combination with an inflatable tube, of an inclosing shoe having abutting inner edges thickened to form spaced shoulders, clips having upstruck flanges or lips secured to said shoulders, and means for attaching the clips to a rim, substantially as specified.

3. The combination with an inflatable tube, of an inclosing shoe having thickened abutting edges provided with spaced beveled or under-cut shoulders, clips extending transversely across the meeting edges of the shoe and provided with upturned flanges or lips lying against and engaging said beveled or under-cut shoulders, and means for securing the clips, detachably, to a wheel-rim, substantially as specified.

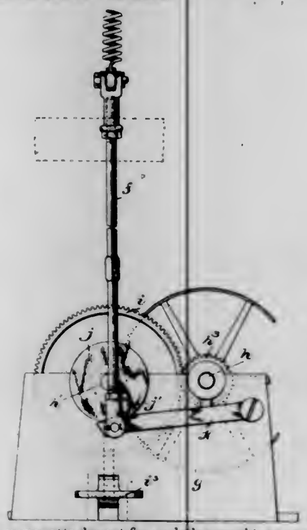
543,338. PUMP. EDWARD R. FRIEHLL, Larned, Kans. Filed Feb. 12, 1895. Serial No. 538,077. (No model.)

Claim.—In a pump the valve casing described having the induction opening a, at its lower end, the valve seat c, surrounding the upper inner end of said opening a, and the opening b, at its upper end larger in diameter than the opening a, and also having the interior, longitudinal, radially-disposed guide-ribs B, forming the passages or spaces d, and extending from the valve seat c, to the opening b, at

the upper end of the casing; said ribs being of such a width that the space within their inner edges is smaller in diameter than the opening *b*, in combination with the removable check valve arranged between the guide ribs B, and comprising the portion *f*, larger in diameter than the opening *a*, of the casing and provided with a vertical edge f^2, engaging the inner edges of the ribs B, the packing *h*, on the under side of the portion *f*, the lower metallic section *e*, sufficiently small to enter the opening *a*, the bail *g*, connected with the portion *f*, the bolt taking through the portions *e*, and *f*, and the packing *h*, and the nut mounted on the bolt, substantially as specified.



543,339. POWER ATTACHMENT FOR FOOT-POWER EYELETING-MACHINES. GEORGE O. GODDARD, Brockton, Mass. Filed Oct. 24, 1894. Serial No. 526,799. (No model.)

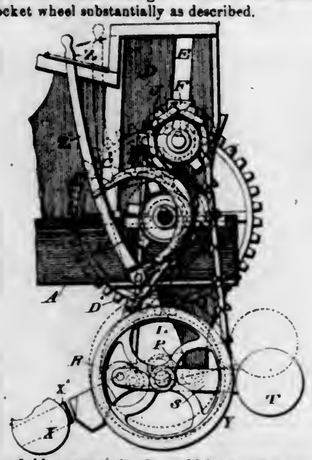


Claim.—A power attachment for eyeleting-machines, comprising in its construction a frame or casting of rectangular form having at one side means of attachment to a support, as a floor or bench, and at the other side journal-bearings; shafts in said bearings; gears connecting the shafts; a power-receiving means as a pulley, on one shaft; a crank-disk on the other shaft; and a lever pivoted at one end to the casting and extending at the other end into the path of the wrist-pin of said disk, the throw of said wrist-pin taking it beyond the end of the lever, and the latter being connected with the spring-actuated pitman of the eyeleting-machine.

543,340. FODDER-CUTTER. NATHAN HOFFMAN, Pottstown, Pa., assignor to the Ellis Keystone Agricultural Works, of Pennsylvania. Filed Dec. 14, 1894. Serial No. 531,757. (No model.)

Claim.—1. In a fodder cutter, two feed rolls having sprocket wheels, on their journals, the journals of one of said rolls having fixed bearings and the journals of the other roll, having bearings in sliding boxes, a frame pivoted to a fixed support, a weighted lever pivoted to said frame and having a pulley mounted thereon, a sprocket chain engaging said pulley and sprocket wheels and means for disengaging said chain from said sprocket wheel on said feed roll having a fixed bearing, said parts being combined substantially as described.

2. In a fodder cutter, a set of rolls provided with sprocket wheels, and having a pulley attached to a weighted lever thereunder, a chain passing around said pulley and the upper sprocket wheel, the lower sprocket wheel being placed outside of said chain, but in contact therewith, and means for moving the chain out of contact with said lower sprocket wheel substantially as described.



3. In a fodder cutter, the frame M having the cross bar N, the arms P and the weighted lever S pivoted to one of said arms and carrying the pulley Y, a series of rolls, one of said rolls having adjustable bearings and connections from the latter to said cross bar and means for actuating said rolls, the above parts being combined substantially as described.

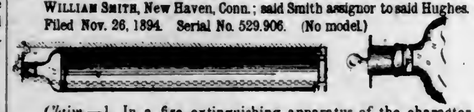
4. In a fodder cutter, a series of rolls and sprocket wheels therefor, a chain substantially encircling the upper sprocket wheel and passing to the side of the lower wheel, but in contact therewith, and means for keeping said chain taut, a lever provided with a cage or guard having a shelf C' upon which said chain rides, whereby the latter can be thrown out of engagement with the lower sprocket wheel, substantially as described.

5. In a fodder cutter, the beams A with the slotted frame D thereon, the roll C journaled in said beams, and the roll G journaled in the sliding box movable in slots in said frame D, the weighted frame M pivoted to the hanger L below said beams, the weighted lever X' having the pulley Y mounted thereon, the sprocket wheels J and K on the journals of said rolls G and C, the sprocket chain engaging said sprocket wheels and pulley, and the rods V connecting said sliding boxes, and the frame M, said parts being combined substantially as described.

6. In a fodder cutter, the tension regulating devices consisting of the cross bar N, having the arms P, which are pivotally attached to a suitable fixed point, a lever S having one end pivoted to one of said arms P, while its other end carries a weight T, a pulley Y journaled to said lever S, and a chain encircling said pulley and adapted to communicate motion to suitable feed rolls, substantially as described.

7. In a fodder cutter, the frame M having the cross bar N, and the arms P which are attached to some fixed point, the weighted lever S and the pulley Y mounted thereon, said lever being pivoted to one of said arms P, the ears U attached to said cross bar, the upper and lower feed rolls, connections from said ears U to the bearings of said upper feed roll, and means for actuating said feed rolls, substantially as described.

543,341. FIRE-EXTINGUISHER. GEORGE W. H. HUGHES and WILLIAM SMITH, New Haven, Conn.; said Smith assignor to said Hughes. Filed Nov. 26, 1894. Serial No. 529,906. (No model.)



Claim.—1. In a fire extinguishing apparatus of the character herein described in combination with a tube adapted to contain chemicals and provided with means for suspending the same to a hook, a neck, provided with a nozzle secured thereto by means of fusible material substantially as described.

2. In a fire extinguisher of the character herein described in combination with a tube adapted to contain chemicals a neck provided with a sprayer disposed within the same said neck having a nozzle secured thereto by means of fusible solder substantially as described and set forth.

3. In a fire-extioguisbing apparatus of the character herein described, in combination with a tube adapted to contain chemicals and formed with a neck, a nozzle secured to said neck by means of fusible material, said nozzle provided with a perforated flange, substantially as described.

4. In a fire-extinguisher of the character herein described, the combination with the tube thereof, of a nozzle secured to said tube by fusible material, and a chain also connecting said tube and nozzle, substantially as described.

5. In a fire-extinguisher of the character herein described, the combination with the tube thereof of a nozzle secured to said tube by means of fusible material, and a chain connected at one end with said nozzle, and at the other end with the lower end of the tube, substantially as described.

6. In a fire extinguisher of the character herein described, the combination with the tube thereof, of a nozzle secured to said tube by fusible material, a cork to close said nozzle, and a chain connecting said cork with a stationary fixture, substantially as described.

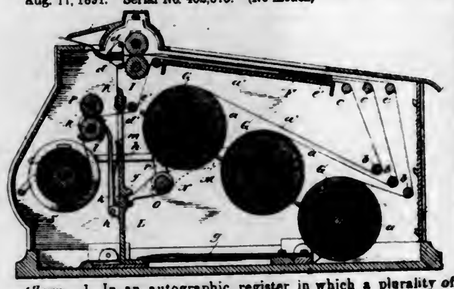
7. In a fire-extinguisher of the character herein described, suspended from a single hook, the combination with the tube thereof of a nozzle secured to the said tube by fusible solder, said nozzle being directly connected with the hook when the device is suspended, and a flexible connection between said nozzle and tube, whereby the several parts are so arranged and connected that the device is suspended and automatically operated from a single hook or point of suspension, all substantially as and for the purpose described.

8. In a fire extinguisher in combination with a tube a neck provided with a nozzle secured thereto by fusible solder a perforated flange on said neck and a chain secured at one end to said flange and at the other end to one side of the tube substantially at its lower end, substantially as and for the purpose described.

9. In a fire extinguishing apparatus substantially of the character herein described in combination with a tube adapted to contain chemicals and provided with a neck a nozzle secured to the neck by fusible solder and provided with means for suspension, a steadying bracket secured in near relation to the bottom of the tube and arranged and adapted to loosely inclose the same to prevent undue motion or swaying of the tube substantially as and for the purpose described.

10. In combination with a fire extinguisher adapted to be suspended by a hook or other suitable means a steadying bracket constructed of a single piece and provided with a perforated flange for securing the same to the post, wall or casement &c. and a series of upturned arms for receiving the bottom of the tube containing the chemicals substantially as described.

543,342. AUTOGRAPHIC REGISTER. JOHN KIRBY, Jr., WILLIAM E. CRUME, CHARLES D. GRIMES, and JOHN M. CLARK, Dayton, Ohio, assignors, by mesne assignments, to the Carter-Crume Company. Filed Aug. 17, 1891. Serial No. 402,873. (No model.)



Claim.—1. In an autographic register in which a plurality of strips of paper are employed, the combination with the writing tablet over which the paper strips are propelled and manifolding material between the upper strips of paper, with feeding mechanism for said upper strips, of a sheet of manifolding material narrowed than said tablet, interposed between the lower and upper strips of paper and separate feeding mechanism for said lower strip, which when actuated, feeds said strip a shorter distance than the upper strips are fed, substantially as shown and described.

2. In an autographic register in which a plurality of strips of paper are employed, the combination with feeding and cutting mechanism for the upper strips, with manifolding material between said upper strips and a writing tablet over which said strips are propelled, of a narrow sheet of manifolding material interposed between the lower and upper strips, separate feeding mechanism for said lower strip, and means whereby said feeding mechanism may be operated simultaneously with the cutting mechanism for the upper strips to feed said lower strip a shorter distance than the upper strips, substantially as shown and described.

3. In an autographic register in which a plurality of strips of paper are employed, the combination with feeding mechanism for the upper strips with manifolding material between said upper strips and cutting mechanism for severing said strips from the rolls, of a narrow sheet of manifolding material interposed between the lower and upper strips, separate feeding mechanism for the lower strip, with storing reel to receive said strip, and means connecting said reel and separate feeding mechanism to the cutting mechanism, whereby the operation of said cutting mechanism will operate said reel and separate feeding mechanism to feed said lower strip a shorter distance than the upper strips are fed, substantially in the manner and for the purpose described.

4. In an autographic register in which three or more strips of paper are employed, the combination with a writing tablet over which the paper strips are propelled and manifolding material between the upper strips of paper, of a sheet of manifolding material narrower than said tablet, interposed between the lower and upper strips of paper, and independent feeding mechanism for the lower strip, substantially as shown and described.

5. In an autographic register in which three or more strips of paper are employed, the combination, with a writing tablet over which the paper strips are propelled, and manifolding material between the upper strips of paper, of a sheet of manifolding material narrower than said tablet, interposed between the lower and upper strips of paper, and feeding mechanism for the lower strip which when actuated feeds said strip a shorter distance than the upper strips are fed, substantially as shown and described.

6. In an autographic register the combination with a case having an opening in its top for the delivery of one or more of the paper strips, feeding mechanism therefor, and cutting mechanism to sever the strips from the roll, of a shield or top piece wider than the opening secured to the top cover and extending out over and beyond said opening to protect the same and prevent the buckling of said strips under the cutting mechanism, substantially as shown and described.

7. In an autographic register, the combination, with the case and a dispensing roll of paper journaled therein, of a plate shaped to embrace the journal of the roll and bearing against the entire end of the roll, and a spring projection, integral with the plate, curved to have its bearing against the case at or near the journal bearing of the roll, substantially as shown and described.

8. In an autographic register in which three or more strips of paper are employed, the combination, with the writing tablet over which the paper strips are propelled and manifolding material between the upper strips of paper, of a sheet of manifolding material narrower than said tablet interposed between the lower and upper strips of paper, and a storage reel for said lower strip, with means for actuating the same to wind up the record strip and feed same a shorter distance than the upper strips are fed, substantially as shown and described.

9. In an autographic register in which three or more strips of paper are employed, the combination with a writing tablet over which the paper strips are propelled, and manifolding material between the upper strips of paper, the feeding mechanism for said upper strips, of a sheet of manifolding material narrower than said tablet, interposed between the lower and upper strips of paper, and separate feeding mechanism for said lower strip.

10. In an autographic register in which three or more strips of paper are employed, the combination with the feeding and cutting mechanism for the upper strips, with manifolding material between said upper strips and a writing tablet over which said strips are propelled, of a narrow sheet of manifolding material interposed between the lower and upper strips, and separate feeding mechanism for said lower strip, substantially as shown and described.

11. In an autographic register in which three or more strips of paper are employed, the combination with feeding and cutting mechanism for the upper strips, with manifolding material between said upper strips, and a writing tablet over which said strips are propelled, of a narrow sheet of manifolding material interposed between the lower and upper strips, separate feeding mechanism for said lower strip, and means whereby said feeding mechanism may be operated simultaneously with the cutting mechanism of the upper strips, substantially as shown and described.

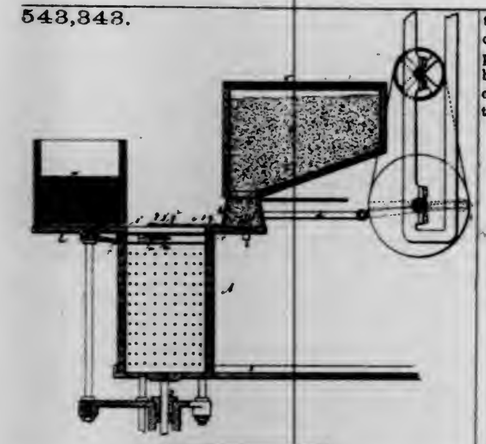
543,343. OIL-PRESS. JULIUS KOCH, Münden, Germany. Filed July 7, 1894. Serial No. 516,852. (No model.)

Claim.—1. The combination of a straining vessel A, with a reciprocating feed box *k*, arms c, having pawls *g*, plate storing receptacle *a*, rails *i*, adapted to engage the pawls, and means for operating the arms c substantially as specified.

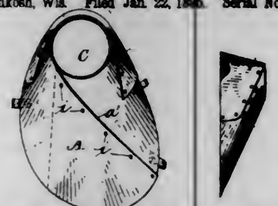
2. The combination of a straining vessel with a ring *r*, above the same fingers *m*, pivoted thereto, and with a reciprocating feed box having a stop that is adapted to engage said ring and actuate the same, substantially as specified.

3. The combination in an oil press, of a straining vessel, having a series of movable fingers or supports for the press plates, with a sliding feed box, arms for drawing the press plates into alignment with the straining vessel, and means for operating said arms substantially as specified.

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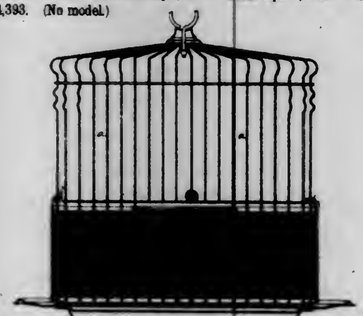


543,344. DISPLAY-FORM FOR CLOTHING. ARMIN O. KUEHNSTED, Oshkosh, Wis. Filed Jan. 22, 1895. Serial No. 535,833. (No model.)



Claim.—As an improved article of manufacture, a window or counter display form for coats which are laid upon the upper surface of the form in a longitudinally folded or doubled manner, said form comprising in its construction a piece of flexible material cut to a suitable shape and bent around and permanently secured in shape to conform approximately to the shape of one of the shoulders, one side and a portion of the back and chest of a person, and having a flat rear surface; and a flexible shoulder piece cut in suitable form and secured to the top of the body portion of the form in an arching manner and extended directly over the entire shoulder portion and within the outline of the depth of the form to form an approximately square shoulder, substantially as described.

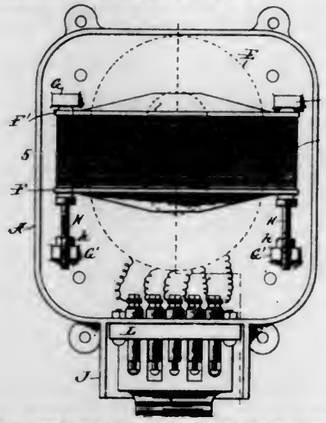
543,345. BIRD-CAGE. THEODORE L. MAXWELL, New York, and WILLIAM F. MAXWELL, Brooklyn, N. Y. Filed Apr. 4, 1895. Serial No. 544,393. (No model.)



Claim.—A bird cage having wires that are crimped at their upper ends and a vertically movable fender engaging such wires and adapted to be suspended from the crimps when in its elevated position, substantially as specified.

543,346. ELECTRIC TRANSFORMER. JOHN A. MOSHER, Chicago, Ill. Filed May 7, 1895. Serial No. 548,413. (No model.)

Claim.—1. The combination with the box A having internal opposing lugs G, G', and binding screws carried by such lugs, and with the cover B having similar lugs and screws attached to its inner surface, of a sectional electro-magnet core whose members are adapted to be secured respectively between the lugs of the box and the lugs of the cover, said sections having co-operating contact faces whose planes are oblique to the direction of their approach, and of screw bolts for drawing the cover forcibly to the box whereby the opposing or co-operating faces of the core are brought into contact, substantially as described and for the purpose set forth.



2. In a transformer, the combination with the primary coil, of a terminal block for carrying the terminals of the primary coil and of the main circuit, of a contact plug adapted to connect both ends of the circuit with the primary coil.

3. In a transformer, the combination with the primary coil, of a terminal block having the binding posts 2, 2^a, for the attachment of the terminals of the primary coil, and having contact plates 10, 10^a, and the binding posts 1, 1^a, for attachment of the terminals of the main circuit, and having the contact plates 8, 8^a, and the plug M, having the electrically connected contact plates 9, 9^a, and the electrically connected contact plates 13, 13^a, the plates 9, 13, being adapted for contact with the plates 8, 8^a, and the plates 9^a, 13^a, being adapted for contact with the plates 10^a, 10, substantially as described and for the purpose specified.

4. The combination of the case A, having the removable cover plate B, the primary coil E', the secondary coil E, the sectional core, D, C, the contact faces of whose sections are transverse to the direction of the magnetic current and oblique to the direction of their mutual approach with the terminal block L, having a plurality of binding posts connected with different convolutions of the secondary coil and binding posts for the terminals of the primary coil and the main circuit and a contact plug for connecting the primary coil terminals and the main circuit terminals, substantially as described and for the purpose set forth.

5. In a transformer, the combination with a terminal block for attachment of the terminals of the primary coil and the main circuit, of a contact plug for completing the circuit by connecting both wires of the main circuit with the primary coil, the medium of transmission through the plug being fusible, substantially as described and for the purpose specified.

543,347. KEY-OPENING CAN. CHARLES B. MCDONALD, Chicago, Ill., assignor to the National Key-Opening Can Company, same place. Filed Jan. 25, 1893. Serial No. 459,728. (No model.)



Claim.—1. A lock-seamed can body having a circumferential detachable strip which extends across the locked seam and terminates in an integral free tongue projecting from the external fold of the seam.

2. A lock-seamed can body having a circumferential detachable strip extending across the locked seam and terminating in an integral free tongue proceeding from the external fold of the seam at a point between the lateral limits of said fold.

3. The can body blank or sheet described having a detachable strip provided with a tongue A' projecting beyond the retracted edge a^2 of the blank and laterally separated from the sheet at its base by slits a', whereby, when the blank is lock-seamed, as set forth, the tongue proceeds from the external fold of the seam.

4. The can body blank or sheet described having a detachable strip provided with a tongue A' projecting beyond the retracted edge a^2 of the blank and laterally separated from the sheet at its base by a slit or slits a' deeper than the width of the fold a^2, whereby, when the blank is lock-seamed, as set forth, the tongue proceeds from the external fold of the seam between the lateral limits of said fold.

5. The can body sheet described having a detachable strip formed by one or more weakened lines, said sheet having a projecting tongue at each end forming the terminals of the detachable strip, while having the remaining portion of its opposite edges folded to hook into each other and form a locked side seam of a can body.

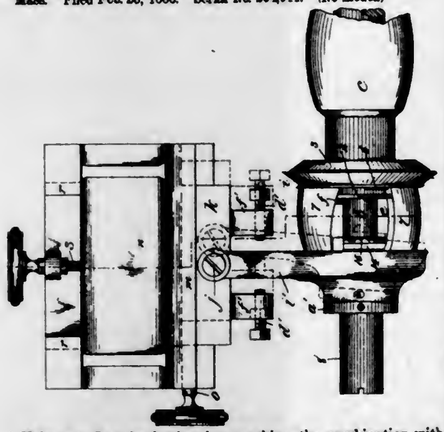
6. A sheet metal, lock-seamed can body having a circumferential detachable strip terminating at each end in a tongue, one upon the inside and the other upon the outside of the can body, the external tongue being free and projecting from and beyond the locked side seam.

543,348. SHAVING APPARATUS. FRIEDRICH W. NAUMANN, Leipsic, Germany, assignor to Christian Hugo Zimmermann, same place. Filed Dec. 21, 1893. Serial No. 494,278. (No model.)



Claim.—The combination of a notched lather cup with a pivoted knife holder, a guard secured thereto, a clamp at one side of the guard, and a bent lid at the other side of the guard which has a hook shaped end adapted to engage the cup, substantially as specified.

543,349. HEEL-TRIMMING MACHINE. OSCAR L. NOBLE, Boston, Mass. Filed Feb. 23, 1888. Serial No. 264,911. (No model.)



Claim.—1. In a heel trimming machine, the combination with the rotary cutter head, of a counter guard, a single center or pivot behind the cutter on which said guard is free to oscillate, adjustable supports whereby said center or pivot may be adjusted at right angles with the axis of the cutter and in a direction parallel therewith, and a rand trimmer secured to said guard so as to oscillate therewith and rotatively engaged with the cutter head, as set forth.

2. The combination herein described, of a rotary cutter head, a support or slide *k* which is adjustable in a direction parallel with the axis of the cutter head, a slide *n* which supports the slide *k* and is adjustable at right angles with the axis of the cutter head, a counter guard mounted on an arm which is loosely pivoted to the slide *k* at a single point behind the cutter so that the guard is at all times free to oscillate on said single pivotal point, and means for holding the slides *k n* in any positions to which they may be adjusted, whereby the work supporting portion of the guard is enabled to move in a curve which can be made by adjustment of the support to correspond to the curve of the cutting edges of different sizes, as set forth.

3. The combination herein described, of a rotary cutter head, a support or slide *k* which is adjustable in a direction parallel with the axis of the cutter head, a slide *n* which supports the slide *k* and is adjustable at right angles with the axis of the cutter head, means for holding said slides in any position to which they may be adjusted, a counter guard supported by an arm which is loosely pivoted to said slide at a single point behind the cutter, whereby said guard may be adjusted to cutter heads of different lengths and diameters, the guard being free at all times to oscillate, and a rand cutter secured to the guard so as to oscillate therewith and rotatively engaged with the cutter head, as set forth.

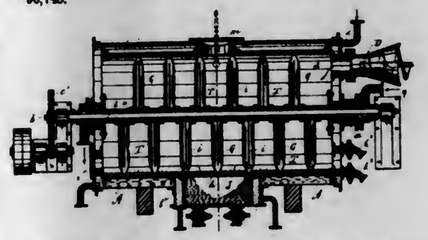
4. The combination of a rotary cutter head, the cutters of which are longitudinally curved, a guard-support or carriage outside of the periphery of the cutter head, means for adjusting said guard support in two directions, viz., parallel with the shaft of the cutter head and at right angles with said shaft, a guard mounted to move in the arc of a circle on said support, and a rand cutter rotatively engaged with the cutter head and secured to the guard, the rand cutter moving in the arc of a circle with the guard, so that both the guard and rand cutter conform to the longitudinal curvature of the cutting edges when moving toward and from the top-lift end thereof, as set forth.

5. The combination of the cutter head, the guard formed to encircle one end of the cutter head, the support for the guard, and the rand cutter composed of the sleeve 12 engaged as described with the guard, the disk 13 on said sleeve and the knives 14, 14 on said disk between the cutters of the cutter head, and means substantially as described whereby the rand cutter and cutter and cutter head are rotatively engaged, as set forth.

6. The combination of the collars 2, 4 having the eccentric ribs, the grooved cutters engaged with said ribs, and the adjustable plate *e* having lugs or stops to bear against the heels of the cutters, as set forth.

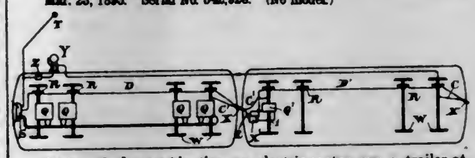
7. In a cutter head, the combination of the collars 2, 4 secured to a shaft and provided with the ribs on their inner sides, the cutters having grooves in their side edges formed to receive said ribs, and means for clamping the collars against the cutters, as set forth.

543,350. RENDERING APPARATUS. HERMANN PFÜTENER, Leipsic, Germany. Filed Mar. 9, 1892. Serial No. 424,299. (No model.) Patented in Germany July 19, 1891, No. 63,537; in Austria-Hungary Aug. 3, 1891, No. 37,204 and No. 61,906; in England Aug. 4, 1891, No. 13,189; in France Aug. 10, 1891, No. 215,426, and in Belgium Oct. 10, 1891, No. 96,743.



Claim.—In a rendering tank, the combination of a horizontal jacketed drum with an inlet hopper provided with a screen and conveyer, a revolving shaft passing through the center of the drum, a series of hollow communicating and partitioned fingers secured thereto in such manner that the heating agent passes in succession through the same, a jacketed accumulator located at the bottom of the drum and a screen above such accumulator, substantially as specified.

543,351. ELECTRIC BRAKE. WILLIAM B. POTTER, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Mar. 23, 1895. Serial No. 542,928. (No model.)



Claim.—1. In combination, an electric motor car, a trailer attached thereto, braking apparatus upon both cars normally actuated by the motors upon the motor car when operated as generators, an auxiliary normally idle source of electro-motive force carried upon the trailer, and means whereby the auxiliary generator is thrown into closed circuit with the braking magnets upon the trailer by the accidental separation of the trailer from the motor car.

2. In combination, an electric motor car, a trailer, braking apparatus upon the two cars and normally operated by the motors upon the motor car when operating as generators, an auxiliary normally idle dynamo-electric generator carried upon or driven by the axle of the trailer, and suitable couplings and connections between the braking apparatus and the auxiliary generator whereby the accidental separation of the connection between the motor car and trailer acts to set the brake upon the trailer.

3. In combination, an electric motor car, a trailer, an auxiliary normally idle dynamo-electric machine upon the trailer car, and means whereby the accidental separation of the two cars will close the auxiliary generator upon a local circuit acting to stop the trailer car.

4. In combination, an electric motor car, a trailer, braking apparatus upon the two cars normally operated by the motors upon the motor car when acting as generators, an auxiliary normally idle dynamo-electric machine upon the trailer car, and means whereby the accidental separation of the two cars will first momentarily short-circuit the auxiliary machine and then throw it upon a local circuit including the brake magnets.

5. In combination, an electric motor car, a trailer, braking apparatus upon the two cars normally operated by the motors upon the motor car when acting as generators, an auxiliary normally idle dynamo-electric machine upon the trailer, and means for causing the accidental separation of the two cars to impart an initial excitation to the field-magnets of the auxiliary machine, and then throw it upon a local circuit including the braking apparatus of the trailer.

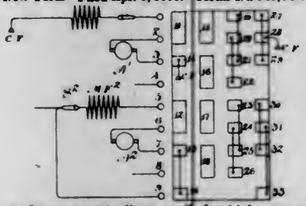
6. In combination, an electric motor car, a trailer, braking apparatus upon the two cars normally actuated by the motors upon the motor car when operating as generators, an auxiliary normally idle dynamo-electric machine upon the trailer, contacts and connections whereby the auxiliary machine is first momentarily short-circuited to obtain an initial field-magnetization and is then thrown upon a local circuit including the braking apparatus upon the trailer, and means for preventing the accidental displacement of the contacts and connections.

7. As a means for arresting a moving vehicle, a normally idle dynamo-electric generator thereon, braking apparatus, means for imparting an initial magnetization to the generator, a local circuit, and means for including the generator in the local circuit with the braking apparatus.

8. In an electric braking apparatus, a dynamo-electric generator composed of an armature mounted upon the axle of the vehicle, a field-magnet also rotatably mounted upon such axle, and a stop limiting the motion of the field-magnet in either direction; whereby the relation of the field-magnet and armature may be reversed to correspond to the direction of motion of the car.

9. As a means for arresting a moving vehicle, a normally idle dynamo electric generator thereon, braking apparatus, means for throwing the generator into a local circuit including the braking apparatus, and means for adjusting the relation of armature and field in accordance with the direction of motion of the vehicle.

543,352. SAFETY APPLIANCE FOR ELECTRIC CARS. WILLIAM B. POTTER, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Apr. 9, 1895. Serial No. 545,047. (No model.)



Claim.—1. In an electrically propelled vehicle, a controller, and a cylindrical switch therein provided with four series of contacts, two of such series designed for the normal operation of the motors in running forward or backward, and the other two series arranged respectively to connect the motors each in an independent short circuit, the one series when running forward, the other when running backward.

2. In an electrically propelled vehicle, a controller, a plurality of motors operating the vehicle, and a switch in the controller provided with contacts and connections adapted to reverse the relation of armature and field in the motors and to throw them upon independent short circuits, in whichever direction the vehicle may be moving.

3. In an electrically propelled vehicle, a controller, one or more motors operating the vehicle, a switch co-operating with the controllers and adapted in its normal positions to determine the direction of motion of the vehicle, contacts upon the switch arranged to connect the motors each in an independent short circuit, the contacts being arranged in two series, one designed to operate in the forward motion of the car, the other in its backward motion; and interlocking means between the controller and the switch, whereby the controller is free to move when the switch is in one or the other of its normal positions, and is locked against motion in its other positions.

4. In an electrically propelled vehicle, an auxiliary switch designed to act as a reversing switch in its normal operation two series of contacts other than the reversing switch contacts carried thereon, such contacts adapted to short-circuit the motors upon a local circuit to act as an emergency stop, a handle for the auxiliary switch, and locking means for the handle so arranged that the handle may be thrown to the end of its stroke in either direction, but will be locked against accidental displacement after being thrown.

543,353. GARMENT-SUPPORTER. EDWARD I. ROBBINS and CHARLES HESSLER, Trenton, N. J. Filed Oct. 24, 1894. Serial No. 526,855. (No model.)



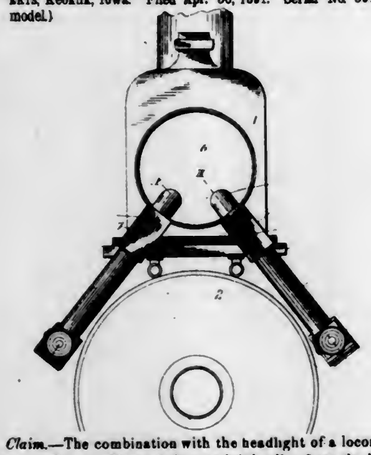
Claim.—1. A garment support formed of two pieces of metal connected by a spring hinge, one of said sections being slotted and provided with two spring tongues, and the other member having a series of spurs, as and for the purpose described.

2. A garment support comprising two pieces of metal connected by a spring hinge, the members being of an approximately U or J shape, the U shaped member being slotted and provided with two spring tongues and the J shaped member being provided with a series of integral spurs, as and for the purpose described.

3. A garment support formed of two pieces of metal, one of which is slotted and provided with spring tongues, the other piece having a curved end doubled upon itself and having its extremity turned up as an engaging projection, as specified.

4. A garment supporter, formed of two pieces of metal and comprising two members which are respectively of an approximately U- and J-shape, the U-shaped member being slotted and provided with two spring tongues, and the J-shaped member having a portion forming a continuation of its curved end, shaped and doubled upon itself, in a manner to encircle a portion of the U-shaped member and having its extremity turned up, as an engaging projection, as specified.

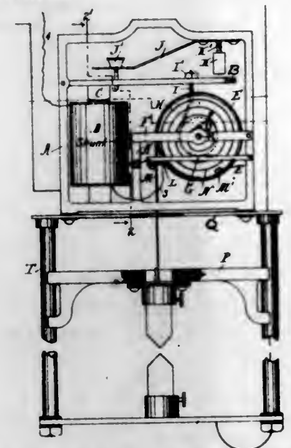
543,354. SIGNAL-LIGHT FOR LOCOMOTIVES. JAMES R. ROBERTS, Keokuk, Iowa. Filed Apr. 30, 1891. Serial No. 391,143. (No model.)



Claim.—The combination with the headlight of a locomotive, of a downwardly extending tubular conduit leading from the headlight, and a signal-light box at the lower end of the conduit located so as to appear in the dark shadow between the headlight and pilot-beam, substantially as described.

543,355. ELECTRIC-ARC LAMP. HENRY J. SAGE, Chicago, Ill. Filed Feb. 13, 1895. Serial No. 538,274. (No model.)

Claim.—1. In an electric arc lamp, in combination, a regulating magnet placed in a shunt circuit, a lever actuated by said magnet, a friction brake operated by said lever, a drum around which a ribbon supporting the upper carbon is wound, said drum being capable of a bodily translation as well as rotation, said friction brake operating upon said drum and serving to sustain it in a position which corresponds to an elevated position of the upper carbon and at the same time prevent its rotation, a stop serving to limit the movement of said drum in the direction to lower the upper carbon, whereby a current through the magnet allows the friction brake and drum to be moved in the direction to lower the upper carbon without rotation of the drum and an increase in the current strength after the drum's translation has been stopped allows a further movement of the friction brake which reduces the friction and allows the drum to unwind, for the purpose specified.



2. In an electric arc lamp, in combination, a regulating magnet in a shunt circuit, a lever adapted to be attracted by said magnet, a spring opposing said attraction, a drum around which a ribbon supporting the upper carbon is wound, said drum being revolubly supported by a pivoted lever, a stop limiting the movement of said lever in one direction, and friction brake mechanism connecting said first mentioned lever with said drum, whereby a current of sufficient strength through the magnet first allows the drum to be moved in the direction to lower the upper carbon until the drum's supporting lever contacts with the said stop and then reduces the friction of the brake and allows the drum to unwind, for the purpose specified.

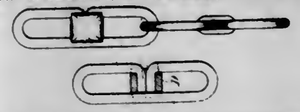
3. In an electric arc-lamp, in combination, a revoluble drum around the periphery of which a ribbon supporting the upper carbon is wound, a friction drum concentric with said first mentioned drum and revolving therewith, said drums being so supported as to be capable of an up and down movement, a friction band in contact with said friction drum and so arranged as to be capable of raising and lowering said drum as well as of supplying friction sufficient to prevent rotation thereof, and operating mechanism connecting said friction band with an electro-magnet whereby the latter is capable of controlling the movements of the ribbon-drum and allowing it to be first lowered and then unwound, for the purpose specified.

4. In an electric arc lamp, in combination, a regulating magnet D placed upon a shunt circuit, a lever B adapted to be attracted by said magnet, a revoluble drum E around which a ribbon supporting the upper carbon is wound, a lever F which supports said drum, a stop A' limiting the movement of said lever in one direction, a friction drum W concentric with said drum E and revolving therewith, a lever G, a flexible band H secured at one end to the lever G and at the other to the lever B, said band being for a portion of its length in contact with the periphery of the friction drum W, for the purpose specified.

5. In an electric arc lamp, in combination, a lower carbon, an upper carbon secured to a cross-head P which is guided in its movement by the guides T, a flexible band or ribbon supporting the cross-head and upper carbon and attached to a revoluble drum, said drum being also capable of an up and down movement, a spring tending to rotate said drum in a direction to wind up the ribbon thereon, a friction-drum concentric with said ribbon-drum and revolving therewith, a friction band in contact with said friction-drum and serving to support said drums, said band being connected to a lever adapted to be operated by an electro-magnet placed in a shunt circuit, a spring whose retractive force is independent of the strength of the current opposing the attraction of said magnet, whereby said spring operates to draw up said friction band and thereby raise the drums and a current through said magnet operates to slacken said friction band, lowering the drums, and then further slackens the friction band and allows the drum to rotate, for the purpose specified.

6. In an electric arc lamp, in combination, an upper carbon supported by a flexible band wound upon a revoluble drum, an electro-magnet capable of controlling the revolution of said drum, a projecting pin which moves as said drum revolves, a movable strip forming one of the conductors of the circuit through said magnet, being normally in contact with another conductor, said strip and pin being so placed that when the drum shall have unwound a certain predetermined distance the pin will force the strip out of contact with the conductor which it touched and thereby break the circuit through the magnet, for the purpose specified.

543,356. CHAIN-LINK. JOHN C. SCHMIDT, York, Pa. Filed May 31, 1895. Serial No. 551,136. (No model.)



Claim.—1. In a chain link formed of a rod or bar of metal reflexed at the ends of the link with the extreme ends of the bar brought into proximity and extended toward the opposite or straight side of the link, and a union or connecting piece surrounding said ends and lying within the sides of the link; substantially as described.

2. A barred chain link formed of a rod or bar of metal reflexed at the ends of the link, with the extreme ends of the bar brought into proximity and extended across to the opposite or straight side of the link, and a union or connecting piece surrounding said ends and lying within the sides of the link; substantially as described.

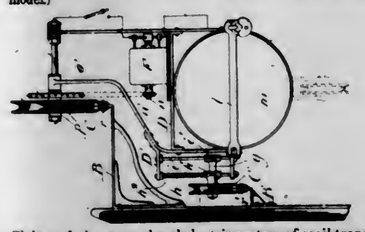
3. A barred chain link formed of a rod or bar of metal reflexed at the ends of the link, with the extreme ends of the bar brought into proximity and bent at an angle crosswise of the link, and a union surrounding said ends and bridging the space between the sides of the link to form a cross bar; substantially as described.

4. A barred chain link formed of a rod or bar of metal reflexed at the ends of the link, with the extreme ends of the bar brought into proximity and extended across to the opposite side of the link in substantially parallel lines, and a union surrounding said ends and bridging the space between the sides of the link; substantially as described.

5. A barred chain link formed of a rod or bar of metal reflexed at the ends of the link, with the extreme ends of the bar brought into proximity and bent at an angle crosswise of the link, and a union for said ends having seats in diametrically opposite edges for the side bars of the link; substantially as described.

6. A barred chain link formed of a rod or bar of metal reflexed at the ends of the link with the extreme ends of the bar brought into proximity and extended across to the opposite side of the link, and a union for said ends having concave seats in diametrically opposite edges for the side bars of the link and rounded sides whereby no angular projections are left; substantially as described.

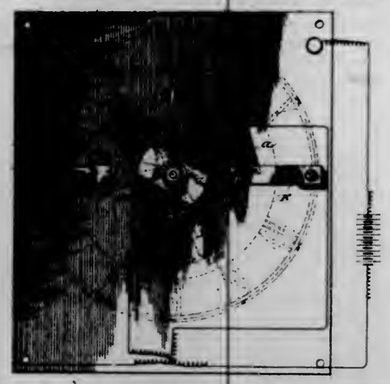
543,357. ELECTRIC TRANSPORTATION SYSTEM. RICHARD E. SHERMAN, Chicago, Ill. Filed Mar. 1, 1895. Serial No. 540,164. (No model.)



Claim.—1. In an overhead electric system of mail transportation, the combination with the outgoing and return circuit-lines supported one above the other on posts, of a mail-bag receptacle, a metallic frame supporting said receptacle, a driving contact-wheel on a shaft carried by the frame and by which said frame is suspended on one of said lines, an electric motor on the frame and insulated therefrom and from said receptacle and having its armature-shaft geared with said contact-wheel, an extension of the frame carrying vertical guide-rods, a second, spring-controlled, contact-wheel journaled to bear against the other of said lines on a shaft having guide-sockets surrounding said rods, an electrical connection through the motor between said contact-wheels, and a switch in said connection, substantially as described.

2. Means for carrying mail in an overhead electric system of mail-transportation, comprising a metallic skeleton-frame D carrying an insulated metal shaft η having journaled upon it a driving contact-wheel E, an electric motor F supported on and insulated from the frame and having its shaft n geared with said driving contact-wheel, a cartridge-shaped mail-receptacle G secured in said frame and open at its larger end where it is provided with a cover m and with a hinged hasp l and a staple l' at which to engage and lock the hasp, and a contact wheel E' resiliently journaled on the frame and electrically connected with the contact-wheel E through the motor, as and for the purpose set forth.

543,358. ELECTRIC CLOCK-WINDING MECHANISM. LOUIS H. SPELLIER, Philadelphia, Pa.; Henry Trumbore executor of said Spellier, deceased. Filed May 23, 1891. Serial No. 394,446. (No model.)



Claim.—1. The combination with the actuator or actuating mechanism of a clock, of an electric motor and a device supplementing the action thereof and set in motion thereby, such device continuing to wind the spring or other actuating mechanism of the clock, after the electric motor has ceased to act, substantially as set forth.

2. In a clock, an electric motor, an actuator connected with the mechanism of the clock, and a weight or momentum device attached to the actuator and adapted to break the electrical connection with the motor, substantially as described.

3. In a clock, an electric motor, an actuator for the time mechanism of the clock, and a momentum device attached to the actuator and acting to re-establish electrical connection with the motor, substantially as described.

4. The combination with a spring to be wound or set for action, of an electric-motor which sets the spring and a weight which automatically stops the action of the motor at a desired tension of the spring and starts it again at a point of relaxation of the same, substantially as described.

5. The combination with winding mechanism and time movement of a clock, of a weight brought into action by and supplementing the action of an electric motor, substantially as described.

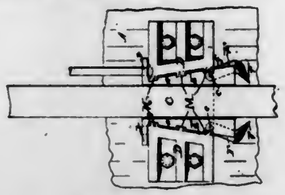
6. The combination with an electric motor having a mutilated commutator, of a weight acting to complete the movement of the parts actuated by the motor, a winding arbor to which the weight is attached, and a spring having one end attached to the same arbor, the weight acting to furnish an abutment for this end of the spring, substantially as described.

7. The combination with an electric-motor having a mutilated commutator, of a weight acting to complete the movement of the parts actuated by the motor, and a shaft or winding arbor to which the weight is attached, the movable part of the motor, and the weight, being fixed to the shaft or winding arbor, a spring, and a box and an actuating shaft for the train of the clock, the spring being attached at one end to the winding arbor, and at the other end to the barrel, and the barrel being fixed upon the actuating shaft, the mutilated commutator causing a partial winding of the spring through the movable part of the motor, further winding of the spring being carried on through the same movable part by the weight, and the weight by its gravity also then furnishing an abutment for the spring, which, at its other end pushing against the box, tends to drive it and with it the train actuating shaft upon which it is fixed substantially as described.

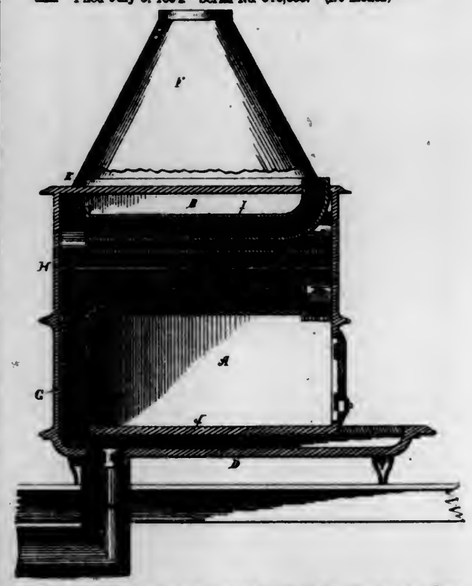
8. The combination with an electric-motor, having a mutilated commutator and a weight acting to complete the movement of the parts actuated by the motor, of a spring wound by the parts actuated by the motor, and the weight, the spring having means actuated in unwinding, to automatically re-establish, at a predetermined tension of the spring, electrical connection with the mutilated commutator, substantially as described.

543,359. SAFETY-STOP FOR ELEVATORS. JAMES TAYLOR Louisville, Ky. Filed Jan. 4, 1893. Serial No. 457,273. (No model.)

Claim.—The combination, with an elevator car, of a guide piece secured to one side thereof, the inner side, or edge of said guide piece being provided with a wedge shaped slide way, and having lips along its outer edge, a wedge within the slide way between the lips and the side of the car having one of its sides straight, the upper end of said wedge being bent over the top of the guide piece and perforated to form an ear, and the opposite end being bifurcated and recessed on its straight side above the bifurcation, a dog pivotally secured within the bifurcation, the free end of which is curved downwardly and pointed, and a spring within the recess, the free end of which engages with the dog below the pivotal point and forces the rear edge of the dog beyond the inclined face of the wedge, a lever on the car, one end of which is connected with the hoisting rope and a rod secured to the other end of the lever and with the ear at the top of the wedge, substantially as set forth.



543,360. HEATING-STOVE. WILLIAM W. TOWER, Danville, Canada. Filed July 5, 1894. Serial No. 516,633. (No model.)

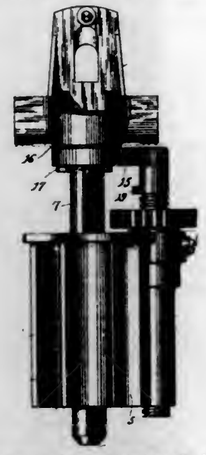


Claim.—1. In a stove, the combination of the air chamber D at the bottom of the stove forming a false bottom for the fire chamber or hearth A and having an air inlet beneath it the large horizontal air chamber H at the upper part of the stove having four concave surfaces as shown, the air pipes G, G leading from the lower air chamber D at the rear of the stove and inside of the fire chamber up to a point adjacent to the air chamber H; thence forward parallel with its lower concave sides to the front of the stove and there making connection with said air chamber H and the upper air discharge pipes I, I making connection with said air chamber H at the rear of the stove and running parallel with its concave sides to the front thereof and discharging above the stove, substantially as set forth.

2. In a stove, the combination of an air chamber at the bottom of the stove, extended forward beneath the hearth, an opening thereinto through the hearth, a removable cover for said opening, a second air chamber extending the entire length of the stove above the fire, horizontal and vertical air tubes connecting the two air chambers and passing out through the top of the stove, an inlet to the lower air chamber, and a smoke outlet in the form of a narrow opening extending the whole length of the stove.

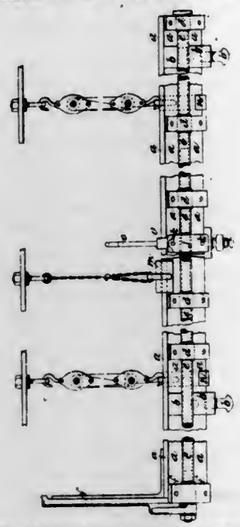
543,361. REVOLVING CHAIR. CARLES C. TRAPP, Port Washington, Wis. Filed Jan. 18, 1895. Serial No. 535,267. (No model.)

Claim.—1. In a revolving chair, the combination, of a head having a main vertical aperture and an adjacent vertical auxiliary aperture, said auxiliary aperture being enlarged at and near the top of the head, a non-revoluble screw loose in the auxiliary aperture, said screw having a radially projecting arm, a nut turning on the screw and provided with a depending tubular stem fitted loosely in the enlarged portion of the auxiliary aperture, and also with a shoulder resting on the head, thereby supporting the screw and its load, a vertically-disposed spindle inserted loosely in the aperture of the head, and through the radial arm of the screw, on which arm the spindle is supported revolubly, and means securing the nut revolubly and releasably in the head, said means and construction being such that on releasing the nut, said nut, the screw and the spindle together can be lifted freely from the head, substantially as set forth.



2. In a revolving chair, the combination, of a head, a spindle arranged to move freely in an aperture therein, a screw entering a socket in the head, the end of said screw provided with an arm through which the spindle passes loosely, a nut engaging the screw above the head a pin intersecting said spindle below the arm, a projecting stop moving with the screw and adapted to contact with the nut after the spindle has been moved downwardly a certain distance to prevent the intersecting pin from striking the nut, and means for preventing vertical movement of the nut on the screw, substantially as set forth.

543,362. APPARATUS FOR INDICATING WARPING, &c., OF ARMOR-PLATES, &c., DURING PROCESS OF CHILLING. TOLMIE J. TREDDER, Sheffield, England, assignor to John Brown & Co., Limited, same place. Filed Mar. 4, 1895. Serial No. 540,490. (No model.)

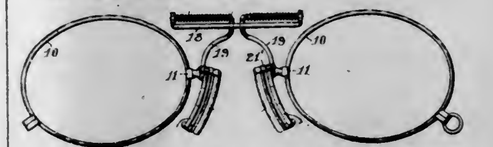


Claim.—1. In an indicating apparatus, the combination of a suitable support having bearings for a shaft, a shaft set in said bearings and adapted to freely rock therein, with three feet, two of which are attached to said support and the third is secured to said shaft and moves with it, and an index on the shaft to indicate the movement of the movable foot, substantially as described.

2. In an indicating apparatus, the combination of a suitable support having bearings for a shaft, a shaft set in said bearings and adapted to freely rock therein with three legs, two of which are movable lengthwise of said support, and the third attached to the shaft and moving with it, and an index on the shaft to indicate the movement of the movable foot, substantially as described.

3. In an indicating apparatus, the combination of a frame *a*, two feet *b* attached to said frame, a shaft *c* capable of motion in said frame, a movable foot *j* attached to said shaft, a pointer *h* also attached to the shaft, and the terminal bearing *f* carrying a scale *g*, substantially as described and shown.

543,363. EYEGLASSES. ALBERT S. WEAVER, Providence, R. I., assignor of one-half to George M. Hobart, same place. Filed Nov. 21, 1894. Serial No. 529,461. (No model.)

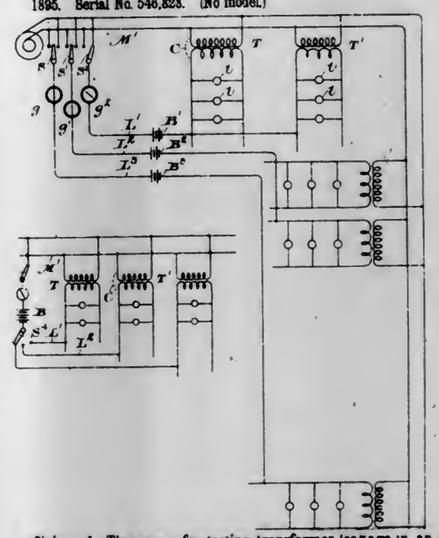


Claim.—1. In spring-bar eye-glasses, the combination with the two lenses and the post, of two bent metal-blanks each comprising a support for the nose-cushion and a spring-supporting bar, and a bar provided with ways for the bridge-pieces and abutments for the coiling-spring; the whole adapted for automatic adjustment, as described.

2. In spring-bar eye-glasses, the combination with the two lenses and the posts, of the adjustable bridge-connection consisting of a bar provided with ways and bent-up perforated ends, two bent metal-blanks each comprising in one piece the support for a nose-cushion, the recesses 17 and the rod 13, and the coiled-springs 14 each abutting against a bent-up perforated end of the way-bar and the recessed portion of the blank, as described.

3. In spring-bar eye-glasses, the combination with the lenses and the posts 11, of the bar 18 provided with the bent-up perforated ends 24, the two bent metal-blanks each forming in one piece the spring-supporting rod 13, the recesses 17, the bent portion 19 and the supports for the nose-cushion, of the nose-cushions 23, and the coiled-springs 14, the whole adapted for automatic adjustment, as described.

543,364. TESTING-CIRCUIT FOR ALTERNATING-CURRENT SYSTEMS OF DISTRIBUTION. HERBERT C. WIRT, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Apr. 23, 1895. Serial No. 546,828. (No model.)

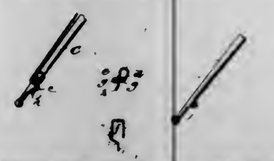


Claim.—1. The means for testing transformer leakage in an alternating current system of distribution herein set out, comprising mains, transformers having their primaries in multiple arc across the mains, leads from the secondaries of such transformers including a galvanometer or current-indicating device and a source of electromotive force, and means for connecting the leads to one or the other of the mains.

2. The means for testing for transformer leakage in an alternating current system of distribution herein set out, comprising mains between which the primaries of the transformers are connected in multiple arc, leads including a plurality of the transformer secondaries going back to the central station or other suitable point, current-indicating devices, and a source of electro-motive force distinct from the main generator of the system in such leads, in combination with means for connecting the leads to one or the other of the mains at will.

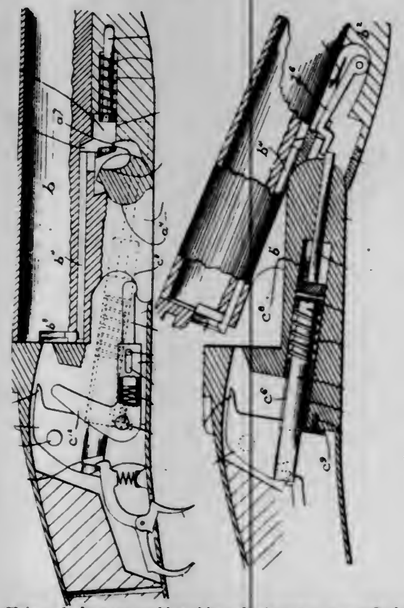
3. The means for testing for transformer leakage in an alternating current system herein set out, consisting of mains, transformers having their primaries in multiple arc across the mains, leads from the transformers to the central station or other suitable point, a galvanometer, a source of electro-motive force, and suitable switching appliances arranged to connect the galvanometer and a source of electro-motive force in circuit with either one of the leads from the transformers and with either one of the mains at will.

543,365. DETACHABLE UMBRELLA-COVER. JULIUS F. WITT, Chicago, Ill. Filed Jan. 25, 1895. Serial No. 536,168. (No model.)



Claim.—A fastener for detachable covers of umbrellas constructed integral from round wire bent to provide parallel side members joined by an arched bow and adapted to embrace the outer end of the rib of an umbrella, said side members being provided with loops or eyes for attaching the margin of the cover thereto and one of said members being provided with an offset extension adapted to provide a shoulder and its extremity being arranged parallel to the side members of the fastener and adapted to enter the loop or eye of the umbrella rib and extend beneath the same, substantially as described.

543,366. EJECTING AND COCKING MECHANISM FOR BREAK-DOWN GUNS. CHARLES A. YOUNG and SILAS H. BARTON, Enon, Ohio. Filed Oct. 12, 1894. Serial No. 525,743. (No model.)



Claim.—1. In a gun, a hinged barrel, a hammer, a sear for holding said hammer, and a spring for operating the same, a pivoted cocking lever independent of said hammer but adapted to engage therewith, said cocking lever being formed in two parts, one adapted to telescope in the other as described, the telescoping part being projected so as to engage with said hinged barrel, substantially as specified.

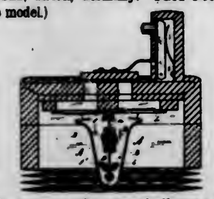
2. The combination with the hinged barrels having an extended lug thereon, spring-actuated hammers for said barrels, and means for holding said hammers when the springs are compressed, laterally-extending projections on each of said hammers, and a pivoted lever between said hammers adapted to engage said projections, said lever being provided with a spring-pressed telescoping arm to engage said lug, substantially as specified.

3. The combination with a hammer formed integral with a firing pin and extended stem as described, a sleeve on said stem provided with a slotted opening to receive and guide said hammer, a collar secured to said stem, and a spring between said sleeve and collar, and means, substantially as described, for holding said sleeve as the spring is compressed, substantially as specified.

4. In a gun, a hammer formed integral with a firing pin and extended stem as described, a sleeve on said stem adapted to guide said hammer, and a collar secured to said stem, a spring surrounding said stem and between said sleeve and collar, a laterally extending projection on said hammer, and a pivoted lever adapted to engage said projection, said lever being extended so as to engage the hinged barrel of said gun, substantially as specified.

5. In a gun, a hinged barrel having a projecting lug, a pivoted lever formed in two parts adapted to telescope as described, a hammer formed integral with a firing pin, and a projecting stem having a spring thereon, a sear for engaging said hammer, said pivoted lever being adapted to engage with said hammer when moved by said hinged barrel, substantially as specified.

543,367. ACCORDION OR SIMILAR MUSICAL INSTRUMENT. WILHELM ZIELKE, Thorn, Germany. Filed Feb. 25, 1895. Serial No. 539,587. (No model.)



Claim.—1. In an accordion or similar musical instrument the combination of the reed plate with a sound bell and with a vibrating partition within such bell, substantially as specified.

2. The combination of a reed plate with a sound bell, an inclosed vibrating partition and inclosed sound producing vibrating bodies, substantially as specified.

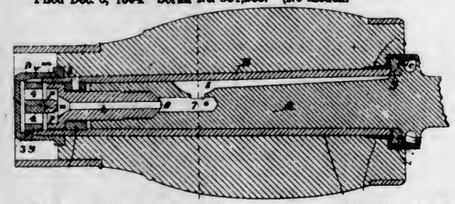
3. The combination of a reed plate with a sound bell, an inclosed vibrating partition and rails engaging the edges of the partition, substantially as specified.

4. The combination of a reed plate with a sound bell, an inclosed vibrating partition, and a forked stop adapted to engage and arrest said partition, substantially as specified.

5. The combination of a reed plate with a sound bell, an inclosed vibrating partition and with vibrating springs and disks secured within the bell, substantially as specified.

6. The combination of a reed plate with a sound bell, an inclosed vibrating partition and pivots that connect the partition to the bell, substantially as specified.

543,368. CARRIAGE-AXLE. SAMUEL R. BAILEY, Amesbury, Mass. Filed Dec. 8, 1894. Serial No. 531,265. (No model.)



Claim.—1. In a carriage axle the two part solid collar formed of parts *a* and *b*, having groove *c* between them, the part *a* having greater diameter than part *b*, and flange *e* formed internally with an outward flare, and formed with lip *h* to abut against part *b* of the solid collar, substantially as specified.

2. In a carriage axle, the nut 1 threaded in the axle and formed with axial hole 8 the projection *n* and the passages *p* formed at the sides of projection *n* and in communication with said central passage 8, substantially as specified.

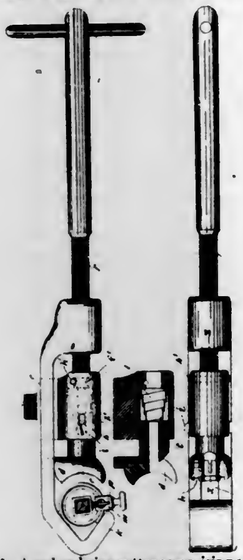
3. In a carriage axle and in combination with nut 1 formed with projection *n*, the plug *y* threaded in the outer part of box B and formed with projection 2 that abuts against said projection *n*, and formed with holes 4, outside said projection 2, substantially as specified.

4. In a carriage axle, and in combination the plug *y* threaded in the outer end of box B, the said box formed with thread *q*, the slits *w* at its outer end a beveled corner as *t* and a threaded cap D formed to impinge upon the beveled part of said box to compress it upon plug *y*, substantially as specified.

5. In combination with nut 1 formed with an axial passage 8 that communicates with opening in cap D, the axle A formed with a central passage 7, in rear of nut 1, a top groove 5 and hole 6 connecting said groove with passage 7, all substantially as specified.

6. In a carriage axle the combination of nut 1 formed with head *m* and threaded in the axle, the ring *i* secured in box B and arranged to abut against nut 1, and plug *y* also secured in box B to abut against the outer face of head *m* substantially as specified.

543,369. ROD AND PIPE CUTTER. WILHELM BARNEKOW, Magdeburg, Germany. Filed May 5, 1894. Serial No. 510,158. (No model.)



Claim.—1. A rod and pipe cutter comprising a fixed jaw, a sleeve sliding longitudinally in ways of said fixed jaw, a sliding jaw, carried by the sleeve, a volute spring located within the sleeve and bearing against the sliding jaw, a cutter mounted in the sliding jaw, and an operating screw coupled to the sleeve; substantially as described.

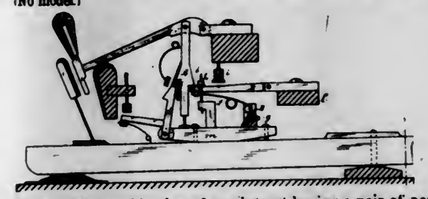
2. A rod and pipe cutter comprising a fixed jaw having a longitudinal slot, through its back, a sliding sleeve, having a projection guided in the slot, a sliding jaw, carried by the sleeve having a projection guided in the slot pin and slot connections with the sleeve, and curved recesses at its end, a spring located within said sleeve, and bearing against the sliding jaw, a cutter mounted in the sliding jaw, a pair of disks for supporting the article operated upon and fitted to the curved recesses, and an operating screw connected with the sleeve; substantially as described.

3. A rod and pipe cutter comprising a fixed jaw, a sleeve sliding within said fixed jaw, a sliding jaw carried by the sleeve, having curved recesses, a cutter mounted in the sliding jaw, a spring located within the sleeve and bearing against the sliding jaw, a pair of disks for supporting the article to be operated upon, fitted to the curved recesses of the sliding jaw and an operating screw connected with the sleeve, substantially as described.

4. A rod and pipe cutter comprising a fixed jaw, a sleeve sliding within said fixed jaw, a spring sliding jaw carried by the sleeve, having curved recesses, a cutter mounted in the sliding jaw, a pair of disks having circular grooves and fitted to the curved recesses of the sliding jaw, and a brace consisting of a bridge-block and pins working through the bridge-block and entering the grooves of the disks; substantially as described.

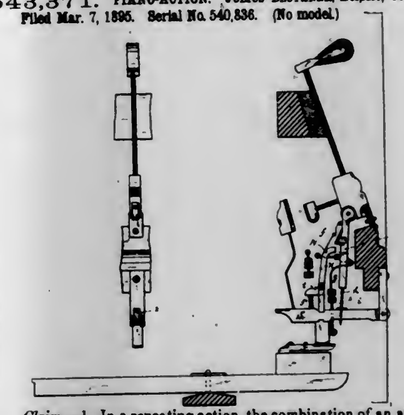
5. A rod and pipe cutter comprising a fixed jaw, a sleeve sliding within said fixed jaw, a spring sliding jaw carried by the sleeve, having curved recesses, a cutter mounted in the sliding jaw, and a pair of disks fitted to the curved recesses of the sliding jaw, one of the disks also being provided with a sleeve and clamp-screw; substantially as described.

543,370. REPEATING-ACTION FOR GRAND PIANOS. JULIUS BLÜTHNER, Leipsic, Germany. Filed Mar. 7, 1895. Serial No. 540,835. (No model.)



Claim.—The combination of an abstract having a pair of noses with a jack engaging one of said noses, a lever engaging the other nose, an adjustable spring for supporting the lever and a regulating button for limiting the play of the lever, substantially as specified.

543,371. PIANO-ACTION. JULIUS BLÜTHNER, Leipsic, Germany. Filed Mar. 7, 1895. Serial No. 540,836. (No model.)

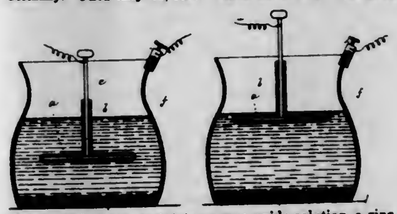


Claim.—1. In a repeating action, the combination of an abstract with a downwardly extending spring arm connected thereto at its upper end, a button secured to the free end of the spring arm, and a regulating button adapted to engage said button, substantially as specified.

2. The combination of an abstract having a nose, with a spring arm, a button adapted to be engaged thereby, a guide pin, a jack, and a spring adapted to throw the jack into engagement with the nose, substantially as specified.

3. The combination of an abstract having a nose, with a spring arm, a button secured thereto, a regulating button engaged thereby, a guide pin secured to the lower end of the abstract, an arched jack and a loop spring adapted to throw the jack into engagement with the nose, substantially as specified.

543,372. SECONDARY BATTERY. EMIL BOETTCHER, Leipsic, Germany. Filed May 12, 1890. Serial No. 351,445. (No model.)

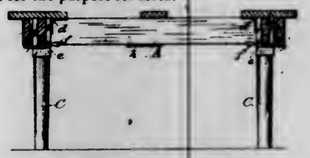


Claim.—A battery containing a zinc oxide solution, a zinc cathode and a non-conducting covering that extends over the lower surface, the rim and the vertical stem of the cathode, substantially as specified.

543,373. TRUNK-STAND. JOHN W. BUTLER, Washington, D. C. Filed Oct. 22, 1894. Serial No. 526,607. (No model.)

Claim.—The trunkstand herein described, consisting of the frame A, provided with a catch *h* and having the end-pieces A', provided with the angular springs E secured thereto, and having hooks *e* and the slats B forming the top, in combination with the hinged legs C, connecting bars D arranged to be held in an upright position by means of said

springs, and in folded position by the holder *h*, all arranged as shown and specified for the purpose set forth.

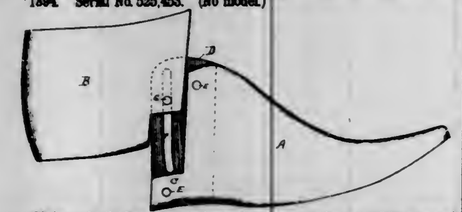


543,374. WINDOW-FASTENER. HENRY H. CASWELL, Newport, Vt. Filed Feb. 9, 1895. Serial No. 537,825. (No model.)



Claim.—A sash fastener made from a single piece of metal, comprising a plate having a longitudinally elongated slot adapting it to be pivotally secured to a window sash and to slide longitudinally thereon, and an angular extension projecting at right angles thereto and formed with a vertically elongated slot left open at one end and adapted to pass over and engage a headed pin or stud on the window casing, in the manner and substantially as described.

543,375. LAST. EDWARD M. COLE, Chicago, Ill. Filed Oct. 10, 1894. Serial No. 525,453. (No model.)

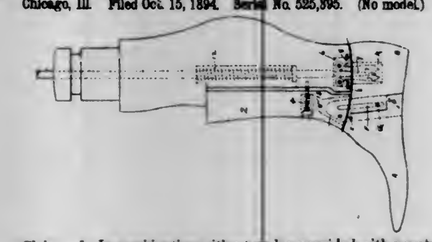


Claim.—1. In lasts consisting of two parts inseparably secured together but permitting one part to have a limited movement in relationship to the other part, an inclined line of intersection between the said parts, and means whereby the movement required to bring the parts into a position corresponding to a uniform last will cause the two parts to be locked securely together.

2. In a two-part last, one part of which has a limited movement on the other part, an inclined line of intersection between the said parts, along which the said movement occurs, and means for guiding said movement so that at its extreme the said parts will be wedged together.

3. In a two-part last having an inclined line of intersection provided with an offset therein, devices for connecting the two parts together and permitting one part to have a limited movement on the other part, and means for directing the course of this movement so as to cause the two parts to be wedged together when they are in a position conforming to a uniform last.

543,376. TREE-LEG AND TREE-FOOT. EDWARD M. COLE, Chicago, Ill. Filed Oct. 15, 1894. Serial No. 525,895. (No model.)



Claim.—1. In combination with a tree-leg provided with a socket and a projecting and expanding pin, a two part tree-foot having its parts connected together by means of a pin and a slotted plate, a projecting edge on said plate adapted to enter and fit the socket in the tree-leg, and a socket in the tree-foot adapted to be engaged by said expanding pin.

2. In combination with a two-part expanding tree-leg having a socket in one part and an expanding pin in the other part, a two-part tree foot having a slotted tongue in the fore part section and a groove and pin in the heel section for securing the parts together and permitting one part to have a limited movement on the other part, a tapering projection on said tongue adapted to enter and fit the socket on the tree-leg, and a socket in the heel-section for receiving the expanding pin on the tree-leg.

3. A two-part tree-foot having its parts secured together by a slotted plate and pin, the slot in said plate being at an inclination to the line of intersection between said parts for the purpose of causing the parts to be wedged together when pressed into the position corresponding to that of a uniform last, a projecting edge on said plate for engaging a socket on a tree-leg, and a tapering socket in the heel section of said tree-foot for receiving and being gripped by an expanding pin on the same tree-leg.

4. A two-part tree-foot having its parts secured together by means of a slotted plate and pin and having the slot set at an inclination to the line of intersection between the parts so as to cause the parts to become wedged together when put into the position corresponding to that of a uniform last, a two-part tree-leg, one part of which has a limited movement toward and from the other part, a projection on one tree-foot part and a socket on the other tree-foot part, and corresponding socket and projection on the tree-leg parts for connecting the tree-foot and the tree-leg together, one of said projections being in the form of an expanding pin for the purpose of causing it and its corresponding socket to form a gripping device.

5. In combination, a self-locking two-part tree-foot, a two-part tree-leg having its parts arranged to expand or contract so as to make it conform to different lengths of tree feet, sockets and projections for securing the tree-leg and tree-foot firmly together, and a layer of yielding material between said tree-leg and said tree-foot for the purpose of compensating for inequalities caused by using tree-feet of different lengths.

6. A two-part tree-foot and a two-part tree-leg, a projection on the fore part of the tree-foot and a corresponding socket on the fore part of the tree-leg, a gripping device for securing the rear parts of the tree-leg and tree-foot together, said gripping device consisting of an expanding pin and a corresponding socket, and means for permitting the parts of the tree-leg to expand and contract in the direction of from front to rear to cause it to accommodate and correspond to different lengths to tree-foot.

543,377. METHOD OF MANUFACTURING CORK-SOLE SHOES. EDWARD M. COLE, Chicago, Ill. Filed Nov. 3, 1894. Serial No. 527,823. (No model.)



Claim.—1. The process of manufacturing cork-sole shoes which consists; first, in sewing the inner sole, the upper, the casing and the cork-welt together as in the ordinary manner; second, in channeling the cork-welt and burnishing the edge thereof after it has been sewed in position; third, in placing the loose edge of the casing and the edge of the welt in said channel and securing the said parts to the inner sole by a line of sewing that passes through all of said parts on the line of the channel in said cork-welt; and fourth, in securing the cork and the outer sole to the other parts in the ordinary manner.

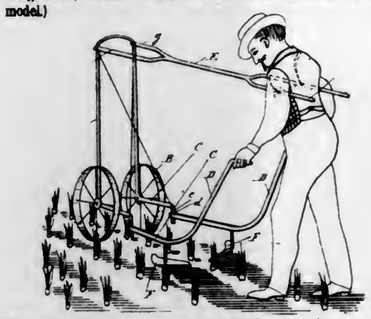
2. In the manufacture of cork-sole shoes, the process of securing a smooth and uniform face on the cork-welt which consists in channeling said cork-welt at one side of its face after it is secured in position, said channel being at a definite and predetermined distance from the opposite side of the face, and in burnishing said face at the same time that the channel is formed.

3. In the manufacture of cork-sole shoes, the process of securing a uniform face on a cork-welt which consists in running a channel along one side of the face of said cork-welt after it is secured in position, which channel is at a definite and predetermined distance from the opposite side of said face.

4. In the manufacture of cork-sole shoes, the method of securing a uniform line of sewing through the welt, the cork-welt, the inner sole and the intervening parts which consists; first, in securing the cork-welt, the inner sole and the intervening parts together; second, in forming a channel in said cork-welt after it has been secured in place for the purpose of obtaining a uniform line of least resistance for the needle during the second sewing; and third, in running the second line of sewing through the parts laid in this channel and along the depression caused thereby.

5. In the manufacture of cork-sole shoes, the method of securing a uniform line of second sewing by channeling the cork welt after it has been secured in position so as to obtain a line of least resistance in uniform relationship to adjacent parts, and in running said second sewing through the parts laid in said channel and along said line of least resistance.

543,378. HAND WHEEL-CULTIVATOR. ROBERT G. H. DILLON, Long Point, Canada. Filed Oct. 25, 1894. Serial No. 527,092. (No model.)



Claim.—1. The combination, with a wheeled cultivator provided with an arched-shaped frame A extending upwardly to a point substantially level with the chest of the operator; of the pushing shaft E pivoted to the top of the said frame and provided with branches *f*; and the strap G extending over the back of the neck of the operator, holding the branches *f* in his arm pits, and operating to receive all the pushing strain, substantially as set forth.

2. The combination, with a wheeled cultivator provided with an arch-shaped frame A extending upwardly to a point substantially level with the chest of the operator; of the laterally movable handles D pivoted to the lower part of the said frame and supporting the hoes F; the pushing shaft E pivoted to the top of the frame and provided with branches *f*; and the strap G extending over the back of the neck of the operator, holding the branches *f* in his arm pits, and operating to receive all the pushing strain, substantially as set forth.

543,379. CULTIVATOR. JAMES EDWARDS, Peru, Ill., assignor to the Peru Plow and Wheel Company, same place. Filed Nov. 27, 1894. Serial No. 530,148. (No model.)



Claim.—1. As an improvement in cultivators, the combination of the axle, the tongue or pole pivoted to swing horizontally and vertically, the foot lever connected to each side thereof, to swing the same horizontally, and the hand lever to move said tongue, or pole vertically, substantially as and for the purpose specified.

2. As an improvement in cultivators, the combination of the axle, the tongue or pole pivotally connected therewith, and a downwardly extending foot lever, having a horizontol pivot, at each side of, and connected to said tongue or pole, substantially as and for the purpose shown.

3. As an improvement in cultivators, the combination of a shovel supporting frame, a tongue or pole pivotally connected therewith, and a downwardly extending foot lever at each side of, and connected with the tongue or pole, and having a horizontal pivot, substantially as and for the purpose set forth.

4. As an improvement in cultivators, the combination of the axle, the tongue or pole pivoted thereto at its rear end, the horizontally pivoted, downwardly extending foot lever, at each side of said tongue or pole, and a link connecting the upper end of each lever with the pole, substantially as and for the purpose described.

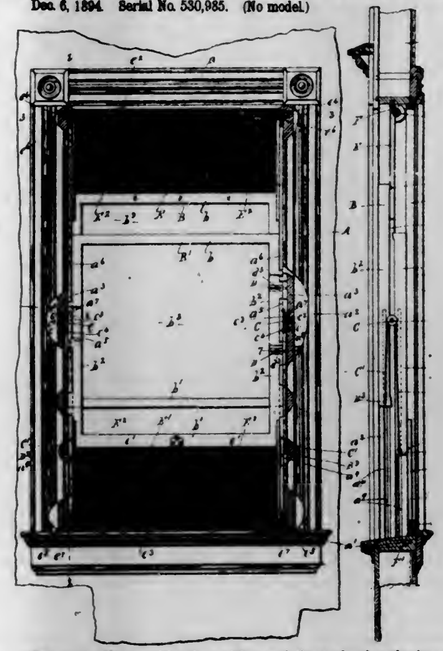
5. As an improvement in cultivators, the combination of an axle, the pole or tongue pivotally connected therewith, levers connected with opposite sides of said tongue, the two forwardly extending bars attached to the axle upon opposite sides of the tongue, bars above and below the tongue which connect the front ends of said forwardly extending bars, and suitably connected gangs of plows, substantially as and for the purpose specified.

6. The combination of a support, a plow beam, having an opening or eye, and the rotary part passing through said eye and connected to the support, that has a lug adapted to be placed in and out of alignment with a slot in the beam, substantially as and for the purpose shown.

7. The combination of a support, a plow beam having an opening or eye, a rotary part passing through said eye and connected to the support, that has a lug adapted to be placed into and out of alignment with a slot in the beam, and means to normally keep said lug and slot out of alignment, substantially as and for the purpose set forth.

8. The combination of a suitable support, as bars, a bolt extending between said bars, a sleeve journaled on said bolt and having radial lugs, a plow beam mounted on the sleeve and having a radial slot for the passage of the lugs when the same aligns therewith, and a handle attached to said sleeve for rocking the same to place lugs and slot into and out of alignment, substantially as and for the purpose described.

543,380. WINDOW. LEVI N. FOWLER, Syracuse, N. Y. Filed Dec. 6, 1894. Serial No. 530,985. (No model.)

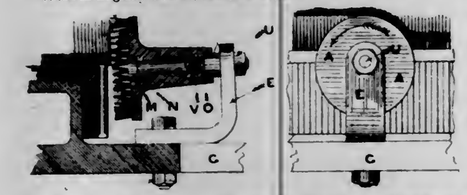


Claim.—1. The combination with a sash frame having the inner faces of its pulley stiles provided with parallel grooves a^4, and sockets a^7 interposed between the grooves, socket bearings c^3 of less diameter than the sockets a^7 inserted into the end walls of said sockets, supporting plates c^4 of greater length than the diameter of the sockets extending lengthwise of the pulley stiles and having their opposite ends secured thereto, upper and lower sashes B B' movable in the grooves a^4, parting strips a^5 interposed between the sashes projecting from the inner faces of the pulley stiles and aligned with the sockets a^7 for concealing said supporting plates and sockets, pulleys C arranged in the sockets a^7 and provided with trunnions *c* journaled in the bearings c^3 and trunnions c' journaled in the supporting plates c^3, and cords C' passed over the pulleys C and having their opposite ends movable on opposite sides of the parting strips and connected to the sashes, substantially as and for the purpose described.

2. The combination with a sash frame having sockets in the inner faces of the pulley stiles, supporting plates at the outer ends of the sockets, upper and lower sashes, parting strips between said sashes projecting from the inner faces of the pulley stiles and aligned with the sockets for concealing the supporting plates and sockets, pulleys arranged in the sockets and provided with outer trunnions supported by the end walls of the sockets and inner trunnions supported by said plates, cords passed over the pulleys and having their opposite ends movable on opposite sides of the parting strips and connected to the sashes, a roller journaled beneath the head or top rail of the frame at the inner side of the upper extremity of the upper sash, a guide roller of smaller diameter than the screen roller arranged between the vertical plane of the upper sash and the former roller and having its axis nearer the lower face of the head or top rail than the axis of the former roller, and a screen passed over the guide roller and having one extremity wound around the former roller and its opposite extremity secured to the adjacent end of the upper sash, substantially as and for the purpose described.

3. The combination with a sash frame, and upper and lower sashes reciprocally movable; of a longitudinal adjustable roller journaled in proximity to one of the rails of the frame, and a screen adjustable widthwise and having one extremity wound around said roller and its opposite extremity secured to the adjacent edge of one of the sashes, substantially as and for the purpose specified.

543,381. APPARATUS FOR CLEANING EDGES OF CIRCULAR COMBS. WILLIAM H. GREENWOOD and FREDERICK FARRAR, Bradford, England. Filed Sept. 25, 1893. Serial No. 486,437. (No model.) Patented in England Dec. 17, 1892, No. 23,157.



Claim.—1. The combination with the circular rotary comb of a combing machine, of a loosely journaled brush or cleaner, bearing against and rotated by direct contact with the comb; substantially as described.

2. The combination with the circular rotary comb of a combing machine, of a loosely journaled brush or cleaner having that portion of its face above its axis of rotation or toward the ends of the comb teeth and on the side of said axis toward which the comb moves pressed against the comb, whereby as the comb revolves, its movement is imparted to the brush or cleaner and the latter turned on its axis as described.

3. The combination with the circular rotary comb of a combing machine, of a loosely journaled brush or cleaner mounted on an axis located below the edge of the comb and set slightly out of a radial line from the center of the comb, whereby the cleaner bears against the comb only in advance of a vertical plane through its center of rotation; substantially as described.

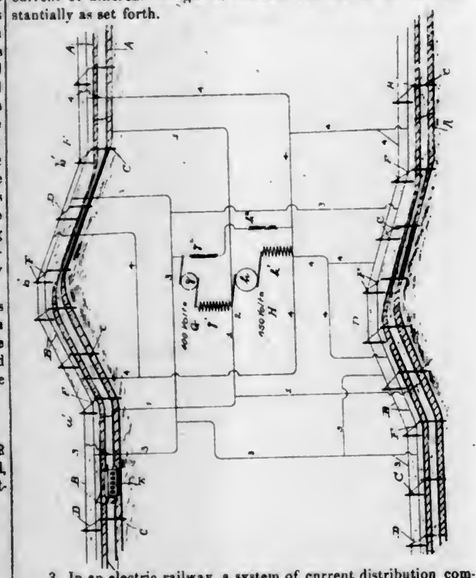
4. The combination with the circular rotary comb of a combing machine, of a loosely journaled brush or cleaner mounted on an axis located below the edge of the comb and set at an inclination to cause the top of the cleaner to contact with the comb and also set slightly out of a radial line from the center of the comb, whereby the cleaner bears against the comb only above a horizontal plane through its center and in advance of a vertical plane through its center of rotation; substantially as described.

5. The combination with the circular rotary comb of a combing machine, of a loosely journaled spring pressed brush or cleaner bearing against and rotated by contact with the comb; substantially as described.

543,382. ELECTRIC-RAILWAY SYSTEM. JOHN C. HENRY, Westfield, N. J. Filed May 13, 1895. Serial No. 549,165. (No model.)

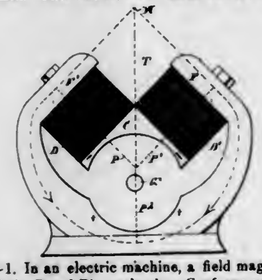
Claim.—1. In an electric railway, a system of current distribution having sources of supply of different electro-motive force coupled together in the three wire or compensating system, one or more road conductors divided into electrically separate sections, and conductors leading from said coupled sources of supply to different sections of the road, whereby predetermined sections will be given different voltages, substantially as set forth.

2. In an electric railway, a system of current distribution comprising one or more road conductors divided into sections insulated from each other, two electric generators of different electro motive force coupled in series, and feed conductors connected with said generators in the three wire or compensating system and supplying current of different voltages to different sections of the road, substantially as set forth.



3. In an electric railway, a system of current distribution comprising one or more working conductors divided into electrically separate sections, two dynamo electric generators of different electromotive force coupled in series, feed conductors connecting the positive and negative sides of said coupled generators with different sections of the road, and a neutral conductor connected with said generators in the three wire or compensating system and common to all the road sections, substantially as set forth.

543,383. DYNAMO-ELECTRIC MACHINE. THOMAS H. HICKS, Detroit, Mich. Filed Jan. 13, 1894. Serial No. 496,756. (No model.)



Claim.—1. In an electric machine, a field magnet consisting of two radial limbs B and B', a pole-piece C of one magnetic polarity joining said limbs together at one end, separate yokes F and F' joining the other ends of said limbs, the ends of the yokes, joined to the magnet-limbs, being separated by a space T; the magnetic polarities of the outer ends of the magnet-limbs, established in the yokes, having an opposite polarity to the pole-piece C, substantially as described.

2. In an electric machine, the combination with yokes, F and F', of a field magnet having only two radial limbs, B and B': said yokes having located therein one of the field poles, substantially as described.

3. In an electric machine, the combination with yokes F and F', separated from each other at one end by the space T, of a field magnet having radial limbs B and B', and having one of the magnetic field-poles located in said yokes, substantially as described.

4. In an electric machine, the combination with yokes F and F', of a field magnet having only two radial limbs B and B': said yokes being separated at one end by the space T; magnetic poles of one polarity being located in said yokes, substantially as described.

5. In an electric machine, the combination of yokes F and F', with field magnets each consisting of radial limbs B and B', and a pole-piece C; the yokes each being bolted to one of the outer ends of the radial limbs; each pair of yokes and radial limbs being separated at their ends by an open space T, substantially as described.

6. In an electric machine, the combination of two field magnets each having two radial limbs B and B', and a pole piece C; of the yokes F and F' uniting said field-magnets, only one of said yokes being secured to the base of the machine; the ends of the yokes being separated from each other by an open space between each pair of radial limbs B and B' substantially as described.

7. In an electric machine provided with field magnets, an armature, armature shaft, and a commutator, the commutator constructed with a sleeve, G', mounted on the armature shaft, commutator segments insulated from the sleeve, said segments of said commutator constructed with annular grooves located at the peripheral ends of the segments; wire bands, L, located in said grooves and insulated from the segments, and rings located upon said wire bands, substantially as described.

8. In an electric machine provided with field magnets, an armature, armature shaft, and a commutator, the commutator constructed with a sleeve, G', mounted on the armature shaft, segments insulated from the sleeve, the segments of said commutator constructed with annular grooves located at the peripheral ends of the segments; an annular groove intermediate the ends of said commutator, wire bands located in each of said grooves, the intermediate wire band preventing the commutator segments from rising in the center during the rotation of the armature, substantially as described.

9. In an electric machine, a commutator constructed with an annular groove, K', and a wire band located in said groove to prevent the commutator segments from rising during the rotation of said commutator, substantially as described.

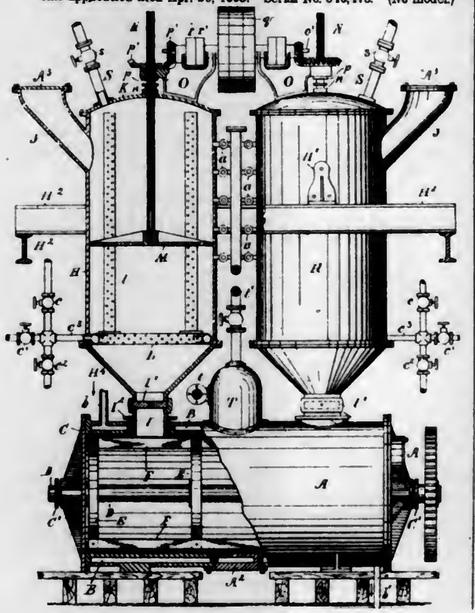
10. In an electric machine, a commutator constructed with an annular groove, K', a wire band located in said groove to prevent the commutator segments from rising during the rotation of said commutator, and a covering cement located upon said wire band, substantially as set forth.

11. In an electric machine, a commutator constructed with annular grooves, K, toward the extremities of the commutator, wire bands located in said grooves and insulated from the commutator segments, substantially as described.

12. In an electric machine, a commutator constructed with annular grooves, K, toward the extremities of the commutator, wire bands located in said grooves and insulated from the commutator segments, and rings located upon said wire bands, substantially as described.

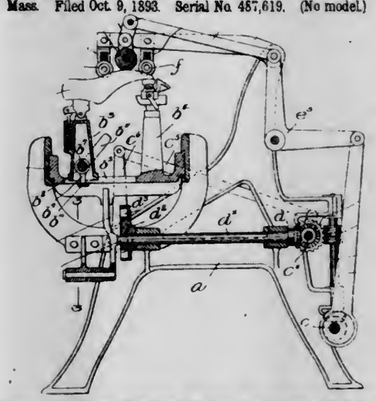
13. In an electric machine, a commutator constructed with annular grooves, K, toward the extremities of the commutator, wire bands located in said grooves and insulated from the commutator segments; nuts located at the extremities of the commutator, and yielding insulating material located between said nuts and the ends of the commutator, substantially as described.

543,384. RENDERING AND DRYING APPARATUS. EMIL HOLTHAUS, Canarsie, N. Y., assignor to Cyrus C. Currier, Newark, N. J. Original application filed Dec. 12, 1894, Serial No. 531,570. Divided and this application filed Apr. 20, 1895. Serial No. 546,478. (No model.)



Claim.—The apparatus herein shown and described for treating garbage to extract the grease and dry the residue in a continuous operation within closed vessels, which consists of the drying cylinder A with means for heating the same and agitating the material within the cylinder, a series of separate rendering tanks H arranged above the same and having their bottom outlets I tightly connected with the interior of the cylinder, suitable inlets for charging the tanks with means for tightly closing the same, a movable plunger M in each rendering tank with means for depressing the same to express the fluid from the material when cooked, means for conducting the expressed fluid from the interior of the tank, and a suitable cock, as c^4, for drawing off such fluid, one or more condensers and suitable pipe connections for drawing off and condensing the fumes from the tanks and drier, and gates for connecting the tanks in succession with the same drying cylinder, whereby successive charges may be rendered in the separate rendering tanks, the moisture expressed therefrom, and the charges dried successively in the same drying cylinder.

543,385. SOLE-LEVELING MACHINE. EDWARD C. JUDD, Boston Mass. Filed Oct. 9, 1893. Serial No. 487,619. (No model.)



Claim.—1. A sole-leveling machine, combining in its structure a jack, a vertically swinging frame or holder, a roll-carrier on the frame or holder, a leveling roll mounted on the carrier, and side rolls mounted on the frame or holder independent of the said roll-carrier.

2. A sole-leveling machine, combining in its structure a jack, a swinging frame or holder, a movable roll-carrier mounted on the frame or holder, a leveling-roll arranged on the said carrier, and yielding side rolls mounted in pairs on the swinging frame and the rolls of each pair having their axes substantially coincident.

3. A sole-leveling machine, comprising in its construction a jack, a vertically swinging frame or holder above said jack, a leveling-roll supported by the said frame or holder, and one or more pairs of side-rolls connected with the frame or holder on one side of the said leveling-roll, the axes of the two rolls of a pair being substantially in line with each other.

4. The combination of a jack, a vertically-swinging frame or holder above said jack, a leveling-roll supported by said holder and side-rolls supported by said holder in position to bear on the marginal portions of the sole face, the said side-rolls being yieldingly supported whereby they are adapted to move endwise and follow the curves of the sole edge, as set forth.

5. The combination of a jack, a vertically-swinging frame or holder above the jack, a leveling-roll mounted in a carrier which is pivotally connected with said holder, mechanism for oscillating said carrier to move the roll back and forth on the sole, and side-rolls supported by said holder as set forth.

6. The combination of a jack, a vertically-swinging frame or holder above the jack, a leveling-roll supported by said holder, studs or bearings secured to the holder, independently-movable flanged side-rolls adapted to slide on said studs, and springs whereby said rolls are yieldingly pressed inwardly, their flanges bearing against the edge of the sole as set forth.

7. The combination of a jack, a vertically-swinging frame or holder above the jack, a leveling-roll supported by said holder, vertically adjustable standards carried by the holder and auxiliary side-rolls carried by said standards.

8. The combination of a jack, a vertically-swinging frame or holder above the jack, a leveling-roll supported by said holder, standards adjustably secured to the holder, studs or bearings secured to said standards and adjustable therewith so that the studs may stand at different angles, and independently-movable spring-pressed flanged side-rolls adapted to slide on said studs, as set forth.

9. A sole-leveling machine, comprising in its construction a pivoted yoke having slide-ways, a slide fitting said ways and carrying last-supporting devices, and means for oscillating the yoke and reciprocating the slide.

543,386. PNEUMATIC TIRE. ARTHUR A. KING, Aurora, Ill. Filed Mar. 28, 1895. Serial No. 543,483. (No model.)

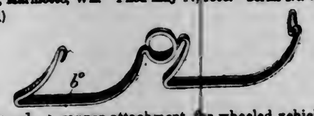


Claim.—1. As a means for fastening tires to wheel rims, the combination of a wire extending circumferentially around the rim, a block connected to each end of said wire, a shaft having right and left hand screw threaded portions each of which engages a threaded opening in a block having a flat side, means to rotate said shaft, and a surface engaging the flat side of each block to hold the same from rotating as the shaft is revolved, substantially as and for the purpose specified.

2. As a means for fastening tires to wheel rims, the combination of a wire extending circumferentially around the rim, a block connected to each end of said wire, a shaft having right and left hand, screw-threaded portions, each of which engages a threaded opening in a block, a casing for each block that permits the same to slide but not to rotate, and means to rotate said shaft, substantially as and for the purpose set forth.

3. As a means for fastening tires to wheel rims, the combination of a wire extending circumferentially around the rim, a block connected to each end of said wire having flat sides, a shaft having right and left hand screw threaded portions, each of which engages a threaded opening in a block, a casing for each block, engaging the flat sides thereof to hold the same from rotating a bevel pinion on said shaft, and an operating shaft having a pinion meshing with that upon the threaded shaft, substantially as and for the purpose described.

543,387. RUNNER ATTACHMENT FOR VEHICLES. LOUIS LAVIGNE, Marinette, Wis. Filed May 17, 1895. Serial No. 549,671. (No model.)



Claim.—1. A runner attachment for wheeled vehicles in which the wheels are of a different gage, which comprises a bar or plate formed near the two ends thereof into grooved runners for the two wheels on a side, with the central portion of said bar or plate formed into a coil spring, with means for attaching the front and rear ends of said bar to the wheels of the vehicle, and for attaching said coil spring to the opposite sides of the said wheels, substantially as and for the purposes described.

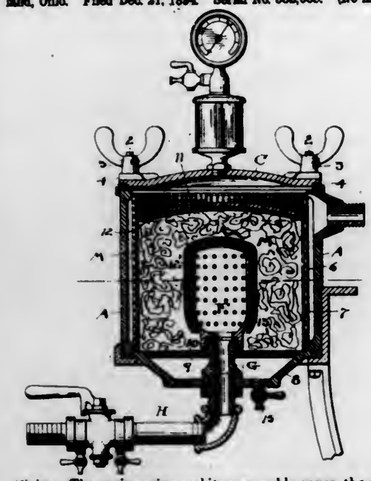
2. A runner attachment for wheeled vehicles, which comprises a bar or plate formed near the two ends thereof into grooved runners for the two wheels on a side, with the central portion of said bar or plate formed into a coil spring, with hooks for attaching the front and rear ends of said bar to the wheels of the vehicle, and coil springs connecting the coil spring formed in said bar or plate to the opposite sides of the said wheels, substantially as and for the purposes described.

543,388. BARREL-SWING. WILLARD D. LLOYD, Beaver Falls, Pa. Filed May 6, 1895. Serial No. 548,332. (No model.)



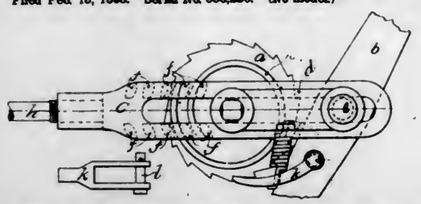
Claim.—The combination, in a barrel stand, of the staff A; the foot B, attached to said staff and provided with the recess *a*, the groove *b*, and the steps *c*; the hook D, sliding upon the staff; the socket C, encircling the head of the staff, and provided with the slotted offset *e*, adapted for attachment to an upper support for the staff, and the pivot E, adapted for attachment to a floor or platform, to serve as a bottom support for the staff, and also adapted for engagement with the aforesaid recess in the foot attached to the staff, the whole constructed and arranged as, and for the purposes, described.

543,389. FILTERING APPARATUS. CHARLES H. LOEW, Cleveland, Ohio. Filed Dec. 21, 1894. Serial No. 532,605. (No model.)



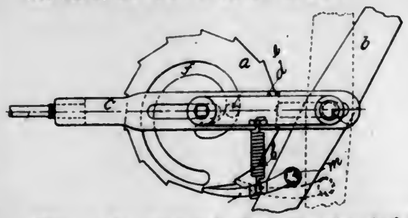
Claim.—The main casing and its removable cover, the open work tubes —6— and —7— within the casing sleeved upon one another and set apart from the casing to leave a free space between said parts and having a separate detached cover serving as a follower in combination with the inner perforated hollow part —F— and the discharge pipe connected with the bottom thereof, said part —F— having an open work covering —12— over its outside and the jacket —13— over said covering, the filtering media packed within the said tubes —6— and —7— and having the hollow part —E— in about the center thereof, the inlet pipe arranged to discharge into the space within casing —A— about the tubes —6— and —7— means to produce a pressure in said inlet pipe and said filter, and the outlet —15— in the bottom of the casing —A—, substantially as set forth.

543,390. SLACK-ADJUSTER. WALDO H. MARSHALL, Chicago, Ill. Filed Feb. 13, 1895. Serial No. 538,220. (No model.)



Claim.—In a brake slack adjuster, a rod or connection provided with a series of teeth or bearing points, in combination with a spiral cam, adapted upon rotation to successively engage said teeth, substantially as shown and for the purpose specified.

543,391. SLACK-ADJUSTER. WALDO H. MARSHALL, Chicago, Ill. Filed Feb. 13, 1895. Serial No. 538,231. (No model.)

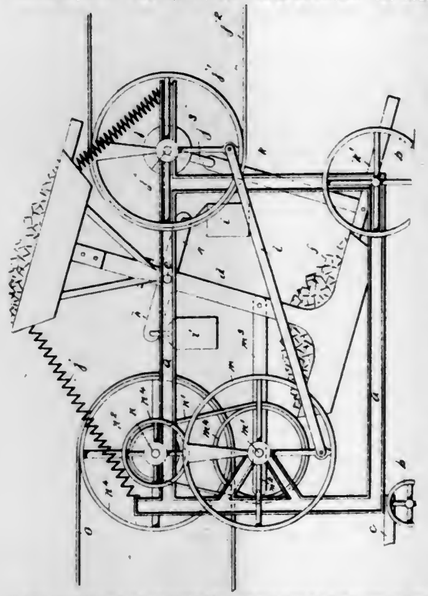


Claim.—1. In a brake slack adjuster, a ratchet wheel with its journals in a connection to a brake lever, and having a spirally shaped cam engaging a pin or bearing in the brake rod or connection to be adjusted, and adapted upon rotation to alter the length of said rod.

2. In a brake slack adjuster, a ratchet wheel having a spirally shaped cam engaging a pin or bearing in the brake rod or connection to be adjusted, rotated by a pawl pivoted on an operating lever, and adapted upon rotation to alter the length of said rod.

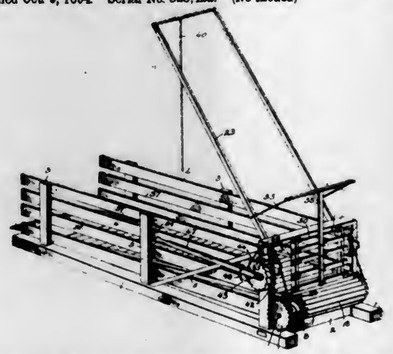
3. In a brake slack adjuster, a ratchet wheel with its journals in a connection to a brake lever, having a spirally shaped cam engaging a pin or bearing in the brake rod or connection to be adjusted, rotated by a pawl pivoted on an operating lever, and adapted on rotation to alter the length of said rod.

543,392. MECHANICAL POWER. CHARLES R. MATTHEWS, Charlie Hope, Va. Filed Apr. 27, 1895. Serial No. 547,331. (No model.)



Claim.—A frame, a pendulum fulcrumed therein between its ends and having the weights at both ends and on opposite sides thereof and the oppositely acting springs, a shaft connected with the prime motor and having a crank connected to one end of the pendulum, another shaft arranged to be connected with the device to be driven and having a crank connected with the same end of the pendulum and the pitman eccentrically connecting said two shafts.

543,393. STOCK-LOADER. WILLIAM J. MEAD, Mapleton, Minn. Filed Oct. 9, 1894. Serial No. 525,422. (No model.)



Claim.—1. In a stock loader, the combination of a frame provided with vertical sides forming a chute or gangway, a carrier frame located longitudinally therein, a carrier mounted on the carrier frame, the carrier frame being capable of having its front end swung in a vertical line, a drum journaled in said front end of the carrier frame and over which the carrier passes, a gear fixed to said drum, a driven gear mounted on the frame of the machine, a lever fulcrumed on the frame of the machine and connected to the carrier frame whereby the front end of the carrier frame may be raised, and whereby the gear of the drum may be engaged with the driven gear, and a discharge gate connected to the lever so as to be operated in unison therewith, substantially as described.

2. In a stock loader, the combination of a frame, a carrier mounted therein so that one end will be capable of swinging in a vertical line, a drum at said end of the carrier and over which it operates, a gear fixed to the drum, and a drive gear mounted on the frame of the machine and with which the gear of the drum may engage when the carrier is raised, substantially as described.

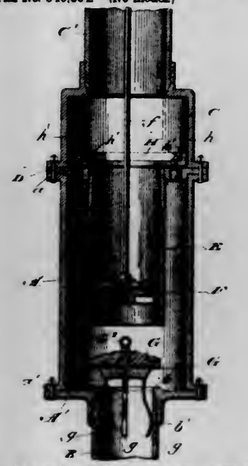
3. In a stock loader, the combination of a frame having vertically-extending sides forming a chute or gangway, a carrier frame mounted therein and pivoted at one end so that the remaining end will be capable of swinging in a vertical line, a drum journaled in the said movable end of the carrier frame, a carrier operating over said drum, a gear fixed to the shaft of said drum, a drive gear fixed to the frame of the machine and adapted to be engaged by the gear of the carrier frame when said frame is raised, a lever fulcrumed to the frame and connected to the carrier frame whereby the carrier frame may be raised, and a discharge-gate mounted upon the frame and connected to the lever, whereby it will be manipulated in unison with the carrier frame, substantially as described.

4. In a stock loader, the combination of a frame, a carrier arranged longitudinally therein, a gear fixed to the frame and capable of connection with the carrier, a ratchet-disk fixed to the gear, a stop-pawl for preventing back movement thereof, a sweep lever pivotally mounted at the axis of the ratchet-disk, and a pawl on said lever and operating with the disk, substantially as described.

5. In a stock loader, the combination of a frame provided with vertical sides forming a chute or gangway, a stock carrier located longitudinally therein and arranged to have one end capable of swinging in a vertical line, and drive mechanism fixed to the frame and capable of being engaged and disengaged with the carrier as the same moves as aforesaid, whereby power may be transmitted to the carrier and the same operated, substantially as described.

6. In a stock loader, the combination of a frame provided with vertical sides forming a chute or gangway, a stock carrier located therein and arranged to have one end capable of swinging in a vertical line, means for raising and lowering said end of the carrier, a gate commanding the open-end of the chute or gangway and connected to the operating mechanism of the carrier so as to be opened when the carrier is raised, and operating mechanism fixed on the frame and capable of being engaged and disengaged with the carrier as the same moves as aforesaid, whereby power may be transmitted to the carrier and the same operated, substantially as described.

543,394. PUMP. HENRY MEHL, Bushton, Kans. Filed Mar. 7, 1895. Serial No. 540,884. (No model.)

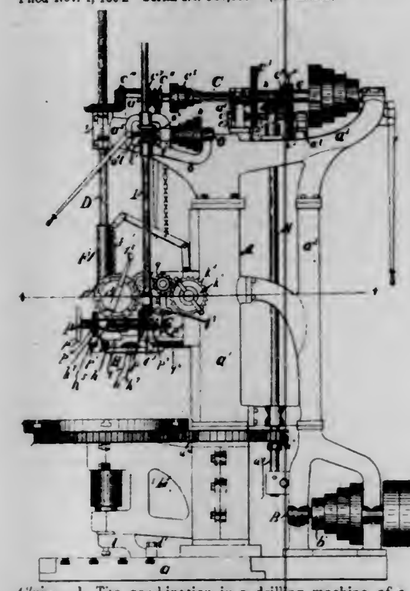


Claim.—1. In combination with a pump constructed substantially as shown, of valves G and H provided with spring guide bars which are attached to the valves and are curved toward each other at their free ends, substantially as shown and for the purpose set forth.

2. In combination with a pump constructed substantially as shown, of a stock or casing A, annular plate D having apertures D', the parts of the plate between the apertures being concave, a ring-valve having a packing and spring guide bars attached thereto by means of bolts which are positioned in line with the apertures in the annular plate, a cylinder E carried by the annular plate, a piston attached to a piston rod, and a valve G having depending spring guide bars which enter the pipe B carried by the stock or casing, the cylinder E and exit pipe being of the same diameter and of a greater diameter than the suction pipe, substantially as shown and for the purpose set forth.

3. In combination with a pump constructed substantially as shown and provided with a stock or casing A, an annular plate D attached to the stock or casing and provided with apertures, an inner cylinder E attached to said annular plate so as to depend therefrom, a ring-valve H positioned above the annular plate, and a piston and operating means therefor; together with a valve G having depending guide springs *g*, the length of the valve G from its washer to the ends of the guide springs being greater than the distance between the seat for said valve and the lower end of the inner cylinder, substantially as shown, whereby the valve can be guided from the cylinder to its seat, as set forth.

543,395. DRILLING-MACHINE. ANTON MILL, Cincinnati, Ohio. Filed Nov. 1, 1894. Serial No. 527,663. (No model.)



Claim.—1. The combination in a drilling machine of a main frame; a secondary frame movable thereon; a drill spindle carried by the secondary frame; a carriage adapted to carry a turning tool and movable relatively to the drill spindle; a revoluble face plate mounted on a frame adapted to swing about the main frame, below the secondary frame; means for rotating the spindle; means for moving the tool carriage, and means for moving the secondary frame; substantially as and for the purpose set forth.

2. The combination in a drilling machine of a main frame; a secondary frame movable thereon; a tool carriage movable transversely to the path of movement of the secondary frame; a drill spindle carried by the secondary frame; a revoluble face plate mounted on a frame adapted to swing about the main frame below the secondary frame; means for rotating the spindle; means for moving the secondary frame, means for moving the tool carriage, and means for locking the face plate in a position having its center of rotation concentric with the center of rotation of the drill spindle, substantially as and for the purpose set forth.

3. The combination, in a drilling machine of a main frame, a secondary frame movable thereon, a tool carriage carried by the secondary frame and adapted to move transversely to its path of movement, a drill spindle carried by the secondary frame, means for moving the tool carriage, means for operating the spindle, secondary frame and tool carriage simultaneously, and means for disconnecting the tool carriage from the operating mechanism, substantially as and for the purpose set forth.

4. The combination, in a drilling machine of a main frame, a secondary frame movable thereon, a tool carriage carried by the secondary frame and adapted to move transversely to its path of movement, an arm pivoted to the secondary frame, carrying at one end a slotted link adapted to be secured to the tool carriage, and a roller at the other end adapted to move in a guide pivotally secured to the main frame, substantially as and for the purpose set forth.

5. The combination in a drilling machine of a main frame a secondary frame movable thereon; a tool carriage carried by the secondary frame and adapted to move transversely to the path of movement of the secondary frame; a drill spindle carried by the secondary frame and adapted to be driven from the main frame; a revoluble face plate carried by a bracket mounted on the main frame below the drill spindle; a gear secured to the face plate adapted to mesh with a gear supported on the main frame; a vertical shaft, carrying a pinion adapted to mesh with a pinion on a driving shaft, and a gear adapted to mesh with the gear mounted on the main frame: means for raising or lowering the shaft: means for rotating the spindle: means for moving the secondary frame, and means for moving the tool carriage, substantially as and for the purpose set forth.

6. The combination in a drilling machine of a main frame, a driving shaft carried thereby; a secondary frame adapted to move on the main frame; a drill spindle carried by a sleeve mounted in the secondary frame; a pinion on the driving shaft adapted to mesh with a pinion feathered to the drill spindle; a shaft driven from the driving shaft, carried by the secondary frame; a bevel pinion on its lower extremity adapted to engage with a pinion carried by a supplementary shaft having a worm, adapted to mesh with a worm wheel carried by an arbor; a pinion mounted on the arbor and adapted to mesh with a rack bar carried by the sleeve supporting the drill spindle; a traveling tool carriage carried by the secondary frame; and a connection between the supplementary shaft and tool carriage whereby the tool carriage may be moved on the secondary frame transversely to its path of movement, substantially as and for the purpose set forth.

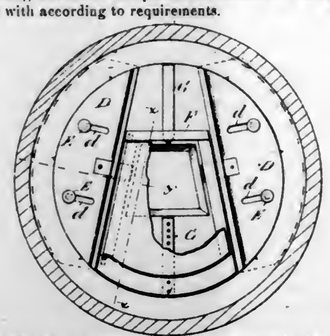
7. The combination in a drilling machine of a main frame, a driving shaft carried thereby; a secondary frame adapted to move on the main frame; a drill spindle carried by a sleeve mounted in the secondary frame; a pinion on the driving shaft adapted to mesh with a pinion feathered to the drill spindle; a shaft, driven from the driving shaft, carried by the secondary frame; a bevel pinion on its lower extremity adapted to engage with a pinion carried by a supplementary shaft having a worm, adapted to mesh with a worm wheel carried by an arbor; a pinion mounted on the arbor and adapted to mesh with a rack bar carried by the sleeve supporting the drill spindle: a traveling tool carriage carried by the secondary frame; a spiral gear mounted on the shaft carrying the worm, adapted to mesh with a spiral gear carried by a shaft adapted, through connecting gearing, to drive a feed screw operating the tool carriage, substantially as and for the purpose set forth.

8. In a drilling machine the combination of a main frame: a driving shaft carried thereby; a secondary frame adapted to move on the main frame; a drill spindle carried by a sleeve mounted in the secondary frame; a pinion on the driving shaft adapted to mesh with a pinion feathered to the drill spindle, a shaft driven from the driving shaft and carried by the secondary frame; a bevel pinion on its lower extremity adapted to engage with a pinion carried by a supplementary shaft having a worm adapted to mesh with a worm wheel carried by an arbor; a pinion mounted on the arbor and adapted to mesh with a rack bar carried by the sleeve supporting the drill spindle; a traveling tool carriage carried by the secondary frame; and a connection between the supplementary shaft and tool carriage whereby the tool carriage may be moved on the secondary frame transversely to its path of movement; a revoluble face plate mounted on a swinging frame, and a vertical shaft driven from the driving shaft adapted, through connecting mechanism, to rotate the face plate, substantially as and for the purpose set forth.

9. The combination in a drilling machine of a main frame, a driving shaft carried thereby; a secondary frame adapted to move on the main frame; a sleeve mounted on the secondary frame; a drill spindle carried thereby; a pinion on the driving shaft adapted to mesh with a pinion feathered to the drill spindle; a shaft driven from the driving shaft and carried by the secondary frame; a bevel pinion on its lower extremity adapted to engage with a pinion carried by a supplementary shaft having a worm adapted to mesh with a worm wheel carried by an arbor; a pinion mounted on the arbor and adapted to mesh with a rack bar carried by the sleeve supporting the drill spindle; an arbor mounted on the secondary frame adjacent to the main frame; a pinion on the arbor adapted to engage with a rack bar secured to the main frame; a gear loosely mounted on the arbor and in line with a gear mounted on the arbor which actuates the sleeve carrying the drill spindle; a clutch adapted to lock the gear to the arbor and a train of gears mounted on a pivoted arm, adapted to mesh with the gears on the arbors, and form a driving connection between them; a traveling tool carriage carried by the secondary frame; a connection between the supplementary shaft and tool carriage whereby the tool carriage may be moved on the secondary frame transversely to its path of movement; a revoluble face plate mounted on a swinging frame; a shaft driven from the driving shaft and adapted, through connecting mechanism, to rotate the face plate, substantially as and for the purpose set forth.

543,396. BARREL-COVER. JOHN MURRAY, St. Louis, Mo. Filed Sept. 15, 1894. Serial No. 523,110. (No model.)

Claim.—1. A barrel cover, comprising a body having an interior opening for passage of the barrel contents, and horizontal guides on its upper surface, a secondary cover for said opening, and a transversely sliding attachment adapted to be mounted on said guides, or dispensed with according to requirements.



2. A brine barrel cover comprising a transversely sliding wedge-frame surrounding, but not obstructing, a hole through the cover giving access to the contents of the barrel and adjunctive devices operating therewith.

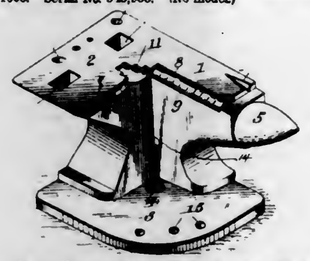
3. A brine barrel cover comprising a main cover having an access hole to the subaqueous contents, an open frame slidingly mounted around said hole without closing it in normal adjustments, and expanding pieces operated by said frame to engage anywhere with the sides of the barrel.

4. A barrel cover comprising a main cover having an access hole to withdraw the contents from below, a transversely sliding frame surrounding said access hole without obstructing it, and expanding segments on opposite sides of said frame and slidingly connected therewith.

5. An interiorly adjustable cover for brine barrels, comprising a wedge-frame, open for access below, and movable segments embracing said wedge-frame, having a slidingly operated connection of dovetail tongues and grooves on said members to push out and pull in the segments by the sliding of said wedge-frame.

6. A barrel cover comprising a main cover with a hole for passage of the contents, adjustable segments slidingly connected to said main cover about said hole, and means to hold said segments in adjusted position.

543,397. ANVIL. MALREE W. MCINTURFF, Prosperity, Mo. Filed Apr. 1, 1895. Serial No. 543,933. (No model.)



Claim.—An anvil comprising two wings, one of the wings having a nipple drawing depression near one end, a bevel drill drawing surface near the inside edge, a horn and a beak-iron provided with a socket and round hole, and the other wing having a series of band-forming curved recesses near the inner edge, a series of bolt forming holes near the outer edge and a calk-turning slot near its outer end, substantially as described and for the purpose set forth.

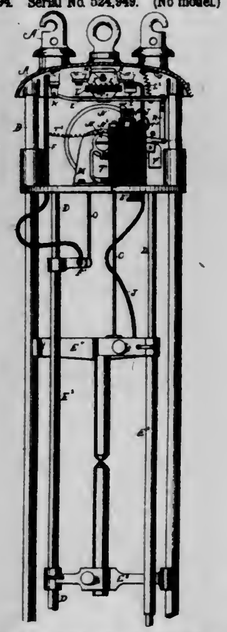
543,398. FENCE-POST. AURELIUS E. NEWMAN and LE ROY JAMES, Ospur, Ill. Filed Feb. 16, 1895. Serial No. 538,656. (No model.)



Claim.—1. The fence post comprising the hollow base having its lower end turned or crimped inwardly to partially close its lower end, the post extending into the upper end of the base and secured therein and provided with the inwardly deflected offset at the upper end of the base, the post being approximately U-shaped in cross section and the brace secured to the base and to the post, substantially as described.

2. The hollow base, the post at its lower end secured in the open end of the base and having the inward offset at the upper open end of the base, the post approximately U-shaped in cross section and the brace secured in the open end of the base, and extending upwardly in the concaved side of the post approximately to the top thereof and approximately U-shaped in cross section and secured to the post, substantially as described.

543,399. ELECTRIC-ARC LAMP. SAMUEL E. NUTTING, Oak Park, assignor to George W. Furbeck and Joseph Kettlestrings, Chicago, Ill. Filed Oct. 5, 1894. Serial No. 524,949. (No model.)



Claim.—1. In an arc lamp the combination of a device for separating and moving the carbons consisting of an electric conductor attached to fixed brackets at each end and adapted to expand by heat from the main current, a carbon carrier, a clamping device adapted to engage with the carbon carrier, means for communicating the expansive movement of the conductor to the clamping device and a device actuated by a derived or shunt circuit around the arc for releasing the carbon carrier from the clamping device, substantially as shown and described.

2. In an arc lamp, the combination of a device actuated by heat from an electric current passing through the lamp, a brake-wheel suitably mounted upon its shaft, a swinging-frame, a brake pivoted in the swinging-frame and adapted to engage with the brake-wheel, means adapted to communicate the action of the heat device to the brake, and a shunt circuit around the arc adapted to move an independent trip and release the brake from the brake-wheel, substantially as set forth.

3. In an arc lamp the combination of a device actuated by heat from an electric current passing through the lamp, a brake wheel suitably mounted upon its shaft, a swinging frame pivoted concentrically with the brake wheel, a brake pivoted in the swinging frame and adapted to engage with the brake wheel, a lever and link adapted to communicate the action of the heat device to the brake, and a shunt circuit around the arc adapted to release the brake wheel from the brake, substantially as set forth.

543,400. PILE-SUPPORTER. GEORGE C. ORMEROD, Asbury Park, N. J., assignor of one-half to Elisha Stout, same place. Filed Jan. 31, 1895. Serial No. 536,866. (No model.)

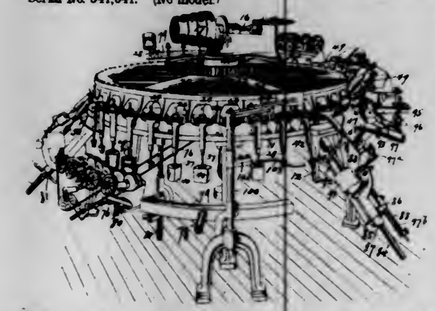


Claim.—1. A supporting device adapted to the use specified, the same consisting of a bulb or case of soft rubber, a flanged base formed integral therewith, a metallic valve-case embedded in said flanged base, and a valve arranged within said case and adapted to admit air or liquid to said bulb for expanding the same, and a stem or rod terminating within or flush with the mouth of the valve-case for unseating the valve, substantially as and for the purpose described.

2. A supporting device adapted to the use specified, the same consisting of a bulb of soft rubber, a flanged integrally formed base for preventing displacement thereof, and a valve case and valve for admitting air or liquid to the said bulb located entirely within said flanged base, said valve case being internally screw-threaded to receive the threaded nozzle or coupling piece of a detachable hand-bulb for inflating or expanding said supporting bulb, substantially as specified.

3. A device adapted for the purpose described, comprising the supporting-bulb 1 of soft rubber, the flanged base 2 for keeping the same in place, made thicker than the main body of the bulb, the thickened lower portion 11 of the bulb for preventing expansion at this point, and a valve adapting the bulb to remain inflated, substantially as set forth.

543,401. MACHINE FOR SOLDERING END SEAMS OF SHEET-METAL CANS. LUDWIG PETTERSON, Chicago, Ill. Filed Mar. 13, 1895. Serial No. 541,641. (No model.)



Claim.—1. In a machine for soldering the end seams of sheet metal cans, the combination with a rotary carrier table, of a can carrier pivotally and rotatably mounted thereon and having a driving pinion, soldering appliances arranged respectively at different elevations, adjacent to the path of the carrier, and a stationary rack with which the pinion enmeshes, said rack having its teeth disposed at different angles radially in different portions thereof whereby the angle of inclination of the can carrier may be changed to present the ends of the can successively to the soldering appliances without changing the operative engagement of the pinion and rack, substantially as described.

2. In a machine for soldering the end seams of sheet metal cans, the combination with a rotary can carrier table, of soldering appliances arranged circumferentially thereto and at different elevations respectively, a can carrier pivotally and rotatably mounted upon said table and having a driving pinion, and a rack having its teeth disposed at different angles radially in different portions thereof and enmeshed with the pinion on the carrier whereby the latter is both rotated and permitted to change its angle of inclination in making the circuit of the table, substantially as described.

3. In a machine for soldering the end seams of sheet metal cans, the combination with a rotary carrier table, of a series of can carriers pivotally and rotatably mounted thereon, soldering appliances arranged respectively at different elevations and adjacent to the path of the can carriers, each of the carriers being provided with a driving pinion, a stationary rack having its teeth disposed at different angles radially in different portions thereof and adapted to engage the pinion and said rack having also sinuous or twisted portions connecting the portions of opposite inclination, substantially as described.

4. In a machine for soldering the end seams of sheet metal cans, the combination with a rotary carrier table, of can carriers pivotally and rotatably mounted thereon and having driving pinions, a stationary rack with which said pinions engage and whereby they are rotated, said rack having its teeth disposed at different angles radially in different portions thereof and guides to control and limit the inclination of the carrier, substantially as described.

5. In a machine for soldering the end seams of sheet metal cans, the combination with a rotary carrier table, of a series of can carriers pivotally and rotatably mounted thereon and having each a driving pinion, soldering appliances arranged circumferentially to the table and at different elevations and a stationary rack with which said pinions engage said rack having its teeth disposed vertically in different portions thereof adjacent to the soldering appliances, the vertical portions being connected by sinuous or twisted portions and guides for the carriers whereby the carriers after passing the soldering appliances are caused to assume vertical positions, substantially as described.

6. In a machine for soldering the end seams of sheet metal cans, the combination with a rotary carrier table, of a can carrier pivotally and rotatably mounted thereon and having a driving pinion, soldering appliances arranged respectively at different elevations, adjacent to the path of the carrier and a stationary rack with which the pinion enmeshes, said rack having its teeth disposed at different angles radially in different portions thereof so as to permit the can carrier to change its angle of inclination, and diverging guide rods and ratchet wheels whereby the carrier arm is guided and the angle of its inclination is governed so as to present the ends of the can successively to the soldering appliances, substantially as described.

7. In a machine for soldering the end seams of sheet metal cans, the combination with a rotary can carrier table, of soldering appliances arranged circumferentially thereto and at different elevations respectively, a can carrier pivotally and rotatably mounted upon said table and having a driving pinion, and a rack having its teeth disposed at different angles radially in different portions thereof and enmeshed with the pinion on the carrier whereby the latter is permitted to change its angle of inclination and diverging guides to change said inclinations, substantially as described.

8. In a machine for soldering the end seams of sheet metal cans, the combination with a rotary carrier table, of can carriers rotatably mounted thereon, solder appliances and a joint wiper device comprising a plurality of rotatable shafts extending toward the path of the can carrier and having mounted thereon a series of cloth disks, substantially as described.

9. In a can soldering machine, a can holder having holding mechanism adapted to enter the filling opening of the can and to hold the can by engaging only the head thereof, substantially as described.

10. A can holder having a chuck with jaws constructed to enter the filling opening of the can head and to be expanded to engage the can head at the filling opening, substantially as described.

11. A can holding appliance comprising a two-part chuck, one member of which is adapted to enter the filling opening in the head of the can and to engage said head upon its inner surface and the other to engage the outer surface of the head, substantially as described.

12. A can holder for a can soldering machine, consisting of a rotatable chuck having pivoted jaws and adapted to enter the filling opening of the can and means for expanding and releasing the jaws, substantially as described.

13. A can holder comprising in combination a frame, a sleeve secured to the frame, a spindle having a bearing in the frame and sleeve and capable of rotation and reciprocation therein, a block or collar mounted on the sleeve and adapted to form a rest for the can and a chuck head carried by the sleeve and adapted to enter the filling opening of the can and to be expanded to engage the can at the opening, substantially as described.

14. In a can soldering apparatus, the combination with a rotary carrier table having a series of can carriers rotatably and pivotally mounted thereon, each of said carriers having a chuck to engage the can about its opening, a chute over which the cans are fed and a rocking can support adapted to be rocked by the movement of the carrier table to bring the cans into alignment with the chuck, and also adapted to be reciprocated in order to bring the can into position to be engaged, substantially as described.

543,402. COMMODE OR SANITARY PAIL. VALBORG R. POPPENS, North Melbourne, Victoria. Filed Oct. 6, 1894. Serial No. 525,114. (No model.)



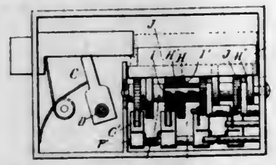
Claim.—In a sanitary vessel, the combination with the pail M provided with three or more brackets or supports such as T, for the seat; of the removable hollow annular seat ring R resting upon said brackets and projecting slightly above the upper rim of said pail; the said seat ring being provided with inlet opening U by means of which a disinfectant may be introduced into the annular chamber within said ring, and a bulb connected to the outside of said ring, and an outlet opening on the inner side of said ring, by means of which bulb the disinfectant in the annular chamber within said ring may be discharged through said outlet opening into said pail, substantially as and for the purposes described.

543,403. GARMENT HANGER AND STRETCHER. JOHN H. J. RONNER, New York, N. Y. Filed May 8, 1895. Serial No. 548,503. (No model.)



Claim.—A clothes hanger, comprising a body portion having a recess on one side and near the lower edge, a suspension rod secured to the body and having its lower end bent and protruding near the recess, a movable jaw adapted to fit into the recess of the body and having means of attachment to the bent end of the suspension rod, and a fastening nut on the said bent end of the rod to lock the movable jaw, substantially as described.

543,404. LOCK. DEXTER A. ROOT, Bay City, Mich. Filed Oct. 13, 1894. Serial No. 525,835. (No model.)

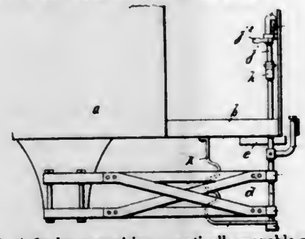


Claim.—1. In a permutation lock, the combination with the casing, the bolt and the locking bar therefor, of a disk-shaped tumbler H having a gate therein, a disk H', a toothed or notched hub thereon with which the disk is adapted to detachably engage, an actuating ratchet and pawl device for the tumbler, and a friction brake for the disk H' adapted to be applied at one point only to indicate the starting point of the combination, substantially as described.

2. In a permutation lock, the combination with the casing, the bolt and locking bar therefor, of a spring push pin, a ratchet and pawl device operated by the push pin, a disk H' to which the ratchet is secured having a depression in its edge, a gated disk-shaped tumbler, and a spring pawl adapted to engage in a depression in the disk H' substantially as and for the purpose described.

3. In a permutation lock, the combination with the casing, the bolt and locking bar therefor, of a series of spring push pins, pawls adapted to be actuated thereby, ratchet wheels with which the pawls engage sleeved upon a common shaft, friction brake disks secured to the ratchet wheels having one point at which the brake is applied, a toothed hub on the side of the friction disk and a corresponding notched gated tumbler disk adapted to detachably engage with the hub, substantially as described.

543,405. CAR-FENDER. OSCAR ROTHROCK, New York, N. Y. Filed July 12, 1894. Serial No. 517,504. (No model.)



Claim.—1. A fender comprising a vertically movable receptacle arranged beneath the car end with controlling means extending above the car platform, and with a transverse flexible buffer carried by the controlling means, and arranged in front of the dash to protect pedestrians from the bumper or coupling head, substantially as described.

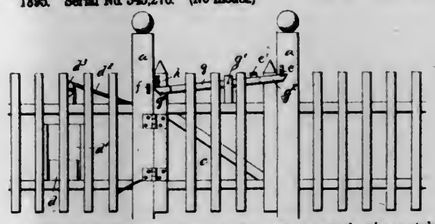
2. In a vehicle, a vertically movable fender arranged beneath the car end with upwardly extending bars extending above the plane of the platform and provided with controlling means, the lateral arms from said bars extending upwardly in front of the dash, and the buffer secured to said arms and extending transversely in front of the dash so as to move down in front of the bumper or coupling head when the fender is dropped, substantially as described.

3. In a vehicle, the flexible shield arranged beneath the car end and secured at its rear end, a vertically movable front bar to which the front end of said shield is secured so as to form a vertically movable receptacle, and the bars extending upward from the ends of said front bar and connected at their upper ends above the plane of the platform and provided with operating means, substantially as described.

4. A vehicle, having vertical guides beneath its platform, a vertically movable bar beneath the guides, and a flexible shield at its front end secured to said front bar, vertical bars secured at their lower ends to the ends of the front bar and extending upwardly through said guides to a point above the platform and provided with a controlling handle and a lock to hold the front bar and shield raised.

5. A vehicle having a vertically movable fender beneath its front end constituting a compartment and comprising a transverse front bar and the bars extending upwardly from the ends of said front bar through suitable guides to a point above the platform and there provided with means for vertically moving and locking said front bar, substantially as described.

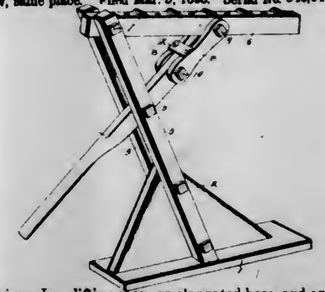
543,406. GATE. HENRY S. SHERMAN, Danville, Ill. Filed Apr. 11, 1895. Serial No. 545,270. (No model.)



Claim.—1. The swinging gate, the two gate posts having catches, a rocking lever fulcrumed between its ends to the gate and extending the length thereof with one end arranged to engage the catch at the free end of the gate and the other end of the lever engaging a latch co-operating with the catch at the opposite end of the gate.

2. The gate having the lever fulcrumed between its ends, the front end of the lever extended outwardly to form a latch to hold the gate closed, and a transverse latch pivoted at the inner end of the gate over the inner end of said lever so that the parts operate in the manner and for the purpose set forth.

543,407. LIFTING-JACK. EARL SHERWOOD and LORENZO LAKE, Honesdale, Pa., assignors of one-half to Walter A. Wood and N. E. Bigelow, same place. Filed Mar. 5, 1895. Serial No. 540,646. (No model.)

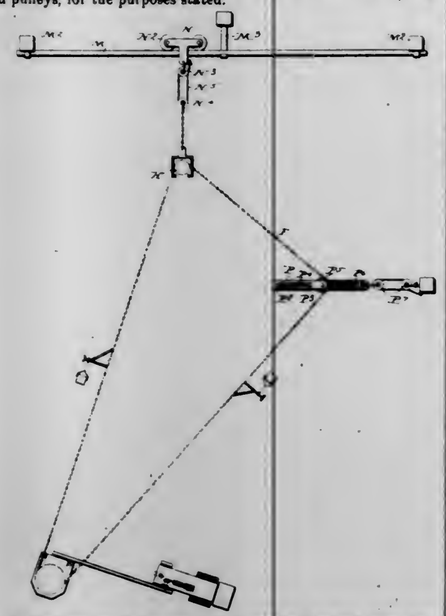


Claim.—In a lifting jack, an elongated base, and an inclined post or standard secured thereto, in combination with a lifting bar pivoted to said post or standard, a corrugated plate secured to the upper face of the lifting bar, an operating lever also pivoted to said post or standard, an open link comprising two side members disposed upon opposite sides of and pivotally connecting the lifting bar with one end of the operating lever, and a stop in the form of a plate or cross bar connecting the side members of the open link and operating in connection with the end of the operating lever to limit the throw of the latter and lock the lifting bar in its raised position, substantially as specified.

543,408. APPARATUS FOR HANDLING EARTH AND GRADING. JOHN T. MONTGOMERY, HENRY C. JORDAN, JAMES SOMER, WILLIAM H. GILMAN, and MOSES HARTMAN, Battle Creek, Iowa. Filed Mar. 8, 1895. Serial No. 541,070. (No model.)

Claim.—1. An apparatus for excavating or removing ground, comprising two drums in a horizontal plane, means for applying power to one of them, an endless chain or the like passed around said drums, one or more arms attached to said chain and extended

horizontally outwardly therefrom and a scraper attached to said arm, a bar supported in a horizontal plane at right angles to a line drawn through the two drums at a point beyond the end of one drum, a suitable frame slidingly mounted thereon and pulleys connected with said frame and the frame of the drum and a rope passed through said pulleys, for the purposes stated.



2. An apparatus for excavating or removing ground, comprising two drums in a horizontal plane, means for applying power to one of them, an endless chain or the like passed around said drums, one or more arms attached to said chain and extended horizontally outwardly therefrom, a scraper attached to each arm, a suitable frame having a vertical slot, a flanged pulley at one end of the frame, a stake driven through said slot into the ground, an extensile coil spring in engagement with the said stake and the outer end of the frame, and means for securing the opposite end of the frame to a suitable support fixed in the ground, for the purposes stated.

3. In a grading and ditching apparatus, the combination of a frame having a suitable base and side pieces extended around said base with a horizontal top, a flanged drum mounted on said frame in a horizontal plane with its central portion in approximately the same plane as the top of the side pieces, flanged collars rotatably mounted at the opposite sides of one end of the frame and an endless chain or the like having horizontal arms fixed thereto and extended outwardly therefrom and scrapers attached to the said arms, for the purposes stated.

4. In a grading and ditching apparatus the combination of a frame having a suitable base and side pieces extended around said base with a horizontal top, a flanged drum mounted on said frame in a horizontal plane with its central portion in approximately the same plane as the top of the side pieces, flanged collars rotatably mounted at the opposite sides of one end of the frame and an endless chain or the like having horizontal arms fixed thereto and extended outwardly therefrom and scrapers attached to the said arms, and a bar supported in a horizontal position beyond the outer end of the frame, a carriage mounted on the said bar and pulleys connected with the carriage and said frame, and a rope passed around said pulleys.

5. In a grading and ditching apparatus, a power drum, comprising a frame having a suitable base, a side piece having a horizontal top extending around said frame, wheels for supporting said frame, flanged collars at the opposite side of the inner end of the frame, a flanged drum mounted on said frame in a horizontal plane with the central portion of the drum on the same plane as the top of said side pieces, a gear wheel fixed to the shaft of the drum and means for applying power to the said gear wheel, substantially as and for the purposes stated.

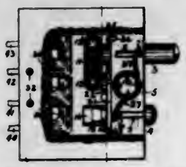
6. In a grading and ditching apparatus the combination with an endless chain, of a bar fixed to a link of the chain and extended horizontally outwardly therefrom, a wheel on its outer end and a brace pivotally connected with the chain at a point in advance of said bar, extended outwardly therefrom and pivotally attached to said bar, for the purposes stated.

7. In a grading and ditching apparatus the combination with an endless chain, of a bar fixed to a link of the chain and extended horizontally outwardly therefrom, a wheel on its outer end and a brace pivotally connected with a chain at a point in advance of said bar extended outwardly therefrom and pivotally attached to said bar, a chain attached to the upper end of said bar and a suitable scraper, having a bail connected with said chain, for the purposes stated.

8. The combination in a grading and ditching apparatus of an endless chain, a headed bolt adapted to be passed through a link in said chain, flanged plates on the upper and lower surfaces of said bolt, flat bars pivotally connected with the upper and lower surfaces of the outer end of said bolt, a wheel mounted on the outer ends of said bars, a bolt having flanged plates at its upper and lower surfaces connected with the chain in advance of the aforesaid bolt and a brace pivotally attached to the outer end of said bolt and pivotally connected with the aforesaid bars, substantially as and for the purposes stated.

9. An improved grading and ditching apparatus comprising a suitable frame mounted on wheels and having side pieces with a horizontal top, flanged rollers at the opposite sides of one end of said frame, a flanged drum mounted on said frame in a horizontal plane, means for applying power to said drum, a second frame having horizontal tops at its sides, flanged rollers at the opposite sides of one end thereof, a flanged drum mounted thereon in a horizontal plane, an iron bar extended in a horizontal plane at right angles to a line drawn through said drums, a carriage on said bar and ropes connected therewith and with said latter drum frame, an endless chain passed around said drums and having one or more arms fixed at right angles thereto, a wheel on the outer end of each arm and a brace pivoted to said arm and to the chain in advance of the arm, a scraper connected by means of a chain with the outer end of the arm, a frame having a flanged pulley thereon and provided with a vertical slot, an extensile coil spring in said slot, and means for connecting the upper end of said frame to a post, all arranged and combined substantially as and for the purposes stated.

543,409. ELECTRICAL SWITCH. HENRY STUEBNER, Philadelphia, Pa. Filed Jan. 19, 1895. Serial No. 535,457. (No model.)



Claim.—1. In a mechanical movement, two reciprocating push rods, a block provided with seats for the said push rods and having a hub, in combination with a spring coiled about the said hub and having its ends in direct engagement with the push rods, substantially as shown and described.

2. In a mechanical movement, in combination, two reciprocating push rods, means for holding each of the rods until the other has moved a predetermined distance, a spring coiled about a fixed hub and having its ends in engagement with the push rods, and means for releasing each of the rods when the other has moved a predetermined distance, substantially as shown and described.

3. In an electric switch, in combination, two reciprocating push rods, a catch which directly engages and holds each until the other has moved a predetermined distance, means for withdrawing the catch from each when the other has moved a predetermined distance, a conducting bridge and a pair of contact clips, substantially as shown and described.

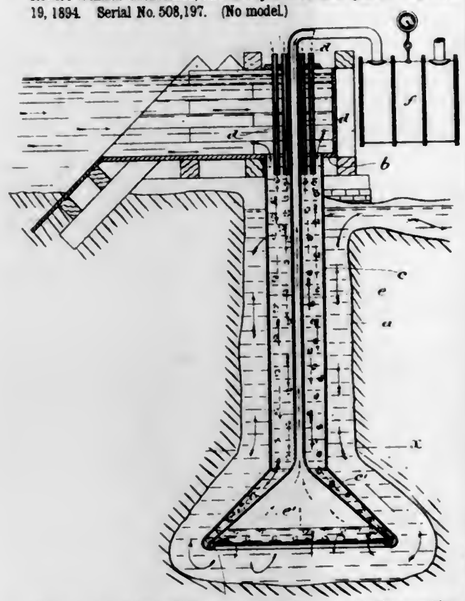
4. In an electric switch, a reciprocating push rod and cross-bar rigidly secured thereto carrying one or more conducting bridges, in combination with one or more sets of contact clips, a catch for holding the bridge or bridges in contact with the clips, a spring for effecting the break of contact, and a second reciprocating rod for actuating the said catch and spring, substantially as shown and described.

5. In an electric switch, two reciprocating push rods each having a projecting pin extending therethrough; a block having a hub, bearings for the said rods, and slots to limit the movements of the said pins and rods; in combination with a spring coiled about the said hub and having its ends in engagement with the said pins, substantially as shown and described.

6. In an electric switch, two reciprocating push rods each having a projecting pin extending therethrough; a block having a hub, bearings for the said rods, and slots to limit the movements of the said pins and rods; in combination with a spring coiled about the said hub and having its ends in engagement with the said pins; and a catch for holding each rod until the other has moved a predetermined distance, substantially as shown and described.

7. In an electric switch, two reciprocating push rods each having a transverse projection, a notch, and an incline; a block having a hub, bearings for the said rods, and slots to limit the movements of said rods; in combination with a spring coiled about the said hub and having its ends in engagement with the said rods; and a spring actuated catch for engaging the notch of each rod until withdrawn by the incline on the other, substantially as shown and described.

543,410. HYDRAULIC AIR-COMPRESSING APPARATUS. CHAS. H. TAYLOR, Montreal, Canada, assignor of one-half to Walter Tyler Ross, Robert William Sutherland, and Henry Millen, same place. Filed Apr. 19, 1894. Serial No. 508,197. (No model.)



Claim.—In a hydraulic air compressing apparatus, the combination with a suitable dam and well, of a main conductor located in said well and having its upper receiving end open to receive a falling body of water directed to it by said dam, and its lower delivery end flared or terminating in a hood-shaped section with inwardly curved edge; open ended air tubes or ducts extending from a point within said conductor through the body of water to the open air or atmosphere; and an air conductor with open flared or hood-shaped lower end located within said main conductor and leading upward through same to any suitable tank or receiver, the space in said well surrounding said main conductor serving as an outflow for the body of water leaving said main conductor as described.

543,411. HYDRAULIC AIR-COMPRESSING APPARATUS. CHAS. H. TAYLOR, Montreal, Canada, assignor to Joseph Rowat Fair and Henry Millen, trustees, same place. Filed Feb. 13, 1895. Serial No. 538,301. (No model.)

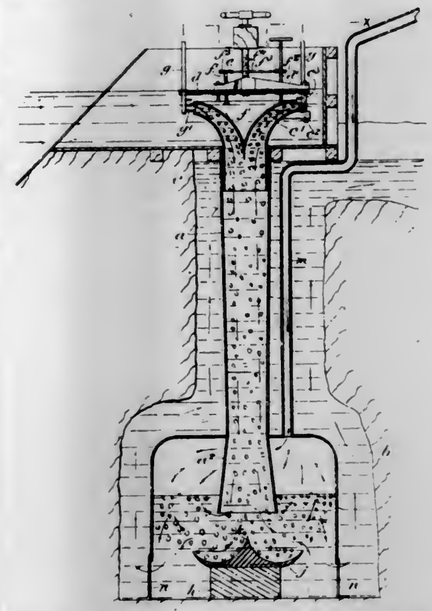
Claim.—1. In hydraulic air compressing apparatus, an open ended stand pipe or conductor located beneath and adapted to receive a falling body of water and having a movable telescopic receiving end for increasing or diminishing the height of said stand pipe for the purpose set forth.

2. In hydraulic air compressing apparatus having a stand pipe or conductor for a falling body of water, with its open receiving end located beneath such body of water, a movable regulator or cut off device adjustable relatively to the receiving end of the stand pipe, with means for operating same, for the purpose set forth.

3. In hydraulic air compressing apparatus having a stand pipe or conductor for a falling body of water, a series of air inlets located at the receiving end of the stand pipe or conductor and a regulator or cut off device common to and movable across the open ends of the series of inlets with means for operating same, for the purpose set forth.

4. In hydraulic air compressing apparatus, a stand pipe or conductor for a falling body of water having its upper end located beneath the water level and provided with air inlets communicating with the atmosphere, and its main length of tapering form toward a point near its lower delivery end for the purpose set forth.

5. In hydraulic air compressing apparatus, a stand pipe or conductor for a falling body of water having its upper end located beneath the water level and provided with air inlets communicating with the atmosphere, and an expansion chamber or dome at its lower end into which such lower end is introduced and expanded, for the purpose set forth.



6. In hydraulic air compressing apparatus having an open ended stand pipe or conductor with air inlet thereto, a spreader located beneath the lower open end of such stand pipe, for the purpose set forth.

7. In hydraulic air compressing apparatus having a stand pipe or conductor, a spreader of saucer form with central upward projection located beneath the lower end of such stand pipe, for the purpose set forth.

8. In hydraulic air compressing apparatus, having a stand pipe or conductor, a movable telescopic receiving end for increasing or diminishing the height of said stand pipe or conductor and a movable regulator or cut off device adjustable relatively to such movable receiving end, for the purpose set forth.

9. In hydraulic air compressing apparatus having a stand pipe or conductor, a movable receiving end for such conductor, a series of air inlets located to deliver into the movable receiving end and a movable section acting as a combined water flow regulator, and air cut off device, for the purpose set forth.

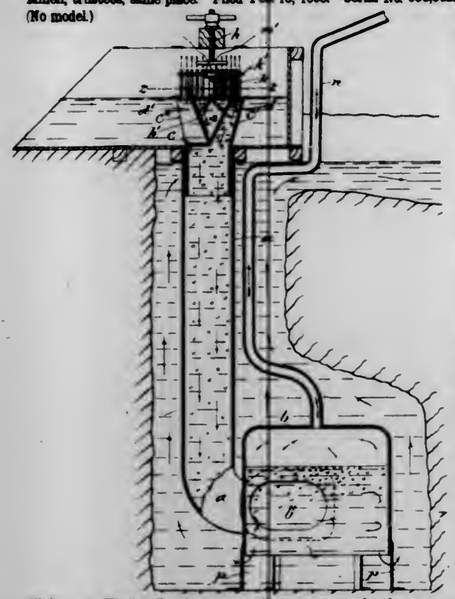
10. In hydraulic air compressing apparatus, a stand pipe or conductor for a falling body of water having its upper end in the form of a movable telescopic section carrying air inlets communicating with the atmosphere and its main length tapering inward from its upper end to within a short distance of its lower end which is expanded for the purpose set forth.

11. In hydraulic air compressing apparatus, the combination of the stand pipe or conductor, having at its upper end, a movable receiver, a series of air inlets a movable section acting as a regulator and cut off device, and at its lower end an expansion chamber or dome with air outlet therefrom, for the purpose set forth.

12. In hydraulic air compressing apparatus, the combination of a stand pipe or conductor having at its upper end a movable receiver, a series of air inlets, a movable section acting as a regulator and cut off device, and at its lower end an expansion chamber or dome with air outlet therefrom and a spreader within the expansion chamber and located beneath the lower end of the stand pipe for the purpose set forth.

13. Hydraulic air compressing apparatus comprising a water conductor having its upper end adjustable and carrying air inlets communicating with the atmosphere at the end into which the water falls in order that air may be sucked into same by the action of the water and an air conductor leading from the lower or delivery end of said water conductor into which such air passes, and through which it is forced by said body of water to a tank or receiver as set forth.

543,412. HYDRAULIC AIR-COMPRESSING APPARATUS. CHAS. H. TAYLOR, Montreal, Canada, assignor to Joseph Rowat Fair and Henry Millen, trustees, same place. Filed Feb. 13, 1895. Serial No. 538,302. (No model.)



Claim.—1. Hydraulic air compressing apparatus having a conductor through which a falling body of water is passed the receiving end of the conductor having side and top inlets for dividing the body of water into a number of separate streams upon entering the conductor for the purpose set forth.

2. Hydraulic air compressing apparatus having a conductor through which a falling body of water is passed, the receiving end of the conductor having a number of independent inlets and inclined faces for dividing the body of water into a number of separate streams upon entering the conductor and bringing them together within such conductor, for the purpose set forth.

3. Hydraulic air compressing apparatus having a conductor through which a falling body of water is passed and such conductor curved to create a whirlpool at the lower end thereof for the purpose set forth.

4. Hydraulic air compressing apparatus, having a stand pipe or conductor, with its upper receiving end adjustable and divided into a number of independent inlets, and an air conductor leading from its lower or delivery end to a tank or receiver, for the purpose set forth.

5. Hydraulic air compressing apparatus having a stand pipe or conductor with its receiving end formed to present inner and outer edges, for the water to fall over into the conductor, and means for conducting water to the inner edges, for the purpose set forth.

6. Hydraulic air compressing apparatus having a stand pipe or conductor, the receiving end of which is composed of two inverted cones, one within the other, and the outer one truncated, so as to form an inlet to the stand pipe, each cone having a portion cut away and the edges, thus formed, of one, connected to the edges, thus formed, of the other, so as to form a lateral passage to the inner cone, for the purpose set forth.

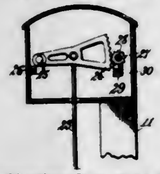
7. Hydraulic air compressing apparatus, having a stand pipe or conductor an expansion chamber to which said stand pipe is connected tangentially, and an air conductor leading from such expansion chamber to a receiver, for the purpose set forth.

543,413. ADJUSTABLE AUGER-HANDLE. JOHN TUNSTED, Allentown, N. Y., assignor of one-half to James A. Vincent, same place. Filed Oct. 26, 1894. Serial No. 527,084. (No model.)



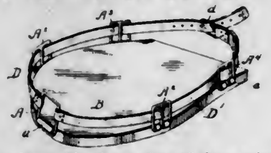
Claim.—A metallic shank socket for auger handles, comprising the part A having a vertical slot a which is tapered in cross-section and provided at its lower end with projections a' and a^2, the projection a^2 having an opening a^3 adjacent to the vertical wall of the slot, a pin a^4 which intersects the slot, a movable plate B one end of which is inclined and provided with a projecting portion b, the straight end wall of the plate having an open-ended slot b' and below the same a recess b^2, and a key C having a tapered head and threaded portion which passes through the opening a^3 for engagement with a nut, the parts being organized substantially as shown and for the purpose set forth.

543,414. AUTOMATIC RAILWAY-GATE. WILLIAM LE ROY VERNON, Danville, Va. Filed May 16, 1895. Serial No. 549,572. (No model.)



Claim.—The combination of transverse, primary rock-shafts having crank pins and cranks, a secondary rock-shaft having a crank pin and a crank, a link connecting the cranks of all the rock-shafts, parallel, depressible bars or rails arranged horizontally and loosely mounted on the crank pins of the primary rock-shafts, a gate-arm weighted at one end, a standard, post, or frame having a bracket provided with an oscillatory shaft which carries the gate-arm, a gear or pinion rigid on the said shaft, a vertically swinging gear engaging the gear or pinion of the shaft, and a pitman connecting the swinging gear with the crank pin of the secondary rock-shaft, substantially as described.

543,415. CREEPER-SHOE FOR HORSES. PETER W. WEIDA, Philadelphia, Pa. Filed Oct. 24, 1894. Serial No. 526,817. (No model.)



Claim.—1. In combination, a plate of sharp gritty material and rubber, a series of pivot lugs embedded therein and projecting laterally from the edges of the plate, a forward strap holder and side strap holders or guides pivoted to said lugs, and opposite straps, each having one end secured to the forward strap holder and passing through the respective side strap holders or guides, substantially as specified.

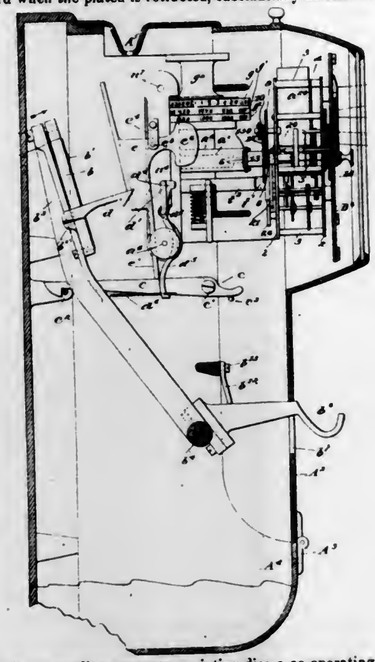
2. In combination, a plate of sharp gritty material and rubber, a series of wedge-shaped pivot lugs a embedded therein, strap guides or holders A, A', A^3, A^3, A^4 pivoted to said lugs, and straps D D' secured to the opposite side bars of the forward holder A and passing through the remaining holders or guides, substantially as specified.

543,416. TIME-RECORDING APPARATUS. JOHN C. WILSON, Boston, Mass. Filed Mar. 3, 1891. Serial No. 383,593. (No model.) Patented in England May 16, 1891, No. 4,973.

Claim.—1. In a time recording apparatus, printing dies, a platen co-operating therewith inclosed in a case provided with an inlet opening for the card or ticket, a closed receptacle to receive the card after the impression has been made, and an arresting device intermediate the inlet opening and closed receptacle to normally support and prevent the passage of the card into the closed receptacle, combined with an intermittingly movable guide to position the card to be printed upon the arresting device, subsequent movement of the guide removing the card from the said arresting device, substantially as described.

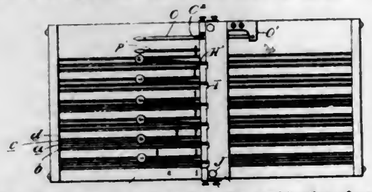
2. In a time recording apparatus, a stamp, a platen inclosed within a case provided with an inlet for the card or ticket to be printed, a closed receptacle connected to the case to receive the printed cards, a movable arresting device normally in the path of and to prevent the passage of a card from the inlet to the closed receptacle, and an intermittingly movable guide to position the card to be printed, upon the arresting device, the movement of said guide withdrawing the card from the stamp, combined with mechanism controlled by the platen to move said guide and arresting device to release and discharge the card when printed, substantially as described.

3. In a recording apparatus, a stamp, a platen inclosed within a case provided with an inlet for the card to be printed, a movable supporting or arresting device directly beneath said inlet when in normal position, and adapted to arrest the card and maintain it in proximity to the stamp until it is printed and the platen is retracted, combined with a lever pivoted within the casing and to the inner end of which the platen is attached, the outer end of the lever extending through an opening in the case, and connections between said arresting device and lever to move the arresting device from the path of the card when the platen is retracted, substantially as described.



4. In a recording apparatus, printing dies, a co-operating platen inclosed in a case provided with an inlet opening for the card, a closed receptacle for the printed cards, and an arresting device intermediate the inlet opening and closed receptacle, to normally support and prevent the passage of the card into the closed receptacle, combined with an actuating lever pivoted within the case, the inner end of said lever carrying the platen and the outer end extending through the case, a guide to position the card to be printed, upon the arresting device, and to subsequently remove it therefrom, and connections between the actuating lever and guide, to actuate the latter, substantially as described.

543,417. REGISTERING-MACHINE. LUTHER E. ALLEN, Detroit, Mich. Filed Aug. 6, 1894. Serial No. 519,548. (No model.)



Claim.—1. In a registering machine, the combination of a receptacle, a series of balls therein, a series of races connecting at their upper ends with the receptacle, a gate controlling the passage of the balls from the receptacle, and a switch for controlling the movement of the ball into any of the ball races, substantially as described.

2. In a registering machine, the combination of the bed having ball races therein, a transverse gate guide, having grooves registering with the ball races, key actuated laterally movable gates in said guide, balls in the ball races controlled by said gates and a movable switch for conducting the balls laterally to the gates, substantially as described.

3. In a registering machine, the combination with a series of ball races, the balls therein, switches controlling the movement of the balls through the races and a movable common bar to which all the switches are secured, substantially as and for the purpose described.

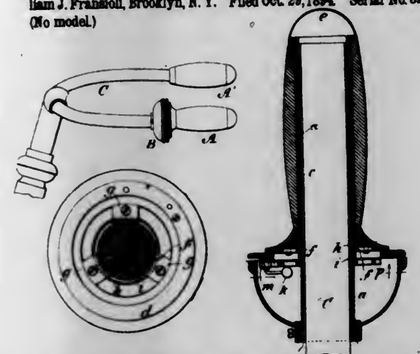
4. In a registering machine, the combination of the ball races, the transverse guideway across the ball races, gate blocks sliding in the guideway, the lugs e e' on the blocks and means for actuating the blocks, substantially as described.

5. In a registering machine, the combination with the ball races, of the balls therein, the transverse guideway across the ball races, the gate blocks G sliding in the guideway, the lugs e e' on the under side of said blocks, the pin J^3 on the upper face thereof and the spring actuated key engaging said pin and forming means of actuating the same substantially as described.

6. In a registering machine, the combination of the ball races and balls therein, the gates controlling the balls and a switch on either side of the gates to shift the balls, substantially as and for the purpose described.

7. In a registering machine, the combination of the ball races and the balls therein, the gates controlling the balls, of a switch bar having a multiple of ways therein for each gate and a lever for controlling said switch bar, substantially as described.

543,418. BICYCLE-ALARM. RAYMOND M. BEATTY, Newark, N. J., assignor of three-fourths to Michael Tracy, Thomas Gerehart, and William J. Fransioli, Brooklyn, N. Y. Filed Oct. 29, 1894. Serial No. 527,252. (No model.)



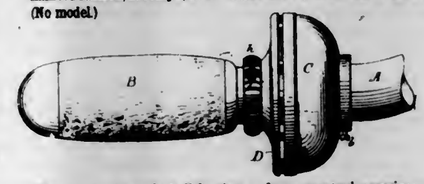
Claim.—1. The combination with the handle-bar of a velocipede, of a handle movable thereon, and an alarm mechanism constructed annularly with an axial opening through it to receive the handle bar and mounted to concentrically surround the handle-bar, at the end of the handle and connected to the handle to be actuated by the movement of the latter.

2. A combined velocipede handle and alarm mechanism adapted for attachment to the handle-bar of a velocipede, and constructed with an inner sleeve having means for attachment to the handle-bar, the inclosing shell of the alarm mechanism fixed upon said sleeve, the handle mounted rotatively upon said sleeve, and the alarm mechanism adapted to be operated by the rotative movement of the handle.

3. The combination with the handle-bar of a velocipede, of a bell constructed to annularly surround the handle bar and fixedly mounted thereon, a handle rotatively mounted thereon, and an intervening bell ringing mechanism adapted to be actuated by the rotative movement of the handle.

4. The combination with the handle-bar of a velocipede, of a handle rotatively mounted thereon, a bell fixedly mounted thereon, a cam-wheel p fixedly attached to said handle-bar, and a hammer lever r^3 acted on by said cam and pivotally connected to said handle so as to be revolved therewith to ring the bell.

543,419. BICYCLE-BELL. RAYMOND M. BEATTY, Newark, N. J., assignor of three-fourths to Michael Tracy, Thomas Gerehart, and William J. Fransioli, Brooklyn, N. Y. Filed Jan. 21, 1895. Serial No. 535,589. (No model.)



Claim.—1. A cycle bell having a large central opening, and a sleeve passing axially through said opening on which the bell is fixed, said sleeve adapted to fit over the handle-bar and having means for attachment thereto and an actuating part mounted on the exterior of said sleeve and movable to ring the bell.

2. A cycle bell having a central opening large enough to admit the handle-bar through it and adapted to be mounted on the handle-bar, combined with an alarm mechanism comprising an actuating part mounted to turn axially around the handle-bar.

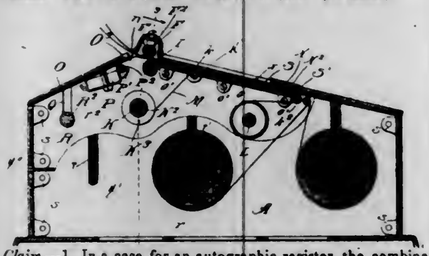
3. A cycle bell having a central opening large enough to admit the handle-bar through it and adapted to be mounted on the handle-bar, combined with an alarm mechanism comprising an actuating disk mounted annularly around the handle-bar to close the mouth of the bell and adapted to be turned axially around the handle-bar to ring the bell.

4. A cycle bell mounted annularly around the handle-bar, combined with a swinging hammer having a projecting arm, and a rotative disk adapted to turn axially around the handle-bar, and carrying projections adapted to engage said hammer arm and throw the hammer against the bell.

5. In a cycle bell, the combination with a sleeve *a*, the bell C fixed thereon, a disk D mounted to turn thereon, a hammer for striking the bell, and means carried by said disk for actuating the hammer.

6. The combination of a sleeve *a* having a flange *a'*, a bell C fixed on said sleeve, a disk D mounted to turn on said sleeve, and segmental plates *k* attached to said disk and engaging said flange to prevent the longitudinal displacement of the disk.

543,420. AUTOGRAPHIC REGISTER. DAVID T. BAXTER, Hamilton, Canada. Filed Mar. 24, 1894. Serial No. 504,936. (No model.)



Claim.—1. In a case for an autographic register, the combination of the base section *r*, upper section r^3 hinged to the base section at the rear end thereof, plate O, hinged to the section r^3 at the rear end thereof, locking means for securing the plate O to the section r^3, and plate B, hinged to the base section *r* at the rear end thereof, and of such length as to be overlapped by the plate O, whereby, when the section r^3, plate B and plate O are folded together in the order named locking of the plate O to the section r^3 locks the whole case, substantially as described.

2. In an autographic register, the combination with the rollers for the check and sales and summary strips and with the plate against which impressions are made, the top plate having the opening through which the strips are exposed, and the summary guide plate having a slot, adjustably secured to said top plate, substantially as and for the purpose described.

3. In an autographic register, the combination with the sides r^1, having the upper sections, r^3, hinged, as at *p'*, said upper sections carrying the feed mechanism for the strips of a hinged cover plate B, having the projecting ears, *n'*, and the hinged cover plate O, provided with a lock and having the projecting overlapping ears, O^3, substantially as and for the purpose described.

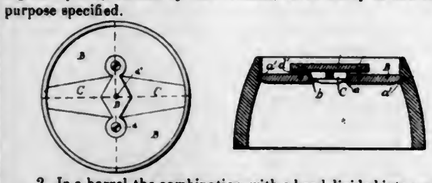
4. In an autographic register, the combination of the check and sales strip rollers and with the plate *o*, of a summary strip roll-carrying shaft and summary strip receiving-roller, in position to carry a summary strip over the plate *o*, of a hinged plate B, presenting the opening B^3, and the adjustable plate N having the slot N^3, substantially as described and for the purpose set forth.

5. In an autographic register, the combination with the rollers for the check and sales strips and the summary strip of the feed roller I having the pinion I' and its companion feed roller, the gear wheel meshing with said pinion and carrying the shaft of the summary roller, and the removable roller R, having a handle R', and adapted to receive the check strip, substantially as and for the purpose described.

6. In an autographic register, the combination of the summary roll receiving roller K, having a bearing at one end in the wall of the case, and having at its opposite end a clutch member, the shaft H', and having at one end a clutch member for coupling with the shaft K, the sleeve K' and spring K^2, all as and for the purpose described.

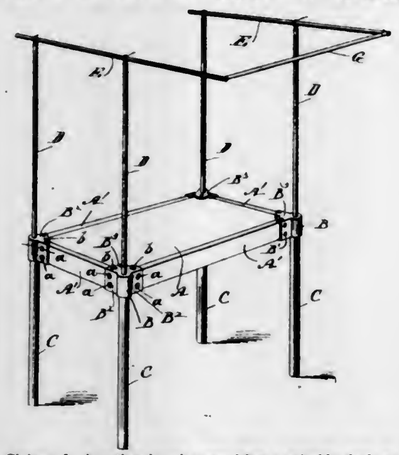
543,421. CLAMP FOR BARREL-HEADS. HIRAM M. DELLINGER, Paradise, Pa. Filed Aug. 13, 1894. Serial No. 520,174. (No model.)

Claim.—1. In a barrel, the combination, with a head divided into sections, said sections engaging the croze and having their inner edges beveled, of a wedge-plate divided transversely into two parts, the ends of said wedge-plate engaging the croze between the head-sections and having the edges thereof adapted to engage the beveled edges of said head-sections, the said parts of the wedge-plate having registering recesses formed in their meeting edges, and a keeper covering the opening formed by said recesses, substantially as and for the purpose specified.



2. In a barrel, the combination, with a head divided into sections, said sections engaging the croze and having beveled edges so cut as to form a lozenge-shaped opening between them, of a lozenge-shaped wedge-plate divided transversely into two parts, said wedge-plate engaging the croze between the head-sections and having the edges thereof adapted to engage the beveled edges of the head-sections, the said parts of the wedge-plate having registering recesses formed in their meeting edges, and a keeper covering the opening formed by said recesses, substantially as and for the purpose specified.

543,422. FOLDING VOTING-BOOTH. JUAN W. ERNEST, Los Angeles, Cal. Filed June 22, 1894. Serial No. 515,361. (No model.)



Claim.—1. A voting booth comprising a suitable desk or table having metal sockets with projecting flanges secured to the table, legs secured in the sockets and removable therefrom, a frame-work secured to the table and removable therefrom, and a flexible covering overlapping in front loosely secured to the removable frame-work, the legs, removable frame-work and covering adapted to be received in the table and held by a transverse fastening bar.

2. A desk or table comprising the combination of a suitable top having metal sockets with projecting flanges secured to the table, legs secured in the sockets and removable therefrom, and a transversely ranging fastening bar pivotally secured to the table to fasten said legs therein, substantially as shown and described.

3. In a table, the combination, with a rectangular body, legs, apertured in the tops thereof, and standards projecting upwardly from the table and adapted to fit in the tops of the legs, of sockets comprising a hollow cylindrical shell-like body tapering upwardly to receive the legs therein, and apertures in the top to receive the standards therethrough, side pieces or braces projecting radially from the sockets at right-angles to each other, and having screw holes therein, and a top flange connecting the two braces, substantially as shown and described.

4. A folding booth comprising a rectangular table-body having sides depending therefrom of such depth as to form, in conjunction with the table-body when the same is inverted, a box or receptacle, a beam secured to the under-surface of the table-body and having a cross-rod swiveled thereto, sockets at each corner of the body on the outside thereof, secured to the said body and to the sides by braces, the said sockets being hollow and having openings in the upper surface thereof, cylindrical legs tapered at the top and fitting in the sockets, the said legs being apertured in the upper ends thereof, standards passing through the openings in the sockets and extending into those of the legs, the said standards projecting upwardly from the table-body, loops in the top of the standards, a canvas casing secured to the standards and surrounding the device at the rear and sides thereof, the said casing extending from the top of the standards below the table-body, loops secured to the sides of the said casing, rods passing through the loops in the standard and normally projecting forwardly beyond the front of the table-body, the said rods being adapted to slide in the said loops to make the booth laterally extensible, a canvas or other suitable covering secured to the rods, depending therefrom and open at the front, the ends thereof being secured at the top to overlap, and a cross-rod attached to the said front of the casing and resting between the ends of the side-bars to maintain them apart, the whole frame being adapted to collapse and be folded up to fit within the table body when the latter is inverted, substantially as shown and described.

5. A folding voting booth comprising a desk or table with sides secured thereto and surrounding the same, and having tapering metal sockets and angle-braces secured to each corner thereof, suitable legs adapted to fit in said metal sockets, standards extending upward from the sockets, rods at the top of the standards, and a canvas or other suitable covering suspended therefrom.

6. In a table, a leg-securing socket comprising a hollow cylindrical shell-like body slightly tapered to receive the top of the leg, side-pieces projecting radially therefrom at right-angles to each other and adapted to be secured to the side of the table, and a flange connecting the side pieces and adapted to be secured to the top of the table, substantially as and for the purpose set forth.

7. A folding voting booth comprising a table-body having sockets at each corner thereof, legs adapted to be inserted in the said sockets, standards extending through the top of the sockets and into the legs, a flexible casing secured to the standards, rods at the top of the standards, and a casing suspended therefrom, substantially as and for the purpose set forth.

8. A folding voting booth comprising a table having sockets at each corner thereof, legs inserted in the said sockets, standards extending through the top of the same and into the legs, a flexible casing secured to the standards and surrounding the table at the rear and sides thereof, rods upon the top of the standards at the sides and projecting forwardly beyond the front of the table-body and a casing suspended from the said rods upon the front and sides of the device, and open at the front, substantially as and for the purpose set forth.

9. A desk or table comprising the combination of a top having sides secured thereto and surrounding the same, and metal sockets with projecting flanges secured to the table, suitable legs secured in the sockets and removable therefrom and adapted when removed from the sockets to rest longitudinally on the under side of the table, and a transverse fastening-bar pivotally secured to the table to fasten the legs therein, substantially as shown and described.

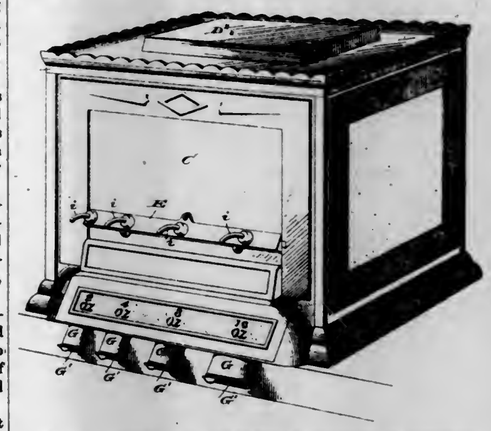
10. In a voting booth, the combination with a table-body constructed in the form of an inverted box, having removable legs inserted therein and a removable folding frame thereon and adapted to receive the same therein when removed, of rods sliding in the top of said frame having a flexible casing secured thereto, the said rods being adapted to be pushed inwardly to carry the casing toward the table-body, or to be drawn outwardly to project the same appreciably beyond the said table-body, substantially as and for the purpose set forth.

11. A folding voting booth, comprising a table having sockets at each corner thereof, legs secured within the said sockets, standards extending through the top of the sockets into the legs, the said standards having loops on their upper ends, a flexible casing secured to the standards and inclosing the same at the rear and sides thereof, the said casing extending from the top of the standards below the level of the table-body, rods sliding in the loops on the standards at each side and laterally extensible therein, a casing secured to the rods and depending therefrom at the front and sides, the said casing being opened at the front and overlapping and a cross-rod at the front of the rods held between the same to maintain the said rods apart, substantially as shown and described.

543,423. DISPENSING CASE OR CABINET. SEBASTIAN C. GUTERIE, Evansville, Ind. Filed Oct. 25, 1894. Serial No. 526,942. (No model.)

Claim.—1. A cabinet comprising front, rear and end walls having inwardly-projecting ledges and lugs, top and bottom connected to said ledges and lugs to hold the parts assembled, the bottom being composed of inclined pieces which are positioned above the lower edges of the sides, discharge spouts of different capacities secured to the bottom so as to extend beyond the lower front portion of the casing, sliding cut-offs adapted to operate above the upper ends of the discharge spouts, and pivoted cut-offs at the lower ends of the spouts, substantially as shown and for the purpose set forth.

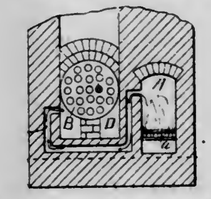
2. The cabinet constructed to provide a single storage chamber with a bottom composed of pieces which incline downwardly to the center of the cabinet, one of the inclined pieces having a series of openings therein, a series of discharge spouts of different capacities secured below said openings, so as to project beyond the front wall of the casing and cut off slides located above the discharge spouts and provided with operating handles which extend through and beyond the front wall of the cabinet and cut-offs pivoted to the lower ends of the spouts, substantially as shown and for the purpose set forth.



3. In a cabinet having a single storage receptacle the bottom of which has attached thereto forwardly inclined measuring and discharge spouts of different capacities, cut off slides I located above the upper ends of the discharge spouts, springs adapted to bear against the slides and against the front wall of the cabinet, the springs being carried by the operating handles of the cut-off slides, and partially housed within projecting portions formed in a frame carried by the front wall of the casing and cut-offs located at the lower ends of the measuring and discharge spouts, substantially as shown and for the purpose set forth.

4. In a cabinet having a single storage chamber the inclined bottom plate thereof having openings formed therein, a slide or cut-off adapted to move immediately beneath said openings, an apertured plate H having recessed projections *h*, measuring spouts G having apertured lugs or flanges, and bolts which connect the plate H and spouts G to the bottom of the storage chamber, substantially as shown and for the purpose set forth.

543,424. SMOKE-CONSUMING FURNACE. VICTOR K. MCELHENY, Pittsburg, Pa. Filed Nov. 3, 1894. Serial No. 527,794. (No model.)



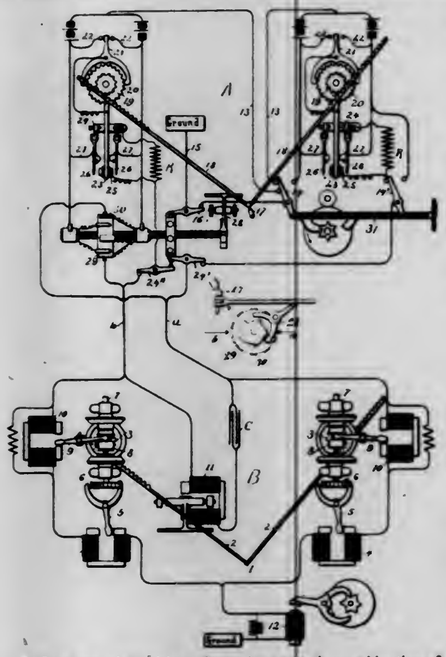
Claim.—The combination of the fuel chamber A, located to one side of the boiler furnace, a series of flues leading from the side of the fuel chamber, and extended downward below the boiler furnace, and thence upward, and into said boiler furnace, substantially as and for the purpose set forth.

543,425. WRITING-TELEGRAPH. JAMES H. ROBERTSON, Brooklyn, N. Y., assignor to William R. Gump, same place. Filed Jan. 9, 1894. Renewed Dec. 24, 1894. Serial No. 532,891. (No model.)

Claim.—1. In a two wire writing telegraph system, the combination of a suitable receiving device at a receiver station, two wires joining the stations, and at the transmitter station means for transmitting over the two lines currents which effect the movements of the receiving pen in extent and intervening currents of both polarities which control the direction of its movements, substantially as described.

2. In a writing telegraph system the combination of a suitable receiving device at a receiver station, two wires joining the stations, and at the transmitter station means for transmitting over the two lines currents which effect the movements of the receiving pen in ex-

tent, and intervening currents of both polarities which control the direction of its movement, and means for preventing short circuits in the transmission of these various currents, substantially as described.



3. In a two wire writing telegraph system the combination of a suitable receiving device at a receiver station, two wires joining the stations, and at the transmitter station means for transmitting currents which control the movements of the receiving pen in extent and direction, and means for transmitting a distinct set of currents which effect the lifting and lowering of the receiving pen, and means for transmitting a second distinct set of currents which control the paper shifting at the receiver station, substantially as described.

4. In a two wire writing telegraph system, the combination of a suitable receiving device at the receiving station including means for controlling the movement of the receiver pen in extent and direction, and a supplemental part to effect a fundamental telautographic operation, two wires joining the two stations, and at the transmitter station means for transmitting over the two lines currents which effect the movements of the receiver pen in extent and direction, and means for suspending the transmission of the foregoing currents and transmitting to line currents which effect the operation of the supplemental part of the receiving device, there being currents of both polarities, and means for preventing short circuits in transmission of the various currents, substantially as described.

5. In a two wire writing telegraph system the combination at a receiver station of a suitable device for controlling the movements of the receiver pen both in extent and direction and a polarized pen lifting and lowering device, two wires joining the two stations, and at the transmitter station means for transmitting over the two lines currents which control the movements of the receiving pen in extent and direction, and means for transmitting to line currents of both polarities which effect the lifting and lowering of the receiver pen, and means for preventing short circuits in the transmission of these various currents, substantially as described.

6. In a two wire writing telegraph system the combination of a suitable device at the receiver station for controlling the movements of the receiving pen both in extent and direction, a polarized pen lifting and lowering device, and a paper shifting device, two wires connecting the two stations, and at the transmitter station means for transmitting over the two lines currents which control the movements of the receiving pen in extent and direction, means for transmitting over the two lines currents of both polarities which effect the lifting and lowering of the receiving pen, means for transmitting to line currents which control the shifting of the paper at the receiver station, and means for preventing short circuits in the transmission of these various currents, substantially as described.

7. In a two wire writing telegraph system the combination at the receiver station of a suitable polarized device for controlling the extent of movement of the receiving pen, a suitable polarized device for controlling its direction of movement, and a suitable supplemental device, two wires connecting the two stations, and at the transmitter station means for transmitting over the two lines currents of both polarities which control the extent of movement of the receiving pen, means for transmitting over the two lines currents of both polarities which control the direction of these movements, and means for transmitting to one of said lines currents which control the said supplemental device, and means for preventing short circuits in the transmission of these various currents, substantially as described.

8. In a two wire writing telegraph system the combination at the receiver station of a suitable polarized device for controlling the extent of movement of the receiving pen, a suitable polarized device for controlling its direction of movement, and a suitable polarized device for lifting and lowering it, two wires connecting the stations, and at the transmitter station means for transmitting over the two lines currents of both polarities which control the movements of the receiving pen in extent, means for transmitting over the two lines currents of both polarities which control its direction of movement, and means for transmitting to line currents of both polarities which effect the lifting and lowering of the receiving pen, and means for preventing short circuits in the transmission of the various currents, substantially as described.

9. In a two wire writing telegraph system, the combination of a suitable receiving device at a receiver station, two wires joining the stations, and at the transmitter station means for transmitting over the two lines currents which effect the movements of the receiving pen in extent and stronger currents of both polarities which control the directions of its movements, substantially as described.

10. In a two wire writing telegraph system the combination of a suitable receiving device at a receiver station, two wires joining the stations, and at the transmitter station means for transmitting over the two lines currents which effect the movements of the receiving pen in extent, and stronger currents of both polarities which control the direction of its movements, and means for preventing short circuits in the transmission of these various currents, substantially as described.

11. In a two wire writing telegraph system the combination of a suitable receiving device at a receiver station, including means for controlling the movement of the receiver pen in extent and direction, and a supplemental part, and two wires joining the two stations, and at the transmitter station means for transmitting over the two lines currents which effect the movements of the receiving pen in extent and direction, and means for transmitting to line stronger currents which effect the operation of the supplemental part of the receiving device, substantially as described.

12. In a two wire writing telegraph system the combination of a suitable receiving device at a receiver station, two wires joining the stations, and at the transmitter station means for transmitting currents which control the movements of the receiving pen, and means for transmitting currents which effect the lifting and lowering of the receiving pen, and means for transmitting currents which control the paper shifting at the receiver station, the currents which lift and lower the pen and shift the paper being stronger than the other currents, substantially as described.

13. In a two wire writing telegraph system the combination of a suitable receiving device at a receiver station, including means for controlling the movement of the receiver pen in extent and direction, and a supplemental part, and two wires joining the stations, and at the transmitter station means for transmitting over the two lines currents which effect the movements of the receiving-pen in extent and direction, and means for transmitting to line stronger currents which effect the operation of the supplemental part of the receiving device, there being currents of both polarities, and means for preventing short circuits in the transmission of the various currents, substantially as described.

14. In a two wire writing telegraph system the combination at a receiver station of a suitable device for controlling the movements of the receiver pen, and a polarized pen lifting and lowering device, two wires joining the two stations, and at the transmitter station means for transmitting over the two lines currents which control the movements of the receiving pen, and means for transmitting to line stronger currents of both polarities which effect the lifting and lowering of the receiver pen, and means for preventing short circuits in the transmission of these various currents, substantially as described.

15. In a two wire writing telegraph system the combination of a suitable device at the receiver station for controlling the movements of the receiving pen, a polarized pen lifting and lowering device, and a paper shifting device, two wires connecting the two stations, and at the transmitter station means for transmitting over the two lines currents which control the movements of the receiving pen, means for transmitting over the two lines currents of both polarities which effect the lifting and lowering of the receiving pen, means for transmitting to line currents which control the shifting of the paper at the receiver station, the currents which lift and lower the pen and shift the paper being stronger than the other currents, and means for preventing short circuits in the transmission of these various currents, substantially as described.

16. In a two wire writing telegraph system the combination at the receiver station of a suitable polarized device for controlling the extent of movement of the receiving-pen, a suitable polarized device for controlling its direction of movement, and a suitable supplemental device, two wires connecting the two stations, and at the transmitter station means for transmitting over the two lines currents of both polarities which control the extent of movement of the receiving pen, means for transmitting over the two lines stronger currents of both polarities which control the direction of these movements, and means for transmitting to one of said lines currents stronger than the said direction controlling currents which control the said supplemental device, and means for preventing the short circuits in the transmission of these various currents, substantially as described.

17. In a writing telegraph system the combination at the receiver station of a suitable polarized device for controlling the extent of movement of the receiving pen, a suitable polarized device for controlling its direction of movement, and a suitable polarized device for lifting and lowering it, wires connecting the stations, and at the transmitter station means for transmitting currents of both polarities which control the movements of the receiving pen in extent, means for transmitting currents of both polarities which control its direction of movement, and means for transmitting currents of both polarities which effect the lifting and lowering of the receiving pen, substantially as described.

18. In a writing telegraph system, the combination, in which currents of both polarities are transmitted, consisting of two lines, a branch from each of the lines through a transmitting device, a commutator constructed to throw the two lines into one circuit, and means for breaking the said branches when the said commutator is operated, and at the receiver a loop in which is connected a controlling device, substantially as described.

19. In a writing telegraph system the combination of two lines, a branch from one of the lines through a transmitting device, a pole-changer constructed to throw the two lines into one circuit, and transmit currents of opposite polarity, means for breaking the said branch when the said pole-changer is operated, and at the receiver station a loop in which is connected a pen lifting and lowering device, substantially as described.

20. In a writing telegraph the combination of two lines, a branch from one of the lines through a transmitting device, a pole-changer constructed to throw the two lines into one circuit, and transmit currents of opposite polarity, and means for breaking the said branch when the said pole changer is operated, the said pole changer and branch circuit breaker being operated momentarily by the transmitter pen whenever it is lifted or lowered, and at the other end of the lines a receiver pen, mechanism for causing it to obey the currents from the transmitter, a polarized pen lifting and lowering device which lifts or lowers the pen according to the direction of the current through the pole changer, substantially as described.

21. In a writing telegraph the combination of two lines, a battery having an intermediate ground connection, a branch from one of the lines through a transmitting device to either end of the battery, a commutator for connecting the two ends of the battery to the two lines, means for breaking the said branch when the said commutator is operated, substantially as described.

22. In a writing telegraph the combination of two lines, and, at the transmitter station, a battery having an intermediate ground connection, a branch from one of the lines through a transmitting device, to either end of the battery, a pole changer for connecting the two ends of the battery to the two lines, and means for breaking the said branch when the said pole changer is operated, the pole changer and branch circuit breaker being operated momentarily by the transmitting pen when it is lifted or lowered; and, at the receiver station, a receiving pen, mechanism for causing it to obey the currents from the transmitter and follow the movements of the transmitting pen, and a polarized pen lifting and lowering device which lifts or lowers the receiving pen according to the direction of the current through the pole changer, substantially as described.

23. In a writing telegraph the combination in which currents of both polarities are transmitted consisting of two lines, a branch from each of the lines through a transmitting device, a commutator for connecting both lines together in one circuit, a second commutator for commutating one of the lines independently of the other, and means for breaking both of the above named branches when either of the said commutators is operated, substantially as described.

24. In a writing telegraph the combination of two lines, a branch from each of the lines through a transmitting device, a pen lifting and lowering pole changer connecting both of the lines together in one circuit to transmit both positive and negative currents, a paper shifting commutator for commutating one of the lines independently of the other, and means for breaking both of the above named branches when either the said pole-changer or said commutator is operated, and at the receiver station a pen lifting and lowering device in the loop across the two wires and operated when the pole-changer is operated at the transmitter station, and a paper shifting device in a common ground of the two wires operated when the paper shifting commutator is operated at the transmitter station, substantially as described.

25. In a writing telegraph the combination of a line wire which connects the transmitter and receiver stations, and to which is connected, at the transmitter station, one half of a transmitter, a commutator, for cutting out and closing the line around the said half transmitter, and at the receiving station, one half of a receiver and a magnetic translating device operated only when the line at the transmitter station is closed around the said half transmitter and it is thereby cut out, substantially as described.

26. In a writing telegraph the combination of a line wire which connects the transmitter and receiver stations, and to which is connected, at the transmitter station, one half of a transmitter for sending over the line currents to control the movement of the receiving pen in extent and direction and a commutator for closing the line around and cutting out the said half transmitter to send other currents over the line, and at the receiver station, one half of a receiver and a translating device operated only by the currents sent to line when the line at the transmitter station is closed around the said half transmitter and it is thereby cut out, substantially as described.

27. In a writing telegraph system in which currents of both polarities are transmitted over one line, which line joins a transmitter and a receiver station, the combination of suitable mechanism at the receiver station including a receiver pen, and, at the transmitter station two branches to line, a switch operated by the horizontal movement of the transmitter pen for sending to line one set of currents to control the movements of the receiver pen in extent, means for sending to line a distinct set of currents to accomplish an additional result at the receiver station, each set of currents traversing its own branch, and means for preventing the simultaneous closure of the two branches, substantially as described.

28. In a writing telegraph system in which currents of both polarities are transmitted over one line, which line joins a transmitter and a receiver station, the combination of suitable mechanism at the receiver station, including a receiver pen, and, at the transmitter station, three branches to line, a switch operated by the horizontal movement of the transmitter pen for sending to line one set of currents to control the movements of the receiver pen in extent, means for sending to said line two other distinct sets of currents to accomplish additional results at the receiver station, each of the three sets of currents traversing its own branch, and means for preventing the simultaneous closure of any two of the branches, substantially as described.

29. In a writing telegraph system, the combination of a line joining a transmitter and a receiver station, at the latter suitable receiving apparatus, including a pen, and at the transmitter station two branches to line, means for sending to line two distinct sets of currents, including currents of both polarities, to accomplish at the receiver station the moving of the pen and the lowering and lifting of the pen respectively, each set of currents traversing its own branch, and means for preventing the simultaneous closing of the two branches, substantially as described.

30. In a writing telegraph the combination of a line joining a transmitter and a receiver station, at the latter suitable receiving apparatus including a pen, and at the transmitter station three branches to line, means for sending to line three distinct sets of currents, each set traversing its own branch, the one set being alternating pulsations and controlling the extent of movement of the receiver pen horizontally, another set being both positive and negative pulsations and controlling the direction of movement of the pen, and the third set being both positive and negative pulsations and controlling the lifting and lowering of the pen, substantially as described.

31. In a writing telegraph system the combination of a line which joins a transmitter and a receiver station, at the latter suitable receiving apparatus including a pen, and, at the transmitter station, three branches to said line, means for sending to said line three distinct sets of currents, each set traversing its own branch, one set being alternating pulsations and controlling the extent of movement of the pen horizontally, another set being both positive and negative pulsations and controlling the direction of movement of the pen, and the third set effecting a supplemental result at the receiver station, and means for preventing the simultaneous closure of any two of the branches, substantially as described.

32. In a writing telegraph the combination of a line, joining a transmitter and a receiver station, at the latter suitable receiving apparatus, including a pen, and, at the transmitter station, two branches to line, means for sending to said line two distinct sets of currents, one set being alternating pulsations, and the other set being both positive and negative currents, to accomplish at the receiver station the moving of the pen and the lifting and lowering of the pen respectively, each set of currents traversing its own branch, and means for pre-

venting the simultaneous closure of the two branches, substantially as described.

33. In a writing telegraph the combination of a line joining a transmitter and a receiver station, at the latter suitable receiving apparatus, including a pen, and, at the transmitter station, three branches to line, means for sending to said line three distinct sets of currents, which include currents of both polarities, each set traversing its own branch, one set controlling the extent of movement of the receiver pen horizontally, another set controlling the direction of movement of the pen, and the third set controlling the lifting and lowering of the pen, and means for preventing the simultaneous closure of any two of the branches in which currents of both polarities are transmitted, substantially as described.

34. In a writing telegraph system in which currents of both polarities are transmitted over one line, which line joins a transmitter and a receiver station, the combination of branches to line at the transmitter station, a switch operated by horizontal movement of the transmitter pen for sending to line one set of currents to control the movements of the receiver pen in extent, means also operated by the transmitter pen for sending to line one or more additional distinct sets of currents, each of all of the said sets of currents traversing its own branch, and means operated by the transmitter pen for preventing simultaneous closure of any two of the branches in which currents of both polarities are transmitted, and at the receiver station suitable receiving mechanism, including a pen, and distinct means operated each by one of the said sets of currents, and each effecting a distinct telautographic operation, including the control of the movements of the receiver pen in extent, substantially as described.

35. In a writing telegraph the combination of a line joining a transmitter and a receiver station, at the latter a suitable receiving mechanism including a pen, and at the transmitter station two branches to line, a transmitter which includes two circuit closers, one in each branch, operated manually with the pen for sending to line two distinct sets of currents, which include currents of both polarities, each set traversing its own branch, one set to control the movement of the receiver pen in extent and the other to control the direction of its movement, and mechanical connection between the two circuit closers whereby the direction controlling branch is closed and then opened before the other branch is closed, substantially as described.

36. In a writing telegraph the combination of a line joining a transmitter and a receiver station, at the latter suitable receiving mechanism, including pen, and, at the transmitter station, three branches to line, a transmitter for sending to line two distinct sets of currents, which include currents of both polarities, one set controlling the extent of movement of the receiver pen horizontally, the other set controlling the direction of movement of the receiver pen, and a pole-changer for sending to line a third set of currents which control the lifting and lowering of the receiving pen, each of the three sets traversing its own branch, and means operated by the transmitting pen for preventing the simultaneous closure of any two of the branches, substantially as described.

37. In a writing telegraph system a transmitter, a branch to line which includes a pulsator and a switch, a second and distinct branch to line which includes a second and distinct switch for sending both positive and negative currents, and means for preventing the simultaneous closure of the two switches, substantially as described.

38. In a writing telegraph system a transmitter, a branch to line which includes an alternating pulsator and a switch, a second and distinct branch to line which also includes a second and distinct switch, means for sending a distinct set of currents over the second branch, and means for preventing the simultaneous closure of the two switches, substantially as described.

39. In a writing telegraph system a transmitter, a branch to line which includes an alternating pulsator and a switch, a second and distinct branch to line which includes a second and distinct switch for sending both positive and negative currents, and means for preventing the simultaneous closure of the two switches, substantially as described.

40. In a writing telegraph transmitter constructed to transmit to line currents of both polarities, the combination of two switches each in a separate branch to line, one switch being in a branch with a pulsator, and connected by the pen to the switch in the other branch, the action between the switches being such that the latter switch closes and again breaks its branch before the former switch is closed, substantially as described.

41. In a writing telegraph transmitter constructed to send to line currents of both polarities the combination of a transmitter pen, a current pulsator operated thereby through mechanism to which is also attached a switch arm having two contact points insulated from each other, two sets of contacts cooperating with these two points on the switch arm, one member of each of these sets of contact points lying on either side of the switch arm, two branches to the one line, one through the pulsator the switch arm and one set of contacts, and the other through the switch arm and the other set of contacts, the two sets of contacts being so constructed and adjusted relatively to each other that the second branch is closed and then broken before the first branch is closed, each time that the switch arm is moved in either direction from its natural position, substantially as described.

42. In a writing telegraph transmitter the combination of a transmitting pen, connections to line through a switch that is closed by movement of the pen without respect to the direction of motion of the pen, or its range of motion beyond certain limits, means for opening this switch immediately on reversal of motion of the pen, means for sending alternating pulsations to line through this switch, a connection to line in parallel with and beyond this switch, and a second switch arranged to send currents of both polarities to line, the direction of the currents being dependent on direction of motion of the pen, and means whereby the said second switch is closed and then opened before the said first switch is closed, substantially as described.

43. A two wire writing telegraph transmitter comprising the combination of a transmitting pen, a pulsator for sending alternating currents to each line, the number of pulsations being dependent on the extent of movement of the pen, switches for sending positive or negative currents to said lines upon each reversal of direction of movement of the pen, the direction of the current being dependent on the direction of the pen movement, substantially as described.

44. In a two wire writing telegraph the combination of a transmitting pen, a branch which includes a pulsator for sending alternating currents to each line, the number of pulsations being dependent on the extent of movement of the pen, a second branch to each line which includes a switch for sending a positive or negative current to line upon each reversal of direction of movement of the pen, the direction of the current being dependent on the direction of the pen movement, and means whereby the said switch is first closed and then opened before the branch through the pulsator is closed, substantially as described.

45. In a writing telegraph system, at the transmitter the combination of a transmitting pen, connections to a line through a switch that is closed by movement of the pen without respect to the direction of motion of the pen, or its range of motion beyond certain limits, means for opening this switch immediately on reversal of motion of the pen, means for sending alternating pulsations to the said line through this switch, a connection to said line in parallel with and beyond this switch, and a second switch arranged to send currents of both polarities to line, the polarity of the currents being dependent on direction of motion of the pen, and means whereby the said second switch is closed and then opened before the said first switch is closed, and at the receiver station a receiving pen, means controlled by the aforesaid alternating pulsations, for effecting the movement of the receiver pen, and means controlled by the aforesaid currents of both polarities for effecting changes of direction of movement of the receiver pen, substantially as described.

46. In a writing telegraph transmitter the combination of a transmitting pen, a pulsator for sending alternating currents to a line, the number of pulsations being dependent on the extent of movement of the pen, a switch for sending a positive or negative current to said line upon each reversal of direction of movement of the pen, the polarity of the current being dependent on the direction of the pen movement, and at the receiver station a receiving pen, means controlled by the said alternating currents, for effecting its movement, and means controlled by the aforesaid positive and negative currents, for effecting changes of direction of its movement, substantially as described.

47. In a writing telegraph the combination of a transmitting pen, a branch which includes a pulsator for sending alternating currents to a line, the number of pulsations being dependent on the extent of movement of the pen, a second branch which includes a switch for sending a positive or negative current to said line upon each reversal of direction of movement of the pen, the polarity of the current being dependent on the direction of the pen movement, and means whereby the said switch is first closed and then opened before the branch through the pulsator is closed, and at the receiver station a receiving pen, means controlled by the said alternating currents, for effecting its movement, and means controlled by the said positive and negative currents for effecting changes of direction of its movement, substantially as described.

48. In a writing telegraph transmitter two points connected with opposite ends of a battery and otherwise insulated from each other, a contact finger which alternately contacts with them, two contact members, cooperating mechanically, one electrically connected with the said finger and the other insulated therefrom, two contacting strips insulated except for two points connecting them each with one end of the battery, the said strips being in the path of the insulated members, and connecting it with one or the other of said points last named on a partial movement of the said members, and being disconnected from the said points by further movement of the said insulated member, a contact shoe in position to contact with the non-insulated member upon such further movement only, connections from the insulated member and the said contact shoe to line, substantially as described.

49. In a writing telegraph transmitter two points connected with opposite ends of a battery and otherwise insulated from each other, a contact finger which alternately contacts with them, two cooperating contact members, one electrically connected with the said finger and the other insulated both from the said other member and the said finger, each of said contact members contacting with one of two pairs of points, there being a point of each pair on each side of the said members, the two points of one of the pairs being connected and the two points of the other pair being insulated from each other, the said insulated points being connected respectively to opposite ends of the battery and being in the path of the said insulated member, which on movement in either direction is first connected through one of the points to one end of the battery and then on further movement is disconnected, the said further movement bringing the uninsulated contact member into contact with one of the uninsulated pair of contact points, and connections from the said insulated member and the said uninsulated pair of contact points to line through different branches, substantially as described.

50. In writing telegraphs, the combination with the transmitter and receiver and two main line wires connecting the same, of a commutator at the transmitter adapted to transform the said main line wires into a single metallic circuit, changing the polarity at each transformation, substantially as described.

51. In writing telegraphs, the combination with the transmitter and receiver, two main line wires and the pen lifting and lowering system at the receiver, of a commutator at the transmitter adapted to momentarily transform the two line wires into a metallic circuit, changing the polarity at each transformation and instantly restoring circuits and batteries to their normal condition, substantially as described.

52. In writing telegraphs, the combination with the transmitter and receiver and two main line wires connecting the same, of means located at the transmitter and cooperating therewith for commutating the said main line wires and batteries, when the transmitting pen is raised or lowered, whereby additional main lines for giving the perpendicular movements to the receiving pen are dispensed with, substantially as described.

53. In writing telegraphs, the combination with the transmitter and receiver and two main line wires connecting the same, of means at the transmitter which cooperates therewith to commutate said main lines, when the transmitting pen is raised or lowered, changing the polarity at each of said movements, and a condenser at the receiver cooperating with the commutated main lines, substantially as described.

54. In writing telegraphs, the combination with the receiver and transmitter and two main line wires connecting the same, of a condenser and polarized relay bridged across the incoming line wires at the receiver and controlling the pen lifting mechanism, and a commutator at the transmitter which cooperates therewith to transform the lines and batteries to send the impulses which produce the perpendicular movements of the receiving pen, substantially as described.

55. In writing telegraphs, the combination with the transmitter and receiver and two main line wires connecting the same, of a commutator at the transmitter for the main lines, a series of batteries, and a polarized relay and condenser at the receiver, substantially as described.

56. In writing telegraphs, the combination with the transmitter and receiver and two line wires connecting the same and grounded at both ends, of mechanism for breaking the ground at the transmitter and commutating the lines and batteries when the stylus of the transmitter is lifted from or lowered to the paper, substantially as described.

57. In a writing telegraph the combination with a series of batteries, a transmitter, a receiver, and two line wires connecting the same and grounded at both ends, of a commutator at the transmitter adapted to break the ground at the transmitter and commutate the lines and batteries when the stylus of the transmitter is lifted from or lowered to the paper, substantially as described.

543,426. WRITING-TELEGRAPH. JAMES H. ROBERTSON, Brooklyn, N. Y., assignor to William E. Gump, same place. Filed Dec. 19, 1894. Serial No. 532,376. (No model.)

Claim.—1. In a writing telegraph, the combination with the receiver and transmitter, and electrical connection between the same, of a pen lifting and lowering mechanism, and an induced current generating-mechanism arranged to operate, through the said electrical connection, the said pen lifting and lowering mechanism, substantially as described.

2. In a writing telegraph, the combination with the receiver and transmitter, and the main line conductors connecting the same, of a pen lifting and lowering mechanism and an induced current-generating mechanism arranged to operate, through said main line conductors, the said lifting and lowering mechanism, substantially as described.



3. In a writing telegraph, the combination with the receiver and transmitter, and electrical connection between the same, of an induction coil, circuit closer, and local battery, arranged at the transmitter, and a condenser, and pen-lifting mechanism arranged at the receiver both mechanisms at transmitter and receiver being connected by conductors to the electrical connection between transmitter and receiver, substantially as described.

4. In a writing telegraph, the combination with the receiver and transmitter, and the main conductors connecting the same, of an induction coil circuit breaker, and local battery, connected to said conductors at the transmitter, and a condenser, polarized relay, local battery circuit, pen lifting magnet, and pen lifting armature arranged in connection with the main conductors at the receiver, substantially as described.

5. In a writing telegraph, in combination, a condenser, polarized magnet and pen-lifting mechanism in a local circuit arranged between the two line wires at the receiver, substantially as described.

6. In a writing telegraph, the combination with the receiving pen, of an armature arranged to lift and lower said pen and an electro magnet operating said armature and connected with the main line conductors through a condenser, substantially as described.

543,427. WRITING-TELEGRAPH. JAMES H. ROBERTSON, Brooklyn, N. Y., assignor to William E. Gump, same place. Filed Mar. 21, 1895. Serial No. 542,621. (No model.)

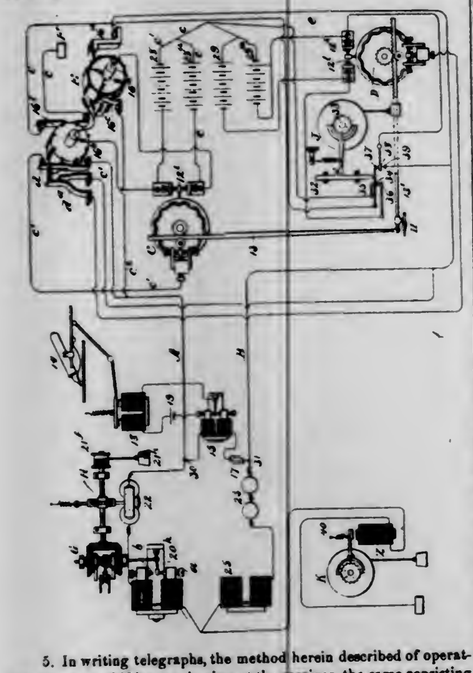
Claim.—1. In writing telegraphs, the method herein described of transmitting the perpendicular movements of writing over the same main lines that transmit the lateral movements of writing, the same consisting in disconnecting the terminals of two main line wires at the transmitter and cutting off the common ground and batteries, and then inserting for an instant between the main line wire terminals a battery of greater power than either of the individual batteries on the main lines, substantially as set forth.

2. In writing telegraphs employing two main line wires only, the method herein described of producing a movement at an angle to the two movements which when compounded give the lateral movements of writing, which consists in momentarily commutating at the transmitter the said two main lines and transforming them into a single metallic circuit over which the impulses for giving the desired movement are transmitted, substantially as set forth.

3. In writing telegraphs, the method herein described of transmitting the perpendicular movements of writing over the same main line wires that transmit the lateral movements of writing, which consists in momentarily commutating said main line wires and the batteries automatically by the movement of the transmitting pen, substantially as set forth.

4. In writing telegraphs employing two main line wires only, the method herein described of moving the paper at the receiver, which

cousists in commutating at the transmitter one of said main line wires and sending an impulse over said line of greater power than required to produce one of the lateral movements of writing, substantially as set forth.



5. In writing telegraphs, the method herein described of operating the paper shifting mechanism at the receiver, the same consisting in manually operating the escapement of the paper shifting cylinder at the transmitter and then momentarily transforming the batteries at the transmitter into a single battery in series by grounding one end at the transmitter and the other end at the receiver, the high electromotive force of the battery thus brought into action influencing the electrically controlled paper shifting cylinder at the receiver, substantially as set forth.

6. In writing telegraphs, the method herein described of operating the paper shifting mechanism at the receiver over one of the main line wires used in transmitting the lateral movements in writing, which consists in manually operating the escapement of the paper shifting cylinder at the transmitter, then automatically commutating the batteries used in sending impulses over said main line, whereby the electrically controlled paper shifting cylinder at the receiver is influenced, substantially as set forth.

7. The combination of a writing telegraph transmitter stylus and a commutator operated by the stylus when the latter is raised or lowered, the said commutator having two pairs of contacts connected in series, and means for reversing the connections between these pairs of contacts with each successive operation of the commutator, substantially as described.

8. In writing telegraphs, a commutator consisting of a cylinder of non-conducting material provided with strips of conducting material in one portion thereof and extensions of insulating material in the other portion thereof, substantially as described.

9. In writing telegraphs, a commutator consisting of a cylinder of non-conducting material, having strips of conducting material in one portion thereof and extensions of insulating material in the other portion thereof, and springs at intervals, and electric connections whereby the springs and conducting strips can be connected to the batteries, main lines and ground, said springs co-operating with the strips of conducting material on the cylinder, and other springs having connections whereby they can be electrically connected with the main lines, said other springs co-operating with the extensions of insulating material in the said cylinder, substantially as described.

10. In writing telegraphs, a commutator, provided with two pairs of contacts connected in series, a transmitting pen, a pivoted lever mechanically connected to the commutator shaft and the said pen, and appliances on the commutator shaft and said lever whereby the commutator cylinder is caused to move a definite space in one direction as the transmitting pen is raised or lowered, substantially as described.

11. In writing telegraphs, a cylindrical commutator, and two pairs of contacts connected in series, a transmitting pen, and a pawl and ratchet movement in mechanical connection with the said commutator and the said transmitter pen, but unaffected by the lateral movements of the pen, whereby when the said stylus is lifted or lowered, the commutating cylinder is moved a definite distance in one direction, reversing the connections through the said pairs of contacts of the commutator each time it is operated, substantially as described.

12. In writing telegraphs, the combination with the transmitter of a two part cyliudrical commutator the shaft of which is also in two parts which are insulated from each other, one portion of said cylinder provided with a series of conducting strips, each alternate strip of the series being connected with one portion of the shaft and the other strips of the series connected to the other portion of the shaft, substantially as set forth.

13. In writing telegraphs, a cylindrical commutator having a metallic shaft in two parts electrically separated from each other, and provided with two series of conducting strips and insulated extensions arranged in the cylinder to insure an impulse of opposite polarity at every movement and restore the circuits again to their normal condition at the same movement, substantially as set forth.

14. In writing telegraphs, a commutator provided with a shaft in two parts, insulated from each other, one portion of said shaft being provided with connections whereby it can be connected with one line wire, while at the same time the other portion is connected with the other line wire, a third connection whereby the line wire can be grounded, and means for breaking the grounding connection in the commutator when the commutator is operated, substantially as described.

15. In writing telegraphs, a commutator provided with a two-part shaft, the two parts being electrically insulated from each other, connections whereby the two parts can be connected up simultaneously to the two poles of the battery in either direction, a third contact whereby the said battery can be grounded, the commutator being so constructed as to complete the circuit of the battery through it and break the said ground each time it is operated, substantially as described.

16. In writing telegraphs, a commutator having a shaft in two parts, insulated from each other and provided with two series of contact strips, connections between one series of strips and one part of the shaft, and the other series of strips and the other part of the shaft, connections for the parts of the shaft whereby they can be connected to opposite poles of the battery, and contact fingers to engage said strips, but normally out of contact therewith, substantially as described

17. In writing telegraphs, a commutator having a shaft in two parts, insulated from each other, and provided with two series of contact strips, connections between one series of strips and one part of the shaft, and the other series of strips and the other part of the shaft, connections for the parts of the shaft whereby they can be connected to opposite poles of the battery, and contact fingers to engage said strips, but normally out of contact therewith, and a third contact whereby the battery can be grounded, which contact is normally closed, but is open when the commutator is operated, substantially as described.

18. In writing telegraphs, the combination with a circuit interrupter mechanically connected with the transmitter stylus and including a disk capable of revolving in either direction and provided with a sinuous channel, of a pivoted contact maker the fulcrum of which is between the sinuous channel of the disk and the contact point of the circuit interrupted and which only moves to and fro whichever way the disk is revolved and in its positive co-operation with said disk makes and breaks the circuit in which it is placed, always at the same contact, substantially as set forth.

19. In writing telegraphs, the combination with the transmitter stylus and a circuit interrupter mechanically connected with said transmitter stylus and comprising a revoluble disk or wheel capable of movement in either direction, of a pivoted contact maker adapted to be vibrated by co-operation of one of its ends with said revoluble disk, substantially as set forth.

20. In writing telegraphs, a circuit interrupter mechanically connected with the transmitter stylus and comprising a revoluble disk or wheel capable of movement in either direction and provided with a sinuous groove or channel, of a pivoted contact maker adapted to be alternately forced into and out of contact with the line contact by its co-operation with the said sinuous channel as the stylus is manipulated in writing, substantially as set forth.

21. In writing telegraphs, the combination with the transmitter stylus, of a pair of circuit interrupters mechanically connected with said stylus and each comprising a suitably mounted disk or wheel provided with a sinuous channel, of two pivoted vibratory contact makers co-operating with the sinuous channels in the disks, whereby as the transmitter stylus is moved by the operator in either direction said disks are caused to revolve, thereby causing said contact makers to move a definite and positive distance to and fro to make contact between the contact points and the line contacts, substantially as set forth.

22. In writing telegraphs, a circuit interrupter consisting of a wheel or disk provided with a sinuous channel and mounted on a vertical shaft, a gear wheel also fixed to said shaft and a guide or pressure pulley supported in proper relation to said gear wheel, in combination with a pivoted contact maker coacting with the sinuous channel of said disk or wheel, and an arm of the transmitter pen provided with teeth and co-operating with said gear wheel and pressure pulley, substantially as set forth.

23. In writing telegraphs, the combination with a circuit interrupter comprising a disk or wheel mounted on a vertical shaft and co-operating with a pivoted contact maker, and a gear wheel likewise mounted on said vertical shaft and co-operating with a pressure pulley and with an arm of the transmitter stylus, of a pole changing arm likewise mounted on said vertical shaft and frictionally connected to the revolving part of the circuit interrupter and making the desired contacts as the transmitter arm is moved backward or forward, substantially as set forth.

24. In writing telegraphs, the combination with the circuit interrupter comprising a disk or wheel mounted on a vertical shaft and a gear wheel also mounted on said shaft, the said disk or wheel coacting with a pivoted contact maker and said gear wheel with an arm of the transmitter stylus, of a pole changing arm loosely mounted on said shaft and provided with a spring as 12ª whereby the necessary frictional contact between said arm and the movable part of the circuit interrupter is secured, substantially as set forth.

25. In writing telegraphs, the combination with two line wires and a polarized magnet and condenser bridged across said lines at the receiver, of a cylindrical commutator and a circuit interrupter at the transmitter and a vibratory contact maker, said circuit interrupter mechanically connected with the stylus of the transmitter and operating as said stylus is manipulated in writing to alternately push said contact maker against and pull it away from a conducting contact, substantially as set forth.

26. In a feed mechanism of a writing telegraph, the combination with a motor shaft moving in one direction only and provided with an escapement wheel and a gear wheel rigidly attached thereto, of two gear wheels pinioned to be operated by said first mentioned gear wheel, a second shaft provided with a feed wheel, said shaft having bearings through the said two gear wheels, said feed wheel adapted to receive motion from one or the other of said two gear wheels and a polarized magnet the armature of which is attached to said feed wheel shaft, substantially as set forth.

27. In a feed mechanism of a writing telegraph, two shafts arranged at an angle to each other, one of said shafts carrying an escapement and gear wheel and revolving in one direction only, and the other carrying the feed wheel and having its bearings through two gear wheels adapted to be operated by the gear wheel on the first mentioned shaft, and revolving in either of two directions, the said feed wheel shaft also having two motions through its bearings at right angles to its direction of revolution, in combination with a polarized magnet and a co-operating armature which is attached to said feed-wheel shaft, substantially as set forth.

28. In a receiver feed mechanism of a writing telegraph, the combination with the shaft carrying the feed wheel, said shaft having a right and left motion through the two gear-wheels which give motion to said feed wheel, of a polarized magnet having its armature mechanically connected to said shaft whereby the movements of the feed mechanism are reversed as the polarity of the current is changed, substantially as set forth.

29. In a feed mechanism of a writing telegraph, the combination with an escapement shaft and three gear wheels whose movements are controlled by said shaft and which always revolve each in its own direction which is always the same, of a feed wheel and its shaft, a polarized magnet and co-operating armature mechanically connected to said feed wheel shaft whereby the movement of the feed wheel shaft is adapted to be reversed without any change in the direction of movement of the escapement shaft or the aforesaid gear wheels, substantially as set forth.

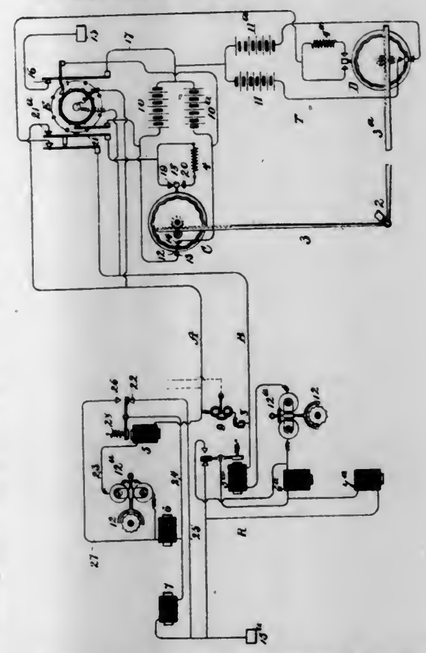
30. In a feed mechanism of a writing telegraph, the combination with a shaft carrying an escapement wheel and provided with a weight or its equivalent which causes the said shaft to revolve in one direction when the escapement is released, of a feed mechanism consisting of a train of three gear wheels and a feed wheel on a shaft said shaft having a movement at an angle to its revolving movements, substantially as set forth.

31. In a feed mechanism of a writing telegraph, the combination with a shaft carrying an escapement wheel and provided with a gear wheel at one end and always revolving in one direction and an electro magnet controlling the escapement, of two gear wheels and a feed wheel located on a shaft between said two gear wheels with which it co-operates, said shaft passing freely through the centers of said two gear wheels and mechanically connected to the armature of a polarized magnet, substantially as set forth.

32. In a receiving feed mechanism of a writing telegraph, the combination with a motor shaft moving in one direction only and provided with an escapement wheel, a motor wheel and a gear wheel rigidly attached thereto, of a reversing shaft having rigidly pinioned thereon two gear wheels both traveling always in the same direction and operated by the gear wheel on the motor shaft, a feed wheel on the reversing shaft between the said pinioned gear wheels and a polarized magnet the armature of which is mechanically connected to the reversing shaft, substantially as set forth.

33. In writing telegraphs, a paper shifting drum at the transmitter, and a lever adapted to operate said drum, and a compound commutator at the transmitter with suitable contacts operated by the movement of the lever, which operates said paper shifter, substantially as described.

543,428. WRITING-TELEGRAPH. JAMES H. ROBERTSON, Brooklyn, N. Y., assignor to William E. Gump, same place. Filed Mar. 21, 1895. Serial No. 542,622. (No model.)



Claim.—1. In a writing telegraph transmitter, the combination of a transmitter pen and mechanism operated thereby for controlling the connection to line, comprising a circuit interrupter for controlling the connection to line, and a contact maker for connecting the line up through a resistance or around the same, according to the direction of movement of the transmitter pen, substantially as set forth.

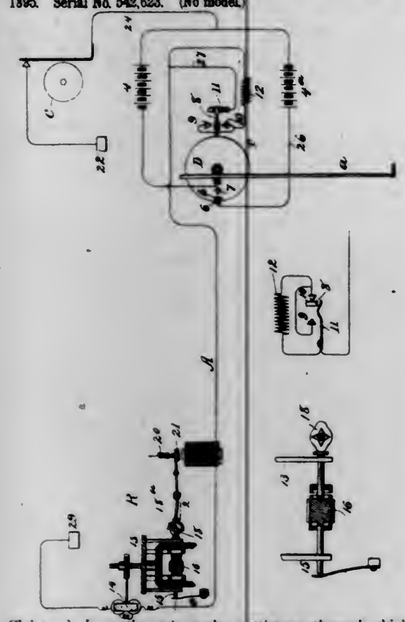
2. In a writing telegraph transmitter, the combination of a transmitting pen and mechanism operated thereby for controlling the connection to line, comprising a circuit interrupter constructed to send alternating pulsations to line, and a contact maker for connecting the line up through a resistance or around the same, according to the direction of movement of the transmitter pen, substantially as set forth.

3. In writing telegraphs, a resistance arranged at the transmitter, through which the impulses made by only one of the movements (either the forward or the backward) of the transmitting pen pass into a main line with a connecting line without a resistance for the other impulses, in combination with a controlling magnet at the receiver, which controls the reversing magnets of the feeding mechanism on that line, substantially as set forth.

4. In writing telegraphs, two resistances arranged at the transmitter through which the impulses made by only one of the movements of the transmitting pen (either the forward or the reverse), pass into the main lines, and connecting lines without resistances for the impulses of the opposite movements, in combination with two controlling magnets at the receiver which control the reversing magnets of the feeding mechanism on each line, substantially as set forth.

5. In writing telegraphs two contact points co-operating with the reversing arm of a circuit interrupter, one of said contact points electrically connected to the main line wire and the other contact point also electrically connected to the same line wire through a resistance, in combination with a controlling magnet at the receiver, which controls on that line the feeding mechanism of the receiving pen, substantially as set forth.

543,429. WRITING-TELEGRAPH. JAMES H. ROBERTSON, Brooklyn, N. Y., assignor to William E. Gump, same place. Filed Mar. 21, 1895. Serial No. 542,623. (No model.)



Claim.—1. In writing telegraphs, a resistance through which the writing impulses are sent, in combination with a friction contact adapted to send an impulse direct to line when the movement of the transmitting pen is reversed and the resistance is cut out, substantially as set forth.

2. In writing telegraphs, a circuit interrupter and a resistance through which the writing impulses are sent, in combination with the contact in series with the interrupter, through which an impulse is sent direct to line when the movement of the transmitting pen is reversed and the resistance cut out, substantially as set forth.

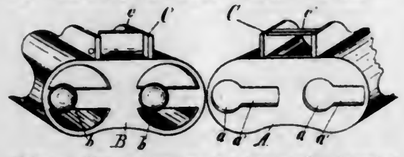
3. In writing telegraphs, a circuit interrupter constructed to send to line positive and negative pulsations, and a resistance through which these writing impulses are sent, in combination with a contact in series with the interrupter, through which an impulse is sent direct to line when the movement of the transmitting pen is reversed and the resistance is cut out, substantially as set forth.

4. In writing telegraphs, the combination with a receiving feed-wheel and its shaft, of means for reversing the movement of said feed-wheel, the same consisting of a cam coacting with one end of said shaft and a spring coacting with its opposite end and tending to always push the shaft in one direction, and an electro magnet in the main line influenced from the transmitter and controlling the movement of said cam, substantially as set forth.

5. In writing telegraphs, the combination with a circuit interrupter at the transmitter adapted to send impulses of successively opposite polarity over a main line, and also provided with a reversing lever, of a resistance arranged between the transmitter and the main line, a friction contact in a branch of the main line with which said reversing lever coacts, means for reversing the movement of the feed wheel at the receiver and the electro magnet controlling said reversing means, substantially as set forth.

6. In writing telegraphs, the combination with the shaft of the feed reversing mechanism and means, including an electro magnet 17, for operating the same, of the batteries at the transmitter, a circuit interrupter having a contact maker, as 5, adapted to make contact with contact points 6, 7 in electrical connection with said batteries, and also provided with a lever, as 8, adapted to make contact with contact points 9, 10, in electrical connection with the main line, a resistance, as 12, between the main line and the transmitter and a spring, as 11, in a branch of the main line and adapted to be acted upon by lever 8 in its movements between contact points 9, 10, cutting out resistance 12 to influence electro magnet 17 at the receiver, substantially as set forth.

543,430. HORSE-COLLAR FASTENER. ALVIN SMITH, Cincinnati, Ohio. Filed Aug. 20, 1894. Serial No. 520,804. (No model.)

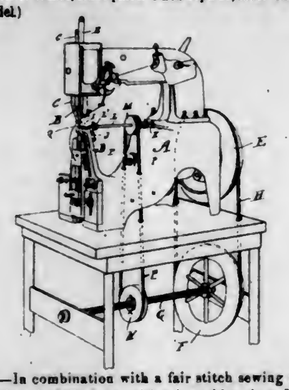


Claim.—1. The combination, in a horse collar fastening, of a socket, A, embracing one end of the collar; a socket, B, embracing the other end, downwardly projecting ribs, C, and a tongue, *c*, pivotally attached to one socket and adapted to take between the ribs on the other, substantially as and for the purpose set forth.

2. The combination, in a horse collar fastening of sockets embracing the ends of the collar, a downwardly projecting pair of ribs on one of the sockets, a bar connecting the ribs, and a tongue pivoted to the other socket and adapted to swing between the ribs and lock them against lateral displacement, substantially as and for the purpose set forth.

3. The combination, in a horse collar fastening, of sockets embracing the ends of the collar, a downwardly projecting pair of ribs, on one of the sockets, tapering inwardly from their lower edges upward, and a tongue pivoted on the other socket and adapted to swing between the ribs and lock them against lateral displacement, substantially as and for the purpose set forth.

543,431. GROOVE-CUTTING ATTACHMENT FOR SEWING-MACHINES. AGUSTUS G. TAYLOR, Peterborough, N. H., assignor of one-half to Samuel G. White, same place. Filed Sept. 11, 1890. Serial No. 364,614. (No model.)



Claim.—In combination with a fair stitch sewing machine a rotating vibrating shaft L, mounted in pivoted bearings J, K, and bearing I, secured to the loop former, a rotary cutter Q, mounted on the end of said shaft on a line with but in advance of the needle and means for imparting a rotary motion to said shaft substantially as set forth.

543,432. GLOVE-FASTENING. EDGAR THOMPSON and FRANK W. ZUBER, San Francisco, Cal., assignors to August Klein, Gloversville, N. Y. Filed Apr. 19, 1895. Serial No. 546,414. (No model.)

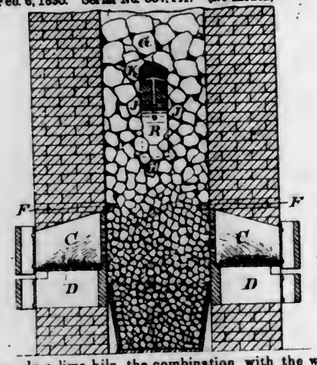


Claim.—1. The glove fastening, consisting of the part A provided with means for securing it to the body of the glove and having a central tubular passage in which is a recess with a shoulder or ledge a^3 near the bottom of said passage; the part B provided with means for securing it to the glove and having a cylindrical post or stud, laterally projecting catches recessed in the said stud and adapted to engage the recess in the tubular passage of the part A, and the sleeve movable longitudinally upon the said stud and by such movement acting to press the said catches back into the recesses of the stud, constructed for operation as set forth.

2. In a glove-fastening, the combination, with a button-hole part or socket having a tubular passage a^x through its center and a recess and a shoulder a^3 therein, of the button-part or stud having a cylindrical post provided with longitudinal recesses in the sides; the V-shape spring in said recesses having laterally projecting end-portions adapted to engage the recesses in the button-hole part; and the movable sleeve fitted on the stud and adapted when pressed down to force in the said projection ends clear of the recess in the said button-hole part, substantially as set forth.

3. In a glove-fastening, the combination of the stud *b* having recesses in the sides and across the top, and provided with the seat or bearing C^3; the U-shape spring having laterally projecting end-portions C^x and the sleeve b^3 having limited sliding movement upon the stud over the spring, the said sleeve when moved in one direction by pressure upon its top acting to retract the ends of the spring, and being returned to position by the resilience of said spring, when such pressure is removed.

543,433. LIMEKILN. RICHARD VANDERHOOF and HARRY VANDERHOOF, Hamburg, assignors to Marcus Sayre, South Orange, N. J. Filed Feb. 6, 1895. Serial No. 537,441. (No model.)



Claim.—In a lime kiln, the combination, with the walls thereof provided with fire chambers and ash pits, of an arch with the ends formed integrally with the walls above the fire chambers, said arch being of a less width than the space between the walls and provided with transverse perforations or flues, and vertical flues extending from the bottom of the arch to and intersecting the transverse flues, whereby the heat from the space underneath the arch is equally distributed to both sides of the arch, substantially as set forth.

543,434. VEHICLE-TIRE. THEODORE B. BLOSSER, Springfield, Ohio, assignor, by direct and mesne assignments, to the Victor Rubber Tire Company, same place. Filed May 24, 1895. Serial No. 550,543. (No model.)



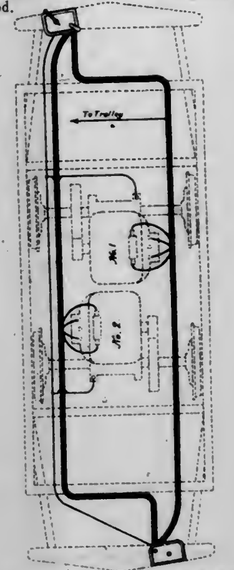
Claim.—1. The combination in a vehicle wheel having a channel felly, of a tire consisting essentially of a rubber body having a continuous opening through the same, a continuous core of leather or other similar nonelastic or slightly elastic material adapted to fit in said opening so as to form a substantially solid tire, and a retaining wire passing through said core, substantially as specified.

2. The combination with a vehicle wheel having a channel felly, of a rubber-tire having a flat bottom to fit said felly, a central core of leather or other similar non-elastic or slightly elastic material also flat at the bottom as described, and a single retaining wire passing through said core, substantially as specified.

3. The combination with a channel felly, of a rubber-tire having a central core of leather, a retaining wire passing through said core, the ends of said retaining wire being united by interlocking loops having retaining sleeves or collars, substantially as specified.

543,435. MEANS FOR ARRESTING MOTION OF ELECTRIC CARS. ARTHUR K. BONTA, Hoboken, N. J., assignor to the Bonta Manufacturing Company, same place. Filed Mar. 21, 1895. Serial No. 542,638. (No model.)

Claim.—1. In an electric car the combination of a propelling motor or motors, a controller stand located on the motorman's platform and containing a car controlling switch and a separate reversing switch the latter consisting of a cylinder having three sets of contact points thereon and a set of stationary fingers or terminals with which said sets of contact points are adapted to engage; one set establishing connections to send the car forward, another set to send the car backward, and the third set to reverse the relation of the field magnet and armature connections and establish a closed local circuit in which the terminals of the motor or motors will be connected in series, substantially as described.



2. In an electric car the combination of a propelling motor or motors, a controller stand located on the motorman's platform and containing a car controlling switch and a separate car reversing switch, the latter consisting of a cylinder having three sets of contact points thereon and a set of stationary fingers or terminals with which said sets of contact points are adapted to engage, one set establishing connections to send the car forward, another set to send the car backward, and the third set to establish a closed local circuit in which the terminals of the motor or motors will be connected together for the purpose set forth.

3. In an electric car, the combination of two propelling motors, a controller stand located on the motorman's platform, said controller stand containing two circuit changing cylinders; one for reversing, and one for varying the speed, a short circuit including both motors in series, a circuit controller for said short circuit, located upon said reversing cylinder, and a lever for operating said reversing cylinder, the lever having two stops one of which is adjustable.

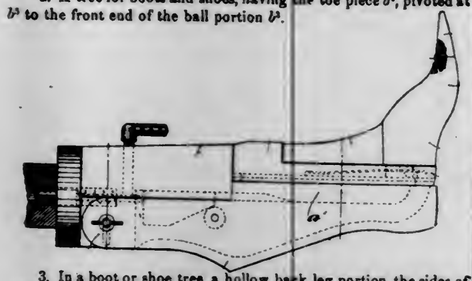
4. In an electric car, two propelling motors, a controller stand located on the motorman's platform, a controller located in said stand and conductors leading from the motors to terminals on said stand whereby the speed of the motors may be changed, all in combination with a reversing switch located in said stand and controlling the course of the current over said conductors, the reversing switch having extra contacts by means of which the motors may be thrown into series in a closed local circuit, substantially as described.

5. In an electric car, two propelling motors, a controller stand located on the motorman's platform, a controller located in said stand and conductors leading from the motors to terminals on said stand whereby the speed of the motors may be changed, all in combination with a reversing switch located in said stand and controlling the course of the current over said conductors, the reversing switch having extra contacts by means of which the motors may be thrown into series in a closed local circuit which local circuit includes the said conductors leading from the motors to the controlling stand.

543,436. BOOT OR SHOE TREE. GEORGE H. CLARK, Boston, Mass., assignor to the Clark Manufacturing Company, same place. Filed Dec. 21, 1894. Serial No. 532,536. (No model.)

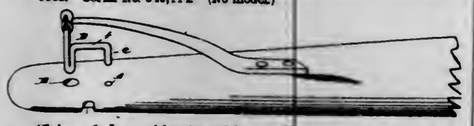
Claim.—1. In a tree for boots and shoes, the combination of separable back and front leg portions, a sliding detachable fore-part, comprising instep, shank, and ball portions, and the toe piece b^4, which is pivoted to the front end of the ball portion, substantially as described.

2. A tree for boots and shoes, having the toe piece b^4, pivoted at b^3 to the front end of the ball portion b^2.



3. In a boot or shoe tree, a hollow back leg portion, the sides of which are gradually reduced in thickness to a sharp edge, a front leg portion, which enters the hollow of the back leg portion, between its thin tapering side edges, and a pivotal connection for the parts, whereby they may be more or less separated, substantially as described.

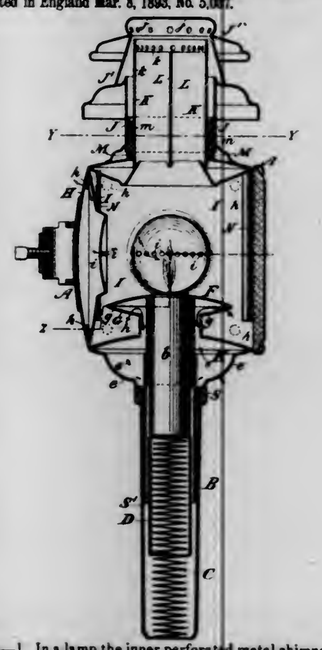
543,437. TRACE-FASTENER. SYLVESTER COLE, Pontiac, Mich., assignor of one-half to Samuel W. Smith, same place. Filed May 13, 1895. Serial No. 549,114. (No model.)



Claim.—1. In combination with a whiffletree, a pin provided with an arm adapted to extend through the eye of the tug, substantially as described.

2. In combination with a whiffletree, a double pointed pin, of which the points are united by a bar adapted to traverse the eye of the tug, and means for securing the pin to the whiffletree, substantially as described.

543,438. CARRIAGE-LAMP. SHERMAN COOPER, Westfield, N. J., assignor, by direct and mesne assignments, to The Cooper Lamp Company, same place. Filed Mar. 14, 1894. Serial No. 503,602. (No model.) Patented in England Mar. 8, 1893, No. 5,037.

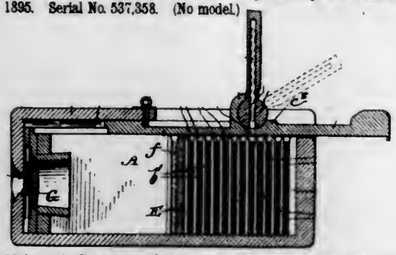


Claim.—1. In a lamp the inner perforated metal chimney K, provided with one or more vertical partitions or baffle plates, the lower ends of such partitions being arranged above the flame of the lamp in combination with the outer chimney J, provided with perforations in its circumference in the manner and for the purposes therein specified.

2. In a lamp, the perforated convex and concave deflecting disks F and G, placed around the upper end of the candle tube and arranged to form by their juxtaposition a heating chamber for the air passing into the lamp through the perforations in such disks in combination with the horizontal air-holes *e. e.* placed around the circumference of the chamber E, in the manner shown and for the purposes specified.

3. In a lamp, the combination with a sectional candle tube B, of the candle spring C, made of a less diameter than the tube B, as described, and the loose or removable guard or thimble D constructed as shown with the upper end rounded or chamfered, and having a length not less than the upper section of the candle tube for the purposes shown and in the manner specified.

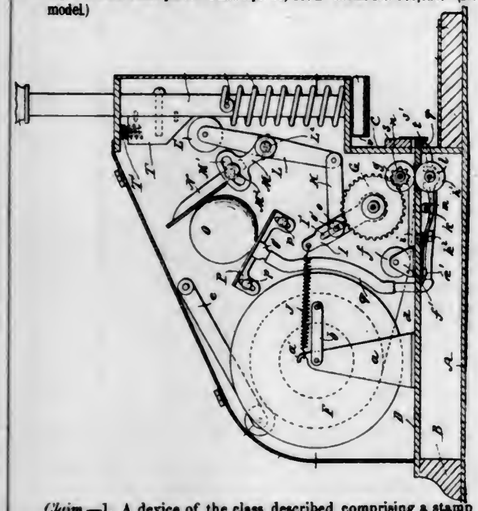
543,439. MAGAZINE-CAMERA. DAVID R. CRAW, Oshkosh, Wis., assignor of one-half to Everett G. Tulledge, same place. Filed Feb. 5, 1895. Serial No. 537,358. (No model.)



Claim.—1. In a magazine camera the combination of a camera proper, a plate magazine in the rear of the same, a pivoted sliding plate changer adapted to receive any plate from the magazine and deposit it in the camera or vice versa, a graduated stop slide and means for positively engaging said slide to stop the plate changer exactly over the plate it is desired to use, substantially as described.

2. In a magazine camera, the combination of a camera proper, a plate magazine in the rear of the same, a pivotal sliding plate changer adapted to receive any plate from the magazine and deposit it in the camera or vice versa, a graduated slide, an apertured indicator, and a pin adapted to be passed through any one of the apertures of said indicator and engage the graduated slide to stop the plate changer over the desired plate in the magazine, substantially as described.

543,440. STAMP-ATTACHING AND SEALING MACHINE. THOS. C. DEVLIN, Portland, Oreg., assignor of one-half to D. Solis Cohen and Sigel Grutze, same place. Filed Apr. 25, 1894. Serial No. 508,929. (No model.)



Claim.—1. A device of the class described comprising a stamp receptacle, means for feeding the stamps therefrom, a presser acting to affix the stamps, an atomizer arranged to contribute moisture, and a lever in operative relation to the presser and having an extension to operate the atomizer.

2. A device of the class described comprising a stamp receptacle, means for feeding the stamps therefrom, a presser acting to affix the stamps, an atomizer having an air bulb and arranged to contribute moisture, a projection on the presser, and a lever in the path of the said projection, said lever having operative connection with the feeding mechanism and the atomizer.

3. A device of the class described comprising a stamp receptacle, means for feeding the stamps therefrom, a presser acting to affix the stamps, an atomizer arranged to contribute moisture, a lever in operative relation to the presser and having an extension to operate the atomizer, and means for rendering the feed mechanism inoperative at times.

4. A device of the class described comprising a stamp receptacle, means for feeding the stamps therefrom, a presser acting to affix the stamps, an atomizer having an air bulb and arranged to contribute moisture, a projection on the presser, a lever in the path of the said presser, said lever having operative connection with the feeding mechanism and the atomizer, and means for rendering the feed mechanism inoperative at times.

5. A stamp affixing machine comprising a reel, feed-rollers delivering through a slot in the frame of the device, a slotted metallic plate secured over the said slot in the frame, a spring-controlled actuating rod having a beveled block thereon, a lever pivoted adjacent to the said rod and adapted to be operated by the said block, an atomizer arranged near the said lever, a plate connecting with the lever and adapted to operate the atomizer, a connecting rod joining the lever to the arm of a clutch engaging with a gear-wheel, which meshes with a gear upon one of the feed-rollers, in such manner as to turn the same in but one direction, pipes leading from the air bulb of the atomizer, and from the water reservoir, to a point in front of the stamp feed, and a pressing block upon the lower end of the said rod having a cutter blade thereon, substantially as shown and described.

6. A stamp affixing machine comprising a reel, feed-rollers delivering through a slot in the frame of the device, guides intervening the reel and the feed-rollers, a slotted metallic plate secured over the said slot in the frame, a vertically movable sprig-controlled actuating rod carrying a block beveled at the lower portion thereof, a lever pivoted adjacent to the said rod and adapted to be operated by the said block, an atomizer supported upon a bracket near the said lever, a plate secured to an arm connecting with the said lever and adapted to operate the said atomizer, a connecting rod joining the said lever to the arm of a clutch engaging with a gear-wheel, which meshes with a gear upon one of the feed-rollers, in such manner as to turn the same only upon the downward movement of the said rod, the said connecting rod being adjustably secured to the said clutch arm, pipes leading from the air bulb of the atomizer and from a water reservoir to a point in front of the stamp feed, the said pipes being arranged to spray a portion of the envelope or package to be stamped, and a pressing block upon the lower end of the rod, having a sharpened cutter blade thereon, substantially as shown and described.

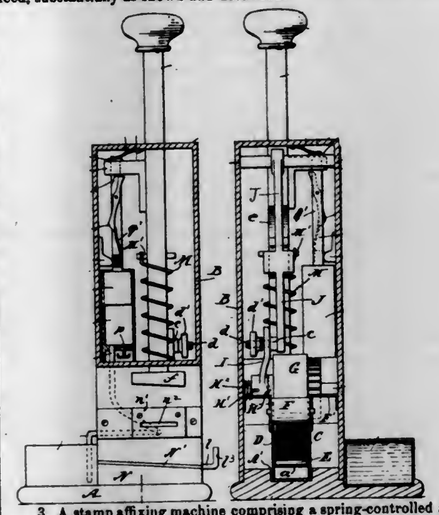
7. A device of the class described comprising a stamp receptacle, means comprising rolls for feeding the stamps therefrom, a presser acting to affix the stamps, an atomizer having an air bulb and arranged to contribute moisture, a projection on the presser, and a lever in the path of the said projection said lever having operative connection with the feeding mechanism, and means for separating the said feeding rolls at times, to prevent feed of the stamps.

8. A device of the class described comprising a stamp receptacle, means comprising rolls for feeding the stamps therefrom, a presser acting to affix the stamps, an atomizer having an air bulb and arranged to contribute moisture, a projection on the presser, a lever in the path of the said presser, said lever having operative connection with the feeding mechanism and the atomizer, and means for separating the feed rolls at times to prevent feeding of the stamps.

543,441. STAMP-AFFIXING MACHINE. THOMAS C. DEVLIN, Portland, Oreg., assignor of one-half to D. Solis Cohen and Sigel Grutze, same place. Filed May 1, 1894. Serial No. 509,632. (No model.)

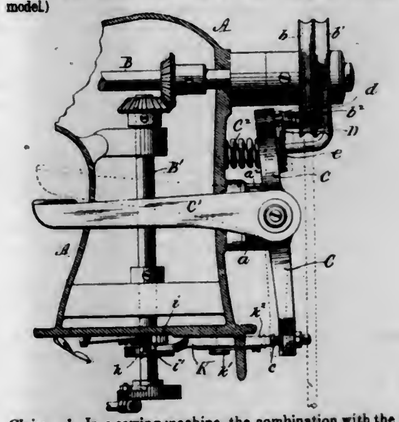
Claim.—1. A stamp affixing machine comprising a spring-controlled actuating rod carrying a pressing block and cutter blade, a block on the actuating rod, a lever pivoted adjacent to said rod and in the path of said block, and adapted to be forced rearwardly by the downward movement thereof, a feed-roller arranged to bear upon the stamps, a clutch connecting with the lever and adapted to turn the said roller in a forward direction only, smaller rollers arranged in front of the feed roller and gearing therewith, a slotted plate secured in front of the said rollers and a stamp box adapted to receive strips of stamps, having a spring bottom therein to hold the said stamps upwardly against the feed-roller, and a plurality of friction rollers arranged near the top of the box, substantially as shown and described.

2. In a stamp affixing machine, the combination, with a spring-controlled actuating rod, a stamp holder, feed-rollers, a cutter and pressing block, connecting to the actuating rod, of a moistening device comprising an air cylinder having a valve therein, a piston working in the said cylinder and resting in an arm secured to the actuating rod, a catch adapted to cause the said piston to be depressed at the first movement only of the actuating rod, and pipes leading from the said cylinder and from a water reservoir to a point below the stamp feed, substantially as shown and described.



3. A stamp affixing machine comprising a spring-controlled actuating rod carrying a pressing block and cutter blade, and having thereon an arm and a beveled block, a lever pivoted adjacent to the said rod, having a friction roller thereon, and connecting by means of a clutch to a feed roller, in such manner as to turn the same in a forward direction only, a pair of rollers gearing with the said feed-roller and having guides at either side thereof, a slotted plate secured in front of the said guides, a stamp receptacle adapted to receive strips of stamps, having a spring therein supporting a false bottom and adapted to hold the stamps upwardly in engagement with the feed-roller, a plurality of friction rollers arranged near the top of the stamp box, an air cylinder arranged near the actuating rod having a piston working therein and resting in the arm upon the rod, a catch upon the piston rod by means of which the said piston is depressed only upon the first movement of the rod, an inwardly opening valve in the bottom of the cylinder, and pipes leading from the same and from a water reservoir to a point below the delivery slot, substantially as shown and described.

543,442. STOP MECHANISM FOR SEWING-MACHINES. JOHN DOUGLAS, Elizabeth, N. J., assignor to The Singer Manufacturing Company, of New Jersey. Filed Feb. 27, 1894. Serial No. 501,690. (No model.)



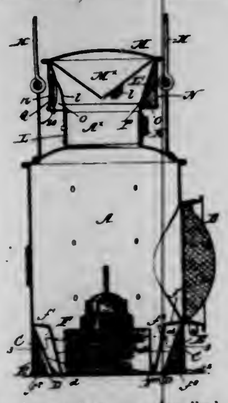
Claim.—1. In a sewing machine, the combination with the main shaft thereof provided with a fast driving wheel or pulley having a stud or projection, of a starting and stopping lever, a spring-pressed arm and stopping abutment both carried by said lever and both of which are movable into the path of said stud or projection, so as to be successively engaged thereby, when the machine is to be stopped, and automatic mechanism for changing the position of said lever, to

move said arm and abutment into the path of said stud or projection, when a desired number of stitches have been made.

2. In a sewing machine, the combination with the main shaft thereof provided with a fast driving wheel or pulley having the pin or stud b^3, of a power-transmitting device, the spring-pressed stopping and starting lever C, the spring-pressed arm D carried by said lever and provided with a stopping abutment, said arm and abutment being arranged to be successively engaged by said pin or stud on said wheel or pulley, a holding device to retain said stopping and starting lever in a position to permit the power to be transmitted to said driving wheel or pulley, and an automatic tripping mechanism whereby said holding device may, when desired, be moved to permit said starting and stopping lever to be shifted to a position to disconnect the power from the said driving shaft.

3. In a sewing machine, the combination with the main shaft thereof provided with fast and loose pulleys b and b', the former having the laterally projecting pin or stud b^3, of the spring-pressed starting and stopping lever C having the pin or projection c and a belt shifter, the spring-pressed retarding arm D pivoted to said lever and provided with the stopping abutment d^3, the spring-pressed holding lever K, the wheel i having the tripping lug i' to engage a portion of said lever, and means for rotating said wheel i to cause the said tripping lug to engage said lever K to stop the machine when a desired number of stitches have been made.

543,443. LAMP. JAMES FORSYTHE, Pittsburg, assignor of two-thirds to William L. Newbaker and George A. Jackson, Wilkinsburg, Pa. Filed May 17, 1894. Serial No. 511,562. (No model.)



Claim.—1. In a lamp or lantern as described, a hood portion, having its upper end flared outward, having a closed top, a pendent vertical annular rim surrounding the flared portion, a series of division plates connecting such rim and flared portion, whereby to form a series of independent spaces, said rim and flared portions having coincident air openings, and flap valves hung one in each of such spaces, arranged to close over the openings in the outer rim when the air enters from below and to swing back and close over the openings in the flared portion when the wind pressure is direct through the outer openings all substantially as described and for the purposes specified.

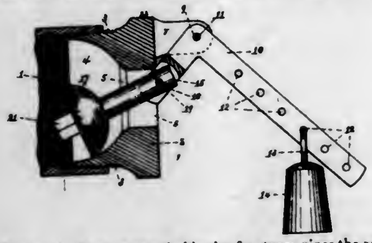
2. In a lamp, a hood portion having an upper outwardly flared end having a closed top, having a pendent annular rim, whereby an annular space is formed, division members forming such space into sections, coincident air passages formed in the said rim and flared end, one set for each section, and a gravity or swing valve held in each of such sections, all arranged substantially as shown and described.

3. As an improvement in lamps or lanterns substantially as described, a body portion having a neck member terminating with an outwardly flared portion having a closed top, a vertical annular rim surrounding the flared portion, whereby an annular space open at the bottom is formed, said space being radially divided to form a series of chambers, said rim and annular portions having coincident air passages, and flap valves hinged to the inner face of the annular rim to close normally over the outer openings and be held thereover when the draft is from below, and adapted to be swung back by direct wind pressure, to close over the openings in the flared portion of the hood all substantially as shown and for the purposes described.

4. In a lamp or lantern as described, a casing having a series of internal air spaces D having inclined walls d, the casing and walls having aligning air passages C and d' respectively, hinged flap valves held in the said spaces to normally hang over the passages C, and openings f^6 in the bottom of the casing entering the spaces D and so arranged that air drafts therethrough will serve to keep the flap valves over the passages C as and for the purposes specified.

5. The combination with the casing having a lamp holding seat portion or chamber at the bottom, having its side walls connected by a top portion f' with the casing to form chambers F, the said side walls having air passages f^2, of air spaces D held within the spaces F, having their inner walls d inclined and connected with the casing, said walls and the casing having coincident air holes d' and C respectively and the flap valves E hinged in the chambers D to normally hang over the openings C all arranged substantially as and for the purposes described.

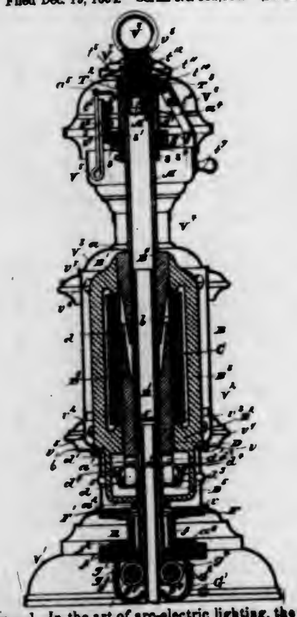
543,444. BLEEDER FOR STEAM-PIPES. CHARLES C. HOWELL, Red Rock, Pa. Filed Mar. 13, 1895. Serial No. 541,586. (No model.)



Claim.—1. In an automatic bleeder for steam pipes the combination with the body formed with the lugs and angular portion and provided with a valve-chamber having a valve seat therein, of the hemispherical valve provided with an angular projection and a stem, the bent lever pivotally secured to the lugs and provided with the forked extension adapted to be pivotally secured to the valve stem and the weight, substantially as shown and described.

2. An automatic bleeder for steam pipes, comprising the body externally screw-threaded formed with the lugs, angular portion, and discharge orifice, and provided with a valve-chamber having an interior valve-seat, a valve provided with an angular extension on the one side, and on the other a stem adapted to engage with the bent lever, the bent lever pivotally secured to the lugs, provided with the forked extension and with a series of perforations, and the weight provided with a hook adapted to engage with the perforations of the lever, substantially as shown and described and for the purpose herein set forth.

543,445. ELECTRIC-ARC LAMP. WILLIAM JANDUS, Cleveland, Ohio. Filed Dec. 19, 1894. Serial No. 532,314. (No model.)



Claim.—1. In the art of arc-electric lighting, the method of protecting the arc and prolonging the life of the electrodes which consists in surrounding the arc by an inclosed body of chemically inert gases, and surrounding such inclosure by an envelope or inclosed outer reservoir of chemically inert gases, said inner and outer inclosed bodies communicating with one another.

2. In an arc-electric lamp the combination with an arc-inclosing globe, of an outer globe or chamber, said globes being constructed and arranged to insure and maintain an envelope or reservoir of chemically inert gases around and in communication with the body of gas in the arc-inclosing globe substantially as set forth.

3. In an arc electric-lamp, the combination with an arc-inclosing globe, of an outer globe or chamber constructed to insure and maintain an envelope or reservoir of chemically inert gases around and in communication with the body of gas in the arc-inclosing globe and provided with an outwardly yielding closure, substantially as set forth.

4. In an arc electric-lamp the combination with an arc-inclosing globe, of an outer globe or chamber constructed to insure and maintain an envelope or reservoir of chemically inert gases around and in communication with the body of gas in the arc-inclosing globe the outer globe or chamber being provided with a detachable portion with which is connected the lower electrode holder, substantially as set forth.

5. In an arc-electric lamp the combination with an arc-inclosing globe, and an outer globe or chamber, of a lower electrode-holder detachably secured to a support rigidly connected with the lamp frame, and an outwardly yielding valve, connected with the lower electrode holder, substantially as set forth.

6. In an electric-lamp the combination with that portion of the lamp structure inclosing the feeding mechanism, of a lower electrode supporting frame, a globe surrounding the frame and secured thereto, the latter being detachably secured to the lamp structure outside of the globe, substantially as set forth.

7. In an electric lamp the combination with that portion of the lamp structure in which the regulating mechanism is contained, of a lower electrode supporting frame an outer globe and an arc inclosing globe both connected with said frame, the latter being provided with a connection outside of the globe whereby it is detachably secured to the upper portion of the lamp structure, substantially as set forth.

8. In an electric lamp, the combination with a lower electrode supporting frame formed with an opening at its lower end, of an electrode holding structure having means for locking it in said opening, and an arc inclosure supported upon said structure and of such diameter that it may be inserted through the opening of the frame, substantially as set forth.

9. In an electric lamp, the combination with a globe having an opening at its bottom and a lower electrode supporting frame within said globe and formed with an opening at its lower end registering with the bottom opening of the globe, of an electrode holding structure having means for locking it in the opening of the frame, and an arc inclosure upon said structure and of such diameter that it may be inserted through the opening of the frame, substantially as set forth.

10. In an electric lamp, the combination of a globe having an opening at its bottom, a lower electrode supporting frame within said globe and formed with an opening at its lower end registering with the bottom opening of the globe, an electrode holding structure having means for locking it in the opening of the frame, an arc inclosure supported upon the upper end of the electrode holding structure and of such diameter that it may be inserted through the opening of the frame, and a cover which fits in the bottom opening of the globe and is secured outwardly yielding upon the lower end of the electrode holding structure, substantially as set forth.

11. In an electric lamp, the combination of a lower electrode supporting frame having a horizontal ring at its lower end formed with notches in its interior periphery, and a lower carbon holding structure provided with lugs which register with and may pass through the notches in the ring and rest upon the upper edge of the same when the structure is partly rotated in the ring, substantially as set forth.

12. In an electric lamp, the combination of a lower electrode supporting frame having a horizontal ring at its lower end formed with notches in its interior periphery, and a lower carbon holding structure provided with upper lugs which register with and pass through the notches in the ring and rest upon the upper edge of the same when the structure is partly rotated in the ring and with lower lugs which cannot pass through the notches and bear against the lower edge of the ring, substantially as set forth.

13. In an electric lamp, the combination of a lower electrode supporting frame formed with an opening at its lower end, a globe surrounding said frame and formed with a bottom opening, a lower electrode holder, a cover for the bottom opening of the globe and supported upon said holder, and a part adjustably secured upon the holder and provided with means for locking it in the opening of the supporting frame, substantially as set forth.

14. In an electric lamp, the combination of an arc inclosing chamber, an electrode supporting frame within said globe and forming a part of one lamp terminal and formed with a ring at its lower end, a tubular rheostat having means for securing it in said ring and having one of its terminals in contact with the frame and an electrode holder secured in the rheostat and in contact with its other terminal, substantially as set forth.

15. In an electric lamp the combination with the lower electrode holder and a supporting frame, of a rheostat interposed between the electrode holder and supporting frame, said rheostat comprising an inner and an outer casing and an intervening resistance material, substantially as set forth.

16. A rheostat consisting of an axial tube, a casing attached to but insulated from said tube, an annular cylinder essentially composed of a refractory and non-conducting substance and a finely comminuted conductor in intimate commixture therewith and interposed between but insulated from the tube and casing but in electrical contact with one end of the casing, an annular disk upon the opposite end of the tube and having a central hub in contact with the resistance cylinder, and contact screws in said disk and capable of being brought into contact with the end of the resistance cylinder, substantially as set forth.

17. In an arc electric lamp the combination with an arc inclosing globe of a cap provided with a tube and a floor, and a washer seated upon the floor and having a lateral adjustment thereon, substantially as set forth.

18. In an electric lamp the combination with a globe having an opening formed in its lower end and an outwardly flaring depending flange encircling said opening, of a cover provided with a correspondingly outwardly flared edge or rim which seats upon the depending outwardly flaring flange on the globe, substantially as set forth.

19. In an electric lamp, the combination of an armature formed with an axial passage through it and with longitudinal and radial slots into such passage, a ring having longitudinal play upon said armature, clutch rings having play with and upon said ring in the slots of the armature, and inclined surfaces secured to the armature and against which the outer edges of the clutch rings may bear, substantially as set forth.

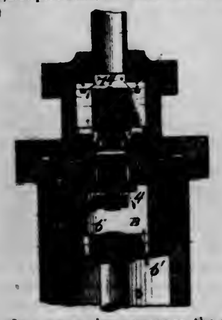
20. The combination with a pivoted switch contact bar provided with opposing shoulders; a spring and an actuating link pivoted at one end on the spring while the free end engages the contact bar, of an actuating lever constructed to engage the actuating link and move its free end to the opposite sides of its dead center substantially as set forth.

21. The combination with a pivoted switch contact bar provided at one edge with a segmental bearing having shoulders at its opposite ends, and an actuating lever also provided with a segmental bearing having shoulders at its opposite ends, of a pivoted actuating link the free end of which engages the said segmental bearings on the switch contact bar and the actuating lever, substantially as set forth.

22. The combination with a pivoted switch contact bar provided on its edge with a segmental bearing having shoulders at its opposite ends, and an actuating lever pivoted concentrically with the switch contact bar and provided with a similar bearing and shoulders, of a pivoted actuating link or bar, a spring for imparting an endwise movement to the actuating link or bar in any of its adjustments and serving to positively move the contact bar to its open or closed positions, substantially as set forth.

23. In an arc-electric lamp the combination with an arc-inclosing globe, of an outer globe or chamber fitted air-tight at its upper end to the lamp, said globes being constructed and arranged to insure and maintain an envelope or reservoir of chemically inert gases around and in communication with the body of gas in the arc-inclosing globe, substantially as set forth.

543,446. VALVE FOR GAS OR AIR COMPRESSORS. SAMUEL W. JOHNSON, Newport News, Va. Filed Jan. 13, 1894. Serial No. 496,789. (No model.)



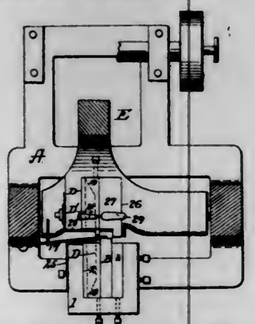
Claim.—1. In a gas or air compressor, the combination with the tubular valve guide, of the suction valve having a stem working in

said guide, and an annularly recessed head adapted to fit over and work upon the upper end of said guide, substantially as and for the purpose specified.

2. In a gas or air compressor, the combination with the suction valve, of the tubular valve guide, provided with vertical ports, the said valve having a stem working in said valve guide, and having a head recessed on its under side so as to fit over and work upon the upper end of the valve guide, substantially as specified.

3. In a gas or air compressor, the combination, with the suction valve, its tubular valve guide and recessed head fitting thereon, of the nut at its lower end, the intervening springs, the discharge valve and its head recessed on the upper side and the springs arranged around the stem of the valve, the whole adapted to operate, substantially as specified.

543,447. NAIL-MACHINE. REUBEN JOHNSON, Northumberland, Pa., assignor to Louisiana Philena Johnson, same place. Filed Dec. 5, 1894. Serial No. 530,913. (No model.)



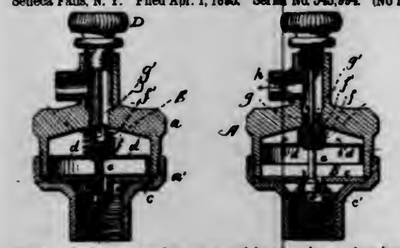
Claim.—1. The improved back-piece, composed of a stationary part formed with a groove in its under portion and having a recess at its front end to receive the head of a movable portion, a movable portion formed with a head to set across the recess in the stationary portion and a stem to fit in the groove thereof, means to hold the stem in the groove and limit its outward movement, and a spring to push the movable portion outward with its face in alingment with the end face of the stationary portion, substantially as and for the purposes set forth.

2. The back-piece B comprising the outer body formed with a central groove or channel 5, and recessed or cut-away front part 7, detachable retaining pieces and stop-piece, the movable part 10 having head 11, and a spring to push the part 10 outward, as specified.

3. In a nail machine for cutting points on nails, the combination of the herein described point-cutting dies composed of the boxing or casing, the die arranged therein and formed with an enlarged rear end portion and having lateral movement in the casing, and a spring to hold the die longitudinally back in the casing.

4. In a nail-machine for cutting points on nails, the point-cutting dies herein described, composed of the three-sided open-end casing D having a hole 22, and slot 21 let into it, and the point-cutting die D' formed with the enlarged end-portion 19, and having a lug or pin 20 entering the slot of the casing to engage the spring and hold the die back in the casing D, substantially as described.

543,448. GAS-PRESSURE REGULATOR. JOSEPH H. LOWE, Baltimore, Md., assignor to the Davis & Stevens Manufacturing Company, Seneca Falls, N. Y. Filed Apr. 1, 1895. Serial No. 543,994. (No model.)

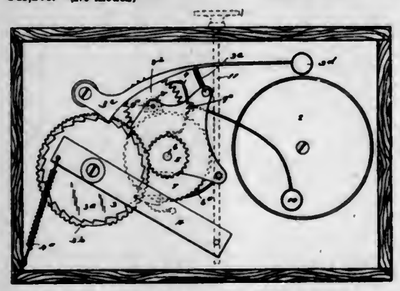


Claim.—1. A gas regulator comprising a valve casing having a suitable inlet and an upper exit, a perforated diaphragm having a transversely perforated valve seat mounted within the lower portion of the casing, a perforated piston mounted above said diaphragm and having a downwardly extending pin or valve adapted to pass into the valve seat on the diaphragm and a post extending up into the upper exit, perforated transversely, as set forth.

2. A gas regulator comprising a valve casing, having a suitable inlet and an upper exit, a perforated diaphragm having a transversely perforated valve seat mounted within the lower portion of the casing, a perforated piston mounted over said diaphragm having a downwardly extending pin enlarged at its lower end and adapted, when the pressure is high, to occupy a position opposite of the perforations in the valve seat, and a post extending up into the upper exit recessed and perforated transversely and a thumb screw —D— as set forth.

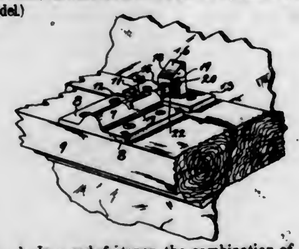
3. A gas regulator comprising a valve casing, having a suitable inlet and an upper exit, a perforated diaphragm located within the lower portion of the casing and provided with a valve seat as described, a perforated piston mounted above said diaphragm and having a downwardly extending pin enlarged to form a valve, and a post extending up into the upper exit, recessed at its upper end and perforated transversely, and a spiral spring mounted upon said post, engaging the upper face of the piston and the upper wall of the casing and a thumb screw —D—, as set forth.

543,449. REGISTERING-ALARM. JAMES MILLER, Detroit, Mich., assignor to John H. Brown, same place. Filed May 6, 1895. Serial No. 548,278. (No model.)



Claim.—In a register alarm, a bell and hammer therefor, a ratchet wheel and an actuating ratchet lever therefor, a master wheel mutilated at some part and fixed to said ratchet wheel, an escapement device and suitable gears connecting it to said master wheel, a hammer adapted to be actuated by said escapement mechanism, a spring adapted to be wound by the ratchet wheel and ratchet lever, and to actuate said escapement mechanism, the first mentioned hammer being adapted to strike the bell at each successive impulse given to the ratchet wheel, and the second mentioned hammer being adapted to sound an alarm when the gear slips on the mutilated part of the master wheel, substantially as described.

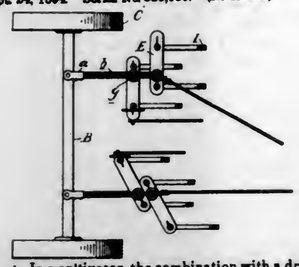
543,450. SASH-FASTENER. HERBERT C. OETTINGER and JACOB WALLENSTEIN, Cincinnati, Ohio. Filed Mar. 2, 1895. Serial No. 540,312. (No model.)



Claim.—1. In a sash-fastener, the combination of a housing 7, provided with flanges for attachment and a cylindrical bore closed at one end and open at the other, a slot 12 in the upper bored part of the housing, a locking bolt closely fitting and confined in the bore of the housing, a spring between the closed end of the latter and the inner end of the bolt, an operating knob 11 on the latter, passing with its shank out through slot 12, whereby the movement of the bolt is limited and a pin 20 on its outer end, a notch 21 branching off from slot 12, whereby when knob 11 is opposite it, a limited rotation of the bolt is permitted, a catch having a cavity or socket 15, in its front-side adapted to be entered by the outer bolt-end and provided with a slot 19 in its side to receive pin 20 after rotation of the bolt, and inclined surfaces 23 and 22, the former in notch 21, the other in slot 19, which by contact with knob 11 and pin 20 respectively, of the bolt when the same is rotated, produce a compound and double action for the purpose of drawing the sashes together.

2. In a sash-fastener, a catch or keeper, inclined on its upper surface and adapted to be secured to the sash-rail, a socket or cavity 15 in its front-side below its upper inclined end and a slot 19, in its side, in combination with a rotary spring bolt having a pin 20 at its outer end adapted to enter slot 19 when the outer bolt-end is in position within socket 15.

543,451. CULTIVATOR. ELIJAH A. OVENSHIRE, Detroit, Mich. Filed Sept. 24, 1894. Serial No. 523,939. (No model.)



Claim.—1. In a cultivator, the combination with a drag-bar comprising two parallel bars, of a plurality of independent cross-bars having overlapping inner ends, and means for adjustably securing the cross-bars to the drag-bar at different points and for securing the cross-bars at varying angles relative to the drag bar, substantially as described.

2. In a cultivator, the combination of the head *a* having sockets in the sides, the separated bars *b* secured at their forward ends in said sockets, clamping plates above and below said bars, a cross bar, adjustably engaging the lower clamping plate and a clamping bolt for clamping the parts together, substantially as described.

3. In a cultivator, the combination of a cross bar having longitudinal slots therein, the clamping bolts passing through the cross bars in said slots, the sliding plate K devices to prevent the rotation of said plate, the rotatorily adjustable plate J, means for preventing the rotation of the plates in relation to each other, and the tooth secured to the plate J, substantially as described.

4. In a cultivator, the combination with the drag bar, of a cross bar longitudinally slotted and having an annular notched flange on its upper face and projections adjacent to the slots on its under face, a clamping plate on the upper face having projections engaging the notched flange, a bolt for clamping the plate to the cross bar and the cross bar to the drag bar, teeth, clamping plates between the teeth and cross bar having projections engaging the projections on the cross bar, and bolts for clamping the teeth to the bar, substantially as described.

543,452. PROCESS OF TREATING LIME. HARRY H. PIERCE, Toledo, Ohio, assignor, by mesne assignments, to the H. H. Pierce Company, same place. Filed June 6, 1894. Serial No. 513,654. (No specimens.)

Claim.—1. The herein described process of treating lime, which consists in, first, slaking quick-lime to a putty; second, roasting said putty, and, third, grinding the hard mass thus obtained, substantially as and for the purpose specified.

2. As an article of manufacture, lime which as quick-lime has been slaked to a putty, then roasted and then ground, and which will not slake, heat nor swell, substantially as and for the purpose specified.

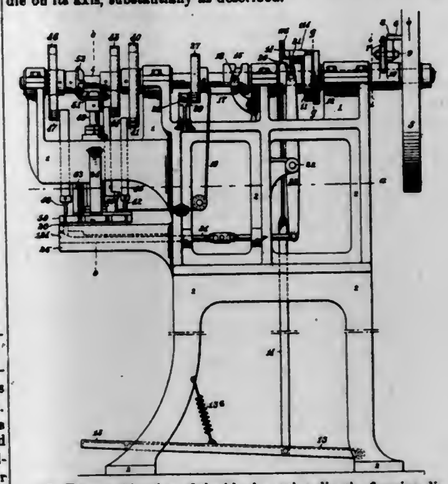
543,453. MACHINE FOR RIVETING CARDBOARD. EMIL SALTZKORN and LUDWIG NICOLAI, Dresden, Germany. Filed Mar. 3, 1893. Serial No. 464,630. (No model.) Patented in Germany Feb. 14, 1893, No. 70,554; in England Feb. 15, 1893, 3,418; in France Feb. 20, 1893, No. 228,063; in Belgium Feb. 22, 1893, No. 103,576, and in Austria-Hungary July 5, 1893, No. 10,100 and No. 25,576.

Claim.—1. The combination of the die carrier, a die carried thereby, a blank forming die, a cutting die co-acting therewith, a forming die and means for moving such blank forming die alternately between the cutting die and the forming die, substantially as specified.

2. The combination of the die carrier, a staple receiving die carried thereby, a blank forming die, a cutting die co-acting therewith, a staple forming die, means for moving the blank forming die alternately under the cutting die and the forming die, an ejector, and mechanism for intermittingly moving the staple receiving die under the forming die and the ejector, substantially as described.

3. The combination of the staple-carrying disk, a pivoted die-block supported thereby, a blank-cutting die, a forming die, an ejector, devices for intermittingly revolving the staple-carrying disk, a carriage, a female blank-cutting die carried thereby, and means for moving such carriage between the blank-cutting die and the forming die, substantially as specified.

4. The combination of the die carrier, a pivoted die block carried thereby, a blank cutting die, a staple forming die, an ejector, an anvil co-acting with the ejector to clinch the ends of the staple or rivet and mechanism for intermittingly moving the die under the successive cutting and forming dies and ejector and means for turning the die on its axis, substantially as described.



5. The combination of the blank cutting die, the forming die, the ejector, with a rotated staple carrying disk, a series of die blocks carried by said disk, an independent female die for receiving the blanks, a carriage supporting the same and means for moving the carriage to present the female die alternately under the cutting die and the forming die, substantially as specified.

6. The combination of the blank cutting die, the female die co-acting therewith, a forming die, an ejector, with a rotated staple carrying disk, a series of pivoted die blocks supported thereby, mechanism for moving such disk intermittingly to present the die blocks in succession beneath the successive dies and ejector, and mechanism for rotating the die blocks on their axes, substantially as described.

7. The combination of the staple carrying disk, a series of dies supported therein, a female blank cutting die, a carriage on which the same is supported, and mechanism for moving the disk and carriage intermittingly and forming and ejecting dies, substantially as specified.

8. The combination of the staple carrying disk, a die block carried thereby, a swiveled carriage located above such disk, a female blank forming die carried by such carriage, mechanism for effecting the movement of the die block and the female blank forming die simultaneously, a forming die adapted to force the blank from the female die into the chamber of the die block and an ejector for removing the finished article from such die block, substantially as specified.

9. The combination of the staple carrying disk, a series of rotatable die blocks mounted therein, a pinion carried by each of such blocks, a forming die adapted to force within the chamber of such die, a staple or rivet, fixed gear teeth with which said pinion is adapted to engage, and an ejector adapted to force such staple or rivet from the die chamber after the die block has been partly revolved, substantially as specified.

10. The combination of the staple carrying disk, a series of pivoted die blocks mounted therein, devices for effecting the rotation of such die blocks, locking dogs adapted to engage with the recessed sides of such die blocks and springs acting upon such locking dogs to keep them in engagement with the die blocks, substantially as specified.

11. The combination of the staple carrying disk having near its outer edge an annular channel, a series of die blocks mounted in such disk at equal distances from each other, locking dogs provided in such channels and adapted to engage with the opposite recessed sides of the die blocks and coiled compression springs extending in such channel between adjoining locking dogs, substantially as specified.

12. The combination of the staple carrying disk, a series of independent die blocks mounted in such disks at equal distances from each other, pinions provided one on each of such blocks, stationary gear teeth adapted to engage with such pinions and dies adapted to act in conjunction with such die blocks to produce staples or rivets, substantially as specified.

13. The combination of the female blank cutting die, a die acting in conjunction therewith, a swiveled carriage carrying such female die, a staple carrying disk, mechanism for intermittingly rotating the

same, a series of die blocks pivotally mounted in such disk, pinions secured one to each of such die blocks, a forming die adapted to force the formed blank from the female die into the receiving chamber of one of such pivoted blocks, an ejector, and stationary gear teeth located between the forming die and the ejector and between the ejector and the cutting die, such gear teeth being adapted to engage with the said pinions and at each engagement effect a partial rotation of the die block, substantially as specified.

14. The combination of the female blank cutting die, a die as 42, acting in conjunction therewith, an oscillated carriage carrying such female die, a staple carrying disk, a die block pivotally mounted therein, a pinion secured to such die block, a series of radial grooves or slots in the face of such disk, a hooked plate pivoted to said carriage and adapted to engage in one of such radial grooves, a forming die adapted to force the formed blank from the female die into the receiving chamber of the pivoted die block, an ejector, stationary gear teeth located between the forming die and the ejector and adapted to engage the teeth of said pinion, mechanism for intermittingly rotating the disk, a bell crank lever fulcrumed to the frame and having one of its arms adapted to engage with and lock the disk between successive movements, the opposite arm of said bell crank lever extending into the path of the hooked plate and adapted to effect a disengagement of the latter from the radial groove or grooves of the disk and mechanism for effecting the return of the carriage to its initial position, substantially as specified.

15. The combination of the female blank cutting die, a die, as 42, acting in conjunction therewith, a carriage on which the female die is carried, a staple carrying disk, a series of pivoted die blocks mounted in such disk, a pinion secured to each of such die blocks, a hook-like plate pivoted to such carriage and adapted to engage in radial grooves or slots formed in the body of the disk, a spring normally tending to depress such plate, a forming die adapted to force the formed blank from the female die into the receiving chamber of one of such pivoted die blocks, an ejector, stationary gear teeth located between the forming die and the ejector and adapted to engage with the teeth of said pinions, devices for intermittingly rotating the disk, a bell crank lever fulcrumed to the frame and having one of its arms adapted to engage in locking notches formed in the periphery of the disk, and its opposite arm being inclined and extending into the path of the hook-like plate, a cam, 15, rotated shaft upon which such cam is mounted, a bell crank lever operatively connected to such cam, and a flexible cord or chain extending from one arm of such bell crank levers to the carriage and adapted to return the same to its initial position, substantially as specified.

16. A staple carrying disk, a die block, pivot pins formed on the opposite sides of such block and adapted, one to a recess formed in the main body of the disk, and the other to a removable plate, and a removable plate secured to the periphery of such disk, substantially as specified.

17. The combination of the female blank cutting die, a die, as 42, acting in conjunction therewith, a rotated shaft, 4, a cam thereon operatively connected to said die, 42, an oscillated carriage carrying such female die, a staple carrying disk, a series of dies carried thereby, a forming die, a cam mounted on such shaft, 4, and operatively connected to such forming die, an ejector, a cam mounted upon the shaft, 4, and operatively connected to such ejector, and means for intermittingly rotating the staple carrying disk, substantially as specified.

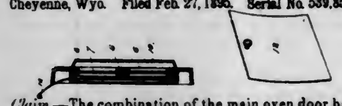
18. The combination of the rotated shaft, 4, a series of cutting, forming and ejector die bars, cams mounted upon said shaft and adapted to operate upon such die bars, a staple carrying disk, a shaft on which said disk is mounted, a bevel gear secured to such shaft and a mutilated gear secured to the shaft 4, and intermeshing with the teeth of such bevel gear, substantially as specified.

19. The combination of the supporting frame, a rotated shaft, 4, supported in suitable bearings therein, a shaft, 49, also mounted in bearings on said frame, a bevel gear, 51, secured to such shaft, 49, a mutilated gear, 52, secured to the shaft, 4, and meshing with the gear, 51, a disk, 50, secured to the lower end of the shaft, 49, a series of die blocks carried by such disk, a female blank cutting die, an oscillated carriage, 54, carrying such female die, a cutting die, 42, an ejector, 48, cams, 40 and 46 secured to the shaft, 4, and adapted to act simultaneously upon the die, 42, and the ejector, 48, respectively, a forming die, 45, a cam, 43, secured to the shaft, 4, and adapted to operate upon the forming die, substantially as specified.

20. The combination of a supporting frame, a rotated shaft, 4, supported in suitable bearings therein, a shaft, 49, also mounted in bearings in said frame, a beveled gear, 51, secured to the shaft, 49, a mutilated gear, 52, secured to the shaft, 4, and adapted to give a step by step rotative motion to the gear wheel, 51, a disk, 50, carried by the shaft, 49, a series of die blocks, 61, pivotally mounted in said disk, 50, pinions, 62, secured to each of such die blocks, a female blank cutting die, a carriage, 54, swiveled on the shaft, 49, and carrying such female die, a die 42, adapted to act in conjunction with such female die, a cam, 40, for operating said die, 42, a forming die, 45, a cam, 43, adapted to operate upon the forming die, an ejector, a cam, 46, adapted to operate thereon, and stationary gear teeth 63, 64, adapted to engage with and turn said pinions, 62, substantially as specified.

21. The combination of the supporting frame, a shaft, 4, mounted in suitable bearings therein, a shaft, 49, also mounted in bearings in said frame, a beveled gear, 51, secured to the shaft, 49, a mutilated gear, 52, secured to the shaft, 4, and adapted to give a step by step rotative movement to the gear wheel, 51, the disk, 50 carried by the shaft, 49, a series of die blocks, 61, pivotally mounted in said disk, 50, a pinion 62, secured to each of such die blocks, a female blank cutting die, a carriage, 54, swiveled to the shaft, 49, and carrying such female die, a die 42, a forming die, 45, an ejector, 48, cams, 40 43 and 46 secured to the shaft, 4, and adapted to operate respectively on the die, 42, forming die, 45, and ejector, 48, blocks 64 and 63, depending from the frame, stationary gear teeth provided upon such blocks and adapted to mesh with the teeth of the pinion, 62, a work table, 25, located beneath the disk, 50, an anvil, 26, vertically guided in said work table, an inclined supporting block for such anvil, a cam, 20, secured to the shaft, 4, and operatively connected to said inclined supporting block, substantially as specified.

543,454. COOKING STOVE OR RANGE. HENRY F. W. SIEVERS, Cheyenne, Wyo. Filed Feb. 27, 1895. Serial No. 539,856. (No model.)



Claim.—The combination of the main oven door having an opening 6 and provided with projections 14 having ways 13, a transparent, or semi-transparent, plate adapted to resist the action of the heat, said plate being placed over the opening in the door, a frame 9 attached to the door and adapted to hold the plate 7 in place, an auxiliary door hinged to the main door and adapted to protect the transparent plate from the outside, and a flexible, readily removable guard-plate or shield 12 engaging the ways 13 of the door 5 and adapted to protect the plate 7 from the inside, as and for the purpose set forth.

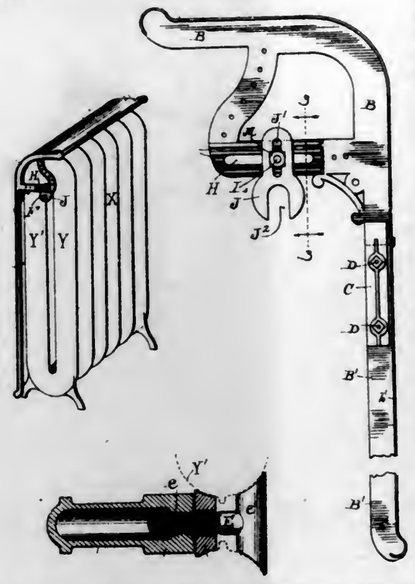
543,455. EAR-COMPRESS. MARY L. WEBER, Denver, Colo. Filed Sept. 19, 1894. Serial No. 523,461. (No model.)



Claim.—As an improved article of manufacture, the herein described ear-shaper comprising two thin integral metallic plates fashioned to conform to the general outline of the human ear, that is to say, their rear edges being outwardly curved, their forward edges inwardly curved, their greatest length being from top to bottom and their upper and lower extremities rounded, said plates having central apertures to allow the sound vibrations to pass to the internal ear, and the elongated apertures in the rear formed approximately parallel with the rear edges of the plates, whereby the external ear is permitted to perform its function in the collection and reflection of sound waves, the plates being further provided with apertured projections at their upper extremities, said plates being connected by a pair of leaf springs attached to the apertured projections of the ear plates, one of the springs being slotted and the other apertured to receive a set screw, as and for the purpose set forth.

543,456. RADIATOR SHIELD AND FRAME. GEORGE E. DIXON, Chicago, Ill. Filed Oct. 20, 1894. Serial No. 526,437. (No model.)

Claim.—1. In a radiator shield support a casting having a horizontal slot therein, ridges on the side of the casting adjacent to the slot, a second casting having a slot therein and ridges on the side thereof adjacent to such slot, such ridges intermeshing with the ridges on the first named casting, and extending substantially horizontally when so intermeshing a second slot in the second named casting extending upward from the bottom thereof and adapted to fit over a horizontal post forming the support of the castings; substantially as described.



2. In a radiator shield a casting having a horizontal slot therein, ridges on the side of the casting adjacent to the slot, a second casting having a slot therein and ridges on the side thereof adjacent to such slot, such ridges intermeshing with the ridges on the first named casting, and extending substantially horizontally when so intermeshing a second slot in the second named casting extending upward from the bottom thereof and an additional casting attachable to the first named casting and forming a leg therefor adapted to rest on the floor on which the radiator to which the castings are attached is placed; substantially as described.

3. In a radiator shield a casting having a horizontal slot therein, ridges on the side of the casting adjacent to the slot, a second casting having a slot therein and ridges on the side thereof adjacent to such slot, such ridges intermeshing with the ridges on the first named casting, and extending substantially horizontally when so intermeshing a second slot in the second named casting extending upward from the bottom thereof, a vertically adjustable post secured to the radiator sections forming a support on which the castings rest; substantially as described.

4. The combination with a radiator of a casting forming one end of a radiator shield, a second casting adjustably secured to the first named casting and a post adjustably secured to the radiator, such post forming a support on which the castings rest; substantially as described.

REISSUES.

11,504. COMBINED CHECK-ROW AND DRILL. CLARENCE H. DOOLEY and HARRY L. DOOLEY, Bloomington, Ill. Filed May 23, 1894. Serial No. 512,238. Original No. 509,797, dated Nov. 28, 1893.

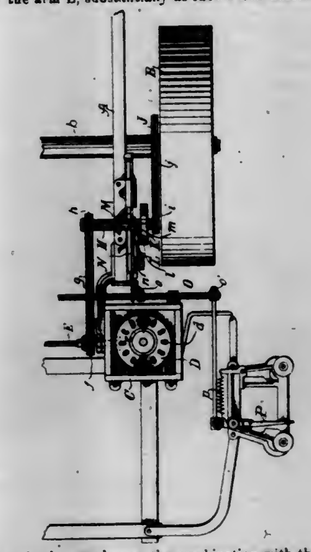
Claim.—1. In combination with the movable seed discharging plate, gearing for actuating the same, a clutch mechanism in such gearing and means to actuate said clutch by a tappet wire.

2. In combination with the movable seed discharging plate, gearing between the same and the carrying wheel, a clutch device in said gearing and means to actuate said clutch by a tappet wire, substantially as described.

3. In combination, a rotary seed plate, a clutch shaft geared thereto, a clutch disk or wheel loosely on said shaft geared to the carrying wheel, and a clutch arm, to connect said shaft and disk, that is controlled by a tappet wire, substantially as described.

4. In combination, a rotary seed plate, a clutch shaft geared thereto, a clutch disk on said shaft geared to the carrying wheel, a pivoted clutch arm to connect said shaft and disk, the stop device to engage said arm, and the pivoted tappet actuated lever connected to said stop device, substantially as described.

5. In a check row planter, the combination with the seed drop ping mechanism, the tappet devices, of actuating mechanism, and a clutch contrivance, the latter consisting of a disk K having an internally notched rim and loosely mounted upon its supporting shaft, an arm L eccentrically pivoted to a plate M fixed on the same shaft, which supports the disk K and having a lateral projection *l* to be thrown in engagement with the said notched rim, and a bar carrying a stop actuated by the tappet devices to project the said stop within the path of the arm L, substantially as shown and described.



6. In a check row planter, the combination with the seed dropping mechanism and the tappet devices, of actuating mechanism and a clutch contrivance, consisting of a disk K secured to a transmitting wheel *i*, both loosely mounted on a shaft, and having an internally notched rim, a plate M fixed on the shaft carrying the disk K, an arm L pivoted to the plate M and having a roller *l*, a spring *m* between corresponding stops on the plate M and the arm L, and a movable bar carrying a stop actuated by the tappet devices to project the said stop within the path of the said arm L, substantially as shown and described.

7. In a check row corn planter, the combination of the seed dropping mechanism, a shaft H forming part of a train of gearing for transmitting motion to the seed dropping mechanism, a pinion *i* loosely mounted on the shaft H, and positively rotated from the power driving wheel, a disk K revolving with the pinion *i* and having an internally notched rim, a plate M secured on the shaft H, an arm L eccentrically pivoted to the plate M and carrying a roller *l*, a spring *m* between corresponding stops on the plate M and the arm L, a movable bar N having a stop *n*, a rock shaft adapted to operate the bar N, and a tappet mechanism arranged to actuate the said rock shaft, substantially as set forth.

8. In a check row corn planter, the combination with a seed plate, covering wheel, and intergear mechanism for actuating the seed plate by power derived from the covering wheel, of a tappet-actuated lever, a clutch, and a tripping mechanism actuated by the movement of said lever in the one direction to close the clutch and by its return movement to open the clutch, substantially as and for the purposes set forth.

9. In a check-row corn planter, the combination substantially as set forth, with a seed plate, covering wheel, and intergear mechanism for actuating the seed plate from the power derived from the covering wheel, of a tappet-actuated lever, a clutch, and tripping mechanism actuated by the movement of the lever in one direction to close the clutch, for throwing the covering-wheel into gear with the seed-plate, and in the opposite direction to adjust the trip for opening the clutch after the lever is at rest, substantially as and for the purposes set forth.

10. In a check row corn planter, the combination substantially as set forth, with a seed plate, covering wheel, and suitable connecting mechanism for transmitting power from the covering wheel to the seed plate to cause its rotation, of a tappet actuated lever, a clutch, and a tripping mechanism, whereby the tappets on the wire shall alone control the rotation of the seed plate and whereby said plate shall operate for an invariable, pre-determined interval after one tappet has acted on the lever and before the following tappet acts thereon.

11. In a check-row corn planter, the combination substantially as set forth, with a seed plate, covering wheel, and intergear mechanism, of a seed detaining and discharging valve, a tappet line actuated lever, a clutch and a tripping mechanism, whereby the tappet shall alone control the rotation of the seed plate and shall at the same time operate said seed detaining and discharging valve.

12. In a check row corn planter, the combination with a seed plate, covering wheel, and suitable connecting mechanism between them, of a tappet-actuated lever with suitable connecting and operating mechanism, whereby the seed plate is driven by power derived from the covering wheel alone, the tappet line being relieved therefrom, and whereby the tappet line is used solely to control the rotation of the seed plate, so that it shall always operate for an invariable, pre-determined interval between two tappets, substantially as and for the purposes set forth.

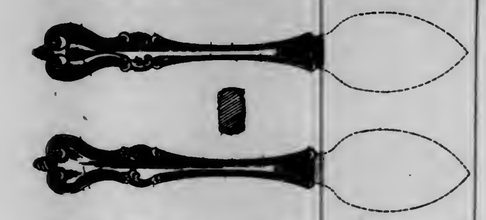
DESIGNS.

24,494. PENDANT. GEORGE HILPERT, Otway, Ohio. Filed Apr. 3, 1895. Serial No. 544,341. Term of patent 3½ years.



Claim.—The design for a pendant for decorating purposes, as herein shown and described.

24,495. HANDLE FOR SPOONS. LUCIEN D. COLE, Newburyport, Mass., assignor to the Towle Manufacturing Company, same place. Filed Mar. 20, 1895. Serial No. 542,544. Term of patent 7 years.

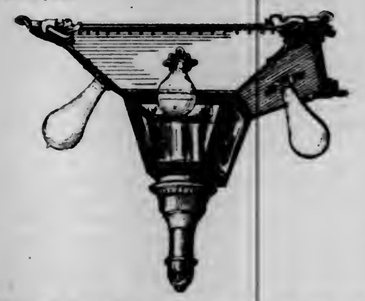


Claim.—1. The design for a handle for spoons or similar articles, herein shown and described.

2. In a design for a handle for spoons or similar articles, the obverse as herein shown and described.

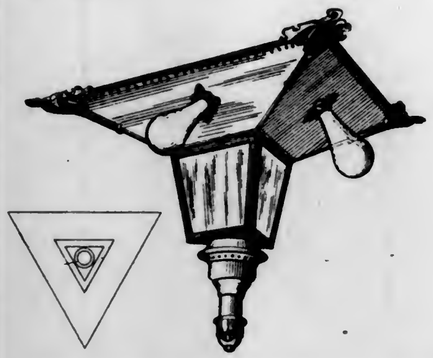
3. In a design for a handle for spoons and similar articles, the reverse as herein shown and described.

24,496. LAMP. HERBERT E. KEELER, New York, N. Y., and WILLIAM S. HAHN, Chicago, Ill., assignors to the Adams & Westlake Company, of Illinois. Filed June 21, 1895. Serial No. 553,612. Term of patent 14 years.



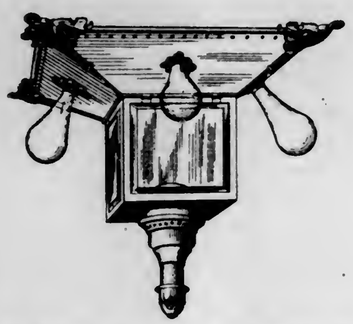
Claim.—The design for a lamp substantially as herein described and illustrated.

24,497. LAMP. HERBERT E. KEELER, New York, N. Y., and WILLIAM S. HAHN, Chicago, Ill., assignors to the Adams & Westlake Company, of Illinois. Filed June 21, 1895. Serial No. 553,613. Term of patent 14 years.



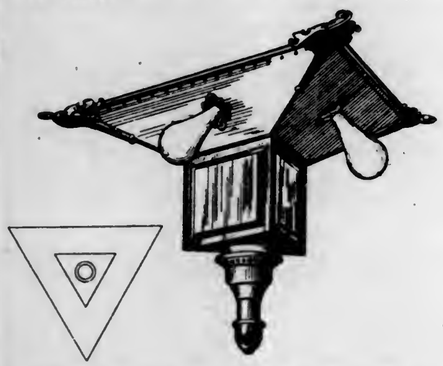
Claim.—The design for a lamp, substantially as herein described and illustrated.

24,498. LAMP. HERBERT E. KEELER, New York, N. Y., and WILLIAM S. HAHN, Chicago, Ill., assignors to the Adams & Westlake Company, of Illinois. Filed June 21, 1895. Serial No. 553,614. Term of patent 14 years.



Claim.—The design for a lamp substantially as herein described and illustrated.

24,499. LAMP. HERBERT E. KEELER, New York, N. Y., and WILLIAM S. HAHN, Chicago, Ill., assignors to the Adams & Westlake Company, of Illinois. Filed June 21, 1895. Serial No. 553,615. Term of patent 14 years.



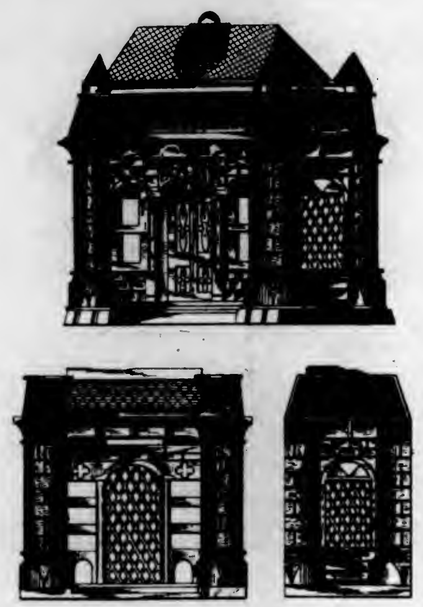
Claim.—The design for a lamp substantially as herein described and illustrated.

24,500. BOTTLE. ALPHONS DRYFOOS, New York, N. Y. Filed June 21, 1895. Serial No. 553,608. Term of patent 7 years.



Claim.—The design for a bottle as herein shown and described.

24,501. TOY MONEY-BANK. CHARLES A. BAILEY, Cromwell, Conn. Filed Apr. 16, 1895. Serial No. 545,972. Term of patent 3½ years.



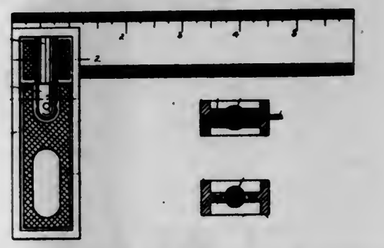
Claim.—The design for a toy money bank substantially as herein shown and described.

24,502. BOX. HENRY FATTON, New York, N. Y. Filed June 11, 1895. Serial No. 552,485. Term of patent 14 years.



Claim.—The design for a box substantially as herein shown and described.

24,503. TRY-SQUARE. LAROY S. STARRETT, Athol, Mass. Filed May 20, 1895. Serial No. 549,998. Term of patent 14 years.



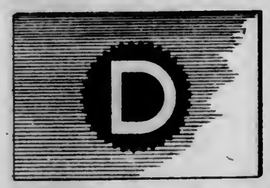
Claim.—The design for a try-square substantially as herein shown and described.

24,504. GRATE. CHARLES T. COE, New York, N. Y. Filed May 28, 1895. Serial No. 551,005. Term of patent 7 years.



Claim.—The design for a grate, substantially as shown and described.

24,505. SIGN-BOARD. HENRY H. DREYER, New York, N. Y. Filed May 18, 1895. Serial No. 549,836. Term of patent 7 years.



Claim.—The design for a sign board, substantially as herein shown and described.

TRADE-MARKS

REGISTERED JULY 23, 1895.

26,839. EMBROIDERY-SILKS. JAS. PEARSALL & Co., London, England. Filed May 28, 1895.



Essential feature.—A device of a mallard and the word "MALLARD." Used since July 30, 1894.

26,840. YARNS OF WOOL, WORSTED, OR HAIR. JOHN PATON, Son & Co., Alloa, Scotland. Filed Apr. 29, 1895.



Essential feature.—The words, character, and abbreviation "JOHN PATON, SON & Co.," inclosed by a rectangular foliated border. Used since 1847.

26,841. BOYS' AND MEN'S FUR HATS. BELFAIRE, LURCH & Co., New York, N. Y. Filed June 22, 1895.

CLIMAX

Essential feature.—The word "CLIMAX." Used since June 1, 1895.

26,842. BOOTS AND SHOES. RICE & HUTCHINS, INCORPORATED, Boston, Mass. Filed June 27, 1895.

ELKSOLE.

Essential feature.—The word "ELKSOLE." Used since April 15, 1895.

26,843. SCHOOL-SHOES. HAMILTON, BROWN SHOE COMPANY, St. Louis, Mo. Filed June 29, 1895.

SECURITY

Essential feature.—The word "SECURITY." Used since March 1, 1895.

26,844. SCHOOL-SHOES. HAMILTON, BROWN SHOE COMPANY, St. Louis, Mo. Filed June 29, 1895.



Essential feature.—The representation of a padlock and the word "SECURITY." Used since March 1, 1895.

26,845. COMBS AND OTHER TORTOISE-SHELL ORNAMENTS. SIDNOCK & SHERRILL, New York, N. Y. Filed June 21, 1895.

XL

Essential feature.—The letters "XL." Used since May 1, 1895.

26,846. LINK CUFF-BUTTONS. JAMES A. FLOHRFELT, New York, N. Y. Filed June 24, 1895.

D-UPLEX

Essential feature.—A prefix consisting of three or more representations of a curved link cuff-button combined to form the letter "D," a hyphen, and the word-symbol "UPLEX." Used since April 24, 1895.

26,847. SCARF-PINS. ELBERT E. HICKOK, St. Louis, Mo. Filed June 27, 1895.

16
2
1

Essential feature.—The characters or symbols "16 2 1." Used since May 2, 1895.

26,848. WATCH CASES AND MOVEMENTS. THE DUEBER WATCH CASE MANUFACTURING COMPANY, Canton, Ohio. Filed May 23, 1895.

DUEBER

Essential feature.—An oblong figure with its pointed ends inclosing the word "DUEBER." Used since January 1, 1895

26,849. CANE-SHEATHS FOR UMBRELLAS. EDWARD HAMPTON HIRSH, Philadelphia, Pa. Filed Apr. 3, 1895.

Eclipse.

Essential feature.—The word "ECLIPSE." Used since December 21, 1894.

26,850. MUSICAL INSTRUMENTS. BARROWS MUSIC COMPANY, Saginaw, Mich. Filed May 16, 1895.

Waldo

Essential feature.—The words "THE WALDO" written in script with a paraph finishing the final letter. Used since April 10, 1891.

26,851. SNUFF. T. H. GARRETT & COMPANY, Louisville, Ky. Filed June 3, 1895.



Essential feature.—The representation of a Maltese cross having at its center a circle in which is represented an eagle with partially outstretched wings. Used since February 23, 1895.

26,852. LAGER-BEER. THE ESTATE OF FREDERICK OPPERMANN, Jr., New York, N. Y. Filed June 4, 1895.



Essential feature.—The representation of a turtle and a child seated on the turtle. Used since May 9, 1895.

26,853. LAGER-BEER. FIRM OF G. PSCHORR, Munich, Germany, and New York, N. Y. Filed June 22, 1895.

Pschorr-Bräu

Essential feature.—The compound word "PSCHORR-BRÄU" displayed in German script. Used since 1820.

26,854. MEDICINAL BEVERAGES. APOHAQUI ALKALINE SPRING WATER COMPANY, New York, N. Y. Filed June 11, 1895.

APOHAQUI

Essential feature.—The word "APOHAQUI." Used since April 1, 1893.

26,855. MAGEN BITTERS. SARA B. ROTHENBERG, Oakland, Cal. Filed Jan. 24, 1895.

BERLINER
MAGENBITTERS

Essential feature.—A garter or band of alternate red and yellow colors, halved horizontally by a bar, upon which appears an escutcheon having a chocolate ground and bearing a displayed eagle, accompanied by the words "BERLINER MAGEN BITTERS." Used since August, 1894.

26,856. CERTAIN NAMED MEDICAL COMPOUNDS. CHARLES R. RAY, Chicago, Ill. Filed May 6, 1895.



Essential feature.—The representation of a segment of a disk with rays extending therefrom and the name "DR. RAY'S" appearing above the disk and across the rays. Used since January 1, 1895.

26,857. CERTAIN NAMED MEDICAL COMPOUND. ALFRED H. WELLS, Hyattsville, Md. Filed June 8, 1895.

GLANDINE

Essential feature.—The word "GLANDINE." Used since May 30, 1895.

26,858. REMEDY FOR COUGHS, COLDS, AND PULMONARY COMPLAINTS. BARTLETT & VILLINGER, Augusta, Ga. Filed June 19, 1895.



Essential feature.—The representation of two ornamental shields, one showing a pine tree and the other showing a crane standing near a shrub, together with the words "BARTLETT'S YELLOW PINE & CRANE WILLOW BALSAM." Used since June 1, 1895.

26,859. BLOOD-PURIFIER AND REMEDY FOR RHEUMATISM. WINNIE G. O'DONNELL, Lewiston, Me. Filed June 10, 1895.



Essential feature.—The representation of a shield and a druggist's emblems at the corners, and the name "DURANDS" diagonally across the face of it. Used since May 8, 1885.

26,860. REMEDY FOR ANEMIA, CHLOROSIS, MEGRIM, AND NEURALGIA. KNOLL & CO., Liesthal, Switzerland. Filed Apr. 6, 1895.

FERROPYRIN

Essential feature.—The word "FERROPYRIN." Used since May 15, 1894.

26,861. LINIMENT. JUNIUS BARNES, Burlington, Vt. Filed June 14, 1895.

MYSTERIOUS

Essential feature.—The word "MYSTERIOUS." Used since 1890.

26,862. SALVE. JEREMIAH HUBBARD, Afton, Ind. Ter. Filed Apr. 30, 1895.

Car-nur-lea-yea-tee.

Essential feature.—The hyphenated word "CAR-NUR-LEA-YEA-TEE." Used since January 1, 1895.

26,863. SALVE. WILLIAM F. A. NEUBAUER, Chicago, Ill. Filed June 12, 1895.

THEOBROMALINE

Essential feature.—The word "THEOBROMALINE." Used since October 1, 1894.

26,864. BAKING-POWDER. THE SOUTHERN MANUFACTURING COMPANY, Richmond, Va. Filed June 17, 1895.



Essential feature.—The representation of a horseshoe and the words "GOOD LUCK BAKING POWDER." Used since October, 1892.

26,865. WHEAT-FLOUR. CAMPBELL BROS., Austin, Minn. Filed Apr. 19, 1895.



Essential feature.—The words "GOLDEN PALACE." Used since March 1, 1890.

26,866. SOAPS FOR USE UPON FABRICS, LEATHER, AND OTHER MATERIALS. DANIEL A. KENDALL, New York, N. Y. Filed June 10, 1895.

HYGIENE



SOAP

Essential feature.—The words "HYGIENE SOAP" and the representation of an American shield. Used since October, 1894.

26,867. WASHING-POWDERS. WILLIAM MCGLAUGHLIN, Sharpsburg, Pa. Filed Mar. 25, 1895.



Essential feature.—The words "STERLING CRYSTOLINE" and the representation of a spoon. Used since February 1, 1894.

26,868. INFUSORIAL EARTH FOR CLEANING AND POLISHING PURPOSES. LAURENCE DANA COLONY and BENJAMIN SARGENT OSGOOD, Keene, N. H. Filed June 7, 1895.

SILVER DIAMOND.

Essential feature.—The words "SILVER DIAMOND." Used since May 1, 1895.

26,869. HORSE WASHING OR CLEANING PREPARATION. LOREN B. LORD, Burlington, Vt. Filed May 4, 1895.

COLDEN

Essential feature.—The word "GOLDEN." Used since January 8, 1894.

26,870. IMPORTED CEMENT. CHARLES ZUBE, New York, N. Y. Filed June 19, 1895.



HEMMOOR

Essential feature.—The word "HEMMOOR" and the figure of a double eagle with a shield on its breast bearing a monogram of the letters "P O H." Used since March 15, 1895.

26,871. CALCINED PLASTER. KEYSTONE PLASTER COMPANY, Chester, Pa. Filed June 26, 1895.



Essential feature.—The representation of a keystone. Used since January, 1892.

26,872. SKATES. THE STARR MANUFACTURING COMPANY, LIMITED, Dartmouth, Canada. Filed May 27, 1895.

Acme

Essential feature.—The word "ACME." Used since 1866.

26,873. BICYCLES AND ACCESSORIES THERETO. THE ZIMMERMAN MANUFACTURING COMPANY, Freehold, N. J. Filed June 17, 1895.

ZIMMY

Essential feature.—The word "ZIMMY." Used since January, 1895.

26,874. MECHANICS' SQUARES AND RULES. EAGLE SQUARE MANUFACTURING COMPANY, Shaftsbury, Vt. Filed May 20, 1895.



Essential feature.—The representation of a spread eagle. Used since January 1, 1870.

26,875. GAS-BURNERS AND THEIR ACCESSORIES AND PARTS. WELSBACH LIGHT COMPANY, Gloucester City, N. J., and Philadelphia, Pa. Filed June 17, 1895.

WELSBACH

Essential feature.—The word "WELSBACH." Used since November 15, 1885.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE KNUDSEN.

Decided January 28, 1895.

1. FUNCTIONAL CLAIMS—DEFINITION.

Functional claims are, first, those covering a function, result, or effect not a product or composition of matter; second, those covering the function of a machine or apparatus; third, those reciting the functions of elements and not their structure, and, fourth, those defining sets of mechanism by statements of the results produced.

2. SAME—PRACTICE.

Claims of the first class are usually participial in form. *Held* not to be patentable and should be rejected. (*Ex parte Simonds*, C. D., 1870, 23; *ex parte Hahn*, C. D., 1875, 107; Rob. on Pat., Vol. 2, sec. 518, notes.)

3. SAME—SAME.

Claims of the second class are in the form of methods or processes or equivalent expressions. *Held* should be rejected. (*Corning* v. *Burden*, 15 How., 252; Rob. on Pat., Vol. 2, sec. 529, notes.)

4. SAME—SAME.

Claims of the third class define the construction as "means," "mechanism," or "devices" for effecting certain results or define certain named elements or the device by statements of function instead of structure. *Held* should be objected to if vague or indefinite or rejected on references disclosing the combination and the functional qualifications, or both. (*Ex parte Pacholder*, 51 O. G., 295; *Morley Sewing Machine Co. et al.* v. *Lancaster*, 47 O. G., 267; *ex parte Hulfpenny*, 53 MS. Dec., 489.)

5. SAME—SAME.

Claims of the fourth class define sets of mechanism by the results produced. *Held* should be objected to and receive action on their merits. (*Smith & Egge Mfg. Co.* v. *Bridgeport Chain Co.*, 56 O. G., 1449.)

ON petition.

VALVE-CONTROLLING MECHANISM.

Application of Jacob B. Knudsen filed November 20, 1893, No. 491,489.

Messrs. Pierce & Fisher for the applicant.

FISHER, *Acting Commissioner:*

This is a petition "that the Examiner in charge of said application be advised that the said claim is in proper form for consideration on its merits and directed to proceed to examine said application upon its merits."

The claim in question is as follows:

1. The combination, with a suitable valve for controlling passage of fluid under pressure, of differential spring mechanism for said valve, said spring mechanism being arranged to exert a materially greater pressure in resisting the initial movement of said valve from its normal position than said spring mechanism exerts in the initial return movement of said valve toward its normal position after it has been forced to a considerable distance from said normal position, whereby when said valve has been moved to a considerable distance from its normal position by fluid pressure it will remain in the position to which it has been so moved until said fluid pressure has materially decreased below the amount of pressure necessary to effect the initial movement from its normal position, substantially as described.

On May 8, 1894, this claim was rejected by the Examiner on the ground that it set forth "merely the function or mode of operation of applicant's device," and on May 23, 1894, it was again rejected as covering "merely the function of the device."

In the Examiner's statement *ex parte McClellan* (59 O. G., 1763) is cited as authority for this rejection.

Strictly speaking, the Examiner's action being a rejection ought not to be reviewed at the present time by me; but on account of the many petitions that have recently been brought involving functional claims and those indefinite through functional phraseology it is deemed desirable to consider such claims somewhat in detail, and the present case offers an opportunity for such a discussion.

Claims of this character may be divided into four classes: first, those covering a function or a result or effect, (excepting when such result is a product or composition of matter,) and nothing more; second, those covering the function of a machine or apparatus; third, those which are indefinite, in that they recite the functions of certain elements named in the claim to the exclusion of proper structural definition, and, fourth, those which cover sets of mechanism by setting forth the results which such sets of mechanism severally produce.

Claims of the first class are usually participial in form. They are not for substantive mechanism, but for the result which such mechanism produces. Examples of this class are given in *ex parte Simonds*, (C. D., 1870, 23,) where the claim was—

producing in cutting-presses a successive change in the point of contact of the cutting-block with the cutting-die—

and in *ex parte Hahn*, (C. D., 1875, 107.) These, with many other decisions, both of the Patent Office and courts, (see the cases cited in connection with section 518 of Robinson on Patents, vol. 2,) have held such claims to be invalid. As the ground of these decisions is that the claims are for a function or for an effect, and that they are therefore not patentable, the action pertains to the merits, and the Examiner's action should be a rejection.

Claims of the second class, for the function of a machine, are expressed in the form of a method or process or else in such terms that they may be construed to cover a method or process. These claims are also invalid. (See *Corning* v. *Burden*, 15 How., 252, and the cases cited in connection with section 529, Robinson on Patents, vol. 2.) As the action in this class goes to the merits, these claims should be rejected.

Claims of the third class, that are indefinite in that they define the construction sought to be covered by the use of such terms as "means," "mechanism," and "devices," for effecting certain results, as set forth in *ex parte Pacholder*, (51 O. G., 293,) or that recite the functions of certain named elements of a combination or of the device as a whole, to the exclusion of proper structural definition, are the claims which cause the most trouble, as frequently it is a matter of great difficulty to decide whether such claims are subject to objection or to rejection or to both. The difficulty, too, is often increased by the fact that a broader construction ought to be given the claim, if it covers a new departure in the art, (*Morley Sewing Machine Co. et al.* v. *Lancaster*, C. D., 1889, 380; 47 O. G., 267,) than if it is for an invention in an already developed art.

The use of the above-noted phraseology does not of necessity render a claim objectionable, for where the idea is clearly stated and the combination or relation of parts to produce a desired end is plainly expressed the breadth of the statement of the claim is no reason for objecting to it. It is only necessary that these expressions shall clearly distinguish what is new from what is old in the art or from fair equivalents thereof. If they do this, the question is then one of patentable novelty—that is to say, claims of this order are not objectionable in form on the ground that they are too broad, but only because they are vague or indefinite. (*Ex parte Halfpenny*, 53 MS. Dec., 489.) When indefinite, they should be objected to; but they can only be rejected on references when these disclose both the complete combination and the functional qualifications covered by the claim.

In the present case the Examiner states that the invention covered is in a highly developed art, and that while he has at his command references which show the combination he is unable to find a reference which shows the combination having the functional qualifications mentioned in the claim under consideration. Such being the case he was wrong in rejecting the claim, since breadth is not, generally speaking, a proper ground for rejection in the absence of references except in unusual cases—as, for instance, when a claim is broader than the invention, as was the claim considered in *ex parte Opdyke*, (C. D., 1890, 39; 50 O. G., 1293.) Furthermore, the reason given by the Examiner—that the claim covers the "function of the machine"—is not thought to be correct. The claim is not a process claim, nor can it be fairly construed to cover a process. It is clearly for a combination of two elements, one of which is expressed by the term "differential spring mechanism," followed by a description of the arrangement of said mechanism. It is not for controlling a fluid-pressure valve by differential spring mechanism, etc., and is neither functional nor for the function of the machine. It is the evident intention of the claim to cover not only the specific subordinate means for producing certain motions of the valve, but to cover certain devices without regard to the special means by which they produce these motions. The language of the claim seems to me to be definite, and the only objection to be urged against it is that it is too broad in view of the art. Rejection of claims of this class should always be accompanied by citation of references and such citations should be made at the time of the first office action.

Claims of the fourth class set forth sets of mechanism by stating the results which they severally produce. A good example of such claims is given in *Smith & Egge Manufacturing Co.* v. *Bridgeport Chain Co.*, (C. D., 1891, 486; 56 O. G., 1449.) Such claims are in bad form and should therefore be objected to by the Examiner; but such action should also be accompanied, where possible, by the citation of references and rejection on merits.

The petition is granted.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court of Appeals—Seventh Circuit.

RUSSELL *v.* KERN.

Decided July 10, 1895.

1. SMITH—MIDDLINGS-PURIFIER—PATENTS EXPIRED BEFORE SUIT—NO EQUITABLE RELIEF.

Letters Patent Nos. 133,898, 137,495, 154,770, and 158,992, to George T. Smith, for middlings-purifiers, having expired prior to the commencement of the suit, afford no basis for equitable relief.

2. SAME—SAME—SAME.

Letters Patent No. 164,050, granted June 1, 1875, to George T. Smith, for middlings-purifier, having expired after the filing of the original bill, but before the return-day of the subpœna, it was within the discretion of the court to dismiss the bill for want of equity.

3. SAME—SAME—INVALID.

Letters Patent No. 187,923, granted February 27, 1877; No. 194,539, August 28, 1877; No. 208,936, October 15, 1878; No. 236,101, December 28, 1880, and No. 258,142, May 16, 1882, to George T. Smith, for middlings-purifiers, *Held* invalid as being for indivisible inventions covered by earlier patents to the same party.

APPEAL from the Circuit Court of the United States for the Eastern District of Wisconsin.

Before WOODS, JENKINS, and SHOWALTER, Judges.

Mr. George E. Sutherland, and *Messrs. Paine & Ladd* for the appellant.

Messrs. Gridley & Hopkins for the appellee.

WOODS, *C. J.*, delivered the opinion of the court.

Error is assignable upon an order or ruling, but not upon the opinion of a court or the reasons given for a ruling. (*Caverly* v. *Deere*, 66 Fed. Rep., 305.) Of the assignment in this record only the first and fifth specifications were necessary or proper. They are to the effect that the circuit court erred in sustaining the demurrer to and dismissing for want of equity the second amended bill. It was filed March 19, 1894,—the original bill having been filed May 31, 1892,—to obtain an accounting and damages for infringement, and an injunction against further infringement, of ten Letters Patent of the United States issued to Geo. T. Smith, of which the numbers and the dates of issue and of the applications therefor, respectively, are as follows: No. 133,898, issued December 10, 1872, filed October 31, 1872; No. 137,495, issued April 1, 1873, filed October 12, 1872; No. 154,770, issued September 8, 1874, filed August 17, 1874; No. 158,992, issued January 19, 1875, filed May 20, 1872; No. 164,050, issued

June 1, 1875, filed July 12, 1871; No. 187,923, issued February 27, 1877, filed December 28, 1876; No. 194,539, issued August 28, 1877, filed September 8, 1874; No. 208,936, issued October 15, 1878, filed August 29, 1878; No. 236,101, issued December 28, 1880, filed November 2, 1880, and No. 258,142, issued May 16, 1882, filed January 4, 1878.

The claims of these patents are as follows:

No. 133,898:

The brushes H H, when attached to an endless belt, chain, rope, or an equivalent of the same, and traveling in one direction on ways and around pulleys, as shown, in combination with a reciprocating-bolt, substantially as set forth.

No. 137,495:

The herein-described process of manufacturing flour from middlings by subjecting them to successive grindings, boltings, and intermediate purifications by currents of air substantially as set forth.

No. 154,770:

In a middlings purifier, a reciprocating shaker, having its bolting-surface contracted at the discharging end, with a corresponding reduction in the air-passage through the same, substantially as set forth.

No. 158,992:

1. Two or more reciprocating bolting surfaces or shakers, through which a current of air passes separated from each other by longitudinal partitions, the cloth upon one shaker differing in fineness from the cloth on the other shaker or shakers, thereby adapting them for receiving and bolting flour or middlings of different grades of fineness, substantially as set forth.

2. In combination with two or more reciprocating bolting surfaces or shakers, through which a current of air passes, the cloth upon one shaker differing in fineness from that of the other, a preparatory bolt constructed to divide the flour or middlings into different grades of fineness, the finer grade being delivered to the shaker which is clothed with the finer cloth, and a coarser grade to a coarser cloth, substantially as set forth.

No. 164,050:

The combination in a machine for dressing flour or middlings, of a bolting-surface through which an air-current passes in one direction, while the flour or middlings pass in the other, with a brush or a series of brushes, which traverse the under side of the bolting-cloth to remove the adhering particles of flour, substantially as set forth.

No. 187,923:

1. The combination, in a flour-dressing machine, of a reciprocating shaker, having bolting-cloth of different degrees of fineness, an air-chamber arranged above the shaker, and divided into sections by transverse partitions, and a conveyer below the shaker, whereby the middlings may be divided into grades of fineness, and subjected to air-currents of different degrees of strength, and afterward intimately remixed for a second purification, substantially as set forth.

2. The combination, in a flour-dressing machine, of a reciprocating shaker clothed with bolting-cloth of different degrees of fineness, an air-chamber arranged above the shaker, and divided into sections by transverse partitions, a fan arranged above the air-chamber, and having an air-trunk for each section of the air-chamber, and a brush traversing the under surface of the bolting-cloth, substantially as set forth.

No. 194,539:

The combination, with the bolting-surface in a middlings-purifier, of two fans in fan-cases, which do not communicate with each other, each fan operating to produce independent air-currents in separate and distinct compartments, and through different sections of the reciprocating bolting-cloth, substantially as set forth.

No. 208,936:

The combination, in a middlings-purifier, of the following elements, namely: a shaking bolter provided with bolting-cloths of different degrees of fineness; a fan to produce air-currents through the bolting-cloth; a bolting-chest which surrounds the bolter and forms part of an inclosed air-trunk, through which air-currents pass after leaving the bolting-cloth; valves for regulating the strength of the air-currents according to the size of mesh of the bolting-cloth and a chamber in the eduction-passage for collecting light material carried off from the bolter by the air-currents.

No. 236,101:

1. The combination, in a middlings-purifier, of a reciprocating screen clothed with cloths of different degrees of fineness, a fan for causing air-currents to pass upward through the screen, and the chest which incloses the screen and forms an air-trunk, by which the air entering below is directed through and escapes above the screen through a contracted tubular discharge, and provided with apertures which are made of different areas opposite the various sections of the screen, for the purpose of regulating the force of the current through such sections, substantially as set forth.

2. The combination, in a middlings-purifier, of a reciprocating screen clothed with cloths of different degrees of fineness, a suction-fan placed above the screen, a chest which incloses the screen and forms an air-trunk between the air-openings below and the fan above the screen, and adjustable openings placed opposite the different sections of the screen, whereby the force of the current may be regulated according to the texture of the cloth and material to be treated, and the material raised by the fan is carried away through the tubular mouth of the fan-case, substantially as set forth.

3. The combination, in a middlings-purifier, of a fan and reciprocating screen clothed with cloths of different degrees of fineness, a chest which incloses the screen and forms an air-trunk, causing the entire current to pass through the screen, and constructed with transversely-elongated and adjustable openings extending across the cloth, so as to equalize the action of the atmospheric currents upon the material traversing the sieve, substantially as set forth.

4. In a middlings-purifier, in combination with a suction-fan and reciprocating screen clothed with cloths of different degrees of fineness, a chest forming a portion of a continuous wind-trunk inclosing the screen, and an auxiliary wind-trunk connecting the fan with the interior of the chest through a series of openings of different areas placed opposite to the different sections of the bolting-cloth, substantially as set forth.

5. The combination, in a middlings-purifier, of a reciprocating screen clothed with cloths of progressively coarser mesh, a fan for causing an air current through the screen, a chest which incloses the screen and forms part of a continuous wind-trunk to conduct the air put in motion by the fan through the entire extent of the screen, and controlling its delivery after it has passed through the screen, and a contracted tubular air-discharge, whereby a film of middlings is subjected to a current of air uniform across the width of the screen and continuously increasing in force as the residuum becomes continually coarser and the cloth proportionally increases in coarseness of mesh, substantially as set forth.

6. The combination, in a middlings-purifier, of a screen having cloths of different degrees of fineness, a fan, and chest which incloses the screen and directs the air-currents through the entire series of cloths, while the middlings pass from the finer to the coarser sections, a hopper which collects the middlings as they fall through the cloths, and a conveyer and slide for remingling the middlings from two or more cloths after they have separately passed through cloths adapted to their several sizes, substantially as set forth.

No. 258,142:

1. In a middlings-purifier, a vibrating screen the cloth of which is formed in sections of increasing coarseness of mesh, and which is provided with supports for the cloth intermediate between its edges to maintain the cloth in plane, substantially as set forth.

2. In a middlings-purifier, a vibrating screen the cloth of which is formed in increasing coarseness of mesh, and which is provided with supports for the cloth intermediate between its edges to maintain the cloth in plane, in combination with a casing forming a wind-trunk, extending from the fan-case to the screen, so as to direct a current of air put in motion by the fan through the entire extent of the screen, whereby the middlings, if fed uniformly across the head of the screen, are subjected to the action of atmospheric currents substantially uniformly across the entire width of the cloth, and which increase in force as the meshes become coarser and coarser and the particles of middlings upon the screen become relatively coarser, substantially as set forth.

3. In a middlings-purifier, a vibrating screen the cloth of which is formed in sections of increasing coarseness of mesh, and which is provided with supports for the cloth intermediate between its edges to maintain the sections of cloth in plane, in combination with a casing which forms a continuous wind-trunk, extending from the fan-case to the screen, so as to direct a current of air put in motion by the fan through the entire extent of the screen, and a cloth-cleaner acting against the surface of the screen for keeping its meshes open, substantially as set forth.

The patents bearing numbers below No. 164,050 all expired before the suit was commenced, and therefore, as the circuit court held, afforded no basis for equitable relief. No. 164,050 expired just after the filing of the original bill, but before the return-day of the subpœna, and for that reason it was within the discretion of the court to dismiss the bill in respect to that patent for want of equity. (*Keyes* v. *Eureka, etc., Mining Co.*, 15 Sup. Ct. Rep., 772.) The court regarded it as "fully anticipated by No. 133,898."

In respect to the later and unexpired patents the view of the court was that they—

were covered by those of earlier issue, and invalid under the rules declared in *Miller* v. *Eagle Mfg. Co.*, (66 O. G., 845; 151 U. S., 186;) *Oval Wood Dish Co.* v *Sandy Creek Co.*, (66 O. G., 1895; 60 Fed. Rep., 285;) *Heald* v. *Rice*, (21 O. G., 1444; 104 U. S., 737.)

The accompanying drawings, taken from Patent No. 236,101, are identical with the drawings of No. 164,050, and not essentially different from those of Nos.

133,898, 194,539, 208,936, and 258,142, No. 137,495 being without drawings.

Fig. 1.

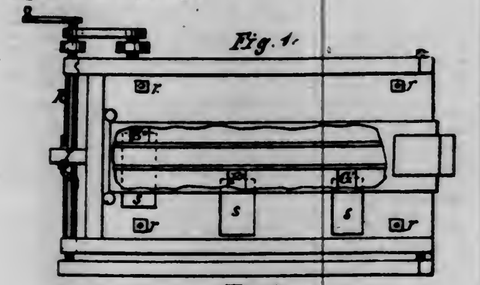


Fig. 3.

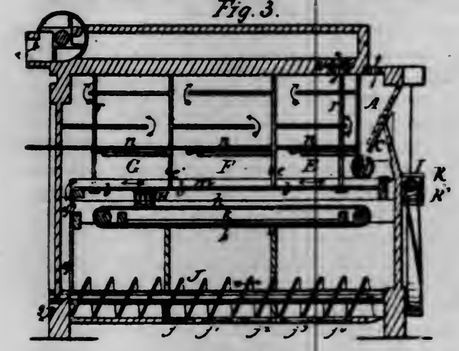
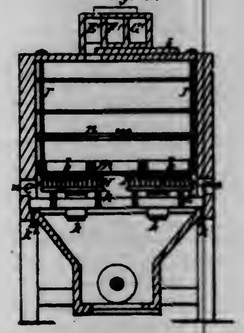


Fig. 2.



In the specification of No. 164,050, issued upon the first of the applications, the machine and its method of operation are thus described:

In the accompanying drawings, A represents a hopper, into which the material to be bolted is delivered from an elevator or by any other means. The material is fed by the roller B to the bolt *b*, the amount of feed being regulated by the slide *c*. The bolt is arranged in a chamber, through which a current of air is made to pass by means of a fan, D, the air entering through suitable openings C in the side of the bolt-chest, the construction and arrangement of parts being such that the air is compelled to pass upward through the bolt-cloth. The bolt or shaker is suspended from the frame-work by means of pivoted links *r r*, and has a reciprocating motion imparted to it by the eccentric R' on shaft R and the inclosing box I.

As the material is agitated by the motion of the bolt, the flour falls through, while the smaller particles of bran are taken up by the current of air and carried off.

As there is a continual current of air in an upward direction through the bolt, it will cause the very fine particles of flour and middlings to adhere to the thread of which the cloth is composed, and close up the meshes to such an extent as to interfere materially with the operation of the device.

In order to obviate this objection and maintain a free passage of the air and middlings, I employ brushes to traverse the under side of the cloth and keep it clean. H H are the brushes attached to and carried by endless belts *h*, the brushes being supported upon ways *k k* during their contact with the bolt.

By preference, I make the frame-work and ways which support the brushes adjustable by means of set-screws *b'*, (see Fig. 2), so that I can keep the brushes always in contact with the bolt.

It is evident that the brushes would act upon the bolt equally well if they had a reciprocating motion, instead of being driven continuously in one direction by the endless belts or chains, although I regard the method shown for operating them as being the cheapest and most convenient, and also better adapted for doing the work.

I am aware that a combination of brushes and air-currents has been used in connection with flour-bolts for many years; but in such machines the air-current passed through the bolting-surface with the flour; hence it could not, by any possibility, be made to perform the same functions as it does in my machine, one of which is to float a portion of the bran and refuse upon or above the bolting-surface, and thus cause such particles to pass off at the tail of the bolt, instead of going through the cloth with the flour or clean middlings.

A minute comparison of the specifications and drawings of the several patents with reference to the claims of each is not necessary. It would serve only to demonstrate more clearly the facts so explicity affirmed in the bill that the Smith purifier is "one compact machine," of which the different parts described in the several Letters Patent are incapable of separate use, and that the machine itself is incomplete and incapable of use without the patented parts. We therefore make only a brief additional statement.

In No. 154,770 the discharging end of the shaker or bolting-surface, which by preference is divided by two or more longitudinal ribs, is, by means of wedge-shaped blocks, made of less width than the receiving portion and the area for the passage of air-currents correspondingly reduced. A division of the chamber above the shaker into sections by means of partitions is also illustrated and declared to be preferred.

In No. 158,992 the cloth on the two or more longitudinal sections into which the shaker is divided is of different degrees of fineness, and in connection therewith is to be used a preparatory or grading-bolt, which is illustrated in the old form of a reel, though, of course, it may be a mere duplication of the horizontal shaker described. The chamber is divided by vertical partitions arranged immediately above the ribs which divide the shaker, and the apertures from the several apartments of the chamber are provided with dampers for regulating the air-currents. An adjustable swing-board, hinged upon the gather-boards below the shaker, is employed—

to regulate the proportion of flour or middlings which shall be delivered to each conveyer.

In No. 187,923, the first of the unexpired patents, the shaker is divided into sections by longitudinal ribs; but the chamber above is divided, by transverse instead of longitudinal partitions, into three sections, each provided with a regulating-damper, and the cloth of the shaker is of three grades, arranged so that the middlings will pass first over the finest and last over the coarsest grade.

In No. 194,539 there is shown a machine made by placing in juxtaposition two or more of the machines already described, each having its own fan, chamber, cloth-conveyer, and other parts and acting independently of the other. In order to admit the air freely to the central portion of the shaker, openings in the gather-boards are provided.

In No. 208,936 special mention is made and the utility explained of the shelves *n* in the air chamber, which, according to the specifications and claim, serve the purpose of—

collecting light material carried off from the bolter by the air currents.

The same shelves are shown in the drawing Fig. 3 of Nos. 133,898, 164,050, and 187,923, but are not mentioned in any of the claims thereof.

No. 236,101 contains the same drawings as No. 164,050, and differs from the earlier and expired patents only in the wording of its claims.

The same is true of No. 258,142, the last of the series, of which the patentee, after acknowledging that "some of the important combinations included in this machine" are covered by the patents already taken out "in other divisions," declares the object to be "to cover all patentable points not covered by any such prior patents."

Special significance has been attributed to some of the averments of the bill. It is alleged, for example,—

that the said Geo T. Smith's middlings-purifier is one compact machine, operating together as a whole, parts of which are covered by the Letters Patent—

mentioned, but no part thereof—

covered by any other patent than those specified herein; that Geo. T. Smith was the original inventor of said machine;

that on July 12, 1871, he filed his application for a patent; about October 23, 1871, filed a caveat for—

further improvements, and on May 20, 1872, applied for letters thereon—

which applications and caveat practically covered all the devices and patents mentioned; but that, owing to alleged interferences and litigation thereon, Smith subsequently—

made special applications for parts of his said invention not included in the alleged interference—

but—

that the primitive idea of said Geo. T. Smith was the invention of a machine made up by the devices—

described; that all the patents—

relate to the same subject matter, to wit: the purifying of middlings by the same general mode, to wit: The ground grain is fed forward through a shaking-screen having progressively coarser meshes, while a current of air draws backward through the screen from below and lifts the coarse or light particles of bran or husk, while permitting the heavier or finer particles of nutritious flour to pass through the screen;

that the machine has no utility or practical value without the use of the patented devices mentioned or their equivalents; that the devices—

are not capable of separate use for the purposes designed; that the purifier is not capable of use without them,

and that—

the devices in such combination constitute the essential features of said machine and are necessary to a complete running machine;

that after the issue of No. 133,898, which was for one only of the mechanical devices set forth in the applications of July 12, 1871, and May 20, 1872, the issue of the other patents was suspended to await the result of the interference declared between Smith,

claiming under the said applications so filed by him, and Benjamin Barter, who claimed under Letters Patent No. 125,518, issued on the 9th day of April, 1872, for an improvement in the method of dressing flour,

a copy of which, with accompanying specifications, is made a part of the bill; that the interference was declared in June, 1872, for the purpose of ascertaining whether Barter, claiming under Letters Patent No. 125,518, or Smith, claiming under his applications of July 12, 1871, and May 20, 1872, and caveat of October 23, 1871,

was the original inventor and discoverer of the inventions described in said patent (No. 133,898) and said applications for patents,

and that the interference was decided November 14, 1874, in favor of Smith.

In the case of *Miller* v. *Eagle Mfg. Co.*, *supra*, after a review of authorities, the Supreme Court declared the conclusion that—

no patent can issue for an invention actually covered by a former patent, especially to the same patentee, although the terms of the claims may differ; that the second patent, although containing a broader claim, more generical in its character than the specific claims contained in the prior patent, is also void; but that where the second patent covers matter described in the prior patent, essentially distinct and separable from the invention covered thereby and claims made thereunder, its validity may be sustained. See, also, *Fassett* v. *Ewart Mfg Co.*, (69 O. G., 953; 10 C. C. A., 441.)

Whether or not under these rules any of the first five of the patents here sued on are invalid, we need not consider. It is clear that singly or all together they cover Smith's invention, and the machine in which it was embodied, so completely as to leave no room for further distinct and separable claims.

The allegation of the bill that after the granting of No. 133,898—

the issue of other patents was suspended to await the result of the interference—

can in no sense be true in respect to Nos. 187,923, 208,936, and 236,101, which were not applied for until after November 14, 1874, when the interference was determined. No. 194,539, too, was not applied for until September 8, 1874, and the interference affords no reason why that patent was not issued until August 28, 1877, nor why No. 258,142 was not issued until May 16, 1882. Besides, the interference was declared for the purpose of determining the right of Smith, as against Barter, to the inventions covered by Letters Patent No. 133,898, the applications of July 12, 1871, and May 20, 1872, and the caveat of October 23, 1871. The patents granted upon those applications were Nos. 158,992 and 164,050. It was, therefore, only the claims of the three patents—Nos. 133,898, 158,992, and 164,050—which were involved in the interference, and there was no reason for suspending action upon other applications, unless they were for the same inventions. If they were for the same inventions, they ought not to have been granted, and, having been granted, are invalid, because covered by the earlier patents.

That the earlier—

applications and caveat practically covered all the devices and patents mentioned—

is alleged in the bill. The allegation is manifestly true, and consequently the patentee was without justification for making—

special applications for parts of his said invention not included in the alleged interference.

There were no such parts.

It may be observed, too, that the features of the later patents are all described and illustrated in the patent of Barter, a copy of which is made an exhibit in the bill. If, therefore, they were not included in the interference and so became the established property of Smith under the three patents mentioned, then they belong to Barter, if included in his claims, and if not to him, then to the public, because of his failure to claim them.

It is doubtless true, as contended, aside from any right to an injunction, that there may be ground for jurisdiction in equity in the nature and circumstances of the account and in the necessity for discovery; but in respect to the expired patents, which are here assumed to be valid, it is not shown that the remedy at law would be inadequate.

The decree of the circuit court is affirmed.

U. S. Circuit Court—Eastern District of Pennsylvania.

JOHNSON COMPANY *v.* PENNSYLVANIA STEEL COMPANY.

Decided May 14, 1895.

1. MOXHAM—RAILROAD-SWITCH—INVALID.
The claim of Letters Patent No. 333,474, granted December 29, 1885, to Arthur J. Moxham, for a railroad-switch, compared with pre-existing switches and *Held* to exhibit mechanical skill only and to be invalid.
2. INVENTION—MECHANICAL SKILL.
The lowest order of invention is something more than the highest mechanical skill, and the question is not whether a particular or every mechanic could make the improvement, but whether any mechanic might, without invention.

STATEMENT OF THE CASE.

This was a bill by the Johnson Company against the Pennsylvania Steel Company for alleged infringement of a patent for a street-railway switch.

Messrs. Harding & Harding for the complainant.
Mr. Philip T. Dodge and *Mr. Joshua Pusey* for the defendant.

DALLAS, *J.:*

This is a suit brought by the Johnson Company, a corporation of Kentucky, and having works located at Johnstown, Cambria county, Pa., against the Pennsylvania Steel Company, a corporation of Pennsylvania, and having works at Steelton, Pa., for infringement of Letters Patent No. 333,474, granted to Arthur J. Moxham December 29, 1885, for a railroad-switch, and by him assigned to the plaintiff company. The bill is in the usual form, and the answer and amended answer deny infringement and set up certain prior patents as anticipations of the invention of said patent.

The only claim of the patent is as follows:

A railway-switch for street-car tracks, composed of two rolled side-bearing girder-rails, of similar forms, devoid of guards, cut and fitted together at the necessary angle to deflect the car, secured together at their junction and at their divergent ends to the main rails of the track, substantially as and for the purposes set forth.

This claim calls for side-bearing girder-rails, but says nothing about a tram. In the specification, as in the claim, however, it is stated that—

the object of this invention is to provide a form of switch more particularly for street-car tracks,

and street-car tracks have been commonly constructed of tram-rails, and in the specification and drawings a tram is referred to and shown. Therefore, as this case is to be decided upon the question of invention, and as that question is presented most favorably for the plaintiff by relating it to side-bearing girder tram-rails, I will so relate and consider it, without pausing to inquire whether the existence of a tram upon the rails to be dealt with, if controlling, could properly be assumed.

The evidence but for one matter, which will presently be separately mentioned, would be convincing, to the preclusion of doubt, that the pre-existing switches left nothing to be done which a skilled mechanic would not naturally have done if he had desired to construct a switch, such as is described in the patent, of side-bearing girder-rails, whether with or without trams.

Patent No. 145,013, issued to Thomas J. Reynolds on November 25, 1873, is a partial exemplar of the prior art, and to that patent alone, though the record includes others of much pertinency, it will suffice to refer. In making the Moxham switch a form of rail is used which differs from that used by Reynolds, the Reynolds switch being made of T-rails and the Moxham of side-bearing rails. Both forms of rail, however, were old, and the only thing which it was necessary to do, or which was done, was to apply the T-rail device to side-bearing rails, and in making this application all that was needed was the removal from the side-bearing rails of such portions thereof as stood in the way and to fit and unite the parts in an obvious manner. This Moxham did most expediently; yet the intelligence which he exercised was but the discreet judgment of a competent constructor and not the higher faculty of creation which distinguishes the inventor. The only difficulty I have encountered in arriving at this conclusion has, as I have intimated, arisen from a single piece of evidence which was offered by the complainant in rebuttal; but upon fully considering that evidence and giving all possible weight to the presumption in favor of the validity of the patent I am still unable to sustain it. The particular evidence referred to consists of a switch which was actually made of side-bearing girder-rails, and which was used in San Francisco before the patent in suit was applied for. That switch was different from and was inferior to the switch in question, and from these facts it is argued that a mechanic could not—certainly did not—learn from the prior art the mode of construction pointed out by Moxham. This argument merits and has received very careful attention; but upon mature reflection I do not think it should prevail. The constructor of the San Francisco device may have had some special object in resorting to the mode of construction which he adopted, or it may be—and this seems to be the more probable explanation—that he was not skillful enough to perform the work in the most desirable manner. The scope of mechanical skill is, however, not restricted to the skill of any particular mechanic. The line to be marked is that which separates mere constructive ability from inventive capacity, and as the lowest order of invention is something more than mechanical skill so the highest degree of mechanical skill is something less than invention. All mechanics are not equally skillful, and the question is not whether every mechanic would do the work in one and the best way, but whether any mechanic might, without invention, do the work in the particular manner sought to be exclusively appropriated. This test, when applied to the present case, is conclusive. The testimony of George W. Parsons upon the subject is quite accordant with the weight of the evidence. It is, in substance, that, before the issuance of the patent in suit, nothing beyond mechanical skill was requisite to the construction of the switch in question.

In principle this case cannot be distinguished from that of *Johnson Co.* v. *Pennsylvania Steel Co.*, (62 Fed. Rep, 156,) and the views which I there expressed are equally applicable here.

The bill is dismissed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 72.—No. 5. TUESDAY, JULY 30, 1895. PRICE—$5 per year.

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DISCLAIMER.

471,769.—*John C. Kinzel*, Knoxville, Tenn. IMPROVEMENT IN BRICK-KILNS. Patent dated March 29, 1892. Disclaimer filed July 24, 1895, by the patentee.

Enters his disclaimer to all the claim in said patent except the following, viz:

In a brick-kiln, the combination of the bed or base, the short independent side walls having front openings for the furnace-doors and ash-pits, parallel pairs of open furnaces extending inwardly from said front openings in the side walls and opening their entire length directly into the space inclosed by said walls and the body of the kiln, and the casing composed of upwardly-sloping terraces supported upon said side walls, substantially as set forth.

Amendment to the Rules of Practice.

The following regulations for the conduct of proceedings in the Patent Office are established:

65. An applicant will be considered to persist in his claim for a patent without altering his specification in case he fail to act in prosecution of the same for six months after the Office action thereon, and thereupon the Examiner will make a re-examination of the case.

134. In appealable cases in which no limit of appeal is fixed, no appeal will be entertained by any tribunal in the Office unless taken within six months from the action which puts the case in condition for appeal, unless it be shown to the satisfaction of the Commissioner that such delay was unavoidable.

68. In every case pending before the Office more than five years, in which the record raises the presumption that there have been intentional delays in prosecution, the Examiner may require the applicant to show cause why the case was not more rapidly prosecuted, and at the hearing thereon, or upon failure of the applicant to appear, the Examiner will determine, under all the circumstances of the case, whether there have been intentional and unreasonable delays in prosecution, and upon finding the fact to be so, he will reject the case for that reason. Present Rules 65, 69, and 134 are repealed, and present Rule 68 is renumbered 69.

The foregoing rules will be in effect on and after April 15, 1895, and will affect pending cases as though the last Office action were upon said date.

The Official Gazette.

THE OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $10; single copies, 10 cents, if mailed to foreign countries 10 cents additional for postage; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Oaths of Applicants in Foreign Countries.

It is hereby directed that oaths accompanying applications for patents made within the following-named foreign countries must be taken before a minister, chargé d'affaires, consul, or commercial agent holding commission under the Government of the United States:

Austria-Hungary.	Netherlands.
Argentine Republic.	Norway.
Belgium.	Peru.
Brazil.	Portugal.
Costa Rica.	Russia.
Denmark.	San Salvador.
Haiti.	Servia.
Honduras.	Sweden.
Italy.	Switzerland.
Mexico.	

Applications filed in this Office presenting oaths not executed in compliance with this order will be treated as incomplete.

Indexes to Periodicals.

The following journals containing indexes to periodical literature may be found on file in the reading room of the scientific library:

Engineering Review, London, a monthly synoptical index of periodical literature in the English, French, and German languages, including hydraulic, railway, mechanical, electrical, mining, metallurgical, marine, military, and gas engineering.

Abstracts of all the principal articles on "Physics" published in the American and Continental journals since January 1, 1895, will be found in the *Proceedings of the Physical Society of London.*

Electrical World, New York, a weekly digest of electrical articles.

Journal of the Association of Engineering Societies, Chicago, a monthly synoptical index of civil-engineering literature, mostly American.

Engineering Magazine, New York, a monthly title-index of engineering articles in the English language only.

Publishers' Catalogues.

This Office would be pleased to receive from manufacturers and publishers such catalogues, circulars, price-lists, or other advertisements relating to the sciences and mechanical arts as are published by them for gratuitous distribution; but notice is hereby given such manufacturers or dealers who feel disposed to send their publications that not less than three copies should be forwarded in order that the subjects may be properly indexed, classified, and subclassified in the Scientific Library for convenient and ready reference.

Issue of July 30, 1895.

Patents	378—No. 543,457 to No. 543,834 inclusive.
Designs	22—No. 24,506 to No. 24,527, inclusive.
Trade-Marks	15—No. 26,876 to No. 26,890, inclusive.
Labels	None.
Prints	None.
Reissues	None.
Total issue	415

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Prints.	States.	Patents and Designs.	Trade-Marks and Prints.
Alabama	2	...	New Hampshire	3	....
Arizona Territory	....	....	New Jersey	6	1
Arkansas	....	....	New Mexico Ter.	....	....
California	10	....	New York	72	5
Colorado	9	....	North Carolina	....	....
Connecticut	11	....	North Dakota	....	....
Delaware	1	....	Ohio	31	3
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Georgia	3	....	Pennsylvania	35	....
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Indiana	7	1	Tennessee	1	....
Iowa	12	1	Texas	7	....
Kansas	1	....	Utah Territory	1	....
Kentucky	10	....	Vermont	5	....
Louisiana	4	....	Virginia	2	....
Maine	1	....	Washington	....	....
Maryland	4	....	West Virginia	6	....
Massachusetts	40	2	Wisconsin	8	....
Michigan	10	....	Wyoming	....	....
Minnesota	5	....	U. S. Army	1	....
Mississippi	2	....	U. S. Navy	....	....
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Montana	....	....	Total to citizens of the United States	366	14
Nebraska	4	....			
Nevada	....	....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentine Republic	....	....	Japan	....	....
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Belgium	....	....	Newfoundland	....	....
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Canada	3	....	Nicaragua	....	....
Chile, Republic of	....	....	Peru	....	....
Colombia	....	....	Portugal	....	....
Cuba	....	....	Queensland	....	....
Denmark	....	....	Roumania	....	....
Ecuador	....	....	Russia	....	....
Egypt	....	....	Scotland	....	....
England	10	....	South Australia	....	....
Finland	....	....	Spain	....	....
France	3	....	Sweden	....	....
Germany	14	1	Switzerland	....	....
Greece	....	....	Venezuela	....	....
Guatemala	....	....	Victoria	....	....
Hawaii	1	....	West Australia	....	....
India	....	....			
Ireland	....	....	Total to citizens of foreign countries	34	1
Italy	1	....			

APPLICATIONS UNDER EXAMINATION.

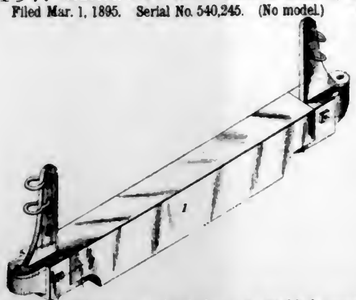
Condition at Close of Business July 23, 1895.

Division No.	Subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended.	No. of applications awaiting action.
	In arrears.—Under one month.			
15	Plastics, Paper-Making, Paving Glass, Fuel, Bread-Making, etc	June 24	July 22	64
31	Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	June 24	July 23	68
13	Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc	July 1	July 10	70
4	Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	July 11	July 15	51
12	Mechanical Engineering, Stor-Service, etc.	July 8	July 15	103
22	Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	June 25	July 15	125
18	Steam-Engineering, etc	June 24	July 15	86
3	Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	June 24	July 15	104
20	Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	June 24	July 15	139
8	Furniture, Beds, Store Furniture, etc.	June 24	July 15	179
29	Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	June 24	July 13	90
14	Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	June 24	July 13	102
11	Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather Working Machinery.	June 24	July 13	180
21	Textiles, etc	June 24	July 12	118
16	Telegraphy, Telephony, Electric Lighting and Signaling.	June 24	July 10	105
2	Farm Stock, Products, etc	June 24	July 10	142
25	Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone-Working, Vegetable Cutters and Crushers.	June 25	July 8	151
10	Carriages and Wagons	June 24	July 5	143
34	Railway Brakes, Draft Appliances, and Rolling-Stock.	June 24	July 5	161
27	Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	June 24	July 5	175
17	Paper-Manufactures and Printing	June 24	July 2	145
32	Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels, etc.	June 24	July 2	210
7	Harvesters, Games and Toys, and Velocipedes.	June 24	July 1	413
6	Chemistry, Explosives, Medicines, Fertilizers, Preserving, Photography, Sugar and Salt, Surgery.	June 24	June 29	192
28	Pneumatics, Refrigeration, Air and Gas Engines, etc.	June 24	June 26	153
19	Stoves and Furnaces	June 23	June 26	309
26	Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	June 24	June 24	109
1	Tillage and Fences	June 24	June 24	304
	Between one and two months.			
23	Instruments of Precision, Acoustics, etc.	June 22	July 13	130
5	Fine Arts, Stationery, Book-Binding, Music, etc.	June 11	June 26	193
30	Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, Optics.	June 13	June 19	258
24	Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	June 11	June 19	172
9	Hydraulics, Fire-Extinguishers, etc.	June 8	June 12	364
	Total number of applications awaiting action			5,308
	Under one month in arrears.			
	Designs	July 5	July 5	143
	Trade-Marks	July 17	July 18	15

PATENTS

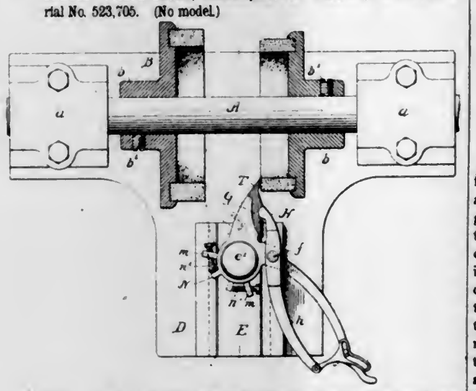
GRANTED JULY 30, 1895.

543,457. BOLSTER-STANDARD. THOMAS H. BENNETT, El Paso, Tex. Filed Mar. 1, 1895. Serial No. 540,245. (No model.)



Claim.—The combination with a bolster recessed in its upper and lower sides, of a standard having at lower end an integral rectangular box with bolt holes through its sides, and upward forward and lower rearward projecting integral lips having bolt holes, said lips fitting said recesses, and screws or the like for securing the box to the bolster, substantially as set forth.

543,458. MACHINE FOR SHARPENING INSERTIBLE SAW-TEETH. JOSEPH BERRY, Philadelphia, Pa. Filed Sept. 21, 1894. Serial No. 523,705. (No model.)

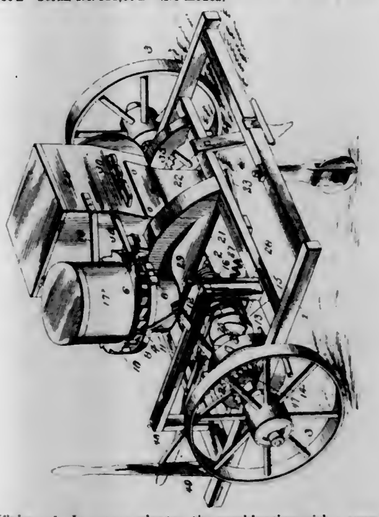


Claim.—1. In a machine for sharpening insertible saw teeth, the combination of two grinding rings having edge grinding surfaces, a shaft carrying such grinding rings, a supporting frame, guideways therein, a slide, E, adapted to such guideways, a post on said slide, handled tooth carrying jaws pivoted to said post, a locking clamp for holding said jaws together, and adjustable stops for limiting the swinging movement of the jaws on said post, substantially as specified.

2. In a machine for sharpening insertible saw teeth the combination of the shaft, A, the adjustable grinding rings, C, C', mounted upon said shaft, means for locking said grinding rings in position on the shaft, the block, D, guideways, *d*, formed therein, a slide, E, adapted to said guideways, stops for limiting the longitudinal movement of said slide, E, a post, *e*, on said slide, a pivot pin, *e'*, in said post, lugs, *m*, adjustable stop screws, *n*, *n'*, carried by said lugs, a handled jaw, G, pivotally secured to the post, *e*, by the pin, *e'*, a block, N, carried by the jaw, G, and adapted to engage with the stop screws, and a second jaw, H, having a handle, *h*, pivoted to the jaw, G, and a link, L, for securing the said jaws on the tooth to be ground.

3. The combination of the two grinding rings, a guided slide, E, movable toward and from said rings, a post, *e*, on said slide, lugs, *m*, adjustable stop screws, *n*, *n'*, carried by said lugs, a jaw, G, pivoted to said post, a block, N, carried by said jaw, G, and adapted to engage with the stop screws, and a second jaw, H, pivoted to the jaw, G, substantially as specified.

543,459. COMBINED CORN-PLANTER AND FERTILIZER-DISTRIBUTER. WILLIAM F. BIRD, Bruceton Mills, W. Va. Filed Oct. 6, 1894. Serial No. 525,134. (No model.)



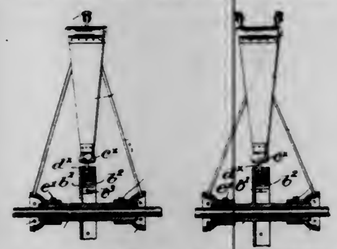
Claim.—1. In a corn planter, the combination with a supporting frame and shaft, of a clutch section adapted to be shifted on the shaft, a disk loose on the shaft and having clutch teeth adapted to be engaged by said clutch section, pins on the face of the disk upon which the clutch teeth are formed, a second series of pins on the circumferential edge of said disk, a pivoted horizontal lever having one end lying in the path of the first-mentioned pins, a revoluble disk having openings, a bottom having openings, slides adapted to be inserted between the said disk and bottom and to cover the openings in the bottom, a seed-box covering said disk and bottom, the slides being of varying widths and having a length to adapt them to project beyond the edge of the seed-box, a ratchet rim for the disk, a pivoted lever arranged in a vertical plane, a pawl carried by the upper end of said lever and engaging the ratchet rim, the lower end of the vertical lever lying in the path of the circumferentially arranged pins, a discharge chute adapted to receive the seed dropped from the seed-box, and over the lower end of which chute lies the inner end of the horizontal lever.

2. In a corn planter, the combination with a supporting frame and dropping mechanism, and a shovel carried by the frame and adapted to form a furrow, of a quadrant rack 42 carried by the frame, a lever 41 pivoted to the frame and having a pawl adapted to engage with said rack, rearwardly extending arms 40 pivoted to the frame at their forward ends, a rod 43 jointed to the lever and passing through a slot 44 in a cross piece 45, the latter being secured to the arms 40, a coiled spring encircling rod 43, shovel-standards carried by the outer ends of the arms 40, and shovels carried by the said standards.

3. In a corn planter, the combination with a supporting frame, of the seed-box, the disk having openings and the bottom, the latter also having openings, and means for operating said disk, the inclined chute 21, a fertilizer box open at bottom, a chute 22 leading from said fertilizer box and into which latter the chute 21 leads, and a lever having one end lying across the open lower end of the chute 22, and

adapted to be periodically operated to uncover said lower end, a horizontal roller journaled in the fertilizer box and pins circumferentially arranged on said roller and gearing between said roller and the shaft of the machine and horizontal slides adapted to be inserted within the fertilizer box above the said roller, said slides being of various widths, as and for the purpose specified.

543,460. WIND-WHEEL. WILLIAM C. BRAMWELL, Hyde Park, Mass. Filed Feb. 19, 1894. Serial No. 500,741. (No model.)



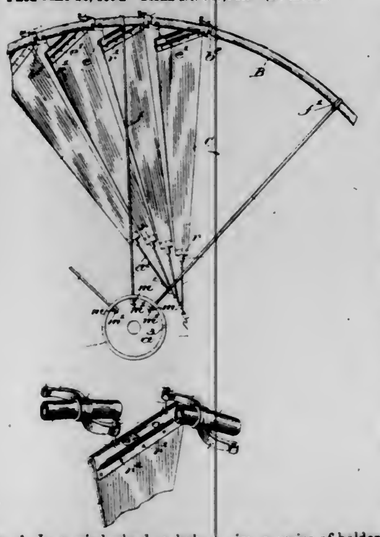
Claim.—1. A wind wheel, composed of an elongated hub and a rim, wind blades under tension directly connecting them, and lateral braces under tension connected to the end of the hub and to the rim, substantially as described.

2. In a wind wheel, a plurality of rims placed side by side, an elongated hub, a series of wind blades under tension and connected at their outer ends to the rim and at their inner ends to the hub, and lateral wind braces under tension secured to the rims and alternately to opposite ends of the elongated hub, substantially as described.

3. In a wind wheel, a laterally extended hub having a central flanged disk, and a rim, combined with a series of radial wind blades under tension and connected at their inner ends to the flanged disk of the hub, and at their outer ends to the rim, and lateral braces also under tension, between the rim and the extended portions of the hub, substantially as described.

4. In a wind wheel, a laterally extended hub, a rim, and wind blades under tension directly connecting them, combined with a cup-shaped support secured to each end of the hub, and lateral braces under tension secured to said rim and to the cup-shaped support, substantially as described.

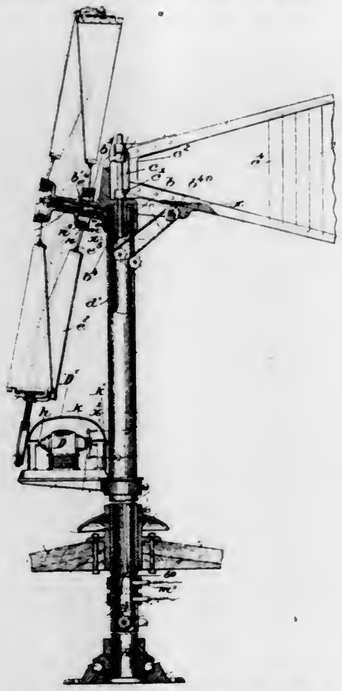
543,461. WIND-WHEEL. WILLIAM C. BRAMWELL, Hyde Park Mass. Filed June 28, 1894. Serial No. 515,948. (No model.)



Claim.—1. In a wind wheel, a hub, a rim, a series of holders thereon having oppositely projecting arms, and a series of wind blades connected tangentially to the hub at their inner ends, and at their outer ends to the arms of the holders, substantially as described.

2. In a wind wheel, a hub, a rim, a series of holders thereon having oppositely projecting arms, a series of wind blades connected tangentially to the hub at their inner ends, and at their outer ends to the arms of the holders, and means to streten or tighten the said wind blades, substantially as described.

543,462. WIND-ENGINE. WILLIAM C. BRAMWELL, Hyde Park, Mass. Filed July 13, 1894. Serial No. 517,391. (No model.)



Claim.—1. A hollow rotative standard, a wind-wheel mounted thereon, a platform-like support attached to and longitudinally adjustable on the standard below the wind-wheel, an electric generator on said support, an endless belt directly connecting the rim of the wind-wheel and the rotatable member of the generator, insulated conducting rings around the exterior of the standard, wires connecting said rings and the commutator of the generator, and current carrying brushes contacting exteriorly with the rings, substantially as described.

2. In a wind-wheel, a hub, and a series of wind blades connected thereto at their inner ends, adjacent blades being secured to opposite ends of the hub, substantially as described.

3. In a wind-wheel, a rim, a hub, and a series of wind blades under tension connecting said hub and rim, the inner ends of adjacent blades being secured to opposite ends of the hub, substantially as described.

4. In a wind-wheel, a rim, a hub, a series of wind blades under tension connecting said hub and rim, and adjustable connections between the inner ends of adjacent blades and opposite ends of the hub, whereby the tension of the blades may be regulated, substantially as described.

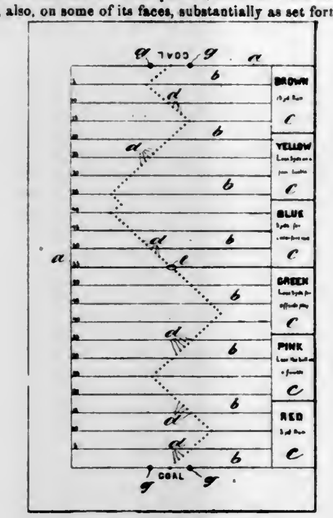
5. In a wind-wheel, a hub having annular flanges at its ends, wind blades, connections between the inner ends of the blades and the annular flanges of the hub, and means to adjust said connections independently, substantially as described.

543,463. GAME APPARATUS. ALVAH G. BROWN, Jr., Brooklyn, N. Y. Filed Dec. 6, 1894. Serial No. 530,993. (No model.)

Claim.—1. A game apparatus comprising, first, a board A, having on it a rectangular field divided by transverse lines into twenty-two spaces *b*, with oblique rows of holes, *d*, dividing each space *b* into five parts, and having indexed spaces *c*, bearing inscriptions which govern the movements of the piece *e*, among the holes *d*, second, the said piece or ball, and third, three dice having indexes on their six faces corresponding to those on the six spaces *c*, one of said dice having also numerals on four of its faces, substantially as set forth.

2. A game apparatus comprising, first, a board A, having on it a field divided by transverse lines into spaces *b*, with rows of holes *d*

dividing the spaces *b* each into five parts, and having differently colored spaces *c*, bearing inscriptions which govern the movements of the piece *e* among the holes *d*, second, the said piece *e*, and third, three dice *f*, each die having its respective faces colored to correspond with the colors on the six spaces *c*, and one of said dice having numerals, also, on some of its faces, substantially as set forth.



543,464. DEVICE FOR PREVENTING PERSONS FALLING FROM LADDERS. EMIL BROCKSCH, Niederschönbrunn, Germany. Filed Dec. 28, 1894. Serial No. 533,181. (No model.)



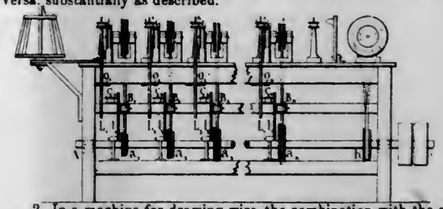
Claim.—1. A device for preventing persons from falling while climbing a ladder, comprising a hook having a connection for retaining it in proximity to and overhanging the hand leaving the hand free for use and a connection from the hook to the wearer, substantially as described.

2. A device for preventing persons from falling while climbing a ladder, comprising a hook having means for securing it to the thumb of the wearer with its upper end overhanging the hand, and a connection from the hook to the wearer, substantially as described.

3. A device for preventing persons from falling while climbing a ladder, comprising a hook, a sleeve or collar on the shank of the hook, arranged to slip over the thumb, and a connection from the hook to the body of the wearer, substantially as described.

543,465. WIRE-DRAWING APPARATUS. JEAN M. BUISSON, Lyons, France. Filed Jan. 10, 1893. Serial No. 457,915. (No model.) Patented in England Sept. 20, 1890, No. 14,898; in Belgium Sept. 22, 1890, No. 92,060; in Austria-Hungary Aug. 17, 1891, No. 11,896, and in France Mar. 18, 1892, No. 212,182.

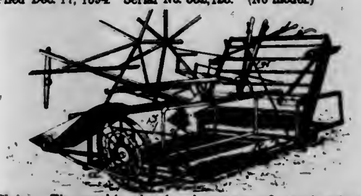
Claim.—1. In a machine for drawing wire, the combination with the series of draw-plates and the series of cooling pulleys alternating with said draw plates, of a common drive shaft, belts and pulleys forming connecting gearing directly between the shaft and cooling pulleys, independent belt tighteners controlled by the wire passing between the cooling pulleys and draw plates, and cooperating with the said belts to control the speed of the pulleys, whereby the speed may be varied instantaneously from zero to the maximum, and vice versa, substantially as described.



2. In a machine for drawing wire, the combination with the series of draw plates and alternating cooling pulleys, of a common drive shaft, belts and pulleys forming connecting gearing directly between the drive shaft and each cooling pulley and a belt tightener moved by variations in the tension of the wire adjacent each pulley, whereby the speed of said pulleys may be varied instantaneously from minimum to maximum, and vice versa and the tension throughout the machine maintained; substantially as described.

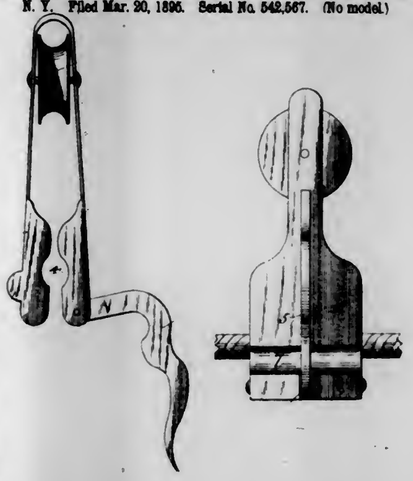
3. In a machine for drawing wire, the combination with the series of draw plates, and alternating cooling pulleys around which the wire passes from the draw plates, of a common drive shaft belting directly uniting the drive shaft and cooling pulleys, independent belt tighteners, belts and pulleys forming connecting gearing one for each pulley for varying instantaneously the speed of the corresponding pulley from zero to the maximum or vice versa, and an operating lever for each of said tighteners having a pulley thereon around which the wire from the cooling pulley controlled thereby passes, substantially as described.

543,466. GRAIN-HARVESTER. ALFRED CALHOUN, Hardy, Ohio. Filed Dec. 17, 1894. Serial No. 532,125. (No model.)



Claim.—The combination in a harvester of a grain wheel having a ratchet rim secured thereto, an arm pivoted to the harvester frame and carrying a pawl adapted to engage with said ratchet rim, and means within reach from the driver's seat having connections with said pivoted arm whereby the arm may be rocked and the grain wheel revolved backwardly.

543,467. CLOTHES-LINE CONNECTOR. JOHN CRNFOR, Albany, N. Y. Filed Mar. 20, 1896. Serial No. 542,567. (No model.)



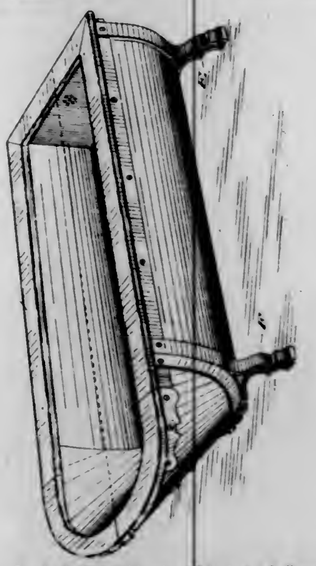
Claim.—The combination with two spring jaws, connected at their upper ends and provided with transverse grooves in their inner faces at their lower ends, one of said jaws provided with a slot at its lower end and with a lug on its outer side, a wheel journaled between the upper ends of the jaws, and an angle lever pivoted to the lower end of one of the jaws and provided with a curved seat to engage the lug on the other jaw, substantially as set forth.

543,468. IRONING-TABLE. CHARLES T. CHASE, St. Louis, Mo., assignor to himself, and Frederick Chase, Philadelphia, Pa. Filed Mar. 30, 1895. Serial No. 543,894. (No model.)



Claim.—The combination of the board A, a frame C secured to the under side of said board, lugs c^3, c^4 projecting downwardly from the opposite ends of said frame C, pivot lugs c and c', formed on said frame, a slotted supporting leg B, B', a clamping bar D, a pivot bolt c^3 extending through the pivot lugs c, c', the slotted leg B, B' and the clamping bar D, an adjusting screw E adapted to act on said clamping bar, indentations or notches b provided in the upper surface of the supporting leg, a sliding block G passing through the slotted portion of said leg, flanges g^3 on said block, a tooth g' formed on the block for engagement with the indentations or notches b, a longitudinally adjustable bar F pivoted to the block G and to the ironing board, and a spring catch H adapted to engage with and hold the leg B, B' when the latter is folded against the under side of the board, substantially as specified.

543,469. BATH. ROBERT DRURY, Toronto, Canada, assignor of one-half to John O. Thorn, same place. Filed Nov. 6, 1894. Serial No. 528,096. (No model.)



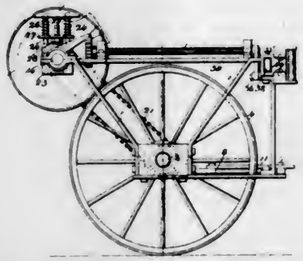
Claim.—1. In a bath the combination of the inner shell composed of a body portion and head and foot portions, the outer covering composed of a body portion and head and foot portions arranged to conform respectively to the shape of the body portion and head and foot portions of the inner shell, a metallic frame comprised of two U-shaped brackets arranged one at the foot of the body portion and the other at the head of the body portion, tie-rods connected to the top of the U-shaped brackets arranged to bind them together, and arms connected to the tie-rods extending around the head of the bath, substantially as specified.

2. In a bath the combination of the inner shell composed of a body portion and head and foot portions, the outer covering composed of a body portion and head and foot portions arranged to conform respectively to the shape of the body portion and head and foot portions of the inner shell, a metallic frame comprised of two U-shaped brackets arranged one at the foot of the body portion and the other at the head of the body portion, tie-rods connected to the top of the U-shaped brackets arranged to bind them together, arms connected to the tie-rods extending around the head of the bath, and a brace connecting together the U-shaped brackets beneath the bath, substantially as specified.

3. In a bath the combination of the inner shell composed of a body portion and head and foot portions, the outer covering composed of a body portion and head and foot portions arranged to conform respectively to the shape of the body portion and head and foot portions of the inner shell, a metallic frame comprised of two U-shaped brackets arranged one at the foot of the body portion and the other at the head of the body portion, tie-rods connected to the top of the U-shaped brackets arranged to bind them together, arms connected to the tie-rods extending around the head of the bath, a brace connecting together the U-shaped brackets beneath the bath, and a top frame connected to the tie-rods and arms, substantially as specified.

4. In a bath the combination of the inner shell composed of a body portion and head and foot portions, the outer covering composed of a body portion and head and foot portions arranged to conform respectively to the shape of the body portion and head and foot portions of the inner shell, a metallic frame comprised of two U-shaped brackets arranged one at the foot of the body portion and the other at the head of the body portion, tie-rods connected to the top of the U-shaped brackets arranged to bind them together, arms connected to the tie-rods extending around the head of the bath, a brace connecting together the U-shaped brackets beneath the bath, a top frame connected to the tie-rods and arms, and a brace connected to the head of the frame and to the U-shaped bracket at the head of the bath and beneath the same, substantially as specified.

543,470. WIRE WINDING AND DISTRIBUTING MACHINE. GEORGE A. FEDER, Belleville, Ill. Filed Dec. 21, 1894. Serial No. 532,535. (No model.)

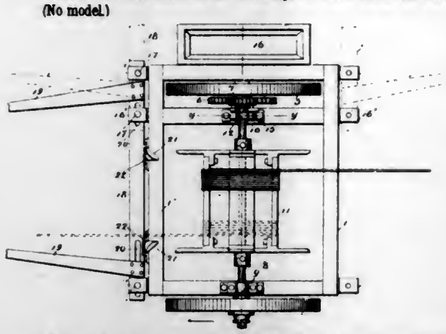


Claim.—1. In a wire winding and distributing machine, a suitable spool supporting shaft, means for imparting motion thereto, a second shaft disposed transversely or at right angles to the spool supporting shaft, a suitable bar mounted in the frame and parallel to the spool supporting shaft, a crank arm at the end of the transverse shaft adjacent to the bar, a connecting rod between the crank arm and bar, a guide frame carried by the bar, a ratchet wheel at the end of the transverse shaft adjacent to the spool supporting shaft, and an arm on the latter for intermittently rotating the ratchet and transverse shaft and imparting a reciprocating motion to the bar and guide frame carried by the same, substantially as set forth.

2. In a wire winding and distributing machine, a suitable drive shaft, wheels mounted on the same, a sleeve carried on the shaft, a sprocket wheel forming part of said sleeve, a polygonal end for said sleeve, a polygonal socket in the hub of one of the wheels, a pivoted lever having a yoke at its free end embracing the sleeve, an arm pivoted to the lever, openings at the free end of said arm, a pin on the frame co-operating with the openings, the whole adapted to engage the sprocket wheel with, or disengage the same from the driving wheel and retain the parts in either position, substantially as set forth.

3. In a wire winding and distributing machine, a suitable spool-supporting shaft, a flanged disk loosely mounted on the shaft, a rectangular block keyed to the shaft within the flange of the disk, parallel arms projecting from one of the faces of the block, a perforated friction block adapted to slide along said arms, a plate embracing said arms and adapted to be shifted along said arms, a coiled spring interposed between the adjacent surfaces of the plate and the friction block and encircling each arm, an exteriorly screw-threaded stem projecting from the block between the arms, and an adjusting nut on said stem interposed between the plate and the block secured to the shaft, substantially as set forth.

543,471. WIRE WINDING AND DISTRIBUTING MACHINE. GEORGE A FEDER, Belleville, Ill. Filed Apr. 22, 1895. Serial No. 546,627. (No model.)



Claim.—1. In a wire winding and distributing machine, a suitable frame, drive wheels mounted on said frame, a reel shaft adapted to be temporarily coupled to or uncoupled from one of the drive wheels, a suitable receptacle for receiving variable quantities of ballast, and a brake shoe controlling the rotation of the reel shaft, substantially as set forth.

2. In a wire winding and distributing machine, a suitable frame, drive wheels mounted on said frame, a suitable reel shaft mounted in proximity to the drive wheels, a gear wheel carried by one of the drive wheels, a removable pinion carried by the reel shaft and adapted to be alternately coupled to and uncoupled from the gear wheel carried by the drive wheel, a suitable receptacle for receiving variable quantities of ballast, and a brake shoe carried by the reel-shaft-bearing adapted to exert variable pressure on the reel shaft, substantially as set forth.

3. In a wire winding and distributing machine, a suitable drive wheel, a reel shaft adapted to co-operate with the same, and a suitable receptacle carried by the frame for receiving variable quantities of ballast, thus varying the weight of the machine frame for correspondingly varying the tension of the wire on the reel during the draft of the machine along the ground, substantially as set forth.

4. In a wire winding and distributing machine, a suitable frame, drive wheels mounted in the same, a gear wheel secured to one of said wheels, a reel shaft, a removable pinion carried by said shaft and adapted to mesh with the gear wheel, a brake shoe pivoted to one of the bearings of the reel shaft, a removable washer interposed between the free end of the brake shoe and the reel-shaft bearing and adapted when in place to keep the brake shoe out of actual contact with the reel shaft, a suitable receptacle for receiving variable quantities of ballast, and means for securing the parts, substantially as set forth.

543,472. OIL-CAN. GEORGE A. FOSTER, Fulton, assignor of one-half to Martin B. Guthrie, Mexico, Mo. Filed Apr. 23, 1895. Serial No. 546,851. (No model.)

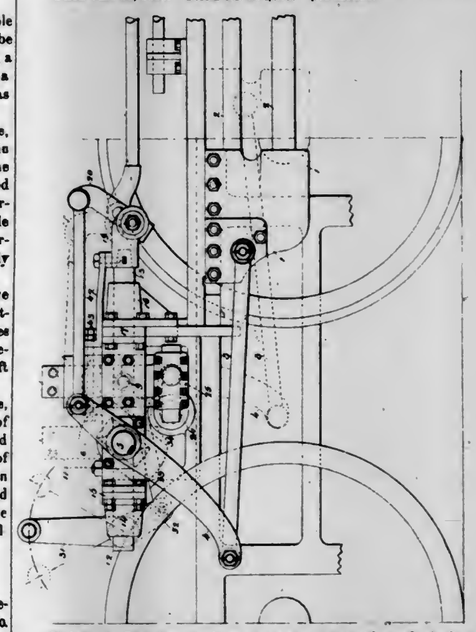


Claim.—1. The combination with a can, which is formed with an elevated apertured bottom, affording a recess to receive a piston-handle, of a cylinder secured in said aperture, an inwardly-opening valve closing the inner end of the cylinder, a plunger arranged within the cylinder, an inwardly-opening valve on the plunger and a handle for operating the plunger; substantially as described.

2. The combination with a can having a spout and a raised apertured bottom, of a spring-pressed regulating valve to control the emission of oil through the spout, a cylinder secured in the aperture in the raised bottom, inwardly-opening valves on the plunger and cylinder, and a handle for operating the plunger; substantially as described.

3. The combination with a can which is provided with a raised bottom, of a cylinder arranged in the bottom and projecting into the can, a plunger which is adapted to reciprocate in the cylinder, a hollow rod for the plunger, a valve for controlling the passage of air through the hollow rod, a valve for permitting the compressed air in the cylinder to pass into the can, and a regulating valve for controlling the emission of oil through the spout; substantially as described

543,473. LOCOMOTIVE VALVE-GEAR. JULIUS FRANKENBERG, St. Louis, Mo., assignor of one-fourth to Hiram H. Stiebel, same place. Filed Jan. 10, 1895. Serial No. 534,458. (No model.)



Claim.—1. In a locomotive valve gear, a suitable rock shaft, a cross head, intermediate connections for imparting an oscillatory motion to said shaft, a slide valve in operative connection with said rock shaft and adapted to be reciprocated by the latter, a second rock shaft, a link carried by said second rock shaft, a link block in movable contact with said link adapted to be oscillated by said second rock shaft during the normal throw of the valve, a tumbling shaft, and intermediate connections between said tumbling shaft and the link block for imparting a rectilinear reciprocating motion to the latter for an increased throw of the valve, substantially as set forth.

2. In a locomotive valve gear, a rock shaft, means for oscillating the same from the cross-head of the locomotive, a second rock-shaft, a link carried at one end of the same, suitable mechanism at the opposite end for oscillating said second rock-shaft, a reverse bar, a link block movable in said link and pivotally secured to the reverse bar, a tumbling shaft, intermediate connections between the tumbling shaft and the reverse bar for shifting the position of the latter and the link block along the link, and a suitable guide block for the reverse bar for confining the latter to a rectilinear reciprocating motion during the oscillation of the second rock shaft for any increased throw of the valve, substantially as set forth.

3. In a locomotive valve gear, one or more rock shafts, an enlarged opening in each shaft at one end thereof, guide rods passing through said openings and in operative connection with the slide valve, suitable bearings for said guide rods, and means for reciprocating said guide rods for any increased throw of the valve, substantially as set forth.

4. In a locomotive valve gear, a suitable rock shaft, a cross head, intermediate mechanism between said cross head and rock shaft for oscillating the latter, a second rock shaft, a link carried by the same,

a movable link block having a pivotal point normally concentric with the axis of oscillation of the second rock shaft, a reverse bar controlling the position of the link block within the link, a reverse bar guide, guide rods secured to said reverse bar guide, a cut-off lever carried at the end of one of said guide rods, a tumbling shaft, intermediate connections between the tumbling shaft and the reverse bar for operating the latter, and a guide block carried by the tumbling shaft for confining the reverse bar, the reverse bar guide, guide rods and link block to a reciprocating motion during an increased throw of the slide valve, substantially as set forth.

5. In a locomotive valve gear, a tumbling shaft, a movable reverse bar in operative connection with the same, a rock shaft, a link carried by said rock shaft, an oscillating link block having a pivotal point normally concentric with the axis of oscillation of the rock shaft, a pivotal connection between the reverse bar and the oscillating link block for imparting a rectilinear motion to the latter when shifted from its normal position within the link for an increased throw of the valve, substantially as set forth.

6. In a locomotive valve gear, two independent rock shafts, a rocking arm carried at the end of one of the shafts, suitable connections between said arm and the cross head, a link carried on the adjacent end of the second rock shaft, a movable link block within the link, a reverse bar to which said link-block is pivotally secured, a reverse bar guide for controlling the vertical positions of the reverse bar and link block, suitable guide rods secured on either side of the reverse bar guide, one of said rods passing through an opening of the first named rock shaft, a cut-off lever pivoted at its lower end to the end of the second guide rod, a suitable rod connecting the upper ends of the cut-off lever and rocking arm carried by the first rock shaft, a tumbling shaft, and a guide block carried thereby and controlling the path of the lower end of the reverse bar for varying the elevation of said reverse bar and link block carried thereby and imparting a reciprocating rectilinear motion to the reverse bar and link block when the latter is shifted from its normal position for an increased throw of the valve, substantially as set forth.

7. In a locomotive valve gear, a tumbling shaft, an arm carried at one end thereof, a pin at the free end of said arm, a guide block carried by said pin, a movable reverse bar, an inner plate at the lower end of the reverse bar having an elongated slot through which the pin carrying the guide block operates, and an outer plate at the lower outer end of the reverse bar, the said plates forming a housing for the guide block, substantially as set forth.

8. In a locomotive valve gear, a reverse bar guide having lateral walls, a guide rod on either side of the same, a reinforcing block for said walls located at the upper end of the same, a forked reverse bar confined within the reverse bar guide, the members of the fork embracing the reinforcing block of the reverse bar guide; and a connecting end block for the free ends of the members of the reverse bar, substantially as set forth.

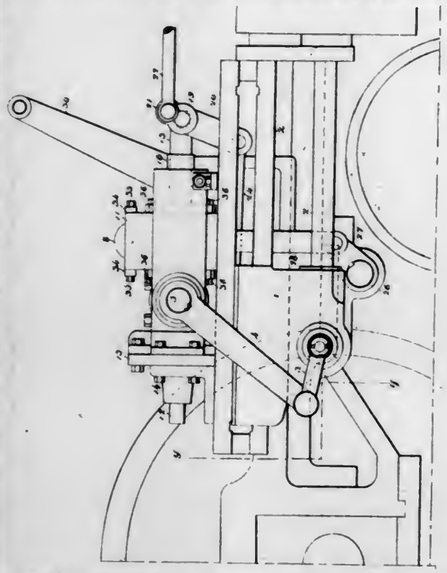
9. In a locomotive valve gear, a suitable rock shaft, a tumbling shaft, a movable reverse bar in operative connection with the tumbling shaft, and suitable intermediate connections between the reverse bar and rock shaft for imparting a rectilinear motion to the reverse bar, substantially as set forth.

10. In a locomotive valve gear, a suitable rock shaft, a tumbling shaft, a movable reverse bar in operative connection with the tumbling shaft, a cut-off lever, suitable intermediate connections between the cut-off lever and the reverse bar, and suitable connections between the reverse bar and rock shaft for imparting a rectilinear motion to the reverse bar and one end of the cut-off lever for any increased throw of the slide valve, substantially as set forth.

11. In a locomotive valve gear, a suitable rock shaft, a rocking arm keyed to one end thereof, a cross head in operative connection with the lower end of the rocking arm, a second rock shaft, a cut-off lever pivoted at its lower end in operative connection with the said second rock shaft, the said lower end adapted to receive a rectilinear motion from said second rock shaft, and a connecting rod between the upper end of said cut-off lever and the upper end of the rocking arm of the first rock shaft for imparting an oscillatory motion to said upper end of the cut-off lever, substantially as set forth.

543,474. LOCOMOTIVE VALVE-GEAR. JULIUS FRANKENBERG, St. Louis, Mo. Filed Mar. 28, 1895. Serial No. 543,468. (No model.)

Claim.—1. In a locomotive valve gear, a suitable rock shaft, a cross head, intermediate connections for imparting an oscillatory motion to said shaft, a slide valve in operative connection with said rock shaft and adapted to be reciprocated by the latter, a second rock shaft, a link carried by said second rock shaft having a straight guideway, a link block movable in said guide-way and adapted to be oscillated by said rock shaft during the normal throw of the valve, a tumbling shaft, a reverse bar for controlling the position of the link block in its guide-way, a reverse-bar guide, and intermediate connections between the tumbling shaft and reverse bar for imparting a rectilinear reciprocating motion to the reverse-bar guide and a simultaneous curvilinear reciprocating motion to the link block and reverse bar for an increased throw of the valve, substantially as set forth



2. In a locomotive valve gear, two suitable rock shafts, guide rods at opposite ends thereof, suitable bearings for said guide rods, means for reciprocating said guide rods for an increased throw of the valve, a reverse bar guide carried by said rods, and a forked or bifurcated connection between the reverse bar guide and one of the guide rods on either side whereby the said guide rod is made to embrace the rock shaft at one end and permit the free reciprocation of the guide rods, substantially as set forth.

3. In a locomotive valve gear, a suitable rock shaft, a cross head, intermediate mechanism between the cross head and the rock shaft for oscillating the latter, a second rock shaft, a link carried by the same, a movable link block having a pivotal point normally concentric with the axis of oscillation of the second rock shaft, a reverse bar controlling the position of the link block within the link, a reverse bar guide, guide rods secured to the reverse bar guide, a cut-off lever carried at one end of one of said guide rods, a tumbling shaft, suitable bearings for confining the reverse bar guide and guide rods to a rectilinear reciprocating motion for an increased throw of the valve, and a reverse arm between the reverse bar and tumbling shaft for simultaneously confining the reverse bar and link block to a curvilinear motion during such increased valve travel, substantially as set forth.

4. In a locomotive valve gear, a tumbling shaft, a movable reverse bar, a rock shaft, a link carried by said rock shaft at one end thereof, a link block in movable contact with said link pivotally connected to the reverse bar and having its pivotal point normally concentric with the axis of oscillation of the rock shaft, and a positive connection between the tumbling shaft and the reverse bar at a point to one side of the pivotal connection of the link block, substantially as set forth.

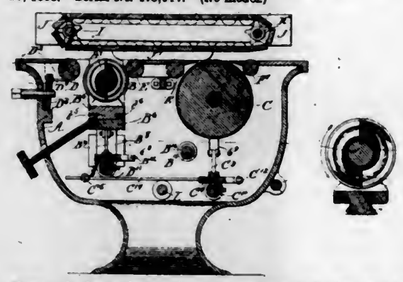
5. In a locomotive valve gear, a tumbling shaft, a movable reverse bar, a rock shaft, a link carried by said rock shaft at one end thereof, a link block in movable contact with said link pivotally connected to the reverse bar and having its pivotal point normally concentric with the axis of oscillation of the rock shaft, and a reverse arm interposed between the tumbling shaft and reverse bar and having a pivotal connection with the reverse bar at a point above the neutral line, or the pivotal point of the link block, substantially as set forth.

6. In a locomotive valve gear, a suitable rock shaft, a link carried at one end thereof, a link block in movable contact with said link, a reverse bar to which said link is pivoted, the pivotal point being normally concentric with the axis of the rock shaft, suitable reciprocating guide rods, a reverse bar guide carried by said guide rods and disposed at right angles to the axes of said rods, a reverse arm pivoted to the reverse bar to one side of the pivotal point of the link block, and a tumbling shaft in operative connection with said reverse arm, substantially as set forth.

7. In a locomotive valve gear, a suitable rock shaft, a tumbling shaft, a movable reverse bar, a reverse bar guide, a cut-off lever, suitable guide rods, and intermediate connections between the reverse bar and tumbling shaft for imparting a rectilinear reciprocating motion to the reverse bar guide, guide rods and one end of the cut-off lever, and a simultaneous curvilinear motion to the reverse bar for any increased throw of the valve, substantially as set forth.

8. In a locomotive valve gear, a suitable rock shaft, a straight link of U-shaped cross section at one end thereof, a movable link block operating in said link, a reverse bar to which said link block is pivoted, a cavity in the reverse bar, a reverse arm pivoted to said reverse bar within the cavity at a point above the pivotal point of the link block, a tumbling shaft in operative connection with the reverse arm, a reverse bar guide, and guide rods for the latter, substantially as set forth.

543,475. PLANER. HARVEY FRASER, Beloit, Wis. Filed May 29, 1893. Serial No. 475,917. (No model.)



Claim.—1. In a planer, the combination with the case of the machine, of mechanism for guiding lumber through said machine and a working cylinder arranged transversely to the path formed by said guiding mechanism and having spiral radial faces, B^3, and spiral knives, B', applied to said faces, substantially as described.

2. In a planer, the combination with a working cylinder having a support or supports permitting reciprocation in a direction perpendicular to said cylinder, of links, B^9, sliding blocks, C^{10}, and mechanism for moving said sliding blocks toward and from each other, substantially as described.

3. In a planer, the combination with a working cylinder, having a support or supports permitting reciprocation in a direction perpendicular to said cylinder, of links, B^9, sliding blocks, C^{10}, cross-head, C^{13}, and suitable connections from said cross-head to said blocks, and suitable mechanism for partially rotating said cross-head, substantially as described.

4. In a planer, the combination with a working cylinder having a support or supports permitting reciprocation in a direction perpendicular to said cylinder, of links, B^9, sliding blocks, C^{10}, links, C^{12}, cross head, C^{13}, arms, C^{14}, screw-shaft, C^{15}, and threaded bearing, C^{16}, substantially as described.

5. In a planer, the combination of an idle roller, D, and frame, D', to which said roller is journaled, of a pivoted yoke, D^3, and screw-bolt, D^4, for varying the elevation of said roller and the portion of said frame to which said roller is journaled, substantially as described.

6. In a planer, the combination with the case of the machine, of a vertically reciprocable feed mechanism located above said cylinder, eccentrics suitably connected with the support of said feed mechanism, and means for rotating said eccentrics, substantially as described.

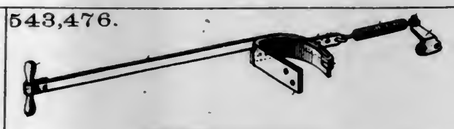
7. In a planer, the combination with the case of the machine, of a vertically reciprocable feed mechanism located above said cylinder, of eccentrics suitably connected with the support of said feed mechanism, a shaft for supporting said eccentrics, a worm gear wheel located upon said shaft, and a shaft having a crank at one end and at the other end a worm engaging said worm gear wheel, substantially as described.

8. In a planer, the combination with the case of the machine, of an endless feed apron, vertically-reciprocable plates located at the side of said apron, shafts for supporting said apron and having bearings in said plates, gearing extending from said case to one of said shafts and supported in part in bearings attached to said case and in part in bearings attached to said plates, two parts of said gearing being adjustably connected to each other, substantially as described.

543,476. DEVICE FOR OPENING OR CLOSING DOORS OF VEHICLES. JAMES FRYE, Philadelphia, Pa. Filed Apr. 25, 1895. Serial No. 547,091. (No model.)

Claim.—In a device of the character described, the combination of a segmental plate B, a strap C connected therewith, having a handle D, a spring E, a bracket F and a strap G, the latter also being connected to one end of the segmental plate B, all substantially as specified.

543,476.

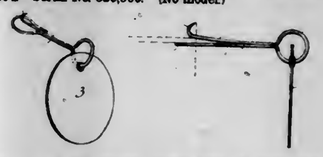


543,477. SPIGOT. JAMES FRYE, Philadelphia, Pa. Filed Apr. 25 1895. Serial No. 547,093. (No model.)



Claim.—In a spigot, the combination of the valve C, having openings B' and B^3, the barrel E communicating therewith, and having plunger F, valve *f* and orifices *f'*, a passage in said spigot adapted to engage said barrel and said valve, substantially as specified and for the purpose set forth.

543,478. TAG-FASTENER. NATHANIEL W. GREEN, Albert Lea, Minn., assignor of one-half to Frank M. Crane, same place. Filed Oct. 19, 1894. Serial No. 526,366. (No model.)



Claim.—1. A tag-fastener, comprising an outer end or handle part, and wire parts extending therefrom, one of said parts provided with an open loop and the other with a point or hook normally within the loop, the back of said hook being adapted to be turned after the insertion of a piece of material between the hook and the loop to reverse the hook and project the same into the material, substantially as described.

2. As a new article of manufacture, the herein described tag fastener, consisting of an outer end or loop and extending parts, said extending parts being provided with a hook and a loop respectively, the back of the hook being normally presented toward said loop, and said outer end or eye adapted to turn after the insertion of a piece of material between the hook and the loop to reverse the hook, as described.

3. In a tag fastener, the combination, with the outer end, loop or eye 2, of the tag secured therein, the extensions 4 and 5 crossing one another at the inner side of the eye 2 and the hook and open loop upon said parts 4 and 5, respectively, substantially as described.

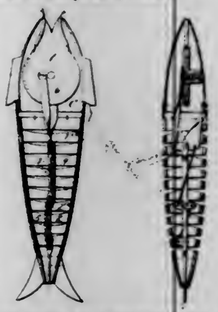
4. The tag fastener, composed of a bent wire and comprising the outer eye and straight parts 4 and 5, provided with the hook and loop respectively, said hook and loop being in planes substantially at right angles to one another, the back of said hook being normally presented to the open loop, and said eye adapted to turn after the insertion of a piece of material between the hook and loop portions and to reverse the hook, substantially as described.

543,479. MECHANICAL TOY. HENRY W. HARRISON and LE ROI B. WADLEIGH, Clinton, Iowa. Filed Mar. 7, 1895. Serial No. 540,822. (No model.)

Claim.—1. In a mechanical toy, the combination with a plurality of levers pivotally connected in series, said pivots being in substantially a right line when the levers are extended, of a plurality of tie-rods which cross the intermediate levers and are pivotally connected with alternate levers of the series, one of said tie-rods being anchored; substantially as and for the purposes specified.

2. The combination of a plurality of levers pivotally connected in series, said pivots being in line when the levers are extended, a plurality of tie-rods which cross the levers, and one of which is pivotally connected with alternate levers, a case which incloses the tie-rods and levers, the first of said levers and first of said tie-rods being pivotally anchored to said case, and means for vibrating the first of said levers; substantially as and for the purposes specified.

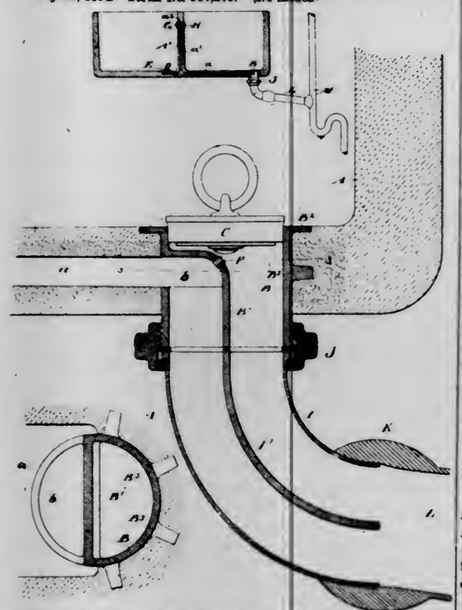
3. In a mechanical toy, the combination with a figure sheath having a rigid and a flexible section, of a plurality of levers pivotally connected in series, the first lever of said series pivoted on the rigid section of the sheath, and the said series of levers extending into the flexible portion of said sheath, and a plurality of tie-rods which cross the intermediate levers and are pivotally connected with alternate levers of the series and with the rigid section of the sheath; substantially as and for the purposes specified.



4. In a mechanical toy, the combination with a figure sheath having a rigid and a flexible section, of a plurality of levers pivotally connected in series, the first of said levers pivoted on the rigid section of the sheath, a plurality of tie-rods which cross the levers and are pivotally connected with alternate levers of the series and with the rigid section of the sheath, a pulley journaled on the rigid section of the sheath, and a pitman eccentrically connected with the pulley and with the first lever of the series; substantially as and for the purposes specified.

5. A sheath for mechanical toys, said sheath composed of longitudinally separable rigid sections which afford support for the mechanical movement, and a flexible transversely separable section adapted to inclose the mechanical movement and provided with a collar or ring which encircles the longitudinally separable sections; substantially as and for the purposes specified.

543,480. STATIONARY WASHTUB. SIDNEY W. HENDRICKSON, New York, N. Y., assignor to William Hendrickson, same place. Filed July 12, 1894. Serial No. 517,275. (No model.)

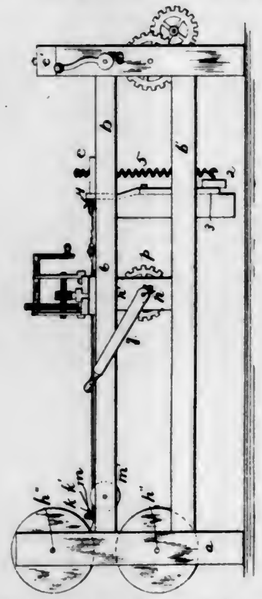


Claim.—1. The method described of producing tubs of cement with a passage in the bottom thereof, consisting in making a cement tube from a similar composition and allowing it to set, and in molding the material of the tub around the tube while in a plastic condition, and then drying the mass and causing it to unite with the cement of the tub into a homogeneous mass, substantially as herein specified.

2. In a wash-tub having two compartments, a single discharge orifice having set therein the casting B having the central partition B', flange B^3 and a series of spurs B^2 at or near the mid-thickness of the cement, with the spaces on opposite sides of the central partition B', in connection with the two compartments of the tub, all arranged to serve substantially as herein specified.

3. In a wash-tub having two compartments, a discharge passage *a* leading from one compartment, in combination with a single casting B having a partition B', the spaces on the opposite sides of which communicate respectively with the two compartments of the tub and also with a discharge pipe I leading from such casting the latter provided with a coinciding partition I, extending downward therein, so as to form a continuation of the division between the outlet passages from the two compartments, all arranged for joint operation substantially as herein specified.

543,481. FENCE-MAKING MACHINE. MARTIN E. HODGES, Syracuse, N. Y. Filed Mar. 23, 1894. Serial No. 504,769. (No model.)



Claim.—1. In a fence making machine, a reciprocating beater, in combination with geared twisters journaled in the beater frame, a rack-bar upon said beater engaging with said gears, and means to reciprocate said rack-bar to rotate said twisters.

2. In a fence-making machine, a reciprocating beater-frame, warp wire twisters mounted therein and each provided with a driving gear, a rack-bar mounted in said frame and engaging with said gears, and means to reciprocate said rack-bar, in combination.

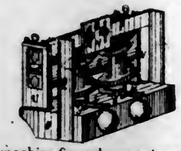
3. In a fence-making machine, the combination with the main frame, of a reciprocating beater comprising a beater frame, rack bars secured to the beater frame, a shaft journaled in the main frame, gears thereon engaging with said rack-bars, and means to rotate said shaft.

4. In a fence making machine, the combination with the main-frame of a reciprocating beater mounted thereon, comprising a beater frame, rack-bars secured to the beater frame, a shaft journaled in the main frame, gears thereon engaging with said rack-bars, and means to rotate said shaft and gears, and warp wire twisters mounted in the beater frame, and means to rotate them.

5. In a fence-making machine, a main frame, and warp-wire reels journaled thereon, a reciprocating beater frame and wire twisters journaled therein, in combination with a fence-winding reel mounted upon the opposite end thereof, stop fingers projecting above the main frame and engaging with a picket in the fence, and means to vertically reciprocate said fingers.

6. In a fence-making machine, a main frame, a beater frame adapted to reciprocate therein, a warp wire twister comprising a shaft, journaled in the beater frame, a twisting head secured upon said shaft, a driving gear upon said shaft, and perforations through said head and gear parallel with said shaft to receive a pair of warp wires, in combination with a rack-bar upon the beater frame engaging with the gears of a series of twisters and adapted to be reciprocated to rotate all of said twisters simultaneously first in one direction and then in the opposite direction.

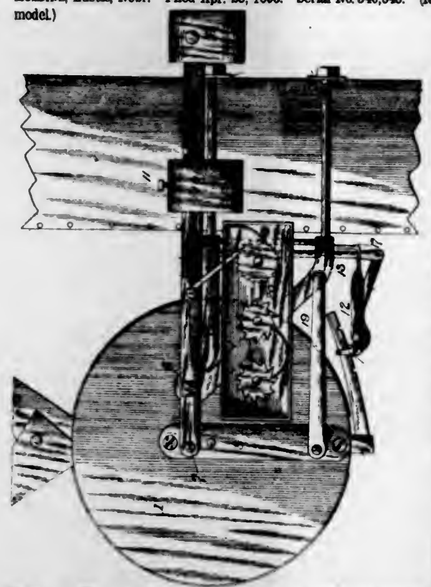
543,482. MACHINE FOR ENLARGING TAPES OR LACES. FRIEDRICH W. HOHRATH, Barmen, Germany. Filed Jan. 5, 1893. Serial No. 457,440½. (No model.) Patented in Germany Apr. 26, 1892, No. 66,770.



Claim.—1. In a machine for enlarging tapes and laces, the combination of the frame D, vertical studs E, F thereon, intermeshing gear wheels A and B on said studs, disks G, H on said studs above the gear wheels and secured thereto, a fixed shoe N secured to the frame above the disks and weighted levers L M pivoted to the frame and serving to press the disks G H upward against the shoe N.

2. In a machine for enlarging tapes and laces the combination of the frame D, vertical studs E, F thereon, intermeshing gear wheels A B on said studs, disks G H on said studs above the gear wheels and secured thereto, a fixed shoe N secured to the frame above the disks, weighted levers L M pivoted to the frame and serving to press the disks G H upward against the shoe N and heated rollers R, S journaled in the frame in front of the disks and serving for fixing the width of the braids when leaving the stretching disks and shoes, the whole as described and illustrated and for the purpose set forth.

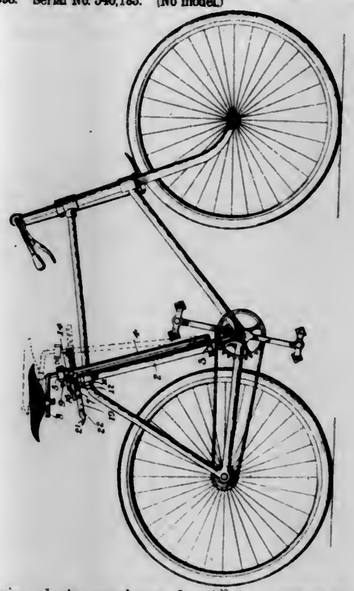
543,483. GRAIN MEASURER AND REGISTER. GOTTLIEB K. HOLBINE, Eustis, Nebr. Filed Apr. 23, 1895. Serial No. 546,843. (No model.)



Claim.—1. The combination with a hopper, of a partition pivoted therein, scale beams pivoted to said hopper, supporting brackets pivoted to said scale beams, rods pivoted to the supporting brackets and to the hopper to prevent said hopper rotating, a notched bar secured to the lower end of the partition, a pivoted dog to engage the notches in said bar, a link connecting the said dog to the scale beams, and a registering device actuated by the movement of the hopper, substantially as set forth.

2. The combination with a hopper, scale beams pivoted thereto, brackets pivoted to the scale beams, rods pivoted to the brackets and to the hopper, to prevent the rotation of the hopper, a notched bar secured to the lower end of the hopper, a slotted bar secured to the brackets and provided with an upturned slotted end, through which the notched bar moves and by which it is guided, a dog pivoted between the sides of the notched bar, a link pivoted to the dog and to the scale beams, a registering device actuated by the scale beams and clips for securing the brackets to the elevator frame, substantially as set forth.

543,484. SAFETY-BICYCLE. JOHN E. JAMES, Worthington, Pa. assignor of one-half to John M. Williams, same place. Filed Mar. 1, 1895. Serial No. 540,183. (No model.)



Claim.—1. An attachment for bicycles consisting of supports adapted to be pivoted to the frame of the bicycle, a saddle rod secured to said supports, a rod adapted to be seated in the usual saddle post socket and provided with a head, a latch carried by the said head, and a bar adjustably secured to the saddle rod to be engaged and be locked by said latch, substantially as set forth.

2. The combination with a bicycle frame, of supports pivoted thereto, a saddle rod attached to said supports, a rod secured to the post of said frame, a bar connected with said saddle rod, and having a sliding connection with the rod secured to the post and provided with a toe at its rear end, a head mounted on this latter rod and provided with a spring-actuated latch having a straight and an inclined tooth to be engaged by the toe of the bar.

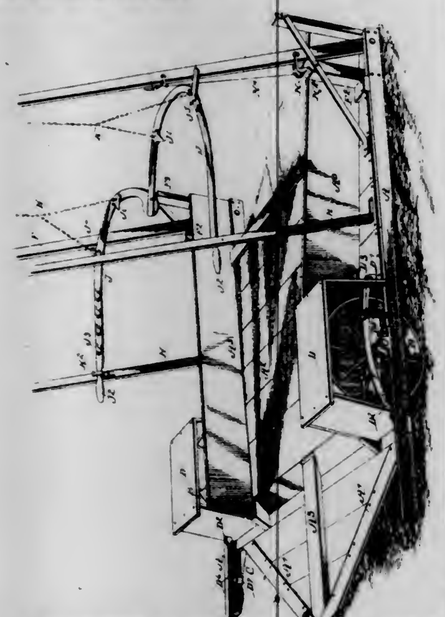
3. The combination with a bicycle frame having the usual post, of two tubular supports pivotally secured to the lower end of the post, a head vertically adjustably secured in the upper ends of the tubular supports, a saddle rod secured to said head and provided with a slot in its lower end, a rod secured to the upper end of the said post and provided with a slot corresponding to the slot in the saddle rod, a bar adjustably secured in the slot of the said saddle rod and passing through the slot in the rod secured to the post, said bar having a stud near its rear end, and at its rear end a toe, a head secured to the last named rod, a spring actuated latch pivoted to said head, said latch provided with an inclined and a straight tooth to be engaged by the toe of the bar.

543,485. CORN-HARVESTER. HENRY D. JAMES and LOREN D. HART, Dickens, Iowa. Filed Dec. 1, 1894. Serial No. 530,555. (No model.)

Claim.—1. In a corn harvester, the combination of a suitable frame having a platform thereon, two uprights pivoted to the sides of the frame, a cross piece for connecting them, means for limiting the forward and rearward movements of said uprights, a shocking device comprising two approximately semi-circular parts hinged together at one end, projections on the top surface of one of said parts and two chains depending from the tops of the said uprights and divided at their lower ends and attached to said shocking device to support the same in a horizontal position with its hinged ends in the rear, substantially as and for the purposes stated.

2. The combination in a corn harvester of a suitable platform, two uprights pivoted to the rear side portions thereof, a cross piece at their tops, two stops on each side of the machine frame to limit the forward and rear movements of the uprights, a gravity hook on one of said uprights to engage the forward stop and hold it to the forward limit of its movement, a shocking device composed of two approximately semi-circular levers, pivoted together, and having straight handles at their free ends, and projections on the top of one lever, and means for suspending said shocking device in a horizontal position from said cross bar, for the purposes stated.

3. The combination in a corn harvester, of a suitable platform, two uprights pivoted to the rear side portions thereof, a cross piece at their tops, stops for limiting their movement, two like uprights pivoted to the side of the machine frame in advance of the aforesaid ones, a shocking device comprising two approximately semi-circular levers pivoted together at one end and having straight handles at their free ends and projections at the top of one lever, means for suspending the device from said top cross piece and hooks attached to the inner faces of said forward uprights to receive the handles of the levers, for the purposes stated.



4. The combination in a corn harvester, of a suitable platform, four uprights pivoted thereto as set forth, stops to limit the movement of the rear uprights, a frame at the top of the uprights to connect them, and an awning on said frame, a gravity pawl adapted to engage the forward stop as set forth, the shocking device as shown and described suspended from the top cross piece and hooks for supporting the forward ends of the shocking device, substantially as and for the purposes stated.

5. A steering device, for corn harvesters and the like comprising a lever fulcrumed to the forward end of the machine frame, a stationary guard arched over the forward end of the lever, notches on the under side of said guard and a singletree mounted in the forward end of the lever, substantially as and for the purposes stated.

543,486. TWIST-DRILL BODY-CLEARING MACHINE. MOSES C. JOHNSON, Danbury, Conn., assignor to the T & B Tool Company, same place and Portland, Me. Filed May 7, 1894. Serial No. 510,331. (No model.)

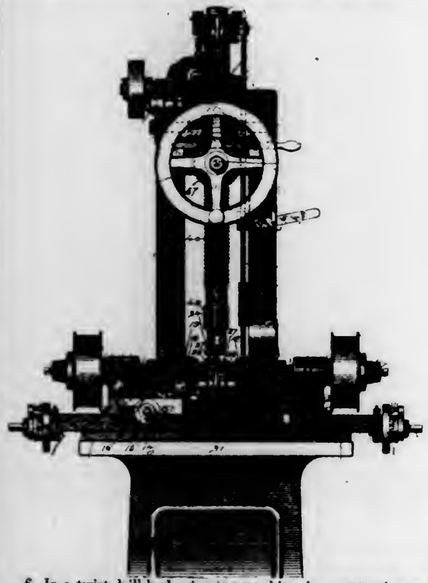
Claim.—1. In a twist drill body clearing machine, in combination, a drill feed, mechanism for operating the drill feed, face cutters with their axes extending in planes substantially at right angles to the plane of the axis of the drill feed, and mechanism for rotating the cutters, substantially as specified.

2. In a twist drill body clearing machine, in combination, a drill feed, mechanism for operating the drill feed, cutters with their cutting faces revolving in planes substantially parallel with the plane of the axis of the drill feed, and mechanism for rotating the cutters, substantially as specified.

3. In a twist drill body clearing machine, in combination, a drill feed, mechanism for operating the drill feed, rotary face cutters with their cutting faces revolving in planes substantially parallel with the axis of the drill feed and supported in bearings that can be oscillated, and mechanism for rotating the cutters, substantially as specified.

4. In a twist drill body clearing machine, in combination, a drill feed, mechanism for operating the drill feed, rotary face cutters with their axes out of line with the center of the drill or axis of the drill feed supported in bearings that can be oscillated and are held by slides movable at right angles to the axes of the cutters, and mechanism for rotating the cutters, substantially as specified.

5. In a twist drill body clearing machine, in combination, a drill feed, mechanism for operating the drill feed, rotary face cutters with their axes out of line with the center of the drill or axis of the drill feed supported in bearings that can be oscillated and are held by slides movable parallel with the plane of the axes of the cutters, and mechanism for rotating the cutters, substantially as specified.



6. In a twist drill body clearing machine, in combination, a drill feed, mechanism for operating the drill feed, rotary face cutters supported in bearings that can be oscillated and are held by slides adjustable at right angles to and also parallel with the plane of the axes of the cutters, and mechanism for rotating the cutters substantially as specified.

7. In a twist drill body clearing machine, in combination, a drill feed, mechanism for operating the drill feed, rotary face cutters with their cutting faces revolving in planes substantially parallel with the axis of the drill feed and with their axes inclined at an angle with the line of movement of the axis of the drill feed, said cutters being movable at right angles to their axes, and mechanism for rotating the cutters, substantially as specified.

8. In a twist drill body clearing machine, in combination, a drill feed, mechanism for operating the drill feed, face cutters with their cutting faces revolving in planes substantially parallel with the axis of the drill feed and with their axes at an angle with the line of movement of the axis of the drill feed, said cutters being movable parallel with the plane of their axes, and mechanism for rotating the cutters, substantially as specified.

9. In a twist drill body clearing machine, in combination, a drill feed, mechanism for operating the drill feed, rotary face cutters with their axes at an angle with the line of movement of the axis of the drill feed, said cutters being adjustable at right angles to and parallel with the plane of their axes, and mechanism for rotating the cutters, substantially as specified.

10. In a twist drill body clearing machine, in combination, a drill feed, mechanism for operating the drill feed, slides movable toward and from the front and back of the machine, oscillating heads borne by the slides, rotary spindles borne by the oscillating heads, and cutters with their cutting faces revolving in planes substantially parallel with the axis of the drill feed mounted on the spindles, substantially as specified.

11. In combination with the drill feed of a twist drill body clearing machine, a rotary spindle bearing a face cutter with its axis extending in a plane substantially at right angles to the plane of the line of movement of the axis of the drill feed, but said axis of the cutter being out of line with the axis of the drill feed, substantially as specified.

12. In a twist drill body clearing machine in combination, a drill feed, mechanism for operating the drill feed, face cutters with their axes out of line with the line of movement of the axis of the drill feed, and mechanism for rotating the cutters, substantially as specified.

13. In combination with the drill feed of a twist drill body clearing machine, a rotary spindle bearing a face cutter with teeth on one face which rotate in a plane substantially parallel with the plane of the line of movement of the axis of the drill feed, the axis of the cutter being out of line with the axis of the drill feed, substantially as specified.

14. In a twist drill body clearing machine in combination, a drill feed, mechanism for operating the drill feed, rotary cutters adjustable toward and from the line of movement of the drill feed, and a tubular guide supported by the machine in line with the drill feed, said drill guide having cutter openings through its side walls and drill supporting walls above and below the cutter openings with pins projecting through the walls into the interior of the guide, substantially as specified.

15. In a twist drill body clearing machine, in combination, rotary cutters, mechanism for rotating the cutters, a longitudinally feeding sleeve loosely carrying a drill spindle, and mechanism for feeding the sleeve, substantially as specified.

16. In a twist drill body clearing machine, in combination, rotary cutters, mechanism for rotating the cutters, a longitudinally feeding sleeve loosely carrying a drill spindle, a friction device connecting the sleeve and the spindle, and mechanism for feeding the sleeve, substantially as specified.

17. In a twist drill body clearing machine, in combination, rotary cutters, mechanism for rotating the cutters, a rotary feed nut, mechanism for rotating the nut, a sleeve longitudinally fed by the nut, and a drill spindle loosely carried by the sleeve, substantially as specified.

18. In a twist drill body clearing machine, in combination, rotary cutters, mechanism for rotating the cutters, a longitudinally feeding sleeve loosely carrying a drill spindle, power mechanism for feeding the sleeve, and hand mechanism for feeding the sleeve, substantially as specified.

19. In a twist drill body clearing machine, in combination, rotary cutters, mechanism for rotating the cutters, a longitudinally feeding sleeve loosely carrying a drill spindle, and mechanism borne by a movable support for feeding the sleeve, substantially as specified.

20. In a twist drill body clearing machine, in combination, rotary cutters, mechanism for rotating the cutters, a longitudinally feeding sleeve loosely carrying a drill spindle, and mechanism borne by a pivoted support for feeding the sleeve, substantially as specified.

21. In a twist drill body clearing machine, in combination, rotary cutters, mechanism for rotating the cutters, a longitudinally feeding sleeve loosely carrying a drill spindle, hand mechanism secured to the frame for feeding the sleeve, and power mechanism borne by a support movably secured to the frame for feeding the sleeve, substantially as specified.

22. In a twist drill body clearing machine, in combination, rotary cutters, mechanism for rotating the cutters, a longitudinally feeding sleeve loosely carrying a drill spindle, mechanism borne by a movable support for feeding the sleeve, a catch for engaging or disengaging the movable support, and a spring for throwing the support when it is disengaged from the catch, substantially as specified.

23. In a twist drill body clearing machine, in combination, rotary cutters, mechanism for rotating the cutters, a longitudinally feeding sleeve loosely carrying a drill spindle, mechanism borne by a movable support for feeding the sleeve, a catch for engaging or disengaging the support, a spring for moving the support when it is disengaged from the catch, and a tripping device connected with the feeding sleeve and adapted to engage a part of the catch for tripping the same, substantially as specified.

24. In a twist drill body clearing machine, in combination, rotary cutters, mechanism for rotating the cutters, a rotary nut bearing two gears, power mechanism for driving the nut through one gear and hand mechanism for driving the nut through the other gear, and a sleeve bearing a loose drill spindle reciprocated by the movement of the nut, substantially as specified.

25. In a twist drill body clearing machine, in combination, rotary cutters, mechanism for rotating the cutters, a rotary feed nut bearing bevel and worm gears, a bevel gear connected with a hand wheel meshing with the bevel gear carried by the feed nut, and a power rotated worm meshing with the worm gear for rotating the feed nut by power, and a sleeve bearing a loose drill spindle reciprocated by the movement of the nut, substantially as specified.

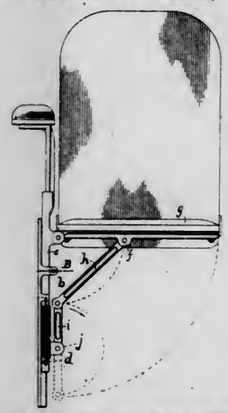
26. In a twist drill body clearing machine, in combination, rotary cutters, mechanism for rotating the cutters, a rotary feed nut bearing a sleeve with a loose drill spindle and having a bevel gear engaging a bevel gear connected with the hand wheel, and bearing a worm gear engaging a worm borne by a movable head, mechanism for rotating the worm, and a movable head attached to the frame, substantially as specified.

27. In a twist drill body clearing machine, in combination, rotary cutters, mechanism for rotating the cutters, a rotary feed nut bearing a sleeve with a loose drill spindle and having a bevel gear that engages a bevel gear connected with a hand wheel, and bearing a worm gear that engages a worm borne by a movable head, adjustable mechanism for rotating the worm, and a movable head attached to the frame, substantially as specified.

28. In a twist drill body clearing machine, in combination, rotary cutters, mechanism for rotating the cutters, a feed nut loosely supported by the frame, said nut bearing a worm gear and a bevel gear, a bevel gear supported by the frame meshing with the bevel gear on the nut and connected with a hand wheel for rotating the same, a worm borne by a movable head and engaging the worm wheel on the nut, a gear connected with the worm shaft and meshing with a gear borne by an adjustable arm, said latter gear meshing with a gear connected with the driving pulley, a longitudinally threaded sleeve borne by the feed nut, and a drill spindle loosely carried by the sleeve, substantially as specified.

29. In a twist drill body clearing machine, in combination, rotary cutters, mechanism for rotating the cutters, a feed nut loosely supported by the frame, said nut bearing a worm gear and a bevel gear, a bevel gear supported by the frame meshing with a bevel gear on the nut and connected with a hand wheel for rotating the same, a worm borne by a movable head and engaging the worm wheel on the nut, a gear connected with the worm shaft and meshing with a gear borne by an adjustable arm, said latter gear meshing with a gear connected with the driving pulley, a longitudinally threaded sleeve borne by the feed nut, a drill spindle loosely carried by the sleeve, and a friction device connecting the spindle with the sleeve, substantially as specified.

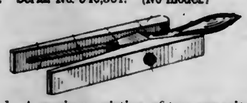
543,487. FOLDING SEAT. JOHN S. KILGORE, Salida, Colo. Filed Feb. 2, 1895. Serial No. 537,139. (No model.)



Claim.—1. A folding seat comprising a main frame, rollers journaled thereon and slots formed therein, a rolling frame held between said rollers and main frame and carrying rollers bearing against the main frame, bolts carried by said rolling frame and moving in the slots of the main frame, springs connecting the two frames, a seat hinged to the rolling frame, braces hinged to the under side of the seat and a second brace hinged at one end to the seat brace and at its other end to the rolling frame.

2. A folding seat comprising a main frame, a spring suspended rolling frame carried thereby, an arm rest detachably connected to the rolling frame, a seat hinged to said rolling frame, two part folding supporting braces pivoted to each other and to the seat and rolling frame respectively and a support hinged to the seat and adapted to serve either as a back rest or a supplemental seat bottom.

543,488. QUOIN. RICHARD KINSMAN, Galt, Canada. Filed Apr. 20, 1895. Serial No. 546,581. (No model.)



Claim.—1. A quoin consisting of two oppositely opposed wedges a lever pivotally connected to and adapted to expand the wedges, and means for longitudinally adjusting one of the wedges to increase or diminish the expansion capacity of the quoin, substantially as described.

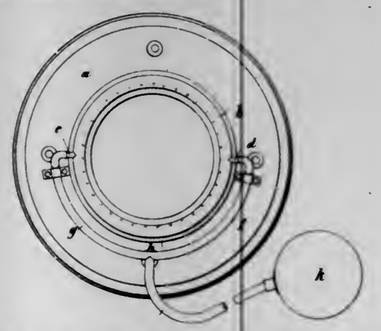
2. A quoin consisting of two oppositely opposed wedges the inner face of one of the wedges composed of two inclined planes, a wedge-shaped expansion lever pivotally connected to the said wedges, a longitudinal slot through the side of one of the wedges, adapted to form the bearing for its respective end of the spindle of the expansion lever, and to permit of the longitudinal adjustment of the wedge, substantially as described.

543,489. LUBRICATOR. JOHN KRIDLER, Grand Rapids, Mich. Filed July 19, 1894. Serial No. 518,007. (No model.)



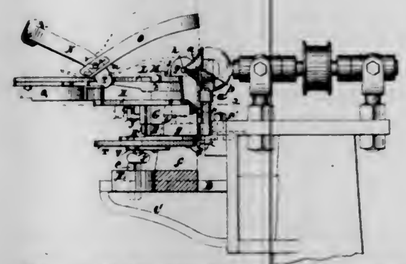
Claim.—The herein described loose-pulley oiler, consisting of a cup open at the bottom and closed at the top, said cup having a perforation in its top wall, a feed pipe removably attached to said top wall and extending thence laterally and downwardly, said feed pipe being also adapted to be secured to a pulley-hub, a piston within said cup, and a plug for controlling the supply opening to the feed pipe, said plug being located within the end of the feed pipe contiguous to said cup, substantially as shown and described.

543,490. CONTRIVANCE FOR DISINFECTING TELEPHONE APPARATUS. RUDOLPH LAMARCHE, Hamburg, Germany. Filed July 24, 1894. Serial No. 518,486. (No model.)



Claim.—A contrivance for the disinfection of telephone apparatus comprising a tube in the form of an annular ring placed at the mouth piece of the telephone, said tube having a number of perforations and being provided with a rubber ball connected thereto for the reception of the disinfecting materials.

543,491. HEEL-TRIMMING MACHINE. CHARLES H. LANGILL, Everett, Mass. Filed May 8, 1889. Serial No. 310,053. (No model.)



Claim.—1. In a heel trimming machine, the combination with a cutter head provided with knives which meet at and extend radially from the axis about which the cutter revolves, of a support for the heel pivoted on a line which extends at or near said cutter through the axis thereof and adapted to move in a horizontal plane, substantially as described.

2. In a heel trimming machine, the combination with a center head mounted on the end of a shaft and having cutters meeting at and extending substantially radial to the shaft, of a pivoted support for the heel pivoted to move in a horizontal plane, and mounted to move in a vertical plane to bring the heel in incline position with relation to the cutter, substantially as described.

3. In a heel trimming machine, the combination of a rotary cutter, a plate F pivoted at right angles to the axis of the cutter and a support L pivotally supported upon the plate F, substantially as described.

4. In a heel trimming machine, the combination of a rotary cutter, a support pivoted at right angles to the axis of said cutter, two cam faces, means for moving them inwardly and outwardly, and connections intermediate of cams and the support, substantially as described.

5. In a heel-trimming machine, the combination of a plate F pivoted at right-angles to the axis of the cutter and provided with ways parallel with line of pivoting, a block G to slide on said ways, and a support for a boot or shoe pivoted to said block, substantially as and for the purposes set forth.

6. In a heel trimming machine the combination of a block G, a support L for a boot or shoe pivoted to said block by means of a pin having inclined or cam like parts—the opening *j* for the pivot-pin having inclined walls *k* against which the cam of the pivot-pin acts,—and a strap *l* to press the pivot-pin against said walls, substantially as and for the purposes set forth.

7. In a heel trimming machine, the combination of a block G, a support L pivoted to said block, a pivot-pin forming a cam, an opening for the pivot-pin provided with inclined walls, a strap *l* pressed against the pivot-pin, and an adjustable slide J, substantially as and for the purposes set forth.

8. In a heel-trimming machine the combination with a support on which the sole of the boot or shoe is placed, of a band O to surround the counter, and a lever N, said band and lever being adjustable with reference to each other, and pivoted to each other and said support, substantially as specified.

9. In a heel-trimming machine, the combination with a support—on which the heel of the boot or shoe bears—provided with an adjustable heel-plate having a flange *l* and a spur *s*,-of a band O and lever for pressing the band against the heel, substantially as set forth.

10. In a heel-trimming machine the combination of a support—on which the sole of the boot or shoe bears—provided with an adjustable heel-plate, a band to encompass the counter, and a lever to tighten said band against the counter, said lever and band being pivoted to each other and said support, substantially as specified.

11. In a heel trimming machine, the combination with a cutter head provided with cutters which meet at and extend radially from the axis about which the cutter revolves, of a support for the heel pivoted on a line which extends at or near the end of said cutter through the axis thereof, and clamping devices on the support for holding the work thereon, substantially as described.

12. In a heel trimming machine, the combination with a cutter head provided with cutters which meet at and extend radially from the axis about which the cutter revolves, of a rotatable support for the heel pivoted on a line which extends at or near the end of said cutter through the axis thereof, and means for controlling the movement of the supports toward and away from the cutter, substantially as described.

13. In a heel trimming machine, the combination with a cutter head provided with cutters which meet at and extend radially from the axis about which the cutter revolves, of a rotatable support for the heel pivoted on a line which extends at or near the end of said cutter through the axis thereof, of a pattern device adjacent to the support, and means intermediate of the pattern device and support for moving the support toward and away from the cutter as the support is rotated, substantially as described.

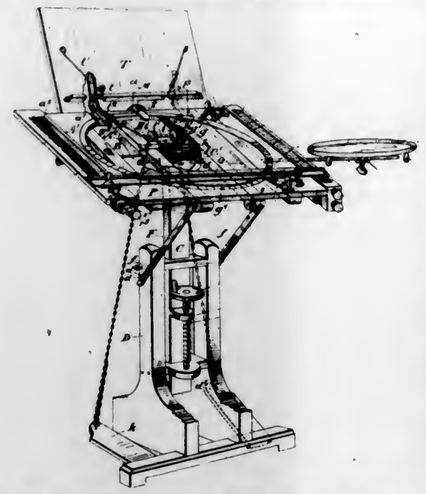
543,492. DRAWING, SKETCHING, AND DESIGNING TABLE. SAMUEL J. LAUGHLIN and JAMES HOUGH, Guelph, Canada. Filed July 17, 1894. Serial No. 517,836. (No model.) Patented in Canada Sept. 13, 1894. No. 46,973.

Claim.—1. In a drawing table, the combination with the table A having a circular opening, of a removable circular drawing board, a square socket in the center of the bottom thereof, a spindle with a square head fitting into the socket, means for rotating the spindle, and cross bars secured to the under side of the table and extending beneath the opening and friction rollers journaled in the cross bars and forming the supports for the board, substantially as described.

2. The combination with a circular drawing board, G, of the arc-shaped clasps, O, pivoted at, *o*, on the edge of the board and designed to fit between the bent retaining pin, *o'*, and the edge of the board over the turned down corner of the paper as and for the purpose specified.

3. The combination with a drawing table having a circular opening and a circular drawing board within such opening, of a spindle, *h*, journaled in the bars, H, H, extending between the central cross bars, A', A', and having a square upper end extending into corresponding hole in the plate at the bottom of the board, a pulley, I, on the spindle *h*, guiding pulleys, *i*, *i*, on the spindle, *i'*, extending between

the cross bars, a chain secured to the pulley, I, and extending over the guiding pulleys, *i*, *i*, the lower end of the chain being connected to the forward end of the pedals, *k*, and the cross bar, K, secured to the lower portion of the standard and extending out each way and having the pedals hinged to it as and for the purpose specified.



4. The combination with a table provided with a circular opening and a circular board supported within the opening with its surface above the level of the table and provided with a catch, g^6, in its edge and means for rotating the table, of stops adjustably held at each side and within the sweep of the catch, the stops being located at approximately ninety degrees apart so as to permit of a ninety degree swing to the board as and for the purpose specified.

5. The combination with a table provided with a circular opening and a circular board supported within the opening with its surface above the level of the table and provided with a catch, g^6, in its edge and means for rotating the table, of the pivoted stops, L, adjustably held at each side and within the sweep of the catch, the stops being located at approximately ninety degrees apart and screw pins, l', extending through blocks, l^3, provided to adjust the stops to a nicety as and for the purpose specified.

6. The combination with a drawing table having a circular opening, of a circular drawing board having the surface extending above the table, and a pivoted spring clamp secured at the rear of the table and having its free end extending over the board, a screw pin extending from the top of the table through the clamp and a pressure knob screwed upon the screw pin above the clamp as and for the purpose specified.

7. The combination with the table, A, provided with cross bars and pivotally supported upon the spindle, B, having bearings beneath the cross bar upon the upper enlarged end of the vertical single standard, C, the standards, D, D, having cross bars, D', through which the standard, C, extends, the bracket, *d'*, forming part of the cross bar, D', the bracket, *c*, forming part of the standard, C, the screw spindle secured in the bracket, D', and extending through the bracket, *c*, and provided with a hand wheel as and for the purpose specified.

8. The combination with the table, A, provided with cross bars and pivotally supported upon the spindle, B, having bearings beneath the cross bar upon the upper enlarged end of the vertical single standard, C, the double standards, D, D, supporting the single standards in the cross bars, D', extending between them, the slotted stays, F, F, pivotally connected to the cross bars, A', and secured to the standards, D, D, by the thumb screw, *d*, *d*, extending through the slots as and for the purpose specified.

9. The combination with the table, A, having the raised ends, A^3, and, A^5, and a circular opening, *a*, and circular board, G, rotatably supported within the opening and having its surface flush with the surface of its raised ends, of the rule, P, extending across the board and raised ends and connected at both ends to cords by depending blocks and means whereby the cords are given a uniformity of movement so as to keep the rule when being moved parallel to the rear and front of the table as and for the purpose specified.

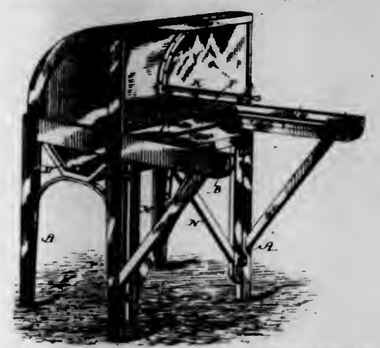
10. The combination with the table, A, having the raised ends, A^3, and, A^5, and a circular opening, *a*, and circular board, G, rotatably supported within the opening and having its surface flush with the surface of the raised ends, of the rule, P, extending across the board and raised ends and connected at both ends to cords by depending blocks, the cords being endless and extending around front and rear pulleys, *r*, and, *r'*, and wound around central pulleys, r^3, which are secured at each end to the common spindle, B, as and for the purpose specified.

11. The combination with the table, A, with raised ends, A^4, and, A^3, and having a circular opening provided with a circular board rotatably supported and suitably secured therein and having the surface flush with the raised ends, of the rule, P, and the scale, A^4, held securely within the longitudinal recess, a^3, in any definite position by the adjusting screw, a^4, as and for the purpose specified.

12. The combination with the table, A, with raised ends A^3, and, A^5, and having a circular opening provided with a circular board rotatably supported and secured therein, and having the surface flush with the raised ends, of the rule, P, rotatable bar journaled in the recess, a^3, and provided with longitudinal ratchet-shaped notched strips and grooves longitudinally arranged, a catch tooth, *p*, depending from the rule and designed to engage with a notched strip of the bar when underneath the tooth as and for the purpose specified.

13. The combination with the table, A, with raised ends, A^3, and, A^5, and having a circular opening provided with a circular board rotatably supported and secured therein, and having the surface flush with the raised ends, of the rule, P, rotatable bar journaled in the recess, a^3, and provided with longitudinal ratchet-shaped notched strips and grooves longitudinally arranged, a catch tooth, *p*, depending from the rule, the scale marked collars, *s'*, on the supporting spindle, *s*, the pointer, *s'*, knob, s^3, toothed wheel, s^2, and dog, s^4, all arranged as and for the purpose specified.

543,493. EGG-TESTER. ESTES H. LAYMAN, Des Moines, Iowa. Filed Aug. 15, 1894. Serial No. 520,427. (No model.)



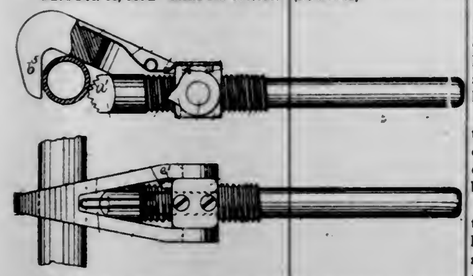
Claim.—1. An improved egg testing apparatus comprising a suitable chamber, means for admitting light to its interior from its bottom, a cover for the chamber having openings therein, two tracks in the sides of the chamber, an egg drawer having compartments therein to receive eggs, projections at the sides of the drawer to engage said tracks to enable the drawer to be moved outwardly and then turned over, clamps at the sides of the said drawer to engage a mating egg-case so that the eggs may be transferred from one to the other, substantially as and for the purposes stated.

2. An improved egg tester comprising a suitable chamber, a bottom portion therein having a reflector on its top surface, means for admitting light above said reflector, to be directed upwardly therefrom, a suitable drawer having a perforated bottom, a case adapted to be placed on said bottom, and provided with a plurality of compartments, each of a size and shape adapted to admit an egg, means for moving the said case containing the eggs longitudinally upon the said perforated bottom, two supports projecting forwardly from the sides of the machine frame, a track fixed to each, a journal fixed to each end of the aforesaid drawer adapted to slide in said tracks and permit the drawer to be turned, and means for clamping a mating drawer thereto, for the purposes stated.

3. An improved egg testing apparatus comprising a suitable chamber, a bottom therein having its sides inclined downwardly and inwardly, reflectors on the top surfaces of said bottom, suitable lamps placed upon said bottom, an egg drawer composed of a rectangular frame, the bottom in said frame having a plurality of perforations as set forth, a case for containing eggs mounted on the top of the said drawer and capable of moving longitudinally thereon, a lever pivotally mounted to the inside of one end of the machine frame, a journal projecting downwardly from its approximately central portion, adapted to engage the one end of said sliding case, two supports projecting forwardly from the sides of the machine frame, a track having a groove therein fixed to the inner surface of each of said supports, a journal fixed to the central portion of each end of the aforesaid drawer, and

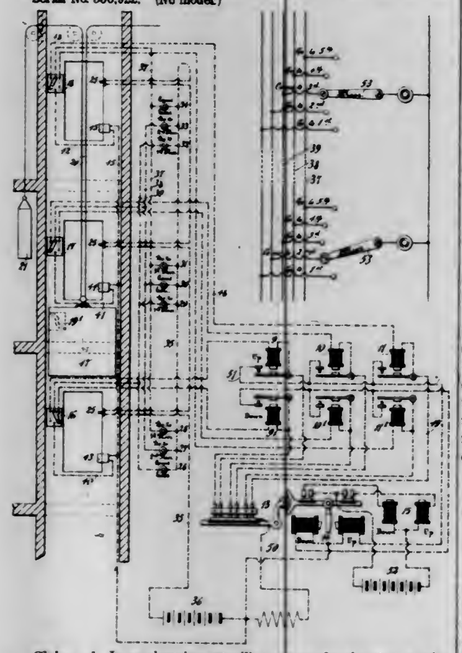
a clamping device pivoted to the ends of the drawer, adapted to clamp a mating drawer thereto, and brackets hinged to the machine frame to be swung forwardly to support the egg drawer in a horizontal position when drawn from the machine frame, all arranged and combined to operate substantially in the manner set forth, and for the purposes stated.

543,494. PIPE-WRENCH. NORMAN D. MACDONALD, Boston, Mass. Filed Dec. 11, 1894. Serial No. 531,458. (No model.)



Claim.—In a pipe wrench, the spindle A provided at one end with teeth and with the screw threads a^3 below said teeth, the internally threaded sleeve b, the angular jaw consisting of the forked arms b^2 b^3 and the arm b^4, the said forked arms being united to form the solid bearing d^5, and the recess d^4, the spring d secured to the sleeve b and having its free end acting against the bearing d^5 within the recess d^4, and a stop to limit the movement of the angular jaw away from the spindle A, substantially as described.

543,495. ELECTRICAL CONTROLLING SYSTEM FOR ELEVATORS. CYPRIEN O. MAILLOUX, New York, N. Y. Filed May 28, 1895. Serial No. 550,922. (No model.)



Claim.—1. In an electric controlling system for elevator or other cars, the combination with the controlling switch at each landing for calling the car to that landing, of duplicate switches corresponding to the controlling switches at other landings whereby the car may from one landing be directed to any of the others, substantially as set forth.

2. In an electrical controlling system for elevator or other cars, the combination with the controlling circuit, of floor switches automatically operated by the car, and multiple switches at the several landings, like members of which are connected together and to a floor switch.

3. In an electrical controlling system for elevator or other cars, the combination with the controlling circuits, of electrically operated running indicators at each landing thrown simultaneously into and out of operation respectively by the starting and stopping of the car.

4. In an electric controlling system for elevator or other cars, the combination with the well doors, of indicators at each floor, and means operated on the opening of a well door to actuate one indicator on each floor to announce such opening for the purpose set forth.

5. In an electrical controlling system for elevator or other cars, the combination with well doors automatically opened by the action of the car, a series of branches from the controlling circuit, contacts located in each branch to be closed on the opening of the well doors, and indicators in each branch at each landing for enunciating at all landings the opening of a well door.

6. In an electrical controlling system for elevator or other cars, the combination with the well doors, of a bell or buzzer located at each door and having its circuit controlled by the position of that door, and a switch at each landing for closing circuit through that bell whose door has been left open, as and for the purpose set forth.

7. In an electrical controlling system for elevator or other cars, the combination with the well door indicators, of a bell or buzzer located at each door in a branch circuit closed on opening that door, and a button at each floor for completing the circuit through any one of said buzzers whose door has been left open.

8. In an electrical controlling system for elevator or other cars, the combination with the main controlling circuit, of a bar spring-mounted in a suitable guide in a well door frame, a spring for forcing said bar outward against the door, a contact carried by said bar and connected to said circuit, a contact also connected to said circuit and located in a position to engage said contact when the door is closed, and contact springs in the buzzer and door indicator circuits located in a position to be engaged by said bar contact when the door is open, for the purpose specified.

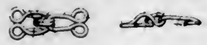
9. In an electrical controlling system for elevator or other cars, the combination with a casing located at a landing, a running indicator located therein and consisting of a magnetically controlled vane bearing the word "Running" and a fixed plate bearing the word "Stopped" the latter being covered by the former in one of its positions, magnetically operated door indicators also located in said casing, landing switches corresponding to each door indicator located in close proximity thereto in said casing, and a stop switch and a call switch operating the buzzers also located in said casing.

10. In an electrical controlling system for elevator or other cars, the combination with self-holding push-buttons in the controlling circuit at the landings, of floor switches located in the path of the car and consisting of a pivoted contact lever connected to the controlling circuit, and overlapping contact plates connected to branches of the controlling circuit and to the lock circuit, and means carried by the car for shifting said levers from one contact to another, as and for the purpose set forth.

11. In a push button, the combination of a hollow magnet core, a push closing circuit on said core, and having a self-holding armature and a guide pin of insulating material working in the core.

12. In an electrical controlling system for elevator or other cars, the combination with the controlling circuit, of landing switches consisting of self-holding push buttons comprising a push pin provided with a stem of insulation, an armature connected thereto, a spring connected to the controlling circuit and bearing on said armature for making electrical contact therewith and for returning the push to normal position, and an electro-magnet provided with a hollow core for the reception of the push-pin stem and having one end of its coil connected to said core, as and for the purpose set forth.

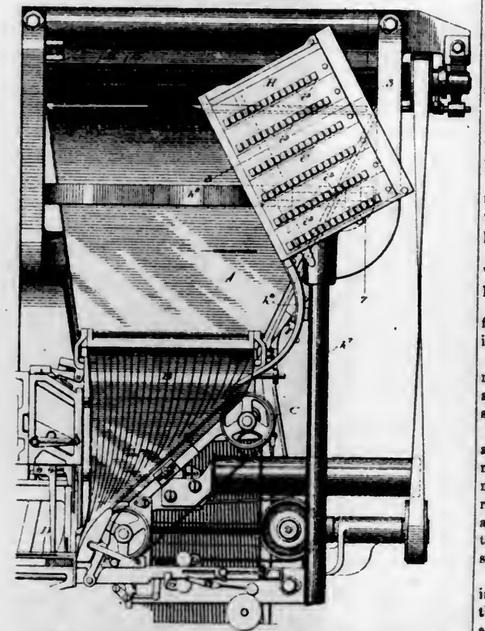
543,496. HOOK AND EYE. GEORGE E. MELLEN, Des Moines, Iowa. Filed Dec. 7, 1894. Serial No. 531,083. (No model.)



Claim.—1. An improved hook, composed of a single piece of spring wire with loops near its end portions adapted to be sewed to a garment and its ends extended under the hook proper, combined guards and guides at its sides and a hook at its central portion bent backwardly between the guards and guides and having its lower end in such proximity to the aforesaid ends, that an eye to be admitted between the hook and said ends, must separate the ends, for the purposes stated.

2. An improved hook and eye, comprising a hook having straight ends parallel with each other, loops formed at the outer end of the hook, combined guards and guides bent upwardly and outwardly therefrom and a hook proper bent to overlap the said straight ends with its ends between and below the level of the guards and guides and an eye having loops at one end and its central portion bent to enter between the guides and guards and under the hook and bent downwardly at its outer end, substantially as and for the purposes stated.

543,497. LINOTYPE-MACHINE. OTTMAR MERGENTHALER, Baltimore, Md., assignor to the Mergenthaler Linotype Company, New York, N. Y. Filed Apr. 12, 1893. Serial No. 470,007. (No model.)



Claim.—1. In combination with a composing mechanism and its magazine, a supplemental or independent magazine, adapted to deliver its type to the first named mechanism.

2. In combination with a composing mechanism and its magazine, having a carrier to advance the type toward the composing point, a supplemental magazine, also arranged to deliver its type to the carrier of the first named mechanism.

3. In combination with a linotype machine, containing a series of type a magazine therefor and means for selecting and assembling said type in line, a detachable type-holder or magazine, adapted to deliver its type to the first named mechanism, whereby type from the two magazines may be assembled by the one mechanism, either in a common line, or in different lines, as demanded.

4. The linotype machine provided with the assembling or carrying belt, the main magazine and means for delivering type therefrom to the belt in combination with the supplemental magazine, adapted to deliver its type to said belt.

5. In combination with a linotype machine containing a magazine and a composing mechanism, a supplemental magazine, provided with a finger-key mechanism for discharging type therefrom and with means for directing said type to the composing mechanism of the machine.

6. In combination with a linotype machine having a composing mechanism including a magazine co-operating therewith, a supplemental magazine containing a series of inclined channels for the type, means for delivering the type individually from said channels, and converging guides by which the matrices so delivered are directed through a common passage.

7. A magazine consisting of a series of inclined storage channels arranged side by side in rows one row above another and each provided at the lower end with means for retaining the matrices and discharging them one at a time in combination with guide channels or conductors through which the discharged matrices are delivered at a common point, said guide channels extending from the upper storage channels past the ends of the storage channels thereunder whereby several storage channels are caused to deliver matrices through a common guide channel.

8. In a type magazine, an inclined channel provided with fixed type retaining shoulders at the front, in combination with a lifting dog arranged to act beneath the lower end of the type, whereby the forward type is lifted clear of the shoulders.

9. In a type magazine the inclined type channels each having fixed top and bottom shoulders at the lower end in combination with the lifting dogs arranged to act beneath the lower ends of the type, rock shafts carrying the dogs, a series of finger keys located at one side of the magazine and connections from the keys to the respective rock shafts, substantially as shown.

10. In a type magazine the series of channels inclined downward toward the delivery end and each provided with fixed retaining shoulders in combination with the lifting dogs lying transversely under the lower ends of the channels, the parallel rock shafts carrying said dogs and provided with crank arms, the finger buttons and their rods connected to the cranks and the retracting springs substantially as shown.

11. In a type magazine, an inclined type channel, provided with type retaining lips or shoulders and a longitudinal wire or rod adapted to extend through the type to maintain them in an upright position therein.

12. In combination with the perforated type, the inclined type receiving channel, means to retain the forward type, and a floating wire, within the channel, and acting to retain the type in an upright position.

13. In a type magazine the type channel therein, in combination with the floating wire and the hinged plate co-operating with the upper end of the wire.

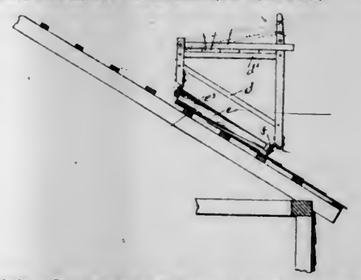
14. In combination with the linotype machine having an outlet for sorts matrices, a series of perforated matrices and a receiver having a wire or rod on which said matrices are delivered.

15. A linotype machine provided with a distributer to deliver matrices in combination with a rod or wire to which the matrices are delivered from the distributer, and by which they are suspended side by side.

16. In combination with a linotype machine, having a type magazine a composing mechanism, and a distributer, a supplementary magazine, provided with finger keys, and adapted to deliver sorts matrices to the composing mechanism out of the machine, sorts matrices adapted to leave the distributer at a common point, a secondary distributer for the sorts matrices, and tubes adapted to receive the matrices from the secondary distributer and deliver them to the supplementary magazine.

17. The distributer consisting of the toothed bar F means for feeding the matrices along said bar, and the tubes N arranged to turn the falling matrices and deliver them sidewise, substantially as described.

543,498. ROOFER'S TRUCK. SAMUEL A. MONBECK, Vorhees, Ohio. Filed June 26, 1894. Serial No. 515,602. (No model.)

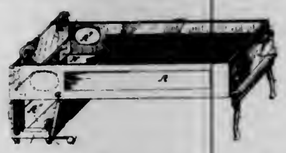


Claim.—In a shingle truck the combination with the framework consisting of the standards a and b and intervening frame pieces, of rollers e journaled as described between extensions of the lower ends of said standards, each of said rollers being provided toward its inner end with a gradual swell or enlargement and on its outer end with a toothed wheel and a shingle supporting floor fulcrumed as described to the standards b and adapted to be supported as described at varying angles therewith, substantially as and for the purpose specified.

543,499. FOLDING BED. JOSHUA H. MORRISON, Connersville, Ind. Filed Oct. 15, 1894. Serial No. 525,876. (No model.)

Claim.—1. The combination, with the two part base C, having a vertical slot in each part, the bed-body A and a double hinged connection between the body and the base forming a swinging support and fulcrum for the bed-body, of a weighted board having end rollers working in the vertical slots, rollers on the bed-body also working in the said slots, curved blocks secured to the bed-body, and a flexible connection between the weighted board and the bed-body, said connection being passed over the curved block and secured thereto or to the side of the bed-body, substantially as described and for the purposes specified.

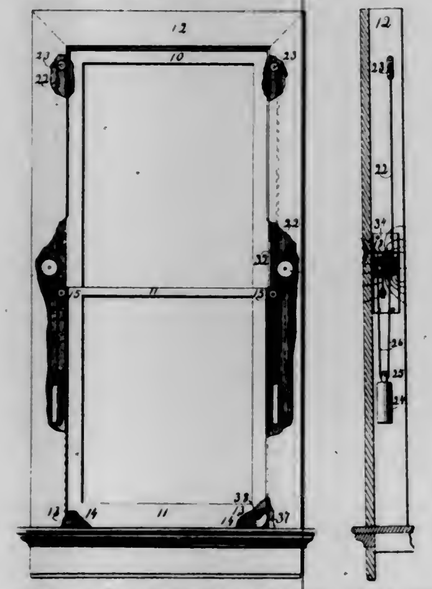
2. The combination, in a folding bed of the base C in two duplicate parts said parts being located on opposite sides of the bed and within the inclosure formed by the sides of the bed-body, each of said parts consisting of a standard C' having the vertical slot c and of the standard C^3 connected to the standard C' by the integral arms C^2, the bed-body A consisting of the sides A' and A^2, top A^3 and front A^7 said front having the bottom hinged section A^6, the section A^6 hinged to the bed-body and to the base C, the rollers A^5 secured to the bed-body and working in the slots c, the curved blocks A^9 for the purposes described, the board D having the rollers D' and D^3 at each end working into the slots c, the arms D^2 secured to the board, the weights W also secured to the board, the cord D^4 and the adjustable legs G, all substantially as described and for the purposes specified.



3. The combination, with the bed-body A and legs pivotally secured so as to be dropped down to support the outer end of said body of the section F forming a top ornament when the bed is in raised position and hinged so as to leave a space between the bed body and section when the bed is lowered and the section folded against the foot board, whereby legs pivotally secured to the top A^3 will be free to swing down between the section F and the bed when the bed is in use, substantially as shown.

4. The combination, with the bed body A, and legs pivotally secured to the body, of the section F forming the top ornament when the bed is in a raised position and hinged so as to leave a space between the bed body and section when the bed is lowered and the section folded against the footboard, whereby the pivotally secured legs will be free to swing down through the space between the section F and the bed, and cords connecting the section F with each of the legs whereby the legs will be raised automatically by the movement of the part F, substantially in the manner as described and shown and for the purposes specified.

543,500. SASH-BALANCE. NELS NEILER, Sioux City, Iowa. Filed Nov. 23, 1894. Serial No. 529,740. (No model.)

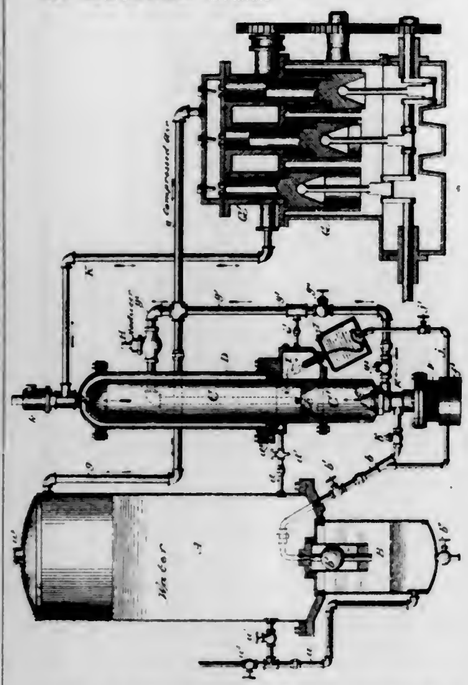


Claim.—1. The combination in a sash balance and lock, of two spools journaled in the window frame, one cord secured at one end to one spool and at the other end to the lower sash, another cord secured at one end to the other spool and at the other end to the upper sash, and a third cord secured at one end to one spool and at the other end to the other spool and a balance weight hung in the bight of this third cord, substantially as described.

2. The combination of a lower sash; a cord secured beneath a corner thereof and passing up by its edge; a cam hung above the cord in the sash to engage the frame, a balance weight upon the cord and means for stopping the same, substantially as described whereby the cord when pulled holds the cam disengaged from the frame and the same cord when stopped permits the cam to engage the same.

3. The combination of a sash, a frame therefor; a spool journaled in the frame and having a ratchet wheel; a detent for said ratchet wheel, a key for the detent, a weight hung by a cord to the spool; another cord secured at one end below a corner of the sash and at the other end secured to the said spool, and a cam hung in the said corner of the sash above the adjacent cord and adapted to engage the frame, substantially as described.

543,501. APPARATUS FOR PRODUCING MOTIVE POWER. BRUNO V. NORDBERG and CHARLES E. SHADALL, Milwaukee, Wis., assignors to the Bruno Nordberg Company, same place. Filed Aug. 11, 1890. Serial No. 361,680. (No model.)



Claim.—1. In apparatus for producing an actuating medium for engines, the combination of a closed water tank, a closed oil reservoir having a connection between the lower part thereof and the lower part of said tank, a closed combustion chamber connected with the upper part of the oil reservoir, and a pump connected with said water tank, substantially as and for the purposes set forth.

2. In apparatus for producing an actuating medium for engines, the combination of a closed water tank, a closed oil reservoir connected therewith, a combustion chamber connected with the oil reservoir, and a force pump connected with the water tank and arranged to produce and maintain a constant pressure thereon, whereby water is forced therefrom into the lower part of the oil reservoir, and oil is fed from the upper part of said reservoir into the combustion chamber, substantially as and for the purposes set forth.

3. In apparatus for producing an actuating medium for engines, the combination of an oil reservoir, a combustion chamber connected with said reservoir, and an igniting device consisting of a chamber provided with a lamp or burner and communicating through an opening with said combustion chamber in proximity with its oil connection, and an air blast device connected with said lamp or burner chamber, substantially as and for the purposes set forth.

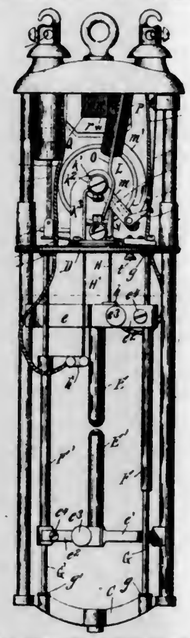
4. In apparatus for producing a driving medium for engines, the combination of a water tank, an oil reservoir connected therewith, a combustion chamber connected with said oil reservoir, a pump connected with said water tank and with the combustion chamber, and a reducing valve in the connection with the combustion chamber, whereby a greater pressure is maintained in the water tank than in the combustion chamber, and oil is fed to the latter by such differential pressure, substantially as and for the purposes set forth.

5. In apparatus for producing an actuating medium for engines, the combination of a combustion chamber, an oil reservoir connected therewith, a pump arranged to force oil from said reservoir into the combustion chamber and having a connection with said combustion chamber, and a reducing valve in the latter connection, whereby a differential pressure is maintained in the oil reservoir and combustion chamber, substantially as and for the purposes set forth.

6. In apparatus for producing an actuating medium for engines, the combination of a water tank, an oil reservoir having a connection therewith, a combustion chamber having a connection with the upper part of said oil reservoir, a float buoyant in water but not in oil, controlling communication from the oil reservoir to the combustion chamber, substantially as and for the purposes set forth.

7. In apparatus for producing an actuating medium for engines, the combination of a closed water tank, an oil reservoir connected therewith, a combustion chamber connected with said oil reservoir, an atomizer through which oil is injected into said chamber, an air pump having separate connections with said water tank, atomizer and combustion chamber, a reducing valve placed in the connection with the combustion chamber, and an automatic regulating valve controlling the supply of oil to the combustion chamber, substantially as and for the purposes set forth.

543,502. ELECTRIC-ARC LAMP. SAMUEL E. NUTTING, Chicago, Ill., assignor to George W. Furbeck and Joseph Kettlestrings, same place. Filed Apr. 5, 1894. Serial No. 506,380. (No model.)



Claim.—1. In an arc lamp supplied with alternating electric current impulses, the combination with an electro-magnet in circuit with the lamp, of an armature co-operating with the magnet and adapted to control the carbon feed of the lamp, the magnet and armature being so related that the induced counter electro-motive force of the magnet varies with the changes of position of the armature, whereby the current supplied to the lamp is regulated.

2. The combination with an arc lamp supplied with alternating electric current impulses, of an electro-magnet adapted to adjust the electro-motive force of the current to the capacity of the lamp by its induced counter electro-motive force, an armature for co-operating with the electro-magnet, and mechanism actuated by the armature for controlling the carbon feed of the lamp, substantially as described.

3. The combination with an arc lamp, of an electro-magnet having a core in bar form and its polar faces divergent, of a forked armature moving transversely to the polar axis of the magnet and having its arms spaced apart so as to embrace both poles of the magnet, and mechanism actuated by the magnet for controlling the carbon feed of the lamp, substantially as described and for the purpose specified.

4. In an arc lamp the combination with an electro-magnet, of a pivoted armature, a carbon supporter, J, a brake-wheel moving with the carbon supporter, a brake-shoe adapted to frictionally engage the brake-wheel and pivotally mounted upon a frame swinging concentrically with the brake-wheel, flexible connection between the brake-shoe and the armature, means for yieldingly resisting the strain of the armature upon the brake-shoe, a tripping post located between the brake-shoe and the axis of its supporting frame, a trip arm rigidly attached to the brake-shoe and adapted for contact with the post as the armature recedes from the magnet whereby the brake-shoe is tilted on its pivot and released from contact with the brake-wheel, substantially as described and for the purpose specified.

5. In an arc lamp the combination with an electro-magnet, of a swinging armature having an indirect approach to the magnet, a carbon carrier, J, a brake-wheel moving with the carbon carrier, a brake-shoe adapted to frictionally engage the brake-wheel and being pivotally mounted upon a frame swinging concentrically with the brake-wheel, flexible connection between the armature and the brake-shoe, means for yieldingly resisting the strain of the armature upon the brake-shoe, an arm, m^2, rigidly connected with the brake-shoe and projecting toward the axis of its supporting frame, a trip for contact with the arm, m^2, as the armature recedes whereby the brake-shoe is tilted backwardly from the face of the brake-wheel substantially as described and for the purpose specified.

6. In an arc lamp having a fixed position for its arc, the combination with a pair of vertically reciprocating carbon holders differentiated in weight, a drum for carrying the carbon holders and adapted to be rotated by gravity, cables for supporting the carbon holders and wound oppositely upon the drum, a brake-wheel mounted rigidly with the drum, a brake-shoe frictionally impinging against the brake-wheel and being pivotally mounted upon a frame swinging concentrically with such wheel, an electro-magnet, an armature for cooperating with and having an indirect approach to the electro-magnet, flexible connection between the armature and the brake-shoe whereby the advance of the armature draws the shoe to the brake-wheel, means for yieldingly resisting the strain of the armature upon the brake-shoe, an arm rigidly connected with the brake-shoe and extending toward the axis of its supporting frame, a trip for engaging the arm as the armature recedes and tilting the brake-shoe backwardly from the brake-wheel, substantially as described and for the purpose specified.

7. In an arc lamp the combination with a frame comprising a pair of side rods, a cap or cover uniting the upper ends of the rods, a cross-bar uniting the lower ends thereof, and a table, D, carried by the side rods, between the cap and the cross-bar, of a pair of supplemental rods extending from the table to the cross-bar and insulated at both ends, a pair of carbon carrying cross-heads differentiated in weight, and each having a long sleeve mounted upon one of the supplemental rods and an insulated bearing against one of the side rods, a drum supported by the table D, cables for supporting the cross-heads and having insulated attachments thereto and being wound oppositely upon the drum, means for automatically controlling the rotation of the drum, and means for conveying the electric current to the cross-heads, substantially as described and for the purpose specified.

8. In an arc lamp, the combination with the frame of the lamp, and with a vertically reciprocating cross-head for carrying the carbon and having a V-shaped recess for its reception, of a clamping bar electrically connected with the cross-head and over-lapping its recess and presenting a straight face transverse to the carbon, said bar having one of its ends loosely secured to the cross-head, and a binding screw between the attached end of the bar and the recess for drawing the bar to the cross-head.

9. In an arc lamp the combination with the table, D, the side posts, A, A', depending from the table, and the cross bar, C, connecting the lower ends of the posts, of supplemental vertical rods, G, G', rigidly set in and electrically insulated from the table and the cross-bar, and carbon holders, c, c', adapted to slide respectively upon the rods G, G', and to engage respectively the posts A, A', said holders being electrically insulated from the said posts, substantially as described and for the purposes set forth.

10. In an arc lamp the combination with the table D, the side posts A, A', depending from the table, and the cross-bar C, connecting the lower ends of the posts, of supplemental vertical rods G, G', rigidly set in and electrically insulated from the table and the cross-bar, and carbon holders c, c', adapted to slide respectively upon the rods G, G', said holders being electrically insulated from the said posts, substantially as described and for the purpose specified.

543,503. SENSITIVE NON-HALATION PLATE. CHARLES F. OAKLEY, London, England. Filed Apr. 9, 1895. Serial No. 545,090. (No specimens.)

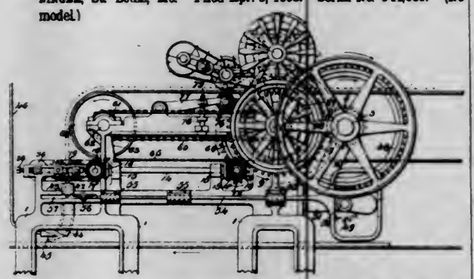
Claim.—1. The mode hereinbefore described of manufacturing

photographic plates and films which consists in first coating the support for the sensitive emulsion with a non-sensitive material, then immersing it in a coloring and hardening solution whereby it is colored, rendered non-actinic and practically insoluble and therefore prevented from giving up its coloring matter to the sensitive emulsion, and then coating the colored non-sensitive material with a sensitive emulsion, substantially as and for the purpose set forth.

2. The mode hereinbefore described of manufacturing photographic plates and films which consists in first coating the support for the sensitive emulsion with a non-sensitive material, then immersing it in a solution of permanganate of potass whereby it is colored, rendered non-actinic and practically insoluble and therefore prevented from giving up its coloring matter to the sensitive emulsion and then coating the colored non-sensitive material with a sensitive emulsion substantially as and for the purpose set forth.

3. As a new article of manufacture a photographic plate or film consisting of a support having two coats the first coat being a non-sensitive material which has been colored and rendered non-actinic and practically insoluble by immersion in a solution of permanganate of potass after its application to said support, and the second coat being a sensitive emulsion, substantially as set forth.

543,504. MACHINE FOR CUTTING DOUGH. JOHN J. PFENNINGER, St. Louis, Mo. Filed Apr. 8, 1895. Serial No. 544,885. (No model.)



Claim.—1. In a dough cutting machine, a suitable feed belt, compression rollers for pressing the dough into sheets, suitable cutting disks in the path of said belt for cutting the dough into strips, suitable driving mechanism for said disks, an adjustable cylindrical pulley, deflecting belts passing between said disks and over said pulley, and suitable cutters for cutting said strips of dough into suitable lengths, substantially as set forth.

2. In a dough cutting machine, a suitable feed belt, positively driven compression cylinders interposed in the path of the belt on opposite sides of one lap thereof, a series of cutting disks for cutting the sheets resulting from the action of the cylinders into strips, deflecting belts co-operating with said cutting disks, flanged cylinders for directing the strips, a series of pockets for said strips, a reciprocating knife for cutting the strips into suitable lengths, suitable means for guiding the resulting pieces, and a delivery belt for conveying off the final pieces, substantially as set forth.

3. In a dough cutting machine, a suitable feed belt, suitable compression cylinders co-operating with said belt for spreading the dough into sheets, a series of cutting disks for cutting the sheets into strips, deflecting belts co-operating with said cutting disks, flanged cylinders for receiving the said strips, and a series of separating threads co-operating with said flanged cylinders, substantially as set forth.

4. In a dough cutting machine, a suitable frame, a main drive shaft, a pinion on said shaft, a second shaft adjacent to the main shaft, a gear wheel on said second shaft meshing with the pinion on the drive shaft, mechanism for rolling the dough into sheets and cutting the latter into strips, suitable flanged cylinders for the reception of the strips, intermediate gear connections between said flanged cylinders and the gear wheel on the second shaft for imparting motion to said cylinders, a sprocket wheel on the second shaft adjacent to the gear wheel, a terminal shaft mounted on said frame, a sprocket wheel on said terminal shaft, a sprocket chain connecting the two sprocket wheels, a delivery cylinder on the terminal shaft, and a feed belt passing over the same for feeding the strips to the flanged cylinders, substantially as set forth.

5. In a dough cutting machine, a suitable frame, a main drive shaft, a second shaft mounted on said frame, a cylinder on said second shaft, intermediate gearing between the two shafts, finger gears on said second shaft, a shaft superposed over the second shaft, a compression cylinder on said superposed shaft, finger gears secured to the shaft carrying the compression cylinder meshing with the finger gears of the lower shaft, a feed belt adapted to pass between the two cylinders, and suitable cutting devices for cutting the dough after it leaves the compression cylinders, substantially as set forth.

6. In a dough cutting machine, a suitable feed belt, compression cylinders for spreading the dough thereon into sheets, cutting devices for cutting said sheets into strips, deflecting belts in connection with said cutting devices, suitable flanged cylinders for receiving said strips, a cutting knife in the path of said strips, mechanism for reciprocating said knife, a series of guide tubes for the resulting pieces, and a delivery belt for carrying the pieces to a suitable point, substantially as set forth.

7. In a dough cutting machine, a suitable frame, a main drive shaft, a gear wheel carried by the same, a second shaft mounted under the drive shaft, a pinion on said second shaft, outwardly projecting arms secured to said second shaft, reciprocating bars mounted in suitable bearings on either side of the frame, an expanded ring carried by each of said bars and embracing the arms carried by the second shaft, a knife secured between the opposite ends of said bars, and a suitable guide for said knife, the bars and knife being adapted to be reciprocated by the revolution of the shaft carrying the arms, substantially as set forth.

8. In a dough cutting machine, suitable revolving cylinders adjacently mounted to one another, means for feeding strips of dough to the same, an exterior cylinder mounted on either side of the first named cylinders, and suitable threads passing over the outer pair of cylinders and revolving about the inner cylinders, substantially as set forth.

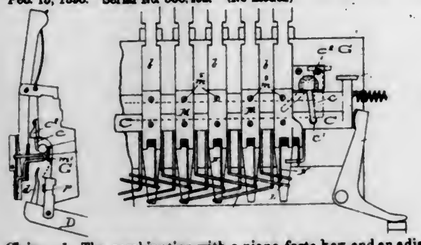
9. In a dough cutting machine, suitable revolving flanged cylinders, bands of rubber or like material interposed between the flanges, means for feeding strips of dough to the cylinders between said flanges, a cylinder disposed exteriorly on either side of the flanged cylinders said exterior cylinders having a series of peripheral depressions in line with the flanges of the inner cylinders, separating threads passed over the cylinders and confined within the depressions, adjustable bearings for the several cylinders, the said dough strips passing between the threads and separated by the same, substantially as set forth.

10. In a dough cutting machine, a suitable cylinder having disposed thereon a series of cutting disks, a shaft for said cylinder, deflecting belts passed around said cylinder between the disks, an idle pulley for said deflecting belts, means for adjusting the bearings for said pulley, and suitable gearing for imparting motion to the cutting disks, substantially as set forth.

11. In a dough cutting machine, a suitable frame, dough-feeding mechanism for the same, suitable cutting devices for cutting said dough into strips, a rotating frame mounted on the main frame and cutting devices carried by the rotating frame for dissecting the strips into any convenient form, substantially as set forth.

12. In a dough cutting machine, a suitable machine frame, a ring mounted at one end thereof, guide-ways along the periphery of said ring, a frame suspended from the ring and adapted to rotate within the guide-ways, slotted guides along opposite sides of the rotating frame, movable bearings within said slots, cutting disks carried by said bearings, and an operating handle for shifting the cutting disks within the slots and rotating the same simultaneously, substantially as set forth.

543,505. PIANOFORTE. JAMES H. PHELPS, Sharon, Wis. Filed Feb. 15, 1895. Serial No. 538,492. (No model.)



Claim.—1. The combination with a piano forte key and an adjacent key not harmonizing therewith, and their respective dampers, of devices applied to the damper of said last mentioned key and adapted when the first key is struck, to close the damper of the non-harmonizing key, substantially as specified.

2. In a piano action, the combination with two adjacent keys not harmonizing with each other, of devices applied to the damper of each key adapted when either key is struck to hold open the damper of that key and to close the damper of the other key, substantially as specified.

3. The combination with the dampers of a piano forte action, of arms extending laterally from each damper across the neighboring dampers and adapted to be operated by said neighboring dampers in closing the dampers by which the arms are carried, substantially as specified.

4. In a piano forte action, the combination with the dampers and devices whereby each damper locks itself open and closes its neighbors when its key is struck, of a rod adapted to move said damper operating devices out of their acting positions, and means for moving said rod in the performance of this duty, substantially as specified.

5. In a piano forte action, the combination with the dampers and devices whereby each damper locks itself open and closes its neighbor dampers when its key is struck, of a device adapted to hold said damper locking and closing devices out of action, and means for moving it so as to give these devices freedom to act, substantially as specified.

6. The combination with the dampers and the devices whereby each damper closes its neighbor damper, of a rod adapted both to move and hold said closing devices out of action, and means for actuating said rod in these functions, substantially as specified.

7. The combination with the dampers and the devices whereby each damper locks itself open and closes its neighbor dampers when its key is struck, of a rod supported upon pivoted arms and adapted to control said damper operating devices, and means for moving said rod longitudinally, substantially as specified.

8. The combination with the dampers and the devices whereby each damper closes its neighbor dampers, of a forte pedal rod supported upon arms which are pivotally secured to the rod and are attached to the action rail by universal joints, whereby said rod is adapted both to be swung to open the dampers, and to be raised and lowered to control said damper closing devices, substantially as specified.

9. The combination with the dampers and the devices whereby each damper is locked open and also closes its neighbor dampers, when its key is struck, of the action rail having a raised surface *g*, and the forte pedal rod hung upon arms supported from the rail by universal joints, and pivotally secured to the rod, substantially as specified.

10. The combination in a piano action, of the dampers, the lateral arms and stops carried by the dampers, and a forte pedal rod adapted to operate said stops, substantially as specified.

11. The combination in a piano action, of the dampers, lateral arms and stops carried by the dampers, the cushion *g* adapted to act with the stops in locking the dampers open, and a device for throwing the stops off the cushion, substantially as specified.

12. The combination with the dampers and a rod moved by the foot pedal, of the wires L and springs N, both carried by the dampers, substantially as specified.

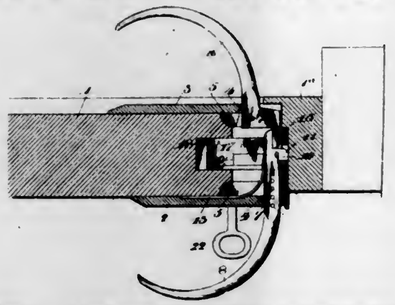
13. The laterally projecting arms L and the stops *m'*, formed of one piece of wire, and combined with the dampers, substantially as specified.

14. The combination with the dampers of the laterally projecting wires L, stops *m'*, and pivots *m* formed of one piece of wire, substantially as specified.

15. The combination with the dampers of the laterally projecting wires L, stops *m'*, and pivot *m* formed of one piece of wire, and the blocks M, substantially as specified.

16. The combination of the dampers, the wires L having pivots *m*, blocks M and cloth *s*, substantially as specified.

543,506. DOOR LOCK AND LATCH. JAMES H. PRESTON, Francestown, N. H. Filed Mar. 19, 1895. Serial No. 542,367. (No model.)



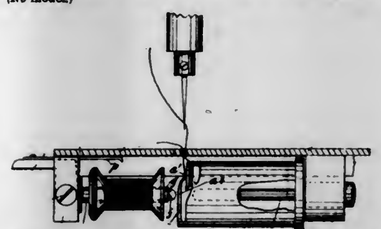
Claim.—1. A latch mechanism comprising a pair of handle levers hung so as to swing in a horizontal plane and provided with inwardly extending overlapping lips or extremities, and a catch lip formed integrally with one of said levers and arranged in proximal relation to the lip or overlapping end of its respective lever, whereby upon the operation of either one of the levers, said catch lip is adapted to be projected outwardly through the casing into engagement with a keeper, or to be withdrawn inside of said casing and out of engagement with the keeper, substantially as specified.

2. In a latch mechanism, a pair of handle levers hung to swing in a horizontal plane, a catch lip on one of said levers, and an inwardly extending lip on the other lever engaging a corresponding lip on the first lever, and a spring located behind the inwardly extending end of the lever which carries the catch lip, whereby said catch lip is held normally in engagment with a slotted keeper and is adapted to be operated by either one of said levers from either side of the door, substantially as described.

3. A combined latch and lock comprising a pair of pivoted handle levers hung to swing in a horizontal plane, a catch lip for engaging a slotted keeper, a lip on the other lever for engaging a corresponding lip on the first lever, an actuating spring for holding said catch lip normally in engagement with its keeper, and a vertically sliding bolt adapted to be moved behind one of said levers for locking the same, all arranged substantially as and for the purpose described.

4. In a latch mechanism, a pair of handle levers arranged upon either side of the door and hung to swing in a horizontal plane, a catch lip on one of said levers for engaging a keeper plate, an inwardly extending lip on the other lever for operating the first lever, the supporting plates in which said levers are pivotally mounted, and a series of perforations in one or both of said levers, whereby the latter may be adjusted relatively to their supporting plates for accommodating the device to a door of any thickness, substantially as specified.

543,507. SEWING-MACHINE. DAVID RICHARDS, London, England. Filed Apr. 3, 1893. Renewed Feb. 25, 1895. Serial No. 539,678. (No model.)



Claim.—1. In a sewing machine, the combination of the looping cylinder *a* carrying the guide pin *b*, of a guide pin *f*, the laterally pivoted and vertically tilting block *o*, swinging longitudinally of the spool race, by which the guide pin *f* is carried, said block when depressed being adapted to elevate the inner end of the guide pin *f* into a substantially vertical position, and the sliding sleeve *g* adapted to slide upon said guide pins when they are in line with each other, substantially as described.

2. In a sewing machine, the combination of a looping cylinder *a* carrying the guide pin *b*, of the guide pin *f*, the laterally pivoted and vertically tilting block *o*, swinging longitudinally of the spool race, by which the guide pin *f* is carried, the heel or projection connected to said block and extending beyond the end of the bed plate, so that when said heel or projection is depressed the inner end of the guide pin *f* will be elevated into a substantially vertical position, and the sliding sleeve *g* adapted to slide upon said guide pins when they are in line with each other, substantially as described.

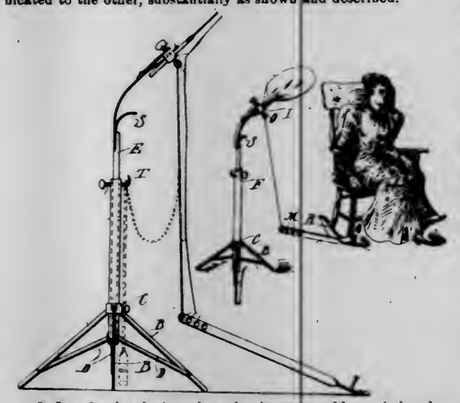
3. In a sewing machine, the combination of the bed plate having a section thereof removable, of the looping cylinder *a* carrying the guide pin *b*, the laterally pivoted and vertically tilting block *o* swinging longitudinally of the guide pin *b* and carrying the guide pin *f*, the spring *p*, secured to the upper surface of said block and adapted to bear against the under side of the removable section of the bed plate when the guide pin *f* is in its lower position, and the sliding sleeve *g* adapted to slide upon said guide pins, substantially as described.

4. In a sewing machine, the looping cylinder *a* carrying the guide pin *b*, the guide pin *f* pivotally mounted in line with said guide pin *b*, the sleeve *g* formed with the groove *i* and adapted to slide upon said guide pin, an actuating arm provided at one end with an angular finger *k* engaging the groove upon said sleeve, a lever *s* pivoted at one end to the bed plate and at its other end pivoted to said actuating arm, a stud *t* formed upon said lever *s* intermediate of its ends, a drum *u*, situated on the power transmitting shaft, a cam groove formed upon the periphery of said drum and into which the said stud *t* projects so as to transmit reciprocating motion to the sleeve, substantially as described.

543,508. AUTOMATICALLY-OPERATED FAN. MAX SA-VILSON, New York, N. Y. Filed Apr. 25, 1895. Serial No. 547,126. (No model.)

Claim.—1. In a fanning device adapted to be operated by a chair, a lever resting on the floor at one end, and having a bearing for the rocker of the chair, an adjustable standard or support, consisting of a rod adapted to be slid up and down in a tube, said tube

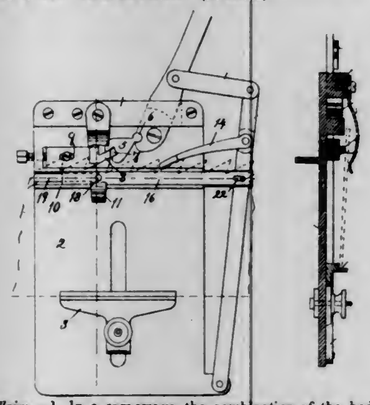
being provided with adjustable legs, a spring secured to the upper end of the rod, and adapted to hold a fan, and a connection between the lever and the spring, whereby the movements of one are communicated to the other, substantially as shown and described.



2. In a fanning device adapted to be operated by a chair, a lever resting on the floor at one end, and having a bearing for the rocker of the chair, an adjustable standard or support, consisting of a rod adapted to be slid up and down in a tube, said tube being provided with adjustable legs, a spring secured to the upper end of the rod, and bearing at its upper end a clamp adapted to receive a fan, a hook or loop attached to the clamp, and a cord connecting the loop and lever, whereby the movements of one are communicated to the other, substantially as shown and described.

3. In a fanning device adapted to be operated by a chair, a lever resting on the floor at one end, and having a bearing for the rocker of the chair, an adjustable standard or support, consisting of a rod adapted to be slid up and down in a tube, said tube being provided with adjustable legs, a spring secured to the upper end of the rod, and bearing at its upper end a clamp adapted to receive a fan, a hook or loop attached to the clamp, and a cord connecting the loop and lever, whereby the movements of one are communicated to the other, a guard for limiting the movement of the spring, and a hook on the tube, upon which the lever may be hung when not in use, substantially as shown and described.

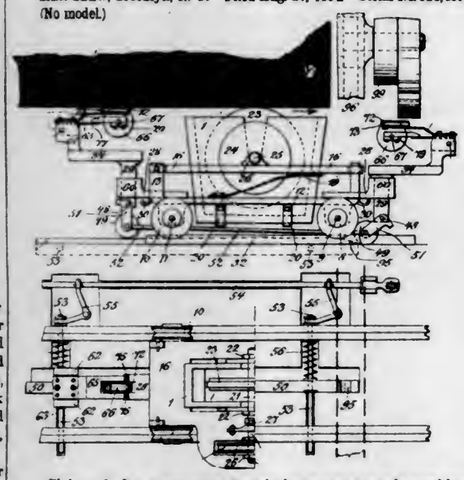
543,509. SAW-SWAGE. THOMAS SEELY, Marshall, Ind. Filed May 6, 1895. Serial No. 548,215. (No model.)



Claim.—1. In a saw-swage, the combination of the bed-plate, means for supporting the saw thereon, the operating lever pivoted to the bed-plate, the swaging-die hinged to the operating lever and provided at its opposite end with an open slot having a convex swaging surface formed on one of its edges, and the anvil having an inclined surface adapted to support the back of a saw-tooth, said anvil projecting into the slot in the swaging-die so as to form a guide therefor, all arranged to co operate substantially as and for the purpose set forth.

2. In a saw-swage, the combination with the bed-plate, the anvil, the operating lever, and the swaging-die opposed to said anvil, of the rib provided with ways arranged on the bed-plate so as to support the side of the saw, and having formed therein a groove one end of which is inclined as described, the bar arranged to slide longitudinally in the ways of said rib, the pin mounted loosely in said bar and engaging said groove, and intermediate connecting mechanism connecting said bar and the operating lever, whereby the bar is actuated by the movements of the operating lever, all substantially as and for the purpose set forth.

543,510. APPARATUS FOR PRINTING CARPET-YARNS. WILLIAM SHAW, Brooklyn, N. Y. Filed Aug. 27, 1894. Serial No. 521,409. (No model.)



Claim.—1. In an apparatus for printing carpet yarns in combination with a yarn drum, a distributing wheel, a roller and a rubber adjusted to follow in the path of the roller, having its upper surface sloping downward to the periphery of the roller, and means for holding the roller and the rubber against the yarn and the end of the slope against the roller, substantially as set forth.

2. In an apparatus for printing carpet yarns, in combination with a yarn drum, a distributing wheel, a roller, and a sloping rubber extending from the periphery of the roller upward and outward and springs for holding roller and rubber against the yarn, substantially as set forth.

3. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel and an equalizer constructed as a two armed blade with a substantially vertical drainage channel between the inner surfaces of the arms, and a tongue sloping from its heel toward or to such roller, and having its slope widening toward the roller, substantially as set forth.

4. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, and an equalizer constructed as a two armed blade with a substantially vertical drainage channel between the inner surfaces of the arms, a roller inserted between its arms and a sloping tongue extending forward from the heel of the equalizer to the periphery of such roller, substantially as set forth.

5. In an apparatus for printing carpet yarns, in combination with the yarn drum, an appliance for forcing the coloring matter into the yarn mounted on a leaf spring an adjustable support carrying said spring, and means for varying the extreme elevation of such spring with reference to said support, substantially as set forth.

6. In an apparatus for printing carpet yarns, in combination with the yarn drum, an appliance for forcing the coloring matter into the yarn, a leaf spring fixedly supported near its end and supporting said appliance, and a set screw for adjusting the tension of said spring, and resting against it between its fixed and its free end substantially as set forth.

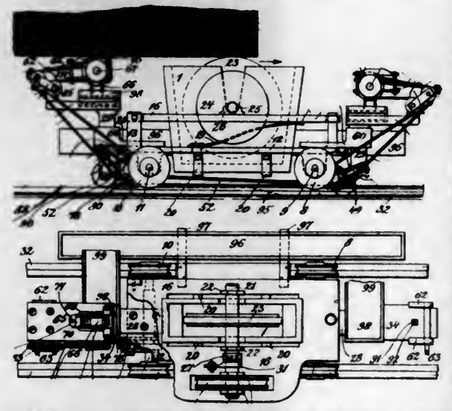
7. In an apparatus for printing carpet yarns, in combination with the yarn drum, a color distributer, and a device for forcing the coloring matter into the yarn mounted on an adjustable support, a guide for directing said support upward and downward, a movable rail on which said support rides, a pulley, and mechanism for converting revolving motion of the same into lateral motion of said rail, substantially as set forth.

8. In an apparatus for printing carpet yarns, in combination with the yarn drum, a color distributer and a device for forcing the coloring matter into the yarn mounted on an adjustable support, a guide for directing said support upward and downward, a movable rail on which said support rides, a bar adjusted to move longitudinally parallel with the position of said rail and mechanism for converting such movement of said bar into lateral movement of the rail, substantially as set forth.

9. In an apparatus for printing carpet yarns, in combination with the yarn drum, a color distributer, and a device for forcing the coloring matter into the yarn mounted on an adjustable support, a guide for directing said support upward and downward, a movable rail on which said support rides, cam mechanism connected with said rail, and means for converting its motion into movement of said rail, substantially as set forth.

10. In an apparatus for printing carpet yarns, in combination with the yarn drum, a color distributer, and a device for forcing the coloring matter into the yarn mounted on an adjustable support, a guide for directing said support upward and downward, a movable rail on which said support rides, a cam wheel, shoes engaging therewith at different points, and connections between said shoes and said rail whereby said rail may be moved alternately in opposite directions, substantially as set forth.

543,511. APPARATUS FOR PRINTING CARPET-YARNS. WILLIAM SHAW, Brooklyn, and FRANK TROMBLEY, Yonkers, N. Y. Filed Sept. 5, 1894. Serial No. 522,193. (No model.)



Claim.—1. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, a pressure roller mounted on a leaf spring, and a rubber actuated by a spring or springs mounted on said leaf spring, substantially as set forth.

2. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, a pressure roller mounted on a leaf spring means for adjusting the tension of said spring, and a rubber actuated by a spring or springs mounted on said leaf spring, substantially as set forth.

3. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, a pressure roller and an equalizing rubber, roller and rubber being both mounted on the same leaf spring, substantially as set forth.

4. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, and a pressure roller in the rear of such wheel and having its axle placed under a slight angle to the axle of said wheel, substantially as set forth.

5. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, and two pressure rollers, one placed in front and the other in the rear of said wheel, the axles of both of said rollers being placed under slight angles to the axle of the color wheel in vertical planes intersecting on that side of the color wheel from which the unprinted yarn is turned toward it, substantially as set forth.

6. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, an equalizer constructed as a two armed blade with a substantially vertical drainage channel between said arms, a roller for forcing the coloring matter into the yarn placed within said channel, appliances for raising and lowering said roller and means for revolving such roller when in its lowered position, substantially as set forth.

7. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel mounted on the color carriage, a pressure roller for forcing the coloring matter into the yarn and means for imparting revolving motion of one of the carriage wheels to such roller, substantially as set forth.

8. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, a pressure device adjusted to follow in the path of said wheel and an independent spring or springs near the forward end and other such spring or springs near the rear end of said device for forcing it against the yarn, substantially as set forth.

9. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, an equalizer adjusted to follow in the path of said wheel, and independent springs placed in the rear and also to both sides of the same, substantially as set forth.

10. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel mounted on the color carriage, a pressure roller for forcing the coloring matter into the yarn, adjusted to be raised and lowered, a chain or rope for imparting revolving motion to such roller from a roller or axle of fixed elevation, and means for tightening such chain or rope automatically while the roller is either in its elevated or its lowered position, substantially as set forth.

11. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel mounted on the color carriage, a pressure roller for forcing the coloring matter into the yarn, adjusted to be raised and lowered, a chain or rope for imparting revolving motion to such roller from a roller or axle of fixed elevation, and one or more auxiliary or intermediate rollers mounted on undulating pivots for the purpose of holding the chain or rope tight, substantially as set forth.

12. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel mounted on the color carriage, a pressure roller for forcing the coloring matter into the yarn, adjusted to be raised and lowered, a chain or rope for imparting revolving motion to such roller from a roller or axle of fixed elevation, and one or more auxiliary rollers having their pivots mounted on gravity levers for the purpose of holding the chain tight, substantially as set forth.

13. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, a pressure roller, a pulley for revolving it, both mounted on a leaf spring and a rope or chain for revolving said pulley and extending from the same substantially in the direction of the leaf spring, all as set forth.

14. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, a roller for forcing the coloring matter into the yarn and a spring actuated cleaner for such roller, and means for withdrawing the cleaner from the roller while the latter is in operation, substantially as set forth.

15. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, a pressure roller and a cleaning device for such roller, and means for intermittingly holding such cleaner in contact with the periphery and sides of the roller, substantially as set forth.

16. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, a pressure roller, means for revolving the same while the wheel is traveling in either direction, a cleaner and means for holding said cleaner in contact with the periphery and sides while the roller is not in contact with the arm, and in contact with the sides only when such roller is in contact with the yarn, substantially as set forth.

17. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, a roller, means for revolving the same in both directions, and two cleaners comprising blades held in contact with both sides of the roller at different points of its periphery, substantially as set forth.

18. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, an equalizer and a roller each mounted on a suitable frame, such frames movable with reference to each other, one of the frames being guided by the other, substantially as set forth.

19. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, an equalizer, and a roller mounted between its arms, and means for imparting peripheral velocity to the roller greater than the speed of the arms of the equalizer, substantially as set forth.

20. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, a color box for feeding said wheel, a device for removing surplus coloring matter from the yarn, a receiving trough placed sidewise therefrom and a lateral spout for discharging such surplus color into said trough, substantially as set forth.

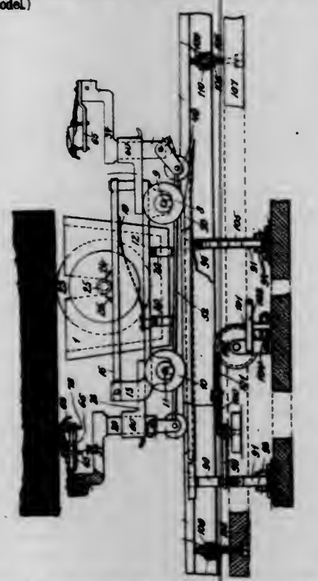
21. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, a color box for feeding the same, devices for removing surplus coloring matter from the yarn, placed in front and in the rear of the wheel and an independent receptacle for said surplus color mounted on the carriage, substantially as set forth.

22. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, a color box for feeding said wheel, a device for removing surplus coloring matter from the yarn, means for raising and lowering said device, and a color receptacle adjusted to be raised and lowered with aforesaid color removing device, substantially as set forth.

23. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, a color box for feeding said

wheel, devices for removing surplus coloring matter from the yarn placed in front and in the rear of said wheel, means for raising and lowering said color removing devices, receptacles adjusted to be raised and lowered with the same and provided with proper spouts or discharge outlets, and a joint receptacle into which they discharge, substantially as set forth.

543,512. APPARATUS FOR PRINTING CARPET-YARNS. WILLIAM SHAW, Brooklyn, N. Y. Filed May 3, 1895. Serial No. 548,273. (No model.)



Claim.—1. In an apparatus for printing carpet yarns, in combination with a yarn drum, a distributing wheel and two rubbers having their operative portions non elastic and adjusted to simultaneously slide in the path of the wheel one behind the other, and independent means for holding each of said rubbers in contact with the yarn, substantially as set forth.

2. In an apparatus for printing carpet yarns, in combination with a yarn drum, a distributing wheel, an equalizer constructed as a two armed blade with proper cross connection and having its arms extending along and outside of the path of the wheel and a rubber inserted between said arms and having a depression on its upper surface, substantially as set forth.

3. In an apparatus for printing carpet yarns, in combination with a yarn drum, a distributing wheel, an equalizer consisting of a heel and a two armed blade and provided with a tongue sloping from its heel toward the distributing wheel and an independent rubber inserted between said arms and provided with a depression on its upper surface, substantially as set forth.

4. In an apparatus for printing carpet yarns, in combination with a yarn drum, a distributing wheel and a rubber having an elongated operative surface extending parallel with and along the drum a stationary rigid platform, guide bolts passing through the rubber near its forward and near its rear end and adjusted to play in suitable holes in said platform and springs for actuating said rubber, substantially as set forth.

5. In an apparatus for printing carpet yarns, in combination with a yarn drum, a distributing wheel and a rubber, having an elongated operative surface extending along the yarn drum independent leaf springs supporting the forward and the rear end of the rubber, a rigid platform on which said springs are mounted, guide bolts passing through said springs and the platform, and connected with the rubber, substantially as set forth.

6. In an apparatus for printing carpet yarns, in combination with a yarn drum, a distributing wheel and two rubbers each actuated by independent springs, a platform, and guide bolts adjusted to play within suitable holes therein and serving for the rubbers jointly, substantially as set forth.

7. In an apparatus for printing carpet yarns, in combination with a yarn drum, a distributing wheel and an equalizer comprising two longitudinal arms having the portions nearest the distributing wheel which carry their operative edges, terminate at substantially the same distances from said wheel and a cross connection, and a rubber extending laterally from said equalizer and beyond the path of its broadest portion and provided with an operative surface of substantially the same elevation as that of said cross connection, all substantially as set forth.

8. In an apparatus for printing carpet yarns, in combination with a yarn drum, a distributing wheel and an equalizer, comprising two longitudinal arms and a cross connection, the portions of the arms nearest the distributing wheel which carry their operative edges, terminating at substantially the same distances from said wheel an arm extending laterally from said equalizer and beyond the path of said portions of the arms and provided with a narrow, rounding, upper edge, substantially as set forth.

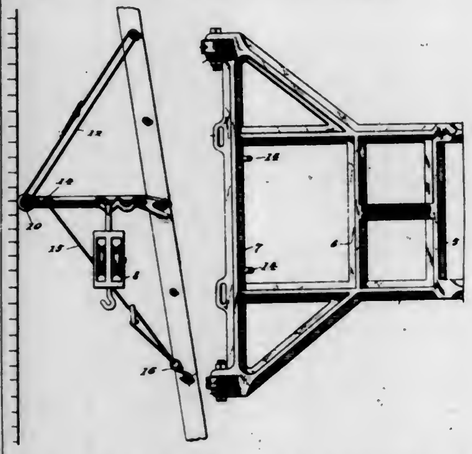
9. In an apparatus for printing carpet yarns, in combination with a yarn drum and a distributing wheel, an equalizer comprising two longitudinal bars and a suitable cross connection, and provided with an apron at its forward end and extending between said longitudinal bars, said apron curving downward and toward the distributing wheel, for the purpose of gradually guiding the equalizer underneath said drum substantially as set forth.

10. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, an equalizer comprising two longitudinal arms and a cross connection and a sliding rubber inserted between said portions of the equalizer and having its upper outer edges correspond substantially with the upper and inner edges of the arms and cross connection of the equalizer, said rubber being capable of vertical displacement with reference to the equalizer, substantially as set forth.

11. In an apparatus for printing carpet yarns, in combination with the yarn drum, a distributing wheel, an equalizer comprising two longitudinal arms and a cross connection and an independent sliding rubber inserted between said portions of said equalizer and having its upper outer edges correspond substantially with the upper and inner edges of the equalizer, the walls of the equalizer and the rubber underneath said edges being made to recede from each other, substantially as set forth.

12. In an apparatus for printing carpet yarns, in combination with the color carriage and its track, rubbing devices on suitable supports, a rail on which the same travel mounted on a hinged support, bell crank mechanism 98, 99, 100, pulley 102, rope or chain 101 and treadle 103, substantially as set forth.

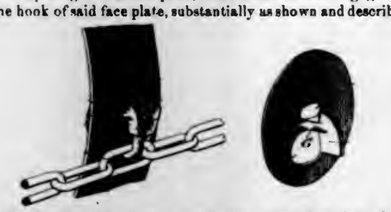
543,513. STAGING-SUPPORT. ROBERT W. SOMERS, Fremont, Nebr. Filed Dec. 8, 1894. Serial No. 531,248. (No model.)



Claim.—A staging support adapted to be applied to a ladder of ordinary construction, consisting of a frame having side bars and cross bars, the side bars being formed with bifurcated ends to engage with one of the rungs of the ladder and the forward cross bar thereof being extended out beyond the side bars and having rollers mounted therein, looped extensions on the said cross bar, straps engaging said looped extensions and one of the rungs of the ladder, hooks projecting from the edge of said cross bar, and guy ropes passing around said hooks and connecting with one of the lower rungs of the ladder, substantially as and for the purpose described.

543,514. BACK-BAND HOOK. LORENZO STOWE, Rome, Tenn. Filed May 16, 1895. Serial No. 549,567. (No model.)

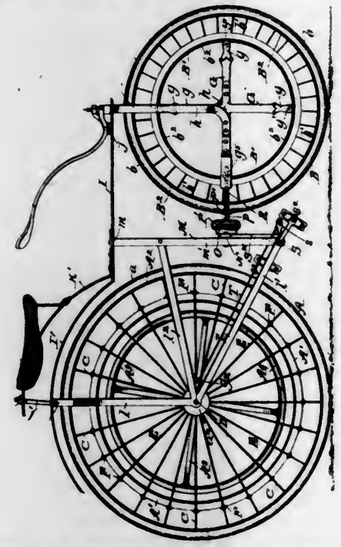
Claim.—1. In a backband hook, the combination with the face plate, having a hook within its outer edge, upon its forward face, and provided with means upon its rear face for connection with the backband, said face plate having an elongated opening at its center, of a back plate having a forwardly projecting shank, and the head, carried by said shank, which head is adapted to be passed through the elongated opening of the face plate, and be turned into engagement with the hook of said face plate, substantially as shown and described.



2. In a backband hook, the combination with a face plate, skeleton in form, and comprising an outer rim and the central cross-bar, said cross bar having an elongated opening formed therein, a hook formed upon the outer rim, the rear face of said face plate being provided with a series of prongs, of the back plate having a forwardly projecting shank having a head adapted to pass through the elongated opening in the face plate, and to be turned opposite the hook carried by said plate, the back plate having openings therein, to facilitate the manipulation of said plate, substantially as shown and described.

3. The combination with the back band, of the face plate, having a hook, and the elongated opening said face plate having prongs upon its inner side, adapted to engage the back band, and the back plate, having a central shank, and the head carried by said shank, substantially as shown and described.

543,515. BICYCLE. GEORGE R. THOMAS, Durango, Colo. Filed Feb. 7, 1894. Renewed Feb. 15, 1895. Serial No. 538,494. (No model.)



Claim.—1. In a bicycle, the combination with the main wheel, and frame, and a transverse horizontal guide held in front of the rear wheel, of the steering head, and frame, the front wheel journaled thereon, and a spring actuated roller, and holding frame, secured on the steering frame and adapted to engage the aforesaid guide, all substantially as shown and described.

2. An improved bicycle, consisting of a main frame, including a spring bar or seat rest, said main frame having front and rear yoke portions, the main wheel journaled in the rear yoke portion, having its axle formed with crank portions, the pedal axle journaled in the lower end of the front yoke portion having crank portions, connected by pitmen with the main axle cranks, a horizontal guide on such front yoke, a steering head, a supporting bar connecting such head and main frame, a front yoke frame connected to such head, a front wheel journaled in such front yoke frame, said frame having a yielding presser portion engaging the horizontal guide all arranged substantially as shown and for the purposes described.

543,516. OBSTETRIC BED-PAN. JOHN W. VAUGHN, Los Angeles, Cal. Filed Feb. 13, 1892. Serial No. 421,371 (No model.)



Claim.—A bed pan of oblate pyriform horizontal section, flat bottom and sloping concave oblate pyriform top, narrower at front than back and having its greatest depth at the narrower front end, and having its top broad at the rear portion and formed at its broad rear portion into the seat-piece *e*, and provided in its neck or narrower forward portion with the oblate pyriform opening F, having its base at the rear of and wholly in the neck of the pan.

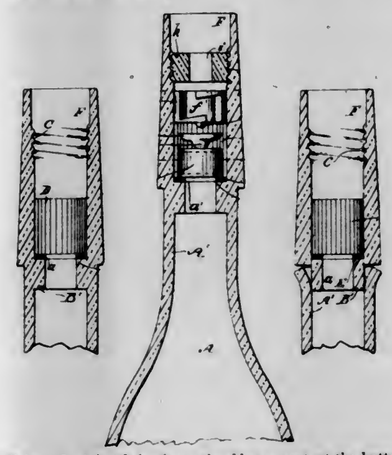
543,517. CORN-CUTTER. LOREN M. WEAVER, Bethel, Mich. Filed Oct. 26, 1894. Serial No. 527,073. (No model.)



Claim.—1. In a corn cutter, a flat platform provided at one side with a wheel spindle, a side running wheel mounted on the wheel spindle, a single slide runner attached to the platform opposite the wheel, said single slide runner being sufficiently long to extend a distance in front and in rear of the platform and thereby disposing the wheel at a point intermediate between the ends of the runner, a cutting knife attached to the platform and extending across the space between the wheel and the runner, and a draft attachment connected with the front end of the runner, substantially as set forth.

2. In a corn cutter, a flat platform provided at one side with an offstanding wheel spindle, a pair of longitudinally disposed flanges projected from its under side near the side edge opposite the wheel spindle, and with an inclined front edge, a side running wheel mounted on the spindle, a single slide runner attached to the under side of the platform between the flanges thereof and of a greater length than the platform, an inclined cutting knife arranged at the inclined front edge of the platform, metal facing strips arranged on the upper and lower sides of the platform at the inclined front edge, and bolts passed through the platform, knife, and facing strips, substantially as set forth.

543,518. BOTTLE. ROSS E. YERBY, Brooklyn, N. Y., assignor of nine-twentieths to John Cottier, same place. Filed Mar. 20, 1894. Serial No. 504,356. (No model.)

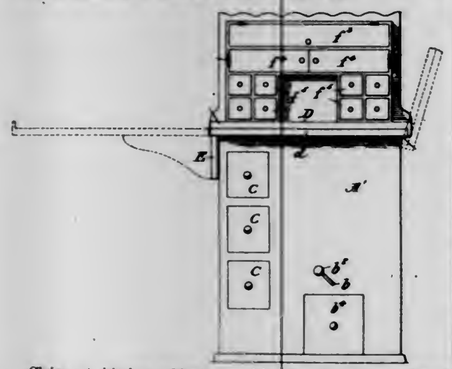


Claim.—1. A bottle having a shoulder or seat at the bottom of its neck, a protector in said neck, a valve in said neck, between said shoulder and protector, a disk above said valve, having a central rounded protuberance upon its under face, serving as a weight to tilt said disk and resting upon the valve, whereby upon laying the bottle longitudinally said disk will wedge between said valve and said protector, substantially as described

2. A bottle having a shoulder or seat at the bottom of its neck and provided with vertical grooves formed therein above the seat, a hollow cylindrical valve fitting substantially snugly and sliding longitudinally only in the grooved portion of the neck, a flat disk having a central rounded protuberance upon its under face serving as a weight to tilt said disk, a plug secured in the neck above the said disk having sinuous ports in its periphery, and a central projection thereon which stops the disk when the bottle is wholly or partially inverted.

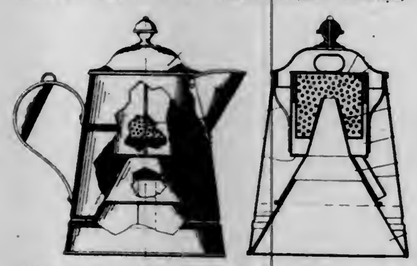
3. The combination, with a bottle, of an auxiliary neck of similar width therewith, and having a reduced tubular depending portion permanently secured therein and forming an annular shoulder or seat, said auxiliary neck having a series of closely adjacent vertical grooves therein, a plug secured in the said neck above the grooves having sinuous ports in its periphery, a hollow air-tight cylindrical flat-edged valve sliding in the neck longitudinally only, between the shoulder and the plug, and a disk having a depending central protuberance resting on the valve, said protuberance acting as a weight to cause said disk to tilt.

543,519. KITCHEN-CABINET. WESLEY A. YOUNG, Jefferson, Iowa. Filed Mar. 20, 1895. Serial No. 542,502. (No model.)



Claim.—A kitchen cabinet comprising a main portion, a board forming the top of the main portion, the board being composed of two sections, the lower section being hinged to the main portion at one end, and the upper section being hinged to the lower section at the opposite end to that at which the lower section is connected to the main portion and being provided at its free end with an overhanging flange, and an arm pivotally connected to the main portion and adapted to support the board when extended, whereby a cover for the main portion, and a mold board having its face protected from dirt, &c., when not in use, is provided, substantially as described.

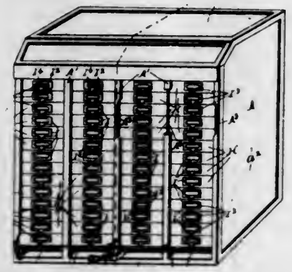
543,520. COFFEE-POT CONSTRUCTION. WILLIAM BLANKNER, Aurora, Ill. Filed Dec. 1, 1894. Serial No. 530,552. (No model.)



Claim.—1. In a coffee pot construction the combination with the external coffee pot case *a*, of a cup or casing *d* suspended in the upper portion thereof, a funnel shaped casing projecting within said cup and depending therefrom as described, a perforated cup casing having a central conical sheath projecting therein and adapted to fit over the upper portion of said funnel shaped casing *e*, a spout leading from the casing *d* to the interior of the casing *a* and a lid *h* adapted to cover both the casings *d* and *g*, substantially as and for the purpose specified.

2. In a coffee-pot construction the combination with the external casing *a*, of a substantially cup shaped casing *d* suspended in the upper portion thereof, a funnel shaped casing partially within and partially without the case *d* as described, a perforated casing *g* contained within the casing *d* and having its bottom portion fitting about the upper portion of the casing *e*, an outlet spout *k* connecting the interior of the casing *d* with the interior of the casing *a*, a detachable lid covering both the casings *d* and *g* and a conical band *c* arranged as described in the lower portion of the external casing over which the lower portion of the casing *e* is adapted to fit, substantially as and for the purpose specified.

543,521. FILE. JOHN F. CUNNINGHAM, Rochester, N. Y. Filed Oct. 30, 1894. Serial No. 527,453. (No model.)



Claim.—1. A file comprising an outer case, a support or partition arranged within the case, in a substantially horizontal plane and having its front extremity pivoted and its rear extremity movable up and down within the case, and means for rocking the support or partition on its pivot, substantially as and for the purpose specified.

2. A file comprising an outer case, a pivoted support or partition arranged within the case, means for rocking the support or partition on its pivot, and a vertically reciprocating panel or cover supported in front of the support or partition and movable independent thereof for permitting access to said support or partition, substantially as and for the purpose set forth.

3. A file comprising an outer case, a support or partition arranged within the case in a substantially horizontal plane and having its front extremity pivoted and its rear extremity movable up and down within the case, means for rocking the support or partition on its pivot, and a vertically reciprocating panel or cover supported in front of the support or partition and movable independent thereof for permitting access to said support or partition, substantially as and for the purpose described.

4. A file comprising an outer case, a series of supports or partitions arranged normally in substantially horizontal planes one above the other, a connection between the supports or partitions for simultaneously inclining the same, and means for operating the connection, substantially as and for the purpose described.

5. A file comprising an outer case, a series of pivoted supports or partitions arranged within the case one above the other, a connection between the free ends of the supports or partitions for simultaneously rocking the same on their pivots, and means for operating the connection, substantially as set forth.

6. A file comprising an outer case, a substantially horizontal support or partition arranged within the case, a vertically reciprocating panel or cover supported in front of the support or partition and movable independent thereof for permitting access to the support or partition, and means for inclining said support or partition and automatically moving the panel or cover, substantially as described.

7. A file comprising an outer case, a substantially horizontal support or partition arranged within the case, a movable panel or cover for permitting access to the support or partition, a movable support for the panel or cover, and means for inclining said support or partition and automatically moving the support for the panel or cover, substantially as specified.

8. A file comprising an outer case, separate substantially parallel series of supports or partitions arranged within the case, connections between the supports or partitions of each series, and means for simultaneously operating the connections, substantially as described.

9. A file comprising an outer case, a substantially horizontal support or partition arranged within the case, means for inclining the support or partition, and a spring for regulating the return movement of the support or partition, substantially as and for the purpose set forth.

10. A file comprising an outer case, a substantially horizontal support or partition arranged within the case, a movable panel or cover for permitting access to the support or partition, a movable support for the panel or cover, means for inclining said support or partition and automatically moving the support for the panel or cover, and a spring for regulating the return movement of said means, substantially as described.

11. A file comprising an outer case, a support or partition arranged within the case, in a substantially horizontal plane and having its front extremity pivoted and its rear extremity movable up and down within the case, means for inclining the support or partition, and a stop for holding said support or partition in its inclined position, substantially as specified.

12. A file comprising an outer case, a substantially horizontal support or partition arranged within the case, means for inclining the support or partition, a stop for holding said support or partition in its inclined position, and means for forcing the stop from its operative position, substantially as set forth.

13. A file comprising an outer case, a substantially horizontal support or partition arranged within the case, means for inclining the support or partition, and a vertically reciprocating panel or cover supported in front of the support or partition and movable independent thereof for permitting access to said support or partition, said panel or cover being provided with a distinguishing character, substantially as and for the purpose described.

14. A file comprising an outer case, a substantially horizontal support or partition arranged within the case, means for inclining the support or partition, a vertically reciprocating panel or cover supported in front of the support or partition and movable independent thereof for permitting access to the support or partition, and a label holder secured to the panel or cover, substantially as described.

15. A file comprising an outer case, a substantially horizontal support or partition arranged within the case, means for inclining the support or partition, a vertically reciprocating panel or cover supported in front of the support or partition and movable independent thereof for permitting access to the support or partition, a label holder secured to the panel or cover, and a label removably mounted in the label holder, substantially as specified.

16. A file comprising an outer case, a substantially horizontal support or partition arranged within the case, means for inclining the support or partition, a vertically reciprocating panel or cover supported in front of the support or partition and movable independent thereof for permitting access to the support or partition, and a label holder secured to the panel or cover and consisting of a perforated plate having supporting shoulders and projecting arms passed through the panel or cover, substantially as and for the purpose described.

17. A file comprising an outer case, a support or partition arranged within the case, in a substantially horizontal plane and having its front extremity pivoted and its rear extremity movable up and down within the case and a pivoted lever connected to the rear extremity of the support or partition for inclining the same, substantially as and for the purpose specified.

18. A file comprising an outer case, a pivoted support or partition arranged within the case, a connection or link hinged to the free extremity of the support or partition, and a pivoted lever connected to the connection or link for actuating the same and inclining the support or partition, substantially as and for the purpose described.

19. A file comprising an outer case, a pivoted support or partition arranged within the case, a connection or link hinged to the free extremity of the support or partition, a pivoted lever hinged to the connection or link for actuating the same and inclining the support or partition, and a pivoted stop for preventing the return movement of the lever, substantially as and for the purpose specified.

20. A file comprising an outer case, a pivoted support or partition arranged within the case, a connection or link hinged to the free extremity of the support or partition, a pivoted lever hinged to the connection or link for actuating the same and inclining the support or partition, and a spring for regulating the return movement of the lever, substantially as and for the purpose set forth.

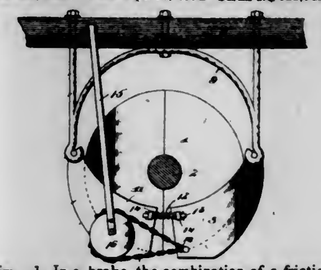
21. A file comprising an outer case, a pivoted support or partition arranged within the case, a connection or link hinged to the free extremity of the support or partition, a pivoted lever connected to said connection or link for actuating the same and inclining the support or partition, a pivoted stop for preventing the return movement of the lever, and a spring for regulating the return movement of the lever, substantially as set forth.

22. A file comprising an outer case, a pivoted support or partition arranged within the case, a connection or link hinged to the free extremity of the support or partition, a pivoted lever connected to said connection or link for actuating the same and inclining the support or partition, a pivoted stop for preventing the return movement of the lever, and a sliding rod for forcing the stop from operative position, substantially as described.

23. A file comprising an outer case, a pivoted support or partition arranged within the case, a movable panel or cover for permitting access to the support or partition, a support for the panel or cover arranged beneath the same, a connection or link hinged to the support or partition, and a pivoted lever having one end connected to the connection or link for actuating the same and inclining the support or partition and its other end arranged beneath the support for the panel or cover for automatically moving said panel or cover, substantially as specified.

24. A file comprising an outer case, a pivoted support or partition arranged within the case, a movable panel or cover for permitting access to the support or partition, a support for the panel or cover arranged beneath the same, a connection or link hinged to the support or partition, a pivoted lever having one end connected to the connection or link for actuating the same and inclining the support or partition and its other end arranged beneath the support for the panel or cover for automatically moving said panel or cover, a pivoted stop for preventing the return movement of the lever, a spring for regulating the return movement of the lever, and means for forcing said stop from operative position, substantially as and for the purpose described.

543,522. BRAKE FOR RAILWAY-CARS. ROWAN T. F. DODDS, Louisville, Ohio. Filed Sept. 10, 1894. Serial No. 522,643. (No model.)



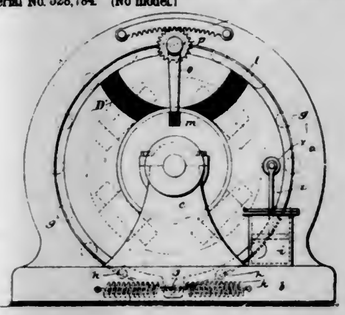
Claim.—1. In a brake, the combination of a friction wheel designed to be mounted on an axle, the opposite brake-shoes arranged in advance and in rear of the wheel and adapted to engage the same, a lever fulcrumed on one of the shoes and provided with a circular head, and a chain connected with the other shoe and arranged to be wound on the head of the lever, whereby the brake-shoes are forced into contact with the wheel, substantially as described.

2. In a brake, the combination of a friction wheel designed to be fixed to an axle, the opposite segmental shoes arranged to engage the wheel, a lever fulcrumed on one of the shoes and provided with a circular head, and upper and lower chains connected with the other shoe and arranged on the upper and lower sides of the head of the lever, whereby the brake-shoes will be applied when the lever is swung in either direction, substantially as described.

3. In a brake, the combination of a friction wheel designed to be fixed to a car-axle, a depending hanger having an arched portion located over the wheel, and vertical sides connected with the terminals of the arched portion, segmental brake-shoes pivotally connected with the sides of the hanger and arranged at the bottom of the wheel, a spring for holding the brake-shoes normally off the wheel and connected with their adjacent ends, a lever fulcrumed on one of the brake-shoes and provided with a circular head, and the upper and lower chains arranged on opposite edges of the circular head and connected with the other brake-shoe, substantially as and for the purpose described.

4. In a brake, the combination of a friction wheel designed to be fixed to an axle, a hanger, the segmental brake shoes pivoted at their upper ends to the hanger and depending therefrom and provided at one side of the friction wheel with flanges, a spring connection between the lower ends of the shoes, and mechanism mounted on the free ends of the shoes and located below the spring connection and adapted to force the shoes into contact with the friction wheel, substantially as described.

543,523. STARTING OR STOPPING DEVICE FOR ELECTRIC MOTORS. JONATHAN P. B. FISKE, Alliance, Ohio. Filed Nov. 14, 1894. Serial No. 528,784. (No model.)



Claim.—1. The combination with a fixed motor frame, of a movable field magnet frame, a rheostat, a contact shoe, and connections between said shoe and frames, whereby the torque of the movable field magnet frame will automatically operate said shoe and cause it to pass over the contacts of the rheostat, substantially as set forth.

2. The combination with a fixed motor frame, and a movable field magnet frame within the fixed frame, of antifriction devices between said frames, a resistance device, a contact shoe adapted to pass over the contacts of said resistance coil, a contact lever carrying said shoe and pivoted to one of said frames, a rack bar secured to the other frame, and a pinion adapted to move with said contact lever and concentric with the pivot thereof, said pinion being adapted to mesh with said rack bar, whereby the torque of the movable field magnet frame will cause motion to be transmitted to said contact shoe, substantially as set forth.

3. The combination with a fixed frame of a motor, and a movable frame within the fixed frame, recesses in said frames for the reception of balls located between the frames, devices for controlling the starting and stopping of the motor, and connections between said devices and the movable frame, substantially as set forth.

4. The combination with a fixed motor frame, of a movable field magnet frame bearing such relation to the fixed frame as to permit the passage of lines of force to the latter, antifriction bearings between said frames, devices for controlling the starting and stopping of the motor, and connections between the movable frame and said devices, substantially as set forth.

5. The combination with a fixed motor frame, of a movable field magnet frame located within the fixed frame, stops to limit the movement of said movable field magnet frame, springs connected with the movable frame and adapted to maintain it in a normal position when the motor is not running, devices for controlling the starting and stopping of the motor, and connections between the movable field magnet frame and said devices, substantially as set forth.

6. The combination with a fixed frame of a motor, and a movable field magnet frame within the fixed frame, means for limiting the movement of said movable frame, a device for controlling and cushioning the movement of said movable frame, devices for controlling the starting and stopping of the motor, and connections between the movable field magnet frame and said devices, substantially as set forth.

7. The combination with a fixed motor-frame having a recessed inner face, and a movable field magnet frame within the fixed frame and having a recess in its periphery, of a cage within said recess, balls within said cage bearing on the respective frames, devices for controlling the starting and stopping of the motor, and connections between said devices and the movable field magnet frame, substantially as set forth.

8. The combination with an electric machine having a revoluble member and a member capable of oscillating, of a brake wheel carried by the revoluble member, a brake band or shoe cooperating with said brake wheel, a rock shaft connected with said brake band or shoe, a projection on the oscillatory member of the machine and an arm connected with the rock shaft and adapted to be engaged by said projection, whereby to automatically release the brake band or shoe, substantially as set forth.

9. The combination with an electric motor having a rotary member and an oscillatory member, a brake wheel on the rotary member and a brake band or shoe cooperating with said brake wheel, of a rock shaft connected with said brake band, connections intermediate of said rock shaft and the oscillatory member of the motor, and a cushioning device connected with said shaft, substantially as set forth.

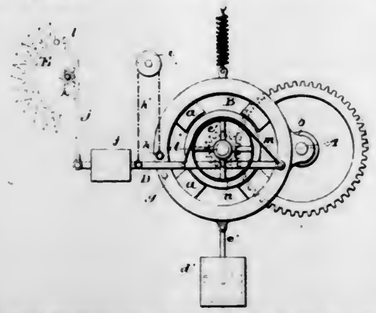
10. The combination with an electric motor having a rotary member and an oscillatory member, a brake wheel on the rotary member and a brake band or shoe cooperating with said brake wheel, of a rock shaft connected with said brake band, a projection on said oscillatory member of the motor and an arm connected with the rock shaft and adapted to be moved by said projection, whereby to release the brake, substantially as set forth.

11. The combination with an electric motor having a rotary member and an oscillatory member, a brake wheel carried by said rotary member and a brake band or shoe on said brake wheel, of a rock shaft connected with said brake band or shoe, a projection on the oscillatory member, an arm connected to the rock shaft and adapted to be operated by said projection to release the brake, and a weighted lever connected with said rock shaft, substantially as set forth.

543,524. DEVICE FOR AUTOMATICALLY OPERATING BRAKES AND RHEOSTATS. JONATHAN P. B. FISKE, Alliance, Ohio. Filed Dec. 6, 1894. Serial No. 531,046. (No model.)

Claim.—1. The combination with an electric motor constructed and adapted to move bodily in response to the increase or decrease of the amount of load put upon it, of starting and stopping devices connected with said motor and operated by said movements thereof, substantially as set forth.

2. The combination with a driven shaft, of an electric motor geared therewith and supported in such manner as to be capable of a movement bodily when the amount of the load on the driven shaft increases or decreases, and starting and stopping devices connected with said motor and operated by the said movements thereof, substantially as set forth.



3. The combination with a driven shaft, of a motor pivotally connected thereto, said motor being so geared to the shaft as to have a movement bodily relatively thereto when the load on the driven shaft increases or decreases, and starting and stopping devices connected with said motor and operated by the said movements thereof, substantially as set forth.

4. The combination with a driven shaft and a gear wheel secured thereto, of a motor pivotally connected with the shaft, a pinion on the driving member of said motor meshing with said gear wheel so that when the load on the driven shaft increases the pinion will tend to ride on the periphery of the gear wheel, and starting and stopping devices connected with said motor and operated by the movements thereof, substantially as set forth.

5. The combination with a driven shaft and a gear wheel secured thereto, of an electric motor pivotally connected to the shaft, a pinion carried by the armature of said electric motor and meshing with said gear wheel so that when the load on the driven shaft increases or decreases the pinion will tend to ride on the periphery of the gear wheel, whereby to cause the motor to have a movement on its pivotal connection with the shaft, and a brake and a rheostat connected with said motor so as to be operated by the said movements thereof, substantially as set forth.

6. The combination with a driven shaft, of a motor geared therewith and so mounted as to have a movement bodily in two directions in accordance with the increase or decrease of the load on the driven shaft and a brake and a rheostat connected with said motor and operated by the said movements thereof, substantially as set forth.

7. The combination with a driven shaft and a motor pivotally connected thereto, of a spring for counterbalancing the weight of said motor, gearing between said motor and shaft, and a brake connected with the motor and operated by the movements thereof on its pivotal connection with the driven shaft, substantially as set forth.

8. The combination with a driven shaft, a gear wheel thereon and an electric motor pivotally connected with said shaft, of a pinion on the armature shaft meshing with said gear wheel, a brake wheel carried by said armature shaft, and a friction device bearing on said brake wheel and connected with the motor in such manner that when the motor moves on its pivotal connection with the driven shaft, said friction device will be operated relatively to the brake wheel, substantially as set forth.

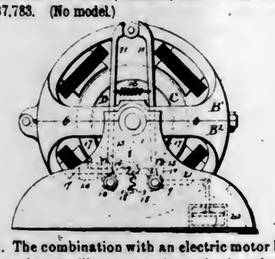
9. The combination with a driven shaft, and an electric motor pivotally connected thereto and geared therewith, of a brake wheel carried by the armature shaft, a pivoted lever, a brake band connected with the pivoted lever and bearing on the brake wheel, and devices carried by the motor whereby to operate said lever when the motor moves on its pivotal connection with the driven shaft, substantially as set forth.

10. The combination with a driven shaft, a motor pivotally connected at one side thereto and gearing between said shaft and motor, a spring for counterbalancing said motor, a dash pot to cushion the movement of the motor on its pivotal connection with the driven shaft, a brake wheel carried by the driving part of the motor, a pivoted lever, a brake band connected with said lever and bearing on said brake wheel, and devices connected with the motor for operating said lever to operate the brake when the motor moves on its pivotal connection with the driven shaft, substantially as set forth.

11. The combination with a driven shaft, of a motor having a lateral pivotal connection with said driven shaft, gearing between said motor and shaft, a brake wheel on the motor shaft, a pivoted lever a weight on said lever, a brake band connected with said lever and bearing on said brake wheel, a pulley, and a flexible device passing over said pulley and connected at its ends to the motor and lever respectively so that when the motor moves downwardly the lever will be raised, substantially as and for the purpose set forth.

12. The combination with a driven shaft, an electric motor pivotally connected thereto and gearing between said motor and shaft, of a brake wheel on the armature shaft, a pivoted lever, a brake band connected with said lever and bearing on the brake wheel, devices connected with the motor for causing said lever to move to release the brake when the motor moves on its connection with the driven shaft, a rheostat, a pinion carried by the contact brush of said rheostat, and a rack bar meshing with said pinion and connected with said pivoted lever, substantially as set forth.

543,525. ELECTRIC MOTOR AND BRAKE MECHANISM THEREFOR. JONATHAN P. B. FISKE, Alliance, Ohio. Filed Feb. 9, 1895. Serial No. 537,783. (No model.)



Claim.—1. The combination with an electric motor having a revoluble member and an oscillatory member, a brake wheel carried by the armature shaft and a brake band on said wheel, of two rock shafts, arms or eccentrics on said rock shafts and connected with the respective ends of the brake band, arms connected with said rock shafts, a projection on the oscillatory member and disposed between said last mentioned arms and intermeshing toothed segments secured to the respective rock-shafts, substantially as set forth.

2. The combination with an electric motor having a revoluble member and an oscillatory member, a brake wheel carried by the armature shaft, and a brake band on said wheel, of two rock shafts geared together and connected with the respective ends of the brake band, arms connected with said rock shaft, a projection on the oscillatory member and disposed between said arms, a weighted lever connected with one of said rock shafts and a dash pot connected with one of said rock shafts, substantially as set forth.

3. The combination with an electric motor having a revoluble member and an oscillatory member a brake wheel carried by the revoluble member, and a brake band on said wheel, of two rock shafts geared together, arms or eccentrics secured to said shafts and connected to the respective ends of the brake band, pins projecting from said arms or eccentrics, arms loosely connected to said rock shafts and adapted to engage said pins, and a projection from the oscillatory member of the motor and disposed between said last-mentioned arms, substantially as set forth.

4. The combination with an electric motor having a revoluble member and an oscillatory member, a brake wheel carried by the revoluble member and a brake band on the brake wheel, of two rock shafts, arms on said rock shafts connected to the respective ends of the brake band, intermeshing toothed segments on the respective shafts, a projection on the oscillatory member of the motor, arms connected to the rock shafts and having their free ends disposed at opposite sides of said projection and a weighted arm connected with one of said rock shafts, substantially as set forth.

5. The combination with a stationary frame, having journal bearings, of a field magnet frame, yokes projecting from the ends of said frame, hollow trunnions projecting from said yokes and mounted on said journal bearings, an armature and an armature shaft mounted in said hollow trunnions and yokes, substantially as set forth.

6. The combination with a stationary frame, of a field magnet frame, hollow yokes projecting from the ends of said field magnet frame, hollow trunnions projecting from said yokes, an armature and an armature shaft mounted in said hollow trunnions, substantially as set forth.

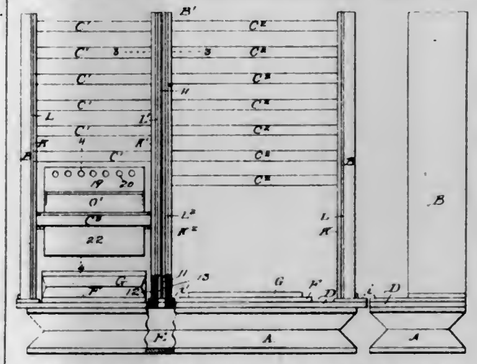
7. The combination with a stationary frame, of a field magnet frame made in two parts removably connected together, yokes projecting from said field magnet frame, trunnions projecting from said yokes and mounted in the stationary frame, an armature and an armature shaft mounted in said trunnions, substantially as set forth.

8. In an electric motor, the combination with a stationary frame, of a field magnet frame made in two parts removably secured together, yokes projecting from said field magnet frame, each yoke being made in two parts, the respective parts of the yoke projecting from the respective parts of the field magnet frame, and a connection between said yokes and the stationary frame.

9. The combination with the field magnet frame of an electric machine, of yokes projecting from the ends of said frame and trunnions from said yokes, substantially as set forth.

10. In an electric motor, the combination with a stationary frame, of a field magnet frame made in two parts removably secured together, yokes projecting from said field magnet frame, each yoke being made in two parts, the respective parts of the yokes projecting from the respective parts of the field magnet frame, and trunnions projecting from said yokes and mounted in the stationary frame, substantially as set forth.

543,526. ORGAN. LEVI K. FULLER, Brattleborough, Vt., assignor to the Estey Organ Company, same place. Filed Nov. 8, 1893. Serial No. 490,334. (No model.)



Claim.—1. Two wind conductors, and a wind-chest extending therebetween and communicating at opposite ends with said conductors respectively, said wind chest being divided into noncommunicating bass and treble sections, in combination with means separating said bass and treble sections, substantially as set forth.

2. Two wind conductors, and a wind chest extending therebetween and communicating at opposite ends with said conductors respectively, said wind chest being divided into bass and treble sections, in combination with a third or intermediate conductor between said bass and treble sections and communicating therewith, substantially as set forth.

3. Two wind conductors, and a wind chest extending therebetween and communicating at opposite ends with said wind conductors respectively, said wind chest being divided into bass and treble sections, in combination with a third or intermediate conductor between said bass and treble sections and having two independent air passages communicating with said bass and treble sections respectively, substantially as set forth.

4. Bass and treble wind chests, in combination with the bellows, and a conductor between said wind chests communicating with said bellows, said conductor having two independent and separated wind-passages communicating with said bass and treble wind chests respectively, substantially as set forth.

5. A horizontally-disposed bellows foundation, a bellows chamber therebeneath, two vertical wind conductors rising from said foundation and communicating with said bellows chamber, and a third or intermediate vertical conductor extending upward from said bellows foundation and having a vertically and longitudinally extending partition dividing the same into two independent air passages both of which communicate with the bellows chamber, in combination with a plurality of bass wind chests extending horizontally and communicating at opposite ends respectively with one of said main conductors and one of the air passages in said third or intermediate conductor, and a plurality of treble wind chests extending horizontally and communicating at opposite ends respectively with the other of said main conductors and the other air passage of said third or intermediate conductor, substantially as set forth.

6. The bellows, and the two main conductors and the third or intermediate conductor communicating therewith, in combination with exhausters for said bellows located on opposite sides of said third or intermediate conductor, substantially as set forth.

7. The horizontal bellows foundation, the bellows therebeneath, side main wind conductors and a third or intermediate conductor extending upwardly from the bellows foundation, bass wind chests extending between one of said main conductors and the third conductor and communicating with both, and treble wind chests extending between the other of said main conductors and the third conductor, in combination with a sub-bass mechanism located above the bellows and below the other bass wind chests, said sub-bass mechanism includ-

ing a wind chest communicating at opposite ends with the third conductor and the same main conductor with which the other bass wind chests communicate, substantially as set forth.

8. The combination of the horizontal wind-chest having communication with the bellows through its end or ends, the resonance chamber beneath the same, the vertically extending reed-set above the wind chest, the swell chamber above the reed set, the reed valves within the swell chamber and above the reed set, and the reinforcing chamber in front of the swell chamber, substantially as set forth.

9. The horizontal wind chest, the reed set upon and above the same, the swell chamber above the reed set, and a gravity-closing pivoted horizontal reed-valve within the swell chamber and on the air ingress side of the air duct leading to the corresponding reed, in combination with a vertically extending and movable action-rod, a pivoted swinging coupler supported upon and above the wind chest in front of the reed set, a vertically-movable tracker-pin supported in guides in front of the reed set, behind said coupler, and extending within the swell chamber beneath the reed valves, and a rock-shaft on said coupler extending from said action-rod to said tracker-pin, substantially as set forth.

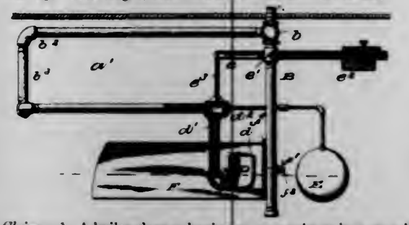
10. The sub-bass reed set, and the wind chest on the eduction side thereof, in combination with valves for said reed set on the induction side thereof, and operating and coupling mechanism for said valves wholly exterior to said reed-set, wind-chest, and the air passages therebetween, substantially as set forth.

11. The combination of the gravity-closing reed valve and the bearing therefor, said reed valve being pivoted between the cheeks of said bearing by an anti-friction pivot, substantially as set forth.

12. The wind-chest, the swell-chamber, and the reed-set between the wind-chest and swell-chamber, in combination with the reed-valves within the swell-chamber and on the induction side of the reed-set, and operating mechanism for said valves wholly exterior to the wind-chest and reed-set, substantially as set forth.

13. The horizontal wind-chest, the vertically-disposed reed-set mounted above and upon the rear end of said wind-chest, and the swell-chamber located above the reed-set and extending forward of the same, in combination with the reed-valves located within the swell-chamber on the induction side of the reed-set, a coupling mechanism mounted above and upon the wind-chest in front of the reed-set, and reed-valve-operating tracker-pins extending upwardly from the coupling mechanism through the overhanging bottom of the swell-chamber, substantially as set forth.

543,527. BOILER-CLEANER. CULBERSON S. GARRIGUS, Louisville, Ky. Filed Aug. 9, 1894. Serial No. 519,835. (No model.)



Claim.—1. A boiler cleaner having an approximately perpendicularly disposed skimmer cup open at its top and provided with a vertical slot at one side extending to near the bottom of said cup, an outlet pipe opening into one side of said cup on a line with the bottom thereof, and a guide extending beyond the slot in said cup substantially as set forth.

2. A boiler cleaner having an approximately perpendicularly disposed skimmer-cup open at its top and provided with a vertical slot in one side extending to near the bottom of said cup, an outlet pipe opening into one side of said cup on a line with the bottom thereof, a guide extending beyond the slot in said cup and a float connected to said outlet pipe for normally keeping the said slot in said cup on a line intersecting the water line in the boiler said float being located in rear of said guide, substantially as set forth.

3. A boiler cleaner having an approximately perpendicularly disposed skimmer-cup open at its top and provided with a vertical slot in one side extending to near the bottom of said cup, a series of outlet pipes having a movable or swinging member which opens into one side of said cup opposite said slot on a line with the bottom of the latter, and a float connected to said movable member for normally keeping the said slot in said cup on a line intersecting the water line in the boiler, substantially as set forth.

4. A boiler cleaner having an approximately perpendicularly disposed skimmer-cup open at its top and provided with a vertical slot in one side extending to near the bottom of said cup, a depending standard, an outlet pipe having a swinging member opening into one side of said cup on a line with the bottom thereof, a float connected to said swinging member, and a weighted lever fulcrumed on said standard and connected to said latter member, substantially as set forth.

5. In a boiler cleaner, an approximately perpendicularly disposed skimmer-cup having a slot in its rear side, an outlet pipe opening into said cup on a line with its bottom, a V-shaped guide having wings extended from the sides of the boiler to and beyond said slot in said cup, said slot facing the inner ends of said guide-wings, and a float in the rear of said inner ends of said guide wings connected to said outlet pipe, substantially as and for the purpose set forth.

6. In a boiler-cleaner, a skimmer-cup open at its top and having a vertical slot therein, means for automatically regulating the position of said cup according to the height of the water in the boiler, the V-shaped guide having divergent wings, said cup being at the vertex of said guide, with its slot facing the latter and means for adjusting said guide, substantially as set forth.

7. A boiler cleaner comprising a standard or support located within the boiler shell near that end thereof farthest from the fire, an approximately perpendicularly disposed skimmer-cup having a vertical slot therein, a V-shaped guide adjustably supported on said standard, said cup being located at or near the vertex of said guide, the series of outlet pipes having a swinging member connected to said cup, a float also connected to said swinging member and designed to be located beyond the vertex of said guide and between the latter and the adjacent end of the boiler, substantially as set forth.

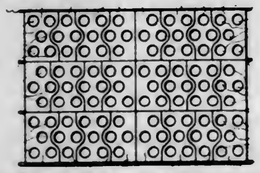
8. A boiler-cleaner, comprising a skimmer-cup supported within the boiler at the water-surface and having pipe communication leading outside of the boiler, a vertical standard supported within the boiler by the shell thereof, a hinge-piece supported by said standard and a pair of adjustable skimming-wings having their inner ends hinged to said hinge-piece and having their outer ends converging and extended to the sides of the shell, substantially as set forth.

9. A boiler cleaner, comprising a skimmer supported within the boiler at the surface of the water and having pipe communication leading to outside the boiler, a vertical standard rigidly supported within the boiler by the shell thereof, a hinge-piece secured to said standard and vertically adjustable thereon, and a pair of converging skimming-wings having their convergent ends pivoted to said hinge-piece and means for binding and holding said hinged ends of said wings, substantially as set forth.

10. A boiler-cleaner, comprising a vertical standard rigidly supported within the boiler by the shell thereof, a hinge-piece secured to said standard and vertically adjustable thereon, converging skimmer-wings having their convergent ends pivoted to said hinge piece, a slotted skimmer-cup disposed within the vertex of the angle formed by said skimmer-wings and presenting its slot toward said vertex, and a series of pipes connected to the lower portion of said skimmer-cup and extending outwardly through the wall of the boiler, substantially as set forth.

11. The herein-described improved boiler-cleaner, comprising a vertical standard rigidly supported within the boiler by the shell thereof, a pipe leading from within the boiler to the outside thereof, a swinging horizontal pipe connected with said pipe, a slotted skimmer-cup supported by and in communication with the free end of said swinging pipe in a position near said vertical standard, a float connected with the free end of said swinging pipe, a lever pivoted upon said standard and having one end connected with said swinging pipe, a weight adjustably secured on the other end of said lever, and converging skimmer-wings having their inner ends supported by said standard exterior to and near said skimming-cup, substantially as set forth.

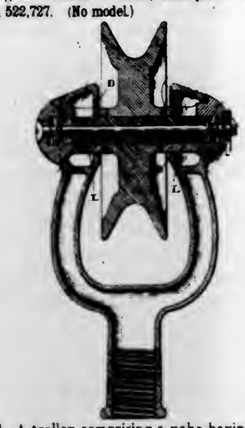
543,528. STEAM-BOILER FURNACE AND TILES THEREFOR. JOHN L. GILL, Jr., Philadelphia, Pa. Filed Oct. 31, 1894. Serial No. 527,536. (No model.)



Claim.—1. As an article of manufacture refractory tiles having perforations adapted to receive the water tubes of steam generators, two opposite parallel straight edges grooved lengthwise to fit upon rods, and curved grooved edges adapted to fit similar curved edged tiles and receive a plastic cement when assembled in partition walls of steam generator furnaces substantially as set forth.

2. In a partition for directing products of combustion among the tubes of steam generators of the class described, a series of perforated tiles fitted upon boiler tubes, and having grooved parallel edges fitted upon bracing rods, and curved grooved edges, fitted to like edges of contiguous tiles combined with a refractory cement in said grooves substantially as set forth.

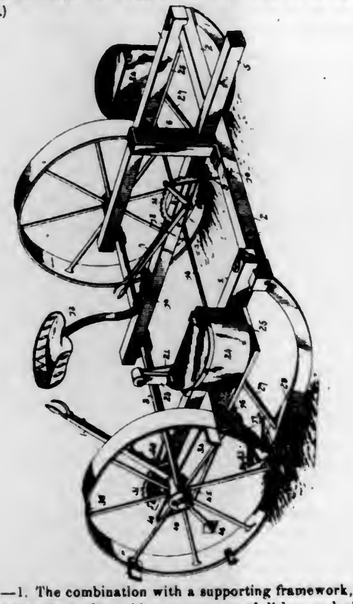
543,529. ELECTRIC TROLLEY. GEORGE W. HOOPER, Rochester, N. Y., assignor to James S. Baker, same place. Filed Sept. 11, 1894. Serial No. 522,727. (No model.)



Claim.—1. A trolley comprising a yoke having transverse openings in its ends, a wheel having a rigid hollow shaft, hollow bushings extending inward through said openings, and receiving and forming bearings for said rigid hollow shaft and held against inward movement in said yoke, and a clamping bolt passing through said shaft and bushings for uniting them and holding the ends of the yoke against spreading.

2. A trolley comprising a yoke having transverse openings in its ends, a wheel having a rigid hollow shaft, hollow bushings having heads or flanges at their outer ends engaging the yoke and inwardly extending portions receiving and forming bearings for the ends of said rigid hollow shaft, and a clamping bolt passing freely through said hollow shaft and uniting said bushings and holding the yoke against spreading, substantially as shown.

543,530. CHECK-ROW PLANTER AND DRILL. CHARLES H. JACKSON, St. Joseph, Mo. Filed Nov. 10, 1894. Serial No. 528,402. (No model.)



Claim.—1. The combination with a supporting framework, and a furrow opening shoe, of a seed-box, a rotary seed-disk, a rock-shaft, a swinging-arm carrying a pawl for engaging the seed-disk and imparting a step by step movement thereto, a rocking-arm carried by said rock-shaft and operatively connected with the swinging-arm, a locking slide arranged at one end in operative relation with the pawl, provided with a pin to engage the swingiug arm and having means for adjustment to remove the pin from engagement with said arm and means for rocking said shaft, substantially as specified.

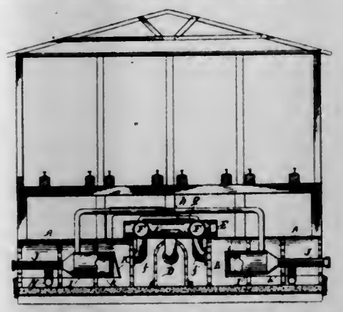
2. The combination with a supporting framework, and a furrow opening shoe, of a seed-box, a rotary seed-disk, a swinging-arm having a pawl for engaging said seed-disk, a rock-shaft, a rocking-arm having a stud operating in a slot of said swinging-arm, a spring for holding the rocking lever in its normal position, means for imparting motion to the rock-shaft in opposition to said spring, a locking slide resting at one end on said pawl and provided at the other end with a slot having terminal enlargements and arranged in engagement with a stud whereby the slide may be longitudinally adjusted, and a pin carried by the slide to engage and limit the movement of the swinging arm substantially as specified.

3. The combination with a supporting framework, ground-wheels, a furrow opening shoe, a seed-box, and feeding-mechanism, of a rock-shaft operatively connected with the feeding-mechanism and having a crank-arm, a shoe adjustably secured to said crank, and check row and drill projections carried by the ground-wheel adjacent to said crank-arm, said cam being adapted for adjustment to occupy a position in the path of either the check row or drill projections, substantially as specified.

4. The combination with a supporting framework, ground-wheels, a furrow opening shoe, a seed-box and feeding mechanism, of a rock-shaft operatively connected with the feeding-mechanism and having a crank-arm arranged adjacent to the plane of one of the ground-wheels, a cam attached to the said crank arm and capable of adjustment to vary the distance of its wings from the plane of the wheel, and check row and drill projections of different lengths carried by and extending laterally from said ground-wheel, substantially as specified.

5. The combination with a supporting framework, ground-wheels, a furrow opening shoe, a seed box, and feeding-mechanism, of a rock-shaft operatively connected with said feeding-mechanism and having a crank-arm adjacent to one of said ground-wheels, a cam attached to the crank-arm and provided with oppositely extending wings having beveled edges, said cam being reversible to vary the position of said wings with relation to the plane of said adjacent ground-wheel, and projections of different lengths carried by said ground-wheel and adapted respectively to engage the cam according to the position of the latter, substantially as specified.

543,531. DRY-KILN FURNACE. WILLIAM KETCHAM, Dallas, Tex. Filed Aug. 1, 1891. Serial No. 401,352. (No model.)



Claim.—1. In a dry kiln the combination with a series of furnaces normally closed to the admission of atmospheric air, and a furnace open for the admission of atmospheric air, of a flue head, smoke flues leading from all of said furnaces to said flue head, and means for returning to the furnaces normally closed to atmospheric air the smoke from all the furnaces and the unconsumed air which passes through the furnace open to atmospheric air, substantially as and for the purpose specified.

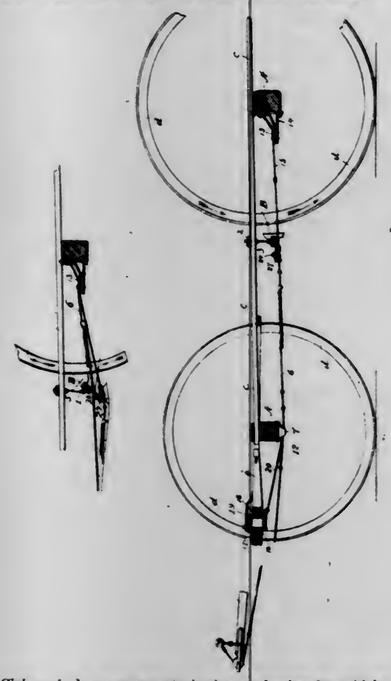
2. In a dry kiln the combination with a series of furnaces normally closed to the admission of atmospheric air, smoke flues leading from said furnaces and a flue head common to all of said smoke flues, of a furnace open for the admission of atmospheric air, a flue leading therefrom to the flue head, a fan having its receiving end connected with the flue head, a return pipe leading from the discharge end of the fan, and a series of branch pipes leading from the return pipe to the series of furnaces normally closed to atmospheric air, whereby the latter are supplied with the unconsumed products of combustion including the unconsumed air which passes through the

furnace open to the atmosphere, substantially as and for the purpose specified.

3. In a dry kiln, the combination with a series of furnaces normally closed to the admission of atmospheric air, and a furnace open for the admission of atmospheric air, of a flue head, smoke flues leading from all of said furnaces to the flue head, a blower and return pipes connecting the flue head and the series of furnaces normally closed to atmospheric air, whereby the smoke from all the furnaces and the unconsumed air passing through the furnace open to the atmosphere are forced from the flue head through the return pipes, and a device interposed in the return pipes between the flue head and the furnaces to permit the escape of a portion of the unconsumed products of combustion into the kiln, substantially as and for the purpose specified.

4. In a dry kiln the combination with a series of furnaces having smoke circulating flues, a fan and return pipe communicating with the furnaces, of receptacles interposed in the return pipe, said receptacles having doors opening into the kiln and adjustable spring connections between said doors and a fixed part of the kiln whereby the tension of the springs is regulated to keep the doors closed, or partially opened by the internal pressure of heat and smoke, as and for the purpose set forth.

543,532. AUTOMATIC WAGON-BRAKE. JESSE KIRLIN, Stuart, Iowa. Filed July 14, 1894. Serial No. 517,589. (No model.)



Claim.—1 In an automatic brake mechanism for vehicles, the combination with the vehicle, a brake bar suspended from the vehicle and capable of rocking over, and shoes or rubs attached to the brake bar, of a lever pivoted to the vehicle, one end of this lever having connection with the brake bar and adapted to be fastened to a neck yoke or the bold back part of the vehicle and the other end of the lever having connection with the draft part of the vehicle, this lever constructed to strike the vehicle to limit its vibration in one direction when the brake bar is rocked whereby to receive the application of the backward hold and take it from the brake shoes or rubs, substantially as set forth.

2. In an automatic brake for vehicles, the combination with the vehicle, a lever pivoted thereto, and rods extending from the ends forward, one connected with the neck yoke and the other with the whiffletrees, of a brake bar located above both rods and having a hinged connection with one of the rods, said bar carrying brake shoes or rubs, substantially as set forth.

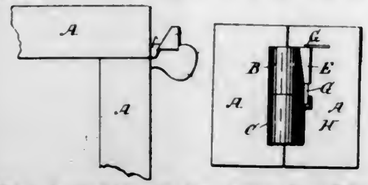
3. In an automatic brake mechanism for vehicles, the combination with the vehicle, a whiffletree, and a neck yoke, each of which has a sliding connection with the tongue of the vehicle, of a lever pivotally connected with the vehicle, rods extending from the ends of the lever forward, one to the neck yoke and the other to the whiffletrees, these rods having flexible connections, and a brake bar connected with one of these rods and carrying shoes or rubs adapted to engage wheels of the vehicle, substantially as set forth.

4. In an automatic brake for vehicles, the combination with the vehicle, and brake bar suspended therefrom, of a lever having pivotal connection with the vehicle, rods extending from the ends of this lever forward, a sleeve through which one of these rods extends and to which an arm extending from the brake bar is hinged, and means for adjusting the rod through this sleeve and securing it in said adjustment, substantially as set forth.

5. The combination with a vehicle, of a brake bar having shoes or rubs thereon, and means for shifting this bar endwise to throw different portions of the shoes opposite the wheels, substantially as set forth.

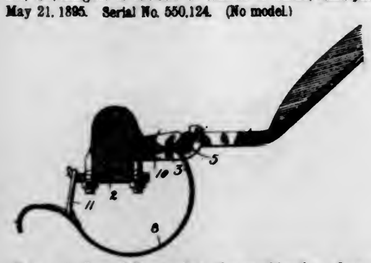
6. The combination with a vehicle, of brake-bar having shoes thereon of greater width than the width of the wheel tires, a cross bar connected with the vehicle, a hanger for connecting the brake-bar to the cross bar, and means for effecting a lateral adjustment of this cross bar relative to the vehicle wheels to apply different portions of the brake-shoes to the wheels, substantially as set forth.

543,533. SAFETY LOCK-HINGE. FRANK KRUPP, New Orleans, La. Filed Dec. 12, 1892. Renewed May 13, 1895. Serial No. 549,193. (No model.)



Claim.—In a lock hinge, the hinge portions C, and B, having an opening between them, the lug E, formed upon the portion B, and the hanger H, secured to the portion C on the same vertical plane with the said lug, combined with the key G loosely connected with the said hanger and the said lug, so as to be swung from one position to another, substantially as shown and described.

543,534. THILL-COUPLING. BENJAMIN P. MALONEY, New Market, Va., assignor of one-half to Charles L. Burke, same place. Filed May 21, 1895. Serial No. 550,124. (No model.)



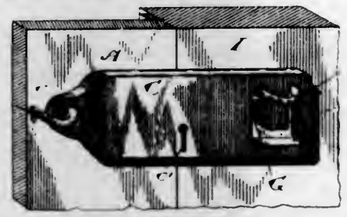
Claim.—1. In a thill coupling, the combination of an axle clip, provided with forwardly projecting ears having open bearings or recesses, a thill iron having a transverse portion detachably arranged in the bearings or recesses of the ears, and an anti-rattler spring fulcrumed on the axle clip between the ears thereof and provided with a forwardly projecting hook engaging the thill iron and retaining the same in the bearings or recesses, and preventing the parts from rattling, substantially as described.

2. In a thill coupling, the combination of an axle clip, provided with forwardly projecting ears having open bearings or recesses, a thill iron detachably arranged in the bearings or recesses, and an anti-rattler spring curved throughout its length and extending beneath the axle clip and having its rear portion detachably connected with the same and having its front portion fulcrumed between the ears and provided with a forwardly projecting hook engaging the thill iron and retaining the same in the bearings or recesses, substantially as described.

3. In a thill coupling, the combination of an axle clip, having forwardly projecting ears, provided with bearing recesses, a clip plate provided at its rear end with a projection, a thill iron having an eye provided with a transverse portion arranged in the bearing recesses, a pivot connecting the ears, a curved spring extending beneath the axle clip and provided at its front end with an eye to receive the pivot, and having a forwardly projecting hook engaging the eye of

the thill iron, and a link mounted on the rear portion of the spring and detachably engaging the projection of the clip-plate, substantially as described.

543,535. HASP-LOCK. THOMAS MOUNCE, Toronto, Canada. Filed Jan. 3, 1895. Serial No. 533,686. (No model.)



Claim.—In a hasp-lock, the combination of a pivoted hasp provided with a lock and having a U-shaped opening near its free end, the tongue E of said U-shaped opening having a notch therein, a locking staple arranged to enter said U-shaped opening and be engaged by said tongue, the bolt of said lock being constructed and arranged to bridge the opening and lock the staple over said tongue by having its end pass into said notch, substantially as and for the purpose specified.

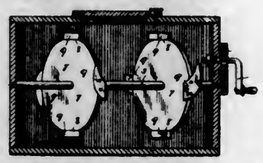
543,536. HOOK AND EYE. MARTIN J. MYERS, Philadelphia, Pa. Filed June 28, 1894. Serial No. 515,947. (No model.)



Claim.—1. A hook or eye having an engaging portion, two attaching portions, and two spring bends in the form of open loops between the engaging and attaching portions, and in the same plane as the latter, said attaching portions being on the insides of the loops, substantially as specified.

2. A hook or eye having two attaching portions, and a series of engaging portions located at different distances from said attaching portions, so as to provide for slackening or tightening of the parts secured thereby, and having between the base of the engaging portion and the attaching portions, spring bends in the form of open loops in the same plane as said attaching portions, the latter being on the insides of the loops, substantially as specified.

543,537. CHURN. CALVERT R. MCGARRY, Elkton, Va. Filed June 5, 1894. Serial No. 513,514. (No model.)



Claim.—1. A churn dasher comprising a shaft, and imperforate parallel disks arranged obliquely on said shaft and carrying dashers or dasher heads, substantially as set forth.

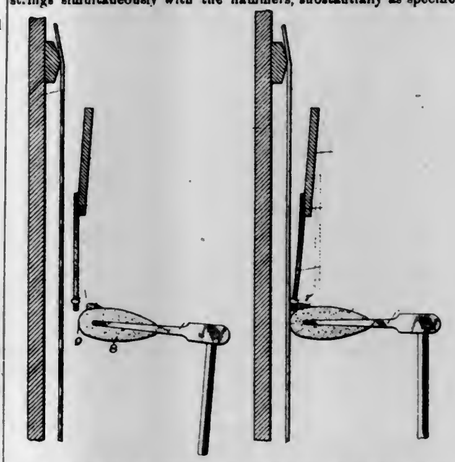
2. A churn dasher comprising a horizontal shaft, parallel disks arranged obliquely or diagonally on said shaft, and segmental dashers or dasher heads arranged on diametrically opposite sides of said disks, substantially as set forth.

3. A churn dasher comprising a horizontal shaft, parallel imperforate disks arranged obliquely or diagonally on said shaft, and segmental dashers or dasher heads arranged on diametrically opposite sides of said disks, said dashers or dasher heads being located directly adjacent to the peripheries of said disks to dispose the outer curve faces thereof flush with the said peripheries of the disks, substantially as specified.

543,538. PIANO ATTACHMENT. FELIX K. NATICK, Brooklyn, N. Y. Filed May 23, 1895. Serial No. 550,398. (No model.)

Claim.—1. In a piano, the combination with strings and hammers, of a series of auxiliary strikers, and ears or projections carried by the hammers and adapted to engage said auxiliary strikers, respectively, and bring them in contact with the strings simultaneously with the hammers, substantially as specified.

2. In a piano, the combination with strings and hammers, of auxiliary strikers having metallic heads, and ears or projections on the hammers to engage said strikers and bring them in contact with the strings simultaneously with the hammers, substantially as specified.

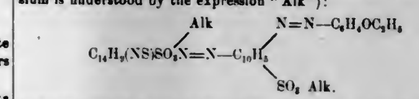


3. In a piano, the combination with strings and hammers, of auxiliary strikers having flexible tongues and heads adapted to strike the strings, and lateral ears or projections carried by the hammers and set back from the planes of the impact points thereof, said ears or projections being adapted to engage the tongues and force the heads of the auxiliary strikers in contact with the strings simultaneously with the hammers, substantially as specified.

543,539. BROWN AZO DYE. KARL PATHE and ADOLF ISRAEL Elberfeld, Germany, assignors to the Farbenfabriken, vormals Fr. Bayer & Co., same place. Filed Apr. 16, 1895. Serial No. 545,953. (Specimens.) Patented in England Feb. 6, 1894, No. 2,591; in France Apr. 27, 1894, No. 221,233, and in Italy May 23, 1894, XXVIII, 36,270, LXXI, 134.

Claim.—1. The process for the production of substantive azo dyes, consisting in combining one molecular proportion of diazotized dehydrothio para toluidin sulfonic acid with one molecular proportion of alpha, amidonaphthalene beta, sulfonic acid, or an alkaline salt thereof, rediazotizing the intermediate amido azo compound, subsequently combining the so formed diazo-product with one molecular proportion of phenol, and finally converting the hydroxy groups contained in the so formed hydroxy products into an alkyloxy group, substantially as described.

2. As new articles of manufacture, the substantive dyes which may result from the alkylation of the hydrooxydisazo product obtained from dehydrothio para toluidin sulfonic acid, alpha, amidonaphthalene beta, sulfo-acid, and phenol, as hereinbefore described having in case the hydroxydisazo product from dehydrothio para toluidin sulfonic acid, alpha, amidonaphthalene beta, sulfo acid and phenol be ethylated, the following formula (in which sodium or potassium is understood by the expression "Alk"):

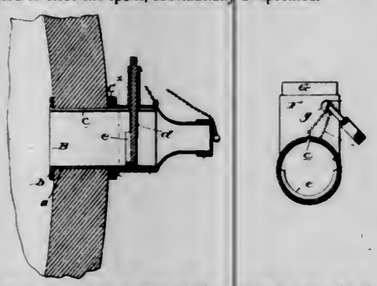


forming a reddish-brown powder difficultly soluble in cold water with a reddish-brown color and difficultly soluble in ammonia liquor, insoluble in alcohol and soda-lye, soluble in sulfuric acid (66° Baumé) with a green color which turns into greenish-blue on the addition of a small quantity of ice-water to this sulfuric acid solution, while reddish-brown flakes are precipitated on the addition of a large quantity of water producing, on unmordanted cotton, yellowish-brown shades fast to the action of light, alkali and acid, substantially as described.

543,540. DETACHABLE AND ADJUSTABLE LOCKED CUT-OFF POWDER-SPOUT. PHILIP SAUER, Jobs, Ohio. Filed Sept. 18, 1894. Serial No. 523,429. (No model.)

Claim.—1. A spout comprising an inner tubular section having a slot *d*, an outer tubular section arranged on the inner section and having a sleeve registering with the slot of said inner section, and a gate arranged in the sleeve of the outer section and the slot *d*, of the inner section and adapted to close the spout and secure the outer section on the inner section, substantially as specified.

2. A spout comprising an inner tubular section adapted to be detachably secured in the bung-hole of a keg and having a slot *d*, an outer tubular section arranged on the inner section and having a sleeve registering with the slot of said inner section and a gate arranged in the sleeve of the outer section and the slot *d*, of the inner section and adapted to close the spout, substantially as specified.



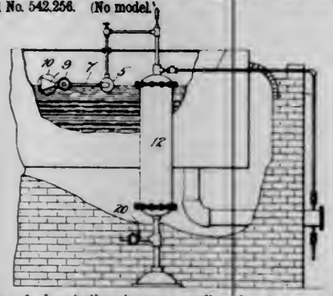
3. A spout comprising an inner tubular section having a slot *d*, an outer tubular section arranged on the inner section, a sleeve carried by the outer section and registering with the slot *d*, of the inner section and having eyes *g*, in its side walls, a gate arranged in the sleeve of the outer section and the slot of the inner section and adapted to close the spout and having an eye *g*, adapted to register with those of the sleeve and a securing device extending through the eyes of the sleeve and the eye *g*, of the gate so as to hold the gate in its closed position, substantially as and for the purpose set forth.

4. A spout comprising an inner tubular section having a slot *d*, an outer tubular section arranged on the inner section, a sleeve carried by the outer section and registering with the slot *d*, of the inner section and having eyes *g*, in its side walls, a gate arranged in the sleeve of the outer section and the slot of the inner section and adapted to close the spout and having an eye *g*, adapted to register with those of the sleeve, a cap adapted to take over the outer end of the outer section, a chain connecting said cap and the outer section and having a ring i, and a securing device adapted to extend through the ring i, and the eyes *g*, of the sleeve and gate so as to secure the cap and gate in position substantially as specified.

5. A spout comprising an inner section having a flange adapted to engage the inside of a keg or receptacle and a longitudinal slot extending throughout its length so as to permit of it being reduced in diameter to enable the flange to pass through a bung-hole or opening in the keg, and an outer section secured upon the inner section, substantially as specified.

6. A spout comprising an inner tubular section having a slot *d*, an outer tubular section arranged on the inner section and having a slot registering with the slot *d*, of said inner section and a gate arranged in the registered slots of the inner and outer sections and adapted to close the spout and secure the outer section on the inner section, substantially as specified.

543,541. BOILER-CLEANER. FRANK L. SMITH, Blue Island, assignor of one-half to William J. Wiley, Chicago, Ill. Filed Mar. 18, 1895. Serial No. 542,256. (No model.)



Claim.—1. In a boiler cleaner a settling chamber, a cone-shaped shield arranged therein, having the mouth thereof presented toward the top of said chamber, an exit pipe having its receiving end arranged within said shield, a second shield mounted in said chamber and reversely arranged with respect to said first mentioned shield, a skimmer arranged in the boiler, a pipe connection leading therefrom and delivering into said chamber, at a point adjacent to the inner wall of said chamber, beneath the lowermost shield; as and for the purpose set forth.

2. In a boiler cleaner, a settling chamber, a cone-shaped shield arranged therein, having the mouth thereof presented toward the top of said chamber, an exit pipe arranged in said chamber having its receiving end opening into said shield, a second shield mounted in said chamber, and reversely arranged with respect to said first mentioned shield, a skimmer arranged in the boiler, a pipe connection from said skimmer to said chamber, arranged to pass through said exit pipe and adapted to deliver into said chamber at a point beneath the lowermost shield; as and for the purpose set forth.

3. The combination of a boiler, a settling chamber, arranged adjacent thereto, a skimmer arranged in said boiler, a pipe communicating with said skimmer and arranged to deliver into said settling chamber, the delivery end thereof being upwardly turned; as and for the purpose set forth.

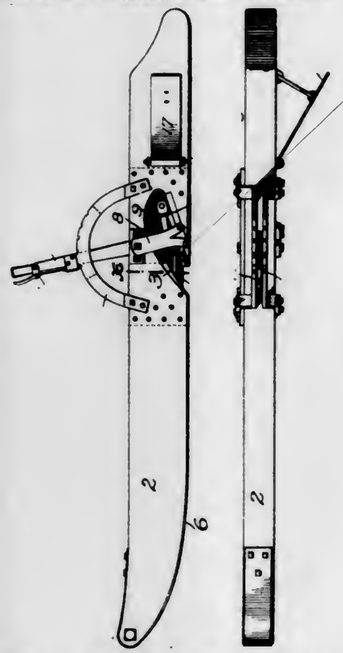
4. The combination of a boiler, a settling chamber, arranged adjacent thereto, a skimmer arranged in said boiler, a pipe communicating with said skimmer and arranged to deliver into said settling chamber, the delivery end thereof comprising a series of upwardly turned pipe sections; as and for the purpose set forth.

5. The combination of a boiler, a settling chamber, arranged adjacent thereto, a skimmer arranged in said boiler, a pipe communicating with said skimmer and arranged to deliver into said settling chamber, the delivery end thereof being arranged below the level of the skimmer, and comprising a series of radiating upwardly turned pipe sections; as and for the purpose set forth.

6. The combination of a boiler, a settling chamber, a skimmer, a pipe communicating with said skimmer and arranged to pass through the top and into said settling chamber, and having its larger end presented toward the top of said chamber, said pipe arranged to pass through said shield, the delivery end of said pipe comprising upturned pipe sections, and arranged below the lower and smaller end of said shield; as and for the purpose set forth.

7. The combination of a boiler, a settling chamber, two-coned shaped shields arranged thereon, one of said shields arranged to pass through the other, said shields being reversely arranged with respect to the other, the upper shield having the large end thereof presented toward the top of the chamber, a skimmer arranged in said boiler, and a pipe communicating therewith and delivering into said chamber at a point below the lowermost shield; as and for the purpose set forth.

543,542. RUT-CUTTER. CHARLES L. TOLLES, Eau Claire, Wis. Filed Mar. 1, 1895. Serial No. 540,132. (No model.)



Claim.—1. The combination, with the runner, of a knife carried thereby, guides upon either side of said knife, the pivoted lever carried by said runner, a link connecting said knife and said lever whereby as said lever is operated said knife will be moved back and forth between said guides, and a plate carried by said runner adjacent to said knife and having a sharpened lower edge, for the purpose set forth.

2. The combination, with the runner, provided with a recess or slot, the knife carried by said runner within said recess and arranged to slide up and down between guides on either side thereof, a plate carried by said runner adjacent to said knife and provided with a sharpened lower edge, a lever also carried by said runner and pivotally connected with said knife, whereby when said lever is moved back said knife will be forced into the ground beneath said runner to form a rut, substantially as described.

3. The combination, with the runner, provided with a recess or slot, a knife having a spoon shaped lower end carried by said runner within said recess and arranged to slide up and down between guides on either side thereof, a plate carried by said runner adjacent to said knife and provided with a sharpened lower edge, a lever also carried by said runner and pivotally connected with said knife, whereby when said lever is moved back and forth said knife will be forced into the ground beneath said runner to make or clear the rut, substantially as described.

4. The combination, with the runner, provided with a recess or slot, a knife having a spoon shaped lower end carried by said runner within said recess and arranged to slide up and down between guides on either side thereof, a locking mechanism whereby said knife may be secured in any desired position, a plate carried by said runner adjacent to said knife and provided with a sharpened lower edge, a lever also carried by said runner and pivotally connected with said knife, whereby when said lever is moved back said knife will be projected into the ground beneath said runner to make or clear the rut, and withdrawn from the ground upon the forward movement of said lever, substantially as described.

5. A sled runner having a diagonal slot forming the nose 4, the shoe 5 covering the lower portion of the same, the brace 8 having one end secured to said nose 4 and its opposite end to the upper part of said runner, the knife 11 arranged to slide on the upper surface of said nose, the guide 12 arranged above said knife, the slot or opening 7 leading from said diagonal slot to the upper edge of the runner, the lever 13 pivoted within said slot 7, and the link connecting the lower end of said lever, and the upper end of said knife, for the purpose set forth.

6. A sled runner provided with a nose 4 formed by a slot extending up into the runner from the lower edge thereof, a knife arranged to slide upon the inclined upper surface of said nose, a guide extending across the upper surface of said knife, a lever pivoted within a slot or recess above said knife, means for locking said lever in any desired position, and means connecting the lower end of said lever, and the upper end of said knife, whereby when said lever is moved back and forth said knife will be moved over the inclined surface of said nose, substantially as described.

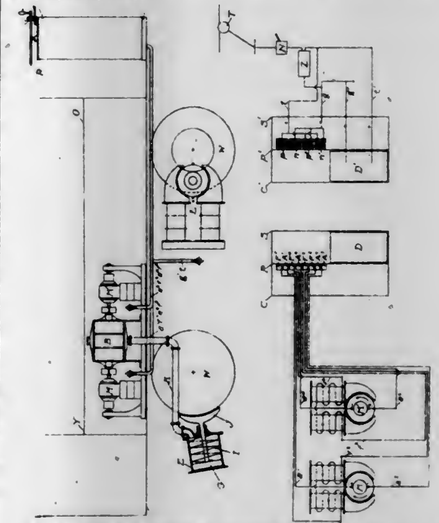
543,543. PROCESS OF EXTRACTING GOLD OR SILVER FROM ORES. MARTIN E. WALDSTEIN, New York, N. Y. Filed Sept. 1, 1894. Serial No. 521,972. (No specimens.)

Claim.—1. The process of extracting precious metals from ores, consisting in subjecting the ores to the action of cyanide of potassium, adding to the materials during this action, a salt or salts decomposable by an acid and yielding oxygen, and sufficient acid to decompose this salt, or salts and subsequently adding an excess of acid, to decompose the double cyanide and finally separating the precious metal from its compound in any suitable manner, substantially as specified.

2. The decomposition by means of a mineral acid of the double cyanides of silver or gold formed by the cyanide process, and the precipitation of silver or gold as sulphides by means of sulphureted hydrogen.

543,544. ELECTRIC-CAR BRAKE. GEORGE B. DAMON, Lowell, Mass., assignor of one-half to Gardner W. Pearson, same place. Filed Apr. 9, 1894. Serial No. 506,829. (No model.)

Claim.—1. In a system of brakes for electric cars, the combination of a controlling stand connected with the source of electric power and composed of an outer stationary cylinder and an inner movable cylinder with a handle for turning the same, each cylinder carrying two sets of contacts so arranged that a turn of the movable cylinder in one direction from a given point engages contacts on each cylinder which close the circuit for the car propelling motors and a turn in the other direction from said point engages contacts which close a shunt circuit, electric motors through which this second circuit passes, a reversible blower, as a source of pneumatic pressure, directly connected by proper shafting with the electric motors, a cylinder at one end of which pneumatic pressure from the blower is admitted by suitable pipes, a piston reciprocating within the cylinder, a brake shoe attached to the rod of the piston and a spring attached to the cylinder and bearing against the piston head so as by its pressure to keep the brake shoe away from the wheel of the truck; whereby when the shunt circuit is closed by the controlling stand, it starts the electric motor which starts the blower, causing pressure in the cylinder which forces out the piston and brings the brake shoe in contact with the wheel of the truck, overcoming the pressure of the spring and when the motor is stopped by the controlling stand the motor and blower are stopped and the spring acts to force back the piston, release the brake and reverse the blower and motor, permitting the escape of the air through the blower, as described and for the purpose specified.



2. In a system of brakes for electric cars, the combination of a controlling stand connected with the source of power and consisting of an outer stationary cylinder and an inner movable cylinder to the axis of which is attached a handle, said cylinders carrying contacts adapted to control the passage of the current through the circuit in which are the car propelling motors when the movable cylinder is turned in one direction from a given point and to control the passage of the current through a shunt circuit when the movable cylinder is turned in the other direction from the given point, electric motors lying within the last named circuit and energized by the current therefrom, and a reversible positive action blower producing pneumatic pressure directly connected by suitable shafting with the electric motors, as described and for the purpose specified.

3. In a system of brakes for electric cars, a double controlling stand, consisting of an outer stationary cylinder, a movable cylinder revolving inside the stationary cylinder, a handle attached to the axis of the movable cylinder, both cylinders carrying on their upper adjacent surfaces contacts which engage when the movable cylinder is turned in one direction from a given point closing the circuit between the source of electricity and the car propelling motors, and on their lower adjacent surfaces contacts which engage when the movable cylinder is turned in the other direction from the given point closing a shunt circuit passing through brake motors; both circuits being open when the movable cylinder is in the position first indicated, as described, and for the purpose specified.

4. In a system of brakes for electric cars, the combination of a controlling stand connected by proper conductors with a shunt from the main source of electric power and adapted to cut off or permit the passage of the current thereof, electric motors through which said current passes after leaving the controlling stand, a positive action reversible blower for producing pneumatic pressure, operated by the electric motors and connected therewith by suitable shafting, a cylinder into which by suitable pipes the pneumatic pressure created by the blower is introduced, a piston reciprocating within the cylinder, a brake shoe attached to the rod of the piston, and a spring bearing against the piston head at one end and attached to the cylinder at the other end whereby its pressure holds the piston and brake shoe away from the wheel of the truck when there is no pneumatic pressure in the cylinder to overcome its resistance, as described and for the purpose specified.

5. In a system of brakes for electric cars, the combination of a positive action reversible blower for producing pneumatic pressure for actuating brakes, electric motors for operating said blower and connected therewith by suitable shafting, and a controlling stand, connected by suitable conductors with a shunt from the main source of electric power and with said motors and adjusted to regulate the supply of current therefrom to the said electric motors, whereby the cre-

ation of pneumatic pressure for operating brakes can instantly be created or stopped by the motion of the controlling stand as described and for the purpose specified.

6. In a system of brakes for electric cars, the combination of a double controlling stand composed of an outer stationary cylinder in which revolves a movable cylinder with a handle attached to its axis, each cylinder carrying two sets of contacts, so disposed on their adjacent surfaces that when the movable cylinder is turned in one direction from a given point, contacts engage which are respectively connected with the source of electric power and with the car propelling motors and when the movable cylinder is turned in the other direction from the given point, contacts engage which are respectively connected with a shunt from the main electric current and with independent electric motors, and the last named electric motors for operating the brake system; whereby the circuit for the car propelling motors and brake motors cannot be both closed at the same time, as described and for the purpose specified.

7. In a system of electric car brakes, a positive action blower, for producing pneumatic pressure, of any usual construction which admits of its being reversed by the reentry of compressed air through the port from which it is ordinarily expelled by the action of the blower, electric motors for operating the blower to which they are connected by suitable shafting, a cylinder into which the blower by suitable pipes, forces compressed air when in action, a piston reciprocating within the cylinder, a brake shoe attached to the piston rod and a spring attached to the cylinder and bearing against the piston head in opposition to the pressure of the air from the blower, as described and for the purpose specified.

8. In a system of electric car brakes, the combination of a positive action blower, for rapidly producing pneumatic pressure, of such construction that the reentry of compressed air through the port from which it is expelled by the positive action of the blower, will reverse the blower, and electric motors directly attached to and for operating the blower as applied to and for producing pneumatic pressure in a system of air brakes as described and for the purpose specified.

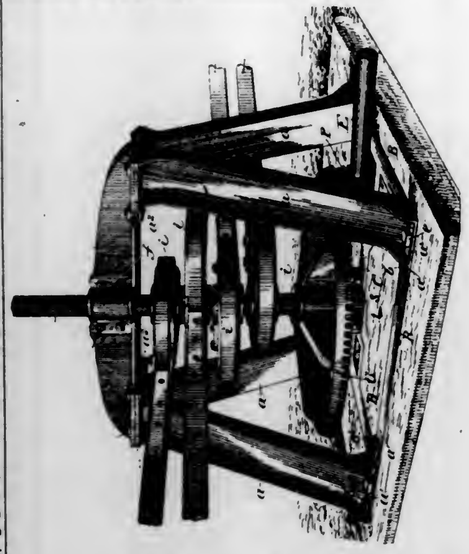
9. In a system of brakes for electric cars, the combination of a cylinder, a piston reciprocating therein, a brake shoe attached to the rod of the piston, a spring attached to the cylinder and bearing against the piston head and a positive action blower, for producing pneumatic pressure in the cylinder through pipes by which the blower and cylinder are directly connected, thus setting the brake, the blower being so constructed and the spring so attached that when power is withdrawn from the blower, the pressure of the spring and the compressed air in the cylinder will reverse it and allow the air to escape and withdraw the piston and brake from the wheel of the truck, as described and for the purpose specified.

10. A controlling stand for electric cars consisting of a stationary cylinder, a movable cylinder turning therein provided with a handle attached to its axis and a stop so placed as to limit the motion of the cylinder; the cylinders carry on their upper portions, the stationary on the right of a certain point and the movable on the left of such point, contacts which, when the movable cylinder is turned toward the right, engage and close one circuit, and on their lower portions, they carry, the stationary on the left of the above point and the movable on the right of such point, contacts which when the movable cylinder is turned toward the left, engage and close another circuit, neither circuit being closed when the movable cylinder rests at the above mentioned zero point, and it being impossible for both contacts to be closed at the same time, as described and for the purpose specified.

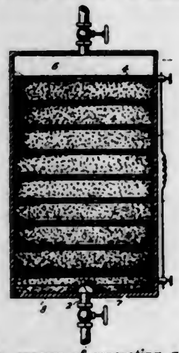
11. In a system of electric car brakes, the combination of a positive action blower, for rapidly producing pneumatic pressure, of such construction that the re-entry of compressed air through the port from which it is expelled by the positive action of the blower, will reverse the blower, electric motors directly attached to and for operating the blower and a brake cylinder connected by suitable pipes to the blower at the above mentioned port, as described and for the purpose specified.

543,545. OIL-WELL PUMPING-RIG FRAME. JOHN J. DOYLE, Franklin, Pa. Filed May 17, 1895. Serial No. 549,672. (No model.)

Claim.—In an oil-well pumping rig, the combination of the base frame B, adapted to be anchored in or to a suitable foundation and having vertical depending flanges *b*, *b*, for taking into said foundation and securing the frame against lateral displacement, the A-frames consisting of the pillars *a*, *a*, having suitable foot-flanges by which they are bolted to the base-frame, and meeting at their upper ends, and the flanged top sill T spanning the space between the A-frames and bolted to horizontal flanges at the upper ends of the pillars, said base-frame having the center sill C provided with a vertical step bearing for the main rig shaft, and a horizontal bearing for the inner end of the engine shaft, and said top sill having a vertical bearing for the upper part of the main rig shaft in alignment with the step bearing on the sill of the base frame; substantially as described.



543,546. PROCESS OF AND APPARATUS FOR TREATMENT OF PRECIOUS METALS. EDWIN J. FRASER, San Francisco, Cal. Filed Nov. 25, 1893. Serial No. 492,010. (No model.)



Claim.—1. The process of separating gold or other precious metal held in an electrolytic solution, which consists in passing the solution through a vessel containing alternating porous layers of zinc and carbon, to set up a local voltaic action which tends to decompose the solution, precipitating the gold in the carbon by filtration, substantially as set forth.

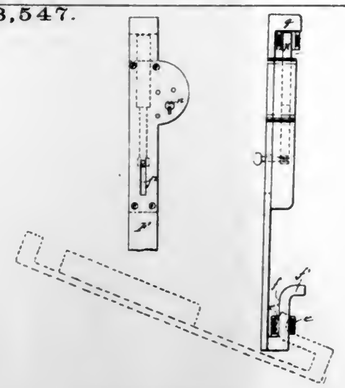
2. A voltaic and mechanical filter composed of perforated zinc plates alternating with porous fillings of carbon, adapted to receive an electrolytic solution containing gold, and to separate the gold from the solution by local voltaic action, by precipitation, and by mechanical filtering, substantially as set forth.

543,547. BICYCLE-CHAIN LOCK. HIRAM G. GRISTWITE, Reading, Pa. Filed Dec. 1, 1894. Serial No. 530,560. (No model.)

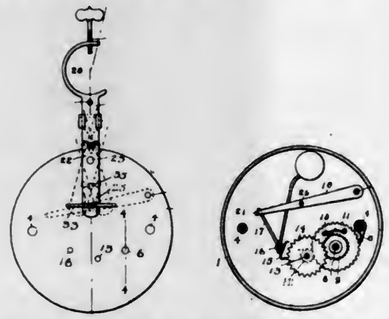
Claim.—1. A driving-chain lock for velocipedes comprising a bar or plate having one end formed with an open hook of smaller cross-section than said bar or plate to adapt the same to engage one part of the chain as described and the other end with a rigid shoulder or head, a sliding bolt arranged to engage the other part of the chain in connection with said shoulder, and a lock mechanism for said bolt, substantially as and for the purpose, set forth.

2. A driving-chain lock for velocipedes comprising a bar or plate having one end formed with a chain hook having a shoulder *f*", and the other end with a chain recess *g* opening transversely, a sliding bolt adapted to enter said recess longitudinally and a lock for said bolt, substantially as and for the purpose set forth.

543,547.



543,548. BURGLAR-ALARM. JOSHUA GIVEN, Elgin, Ill. Filed Oct. 9, 1894. Serial No. 525,409. (No model.)



Claim.—1. The combination of an alarm bell having a plate 2, a stop to hold the alarm mechanism at rest and a bar adapted to move the stop to release the mechanism, said bell being pivoted to the bar and said bar having an extension adapted to be folded down upon the plate and to lock the alarm in an inoperative position and also provided with devices for attaching it to a door spindle or the like, substantially as set forth.

2. The combination in an alarm bell of the pivoted suspending bar, the spring bar 18 fixed at one end and at the other provided with a stop 21, and having a pin 26, a pivoted arm 17 connected by an escapement and intermediate gears to a hammer-operating spring, and said hammer the suspending bar normally bearing on the pin and holding the spring 18 under tension and its finger in engagement with the escapement bar, substantially as set forth.

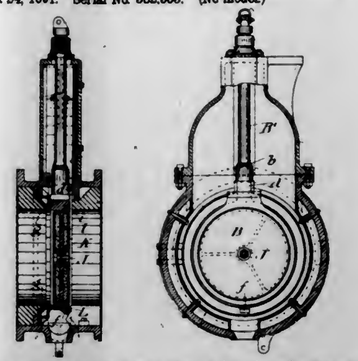
3. The combination of an alarm bell having a stop to hold the alarm mechanism at rest and a bar adapted to move the stop to release the mechanism, said bell being pivoted to the bar and said bar having a folding extension provided with devices for attaching it to a door spindle or the like, said extension having a pin adapted when the extension is folded upon the bar to enter a hole therein and a hole in the bell closing plate to hold the parts together and hold the bar inoperative, substantially as set forth.

4. The combination of the alarm bell having a plate 2 and alarm mechanism inclosed thereby, a stop to hold said mechanism at rest comprising a spring bar 18, a pin fixed on said spring bar and extending through the plate and a swinging cam-bar adapted when suitably moved to depress the pin and move the stop to release the alarm mechanism, substantially as set forth.

5. In an alarm bell the gong, the hammer mechanism, and the plate 2 provided with a notch or recess 32 in combination with the folding suspending bar pivoted to the plate and having a hinge near the edge of said plate and adjacent to said recess, said bar being adapted by intermediate devices to hold the alarm at rest until moved about its pivot, and a sliding catch 30 adapted to enter said recess to hold the bar from folding and also to prevent its turning on its pivot, substantially as set forth.

6. An alarm bell having a flat back and a suspending bar for attaching it to a door spindle or the like, said bar being attached to said back and having a hinged extension adapted to fold upon the bar adjacent to the back, the main hinge being situated near the periphery of the bell and the entire bar and bar extensions except the hinge lying when folded within said periphery, substantially as set forth.

543,549. VALVE. JOHN M. HARTMAN, Philadelphia, Pa. Filed Feb. 24, 1891. Serial No. 382,355. (No model.)



Claim.—1. The combination of the valve, the valve stem and the casing having an opening for the free passage of said stem, with a ring mounted upon the exterior of the casing at said opening, said ring having its inner periphery beveled on both sides, and a pair of collars mounted near the top and bottom of said stem respectively, and having oppositely beveled surfaces, each in correspondence with the bevel upon the proximate side of the ring, substantially as set forth.

2. The combination with the valve, the valve stem having oppositely beveled collars, and the valve casing having a ring beveled on both sides, as set forth, and surrounding said stem, of a chain connected with the upper end of said stem, a balancing device (such as a pulley and counter-weight) and a rotatable weighted arm having a shaft engaging with said chain, whereby in the uppermost and lowest positions of the valve the counter-weight and the valve may respectively be overbalanced, to maintain a close fit between the respective collars and the ring, substantially as set forth.

3. The combination with the valve, valve stem, and the casing provided with a ring having a bevel on its upper side, of a longitudinally adjustable collar, mounted near the upper end of the stem, and having a beveled edge in correspondence with the bevel on the upper side of said ring, substantially as set forth.

4. The combination of the valve; the valve-casing having an extension for withdrawal of said valve; the valve-stem provided with a point of suspension out of the line of its axis and toward the front face of the valve; a guide block, *d*, mounted upon the rear face of said stem; and a guide-strip, *e*, mounted upon the interior of said extension to guide said block, substantially as set forth.

5. The combination with the valve, of a rearwardly projecting lug mounted at the bottom thereof, and a wedge block mounted in the bottom of the casing opposite to the seat, said wedge-block having an inclined surface upon its lower portion and a substantially vertical surface extending above the inclined portion, whereby the valve is supported during the act of raising, until the opening of a passage sufficient to establish equilibrium on both sides thereof, substantially as set forth.

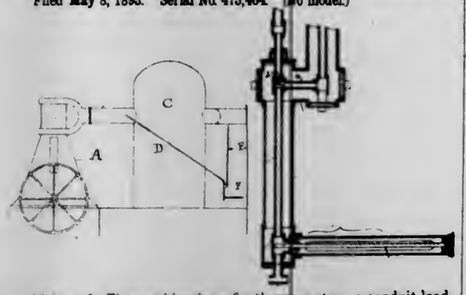
6. The combination with the valve casing, of an outwardly bulged portion extending around that portion which is immediately adjacent to the valve, and a detachable shield of T-shaped cross section mounted within said bulged portion, substantially as set forth.

7. The combination with the valve and casing, of a seat consisting of a hollow metallic annulus of triangular cross section, provided with interior water circulation and a fire brick lining extending over the inclined back of said annulus, whereby only the edge of the water-cooled seat is exposed to the direct action of the passing blast, substantially as and for the purposes set forth.

8. The combination with the casing, and the valve seat situated therein, of the valve having a stem passing freely through an opening in the extension of said casing, and a supporting attachment for said stem arranged on that side of the center of gravity of the valve which is toward the seat, whereby in the opening and closing of the valve the face thereof is caused to scrape against the seat, as and for the purposes set forth.

9. The valve B consisting of a flat disk having an annular flange projecting on each side around its periphery, in combination with dished plates secured on each side of said disk within said flanges, and a packing of refractory non-conducting material arranged within the dished portions of said plates, substantially as set forth.

543,550. PYROMETER. JOHN M. HARTMAN, Philadelphia, Pa. Filed May 8, 1893. Serial No. 473,464. (No model.)

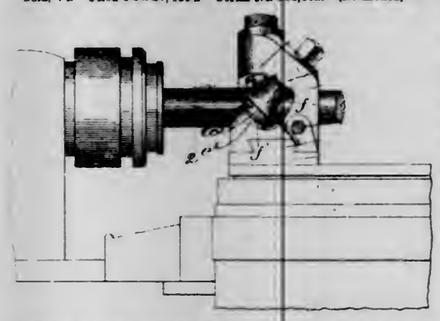


Claim.—1. The combination of a thermometer; a conduit leading thereto; a blast-producing apparatus; a blast-heating apparatus communicating therewith; a hot air pipe communicating with the exit of the blast heating apparatus and leading to said conduit; and a diluting pipe also leading to said conduit, but communicating with the blast-producing apparatus at a point in advance of the blast-heating apparatus, substantially as set forth.

2. The combination of a thermometer; a chamber inclosing the exposed portion thereof; a conduit communicating with said chamber; a blast-producing apparatus; a blast-heating apparatus; inlet and outlet pipes for said blast-heating apparatus; a hot air pipe leading from said outlet pipe to a point of communication with said conduit; a diluting pipe leading from said inlet pipe to said conduit; and a nozzle interposed between said diluting pipe and said conduit at the point of communication of the hot air pipe therewith; substantially as set forth.

3. The combination of a thermometer; a chamber inclosing the exposed portion thereof; a conduit communicating with said chamber; a blast-producing apparatus; a blast-heating apparatus; inlet and outlet pipes for said blast-heating apparatus; a hot air pipe leading from said outlet pipe to a point of communication with said conduit; a diluting pipe leading from said inlet pipe to said conduit; said diluting pipe being projected within the inlet pipe in the direction of the current, substantially as set forth.

543,551. METAL-REDUCING TOOL. JAMES HARTNESS, Springfield, Vt. Filed Feb. 27, 1894. Serial No. 501,692. (No model.)

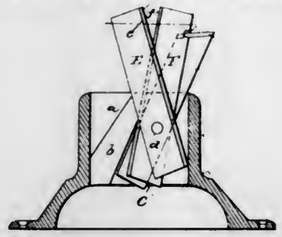


Claim.—A metal-reducing tool or appliance comprising a cutter having a circular cutting edge, a holder composed of a bottom-portion formed to rest on a support on a lathe and an arm or standard rising from said bottom-portion and curved to extend over the work, an adjustable bearing on said arm or standard above the cutter, a bearing in said bottom-portion below the cutter, said bearings being formed to engage trunnions on the cutter and arranged to hold the cutter in an oblique position relatively to the work, a back rest adjustable toward and from the cutter in a socket formed in the standard-portion of the holder, and a device for securing the back-rest to the holder in any position to which it may be adjusted.

543,552. COMBINED KNIFE AND SCISSORS SHARPENER. FRIEDERICK HAYES, Philadelphia, Pa. Filed Apr. 8, 1895. Serial No. 544,979. (No model.)

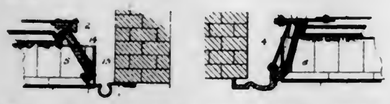
Claim.—1. In a knife and scissors sharpener the combination with two crossed blades and a third blade arranged to co-operate with one of said crossed blades, of a supporting frame having a socket for the shanks of said blades with offsets therein for separately guiding the same, and a screw arranged to clamp or release the blades, substantially as set forth.

2. In a knife sharpener the combination with a supporting frame and clamping device, of two crossed blades having their inner edges beveled so as to provide one acute edge in the contact plane of the crossed plates and another acute edge in the outer plane of the opposite plate, substantially as and for the purpose set forth.



3. In a knife and scissors sharpener the combination of a knife sharpening blade having a notch formed in its outer edge below the top thereof, and a scissors sharpening blade having the beveled edge thereof arranged transversely to said notched edge, with mechanism for adjustably supporting the same, substantially as and for the purpose set forth.

543,553. FIREPLACE-LINING. JOSEPH F. HEWITT and JOHN W. HEWITT, Allegheny, Pa. Filed June 19, 1894. Serial No. 515,053. (No model.)



Claim.—1. In a fire place the combination of the detachable and movable front and back tile-supporting frames, ties connecting said frames, and a shallow open sided box filled with tiles and extending between and movably supported in said frames and constituting an inner wall of the fire place adapted to be slid into and out of the tied frames, substantially as set forth.

2. In a fire place, a hearth consisting of a shallow open topped box 11 filled with tiles, in combination with the front and back frames and with tile-lined sides and the ties connecting said frames said sides having transverse slots or recesses 12 adapted to receive and support the ends of said box whereby the hearth is suitably supported and is made removable for repairs, substantially as set forth.

3. In a fire place, the removable box 11 filled with tiles, in combination with the front frame having shoulders 6, the back frame having grooves for tiles, the slotted sides lined with tiles, said tile being situated between said shoulders and grooves, and the sides slotted to receive the said box and provide for it a bottom support, substantially as set forth.

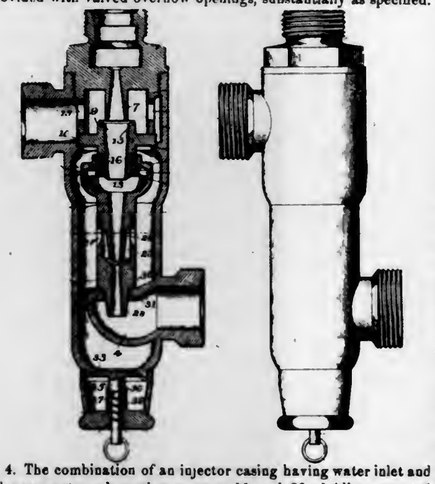
4. In a fire place, the combination of a burner, a receptacle 18 consisting of a shallow open topped separable pan filled with asbestos board or the like and provided with extensions 18' whereby it is adapted to be suspended upon the sides of the fire place, with said sides and with the front and back frames, both sides and backs and also the box being separable, substantially as set forth.

543,554. INJECTOR. ISAAC R. LAUX, Orrville, Ohio. Filed Nov. 14, 1894. Serial No. 528,304. (Model.)

Claim.—1. An injector having lifting, combining, and discharging cones, the combining cone being provided at the mouth of the lifting cone with an enlarged cavity which is larger in diameter than the exterior of the lifting cone, and is provided with overflow openings in its upper side, in combination with an annular upwardly opening valve slidably mounted upon the contiguous portion of the lifting cone and adapted to be actuated by gravity to close said overflow openings, whereby an excess of pressure within the combining cone acts upon the said valve parallel with the direction of its movement to allow escape of fluid through the overflow openings, said valve having a concaved under surface, substantially as specified.

2. The combination with an injector casing having an overflow cavity and provided at one end with a removable cap, of lifting, combining, and discharging cones detachably connected together independently of and seated within the casing, and being held therein by said cap, whereby they may be removed from the casing without disconnection the upper end of the lifting cone being in communication with a water inlet port, the lower end of the discharging cone being in communication with a discharge port, and the combining cone being provided with valved overflow openings, substantially as specified.

3. The combination with an injector casing having an overflow cavity, of a cap removably fitted in one end of the casing and provided with an integral nozzle or jet, lifting, combining, and discharging cones detachably connected together independently of and being seated within the casing, and being held therein by said cap which is provided with a flange to bear upon a lateral flange of the lifting cone with said nozzle or jet inserted in the upper end of said cone, whereby the cones may be removed from the casing without disconnection, the upper end of the lifting cone being in communication with a water inlet port, the lower end of the discharging cone being in communication with a discharge port, and the combining cone being provided with valved overflow openings, substantially as specified.



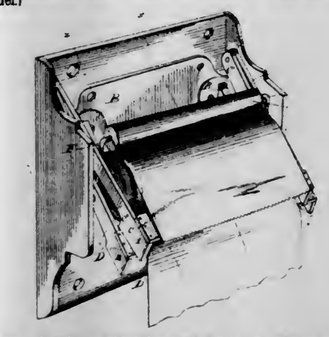
4. The combination of an injector casing having water inlet and discharge ports and contiguous seats 11 and 30, rigidly connected lifting, combining, and discharging cones, the former being provided with a flange which is fitted upon the seat 11 and the latter of which is provided with a shoulder fitted upon the seat 30, a cap removably fitted in the upper end of the casing and provided with a depending perforated flange to bear upon the flange of the lifting cone, and also provided with a steam jet which is arranged in axial alignment with the connected cones, said combining cone having an enlarged cavity provided with overflow openings communicating with an overflow chamber surrounding the cones, a gravity closed valve arranged to control said overflow openings, and a valved outlet opening at the lower end of the overflow chamber, substantially as specified.

5. The combination with an injector casing having an overflow chamber provided with a valved outlet, of connected lifting, combining, and discharging cones, arranged in axial alignment with the steam jet and in communication at opposite ends with water inlet and discharge ports, the combining cone being provided with valved overflow openings communicating with the overflow chamber, and the discharging cone being provided with openings in registration with perforations in a reduced lower portion of the combining cone, the reduced lower portion of the combining cone extending below said openings in the discharging cone, substantially as specified.

6. The combination with an injector casing having an overflow chamber provided with a valved outlet, of connected lifting, combining, and discharging cones arranged in axial alignment with a steam jet and connecting water inlet and discharge ports, the combining cone being provided with valved overflow openings arranged in the upper side of an enlarged cavity of said cone, said cavity being located adjacent to the mouth of the lifting cone, the discharging cone being provided with an enlarged chamber provided in its side walls with outlet openings, and the combining cone being provided with a reduced downwardly tapered portion which extends axially within the enlarged cavity of the discharging cone and is laterally perforated to communicate with the openings in the walls of the discharging cone, substantially as specified.

7. The combination with an injector casing having an overflow chamber provided at its lower end with an outlet opening, water inlet and discharge ports, an axial steam jet, and connected lifting, combining, and discharging cones, of an overflow nozzle in communication with the outlet opening of the overflow chamber, a valve seated contiguous to and adapted to close said outlet opening and provided with a stem arranged in a suitable guide, a spring for actuating and normally holding the valve seated, and a ring connected to an exposed extended portion of the valve stem and adapted to be engaged with a depression contiguous to the stem to hold the valve in its unseated position, substantially as specified.

543,555. PAPER-ROLL HOLDER AND CUTTER. ELISHA MORGAN, Springfield, Mass. Filed July 26, 1889. Serial No. 318,738. (No model.)

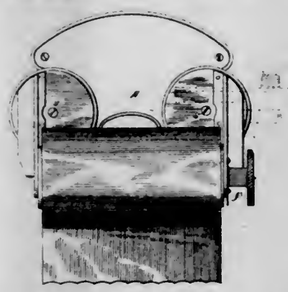


Claim.—1. The combination with the paper roll composed of two superposed webs of paper wound together in roll form and a fixture in which said roll is mounted, of arms mounted on the bracket and two knives mounted on said arms in proximity to the roll, one for each sheet and bearing a fixed relation thereto during the unwinding and severing of each sheet; substantially as described.

2. The combination with the paper roll composed of two superposed webs of paper wound together in roll form and a fixture in which said roll is mounted, of arms pivotally connected to the bracket and two knives mounted on said arms in proximity to the roll, one for each web; substantially as described.

3. The combination with the paper roll composed of two superposed webs of paper wound together into roll form and a fixture in which said roll is mounted, of the swinging arms connected to said fixture, the knives on the arms in proximity to the roll and the friction brake connected and swinging with the knives; substantially as described.

543,556. TOILET-PAPER FIXTURE. ELISHA MORGAN, Springfield, Mass., and OLIVER H. HICKS, Chicago, Ill., assignors to the Morgan Envelope Company, Springfield, Mass. Filed Jan. 7, 1892. Serial No. 417,287. (No model.)



Claim.—1. In a toilet paper fixture, the combination with the removable roll of easily severed or separated paper, and the support upon which said paper is pivotally mounted, of the spring forming a permanent portion of the support and located intermediate and connecting the roll and support, adapted to be put under increased tension by a forward rotation of the roll, and to return the roll to normal position after the separation of a length of the paper, with means for arresting the rotation of the roll; substantially as described.

2. In a toilet paper fixture, the combination with the supports, of the removable roll of paper mounted thereon, a spring forming a permanent part of the support cooperating with the roll and put under increased tension by a pull upon the free end and forward rotation of the roll and a stop for limiting the backward movement of the spring and roll; substantially as described.

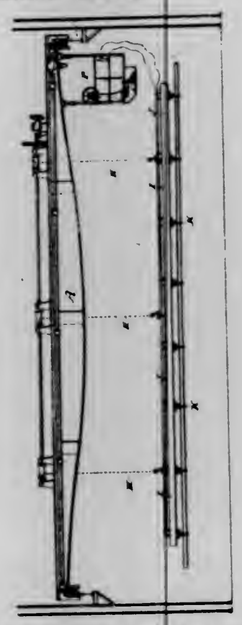
3. The combination with the support and the spring impelled arm carried thereby, of the rotary roll of paper provided with projections cooperating with the spring impelled arm, whereby the roll and arm are connected for simultaneous movement; substantially as described.

4. The combination with the supports and the spring impelled arm carried thereby, of the rotary roll of paper carried by the supports and provided with projections cooperating with the spring impelled arm and the stop for arresting the movement of the arm; substantially as described.

5. The combination with the arms having the plugs or roll supports, the short shaft passing through one of said plugs the arm on one end of the shaft and the disk on the opposite end, of the spring for rotating the shaft and the stop; substantially as described.

6. The herein described roll of paper for toilet fixtures having the core and the metal strip interposed between the core and roll paper, said strip being provided with projections extending into the central opening and adapted for cooperation with the fixture; substantially as described.

543,557. **OVERHEAD TRAVELING CRANE.** THOMAS R. MORGAN, Sr., Alliance, Ohio, assignor of three-fourths to Thomas R. Morgan, Jr., John R. Morgan, and William H. Morgan, same place. Filed Sept. 10, 1894. Serial No. 522,647. (No model.)



Claim.—1. The combination with a crane and suspending means carried thereby, of a table carried by said suspending means and a series of electrically operated tongs carried by said table or support.

2. The combination with a crane and a table suspended from said crane, of a series of tongs or grapples carried by said support or table, and magneto-electric devices for opening said tongs, substantially as set forth.

3. The combination with a traveling bridge, a drum thereon, a chain carried by the drum and a table carried by the chain, of a series of electrically operated tongs carried by the support or table.

4. The combination with a traveling bridge, a series of drums thereon, means for actuating the drums simultaneously and a chain on each drum, of a table carried by the chains and electrically operated tongs carried by the table, substantially as set forth.

5. The combination with a traveling bridge, a shaft carried thereby, a series of drums secured to said shaft and a chain to each drum, of a table carried by the chains, and a series of electrically operated tongs supported by the table.

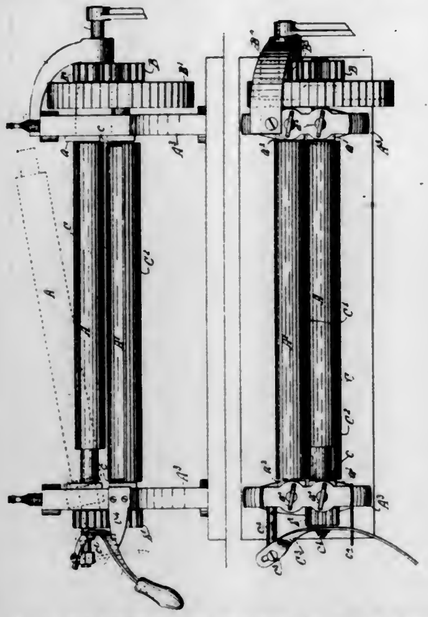
6. The combination with a table and a series of tongs connected thereto, of a solenoid for each tongs, substantially as set forth.

7. The combination with a table, links pivoted thereto and curved arms pivoted to the links the said curved arms being pivoted together, of solenoids, the cores of which are connected to the curved arms whereby the upward movement of the cores separates the free ends of the arms, substantially as set forth.

8. The combination with a table links arranged in pairs pivoted to said table and a curved arm pivoted at one end to each link, the two arms of each pair of links being pivoted together, of solenoids the cores of which are connected to the curved arms, substantially as and for the purpose described.

543,558. **PIPE-FORMING MACHINE.** CHARLES OBERLE and ERNST FALLER, North Tarrytown, N. Y., assignors to MAX H. C. Brombacher, same place. Filed Sept. 30, 1892. Serial No. 447,392. (No model.)

Claim.—1. In a pipe forming machine the combination with the pressure roller and the turning roller, of the longitudinally movable forming roller having the grooves, and gearing for imparting a fast or slow rotary movement to the pressure roller, substantially as specified.



2. In a pipe forming machine the combination with the pressure roller and the turning roller, of the tilting longitudinally movable roller having the longitudinal grooves, and a pressure plate movable between the pressure roller and the turning roller, substantially as specified.

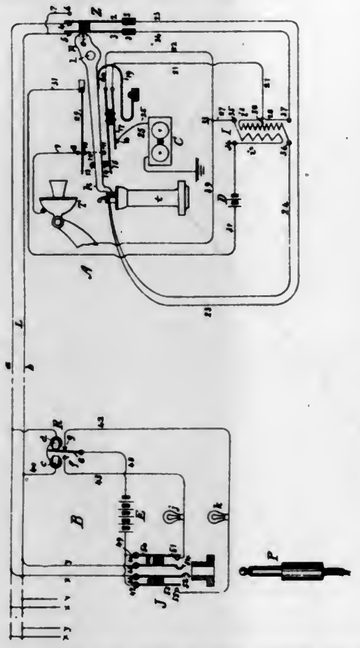
3. In a pipe forming machine, the combination with the pressure roller and the turning roller of the forming roller movable longitudinally, a lever for moving said roller longitudinally, and the swinging bearing block for said roller, substantially as specified.

543,559. **SIGNALING APPARATUS FOR TELEPHONE-EXCHANGE CIRCUITS.** JOSEPH J. O'CONNELL, Chicago, Ill., assignor to the American Bell Telephone Company, Boston, Mass. Filed May 14 1895. Serial No. 549,294. (No model.)

Claim.—1. The combination of a main telephone circuit, two local signal circuits at a station thereof each including a visible signal, a switch socket for the said main circuit, and a switch plug therefor; a relay contained in the said main circuit and adapted to respond diversely to current impulses of opposite direction circulating therein; and circuit opening and closing switches at two points of each signal circuit so arranged that the signals of either of the said circuits can only be displayed when such circuit is closed at both points, one switch of both circuits being controlled by the said relay, and the other by the switch socket and plug, substantially as described.

2. The combination with a telephone circuit extending between a subetation and a central station, a switch socket and plug therefor, and a signal receiving main circuit relay; of two local signaling circuits, each including a visible signal responsive to the passage of an electric current through its respective circuit, and adapted to disappear on the cessation of such current; two circuit controllers for each signal circuit, one associated with the switch socket, and operated by the insertion and withdrawal of the plug, and the other operated by the main circuit relay, the said signaling circuits being so arranged that one of them is normally closed in the switch socket and open at the relay, while the other is open at the switch socket and closed at the relay, whereby the relay is enabled to display the signal of the former only when the plug is not in its socket and the signal of the latter only when the plug is in its socket, substantially as described.

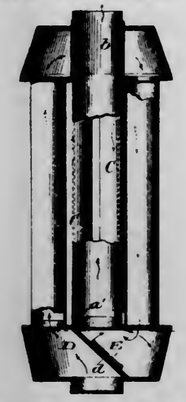
3. In a telephone switchboard apparatus the combination of a main telephone circuit extending to a substation; a polarized relay permanently connected therewith, and adapted to respond to currents of opposite sign traversing the said main line; a switch socket containing terminals of the said main circuit adapted for interconnection with other main circuits, and a switch plug associated therewith for the establishment of such interconnections; normally inert local signal circuits each including a glow lamp for call and disconnecting signals respectively, and a current generator therefor, the call signal circuit having a normally closed switch, and the disconnecting signal having a normally open switch within the switch socket, to be opened and closed respectively by the insertion of the plug, and to be restored to their normal condition on the withdrawal thereof; the said signal circuits being also controlled by the armature of the polarized relay, so that either one if closed within the switch socket may have its signal made operative when concurrently closed by the relay armature, in response to a main line current of appropriate sign, substantially as described.



4. The combination with a telephone circuit extending between a central station and a substation, of a substation apparatus comprising an automatic switch lever adapted to be actuated by the removal and replacement of the telephone, a battery, an induction coil having a primary winding in circuit with the said battery, and a secondary winding in the main telephone circuit; a circuit or current changing switch actuated by the movements of the said automatic switch lever and transposing the relation of the main circuit and induction coil; and circuit closing and breaking springs and contact stops also actuated by the said switch lever in both directions, and adapted to close and open the circuit of the battery through the primary winding; whereby the stronger induced current due to the opening of the primary circuit is established at different times in opposite directions in the secondary winding and main line; substantially as and for the purposes specified.

5. The combination with a telephone circuit extending between a central and a substation, of central station apparatus comprising a polarized relay permanently connected therewith, responsive to changes of direction in main line currents, a switch socket and its plug; and independent local call signal and disconnecting signal circuits including each a self-restoring visible signal, the said circuits being controlled jointly by the said polarized relay, and the switch socket and plug, so that the call signal circuit may be closed by the said relay and the signal given when the plug is withdrawn, while the disconnecting signal circuit may be closed and the signal given when the plug is inserted; and substation apparatus comprising the automatic switch lever actuated by the removal and replacement of the telephone, a battery, an induction coil, a circuit closing and breaking mechanism actuated by the movement of the automatic switch lever in both directions and adapted to close and open the circuit of the battery through the induction coil primary, and to develop induced currents thereby in the secondary winding and main line, and a circuit changing or current changing switch also actuated by the switch lever, and adapted to reverse the relations of the main circuit with the induction coil, and thereby select the stronger induced currents consequent on the opening of the primary circuit, and to cause them to circulate in the main line in opposite directions, whereby the central office relay is enabled to operate the call signal on the removal of the telephone, and the disconnecting signal on its replacement, substantially as described.

543,560. **RADIATOR.** ANTON OHNENUS, Quincy, Ill. Filed Feb. 25, 1895. Serial No. 539,645. (No model.)



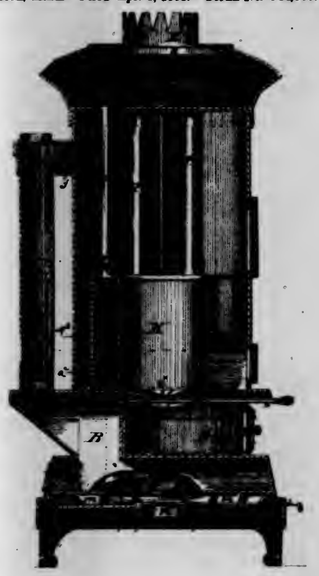
Claim.—1. A radiator composed of an upper and a lower drum, pipes connecting the same, and a central pipe affording communication from the lower drum through the upper one, substantially as specified.

2. A radiator composed of an upper and a lower drum, a diaphragm dividing the lower drum into two compartments, pipes connecting the two drums, and a central pipe affording communication between the one compartment of the lower drum and the chimney, as set forth.

3. A radiator consisting of an upper and a lower drum, pipes connecting the same, and an inclined partition within the lower drum, as set forth.

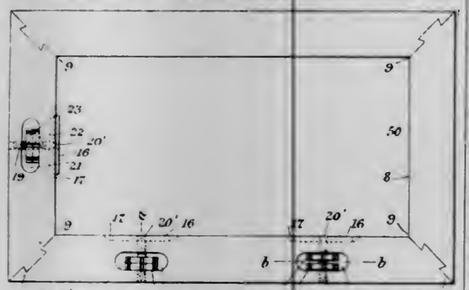
4. A radiator consisting of an upper and a lower drum, the former having a central sleeve extending therethrough and the lower provided with an upper and a lower neck, and an inclined partition and pipes connecting the upper and lower drum part upon one side of said partition and part upon the other side, substantially as shown and described.

543,561. **HEATING-STOVE.** OLE OLSON and CARL P. CARLSON, Ruthton, Minn. Filed Apr. 8, 1895. Serial No. 544,863. (No model.)



Claim.—In a heating stove the main body A, the hot air chamber C, at its top; the fire pot, the air chamber O partially surrounding it, and the air pipes P, connecting the two chambers O, C; combined with the flue A^3, in the lower portion of the body A, the inclined grate a^3, the air ducts R, extending up through the base and connecting at their upper ends with the chamber O, the air receiver, and the base, with which the stove pipe connects, substantially as shown.

543,562. CHASE FOR PRINTING-PRESSES. JOSEPH J. RAFTER, Hartford, Conn. Filed May 14, 1895. Serial No. 549,240. (No model.)



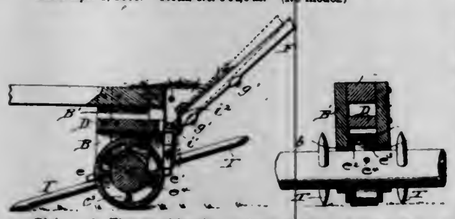
Claim.—1. A chase for a printing-press composed of sections, and provided with a suitable clamping device comprising a clamping-plate adapted to normally rest in a recess in the inner wall of a section; and having its outer face thereof flush with said inner wall; a screw-threaded spindle connected to said plate, and extending transversely through the section; a peripherally-toothed clamping-nut, and a peripherally-toothed check-nut disposed in an aperture in the top wall of the section, and working on said screw-threaded spindle to adjust the clamping-plate, substantially as described.

2. A chase for a printing-press consisting of a frame and a clamping device, said clamping device comprising a clamping-plate adapted to normally rest in a recess in the inner wall of the frame, and having its outer face flush with said inner wall; a screw-threaded spindle connecting said plate, and extending transversely through the frame; and a clamping-nut and a check-nut disposed in an aperture in the frame between the inner and outer walls thereof, and working on said screw-threaded spindle, to adjust the clamping-plate, substantially as described.

3. A chase for a printing-press comprising a frame having an aperture extending from the top to the bottom walls thereof; a clamping device consisting of a plate adapted to normally rest in a recess in the inner wall of the frame, and having its outer face flush with said inner wall; a screw-threaded spindle projecting transversely through the frame and secured to said plate; and a peripherally-toothed clamping-nut and a peripherally-toothed check-nut disposed in said aperture, and adapted to work on said spindle, whereby said plate can be adjusted, clamped, and held in position, until manually readjusted, substantially as described.

4. A chase for a printing-press comprising a frame having an aperture extending from the top to the bottom walls thereof intermediate of its outer and inner wall; a clamping-plate adapted to normally rest in a recess in the inner wall of the frame; a screw-threaded spindle projecting through the frame and aperture and secured to said plate; and a clamping-nut and a check-nut disposed in said aperture, and adapted to work on said spindle, whereby said plate can be adjusted, clamped, and held in position until manually readjusted, substantially as described.

543,563. HORSE-RAKE. JOHN H. RANDOLPH, Baton Rouge, La. Filed Apr. 1, 1895. Serial No. 544,042. (No model.)



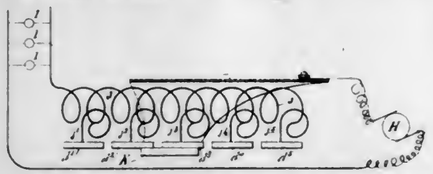
Claim.—1. The combination, substantially as hereinbefore set forth, of the tongue, the down-hangers, the spacing block below the tongue and secured to the down-hangers, the rake head journaled in the down-hangers, the removable skeleton hub secured to the rake head between the down-hangers, stops on the periphery of the hub, the stop lever pivoted to a rearwardly projecting portion of the tongue, beyond the down-hangers, and provided with a slot through which extends a bolt for limiting the movement of the lever, and an adjustable stop or foot piece on the lower end of the stop lever adapted to engage with the stops on the hub.

2. The combination, substantially as hereinbefore set forth, of the tongue, the rake head, the angle irons secured to the tongue and extending under the rake head, the filling pieces between the vertical portions of the angle irons and conforming at their lower ends to the rake head, the hub secured to the rake head between the angle iron hangers, the stop lever pivoted to a rearwardly projecting portion of the tongue, beyond the down-hangers, and an adjustable foot piece on the stop lever adapted to engage with stops on the hub of the rake head.

3. The combination, substantially as hereinbefore set forth, of the tongue, the down-hangers, the rake head journaled in the down-hangers, the stop lever pivotally connected with a rearwardly projecting portion of the tongue, beyond the down-hangers, and the slotted, serrated foot piece provided with a bolt for securing it to the lower portion of the stop lever.

4. The combination of the tongue, the down-hangers, the rake head journaled in the down-hangers, the skeleton hub secured to the rake head between the hangers, the stop lever having a web pivoted to a rearwardly projecting portion of the tongue, beyond the down-hangers, a spring secured to the tongue and bearing on the top of the web, an adjustable foot piece adapted to engage with the stops of the hub of the rake head, and bolts extending through the rake head at its opposite ends and having their heads secured in socket plates, substantially as described.

543,564. REACTIVE COIL. EDGAR E. STARK, New York, N. Y., assignor to Sigmund Bergman, same place. Filed Feb. 21, 1894. Serial No. 500,975. (No model.)



Claim.—1. The combination of a part made of iron laminæ, a wire forming part of an electric circuit wound or coiled around it and in electrical communication with a set of insulated contact pieces, a sliding contact or brush interposed in the circuit and which is movable over said set of insulated contact pieces, and reverse coils or windings attached to coils or turns of the said wire and the said set of insulated contact pieces, substantially as specified.

2. The combination of a part made of iron laminæ, a wire forming part of an electric circuit and coiled or wound around said part, a shield or hood encircling said part and capable of movement relatively to the same, reverse coils or windings electrically connected to said coil, and means for successively shunting portions of said coil through these reverse coils or windings, substantially as specified.

3. The combination of a part made of iron laminæ, a wire forming part of an electric circuit, and coiled or wound around said part, a shield or hood encircling said part and capable of movement relatively to the same, reverse coils or windings electrically connected to said coil, and means for successively shunting portions of said coil through these reverse coils or windings simultaneously with a movement of shield or hood, substantially as specified.

4. The combination of a part made of iron laminæ, a wire forming part of an electric circuit and coiled or wound around said part, a shield or hood encircling said part and capable of movement relatively to the same, insulated contact pieces, reverse coils or windings electrically connected to insulated contact pieces, and to said coil, a metallic brush sliding over said contact pieces and electrically connected to shield or hood, and a metallic piece connecting said hood to a terminal of an electric circuit, substantially as specified.

543,565. COMBINED STEP-LADDER AND IRONING-BOARD. CHARLES WALTER, Locust Corner, Ohio. Filed Jan. 17, 1894. Serial No. 497,170. (No model.)

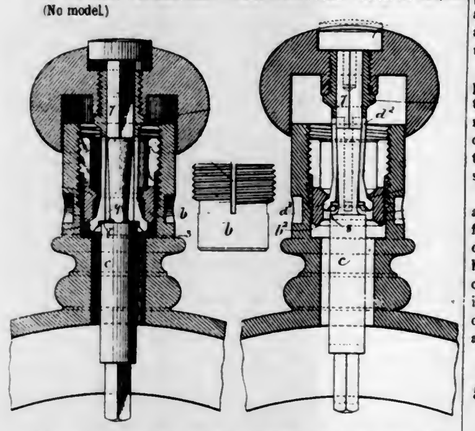
Claim.—1. An improved combined step ladder and ironing board, comprising a pair of long supporting members A, A, a board F pivoted at one end between the legs A and having at such end a transverse strip E, such board forming the back brace when the device is used as a step ladder, and a short pair of legs or brace members G G pivoted between the legs A A to fold flush therewith and a cross strip

H secured to one end of such legs, such strip H, the strip E and legs G being arranged relatively so that when the said legs G G are folded between the legs A A the said strip H will engage the strip E and force the board F inward toward the legs A A, and form a locking means to prevent the legs and the board F from spreading as pressure is applied to the lower rung J' of the leg section G, substanially as and for the purpose shown and described.



2. The combination with the long leg members A, having horizontally disposed slots C^x, the plates K, secured thereto having corresponding slots, and provided with socket portions above and below the slots, the spring pressed keeper bolts k' movable in the sockets, and the short supporting legs, of the board F having a cross piece E provided with trunnions e' adapted to be fitted in the slots of the legs A, and plates K, and a stop member on the board to engage the short legs, all arranged substantially as shown and described.

543,566. PENDANT FOR STEM-WINDING WATCHES. CHARLES A. WHITNEY, Waltham, Mass. Filed Oct. 24, 1894. Serial No. 526,815. (No model.)



Claim.—1. In a watch having a winding and hands-setting bar and a crown adapted to rotate said bar and to move it endwise, the improved mechanism for locking the bar in its winding position, the same comprising a fixed locking member attached to the pendant, a contractible sleeve attached to the crown and engaged by said fixed locking member when the crown and bar are in their winding position, and a movable locking member adapted to normally hold the sleeve in engagement with the fixed locking member and movable inwardly from its normal position to permit the separation of the sleeve from the fixed locking member and the outward movement of the crown, sleeve, and bar.

2. The combination of a watch-case pendant having a fixed locking member, a crown having a contractible sleeve adapted to yieldingly engage said locking member when the crown is in its inner position, and a winding and hands setting bar rotatively engaged with the crown and provided with a shoulder or movable locking member adapted to normally hold the sleeve in engagement with the fixed locking member, said bar having a limited independent endwise movement so that it may be moved inwardly to displace the said movable locking member and permit the outward movement of the crown, sleeve, and bar.

3. The combination of a watch-case pendant, a crown having a contractible sleeve projecting into the pendant, a winding and hands-setting bar rotatively engaged with the crown and having a shoulder or movable locking member, a screw threaded sleeve engaged with the pendant and provided with a fixed locking member to hold the contractible sleeve, crown, and bar in position for winding and with a stop or shoulder to limit the outward movement of the contractible sleeve, crown, and bar, the bar having a limited independent endwise movement so that it may be moved inwardly to displace its shoulder or locking member and permit the outward movement of the crown, sleeve, and bar.

4. The combination of a watch-case pendant internally screw-threaded, a threaded sleeve screwed into the pendant and terminating in a locking face, a crown having a contractible split sleeve projecting into the pendant and having projections or enlargements on the ends of its arms, said projections collectively forming a contractible shoulder adapted to engage the locking face in the pendant and prevent outward movement of the crown, and a winding and hands-setting bar rotatively engaged with the crown and movable endwise independently thereof, said bar having a shoulder which normally prevents the contraction of the shoulder on the crown, and a recess which permits such contraction when the bar is moved inwardly.

543,567. MEANS FOR AUTOMATICALLY REMOVING UNCONSUMED PRODUCTS FROM GUN-BARRELS. JOHN M. BROWNING, Ogden, Utah. Filed Apr. 16, 1895. Serial No. 545,920. (No model.)

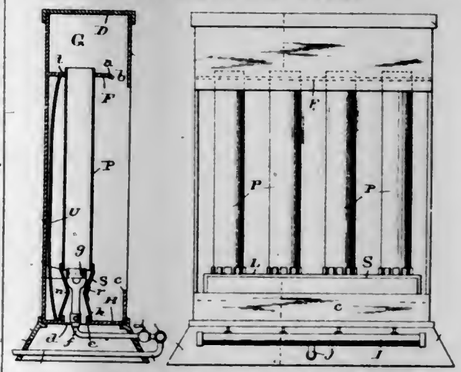


Claim.—1. In a breech loading fire-arm the air pump, consisting of an air chamber in the receiver or attached to the receiver and a piston attached to one of the reciprocating parts of the breech mechanism and fitting in said air chamber, and a passage leading from said air chamber and opening into the receiver in rear of and in the direction of the cartridge chamber.

2. In a breech loading fire-arm the combination of the receiver provided with an air chamber in rear of the breech bolt, a piston attached to the breech bolt and fitting in said air chamber, means to reciprocate said breech bolt, and a passage leading from said air chamber into the receiver in rear of and in the direction of the cartridge chamber of the barrel, substantially as and for the purpose specified.

3. In a breech loading fire-arm in combination with the receiver and the cartridge chamber opening into said receiver, a breech bolt for opening and closing said cartridge chamber, means for reciprocating said breech bolt, a hammer in rear of said breech bolt, said hammer provided with a piston, an air chamber attached to the receiver and a passage leading from said air chamber into the receiver in rear of and in the direction of the cartridge chamber, whereby during the opening movement air is compressed in said air chamber and forced into the cartridge chamber, for the purpose specified.

543,568. GAS-STOVE FOR HEATING. THOMAS A. BRYAN, Baltimore, Md., assignor to the Bryan Manufacturing Company, same place. Filed May 31, 1894. Serial No. 512,992. (No model.)



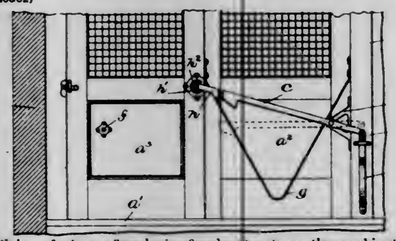
Claim.—1. In a gas stove, the combination, with a base, of a case seated thereon, said case comprising, top, bottom, back and end walls, the bottom being slotted longitudinally and provided with an upflange around the slot, a bottomless shell fitting over said flange, the top of which is provided with openings, burners in the shell, one for

each opening in the top, a supply pipe communicating with all of the burners, and a glass tube from each opening in the shell to the upper portion of the case, substantially as set forth.

2. In a gas stove, the combination, with a base, of a case seated thereon, said case comprising top, bottom, back and end walls, the bottom being slotted longitudinally, a bottomless shell fitting over the slot, the top of which is provided with openings and the sides being contracted toward each other at the central portion longitudinally of the shell, the upper portion of one of the sides of the shell being formed into a door, burners within the shell, one for each opening, a supply pipe communicating with all of the burners, and a glass tube from each burner to the top portion of the case, the lower end of the tube resting against the inclined portion of the shell, substantially as set forth.

3. In a gas stove, the combination, with an open front case the top of which is provided with a chamber, the bottom of the chamber being provided with openings and extending nearly to the front of the case, whereby a narrow opening is formed at the lower front portion of the chamber, the bottom of the case being slotted longitudinally, a bottomless shell over the slot, the top of which is provided with openings registering with the openings at the bottom of the chamber at the top of the case, and the side walls are contracted toward each other at the central portion, longitudinally of the shell, burners within the shell, one for each opening, a supply pipe for the burners, a glass tube fitting within the opening over each burner, with its lower end resting against the inclined portion of the shell, and having its upper end projecting through the opening in the bottom of the chamber at the bottom of the case, substantially as set forth.

543,569. SAFETY DEVICE FOR ELEVATORS. THEODORE M. CLARK, Newton, Mass. Filed Nov. 19, 1894. Serial No. 529,213. (No model.)



Claim.—1. In a safety device for elevator doors, the combination of a latch pivoted to the hatchway, a bowed spring fastened at one end to the hatchway and engaged at its free end with the tail of the latch, said bowed spring standing in the path of a projection on the car, a stud on the door and arranged to be engaged by the latch when the door is opened, and an abutment-piece on the door and arranged to come against the end of the latch except when the latter is displaced by the engagement of the projection on the car with the bowed spring.

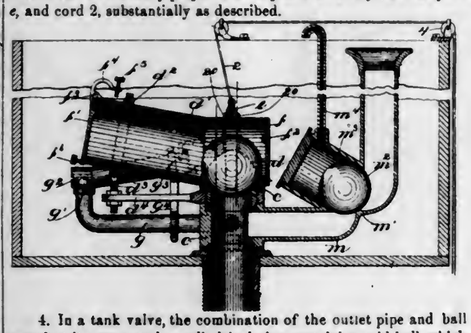
2. In a safety device for elevator doors, the combination of a latch pivoted to the hatchway, a bowed spring fastened at one end to the hatchway and engaged at its free end with the tail of the latch, said bowed spring standing in the path of a projection on the car, a stud on the door and arranged to be engaged by the latch when the door is opened, and an abutment-piece pivoted to the door and arranged to come against the end of the latch except when the latter is displaced by the engagement of the projection on the car with the bowed spring, and to ride over the latch by movement on its pivot in the closing of the door, substantially as described.

543,570. TANK-VALVE. DAVID CRAIG, Melrose, assignor of one-half to Henry Conley, Boston, Mass. Filed Nov. 24, 1894. Serial No. 529,832. (No model.)

Claim.—1. In a tank valve, the combination of an outlet pipe, a ball valve controlling the passage therethrough, a cylindrical pipe containing the ball, which latter snugly fits its interior, said pipe being pivoted at one end, and provided at its lower side at the opposite end with an opening through which the ball projects while closing the outlet pipe, a valve controlling the passage through said pipe, which when open permits the ball to move quickly, and when closed or partially closed, causes it to move slowly, and a cord connected with said pipe, substantially as described.

2. In a tank valve, the combination of the outlet pipe and ball seated at its upper end, a cylindrical pipe containing said ball, which latter snugly fits its interior, said pipe being pivoted at one end, and having an opening at its lower side at the opposite end, through which the ball normally projects, the adjustable valve f', and cord 2, substantially as described.

3. In a tank valve, the combination of the outlet pipe and ball seated at its upper end, a cylindrical pipe containing said ball, which latter snugly fits its interior, said pipe being pivoted at one end, and having an opening at its lower side at the opposite end, through which the ball normally projects, the adjustable valve f', a loose yoke e, and cord 2, substantially as described.



4. In a tank valve, the combination of the outlet pipe and ball seated at its upper end, a cylindrical pipe containing said ball, which latter snugly fits its interior, said pipe being pivoted at one end, and having an opening at its lower side at the opposite end, through which the ball normally projects, the adjustable valve f', and the valve f, and cord 2, substantially as described.

5. In a tank valve, the combination of the outlet pipe and ball seated at its upper end, a cylindrical pipe containing said ball, which latter snugly fits its interior, said pipe being pivoted at one end by an adjustable pivotal connection, and having an opening at its lower side at the opposite end, through which the ball normally projects, the adjustable valve f', and cord 2, substantially as described.

6. In a tank valve, the combination of the outlet pipe and ball seated at its upper end, a cylindrical pipe containing said ball, which latter snugly fits its interior, said pipe being pivoted at one end, and having an opening at its lower side at the opposite end, through which the ball normally projects, a clack valve f' having a limiting stop f^5, and a regulating stop f^4, a cord 2 connected with the pipe, substantially as described.

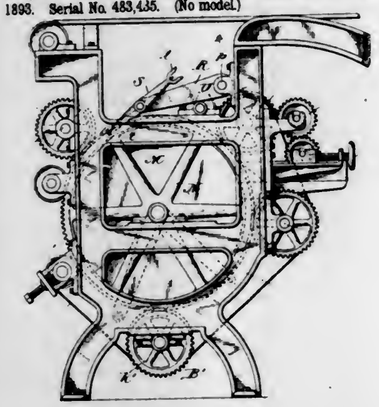
7. In a tank valve, the outlet pipe, and flushing valve, combined with a supplementary bowl-filling device, consisting of a ball seated at the upper end of the pipe g, a cylindrical pipe g^3, which it snugly fits, pivoted at one end and having at its lower side, near its opposite end, an opening 4, through which the ball normally projects, and end valves for said pipe, substantially as described.

8. The tank a, flushing valve contained therein, and the over-flow pipe m, having a contracted portion m', formed with a valve seat, a ball m^3 and vented receptacle therefor, into which the ball is moved by the pressure of the water, substantially as described.

9. In a tank valve, a pivoted cylindrical pipe having an opening at the end opposite its pivotal connection, and containing a ball which normally projects through said opening, and closes on a seat to stop the outlet of the tank, but which is movable to the other end of the pipe when the pipe is turned up, and means for retarding the progress of the ball on its return, consisting of a gravitating valve controlling the passage through the pipe; substantially as described

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543,571. PAPER-BAG MACHINE. CHARLES CRIST, Dayton, Ohio, assignor to the Crist Machine Company, same place. Filed Aug. 18, 1893. Serial No. 483,435. (No model.)



Claim.—1. In a paper bag machine the combination with the main rotary cylinder around which the bag is formed, of a rotating and oscillating former plate arranged to enter the cut lip portion of the blank, with cooperating mechanism in connection with said cylinder and said plate to rotate and oscillate same to open out the blank at the proper fold, substantially as shown and described.

2. In a paper bag machine, the combination, with the main rotary cylinder, of a shaft journaled in an oscillating frame, former plates secured to said shaft, and extending out in opposite directions, forked arms therefor, and pins on the main cylinder to engage within said forks and thus to rotate and oscillate said former substantially as shown and described.

3 In a paper bag machine, the combination, with the main rotary cylinder, of a shaft journaled in an oscillating frame, former plates secured to said shaft, and extending out in opposite directions, two pairs of arms therefor, nearly at right angles to each other with pins on the main cylinder to engage with said arms alternately whereby the former may be rotated oscillated and returned to its original position substantially as shown and described.

4. In a paper bag machine, the combination, with cutting, creasing, and folding mechanism therefor, of a hollow main cylinder around which the bags are formed with hollow trunnions therefor within which steam may be introduced into the cylinder substantially as shown and described.

5. In a paper bag machine the combination with the main rotary cylinder, of a roller folder for the inner and an arm folder for the outer flap of the bag bottom, and means for operating said folders in opposite directions upon said main cylinder in conjunction with each other, whereby the roller folder may turn down the inner flap and the arm folder the outer flap and the folded bag blank be thereupon carried by the cylinder under the roller folder, substantially as shown and described.

6. In a paper bag machine the combination with the main rotary cylinder, of a roller folder for the inner and an arm folder for the outer flap of the bag bottom, and cams for operating said folders in opposite directions upon said main cylinder whereby the roller folder may turn down the inner flap and the arm folder the outer flap and the folded bag blank be thereupon carried by the cylinder under the roller folder, substantially as shown and described.

7. In a paper bag machine the combination with the main rotary cylinder and creasers for the bottom folds, of a roller folder for the inner and an arm folder for the outer flap of the bag bottom, cams on the creaser shafts in connection with said folders whereby the rotation of the shafts will operate said folders in opposite directions upon said main cylinder to fold down the bottom flaps, substantially as shown and described.

543,572. ARTIFICIAL-STONE COMPOSITION AND METHOD OF MAKING SAME. WILLIAM M. DALTON, Alva, Miss., assignor of two-thirds to Lycurgus L. Hammond, same place, and William L. Nugent and Thomas A. McWillie, Jackson, Miss. Filed Nov. 15, 1894. Serial No. 528,906. (No specimens.)

Claim.—1. A composition of matter to be used as artificial stone, consisting of fire clay, silicic oxide, sand, and cement, mixed in substantially the proportions named.

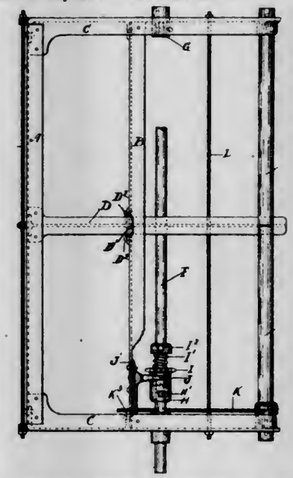
2. The method of making artificial stone which consists in first suitably mixing proper proportions of fire-clay and silica; second, suitably mixing cement and sand in proper proportions; third, combining the first mixture with the second and thoroughly agitating the same; fourth, placing small quantities of this combined mixture in a mold at a time and spraying water onto the mixture as it is being placed in the mold and, fifth, compressing the mixture by means of pressure boards, as it is placed in the mold, substantially as described.

543,573. SEEDING-MACHINE. WILLIAM J. DEALTRY, Louisville, Ky., assignor to the Brennan & Co. Southwestern Agricultural Works, same place. Filed Apr. 11, 1895. Serial No 545,357. (No model.)

Claim.—1. In a seeding machine, the combination, with a metallic frame therefor, of a metallic center piece having a lip or shoulder formed thereon, and cross piece connecting the frame ends and secured to said center piece under and against said overhanging lip, substantially as shown and described.

2. In a seeding machine, the combination, with a metallic frame therefor, of a metallic center piece having a lip or shoulder formed thereon, and a pin integral therewith at its forward end, with cross piece connecting the frame ends and secured to said center piece under and against said overhanging lip, and front piece with hole therein for the reception and riveting thereto of said pin, substantially as shown and described.

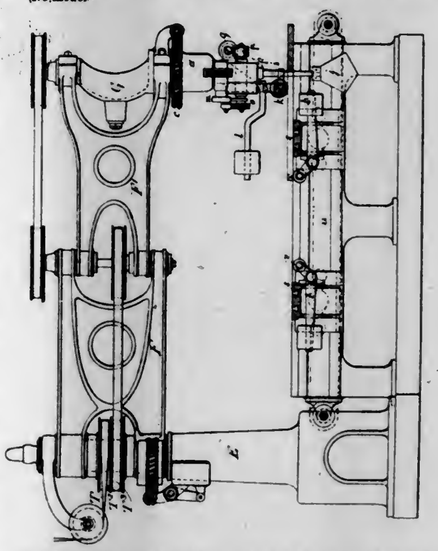
3. In a seeding machine, the combination, with a sprocket clutch mechanism for communicating motion to the seeding devices, of a shifting crank pivoted to the frame in engagement with said clutch mechanism, a rocker bar for elevating the shoes or hoes of the machine and a rod connecting said rocker bar and shifting crank, whereby upon the elevation of the shoes the sprocket clutch will be disconnected, substantially as shown and described.



4. In a seeding machine, the combination, with the axle, of a spring controlled sprocket clutch in connection with a rigid clutch on said axle, a shifting crank pivoted to the frame in engagement with said sprocket clutch, hole in the outer end of said crank with rod sliding therein in one direction, and pin on said rod contacting with said shifter when the rod is shifted in the other direction, rocker bar for elevating and depressing the drill shoes, and rock arm thereon to which said rod is connected, whereby the elevation of the shoes will disconnect said clutch mechanism, substantially as shown and described.

5. In a seeding machine a sprocket wheel for driving the feed shaft with annular recesses in its web on both sides and a hanger for supporting same fitting within said annular recesses so as to be flush with the hub thereof substantially as shown and described.

543,574. UNIVERSAL TURNING RADIAL SAW. HEINRICH EBERHARDT, Düsseldorf, Germany. Filed May 6, 1893. Serial No. 473,251. (No model.)



Claim.—1. A universal jig saw comprising in its construction, a swinging frame, a head mounted therein, a reciprocating saw clamp, a weighted saw blade secured therein, and a toothed rotary feed wheel mounted adjacent to the saw blade and operated from the saw clamp, substantially as described.

2. A universal jig saw comprising in its construction a swinging frame, a head mounted therein, a reciprocating saw clamp, a weighted saw blade secured therein, and a toothed feed wheel under pressure mounted adjacent to the saw blade, substantially as and for the purpose set forth.

3. A universal jig saw comprising in its construction a swinging frame, a head mounted therein, a saw clamp, a bevel wheel crank mechanism for reciprocating the saw clamp, a weighted saw blade secured in the saw clamp, a toothed feed wheel mounted adjacent to the saw blade, means substantially as described for operating the feed wheel, two independent work-tables, and weighted levers mounted on the same and bearing against the work, substantially as described.

543,575. SPITTOON. WILLIS W. FRANTZ, Waynesborough, Pa. Filed Aug. 9, 1894. Serial No. 519,865. (No model.)



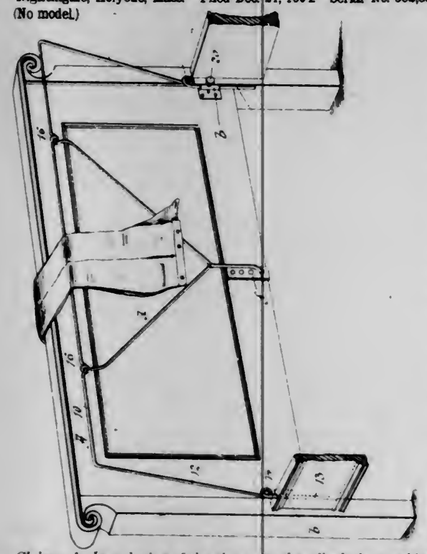
Claim.—1. A spittoon comprising a body portion a removable pan, a funnel independent of both the body portion and pan and yielding means attached between its ends to the body portion one end being connected with the funnel and the other formed to support the pan, substantially as specified.

2. A spittoon comprising a body portion, a removable pan, a funnel independent of both the body portion and pan and yielding means attached between its ends to the body portion one end being connected with the funnel and the other extended below the bottom of the body portion being constructed to support the pan, substantially as specified.

3. A spittoon comprising a body portion with annular inwardly-extending flange at its upper end with an opening, a funnel disconnected from the body portion, and extending into said opening, spring strips secured to the body portion beneath said flange, with their upper ends inclined and secured to the funnel with an opening surrounding the lower end of the funnel, and a removable pan supported on said strips which extend below the lower edge of the body portion to provide a surrounding space, substantially as specified.

4. A spittoon comprising a body portion, spring strips extending above and below the same, a funnel having its lower portion of less diameter than the upper part of the body portion and secured to the upper ends of said strips and a removable pan supported upon said strips beneath the funnel, substantially as shown and described.

543,576. CLOTHES-SUPPORTING ATTACHMENT FOR BEDSTEADS. WILLIAM C. GUILFORD, Chicopee, assignor of one-half to George Nightingale, Holyoke, Mass. Filed Dec. 21, 1894. Serial No. 532,537. (No model.)



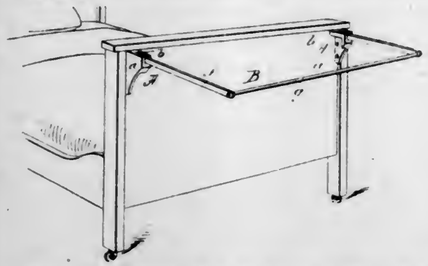
Claim.—1. In a device of the character described, the combination of the swing-frame composed of the intermediate cross-rod, and side members each of which comprises a terminal which has the coils that constitute hinge-like connections with the main portion of the frame, and sockets in which the said terminals may have adjustable movements, of a rod, having a connection with the intermediate member of the frame, an abutment to support the lower end of said rod, and set screws for confining each of said terminals in its duly adjusted position substantially as described.

2. In a device of the character described, the combination with the swing-frame composed of the intermediate cross-rod, and side members each of which comprises a terminal which has the coils that constitute hinge-like connections with the main portion of the frame, and sockets in which the said terminals may have adjustable movements, of a rod, having a connection with the intermediate member of the frame, and several vertically arranged abutments any one of which may be utilized to support the lower end of said rod, and set screws for confining each of said terminals in its duly adjusted position substantially as described.

3. In a device of the character described, the combination with the swing-frame composed of the intermediate cross-rod and the side members, 12, 12, each of which comprises a terminal which has the coil, 14, that constitutes a spring hinge-like connection between the terminal and the main part of the frame, and means for supporting and confining said terminals, of a rod, having a connection with the intermediate member of the frame and an abutment against which may be placed the lower end of said rod, substantially as described and for the purpose set forth.

4. The combination with the swing-frame composed of intermediate cross-rod, 10, and side members, 12, 12, each formed with the coil, 14, within the end portion, 13, the sockets, *b*, *b*, in which the said terminals are movably fitted and the set screws, 20, of the part, *f*, constituting an abutment the rod, *d*, having eye, 16, whereby it is connected to the intermediate member of the frame and adapted to rest by its lower end against said abutment and the pin, 25, into engagement with which the intermediate member of the frame may be sprung, substantially as described and shown.

543,577. CLOTHES-SUPPORTING ATTACHMENT FOR BEDSTEADS. WILLIAM C. GUILFORD, Chicopee, assignor of one-half to George Nightingale, Holyoke, Mass. Filed Jan. 14, 1895. Serial No. 534,915. (No model.)



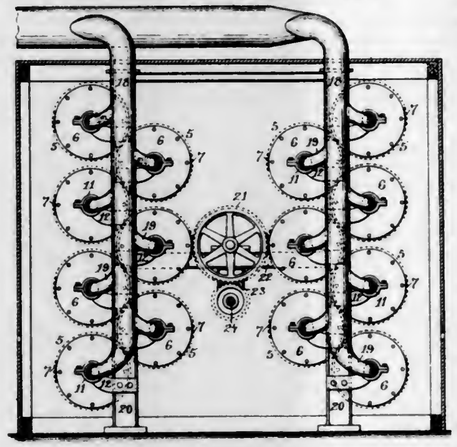
Claim.—1. In an appliance of the character described, the casting or bracket consisting of the vertical perforated attachment member, *a*, having the horizontal top and vertical front members, *b*, *d*, which are at right angles to each other and to the said attachment member, *a*, and which are constructed with the aperture in the forward part of the top which is continued downwardly from the upper edge of the front, and said attachment member having the stop, *h*, at a distance to the rear of the front, combined with the bar having a thickness approximately the width of said aperture with its end portion, however, laterally thickened, and having a width throughout its entire length substantially equal to the distance from the under side of the bracket top to the lower boundary of said aperture within the bracket-front, substantially as described and shown.

2. The combination with the bracket having the apertured top and front essentially as shown, of the bar having at its end the shoe of rubber or analogous material which constitutes a widened stop member, and which is of trough form with a wedge-shaped back, substantially as described.

543,578. DRYING-MACHINE. WILLIAM HARTLEY, Jr., Pawtucket, R. I. Filed Nov. 25, 1892. Serial No. 453,014. (No model.)

Claim.—In a drying or oxidizing machine, the combination with an inclosing chamber having an inlet and an outlet through which the fabric to be treated may be passed, of the standards 20—20 mounted within the chamber and furnished with the brackets 12—12 extending alternately in opposite directions, the cross-bars 22 connecting the standards in pairs, the sleeves 10—10 mounted in the brackets 12—12 and furnished with the spiders 14 having branched

outlets 15, the slotted-tubes 16 connecting the corresponding branches of the spiders, cylindrical cages formed by the heads 6—6 connected by the rods 9—9 and having the collars 8—8 journaled on the sleeves, said heads having gears 7—7 formed around their peripheries, the gears of the adjacent heads intermeshing, the gears 21 connecting the gears 7—7 of the vertical systems, a shaft on which the gears 21 are mounted, this shaft being journaled on the cross-bars 22, and the air-supply pipes 18—18 having the branches 19—19 connecting with the sleeves 10—10, as and for the purpose described.



543,579. PROCESS OF PRODUCING PHENOXACETIC ANILIDS, &c. LEONHARD LEDERER, Munich, Germany. Filed Oct. 29, 1894. Serial No. 527,329. (Specimens.)

Claim.—1. The herein described process for the production of the anilids of the phenoxacetic acids, consisting in reacting on phenoxacetic acids with aromatic amido-compounds.

2. The herein described process for the production of phenoxacet-para-phenetidids, consisting in reacting on phenoxacetic acids with para-phenetidin, then dissolving the product with alcohol and separating the crystals of phenoxacet-para-phenetidids.

543,580. BUILDING SET. EDWARD VON LEISTNER, New York, N. Y., assignor of one-half to Hermann Goetter, Arlington, N. J. Filed Feb. 15, 1895. Serial No. 538,536. (No model.)



Claim.—1. A set for building actual constructions and models composed of four perforated elementary members *a*, *b*, *c*, *d*, which bear to each other mathematically fixed proportions, the strut *a* being of any suitable size, the strut *b* being the diagonal of a square formed by *a*, the longitudinal *c* being the diagonal of a square formed by *b* and the rod *d* being the diagonal of an oblong whose long sides are *c* and whose short sides are *b*, substantially as described.

2. A set for building actual constructions and models composed of four perforated elementary members *a*, *b*, *c*, *d*, which bear to each other mathematically fixed proportions, the strut *a* being of any suitable size, the strut *b* being the diagonal of a square formed by *a*, the longitudinal *c* being the diagonal of a square formed by *b* and the rod *d* being the diagonal of an oblong whose long sides are *c* and whose short sides are *b*, supplementary pieces and the necessary screws and nuts for connection, substantially as described.

3. A system of perforated building members for actual constructions and models composed of a strut *a* of suitable size and provided with a rectangular flange beveled at the ends, a like strut *b* being the diagonal of a square formed by *a*, a channel iron *c* being the diagonal of a square formed by *b* with two flanges of different sizes and converging ends, a rod *d* with flattened ends of different lengths, the locations of the perforations being mathematically determined as specified, supplementary pieces and connecting screws and nuts, substantially as described.

4. In a set of building members for actual constructions a perforated strut *b* being the diagonal of a square formed by strut *a* and having a rectangular flange beveled at the end, the location of the inner perforation being mathematically defined, substantially as described.

5. In a set of building-members a longitudinal piece in the form of a channel iron with two flanges of different sizes seven perforations and converging ends, the lengths of this longitudinal and its perforations being mathematically determined, substantially as described.

6. In a set of elementary building members a diagonal rod flattened out at its ends forming two flanges of different length with two perforations in each end, the length of the rod and the locations of the perforations being mathematically determined, substantially as described.

543,581. AUTOMATIC CAR-VENTILATOR. GEORGE H. MAYNARD, Boston, Mass. Filed July 12, 1894. Serial No. 517,287. (No model.)



Claim.—An automatic ventilator for cars, comprising in its construction a pipe *a* secured to the car in the direction of the length of the latter, a triangular opening in said pipe *a*, an eccentrically supported valve *d* supported in said opening by means of integral projections on said valve, a pipe *b* secured to said pipe *a* over said opening and having a pipe *c* connected therewith projecting into the car, substantially as and for the purpose set forth.

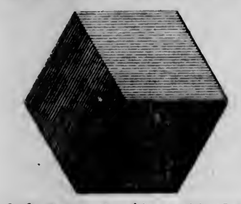
543,582. BUILDING-BLOCK. JULIA E. MEYENBERG, Chicago, Ill. Filed Apr. 28, 1894. Serial No. 509,352. (No model.)



Claim.—1. The herein-described building blocks having beveled ends, side interlocking alternate tongues and grooves, and interlocking inclined end tongues and grooves at the beveled ends, substantially as set forth.

2. A hollow building block provided with rows of alternate tongues and grooves on opposite sides and extending from end to end thereof, beveled ends, and a projected inclined end tongue and inclined groove at the opposite beveled ends, all of said tongues and grooves being of the same length as the width of the block, substantially as set forth.

543,583. PROCESS OF MANUFACTURING MULTICOLORED PATTERNS OF VULCANIZED RUBBER. JOHN MURPHY, Brooklyn, N. Y. Filed May 8, 1895. Serial No. 548,501. (Specimens.)

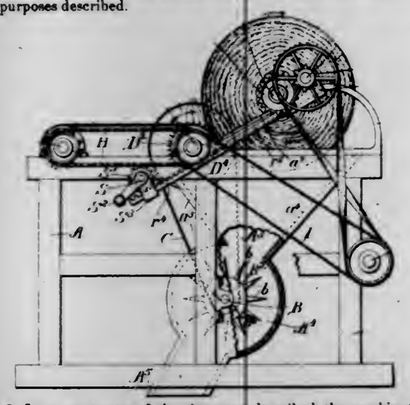


Claim.—1. In the art of making multi-colored tiles of india rubber, the process which consists in first semi-vulcanizing the sheets of various colors, in then cutting out small pieces of these semi-vulcanized sheets, in then laying these semi-vulcanized sheets side by side in the form of a tile, interposing between them unvulcanized films of india rubber, and thereupon proceeding to completely vulcanize the entire tile.

2. Multi-colored india rubber tiles consisting of fully vulcanized tile sections and interposed films of india rubber.

543,584. FIBER UNWINDER AND MIXER. WARREN A PATTERSON, Waco, Tex., assignor of three-eighths to L. W. Campbell, same place. Filed Nov. 15, 1894. Serial No. 528,924. (No model.)

Claim.—1. In an apparatus of the character described, the combination with a support adapted to hold a cylindrical bale of fibrous material, and means for revolving said bale, of a stripper adapted to engage the outer layer and unwind the same, substantially as and for the purposes described.



2. In an apparatus of the character described, the combination with a support adapted to hold a cylindrical bale of fibrous material, and means for revolving said bale, of a stripper adapted to engage the outer layer and unwind the same, and a picker adapted to pick and stretch the layer so unwound, substantially as described.

3. In an apparatus of the character described, the combination with a support adapted to hold a cylindrical bale of fibrous material, and means for revolving said bale, of a stripper adapted to engage the outer layer and unwind the same, and a dentated picker moving at a higher surface speed than said bale, and adapted to pick and stretch the layer so unwound, substantially as described.

4. In an apparatus of the character described, the combination with a support adapted to hold a cylindrical bale of fibrous material, and means for revolving said bale, of a stripper moving beneath said bale and supporting the same, the said stripper being adapted to engage the outer layer and unwind the same, substantially as and for the purposes described.

5. In an apparatus of the character described, the combination with a support adapted to hold a cylindrical bale of fibrous material, and means for revolving said bale, of a stripper moving beneath said bale and supporting the same, the said stripper being adapted to engage the outer layer and unwind the same, and a picker adapted to pick and stretch the layer so unwound, substantially as described.

6. In an apparatus of the character described, the combination with a support adapted to hold a cylindrical bale of fibrous material, and means for revolving said bale, of a stripper moving beneath said bale and supporting the same, the said stripper being adapted to engage the outer layer and unwind the same, and a dentated picker moving at a higher surface speed than said bale, and adapted to pick and stretch the layer so unwound, substantially as described.

7. In an apparatus of the character described, the combination with a support adapted to hold a cylindrical bale of fibrous material; of journals driven into said bale; bearings for said journals; means for revolving said journals in said bearings; and a stripper adapted to engage the outer layer and unwind the same, substantially as and for the purposes described.

8. In an apparatus of the character described, the combination with a support adapted to hold a cylindrical bale of fibrous material; of journals driven into said bale; bearings for said journals; means for revolving said journals in said bearings; a stripper adapted to engage the outer layer and unwind the same, and means for pressing said bale on said stripper, substantially as described.

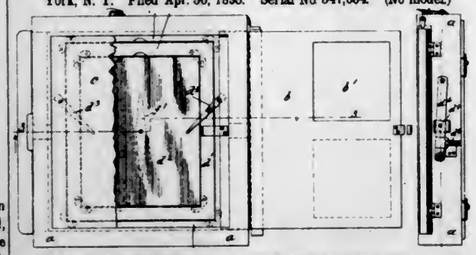
9. In an apparatus of the character described, the combination with a support adapted to hold a cylindrical bale of fibrous material; of journals driven into said bale; bearings for said journals; means for revolving said journals in said bearings; a stripper adapted to engage the outer layer and unwind the same, and means for moving the centers of said journals toward said stripper, substantially as described.

10. In an apparatus of the character described, the combination with a plurality of supports adapted to hold cylindrical bales of fibrous material, and means for revolving said bales, of a stripper moving beneath each of said bales and supporting the same, the said stripper being adapted to engage the outer layer of each of said bales and unwind the same, substantially as and for the purposes described.

11. In an apparatus of the character described, the combination with a plurality of supports adapted to hold cylindrical bales of fibrous material, and means for revolving said bales, of a stripper moving beneath each of said bales and supporting the same, the said stripper being adapted to engage the outer layer of each of said bales, and unwind the same; and a picker adapted to pick, stretch and mix the layers so unwound, substantially as described.

12. In an apparatus of the character described, the combination with a plurality of supports adapted to hold cylindrical bales of fibrous material, and means for revolving said bales, of a stripper moving beneath each of said bales and supporting the same, the said stripper being adapted to engage the outer layer of each of said bales and unwind the same; and a dentated picker moving at a higher surface speed than said bales, and adapted to pick, stretch, and mix the layers so unwound, substantially as described.

543,585. PHOTOGRAPHIC-PLATE HOLDER. JOHN STOCK, New York, N. Y. Filed Apr. 30, 1895. Serial No. 547,634. (No model.)

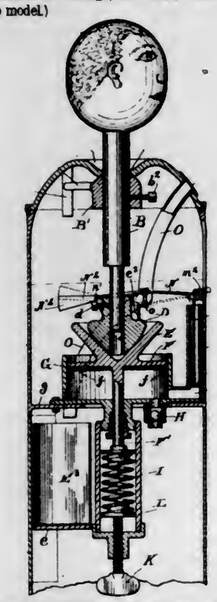


Claim.—1. A photographic plate holder provided with an outer shutter having an opening, an inner imperforate shutter, an adjustable screen and a pair of slides for holding the sensitized plate, substantially as specified.

2. A photographic plate holder provided with a movable screen-holding frame, outwardly extending arms secured to such frame and a locking device at the outside of the plate holder which is connected to such arms and is adapted to lock the frame in different positions, substantially as specified.

3. A photographic plate holder provided with a movable screen-holding frame, outwardly extending arms secured to such frame, levers pivoted to the plate holder and connected to the arms and racks engaged by the levers, substantially as specified.

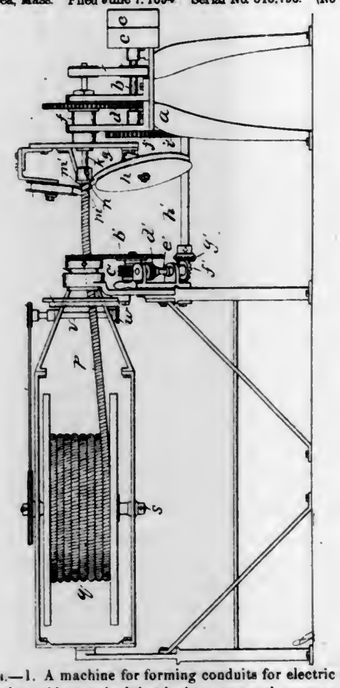
543,586. COIN-CONTROLLED STRENGTH-TESTING MACHINE. JOHN P. WENNERSTEN, Chicago, Ill. Filed Jan. 18, 1895. Serial No. 535,325. (No model.)



Claim.—1. The combination with a casing having in its top an opening and in its side a vertical slot, of a standard or bar in said opening provided at its top with a head or spherical piece, an inverted cone-shaped piece secured to the lower portion of said bar, a cylinder located within the casing and having in its lower portion a valve to admit air, and in its side a pipe for the indicating rod and its piston, a spring-controlled piston to operate in said cylinder having on its upper surface a funnel shaped piece to engage the cone-shaped piece on the bar, a piston within the pipe and a rod attached to said piston and extending through the slot in the casing, substantially as described.

2. The combination with the casing A', having in its upper part the openings *a'*, and *c*, and slot *b*, provided with the marks *b'*, of the bar B, having the head C, the inverted cone shaped piece D, secured to its lower end, the cylinder G, located in the casing and having the valve H, in its lower part, the pipe *h*, opening into said cylinder, and spring-controlled piston F, having the funnel shaped piece E, provided with the pin e^3, on its upper surface, the piston M, within the pipe *h*, the rod M', attached to the piston M, at its lower end, and provided with a projection at its upper end to extend through the slot *b*, in the casing, the coin-guide O, having the slot *o*, and opening *o'*, the lever N, pivoted to the casing and having the angular opening n^3, near its pivoted part, and the arm *n*, at its other end, the lever N^2, fulcrumed at *n'*, and pivotally connected to the lever N, all constructed, arranged, and operating substantially as and for the purpose set forth.

543,587. MACHINE FOR MAKING TUBING. JAMES S. WILSON, Chelsea, Mass. Filed June 7, 1894. Serial No. 513,796. (No model.)



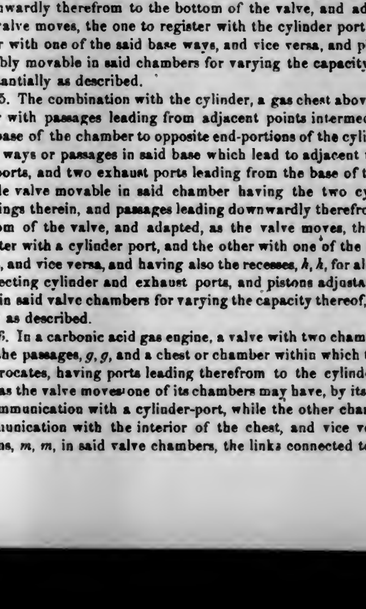
Claim.—1. A machine for forming conduits for electric conductors and other tubing, embodying in its construction a mandrel and means for rotating it, and a bobbin-carrying head revoluble about the mandrel in a direction opposite to that of its rotation, as set forth.

2. A machine for forming conduits for electric conductors and other tubing, embodying in its construction a mandrel, a bobbin-carrying head revoluble about the said mandrel, a winding-on spool for drawing the material laid up by the bobbins off the mandrel, and means for rotating the mandrel in a direction opposite to the rotation of the spools to take the kink out of the material drawn off from the mandrel, as set forth.

3. In a machine of the character described, the combination of a mandrel and means for rotating it, a bobbin-carrying head revoluble about the said mandrel in a direction reverse thereto, a winding-on spool in a rotatable frame or holder, and means for rotating said spool in the holder and for rotating the latter whereby the spool is axially revolved, substantially as and for the purpose described.

543,588. CARBONIC-ACID-GAS ENGINE. ELIJAH B. BENHAM, Mystic, Conn. Filed Mar. 12, 1894. Renewed Dec. 24, 1894. Serial No. 532,894. (No model.)

Claim.—1. A measuring valve for admitting liquefied gas to the cylinder of an engine comprising a piston having a reciprocating movement in a cylinder with a passage communicating therewith for receiving and discharging said liquefied matter, combined with a support for said piston which is adjustable for sustaining said piston at variable distances from the discharge, or lower end of said cylinder substantially as described.



2. A measuring valve for admitting liquefied gas to the cylinder of an engine having a chamber, and a piston having a reciprocatory movement therein, and a passage for the entrance of the said gaseous matter to the valve chamber which is adapted to alternately register with a cylinder port, and to have open communication with the interior of the chamber within which the acid supply is contained, substantially as described.

3. A valve with a chamber, one side of which is movable, a chest in which it reciprocates, said valve having a passage leading through it to its said chamber, and adapted, as the valve moves to have alternately a communication with the interior of the chest, and with a cylinder port, and means for adjusting the movable side of the valve-chamber for varying the capacity of the chamber, substantially as described.

4. The combination with the cylinder, a chest above the cylinder with passages leading from adjacent points intermediately of the base of the chamber to opposite end-portions of the cylinder, and ways or passages in said base open to the interior of the chest which lead to adjacent the cylinder ports, a slide valve movable in said chamber having the two cylindrical openings therein, and passages leading downwardly therefrom to the bottom of the valve, and adapted, as the valve moves, the one to register with the cylinder port, and the other with one of the said base ways, and vice versa, and pistons adjustably movable in said chambers for varying the capacity thereof, substantially as described.

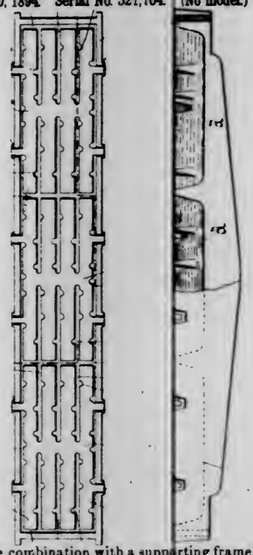
5. The combination with the cylinder, a gas chest above the cylinder with passages leading from adjacent points intermediately of the base of the chamber to opposite end-portions of the cylinder, and with ways or passages in said base which lead to adjacent the cylinder ports, and two exhaust ports leading from the base of the chest, a slide valve movable in said chamber having the two cylindrical openings therein, and passages leading downwardly therefrom to the bottom of the valve, and adapted, as the valve moves, the one to register with a cylinder port, and the other with one of the said base ways, and vice versa, and having also the recesses, *h*, *h*, for alternately connecting cylinder and exhaust ports, and pistons adjustably movable in said valve chambers for varying the capacity thereof, substantially as described.

6. In a carbonic acid gas engine, a valve with two chambers, *f*, *f*, and the passages, *g*, *g*, and a chest or chamber within which the valve reciprocates, having ports leading therefrom to the cylinder, all so that as the valve moves one of its chambers may have, by its passage, *g*, communication with a cylinder-port, while the other chamber has communication with the interior of the chest, and vice versa, the pistons, *m*, *m*, in said valve chambers, the links connected to the pis-

tons, the lever to which the links are hung, the rod to the lower end of which the lever has its middle pivoted, a fixed part through which the rod has a screw engagement, and means for turning the rod, substantially as and for the purpose set forth

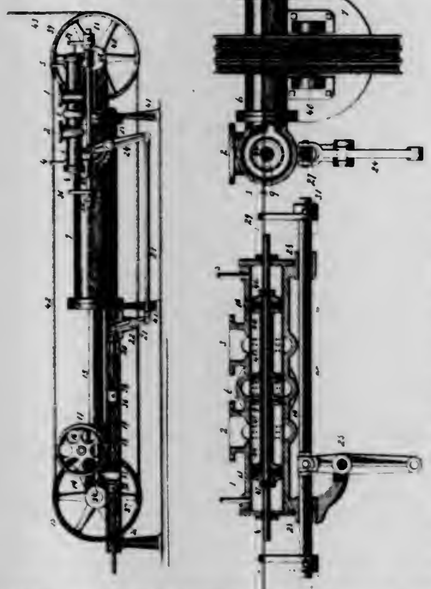
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543,589. FURNACE-GRATE. CHARLES T. COE, New York, N. Y. Filed Aug. 30, 1894. Serial No. 521,704. (No model.)



Claim.—The combination with a supporting frame provided with sockets, of grate sections consisting of transverse ribs, spaced arms extending transversely therefrom, and lugs *a* extending laterally from the outside arms and adapted to be received by the sockets in the frame for the support of said sections, substantially as described.

543,590. VALVE MECHANISM FOR HYDRAULIC ELEVATORS. CHARLES L. COOKSON, Kansas City, Mo. Filed May 21, 1894. Serial No. 511,971. (No model.)



Claim.—1. In a valve mechanism for hydraulic elevators the combination with the cylinder having inlet and outlet passages, the piston rod mounted in and extending beyond the cylinder heads and the main piston and auxiliary pistons carried on the piston rod, of arms independent of the piston rod adapted to contact with the ends thereof and means for actuating said arms as the car reaches the top or bottom of the elevator shaft to cause them to come in contact with the ends of the piston rod and move the pistons to stop the car, substantially as shown and described.

2. The combination with a main cylinder having a piston therein and a piston rod connected with the piston of a valve cylinder having a piston valve therein, a piston rod mounted in and extending beyond the heads of said valve cylinder, a piston carried on said piston rod, a rod mounted on the frame of said valve-cylinder, arms carried on the ends of said rod adapted to contact at certain times with said piston rod of the valve cylinder, a rocking arm mounted on the frame of the valve cylinder and connected with said rod, a rocking arm mounted on the frame of the main cylinder, a rod connecting said rocking arms, a rod mounted in blocks on the frame of the main cylinder, buttons secured by set screws upon said rod, and an arm secured to the cross-head of the piston rod of the main cylinder, said arm being adapted to press upon one of said buttons when the car reaches the top or bottom of the elevator shaft to move the arms carried on the rod mounted on the frame of the valve cylinder to actuate the piston rod of the valve cylinder to close the valve therein and stop the car substantially as shown and described.

3. The combination with a main cylinder having a piston therein and a piston rod connected with the piston, a valve cylinder having a piston valve and piston therein, and a piston rod mounted in and extending beyond the heads of said valve cylinder, of a cross-head carried on the piston rod of the main cylinder, an arm 33 secured to said cross-head, a rod 19 mounted in blocks 20 on the frame of the main cylinder and adapted to slide therein, buttons 35, 36, secured by set screws to said rod, a rocking arm 21 mounted on the frame of the main cylinder and having pivotal connection at one end with the rod 19, a rocking arm 24 mounted on the frame of the valve cylinder, a rod 23 connecting said rocking arms, a shaft 27 mounted in bearings on the frame of the valve cylinder and adapted to slide in its bearings said shaft being connected with the rocking arm 24 by a pin therein engaging the bifurcated end of said arm, arms 29 and 30 carried upon and secured to said shaft 27 and adapted to contact with the piston rod of the valve cylinder, said arms being actuated by the arm 33 pressing upon the buttons 35, 36, when the car reaches the top or bottom of the elevator shaft to operate the piston of the valve cylinder to close the valve and stop the car substantially as shown and described.

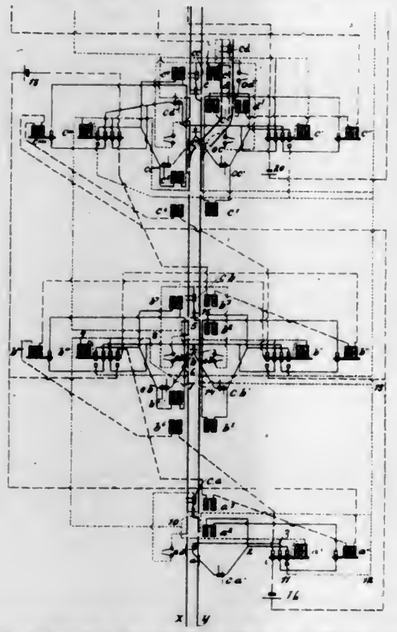
4. The combination with a main cylinder having a piston therein and a piston rod connected with the piston, a valve cylinder having a piston valve and piston therein, and a piston rod mounted in and extending beyond the heads of said valve cylinder, of arms independent of the piston rod of said valve cylinder adapted to contact with the ends thereof, and means in connection with the piston rod of the main cylinder for actuating said arms as the car reaches the top or bottom of the elevator shaft to cause them to come in contact with the ends of the piston rod of the valve cylinder and close the valve to stop the car, substantially as shown and described.

543,591. RAILWAY SIGNALING SYSTEM. THOMAS B. DIXON, Henderson, Ky. Filed Nov. 17, 1892. Serial No. 452,358. (No model.)

Claim.—1. In an electrical railway signaling system, the combination, with two or more blocks or sections of track forming a signal division, track-instruments at the ends of said blocks, and a signal at each end of each block controlling the entrance of trains to said block at the end at which said signal is located, of a circuit for each signal controlled by the corresponding track instrument and adapted to set said signal to danger when a train passes over said track-instrument and into the block to which said signal belongs, two front signal circuits for the division, each controlled by a track-instrument at one end of the division and controlling the signals of the division which control trains within the division moving toward that track-instrument, and adapted to set said signals to danger when a train passes over said track-instrument and into said division, clearing circuits for the signals of each block operated by the track-instruments at the ends of said block and adapted to clear said signals when a train has passed out of said block, and means for clearing all of the signals of the division yet uncleared when the train passes out of the division, substantially as described.

2. In an electrical railway signaling system, the combination, with a block or section of track, of a track instrument, governor, and a local closed circuit battery at one end of said block, and a governor closed circuit passing through the governor magnet and normally closed contact points of the governor and track instrument, substantially as described.

3. In an electrical railway signaling system, the combination, with a block or section of track, a track instrument at each end of said block, a governor and a local closed circuit battery at one end of said block, and a governor closed circuit passing through the governor magnet and normally closed contact points of the governor and track instrument, of a governor open circuit battery at the distant end of the block from the governor, and a clearing circuit from said battery passing through the governor magnet and normally open contact points of the governor and distant track instrument, substantially as described.



4. In an electrical railway signaling system, the combination, with a block or section of track, a track instrument at each end of said block, a governor and a local closed circuit battery at one end of said block, and a governor closed circuit passing through the governor magnet and normally closed contact points of the governor and track instrument, of a governor open circuit battery at the distant end of the block from the governor, a clearing circuit from said battery passing through the governor magnet and normally open contact points of the governor and distant track instrument, and a signal circuit passing through the contact points of said governor, substantially as described.

5. In an electrical railway signaling system, the combination, with a block, as B. C, governors, as b' and c''', one at each end of the block, track instruments as b and c, one at each end of the block, the full-line batteries at B and C and the full-line branches of these passing through the track instrument contact points, the governor magnet, and the governor contact points, as on the right at station B and on the left at station C, of the dotted-line open circuit batteries at B and C and the clearing circuits branching from these and passing through the track instrument contact points, the governor magnets and governor contact points, and the dotted line circuit extending throughout the block and connecting electrically the governors at each end of the block together; the track instrument at each end of the block being adapted to break the corresponding full-line circuit upon the entrance of a train at either end of the block, whereby the armature of the governor at the end of the block at which the train enters drops to the danger position; and adapted to complete one of the dotted line circuits when the train passes out of the block at either end, whereby the armature of the governor, or of both governors if both be down, is restored to the normal position, substantially as described.

6. In an electrical railway signaling system, the combination, with a block as B C, a track instrument, governors, and a closed circuit battery at each signal station, and branch circuits from said battery passing through the governor magnets and through the contact points of the governors and track instrument, of signals at each signal station, local signal circuits controlled by said governors for controlling said signals, and clearing circuits for restoring to safety the governors, and the signals in rear of a train, substantially as described.

7. In an electrical railway signaling system, the combination, with a block or section of track, a home signal at each end of the block, and means for setting both of said home signals to danger when a train enters said block, of a special front signal at each end of the block, a circuit therefor, and a track-instrument controlling said circuit and situated at the distant end of said block from said special front signal, and adapted to set said special front signal to danger when a train passes over said track-instrument into said block, substantially as described.

8. In an electrical railway signaling system, the combination, with a section of road as A C, divided into blocks, as A B and B C, and track instruments and governors controlled thereby at the entrance of every block, of front relays for each direction of movement at each signal station, a front signal battery, as 16 for each direction, and a circuit therefor passing through contact points of the governors for one direction of movement of trains, as governors a' and b', and through the magnets of the front relays controlling the signals governing the other direction of movement of trains, as b''' and c''', signals at each signal station and local signal circuits therefor passing through contact points of the local governors and front relays, substantially as described.

9. In an electrical railway signaling system, the combination, with a block or section of track, as B C, provided with a side or auxiliary track, and signals for said block, of a main track instrument c provided with contact points oc'' and a circuit passing through those contact points for setting to danger signals within the block B C when said contact points are operated, and other contact points oc' and a circuit passing through said contact points for clearing signals in the block B C when said contact points oc' are operated, of a siding track instrument d provided with contact points od'' operated by a train in passing from the siding over said siding track instrument and connections for said contact points od'' whereby the same signals are set to danger in the block B C when said contact points are operated as are set when contact points oc'' are operated, and likewise provided with other contact points od' operated when a train passes from the main track over said track instrument d on to the siding and connections for said contact points od' whereby the same signals are cleared by the operation of said contact points as are cleared by the operation of contact points oc' of track instrument c, substantially as described.

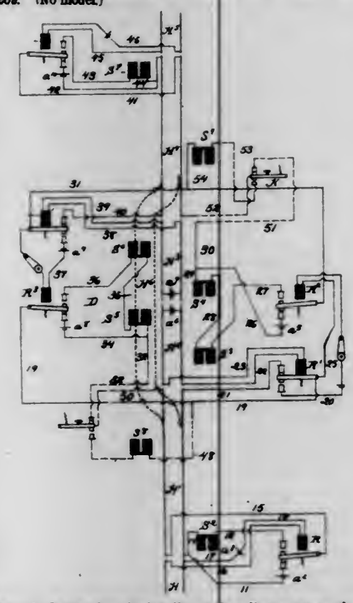
10. In an electrical railway signaling system, the combination, with a section of track F I provided with a double point siding, a governor f', track instrument f, and a governor circuit passing through the magnet of said governor and through contact points of the said track instrument and governor, of insulated sections of the main track rails extending throughout the distance between the points of the siding, a track instrument i, a clearing circuit battery 62, and a circuit therefor passing through contact points of the track instrument i, through the magnet of governor f' and through the above mentioned insulated sections of track, substantially as described.

11. In an electrical railway signaling system, the combination, with a section of track F I, a governor f', a track instrument f, and a governor circuit passing through the magnet of said governor and through the contact points of said track instrument and governor, of insulated sections of track extending throughout the block, a track instrument i, a clearing circuit battery 62, and a circuit therefor passing through contact points of the track instrument i, through the magnet of governor f', and through the above mentioned insulated sections of track, substantially as described.

12. In an electrical railway signaling system for crossovers, the combination, with track instruments u and v at the ends of the crossover track and signal operating circuits controlled by the contact points of said track instruments, of the switch instruments u_1 and v_1 operated by the movement of the switch throwing mechanism of the crossover track, and circuits passing through contact points of said track instruments and switch instruments, whereby when a train passes from one main track over the crossover track to the other main track front and rear signals on the track which the train enters are set to danger when the train passes over the track instrument at the entrance of the crossover track and the front and rear signals on the track which the train leaves are returned to safety when said train passes over the track instrument at the end of the crossover track, substantially as described.

13. In an electrical railway signaling system, the combination, with a block or section of track as A B, Fig. 9, of two batteries of unequal strength, as 164 and 165, and the dashed line circuits branching from them, governor contact points as the first and second contact points of governors a' and b''', adapted to cut out one of the batteries and one of the coils of the front relay and the rheostat when the armature of the governor is in the danger position, and to connect the line and the other relay coil with the return conductor of the circuit, of two differentially wound polar relays, one at each end of the block, as a'' and b''', adapted to control the front signals and front relays of the system and to cause the signals controlled to go to danger in case of great line leakage, of two rheostats as 167 and 168 adapted to balance the resistance of the line, and of two relays as a^4 and a^5 placed in the line circuit, one at each end of the block, and adapted to set the signals at each end of the block to danger upon the breaking, or a great increase in the resistance, of the line wire, substantially as described.

543,592. ELECTRICAL RAILWAY SIGNALING SYSTEM. THOMAS R. DIXON, Henderson, Ky. Filed Oct. 5, 1893. Serial No. 487,209. (No model.)



Claim.—1. In an electrical railway signaling system, the combination, with two insulated blocks or sections of track, an electrically controlled signal for each block controlling the entrance of trains thereto, a signal circuit for each block controlling the signal of that block and passing through the rails of said block, a signal battery for each signal circuit, means for throwing the signal battery of each block into or out of its signal circuit, thereby setting to safety or to danger the signal of that block, and a circuit controller operated from the entrance of the second block and controlling the signal circuit of the first block, and arranged to set to danger or to hold at danger the signal of the first block when a train is entering the second block, substantially as described.

2. In an electrical railway signaling system, the combination, with two insulated blocks or sections of track, an electrically controlled signal for each block controlling the entrance of trains thereto, a signal circuit for each block controlling the signal of that block and passing through the rails of said block, a signal battery for each signal circuit, means for throwing each of said signals into and out of its signal circuit, and a circuit controller operated from the entrance of the second block and controlling the signal circuit of the first block, and arranged to break the signal circuit of the first block when a train is entering the second block, substantially as described.

3. In an electrical railway signaling system, the combination, with two insulated blocks or sections of track, an electrically controlled signal at each end of each block controlling the entrance of trains to said block, a signal battery at each end of each block, a line conductor for each block, and a circuit controller for each end of each block connected to the signal and battery at that end of that block and to the line conductor, and adapted to connect either said signal or said battery to the line conductor, and means for setting to danger or for holding at danger the signals of the first block when the signal of the second block situated at the station nearest the first block is at safety, substantially as described.

4. In an electrical railway signaling system, the combination, with two insulated blocks or sections of track, an electrically controlled signal at each end of each block controlling the entrance of trains to said block, a signal battery at each end of each block, a line conductor for each block, and a circuit controller for each end of each block connected to the signal and battery at that end of that block and to the line conductor, and adapted to connect either said signal or said battery to the line conductor, and means for breaking the line circuit of the first block when the signal of the second block situated at the station nearest the first block is in the line circuit of the second block, substantially as described.

5. In an electrical railway signaling system, the combination, with two or more blocks or sections of track, and a signal for each end of each block controlling the entrance of trains thereto, of a signal battery for each end of each block, an electrically operated circuit controller or switch for each end of each block connected to the signal circuit of the block and to the signal and signal battery of its end of the block, and adapted to connect either said signal or said battery to the signal circuit, and an insulated track section for each end of each block and a local circuit and battery therefor, controlling the circuit controller of that end of the block and connected to the rails of said insulated track sections, the said insulated track section of each block being placed between the corresponding insulated track section of the adjoining block and the main track section of the adjoining block, substantially as described.

6. In an electrical railway signaling system, the combination, with two adjacent blocks or sections of track, C D and D E, and signals S^3 and S^4 controlling the entrance of trains to said blocks, of an insulated track section H^2, an electrically operated circuit controller R′ and a battery and circuit operating said circuit controller and adapted to cause the armature thereof to fall when wheels are on said track section H^2, an insulated track section H^3, an electrically operated circuit controller R^3 and a battery and circuit for operating said circuit controller adapted to cause the armature thereof to rise when wheels are on said track section H^2, a battery and circuit controlled by circuit controlling devices operated by the armature of circuit controller R′ and adapted to operate signal S^4 when wheels are on track section H^3, a battery and circuit for operating signal S^3, and circuit controlling devices operated by the movement of the armature of circuit controllers R′ and R^3, controlling the circuit of signal S^3, and adapted to prevent the operation of said signal when wheels are on either of said track sections H^2 or H^3, substantially as described.

7. In an electrical railway signaling system, the combination, with a block or section of track C D, having a siding at D, a line conductor extending throughout the block, signals S^3 and S^5 controlling the entrance of trains into the block at the ends C and D respectively and a signal S^6 controlling the entrance of trains into the block from the siding, said signals being electrically operated and arranged to indicate danger when no current is flowing through them, and signal batteries a^3 and a^6 at the ends C and D of said block respectively, of circuit controllers or switches R and R^2 at the ends C and D of said block, respectively, each connected to the signal and battery at its end of the block, and to the line conductor, and adapted to place either said signal or said battery in circuit with the line conductor, and a circuit controller or switch K, connected to circuit controller R^2, signal S^2, and the line conductor, and adapted when operated to cut said circuit controller R^2 out of circuit with the line conductor, thereby maintainiog said signal S^2 at danger, and to place signal S^2 in circuit with the line conductor, substantially as described.

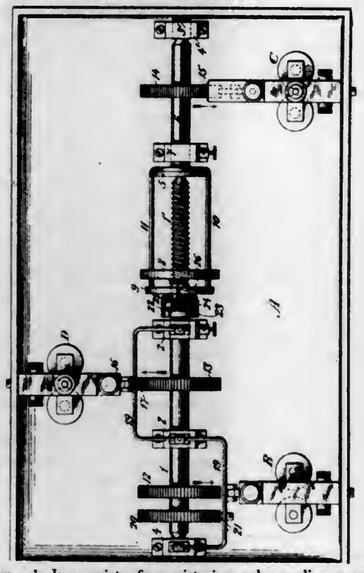
8. In an electrical railway signaling system, the combination, with a block or section of track C D having two or more sidings at D, a line conductor extending throughout the block, signals S^3 and S^5 controlling the entrance of trains into the block at the ends C and D respectively and signals S^{10}, S^{11}, &c., controlling the entrance of trains into the block from the sidings, said signals being electrically operated and arranged to indicate danger when no current is flowing through them, and signal batteries a^3 and a^6 at the ends C and D of said block respectively, of circuit controllers or switches R and R^2 at the ends C and D of said block, respectively, each connected to the signal and battery at its end of the block, and to the line conductor, and adapted to place either said signal or said battery in circuit with the line conductor, electrically operated circuit controllers or switches r, r', &c., corresponding to signals S^{10}, S^{11}, &c., respectively, each connected to the circuit controller R^2, to the line conductor, and to its corresponding signal, and adapted when operated to cut said circuit controller R^2 out of circuit with the line conductor, thereby maintaining signal S^2 at danger, and to place its corresponding signal in circuit with the line conductor, local batteries and circuits for each siding arranged to operate the circuit controller corresponding to said siding when a train passes from the siding to the main track, and an interlocking device controlling said siding signals and adapted to prevent one of said siding signals from being set to safety when another has already been set to safety, substantially as described.

9. In an electrical railway signaling system, the combination, with two adjacent blocks or sections of track, C D and D E, a line conductor for each block extending throughout the block, electrically controlled signals, S^3 and S^5, at the ends C and D of block C D respectively, and S^4 and S^7 at the ends D and E of block D E respectively, signal batteries a^3 and a^5 at the ends of block C D, signal batteries a^5 and a^{10} at the ends of block D E, and circuit controllers or switches R, R^2, and R^3 corresponding respectively to signals S^3, S^5, and S^7, each circuit controller being connected to its corresponding signal and battery and to the line circuit of its block, and being adapted to place either said signal or said battery in circuit with that line circuit, of an electrically operated circuit controller, R^3, corresponding to signal S^4, and connected to that signal, to battery a^5, and to the line circuit of block D E and adapted when operated to place either said signal or said battery in circuit with said line circuit, an electrically operated circuit controller R′, an insulated track section H^3 at the end D of block C D, a local battery and circuit therefor, connected to the rails of said track section and controlling said circuit controller R′, and adapted to cause the armature thereof to fall when wheels are on said track section H^3, a battery a^4 and local circuit for operating circuit controller R^2 controlled by circuit controller R′ and arranged to cause signal S^4 to be placed in circuit with the line circuit of block D E when circuit controller R′ is operated through the presence of wheels upon said track section H^3, a switch N adapted when operated to prevent the operation of circuit controller R^2 and the placing of signal S^4 in the line circuit, and conductors forming part of the line conductor of block C D and connected to circuit controllers R′ and R^3, and arranged to prevent the operation of the line circuit of that block when the armature of circuit controller R′ is down or when the circuit controller R^3 is operated to place signal S^6 in circuit with the line circuit of block D E, substantially as described.

10. In an electrical railway signaling system, the combination, with two or more interfering tracks, electrically controlled signals for controlling traffic on said tracks, and signal circuits and batteries for operating said signals, of circuit controlling switches or relays for operating said signal circuits, having operating levers arranged about a revolubly mounted disk which is provided with a notch in its periphery adapted to receive each of said levers when opposite the same, said circuit controlling devices being adapted each to operate its signal circuit when its operating or switch lever is within said notch, substantially as described.

11. In an electrical railway signaling system, the combination, with two or more interfering tracks, H^6 and $H^{6'}$, electrically controlled signals S^{10} and S^{11} for controlling traffic on said tracks, and signal circuits and batteries for operating said signals, of circuit controlling switches or relays r and r' for operating said signal circuits, having operating levers arranged about a revolubly mounted disk d which is provided with a notch s in its periphery adapted to receive each of said levers when opposite the same, and contact points operated by the movement of the operating lever of each switch, and controlling the circuit of the signal corresponding to said switch, substantially as described.

543,593. REGISTER. THOMAS R. DIXON, Henderson, Ky. Filed Feb. 14, 1894. Serial No. 500,169. (No model.)



Claim.—1. In a register for registering and canceling successive events, the combination, with a registering mechanism operated by successive impulses corresponding to the events registered, a canceling mechanism, operated by successive impulses corresponding to the events canceled and registering devices, of means for operating the registering devices by the simultaneous and independent operation of said registering and canceling mechanisms, substantially as described.

2. In a register, the combination, with a registering mechanism, two separate canceling mechanisms, and registering devices, of means for operating the registering devices by the operation of the said registering mechanism, and by the simultaneous and independent operation of said canceling mechanisms, substantially as described.

3. In a register for registering and canceling successive events the combination, with a registering mechanism, operated by successive impulses corresponding to the events registered a canceling mechanism, operated by successive impulses corresponding to the events canceled and circuit controlling registering devices, of means for operating the registering devices by the simultaneous and independent operation of said registering and canceling mechanisms, substantially as described.

4. In a register, the combination, with a registering mechanism, two separate canceling mechanisms, and circuit controlling registering devices, of means for operating the registering devices by the operation of said registering mechanism and by the simultaneous and independent operation of said canceling mechanisms, substantially as described.

5. In a register, the combination, with a screw-threaded shaft revolubly mounted, of a nut mounted on said shaft, means for rotating said shaft within said nut, means for rotating said nut about said shaft, and signal controlling devices controlled by said nut in accordance with its position on said shaft, substantially as described.

6. In a register, the combination, with a screw-threaded shaft revolubly mounted, of a nut revolubly mounted on said shaft, means for rotating the shaft within the nut, means for rotating the nut about the shaft, and electrical contact points operated by the movement of the nut relative to the shaft, and adapted to control electric circuits, substantially as described.

7. In a register, the combination, with a screw-threaded shaft revolubly mounted and a nut revolubly mounted upon said shaft, of a registering mechanism for rotating said shaft within said nut, a canceling mechanism for rotating said nut abont said shaft, and a reverse canceling mechanism for rotating said shaft in a direction opposite to that in which it is rotated by the registering mechanism, substantially as described.

8. In a register, the combination, with a screw-threaded shaft revolubly mounted and a nut revolubly mounted upon said shaft, of a registering mechanism for rotating said shaft within said nut, a canceling mechanism for rotating said shaft in a direction opposite to that in which it is rotated by the registering mechanism, and electrical contact points operated by the movement of the nut relative to said shaft, and adapted to control electric circuits, substantially as described.

9. In a register, the combination, with a screw-threaded shaft revolubly mounted and a nut revolubly mounted on said shaft, of a registering mechanism for rotating said shaft in one direction, a canceling mechanism for rotating said shaft in the opposite direction, and means for normally throwing both registering and canceling mechanisms out of gear with the shaft, but adapted to throw either of said mechanisms into gear with the shaft when it begins to operate, substantially as described.

10. In a register, the combination, with a screw-threaded shaft 1, and the nut 8 mounted thereon, of the shaft 6 revolubly mounted, means for rotating said shaft, and means for causing said nut to be revolved by the revolution of the shaft 6, substantially as described.

11. In a register, the combination, with a screw-threaded shaft 1, and the nut 8 mounted thereon, of the shaft 6 revolubly mounted in line with shaft 1, means for rotating said shaft 6, and rods 10 and 11 carried by said shaft and having bearings in said nut 8, whereby the nut 8 is caused to rotate with shaft 6, substantially as described.

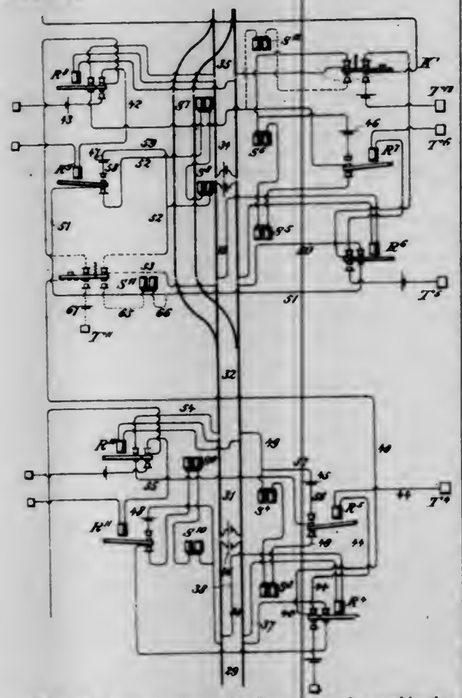
12. In a register, the combination, with the shaft 6 revolubly mounted, the disk 5 thereon, and the shaft 1 revolubly mounted in line with shaft 6 and having a conical end bearing within a conical recess in disk 5, of the nut 8 mounted upon said shaft 1, rods 10 and 11 carried by said disk 5 and having bearings in the nut 8, and a disk 9 mounted upon said shaft 1 and supporting the ends of said rods 10 and 11, substantially as described.

13. In a register, the combination, with a shaft 1 revolubly mounted and having a screw-threaded portion 1′ insulated from the main body of the shaft, of a nut 8 mounted upon said screw-threaded portion 1′, means for rotating the shaft within said nut, means for rotating said nut about said shaft, a contact point 26 carried by the nut, and a contact point 25 carried by an arm projecting from the main body of the shaft and adapted to engage with said contact point 26, but to be separated therefrom by motion of the nut relative to the shaft, substantially as described.

543,594. ELECTRICAL RAILWAY SIGNALING SYSTEM. THOMAS R. DIXON, Henderson, Ky. Filed July 10, 1894. Serial No. 517,137. (No model.)

Claim.—1. In an electrical railway signaling system, the combination, with an insulated block or section of track, and an electrically controlled signal controlling the entrance of trains to said block at one end thereof, of a battery at the distant end of said block and a signal circuit therefor passing through the rails of said section of track and controlling the signal at the home end of the block, said battery being normally out of said track circuit and a circuit controller operated from the home end of said block, and arranged, when

operated, to throw said battery into the signal circuit, substantially as described.



2. In an electrical railway signaling system, the combination, with an insulated block or section of track, and an electrically controlled signal controlling the entrance of trains to said block at one end thereof, of a battery at the distant end of said block and a signal circuit therefor passing through the rails of said section of track and controlling the signal at the home end of the block, said battery being normally out of said track circuit a circuit controller arranged, when operated, to throw said battery into the signal circuit, a second circuit controlling said circuit controller, and means operated by a train at the home end of said block for controlling said second circuit, substantially as described.

3. In an electrical railway signaling system the combination, with an insulated block or section of track, and an electrically controlled signal controlling the entrance of trains to said section of track, of a battery at the distant end of said block and a signal circuit therefor passing through the rails of said block and controlling the signal at the home end of the block, said battery being normally out of said track circuit, a relay, likewise at the distant end of said section of track, and adapted to throw said battery into and out of said signal controlling circuit, and a second circuit for controlling said relay provided with means, operated from the entrance of said section of track, for controlling the said circuit, said circuit being adapted to control the action of said relay, substantially as described.

4. In an electrical railway signaling system, the combination, with a block or section of track having a main insulated track section, a short insulated track section at the entrance to said block, and an electrically controlled signal controlling the entrance of trains to said block or section of track, of a battery at the distant end of said block and a signal circuit therefor passing through the rails of said block and controlling the signal at the home end of the block, said battery being normally out of said track circuit, a relay adapted to throw said battery into and out of said signal circuit, a second circuit controlling the action of said signal circuit relay, a relay controlling said second circuit, and a local circuit and battery for operating said second relay, connected to the rails of said short insulated track section, and operated by the presence of cars thereon, substantially as described.

5. In an electrical railway signaling system, the combination, with two or more insulated blocks or sections of track, and an electrically controlled signal for each block controlling the entrance of trains thereto, of a battery at the distant end of each block and a signal circuit therefor passing through the rails of said block and controlling the signal at the home end of the block, said battery being normally out of said track circuit, a circuit controller for each block operated from the home end of the block and arranged, when operated, to throw the said battery of the block into the signal circuit, and a circuit controller for each block operated from the entrance of that block, and controlling the signal circuit of the preceding block, and arranged to break said signal circuit when a train is entering the block to which said circuit controller belongs, substantially as described.

6. In an electrical railway signaling system, the combination, with two insulated blocks or sections of track and an electrically controlled signal for each block, controlling the entrance of trains thereto, of a battery at the distant end of each block and a signal circuit therefor passing through the rails of said block and controlling the signal at the home end of the block, said battery being normally out of said track circuit, a relay for each signal circuit battery adapted to throw said battery into and out of said signal circuit, a second circuit for each block controlling the action of the signal circuit relay of that block, a circuit controlling device for each block controlling the said second circuit of that block, and means operated by the said last named circuit controlling device of the second block for breaking the signal circuit of the first block when the signal battery of said second block is in its signal circuit, substantially as described.

7. In an electrical railway signaling system, the combination, with two insulated blocks or section of track, and an electrically controlled signal controlling the entrance of trains thereto, of a battery at the distant end of each block and a signal circuit therefor passing through the rails of said block and controlling the signal at the home end of the block, said battery being normally out of said track circuit, a relay for each signal circuit adapted to throw said battery into and out of said signal circuit, a second circuit for each block, controlling the signal circuit relay of that block, a relay controlling the said second circuit of each block, a local circuit and battery adapted to operate the said relay controlling said second circuit, said local circuit being connected to the rails of a short insulated track section at the entrance of the block and adapted to be operated by the presence of cars on said insulated track section, and means operated by the relay which controls the second circuit of the second block, for breaking the signal circuit of the first block when the signal battery of the second block is in the signal circuit of that block, substantially as described.

8. In an electrical railway signaling system, the combination, with an insulated block or section of track and electrically controlled signals controlling the entrance of trains to said block at the ends thereof, a signal circuit conductor extending through the rails of said block, signal batteries at the ends of the block for operating said signals, and a signal circuit controller or relay at each end of the block adapted, when operated, to connect either the signal or the signal battery at its end of the block to said signal circuit conductor, of a line circuit conductor extending through the block, a line circuit battery at each end of the block, and a line circuit controller at each end of the block adapted when operated to place either the signal circuit relay or the line battery at its end of the block in circuit with the line conductor of the block, substantially as described.

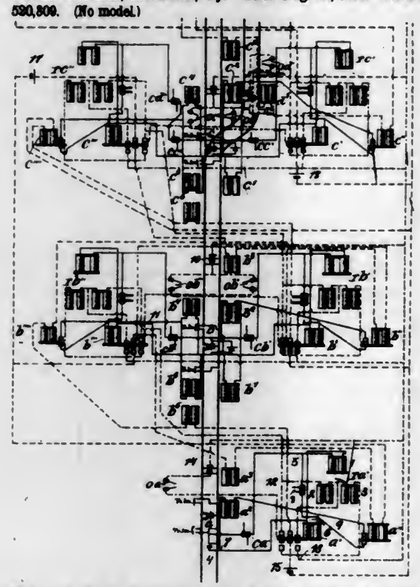
9. In an electrical railway signaling system, the combination, with an insulated block or section of track and electrically controlled signals controlling the entrance of trains to said block at the ends thereof, a signal circuit conductor extending through the rails of said block, signal batteries at the ends of the block for operating said signals, and a signal circuit controller or relay at each end of the block adapted, when operated, to connect either the signal or the signal battery at its end of the block with said signal circuit conductor, of a line circuit conductor extending through the block, a line circuit battery at each end of the block, a line circuit controller or relay at each end of the block adapted when operated to place either the signal circuit relay or the line circuit battery at its end of the block in circuit with said line conductor, short insulated track sections at the ends of the block, and local circuits and batteries controlling said line circuit relays, each of said local circuits being connected to the rails of a short insulated track section at its end of the block and adapted to be operated by the presence of cars upon said track section, substantially as described.

10. In an electrical railway signaling system the combination, with an insulated block or section of track and electrically controlled signals controlling the entrance of trains to said block at the ends thereof, a signal circuit extending through the rails of said block and normally connected to said signals, signal batteries at the ends of the block for operating said signals, and normally out of circuit with said signal circuit, and a circuit controller or relay at each end of the block adapted, when operated, to place the signal at its end of the block out of circuit with the signal circuit and to place the signal circuit battery at its end of the block in circuit with the signal circuit, of a line circuit conductor extending through the block, a line circuit battery at each end of the block, and a line circuit controller at each end of the block adapted when operated to place either the signal circuit relay or the line battery at its end of the block in circuit with the line conductor of the block, substantially as described.

11. In an electrical railway signaling system, the combination, with an insulated block or section of track, and electrically controlled signals controlling the entrance of trains to said block at the ends thereof, a signal circuit extending through the rails of said block, signal batteries at the ends of the block for operating said signals, and a signal circuit controller or relay at each end of the block adapted, when operated, to connect either the signal or the signal battery at its end of the block with said signal circuit, of a line circuit conductor extending through the block and normally connected to the said signal circuit relays, a line circuit battery at each end of the block normally out of circuit with said line conductor, and a line circuit controller at each end of the block adapted when operated to place the signal circuit relay at its end of the block out of circuit with said line conductor and to place the line circuit battery at its end of the block in circuit with the line conductor, substantially as described.

543,595. ELECTRICAL RAILWAY SIGNALING SYSTEM.

THOMAS B. DIXON, Henderson, Ky. Filed Aug. 20, 1894. Serial No. 520,809. (No model.)



Claim.—1. In an electrical railway signaling system, the combination, with two or more consecutive blocks or sections of track, a track-instrument at the entrance of each block, and a register for each block provided with registering and canceling mechanisms, capable of simultaneous and independent operation of a separate registering circuit for each register controlling the registering mechanism of that register and operated by the track-instrument at the entrance of the block to which that register belongs, a separate canceling circuit for each register controlling the canceling mechanism of that register and operated by the track-instrument at the entrance of a succeeding block, and batteries or other sources of electrical energy for said circuits, substantially as described.

2. In an electrical railway signaling system, the combination, with a block or section of track and a register therefor having registering and canceling mechanisms, capable of simultaneous and independent operation, of a track-instrument at the entrance of said block and a registering circuit for controlling the registering mechanism operated thereby, a track-instrument at the exit to said block and a canceling circuit for controlling the canceling mechanism operated thereby, batteries or other sources of electrical energy for said circuits, and means for preventing the operation of said canceling circuit by a train from within the block to which the register belongs when no train is recorded at said register, substantially as described.

3. In an electrical railway signaling system, the combination, with a block or section of track and a register therefor having registering and canceling mechanisms, of a track-instrument at the entrance of said block and a registering circuit for controlling the registering mechanism operated thereby, a track-instrument at the exit to said block and a canceling circuit for controlling the canceling mechanism operated thereby, and contact points controlling said canceling circuit and operated through the action of the registering and canceling mechanisms of said register, and adapted to prevent the operation of the canceling circuit when no train within the block is recorded at said register, substantially as described.

4. In an electrical railway signaling system the combination, with a block or section of track and a register therefor having registering and canceling mechanisms, of a track-instrument at the entrance of said block and a registering circuit for controlling the registering mechanism operated thereby, a track-instrument at the exit to said block and a canceling circuit for controlling the canceling mechanism operated thereby, register contact points normally closed when no train is recorded at said register but arranged to be separated when a train is recorded at said register, a governor or relay and a normally closed governor circuit passing through said register contact points and controlling said governor, contact points of the governor through which the canceling circuit passes and which are normally separated but are brought together by the fall of the governor armature, thereby preventing the operation of the canceling mechanism, and batteries or other sources of electrical energy for said circuit, substantially as described.

5. In an electrical railway signaling system the combination, with a block or section of track A B, track-instruments *a* and *b* at the entrance and exit to said block respectively, and a register *ra'* for said block having registering and canceling mechanisms, of a registering circuit passing through the registering magnet 1 and through contact points *ea'* of track-instrument *a*, a canceling circuit passing through the canceling magnet 2 and through contact points *eb'* of track-instrument *b*, register contact points 8 normally closed when no train is recorded at said register and arranged to be separated when a train is recorded at said register, a relay or governor *a'* and a normally closed governor circuit passing through said register contact points 8, contact points of the governor through which said canceling circuit passes and which are normally separated but are brought together by the fall of the governor armature, and batteries or other sources of energy for said circuits, substantially as described.

6. In an electrical railway signaling system, the combination, with a block or section of track and track-instruments at the ends of said block, of a register for one end of said block, having registering and canceling mechanisms capable of simultaneous and independent operation and a reverse canceling mechanism capable of operating simultaneously with and independently of said canceling mechanism, suitable connections between the registering and reverse canceling mechanism and the track-instrument at the same end of the block, whereby the registering and reverse canceling mechanisms are operated by the home track-instrument, and other suitable connections between the canceling mechanism and the track-instrument at the other end of the block, whereby said canceling mechanism is operated by the distant track-instrument, substantially as described.

7. In an electrical railway signaling system, the combination, with a block or section of tracks, as A B, and track-instruments *a* and *b* at the ends of said block, of a register *ra'* for one end of said block having registering and canceling mechanisms capable of simultaneous and independent operation and a reverse canceling mechanism capable of operating simultaneously with and independently of said canceling mechanism, registering and reverse canceling circuits connecting said registering and reverse canceling mechanisms with track-instrument *a*, whereby said registering and reverse canceling mechanisms are operated by the home track-instrument, and a canceling circuit connecting said canceling mechanism with track-instrument *b*, whereby said canceling mechanism is operated by the distant track-instrument, substantially as described.

8. In an electrical railway signaling system, the combination, with a block or section of track and track-instruments at the ends of said block, of a register for one end of said block, having registering and canceling mechanisms capable of simultaneous and independent operation and a reverse canceling mechanism capable of operating simultaneously with and independently of said canceling mechanism, suitable connections between the registering and reverse canceling mechanisms and the track-instrument at the same end of the block, whereby the registering and reverse canceling mechanisms are operated by the track-instrument at the home end of the block, other suitable connections between the canceling mechanism and the track-instrument at the other end of the block, whereby the canceling mechanism is operated by the distant track-instrument, and signal controlling devices operated by said register, substantially as described.

9. In an electrical railway signaling system, the combination, with a block or section of track and a register therefor having registering and canceling mechanisms capable of simultaneous and independent operation and a reverse canceling mechanism capable of operating simultaneously with and independently of said canceling mechanism, and track-instruments at the ends of said block for operating said register, of a registering circuit for controlling the registering mechanism operated by the track-instrument at the entrance of said block, a canceling circuit for controlling the canceling mechanism operated by the track-instrument at the exit of said block, a reverse canceling

circuit for controlling said reverse canceling mechanism operated by the track instrument at the entrance of said block, batteries or other sources of electrical energy for said circuits, and means for preventing the operation of said canceling circuits when no train within the block is recorded at said register, substantially as described.

10. In an electrical railway signaling system, the combination, with a block or section of track, as A B, track-instruments *a* and *b* at the entrance and exit to said block respectively, and a register *ra'* for said block having registering and canceling mechanisms capable of simultaneous and independent operation and a reverse canceling mechanism capable of operating simultaneously with and independently of said canceling mechanism, of a registering circuit passing through contact points *oa'* of track-instrument *a*, a canceling circuit passing through the canceling magnet 2 and through the registering magnet 1 and through contact points *ob'* of track-instrument *b*, a reverse canceling circuit passing through the reverse canceling magnet 3 and through contact points *oa''* of track-instrument *a*, batteries or other sources of electrical energy for said circuits, and means for preventing the operation of said canceling and reverse canceling circuits when no train within the block is recorded at said register, substantially as described.

11. In an electrical railway signaling system, the combination, with a block or section of track, as A B, track-instruments *a* and *b* at the entrance and exit to said block respectively, and a register *ra'* for said block having registering, canceling, and reverse canceling mechanisms, of a registering circuit passing through the registering magnet 1 and through contact points *oa'* of track-instrument *a*, a canceling circuit passing through the canceling magnet 2 and through contact points *ob'* of track-instrument *b*, a reverse canceling circuit passing through the reverse canceling magnet 3 and through contact points *oa''* of track-instrument *a*, register contact points 8 normally closed when no train is recorded at the track-instrument and arranged to be separated when a train is recorded at said register, a relay or governor *a'* and a normally closed governor circuit passing through said register contact points 8 and controlling the governor, and contact points of the governor through which pass the canceling and reverse canceling circuits, and which are normally separated, but are brought together by the fall of the governor armature, substantially as described.

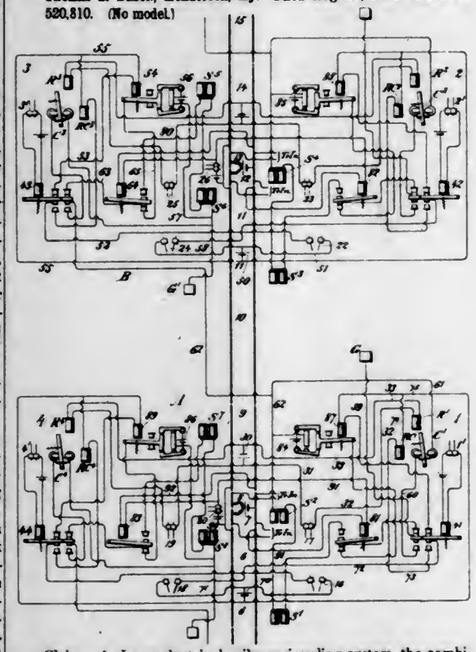
12. In an electrical railway signaling system, the combination, with a block or section of track, a register therefor having registering and canceling mechanisms, and suitable signals for said block adapted to be controlled through the action of said register, of a track-instrument at the entrance of said block and a registering circuit for controlling the registering mechanism operated thereby, a track-instrument at the exit to said block and a canceling circuit for controlling the canceling mechanism operated thereby, register contact points normally closed when no train is recorded at the register but arranged to be separated when a train is recorded at said register, a governor or relay, and a normally closed governor circuit passing through said register contact points and controlling said governor, contact points of the governor through which the canceling circuit passes and which are normally separated but are brought together by the fall of the governor armature, thereby preventing the operation of the canceling mechanism when no train is recorded at said register, a normally closed signal circuit for operating the signals of said block controlled by said register contact points, and adapted to hold said signals at danger when said register contact points are separated, and batteries or other sources of electrical energy for said circuits, substantially as described.

13. In an electrical railway signaling system, the combination, with a block or section of track, a register therefor having registering and canceling mechanisms capable of simultaneous and independent operation and a reverse canceling mechanism capable of operating simultaneously with and independently of said canceling mechanisms, and signals for said block adapted to be controlled through the action of said register, of a track-instrument at the entrance of said block and a registering circuit operated thereby for controlling the registering mechanism, a track-instrument at the exit to said block and a canceling circuit operated thereby for controlling the canceling mechanism, and a reverse canceling circuit operated by the track-instrument at the entrance of said block for controlling the reverse canceling mechanism and circuit, register contact points operated by said registering, canceling, and reverse canceling mechanisms, a signal circuit operated thereby for controlling the signals of said block, and batteries or other sources of electrical energy for said circuits, substantially as described.

14. In an electrical railway signaling system, the combination, with a section of track, as A C, divided into blocks, as A B and B C, registers, as *ra'* and *rb''* for each block corresponding to each direction of movement of trains over that block and adapted to register the passage of trains into and out of said block, and track-instruments at the ends of said blocks for operating said registers, of relays or governors, as *a'* and *b'''*, for each block, corresponding to each direction of movement and controlled each by the corresponding register of that block, front relays as *a''* and *b'''* for each block corresponding to each direction of movement, a front signal battery, as 15, for each direction of movement and a circuit therefor passing through contact points of the governors for one direction of movement, as *a'* and *b'*, and through the magnets of the front relays for the other direction of movement, as *b'''* and *c'''*, signals for each direction of movement for each block and local signal circuits and batteries therefor for operating said signals, controlled each by the corresponding register of that block and by the front relay of that block corresponding to the opposite direction of movement, substantially as described.

15. In an electrical railway signaling system, the combination, with a block or section of track, as B C, provided with a side or auxiliary track, registers *rb'* and *rc''* for registering the passage of trains into and out of said block, having registering and canceling mechanisms capable of operating simultaneously and independently, track-instruments *b* and *c* at the ends of said block having contact points *ob'* and *oc''* and registering circuits passing through and connected to the registering mechanisms of registers *rb'* and *rc''* respectively, for operating the registering mechanisms of said registers when trains pass into said block, and having contact points *ob''* and *oc'* and canceling circuits passing therethrough and connected to the canceling mechanisms of registers *rc''* and *rb'*, respectively, for operating the canceling mechanisms of said registers when trains pass out of said block, of a siding track-instrument *d* having contact points *od'* and a canceling circuit passing therethrough and connected to the canceling mechanism of register *rb'*, adapted to operate the canceling mechanism of register *rb'* when a train passes from block B C on to the siding, and contact points *od''* and a registering circuit passing therethrough and connected to the registering mechanism of register *rc''*, for operating the registering mechanism of register *rc''* when a train passes from the siding into the block B C, substantially as described.

543,596. ELECTRICAL RAILWAY SIGNALING SYSTEM. THOMAS R. DIXON, Henderson, Ky. Filed Aug. 20, 1894. Serial No. 520,810. (No model.)



Claim.—1. In an electrical railway signaling system, the combination, with a block or section of track, signals for the ends of said block, a line circuit for the block, a line battery for each end of the block, and a circuit controller or switch for each end of the block connected to the signal and to the battery of that end of the block, and to the line circuit conductor, and adapted to place either said signal or said battery in circuit with the line circuit, of a register at each end of said block arranged to register the passage of trains into said block and to cancel the passage of trains out of said block, and means operated by said registers for controlling said signals and adapted to hold said signals to danger while a train is registered on said registers, substantially as described.

2. In an electrical railway signaling system, the combination, with a block or section of track, signals for the ends of said block, a line circuit for the block, a line battery for each end of the block, and a circuit controller or switch for each end of the block connected to the signal and to the battery of that end of the block, and to the line circuit conductor, and adapted to place either said signal or said battery in circuit with the line circuit, of a register at each end of said block, arranged to register the passage of trains into said block and to cancel the passage of trains out of said block, contact points operated by said registers, and circuits controlled by said contact points for operating said signals and arranged to hold said signals to danger while a train is within said block, substantially as described.

3. In an electrical railway signaling system the combination, with a block or section of track, signals for the ends of said block, a line circuit for the block, a line battery for each end of the block, a relay for each end of the block connected to the signal and to the battery of that end of the block, and to the line circuit conductor and adapted to place either said signal or said battery in circuit with the line circuit, an insulated track-section at each end of said block, and a battery and circuit connected to the rails of each track-section and to the corresponding relay and adapted to operate said relay when cars are on said track-section, of a register at each end of said block arranged to register the passage of trains into said block and to cancel the passage of trains out of said block, and means operated by said registers for controlling said signals and adapted to hold said signals to danger while a train is registered upon said register, substantially as described.

4. In an electrical railway signaling system, the combination, with a block or section of track, signals normally at danger for the ends of said block, a line circuit for the block, a signal battery for each end of the block and a circuit controller or switch for each end of the block connected to the signal and to the battery of that end of the block, and to the line circuit conductor, and normally connecting said battery to the line circuit, but adapted when operated, to place said signal in circuit with the line circuit and to place said battery out of circuit with the line circuit, of a register for each end of the block, arranged to register the passage of trains into said block and to cancel the passage of trains out of said block, and means, operated by each register, for throwing the signals and battery at its end of the block out of the line circuit when a train is registered on such register, substantially as described.

5. In an electrical railway signaling system the combination, with a block or section of track, signals normally at danger for the ends of said block, a line circuit for the block, a signal battery for each end of the block, and a circuit controller or switch for each end of the block connected to the signal and to the battery of that end of the block and to the line circuit conductor, and normally connecting said battery to the line circuit, but adapted when operated to place said signal in circuit with the line circuit and to place said battery out of circuit with the line circuit, of a register for each end of the block, arranged to register the passage of trains into said block and to cancel the passage of trains out of said block, contact points operated by each register and arranged to be separated when trains are registered thereon, a relay for each register operated by a circuit controlled by the register contact points, and contact points of each register relay arranged to throw the signal and battery corresponding thereto out of the line circuit when the register contact points are separated, substantially as described.

6. In an electrical railway signaling system the combination, with a block or section of track, a signal for one end thereof and a register corresponding to said signal and having a registering and a canceling mechanism, said canceling mechanism being operated by a magnet having a polarized armature, of a track-instrument at the near end of said block arranged to operate said registering mechanism, a line circuit extending through the block, and connected to the magnet of said canceling mechanism, a battery at the distant end of said block, a pole changer connecting said battery to said line circuit and adapted when operated to reverse the connection of said battery to said line circuit, a track-instrument at the distant end of said block, a circuit controlled thereby for operating said pole changer, and means, operated by said register, for holding the said signal to danger while trains are registered on said register, substantially as described.

7. In an electrical railway signaling system the combination, with a block or section of track, a signal for one end thereof, a register corresponding to said signal, and having electrically operated registering and canceling mechanisms, said canceling mechanism being operated by a magnet having a polarized armature, of a track-instrument at the near end of said block, a circuit controlled thereby for operating said registering mechanism, a line circuit extending through the block, and connected to the magnet of said canceling mechanism, a battery at the distant end of said block, a pole changer connecting said battery to said line circuit and adapted when operated to reverse the connection of said battery to said line circuit, a track-instrument at the distant end of said block, a circuit controlled thereby for operating said pole changer, and means, operated by said register, for holding the said signal to danger while trains are registered on said register, substantially as described.

8. In an electrical railway signaling system the combination, with a block or section of track, a signal for each end of said block, a line circuit for the block, a line battery for each end of the block, and a circuit controller or switch for each end of the block connected to the battery and to the signal of its end of the block, and to the line circuit conductor, and adapted to place either said battery or said signal in circuit with the line circuit, of a register for each end of the block having a registering and a canceling mechanism, a track-instrument at each end of the block arranged to operate the registering mechanism of the register of its end of the block, means operated by each register, when a train is registered upon it, for throwing the magnet of the canceling mechanism into the line circuit and for throwing the line battery and the signal at its end of the block out of connection with the line circuit, and means, operated by each track-instrument, for operating the canceling mechanism of the register of the opposite end of the block through such line circuit, substantially as described.

9. In an electrical railway signaling system the combination, with a block or section of track, a signal for each end of said block, a line circuit for the block, a line battery for each end of the block, and a circuit controller or switch for each end of the block, connected to the battery and to the signal of its end of the block, and to the line circuit conductor, and adapted to place either said battery or said signal in circuit with the line circuit, of a register for each end of the block having a registering and a canceling mechanism, the canceling mechanism being operated by a magnet having a polarized armature, a track-instrument at each end of the block arranged to operate the registering mechanism of the register of its end of the block, means operated by each register, when a train is registered upon it, for throwing the magnet of its canceling mechanism into the line circuit and for throwing the line battery and the signal of its end of the block out of connection with the line circuit, a pole changer for each line battery adapted to reverse the connection of that battery with its circuit, and means, operated by each track-instrument, for operating the pole changer of its end of the block, substantially as described.

10. In an electrical railway signaling system, the combination, with a block or section of track, a signal for each end of said block, a line circuit for the block, a line battery for each end of the block and a circuit controller or switch for each end of the block, connected to the line battery and to the signal of its end of the block, and to the line circuit conductor, and adapted to place either said battery or said signal in circuit with the line circuit, of a register for each end of the block having electrically operated registering and canceling mechanisms, a track-instrument at each end of the block, a circuit controlled thereby for operating the registering mechanism of the register at its end of the block, means operated by each register, when a train is registered upon it, for throwing the magnet of its canceling mechanism into the line circuit, and for throwing the line battery and the signal at its end of the block out of connection with the line circuit, and means operated by each track-instrument, for operating the canceling mechanism of the register at the opposite end of the block through such line circuit, substantially as described.

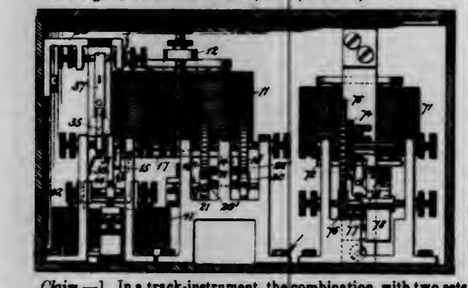
11. In an electrical railway signaling system, the combination, with a block or section of track, a signal for each end of said block, a line circuit for the block, a line battery for each end of the block, a relay for each end of the block, connected to the signal and to the line battery of that end of the block, and to the line circuit conductor and adapted to place either said signal or said battery in circuit with the line circuit, an insulated track-section at each end of said block, and a battery and circuit connected to the rails of each track-section and to the corresponding relay, and adapted to operate said relay when cars are on said track-section, of a register for each end of the block having a registering and a canceling mechanism, a track-instrument at each end of the block arranged to operate the registering mechanism of the register of its end of the block, means operated by each register, when a train is registered upon it, for throwing the magnet of its canceling mechanism into the line circuit and for throwing the line battery and the signal at its end of the block out of connection with the line circuit, and means, operated by each track-instrument, for operating the canceling mechanism of the register at the opposite end of the block, through such line circuit, substantially as described.

12. In an electrical railway signaling system, the combination, with two or more consecutive blocks or sections of track, a signal for each end of each block, a line circuit for each block, a line battery for each end of each block, a line relay for each end of each block connected to the signal and to the line battery at its end of the block, and to the line circuit conductor of that block, and adapted to place either said signal or said battery in circuit with said line circuit, an insulated track-section for each relay included within the

length of the adjacent block, and a battery and circuit connected to the rails of each such track-section and to the corresponding relay, and adapted to operate said relay when cars are on said track-section, of a register for each end of each block having electrically operated registering and canceling mechanisms, track-instruments at the ends of said blocks between said insulated rail sections, each track-instrument adapted to operate different circuits according to the direction in which trains pass over said track-instrument, a circuit controlling the registering mechanism of each register and arranged to be operated by the track-instrument of that end of that block to which said register belongs, when a train passes over said track-instrument into said block, means, operated by each register, when a train is registered upon it, for throwing the magnet of its canceling mechanism into the line circuit and for throwing the line battery and the signal at its end of the block out of connection with the line circuit, means, operated by each track-instrument, for operating the canceling mechanisms of the registers at the distant ends of the adjacent blocks through the line circuits of those blocks and means, operated by each track-instrument, for holding at normal the armatures of the home line relays while wheels are over said track-instrument, substantially as described.

543,597. TRACK-INSTRUMENT. THOMAS B. DIXON, Henderson, Ky.

Filed Aug. 20, 1894. Serial No. 520,811. (No model.)



Claim.—1. In a track-instrument, the combination, with two sets of contact points and a swinging arm arranged to operate the one set or the other according to the direction in which said arm swings, of two magnets each arranged when operated to tend to cause said arm to swing, the said magnets acting to swing said arm in opposite directions, circuits for operating said magnets arranged to be operated by a passing train, and to cause said magnets to be operated successively, and a locking device arranged to hold the said pivoted arm in the position in which the magnet first operated placed it while the second magnet is acting on said arm, substantially as described.

2. In a track-instrument, the combination, with two sets of contact-points, and a swinging arm arranged to operate the one set or the other according to the direction in which said arm swings, of two operating magnets, an armature and armature lever for each of said magnets, acting on said arm and adapted, when its magnet is operated, to tend to swing said arm, said armature levers acting in opposite directions upon said arm, a locking device arranged to hold said pivoted arm in the position in which it is placed by one armature lever while the other armature lever is acting upon it, and circuits for operating said magnets arranged to be operated by a passing train and to cause said magnets to be operated successively, substantially as described.

3. In a track-instrument, the combination, with two sets of contact points, and a swinging arm arranged to operate the one set or the other according to the direction in which said arm swings, of two magnets, an armature and armature lever for each of said magnets, spring actuated pressure pieces carried by said armature levers and pressing against opposite sides of said swinging arm, and each adapted, when its corresponding magnet is operated, to tend to cause said arm to swing, a locking device arranged to hold said pivoted arm in the position in which it is placed by one armature lever while the other armature lever is acting upon it, and circuits for operating said magnets arranged to be operated by a passing train and to cause said magnets to be operated successively, substantially as described.

4. In a track-instrument, the combination, with two sets of contact points and a swinging arm arranged to operate the one set or the other according to the direction in which said arm swings, of two magnets each arranged when operated to tend to cause said arm to swing, the said magnets acting to swing said arm in opposite directions, circuits for operating said magnets arranged to be operated by a passing train and to cause said magnets to be operated successively, locking levers adapted to engage with notches in said pivoted arm, and magnets controlling said levers and arranged to hold said arm locked in the position in which it is placed by one operating magnet while the other operating magnet is acting on said arm, substantially as described.

5. In a track-instrument, the combination, with suitable contact points, of actuating mechanism therefor, and means, operated by wheels passing over the track-instrument, for operating said contact point actuating mechanism, said mechanism being arranged to retain said contact points in normal condition when first operated by wheels passing over the track-instrument and to operate said contact points in returning to normal after the passage of said wheels over the track-instrument, whereby the operation of said contact points is prevented until the wheels have passed completely over the track-instrument, substantially as described.

6. In a track-instrument, the combination, with two sets of contact points, of actuating mechanism therefor arranged to operate the one set of contact points or the other according to the direction in which the train passes over the track-instrument, and means, operated by wheels passing over the track-instrument, for operating said contact point actuating mechanism, said mechanism being arranged to retain in normal condition that set of contact points operated when said mechanism is first operated by the wheels passing over the track-instrument and to operate said contact points in returning to normal after the passage of said wheels over the track-instrument, whereby the operation of said contact points is prevented until the wheels have passed completely over the track-instrument, substantially as described.

7. In a track-instrument, the combination, with two sets of contact points, of two interacting actuating mechanisms corresponding each to one of said sets of contact points and each arranged, when first operated, to retain its contact points in normal condition, and to operate said contact points when returning to normal, each of said mechanisms being connected with the other mechanism and arranged to prevent the operation of the contact points thereby when said first-named mechanism is not in normal position, and means, operated by wheels passing over the track-instrument, for operating said mechanisms successively and concurrently and in an order corresponding to the direction of motion of said wheels, whereby the mechanism last operated is caused to operate its contact points and to prevent the operation by the other mechanism of the contact points of that mechanism, substantially as described.

8. In a track-instrument, the combination, with two sets of contact points, of two interacting actuating mechanisms corresponding each to one of said sets of contact points and each arranged, when first operated, to retain its contact points in normal condition, and to operate said contact points when returning to normal, each of said mechanisms being connected to an arm carrying one of the contact points of the other mechanism and being arranged to prevent those contact points from being operated while said first-named mechanism is not in normal condition, and means, operated by wheels passing over the track-instrument, for operating said mechanism successively and concurrently and in an order corresponding to the direction of motion of said wheels, substantially as described.

9. In a track-instrument, the combination, with two sets of normally separated contact points, of two interacting actuating mechanisms corresponding each to one of said sets of contact points and each arranged, when first operated, to retain its contact points separated, and to bring said contact points together when returning to normal, each of said mechanisms being connected to an arm carrying one of the contact points of the other mechanism and being arranged to prevent said contact point from making contact with its corresponding contact point while said first-named mechanism is not in normal condition, and means, operated by wheels passing over the track-instrument, for operating said mechanisms successively and concurrently and in an order corresponding to the direction of motion of said wheels, substantially as described.

10. In a track-instrument, the combination, with two sets of contact points, of two interacting actuating mechanisms corresponding each to one of said sets of contact points and each arranged, when first operated, to retain its contact points in normal condition, and to operate its contact points when returning to normal, each of said mechanisms being connected with the other mechanism and arranged to prevent the operation of the contact points whereby when said first-named mechanism is not in normal position, an electro-magnet, corresponding to each actuating mechanism, for operating the same, and electric circuits connected to said magnets and arranged to be operated successively when wheels pass over the track-instrument, whereby said mechanisms are operated successively and concurrently and in an order corresponding to the direction of motion of said wheels, substantially as described.

11. In a track-instrument, the combination, with two magnets, armatures and armature levers therefor, a ratchet wheel corresponding to each of said magnets, and means for causing each armature lever, when operated, to rotate its corresponding ratchet wheel, of a contact piece bearing against the teeth of each ratchet wheel and arranged to be operated by the movement thereof, a contact piece operated by each armature lever and adapted to make contact with the contact piece of the ratchet wheel corresponding to the other armature lever, when only the contact piece of said ratchet wheel is operated, and circuits for operating said magnets arranged to be operated successively by wheels passing over the track-instrument, substantially as described.

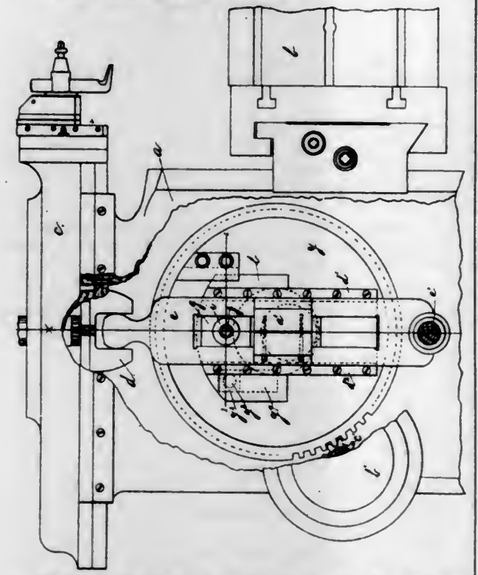
12. In a track-instrument, the combination, with two magnets, armatures and armature levers therefor, a ratchet wheel corresponding to each of said magnets, and means for causing each armature lever, when rising, to rotate its corresponding ratchet wheel, of a contact piece bearing against the teeth of each ratchet wheel and arranged to be operated by the movement thereof, a contact piece carried by each armature lever and adapted to make contact with the contact piece of the ratchet wheel corresponding to the other armature lever, when said armature contact piece is up and said ratchet wheel rotates, and circuits for operating said magnets arranged to be operated successively by wheels passing over the track-instrument, substantially as described.

13. In a track-instrument, the combination, with contact points controlling electric circuits, and electrically operated actuating mechanism for operating said contact points, of insulated track sections and circuits and batteries connected therewith and arranged to operate said contact actuating mechanism when wheels pass over said track sections, and an electrically operated safety device, operated by the circuits connected to said track sections and controlling the circuits passing through said track-instrument contact points, and arranged to prevent the operation of the said circuits by said track-instrument contact points, when the insulation between said track sections fails, substantially as described.

14. In a track-instrument, the combination, with canceling circuit contact points for controlling canceling circuits, magnets and suitable mechanism controlled thereby for operating said contact points, insulated track-sections, and circuits connected therewith and arranged to operate the mechanism of said track-instrument, of a relay having a multiple coil magnet, with its coils included within said track-circuits, and adapted to operate contact points of said relay when the insulation between said rail sections fails, said contact points being connected with said canceling circuits, and arranged to prevent the operation thereof when the insulation between said track sections fails, substantially as described.

543,598. QUICK-RETURN MOTION FOR SHAPING-MACHINES.

MARK FLATHER and ERNEST J. FLATHER, Nashua, N. H. Filed Aug. 20, 1894. Serial No. 520,750. (No model.)



Claim.—1. In a shaping machine, the combination of a gear driven by a pinion secured to the driving shaft, an eccentric bushing attached to the frame of shaping machine, upon the outside of which the said gear has a bearing, a plate provided with a hub which revolves in a bearing in eccentric bushing eccentric to axis of said gear, a stud on side of said gear which operates in an oblong recess in said plate, and causes said plate to revolve with said gear in a path eccentric to path of same, and a collar to retain said plate in position, all as and for the purpose set forth.

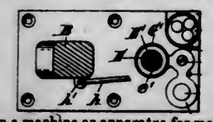
2. The combination in a shaping machine, of a gear having a bearing on the outside of a bushing attached to the frame of shaping machine, a bearing in said bushing eccentric to its axis in which the hub of a plate has a bearing, a stud on said gear operating in a recess in said plate, a slide block operating in ways in said plate, a rack secured to inside of said slide block, a shaft having a bearing in hub of plate which is provided with a pinion and washer on one of its ends, its other end provided with a check-nut and means for revolving said shaft, said pinion meshing into said rack, a metal filling strip attached to the inside of slide block opposite to rack, upon both of which said washer on end of shaft have a bearing, and a stud projecting from the top of slide block which has a bearing in a link block running in a slot in a pitman, all as and for the purpose specified

3. The combination in a shaping machine, of a gear having a bearing outside of a bushing attached to the frame of said shaping machine, a bearing in said bushing eccentric to its axis in which the hub of a plate has a bearing, a stud on said gear operating in a recess in said plate, a slide-block operating in ways in said plate, a stud projecting from the top of said slide-block which has a bearing in a link-block, a pitman having a longitudinal slot in which said link-block runs, lugs cast upon the parallel sides of said pitman, and a filling strip inserted between said lugs, and bolts inserted in said lugs, substantially as and for the purpose set forth.

4. In a shaping machine, an indicator used to determine the length of stroke of ram, consisting of a spiral groove in the adjusting shaft *o*, a collar surrounding grooved portion of said adjusting shaft and not movable with same, a longitudinal slot in said collar, the edges of said slot provided with graduations, a sliding block longitudinally movable in said slot by means of the spiral groove in adjusting shaft *o*, said sliding block being provided with a finger or pointer extending over graduations on collar, substantially as and for the purpose set forth.

543,599. MACHINE FOR MAKING MEDICINAL TABLETS.

LOUIS GRAF, Cincinnati, Ohio. Filed Mar. 30, 1895. Serial No. 543,792. (No model.)



Claim.—1. In a machine or apparatus for making medicinal tablets and the like, the combination of a bed-plate; a standard mounted thereon; a plunger having a male-die and sliding in a guide-way constructed on said standard; an operating-lever suitably connected with the upper end of said plunger; a female mold-device on the bed-plate comprising a barrel or cylinder and one or more bottom-dies; a turn-table mounted on the bed-plate forward of the path of the plunger and having said one or more bottom-dies mounted thereon and which are brought under said path of the plunger or upper die; and a stripper-arm having a stripper-plate thereon, and projecting from the standard in the upward path of the mold-barrel; the whole being constructed, arranged and adapted to operate substantially as herein set forth.

2. In an apparatus for making medicinal tablets and the like, the combination with a male plunger-die and suitable driving mechanism therefor, of a female mold-device comprising a barrel or cylinder and a turn-table having one or more bottom-dies and a tablet carrier or delivery cup mounted thereon, substantially as herein set forth.

3. In an apparatus for making medicinal tablets and the like, the combination with a male plunger-die and suitable driving-mechanism therefor, of a female mold-device comprising a barrel or cylinder and a turn-table having a bottom-die and a tablet carrier or delivery-cup mounted thereon, and a pair of stops for said turn-table whereby the latter is readily and accurately checked in proper working position, substantially as herein set forth.

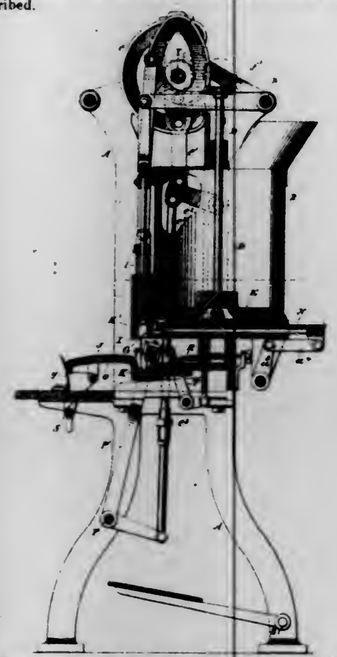
543,600. CIGAR-BUNCHING MACHINE.

FERDINAND J. HAGEN and LUDWIG WIELAND, New York, N. Y., assignors, by mesne assignments, to the Excelsior Cigar Machine Company, same place. Filed Aug. 23, 1894. Serial No. 521,074. (No model.)

Claim.—1. In a cigar bunching machine, a hopper mounted in a frame and a vertical shaft loosely mounted in the hopper, said shaft carrying radially arranged blades E E, said hopper being provided with perforations in the bottom thereof to permit sand or grit to fall therethrough while the tobacco is being agitated or mixed, substantially as described.

2. In a cigar bunching machine, the combination of a hopper having perforations radially around the bottom and having a feed discharge opening therein, a revoluble shaft having agitator blades extending radially therefrom mounted in said hopper, a measuring chamber located directly underneath the discharge opening, with the horizontal plunger for intermittently forcing the tobacco out of the measur-

ng chamber, and with the bunch forming mechanism, substantially as described.



3. In a cigar bunching machine, a measuring chamber, an intermittently reciprocating vertical feed-chute having a horizontal perforation in one of its sides, clips M' M' pivotally mounted at each end of the measuring chamber, one end of said clips being spring pressed, and with a horizontal plunger N for intermittently advancing the tobacco into the feed-chute substantially as described.

4. In a cigar bunching machine, the combination of the hopper mounted in the frame and having a discharge opening in its base, a measuring chamber located below said opening and communicating therewith, with a reciprocating feed-chute adjacent thereto, and with the horizontal reciprocating plunger, the clips M' M', and the bunching mechanism as described.

5. In a cigar machine, a feed hopper mounted in a frame a discharge opening in its base, a measuring chamber located directly below said discharge opening, in combination with a horizontal reciprocating plunger for intermittently forcing the tobacco out of the measuring chamber, a vertically reciprocating feed-chute perforated in the side adjacent to the hopper to permit the tobacco contained in the measuring chamber to be forced at intermittent periods into said chute, and extending below said opening for the purpose of closing one side of the measuring chamber when said chute is in its raised position, with the forming and bunching mechanism, substantially as described.

6. In a cigar machine, a feed hopper mounted in the frame having a discharge opening in its base, a measuring chamber located directly below said discharge opening, in combination with a horizontal reciprocating plunger for intermittently forcing the tobacco out of the measuring chamber, a vertically reciprocating feed-chute having an elongated perforation or port in one side thereof and adjacent to the hopper, said chute exteuding below said elongated opening or port therein, to close the adjacent side of the measuring chamber when said chute is in its raised position, means for actuating said feed-chute to open at intermittent periods said measuring chamber, a vertically reciprocating plunger moving in said feed chute, and the rolling mechanism substantially as described.

7. The combination in a cigar bunching machine, of a feed hopper mounted in the frame, a measuring chamber located directly below said hopper and communicating therewith, a vertical feed chute perforated in one side, with a horizontal plunger moving in a plane coincident with said measuring chamber, the carrying levers a^2 a^3, one lever being provided with a longitudinal slot in one end thereof, the other lever carrying an adjustable stop a^5 which projects into and loosely moves in the slot in the adjacent carrying lever, substantially as and for the purpose specified.

8. In a cigar bunching machine, a feed-hopper having a discharge opening therein, a measuring chamber located below said discharge opening, a vertical revoluble shaft mounted in said hopper, blades E extending radially and horizontally therefrom, said blades being pitched at an incline and adapted to move in a plane coincident with the plane determined by the bottom of the hopper, a bevel gear at the upper end of said shaft, with a counter shaft carrying a bevel gear meshing with the said bevel gear on said vertical shaft, substantially as described.

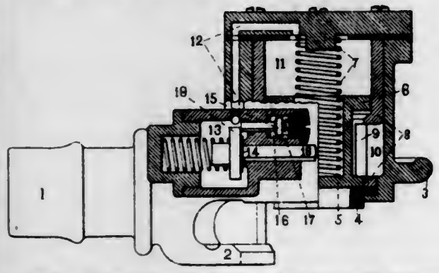
9. In a cigar bunching machine, the combination of a measuring chamber, the plungers N L, the reciprocating chute I having side openings, there being an opening in one face of said chute through which tobacco is intermittently forced by the plunger N adjustable side walls U U in said openings, the adjacent side walls N' N', the clips M' M' pivotally connected to the forward ends of the side walls N' N' with the rolling mechanism, substantially as described.

543,601. METHOD OF PREPARING GRANULAR EFFERVESCENT COMPOUNDS. THOMAS KERFOOT, Manchester, England. Filed Feb. 10, 1893. Serial No. 461,811. (No specimens.) Patented in England July 15, 1892, No. 12,998.

Claim.—1. In the method of preparing granular effervescible mixtures, the steps consisting of separately submitting the acid and the alkaline constituents to contact with a saccharine adheseive, and then granulating and drying each constituent before assembling the dried material, substantially as described.

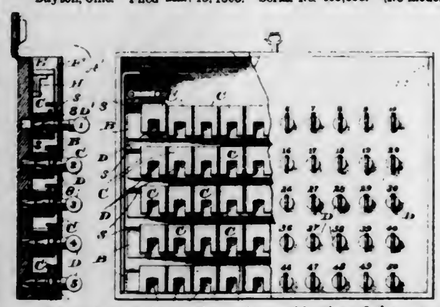
2. The hereinbefore described method of preparing granular effervescible mixtures, which consists of separately preparing the reacting agents by mixing with the acid constituent and with the alkaline constituent, sufficient sugar and water to render each mixture coherent, separately granulating each mixture, drying the granules, mixing the dried acid and alkaline granules, and packing the mixture in air tight vessels, substantially as described.

543,602. PIPE-COUPLING. ALBERT P. MASSEY, Watertown, N. Y. Filed Jan. 7, 1895. Serial No. 534,078. (No model.)



Claim.—In pipe couplings the abutting faces of which are rotated on each other in making or breaking a lock or union, a lift valve in each coupling, a piston to operate said valve and an auxiliary valve device actuated by some fixed part of the opposite coupling for admitting or exhausting air from the chamber containing said piston, substantially as set forth.

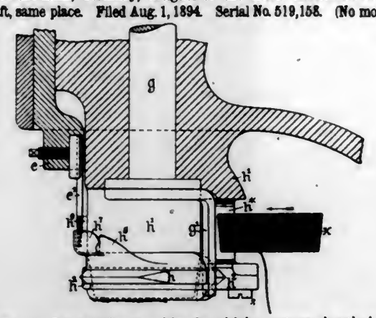
543,603. TIME-KEEPING CHECK-BOARD. FRANK A. PALMER, Dayton, Ohio. Filed Mar. 13, 1893. Serial No. 465,853. (No model.)



Claim.—1. In a time register, the combination of the case provided with cross-bars having perforations in alignment with perforations in the rear of said case; the side bars with the uniting carrying rods, the gravity locking plates supported thereon, and the perforating keys for engagement therewith, substantially as described.

2. In a time register, the combination of the case provided with transverse bars, and having perforations therein registering with perforations in the rear of said case, the vertical side bars with uniting rods, the locking plates suspended therefrom, the perforating key and the register sheet supported between the said transverse bars and the rear of the case, substantially as described.

543,604. SEWING-MACHINE. JOHANN B M. SEGELHORST, Frankfort-on-the-Main, Germany, assignor to the Keats Maschinen-Gesellschaft, same place. Filed Aug. 1, 1894. Serial No. 519,158. (No model.)



Claim.—1. In a sewing machine in which a rotary shuttle is arranged above the work support and the needle approaches the work from above said support, the combination with said work support, needle and shuttle, of a divided shuttle-supporting ring, the division of the said ring providing an opening for the operation of the needle and a second opening or gap for the passage of the thread in threading up the machine, substantially as herein described.

2. In a sewing machine in which a rotary shuttle is arranged above the work support and the needle approaches the work from above said support, the combination with the said needle and work support and a shuttle having in its bottom a curved slot h^5 and having in its side wall a gap h^4 communicating with said slot, of the divided shuttle-supporting ring h^3 h^{3a} having in it a radially arranged gap h^3 to correspond with the gap in the wall of the shuttle, and the pendent ring supporting bracket h' having in it the opening h^6, substantially as and for the purpose herein described.

3. The combination with the sliding bar *k*, a feed arm attached to said bar and a spring for producing pressure on said bar and arm, of a driving shaft *d*, a friction disk *o* and fixed bearings therefor, an adjustable connection between said friction disk and said bar *k*, and a rotating friction clip *n* carried by said driving shaft for producing the rotation of said friction disk *o* and the lifting of the said bar *k* and the feed arm; substantially as herein described.

4. The combination with the sliding bar *k*, a feed arm attached to said bar and a spring for producing pressure on said bar and arm, of a driving shaft *d*, a friction disk *o* and fixed bearings therefor, a connection between said friction disk and said bar *k*, a clamping lever *m* for clamping said bar *k*, a rotary friction clip *n* carried by said driving shaft *d* for producing the rotation of said friction disk *o*, and a cam d^6 carried by said driving shaft *d* for producing the operation of said clamping lever; all substantially as herein set forth.

543,605. RAILWAY-SWITCH. AXEL A. STROM, Austin, assignor to the Strom Manufacturing Company, Chicago, Ill. Filed June 8, 1895. Serial No. 552,112. (No model.)

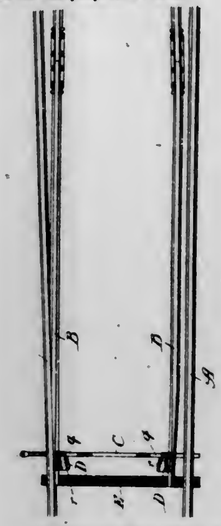
Claim.—1. In combination with a split-switch and the point-rail connecting-bar, an adjustment-plate provided with an adjustment-line inclined to the line of the main-rail, for connection of the bar with a point-rail, substantially as and for the purpose set forth.

2. In combination with a split-switch and the point-rail connecting bar, adjustment-plates one at each end of said bar and each provided with an adjustment-line inclined to the line of the main-rails for connection of the bar with the point-rails, substantially as and for the purpose set forth.

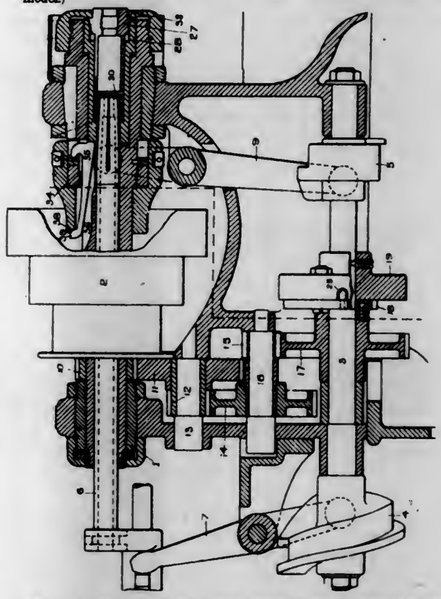
3. In combination with a split-switch and the point-rail connecting-bar an adjustment-plate fastened to a point-rail to extend at its inner side and provided with an adjustment-line inclined to the line of the main-rail for connection of the bar with the point-rail, substantially as and for the purpose set forth.

4. In combination with a split-switch, the point-rail connecting-bar provided near its opposite ends with clips, and adjustment-plates secured to the point-rails to extend at their inner sides and each provided with an adjustment-line inclined to the line of the main-rails and adapted to be connected with a clip on the adjacent end of said bar, substantially as and for the purpose set forth.

5. In combination, a split-switch, a connecting-bar C provided with clips *q* near its opposite ends, and adjustment-plates D secured to the point-rails to extend at their inner sides and each provided with a line of holes *r* inclined to the line of the adjacent main-rail, and pins *p* separably fastening the plates through said holes to the clips, substantially as and for the purpose set forth.



543,606. METAL-SCREW MACHINE. SAMUEL I. WORSLEY, Taunton, Mass., assignor to The Brown & Sharpe Manufacturing Company, Providence, R. I. Filed June 20, 1894. Serial No. 515,126. (No model.)



Claim.—1. The combination with a spindle carrying a chuck containing gripping jaws and means for rotating the same, of a cam-shaft provided with a cam for actuating the jaws of said chuck, and mechanism substantially as described, connecting said cam-shaft with said spindle, whereby said cam-shaft will be operated directly from said spindle.

2. The combination, with a hollow spindle carrying a chuck containing gripping jaws, means for rotating the same, and devices for feeding a rod of stock through said spindle and chuck, of a cam-shaft provided with a cam for actuating said feeding devices, and mechanism substantially as described, connecting said cam-shaft with said spindle, whereby said cam-shaft will be operated directly from said spindle.

3. The combination, with a hollow spindle carrying a chuck containing gripping jaws, means for rotating the same, and devices for

feeding a rod of stock through said spindle and chuck, of a cam-shaft provided with cams for actuating the jaws of said chuck and said feeding devices, and mechanism substantially as described, connecting said cam-shaft with said spindle, whereby said cam-shaft will be operated directly from said spindle.

4. The combination, with a hollow spindle carrying a chuck containing gripping jaws, means for rotating the same, and devices for feeding a rod of stock through said spindle and chuck, of a cam-shaft provided with suitable cams for actuating the jaws of said chuck and said feeding devices, mechanism for operating said cam-shaft direct from said spindle, and means for connecting said cam-shaft with, and disconnecting it from, said spindle, whereby said cam-shaft may be operated intermittently, substantially as described.

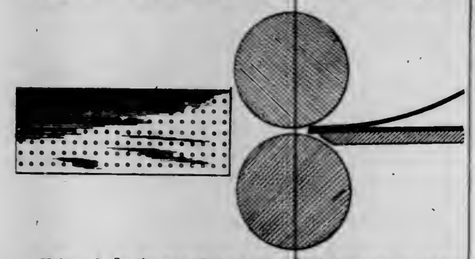
5. The combination, with a hollow spindle carrying a chuck containing gripping jaws, means for rotating the same, and devices for feeding a rod of stock through said spindle and chuck, of a cam-shaft provided with suitable cams for actuating the jaws of said chuck and said feeding devices at the proper times, mechanism for operating said cam-shaft direct from said spindle, means for enabling said cam-shaft to be connected with said spindle, and means for automatically disconnecting said cam-shaft from said spindle, substantially as described.

6. The combination, with a hollow spindle, and means for rotating the same, of a cam-shaft, a train of gearing between said spindle and said cam-shaft, said train terminating in a gear loosely mounted on said cam-shaft, a ratchet-wheel secured to said gear, a pawl connected with said cam-shaft and adapted to engage the teeth of said ratchet wheel, means for normally holding said pawl out of engagement with said ratchet wheel, and means for tripping said pawl and permitting it to engage said ratchet wheel, and thus connect said cam-shaft to said spindle, substantially as described.

7. The combination, with a hollow spindle, and means for rotating the same, of a cam-shaft, a train of gearing between said spindle and said cam-shaft, said train terminating in a gear loosely mounted on said cam-shaft, a ratchet-wheel secured to said gear, a pawl connected with said cam-shaft and adapted to engage said ratchet wheel, means for normally holding said pawl out of engagement with said ratchet wheel, means for tripping said pawl and permitting it to engage said ratchet wheel, and means for automatically disengaging said pawl from said ratchet-wheel, substantially as described.

8. The combination, with a hollow spindle and means for rotating the same, of a chuck containing gripping jaws, an inclosing sleeve for actuating said jaws, a positive abutment for the outer end of said chuck, a spring interposed between the inner end of said chuck and said inclosing sleeve, and means for giving to said sleeve a longitudinal movement with relation to said chuck to actuate the gripping jaws therein, substantially as described.

543,607. MEANS AND APPLIANCES FOR PRODUCING KNOBBED OR RIDGED WROUGHT-METAL PLATES. HENRY H. BATES, Washington, D. C. Filed May 18, 1895. Serial No. 549,781. (No model.)



Claim.—1. In the manufacture of studded, knobbed or ridged wrought metal plates, the apparatus herein described, consisting of a perforated plate or templet in combination with means or mechanism for powerfully compressing the said templet in close contact with a hot metal plate to be impressed, whereby the figure or pattern of the perforation is left in relief upon the surface of the impressed plate, substantially as specified.

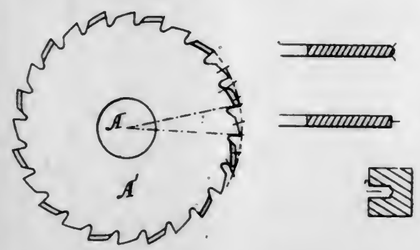
2. In combination with a power compression device for the working of heated metals, a templet formed of a plate of hard, heat-resisting material perforated in any desired pattern for application to the surface of a hot metal plate to be impressed, whereby when the two are subjected together to the compressive means the pattern of the perforated templet is left impressed in raised bosses or ridges upon the surface of the said plate, substantially as specified.

3. An apparatus for impressing raised bosses, knobs or ridges upon the surface of wrought metal plates, consisting of a compression means, such as a pair of plain power driven rolls, in combination with a templet formed of a plate or sheet of hard heat-resisting material perforated with apertures arranged in suitable designs, whereby when hot metal plates are subjected to compression in conjunction with the said templets in the said apparatus, the surface thereof is left bearing the impression of the pattern formed in the substance of the said templet, substantially as specified.

4. The combination of a power compression device and a templet or plate of hard heat-resisting material provided with tapered apertures of any desired figure arranged in any desired pattern, whereby a wrought metal plate when subjected in a heated condition to the action of said compressing device in close contact with the templet aforesaid is made to receive the pattern of the said perforations in relief upon its surface, thus forming a knobbed, studded or ridged exterior upon one side of the said plate, substantially as specified.

5. In combination, a pair of smooth power driven rolls, and a curved templet or plate provided with apertures of any figure arranged in any desired pattern, whereby a wrought metal plate when subjected in a heated condition to the operation of the said combination of apparatus substantially in the manner described, will have imparted to it a knobbed or ridged surface corresponding to the design of the templet, substantially as and for the purpose specified.

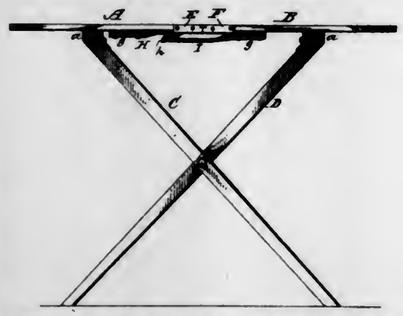
543,608. ROTARY CUTTER. GEORGE R. BEALE, Providence, R. I., assignor to The Brown & Sharpe Manufacturing Company, same place. Filed Feb. 21, 1894. Serial No. 500,998. (No model.)



Claim.—1. A rotary metal cutter having a portion of its teeth of greater radius, but with narrowed cutting faces as compared with the remaining teeth, such narrowed cutting faces being formed by reducing said cutting faces to a width less than the thickness of the shanks of the teeth, the cutting faces of the shorter teeth being left of substantially the same width as said shanks, substantially as described.

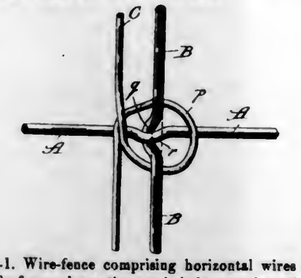
2. A rotary metal cutter having a portion of its teeth of greater radius than the remaining teeth, each of said teeth of greater radius having a narrow cutting face arranged at the center of the tooth and formed by a double bevel, the cutting faces of the shorter teeth being of substantially the same width as the shanks of the teeth, substantially as described.

543,609. FOLDING TABLE. CHARLES S. CARTER, Mansfield, Ohio. Filed Feb. 18, 1895. Serial No. 538,760. (No model.)



Claim.—In a folding table, the two sections connected at their inner edges, and provided with dowel pins *b*, the cleats *a*, and the legs C, D, hinged to the cleats; combined with the two automatically engaging catches H, I, and hinges E, F, and connecting links G, pivoted to each half of the hinge; each part of the hinge consisting of the side leaf *e*, which is recessed in one end of the section, the pocket *c* to receive one end of the link, and the horizontal flange *f*, which projects beyond the pocket and braces the under side of the corner of the section, substantially as described.

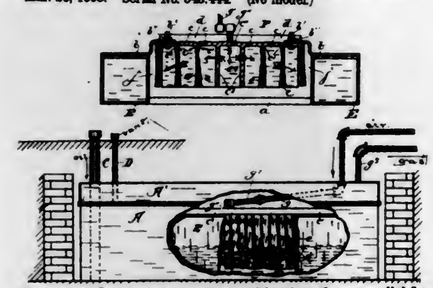
543,610. WIRE FENCE. WALTER CLEMENT, Adrian, Mich. Filed June 6, 1894. Serial No. 513,681. (No model.)



Claim.—1. Wire-fence comprising horizontal wires and cross-bars elastically fastened together at their intersections, the fastening means comprising wires extending alongside the cross-bars across the horizontal wires and containing loop-locks formed by bending each fastening-wire at intervals about said intersections and crossing it upon itself near the initial points of bending, the wire of each loop bearing laterally against the opposite sides of the two intersecting members respectively above and below the horizontal wire and to the right and left sides of the cross-bar, and the lengths in the fastening-wire between loops forming a substantially continuous line more or less parallel with the adjacent cross-bar, substantially as described.

2. Wire-fence comprising horizontal wires A provided at intervals with offsets *r*, bars B crossing said wires at the offsets and means fastening the two together at their intersections comprising wires C containing loop-locks *p* extended about the horizontal wires and cross-bars to bear respectively against their opposite lateral surfaces, said loop-locks being formed in each wire C by bending it at intervals and crossing it upon itself near the initial points of bending, the lengths of the wire between loops forming a substantially continuous line more or less parallel with and spaced from the adjacent cross-bar, substantially as described.

543,611. CARBURETOR. JOHN CLINGMAN, Dayton, Ohio. Filed Mar. 28, 1895. Serial No. 543,444. (No model.)



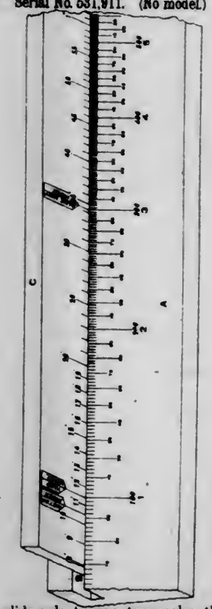
Claim.—1. In a carburetor, the combination of two parallel floats, a generator removably mounted on said floats said generator consisting of parallel strips having their longitudinal edges turned downwardly, a series of strips of woven fiber secured between said downwardly projecting edges, said woven fiber having a portion of its lower horizontal threads retained, whereby means are provided for maintaining the vertical threads in position, substantially as herein shown and described.

2. In a carburetor, the combination with a metallic case having its interior lined with wood, of parallel floats connected at their ends by transverse strips, a generator removably mounted on said floats, a longitudinal air chamber in the center of said generator and a series of perforations throughout the walls of said chamber, strips of woven fiber depended from the top of the generator on both sides of said walls and parallel therewith, said woven fiber having a portion of the horizontal threads retained, whereby means are provided for maintaining the vertical threads therein in place, substantially as herein described.

3. A generator for carburetors, consisting of a series of parallel strips (*c*) rigidly attached to each other and having their longitudinal edges (*c'*) projecting downwardly, a central strip (*c''*) forming partitions (*c³*) with perforations or air ports therein, an air chamber between and extending the length of said partitions, a series of parallel strips of woven fiber as described depended from the edges (*c'*) substantially as herein shown and described.

4. The combination of parallel floats E and E' connected by strips (*a*) and (*a'*), generator F removably mounted on said floats with intervening spaces between said floats and generator, longitudinal partitions, (*c³*) in the center of said generator provided with a series of perforations and forming an air chamber (*c⁴*), a series of strips of woven fiber running parallel with said chamber, the horizontal threads being drawn from a portion of each of said strips of woven fiber, as described, whereby means are provided for enabling the air to uniformly pass through said fiber, and for maintaining the vertical threads thereof in a uniform position, substantially as described.

543,612. SLIDE-RULE. BRANCH H. COLBY, St. Louis, Mo. Filed Dec. 15, 1894. Serial No. 531,911. (No model.)

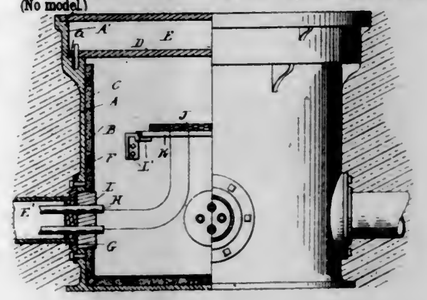


Claim.—1. A slide rule having two scales, the divisions on one corresponding to the logarithm of successive numbers and representing stadia distances or readings, and the divisions on the other corresponding to the logarithms of numbers representing differences of elevation for various distances and different vertical angles, and an index therefor, substantially as described.

2. A slide rule having a logarithmic scale, the divisions on one corresponding to the logarithms of consecutive numbers and representing distances, and the divisions on the other corresponding to the logarithms of numbers representing differences of elevation for various distances and different vertical angles, of an index therefor, and suitable other indexes of other denominations, whereby the distances may be given in one unit and the elevation read in another, substantially as described.

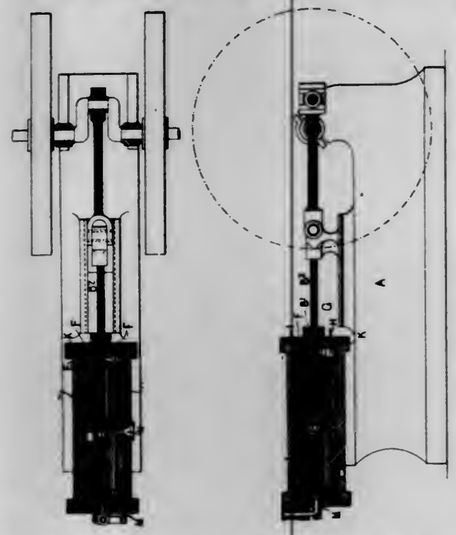
3. A slide rule having two scales, the division on one corresponding to the logarithms of successive numbers and representing readings from a stadia board when held vertically at observed points, and the divisions on the other corresponding to the logarithms of numbers representing differences of elevation for various distances and different vertical angles, and an index therefor, substantially as described.

543,613. MANHOLE FOR UNDERGROUND CONDUITS. JAMES F. CUMMINGS, Detroit, Mich., assignor to the Cummings & Engelman Conduit Company, same place. Filed Nov. 6, 1894. Serial No. 528,028. (No model.)



Claim.—In a man-hole for electric conduits, the combination of the cylindrical outer box A provided with the enlarged top A', formed with a plurality of seating flanges the covers D D' supported by said flanges, the inner box B supported by insulating studs F within the outer box, the insulating material C contained between the walls of the boxes and the removable switchboard freely supported from the walls of the inner box centrally near its top, substantially as described.

543,614. GAS-ENGINE. JOSEPH DAY, Bath, England. Filed May 21, 1892. Serial No. 433,828. (No model.) Patented in England Apr. 14, 1891, No. 6,410, and June 1, 1891, No. 9,347.



Claim.—1. In a gas engine, the combination of a cylinder having an exhaust port and a piston therein, said piston being provided with a shield, O, opposite the exhaust port, the said cylinder being divided by the piston into an explosion chamber, B, on one side, and a compression chamber, E, on the other side, and a communicating passage $L^{\times}$, the opening from said passage into the chamber B, being opened and closed by the piston, with separate air and gas ports leading into the chamber E, and a disk valve, I, secured to the inside of the said chamber, so that its free edges cover both air and gas ports, the said disk valve being adapted to be automatically opened by the suction of the piston, and to close over the ports by the compressing action of the piston, the exhaust port being so proportioned that a part of the products of combustion may be left in the cylinder at the end of the down stroke, substantially as set forth.

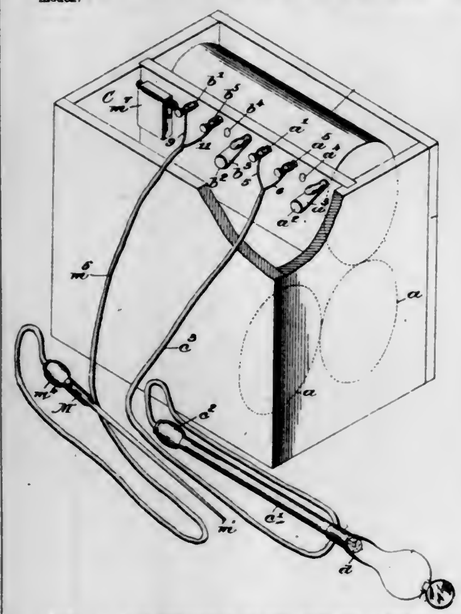
2. In a gas engine, the combination of a cylinder, having an exhaust port and a piston therein, the said cylinder being divided by the piston into an explosion chamber, B, on one side, and a compression chamber, E, on the other, and a communicating passage, $L^{\times}$, the opening from said passage into the chamber B, being opened and closed by the piston, with separate air and gas ports leading into the chamber, E, and a disk valve, I, secured to the inside of the chamber, and surrounding the piston rod, so that the free edges cover both air and gas ports, the said disk valve being adapted to be automatically opened by the suction of the piston, and to close over the ports by the compression action of the piston, substantially as set forth.

543,615. THILL-COUPLING. ANTHONY DIBRELL, Uvalde, Tex. Filed Nov. 10, 1894. Serial No. 528,375. (No model.)



Claim.—In combination with the ordinary clip-eye and pivot-bolt in same, the open-slotted thill-iron with jaws so extended and flattened as to admit of a hole being made through these jaws, in line with the main thill-iron, in which may be placed a bolt-like key with a railroad-spike head thereto, to secure in place while in use, the thill-iron; which key is maintained in its position, while in use, by means of a flat bar-spring fastened to the under side of the thill-iron; or in a recess therein; substantially as described, and for the purposes set forth.

543,616. INTERNAL ILLUMINATOR AND PROBE. WILLARD E. DOW, Braintree, Mass. Filed Feb. 16, 1895. Serial No. 538,667. (No model.)



Claim.—1. In an apparatus of the class described, a tubular lamp-carrier, a lamp at its end, and a reflector having a hollow neck to embrace and adapted to slide concentrically upon the said carrier, and a mirror hinged to the end of said reflector, substantially as described.

2. In an apparatus of the class described, the combination of a lamp, a conducting tube in the end of which the lamp is mounted, said tube constituting one conductor for the lamp, a second conductor within but insulated from the said conducting tube, and terminating in a contact at the end of said tube; two flexible conductors and a socket at the end of the same connected with one of said conductors and adapted to receive the end of said conducting tube; and a contact within said socket and connected with said other flexible conductor and adapted when said tube is inserted in said socket, to co-operate with said tube contact, whereby a complete circuit is established, substantially as described.

3. In an apparatus of the class described, a tubular lamp carrier, a lamp at its end, a mirror support having a tubular portion at one end adapted to slide concentrically upon the said tubular carrier, and a mirror hinged to the end of said mirror support, substantially as described.

4. In an apparatus of the class described, a probe consisting of two conducting members, insulated one from the other, and at the butt end of the probe formed with one of the said members encircling the other and threaded to enter a suitable socket, the other of the said members constituting a fixed contact within, and insulated from, the said threaded portion, substantially as described.

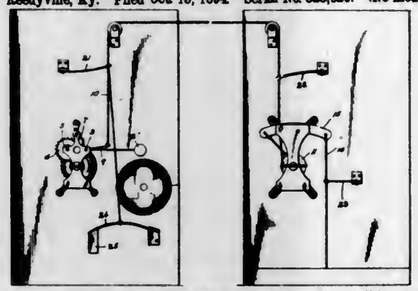
543,617. STENCH-TRAP. GEORGE DÜNSTAN, Lorain, Ohio. Filed Mar. 9, 1894. Serial No. 503,030. (No model.)

Claim.—As an improved article of manufacture, the herein shown and described stench trap, comprising a bowl-shaped casing having its lower end contracted to be fitted into a sewer or waste pipe, and having an interior annular groove 4 at its top, and having ribs 10 integral with and projecting from its inner side and compoundly curved on their inner edges, a sealing bowl 11 having imperforate bottom and sides and removably supported within the casing upon the said ribs, a handle secured centrally to the sealing bowl and extending above the top edge thereof, and a flat perforate cap removably fitted within the upper end of the casing and provided with an integral depending flange fitting within the said interior groove 4,

and having an integral depending inverted trunco-conical neck projecting into the sealing bowl below the plane of its upper edge, substantially as and for the purpose described.



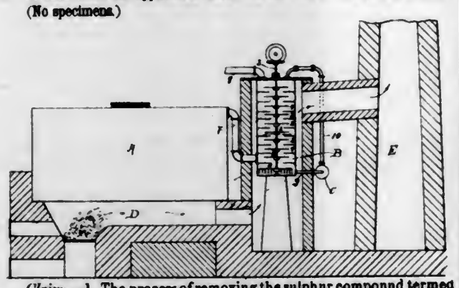
543,618. BURGLAR-ALARM. JOHN H. FINLEY, Morgantown, assignor of one-fourth to Clay P. Johnson and George M. Johnson, Reedyville, Ky. Filed Oct. 13, 1894. Serial No. 525,829. (No model.)



Claim.—1. In an alarm, the combination of a bell, a bell-hammer actuating mechanism, a line having one end connected with the actuating mechanism for holding the same normally out of operation, a pawl and ratchet device connected with the other end of the line and having the same wound on its drum to hold the line taut, a lever connected with the pawl and pivotally mounted, and adapted to be swung on its pivot to withdraw the pawl from its engagement with the ratchet to release the line, whereby an alarm is sounded, and a vibrating spring mounted independently of the bell and the actuating mechanism, connected with said line and carrying a plate at its free end, substantially as and for the purpose described.

2. In an alarm, the combination of a bell, a bell-hammer, actuating mechanism for operating the bell-hammer, a line connected with the actuating mechanism for normally holding the same out of operation, a shaft or windlass connected with the line for holding the latter taut, a pawl and ratchet for locking the shaft, and a lever fulcrumed between its ends and having one end connected with the pawl and designed to have its other end connected with a platform or the like, substantially as described.

543,619. REFINING CANADIAN OR SIMILAR PETROLEUM. HERMAN FRASCH, Cleveland, Ohio, assignor to the Solar Refining Company, of Ohio. Original application filed Feb. 15, 1888, Serial No. 264,131. Divided and this application filed Jan. 23, 1891. Serial No. 378,818. (No specimens.)



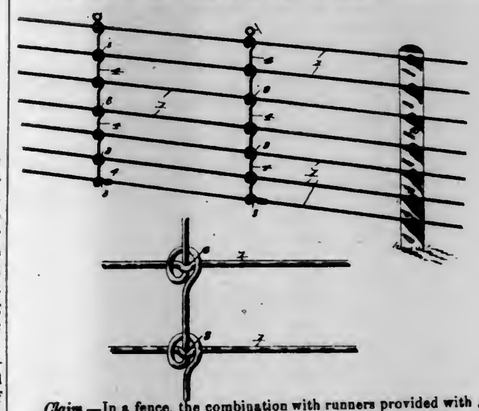
Claim.—1. The process of removing the sulphur compound termed "skunk" from Canadian and similar petroleum, which consists in vaporizing the oil and subjecting the skunk-bearing vapors given off from the body of oil to the action in an undissolved condition of one or more of the oxides or oxygen salts of the metals of that class which are precipitated by hydrogen sulphide in acid solution and which form oxides soluble in skunk-bearing oil; substantially as described.

2. The process of removing the sulphur compound termed "skunk" from Canadian and similar petroleum, which consists in vaporizing the oil and subjecting the skunk-bearing vapors given off from the body of oil to the action in an undissolved condition of showers, films, or spray of one or more of the oxides or oxygen salts of the metals of that class which are precipitated by hydrogen sulpaide in acid solution and which form oxides soluble in skunk-bearing oil; substantially as described.

3. The process of refining Canadian or similar skunk-bearing petroleum, which consists in vaporizing the oil and subjecting the skunk-bearing vapors given off from the body of oil to the action in an undissolved condition of one or more of the oxides or oxygen salts of the metals of that class which are precipitated by hydrogen sulphide in acid solution and which form oxides soluble in skunk-bearing oil, condensing the vapors from which the sulphur compound termed "skunk" has thus been removed, and washing the condensed liquid with sulphuric acid; substantially as described.

4. The process of removing the sulphur compound termed "skunk" from Canadian and similar petroleum, which consists in vaporizing the oil and subjecting the skunk-bearing vapors given off from the body of oil to the action in a dry state of one or more of the oxides or oxygen salts of the metals of that class which are precipitated by hydrogen sulphide in acid solution and which form oxides soluble in skunk-bearing oil; substantially as described.

543,620. WIRE FENCE. CHARLES E. GILBERT, Uniondale, Ind. Filed Aug. 28, 1894. Serial No. 521,549. (No model.)



Claim.—In a fence, the combination with runners provided with vertically aligned horizontal loops or seats 3, of a stay having alternately arranged loops and straight portions arranged respectively in contact with the runners and in the intervals therebetween, the lower extremity of each straight portion being arranged in the horizontal loop or seat 3 of a runner, and the contignous loop in the stay being approximately circular in construction, bearing at horizontally opposite points against the runner upon opposite sides of the plane of said straight portion and upon the opposite side of the runner from the straight portion and approximately in the plane thereof, and the uppermost point of the loop bearing against the straight portion above the horizontal loop or seat 3 of the runner and against the opposite side of said straight portion from the point of contact of the straight portion with the loop or seat of the runner, substantially as specified.

543,621. CAR-TRUCK BOLSTER. EDWARD F. GOLTRA, St. Louis, Mo. Filed Sept. 2, 1893. Serial No. 484,642. (No model.)



Claim.—1. In a cast car truck bolster, the combination of the girders, center bearing, and cross ties, said girders, bearing and cross ties being integral and said cross ties being integral with said girders but being separate from said bearing or other portion of the bolster top or web, substantially as described.

2. A skeleton car truck bolster consisting of girders, center bearing, side bearings and cross ties connecting the girders, the cross ties being separated from the bearings by intervening spaces, said parts being integral throughout.

3. A skeleton car truck bolster, consisting of girders, center bearing, side bearings and cross ties connecting the girders, the cross ties being separated from the bearings by intervening spaces, and themselves consisting of vertical bracket webs, said parts being integral throughout.

4. A skeleton car truck bolster, consisting of girders, center bearing, side bearings and cross ties connecting the girders, the cross ties being separated from the bearing by intervening spaces, and the girders being flanged at their lower edges, said parts being integral throughout.

5. A skeleton car truck bolster consisting of girders carrying center bearing, side bearings and distance tie pieces, said girders being ribbed or flanged longitudinally, and deeper toward their middle than at their ends.

6. A skeleton bolster, consisting of girders, center bearing, and side bearings, and supporting arms extending from the girders and sustaining the center bearing.

7. A skeleton bolster composed of girders, center bearing, side bearings, and transverse tie pieces which connect the girders but not the center and side bearings, the girders tapering upwardly from their middle toward their ends.

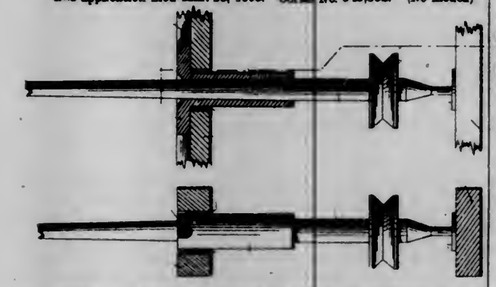
8. A skeleton bolster composed of girders, center bearing, side bearings, and transverse tie pieces which connect the girders but not the center and side bearings, the girders tapering upwardly from their middle toward their ends, and being flanged at their lower edges.

9. A skeleton bolster composed of girders, center bearing, side bearings, and transverse tie pieces which connect the girders but not the center and side bearings, the girders tapering from their middle toward their ends.

10. A skeleton bolster composed of girders, center bearing, side bearings, and transverse tie pieces which connect the girders but not the center and side bearings, the girders tapering from their middle toward their ends, and being ribbed or flanged.

11. A skeleton frame for car bolsters, consisting of girders, flanged or ribbed longitudinally and carrying center and side bearings, in combination with auxiliary distancing means uniting said girders and spacing them apart.

543,622. SUPPORT FOR SPINNING-SPINDLES. THOMAS GORMAN, Warren, assignor of one-half to Frank H. Brown, Warwick, R. I. Original application filed Mar. 26, 1891, Serial No. 386,493. Divided and this application filed Mar. 28, 1895. Serial No. 543,532. (No model.)



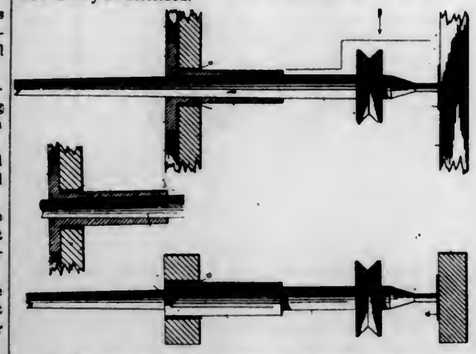
Claim.—1. The combination of a bolster rail provided with a groove or recess in its upper surface, and a bolster arranged loosely within said bolster rail, said bolster being provided at or near its upper end with one or more lugs or projections adapted to enter the groove in the bolster rail and support said bolster vertically in said rail, substantially as described.

2. The combination of a bolster rail provided with a groove or recess in its upper surface, and a bolster arranged loosely within said bolster rail, said bolster being provided at or near its upper end with one or more lugs or projections adapted to enter the groove in the bolster rail and support said bolster vertically in said rail, said lugs being rounded or cut away on their under side, substantially as described.

543,623. SUPPORT FOR SPINNING-SPINDLES. THOMAS GORMAN, Warren, assignor of one-half to Frank Hall Brown, Warwick, R. I. Filed Mar. 26, 1891. Renewed Mar. 28, 1895. Serial No. 543,590. (No model.)

Claim.—1. The combination of a bolster rail provided with a groove or recess in its upper surface, and a bolster arranged loosely within said bolster rail, said bolster being provided at or near its upper end with one or more lugs or projections adapted to enter the groove in the bolster rail and prevent said bolster from rotating in said rail, substantially as described.

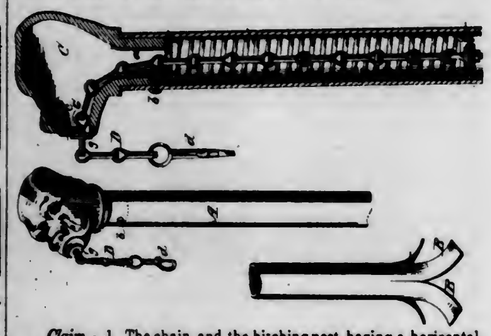
2. The combination of a bolster rail having a groove or recess in its upper surface, and a bolster arranged loosely within said bolster rail so as to have lateral play therein, and so as to be free to rise with relation to said rail, said bolster being provided at or near its upper end with one or more lugs or projections adapted to enter the groove in the bolster rail, whereby said bolster will be prevented from rotating in said rail, but will be free to rise with relation to said rail, substantially as described.



3. The combination of a bolster rail provided with a groove or recess in its upper surface, and a bolster arranged loosely within said bolster rail, said bolster being provided at or near its upper end with one or more lugs or projections adapted to enter the groove in the bolster rail, said lugs being rounded or cut away on their under side, substantially as described.

4. The combination with a tapering spindle and a bolster rail, of a bolster provided with a tapering bore to fit said tapering spindle, said bolster being loosely arranged in the bolster rail and unsupported vertically by said bolster rail, and means for preventing the rotation of said bolster, whereby said bolster will be self-adjusting to secure and maintain a close running fit between said bolster and spindle, substantially as described.

543,624. HITCHING-POST. CHARLES A. HANSON, Rock Island, Ill. Filed Sept. 28, 1894. Serial No. 524,327. (No model.)



Claim.—1. The chain, and the hitching post, having a horizontal opening through which the chain passes and vertical grooves in opposite sides of the opening, combined with a roller which has a vertical play in the grooves, and which automatically closes the opening above the chain, substantially as shown.

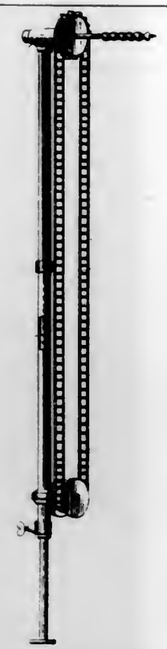
2. The combination of the hitching post, having a horizontal opening through its upper end, and the chain which passes through the opening, combined with a vertically moving roller or device for closing the opening above the chain, substantially as described.

543,625. MACHINE FOR BORING JOISTS FOR ELECTRIC-LIGHT WIRING. JOHN G. HENDERSON and ROBERT H. HENDERSON, Chicago, Ill. Filed Oct. 3, 1894. Serial No. 524,846. (No model.)

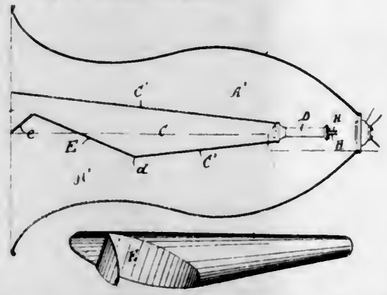
Claim.—1. The combination in an overhead portable boring machine of an extension adapted to rest on the floor and a column adjustable thereon, provided at the top with a bearing for the rotatable bit shank, a sprocket-wheel directly secured to the bit shank, a revolable sprocket idler at the lower end of the column, and an endless driving chain belt connecting the sprockets.

2. In a boring machine a portable handle or column provided with an adjustable extension below and a head above bearing a rotatable shaft holding a boring bit and a chain or belt extending down to turn the bit by, substantially as set forth.

543,625.



543,626. TRANSMITTING AND RECEIVING ATTACHMENT FOR TELEPHONES. HOSEA W. LIBBEY, Boston, Mass. Filed Oct. 9, 1894. Serial No. 525,359. (No model.)

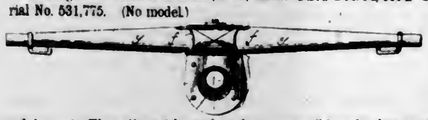


Claim.—1. In combination with a telephone transmitter and receiver an attachment consisting of an outer casing to receive the voice to be transmitted and convey it to the transmitter and an inner casing to receive the voice from the receiver and deliver the same substantially as set forth.

2. A transmitting and receiving attachment for telephones consisting of an outer casing A, forming a sound receptacle A', an inner conical casing C, the front end of the same being cut to form a reentrant angle as described and its mouth covered by a piece having a lip substantially as and for the purposes set forth.

3. The combination of a telephone transmitter and casing forming a sound receptacle attached thereto with a receiver D, and casing C, attached thereto and arranged within the outer casing A, substantially as and for the purposes set forth.

543,627. NECK-YOKE CENTER. TARGE G. MANDT, Stoughton, Wis., assignor to Samuel F. Pearl, Ovid, Mich. Filed Dec. 14, 1894. Serial No. 531,775. (No model.)



Claim.—1. The adjustable neck-yoke "center" herein shown and described, comprising the apertured center proper, C, of leather or other suitable material, having a central tongue aperture D and a smaller aperture *d*, in combination with the casing-plates E having aperture E' and provided with the top sleeve F having a central aperture *d'* corresponding to the aperture *d* in the center C and outwardly flaring ends; substantially as and for the purpose shown and set forth.

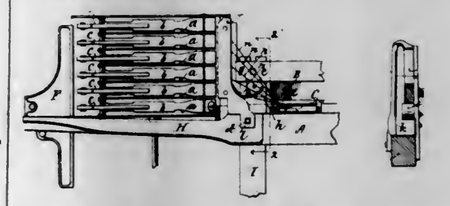
2. The combination with the neck-yoke A provided with central plates B, B' having studs *b b'* of the adjustable "center" or tongue-bearing comprising the apertured leather center C and casing-plate E having the sleeve F provided with apertures *d'*, *d'*, and flaring laterally from its middle-part toward both ends; substantially as and for the purpose shown and set forth.

543,628. DEVICE FOR SECURING DIALS TO WATCH-MOVEMENTS. EDWARD A. MARSH, Newton, Mass. Filed Mar. 30, 1894. Serial No. 505,664. (No model.)



Claim.—Means for fastening dials to watch movements comprising a dial, feet on said dial provided with shoulders, a plate having undercut recesses, and springs in said recesses arranged to engage said shoulders, substantially as and for the purpose set forth.

543,629. MOUTHPIECE FOR LOOM SHUTTLE-BOXES. JOHN J. NOLAN and JAMES H. WILKIE, Pawtucket, R. I. Filed July 24, 1894. Serial No. 518,454. (No model.)



Claim.—1. The combination of the lay, and the drop shuttle-boxes, with the shuttle box mouth piece having an extension above the line of the top of the acting shuttle-box, and the friction cushion arranged in the upward extension of the mouth piece, to prevent the yarn in the shuttle boxes from being drawn into the shed, substantially as described.

2. The combination of the lay, and the drop shuttle-boxes, with the shuttle box mouth-piece having an extension above the line of the top of the acting shuttle-box, the said upward extension being provided with the inclined surface *j*, adapted to force the shuttle completely into the shuttle box, and the upright surface *o*, adapted to retain the raised shuttles in the shuttle boxes, substantially as described.

3. The combination of the lay, and the drop shuttle-boxes, with the shuttle-box mouth-piece provided with the attaching ear *l*, the offset upright arm *i'*, adapted to guide the forward end of the shuttle boxes, and having an inner bearing surface *k* at the lower portion of the offset arm, near the mouth of the acting shuttle-box, substantially as described.

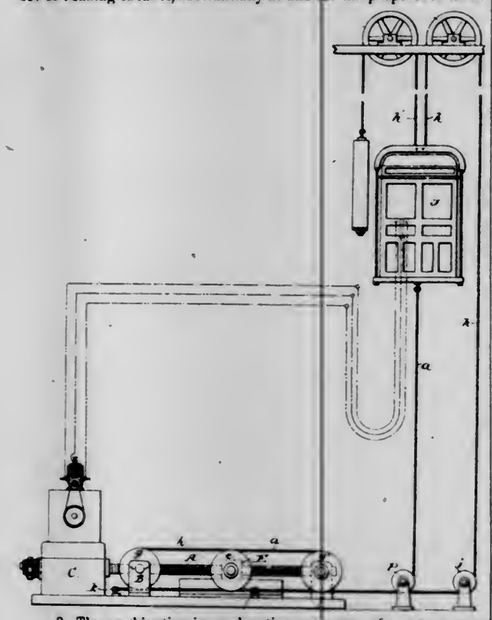
4. The combination of the lay, and the drop shuttle-boxes, with the shuttle-box mouth-piece provided with the attaching ear *l*, the upright arm *i'*, offset toward the boxes in the direction of the line of the lay beam, the inner bearing surface *k* at the lower portion of the offset arm near the mouth of the acting shuttle-box, and the friction cushion J arranged above the line of the top of the acting shuttle-box, substantially as described.

543,630. ELEVATOR. NORTON P. OTIS, Yonkers, assignor to the Otis Brothers & Company, New York, N. Y. Filed Mar. 2, 1893. Serial No. 464,416. (No model.)

Claim.—1. In an elevator apparatus, a cage and its suspensory cable, a counter-weight and its cable connected with the top of the cage, a draft cable connected with the bottom of the cage, and traveling sheaves all on one movable carriage receiving the draft and suspensory cables and operating to draw upon one and simultaneously relax the other and a motor imparting movements to the carriage of the said sheaves, substantially as and for the purpose set forth.

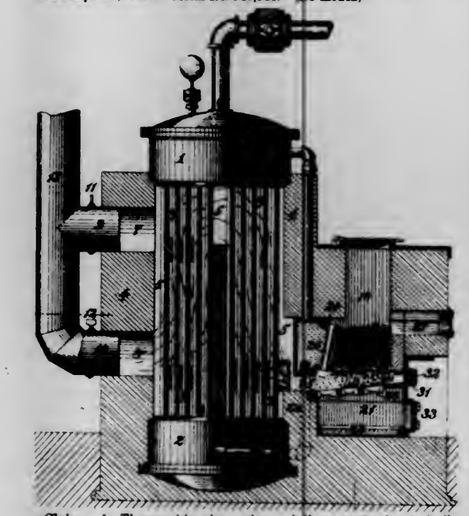
2. The combination in an elevating apparatus, of the cage, its suspensory cable, the counter weight and its cable connected with the top of the cage, a draft cable connected with the bottom of the cage, two sets of standing sheaves, and a traveling carriage carrying two sets of running sheaves the suspensory cable passing around one set of standing sheaves and one set of running sheaves, and the draft

cable passing around the other set of standing sheaves and the other set of running sheaves, substantially as and for the purpose set forth.



3. The combination in an elevating apparatus, of a cage, suspensory cable, a cable h' attached to the top of the cage, a counter-weight connected with said cable h' a draft cable connected to the bottom of the cage, a screw connected with a motor and a carriage connected to travel by the rotation of the screw and supporting two sets of traveling sheaves, and two sets of stationary or standing sheaves, the suspensory and draft cables extending around said sheaves, substantially as and for the purpose set forth.

543,631. BOILER-FURNACE. EDWIN POWELL, Pittsburg, Pa. Filed Apr. 20, 1895. Serial No. 546,518. (No model.)



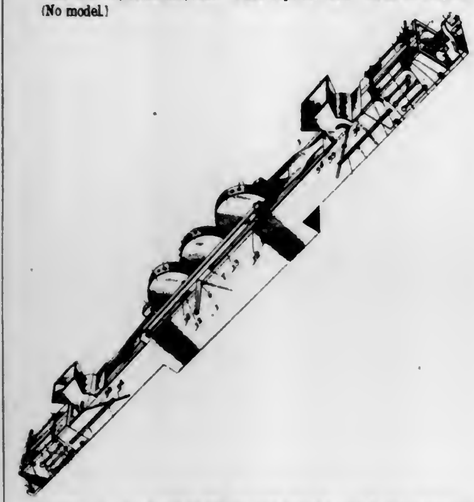
Claim.—1. The combination, substantially as set forth, of a boiler, a combustion chamber located in position to impart heat thereto, a fire chamber, a lower firebed, a water back bridge wall interposed between the fire chamber and the combustion chamber and located above an exit throat or passage adjacent to the firebed, circulating tubes connecting the water back bridge wall with the upper and lower portions of the boiler, a tubular gas conduit passing through the water back bridge wall, its lower end being located adjacent to the exit throat and its upper end being open to the fire chamber near the top of the water back bridge wall, and an air supply passage leading into the fire chamber adjacent to the upper end of the gas conduit.

2. The combination, substantially as set forth, of a boiler, a combustion chamber in a setting inclosing the heating surfaces of said boiler, a fire chamber in a lateral extension of said setting, a lower fire bed in said fire chamber, a water back bridge wall abutting on its upper face against the setting wall which separates the fire chamber from the combustion chamber, and forming the upper boundary of an exit throat or passage adjacent to the fire bed, circulating tubes connecting the water back bridge wall with the upper and lower portions of the boiler, a series of tubular gas conduits passing through the water back bridge wall, their lower ends being located adjacent to the exit throat and their upper ends being open to the fire chamber near the top of the water back bridge wall, and an air supply passage leading into the fire chamber adjacent the upper ends of the gas conduit.

3. The combination, substantially as set forth, of a boiler composed of an upper and a lower drum and a series of connecting water tubes, a combustion chamber in a setting inclosing the heating surfaces of said boiler, a central partition extending upwardly in the combustion chamber from the lower drum of the boiler to a level below the upper drum thereof, valve controlled exit flue passages in the upper and lower portions of the combustion chamber, a lateral fire chamber, a lower firebed therein, a water back bridge wall interposed between the fire chamber and the combustion chamber above an exit throat or passage adjacent to the fire bed, circulating tubes connecting the water back bridge wall with the upper and lower drums of the boiler, a tubular gas conduit passing through the water back bridge wall and open at its ends to the exit throat and to the fire chamber respectively, and an air supply passage leading into the fire chamber adjacent to the upper end of the gas conduit.

4. A water back bridge wall for boiler furnaces having a plane surface on its top for a portion of its width, adapted to make a joint with the wall of a boiler setting, and recessed or shouldered below said plane surface for the remainder of its width, connections for circulating pipes on the plane surface of its top and on its bottom, and one or more tubular gas conduits extending from the shouldered portion of its top to its bottom, substantially as set forth.

543,632. BALING-PRESS. AMOS ROOP, FRANCIS L. BRANDON, and JOHN S. HART, Hicksville, Ohio. Filed Sept. 18, 1894. Serial No. 523,415. (No model.)



Claim.—1. In a baling press, the combination with a reciprocatory plunger, of a master eccentric and means for communicating motion thereto, an auxiliary eccentric mounted upon the rod of said plunger and operatively connected with said master eccentric, whereby motion is communicated from the latter to the former, and means for guiding the auxiliary eccentric to cause its center of rotation to reciprocate in a straight line, substantially as described.

2. In a baling press, the combination with a plunger, of a master eccentric and means for operating the same, said master eccentric being provided with peripheral spurs which are tapered toward their extremities, an auxiliary eccentric mounted upon the rod of said plunger with its major diameter in opposition to that of the master eccentric and having peripheral notches or sockets to receive the spurs of the master eccentric whereby relative lateral displacement of the eccentrics is prevented, and means for guiding the auxiliary eccentric to cause its center of rotation to reciprocate in a straight line, substantially as described.

3. In a baling press, the combination with oppositely disposed, aligned baling chambers, and plungers mounted for reciprocation therein, of a master eccentric arranged between the baling chambers, auxiliary eccentrics mounted for rotation upon the rods of said plungers, the faces of the main and auxiliary eccentrics being constructed to intermesh, whereby rotary motion may be communicated from the master to the auxiliary eccentrics, means for guiding the auxiliary eccentrics to cause their centers of rotation to reciprocate in a common horizontal plane and resilient devices attached to the plungers for normally holding the auxiliary eccentrics in operative relation with the master eccentric, substantially as described.

4. In a baling press, the combination with a plunger and operating mechanism, of a baling chamber having hinged side walls, a divided top or cover having its parts or members hinged at their adjacent inner edges and means for locking said hinged parts in their closed or operative positions, such means consisting of shouldered tongues, ears or studs on the side walls for engagement by the tongues, a spindle mounted in brackets upon the top or cover and carrying said tongues, and an operating handle attached to the spindle and provided with a cam head for maintaining the tongues out of engagement with the ears or studs, substantially as described.

5. In a baling press, the combination with a plunger and operating mechanism, of a baling chamber provided with movable walls for facilitating the removal of a bale, and a resilient spring-pressed follower arranged in the chamber and having parallel rods fitting in guide openings in a fixed standard or block, and actuating springs coiled upon said rods and bearing at opposite extremities against the follower and said standard or block, substantially as described.

6. In a baling press, the combination with a baling chamber, a plunger and operating mechanism, of feed mechanism having an oscillatory packer arranged adjacent to the feed opening of the baling chamber, sliding-fulcrum levers connected to the packer, and projections on the plunger for engaging and communicating motion to the said levers, substantially as described.

7. In a baling press, the combination with a baling chamber, a plunger and operating mechanism therefor, of an oscillatory packer arranged adjacent to the feed opening of the baling chamber, a hopper communicating with and inclosing said packer, sliding-fulcrum levers pivotally connected at their upper extremities to the packer and fitted to slide at intermediate points in swivel bearing blocks, said levers being disposed in opposite directions and upon opposite sides of the baling chambers, and lateral projections on the plunger for engaging and communicating motion to the levers, said projections operating in slots in the sides of the baling chamber, substantially as described.

543,633. NUTMEG-GRATER. HENRY W. SCHOFF, Oak Park, Ill. Filed Dec. 22, 1894. Serial No. 532,710. (No model.)



Claim.—1. In a nutmeg grater, the combination of two plates located alongside each other and rigidly connected, each plate having an inwardly-projecting peripheral flange formed with a notch, said notches being matched with each other, a moving grating-disk rotatably mounted between the plates and having its periphery disposed between and bearing against the flanges thereof, and a nutmeg receptacle carried by one plate and capable of pressing the nutmeg into engagement with the moving grating plate, substantially as described.

2. In a nutmeg grater, the combination of two plates mounted side by side and rigidly connected by a center pin or common bolt, each plate having an inwardly-projecting flange formed with notches therein, said notches being registered with each other, a nutmeg receptacle carried by one plate, a stationary grating disk rigidly secured directly against the inner side of the plate having the nutmeg receptacle and within the flange thereof, and a moving grating disk rotatably mounted between the said plates and having its periphery disposed between and bearing against the flanges thereof, said disk being formed with a radial extension beyond its periphery to receive an operating handle, substantially as described.

3. In a nutmeg grater, the combination of two plates rigidly connected to each other and mounted side by side, said plates having peripheral flanges thereon projecting inwardly toward each other and formed with matching notches therein, a cap removably secured to the outer side of one plate and communicating with the inner side thereof, a spring within the cap, a block movable within the cap and pressed toward the remaining plate by means of the spring, said block having a concave inner face formed with teeth thereon, a fixed grating disk immovably secured directly against the inner side of the plate having the cap, a movable grating disk rotatably mounted between the two plates and having its periphery disposed between and bearing against the flanges thereof, and a handle mounted upon and extending beyond the common bolt or center pin and forming a stop for the nutmeg tube or receptacle, substantially as described.

4. In a nutmeg grater, a pair of annular plates having peripheral flanges disposed toward each other, the handle to which said plates are connected, and a common bolt or pivot passing through the center of said plates and into the handle, in combination with a stationary grating disk arranged within the flange of and secured to one of said plates, a rotary grating disk mounted upon said common bolt or center pin, means for revolving said grating disk, and a pressure collar disposed between the inner face of one of said annular plates and the rear face of the rotary grating disk, substantially as and for the purpose specified.

543,634. FAUCET. ELIJAH U. SCOVILLE, Manlius, N. Y. Filed Mar. 11, 1895. Serial No. 541,257. (No model.)



Claim.—1. The improved faucet provided internally with a valve seat facing the liquid receiving end of the faucet and with a port extending outward from the valve seat, a valve sliding on said seat and constantly closing the aforesaid port, and a finger playing in said port and operating the valve as set forth.

2. A faucet having its body composed of a liquid-receiving section and liquid-discharge section detachably united, a valve-seat on the discharge section adjacent to the receiving section and a port extending from the valve-seat through the discharge section, a valve sliding on said seat and constantly closing said port, a spring bearing on the inner side of the valve and retaining the same on its seat, and a finger playing in the aforesaid port and engaging the outer side of the valve and operating the same as set forth.

3. The combination of the section —C— formed with the chamber —*c*—, the section —*C'*— formed with the valve-seat —*e*— within said chamber and with the discharge duct —*h*— port —*l*— and the recess —"*f*"— the valve —*v*— riding on said seat, the cap —D— secured over said recess and provided with the internally screw-threaded hub —*j*—, the stem —*p*— working in said hub, and the finger —*r*— extending from said stem through the aforesaid port and engaging the valve as set forth.

4. The combination of the section —C— formed with the chamber —*c*—, the section —*C'*— formed with the valve-seat —*e*— inside of said chamber and with the discharge-duct —*h*— port —*l*— and recess —*f*—, the valve —*v*— riding on said seat, the cap —D— provided with the internally screw-threaded hub —*j*—, the stem —*p*— having a screw-threaded portion working in said hub and the finger —*r*— swiveled on said stem and extending through the port —*l*— and engaging the valve as set forth.

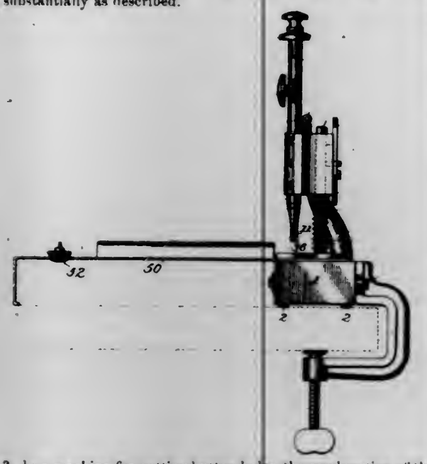
5. In combination with the section —C— formed with the chamber —*c*—, the section —*C'*— formed with the valve-seat —*e*— inside of said chamber and with the discharge-duct —*h*—, port —*l*— and recess —*f*—, the valve —*v*— riding on said seat, the cap — D— provided with the internally screw-threaded hub —*j*—, the stem —*p*— working in said hub and provided with the collar —*t*—, and the finger *r*— *r*— formed with the slot —*t'*— and crotch —*t"*— over said slot and detachably connected thereby to the stem as set forth and shown.

543,635. BUTTONHOLE-CUTTER. ABBY S. VOSE, Providence, R. I. Filed Mar. 7, 1895. Serial No. 540,881. (No model.)

Claim.—1. In a machine for cutting button-holes, the combination with a vertically operating knife or cutter, of a horizontally disposed plate attached to the base of the machine and having a longitudinal slot and a scale, and an adjustable device working in said slot and adapted to be projected through each button-hole as it is cut whereby the distance between the button-holes is regulated, substantially as described.

2. In a machine for cutting button-holes, the combination of the plate formed with the longitudinal slot, the button or gage adjust-

able in said slot, and a gage plate adjustable at right angles to the slot, substantially as described.



3. In a machine for cutting button-holes, the combination of the plate 50 having the longitudinal slot provided with an adjustable gage, and transversely and longitudinally adjustable gage-plates working on said plate, substantially as described.

4. In a machine for cutting button-holes, the combination of a knife or cutter and a punch each operating independently of the other, the one being partly guided by the other in its movements, substantially as described.

5. In a machine for cutting button holes, the combination of a punch normally held to an elevated position and formed with a groove in its side, and a knife or cutter also normally held to an elevated position and having one of its edges entering the groove of the punch said knife and punch operating independently of each other, substantially as described.

6. In a machine for cutting button holes, the knife having the vertical slot provided with an adjustable screw-button, and formed at its lower end with an oblique cutting edge, in combination with a punch working directly adjacent one edge of the cutter and independently of the latter, substantially as described.

7. In a machine for cutting button holes, the combination of the base plate provided with a clamp for attachment to a support, the curved arm projecting from said plate and the body or guide 9, the knife working through said guide and provided with the adjusting button, the spring for retracting the knife, the punch also spring retracted and grooved to receive an edge of the knife, the presser foot and its spring, and the cam operating upon a projection from the stem of said presser foot, substantially as described.

8. In a machine for cutting button holes, the combination of a knife or cutter, the slotted plate 50 provided with the adjustable gage or button for regulating the distance between the holes to be cut, and a gage or guide for the fabric, said gage or guide being adjustable to vary the distance of the button holes from the edge of the fabric, substantially as described.

543,636. MANUFACTURE OF PRESERVATIVE COATINGS FOR IRON OR STEEL. WILLIAM M. WALTERS and FREDERICK R. STONE, Liverpool, England. Filed Sept. 6, 1894. Serial No. 522,302. (No specimens.) Patented in England Oct. 27, 1893, No. 20,253.

Claim.—1. A coating for iron and steel consisting of a solution of tannic acid and gum, substantially in the proportions named.

2. The method of preparing a preservative liquid consisting in separately dissolving tannic acid and gum, and then mixing these solutions, substantially as described.

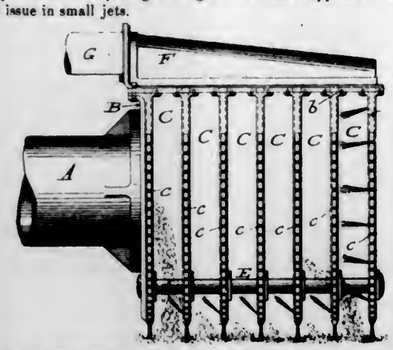
543,637. DREDGER. LINDON W. BATES, Chicago, Ill. Filed Dec. 26, 1894. Serial No. 532,984. (No model.)

Claim.—1. A rake for dredging machines, consisting of a substantially V shaped hollow yoke provided with peripheral openings through which water supplied to the yoke may issue in small jets.

2. A rake for dredging machines, consisting of a substantially V shaped hollow yoke provided on its rear face with openings through which water supplied to the yoke may issue in small jets.

3. A rake for dredging machines, consisting of a substantially V shaped hollow yoke provided on its periphery and on its rear face with openings, through which water supplied to the yoke may issue in small jets.

4. A rake for dredging machines, comprising a series of hollow yokes, separated from each other, connected with a water supply, and provided with openings through which water supplied to the yoke may issue in small jets.



5. In combination with a series of hollow yokes provided with openings through which water may issue in small jets; the connecting plate D provided with openings in line with the yokes; the hoods F F, connected with a water supply, and adapted to deliver water through the plate into the yokes.

6. In combination with a series of hollow yokes provided with openings through which water may issue in small jets; the perforated tie-bolt or tube E' connecting the lower ends of the yokes and communicating with the water way of the yokes; and means for supplying water to the water-way.

7. In combination with the suction pipe, a rake or frame carried thereby and consisting of a series of hollow yokes connected with a water supply and provided with openings through which water may issue in small jets.

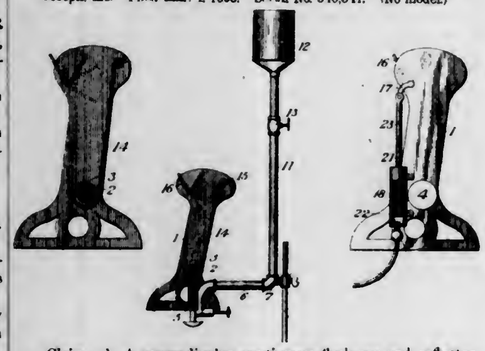
8. In combination with the suction pipe; a rake or frame carried thereby and consisting of a series of hollow yokes connected with a water supply, and having openings on the periphery and rear face; whereby the material is cut up and forced toward the suction pipe by the small jets issuing from the openings.

543,638. ART OF PREPARING ZINC PLATES FOR LITHOGRAPHIC PRINTING. EDWIN T. BEAL, Hull, England, assignor, by mesne assignments, to Grace M. Toobe, Brooklyn, N. Y. Filed Dec. 22, 1894. Serial No. 532,709. (No specimens.)

Claim.—1. The process of preparing zinc plates for lithographic printing, which consists in dulling the surface, and then subjecting it to the action of a solution of sulphate of alumina and potassa (alum), sulphate of zinc, nitrous acid and chloride of calcium substantially as described.

2. The process of preparing zinc plates for lithographic printing, which consists in cleansing the surface, washing with a solution of potassium oxide in water to remove a previous design, and then subjecting to a bath containing sulphate of zinc together with nitrous acid and chloride of calcium, substantially as set forth.

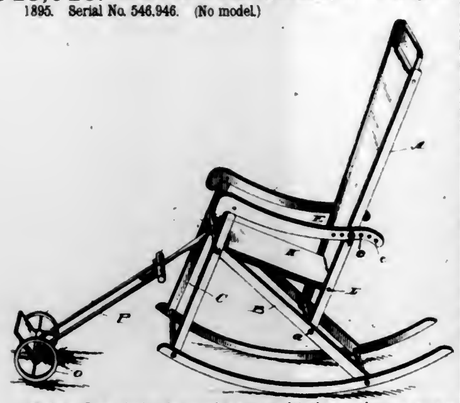
543,639. FLASH-LIGHT MACHINE. LYMAN G. BIGELOW, St. Joseph, Mo. Filed Mar. 4, 1895. Serial No. 540,541. (No model.)



Claim.—1. A perpendicular, continuous flash-pan and reflector combined and in conjunction with a continuous powder trough which in its operation acts as a disperser or separator of the grains of powder before allowing the powder to come in contact with the exploding fire.

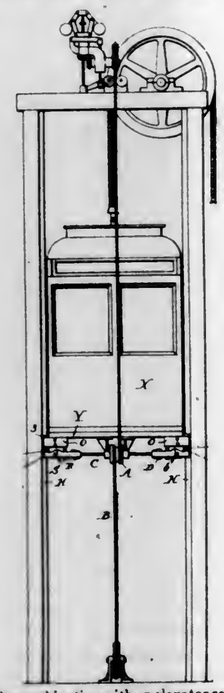
2. The combination of a continuous perpendicular flash-pan; a continuous powder trough and a series of flame jets immediately beneath the powder trough, all substantially as described.

543,640. CHAIR. ALVA P. BROWN, Hillsdale, Ind. Filed Apr. 23, 1895. Serial No. 546,946. (No model.)



Claim.—In a chair, the combination with the continuous canvas back and bottom K having one end secured to a round L, thence passed over a round D and under round L, the removable round M carrying the other end of the said canvas, the rear posts the posts A pivoted thereto and carrying said removable round M, of the legs C and arms E pivoted at their forward ends to said legs, and the rear ends of said arms adjustably held to dowels carried by the upright posts A, whereby the said canvas may be tightened or loosened, substantially as shown and described.

543,641. SAFETY DEVICE FOR ELEVATORS. CHARLES E. BURROUGHS and NORTON P. OTIS, Yonkers, assignors to the Otis Brothers & Company, New York, N. Y. Filed Nov. 17, 1894. Serial No. 529,156. (No model.)



Claim.—1. The combination with an elevator cage and the guides H therefor of blocks O having inclined faces, and wedges P having corresponding inclined faces and arranged to bear upon the sides of the guides H, levers pivoted to swing to and from the guide and capable of vertical movement to lift the wedges, and means for causing the levers to clamp the guides automatically when the cage attains an undue speed, substantially as set forth.

2. The combination with the vertically movable wedges carried by an elevator car at the sides of the guides, bearings for said wedges, pivoted levers adapted to move to and from the guide to clamp the same, and to move vertically to lift the wedges, substantially as described.

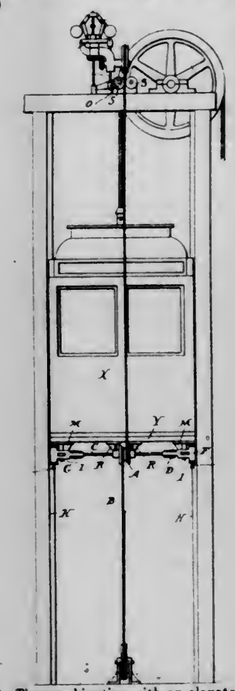
3. The combination with the cage or platform, of the vertically movable wedges P and bearings therefor, levers R extending beneath said wedges, vertical bolts to which said levers are pivoted and springs *w*, substantially as set forth.

4. The combination of the cage, vertically movable wedges and bearings therefor, levers R and jaws pivoted to said levers and arranged to engage with side faces of the guide and springs for maintaining the jaws in their upward positions, substantially as set forth.

5. The combination with the cage, wedges and levers R of jaws T pivoted by transverse bolts U and provided with inclined serrations, substantially as and for the purpose set forth, and springs *b* for moving the jaws in one direction, substantially as described.

6. The combination with the vertically movable wedges carried by an elevator car at the sides of the guides, bearings for said wedges, pivoted levers adapted to move to and from the guides to clamp the same, and to move vertically to lift the wedges, the vertically movable jaws pivoted to the levers and adapted to engage the guides, means for maintaining said jaws in their upward positions, and devices for causing the levers to automatically move toward the guides to throw the jaws in contact therewith, substantially as described.

543,642. SAFETY DEVICE FOR ELEVATORS. CHARLES E. BURROUGHS and NORTON P. OTIS, Yonkers, assignors to the Otis Brothers & Company, New York, N. Y. Filed Nov. 17, 1894. Serial No. 529,157. (No model.)



Claim.—1. The combination with an elevator cage or platform, of brackets, levers F, F supported thereon, a shoe connected with each lever so as to have a limited vertical movement, each shoe having an inclined bearing upon one of the levers, and means for automatically carrying the levers and shoes toward the guides when the cage travels at an undue speed, substantially as set forth.

2. The combination with a cage or platform of an elevator, of levers F, each provided with a semi-conical bearing, a shoe having a corresponding recess and connected to each lever to have a limited vertical movement, and means for moving the levers to bring the shoes against the guide when the cage attains an undue speed, substantially as set forth.

3. The combination with the cage or platform, of levers F, F, and shoes G, each shoe connected to one of the levers at the outer end,

with a semi-conical projection P upon each lever adapted to a corresponding recess in the shoe carried by the lever, substantially as set forth.

4. The combination of the cage or platform, levers F, shoes G, having inclined bearings upon the levers and capable of limited vertical movements, and bolts N extending from the levers through parts of the shoes and provided with springs *m*, substantially as set forth.

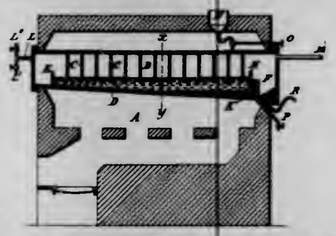
5. The combination of the levers F, F, and shoes G, the levers having converging faces *x*, and wedges D adapted to said converging faces, bars C connected to said wedges, and having threaded ends, a drum A having threaded recesses adapted to receive the bars, a traveling cable wound on said drum and devices for retarding or arresting the movement of said cable when the cage attains an undue speed, and a governor for actuating said devices, substantially as described.

6. The combination with the levers, shoes, wedges, drum A and connecting rods C, of a spring connected with the drum A to turn it in one direction, substantially as set forth.

7. The combination of the cage, levers, shoes, wedges, connecting rods, and governor and cable B, of a drum A for receiving said cable having a recess at one end, and a flat spring coiled within said recess and connected at one end with the drum and at the other with a stationary part of the apparatus, substantially as set forth.

8. The combination with an elevator cage or platform, levers F, F, supported thereon, a shoe connected with each lever so as to have a limited downward movement, means for normally maintaining the shoes at the limit of their upward movements and means for automatically carrying the levers and shoes toward the guides when the cage travels at an undue speed, substantially as described.

543,643. PROCESS OF AND APPARATUS FOR MAKING ALKALI CYANIDS. HAMILTON Y. CASTNER, London, England. Filed Nov. 20, 1894. Serial No. 529,387. (No model.)



Claim.—1. The improvements in the manufacture of alkali cyanids consisting in first producing an amid by decomposing anhydrous ammonia in the presence of an alkali metal maintained at a temperature as set forth and then converting the amid into cyanid by decomposing it in the presence of carbon heated previously to the admission of the amid, as described.

2. The improvements in the manufacture of alkali cyanids consisting in introducing molten alkali metal at a temperature of about 300° to 400° centigrade into an atmosphere of anhydrous ammonia in the proportions of about twenty-three pounds of alkali metal for each seventeen pounds of ammonia gas, withdrawing the amid produced and decomposing it by passing it through carbon heated to redness previously to the admission of the amid and collecting the resulting cyanid.

3. In apparatus for the manufacture of alkali cyanids an externally heated retort provided with gas inlet and discharge pipes and inlet pipes for the molten alkali metal, means for causing the gas to come into intimate contact with the metal and means for drawing off the amid produced.

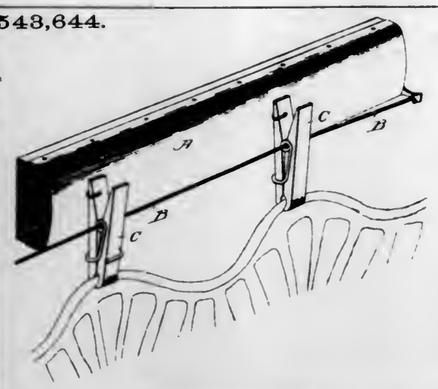
4. In apparatus for the manufacture of alkali cyanids an externally heated retort provided with baffle plates dipping into the molten metal an end plate with bottom openings through which the produced amid passes and an overflow plate and discharge pipe for same.

543,644. LACE-CURTAIN STRETCHER. JOSEPH O. CHENOWETH, St. Louis, Mo. Filed Nov. 19, 1894. Serial No. 529,250. (No model.)

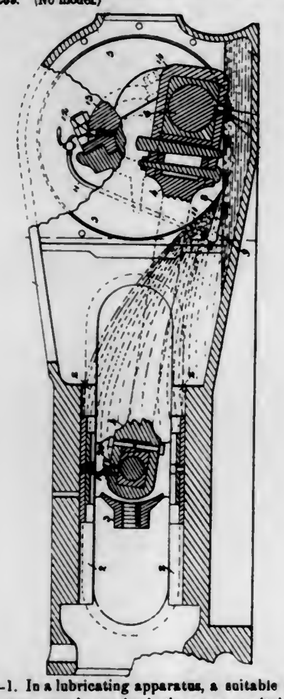
Claim.—1. In a lace curtain stretcher, the combination with a padded rail, of a rod or wire arranged longitudinally thereon, clasps strung on said rod or wire, and hooks on the clasps whereby they may be attached to the padded rail by inserting the hook in the pad, substantially as described.

2. In a lace curtain stretcher the combination with a padded rail, of spring clasps formed of two jaws having a broad gripping surface, and a hook which is secured to one of the jaws by passing therethrough, and being bent upon itself, said hook being adapted to be inserted in the pad on the rail to adjustably hold the clasp in position, substantially as described.

543,644.



543,645. LUBRICATING APPARATUS FOR ENGINES. JOSEPH F. CHUBB and RICHARD HEAP, Mattoon, Ill. Filed Apr. 11, 1895. Serial No. 545,289. (No model.)



Claim.—1. In a lubricating apparatus, a suitable engine frame, an oil basin at a convenient point in the same, a suitable crank disk mounted in the frame in proximity to the basin, a collector having the edge of its open end adjacent to the periphery of the crank disk and located near the surface of the oil, and a pipe forming a continuation of and leading from said collector to the oil cup of a suitable journal, substantially as set forth.

2. In a lubricating apparatus, a suitable engine frame, an oil basin at a convenient portion in the same, a crank disk mounted in the frame in proximity to the basin, a diverging collector having the edge of its open end located adjacent to the periphery of the crank disk, and having its passage substantially in line of the tangent to the said periphery, and a suitable pipe or pipes leading from the contracted end of the collector to the oil cups of the main journal bearings, substantially as set forth.

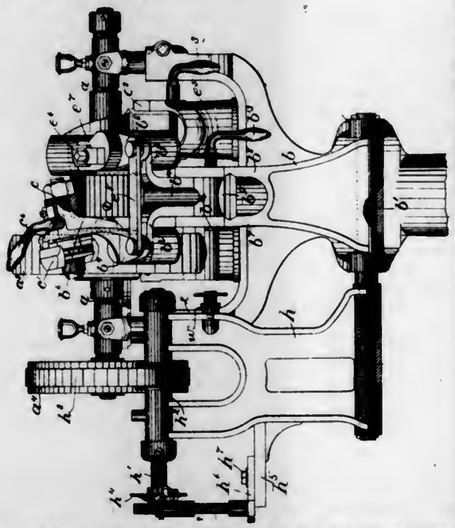
548,646. COCK. ROBERT M. DIXON, East Orange, N. J., assignor to the Safety Car Heating and Lighting Company, New York, N. Y. Filed Apr. 20, 1893. Serial No. 471,206. (No model.)

Claim.—1. In a cock shank or stem, the combination with the revoluble hollow part having a diaphragm therein, an opening in the diaphragm, a plug, a screw bolt passing through the opening in the diaphragm and into the plug, and a spring between the plug and diaphragm, all co-operating substantially as and for the purpose specified.



2. The combination with a cock, of a revoluble shank or stem recessed and provided with a spring actuated plug and annular head, of an apertured floor plate, a recess 24 in said floor plate, and a lug 25 on the shank adapted to co-operate therewith, substantially as specified.

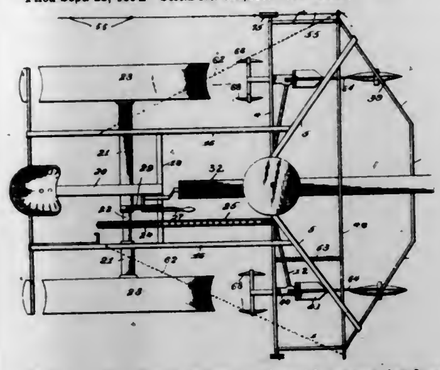
543,647. GRINDING-MACHINE. CHARLES W. GLIDDEN, Lynn, Mass., and CHARLES H. BENJAMIN, Cleveland, Ohio, assignors to James W. Brooks, trustee, Cambridge, Mass. Filed July 16, 1891. Serial No. 399,704. (No model.)



Claim.—1. In a grinding machine, a grinding wheel, and a templet corresponding thereto in shape as described, combined with a blade carrying frame, and another templet corresponding to the blade as described, and an adjustable yoke supporting both said blade carrying frame, and last named templet, substantially as described.

2. In a grinding machine, a grinding wheel, and templet made as a counterpart of it, shaped as described, combined with a pivoted blade carrying frame and templet made as a counterpart of the blade to be sharpened, a pivoted frame for said templet, and a rod or bar connecting said frames, whereby they may be moved simultaneously, substantially as described.

543,648. CORN-PLANTER. MANNIN GROSS, Burlington, Kans. Filed Sept. 25, 1894. Serial No. 524,088. (No model.)

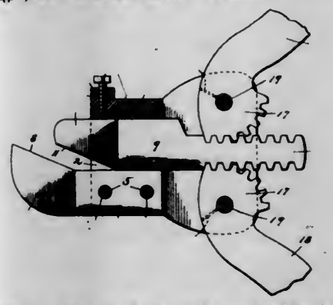


Claim.—1. In a planter, the combination with a supporting framework and ground-wheels, a hopper arranged upon the longitudinal center of the framework, feeding-mechanism for the hopper, a plurality of conveyers in communication with the hopper to which the grain is fed, and connections between said feeding-mechanism and the ground-wheels, of standards secured to the framework and provided with cavities with which communicate the lower ends of said conveyers, furrow-opening shovels carried by said standards, furrow-closing disks arranged in rear of the shovels, valves closing the rear open sides of the cavities in said standards, a rock-shaft mounted transversely on the framework, connections between said rock-shaft and the said valves, a check-row wire guide-arm pivotally connected to said rock-shaft and adapted to be depressed to disengage the wire, and means for normally holding said wire guide-arm in its upright or operative position, substantially as specified.

2. The combination with a framework and planting mechaniem, of a rock shaft provided with a bifurcated extremity, a forked holding and guide arm pivotally mounted in the bifurcation of the rock-shaft and adapted to engage a check row wire, said holding and guide arm being adapted to swing in the plane of the rock-shaft, a stop to limit the inward swinging movement of the holding and guide arm, and a spring actuated latch arranged in the path of the holding and guide arm to normally hold it in its operative position, substantially as specified.

3. The combination with a supporting framework, a hopper, grain feeding mechanism, and means for operating the grain feeding mechanism, of a double-convexed marking or scoring roll, a hollow standard arranged in rear of said roll for carrying a furrow-opening shovel, the cavity in the standard having an outlet or feed-opening and the cavity being in communication with the outlet-opening of the hopper, furrow-closing disks arranged in rear of the furrow-opening shovel and having standards carried by the standard of said furrow-opening shovel, and check-row operated mechanism for controlling the discharge through the outlet or feed opening in the hollow standard, substantially as specified.

543,649. BOLT-CUTTER. CYRUS S. HILL, Rochester, N. H. Filed Aug. 7, 1894. Serial No. 519,663. (No model.)

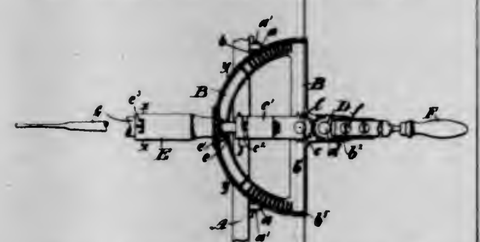


Claim.—1. In a bolt clipper, a bifurcated tool head consisting of parallel head plates and an integral bridge piece connecting said parallel plates at one edge, a stationary cutter jaw fitted between the parallel plates of the tool head and provided at one end with a beveled blade having an inclined cutting edge, bolts removably fastening the stationary cutter jaw within the tool head, a sliding cutter jaw

mounted to slide on the stationary cutter jaw between the latter and the bridge piece of the tool head, said sliding jaw being provided at one end with an integral blade beveled reversely to the blade of the stationary jaw and having an inclined cutting edge opposed to and parallel with the cutting edge of said stationary jaw, means for taking up the wear of the sliding cutter jaw, and means for sliding said sliding cutter jaw within the tool head, substantially as set forth.

2. In a bolt clipper, a bifurcated tool head, a stationary cutter jaw removably held within said head and provided at one end with a cutting blade, a sliding cutter jaw working within said head and provided at one end with a blade opposed to that of the stationary jaw, a washer plate interposed between the sliding jaw and one side of the tool head, a set screw mounted in the tool head and working against said washer plate, and operating levers pivotally mounted at one end in said tool head and connected with said sliding jaw, substantially as set forth.

543,650. BOW-FACING OAR. THOMAS J. MURPHY, Cincinnati, Ohio. Filed Feb. 27, 1895. Serial No. 539,351. (No model.)



Claim.—1. The combination of the rocking support for the oar operating mechanism, intermeshing segmental gears pivoted upon said support, each of said gears having radially projecting arms, one of said arms carrying the bearing for the oar socket, the oar socket fitted to turn in said bearing, the opposite gear having an arm for the handle, the handle secured to said arm, and the oar blade detachably secured in its socket, substantially as shown and described.

2. The combination of the semi-circular supporting plate for the oar operating mechanism mounted to rock above the edge of the boat, intermeshing segmental gears having radially extended arms pivoted upon said support, the oar holding socket having a shaft journaled in the arm of one of said segments, the operating handle secured to the arm of the opposite segment, a wheel secured upon the oar socket shaft and resting upon the segmental bearing, and the oar detachably secured in the socket, substantially as shown and described.

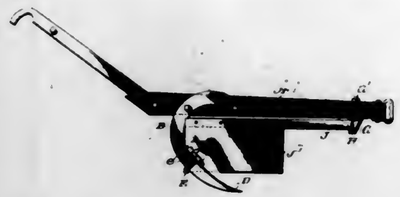
3. The combination, substantially as hereinbefore set forth, of the semi-circular rocking plate for the oar operating mechanism, having segmental racks at each end, the supports for said plate adapted to be secured to the side of the boat, the intermeshing segmental gears having radially extended arms, said gears being pivoted upon said support, one of said arms provided with a bearing for the shaft of the oar socket and the arm of the opposite segment provided with a seat for the shank of the operating arm, the oar socket having a shaft journaled in the bearing of one of the arms, the grooved wheel fitted upon said shaft to bear upon the semi-circular support, a spring pressed detent, the shaft of which is adapted to slide through the perforation in the shaft of the oar socket, the detent being held with spring pressure upon the semi-circular bearing to engage the toothed segments at each end thereof, for the purpose of turning the oar socket at each end of the stroke for the purpose of feathering the oar and returning it to its working position, and means such as shown to limit the feathering motion of the oar socket.

4. The combination of the rocking support for the oar operating mechanism, the segmental gears having radially projecting arms pivoted upon said support, the oar socket fitted in one of said arms, and the handle secured to the opposite arm, a plate secured to the under side of the rocking support and projecting over the top edge of the boat, and an adjusting screw tapped through said plate to limit the dip of the oar, substantially as shown and described.

543,651. PLOW. WILLIS M. MCLENDON, Woodbury, Ga. Filed May 14, 1895. Serial No. 549,266. (No model.)

Claim.—1. The combination of the plow and the fender-hanger, attached to the beam thereof, having a transverse slot as H, and a tooth as I in the bottom of the slot, for the purpose and substantially as described, with the fender-bar and fender, substantially as set forth.

2. The combination of the plow and the fender hanger consisting of a casting having a transverse slot as H, wide at top and narrow at bottom, a tooth at one end of the slot, and a supplementary inclined slot at the front upper corner of slot H, substantially as described, and the notched fender carrying bar engaging said hanger, substantially as specified.



3. The combination of the plow having a slotted standard, and the share having an opening for the passage of a retaining bolt; with the fastener consisting of a bolt having an elongated head or arms on its upper end provided with a tooth adapted to enter the bolt opening in the share when the bolt is passed through the slot in the standard, substantially as described.

4. The combination with the plow and share substantially as described, of the reversible fastener E having a threaded shank or bolt, and opposite arms on its head adapted to hold the share in place when the bolt is fastened to the plow standard, substantially as described.

5. The herein described reversible plowshare fastener consisting of a bolt E having opposite arms *e*, *e*, on its head, each provided with a tooth *e'* on its under side, for the purpose and substantially as set forth.

6. The combination of the plow beam, the casting G, attached thereto having ribs G', a threaded shank, a triangular slot H, a supplementary slot *h*, and a tooth I, substantially as and for the purpose described; with the fender bar having a notched end *j*, substantially as and for the purpose described.

543,652. HAND SHELL-EXTRACTOR FOR FIREARMS. JOHN H. PALM, Chicago, Ill. Filed May 9, 1895. Serial No. 548,888. (No model.)



Claim.—1. In a shell-extractor for fire-arms, the holder part having a smooth-bore at one end and a semi-circular band at its other end open at the side, in combination with a screw-stem passing through said smooth bore and having a head formed with grooved-dogs, and an armed-nut on the screw-stem, for acting against the end of the smooth bored part, the said semi circular band and the screw head being adapted to be placed sidewise over the shell, substantially as described for the purpose stated.

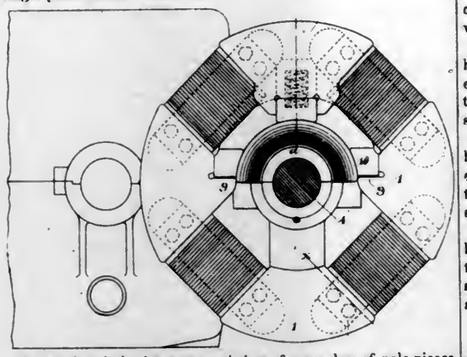
2. In a shell extractor for guns, the holder part having a semi-circular band at one end open at one side and a smooth-bore at the other end, in combination with a screw-stem sliding through the smooth-bore and having a head formed with dogs, an armed-nut on the outer end of said screw-stem, and a projection on one of said parts engaging a groove on the other part with a sliding function for preventing the turning of the screw in the holder.

3. In a shell-extractor for guns, the combination of the screw-stem having a longitudinal groove and a head having transversely grooved-dogs, with a holder part having at one end a half-circle band open at the side and at its other end a smooth bore for said screw-stem having a fin engaging the stem groove, and an armed nut on its outer end for the purpose stated.

543,653. ELECTRIC-BRAKE SHOE. WILLIAM B. POTTER, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Mar. 30, 1895. Serial No. 543,802. (No model.)

Claim.—1. An electric brake shoe consisting of a magnet arranged about a car axle and suspended by a single spring-cushioned bearing above the car axle.

2. An electric brake shoe consisting of a number of pole-pieces arranged in the same plane about a car axle, cores connecting said pole-pieces and wound with coils, said brake shoe being suspended at a single point above the car axle.

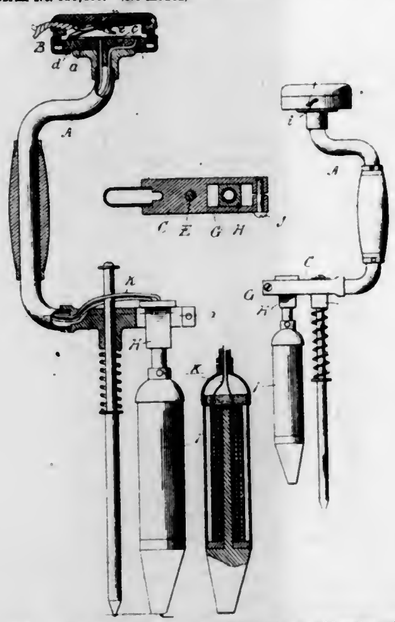


3. An electric brake shoe consisting of a number of pole-pieces arranged in the same plane about a car axle, cores connecting said pole-pieces and wound with coils, and means substantially as described, for holding the brake shoe against vertical and lateral movement, said brake shoe being suspended at a single point above the car axle.

4. An electric brake shoe consisting of a magnet arranged about a car axle and suspended at a single point above the car axle, said shoe being adapted to slide on its point of suspension, and means for restoring the shoe to normal position.

5. An electric brake shoe consisting of a magnet arranged about a car axle, and suspended at a single point above the car axle, said shoe being adapted to slide on its point of suspension, and a spring connection at the point of suspension by means of which the shoe is moved back to and retained in its normal position, and is relieved of friction.

543,654. ELECTRIC SOLDERING-IRON. FRANK B. RAE, Detroit, Mich., assignor to Charles L. Coffin, same place. Filed Sept. 18, 1894. Serial No. 523,405. (No model.)



Claim.—1. In an electric soldering iron, the combination with a revolvable bracket, of a supporting standard on the bracket, a soldering iron on the bracket located laterally to one side of the standard and adapted to circle about the same, electric conductors to the iron, and a swivel contact device therein, substantially as described.

2. In an electric soldering iron, the combination of an electric soldering iron, a head or bracket on which it is secured, a standard slidingly engaging therethrough, a spring supporting the head on the standard, the conductors, and a swivel contact device in the conductors around the pivotal point, substantially as described.

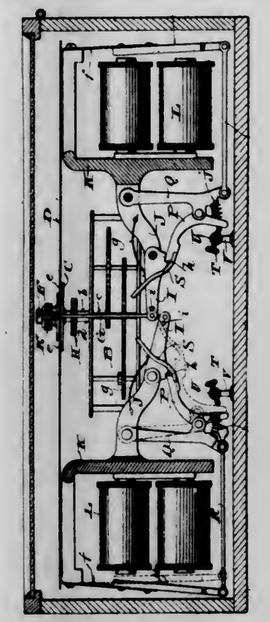
3. In an electric soldering iron, the combination of the brace, a supporting standard therefor, an electric soldering iron adjustably secured beside the standard in the brace, and conductors connecting with the iron at all points of adjustment, substantially as described.

4. In an electric soldering iron, the combination with the brace, having a supporting standard and an electric soldering iron at its lower end, of a swivel top for the brace, the conductors extending into the top, and a swivel contact device in the swivel top, substantially as described.

5. In an electric soldering iron, the combination with the brace, having the supporting standard and the soldering iron at the lower end thereof, of the conductor sterminating at the top of the brace, the adjustable swivel cap, and contacts in the cap forming a switch, substantially as described.

6. In an electric soldering iron, the combination of the brace, the head block *a*, the cap L made in two sections having a limited rotation in relation to each other, the pin *h* on one part, working in the slot *i* in the other part, and the contacts and terminals constructed and arranged, as and for the purpose described.

543,655. WATCHMAN'S TIME-RECORDER. GEORGE F. RANSOM, Milwaukee, Wis., assignor of one-half to Harold G. Underwood, same place. Filed Sept. 4, 1894. Serial No. 521,999. (No model.)



Claim.—1 In a time-recording apparatus, the combination of a removable record-dial or analogous device and its motor, a pricking-pin or analogous marking-device opposed to the record-device but normally out of contact therewith, a lever connected to the marking-device and provided with a lateral projection, an actuating mechanism that has trip-engagement with the lever, and a wiper extended from the actuating-mechanism to operate upon the lever-projection when a trip of said mechanism takes place.

2. In a time-recording apparatus, the combination of a removable record dial or analogous device and its motor, a loose pricking-pin or analogous marking-device in normal opposition to the record device, a lever connected to the marking-device, another lever, a lift-and-trip device pivoted to the latter lever to operate the former lever, a stop in the path of one extremity of the lift-and-trip device, and suitable means for actuating the lever to which said lift-and-trip device is pivoted.

3. In a time recording apparatus, the combination of a removable record dial or analogous device and its motor, a loose pricking-pin or analogous marking-device in normal opposition to the record device, a lever connected to the marking-device, another lever, a pivotal lift-and-trip device carried by the latter lever to operate the former lever, a stop in the path of one extremity of the lift-and-trip device, an electro-maguet, an armature for the magnet, and a link connecting the armature with the lever to which said lift-and-trip device is pivoted.

4. In a time-recording apparatus, the combination of a removable record dial or analogous device and its motor, a loose pricking-pin or analogous marking-device in normal opposition to the record device, a notched lever connected to the marking-device and provided with a lateral projection, another lever, a dog pivoted intermediate of its extremities to the latter lever and normally engaged with the notch in the former lever, a wiper-extension on the dog opposed to the lateral projection on the marking-device lever, a stop in the path of that portion of the dog farthest from the wiper-extension, and suitable means for actuating the dog-carrying lever.

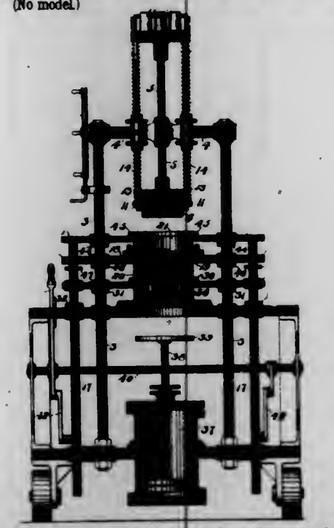
5. In a time-recording apparatus, the combination of a removable record dial or analogous device and its motor, a loose pricking-pin or analogous marking-device in normal opposition to the record device, a notched lever connected to the marking-device and provided with a lateral projection, another lever, a dog pivoted intermediate of its extremities to the latter lever, a wiper-extension on the dog opposed to the lateral projection on the marking-device lever, a stop in the path of that portion of the dog farthest from the wiper-extension, an electro-magnet, an armature for the magnet, and a link connecting the armature and dog-carrying lever.

6. In a time-recording apparatus, the combination of a removable record dial or analogous device and its motor, a loose pricking-pin or analogous marking-device in normal opposition to the record device, a lever connected to the marking-device, another lever, a spring-controlled lift-and-trip device pivoted to the latter lever to operate the former lever, a stop in the path of an extremity of the lift-and-trip device, and suitable means for actuating the lever to which said lift-and-trip device is pivoted.

7. In a time-recording apparatus, the combination of a removable record dial or analogous device and its motor, a loose pricking-pin or analogous marking device in normal opposition to the record device, a lever connected to the marking-device, another lever, a lift-and-trip device pivoted to the latter lever to operate the former lever, an adjustable stop in the path of an extremity of the lift-and-trip device, and suitable means for actuating the lever to which the lift-and-trip device is pivoted.

8. In a time-recording apparatus, the combination of a removable record-dial or analogous device and its motor, a row of pricking-pins or analogous marking-devices arranged to oppose the record-device, two parallel series of supporting-arms extending toward the marking-devices, the arms in one series alternating with those of the other series, a lever connecting each marking-device with one of said arms, another lever in connection with each arm, a lift-and-trip device pivoted to the latter lever to operate the former lever, and suitable means for actuating the lever carrying the lift-and-trip device.

543,656. MANUFACTURE OF GLASSWARE. DANIEL C. RIPLEY, Pittsburg, Pa. Filed Mar. 8, 1893. Renewed Oct. 3, 1894. Serial No. 524,842. (No model.)



Claim.—1. The process of manufacturing articles of glassware, consisting in pressing a number of blanks from a font in a mold, cutting the sprues between the mold and the font, and pressing the blanks to the shape of the finished article; substantially as described.

2. The process of manufacturing articles of glassware, consisting in pressing a number of blanks from a font in a mold, cutting the sprues, removing a part of the mold and substituting another part therefor, and pressing the blanks to the shape of the finished article; substantially as described.

543,657. DISPLAY ATTACHMENT FOR COUNTERS. ISAAC ROSENBERG, Cincinnati, Ohio. Filed May 23, 1895. Serial No. 550,312. (No model.)



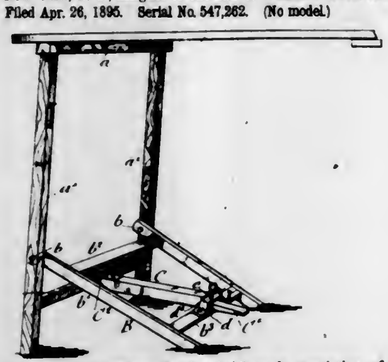
Claim.—1. The combination of a counter having a forwardly projecting top, the display attachment for said counter having its front formed of glass panels, a removable panel within the chamber of said attachment adapted to receive the display goods, and means such as shown to adjust the said panel nearer to or farther from the glass front of the attachment, substantially as shown and described.

2. In combination with a counter, the display attachment consisting of the end pieces, B, front glass frames, B', and the glass panels, b^3, in said frames, the panel, C, arranged within said attachment back of the glass frames and adapted to receive the goods to be displayed, the back closure, D, for said attachment, the said back closure and display panel being removable, and the display panel being adjustable with relation to the front of the case, substantially as shown and described.

3. The combination of the counter having a forwardly projecting top, the display attachment arranged underneath the projecting end of said top having paneled glass frames closing the front of said attachment, the frames and glass plates being inclined outwardly from the top to the base of the display compartment, the adjustable and removable panel arranged within the chamber of the display attachment, and the inwardly inclined base of the said display attachment to prevent the glass panels from injury, substantially as shown and described.

4. The combination, substantially as hereinbefore set forth, of the counter top, the uprights and end pieces supporting said top, the bottom shelf and intermediate shelf bracing and supporting the upright pieces in their vertical position, the inclined glass frames forming the upper front part of the counter, the oppositely inclined base supporting said frames, the display panel, C, arranged back of the transparent front of the counter, and the panel, B, forming the back closure of the display chamber, whereby the display chamber is rendered practically dust tight.

543,658. SUPPORT FOR IRONING-BOARDS. ELIAS V. SIGLER, New York, N. Y., assignor of one-half to William J. Kriel, same place. Filed Apr. 26, 1895. Serial No. 547,262. (No model.)



Claim.—1. A support for ironing-boards, consisting of a main-frame, a stay pivoted to the lower part of said frame and provided with a socket or keeper on the outermost transverse-piece of the same, a brace-piece hinged to a cross-piece of the supporting-frame, and a fastening-device for connecting the outer end of the brace-piece with the socket or keeper of the stay substantially as set forth.

2. In a support for ironing-boards, the combination, with a main frame provided with a top cross-piece and a cross-piece at its lower end, a stay hinged to the legs of the main-frame and provided with a socket or keeper on its outermost transverse-piece, a brace-piece hinged to the lower cross-piece of the main-frame and provided with a shoulder at its outer end, and means for locking the stay, when folded up, into one plane with the upright supporting-frame, substantially as set forth.

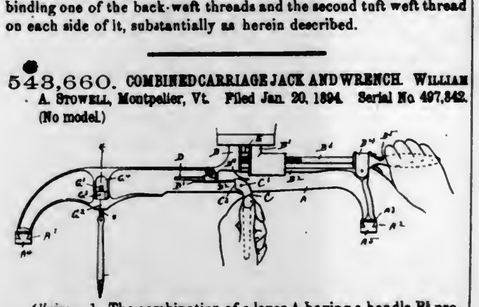
543,659. TUFTED WOVEN FABRIC. HALCYON SKINNER, Yonkers, N. Y. Filed Dec. 17, 1894. Serial No. 532,029. (No model.)



Claim.—1. A tufted woven fabric consisting of warp threads, weft threads and tufts looped around some of the weft threads and in which the rows of tufts follow each other in series of four, and the weft threads follow each other in series of eight, four alternating ones of the said weft threads being tuft-weft and the intervening ones being back weft and each tuft weft thread and the second back weft thread on each side of it being bound by the same warp thread, substantially as herein set forth.

2. A tufted woven fabric consisting of warp threads, weft threads and tufts looped around some of the weft threads and in which the rows of tufts follow each other in series of four, the weft threads follow each other in series of eight and the warp threads are divided in sets of four, four alternating ones of the said weft threads being tuft-weft and the intervening ones being back weft and each warp thread binding one of the back-weft threads and the second tuft weft thread on each side of it, substantially as herein described.

543,660. COMBINED CARRIAGE JACK AND WRENCH. WILLIAM A. STOWELL, Montpelier, Vt. Filed Jan. 20, 1894. Serial No. 497,842. (No model.)



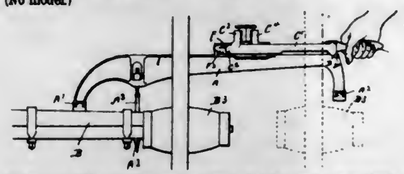
Claim.—1. The combination of a lever A having a handle B^3 projecting from one end of said lever with its axis parallel with said lever, a pair of jaws carried by said lever midway its length and a handle C attached to said lever opposite said jaws and arranged to be held with its axis at right angles to said lever, whereby said lever is rotated about the axis of said handle C, by means of said handle B^3, substantially as described.

2. The combination of a lever A provided with a journal bearing B^4 at one end of said lever, a fixed jaw B carried by said lever midway its length, a movable jaw capable of sliding along said lever and provided with an internal screw thread, a spindle B^5 journaled in said fixed jaw and in the journal bearing B^4, and provided with a screw thread engaging the screw thread in said movable jaw and a handle attached to said spindle and projecting beyond the end of said lever, substantially as described.

3. The combination of the lever A provided with a journal bearing B^4 at one end of said lever, a fixed jaw B midway the length of said lever, a movable jaw B' capable of sliding on said lever and provided with an internal screw thread, a spindle B^5 journaled in said bearing B^4 and in said fixed jaw and having a screw thread engaging the screw thread in said movable jaw, a handle B^6 attached to said spindle and projecting beyond the end of said lever, a hook G suspended from said lever, a handle C pivotally connected with said lever midway its length and a spring carried by said lever and acting against said handle to hold it in position, substantially as described.

4. The combination of the lever A, provided with mortise D, notch D' and spurs D^3, carried by the central section of said lever, handle C pivoted to said lever, a U-shaped spring held by its center in said notch and extending between said spurs D^3 and said pivoted handle, whereby the tension of said spring is applied to said handle, substantially as described.

543,661. COMBINED CARRIAGE JACK AND WRENCH. WILLIAM A. STOWELL, Montpelier, Vt. Filed Apr. 9, 1894. Serial No. 506,967. (No model.)

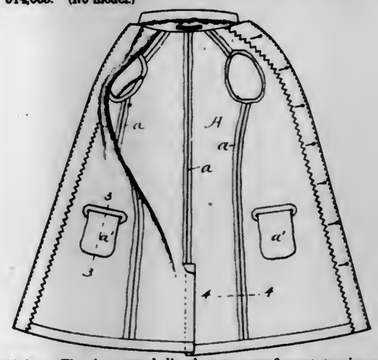


Claim.—1. The device comprising the lever A, provided with feet A' and A^2 at its opposite ends, and a suspension hook A^3 supported by said lever, of a bar C lying parallel with said lever and having one end detachably attached to said lever midway its feet A', A^2, and having the opposite end of said bar C, detachably attached to one end of said lever A, fixed and movable jaws carried by said bar C, an actuating screw journaled in said bar C and extending beyond the end of said lever A and forming a handle A^4, substantially as described.

2. A device comprising the lever A, provided with the feet A' and A^2 and a suspension hook A^3 connected to said lever, studs D' projecting from said lever, detachable bar C' provided with a pair of jaws, hooks D, D on said bar engaging the stud D', handle A^4 carried by said bar and a spring actuated latch held by the lever A and engaging said bar, substantially as described.

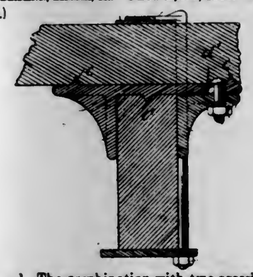
3. A device comprising the lever A provided with the feet A' and A^2, and a suspension hook A^3, of a bar C' detachably connected with said lever and provided with a recess G, a lug F on said lever, a sliding spring actuated bolt held by said lug and entering said recess, lugs or ears C^3, C^4 inclosing said lug F, hooks D engaging studs on said lever and a handle A^4 carried by said detachable bar, substantially as described.

543,662. WATERPROOF COAT. JOHN T. TAYLOR, Hudson, assignor to John R. Farrell, Boston, Mass. Filed June 9, 1894. Serial No. 514,005. (No model.)



Claim.—The improved lined waterproof coat having stitched, waterproof seams, the same comprising sections of outer cloth united by stitches, and sections of lining united by cementation of their overlapping edges, said cloth and lining having interposed therebetween a waterproofing compound, substantially as described.

543,663. CROSS-SILL SUPPORT AND BRACKET-CLAMP. GUSTAVE WENZELMANN, Missal, Ill. Filed Apr. 8, 1895. Serial No. 544,851. (No model.)



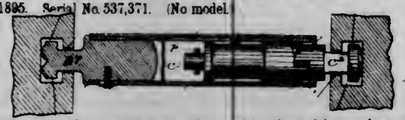
Claim.—1. The combination with two crossing timbers, of an intermediate metal plate provided with downwardly directed guide flanges between which the lower timber is positioned, and a U-shaped clamp extending over the upper timber, through suitable apertures in said plate, and through a washer plate secured to the free edge of the lower timber, substantially as described.

2. The combination with two crossing timbers, of an intermediate metal plate provided with downwardly directed guide flanges between which the lower timber is positioned, and a U-shaped clamp extending over the upper timber, through suitable apertures in said plate, and though a washer plate secured to the free edge of the lower timber, one of said depending brackets being adjustable with respect to the intermediate plate, substantially as described.

3. A clamping device for crossing timbers comprising a plate C provided with an integral depending flange C' having a plurality of studs to engage both timbers, elongated openings, as c^3 d', a clip, as E, a washer plate, as c', and an adjustable bracket, C^2, substantially as described.

4. In a clamping device for securing cross timbers together, the combination with a clip, of an intermediate supporting plate, as C, provided with a depending flange, as C', and an adjustable bracket, as C², the adjacent surfaces of the bracket C² and the supporting plate C being corrugated, substantially as and for the purpose specified.

543,664. CURTAIN-STOP. WALTER V. H. WILLSON, Brunswick, N. Y., assignor of one-half to James Irving, same place. Filed Feb. 5, 1895. Serial No. 537,371. (No model.)



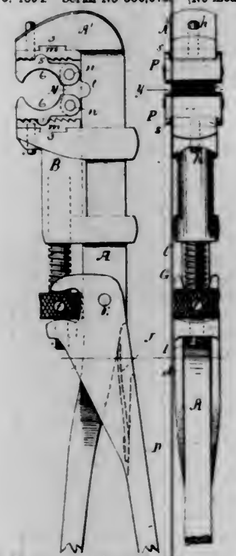
Claim.—1. In a curtain-stop, the combination with a spring-roller and tube, of a curtain secured at one end to the roller and at the other end to one side of the tube, a stop-piece on one end of the tube, a non-rotary stop-piece movably connected with the other end of the tube, and a cam-connection between the tube and non-rotary stop-piece, whereby a rotary movement of the tube operates the cam-connection to produce a relative movement of the tube and non-rotary stop-piece longitudinally of the tube, substantially as described.

2. In a curtain-stop, the combination with a spring-roller and tube, of a curtain secured at one end to the roller and at the other end to one side of the tube, a stop-piece on one end of the tube, a non-rotary stop-piece movably secured to the other end of the tube, and a cam-connection having one element of the connection fixed upon the non-rotary stop-piece and the other element fixed upon a separate part movable longitudinally of the tube, and means for securing such movable part in varying positions lengthwise of the tube, substantially as described.

3. In a curtain stop, the combination with a spring-roller and tube, of a curtain secured at one end to the roller and at the other end to one side of the tube, a stop-piece on one end of the tube, a non-rotary stop-piece movably connected with the other end of the tube, a cam-connection between the tube and non-rotary stop-piece, an operating lever secured to the tube and projecting across the vertical plane of the pendent curtain, and a depending pull secured to the projecting end of the lever, substantially as described.

4. In a curtain-stop, the combination with a spring-roller and a tube having a longitudinal screw slot at one end, of a curtain secured at one end to the roller and at the other end to one side of the tube, a stop-piece in the slotted end of the tube, having in its side a threaded screw-aperture; an adjusting-screw inserted in such aperture and slot with its head in engagement with the slot-walls, a stop-piece movably connected with the other end of the tube, and operating connections between the movable stop-piece and tube, substantially as described.

543,665. PIPE-WRENCH. EDWARD WRIGHT, Worcester, Mass. Filed Dec. 3, 1894. Serial No. 530,670. (No model.)



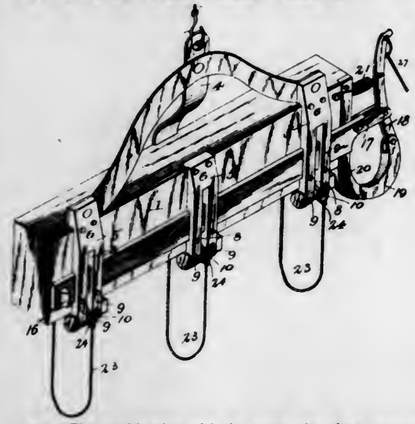
Claim.—1. The combination with the pipe-wrench having toothed jaw-faces, of a removable jaw-guard, of pipe-surface protector, composed of two sections coupled together by hinging links, and pivots loosely connecting their inner ends, said sections having, at their outer ends external raised bearing-surfaces fitted for engaging the toothed jaw-faces, and projecting lugs S at the sides thereof, substantially as set forth.

2. The combination of the wrench-bar having the fixed jaw, the movable jaw sliding thereon, the operating lever pivoted to said bar, the protector or jaw-guards fitting between said fixed jaw and movable jaw at their front ends, their rear ends linked together, and the jaw-adjusting screw having its rosette-head provided with transverse holes, substantially as set forth.

3. The wrench-jaw guard or protector for finished pipe, consisting of a pair of jaw-sections having their inner faces formed with semi-cylindrical cavities to receive a pipe; their exterior adapted for seating against the jaws of the wrench, and their rear ends connected together by a series of links and pivots that form hinging joints at the respective ends of the links, the outer links being provided with lugs *l* for engaging the sides of the wrench-bar, as set forth.

4. The protector or jaw-guard formed of two parts or sections having semi-circular smooth faces for gripping finished pipe, and provided upon the exterior outer ends with elevated bearing lugs that engage the jaw-facing-plate or wrench-jaw, the inner ends of said guard sections being connected together by a series of links and hinging pivots, the dimension of the guard being less at the rear end than at the front end, substantially as set forth.

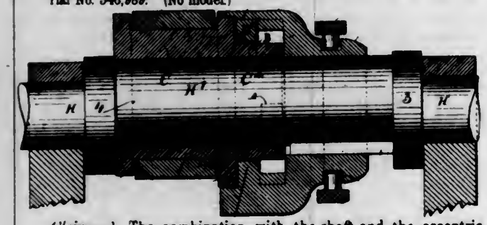
543,666. SLING FOR UNLOADING SUGAR-CANE. NUMA ANCOIN, Delcambre, La., assignor of one-half to Felix Richard, same place. Filed Feb. 20, 1895. Serial No. 539,053. (No model.)



Claim.—The combination with the beam, the plates secured to one side thereof provided with stationary hooks, the plates secured to the other side formed with vertical slots and aligned horizontal grooves, and the pivoted hooks formed with shanks, of the horizontally movable bar working in said grooves, and having a series of slots at the lower edge, the link, the lever and the coiled spring, substantially as described

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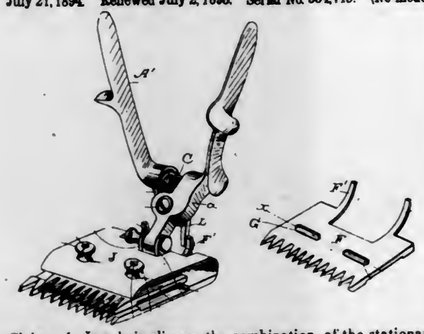
543,667. ECCENTRIC. JAMES H. BAKER, GEORGE F. SHEVLIN, and FREDERICK H BAKER, Saratoga Springs, N. Y. Filed Apr. 24, 1895. Serial No. 546,989. (No model.)



Claim.—1. The combination, with the shaft and the eccentric thereupon, of a loose eccentric or sleeve, a hub at the end having lugs projecting therefrom, a clutch around the shaft, and mechanism for holding the same, and a projection upon the clutch for engaging one of the projections upon the hub of the loose eccentric and giving motion to such eccentric and for varying the throw of the eccentric rod according to the projections that are engaged, substantially as set forth.

2. The combination, with a shaft having upon it an eccentric, of a surrounding loose eccentric or sleeve, a hub upon the same having lugs projecting therefrom in pairs, one pair of lugs being at an angle to the other pair of lugs, a clutch and feather on the shaft, and means for sliding such clutch, a shell and projections for engaging one pair of lugs or the other pair of lugs upon the hub of the eccentric sleeve, substantially as set forth.

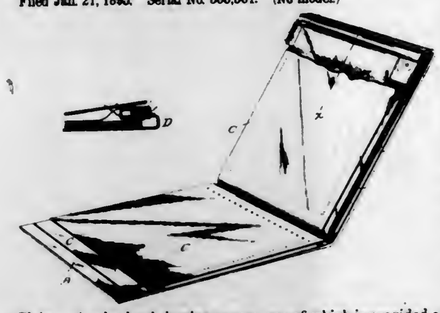
543,668. HAIR-CLIPPER. FRED BANGERTER, San Francisco, Cal., assignor, by mesne assignments, to Charles H. Greene, same place. Filed July 21, 1894. Renewed July 2, 1895. Serial No. 554,715. (No model.)



Claim.—1. In a hair clipper, the combination, of the stationary and movable plates, a pair of pivoted handles, one of said handles being hinged or connected with one of said plates so that the device may be turned to different angles, an opposing plate having its rear portion recessed and provided with rearwardly and upwardly extending curved arms, and the other handle having arms adapted to enter the recess of said plate and engage the curved arms thereof in whatever position the device is turned.

2. In a hair clipper, the combination, of a stationary comb plate having the upwardly extending standards E, a movable cutter plate having a recessed rear end with outwardly extending arms, a cap plate, the front edge of which curves downwardly to rest upon the movable plate, screw bolts from the stationary plate extending through the movable plate and cap plate, thumb nuts engaging the screws, a pair of pivoted handles each having extensions below its pivotal connection, one of said extensions being pivotally mounted upon a horizontal axis between the standards from the stationary plate, and the other extension being located between the rear extending arms of the movable plate said rear arms being curved upwardly whereby the engaging handle extension will always be in position between the upturned curved arms in whatever position the device is turned.

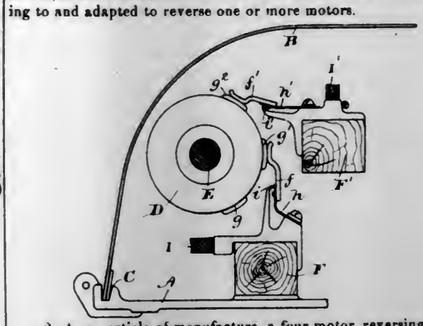
543,669. SALES-BOOK. JAMES C. BROWNING, Crum Elbow, N. Y. Filed Jan. 21, 1895. Serial No. 535,581. (No model.)



Claim.—A sales book having covers, one of which is provided at its free end with a pocket to receive the ends of the leaves, a casing, E, having a closed back and sides, said casing being mounted on and made fast to said pocket, and a plate, F, pivoted at one end to said casing and adapted to be swung outward from the book and to carry the end of a carbon sheet into said casing, when swung inward, as herein set forth and shown.

543,670. FOUR-MOTOR REVERSING-SWITCH. FRANK E. CASE Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed May 15, 1895. Serial No. 549,382. (No model.)

Claim.—1. The combination in a reversing switch, of a row of contacts adapted to be connected to line in either position of the switch, and two or more rows of contacts and brushes, each one leading to and adapted to reverse one or more motors.



2. As an article of manufacture, a four motor reversing switch cylinder having three rows of contacts, the middle row being cross-connected relative to each other, the outer contacts being wide enough to engage with two brushes, the middle contacts with one.

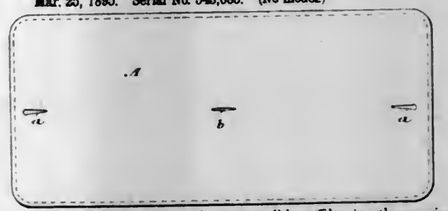
3. In a four motor reversing switch, the combination of three rows of contacts mounted on a cylinder, with two sets of brushes, one set leading to one pair of motors and the second set to a second pair of motors, engaging with the contacts, one row of contacts being common to both sets of brushes.

4. In a four motor reversing switch, the combination of three rows of contacts mounted on a cylinder, with two sets of brushes making contact therewith, the middle and one set of outer contacts being connected so as to cause the motors to revolve in one direction, and the middle and remaining outer contacts causing them to revolve in the opposite direction.

5. In a four motor reversing switch, the combination of three rows of contacts mounted on a cylinder, two sets of brushes engaging therewith, the outer contacts engaging with two brushes, the inner contacts with one, the inner contacts being arranged in an upper and lower series, each series consisting of pairs of contacts cross-connected, the said series of contacts being common to both sets of brushes.

6. In a four motor reversing switch, with the motors connected in pairs, the combination of three rows of contacts, brushes making contact therewith, the inner contacts being arranged in an upper and lower series, the contacts in the series being arranged to form pairs, the leads from two of the motors which form a pair going to the lower series, and those from the remaining pair going to the upper series.

543,671. CUFF. CHARLES C. COPELAND, East Orange, N. J. Filed Mar. 25, 1895. Serial No. 543,085. (No model.)



Claim.—The herein described reversible cuff having the openings *a* arranged at each end of the cuff and centrally of the edges, and an opening *b* in alignment with the openings *a*, and centrally between the same; substantially as described.

543,672. PROCESS OF EXTRACTING PRECIOUS METALS FROM THEIR ORES. MIDDLETON CRAWFORD, Colorado Springs, Colo., assignor of three-fourths to Thomas C. Parrish and Duncan Chisholm, same place, and James Pourtales, Silesia, Germany. Filed Oct. 29, 1894. Serial No. 527,341. (No specimens.)

Claim.—1. The improved process of preparing cyanide solution for the purpose of liviviating the ores of precious metals, which consists in adding to a cyanide solution a solution of peroxide of hydrogen, which has been substantially neutralized, substantially as described.

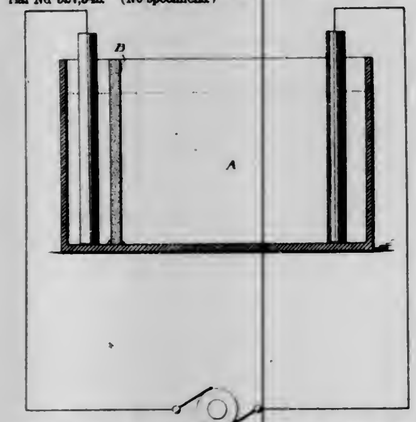
2. The improved process of preparing cyanide solution for the purpose of lixivlating the ores of precious metals, which consists in adding to a cyanide solution a solution of peroxide of hydrogen prepared by mixing peroxide of sodium with dilute sulphuric acid and completely neutralizing the same, substantially as described.

3. The improved process of preparing cyanide solution for the purpose of lixiviating the ores of precious metals, which consists in

adding to a cyanide solution a solution of peroxide of hydrogen prepared by mixing peroxide of sodium with dilute sulphuric acid and neutralizing by silicate of soda, substantially as described.

4. The improved process of extracting precious metals from their ores which consists, first, in lixiviating the ores with a cyanide solution to which has been added a subetantially neutral substance which contains a permanent excess of oxygen; second, in subjecting the gangue and accompanying cyanide solution to an amalgamating process; and, thirdly, in withdrawing the solution from the tailings, and extracting the precious metal therefrom, substantially as described.

543,673. PROCESS OF EXTRACTING PRECIOUS METALS FROM THEIR ORES. MIDDLETON CRAWFORD, Colorado Springs, Colo., assignor of three-fourths to Thomas C. Parrish and Duncan Chisholm, same place, and James Pourtales, Silesia, Germany. Filed Oct. 29, 1894. Serial No. 527,342. (No specimens.)



Claim.—1. The improved process of removing precious metals from their ores, which consists in exposing a cyanide solution to the action of an electric current in the region of the anode only until considerable portion of said solution is converted into cyanate by electrolytic action, and employing said solution as an agent for lixiviating the ore, substantially as described.

2. The improved process of removing precious metals from their ores, which consists in subjecting a cyanide solution to the action of an anode which is separated from its cathode by a porous partition sufficiently dense to substantially prevent circulation of the electrolyte, and employing said solution as an agent for lixiviating the ore, substantially as described.

3. The improved process of removing precious metals from their ores, which consists, first, in exposing a cyanide solution to the passage of an electric current; second, in withdrawing only that portion of said solution which is in the region of the anode, and lixiviating the ore with it; and, third, in reclaiming the precious metals from this solution, substantially as described.

4. The improved process of removing precious metals from their ores which consists, first, in exposing a cyanide solution to the passage of an electric current in the region of the anode only: second, in lixiviating the ore with said solution without electrolytic action; and, third, in reclaiming the precious metals from this solution, substantially as described.

5. The improved process of removing precious metals from their ores which consists, first, in lixiviating the ore with a cyanide solution which has been exposed to an electric current in the region of the anode: second, in subjecting the gangue and accompanying solution to an amalgamating process; and, third, in withdrawing the solution from the tailings and reclaiming the precious metals therefrom, substantially as described.

6. The improved process of removing precious metals from their ores which consists, first, in lixiviating the ore with a cyanide solution which has been previously exposed in a storage receptacle to an electric current in the region of the anode; second, in reclaiming the precious metals from said solution in a different receptacle; and, third, in returning the solution from which the precious metals have been separated to the storage receptacle and re-subjecting it to the action of the electric current in the region of the anode that it may be used over again as before, substantially as described.

7. The improved process of removing precious metals from their ores which consists, first, in subjecting a cyanide solution to an electric current in the region of the anode; second, in lixiviating the ore with said solution; third, in subjecting the ore and its accompanying solution to an amalgamating process; fourth, in separtieg the solution from the tailings; fifth, in removing the dissolved precious metals from the solution; and, sixth, in returuing the said solution to the compartment wherein it was subjected to step one of this claim, substantially as described.

8. The improved process of removing precious metals from their ores which consists, first, in lixiviating the ore with a cyanide solution which has been subjected to the action of an anode separated from its corresponding cathode by a porous partition which substantially prevents the circulation of the electrolyte; second, in withdrawing said solution and removing the precious metals therefrom; third, in again subjecting the solution to the action of an anode separated from its corresponding cathode as before and using it over again in continuous rotation, substantially as described.

9. The improved cyanide process, which consists in dissolving precious metals in a cyanide solution; separating the said metals from said solution; and exposing the entire solution to an electric current in the region of the anode only prior to using it over again, substantially as described.

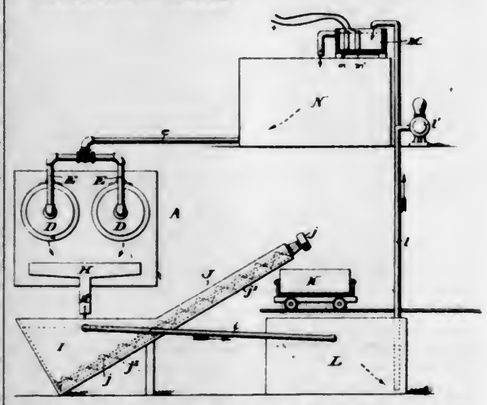
543,674. PROCESS OF EXTRACTING PRECIOUS METALS FROM THEIR ORES. MIDDLETON CRAWFORD, Colorado Springs, Colo., assignor of three-fourths to Thomas C. Parrish and Duncan Chisholm, same place, and James Pourtales, Silesia, Germany. Original application filed Oct. 29, 1894, Serial No. 527,341. Divided and this application filed Dec. 8, 1894. Serial No. 531,206. (No specimens.)

Claim.—1. The improved process of extracting precious metals from their ores, which consists in adding to a solution of ordinary commercial cyanide a cyanate of the corresponding salt until the total cyanate is not less than twenty-five per cent. of the amount of cyanide in said solution; lixiviating the ore therewith and extracting the dissolved precious metals from said solution, substantially as described.

2. The improved process of extracting precious metals from their ores, which consists in preparing a solution of ordinary commercial cyanide; converting a portion of such cyanide into cyanate until the total amount of cyanate present is not substantially less than twenty-five per cent. of the total remaining cyanide, such conversion being unaccompanied by the addition of any substantial acid or alkaline excess; lixiviating the ore with said solution and extracting the dissolved precious metals therefrom, substantially as described.

3. The improved process of extracting precious metals from their ores, which consists in forming a solution of a cyanide and a cyanate of the corresponding base, the total amount of cyanate being not less than twenty-five per cent. of the total amount of cyanide present; lixiviating the ore therewith and extracting the dissolved precious metals from said solution, substantially as described.

543,675. APPARATUS FOR EXTRACTING PRECIOUS METALS FROM THEIR ORES. MIDDLETON CRAWFORD, Colorado Springs, Colo., assignor of three-fourths to Thomas C. Parrish and Duncan Chisholm, same place, and James Pourtales, Silesia, Germany. Filed Dec. 14, 1894. Serial No. 531,751. (No model.)



Claim.—1. An apparatus for extracting precious metals from their ores, which consists in the combination of a plurality of revoluble lixiviating barrels; a single amalgamating table upon which they all discharge their contents; and means for causing the barrels to discharge successively in regular alternation, substantially as described.

2. An apparatus for extracting precious metals from their ores, which consists in the combination of a plurality of revoluble lixiviating barrels each containing a series of discharge openings of graduated size; a single amalgamating table upon which they all discharge their contents; and means whereby the said discharge is effected continuouly from one barrel at a time in regular alteration, substantially as described.

3. An apparatus for extracting precious metals from their ores, which consists in the combination of a plurality of revoluble lixiviating barrels each containing a discharge opening; a single amalgamating table situated beneath the series of barrels over one end of which all of the discharge openings of the barrels are situated, and an overflow trough situated along the opposite end of said amalgamating table, into which the contents of the barrels pass after having traversed the surface of the amalgamating table, substantially as described.

4. An apparatus for extracting precious metals from their ores, which consists in the combination of a plurality of revoluble lixiviating barrels each containing a discharge opening; a single amalgamating table situated beneath the series of barrels, over one end of which all of the discharge openings of the barrels are situated; an overflow trough extending along the opposite end of said amalgamating table into which the contents of the barrels pass after having traversed the surface of the amalgamating table; and means for imparting to said amalgamating table a continuous vibratory motion at right angles to the line along which the contents of the barrels cross the table, substantially as described.

5. An apparatus for extracting precious metals from their ores, which consists in the combination of a tank wherein the solvent liquid is stored; a revoluble lixiviating receptacle; a pipe running from said storage tank to the lixiviating receptacle; an amalgamating table; means for causing the lixiviating receptacle to discharge its contents continuously upon the amalgamating table; a separating tank; means for conducting ore which has passed over the amalgamating table into the separating tank; means for separating the solid contents of this separating tank from its liquid contents; a third tank; connections whereby the solvent liquid thus separated is passed to said third tank; means for reclaiming the precious metals from the solution in said third tank; and connections whereby the solvent liquid is run from the third tank to the storage tank, substantially as described.

6. A separator for removing the tailings of the ores of precious metals from their accompanying solvent solution, which consists in the combination of a tank into which the ores and solution are discharged; a conveyer running from the bottom of said tank to a point exterior thereto by which the solids are separated from the liquids; a car filter with a permeable bottom situated below the discharge end of the conveyer; and a second tank below said car filter, substantially as described.

543,676. PROCESS OF EXTRACTING PRECIOUS METALS FROM THEIR ORES. MIDDLETON CRAWFORD, Colorado Springs, Colo., assignor of three-fourths to Thomas C. Parrish and Duncan Chisholm, same place, and James Pourtales, Silesia, Germany. Filed Jan. 8, 1895. Serial No. 534,223. (No specimens.)

Claim.—The improved process of extracting precious metals from their ores which consists in, first, lixiviating the ore with a cyanide solution to which has been added a small quantity of a substance prepared by agitating ether with binoxide of barium and adding thereto small quantities of very dilute hydrochloric acid, and neutralizing by silicate of soda; and, second, separating the precious metal from this solution in which the ore has been lixiviated, substantially as described.

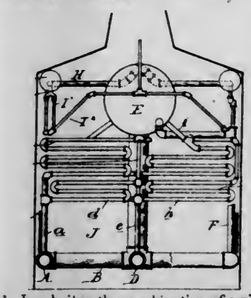
543,677. FILTER AND COOLER. GEORGE L. DAVIS and NIGHTINGALE K. WRIGHT, Chicago, Ill. Filed May 5, 1894. Serial No. 510,232. (No model.)

Claim.—1. In a filter an exterior casing, having positioned therein a central ice chamber, and means for drawing water from each, in combination with a removable filter-bed holding member adapted to inclose the ice chamber, and a filter-bed inclosed within an envelope or sack and adapted to be removably positioned in said holding member, whereby the filter-bed holding member may be removed from the casing and the enveloped bed be removed therefrom and sterilized, and the parts be again positioned within the casing in ultimate proper relationship, substantially as described.

2. A filter and cooler composed of an ice chamber centrally located within an inclosing vessel, and means for drawing water independently from each, in combination with a removable annular vessel adapted to inclose the ice chamber and thus be located in the space between the ice chamber and the wall of the vessel, a perforated transverse partition dividing said annular vessel into a compartment above for unfiltered water and a filter-bed chamber below, a bed of filtering material inclosed in a removable annular envelope and adapted to closely fit within the filter-bed chamber, and a removable perforated bottom to said chamber, whereby the annular vessel may be readily removed from its position and the filter-bed also readily removed from said vessel for the purposes of sterilization, and the said parts be as readily re-positioned again within the filter, substantially as described.



543,678. STEAM-GENERATOR. ANSON C. DEARING, Detroit, Mich., assignor of one-half to Jacob Siegel, same place. Filed Jan. 21, 1895. Serial No. 535,709. (No model.)



Claim.—1. In a boiler, the combination of a pipe frame comprising a rectangular base, a central connection between the end pipes thereof, vertical risers centrally of the end pipes, a steam drum into the ends of which these risers connect, vertical risers at the corners of the base, steam drums into the ends of which these corner risers connect, connection between the side and main steam drums, and looped circulating pipes connecting the side base pipes and the central connecting pipe alternately with the main drum, substantially as described.

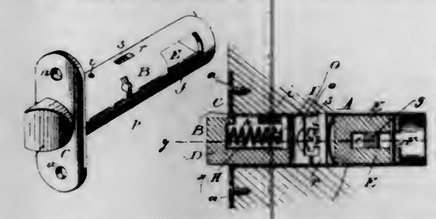
2. The combination with the side pipes A and the drum E, of the risers *a* from those side pipes on opposite sides, the looped coil *d* springing from the risers on opposite sides, the central riser *c* into which these coils connect and which connects into the bottom of the steam drum and the opposite looped coils *b* connecting from the top of the risers *a* into the top of the steam drum, substantially as described.

3. In a boiler, the combination of the rectangular pipe base, the connecting pipe D, centrally joining the ends thereof, the risers C at the ends of said pipes, the drum E in the end of which the risers C connect, the intermediate risers *e* on the connecting pipe D, the lower looped coil *h* on opposite sides of the riser *e* the looped coil *j* at the top of the riser *e* and the pipes *i* through which the pipes *e j* communicate with the drum E, connecting into the drum, substantially as described.

4. In a boiler, the combination of the horizontal pipe base and the steam-drum E connecting therewith, of the risers *l* at the ends, of the side pipes thereof, a series of looped coils *m* connected at one end into said risers and at the other end into a central riser, and said central riser connected into the steam drum, substantially as described.

5. In a boiler, the combination of the pipe frame, comprising the rectangular base, a central connection between the end pipes thereof, vertical risers centrally of the end pipes and steam drum into which the ends of these risers connect, vertical risers at the corners of the base, steam drums at the sides into the ends of which these corner risers connect, connecting pipes between the side and the main steam drum, a perforated diaphragm in the side steam drums, a steam supply pipe leading from above said diaphragm, superheating coils I' forming a continuation of said supply pipe and connection between the superheating coils, substantially as described.

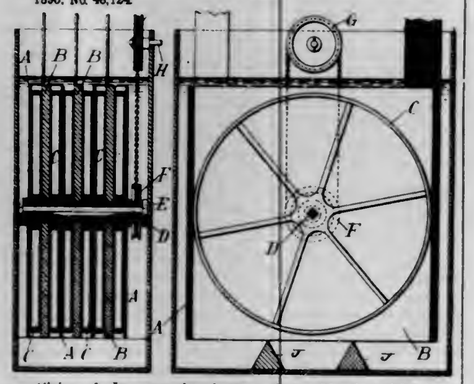
543,679. LOCK. JOSEPH DENNIS, Hot Springs, S. D. Filed Apr. 11, 1895. Serial No. 545,347. (No model.)



Claim.—1. The improved door-lock herein shown and described, comprising the cylindrical casing B; bifurcated bolt D sliding therein, having body-recesses *h* and *o* and provided with the cross-pin F at its bifurcated rear end; spring H fastened to casing B by the shoe I and its screw *i*; tumbler-lock O; and spindle G G' having central slanting jag or offset *g* engaging the cross-pin F and provided with the end-knobs or handles J, J'; all constructed and combined to operate substantially in the manner and for the purpose shown and set forth.

2. The combination with the cylindrical lock-casing B, bifurcated sliding bolt D E F, and spindle G G' having central horizontal slanting jag or offset *g* and provided with the end knobs J J', of the sleeves L *l* and L', spring M, and catch *n* fastened upon sleeve L' and adapted to engage and interlock with a hook *m* upon the adjacent inner side or face of the knob J' appertaining to sleeve L'; substantially as and for the purpose herein shown and set forth.

543,680. SECONDARY VOLTAIC BATTERY. LUDWIG EPSTEIN, London, England. Filed Jan. 5, 1895. Serial No. 533,931. (No model.) Patented in France Jan. 2, 1895, No. 244,081; in Belgium Jan. 2, 1895, No. 113,496; in Italy Jan. 18, 1895, LXXIV, 245, and in Canada Feb. 4 1895. No. 48,124.



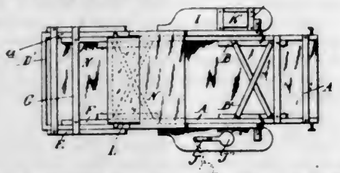
Claim.—1. In a secondary battery, the combination with a negative plate made of wire gauze electrolytically coated with zinc, of positive plates inserted between the negative plates, and revolving agitators of insulating material interposed between the opposed surfaces of the positive and negative plates, substantially as and for the purpose set forth.

2. In a secondary battery the combination with a continuous negative plate consisting of a sheet of wire gauze or foraminous metal amalgamated and electrolytically coated with zinc, and bent back and forth upon itself; of positive plates inserted between the folds or bends of the negative plate, and agitators interposed between the opposed surfaces of the positive and negative plates, substantially as and for the purpose described.

543,681. RECLINING-CHAIR. TELESPHORE FORTIER, Detroit, Mich. Filed Mar. 11, 1895. Serial No. 541,240. (No model.)

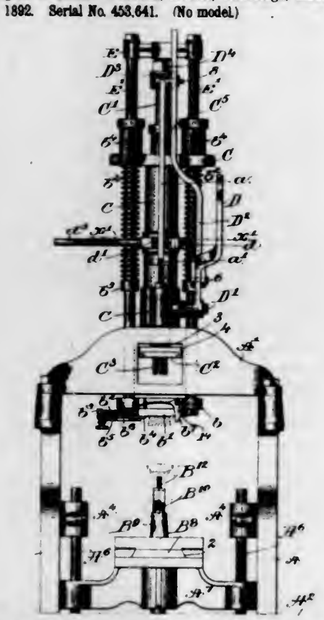
Claim.—1. In a reclining chair, the combination with the frame, of an adjustable back section, the pivoted end section on the back, means for holding the end section at different angles when it is moved in one direction, comprising a notched member and a swinging carrier member projecting beyond the notches, and a spring dog for engaging the notched member and arranged to engage the carrier member by a further movement of the pivoted section, substantially as described.

2. In a reclining chair, the combination with the body and the adjustable back section, of the foot rest comprising the side bars centrally pivoted at one end of the frame, and being connected to the back section by the arms I, the pivot pins F' engaging longitudinal slots H in the side bars of the foot rest, and the entering slots *p*, of the lining H' for the slots, having the spring lips *o o'* opposite the entering slots, substantially as described.



3. In a reclining chair, the combination of the frame, the folding legs hinged thereto, the back section hinged to the frame, the inclined brace pivoted centrally to the back and adapted to engage notches in the frame, the head section of the back hinged to the lower part thereof and devices for holding the head section in its adjusted position comprising the side plates *b* on the end of the back section, having the shoulders *e* and *d*, the notched carrier *i* between the plates and the spring dog *c* on the head section, the parts combined as and for the purpose described.

543,682. HEELING-MACHINE. CHARLES W. GLIDDEN, Lynn, assignor to James W. Brooks, trustee, Cambridge, Mass. Filed Nov. 30 1892. Serial No. 453,641. (No model.)



Claim.—1. In a heel nailing machine, the following instrumentalities, viz;—a driver-bar having an attached series of drivers; a spring to actuate the driver-bar; a locking device to keep the driver-bar in position with its spring compressed; a templet; a carrier therefor; a suitable spring to actuate the templet; a locking device to retain the templet carrier with its spring in compressed condition, and a releasing device to successively release the locking devices and permit the spring of the driver-bar to first act to actuate it to drive nails, and then to permit a spring of the templet to operate to actuate the templet during the operation of attaching a top-lift, substantially as described.

2. In a heel nailing machine, the following instrumentalities, viz;—a driver-bar having an attached series of drivers; a spring to actuate the driver-bar; a locking device to keep the driver-bar in position with its spring compressed; a templet; a carrier therefor; a suitable spring to actuate the templet; a locking device to retain the templet carrier with the spring in compressed condition; releasing devices to successively release the locking devices and permit the spring of the driver-bar to first act to actuate it to drive nails, and then to permit the spring of the templet carrier to operate to actuate the templet during the operation of attaching a top-lift, and actuating means for the shoe support whereby the latter may be moved to put the sole of the shoe and the heel to be attached to it, in firm contact prior to the heel attaching operation, substantially as described.

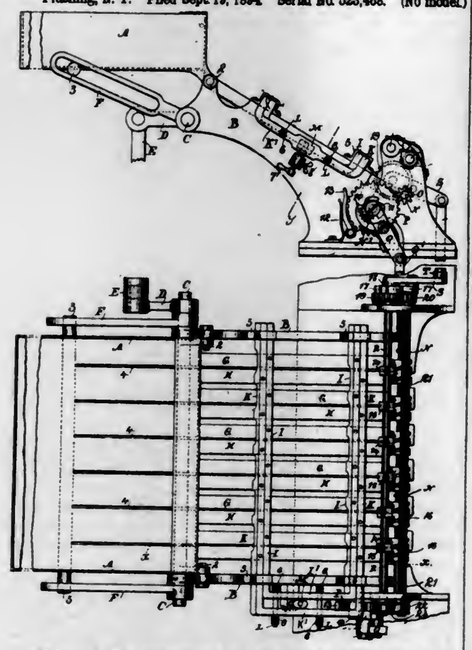
3. In a heeling machine, a driver-bar having an attached series of drivers, a spring to actuate the driver-bar; a lifting device to lift the driver-bar and compress its spring; a locking device to retain the driver-bar in position with its spring compressed; a templet; a templet-carrier operatively connected with the driver-bar and actuated in unison with it during the compression of the driver-bar spring; and a spring co-operating with the templet-carrier to depress the same when desired, substantially as described.

4. In a heeling machine, a driver-bar having an attached series of drivers; a spring to actuate the driver-bar; a lifting device to lift the driver-bar and compress its spring; a locking device to retain the driver-bar in position with its spring compressed; a templet; a templet-carrier operatively connected with the driver-bar, and actuated in unison with it during the compression of the driver-bar spring; an independent locking device for the templet carrier; a spring to depress the templet-carrier, and a releasing device for the said locking devices, the lifting devices being adapted to permit the driver-bar to descend when its locking device is released and yet leave the templet-carrier and templet in elevated position, substantially as described.

5. In a heeling machine, a templet plate, and a carrier therefor, combined with a hinged plate *b'* having holes coinciding with those in the templet plate, and a locking catch to hold the hinged plate and the templet in closed position, substantially as described.

6. A templet plate having a series of holes for the passage of drivers, a templet-carrier, a plate mounted on the templet plate and having a series of holes to receive the head ends of nails loaded into the heel blank, and a top-lift carrier adjustably mounted on the plate having the said holes to receive the nails, as described, said top-lift carrier being movable on said plate to bring the top-lift carrier into position to spank the top-lift onto the partially driven nails, substantially as described.

548,683. FEEDER FOR NAILING-MACHINES. JOHN J. HAYES, Flushing, N. Y. Filed Sept. 19, 1894. Serial No. 523,468. (No model.)



Claim.—1. The combination in a nail feeding mechanism, of inclined bars in pairs, sets of crossing bars connecting the respective inclined bars together in two sets, end bars connecting the crossing bars and mechanism acting between the end bars equally in both directions for adjusting the inclined bars to vary the width of the channel between such inclined bars by one adjustment so as not to change the relation of the nail channels to the other mechanism, substantially as set forth.

2. The combination in a nail feeding mechanism, of the inclined bars G and H, the crossing bars I connected to the bars G, the crossing bars K connected to the bars H, the end bar I' connecting the cross bars I, the end bar K' connecting the cross bars K, a shaft with equal cam projections on each side to adjust the inclined bars and vary the width of the nail channels and springs for pressing the parts toward the cam projections, substantially as set forth.

3. The combination in a nail feeding mechanism, of inclined bars in pairs with the channels or raceways for the nails between them, a shaft passing across at right angles to the channels and having a screw threaded groove for each channel and coinciding with the same, means for rotating such shaft progressively to carry the nails laterally from the lower ends of the respective channels and drop the same so as to be conveyed to the nail driving mechanism, substantially as set forth.

4. The combination in a nail feeding mechanism, of inclined bars in pairs with the channels or raceways for the nails between them, a shaft at right angles to the channels, screw thread grooves coinciding with the channels between the pairs of bars, a pinion, gear wheel, ratchet wheel and pawl and means for moving the pawl to give to the screw shaft a rotation for carrying the nails laterally away from the channels and dropping the same, substantially as set forth.

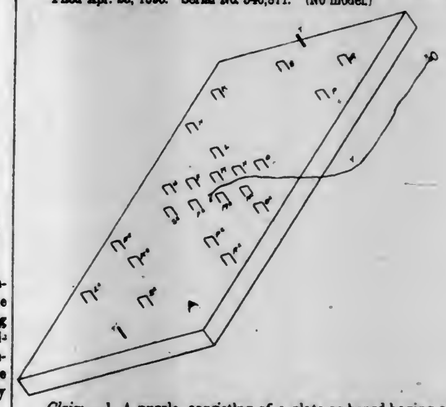
5. In a nail feeding mechanism, the combination with inclined bars forming channels or raceways for the nails and a shaft at right angles to the channels and screw thread grooves on such shaft for moving the nails laterally from the lower ends of the raceways and dropping the same, of fingers, collars and a shaft for supporting the fingers, clamping screws for holding the collars and fingers upon the shaft and mechanism for partly turning the shaft periodically to move the fingers and allow the nails to slide down into the nail delivering mechanism, substantially as set forth.

6. In a nail feeding mechanism the combination with the inclined bars forming channels or raceways for the nails and a shaft at right angles to such channel and screw thread grooves for receiving the nails from the lower ends of the raceways and moving the same laterally for dropping them, of fingers, collars and a shaft for supporting the fingers, clamp screws for holding the collars and fingers upon the shaft, a shaft and toes for giving motion to the fingers and mechanism for rotating the shaft progressively to bring the fingers into action every desired number of strokes of the nail driving mechanism, substantially as set forth.

7. The combination in a nail feeding mechanism, of inclined bars that are L-shaped in section and set together in pairs to form between them the nail channels for suspending the nails by their heads and guiding the same vertically, a shaft at the lower ends of the inclined bars and at right angles to the same, screw thread grooves for receiving the nails and means for rotating the shaft and screw thread grooves to carry the nails away laterally from the inclined bars and dropping the same, substantially as set forth.

8. The combination with the inclined bars having channels between them for the nails, of a shaft at the lower ends of the inclined bars and at right angles to the same, screw thread grooves upon such shaft for the reception of the nails, means for rotating the shaft and screw threads to carry the nails laterally from the channels, there being a notch in the lower end of one bar in each pair of bars through which the nail drops as it is delivered to the nailing machine, substantially as set forth.

548,684. PUZZLE. WILLIAM L. HEDENBERG, New York, N. Y. Filed Apr. 23, 1895. Serial No. 546,811. (No model.)



Claim.—1. A puzzle, consisting of a plate or board having a series of holes, eyes or projections and a flexible connection of such length to an outer point that when passed through or around certain of said holes, eyes or projections it will reach to a definite point, and

if not passed therethrough or around in proper order it will not reach said point, substantially as set forth.

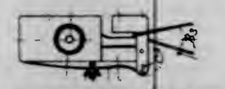
2. A puzzle consisting of a plate or board having a center point, a series of holes, eyes or projections on opposite sides thereof, one series being arranged dissimilarly to the other and a goal point beyond each series, and a flexible connection connected with said plate or board at said center point and being of such length to a definite point that it will only pass through or around one series of said holes, eyes or projections in a certain order to reach said goal point, substantially as described.

543,685. TOOTH-FACING. JEPTHA G. HOLLINGSWORTH, Kansas City, Mo. Filed Jan. 26, 1895. Serial No. 536,311. (No model.)



Claim.—As a new article of manufacture, a tooth facing, having an oval or convex back.

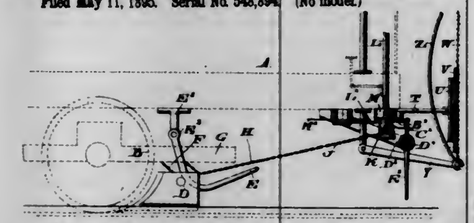
543,686. THREAD-GUIDE FOR ELECTRICAL STOP-MOTIONS. ROBERT C. HOLT, Troy, N. Y. Filed Oct. 29, 1894. Serial No. 527,187. (No model.)



Claim.—1. In a thread-guide for an electric stop-motion, the combination with the supporting case provided with a single depending lug, a movable contact-piece, and an insulated contact located with one end in the path of the movable contact, of a yielding latch pivotally mounted on the depending lug, guide-fingers on the body of the latch located on opposite sides of the path of the movable contact-piece, which latch and fingers together with said contact-piece form the sole support and opposing guides for the thread, for the purpose of affording free movement to the movable contact when released from the control of the thread, substantially as described.

2. In a thread-guide for an electric stop-motion, the combination with the supporting case provided with a single depending lug, and fixed and movable contacts, of a yielding thread-supporting latch pivoted at one end upon the depending lug, guide-fingers projecting approximately at right angles from the other end of the latch on opposite sides of the path of the movable contact-piece and terminating a short distance from the case, whereby a thread-inlet passage is formed solely between the fingers and case leading into the closed latch, substantially as described.

543,687. CAR-FENDER. THOMAS HOUGHTON, Philadelphia, Pa. Filed May 11, 1895. Serial No. 548,894. (No model.)



Claim.—1. In a car fender, shoes having a connected cross rod, pivoted fingers normally resting against said cross rod, chains or other connections normally suspending said shoes, a spool connected with one end of said chain, mechanism for locking said spool and tripping mechanism for releasing said locking mechanism, said parts being combined substantially as described.

2. In a car fender, the shoes C, having the cross rod D, said shoes being supported by means of the chains F, H, and J, a spool upon which said chain J is wound, a ratchet and pawl device, connections therefrom to a rheotome, and means for actuating said pawl when an object is struck, substantially as described.

3. In a car fender, a ratchet and pawl device, connections therefrom to a rheotome and to shoes suitably supported under a car, a rod rotatably mounted having fingers depending therefrom, connections from said rod to said pawl, and other connections from the latter to the fender in front of the car, substantially as described.

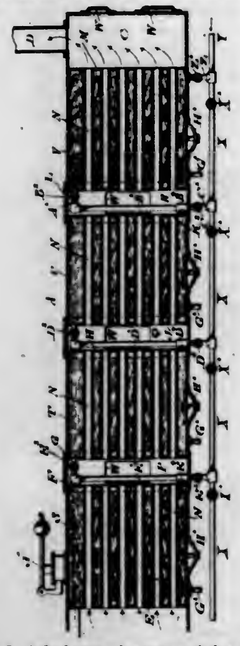
4. In a car fender, a wire netting W having a board V, and plate U adjacent thereto, the jointed arm T, leading from said plate to a lever Q, the latter being pivotally supported, and having one end connected to said arm, a pawl on said lever, a connection from the latter to the cross rod D, fingers E depending from said cross rod, the ratchet N, connections therefrom to a rheotome, and to shoes which are supported above the track, said shoes being braced by the cross rod D, the latter having the fingers E projecting forwardly therefrom, substantially as described.

5. In a car fender, the rods X, the netting W, therebetween, the board V suitably supported, the plate U, connections therefrom to a suitable tripping device, shoes supported under the car, and connections intermediate said tripping device and shoes, substantially as described.

6. In a car fender, shoes having a connecting rod, a rotatable spool having a rod with a disk thereon provided with a toothed portion, a pivoted lever having a pawl engaging said toothed portion, means connected with said lever for releasing said pawl from said toothed portion, a rheotome, and mechanism connecting said rheotome and disk for operating the former on the movement of the latter, said parts being combined substantially as described.

7. In a car fender, the fingers E attached to the rod E^3, supports for the latter, the shoes C supported from the trucks of the car, the rod D connecting said shoes and serving to support said fingers E normally above the track, in combination with suitable means for causing said shoes to drop, substantially as described.

543,688. FEED-WATER HEATER. HENRY G. KRASBEY, Ambler, Pa. Filed Jan. 25, 1895. Serial No. 536,194. (No model.)



Claim.—1. A feed water heater consisting of a series of water holding chambers, having flues therein, said chambers being arranged in substantially longitudinal alignment, combustion chambers intermediate said water chambers, and connections between each of the latter, communicating with the upper and lower portions of the same, said connections being inclosed within said combustion chambers, said parts being combined substantially as described.

2. A feed water heater, consisting of a series of water holding chambers, having flues therein, and combustion chambers therebetween, said chambers being arranged in substantially longitudinal alignment, valved connections between the upper and lower portions of the adjacent water chambers, a feed water inlet communicating with the lower portion of one terminal chamber, and a feed water outlet leading from the upper portion of the other terminal chamber, said parts being combined substantially as described.

3. A feed water heater, consisting of a series of water holding chambers, having flues therein, and combustion chambers therebetween, said chambers being arranged in substantially longitudinal alignment, valved conduits between the upper and lower portions of adjacent water chambers, a valved, longitudinally extending pipe arranged adjacent said heater, and having a valved communication directly with one of said chambers, and a valved connection between said longitudinal pipe and each of said conduits, each of the latter having a valve in its lower portion, whereby the flow of fluid to the lower portion of any water chamber may be cut off, said parts being combined substantially as described.

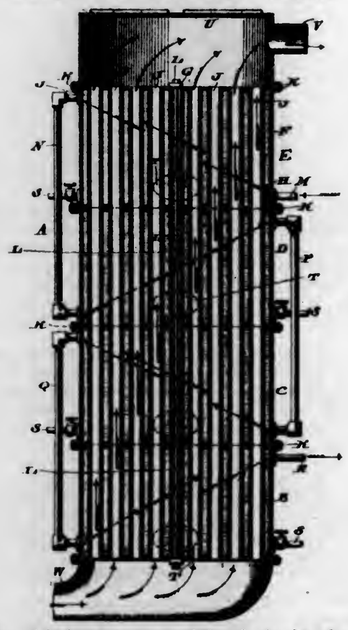
4. In a feed water heater, a series of water holding chambers, having combustion chambers therebetween arranged in substantially longitudinal alignment, flues in said water chambers, an inlet and outlet for the heating medium, the pipes B', D', E', having therein the valves B^3, D^3, E^3, B^4, D^4, and E^4, the longitudinally extending pipe X, provided with the valves X', and having the valved connection Z leading to one water chamber, and the valved connections C', D^3, and E^3, communicating with said pipes B', D', E', said parts being combined substantially as described.

5. A feed water heater, a series of water holding chambers, having flues therein, said chambers being arranged in substantially longitudinal alignment, combustion chambers intermediate said water chambers, valved connections between the upper and lower portions of the adjacent water chambers, and a longitudinally extending valved pipe, having a valved communication with each of said connections, said parts being combined substantially as described.

6. The water chambers S, T, U, V, the combustion chambers therebetween, said chambers being arranged in substantially longitudinal alignment, the valved pipes B', D', and E' the pipe X and the valved connections from the latter, whereby communication is had with said chambers, the above parts being combined substantially as described.

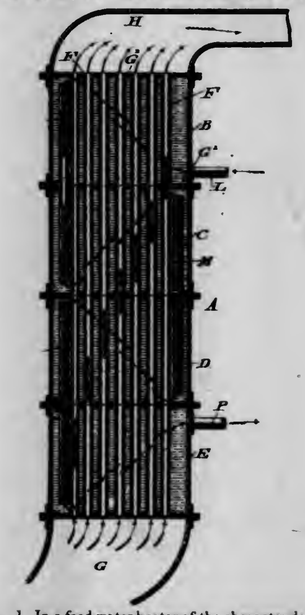
7. A series of water-holding chambers having combustion chambers therebetween, said chambers being arranged in substantially longitudinal alignment, valved pipes connecting the upper and lower portions of said water chambers, a supply pipe X adjacent the latter, valved-connections from said pipe X to said chambers through the pipes which join said water chambers, said pipe X having valves X' thereon between said connections, substantially as described.

543,689. FEED-WATER HEATER. HENRY G. KRASBEY, Ambler, Pa. Filed Apr. 17, 1895. Serial No. 546,160. (No model.)



Claim.—A feed water heater, consisting of a plurality of separable sections, provided with fire tubes, superimposed upon each other, means for securing said sections in position, connections between said sections extending from the upper portion of one section to the lower portion of the adjacent section, and from the upper portion of the latter to the lower portion of the next section, the feed water inlet being in the lower portion of the upper chamber, and the hot water outlet leading from the upper portion of the lowest chamber, in combination with a suitable inlet for the products of combustion attached to said lower section, and a hood or casing having an outlet therefrom, attached to the upper section, whereby the water is rapidly and effectively heated, being introduced in the coolest portion of the heater and discharged from the hottest portion thereof, substantially as described.

543,690. FEED-WATER HEATER. HENRY G. KRASBEY, Ambler, Pa. Filed Apr. 17, 1895. Serial No. 546,151. (No model.)



Claim.—1. In a feed water heater of the character described, the chambers B, C, D, &c., having flues therein, means for holding said chambers in contact, the pipes K, M, N, &c., said pipes being located interiorly of the heater and having their inlets near the tops of said compartments, and their outlets near the bottoms thereof, the feed pipe L entering said chamber B, near the bottom thereof, at the point where the products of combustion are coolest, and the feed water outlet pipe P leading from the lowest chamber, near the point where the products of combustion are hottest, in combination with inlet and outlet passages for the products of combustion, substantially as described.

2. In a feed water heater, the chambers B, C, D, &c., provided with suitable tube sheets and flues, means for holding said chambers in contact with each other, pipes passing through adjacent tube sheets, and having their inlet near the top of one chamber, and their outlet near the bottom of a chamber thereunder, a water inlet pipe leading into the lower portion of the upper chamber, and an outlet pipe leading from the upper portion of the lowest chamber, and inlet and outlet passages for the products of combustion, the above parts being combined substantially as described.

543,691. LANTERN. EMI H. KENNEDY, Oakland, and WILLIAM MATHEWS, Alameda, Cal.; said Mathews assignor to said Kennedy. Filed Feb. 12, 1895. Serial No. 538,099. (No model.)

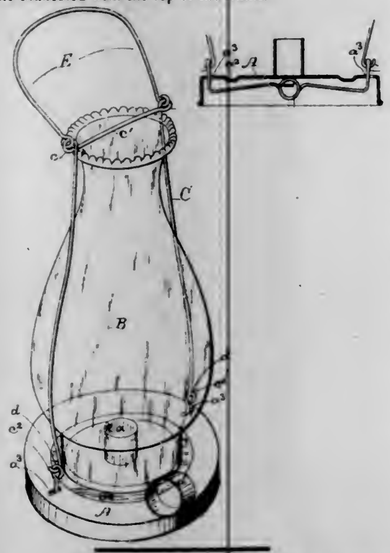
Claim.—1. A lantern composed of a base having a groove, a chimney resting in the groove of said base, a swinging frame exterior to the chimney and having a top bar passing over the chimney top, and a spring seated under the base and having its ends projecting through openings therein and adapted to detachably and hingedly connect with the foot of the frame whereby the top bar of the latter is caused to bear down upon the chimney top, to hold it, and may be removed therefrom, to release it.

2. A lantern composed of a base, a chimney resting on said base, a swinging frame exterior to the chimney and having a top bar passing over the chimney top and spring sides, and the spring under the base having the projecting ends with eyes, with which the ends of the spring sides of the frame removably engage whereby the frame may be readily detached from the base.

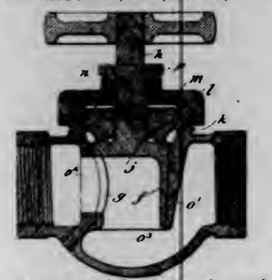
3. A lantern composed of a base, a chimney resting on said base, a swinging frame exterior to the chimney and having a top bar passing over the chimney top and spring sides, a bail or handle connected with said frame whereby it is manipulated, and the spring under the base having the projecting ends with eyes, with which the ends of the spring sides of the frame removably engage whereby the frame may be readily detached from the base.

4. A lantern composed of a base, having an annular groove in its surface, a chimney seated in said groove, a spring under the base

and having upwardly projecting ends, a swinging frame, the feet of the sides of which detachably and hingedly engage the spring ends, said frame having a top bar passing over the chimney top, and a bail or handle connected with the top of the frame.



543,692. VALVE. HARRY E. KEYES, Homestead, Pa., assignor to the Homestead Manufacturing Company, Limited, same place. Filed Sept. 29, 1894. Serial No. 524,536. (No model.)



Claim.—1. A valve provided with a tapering seat having a lateral port, a hollow plug adapted to said seat and also having a lateral port to correspond to the port of the valve seat, and a longitudinal exit, a valve stem fast to or made with the said plug and provided with a screwthread, an angularly socketed head on the valve shell or casing and a complemental nut arranged within said socket and traveling longitudinally upon the threaded stem as said stem is rotated to open and close the valve, and a cap or bonnet for covering the said nut within the socket, substantially as described.

2. A valve provided with a rotary or rotary reciprocating plug having a screwthreaded portion fast to or made with the said plug, a traveling nut applied to said screwthread and movable longitudinally thereon by turning said plug, and a chamber within the valve casing within which said traveling nut is confined against rotation while having perfect freedom of motion longitudinally of the screwthreaded portion, the said traveling nut being carried positively by the screwthreaded portion of the plug into contact with a fixed portion of the casing to restrain the further movement of the plug in closing the valve, thereby insuring the seating of the plug, and also by said screwthreaded portion being moved away from said fixed portion in the act of opening the valve, to ease the said plug from its seat, the said nut thereafter coming into contact with the top of the plug to restrain its undue opening movement, substantially as described.

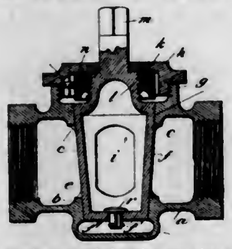
3. A valve comprising a valve casing having a valve seat, and a bonnet, cap or cover, a rotary or rotary reciprocating plug arranged in said seat and provided with a screwthreaded portion fast to or made with it, and a traveling nut applied to said screwthreaded portion between the plug and the cap or other fixed portion of the casing, and restrained from rotary motion, and movable by rotation of the plug in the direction of the length of the plug and toward and from it, substantially as and for the purpose described.

4. A valve comprising a shell or casing, a seat therein, and a nut-receiving cavity, a rotary or rotary reciprocating plug arranged within the valve seat and having a screw threaded portion fast to or made with it, and projecting beyond the shell or casing through said cavity, and a nut applied to such screwthreaded portion and movable lengthwise of the plug by the rotation of the plug while restrained against rotation within its cavity, substantially as and for the purpose described.

5. A valve comprising a shell or casing, a seat therein, and a nut-receiving cavity, a rotary or rotary reciprocating plug arranged within the valve seat and having a screwthreaded portion made fast to or with the said plug and projecting beyond the shell or casing through said cavity, and a nut applied to said screwthreaded portion and movable lengthwise of the plug and by its rotation while restrained against rotation within its cavity, the said nut being adjustable within its said cavity in order to insure accuracy of fit between the plug and its seat, substantially as and for the purpose described.

6. A valve comprising a valve shell, a seat therein, and a nut-receiving cavity made as a polygonal socket, and provided with a cap, cover or bonnet, a rotary or rotary reciprocating plug arranged in the valve seat and provided with a screwthreaded portion made fast to or integral with it and projecting through said cavity and the bonnet, cap or cover, and a traveling nut of the same shape as the polygonal socket and loosely fitted therein against rotation and applied to the screwthreaded portion of the plug so as to travel upon such screwthreaded portion in the direction of its length as said plug is turned to open and close the valve, substantially as and for the purpose described.

543,693. STRAIGHTWAY VALVE. HARRY E. KEYES, Homestead, Pa., assignor to the Homestead Manufacturing Company, Limited, same place. Filed Nov. 27, 1894. Serial No. 530,138. (No model.)

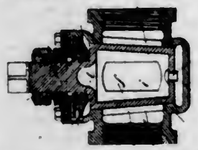


Claim.—1. A valve provided with a tapering seat having lateral ports, a hollow plug adapted to said seat and also having complemental lateral ports, a stem on said plug provided with a screwthreaded portion, a traveling nut applied to said screwthreaded portion and itself having a laterally projecting pin, and a bonnet applied to the valve shell and inclosing the said traveling nut and provided with a groove to receive the pin of the nut, substantially as and for the purpose described.

2. A valve comprising a shell having usual inlet and outlet openings, a top opening for the insertion of the valve proper or plug, a valve seat extending transversely of the shell, and an inclosed leakage pocket at one end of said valve seat opposite the top opening, combined with a valve adapted to said seat and connected with said leakage pocket by an opening, and a check valve in said opening, substantially as described.

3. A valve shell having an opening for the insertion of the plug or valve proper, a valve seat, and an inclosed leakage pocket at one end of said seat, combined with a valve proper or plug adapted to said seat and provided with a bottom opening leading into said plug and a check valve arranged in said opening and opening away from the leakage pocket into said plug, substantially as and for the purpose described.

543,694. VALVE. HARRY E. KEYES, Homestead, Pa., assignor to the Homestead Manufacturing Company, Limited, same place. Filed Feb. 18, 1895. Serial No. 538,859. (No model.)



Claim.—1. In a valve, the combination of a turning plug, a traveling-nut applied thereto to limit its extent of rotation, and a sleeve, gland or stuffing box arranged in the cap next to the traveling nut adjustable wholly independently thereof and serving as an abutment to limit the movement of said nut and plug, substantially as and for the purpose described.

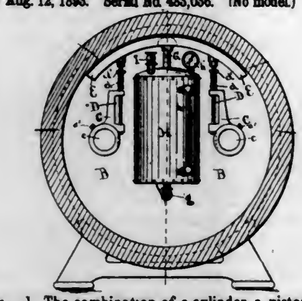
2. In a valve, the combination of a turning plug, a traveling nut applied thereto to limit its extent of rotation, a sleeve, gland or stuffing box arranged in the cap next to the traveling nut and adjustable wholly independently thereof and serving as an abutment to limit the movement of said nut and plug, and a check nut applied to said sleeve, gland or stuffing box to fit such adjustment, substantially as described.

543,695. NUT-LOCK. GEORGE P. LEROUX, Conneaut, Ohio, assignor of one-half to Laurel V. Stone, same place. Filed Feb. 21, 1895. Serial No. 539,213. (No model.)



Claim.—A nut having a subjacent ratchet on a flange e' and a base plate E with a spring-finger e having integral therewith the detent e' situated between the said plate and outer portion of the finger as shown and described.

543,696. LUBRICATOR. EMANUEL MAJOR, Rochester, N. Y. Filed Aug. 12, 1893. Serial No. 483,036. (No model.)



Claim.—1. The combination of a cylinder, a piston, a lubricant trough arranged circumferentially in the cylinder, an absorbent in said trough, means for pressing the trough throughout its length by a constantly self-adjusting pressure against the cylinder, a lubricant tank, and a conductor pipe connecting the tank and the trough.

2. The combination of a cylinder, a piston, a lubricant trough arranged circumferentially in the cylinder, an absorbent in said trough, adjustable spring supports for pressing the trough throughout its length, by a constantly adjusted pressure against the cylinder, a lubricant tank, and a conductor pipe for connecting the tank and the trough.

3. The combination of a cylinder, a piston, a lubricant trough arranged circumferentially in the cylinder, an absorbent in the trough, self-adjusting supporting devices fixed to the piston and to the trough for constantly retaining the trough, throughout its length, in contact with the cylinder, a lubricant tank moving with the piston, and a conductor pipe connecting the trough and the tank.

4. The combination of a cylinder, a piston, a lubricant trough arranged circumferentially in the cylinder, an absorbent in the trough, self-adjusting supporting devices fixed to the piston and to the trough for constantly retaining the trough, throughout its length, in contact with the cylinder, a lubricant tank moving with the piston, a conductor pipe connecting the trough and the tank, and means for forcing the lubricant from the tank to the trough.

5. In a cylinder lubricator, the combination of a horizontal cylinder, a piston, an oil trough supported by the piston or piston rod and arranged in the upper part of the cylinder, a compressible absorbent in the trough, one or more spring supports fixed to the piston and to said trough for pressing the trough, throughout its length, and the absorbent, against the upper part of the cylinder, an oil tank moving with the piston and adapted to pass within the cylinder, a conductor pipe connecting the trough and the tank and supporting the tank, and means of forcing the oil from the tank to the trough, substantially as described.

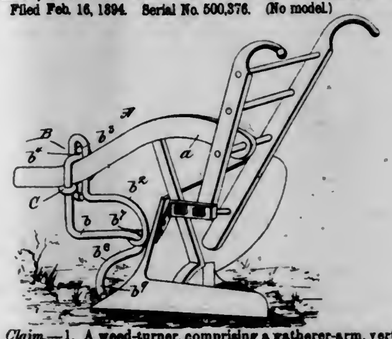
6. In a cylinder lubricator, the combination of a horizontal cylinder, a piston, an oil trough circumferentially arranged in the upper part of the cylinder, an absorbent in the trough, a rod or rods fixed to the trough and passing through brackets attached to the piston, springs pressing said rods in one direction and thereby pressing said absorbent, throughout its length, against the upper side of the inner surface of the cylinder, an oil tank, a conductor pipe having a regulating device therein and connecting the tank and trough and supporting the tank, and means of forcing the oil from the tank into the trough substantially as described.

7. In a cylinder lubricator, the combination of a horizontal cylinder, a piston, a trough supported by the piston or piston rod and circumferentially arranged in the upper part of the cylinder, a compressible absorbent in the trough, means for pressing the trough, throughout its length, and the absorbent, against the upper part of the cylinder, a tank, and a conductor pipe connecting the trough and the tank.

8. In a cylinder lubricator, the combination of a horizontal cylinder, a piston, a trough supported by the piston or piston rod and circumferentially arranged in the upper part of the cylinder, a compressible absorbent, as felt, in the trough, means for constantly and adjustably pressing the trough, throughout its length, and the absorbent, against the upper part of the cylinder, a tank supported to move with the piston, a conductor pipe connecting the trough, and the tank, and means for forcing the lubricant from the tank to the trough.

9. In a cylinder lubricator, the combination of a horizontal cylinder, a piston, a trough supported by the piston or piston rod and circumferentially arranged in the upper part of the cylinder, a compressible absorbent, as felt, in the trough, means for constantly and adjustably pressing the trough, throughout its length, and the absorbent against the upper part of the cylinder, a tank supported to move with the piston, a conductor pipe connecting the trough and the tank, and constituting a free passage for feeding the lubricant from the tank to the trough, and means for forcing the lubricant from the tank to the trough.

543,697. WEED-TURNER. WILLIAM J. MEEKS, Oxford, Fla. Filed Feb. 16, 1894. Serial No. 500,376. (No model.)



Claim.—1. A weed-turner, comprising a gatherer-arm, vertically and horizontally adjustable upon a plow beam and provided with a rearward extending portion having a downward curved extremity, as specified.

2. A weed-turner, comprising a gatherer-arm secured vertically and horizontally adjustable and provided with an angular extremity adapted to embrace two sides of a plow-beam, also with a rearward inclined portion having a downward curved end, as specified.

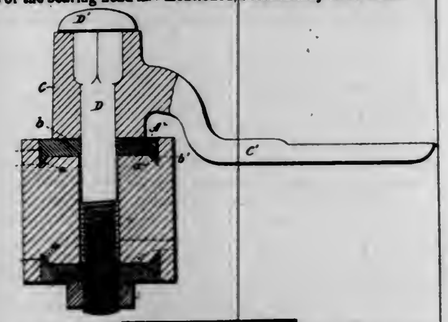
3. A weed-turner, comprising a gatherer-arm having an angular extremity adapted to embrace two sides of a plow beam and provided with a rearward extending inclined portion having a downward curved end, a supporting arm lying substantially parallel and connected with the gatherer-arm adjacent its curved end, and means for adjustably clamping the arms upon opposite sides of a plow-beam, as specified.

4. A weed-turner, comprising a gatherer arm having an angular portion terminating in a threaded extremity, and adapted to embrace two sides of a plow-beam, also a rearward extending inclined portion having a downward curved end, a supporting arm lying substantially parallel and connected with the gatherer-arm adjacent its curved end, the supporting arm being slotted to receive the threaded extremities of the angular portion and of an eye bolt encircling the gatherer-arm and engaging nuts by which the arms are adjustably held upon a plow beam, as specified.

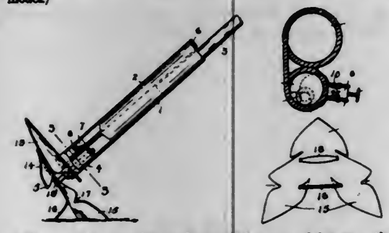
543,698. BODY-LOOP BEARING FOR SPRING-VEHICLES. WILLIAM F. MORTON, New Haven, Conn. Filed Oct. 15, 1894. Serial No. 525,911. (No model.)

Claim.—In a fastening device for the loops of spring-bar vehicles, the combination with a spring-bar having a vertically arranged bolt-hole formed in it, and also having formed in it two shallow recesses located in its upper and lower faces, and concentric with the upper and lower ends of the said bolt-hole, of two circular bearing-heads respectively adapted to be located in the said recesses, having their outer faces flush with the upper and lower faces of the bar and

constructed with central openings, and with annular anchoring flanges projecting inwardly from the edges of their inner faces, a loop, the inner end of the eye of which has bearing upon the outer face of the bearing head in the upper recess in the bar, a bolt passing through the eye of the loop, through both of the said heads, through the bolt-hole of the bar, and projecting through the bearing head located in the recess formed in the lower face of the bar, and a nut applied to the projecting lower end of the bolt, and bearing against the outer face of the bearing head last mentioned, substantially as set forth.



543,699. HAND SEED-SOWER AND WEEDER. GARRET J. OLENDORF, Cooperstown, N. Y. Filed Dec. 14, 1894. Serial No. 531,842. (No model.)



Claim.—1. In a garden tool comprising a seed dropper, the blade 13, situated in front of the seed discharge, in combination with the covering device having the two wings 15, 15, substantially as set forth.

2. In a garden tool comprising a seed dropper, the blade 13, situated in front of the seed discharge in combination with the covering device having the two wings 15, 15, and having the furrow leveling device 16, substantially as set forth.

3. The cultivating tool having two pointed wings 15, 15 similar and symmetrically arranged and means for securing a handle on a middle line between them whereby each may be held near a row in cultivating and whereby the said wings may be used when desired to draw dirt together to cover weeds or close a furrow, substantially as set forth.

4. The cultivating tool having two pointed wings 15, 15, similar and symmetrically arranged and means for securing a handle on a middle line between them and a leveling device 16 whereby each may be held near a row in cultivating and whereby the said wings may be used when desired to draw dirt together to cover weeds or close a furrow and whereby the dirt so moved can be leveled, substantially as set forth.

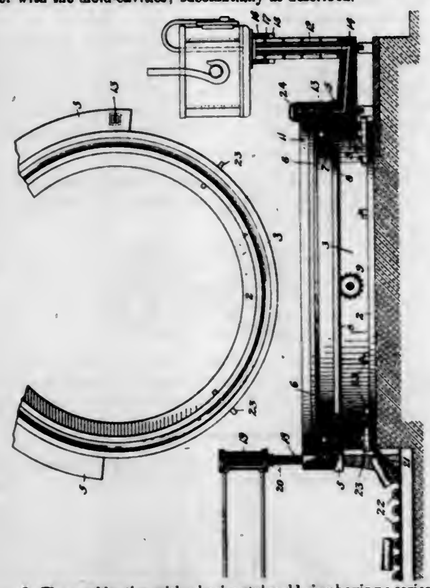
5. The cultivating tool having two pointed wings 15 15 similar and symmetrically arranged and means for securing a handle on a middle line between them whereby each may be held near a row in cultivating and whereby the said wings may be used when desired to draw dirt together to cover weeds or to close a furrow, the wings having each a weed pulling notch 17, substantially as set forth.

6. The garden tool having a blade 13, a seed tube 1, a handle or handle receptacle 2, said tube and handle extending through the blade, and a seed covering device secured to said handle and provided with furrow closing wings, substantially as set forth.

7. In a garden tool a handle comprising the contiguous tubes 1 and 2 made of a single piece of sheet metal suitably bent, one of said tubes being provided with seeding devices and the other with a seed covering device, substantially as set forth.

543,700. CASTING METAL. JOHN A. POTTER, Pittsburg, Pa. Filed Aug. 19, 1893. Serial No. 483,511. (No model.)

Claim.—1. The combination with a horizontal mold-ring having a series of vertical mold-cavities extending through it, of a stationary plate extending beneath a portion of the series and over which the cavities move, said plate having a gate arranged to successively register with the mold-cavities; substantially as described.



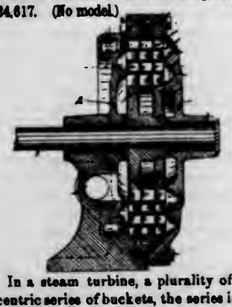
2. The combination with a horizontal mold-ring having a series of vertical mold-cavities extending through it, of a stationary plate extending beneath a portion of the series and over which the cavities move, said plate having a feeding orifice lined with refractory material and arranged to successively register with the mold-cavities; substantially as described.

3. The combination with a horizontal mold-ring having a series of vertical mold-cavities extending through it, of a stationary plate extending beneath a portion of the series and over which the cavities move, said plate having a gate arranged to successively register with the mold-cavities, and a vertical fountain having a lateral runner leading to the gate; substantially as described.

4. The combination with a horizontal mold-ring having a series of vertical mold-cavities extending through it, of a stationary plate extending beneath a portion of the series and over which the cavities move, and having a gate, and an ejector separate from the plate and arranged to eject the castings from the cavities successively as they pass in front of it; substantially as described.

5. The combination with a horizontal mold-ring having vertical mold-cavities, of a stationary plate extending beneath it a portion of its circumference, a gate in said plate, and a vertically acting ejector, arranged to register successively with the mold cavities substantially as described.

543,701. STEAM-TURBINE. GEORGE C. PYLE, Indianapolis, Ind., assignor of one-half to Frank H. Ewers, same place. Filed Oct. 1, 1894. Serial No. 524,617. (No model.)



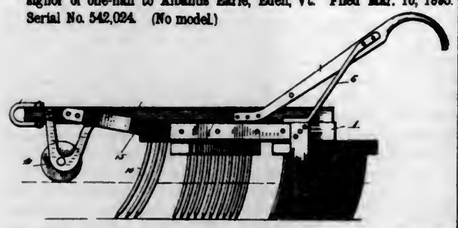
Claim.—1. In a steam turbine, a plurality of wheels, each provided with concentric series of buckets, the series in the wheels registering with each other, a circumferential steam chamber beside an outer series of buckets, means of deflecting the steam from the series in one wheel to the corresponding series in the other wheels, and means of returning the steam after it has passed through an outer series of buckets to an inner series of buckets.

2. In a steam turbine, a plurality of wheels provided with concentric series of buckets which are set at an angle to the axis of the wheel, a circumferential steam chamber beside an outer series of buckets, and stationary deflectors located between the corresponding series of buckets in the wheels and being placed at an angle the reverse of the buckets on each side of them.

3. In a steam turbine, a plurality of wheels provided with concentric series of buckets, each series of buckets in the separate wheels being placed at an angle to the axis the reverse of the angle at which the buckets on each side of such series are placed, stationary deflectors between the corresponding series of buckets in the wheels and placed at an angle the reverse of the angle at which the buckets on each side of them are placed, and steam passes provided in the casing leading from an outer to an inner series of buckets.

4. A steam turbine comprising a suitable casing, a shaft mounted in such casing, a plurality of wheels mounted on such shaft within the casing and provided with concentric series of buckets, each series of buckets in each wheel being set at an angle to the axis of the wheel the reverse of the angle at which the adjoining series in each wheel is set, a stationary partition between the wheels provided with deflectors set at an angle the reverse of the buckets on each side of the same, grooves in the casing on each side of such wheels forming steam passes from an outer to an inner series of buckets successively, ports in the casing for the admission of steam to the outer series of buckets, and an exhaust opening in the center of the wheel.

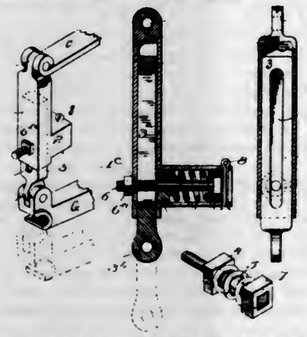
543,702. POTATO-DIGGER. NATHAN F. REED, Johnson, assignor of one-half to Albanus Earle, Eden, Vt. Filed Mar. 16, 1895. Serial No. 542,024. (No model.)



Claim.—1. A potato digger comprising a frame, a plurality of sets of teeth carried by said frame, the forward set being in the center of the machine and arranged to open the ground, the other sets being arranged in parallel rearwardly-inclined lines or rows across the frame, the teeth of each set being closer together than the teeth of the set in front of it, and the teeth of the inclined rows extending at right angles to the line of the row and obliquely to the line of draft, substantially as described.

2. A potato digger comprising a frame, a plurality of sets of teeth carried by said frame, the forward set being in the center of the machine and arranged to open the ground, the other sets being arranged in parallel, rearwardly-extending lines or rows across the frame, and a vertical flat tooth carried by the frame adjacent the forward ends of the inclined rows of teeth, substantially as described and for the purpose set forth.

543,708. HANGER FOR BRAKE-BEAMS. HENRY B. ROSECRANS, Kalamazoo, Mich., assignor to the Chicago Railway Equipment Company, Chicago, Ill. Filed Jan. 15, 1895. Serial No. 535,031. (No model.)



Claim.—1. An automatically adjustable suspension hanger for brake-beams provided with means for maintaining the adjustment thereof, substantially as and for the purposes specified.

2. In an extensible hanger for brake-beams, the combination of a plurality of movable sections, and a yielding grip device, substantially as and for the purposes specified.

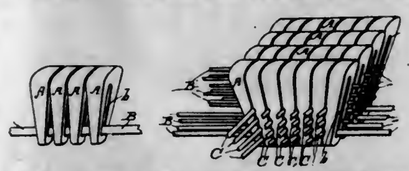
3. In an extensible hanger for brake-beams, the combination of a plurality of movable sections, and a spring actuated grip block; substantially as and for the purposes specified.

4. In an extensible hanger for brake-beams, the combination of a case section provided with a grip pocket, a plunger section arranged in the case section, and a spring actuated grip block arranged in the grip pocket and engaging the plunger section; substantially as and for the purposes specified.

5. In an extensible hanger for brake-beams, the combination of a plurality of telescoping sections, one having an elongated slot, and a yielding grip block; substantially as and for the purposes specified.

6. In an extensible hanger for brake-beams, the combination of a case provided with a grip pocket, a plunger provided with an elongated slot and arranged in said case, a spring supported yielding grip block arranged in the grip pocket of the case, and a through bolt which connects the parts; substantially as and for the purposes specified.

543,704. TIRE FOR VEHICLES. ALEXANDER J. RUDOLPH, San Francisco, Cal. Filed Nov. 1, 1894. Serial No. 527,818. (No model.)



Claim.—1. The improvement in tires consisting of an elastic body having warp and weft threads woven throughout it, said body being stretched or elongated while the weaving takes place, and released after said threads have been fastened whereby the material is retained in a compressed condition.

2. A tire consisting of elastic blocks or sections having uniting threads woven through them in series, said blocks or sections being elongated and correspondingly attenuated in the direction in which the threads are woven through them and released after the threads have been fastened.

3. The method of constructing tires consisting in stretching blocks made of elastic material and afterward weaving through the blocks in the direction in which they have been attenuated by said stretching, warp and weft threads, and after said threads are fastened, releasing the blocks and allowing them to partially return toward their original condition.

4. A tire consisting of blocks or sections of elastic material elongated radially and attenuated transversely, threads of fabric forming a warp and weft therefor woven through said blocks while in the elongated condition, the fabric being released after the threads are fastened, and interior air proof surfaces or tubes admitting of compressed air being introduced therein.

5. A tire consisting of blocks or sections of elastic material stretched radially, having warp and weft threads woven there-through in the direction transverse to the plane of stretching, said fabric being released after the threads are fastened, and having the outer periphery formed into an elastic pile or surface.

6. A tire consisting of blocks or sections of elastic material having warp and weft threads woven there-through before being allowed to again contract, and plastic or adhesive gum applied between the connecting edges of the blocks or sections.

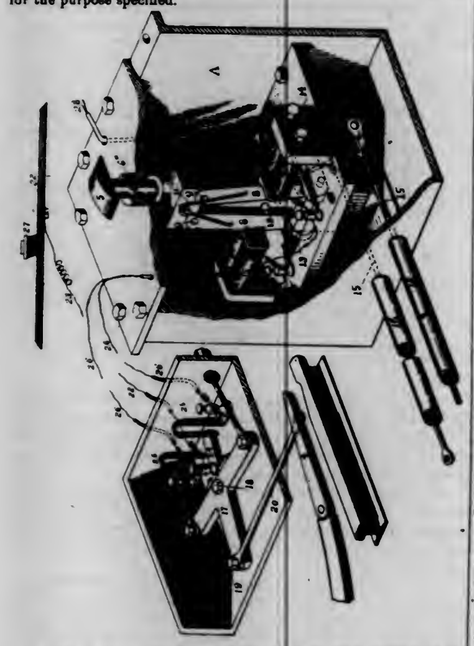
7. A tire consisting of elastic blocks or pieces adapted to be stretched radially, having inelastic threads woven there-through in a plane transverse to the plane of stretching, to compress the blocks or pieces transversely to their length, whereby they are elongated in a line at right angles with that on which they are compressed.

543,705. RAILWAY-SWITCH. ISAAC N. SADDLER, Perrysburg, Ohio. Filed Apr. 22, 1895. Serial No. 546,689. (No model.)

Claim.—1. In a railway switch, a contact-piece or shoe adapted to be engaged and actuated by a car, a switch-point or rail, and means intermediate said contact-piece or shoe and said switch-point or rail adapted to open and to close said switch, in combination with electro-magnets and an electrical switch adapted to throw said contact-piece into engagement alternately with the switch opening mechanism and the switch-closing mechanism, substantially as and for the purpose specified.

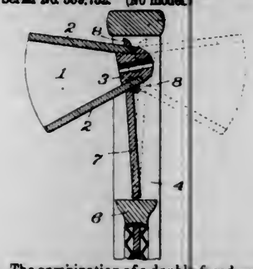
2. In a railway switch, means for throwing the switch-point or rail by the weight of a car, in combination with a normally open electric circuit, magnets in said circuit adapted to control said switch-throwing mechanism, an electric switch in said circuit controlled by said switch-throwing mechanism and means upon said car for closing said circuit at will, substantially as and for the purpose specified.

3. In a railway switch, means for throwing the switch-point or rail by the weight of a passing car, in combination with a normally open electric circuit, magnets in said circuit adapted to control said switch-throwing mechanism, an electric switch in said circuit controlled by said switch-throwing mechanism, a contact-piece or plate (22) in said circuit, and a brush (27) upon said car adapted to engage said contact plate, and to close said circuit and to keep said circuit closed during a definite movement of the car, substantially as and for the purpose specified.



4. In a railway switch, a contact-piece or shoe adapted to be engaged and actuated by a passing car, means for holding said contact-piece normally in operative position, detents on said contact-piece, means for holding said detents normally in inoperative position, bell-crank levers adapted to be engaged by said detents, a switch-point or rail, and suitable connections intermediate said switch-point or rail and said bell-crank levers, in combination with a normally open electric circuit, electro-magnets in said circuit adapted to throw said detents into engagement with said bell-crank levers, means on said car for opening and closing said circuit, and an electric switch in said circuit whereby said electro-magnets are energized alternately, substantially as and for the purpose specified.

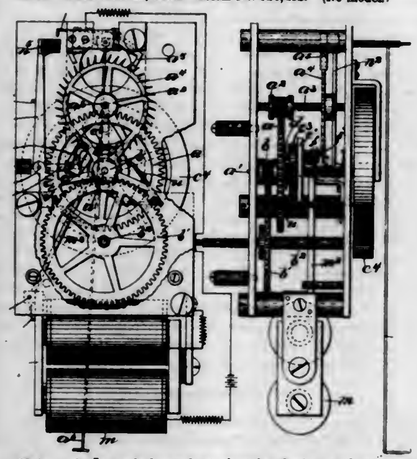
543,706. WASHBOARD. JAMES T. SARGENT, Cleveland, Ohio, assignor to The American Washboard Company, same place. Filed Feb 26, 1895. Serial No. 539,732. (No model.)



Claim.—1. The combination of a double-faced washboard, a soap box pivotally mounted on the side-bars of the frame and movable to operative position above either face, and a brandboard for supporting the box in its operative position, substantially as set forth.

2. In combination with a double-faced washboard, a soap box pivotally mounted between the side-bars of the frame, and movable to operative position above either face, and a brandboard movable out of the path of the soap box while being shifted, substantially as set forth.

543,707. ELECTRIC CLOCK-WINDING MECHANISM. WILLIAM S. SCALES, Everett, assignor to the Columbian Clock Company, Boston, Mass. Filed Nov. 12, 1894. Serial No. 528,482. (No model.)



Claim.—1. In an independent electric clock, an electro-magnet having an armature vibrating toward and from its poles, an actuator connected with the mechanism of the clock, a reciprocating momentum device connected with said actuator, and made independent of but adapted to be operated in one direction by said armature moving toward the poles of the electro-magnet, receiving therefrom a sudden thrust whereby it may supplement the action of said electro-magnet in winding the actuator, and utilizing the full strength of the battery, said momentum device being restored by the clock running down.

2. In an independent electric clock, an electro-magnet having a vibrating armature with an upwardly extended arm m^1, an actuator connected with the mechanism of the clock, a balance wheel connected with said actuator, a projection on the shaft of said balance wheel, adapted to be brought into position to be struck by said arm m^1 by the running down of the clock, a circuit controller for the circuit of said electro-magnet which when operated causes the arm m^1, by striking the projection, to suddenly revolve the balance wheel, that the latter by its momentum may supplement the action of the electro-magnet in winding the clock, substantially as described.

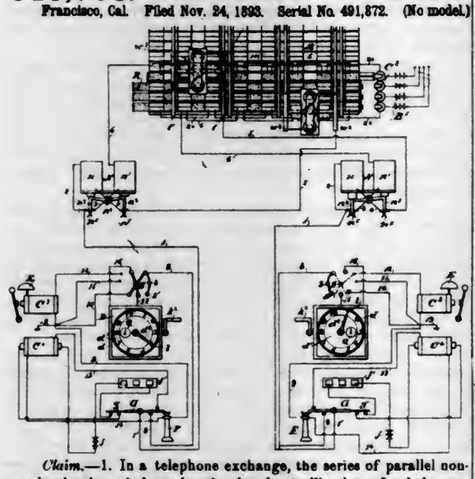
3. In an independent electric clock, an electro-magnet having a vibrating armature, an actuator connected with the mechanism of the clock, a reciprocating momentum device connected with said actuator by a pawl and ratchet connection, operated in one direction by said electro-magnet, and supplementing its action in winding the actuator, and restored by the clock running down, a circuit controller for the circuit of said electro-magnet, one member of which is vibrated regularly by the pallet shaft, and the other member of which is brought into operative position by the clock running down, substantially as described.

4. In an independent electric clock, an electro-magnet having a vibrating armature, an actuator connected with the mechanism of the clock, a reciprocating momentum device connected with said actuator by a pawl and ratchet connection, operated in one direction by said electro-magnet, and supplementing its action in winding the actuator, and restored by the clock running down, a circuit controller for the circuit of said electro-magnet consisting of a contact pen vibrated regularly by the pallet shaft, and a pivoted bell crank lever, one arm of which extends upward to be engaged by said contact pen, and the other arm of which extends horizontally inward to be engaged by a pin connected with one of the reciprocating parts, substantially as described.

5. In an independent electric clock, the train and actuator therefor, combined with a winding device for said actuator, comprising an electro-magnet, its vibrating armature, an arm projecting from a shaft connected with said actuator, and moved by the said armature to wind the actuator, and a balance wheel connected with said arm, which continues to wind the actuator by its momentum, a pawl carried by said arm, a ratchet wheel engaged by it and a spring flexibly connecting said ratchet wheel with the train, substantially as described.

6. In an independent electric clock, the train and actuator therefor, combined with a winding device for said actuator, comprising an electro-magnet, its vibrating armature, an arm connected with said actuator and moved by the said armature to wind the actuator, and a balance wheel connected with said arm, which continues to wind the actuator by its momeetum, a pawl carried by said arm, a ratchet wheel engaged by it, and a spring flexibly connecting said ratchet wheel with the train, a circuit controller for the circuit of said electro-magnet, one member of which is regularly vibrated by the pallet shaft, and the other member of which is brought into operative position by the train running down, and restored by the action of the electro-magnet, substantially as described.

543,708. TELEPHONE-EXCHANGE. WADA Y. SHIBATA, San Francisco, Cal. Filed Nov. 24, 1893. Serial No. 491,872. (No model.)



Claim.—1. In a telephone exchange, the series of parallel non-conducting bars, independent insulated metallic plates fixed thereto, toothed tracks extending transversely across above the sets of metallic plates, cars adapted to move across said tracks, arms depending from said cars upon opposite sides and adapted to form contact with plates in two different lines and conducting wires connecting the sets of plates with each other in independent groups, and connecting with the exchange subscriber, and interrupting non-conducting sheets, movable over the bars to prevent contacts while a car is being moved forward, substantially as herein described.

2. In a telephone exchange system, a series of non-conducting bars having independent metallic plates mounted transversely thereon, toothed tracks extending transversely above said plates, having depending contact bars by which connection is made between two sets of plates, electro magnets and permanent magnets mounted upon a car with means for rotating the wheels of the car whereby the latter is advanced along the tracks above the plates, and non-conducting protectors adapted to extend above the plates, and over which the contact bars move when the car advances in one direction, said protectors having intermediate open spaces through which the contact bars drop by a reverse movement of the car, substantially as herein described.

3. In a telephone exchange system, parallel non-conducting bars having independent metallic conducting plates extending transversely across them, and connected in alternate groups and with the line wires as shown, tracks having their upper surfaces toothed, extending transversely across above the bars and plates, cars having gear-wheels adapted to engage the teeth of said tracks, permanent and electro magnets, means for transmitting a current through the electro magnets whereby the permanent magnets are alternately attracted and repulsed, pawls carried by said magnets adapted to engage the teeth of the wheels and rotate them so that the cars are moved along the track, depending conducting arms supported from the car and adapted to form a contact with the metallic conducting plates beneath, non-conducting shields, an electro magnet and intermediate mechanism whereby said shields are moved so as to prevent contact between the depending arms and the plates until the car reaches the point at which connection is to be made, and wires connecting the different subscribers in the circuit with the independent plates whereby the different telephones of the line may be automatically connected with each other from any station, substantially as herein described.

4. In a telephone exchange system, the parallel non-conducting bars, the independent metallic conducting plates secured thereto and connected with the subscribers' telephones of the system, cars movable upon tracks transversely above the plates, and arms depending from the cars adapted to form contact with the plates as they pass above them, electro magnets $n\,n'$ and non-conducting arms n^3 and n^3, hinged with relation thereto and with contact springs n^5 so as to be actuated to separate said springs and break the contact between wires connected with the springs whenever a circuit is established between two telephones, whereby interruptions from other lines are prevented, substantially as herein described.

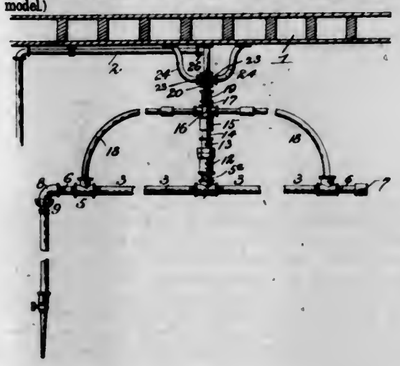
5. In a telephone exchange system, a series of parallel non-conducting bars, independent metallic plates secured transversely thereto, tracks mounted transversely above said plates, and cars adapted to travel upon said tracks, arms depending from the cars adapted to form contact between the various plates, non-conducting shields and an electro magnet by which they are movable in conjunction with the movements of the car so as to expose only the points through which communication is to be made, hinged non-conducting arms and electro magnets acting thereon, spring connections between the lines of wire adapted to be separated by the action of the arms so as to cut off communication from other lines of wire when two points in the system have been connected, substantially as herein described.

6. In a telephone exchange system, a case having a circular dial numbered to correspond with the subscribers connected with the system, a central shaft and a hand or pointer fixed thereto movable over the dial to point to either of the figures thereon, a stationary ring fixed within the case, an arm projecting through an annular slot around the periphery of the dial and adapted to form or break contact by pushing it in or pulling it out, a disk or wheel fixed to the shaft and rotatable therewith, a brush by which connection is made between a wheel and a conducting wire, a spring arm h by which connection is made between the stationary outer rim, and the rim of the movable disk or wheel, and a circuit breaker by which contact between this spring arm and the rim is broken so as to intercept the current when the movable disk has been rotated to a point corresponding with that indicated upon the dial, substantially as herein described.

7. A case having a dial fixed to one side, with figures representing the subscribers connected with the line and hands movable over the dial to correspond with the number with which it is desired to communicate, a central shaft having a disk O fixed to it with metallic plates and connections whereby an intermittent current is produced when the disk is rotated, gear-wheels and a crank by which the shaft and disk are rotated, a wheel or disk fixed to the shaft having connection made between its periphery and one of the conducting wires by means of the brush K, a stationary ring, a spring arm h by which communication is made between the ring and the rotary wheel H, a contact breaker L, and an arm l movable through a slot in the periphery of the dial whereby the contact breaker is moved into the path of the spring arm h at a point coinciding with the number upon the dial with which communication is to be made, so that the circuit is interrupted when the spring arm upon the wheel H has reached the contact breaker, substantially as herein described.

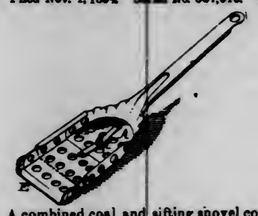
8. In a telephone exchange system, the dial, dial case and pointers corresponding with the number of stations or subscribers in the system, a switch S by which connection is made with the wires from each station, a central station having independent conducting plates, cars adapted to move over said plates, and mechanism upon the cars whereby they are caused to advance by intermittent electrical currents produced by turning a crank and mechanism at either station, conducting arms carried by the car adapted to make contact with said plates, non-conducting shields, and an electro magnet whereby they are moved to cover the plates before the car starts whereby the conducting arms move over the shields without contact with the plates, spaces between the shields through which the conducting arms are allowed to drop into a vertical position by a reverse movement of the car after it reaches the desired point whereby communication is effected, substantially as herein described.

543,709. VEHICLE-WASHING DEVICE. CHARLES A. SIMPSON, Saratoga Springs, N. Y. Filed Nov. 9, 1894. Serial No. 528,281. (No model.)



Claim.—In a vehicle washing device, the combination with the horizontal pipes connected together by a T at their inner ends, one of which pipes is provided with a cap and the other with a hose, and the nipple connected with said T, of the two part expansion joint connected with said nipple, the lower section of which is formed with a screw threaded recess, the upper section provided with an annular flange and a rotatable collar having a screw threaded boss engaging with the lower section, the nipple and coupling connected with said upper section, the nipple connected with said coupling, the rotatable cross, the rods or pipes connected therewith and with said horizontal pipes, the crosses and nipples above said rotatable cross, the brackets connected with said crosses and secured to the ceiling of a stable or other structure, and the supply pipe, substantially as described.

543,710. COAL-SHOVEL. MARTIN L. TATE, Philadelphia, Pa., assignor to Amelia Schwerin, executrix of Emanuel Schwerin, deceased, same place. Filed Nov. 1, 1894. Serial No. 527,616. (No model.)



Claim.—1. A combined coal and sifting shovel consisting of the main blade having a handle and provided with apertures, in combination with a movable blade fitting within the main blade and also provided with apertures and having its end projecting beyond the main blade, and means for adjusting and locking the movable blade upon the main shovel blade to open or close the apertures.

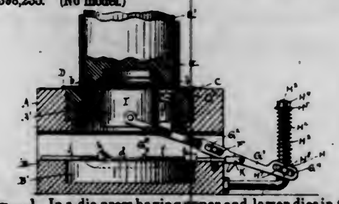
2. In a combined coal and sifting shovel, the combination of the main blade provided with apertures and a handle, with a perforated movable blade movable relatively to the handle and main blade, and a pivoted locking device arranged within the main blade at the rear for locking the movable blade in its adjusted position against backward movement.

3. In a shovel the combination of the main blade having its floor perforated and its sides bent over to form guide grooves, in combination with a movable blade fitting upon the said shovel blade and having its sides guided in the grooves and also provided with apertures, and means to adjust the movable blade upon the shovel blade so as to open or close the said apertures.

4. The combination of the main shovel blade A having apertures B, the movable blade E having apertures G and adjustably supported upon the said blade A, and a toggle connection H for adjusting the blade E upon the blade A.

5. A combined coal and sifting shovel consisting of a main blade made box shaped and having its sides and bottom provided with apertures and its rear with a handle, in combination with a movable blade having bottom and sides fitted within the main blade and also having apertures in its bottom and sides and having its forward end projecting beyond the main blade, stops to limit the backward movement of the movable blade upon the main blade when the apertures are closed, and a lock to lock the movable blade against backward movement when the apertures are open.

543,711. DIE-PRESS. WILLIAM A. TURNER, Worcester, Mass., assignor to Edmund Converse, same place. Filed July 2, 1891. Serial No. 398,235. (No model.)



Claim.—1. In a die press having upper and lower dies in the same vertical plane and a reciprocating punch, by which a blank is carried through the upper to the lower of said dies, the yielding plates between the upper and lower dies by which friction is applied to the edge of the blank as it is carried from the upper to the lower of said dies, whereby the blank is held from falling by its own gravity in advance of the reciprocating punch, substantially as described.

2. In a die press, the combination with an upper and a lower die and a reciprocating punch passing through said upper die, of a pair of yielding curved plates between which the blank is carried by the action of the punch, said yielding plates having a spring applied thereto to carry said plates against the side of the reciprocating punch in position to strip the blank from the punch on its return movement, substantially as described.

3. In a die press, the combination with an annular die, provided with a rib by which the edge of the blank is turned, of a reciprocating punch passing through said die, yielding plates arranged to close over the blank as it is pushed through said annular die and raised against the sides of said reciprocating punch, whereby the blank is stripped from the punch on its return movement, substantially as described.

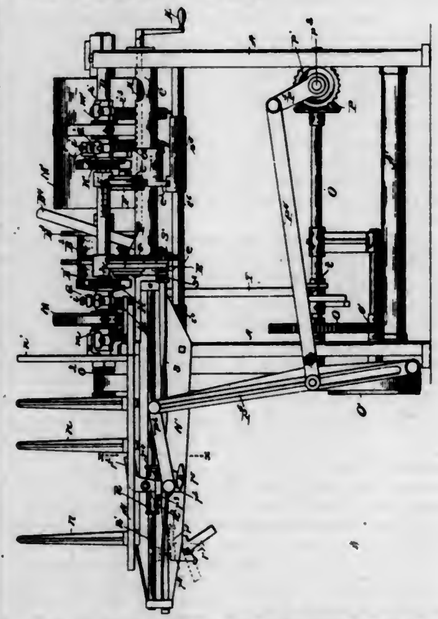
4. In a die press, the combination with an annular die and a reciprocating punch, by which the blank is carried through said annular die, of the curved plates arranged to allow said punch to pass between them, springs by which said plates are pressed against the sides of said punch and an internal rib on said annular die, by which said plates are held from upward movement during the upward movement of the punch, whereby the blank is stripped from the punch, substantially as described.

5. In a die press, the combination with a stationary die and a reciprocating punch, of a pivoted lever arranged to be rocked in one direction by the downward motion of said punch, a spring by which the motion of said rocking lever is reversed, a cam-plate carried by said rocking lever, a sliding bar actuated in one direction by said cam-plate, a spring by which the motion of said sliding bar is reversed, a pivoted clearing lever connected with said sliding bar, whereby the blank is thrown from the die press, substantially as described.

6. In a die press, the combination of the levers G, G′, rocking upon the gudgeons F^3, and hinged at G^3, curved plates I, I, pivoted in and carried by said levers, fixed post H^3, sliding block H′, rods H, H, springs H^7, H^7, on the rods H, H, and a spring H^6, on the post H^3, all combined and operating, substantially as described.

7. In a die press, the combination of the rocking levers G, G′, cam-plate K, carried by said levers and actuating a sliding bar in one direction, sliding bar *d*, spiral spring F, by which the motion of said sliding bar is reversed, pivoted clearing lever *j*, connected with said sliding bar, all arranged and operating, substantially as described.

543,712. MACHINE FOR CUTTING AND TENONING WINDOW-BLIND SLATS. FRANK H. VAN HOUTEN, Fishkill-on-the-Hudson, N. Y., assignor to the Dutchess Tool Company, same place. Filed July 21, 1893. Serial No. 481,130. (No model.)



Claim.—1. In a slat tenoning machine, the combination with the drive shaft, the rotary chucks mounted in stationary bearings, and the feeder for delivering the slats to be tenoned to the chucks and means driven by the feeder for rotating the said chucks, of the rotary saws mounted in oscillatory bearings and arranged to move outside of the chucks; substantially as described.

2. In a slat tenoning machine, the combination with the drive shaft, the rotary chucks mounted in stationary bearings, the reciprocatory feeder working toward and from said chucks and means driven by the feeder for rotating said chucks during the backward movement of the feeder, of the rotary saws for cutting and tenoning the ends of the slats; substantially as described.

3. In a slat tenoning machine, the combination with the hopper, the rotary chucks, the reciprocating feeder delivering the slats from the hopper to the chucks and means driven by said feeder for rotating said chucks, of the saws arranged to cut the ends of the slats; substantially as described.

4. In a slat tenoning machine the combination with the rotary chucks, the feeder delivering slats to the chucks and means driven by the feeder for rotating said chucks, of the rotary saws arranged to move into operative positions outside the chucks when the feeder is on its backward stroke.

5. In a slat tenoning machine, the combination with the drive shaft and the feeder, of a rotary chuck arranged to be positively operated by the feeder, a second rotary chuck arranged to be rotated in unison with the first named chuck by means of a slat placed in said chucks, and saws arranged to simultaneously cut the ends of the slat.

6. In a slat tenoning machine, the combination with the drive shaft, the rotary chuck mounted in stationary bearings, the reciprocating feeder, the spiral rotated by the feeder, and gearing connecting the spiral and chuck whereby the latter is rotated, of the saws for cutting and tenoning the slats; substantially as described.

7. In a tenoning machine, the combination with the drive shaft and the rotary chuck mounted in stationary bearings, of the reciprocatory feeder, the spiral rotated by the feeder, gearing connecting the spiral and chuck, a pawl and cooperating member for permitting the chuck to remain at rest while the feeder is advancing, and the saws for cutting and tenoning the ends of the slat; substantially as described.

8. In a tenoning machine, the combination with the drive shaft, and the rotary chuck mounted in stationary bearings, of the reciprocatory feeder, the spiral rotated by the feeder, a gear wheel for driving the chuck, a pawl and ratchet wheel interposed between the spiral and gear wheel, for rotating the chuck when the feeder is moving in one direction, and the saws for cutting and tenoning the ends of the slats while held in the chuck; substantially as described.

9. In a slat tenoning machine the combination with the rotary chuck and swinging saw both fixed against longitudinal movement, of a rotary chuck and saw adjustable toward and from the fixed chuck and saw respectively, a reciprocating feeder arranged to deliver slats to the chucks and means driven by the feeder for rotating the fixed chuck; substantially as described.

10. In a tenoning machine the combination with the feed-table, a rotary chuck fixed against longitudinal movement at one end of said table, a second rotary chuck adjustable toward and from the fixed chuck, a feeder for automatically feeding the slats to be cut along the table into the chucks, and means driven by the feeder for rotating the chucks, of rotary saws arranged to be moved into operative positions outside the chucks.

11. In a tenoning machine the combination with the frame having ways or shafts, the feed-table, the reciprocating feeder and the rotary chuck and tenoning saw each having a fixed position at the end of the feed-table, and means driven by the feeder for rotating the chuck, of a chuck and a tenoning saw adjustable on the ways toward and from the fixed chuck and saw respectively, and means connecting the adjustable chuck and the adjustable saw for movement together.

12. In a slat tenoning machine, the combination with the rotary chucks, the feeder delivering slats to be cut to the chucks and means driven by the feeder for rotating said chucks, of the rotary saws, the oscillatory shaft, supports or arms bearing the saws and loosely mounted on said shaft, the block secured rigidly on said shaft, the link connected to one of said arms for oscillating the shaft and the spring connected to said block for returning the shaft to its normal position.

13. In a slat tenoning machine the combination with the rotary chucks of the saws, the feeder delivering slats to be cut to the chucks on its forward stroke and means driven by the feeder for rotating the chucks during the return stroke of said feeder.

14. In a slat tenoning machine the combination with the drive shaft, the rotary chucks and the saws secured upon arms, of the feeder delivering slats to the chucks, means driven by the feeder for rotating the chucks, and a shaft driven from the drive shaft and provided with means for oscillating the saws and reciprocating the feeder.

15. In a tenoning machine, the combination with the rotary chuck and rotary saw fixed against longitudinal movement, of a rotary chuck and a rotary saw adjustable toward and from the fixed chuck and saw respectively, a feeder delivering the slats endwise into the chucks and means driven by said feeder for rotating said chucks.

16. In a slat tenoning machine, the combination with the rotary chucks, the oscillatory shaft, the saw mounted in a support or arm carried by said shaft and held against longitudinal movement thereon, a second support or arm adjustably mounted on said shaft, a saw journaled in said adjustable support or arm with gearing for driving said saws; substantially as described.

17. In a tenoning machine the combination with the saws, of a feed table, a reciprocatory feeder for delivering the slats to be cut on its forward stroke and a chuck for receiving the slats, and means driven by said feeder for rotating said chucks.

18. In a slat tenoning machine, the combination with the rotary chucks and rotary oscillating tenoning saws, of the reciprocating feeder, means driven by the feeder for rotating the chucks, the pivoted lever connected with the feeder, the crank connected with said lever, the drive shaft, gearing connecting said drive shaft and saws, and gearing connecting said drive shaft and the crank shaft for operating the feeders; substantially as described.

19. In a slat tenoning machine, the combination with the chucks and tenoning saws, of a reciprocating carriage arranged to rotate the chucks, the pivoted feed latch mounted in the carriage for cooperation with the slats to feed the same, the operating lever for said carriage, means driven thereby for rotating the chucks and a link connecting said latch and lever, whereby the latch is raised as the carriage is moved forward and depressed as the carriage retreats; substantially as described.

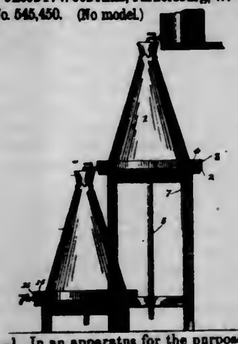
20. In a slat tenoning machine, the combination with the chucks and tenoning saws, of the feed table, the reciprocating carriage beneath the table, the feed latch pivoted on said carriage, the operating lever connected with said latch and a catch for holding said latch depressed when it is not desired to feed the slats; substantially as described.

21. In a slat tenoning machine, the combination with the chucks and tenoning saws, of the feed table, the carriage reciprocating parallel with the same, the feed latch adapted to project above the table pivoted on the carriage, the operating lever connected with said latch, the catch for holding said latch depressed and the trip for throwing said catch out of engagement with the latch, substantially as described.

22. In a slat tenoning machine, the combination with the chucks, and tenoning saws, the feed table, carriage oscillating beneath the same, the latch pivoted on said carriage and adapted to project above the table, the operating lever connected with said latch for raising and depressing the same during alternate movements of the carriage, the catch cooperating with the latch to hold the same depressed and the pivoted trip cooperating with said catch to release the latch and the spring for holding said trip in or out of operative position; substantially as described.

23. In a slat tenoning machine the combination with the tenoning saws of a rotary chuck comprising a body, a jaw pivoted at one end and adjustably secured at its other to the body, and a second jaw pivoted at one end oppositely with respect to the first-named jaw and having its other end free to move,—said jaws being spring-pressed toward each other; substantially as described.

543,713. DEVICE FOR HEATING, AERATING, AND COOLING MILK. JACOB F. WOODYARD, Parkersburg, W. Va. Filed Apr. 12, 1895. Serial No. 545,450. (No model.)



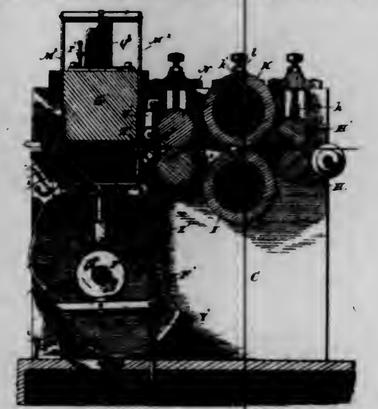
Claim.—1. In an apparatus for the purpose described, the combination with a tank conical in shape, adapted to be heated from the interior and formed with an annular receptacle at its lower end, a tank located beneath said heating tank consisting of a pair of concentric conical-shaped sheets of metal, closed at their lower ends, a cold water inlet at the lower end of the passage between said concentric sheets, and a discharge pipe leading from the upper end of said receptacle, substantially as and for the purpose described.

2. In an apparatus for the purpose described, the combination with a pasteurizer consisting of a tank conical in shape, closed at its

lower end and adapted to hold water, a steam inlet pipe entering said tank near its lower end and a discharge pipe leading from the upper end of said tank, of an aerator or cooler consisting of a pair of concentric sheets of tin or other suitable material having a passage between them, a cold water inlet leading into said passage, and a discharge pipe for water leading from the upper end of said passage, substantially as and for the purpose described.

543,714. MECHANISM FOR MAKING MATCH-BOXES.

Jacob P. Wright, New Haven, Conn., assignor to the Diamond Match Company, Chicago, Ill. Filed June 2, 1894. Serial No. 513,259. (No model.)



Claim.—1. As an improvement in mechanism for forming blanks for paper boxes from a continuous strip of paper, the combination of a knife for transversely cutting the paper, means to vary the length of paper cut by the knife, and revolving, segment-shaped knives for forming slits in each end of the blank, each of which knives operates to cut slits in both ends of the blank, substantially as and for the purpose specified.

2. The combination with box-forming devices, of blank making mechanism comprising a knife for transversely cutting the paper, and revolving, segment-shaped knives for cutting slits in each end of the blank, each of which knives operates to cut slits in both ends of the blank, substantially as and for the purpose set forth.

3. In a paper box making machine, the combination with box forming devices, of a knife for transversely cutting the paper, and a roller between it and the box forming devices, which roller carries a knife to cut longitudinal slits at each end of the severed piece of paper, to complete a blank, substantially as and for the purpose shown.

4. In a box making machine, the combination of the blank forming mechanism, the box forming mechanism, the rollers forming part of said blank forming mechanism, the feed device between said rollers and the box forming mechanism, comprising a roller having a fixed axis and one having a movable axis, means for moving the latter roller toward and from the other and means for revolving one of said rollers, substantially as and for the purpose described.

5. In a paper box machine, the combination of the box forming mechanism, the feeding rollers, one of which is provided with a blank severing knife, a second set of rollers one of which carries blank slitting knives, and the supplemental, intermittently acting feed rollers, placed in close proximity to the box forming mechanism, substantially as and for the purpose specified.

6. In a box making machine, the combination of the blank forming mechanism, the box forming mechanism, the rollers forming part of said blank-forming mechanism, the feed device between said mechanisms comprising a roller having a fixed axis and one having a movable axis, connections between one of the rollers of the blank-forming mechanism, and the feed roller having a fixed axis, and means to move the other feed roller toward and from the latter, substantially as and for the purpose shown.

7. In a paper box making machine, the combination of box forming devices a pair of feed rollers, a knife carried by one of the latter, to cut the paper transversely, a second pair of rollers, having two knives, each of which is adapted to slit the paper longitudinally at both ends, and a bridge between the two pairs of rollers, substantially as and for the purpose described.

8. In a paper box making machine, the combination of a feed roller, gearing to rotate the same, a clutch device connecting it and such gearing that permits the roller to be moved faster than the rate at which such gearing drives it, and an intermittently feeding roller, that has greater peripheral speed than the other, substantially as and for the purpose specified.

9. The combination of the box forming plunger, a holder for the box blank into which the latter is carried by the plunger, the reciprocable strippers, and means to automatically impart a variable movement to the same, whereby they may engage the edges of boxes at different heights upon the plunger, to strip the boxes therefrom, substantially as and for the purpose shown.

10. In a paper box making machine the combination of the box forming plunger, means to fold the box blank thereon, a holder into which the folded blank is carried by the plunger, the reciprocable strippers, a spring to move the latter into engagement with the box edges, and cam mechanism to move said strippers in opposition to the spring, substantially as and for the purpose described.

11. In a paper box making machine, the combination of the box forming plunger, the reciprocable strippers, a spring to move the latter into engagement with the box edges, a latch mechanism to hold said strippers from movement by the spring, and means to release such latch mechanism, substantially as and for the purpose set forth.

12. In a paper box making machine, the combination of the box forming plunger, the reciprocable strippers, the lever connected to the latter, the spring to move said strippers in one direction, a pawl to engage said lever and hold the parts against the stress of the spring, and means to release the pawl at a predetermined time, substantially as and for the purpose specified.

13. In a paper box making machine, the combination of the box-forming plunger, the reciprocating strippers, the lever connected to the latter, the spring to move said stripper in one direction, a pawl to engage said lever and hold the same against the stress of the spring, means to release said pawl at a predetermined point in the descent of the plunger, and a lug to engage said lever to move such strippers in the opposite direction, substantially as and for the purpose shown.

543,715. CLASP FOR GARMENT-SUPPORTERS.

George E. Adams, New Britain, Conn. Filed May 2, 1895. Serial No. 547,867. (No model.)



Claim.—1. A clasp, such as described, comprising a body, a pair of connected spring jaw arms, a pivotal connection between the body and outer arm at a point intermediate the ends of the arm and a bearing projection or cam on the inner arm cooperating with the body to close the jaws; substantially as described.

2. A clasp, such as described, comprising a body portion a pair of spring jaw arms formed from a single piece of metal doubled on itself, the body and outer arm being pivotally connected together at a point intermediate the ends of the arm and a projection or cam on the inner arm cooperating with the body to close the jaws, the highest point on the projection or cam being adapted to move past the bearing on the body when the jaws are closed; substantially as described.

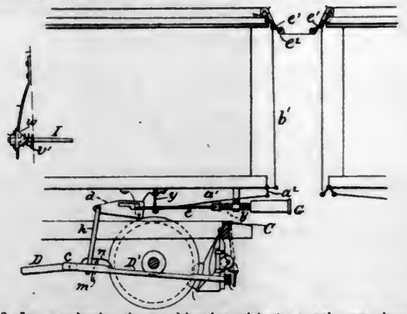
3. A clasp, such as described, comprising a body portion adapted to be secured to a support and having ears or flanges at opposite edges extending in substantially parallel planes and a pair of spring jaw arms formed from a single piece of metal doubled on itself centrally, with pintles on the outer arm cooperating with bearings in the ears on the body and a projection or cam on the inner arm cooperating with the body to close the jaws and having a shoulder for cooperation with the bearing on the body whereby the parts are locked; substantially as described.

4. A clasp, such as described, comprising a body, a pair of spring arms the body and the outer arm being pivotally connected together, a cam or projection on the inner arm cooperating with the body to close the jaws, and having the depression in front of the projection, into which the edge of the body may drop to permit the jaws to open widely; substantially as described.

543,716. CAR-BRAKE.

Addison Barker, Camanche, Iowa. Filed May 22, 1894. Serial No. 512,107. (No model.)

Claim.—1. In a car-brake, the combination with brake-beams provided with brake shoes, of toggle arms, connected at their outer ends with said brake beams, and adapted to press said beams outward, parallel rods connected with said brake-beams, springs on said rods, adapted to close the brakes, a movable draw-bar, a pivoted plate connected at one end with said drawbar, a rod loosely connected with the opposite end of said pivoted plate, said rod being also connected with said toggle arms, so that the latter may be raised or depressed by said rod, substantially as and for the purposes described.



2. In a car-brake, the combination with the toggle arms, having staples or curved rods secured thereto, of a crank-shaft in position to engage said toggle arms by connection with said curved rods, substantially as set forth and described.

3. The combination, with the toggle arms and curved rods secured thereto, of a crank-shaft, adapted to engage said toggle arms, a vertical shaft, mounted in a bearing carried by the car truck and having a bearing connected with the car-body, gearing, connecting said vertical shaft with said crank-shaft, and a spring, tending to raise said vertical shaft from connection with said crank-shaft, substantially as set forth and described.

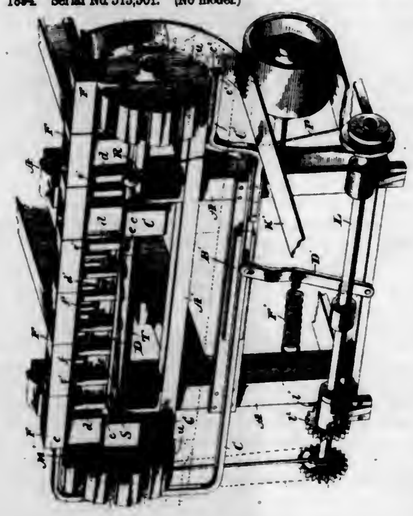
4. The combination, with a drawbar having an endwise movement, of a pivoted plate, provided with a slot, a link connected with said drawbar and with said pivoted plate, by said slot, the said plate having a shoulder formed in said slot for contact with said link, on the rearward movement of the drawbar, and mechanism for lifting said link, so as not to engage said plate by contact with said shoulder, substantially as set forth and described.

5. The combination with the brake beams, of two rods connected therewith at their extremities, each of said rods being extended through one of said brake beams and provided with a nut, a spring between said nut and the brake beam, and a washer, between said nut and said spring, adapted to lock said nut and prevent it turning on said rod, substantially as set forth and described.

6. The combination, with the brake beams, of brake shoes, each of which is provided with a bifurcated spring frame, a wedge provided with a rack-bar, said wedge being adapted to press forward the shoe, a gear wheel carried by said frame, in position to connect with said rack bar and raise said wedge, and a weighted pawl in position to connect with said gear wheel, substantially as and for the purposes described.

543,717. METHOD OF AND MECHANISM FOR FILLING MATCH-BOXES.

Ebenezer R. Beecher and Jacob P. Wright, New Haven, Conn., assignors to the Diamond Match Company, Chicago, Ill. Filed June 2, 1894. Serial No. 513,301. (No model.)



Claim.—1. In the art of boxing matches, the method which consists in feeding the matches from a source of supply, causing a series of temporary holders placed close together to pass along under the falling matches, so as to be gradually filled thereby, as they pass across the path of the matches, jarring the holders, while they are thus progressing, in a direction out of a vertical line and substantially at right angles to the matches, as they are to lie in the filled holders, separating the holders after they have passed beyond the path of the falling matches, then placing inverted trays or boxes in position, so that their sides and ends extend around the space occupied by the matches in the holders, inverting the holders, and transferring their contents to the trays or boxes placed to receive such contents falling from the holders, substantially as and for the purpose specified.

2. In the art of boxing matches, the method which consists in feeding the matches from a source of supply, passing along under the falling matches a series of temporary holders with movable bottoms, causing such bottoms to be raised before the respective holders begin to cross the path of the matches, and lowering them as the passage of the holders across the path of the matches continues, substantially as and for the purpose shown.

3. In the art of boxing machines, the method which consists in discharging the matches in rows from a match making machine, causing a series of temporary holders with movable bottoms to travel across the path of the rows of matches being discharged, with their bottoms raised, as they begin to pass into the path of the matches, lowering such bottoms, as the holders continue their travel across such path, and transferring the contents of the filled holders to suitable trays or boxes, substantially as and for the purpose set forth.

4. In a match boxing machine, in combination with a source of supply of matches, a series of separate match holders, means for moving them across the path of the matches coming from the source of supply, in combination with means for moving the holders onward at a faster rate after they have passed beyond the path of the matches, so as to separate each holder bodily from the one behind it as it passes beyond such path, whereby room is left between each holder and the adjacent one, to allow a box or tray to be placed down over it, substantially as and for the purpose specified.

5. In a match boxing machine in combination with a source of supply of matches, a series of separate holders, means for moving them across the path of the matches, and means for moving the holders before and after they leave the path of the matches at a speed greater than that at which they are moved across such path, so that each holder is bodily separated from the one succeeding it to leave a space between adjacent holders, substantially as and for the purpose set forth.

6. In a match boxing machine, in combination with a source of supply of matches, a series of separate holders, means for moving them across the path of the matches from the source of supply, and means for moving the holders forward to separate them bodily after they have passed beyond the path of the matches, so that inverted trays can be placed over them, substantially as and for the purpose described.

7. In a match boxing machine, in combination, a source of supply of matches, one or more match securing holders, two parallel series of rotating heads adapted to engage opposite sides of a portion of each holder and move the latter across the path of the matches from the source of supply, substantially as and for the purpose specified.

8. In a match boxing machine, in combination with a source of supply of matches, one or more match receiving holders, rotary heads to engage portions of the holders and move them across the path of the matches from the source of supply, and other rotating heads having greater peripheral speed to move the holders at increased speed, after leaving the path of the matches, to separate the holders, substantially as and for the purpose shown.

9. In a match boxing machine, in combination with a source of supply of matches and one or more match receiving holders, rotary devices engaging portions of the holders to move them across the path of the matches from the source of supply, and other rotating devices having greater peripheral speed, situated so as to engage and move the holders before they have reached, and after they have left the path of the matches, whereby the holders are packed closely together before they reach the path of the matches, and are bodily separated from each other as they reach a point beyond such path, substantially as and for the purpose set forth.

10. In a match boxing machine, in combination with a suitable source of supply of the matches, a series of separate, independently movable match receiving holders, means for moving them continuously across the path of the matches from the source of supply, and means for inverting them after they have passed beyond such path, substantially as and for the purpose described.

11. In a match boxing machine, in combination with a suitable source of supply of matches, one or more match receiving holders, carrying devices to carry the latter across the path of the matches and the inverter, adapted to receive the holders from the carrying de-

vices, and invert them after they have passed beyond the path of the matches, substantially as and for the purpose shown.

12. In a match boxing machine, in combination with a suitable source of supply of matches, one or more match receiving holders, carrying devices to move the latter, and a rotary inverter for inverting the holders to which the latter are passed from the carrying devices, substantially as and for the purpose set forth.

13. In a match boxing machine, in combination with one or more match receiving holders, means for moving the same, and a rotary grooved disk adapted to receive the holders from the moving devices and invert them, substantially as and for the purpose described.

14. In a match boxing machine, the combination of a match holder, means for moving the same in the path of matches coming from a source of supply, a rotary grooved disk which is adapted to receive and sustain the holder, and means for moving such holder into and out of one of the grooves in said disk, substantially as and for the purpose shown.

15. In a match boxing machine, the combination of a match holder, constantly moving means for moving the same in the path of matches coming from a source of supply, and an intermittently movable rotary disk for inverting such holder, substantially as and for the purpose set forth.

16. In a match boxing machine, the combination of a series of independently movable separate match holders, means for moving the same in the path of matches coming from a source of supply, a separate rotary transferring device at each end of such path, and means for moving the holders from the means for moving them in the path of the matches into and out of engagement with the transferring device, substantially as and for the purpose described.

17. In a match boxing machine, the combination of a series of match holders, two ways therefor, a rotary, grooved transfer disk at the corresponding ends of said ways, and means for moving the holders from the ways into the grooves of the disks, and out of the grooves into the ways, substantially as and for the purpose specified.

18. In a match boxing machine, the combination of a series of match holders, a series of rotary devices for engaging with and moving said holders in the path of matches coming from a suitable source of supply, a rotary transfer disk, a sliding bar carrying two pawls, one of which moves the holders into and the other out of engagement with the disk, a grooved way into which said holders are moved from the latter, and a second rotary transfer disk, into and out of engagement with which said holders are moved, substantially as and for the purpose shown.

19. In a match boxing machine, in combination with a suitable source of supply of matches, a match receiving holder with movable bottom, means for moving the holder across the path of the matches from the source of supply, and means for lowering the movable bottom, while the holder is being moved across such path, substantially as and for the purpose shown and described.

20. In a match boxing machine, in combination with a suitable source of supply of matches, one or more match receiving holders having movable bottoms, means for moving the holders across the path of the matches from the source of supply, a cam track, and means on the holder bottom engaging such track, so that the bottoms will be held raised, until the holders reach the path of the matches, and will be lowered gradually, as the holders pass across such path, substantially as and for the purpose specified.

21. In a match boxing machine, in combination with a suitable source of supply of matches, a series of match receiving holders having movable bottoms, means for moving such holders repeatedly across the path of the matches, cam mechanism to raise the bottoms of the holders before the latter reach the path of the matches from the source of supply, and to cause such bottoms to descend lower and lower during the progress of the respective holders across the path of the matches, substantially as and for the purpose shown.

22. In a match boxing machine, the combination of a temporary match holder, a series of rotary devices for engaging with and moving said holder, a frame supporting such devices, and means for imparting a vibratory motion to such frame, substantially as and for the purpose shown.

23. In a match boxing machine, in combination with a match receiving casing and means for moving the same along, a frame supporting these moving devices, and means for jarring this frame in a direction at right angles to the matches as they are to lie in the casing, substantially as and for the purpose specified.

24. In a match boxing machine, the combination of a temporary match holder, having a movable bottom, a rotary disk for inverting said holder, which receives and holds the holders, and an eccentric for moving such bottom outward, having its longest diameter on its under side so as to eject the contents of the holder as the latter is inverted, substantially as and for the purpose set forth.

25. In a match boxing machine, the combination of a temporary match holder having a movable bottom and adapted to receive a permanent box, a rotary disk adapted to receive and hold said holder, an eccentric for moving such bottom outward to expel its contents and remove said box as the holder is brought into inverted position having its longest diameter on its under side, and a guard to engage the box as said disk rotates, substantially as and for the purpose described.

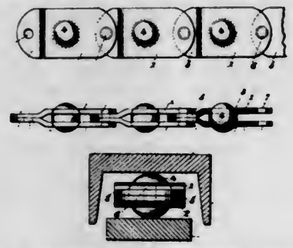
543,718. ROLLER-BEARING. HENRY A. BERGER, Brooklyn, N. Y.
Filed June 17, 1895. Serial No. 552,981. (No model.)



Claim.—1. A ball-bearing, consisting of a ball or sphere, and a carrier comprising a single thickness of sheet metal provided with a ball-receiving opening and having opposite edge portions bent downwardly to form two separated pendent ears of a thickness the same as the thickness of the sheet metal and constructed with concave inner surfaces in which said ball or sphere is loosely arranged, said two ears being located directly opposite one another to retain the ball or sphere, and said ball or sphere being located in the ball-receiving opening to project above and below the said single thickness of sheet metal, substantially as described.

2. A ball-bearing, consisting of a plurality, of pivotally connected link plates, each having a ball receiving opening and a pair of concaved ears, and a ball or sphere loosely arranged in and solely retained by the opposing concaved surfaces of each pair of ears.

543,719. ROLLER-BEARING. RICHARD A. BERGER, Brooklyn, N. Y.
Filed Apr. 16, 1895. Serial No. 545,888. (Model.)



Claim.—1. A roller-bearing, consisting of a plurality of flexibly connected links, each link having an orifice between its boundary edges through which projects the periphery of a rotatable bearing, so that portions of the periphery of said bearing lie above and below the upper and lower sides of the link, and edge portions of said orifice retain said rotatable bearing in operative connection with the link, said links at all times retaining their flexible connection relatively to one another, substantially as described.

2. A roller-bearing, consisting of a plurality of flexibly connected links, each link comprising two plates formed with coincident orifices between their boundary edges through which projects the periphery of a rotatable bearing interposed between said plates, said links at all times retaining their flexible connection relatively to one another, substantially as described.

3. A roller-bearing, consisting of a plurality of flexibly connected links, each link formed of two plates having coincident orifices between their boundary edges through which projects the periphery of a rotatable bearing interposed between said plates, and the plates of each link bent toward each other at one end and inserted between and connected with the separated plates of another link, said links at all times retaining their flexible connection relatively to one another, substantially as described.

543,720. ROLLER-BEARING. RICHARD A. BERGER, Brooklyn, N. Y.
Filed June 17, 1895. Serial No. 552,983. (No model.)

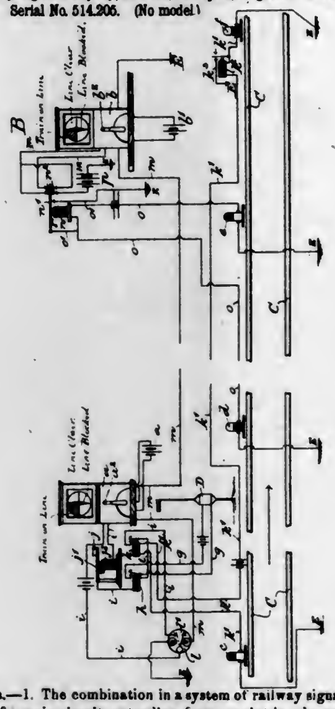


Claim.—1. A roller-bearing, consisting of a rotatable bearing, and a carrier or cage comprising a single thickness of sheet metal having an opening to receive the rotatable bearing and slitted and formed integral with lips or lugs of the same thickness as the thickness of the sheet metal, said lugs projecting above and below the surfaces of the sheet metal and loosely confining the rotatable bearing in position, substantially as and for the purposes shown and described.

2. A roller-bearing, consisting of a carrier or cage comprising a single thickness of metal having a rectangular roller-receiving orifice and formed integral at opposite edges with lips or lugs which project above and below the surfaces of the said single thickness of metal, and an approximately cylindrical roller retained in the rectangular opening by said lips or lugs, substantially as and for the purposes described.

3. A roller-bearing, consisting of rollers, and a plurality of pivotally connected links, each link being composed of a single thickness of metal having a roller-receiving orifice, and formed integral at opposite edges with lips or lugs which project above and below the surfaces of said single thickness of metal and serve to loosely confine a roller in the roller-receiving orifice, substantially as and for the purposes described.

543,721. SIGNALING ON RAILWAYS AND MEANS THEREFOR. EDWIN BLAKEY, Bradford, assignor to the Automatic Electric Railway Signal Company, Limited, Liverpool, England. Filed June 11, 1894. Serial No. 514,205. (No model.)



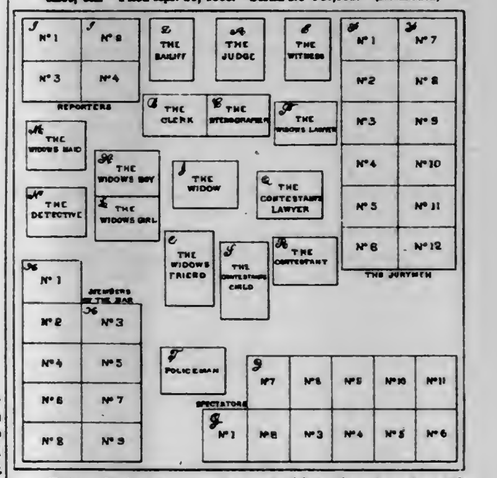
Claim.—1. The combination in a system of railway signaling apparatus, of a main circuit, extending from a point in advance of the signal to the end of the section controlled by said signal; a single needle circuit containing single needle instruments, one at each end of the section; a local circuit containing the signal; a signal circuit containing a relay for closing said local circuit; a polarized relay in the single needle circuit; a relay in the main circuit, and a key in the signal circuit, said relays and key serving to control the closing of such signal circuit and consequently the operation of the signal, means for causing the train to lock the needles of the instruments at "train on line" as it passes along the section; and means for causing it to open the main circuit when approaching the signal, and to close such circuit on leaving the section, substantially as described.

2. The combination in a system of railway signaling apparatus, of a main circuit extending from a point in advance of the signal to the end of the section controlled by said signal; a single needle circuit containing single needle instruments, one at each end of the section; a local circuit containing the signal; a signal circuit containing a relay for closing said local circuit; a polarized relay in the single needle circuit, a relay in the main circuit and a key in the signal circuit, said relays and key serving to control the closing of such signal circuit and consequently the operation of the signal; a relay in a separate circuit for switching off the battery of the single needle circuit and substituting another battery to lock the needles at "train on line;" means for causing the train to first close and then open the circuit of this relay; and also means for causing it to break the main circuit on approaching the signal and to remake it on leaving the section, substantially as described.

3. The combination in a system of railway signaling apparatus in which contact devices are operated by a passing train through the medium of depressible rails, of single needle instruments *a b*, a main circuit *k'*, a contact breaker *c* in said circuit (operated by the passing train), a signal circuit *i* controlled by a relay *k* situated at or near the commencement of the section and containing the key *j* for controlling the signal, a polarized relay *l* in the circuit *m* of the single needle instruments also controlling the signal circuit, a local circuit *g*, including the signal and controlled by a relay *h*, a battery *p* for locking the signal instruments at "train on line," a relay *n* for putting this battery in and out of the single needle circuit *m*, a battery with a circuit maker *d*, and a circuit breaker *e*, (operated by the passing train) for controlling such relay *n*, a branch circuit *o'* to earth to keep the relay closed, and a circuit maker *f* (operated by the train) at the end of the section to energize a second relay k^2 in the main circuit *k'* and cause it to close its earth connection k^2, substantially as specified.

4. In a system of railway signaling apparatus the combination with depressible rails or bars operated by a passing train, single needle instruments and signals of a primary circuit breaker operated by the depressible rails or bars, two electro-magnets in that circuit one at the home and the other at a distant station, a local circuit *g* containing a relay *h*, and acting to allow the signal to fall to "danger," a second circuit closer operated by the passing train, a battery, relay magnet and a third train-operated circuit-breaker in such circuit, a branch circuit closed by the last named electro-magnet to earth to hold its armature, and a battery and single needle circuit to keep the needles to indicate "train on the line," the said circuit being broken when the train actuates the third circuit breaker and the relay magnet breaks the circuit to the needle, allowing the same to be actuated, and a fourth train-operated circuit closer to energize its adjacent relay k^2 and close the earth connection, substantially as specified.

543,722. GAME APPARATUS. JOHN Q. BROWN, Jr., San Francisco, Cal. Filed Apr. 29, 1895. Serial No. 547,552. (No model.)



Claim.—1. A game apparatus comprising a board or chart subdivided into a number of series, comprising each a number of sections, each numbered from first to last, and other unnumbered independent sections marked upon the board in suitable relation with the series.

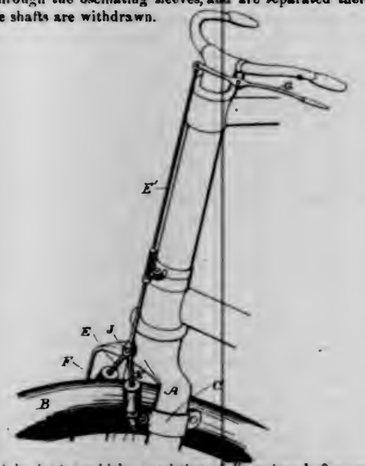
2. In a game apparatus, a board or chart having marked upon it a number of series, comprising each a different number of sections, each numbered from first to last, other series comprising independent unnumbered sections, and a number of independent sections not forming any series.

3. In a game apparatus, a board or chart having marked upon it a number of series comprising each a different number of sections, each numbered from first to last, other series comprising independent unnumbered sections, and a number of independent sections not in series, in combination with cards marked and designated to correspond with the different series and sections.

543,723. BICYCLE-BRAKE. JORGEN CHRISTENSEN, San Francisco, Cal. Filed Mar. 6, 1895. Serial No. 540,748. (No model.)

Claim.—1. In a brake for vehicles, rollers turning upon diverging shafts, the meeting angles of which are connected with an arm or lever by which they are reciprocated, rocking blocks or sleeves

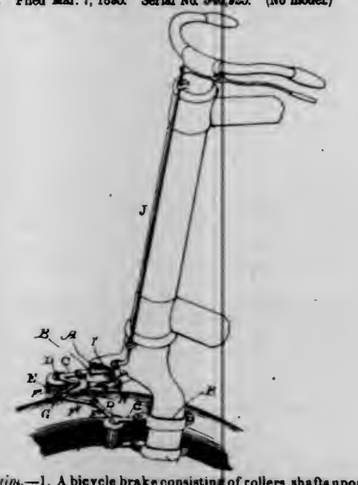
through which the separated ends of the roller shafts pass and are slidable, whereby the rollers are caused to approach each other and press upon each side of the wheel rim or tire when the shafts are forced through the oscillating sleeves, and are separated therefrom when the shafts are withdrawn.



2. A brake for vehicles consisting of diverging shafts upon each side of the wheel rim or tire, oscillating blocks through which the separated ends of the shafts are slidable, a jointed connection to which the meeting ends of the shafts are united whereby the angle of the shafts to each other is increased or diminished by moving the meeting ends of the shafts in a line intermediate between the two, a lever connection by which said shafts are thus moved, and rollers journaled to turn loosely upon said shafts upon each side of a wheel rim or tire, against each side of which they are forced when the meeting ends of the shafts are moved toward the wheel rim and withdrawn therefrom by the withdrawal of the shafts.

3. In a brake for vehicles, the combination, of revoluble rollers upon shafts which converge upon opposite sides of the wheels, said shafts being flexibly united at their upper ends, and having their lower ends loosely mounted and adapted to rock whereby they may be moved in lateral planes to and from the wheel rim to apply or remove the brake, and means connected with the jointed ends of the shafts for tilting said shafts.

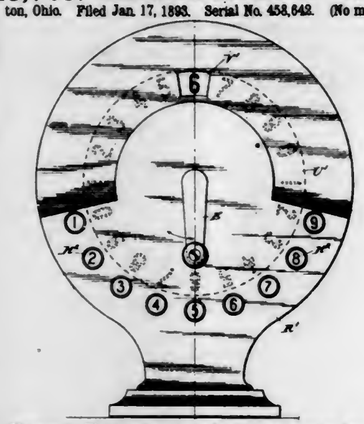
543,724. BICYCLE-BRAKE. JORGEN CHRISTENSEN, San Francisco, Cal. Filed Mar. 7, 1895. Serial No. 540,925. (No model.)



Claim.—1. A bicycle brake consisting of rollers, shafts upon which they are loosely journaled upon opposite sides of the vehicle wheel, lever arms to which the upper and lower ends of the shafts are fixed, said arms being pivoted to and turnable about fixed supports so that the rollers may be made to approach to or separate from each other, lever arms converging toward each other from the arms which carry the rollers, and a connecting link by which said converging levers are united, with an operating lever whereby the rollers may be caused to approach and press upon the wheel rim or separate from each other to release it.

2. In a bicycle brake, clamps fixed upon the framework or forks upon opposite sides of the wheel, lever arms fulcrumed to said clamps and having shafts fixed between their outer ends, rollers loosely turnable upon said shafts between the levers upon opposite sides of the wheel rim or tire, lever arms F F' extending inwardly from the levers which carry the roller shafts, a link connected with the meeting ends of said lever arms and uniting them with an operating hand or foot lever, substantially as herein described.

543,725. CASH REGISTER AND INDICATOR. HUGO COOK, Dayton, Ohio. Filed Jan. 17, 1893. Serial No. 458,642. (No model.)



Claim.—1. The combination of a driving member having a definite movement at each operation, an indicating and a registering member driven thereby, and suitable intermediate connecting and disconnecting devices, whereby the driving member during the first half of its movement is caused to pick up the indicating member and carry it to initial position, whereby the second half of the movement of the driving member is divided between the indicating member and the registering member in proportions determined by the point at which the one is disconnected from and the other connected with the driving member, substantially as described.

2. The combination of a rotary driving member making a complete revolution at each operation, rotary indicating and registering members driven thereby, means for automatically connecting the indicating member with the driving member during the first half of the revolution of the latter, to cause it to pick up the indicating member and carry it to initial position, and means for simultaneously disconnecting the indicating member from the driving member and connecting the registering member with the latter during the second half of the revolution of the driving member, to cause the latter to impart a given portion of the second half of its movement to the indicating member and the remaining portion to the registering member, substantially as described.

3. The combination of a rotary driving member, a rotary indicator wheel having the indicating numbers thereon arranged in backward order relatively to the direction of movement of said wheel, a registering wheel having the numbers thereon arranged in forward order relatively to the direction of movement of said wheel, and suitable connecting and disconnecting devices, whereby the driving member during the first half of its revolution picks up the indicator-wheel and turns it to initial position, and whereby the second half of the revolution of the driving member is divided between the indicator wheel and the registering wheel in proportions determined by the point at which the one is disconnected from and the other connected with the driving member, substantially as described.

4. The combination of a rotary driving member, a rotary indicator wheel provided with two series of numbers arranged in backward order relatively to the direction of movement of the wheel, a registering wheel provided with a series of numbers arranged in forward order relatively to the direction of movement of the wheel, and suitable intermediate connecting and disconnecting devices, whereby during the first half of revolution of the driving member the indicator wheel is turned to initial position, the numbers in one series thereon passing the indicating point in backward order, and whereby, during the second half of revolution of the driving member the numbers in the second series upon the indicator wheel pass the indicating-point in backward order until the number to be indicated is reached, whereupon the indicator wheel is disconnected from the driving member and the registering wheel connected with the latter, so that the indicator wheel remains stationary while the remainder of the second half of the movement of the driving member is transmitted to the registering wheel, substantially as described.

5. The combination of a driving member having a definite movement at each operation, an indicating and a registering member driven thereby, suitable intermediate connecting devices, whereby the driving member during the first half of its movement picks up the indicating member and carries it to initial position, and whereby the second half of the movement of the driving member is divided between the indicating member and the registering member in proportions determined by the point at which the one is disconnected from and the other connected with the driving member, and an arresting or locking device co-operating with the indicating member to automatically lock the latter upon its disconnection from the driving member, substantially as described.

6. The combination of a driving member having a definite movement at each operation, an indicating and a registering member driven thereby, suitable intermediate connecting devices, whereby the driving member during the first half of its movement picks up the indicating member and carries it to initial position, and whereby the second half of the movement of the driving member is divided between the indicating member and the registering member in proportions determined by the point at which the one is disconnected from and the other connected with the driving member, an arresting or locking device co-operating with the indicating member to automatically lock the latter upon its disconnection from the driving member, and a second locking device co-operating with the registering member to automatically lock the latter upon its disconnection from the driving member at the end of the movement of the latter, substantially as described.

7. The combination of a driving member having a definite movement at each operation, a registering member, an indicating member whose indicating numbers are arranged in backward order relatively to its direction of movement, and suitable intermediate connecting and disconnecting devices, whereby the driving member, during the first half of its movement, is caused to pick up the indicating member and carry it to initial position, the numbers upon the latter moving in backward order past the indicating point, and whereby during the second half of the revolution of the driving member the indicating member is turned from initial position to the new indication, its numbers continuing to pass the indicating point in backward order until the number to be indicated is reached and the indicating member disconnected from the driving member and connected to the registering member, substantially as described.

8. The combination of a driving member having a definite movement at each operation, a registering member an indicating member provided with two series of indicating numbers arranged in backward order relatively to the direction of movement of the member, and suitable intermediate connecting and disconnecting devices, whereby during the first half of the movement of the driving member the indicating member is carried from its previous indicating position to initial position, the numbers in one of its series passing the indicating point in backward order, and whereby during the second half of the movement of the driving member the indicator is carried on from initial position to the number in its other series representing the amount to be indicated, the numbers in such second series passing the indicating point in backward order until the number to be indicated is reached and the indicating member disconnected from the driving member and connected to the registering member, substantially as described.

9. The combination of a driving gear or segment having a definite movement at each operation, a registering pinion arranged to be thrown into and out of engagement with said gear, means for throwing it into engagement with the gear at different points in the movement of the latter, and a cam operating to throw it out of engagement with the gear at the end of the movement of the latter, substantially as described.

10. The combination of a driving gear or segment having a definite movement at each operation, a registering pinion mounted upon a pivoted support and arranged to be swung into and out of engagement with the driving gear, means for throwing it into engagement with the driving gear at different points in the movement of the latter, and a cam co-operating with the pivoted support of the registering pinion to throw the latter out of engagement with the driving gear at the end of the movement of the gear, substantially as described.

11. The combination of a driving member provided with a gear wheel or segment and having a definite movement at each operation, a registering member provided with a pinion adapted to be thrown into and out of gear with the driving member, an indicating member movable into and out of engagement with the driving member, a bell-crank interposed between the indicating member and the registering member, to cause one to be thrown into engagement with the driving member when the other is thrown out of engagement with said member, means for rocking the bell-crank at different points in the movement of the driver, to throw the indicating member out of engagement and the registering member into engagement with the driving member, and a cam co-operating with the bell-crank to throw the registering member out of engagement and the indicating member into re-engagement with the driving member at the end of the movement of the latter, substantially as described.

12. The combination of a rotary and longitudinally movable shaft, a driving member arranged to turn with said shaft but permit independent longitudinal movement of it, an indicating member mounted to revolve upon said shaft but movable longitudinally with it into and out of engagement with the driving member, means for sliding the shaft in one direction at different points in its revolution, to disconnect the indicating member from the driving member, and means for sliding the shaft in the opposite direction at the end of its revolution, to re-connect the indicating member with the driving member, substantially as described.

13. The combination of a rotary and longitudinally movable shaft, a driving member arranged to turn with said shaft but permit independent longitudinal movement of it, an indicating member mounted to revolve upon said shaft but movable longitudinally with it into and out of engagement with the driving member, means for sliding the shaft in one direction to disconnect the indicating member from the driving member, a bell crank connected to the indicating member, and a rotary cam co-operating with the bell-crank to throw the indicating member into re-engagement with the driving member, substantially as described.

14. The combination of a rotary and longitudinally movable shaft, a driving member arranged to turn with said shaft but permit independent longitudinal movement of it, an indicating member mounted to revolve upon said shaft but movable longitudinally with it into and out of engagement with the driving member, a bell-crank interposed between the indicating and registering members, means for sliding the shaft in one direction to disconnect the indicating member from and connect the registering member with the driving member, and a cam co-operating with the bell-crank to disconnect the registering member from and reconnect the indicating member with the driving member, substantially as described.

15. The combination of a rotary and longitudinally movable shaft, a driving member arranged to turn with said shaft but permit independent longitudinal movement of it, an indicating member arranged to revolve upon said shaft but movable longitudinally with it into and out of engagement with the driving member, a bell-crank connected to said indicating member, a registering member mounted upon said bell-crank and movable into and out of gear with the driving member, means for sliding the shaft in one direction to disconnect the indicating member from and connect the registering member with the driving member, and a cam co-operating with the bell-crank to disconnect the registering member from and reconnect the indicating member with the driving member, substantially as described.

16. The combination of a driving member having a definite movement at each operation, an indicating and a registering member driven thereby, means for automatically connecting the indicating member with the driving member during the first half of the movement of the latter, to cause it to pick up the indicating member and carry it to initial position, and a series of keys for simultaneously disconnecting the indicating member from and connecting the registering member with the driving member at different points in the second half of the movement of the latter, to cause the driving member to impart a given portion of the second half of its movement to the indicating member and the remaining portion to the registering member, substantially as described.

17. The combination of a rotary driving member, a rotary indicator having the indicating numbers arranged thereon in backward order relatively to the direction of its movement, a registering wheel having the numbers thereon arranged in forward order relatively to the direction of its movement, means for automatically connecting the indicator with the driving member during the first half of the revolution of the latter, to cause it to pick up the indicator and carry it to initial position, and a series of keys for simultaneously disconnecting the indicator from and connecting the registering member with the driving member at different points in the second half of the revolution of the latter, whereby the second half of the revolution of the driving member is divided between the indicator and register in proportions determined by the operated key, substantially as described.

18. The combination of a driving gear or segment having a definite movement at each operation, a registering pinion arranged to be thrown into and out of engagement with said gear, a series of keys and suitable connections for throwing it into engagement with the gear at different points in the movement of the latter, and a cam operating to throw it out of engagement with the gear at the end of the movement of the latter, substantially as described.

19. The combination of a driving gear or segment having a defi-

nite movement at each operation, a registering pinion mounted upon a pivoted support and arranged to be swung into and out of engagement with the driving gear, a series of keys and connections for throwing it into engagement with the driving gear at different points in the movement of the latter, and a cam co-operating with the pivoted support of the registering pinion to throw the latter out of engagement with the driving gear at the end of the movement of the latter, substantially as described.

20. The combination of a driving member provided with a gear wheel or segment and having a definite movement at each operation, a registering member provided with a pinion adapted to be thrown into and out of gear with the driving member, an indicating member movable into and out of engagement with the driving member, a bell-crank interposed between the indicating and registering members, to cause one to be thrown into engagement with the driving member when the other is thrown out of engagement with said member, a series of operating keys and connections for rocking the bell-crank at different points in the movement of the driver, to throw the indicating member out of engagement and the registering member into engagement with the driving member, and a cam co-operating with the bell-crank to throw the registering member out of engagement and the indicating member into re-engagement with the driving member at the end of the movement of the latter, substantially as described.

21. The combination of a rotary and reciprocating shaft, a driving member arranged to turn with said shaft but permit independent longitudinal movement of it, an indicating member mounted to revolve upon said shaft and reciprocate with it into and out of engagement with the driving member, a series of keys and connections for sliding the shaft in one direction at different points in its revolution, to disconnect the indicating member from the driving member, and means for sliding the shaft in the opposite direction at the end of its revolution, to reconnect the indicating member with the driving member, substantially as described.

22. The combination of a rotary and reciprocating shaft, a driving member arranged to turn with said shaft but permit independent longitudinal movement of it, an indicating member mounted to revolve upon said shaft and reciprocate with it into and out of engagement with the driving member, a series of keys and connections for sliding the shaft in one direction to disconnect the indicating member from the driving member, a bell-crank connected to the indicating member, and a rotary cam co-operating with the bell-crank to throw the indicating member into engagement with the driving member, substantially as described.

23. The combination of a rotary and reciprocating shaft, a driving member arranged to turn with said shaft but permit independent longitudinal movement of it, an indicating member mounted to revolve upon said shaft and reciprocate with it into and out of engagement with the driving member, a bell-crank interposed between the indicating and registering members, a series of keys and connections for sliding the shaft in one direction to disconnect the indicating member from and connect the registering member with the driving member, and a cam co-operating with the bell-crank to disconnect the registering member from and reconnect the indicating member with the driving member, substantially as described.

24. The combination of a rotary and reciprocating shaft, a driving member splined thereon, an indicating member arranged to revolve upon said shaft and reciprocate with it into and out of engagement with the driver, a bell-crank connected to said indicating member, a registering member mounted upon said bell-crank and movable into and out of gear with the driving member, a series of keys and connections for sliding the shaft in one direction to disconnect the indicating member from and connect the registering member with the driving member, and a cam co-operating with the bell-crank to disconnect the registering member from and reconnect the indicating member with the driving member, substantially as described.

25. The combination of the rotary driving member A, the rotary and reciprocating indicating member M the spring-plungers R constituting connecting devices between the two members, and means for rotating the member A and moving the member M into and out of engagement with it, substantially as described.

26. The combination of the rotary and reciprocating shaft B, the driving member A splined thereon, the indicating member M mounted to revolve upon said shaft and reciprocate with it, connecting devices, as the spring-plungers R, between the indicating and registering members, and means for rotating and reciprocating the shaft B, substantially as described.

27. The combination of the rotary driving member A having the cam disk J, the rotary and reciprocating indicating member M, connecting devices, as the spring-plungers R, between the two members, the bell-crank Y Z connected to the indicating member M and co-operating with the cam disk J, and means for rotating the member A and moving the member M out of engagement with it, substantially as described.

28. The combination of the rotary driving member A having the gear I, the rotary and reciprocating indicating member M, connecting devices, as the spring-pressed plungers R, between the two members, the bell-crank Y Z connected to the member M, the registering wheel G′ and pinion H mounted on the arm Y of the bell-crank, and means for rotating the driving member A and rocking the bell-crank, substantially as described.

29. The combination of the driving member A having the gear I and cam disk J, the rotary and reciprocating indicating member M, connecting devices, as the spring-plungers R, between the two members, the bell-crank Y Z connected to the member M at one end and co-operating with the cam disk J at the other, the registering wheel G′ and pinion H′ mounted upon the bell-crank and co-operating with the gear I, and means for rotating the member A and moving the member M out of engagement with it, substantially as described.

30. The combination of the rotary and reciprocating shaft B, the driving member A splined thereon and having the gear I and cam disk J, the indicating member M mounted to revolve upon the shaft B and reciprocating with it, connecting devices, as the spring-plungers R, between the two members, the bell-crank Y Z having its arm Z forked and provided with pins fitting in the groove B′ in the member M, and the registering wheel G′ and pinion H′ mounted on the arm Y of the bell-crank, substantially as described.

31. The combination of the rotary driving member A, the rotary and reciprocating indicating member M, connecting devices between the two members, means for rotating the member A and reciprocating the member M, and a locking projection V co-operating with notches in the member M, to lock the latter when it is slid out of connection with the member A, substantially as described.

32. The combination of the rotary driving member A having the gear I, the registering pinion H′ movable into and out of mesh with the gear, means for rotating the member A and throwing the pinion H′ into and out of gear with it at different points in its movement, and a locking projection, as I′, co-operating with the pinion H′ to lock the latter when it is disengaged from the gear I′, substantially as described.

33. The combination of the rotary driving member A having the gear I, the registering pinion H′ movable into and out of mesh with the gear I, means for rotating the member A and throwing the pinion H′ into gear with it, a cam disk J for throwing the pinion H′ out of gear with the member A, and the locking projection I′ co-operating with the pinion H′, substantially as described.

34. The combination of the rotary driving member A having the gear I and cam disk J, the rotary and reciprocating indicating member M, connecting devices between the two members, the bell-crank Y Z co-operating with the member M and cam disk J, the registering wheel G′ and pinion H′ mounted upon the arm Y of the bell-crank, means for rotating the member A and disconnecting the member M from it, and the locking projections V and I′ co-operating respectively with the member M and pinion H′, substantially as described.

35. The combination of the rotary and reciprocating shaft B, the driving member A splined thereon, the arm Y′ fast thereon, the indicating member M loose thereon between the driving member A and arm Y′ and reciprocating with the shaft B, connecting devices between the driving member A and indicating member M, and the keys H^3 co-operating with the cam Q^3 on the arm Y′ to disconnect the indicating member M from the driving member A, substantially as described.

36. The combination of the rotary and reciprocating shaft B, the driving member A splined thereon and having the cam disk J, the arm Y′ fast thereon, the indicating member M loose thereon between the driving member and arm Y′ and reciprocating with the shaft B, the keys H^6 co-operating with the cam Q^3 upon the arm Y′ to disconnect the indicating member from the driving member, and the bell-crank Y Z co-operating with the indicating member M and cam disk J, substantially as described.

37. The combination of the rotary and reciprocating shaft B, the driving member A splined thereon and carrying the gear I and cam disk J, the arm Y′ fast upon the shaft B, the indicating member M loose upon the shaft B between the driving member A and the arm Y′ and reciprocating with the shaft B, connecting devices between the members A and M, the bell-crank Y Z co-operating with the member M and cam disk J, the registering wheels B^2 mounted upon the arm Y of the bell-crank, the primary wheel being provided with the pinion H′ co-operating with the gear I, and the keys H^3 co-operating with the cam Q^3 on the arm Y′ to disconnect the indicating member M from the driving member A, substantially as described.

38. The combination of the rotary shaft B, the arm Y′ fast upon said shaft, the reciprocating bar R^2 provided with the locking lug W^3 co-operating with the arm Y′, the operating keys H^2, and the reciprocating detent plate N^2 co-operating with the keys and with the bar R^2 to move the latter and unlock the arm Y′ when a key H^3 is pressed inward, substantially as described.

39. The combination of the rotary shaft B, the arm Y′ fast thereon, the reciprocating bar R^2 provided with the lug X^2, the keys H^3 having the resetting springs J^3, and the reciprocating detent plate N^2 co-operating with said keys and with the bar R^2, whereby when the shaft B is given a complete revolution the arm Y′ as it reaches normal position moves the bar R^2 and detent plate N^2 and releases the operated key, substantially as described.

40. The combination of the rotary shaft B, the arm Y′ fast thereon, the reciprocating bar R^2 having the lugs W^2 X^2 co-operating with the arm Y′, the keys H^2 having the resetting springs J^3, and the reciprocating detent plate N^2 co-operating with said keys and with the bar R^2 in the manner and for the purpose described.

41. The combination of the rotary and reciprocating shaft B, the driving member A splined thereon and having the gear I and cam disk J, the arm Y′ fast upon the shaft B, the indicating member M loose upon the shaft B between the driving member A and arm Y′ and reciprocating with the shaft, connecting devices between the members A and M, the indicating wheel U′ carried by the sleeve M and provided with two series of numbers adapted to be exposed at the sight opening V′, the bell-crank Y Z co-operating with the member M and cam disk J, the registering wheels mounted upon the arm Y of the bell-crank, the primary one having the pinion H′ co-operating with the gear I, the keys H^2 co-operating with the cam Q^2 on the arm Y′, the resetting springs J^3 for the keys, the detent plate N^2 co-operating with the keys, and the reciprocating bar R^2 co-operating with the plate N^2 and provided with the lugs W^2 X^2 co-operating with the arm Y′, substantially as described.

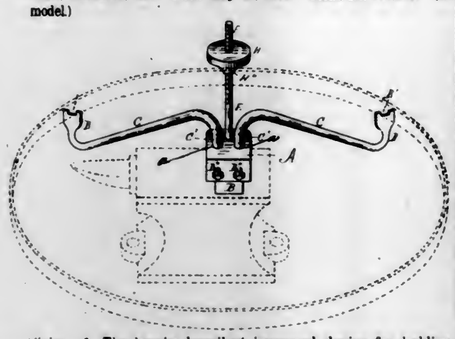
42. The combination of a driving member, a registering member normally out of engagement with but bodily movable into engagement with said driving member, means including any one of a series of keys for effecting the engagement of the driving and registering members, and revoluble disengaging means therefor, substantially as described.

43 The combination of a single driving member, a registering member movable bodily into and out of engagement with said driving member, means including any one of a series of keys for effecting the engagement of the driving and registering members, and a revoluble cam for disengaging said members, substantially as described.

44. The combination of a single driving member, a registering member movable bodily into and out of engagement with said driving member, means including any one of a series of keys for effecting the engagement of the driving and registering members, a lock operating to arrest the movement of the registering member, and revoluble disengaging means therefor, substantially as described.

45. The combination of a single driving member having a constant definite movement at each operation, a registering member movable bodily into and out of engagement with said driving member, a series of keys and means cooperating therewith to throw the registering member into engagement with the driving member, substantially as described.

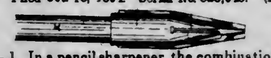
543,726. TIRE-HOLDER. ORIN O. DINSMORE and LOUVILLE G. LORD, Lewiston, Me. Filed May 24, 1895. Serial No. 550,519. (No model.)



Claim.—1. The herein described improved device for holding tires, comprising a base provided with vertical holes in its upper surface, a plurality of horizontal arms C provided with shanks C′ extending into said holes, said arms being provided with upturned ends D notched at D′ to receive the tire and said arms being free to rotate horizontally, a screw-threaded rod extending vertically from the base, and a nut running on said rod and adapted to bear against the upper edge of the tire, substantially as set forth.

2. The herein described improved device for holding tires, comprising the base A provided with the vertical holes *a* in its upper surface, the horizontal rods C provided with the vertical shanks C′ adapted to rest in said holes and formed with the annular grooves C″, said rods being formed at their outer ends into the upturned portions D notched at D′ to receive the tire, set screws extending through the base into said grooves, the screw-threaded rod E extending up from the base, and the nut H running on the thread of said rod and formed on its under surface with the grooves H′ and lips H″ whereby the upper edge of the tire is held, substantially as described.

543,727. PENCIL-SHARPENER. WILLIAM DUFFIELD, London, Canada. Filed Oct. 10, 1894. Serial No. 525,645. (No model.)



Claim.—1. In a pencil sharpener, the combination with a tubular cutter, of an arm pivotally connected to said cutter and provided with an abrading surface on its free end in front of the tubular cutter, substantially as and for the purpose described.

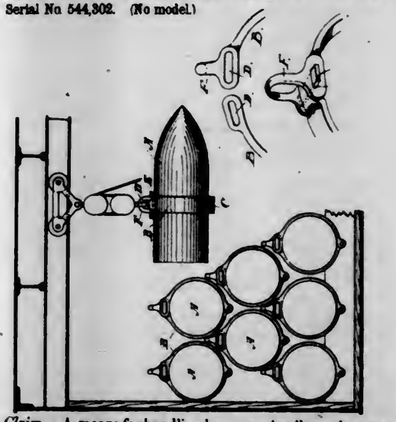
2. In a pencil sharpener, the combination with a tubular cutter, of a spring arm connected to said cutter and provided with an abrading surface on its free end in front of the cutter, substantially as and for the purpose specified.

3. In a pencil sharpener, the combination with a tubular cutter, of a spring arm pivotally connected to said cutter, and provided with an abrading surface on its free end in front of the cutter, substantially as and for the purpose specified.

4. In a pencil sharpener, the combination with a tubular cutter, of a frame supported thereon, and a spring arm pivoted to said frame and provided with an abrading surface on its free end in front of the tubular cutter, substantially as and for the purpose specified.

5. In a pencil sharpener, the combination with a tubular cutter, of a collar on said cutter, flanges extending from said collar, a frame pivoted to said flanges and an arm secured at one end to said frame and provided with an abrading surface on its free end in front of the tubular cutter, substantially as described.

543,728. DEVICE FOR HANDLING HEAVY PROJECTILES AND AMMUNITION. THEODORE FORSELL, Vallejo, Cal. Filed Apr. 3, 1895. Serial No. 544,302. (No model.)



Claim.—A means for handling heavy projectiles and ammunition, consisting of a two-part hinged metal band adapted to clasp the projectile, said band having the free ends of its sections slotted, with the free end of one of the sections adapted to receive the corresponding end of the other section to bring the slots of the two sections into coincidence, and provided with a rigid supplemental eye, a key to be passed through said slots for uniting said free ends and a hoisting device adapted to engage said supplemental eye to suspend and transport the projectile.

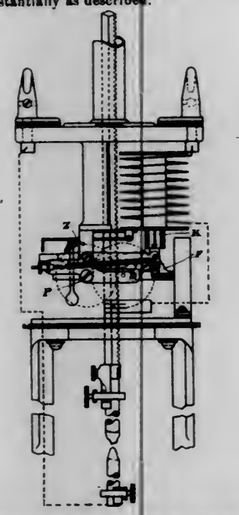
543,729. ELECTRIC-ARC LAMP. CHARLES E. HARTHAN, Lynn, Mass., assignor, by mesne assignments, to the General Electric Company, Schenectady, N. Y. Filed Nov. 21, 1894. Serial No. 529,476. (No model.)

Claim.—1. In an arc lamp, a coil, a core actuated by the coil, feeding mechanism for the lamp operated or controlled by the core, and a spring arranged to progressively assist the action of the core, substantially as described.

2. In an arc lamp, a coil, a core actuated thereby, feeding and arc-striking mechanism operated or controlled by the core, and a spring arranged to progressively assist the motion of the core, substantially as described.

3. In an alternating current arc lamp, the combination of the carbons and feeding mechanism with a maguet receiving alternating currents whose core controls the feeding mechanism, and a spring arranged to progressively assist the movement of the core, as set forth.

4. In an electric arc lamp, a series coil, a core actuated thereby, gearing for the lamp controlled by the core of the coil, a spring attached at one end to the stationary part of the lamp and at the other by suitable connections to the core, the spring being so arranged as to assist the lift of the core to a minimum amount at one end of the traverse and a maximum amount when the core is in its extreme attracted position, substantially as described.



5. In an electric arc lamp, a series coil, a core therefor, gearing carried in a frame pivoted in the lamp, one end of the frame being attached to the core, a spring attached to a stationary part of the frame, and a plate forming with the part of the frame to which the spring is attached a toggle mechanism, the spring being attached at its other end to the plate; whereby the lift of the core tends to bring the spring into a position where its pull will assist the core more and more as the core rises, substantially as set out herein.

6. In an electric arc lamp, a coil, a core actuated thereby, mechanism operating the lamp actuated by the coil, a spring arranged to assist the coil, as herein set out, the spring being attached at one end to a stationary part of the lamp and at its other to a lever connected to the core, and adapted by the motion of the core to bring the spring into a position of greater activity in assisting its action, substantially as described.

543,730. LIGHT-SIGNAL. DAVID P. HEAP, U. S. Army. Filed Apr. 19, 1893. Serial No. 470,964. (No model.)

Claim.—1. The combination with an upper reflector and means for sustaining it in an elevated position, of an illuminating apparatus, at the base, consisting of a light and means for concentrating its rays into a beam and directing the same onto the upper reflector which deflects the beam toward the horizon, substantially as described.

2. The combination with an upper reflector and a supporting tower or mast sustaining the same in an elevated position, of an illuminating apparatus at the base consisting of a light and means for concentrating its rays into a beam and directing the same onto the upper reflector which deflects the beam toward the horizon, substantially as described.

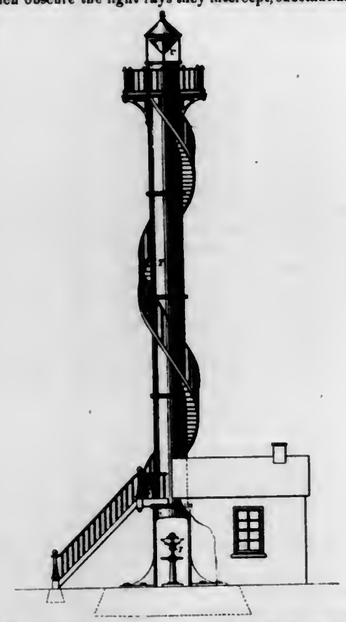
3. The combination with a supporting tower, of a reflector at its top and concentrator at its base, and, a light interposed between them, substantially as described.

4. The combination with a supporting tower, of a revolving reflector at its top, and, at its base, a light and means for concentrating its rays into a beam and directing the same onto the revolving reflector, which deflects the beam toward the horizon, substantially as described.

5. The combination with a tower supporting a reflector at its top, and having at its base, a light and means for concentrating its rays into a beam, of means alternately obscuring and displaying the light from the upper reflector, substantially as described.

6. The combination with a tower supporting a reflector at its top, and having at its base, a light and means for concentrating its rays into a beam, of a rotating damper operating to alternately obstruct and clear the path through which the light passes upward, substantially as described.

7. The combination with a tower supporting a reflector at its top, and having at its base, a light and means for concentrating its rays into a beam, of a horizontally rotative wheel having opaque portions which obscure the light rays they intercept, substantially as described.

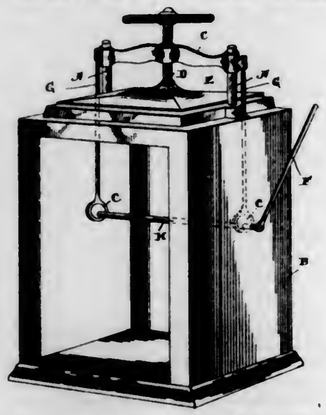


8. The combination with a supporting tower, of a revolving pyramoidal reflector at its top, and at its base, a light and means for concentrating its rays into a beam and directing the same onto the reflector, substantially as described.

9. The combination with a protecting deck and means for supporting the reflector above the same, of a light below said deck and means for concentrating its rays and directing the same onto the reflector, substantially as described.

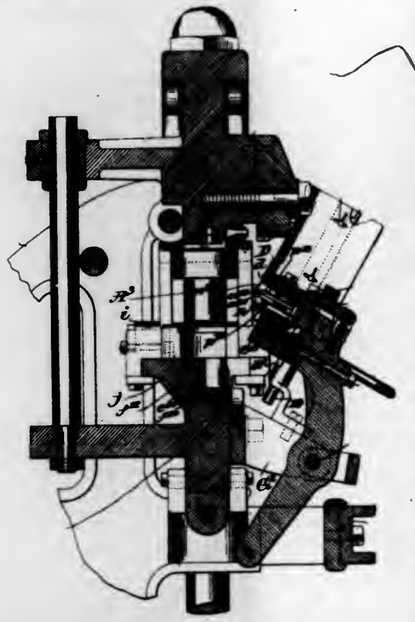
10. The combination with a protective deck and a revolving reflector supported above the same, of a light below said deck, and means for concentrating its rays and directing the same onto the reflector, substantially as described.

543,731. LETTER-PRESS. SAMUEL W. HEMPSTED, Columbus, Ohio. Filed Sept. 21, 1894. Serial No. 523,665. (No model.)



Claim.—A letter press comprising a rigid bed plate, rigid standards extending upward therefrom at opposite sides, a cross beam having its ends loosely encircling said standards and carrying a hand screw and pressure plate co-acting with said base, an operating shaft journaled in rigid bearings below said bed carrying eccentrics or cranks, said shaft extending in a line longitudinal to said cross beam, and rods having their upper ends connected to the ends of the beam outside of said rigid standards and their lower ends connected with said cranks or eccentrics, substantially as described.

543,732. HEEL-COMPRESSING MACHINE. JOHN J. HEYS and CHARLES W. GLIDDEN, Lynn, Mass., assignors to James W. Brooks, trustee. Filed Oct. 30, 1894. Serial No. 527,458. (No model.)



Claim.—1. The heel blank support, combined with a co-operating pusher composed of top and bottom plates, and adjusting devices to change the depth of the pusher and adapt it to heel blanks of different height, substantially as described.

2. The heel blank support, combined with a pusher composed of a bottom plate and a top plate made adjustable longitudinally with relation to the bottom plate to thus adapt the acting end of the pusher to the slope or inclination of a heel blank, substantially as described.

3. The heel blank support and pusher, composed of a bottom plate and a two-part top plate, combined with devices to adjust one part of the top plate on the other, and devices to adjust the entire top plate vertically with relation to the bottom plate, substantially as described.

4. The movable recessed cross-head of a heel compressing machine, and a heel blank carrier having a block c^{10} adapted to enter said recess, combined with a removable plate placed in said recess and to receive the impact of said block, substantially as described.

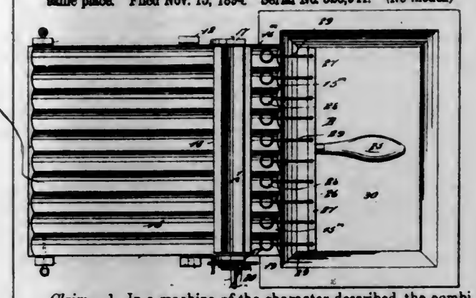
5. The movable recessed cross-head of a heel-compressing machine, and a heel blank carrier having a block c^{10} to enter said recess, combined with a removable plate placed in said recess and adapted to sustain said block, and a removable lining rim also located in said recess above said removable plate, substantially as described.

6. In a heel compressing machine, compressing devices, a heel blank hopper, a heel blank feeder, and means to actuate said feeder to take heel blanks singly from a pile of blanks in said hopper preparatory to their compression, combined with a safety gate intermediate the compressing devices and the hopper, and means to automatically close said gate at times and thereby prevent the accidental escape of a heel blank from the said hopper, substantially as described.

7. The table, the heel blank hopper mounted thereon, a heel blank feeder to take the heel blanks singly from a pile of blanks in the hopper, and a guard m^{30} at the rear end of the table and extended along one side of the path of movement of and above the feeder, to prevent the escape of a heel blank from said hopper or from the feeder and from falling over the guarded edge of the table, substantially as described.

8. In a heel blank compressing machine, a hopper to receive a series of heel blanks, a heel blank feeder, and a heel blank carrier having an attached tread plate, and a heel seat die vertically movable with relation thereto, and mounted on said carrier combined with a chute arranged to receive and guide the compressed blanks as they are discharged from between the tread plate and heel seat die, and a top guard on said chute, substantially as described.

543,733. BONBON-DIPPING MACHINE. LEO HIRSCHFELD, New York, N. Y., assignor of one-half to Julius Stern and Jacob Saalberg, same place. Filed Nov. 15, 1894. Serial No. 528,941. (No model.)

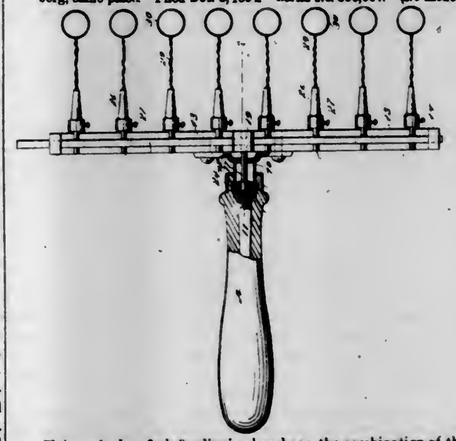


Claim.—1. In a machine of the character described, the combination with a frame, and a grooved table carried thereby, of a feed device above the table, a feed device operating shaft, a disk loosely mounted on the shaft and provided with a handle, a ratchet wheel secured to the said shaft, and a pawl carried by the disk and engaging the ratchet wheel, substantially as described.

2. In a machine of the character described, the combination with a frame, and an inclined table carried thereby and provided with longitudinal channels to receive the material to be dipped, of a feed device above the table, a feed device operating shaft, a disk loosely mounted on the shaft, a ratchet wheel secured to said shaft, a pawl carried by the disk and engaging the ratchet wheel, a handle projecting from the disk, and stops on opposite sides of the handle, substantially as described.

3. In a machine for dipping bon-bons or like articles, the combination, with a frame, a table pivotally mounted upon the frame and provided with channels upon one of its faces to receive the material to be dipped, and means substantially as described for holding one end of the table elevated, of a feed wheel consisting of a hub and a series of radiating blades, the said feed wheel being located over the channeled portion of the board, a ratchet and pawl mechanism connected with the feed wheel, and means, substantially as described, for limiting the movement of the ratchet and pawl mechanism, as and for the purpose set forth.

543,734. FORK FOR DIPPING BONBONS, &c. LEO HIRSCHFELD, New York, N. Y., assignor of one-half to Julius Stern and Jacob Saalberg, same place. Filed Dec. 3, 1894. Serial No. 530,667. (No model.)



Claim.—1. In a fork for dipping bon-bons, the combination of the handled head, the tines mounted to turn thereon and constructed with receivers to hold bon-bons, and means for turning the tines, as and for the purpose set forth.

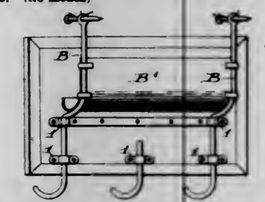
2. In a fork for dipping bon-bons, the combination of the handled head, the tines mounted to turn thereon and constructed with receivers to hold bon-bons, and an operative connection between the tines to cause them to move in unison and simultaneously turn the receivers, substantially as described.

3. A fork for dipping bon bons and other confectionery, the same consisting of a handle, a head carried thereby, a rack having sliding movement in the head, a trigger controlling the movement of the rack, and a series of receivers mounted in the head and given rotary movement by the said rack, substantially as shown and described.

4. In a fork for dipping bon-bons or other confectionery, a handle, a head carried thereby, a rack having movement in the head, a trigger, an actuating connection between the trigger and the rack, a series of rotating chucks journaled in the head and provided with pinions engaging with the said rack, and tines provided with receivers and movably located in the said chucks, as and for the purpose set forth.

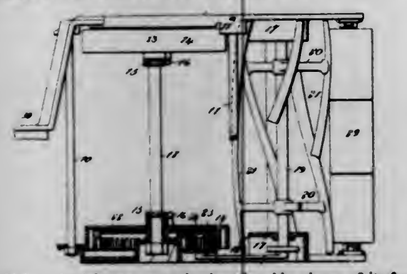
5. In a fork for dipping bon-bons and other confectionery, the combination, with a handle, a channeled head carried thereby, a rack having sliding movement in the head, a spring-controlled trigger operated from the handle, and a rack and pinion connection between the said trigger and the rack of the head, of a series of chucks journaled transversely in the head, each being provided with a pinion located in the head and engaging with the main rack carried thereby, and a series of removable tines, each provided with a receiver at its outer extremity, removably secured in the said chucks, whereby the tines may be turned without turning the body of the machine, as and for the purpose specified.

543,735. COMBINED PICTURE-HANGER, WALL-POCKET, AND HAT-RACK. JOHN HOUSE, Davis, W. Va. Filed May 19, 1894. Serial No. 511,825. (No model.)



Claim.—The combined picture support and wall pocket herein described, comprising the frame A and its backing, the supporting rods B, B formed with hooks at their lower ends extending below the frame and having their upper and lower portions substantially parallel on different planes and an angular middle portion, and provided with eyes in their upper ends, the pocket B', of flexible material secured to the angular parts and upper portions of the supporting rods, and keepers 1, on the backing over the said rods wherein the rods may turn and lie with the angular parts and hooks in alignment with the plane of the frame, substantially as described.

543,736. LAWN-MOWER. EDWARD INGLETON, Pottstown, Pa. Filed Jan. 15, 1895. Serial No. 534,992. (No model.)

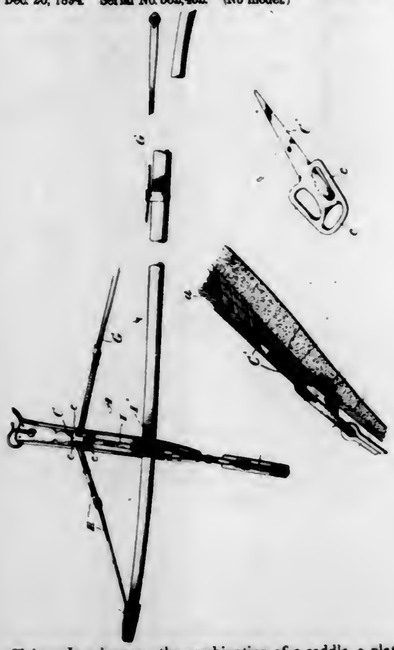


Claim.—1. A lawn mower having the side pieces of its frame provided with elongated and inwardly extending wells or recesses adapted to receive the driving mechanism for the knives, a cutter shaft journaled in the inner walls of the said wells near their forward ends and knives carried by the said shaft and extending from one side piece of the frame to the other, the walls of the said elongated recesses being provided with openings at or near their centers to permit of the free revolution of the knives, substantially as shown and described.

2. A lawn mower having the side pieces of its frame provided with depressions in their outer faces, an axle journaled in the inner walls of said depressions, elongated and horizontal depressions or wells formed in the said side pieces forward of the first depressions, the said elongated depressions being adapted to receive the driving mechanism and each provided at or near its center with an opening extending from top to bottom, a cutter shaft carrying knives and journaled in the inner walls of the said wells near their forward ends, the said knives extending from one side piece of the frame to the other and the openings in the walls of the inwardly extending wells permitting of the free revolution of the said knives, substantially as shown and described.

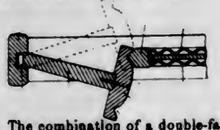
3. In a lawn mower, the combination with a frame having its side pieces provided with depressions in their outer faces and having an elongated and horizontal depression or well formed in each of the said side pieces forward of the first depression, the said elongated depression having a central opening in its walls extending from top to bottom, an axle journaled in the inner walls of the rear depressions, ground wheels adapted to drive the axle, and internally toothed gears carried by the axle, of pinions located within the forward depressions or well portions of the frame, and provided with crank disks, the said pinions being driven from the said gears, a knife shaft journaled in the inner walls of the said elongated depressions or wells near their forward ends and provided with crank disks, pitmen connecting the crank disks of the shafts and pinions and also located within the well portions of the frame, and knives attached to the said shaft and extending from one side piece of the frame to the other, as and for the purpose set forth.

543,737. HARNESS. ALBERT JACQUOT, Wilmington, Del. Filed Dec. 20, 1894. Serial No. 532,462. (No model.)



Claim.—In a harness, the combination of a saddle, a plate having three loops or eyes, the threaded pin or stud, and the nut for connecting said plate to the saddle at one point, and the tongue or extension of such plate riveted to the saddle at another point, and straps connected with the loops, that respectively, form a tug, a hold back, and a thill support, substantially as and for the purpose set forth.

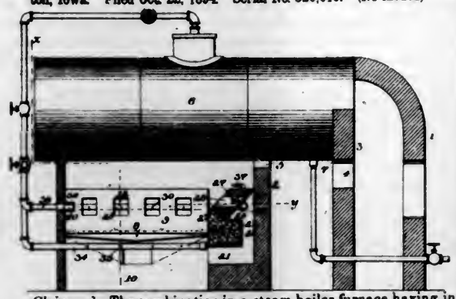
543,738. WASHBOARD. PETER J. JOECKEL, Cleveland, Ohio, assignor to The American Washboard Company, same place. Filed Feb. 26, 1895. Serial No. 537,739. (No model.)



Claim.—1. The combination of a double-faced washboard, with a pivotally mounted brandboard, and a protector attached to and projecting on both sides of the brandboard, whereby it may be swung to position of use above either of the rubbing faces, and form in connection with the brandboard, a soap receptacle above the protector on either side of the board, substantially as set forth.

2. The combination of a double-faced washboard, with a brandboard, a protector attached to and projecting on both sides of the brandboard, said brandboard being movable so as to shift the protector to a position of use above either of the rubbing faces of the board, and form in connection with the protector a soap receptacle on either side, substantially as set forth.

543,739. STEAM-BOILER FURNACE. HENRY KORTEN, Burlington, Iowa. Filed Oct. 22, 1894. Serial No. 526,619. (No model.)

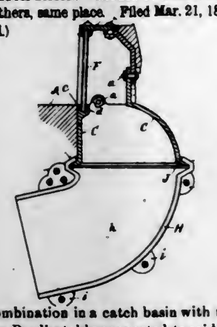


Claim.—1. The combination in a steam boiler furnace having injecting chambers in the side and bridge walls, of the jet pipe located in said chambers, the angle plate, having ports therein, located on the bridge wall and the fire lining supported thereby, the angle plates at each side of the furnace located above the grate and provided with fire linings and ports, and the lugs formed integral with the horizontal portions of said plates and adapted to engage between the grate bars, substantially as described.

2. The combination in a steam boiler furnace having injecting chambers in the side and bridge walls, and communicating with the fire box and ash pit, of the upper and lower jet pipes located in said chambers, the vertical pipe located in the rear injecting chamber, connected with the lower jet pipe, the horizontal pipe at the upper end thereof, the inclined angle plate at the rear of the fire box, the fire lining supported thereby having ports communicating with the fire box and the injecting chamber in the bridge wall, the angle plates at the sides of the fire box, having ports therein and provided with a fire lining, and the lugs on the under side of the horizontal portion of said side angle plates and formed integral therewith, substantially as described.

3. The combination in a steam boiler furnace, having ports in the sides leading to the ash pit, of the tiles located in the sides of the furnace above the grate formed with a horizontal recess in their upper ends, a rear vertical recess communicating therewith and with the port leading to the ash pit, and a groove in the upper rear edge, the pipes located in said groove and in the ash pit, substantially as described.

543,740. CATCH-BASIN. GEORGE F. KUHNS, Dayton, Ohio, assignor to Kuhns Brothers, same place. Filed Mar. 21, 1895. Serial No. 542,656. (No model.)



Claim.—1. The combination in a catch basin with the basin portion C of a curb portion D adjustably connected to said basin portion to accommodate different heights of curbing, and the elbow H swiveled upon the basin portion C so that it may be turned to present its outlet in a different direction.

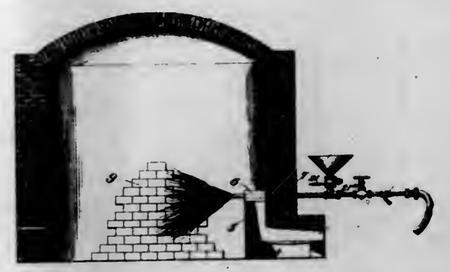
2. The combination in a catch basin of the basin portion C, the curb portion D adjustably connected to said basin portion to accommodate different heights of curbing, a top plate E secured to said curb portion, and bars F seated in said basin portion and said top plate, substantially as described.

543,741. PROCESS OF GLAZING EARTHENWARE AND APPARATUS THEREFOR. WILLIAM A. LOSE, Steubenville, Ohio. Filed Dec. 20, 1894. Serial No. 532,475. (No specimens.)

Claim.—1. A glazing process, which consists in blasting into the interior of a kiln, maintained at a high temperature, a glaze producing chemical, substantially as set forth.

2. A glazing process, which consists in blasting into the interior of a kiln, maintained at high temperature, a compound of a glaze producing chemical and organic matter, substantially as set forth.

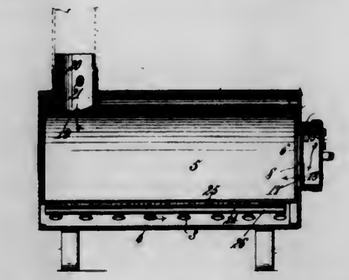
3. A glazing process which consists in injecting into the interior of a kiln maintained at a high temperature, a combustible and glaze producing blast, substantially as specified.



4. A glazing process which consists in injecting into the interior of a kiln maintained at a high temperature by direct communication with incandescent fuel beds, a combustible and glaze producing blast, substantially as specified.

5. The combination with a kiln and furnace bags, of a discharge pipe projecting into the kiln, and a protecting tunnel upon the bag adapted to protect the discharge pipe, substantially as specified.

543,742. HEATING-STOVE. WILLIAM H. LOY and FRED H. GRANT, What Cheer, Iowa. Filed Oct. 22, 1894. Serial No. 526,600. (No model.)



Claim.—1. A heating stove, consisting of an external casing having the lower portion of its wall provided with longitudinal rows of inlet openings and the upper portion of its wall formed with longitudinal rows of outlet openings, a cylindrical fire chamber located within said casing and having a door opening in its front end and a smoke flue at its rear end, flanges secured to said fire chamber for supporting it centrally within the casing to provide a surrounding hot air space, a disk or plate at one end of the casing having a central opening, and a door for closing the door opening in the front end of the fire chamber, substantially as described.

2. A heating stove, consisting of an external casing having the lower portion of its wall provided with longitudinal rows of inlet openings and the upper portion of its wall formed with longitudinal rows of outlet openings, a cylindrical fire chamber located within said casing and having a door opening in its front end and a smoke flue at its rear end perforated longitudinal flanges secured to the under side of said fire chamber for supporting it centrally within the casing to provide a surrounding hot air space, a disk or plate at one end of the casing having a central opening, and a door for closing the door opening in the front end of the fire chamber, substantially as described.

3. A heating stove, consisting of an external casing having the lower and upper portions of its wall formed with inlet and outlet perforations, a cylindrical fire-chamber located in the said casing and having a door opening in its front end, a plate arranged at the lower side of the cylindrical fire-chamber and provided with supporting feet or flanges, an asbestos or fire-proof sheet interposed between the fire-chamber and the said plate, and means for closing the front end of the casing and the door-opening of the fire-chamber, substantially as described.

4. A heating stove, consisting of an external casing, a cylindrical fire chamber centrally supported within said casing and provided at its rear end with a smoke flue and having a door opening in its front end, a disk or plate at one end of the casing having a cylindrical neck and a central opening, and a hollow door fitting said neck to

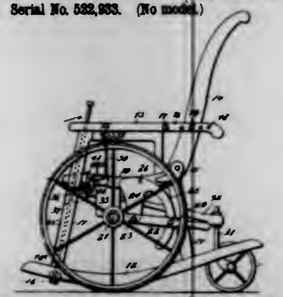
close the door opening of the fire chamber and provided in its front wall with a valve controlled cold air inlet and in its rear wall with a hot air outlet for delivering heated air into the fire chamber, substantially as described.

543,743. HOT-BOX INDICATOR FOR RAILWAY-CARS. LAMAR LYNDON, Athens, Ga. Filed Dec. 13, 1894. Serial No. 531,660. (No model.)



Claim.—In a hot box indicator, a plug adapted to receive mercury said tube being formed of conducting material, and screwed into a seat in a conducting bearing, a glass tube inserted in said plug, a cap closing the top of the tube, a wire entering through said cap, a set screw tapped through said cap and bearing against the wire, a battery and a signal operated by the latter, substantially as described.

543,744. CHAIR. WILLIAM G. MAGEE, Hudson, N. Y. Filed Sept. 13, 1894. Serial No. 532,933. (No model.)



Claim.—1. As an improvement in rocking chairs, the combination with a rocker frame having arm rests and one of its legs formed with a vertical guide portion, of a rod vertically movable on such guide portion having an operating handle projected above the side arm, and a foot portion adapted to be projected below the rocker, and a locking device located adjacent the seat, having an upwardly projecting operating member, and having a latch adapted to be moved into engagement with the aforesaid rod, substantially as and for the purpose described.

2. A chair of the kind described, comprising a rocking chair having pivoted and adjustable lever arms at the sides having main wheels journaled thereon, a latch mechanism and a pivoted lever carrying a caster wheel at the rear end and having its front end projected and arranged to automatically lock in engagement with the aforesaid latch when the chair rests on the wheels and the body is tilted forward, substantially as shown and described.

3. The combination, with the rocking chair and its vertically adjustable side wheels, of the centrally arranged lever fulcrumed beneath the chair seat, the rear wheel on the lever, and a locking device to engage the front end of the lever, this being automatically locked at the forward rocking of the chair, substantially as described.

4. The combination with a rocking chair, having adjustable bearing wheels journaled thereon and a lock mechanism arranged under the seat of the chair, of a lever pivoted centrally under the chair, a caster wheel journaled on the rear end thereof, a guide for the front end of the lever to hold it from lateral movement, said front end having a lock portion adapted to automatically engage the lock mechanism as the chair is tilted forward and hand operated releasing devices connected with such lock mechanism, all arranged substantially as and for the purposes described

543,745. PIPE-CLOSER. JOHN J. MEYER, New York, N. Y. Filed Mar. 13, 1895. Serial No. 541,579. (No model.)

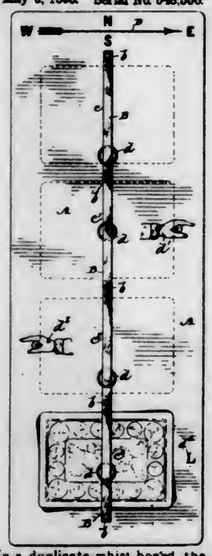
Claim.—1. The combination of the stem hollowed out for a portion of its length and open at its outer end, a plurality of washers on the stem, the stem being provided with an aperture between two adjacent washers to receive water leaking past the inner washer, and means for expanding the washers, substantially as described.

2. The combination of a stem having a longitudinal bore, open at its outer end and having a lateral aperture near its inner end, expansible washers surrounding the stem, one at each side of the said lateral aperture, a sleeve between the said washers and surrounding the stem, and means for expanding the washers, substantially as described.

3. The combination of a stem having a longitudinal bore, open at its outer end and having a lateral aperture near its inner end, expansible washers surrounding the stem, one at each side of the said lateral aperture, a sleeve surrounding the stem at a distance and provided with a lateral aperture, and means for expanding the washers, substantially as described.



543,746. DUPLICATE-WHIST BOARD. HUGH MITCHELL, Duluth, Minn. Filed May 6, 1895. Serial No. 548,330. (No model.)



Claim.—1. In a duplicate whist board, the combination with a suitable board, of a single straight integral elastic band attached at intervals to said board so as to form a plurality of card retaining straps and rings applied on the respective straps for lifting the same whereby the whist hands can be slipped beneath the said straps and kept separated, substantially as described.

2. In a duplicate whist board, the combination with a suitable board, of a single straight integral elastic band attached at intervals to said board so as to form a plurality of card retaining straps for holding whist hands separated from each other, rings applied on the respective straps for raising the same, and devices for indicating which are the north and south, and which the east and west hands and also which hand is to lead, substantially as described.

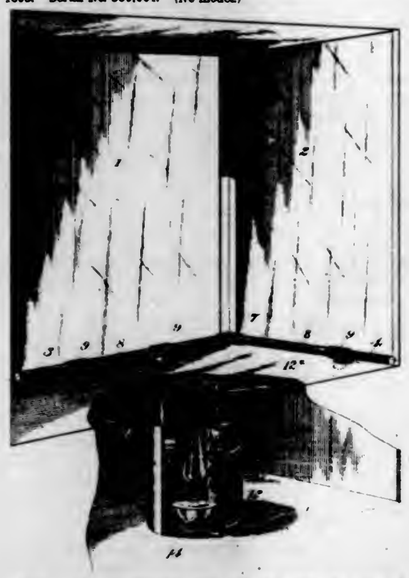
543,747. BLACK AZO DYE. MAX MOELLER and CARL OELSCHLAEGEL, Berlin, Germany, assignors to the Actien-Gesellschaft für Anilin Fabrikation, same place. Filed Mar. 23, 1895. Serial No. 542,980. (Specimens.)

Claim.—The black dye derived from alpha$_1$-alpha$_4$-amidonaphthol alpha$_2$-monosulfonic acid by reacting upon this acid with alpha-diazonaphthalen and para-diazobenzenesulfonic acid substantially as herein set forth—said dye forming in dry state a brownish-black powder readily soluble in water sparingly soluble in alcohol, being not destroyed by further treatment with a diazo-compound, dissolving in concentrated sulfuric acid with pure blue color, from which solution on diluting with water the free color acid is precipitated in the shape of blue-black flakes.

543,748. BLACK AZO DYE. MAX MOELLER and CARL OELSCHLAEGEL, Berlin, Germany, assignors to the Actien-Gesellschaft für Anilin Fabrikation, same place. Filed Mar. 23, 1895. Serial No. 542,981. (Specimens.)

Claim.—The black dye derived from alpha$_1$-alpha$_4$-amidonaphthol-alpha$_2$-monosulfonic acid by reacting upon this acid with two molecules of alpha-diazonaphthalen and one molecule of para-diazobenzenesulfonic acid substantially as herein set forth; said dye forming a brownish-black powder with slight metallic luster, readily soluble in water practically insoluble in alcohol, dissolving in concentrated sulfuric acid with grayish-blue color, from which solution on diluting with water the free color acid is precipitated in the shape of dark flakes.

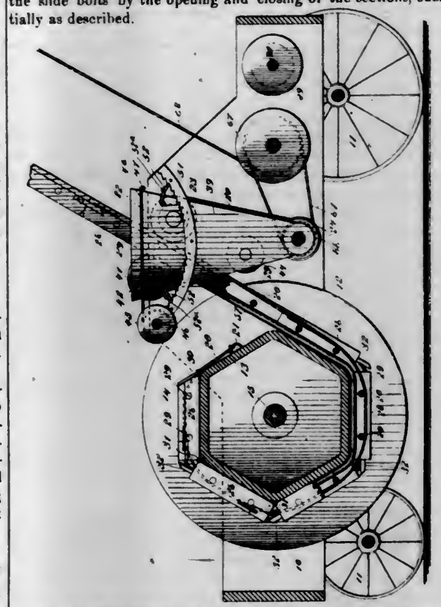
543,749. APPARATUS FOR PREVENTING CONDENSATION ON WINDOW-PANES. JOHN H. MORRIS, Bridgeton, N. J. Filed Feb. 25, 1895. Serial No. 539,601. (No model.)



Claim.—The combination with a heating drum, and a plurality of horizontal radiating pipes provided with vertical extensions opening into the top of the drum and supported exclusively by the drum, said radiating pipes having vertical extensions at their outer ends, of an angular distribution pipe provided with a plurality of T fittings adapted to fit within the vertical extensions at the outer ends of the radiating pipes, and a plurality of burners within the drum and immediately beneath the vertical extensions of the radiating pipes communicating with the top of the drum, substantially as specified.

543,750. HOSE-TOWER AND FIRE-ESCAPE. FRANCIS M. PAINTER, Chicago, Ill. Filed Dec. 4, 1894. Serial No. 530,778. (No model.)

Claim.—1. In an apparatus of the kind described, the ladder comprising a series of sections hinged together, arms secured to the side rails of certain sections and adapted to engage recesses in the adjacent sections, slide bolts movable on a portion of the sections and adapted to engage the adjacent sections, and a device for operating the slide bolts by the opening and closing of the sections, substantially as described.



2. An apparatus of the kind described, comprising a supporting frame, a revoluble drum journaled on the frame, a folding ladder secured to the drum, means for raising the ladder and unwinding the drum, an oscillating guide frame mounted on the head frame and provided with supports and guides for the ladder, a drum and cable mechanism for shifting the position of the guide, and means, as the rack bars on the main frame and the pawls on the guide frame, for locking the guide, substantially as described.

3. The combination, of the revoluble drum, the folding ladder secured to the drum, the oscillating guide comprising opposite end frames and connecting shafts, the guide rollers on the guide to engage the ladder, the winding drum at the foot of the guide, the cable extending from the winding drum over suitable guide pulleys to the ladder drum, and a locking device to fix the position of the guide, substantially as described.

4. The combination, with the ladder, the winding drum for lifting it, the second winding drum and the car and cable connected with the second winding drum, of a clutch for the second winding drum, and a driving connection between the clutch and the first winding drum, substantially as described.

5. The combination, with the ladder and the car hoisting device, of the car having a back adapted to fold inward and make a platform, substantially as described.

6. In an apparatus of the kind described, a car having a back to fold inward to make a platform, and a hinged cross bar in the front of the car, substantially as described.

7. In an apparatus of the character described, a ladder consisting of a series of sections connected and adapted to fold together, and sliding bolts on the several sections, said bolts being provided with actuating devices constructed and arranged to be actuated by the flexure or straightening of the next adjacent sections of the ladder to unlock and lock the sections together, substantially as set forth.

8. In an apparatus of the character described, a ladder consisting of a series of sections pivotally connected on one face at their adjacent ends, a bolt secured to one section, an eye on an adjacent section adapted to receive the said bolt, and a connection between said bolt and the other adjacent section, whereby when the latter is moved, the bolt will be actuated, substantially as set forth.

9. In an apparatus of the character described, a ladder consisting of a series of sections pivotally connected at one side at adjacent ends and provided on opposite sides with overlapping arms, and interlocking bolts and eyes on the sections, said bolts having lugs to engage the overlapping arms, substantially as set forth.

10. In an apparatus of the character described, the combination of a frame, a revoluble drum, a folding ladder secured to the drum and adapted to wind thereon, means for unwinding the ladder, a guide-frame pivotally mounted at its lower end in the frame with its upper

end adapted to be moved toward and from the drum, a drum revolubly mounted in the frame, a cable secured at one end thereto and at its other end to the upper end of the guide-frame, whereby the same may be adjusted to impart the desired inclination to the ladder, and means for locking said guide-frame in position when adjusted, substantially as set forth.

11. In an apparatus of the character described, the combination of a frame, a revoluble drum, a folding ladder secured to the drum and adapted to wind thereon, a cable secured to the drum and adapted to wind outside the ladder, a cross-shaft in the frame, a drum on said cross-shaft, the cable being secured to and adapted to wind on said drum, on the cross-shaft a guide frame comprising end bars pivotally mounted at their lower ends on the said cross-shaft of the frame, and means for locking said guide-frame in position when set at the desired inclination, substantially as set forth.

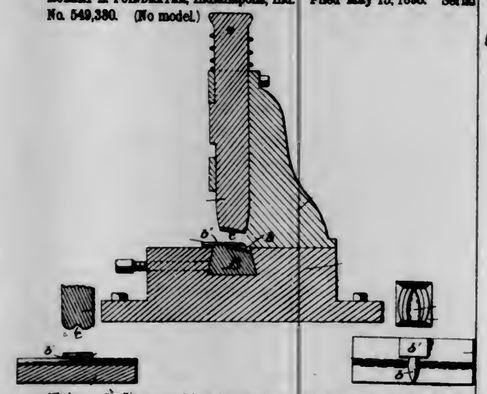
12. In an apparatus of the character described, the combination of a frame, a revoluble drum, a folding ladder secured to the drum and adapted to wind thereon, a cable secured to the drum and adapted to wind outside the ladder, a cross-shaft in the frame, a drum on said shaft, the cable being secured to and adapted to wind on said drum on the cross shaft, a guide-frame comprising end bars pivotally mounted at their lower ends on the said cross-shaft, a shaft in the upper ends of said end bars, and means for locking said guide-frame in position when the same is set at the desired inclination, a sheave on said shaft in the end bars adapted to receive and guide the cable, and rollers on said shaft to receive and guide the side rails of the ladder, substantially as set forth.

543,751. STRING-FASTENER. CHARLES C. PIER, New York, N. Y. Filed Mar. 20, 1895. Serial No. 542,497. (No model.)



Claim.—A fastener for shoe and other laces, consisting of a plate provided with means whereby it may be secured to the device in connection with which it is used and having projected outwardly therefrom two auxiliary plates in each of which is formed a slot of an approximate width equal to the thickness of the lace in connection with which it is used, the said slots being oppositely disposed in their respective auxiliary plates and being of uniform width throughout their length, substantially as described.

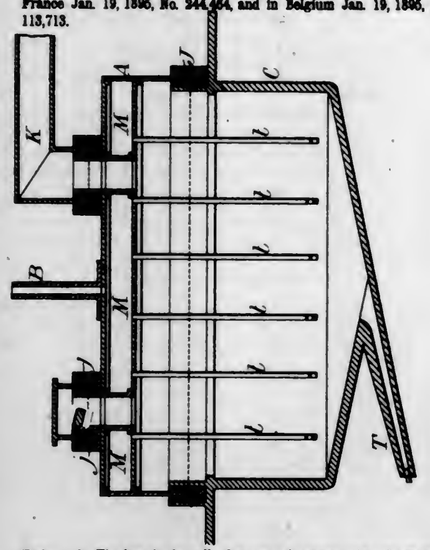
543,752. MACHINE FOR SHAPING AND SETTING SAW-TEETH. ROBERT R. POINDEXTER, Indianapolis, Ind. Filed May 15, 1895. Serial No. 549,380. (No model.)



Claim.—1. In a machine for setting and shaping saw teeth, the combination of a stationary die or anvil formed with a portion of its face tapered, a transverse ridge across said tapered portion, and a movable die formed with a substantially V shaped groove in its face arranged to register and co-operate with said ridge, substantially as set forth.

2. In a machine for setting and shaping saw teeth, the combination of the stationary die or anvil, B, having a portion of its face tapered and a portion horizontal, the transverse ridge, *b*, on its tapered portion, the rest, *b'*, on its horizontal portion, and the movable die, C, having the flaring V-shaped formation, *c*, in its face and arranged to register and co-operate with the ridge, *b*, on said anvil, substantially as set forth.

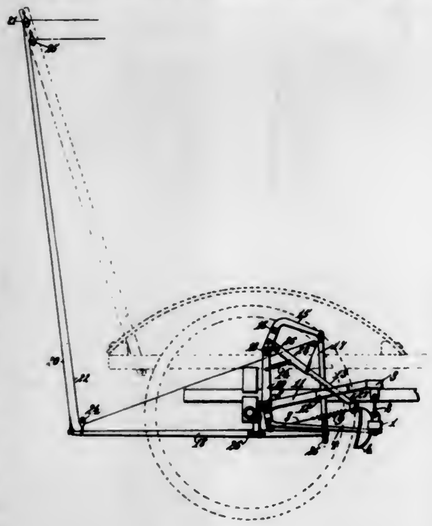
543,753. PROCESS OF AND APPARATUS FOR SEPARATING METALS. MARIE A. J. ROUX, Paris, France, assignor of one-half to Jean Marie Alcide Desmazures, same place. Filed Jan. 26, 1895. Serial No. 536,355. (No model.) Patented in England Jan. 19, 1895, No. 1,322; in France Jan. 19, 1895, No. 244,464, and in Belgium Jan. 19, 1895, No. 113,713.



Claim.—1. The herein described process for separating the metals and other ingredients from blendes by melting in a closed crucible a mixture of the pulverized blende with lead oxide, tapping off such argentiferous lead as may be thus separated adding flux and fusing, then blowing heated air or oxidizing gas through the fluid residue, and removing zinc oxide from its surface.

2. An apparatus for separating metals and other ingredients from blendes, consisting of a crucible C, having a tapping pipe T at its lower portion, and a trough J at its upper portion, a movable cover A having an internal cavity M and a flange extending into said trough, a pipe B for supplying a heating medium to the cavity in the cover, a plurality of pendent blast tubes depending from a part of the cover and communicating with the cavity therein, and a pipe K communicating with the interior of the crucible for carrying off the fumes, substantially as and for the purposes described.

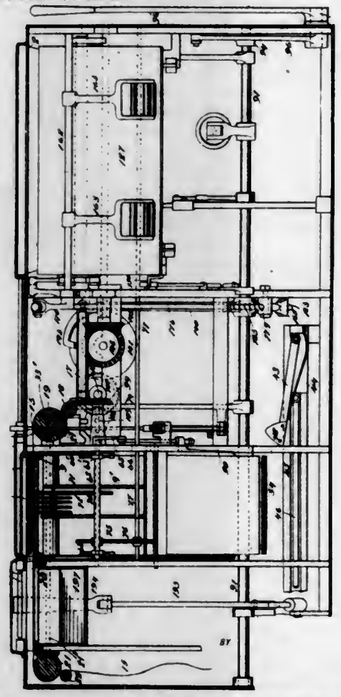
543,754. BRAKE MECHANISM FOR VEHICLES. CHARLES SAMPLE, Valley Grove, W. Va. Filed Mar. 12, 1895. Serial No. 541,494. (No model.)



Claim.—1. In brake-operating mechanism for vehicles, the combination of a rock-shaft through which the brakes are operated, a forwardly projecting lever secured to one end of said rock-shaft, a two-armed lever fulcrumed intermediate its ends and arranged below the upper portion of the rock-shaft lever, a link connecting the forward ends of said levers, a pull cord or rope attached to the rear end of the two-armed lever and extended upward, an automatic locking device for the brakes, and a pull cord or rope to release said locking device, substantially as described.

2. In brake-operating mechanism for vehicles, the combination of a rock shaft through which the brakes are operated, a lever secured to said rock shaft and provided with a forward projecting arm, a link depending from said arm, a lever fulcrumed below the running gear and having one end connected to said link, a pull cord or rope attached to the other end of the said lever and extended upward, an automatic locking device for the brakes, and a pull cord or rope to release said locking device, substantially as described.

543,755. COIN-CONTROLLED REGISTERING-MACHINE. DETALMO DI BRAKKA SAVORGNAN, Rome, Italy. Filed Nov. 24, 1894. Serial No. 529,822. (No model.)



Claim.—1. In a registering machine, the combination with a writing and printing surface, of printing mechanism, a cover and a locking device for rendering the writing and printing surface inaccessible, a coin-operated unlocking device for releasing the cover, and locking mechanism operatively connected with the cover, for locking the printing mechanism when the cover is open, substantially as specified.

2. In a registering machine, the combination of a writing table and date and number-printing mechanism, a paper strip extending over the writing table and printing types, for receiving a record, a reel for receiving the paper strip, mechanism for operating the reel, a cover and locking device provided with a coin-operated releaser for rendering the writing and printing surface inaccessible except at times when the lock is released by a coin, and locking mechanism operatively connected with the cover, for locking the printing mechanism when the cover is open, substantially as specified.

3. In a registering machine, the combination of an apertured table adapted for receiving a paper strip for writing or printing, date and number wheels having figured or lettered faces projecting through the table, platens for pressing paper down upon the date and number wheels, and a double lever for operating the platens simultaneously, substantially as specified.

4. In a registering machine, the combination of a writing table, two paper strips extending over the table, devices for producing impressions simultaneously on the two strips of paper, feeding mechanism for carrying the two strips of paper forward, a cutter punch for cutting the impressed portion of one strip out of the strip, leaving the strip perforated but continuous and means for storing the strips, substantially as specified.

5. In a registering machine, the combination, with the book-forming reel, provided with paper-holding arms having slotted ends of the movable knife for cutting the paper on the reel, substantially as specified.

6. In a registering machine, the combination with the letter box, of a weighing scale provided with a narrow, deep letter receptacle having parallel sides and furnished with a hinged bottom constructed to discharge the weighed letter into the letter box, substantially as specified.

7. The combination, with the beam of the letter weighing scale, of a rolling weight, and a yielding adjusting arm for moving the weight along the scale beam, substantially as specified.

8. The combination of a scale, a letter receptacle suspended from the shorter arm of the scale beam, a rolling weight adapted to roll on the scale beam, a wheel provided with figures for printing, and means for moving the weight and turning the printing wheel simultaneously, substantially as specified.

9. In a registering machine, the combination, with the scale and the weight-moving and printing wheel turning devices, of a positive stop formed of a cylinder having deep and shallow grooves, and a dog fitted to the deep groove and provided with teeth for entering the shallow grooves for stopping and holding the printing wheel as the scale beam drops, substantially as specified.

10. In a registering machine, the combination, with the scale provided with a letter receptacle, of printing mechanism constructed to print on the letter while it is in the letter receptacle, substantially as specified.

11. In a registering machine, the combination, with the letter receptacle and receipt delivering chute, of mechanism for preventing the delivery of the receipt in the absence of a letter in the letter receptacle, substantially as specified.

12. In a registering machine, the combination, with the registering and weighing mechanism, of two sets of numbering wheels, and mechanism for setting both sets simultaneously, one set being constructed for printing on the record strip and receipt, the other set being for printing upon the letter, substantially as specified.

13. In a registering machine, the combination with the covers of the writing table, letter receptacle and shaft carrying the covers, of the cam carried by the cover shaft, an operating lever, and locking mechanism operated by the cam on the cover shaft, whereby the operating mechanism is locked while the covers are open, substantially as specified.

14. In a registering machine, the combination with the operating shaft, of a check comprising two fixed ratchet bars oppositely arranged with respect to each other, and an arm carried by the shaft and provided with pawls for engaging the ratchet bars, and tripping devices for shifting the pawls, for compelling the complete movement of the operating shaft in either direction, substantially as specified.

15. In a registering machine, the combination, with the coin chute and record strip, of a spring pressed coin chute closing lever resting on and controlled by the record strip, substantially as specified.

16. The combination with the coin discharging fork, of a trip lever carried by the locking bar of the operating shaft and adapted to move forward and release the fork-carrying rod, substantially as specified.

17. The combination in a registering machine, of letter numbering mechanism, printing mechanism for recording the numbers of the letters a paper strip for receiving the record of the number of the letters, mechanism for moving the paper strip forward with a step by step motion, an automatic storage reel for receiving the paper strip after it is printed, and mechanism for operating the automatic reel, substantially as specified.

18. The combination with the letter-weighing scales, of a letter receptacle suspended from the scale beam, a cover, a locking device for the same, a hinged bottom for retaining the letter temporarily, printing mechanism for printing on the letter, and mechanism for opening the hinged bottom and discharging the contents of the letter receptacle after opening, substantially as specified.

19. The combination, with a letter box and weighing scales connected with the box, of a letter receptacle having vertical parallel sides and ends supported by the weighing scales and having a hinged bottom, and mechanism for opening the said hinged bottom, substantially as specified.

20. In a registering machine, the combination with letter-weighing scales, of a letter receptacle suspended from the scale beam, a cover fitted to the receptacle operatively connected with the operating mechanism of the registering machine, a hinged bottom connected with the receptacle, and mechanism for operating the hinged bottom for discharging a letter from the box, substantially as specified.

21. In a registering machine, the combination of the scale hav-

ing an adjustable weight, a spirally grooved cylinder provided with straight longitudinal grooves, a dog movable with the scale weight and adapted to engage the spiral or straight grooves of the cylinder, and figure wheels connected with the cylinder, substantially as specified.

22. The combination, with a reel having transversely grooved extension arms for receiving the record strip, of a movable knife constructed to project into and slide through the slots of the arms, and knife-carrying guide, substantially as specified.

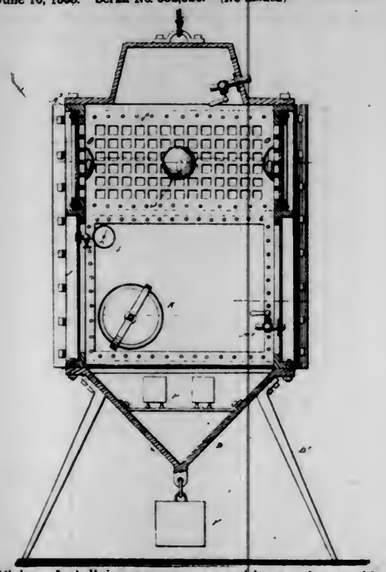
23. The combination, with the number wheels, of a spirally grooved cylinder provided with a straight longitudinal groove connecting the ends of the spiral groove, an actuating slide provided with a stud projecting into the spiral groove, and latches for compelling the stud to pass from the spiral groove to the longitudinal groove at one end of the cylinder, and compelling the stud to pass from the longitudinal groove to the spiral groove at the opposite end of the cylinder, substantially as specified.

24. In a registering machine, the combination with the record-forming devices of an inclosed cutter and die for cutting the receipt from the record strip, leaving the strip perforated but continuous mechanism for carrying the strip between the cutter and die with a step by step motion a locking device for preventing access to the inclosed cutter and die and a chute for receiving and holding the receipt, substantially as specified.

25. In a registering machine, the combination with the operating shaft, of an arm carrying a double pawl, a double acting spring for completing the throw of the pawl in either direction, and a curved ratchet bar provided with two sets of ratchet teeth oppositely arranged with respect to each other and furnished with two pawl-tripping fingers, substantially as specified.

26. The combination with the operating shaft, of an arm carried by the shaft, pawl and ratchet mechanism operatively connected with the operating shaft for insuring the completion of the movement of the shaft in either direction two spring bell hammers provided with spring dogs for engagement with the arm, after the arm has completed its stroke in either of the two directions in which it moves and a bell placed between the hammers for giving a notice of the completion of the stroke of the operating shaft in either direction, substantially as specified.

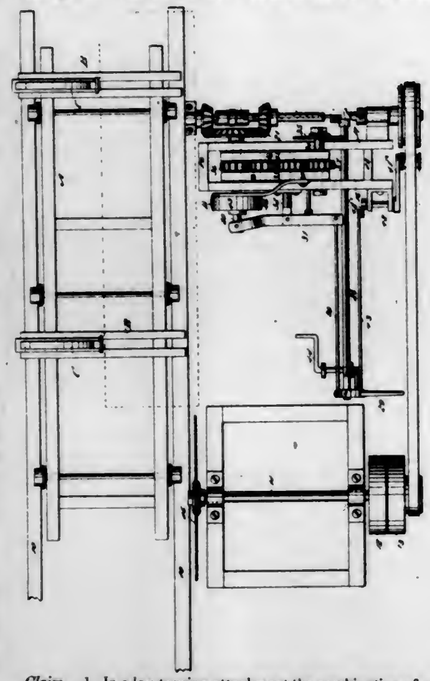
543,756. DIVING APPARATUS. HUBERT SCHON, Allegheny, Pa., assignor to himself, Anton Lutz, and George Muth, same place. Filed June 10, 1895. Serial No. 552,320. (No model.)



Claim.—1. A diving apparatus, comprising a casing provided with side frames having angular flanges bolted together, panels set and fastened in the said frames, a top bolted to the upper end of the said casing, and adapted for connection with a cable or other lifting device, and a bottom bolted to the said casing and carrying a weight, substantially as shown and described.

2. A diving apparatus, comprising a casing provided with side frames having flanges bolted together, panels set and fastened in the said frames, and electric lights held in the said casing, and adapted to shed their light through the said panels, to permit the occupants of the apparatus to observe the surrounding water and objects therein, substantially as shown and described.

543,757. LOG-TURNING MACHINE. JACOB G. STONER, Waynesborough, Pa. Filed Nov. 15, 1894. Serial No. 528,943. (No model.)



Claim.—1. In a log turning attachment the combination of a rotatively mounted machine shaft, means for driving the same in opposite directions, said means comprising a counter shaft and reversing gear adapted to communicate the movement thereof to the machine shaft, a frame loosely hung on said machine shaft, a rotating spur turner carried by the frame, means for driving said spur turner, and a clutch mechanism for connecting the frame to the machine shaft, whereby the frame is swung on its pivot to bring the spur turner into and out of operative position, substantially as set forth.

2. In a log turning attachment, the combination of a rotatively mounted shaft, a frame pivotally mounted thereon, means for locking said frame to the said shaft whereby the frame is turned on its pivot, a spur turner on the frame adapted to engage the log, and means for driving said turner from said shaft, substantially as set forth.

3. In a log turning attachment, the combination of a rotatively mounted shaft, a clutch device mounted thereon, a frame loosely pivoted on the shaft and connected to the loose member of said clutch-device, a spur turner mounted on the frame and adapted when the same is swung on its pivot to engage the log to be turned and means for actuating said spur turner, substantially as set forth.

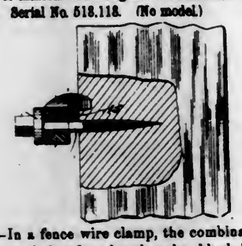
4. In a log-turning attachment for saw mills, the combination, with a pivoted frame, a rotary spur turner carried by the said frame, a driven shaft, and a driving connection between the driven shaft and the spur turner, of a gear secured upon the driven shaft, a line shaft, pinions loosely mounted upon the line shaft and engaging with the said gear on the driven shaft, a double clutch adapted for engagement with either pinion, a shifting device connected with said clutch, and a friction clutch likewise located on the driven shaft and connected with the said frame, as and for the purpose set forth.

5. In a log-turning attachment for saw mills, the combination, with a line shaft having reversing gears, a clutch controlling the same, a shaft driven from the gears of the line shaft, a pivoted frame, a rotary spur turner, and a driving connection between the driven shaft and the said spur, of a friction clutch carried by the driven shaft and connected with the said spur-carrying frame, a shifting lever, and a connection between the shifting lever, the friction clutch and the shifting clutch on the line shaft, all operated substantially as shown and described.

6. The combination, with a shaft, means for rotating the same, a pivoted frame, and a rotary log-turning device carried by the said

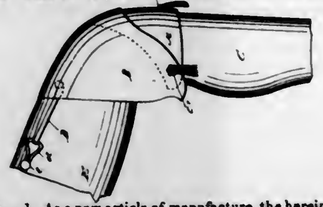
frame, of a clutch, the same consisting of a casing or drum, loosely mounted on the shaft and connected with the said frame, a disk secured to the shaft, shoes held for engagement with the periphery of the drum or casing and provided with spindles entering openings in the disk, expanding arms having a wedge shape, adapted for engagement with the inner end of the spindles and held to slide upon the said shaft, and means, substantially as described, for operating the said expanding arms, as and for the purpose set forth.

543,758. WIRE-FASTENER. OLIVER SWIFT, Aberdeen, S. D., assignor to himself and Morgan W. Simmons, same place. Filed July 20, 1894. Serial No. 518,118. (No model.)



Claim.—In a fence wire clamp, the combination of a stem provided with a headed end, and a clamping block having a perforation through which said stem is adapted to pass, said block being also provided at one side with a toe which projects below its under side and is adapted to enter the post, said toe being separated from the perforation through which the stem passes by a space adapted to receive the fence wire, substantially as set forth.

543,759. KNEE-PROTECTOR. THOMAS B. WALKER, Honolulu, Hawaii. Filed Nov. 21, 1894. Serial No. 529,457. (No model.)

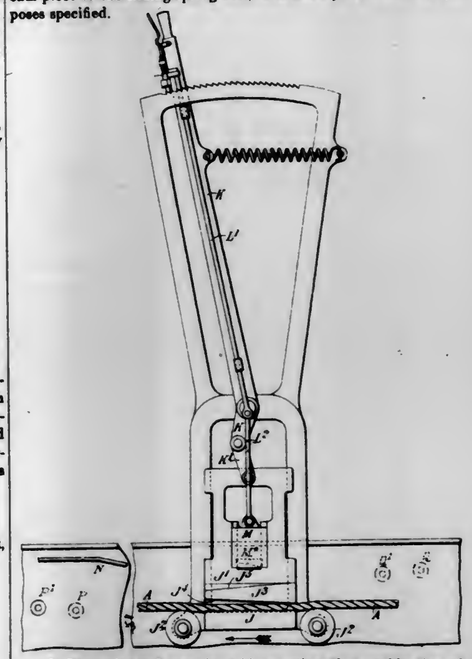


Claim.—1. As a new article of manufacture, the herein described knee and thigh protector for equestrians consisting of a knee member and a thigh member overlapping the knee member, each member being approximately of triangular shape and the sides of the members being reduced in height forming side flaps at the lower corners thereof, the side flaps of the thigh member extending downward below the center or body thereof, and overlapping the side flaps of the knee member, the respective flaps being united at the lower corners of the same and means for holding the members in position on the wearer, substantially as described.

2. The herein described knee and thigh protector, comprising a knee member substantially triangular in shape and reduced at the sides forming side flaps at the lower corners, the upper part of said knee member being shaped to fit upon the knee of the rider, and a thigh member also approximately triangular in shape and adapted to fit upon and overlap the said knee member, the side flaps of the thigh member extending downward below the center or body of the same, and overlapping the side flaps of the knee member, a pivotal connection between the said members near the ends of the flaps, a fastening device arranged at or near the center of the knee member near the lower edge thereof and adapted to secure the same to a boot leg or leggin, and straps secured to the thigh member and having their free ends provided with devices for engaging the trousers leg, substantially as shown and described.

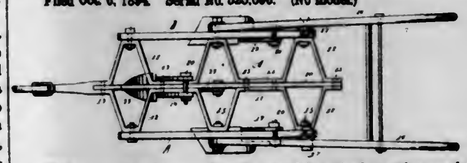
543,760. GRIPPING MECHANISM FOR CABLE TRACTION. ROGER W. WALLACE, London, England. Original application filed June 14, 1892, Serial No. 436,880. Divided and this application filed Dec. 8, 1892. Serial No. 454,537. (No model.) Patented in England June 24, 1891, No. 10,793; in Austria-Hungary May 27, 1892, No. 43/467; in Italy May 31, 1892; in Germany June 2, 1892, No. 72,105; in France June 6, 1892, No. 223,218; in Belgium June 9, 1892, No. 100,062; in Spain June 9, 1892, No. 13,432; in Switzerland June 13, 1892, No. 5,539, and in Canada July 14, 1892, No. 39,335.

Claim.—1. In a gripper for use in cable traction, the combination of a jaw fixed to the lower part of the frame, a movable upper jaw, an operating lever K connected with the movable jaw, a sliding spring bolt L attached to said operating lever engaging with a ratchet on the frame, a sliding cam piece M adapted to engage with inclines located inside the cable tube, and links L′, L², connecting the said cam piece to the sliding spring bolt, substantially as, and for the purposes specified.



2. In a gripper for use in cable traction, the combination of a jaw fixed to the lower part of the frame a movable upper jaw, an operating lever K connected with the movable jaw, a sliding spring bolt L attached to said operating lever and engaging with a ratchet on the frame, a sliding cam piece M adapted to engage with inclines located in the cable tube, links L′ L² connecting said cam piece to the sliding bolt, a projecting piece J^3 secured to the said movable jaw and having inclined faces J^4 J^4 and rollers P, Q, located inside the cable tube and adapted to engage with said inclined faces J^4 J^4 and automatically operate the movable jaw of the gripper to release and grip the cable when necessary, substantially as, and for the purposes specified.

543,761. PLOW-STOCK. JOSEPH W. ABBOTT, Lockhart, Tex. Filed Oct. 6, 1894. Serial No. 525,096. (No model.)

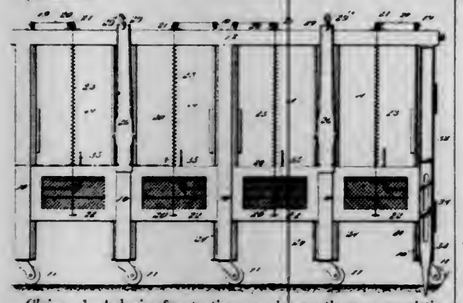


Claim.—1. A cultivator frame, comprising a body portion consisting of opposed zigzag beams forming a continuous frame and provided at their forward portions with a recess and a hitch in advance thereof, a central beam whose front end is secured in the said recess, and side beams secured to the outer portions of the zigzag beams, substantially as described.

2. A cultivator frame, comprising a body portion consisting of a central beam and lateral zigzag beams forming a plurality of projections at each side of the central beam, and side beams secured directly to the said projections of the zigzag beams and capable of longitudinal adjustment thereupon by fastening the front or rear ends of the beams to different projections of the said zigzag beams, substantially as described.

3. A cultivator frame, comprising a body portion consisting of a central beam and lateral zigzag beams forming at least three projections at each side of the central beam, side beams secured directly to the said projections and capable of longitudinal adjustment thereupon by shifting each side beam and fastening its central portion to different projections of the zigzag beams, and handles connected to the adjustable side beams, substantially as described.

543,762. DEVICE FOR STARTING RACE-HORSES. JAMES T. ANDREW, Montgomery, Ala. Filed Oct. 29, 1894. Serial No. 527,189. (No model.)



Claim.—1. A device for starting race horses, the same consisting of a stall provided with front and rear standards, a gate adapted to slide vertically in the said front standards, a lever fulcrumed upon one of said front standards and normally holding the gate in a closed or lower position, means for raising said gate when released from the lever, a rock shaft provided with a crank arm, a link connecting the upper end of the lever with the crank arm, and means for rocking the said shaft, substantially as shown and described.

2. A device for starting race horses, the same consisting of a plurality of stalls provided with front standards, gates held to slide vertically in the front standards, levers fulcrumed upon the front standards between adjoining stalls, each lever being provided with projections at its lower end to engage the gates of two adjoining stalls when in their lower position, means for raising the gates when released from the levers and a trip device adapted to move the said levers simultaneously and release the gates, substantially as shown and described.

3. A device for starting race horses, the same consisting of a stall provided with a sliding front gate, a latch normally holding the gate in a closed position, a trip adapted to release the gate from the said latch, means for opening the gate when released from the latch, and a striker arm operated simultaneously with the opening of the gate, as and for the purpose set forth.

4. A device for starting race horses, the same consisting of a stall, a gate having sliding movement and adapted to close the forward end of the stall, a weight serving to elevate the gate, a latch acting to hold the gate in its lower or closed position, means, substantially as shown and described, for releasing the gate from the latch, and a striker arm located at the rear of the stall and operated by the said weight simultaneously with the raising or opening of the gate, as and for the purpose set forth.

5. In a device for starting race horses, the combination, with a stall and front and rear standards projected beyond the top of the stall, one of the rear standards being provided with a box, and the front standards with slideways angular in cross section, of a gate having angular ribs entering the front slideways of the stall, a releasing lever adapted to normally hold the gate in a lowered position, a trip device adapted to disengage the releasing lever from engagement with the gate, a weight held to slide in the said box at the rear of the stall, a striker arm adapted to deliver a blow upon the animal in the stall and operated by the said weight as the weight falls in opening the gate, and a cable connecting the said weight with the gate, as and for the purpose set forth.

6. In a device for starting race horses, the combination, with a stall and front and rear standards projecting upwardly therefrom, a box being formed upon one of the rear standards, the front standards being formed with slideways angular in cross section, of a gate having ribs extending into the slide-ways at the front of the stall, a weight held to travel in the rear box, a connection between the gate and weight, substantially as described, a releasing lever fulcrumed upon one of the front standards and provided with pins adapted to enter the slideway and extending over the top of the gate when in its lowered position, a trip device by means of which the releasing lever is operated, and a striker arm adapted to deliver a blow upon the horse in the stall, simultaneously with the raising of the gate, the said striker arm being spring-controlled and provided with a member extending into the path of the weight, whereby the arm is carried inward against the resistance of its spring, as and for the purpose specified.

543,763. WINDOW-SHADE. JAMES R. BALSLEY, Connellsville, Pa. Filed Feb. 25, 1895. Serial No. 539,616. (No model.)

Claim.—1. The combination with grooved track pieces, of a shade movable therein, and a transverse twist or buckle in the shade, substantially as set forth.

2. A window shade composed of sheet material having a slight bend 15 on the edges thereof, and an edge strip infolded on the edge thereof to engage the bend 15, substantially as set forth.



3. A shade composed of sheet material and having infolded edge strips thereon, and bends in the edge strips for retaining the shade within the grooves of a track, substantially as set forth.

4. A window shade composed of sheet material, infolded edge strips thereon, a strip of resilient material infolded within the edge strips, and retentive bends in the edge strips, substantially as set forth.

5. A window shade composed of sheet material having infolded edge strips thereon, a strip of resilient material infolded therein, and having its ends projecting and turned back to form retentive bends for the edge strips, substantially as set forth.

6. A window shade provided with a curled metallic bead, and an interior radial flange, substantially as set forth.

7. A window shade provided with a curled bead, an interior radial flange, and a stiffener secured to the flange, substantially as set forth.

8. A window shade provided with a curled metallic bead, an interior radial flange, and a stiffener passing longitudinally through the interior of the bead and engaging with the flange, substantially as set forth.

9. A shade provided with a curled metallic bead, an interior radial flange, and a grooved stiffener extending through the bead, and receiving the flange thereof within its groove, substantially as set forth.

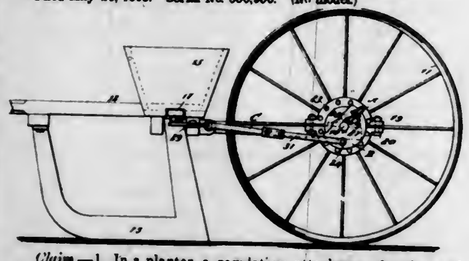
10. A window shade provided with a cylindrical metallic bead, and a round headed finishing piece protecting the end of the bead, substantially as set forth.

11. A window shade provided with a cylindrical metallic bead, a round headed finishing piece, and a plurality of tangs thereon adapted to secure the finishing piece to the end of the bead, substantially as set forth.

12. A window shade composed of sheet material provided with edge strips and beads secured together at right angles, substantially as set forth.

13. A window shade having a body part of sheet material, edge strips and beads secured together, and supporting, as in a frame, the body part, substantially as set forth.

543,764. PLANTER. WALTER W. BURCHELL, Sutherland, Iowa. Filed May 28, 1895. Serial No. 550,960. (No model.)



Claim.—1. In a planter, a regulating attachment for the seed drop slide, the same consisting of a disk adapted for attachment to the hub of a ground wheel, provided with apertures circularly arranged, a crank disk adapted to be loosely mounted on the axle upon which the hub revolves and having a peripheral opening capable of registering with the apertures in the hub disk, a latch carried by the crank disk and adapted to enter the opening in the hub disk, a shifting device for the said latch, and a pitman connected with the crank disk and adapted for engagement with the seed drop slide of the machine, substantially as set forth.

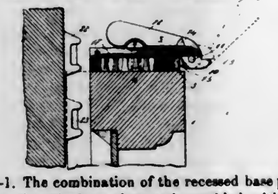
2. In a planter, the combination, with the axle, a ground wheel thereof and the seed drop slide, of a disk secured upon the hub, having circularly arranged apertures, a crank disk loosely mounted on the axle adjacent to the hub disk, a latch carried by the crank disk and adapted to enter the openings in the hub disk, and means, substantially as described, for connecting the crank disk with the seed drop slide, as and for the purpose set forth.

3. In a planter, the combination, with the axle, a ground wheel thereof and the seed drop slide, of a disk secured upon the hub, having circularly arranged apertures, a crank disk loosely mounted on the axle adjacent to the hub disk, a latch carried by the crank disk and adapted to enter the openings in the hub disk, a pitman connected with the crank pin of the crank disk, a lever connected with the said pitman, and a link connection between the lever and the seed drop slide, substantially as shown and described

4. In a planter, the combination, with a ground wheel, the seed drop slide and the axle, the ground wheel being loosely mounted on the axle, of a sectional disk provided with clamps, the said disk being secured on the hub of the ground wheel and provided with circularly arranged apertures, a crank disk loosely mounted on the axle, a spring latch secured to the crank disk and adapted to enter any of the openings in the hub disk, means, substantially as described, for throwing the latch out of engagement with the hub disk, a pitman constructed in adjustable sections, connected with the crank pin of the crank disk, a bell crank lever having one member connected with the said pitman, and a link connecting the opposite member with the aforesaid drop slide, as and for the purpose specified.

5. In a planter, a device for regulating from the ground wheel the dropping of the seed, comprising a crank disk revolving independently of the hub and provided with a latch adapted to enter openings in the hub and a pitman connected with the crank disk and adapted likewise for connection with the said drop slide, as and for the purpose set forth.

543,765. SASH-LOCK. IRVING ELTING, Saugerties, N. Y. Filed Apr. 24, 1895. Serial No. 546,994. (No model.)



Claim.—1. The combination of the recessed base plate the locking plate pivoted to the base plate and provided with an eccentric portion, and a locking device secured to the locking plate and movable relatively thereto to engage the recessed portion of the base plate, substantially as described.

2. The herein described lug for the purpose set forth, provided in one face with a groove, and having a pin projecting from its opposite face, the said lug being apertured to receive a screw or other fastening device, substantially as specified.

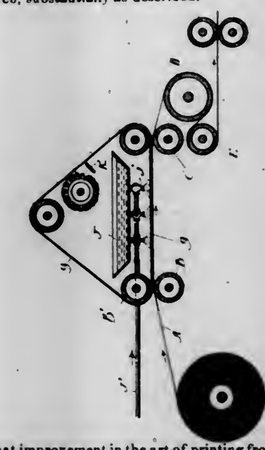
3. The herein described lug for the purpose set forth, provided in one face with a groove of varying depth, and having a pin projecting from its opposite face, the said lug being apertured to receive a screw or other fastening device, substantially as specified.

4. The combination of the base plate provided with a series of recesses and an annular groove, and a rib or projection extending across said groove, the eccentric locking plate pivoted to the base plate and provided with a lug projecting into the groove of the base plate to engage the rib thereof, and a locking device secured to the locking plate and movable relatively thereto to engage the recesses of the base plate, substantially as described.

5. The combination of the base plate provided with a series of recesses, the eccentric locking plate pivoted to the base plate and provided with lugs or ears one of which is provided with a stop, and the locking lever pivoted between the said ears of the locking plate and provided with a stop adapted to engage that on the ear, said locking lever being constructed to engage the recesses of the base plate, substantially as described.

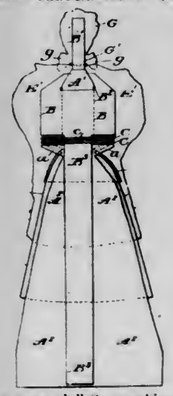
543,766. METHOD OF PRINTING ILLUSTRATED LETTER-PRESS. ROBERT J. FINLEY, New York, N. Y. Filed May 28, 1894. Renewed July 5, 1895. Serial No. 555,029. (No specimens.)

Claim.—1. That improvement in the art of printing from a composite form made up of type-matter and variably distributed illustration cuts requiring a different surface from the type-matter which improvement consists in preparing a finished web or sheet of paper not suitable for the desired printing of such cuts, by treating the paper at arbitrary parts predeterminately selected in keeping with the variant distribution in the form of the cut or cuts and thereafter simultaneously presenting both the type-matter and cuts to the said sheet or web, substantially as described.



2. That improvement in the art of printing from a composite form made up of type-matter and variably distributed illustration cuts requiring a different surface from the type-matter which improvement consists in preparing a finished web or sheet of paper not suitable for the desired printing of such cuts, by coating the paper at arbitrary parts predeterminately selected in keeping with the variant distribution in the form of the cut or cuts and thereafter simultaneously presenting both the type-matter and cuts to the said sheet or web, substantially as described.

543,767. PAPER DOLL. EDWARD T. GIBSON, Minneapolis, Minn. Filed Feb. 15, 1895. Serial No. 538,600. (No model.)



Claim.—1. In a paper doll the combination of an armless and shoulderless paper body having, at a level which is not higher upon the said body than the lower level of the breasts in a normally proportioned doll figure, a lateral projection from and on each side of the trunk portion of the said body, the trunk portion above the said lateral projections being at all points of less breadth than that of the surface of the trunk between the extremities of the two said projections, paper garment pieces having loop pieces which adapt the said garment pieces to be hung separately as well as collectively upon the said lateral projections, a paper locking key having near its upper end a loop hole designed for the insertion of the upper end of the said trunk portion of the paper doll body and having below the said loop hole at a point on the surface of the key which point when the garment pieces are locked by the said key in position upon the doll body corresponds to the upper level of the two said lateral projections on the doll body a sharp contraction in the horizontal expanse of the key on both sides, and, still further, having a downward extension from the point at which the said sharp contraction occurs which downward extension is designed to be passed through the loop

holes in the loop pieces attached to the said garment pieces to completely lock together the parts composing the doll and at the same time afford a sustaining strip which serves to support the said doll body in a nearly upright position when properly bent, a paper head attached to the upper extremity of the said locking key, and paper garment pieces having a downward projected waist extension which waist extension adapts the said garment pieces to be supported separately as well as collectively upon the said doll body by inserting the waist extension from above downward into the loop hole in the loop piece which exists attached to the aforesaid garment pieces, substantially as shown and described.

2. A paper doll having an armless and shoulderless paper body and a lateral projection on each side of the trunk portion of the said body at a level which is not higher on the said trunk portion than the lower level of the breasts in a normally proportioned doll figure, the width of the trunk portion above the said lateral projections being at all points less than the width of the surface between the extremities of the two said lateral projections so as to permit of loop pieces attached to paper garment pieces being hung upon the said lateral projections by passing the trunk portion of the said doll body from below upward through the loop holes in the said loop pieces, substantially as set forth.

3. The combination with a paper doll body having no arms and no shoulders, and having a lateral projection on and from each side of the trunk portion of the said body at a level which is not higher on the said trunk portion than is the lower level of the breasts in a normally proportioned doll figure, the width of the said trunk portion above the said lateral projections being at all points less than the width of the surface between the extremities of the two lateral projections, of paper garment pieces having loop pieces at the top or at the back which loop pieces can be hung upon the said lateral projections by passing the trunk portion of the said doll body from below upward through loop holes in the said loop pieces, substantially as set forth.

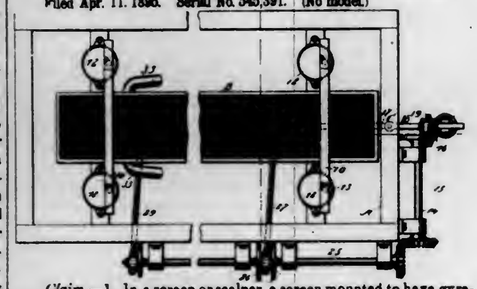
4. The combination with an armless and shoulderless paper doll body having a lateral projection on and from each side of the trunk portion of the said body at a level which is not higher on the said trunk portion than the lower level of the breasts in a normally proportioned doll figure, the width of the said trunk portion above the said lateral projections being at all points less than the width of the surface between the extremities of the two lateral projections, and paper garment pieces having loop pieces by which they are hung upon the said lateral projections on the doll body, of a garment piece or pieces having a downward projected waist extension which waist extension can be inserted between the back of the paper garment pieces having loop pieces and the front of the corresponding part of the said doll body by passing the said waist extension from above downward through the loop holes in the said loop pieces, substantially as set forth.

5. In a paper doll having a paper head and neck in connection with the paper body and having paper garment pieces which are detachably secured to the paper body, the said garment pieces being supported on the said body by means of loop pieces attached to the said garment pieces and which loop pieces are looped over the trunk of the doll body and hung upon lateral projections provided for this purpose on the said trunk, and, still further having other garment pieces which are supported on the said body by means of an extension at the bottoms of the garment pieces which extension is inserted from above downward into the loop holes in the loop pieces attached to garment pieces which are hung upon the said lateral projections on the doll body, the combination with the said neck of the doll of a laterally extended neck ornament section on and from each side of the neck, the said laterally extended neck ornament sections being free from the doll head and body and projected downward to a greater distance than the said neck of the doll so as to permit of the said downward projected lateral extensions of the neck ornament being lapped over the front of the upper extremity of the garment piece which extends on the said doll body to the bottom of the said neck and thereby serve to steady the said garment piece, substantially as set forth.

6. In a paper doll the combination of an armless and shoulderless paper body having a lateral projection on each side of the trunk portion of the said body at a level which is not higher on the said trunk portion than the lower level of the breasts in a normally proportioned doll figure, paper garment pieces having loop pieces which adapt the said garment pieces to be hung separately as well as collectively upon the said lateral projections by passing the said trunk portion of the doll body from below upward through the loop holes in the said loop pieces, and a paper locking key having near its upper extremity a loop hole designed for the insertion of the upper end of the said trunk portion of the doll body and having below the said loop hole at a point on the surface of the said key which point when the garment pieces are locked by the said key in position upon the doll body corresponds to the upper level of the two said lateral projections on the doll body a sharp contraction in the horizontal expanse of the key on both sides, and, still further, having a downward extension from the point at which the said sharp contraction occurs which downward extension is designed to be passed through the loop holes in the loop pieces attached to the said garment pieces to completely lock together the parts composing the doll, substantially as shown and described.

7. In a paper doll the paper locking key B having near its upper end a loop hole B^2 and having at a suitable point below the said loop hole a sharp contraction in the longitudinal expanse of the surface of the key on both sides, and, still further, having an extension B^1 projected downward from the level of the said contraction, the central vertical line of the said extension B^1 coinciding with the center of the said loop hole B^2, as shown and described and for the purpose specified.

543,768. GRAIN-SCALPER. ADAM W. HAAG, Fleetwood, Pa. Filed Apr. 11, 1895. Serial No. 545,391. (No model.)



Claim.—1. In a screen or scalper, a screen mounted to have gyratory reciprocating movement, a drive-shaft, a line-shaft driven thereby, pitmen connecting the line-shaft with the screen, and pitmen likewise connecting the drive shaft with the screen, the two sets of pitmen being at right angles to each other, and means for guiding the end pitman partially in a straight and partially in a curved course or race, whereby the screen will have a gyratory motion and a quick return, as and for the purpose specified.

2. In a screen or scalper, a screen mounted to have gyratory reciprocating movement, a drive shaft, a line shaft driven thereby, pitmen connecting the line shaft with the screen and pitmen likewise connecting the drive shaft with the screen, the two sets of pitmen being at right angles to each other, means for guiding the end pitman partially in a straight and partially in a curved course or race, whereby the screen will have a gyratory motion and a quick return, and means, substantially as described, for adjusting the controlling device for the end pitman, whereby the return motion may be made more or less rapid, as and for the purpose specified.

3. A screen or scalper mounted to have gyratory motion and a driving mechanism comprising a drive shaft, a pitman constructed in two pivotally connected sections, and connecting the drive shaft with the said screen near one end thereof, a shaft arranged at right angles to the drive shaft and driven thereby, the said shaft being also connected by pitmen with the said screen, and means for guiding the pitman connected with the drive shaft, as and for the purpose set forth.

4. In a screen or scalper, a main frame, a screen frame mounted upon wheels or rollers, the said wheels being held to turn upon wear plates secured to the main frame, a drive shaft located at one end of the main frame, a pitman constructed in two pivotally connected sections, the inner section being connected with the screen frame and the outer section with the drive shaft, a line shaft journaled at one side of the main frame and driven from the said drive shaft, pitmen connecting the line shaft with the screen, and means for guiding the pitman connected with the drive shaft, as and for the purpose specified.

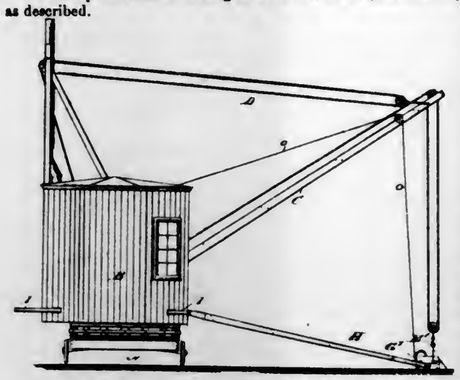
543,769. LOADING-MACHINE. PATRICK H. HAGERTY, Ashtabula, Ohio, assignor of one-half to the Phœnix Iron Works Company, same place. Filed Oct. 31, 1894. Serial No. 527,553. (No model.)

Claim.—1. A loading machine, comprising a boom adapted to carry a bucket, and bars pivotally connected with the boom and having a sliding motion, to push the bucket into the material to be raised and removed, and fill the bucket, substantially as shown and described.

2. A loading machine, provided with a bar having sliding movement in the frame of the machine, a boom pivoted to the sliding bar, a bucket pivoted to the boom, and a hoisting device for the bucket, substantially as described.

3. A loading machine, provided with a bar having sliding movement in the frame of the machine, a boom pivoted to the sliding bar, a bucket pivoted to the boom, and a hoisting device pivotally connected to the bucket in advance of its connection with the boom, substantially as described.

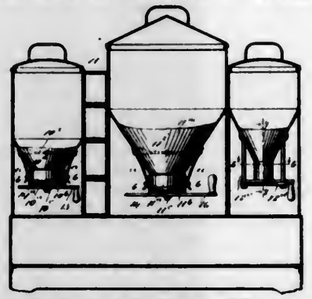
4. A loading machine, comprising a bucket carrying a pivoted bail for connection with a hoisting device, and a forked boom whose side members are pivotally connected with the sides of the bucket in advance of the rear end thereof, but at the rear of the bail pivots, the side members of the boom engaging the sides of the bucket at the rear of the pivot so as to form guides for the bucket, substantially as described.



5. A loading machine, comprising a bucket carrying a pivoted bail for connection with a hoisting device, a forked boom whose side members are pivotally connected with the sides of the bucket in advance of the rear end thereof, but at the rear of the bail pivots, the side members of the boom engaging the sides of the bucket at the rear of the pivot so as to form guides for the bucket, and stops for the boom, secured to the sides of the buckets, substantially as described.

6. In a loading machine, the combination, with a hoisting device, of a bucket provided with a bail connected with the said hoisting device, a boom pivotally connected with the said bucket, and rack bars mounted to slide and pivotally connected with the said boom, substantially as shown and described.

543,770. PORTABLE KITCHEN-CABINET. LESTER HASKILL, Fort Meade, Fla., assignor to himself and Edward D. Deahong, same place. Filed Mar. 29, 1895. Serial No. 543,731. (No model.)

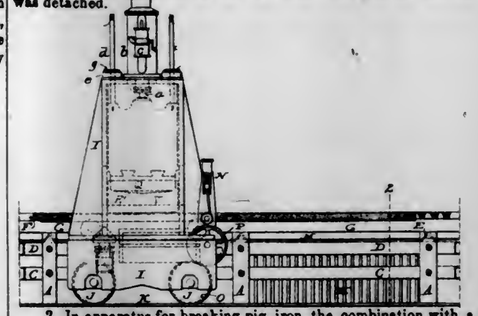


Claim.—1. In a kitchen cabinet, substantially as described, the combination with the hollow base having a sealable door aperture, of cylindrical bins, each having a close cover, and a sealable door aperture near the lower end, and also provided with interior depending funnel attachments for the delivery of material from the bins, cut-off gates for the bins, and sifting devices for two of the bins, comprising a sieve detachable from the funnel portion of the bin, agitator disks on the sieves, lump breaking arms on said disks, and an extensible handle adapted for vibration and partial rotation of the agitator disks, as specified.

2. In a kitchen cabinet, substantially as described, the combination with the flour bin, of the funnel shaped bottom portion, the removable sieve, the spring catches therefor, the apertured agitator disk, the stirring and lump breaking arms on said disk, and the slotted extensible handle lever connected with the disk by a central depending bolt, that has flattened sides to engage the sides of the slot in said lever, substantially as described.

543,771. MACHINE FOR BREAKING PIG-IRON. JOHN S. KENNEDY, Chambersburg, Pa. Filed Jan. 16, 1895. Serial No. 535,136. (No model.)

Claim.—1. In apparatus for breaking pig iron, the combination with a table or support on which to place the bed; of means for coincidently detaching a section of the sow from the bed and from its pigs; and means for breaking the pigs from which the sow section was detached.



2. In apparatus for breaking pig iron, the combination with a table or support on which to place the bed; of a traveling frame or housing provided with means for coincidently detaching a section of the sow from the bed and from its pigs; and means for breaking the pigs from which the sow section was detached.

3. In apparatus for breaking pig iron, the combination with a table or support on which to place the bed; of a track or support extending in the same general direction as the table; breaking mechanism overhanging the table; and a traveling housing mounted upon the track or support and carrying the breaking mechanism.

4. In apparatus for breaking pig iron, the combination with a breaking table; of a traveling housing provided with a breaking mechanism, and a secondary table or anvil.

5. In apparatus for breaking pig-iron, the combination with a stationary table; of a traveling housing provided with breaking mechanism, and also with an anvil or secondary table, and with a hold-down block.

6. In apparatus for breaking pig-iron, the combination with a stationary table; of a traveling housing provided with a breaking mechanism and also with a shelf or apron.

7. In a breaking table, the combination with the posts A B, of the A-shaped spreader plates connecting the posts.

8. In combination with a breaking table; the hold-down block V; independent pig dogs X; and a breaking mechanism.

9. In combination with a breaking table; the hold-down block V; independent dogs X, free to slide upon the block and provided each with a stop; means for raising and lowering the block; and a breaking mechanism.

10. In apparatus for breaking pig iron, the combination with a stationary table; of a traveling housing provided with a breaking mechanism and also with a hold-down block to press the bed upon the table; and means, also mounted upon the traveling housing, for engaging the lower face of the bed, whereby the said bed is clamped on both faces.

11. In combination with a breaking table, and its grating; a traveling housing provided with breaking mechanism, and with an apron to form a continuation of the grating.

12. In combination with a breaking table; a traveling housing provided with breaking mechanism, and with a vertically-movable anvil or secondary table.

13. In combination with a breaking table; a traveling housing provided with two hammers,—the pig hammer being located over, and the sow-hammer outside of said table; and an anvil or secondary table carried by the housing beneath the sow-hammer.

14. In combination with a breaking table; a traveling housing provided with a sow-breaking hammer and also with an anvil or secondary table to support the sow; and a hold-down block to rest upon the bed close to the necks of the pigs.

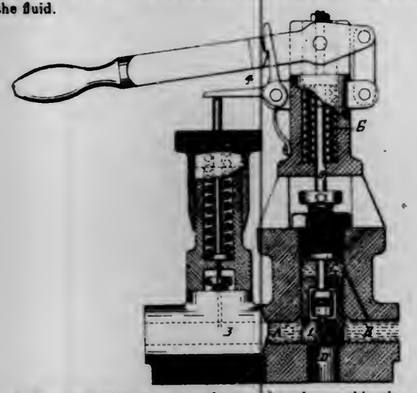
15. In combination with a breaking table; a traveling housing provided with sow and pig breaking hammers; means for holding the pigs while the sow is being detached; and separate dogs for holding the pigs while breaking the latter.

16. In combination with a breaking table; the pig-breaking hammer R having a camber on its lower face.

543,772. HYDRAULIC-PRESSURE VALVE. GEORGE B. LAMB, Waterbury, Conn., assignor to the Waterbury Farrel Foundry and Machine Company, same place. Filed Dec. 3, 1894. Serial No. 530,641. (No model.)

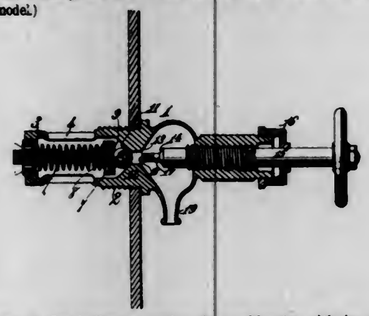
Claim.—1. In a hydraulic-pressure valve, the combination of a valve chamber; a check-valve, for preventing the escape of fluid under pressure: a piston stem or rod, loosely joined thereto near one end within the chamber, the other end being subject to atmospheric pressure: said rod having a degree of freedom in the necessary direction,

sufficient for opening said valve, and having an area exposed to fluid pressure in that direction, greater than the exposed area of the valve to opposing pressure whereby there is a resultant force tending to open said valve, and a catch and tripping piston substantially as described, for retaining the valve rod in position until released by the pressure of the fluid.



2. In a hydraulic pressure release valve, the combination of a valve 1 having a chamber C, a check-valve 2; a piston stem or rod 5, loosely joined thereto near one end, the other end being subject to atmospheric pressure; arranged substantially as described, for opening and closing valve 2, and having its cross sectional area greater than that of the valve 2; and a fastening device, consisting of a catch and tripping piston, substantially as described, for holding and releasing rod 5; combined to operate in the manner described and for the purpose specified.

543,773. BOILER CONNECTION FOR VALVES. CHARLES C. MASSEY, Birmingham, Ala. Filed Nov. 6, 1894. Serial No. 528,075. (No model.)



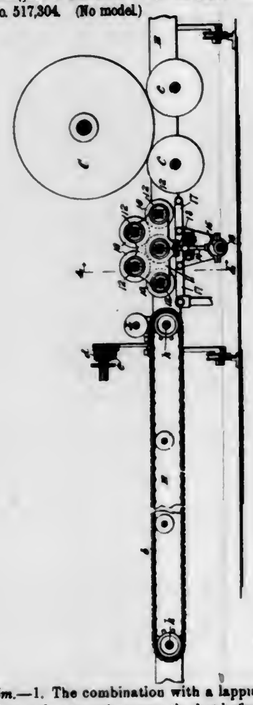
Claim.—1. In a boiler connection, the combination with the valve shell provided with an outlet and having a tubular extension adapted to communicate with the interior of a boiler, of a concave valve seat formed in the outer end of said extension, a ball-valve seated in said seat, a disk having a central seat for said ball-valve, a spring for pressing disk against the ball-valve and forcing said valve to its seat, and a stem for forcing said valve from its seat and provided with a valve for closing the outlet, substantially as described.

2. In a boiler connection, the combination with the valve shell provided with an outlet and having a slotted tubular extension adapted to communicate with the interior of a boiler, of a concave valve seat formed in the outer end of said extension, an apertured disk having a concave seat formed therein, a ball-valve arranged between said seats, a spring for forcing said disk against said ball-valve, and a stem for forcing said valve away from its seat and provided with a valve for closing the outlet, substantially as described.

3. In a boiler connection, the combination with the valve shell provided with an outlet and having a slotted tubular extension adapted to communicate with the interior of a boiler, of a concave valve seat formed in the outer end of said extension, an apertured disk having a concave seat formed therein, a ball valve arranged between said seats, a coiled spring for forcing said disk against the ball-valve, a perforated screw plug for confining said spring in place, and a stem for forcing said valve away from its seat and provided with a valve for closing the outlet, substantially as described.

4. In a boiler connection, the combinaton with the valve shell provided with an outlet and having a slotted tubular extension adapted to communicate with the interior of a boiler, of a concave valve seat formed in the outer end of said extension, a ball valve seated in said seat, a spring for forcing said valve to its seat, and a stem for forcing said valve from its seat, said stem having formed in its end a concave seat for engaging said ball valve and provided with a valve for closing the outlet, substantially as described.

543,774. LAPPING-MACHINE. EDWARD A. MILLS, Little Falls, N. J., assignor to Robert Beattie, same place. Filed July 12, 1894. Serial No. 517,304. (No model.)



Claim.—1. The combination with a lapping or bat forming machine, of a condenser acting upon the bat before it is wound upon the bat roll, said condenser including one or more condensing rolls so arranged and acting under such pressure as to condense the bat by rubbing action upon it, and means for vibrating said condensing rolls transversely to their plane of rotation, substantially as described.

2. The combination with a lapping or bat forming machine having a pressure roll and bat roll, of a condenser between the pressure roll and the bat roll, said condenser including one or more condensing rolls so arranged and acting upon the bat under such pressure as to condense the bat by rubbing action upon it, and means for vibrating said condensing rolls transversely to their plane of rotation, substantially as described.

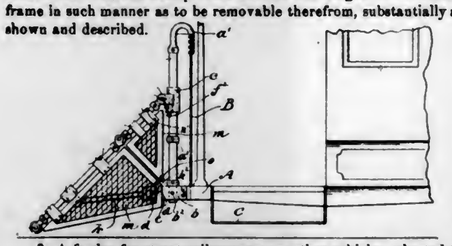
3. The combination with a lapping or bat forming machine, of a condenser acting upon the bat before it is wound upon the bat roll, said condenser including one or more condensing rolls so arranged and acting under such pressure as to condense the bat by rubbing action upon it, means for vibrating said condensing rolls transversely to their plane of rotation, and means for heating the bat during the action of the condenser, substantially as described.

4. The combination with a lapping or bat forming machine, of a condenser acting upon the bat before it is wound upon the bat roll, said condenser including one or more condensing rolls so arranged and acting under such pressure as to condense the bat by rubbing action upon it, means for vibrating said condensing rolls transversely to their plane of rotation, and means for heating and moistening the bat during the action of the condenser, substantially as described.

543,775. CAR-FENDER. GEORGE H. MODEMANN, New York, N. Y. Filed July 2, 1894. Serial No. 516,333. (No model.)

Claim.—1. A fender for street railway cars and other vehicles, consisting of a frame adapted to be secured to the front of a car, a collapsible fender-body slidably mounted upon the said frame, having intervening supporting material and provided with extensible wings at either side thereof, and one or more bars pivoted to the lower end of the fender body and hinged to the supporting frame in such manner as to be removable therefrom, substantially as shown and described.

2. A fender for street railway cars or other vehicles, consisting of a frame adapted to be attached to the front of a car, toggle-bars removably mounted upon the said frame and sliding thereon, a supporting material intervening the upper sections of the bars and the same intervening the lower sections, sleeves sliding upon the lower ends of the bars, and bars pivoted thereto and hinged to the fender frame in such manner as to be removable therefrom, substantially as shown and described.



3. A fender for street railway cars or other vehicles, adapted to collapse beneath the weight of a body to form a seat or repository therefor, the said fender being provided with extensible wings at either side thereof, and the said wings being secured together by a jointed catch or fastening whereby the wings are prevented from flying inwardly, and held obliquely outward to guard the car steps, substantially as shown and described.

4. A fender for street railway cars or other vehicles, adapted to collapse beneath the weight of a body to form a seat or repository therefor, wings secured to the frame at each side by means of loops thereon, the said loops having eccentric slots therein, and pins upon the frame beneath the loops and working in the said slots, substantially as shown and described.

5. In a fender for street railway cars or other vehicles, the combination, with a frame comprising vertical rods, having a fender-body slidably mounted thereon, angle braces secured to the car in which said rods are removably inserted, and pins ranging across the said angle braces, of one or more supporting bars secured to the fender, the said bars having at the rear thereof a head provided with a curved lug adapted to rest upon one of the pins and engage beneath the other, whereby the said bars are pivoted to the frame and removable therefrom, substantially as shown and described.

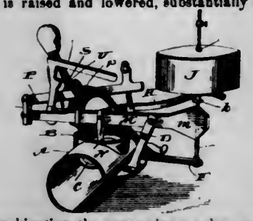
6. A fender for street railway cars or other vehicles, consisting of a frame comprising rods adapted to be attached to the front of a car, angle braces secured to the platform having openings therein in which the rods rest, sleeves sliding upon the said rods, having lugs thereon, a fender frame supported in front of the car, pins passing through the lugs on the sleeves and the fender frame, removable therefrom and attached to the said sleeve, and supporting bars pivoted to the braces and detachable therefrom, substantially as shown and described.

7. A fender for street railway cars or other vehicles, consisting of a frame comprising vertical rods having hooks thereon adapted to engage with the dash board, angle braces secured to the platform having openings therein in which the rods rest, arms projecting forwardly from the brace, pins intervening the arms, a shoulder upon the rod, a sleeve sliding thereon above the shoulder and having lugs mounted thereon, toggle-bars at either side of the device resting between the lugs, a pin extending through the lugs and the toggle-bars, removable therefrom and attached to the sleeve, sleeves sliding upon the lower section of the toggle-bars, supporting bars pivoted to the said sleeves and having curved projections at the rear engaging with the pins upon the braces in such manner as to be pivoted thereto and removable therefrom, a roller journaled in the lower end of the toggle-bars, supporting material intervening the upper and lower sections of the said bars, wings mounted upon the said bars by means of loops having eccentric slots therein, pins upon the bars working in the said slots, and a fastening securing the wings together, substantially as shown and described.

543,776. AUTOMATIC FLUSH-TANK. ARNOLD F. MOLLRING, Nebraska City, Nebr. Filed May 7, 1895. Serial No. 548,452. (No model.)

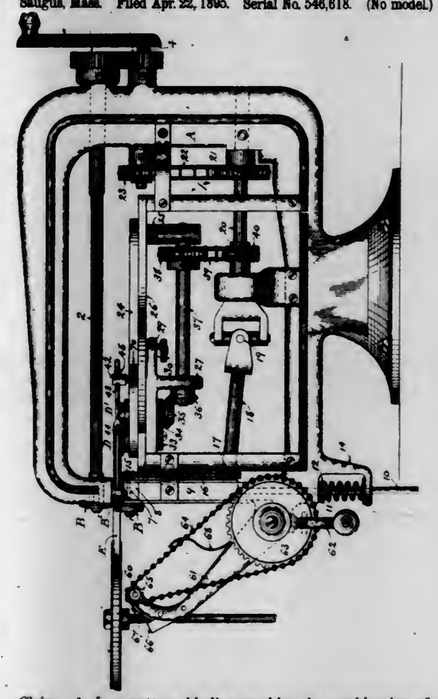
Claim.—1. In combination in a device for flushing sewer-pipes from a cistern, a sewer pipe having a valve controlled aperture, a framework carried on said pipe, a vertical rod carried on a projecting portion of said framework, a float vertically adjustable on said rod, a lever H pivoted to the frame work, its free end carried by said float, a lever U pivoted so as to turn with the said lever H, and designed, to cause a valve in the sewer pipe to be opened, as the float rises, substantially as shown and described.

2. In combination, a sewer pipe located in connection with a cistern, an aperture therein a valve C regulating the same, the lever H pivoted to a framework held to said pipe, the rod G vertically secured to said framework, a float J having a central tube K which rides on said rod, a flange *k* on the tube K on which flange the slotted end of the lever H is adapted to rest and to be raised and lowered by the float, and means for automatically opening and closing the said valve as the float is raised and lowered, substantially as shown and described.



3. In combination, the sewer pipe, a valve seated in an aperture therein, a framework D, lever H pivoted to a portion thereof, a vertical rod G float J tube K having a flanged lower end, the forward free end of the lever H slotted and resting on said flange, the lever U adapted to turn with the lever H, the lever M pivoted to a fulcrum a rod N connecting said lever M to the valve C, the lever P pivoted to the framework and connected by link Q to lever M, the anchor lever T carrying lugs V, a shoulder on said lever T, a lug on lever P, and the bar R pivoted to the free end of the lever P, and a lug *r* at the lower free end of bar R on which lever H is designed to rest, all combined to operate substantially as shown and described.

543,777. PATTERN-BINDING MACHINE. WALTER L. C. NILES, Saugus, Mass. Filed Apr. 22, 1895. Serial No. 546,618. (No model.)



Claim.—1. In a pattern binding machine the combination of a set of molding rolls, a set of binding rolls, means for feeding the molded edging from the molding to the binding rolls, and connected mechanisms for rotating the molding and binding rolls, substantially as described.

2. In a pattern binding machine the combination of a set of binding rolls, a set of molding rolls having provision for feeding the molded edging to the binding rolls, and connected mechanisms for rotating the molding and binding rolls, substantially as described.

3. In a pattern binding machine the combination of a set of binding rolls, a set of molding rolls, means for feeding the molded edging to the binding rolls, mechanism for longitudinally curving the molded edging between the molding and binding rolls, and connected mechanisms for rotating the molding and binding rolls, substantially as described.

4. In a pattern binding machine the combination of a set of binding rolls, a set of molding rolls, means for feeding the molded edging from the molding rolls to the binding rolls, means for changing the relative lateral position of the molding and binding rolls, and connected mechanisms for rotating the molding and binding rolls, substantially as described.

5. In a pattern binding machine the combination of a set of binding rolls, a set of molding rolls, means for feeding the molded edging from the molding rolls to the binding rolls, a cutter supported adjacent to the binding rolls and movable to and from an operative position, and connected mechanisms for actuating the molding and binding rolls, substantially as described.

6. The combination, with associated parts of a pattern binding machine, of a set of binding rolls, a cutter supported adjacent to the binding rolls, means for moving said cutter to and from an operative position, and a table movable with said cutter arranged to support the pattern while the cut is being made, substantially as described.

7. The combination, with associated parts of a pattern binding machine, of a set of binding rolls, a cutter supported adjacent to the rolls, means for moving said cutter to and from an operative position, and a gage movable with said cutter for determining the depth of the cut made thereby, substantially as described.

8. The combination, with associated parts of a pattern binding machine, of a set of binding rolls, and a vertically movable spring supported edge dog adjacent to said rolls, substantially as described and for the purposes specified.

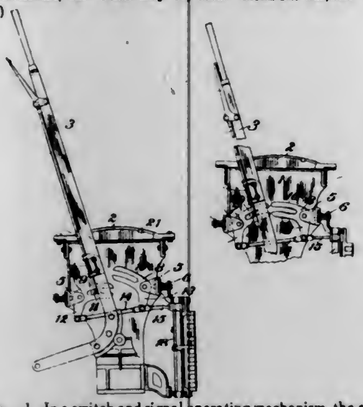
9. In a pattern binding machine the combination of a set of binding rolls, a set of molding rolls, means for feeding the molded edging from the molding rolls to the binding rolls, a device for longitudinally curving the molded edging between the binding and molding rolls, and means for adjusting said device to regulate the curve imparted to the edging thereby, substantially as described.

10. The combination, with associated parts of a pattern binding machine, of a set of molding rolls, and a device supported adjacent to said rolls adapted to receive the molded edging from said rolls and bend it to form a longitudinal curve in said edging, substantially as described.

11. The combination, with associated parts of a pattern binding machine, of a set of molding rolls, and a device supported adjacent thereto, out of the normal path of the edging, adapted to enter the groove in the edging and bear against the same to form a longitudinal curve therein, substantially as described.

12. In a pattern binding machine the combination of a set of binding rolls, a set of molding rolls whereby the edging is molded and fed to the binding rolls, a device shaped to enter the groove in the edging and arranged to bend the same longitudinally toward the binding rolls and connected mechanisms for actuating the molding and binding rolls, substantially as described.

543,778. SWITCH AND SIGNAL MECHANISM. DOMENEC C. O'KAIN, Wilkinsburg, assignor to the Union Switch and Signal Company, Swissvale, Pa. Filed May 17, 1895. Serial No. 549,620. (No model.)

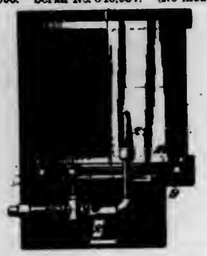


Claim.—1. In a switch and signal operating mechanism, the combination of a series of two or more levers, latch rods carried by the levers, a series of two or more sectional slotted quadrants, each having its sections pivotally mounted, blocks carried by the latch rods and adapted to be shifted along the slots in the sections of the quadrants, the sections of each quadrant being so connected that a movement of one of the sections will shift the other section in the opposite direction, and an interlocking mechanism operated by each quadrant, substantially as set forth.

2. In a switch and signal operating mechanism, the combination of a series of two or more levers, latch rods carried by the levers, a series of two or more pairs of movable blocks adapted to be operated by the latch rods, and the members of each being so connected that a movement of one block will shift the other block in the opposite direction, and an interlocking mechanism operated by said pairs of blocks, substantially as set forth.

3. In a switch and signal interlocking mechanism, the combination of a series of two or more levers, latch rods carried by the levers, a series of two or more pairs of oppositely pivoted bell-crank levers having their facing arms slotted, blocks carried by the latch rods and adapted to engage said slotted arms, a link connecting the other arms of the bell crank levers, whereby a movement of a lever of each pair will produce an opposite movement of the other lever of the pair, and an interlocking mechanism operated by the bell crank levers, substantially as set forth.

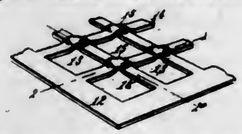
543,779. BAKE-OVEN. EDWARD A. C. PETERSEN, Chicago, Ill. Filed Mar. 8, 1895. Serial No. 540,957. (No model.)



Claim.—1. In a bake oven, the combination of a housing, a cylinder located within the housing and having a reflecting inner surface and an open side, a grooved ring at the bottom of the cylinder and secured thereto, a second grooved ring, balls located in the grooves of the rings, and a removable plate beneath said rings; substantially as and for the purpose set forth.

2. In a bake oven, the combination of a housing having an open front and back and a lower extension forming a chamber 20, a cylinder located within the housing and having a reflecting inner surface and an open side, rings 10 and 15 having grooves in their adjacent faces, balls located in said grooves, a burner, and a gear device 25, 26 for turning on said burner when the cylinder is turned, substantially as and for the purpose set forth.

543,780. SCREEN FOR COAL OR OTHER MATERIAL. JOHN N. POTT, Chicago, Ill. Filed Oct. 11, 1894. Serial No. 525,591. (No model.)



Claim.—The herein described metal screen plate having rounded protuberances forming double reverse curves with said plate and located on and integral with its working surface at inter-sections of the integral webbing or portions of metal left between the perforations, the said rounded protuberances being spaced apart to serve as guards for the perforations and prevent breakage of large lumps or pieces of material being screened and to impart a retarded undulatory movement to the material that will prevent a rapid sliding off from the screen and facilitate the passage of smaller particles through the perforations of the screen, substantially as specified.

543,781. COPY-HOLDER FOR RECORD-BOOKS, &c. PHANOR P. POWELL, Coleman, Tex. Filed Nov. 26, 1894. Serial No. 530,021. (No model.)

Claim.—1. The combination of a bar or support, a copy-holder constructed to lie upon and move over the page of a record book, and a slide-rod extending from the rear side of the copy-holder to the bar or support, said copy-holder and said bar or support having their bases arranged in substantially the same plane, and the copy-holder movable progressively away from the bar or support over the page of the book as the copying progresses, substantially as described.

2. The combination with a bar or support having devices for engaging the edges of book pages, of a copy-holder provided with paper feeding mechanism and having a free sliding connection with said bar or support, so that the copy-holder can be moved progressively away from the bar or support as the copying or recording progresses, substantially as described.

3. The combination with a bar or support having devices for engaging the edges of book pages, of a copy-holder provided with paper-advancing or feeding mechanism, and a guide-rod connected with the copy-holder and having sliding connection with the bar or support, so that the copy-holder can be moved progressively away from the bar or support as the copying or recording progresses, substantially as described.

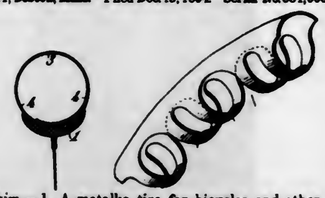
4. The combination with a bar or support having devices for engaging the edges of book pages, of a copy-holder having paper-advancing or feeding rollers and a line-gage or indicator and connected with and bodily movable to and from the said bar or support, so that the copy-holder can be moved progressively away from the bar or support as the copying or recording progresses, substantially as described.

5. The combination with a bar or support having devices for engaging the edges of book pages, of a copy-holder having paper-advancing or feeding mechanism and a longitudinally slotted line-gage or indicator, and guide-rods connected with the copy-holder, having sliding engagement with the said bar or support and provided with jointed sections, substantially as described.

6. The combination with a clamp-bar or support having clamping-jaws for engaging the edges of book pages, of a copy-holder having paper-advancing or feeding rollers and a pivoted swinging line-gage or indicator, and guide-rods connected with the copy-holder, having sliding engagement with the clamp-bar or support and provided with pivoted sections movable into and out of alignment with the guide-rods, substantially as described.

7. The combination with a bar or support having devices for engaging the edges of book pages, of a copy-holder having paper-advancing or feeding-rollers, one of which is provided with means for rotating the same, a guide-rod connection between the copy-holder and the said bar or support, so that the copy-holder can be moved progressively away from the bar or support as the copying or recording progresses, and a line-gage or indicator mounted on the copy-holder, substantially as described.

543,782. METALLIC TIRE FOR BICYCLES. JOSEPH D. PRESCOTT, Boston, Mass. Filed Dec. 13, 1894. Serial No. 531,668. (No model.)



Claim.—1. A metallic tire for bicycles and other wheels, as a substitute for pneumatic and other elastic tires, consisting of a steel plate having laterally projecting, separate strips, the whole being bent into tubular form with the ends of the strips lapped, and then brought into circular form and the ends of the steel plate united, substantially as described.

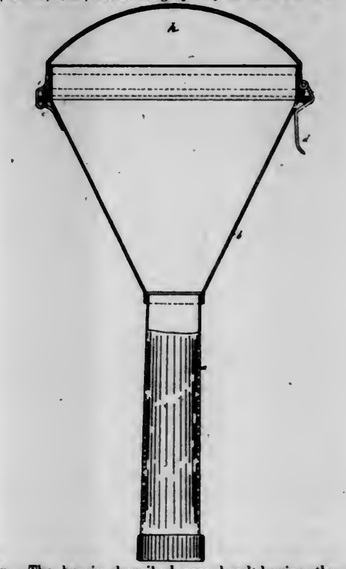
2. A tubular elastic metallic tire for the purpose described, the same consisting of a continuous steel plate, constituting the tread, and curved strips projecting from the edges of the plate and having their free ends lapped, substantially as described.

3. The combination with a rim for a bicycle, or other wheel, of a tubular, elastic, metallic tire, consisting of a continuous steel plate constituting the tread of the wheel and curved strips projecting from the edges of said steel plate, and having their free ends, lapped, the extremities of the steel plate being brought together and fastened, substantially as described.

4. The combination with a rim for a bicycle or other wheel, of a tubular, metallic, elastic tire having a tread consisting of a continuous steel plate, having strips of the same integral metal projecting from its opposite edges at suitable intervals and bent to complete the tubular form, their free ends being lapped and the extremities of the steel plate brought together and fastened, substantially as described

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543,783. WATERING-POT SPRINKLER WITH DETACHABLE ROSE. CARL SACHS, Zabrze, Germany. Filed Nov. 21, 1894. Serial No. 529,489. (No model.) Patented in Germany June 15, 1894, No. 27,146; in France June 29, 1894, No. 239,683; in Italy July 9, 1894, No. 36,804/202; in England July 10, 1894, No. 13,368; in Austria July 13, 1894, No. 44/3,731, and in Hungary July 15, 1894, No. 949.



Claim.—The herein described rose head having the annular shoulder or flange *g*, a distance back from its outer edge, packing on the same, the perforated plate with the inturned edge formed to embrace the outer end of the head and fit said packing on the flange, and catches, substantially as described.

543,784. YELLOW DYE. CONRAD SCHRAUBE, Ludwigshafen, Germany, assignor to the Badische Anilin and Soda Fabrik, same place. Filed Oct. 30, 1894. Serial No. 527,470. (Specimens.) Patented in Germany Aug. 8, 1893, No. 79,570; in England Sept. 30, 1893, No. 18,374, and in France Oct. 30, 1893, No. 232,863.

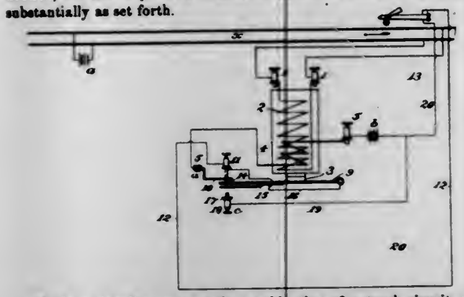
Claim.—1. As a new article of manufacture the new coloring matter whether in the form of salt or as base which is chemically beta-phenylphenanthro-phenazin and can be derived from ortho-amido-diphenylamine and phenanthrene quinone and which in the form of salt is readily soluble in water giving a yellow solution, and in concentrated sulfuric acid giving a yellowish red solution when seen in bulk, but bluish red in thin films; on reduction with zinc and hydrochloric acid it yields a leuco-compound soluble in water with difficulty but easily soluble in alcohol, all substantially as described.

2. The process for the manufacture of new yellow coloring matter which consists in causing phenanthrene-quinone and ortho-amido-diphenyl-amine to react upon one another in the presence of glacial acetic acid substantially as described.

543,785. RAILWAY SIGNALING. JESS G. SCHREUDER, Edgewood Park, assignor to the Union Switch and Signal Company, Swissvale, Pa. Filed Mar. 28, 1894. Serial No. 505,435. (No model.)

Claim.—1. A differentially wound relay having a non-polarized core, in combination with a non-polarized armature, the winding of the relay being greater in one direction than the other and of a sufficient number of turns to produce a considerable force in the core, the lesser windings having a sufficient number of turns to change the polarity of the core when the circuit through the greater winding is

broken, but not to produce a material attractive force in the core, substantially as set forth.



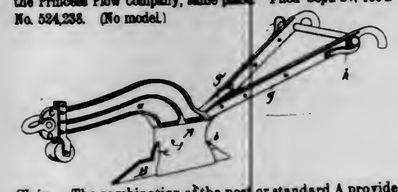
2. In a signaling system, the combination of a track circuit, a differentially wound relay, the winding in one direction being greater than that in the other direction, the greater coil being included in the track circuit, and a normally closed signal circuit controlled by the relay, and including therein the lesser coil of the relay, substantially as set forth.

3. In a signaling system, the combination of a track circuit, a differentially wound relay having its greater coil included in the track circuit, a normally closed signal circuit controlled by the relay and including therein the lesser coil of the relay, and a shunt circuit closed by the movement of the armature away from the magnet, and also including therein the lesser coil of the relay, substantially as set forth.

4. In a signaling system, the combination of a track, a relay provided with two differently proportioned coils, the greater coil being included in the track circuit, and a normally closed signal circuit controlled by the relay and including therein the lesser coil of the relay, said coils being so connected in the circuits that electric currents will pass in opposite directions through the coils, substantially as set forth.

5. In a signaling system, the combination of a track circuit, a relay provided with two differently proportioned coils, the greater coil being included in the track circuit, a normally closed signal circuit having the lesser coil included therein, a make and break mechanism controlled by the armature of the relay, and so constructed as to close the signal circuit only when the armature is in or approximately in contact with the poles of the relay, substantially as set forth.

543,786. PLOW. WILLIAM H. SEFTON, Canton, Ohio, assignor to the Princess Plow Company, same place. Filed Sept. 27, 1894. Serial No. 524,238. (No model.)



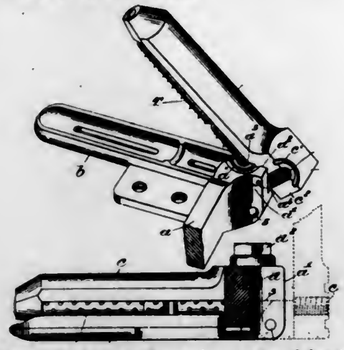
Claim.—The combination of the post or standard A provided with a beam, and the groove C, extended upward in the front portion of the post or standard, the share B, provided with the arm *e*, and extended forward and rearward of the post, and the clamping bolt *b*, and means for securing the arm *e* to the post or standard, substantially as and for the purpose set forth.

543,787. SPINNING-TOP. EDWARD SEGAMER, New Orleans, La. Filed May 7, 1895. Serial No. 548,396. (No model.)



Claim.—As an improved article of manufacture, the spinning top described, consisting essentially of the spindle pointed at both ends, the wheel arranged loosely thereon, and having the winding stem, and the two collars having screw-tapped apertures and arranged on the spindle, one on each side of the wheel, and the set screws taking into said apertures, whereby the wheel may be adjusted on the spindle, substantially as specified.

543,788. LOOM-TEMPLE. EDWARD S. STIMPSON, Hopedale, Mass., assignor to the Dutcher Temple Company, same place. Filed May 20, 1895. Serial No. 549,913. (No model.)



Claim.—1. In a loom temple, a pod, a cap pivoted thereto, a separable seat formed in the pod and cap at right angles to the cap pivot, and a locking device to simultaneously engage the parts of the seat and prevent vertical separation of the cap from the pod, substantially as described.

2. In a loom temple, a pod, a cap pivoted thereto, a longitudinally separable threaded seat formed in the pod and cap at substantially right angles to the cap pivot, and a locking screw to simultaneously engage the threads in the parts of the seat and prevent vertical movement of the cap, substantially as described.

3. In a loom temple, a pod having an abutment at its inner end, a cap having an enlarged inner end and pivoted to the pod adjacent the abutment, a threaded groove in the face of the abutment and a similar groove in the adjacent face of the cap, to form a threaded hole when the cap is closed, and a screw to enter the hole so formed and lock the cap from vertical movement, substantially as described.

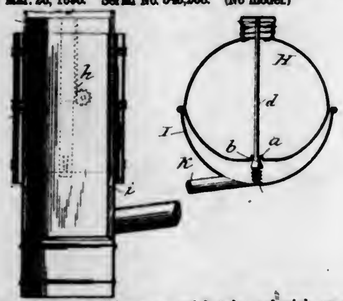
543,789. TEMPLE-ROLL. WALLACE I. STIMPSON, Milford, assignor to the Dutcher Temple Company, Hopedale, Mass. Filed May 20, 1895. Serial No. 549,914. (No model.)



Claim.—In a loom temple roll, a barrel having countersunk pin receiving holes, and a series of pins driven into the holes, the countersink forming a shield for the projecting point of each pin, substantially as described.

2. In a loom temple roll, a barrel having a series of pins driven thereinto, and cup-shaped depressions in the surface of the barrel surrounding and acting as a shield for the projecting point of each pin, substantially as described.

543,790. OIL-STOVE. WILLIAM H. WILDER, Northampton, Mass. Filed Mar. 26, 1895. Serial No. 543,268. (No model.)

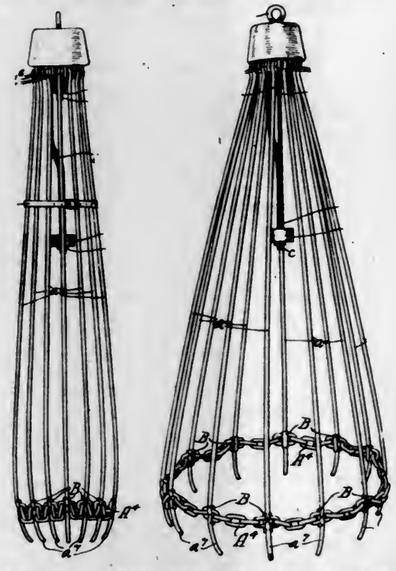


Claim.—1. In an oil burner, a wick tube and wick, an oil chamber, a reservoir adapted to automatically discharge into the oil chamber, and maintain the oil supply at a uniform level, the top of the wick tube holding such a relation to the ascertained oil level that with a wick of an ascertained capillary power, sufficient oil and no more will be constantly delivered to the flame for perfect combustion, substantially as described.

2. In an oil stove, a wick tube and wick, an oil chamber, a reservoir adapted to automatically discharge into the oil chamber and maintain the oil supply at a uniform level, wick raising means bearing a uniform relation to the bottom of the wick and having such relation to the ascertained oil level whereby the wick is invariably lifted above the said oil level in the abnormal position of the raising means, substantially as described.

3. In an oil stove in which a uniform oil level is automatically maintained, a wick tube, an oil chamber, a wick ring and wick raising means arranged relatively to the wick ring whereby the bottom of the wick invariably leaves the ascertained oil line at the moment the wick ring reaches the top of the wick tube, substantially as described.

543,791. CHIMNEY-CLEANER. SYLVESTER A. WOOD, Manitowoc, Wis. Filed Aug. 4, 1894. Serial No. 519,431. (No model.)



Claim.—1. In a chimney cleaner, the combination with an endless chain, of means to maintain said chain, normally, yieldingly expanded, said means comprising spring rods, relatively long as compared with the size of the flues to be cleaned by said cleaner, so that said rods will extend substantially lengthwise of said flues, when the cleaner is inserted therein, a head to which one end of each of said rods is rigidly secured and the said endless chain being secured adjacent to the opposite ends of said rods, substantially as described.

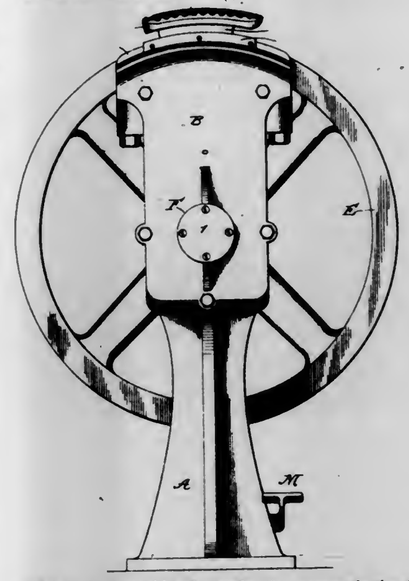
2. In a chimney cleaner, the combination with an endless chain, of means to maintain said chain, normally, yieldingly expanded, said means comprising spring rods, relatively long as compared with the size of the flues to be cleaned by said cleaner, so that said rods will extend, substantially, lengthwise of said flues, when the cleaner is inserted therein, a head to which one end of each of said rods is rigidly secured, the endless chain being secured to said rods at a short distance from their opposite ends and the extreme ends of said rods, which project beyond said chain, being inwardly bent or curved, substantially as described.

3. In a chimney cleaner, the combination of an endless chain, spring rods, adjacent to one end of which said chain is secured and a head in which the opposite ends of said rods are secured, said head comprising a core and an inclosing shell, between which said rods are inserted, substantially as described.

4. In a chimney cleaner, the combination of an endless chain, spring rods adjacent to one end of which said chain is secured and a head in which the opposite ends of said rods are secured, said head comprising a core and an inclosing shell between which said spring rods are inserted, the extreme inner ends of said rods being bent, substantially at right angles and engaging grooves formed in the inclosed end of said core, substantially as described.

5. In a chimney cleaner, the combination of an endless chain, spring rods adjacent to one end of which said chain is secured and a head in which the opposite ends of said rods are confined, said head comprising a core and an inclosing shell between which said rods are inserted, said rods being adjusted to grooves formed in the sides of said core and the extreme inner ends of said rods being bent, substantially at right angles, and engaging continuations of said grooves formed in the inclosed end of said core, substantially as described.

543,792. MACHINE FOR PERFORATING HOLLOW OR PNEUMATIC TIRES. RUFUS WRIGHT and JOHN E. PARKER, Chicago, Ill., assignors to Morgan & Wright, same place. Filed July 23, 1894. Serial No. 518,329. (No model.)



Claim.—1. A machine for perforating pneumatic tire-sheaths, comprising one or more series of reciprocating punches arranged for perforating the sheath alongside a longitudinal slit in the base portion thereof, a head provided with guide-ways for the reciprocating punches, and a shoe or die-plate arranged over the cutting ends of the punches and rigidly connected with the head, the said shoe or die-plate being graduated in width and length to admit of its introduction and removal through the split in the sheath, and being arranged with relation to the head to permit the marginal portions of the sheath along the split to lie between the shoe or die plate and the head and abut against the connection between the head and the shoe or die-plate, substantially as set forth.

2. A machine for perforating pneumatic tire-sheaths, comprising one or more series of reciprocating punches for perforating the sheath alongside a longitudinal slit in the base portion thereof, a head provided with guide-ways for the reciprocating punches and having a curved face through which the punches are arranged to work, and a shoe or die-plate connected with the head and having a curved face arranged over the punches, said shoe or die-plate being graduated in width and length with reference to its introduction and removal through the split in the sheath, and being arranged with relation to the head to permit the marginal portions of the sheath along the split to lie between the curved faces of the shoe or die-plate and the head and abut against the connection between the head and the shoe or die-plate, substantially as set forth.

3. A machine for perforating pneumatic tire-sheaths comprising a head having a face curved with reference to the annular curvature of a pneumatic tire-sheath, a shoe or die-plate arranged over the curved face of the head and having a correspondingly curved face, a neck rigidly connecting the shoe or die-plate with the head, and reciprocating punches arranged to work through the curved face of the head at opposite sides of the neck, the said shoe or die-plate being graduated in width and length with reference to its introduction and withdrawal through a split in the base of a pneumatic tire-sheath, and arranged to permit the edge portions of the sheath along such split to lie between the opposing curved faces of the head and the shoe or die-plate and abut against the neck.

4. A machine adapted for perforating pneumatic tire sheaths having longitudinally split base portions, and comprising a couple of parallel series of reciprocating punches, a head having guide-ways for the punches, and a shoe or die-plate adapted in size with reference to its insertion and removal through the split in the base of the sheath and connected with the head by a neck arranged in a plane between the planes in which the two series of reciprocating punches operate, said shoe or die-plate being provided with female dies 11 substantially as described.

5. A machine for perforating pneumatic tire-sheaths, comprising a set of radially arranged reciprocating punches, a head provided

with guide-ways for the radially arranged reciprocating punches, and a shoe or die-plate arranged opposite the cutting ends of the punches and adapted for insertion and removal through an opening formed longitudinally through the base portion of a pneumatic tire-sheath, said shoe or die-plate and its connection with the head being also arranged to permit the edge portions of the sheath along its longitudinal opening to lie between the head and the shoe or die-plate, substantially as set forth.

6. A perforating machine comprising a movable abutment for operating the punches, and a series of radially arranged reciprocating punches, having shifting connections with the movable abutment, for the purpose set forth.

7. A machine for perforating pneumatic tire-sheaths, comprising a set of radially arranged reciprocating punches, a head provided with guide-ways for the said punches, and a shoe or die-plate arranged opposite the cutting ends of the punches and adapted for insertion and removal through a longitudinal opening in the base-portion of a pneumatic tire-sheath, substantially as set forth.

8. A machine for perforating pneumatic tire-sheaths, comprising a movable abutment arranged for operating the punches and consisting of a reciprocating plunger, a set of reciprocating radially arranged punches having shifting connections with the reciprocating plunger, a head provided with guide-ways for the reciprocating punches and having a curved face through which the punches are arranged to work, and a shoe or die-plate for the purpose set forth connected with the curved face of the head and having a curved face arranged opposite said curved face of the head, substantially as described.

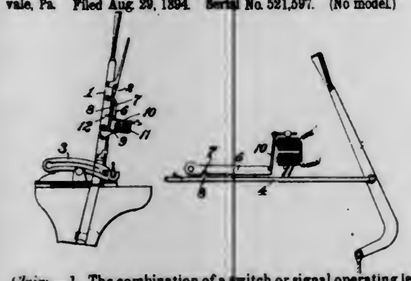
9. A machine for perforating pneumatic tire-sheaths, comprising a reciprocating plunger G for operating the punches, a set of radially arranged punches having shifting connections with the plunger, a head I provided with guide-ways for the reciprocating punches and having a curved face, and a shoe or die-plate K arranged over the curved face of the head and connected therewith by a neck, substantially as described.

10. A machine for perforating pneumatic tire-sheaths, comprising a casing B, a reciprocating plunger G, an eccentric 4 for operating the plunger a set of radially arranged reciprocating punches, a head I provided with guide-ways for the punches, and a shoe or die-plate K arranged over and connected with the head, substantially as described.

11. In a perforating machine a plunger having its top provided with a curved groove or way, a series of punches carrying blocks or bases working in the way, a head-block having radially disposed openings in which the punches work and a die plate with which the punches coact.

12. A perforating machine comprising a casing B a plunger G, located therein a sliding box and drive-shaft for operating the plunger, a series of punches H connected with the plunger a head-block I having radially disposed openings in which the punches work, a shoe K on the head-block having openings with which the punches coact, and a plate J on the head-block, substantially as described.

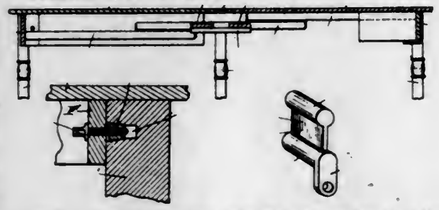
543,793. SWITCH AND SIGNAL MECHANISM. JOHN V. YOUNG, Boston, Mass., assignor to the Union Switch and Signal Company, Swissvale, Pa. Filed Aug. 29, 1894. Serial No. 521,597. (No model.)



Claim.—1. The combination of a switch or signal operating lever, a rod or bar having one end connected to said lever and movable therewith, and provided with a projection having an inclined face, an arm provided with a notch having an inclined face and pivotally mounted in such relation to the bar or rod as to be moved by the rod or bar when shifted, and an electro-magnet provided with an armature and so arranged that the armature will automatically engage the free end of the locking arm, substantially as set forth.

2. A movable part of a switch and signal operating mechanism provided with a projection having an inclined face in combination with pivotally mounted arm automatically movable into locking relation with the movable part and provided with a notch having an inclined face and so located that the distance from the notch to the free end of the arm is greater than the distance from the notch to the pivotal point, and an electro magnet provided with an armature for engaging the free end of the arm and holding the same in locking position, substantially as set forth.

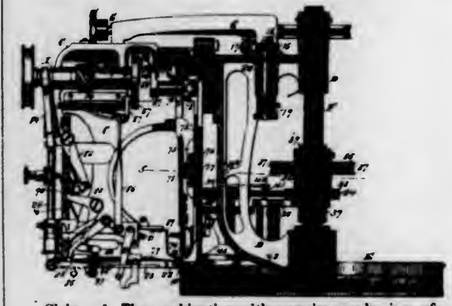
543,794. EXTENSION-TABLE. JOHAN ZALIKOWSKI, Chicago, Ill., assignor of one-half to John Machut, same place. Filed Mar. 15, 1895. Serial No. 541,845. (No model.)



Claim.—1. In an extension table the combination of a frame made in sections, with a series of sliding-rails or pieces at each side of the frame, said rails being united together so as to be extensible longitudinally, a top on the upper surface of the frame, supporting legs at each corner of the same having the openings *g*, provided with the socket-pieces G, the angular pieces F, secured to the ends of the frame and the set-screws H, to unite said pieces and legs, substantially as described.

2. In an extension table the combination of the frame made in sections, with a series of sliding rails at each side of the frame, said rails having the grooves *c*, in their adjacent surfaces, the uniting pieces D, having the enlargements d^3, to operate in said grooves and secured to the ends of the rails, and a top located on the upper surface of the frame, supporting legs at each corner of the frame, the same having the openings *g*, provided with the socket pieces G, the frame pieces F, secured to the ends of the frame, and the set-screws H, to unite said pieces in the legs, substantially as described.

543,795. MACHINE FOR SEWING LOOPED FABRICS. SATTERLEE ARNOLD, Brooklyn, N. Y., assignor to Anna M. Arnold, same place. Filed Aug. 7, 1891. Serial No. 401,976. (No model.)



Claim.—1. The combination with a sewing mechanism, of a rotating pin-wheel upon which the fabric forming the work is supported and by which it is advanced, and an impaler constructed and arranged to press the fabric over the points of any of the pins upon which it is not impaled, as the fabric is advanced to the impaler by the pin wheel, substantially as described.

2. The combination with a sewing mechanism, of a rotating pin wheel upon which the fabric forming the work is supported and by which it is advanced, and an impaler having a curved or inclined surface deflecting the fabric and constructed and arranged to press the fabric over the points of any of the pins upon which it is not impaled, as the fabric is advanced to the impaler by the pin wheel, substantially as described.

3. The combination with a sewing mechanism, of a rotating pin wheel upon which the fabric forming the work is supported and by which it is advanced, an impaler constructed and arranged to press the fabric onto any of the pins upon which it is not impaled, and means for moving the impaler toward and from the wheel to press the fabric onto the pins, as it is advanced to the impaler by the pin wheel, substantially as described.

4. The combination with a sewing mechanism, of a pin plate upon which the fabric forming the work is supported and by which it is advanced, and an impaler constructed and arranged to press the fabric over the points of any of the pins upon which it is not impaled, as the fabric is advanced to the impaler by the pin plate, substantially as described.

5. The combination of a main shaft and stitch forming mechanism, a horizontal continuously rotatable material carrying cylinder provided with closely set peripheral supports, as shown, for holding said material in position to be operated upon by the stitch forming mechanism, a suitable trimmer, and intermediate operative mechanism whereby the fabric is fed, the stitches placed therein, and the edge of said fabric trimmed, substantially as described.

6. The combination with the main shaft and stitch forming mechanism, of a horizontal continuously rotatable material carrying cylinder for holding said material in position to be operated upon by the stitch forming mechanism, a trimmer, suitable intermediate operative mechanism whereby the fabric is fed, the stitches placed therein and the trimmer operated, and means for directing the material from the stitch forming mechanism to the trimmer, substantially as described.

7. The combination with a main shaft, of a horizontal continuously rotating material carrying cylinder provided with closely set peripheral supports, as shown, a needle arranged to reciprocate above said cylinder and in an approximately parallel plane therewith, a suitable trimmer, and operative mechanism whereby the fabric is fed, the stitches placed therein and the edge of the fabric trimmed.

8. The combination with a sewing mechanism, of a continuously rotating pin-wheel upon which the fabric forming the work is supported and by which it is advanced, and an impaler constructed and arranged to press the fabric over the points of any of the pins upon which it is not impaled, as the fabric is advanced to the impaler by the pin-wheel, substantially as described.

9. The combination with a sewing mechanism, of a continuously rotating pin wheel upon which the fabric forming the work is supported and by which it is advanced, an impaler constructed and arranged to press the fabric onto any of the pins upon which it is not impaled, and means for moving the impaler toward and from the wheel to press the fabric onto the pins, as it is advanced to the impaler by the pin wheel, substantially as described.

10. The combination with a sewing mechanism, of a continuously traveling pin plate upon which the fabric forming the work is supported and by which it is advanced, and an impaler constructed and arranged to press the fabric over the points of any of the pins upon which it is not impaled, as the fabric is advanced to the impaler by the pin plate, substantially as described.

11. The combination with a sewing mechanism, of a continuously rotating work-carrying pin wheel on which the fabric forming the work is impaled, a trimmer for cutting off the surplus fabric and a rubber for rubbing down and napping the cut edges, substantially as described.

12. The combination with a sewing mechanism, of a rotating work-carrying pin wheel on which the fabric forming the work is impaled, said sewing mechanism and pin wheel being constructed and combined to unite knit fabrics without registry of the loops, a trimmer for cutting off the surplus fabric, a rubber for rubbing down and napping the cut edges, and a shearer for trimming off the napped edges, substantially as described.

13. The combination with a sewing mechanism, of a rotating work-carrying pin wheel on which the fabric forming the work is impaled, said sewing mechanism and pin wheel being constructed and combined to unite knit fabrics without registry of the loops, an impaler pressing the fabric onto the pins before the seam is made, a trimmer for cutting off the surplus fabric, and a rubber for rubbing down and napping the cut edges, substantially as described.

14. The combination with a sewing mechanism of a continuously traveling feeder for advancing the fabrics to be united, a trimmer for cutting off the surplus fabric, and a rubber for rubbing down and napping the cut edges, substantially as described.

15. The combination with a sewing mechanism of continuously traveling feeder for advancing the fabrics to be united, a trimmer for cutting off the surplus fabric, and a reciprocating rubber formed of one or more toothed blades for rubbing down and napping the cut edges, substantially as described.

16. The combination with a sewing mechanism, of feeding mechanism for advancing the fabrics to be united, said sewing and feeding mechanism being constructed and combined to unite knit fabrics without registry of the loops, a trimmer for cutting off the surplus fabric, a rubber for rubbing down and napping the cut edges, and a shearer for trimming off the napped edges, substantially as described.

17. In a sewing machine having an overhanging frame, the combination with a horizontal continuously rotating work-carrying pin wheel supported by and rotating beneath said frame, of a sewing mechanism and means for moving the needle bar of the sewing mechanism in the line of feed or approximately so when the needle is out of the work to form a retrograde stitch, substantially as described.

18. In a sewing machine having an overhanging frame, the combination with a horizontal continuously rotating work-carrying pin wheel supported by and rotating beneath said frame, of a sewing mechanism, means for moving the needle bar of the sewing mechanism in the line of the feed or approximately so when the needle is out of the work to form a retrograde stitch, and an impaler pressing the fabric on to the pins before the seam is made, substantially as described.

19. In a sewing machine having an overhanging frame, the combination with a sewing mechanism, of a horizontal continuously rotating work carrying wheel supported by and rotating beneath said frame and having means, as closely set radial pins, for holding the material in position to be operated upon by the sewing mechanism, and a trimmer for cutting off the surplus fabric, substantially as described.

20. In a sewing machine having an overhanging frame, the combination with a sewing mechanism, of a horizontal continuously rotating work-carrying wheel supported by and rotating beneath said frame, a trimmer for cutting off the surplus fabric, and a rubber for rubbing down and napping the cut edges, substantially as described.

21. In a sewing machine having an overhanging frame, the combination with a sewing mechanism, of a horizontal continuously rotating work-carrying wheel supported by and rotating beneath said frame, a trimmer for cutting off the surplus fabric, a rubber for rubbing down and napping the cut edges, and a shearer for trimming off the napped edges, substantially as described.

22. In a sewing machine having an overhanging frame, the combination with a sewing mechanism, of a horizontal continuously rotating work-carrying pin wheel supported by and rotating beneath said frame, an impaler pressing the fabric onto the pins before the seam is made, a trimmer for cutting off the surplus fabric, a rubber for rubbing down and napping the cut edges, and a shearer for trimming off the napped edges, substantially as described.

23. In a sewing machine having an overhanging frame, the combination with a sewing mechanism, of a horizontal continuously rotating work-carrying pin wheel supported by and rotating beneath said frame, a trimmer for cutting off the surplus fabric, and an impaler pressing the fabric onto the pins, substantially as described.

24. In a sewing machine having an overhanging frame, the combination with a sewing mechanism, of a horizontal continuously rotating work-carrying pin wheel supported by and rotating beneath said frame, a trimmer for cutting off the surplus fabric, and means for uncurling the edges of the fabric before trimming, substantially as described.

25. In a sewing machine having an overhanging frame, the combination with a sewing mechanism, of a horizontal continuously rotating work-carrying pin wheel supported by and rotating beneath said frame, and means for uncurling the edges of the fabric before sewing, substantially as described.

26. The combination with a sewing mechanism, of a rotating work carrying pin-wheel, a trimmer for trimming off the surplus fabric, and an impaler pressing the fabric onto the pins before trimming, substantially as described.

27. In a sewing machine having an overhanging frame, the combination with a sewing mechanism, of a horizontal rotating work carrying pin-wheel supported by and rotating beneath said frame, a trimmer for cutting off the surplus fabric, and an impaler pressing the fabric onto the pins before trimming, substantially as described.

28. The combination with a mechanism for uniting fabrics, of a rotating work-carrying wheel, and a trimmer mounted to swing concentrically with said wheel, substantially as described.

29. The combination with a mechanism for uniting fabrics, of a rotating work-carrying wheel, a trimmer mounted to swing concentrically with said pin wheel, and means for securing the trimmer in position on either side of the uniting mechanism, substantially as described.

30. The combination with a rotating driver, of a trimmer mounted to swing concentrically therewith, cutters carried by said trimmer, and driving connections between said cutters and driver, substantially as described.

31. In a sewing machine, the combination with a rotating work-carrying wheel, of a driving shaft for said wheel, a trimmer bracket loosely mounted on said shaft, cutters carried by said trimmer bracket, a rotary driving mechanism mounted concentrically with said shaft, and connections between said driving mechanism and cutters, substantially as described.

32. The combination with horizontally rotating pin wheel E and shaft F by which it is carried, of bracket 38 loosely mounted on said shaft and carrying rotating cutters, as 28, 29, a driven sleeve 35 on said shaft, and driving connections between said sleeve and cutters, substantially as described.

33. The combination with horizontally rotating pin wheel E and shaft F by which it is carried, of bracket 38 loosely mounted on said shaft and carrying a trimmer, and an adjustable support between the bracket and wheel, whereby the bracket may be adjusted on the shaft to carry the trimmer toward and from the wheel substantially as described.

34. The combination with a cutter and cutter frame, of a support, one or more pivot screws carried by the cutter frame and bear-

ing against said support, and adjusting screws, one of which is threaded in the frame and bears against the support and the other tapped through the frame and threaded in the support, substantially as described.

35. The combination with rotary cutters 28, 29, their shafts and bearings therefor, of pivot screws 2 and adjusting screws 3, 4, substantially as described.

36. The combination with rotary cutters 28, 29, their shafts and bearings therefor and gears 32 connecting said shafts, of pivot screws 2 in line with the gears and adjusting screws 3, 4, substantially as described.

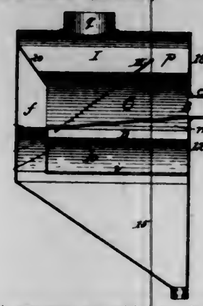
37. The combination with rotary cutter 28, its shaft 30, bearing 46 and a cutter inside cutter 28 with which the latter coacts, of gear 32 on said shaft resting against bearing 46 and provided with hub 6, means for driving said gear 32 and adjusting screws 7, 7' threaded through hub 6 and engaging oppositely inclined cam surfaces on said shaft, substantially as described.

38. The combination with rotary cutter 28, its shaft 30 and a cutter coacting with the rotary cutter of gear 32 on said shaft held against movement longitudinally of the shaft to prevent the rotary cutter moving away from the coacting cutter and having hub 6, and adjusting screws 7, 7' threaded through said hub and engaging oppositely inclined cam surfaces on said shaft, substantially as described.

39. The combination with rotary cutters 28, 29 and shafts 30, 31, of bearings 46, 45, gears 32 connecting said shafts, one of said gears having hub 6, and adjusting screws 7, 7' threaded through the hub 6 and engaging oppositely inclined cam surfaces on the shaft, substantially as described.

40. The combination with pin wheel E and its shaft F carrying gear 11, of shaft G carrying worm 12 by which gear 11 is driveo, and means for moving shaft G to throw the pin wheel in or out of operation, substantially as described.

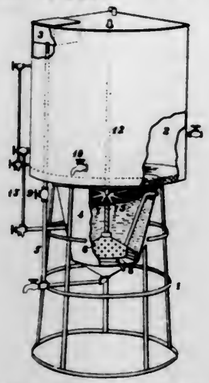
543,796. APPARATUS FOR SEPARATING DUST, SHAVINGS, &c., FROM AIR. ARTHUR W. BANISTER, Boston, Mass. Filed May 23, 1895. Serial No. 550,441. (No model.)



Claim.—1. A separator comprising a casing having a horizontal receiving chamber provided with an inlet opening for the dust-laden-air, a second vertical chamber communicating with said receiving chamber at its rear end and opening into the lower portion of the casing, the latter being provided with an outlet for the discharge of the separated dust or other material suspended in the air, a deflector placed between the vertical chamber and the lower portion of the casing, a third chamber located beneath the receiving chamber and provided on opposite sides with longitudinal deflectors arranged along the sides of the casing and forming between them a central opening from the second chamber and lower portion of the casing into said third chamber, a fourth chamber located over the receiving chamber and communicating with the third chamber through spaces or openings at its opposite sides, a longitudinal upwardly inclined deflector forming the top of the fourth chamber and having a space between its upper front end and the front wall of the casing for the passage of the air and lighter particles carried thereby, a fifth or upper chamber communicating with the fourth chamber through said space, and provided with openings at its lower end communicating with the chambers beneath, said upper chamber having an outlet pipe for the escape of the purified air, substantially as described.

2. In a separator, the combination with the casing having its lower portion of angular form and inclined downwardly toward its vertical front side and having its outlet opening at its front end, of the receiving chamber C, provided with an inlet opening and a rearwardly and downwardly inclined floor or bottom, the vertical chamber *f*, communicating with the chamber C, and opening into the lower portion of the casing, said chamber being provided with a double deflector *g*, having its sides inclined downwardly and outwardly in opposite directions, the chamber D, arranged beneath the receiving chamber C, and provided with longitudinal deflectors *k*, *k*, forming between their inner edges a space or opening *i*, for the passage of the air and dust suspended therein to the chamber D, the chamber G, located over the chamber D, and communicating therewith through openings *n*, *n*, at its opposite sides, the deflector H, arranged within the chamber G, and forming the top of the same, and having a space or passage *p*, between its upper end and the front wall of the casing, and the upper chamber I, communicating through said opening *p*, with the chamber G, and having openings *s*, *s*, at the bottom of said deflector H, and an outlet opening for the escape of the purified air, all constructed to operate substantially in the manner and for the purpose set forth.

543,797. OIL-FILTER. PETER N. BROOKS, Philadelphia, Pa., assignor of one-half to P. S. Cassidy, same place. Filed Aug. 17, 1894. Serial No. 520,555. (No model.)



Claim.—1. The combination in an oil filter, with an oil reservoir provided with an outlet connection as 11, and with a depending filter chamber having filtering material fixed therein and having an opening at its bottom and a pipe applied to said opening for introducing oil and for discharging water, of, a perforated cap mounted over said opening, and perforated water pipes supported on said cap and embedded in and overlying said filtering material for flooding said chamber to float the supernatant oil in the reservoir and for introducing jets through and upon the filtering material, substantially as described.

2. The combination in an oil filter with, a filter chamber depending from an oil reservoir and having filtering material fixed therein and having an opening at its bottom for introducing oil and for discharging water, of a perforated cap mounted over said opening, and perforated water pipes supported on said cap and embedded in and overlying said filtering material for flooding said chamber to float the supernatant oil in the reservoir and for introducing jets radially through and upon the filtering material, substantially as described.

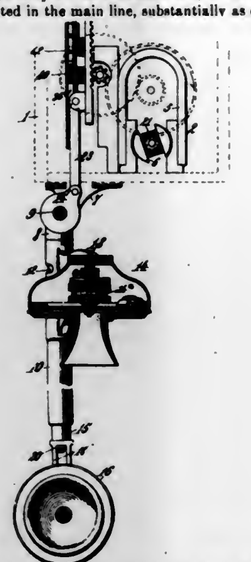
3. The combination in an oil filter with, a filter chamber depending from and communicating with an oil reservoir, of a pipe leading from an oil receptacle and opening into said chamber and provided with an oil valve and with a spigot, a perforated cap and a gauze netting and interposed filtering material mounted in said chamber and above the open end of said pipe, a radially perforated water induction pipe resting on said cap and embedded in the filtering material, horizontal, tubular or pipe-like arms radiating from said pipe and overlying the filtering material and provided on their under sides with perforations, and a steam coil beneath the perforated cap, substantially as described.

4. The combination with, a filter chamber and a pipe communicating with its base of, a perforated cap mounted on the floor of said chamber and over the open end of said pipe, filtering material resting on said cap, and a vertical water pipe mounted on the cap and embedded in the filtering material and radially perforated, substantially as described.

543,798. TELEPHONE. NORVAL I. BURCHELL, Washington, D. C. Filed Oct. 29, 1894. Serial No. 527,295. (No model.)

Claim.—1. In a telephone, the combination with a pivoted arm and with a switch connected to and operated by said arm to complete the telephonic circuit, of a transmitter carried by an arm projecting laterally from the pivoted arm and adapted to turn thereon to bring the transmitter upon either side thereof, said transmitter having a granulated conducting material for its variable resistance medium, whereby said transmitter is necessarily changed in position when the telephone is used and may be inverted, thus changing or reversing, the gravital relations of the granular material, substantially as described.

2. In a telephone, the combination with a main line and with the local telephonic circuits, of a switch consisting of a movable bracket, or carrier, having a single brush, and elongated and continuous contact-strips having a narrow interval of electric separation and so arranged that said brush may have continuous movement thereon one strip being connected in the main line and to one pole of the dynamo, and the other strip being connected through the transmitter to one terminal of the primary of the induction coil, said brush being permanently connected in the main line, substantially as described.



3. In a telephone, the combination with a main line and with the local telephonic circuits, of a switch consisting of a movable bracket, or carrier, having a single brush which is permanently connected with the main line, elongated, continuous contact-strips, having a narrow interval of electric separation, one strip being connected in the main line and to one pole of the dynamo, and the other strip being connected through the transmitter to one terminal of the primary of the induction coil, an arm to operate the magneto call-generator, and means for connecting said arm to the bracket, or carrier, to enable it to operate the switch simultaneously with the operation of the magneto call-generator, substantially as described.

4. In a telephone, the combination with a main line and with the local telephonic circuits, of a switch consisting of a movable bracket, or carrier, of insulating material, a single brush mounted thereon and having a permanent electrical connection with the main line, elongated contacts having a narrow interval of electric separation, one strip being connected in the main line and to one pole of the dynamo, and the other strip being connected through the transmitter to one terminal of the primary of the induction coil, a magneto-call-generator, and an electrically isolated arm or lever, by which said generator is operated said arm being mechanically connected to the bracket, or carrier of the switch, substantially as described.

5. In a telephone, the combination with a pivoted arm of a transmitter mounted on said arm, having a granular conducting material for its variable resistance medium, and a magneto call generator, operated by said pivoted arm whereby the transmitter and its granular material is shaken at each use of the telephone, substantially as described.

6. In a telephone, the combination with a pivoted arm of a transmitter mounted on said arm and having a granular condncting material for its variable resistance-medium, and a magneto-call generator having an armature which is revolved by a rack-bar geared with a pinion on the armature-shaft and connected to the pivoted arm, whereby the transmitter and its granular material is shaken at each use of the telephone, substantially as described.

7. In a telephone, the combination with a pivoted arm of a transmitter mounted thereon and having a granular conducting material for its variable resistance medium, a magneto-call generator, a rack-bar meshing with a pinion on the end of the armature-shaft, and a pitman connecting said rack-bar to the pivoted arm, whereby the transmitter and its granular material is shaken at each use of the telephone, substantially as described.

8. In a telephone, the combination with a pivoted arm of a transmitter and receiver, the former carried by a laterally projecting arm and the latter by a pivot at the end of the pivoted arm, and a spring normally rocking the receiver toward the side on which the transmitter lies, substantially as described.

9. In a telephone, the combination with a pivoted arm of a transmitter supported upon a laterally projecting bracket arm, a supporting arm forming part of said bracket-arm and having a tubular portion receiving and capable of turning upon the pivoted arm, an extension-arm adapted to be drawn out and in, in the line of the pivoted arm, and turning with the supporting-arm, and a receiver pivoted on the end of the extension-arm and having a spring which tilts it toward the side on which the transmitter lies, substantially as described.

10. In a telephone, a circuit controller consisting of a non-conducting spindle having a push-button, bridge-washers mounted on different parts of said spindle, two contact-posts lying on opposite sides of said spindle, a spring drawing one of the bridge-washers against said posts, a third contact-post having an end in line with one of the two, whereby the second bridge-washer may seat on both when the button is pushed to compress the spring, a movable switch connected by a flexible cord to one of the two contact-posts, and interrupted contact-strips on which the movable switch slides, substantially as described.

11. In a telephone system, the combination with a source of electrical energy, of a main line adapted to conduct current when the circuit is closed, a series of induction-coils having their primaries included in the main line and in the transmitters at the several local stations, a series of local receiving circuits including the secondaries of the induction-coils and the telephonic receivers, and a movable switch which makes and breaks the telephonic circuits and simultaneously breaks and makes the operative circuit of the magneto call-generator, substantially as described

12. In a telephone, the combination with a magneto-coil-generator, of a movable switch having a single brush, elongated contact-strips electrically separated by a narrow interval over which said brush moves with continuous contact, a circuit for the magneto-call-generator including one of said contact-strips, a circuit for the transmitter including another of said contact-strips, and a short circuit for the magneto-coil-generator including the first of said contacts and the movable switch, the latter having a permanent connection with the main line, substantially as described.

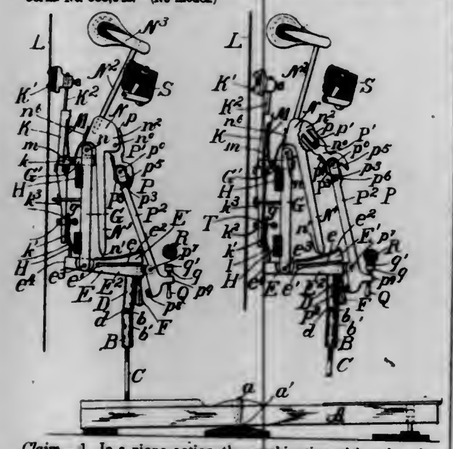
13. In a telephone, a movable switch consisting of a bracket, or carrier, having a single brush having permanent electrical connection with the line-wire, elongated, electrically interrupted contact-strips with which said brush has continuous contact throughout each movement of the switch, one of which is connected to one pole of the magneto-call-generator and another to one electrode of the transmitter, a circuit for the bell coils including the other pole of the magneto call-generator, and a transmitting circuit including the second electrode of the telephonic transmitter, the primary of the induction coil and the main line, substantially as described.

14. In a telephone, a switch consisting of a movable bracket having a single brush suitably connected in the main line, electrically isolated, elongated contact-strips over which said brush moves, one of said strips being permanently connected in the circuit of the magneto call-generator, and another in the circuit including the transmitter, the primary of the induction coil, and the main line, a separate contact located in the line of movement of the bracket and forming part of a short circuit for the magneto-call-generator, said circuit being completed when the bracket or carrier reaches its limit of movement in one direction, and means for operating the armature of the magneto-call-generator and simultaneously moving the brush of the switch over the elongated contact strips, substantially as described.

15. In a telephone, the combination with a magneto-call generator, and with a transmitter, a receiver, and an induction coil of a switch consisting of a movable bracket permanently connected in the main line circuit, isolated contact-strips over which a brush on the bracket moves, a separate contact lying in the line of movement, a short circuit for the magneto-call generator, including said separate contact, the brush on the movable bracket, and one of the contact-strips, a local receiving circuit including the secondary of the induction-coil and the telephonic receiver and a transmitting circuit including another of the contact-strips, the brush on the movable bracket, the main line, the primary of the induction-coil, and the telephonic transmitter, substantially as described.

16. In a telephone, the combination with a magneto call generator, of a pivoted arm connected to and operating the armature of said generator, a transmitter and receiver, a switch consisting of a movable bracket having a brush having permanently electrical connection in the main line, the bracket being connected to said pivoted arm in such manner as to receive motion therefrom, electrically isolated contact strips over which the brush moves, a separate contact lying in the line of movement of the brush, a short circuit for the magneto-call generator including said separate contact, the brush on the bracket, and one of the contact-strips, and a transmitting circuit including the other contact-strip, the brush and the telephonic transmitter, substantially as described.

543,799. PIANO-ACTION. JOHN W. DARLEY, Jr., Baltimore, Md., assignor of one-half to Michael Holzman, Phillip Hamburger, and Leon Hamburger, same place. Filed Oct. 30, 1893. Renewed Jan. 4, 1895. Serial No. 533,842. (No model.)



Claim.—1. In a piano action, the combination with a piano key, of a pivoted lever provided with a curved pad e^3 of buckskin or similar material, and adjustable mechanism connecting said pivoted lever with the said piano key; of a pivoted hammer butt having a projecting arm adapted to engage in said curved pad during part of its return stroke; and a jack slotted at its upper end connecting said pivoted lever with said hammer butt, substantially as and for the purposes described.

2. In a piano action, the combination with a piano key, of a pivoted lever provided with a curved pad e^3 of buckskin or similar material, and adjustable mechanism connecting said pivoted lever with the said piano key; of a pivoted hammer butt having a projecting arm adapted to engage in said curved pad during part of its return stroke; and a jack made in two portions pivoted together the upper portion of said jack being slotted as shown and connected to the hammer butt; and the lower portion of said jack being pivoted to said pivoted lever, and a spring normally tending to straighten said jack, substantially as and for the purposes described.

3. In a piano action, the combination with a piano key, of a pivoted lever provided with a curved pad e^3 of buckskin or similar material, and adjustable mechanism connecting said pivoted lever with the said piano key; of a pivoted hammer butt having a projecting arm adapted to engage in said curved pad during part of its return stroke; and a jack made in two parts pivoted together, the upper part being slotted and engaging a pin on said hammer butt; and the lower part being pivoted to said pivoted lever and provided with a projecting arm adapted to bring up against a fixed part of the piano near the end of the stroke of the hammer butt, and a spring normally tending to straighten said jack, substantially as and for the purposes described.

4. In a piano action the combination with a piano key A of a pivoted lever split horizontally into two tongues as shown and provided on its upper edge with a curved pad of buckskin or similar material, a screw passing through the lower tongue of said lever and adapted to raise or lower said upper tongue and the buckskin thereon, means for adjustably connecting said lower tongue with said piano key; a hammer butt pivoted above said lever and having a downwardly projecting arm adapted to engage in said curved pad during part of its return stroke; and a jack connecting said pivoted lever with said hammer butt, substantially as described.

5. In a piano action, the combination with a piano key A of a pivoted lever split horizontally into two tongues as shown, and provided on its upper edge with a curved pad of buckskin or similar material, a screw passing through the lower tongue of said lever and adapted to raise or lower said upper tongue and the buckskin thereon, means for adjustably connecting said lower tongue with said piano key; a hammer butt pivoted above said lever and having a downwardly projecting arm adapted to engage in said curved pad during part of its return stroke, the said hammer butt being provided with a pin in front of said pivot; a jack made in two portions pivoted together, and having its upper end slotted and engaging said pin, and its lower portion pivoted to said pivoted lever; and a spring normally tending to straighten said jack, substantially as and for the purposes described.

6. In a piano action the combination with a piano key A of a pivoted lever split horizontally into two tongues as shown and provided on its upper edge with a curved pad of buckskin or similar material, a screw passing through the lower tongue of said lever and adapted to raise or lower said upper tongue and the buckskin thereon, means for adjustably connecting said lower tongue with said piano key; a hammer butt pivoted above said lever and having a downwardly projecting arm adapted to engage in said curved pad during part of its return stroke; the said hammer butt being provided with a pin in front of said pivot; a jack P made of two parts P' and P^3 of unequal length and pivoted together; the upper and shorter part being slotted and engaging said pin, and the lower part being pivoted to said pivoted lever; and a spring normally tending to straighten said jack; and a piano key, substantially as and for the purposes described.

7. In a piano action the combination with a piano key A of a pivoted lever split horizontally into two tongues as shown and provided on its upper edge with a curved pad of buckskin or similar material, a screw passing through the lower tongue of said lever and adapted to raise or lower said upper tongue and the buckskin thereon, means for adjustably connecting said lower tongue with said piano key; a hammer butt pivoted above said lever and having a downwardly projecting arm adapted to engage in said curved pad during part of the return stroke; the said hammer butt being provided with a pin in front of said pivot; a jack made in two parts pivoted together, the upper part being slotted and engaging said pin; the lower part being pivoted to said pivoted lever and having a projecting arm adapted to bring up against a fixed part of the piano near the end of the stroke of the hammer butt; and means for straightening said jointed jack, substantially as and for the purposes described.

8. In a piano action, the combination with a pivoted damper lever and pivoted hammer butt, with a spring interposed between the two, and a pin secured to said hammer butt in front of its pivot, of a jack made in two portions pivoted together, and having its upper end slotted and engaging said pin, a spring normally tending to straighten said jack; a piano key, and mechanism connecting said piano key with the lower parts of said jointed jack, and of said damper lever, substantially as and for the purposes described.

9. In a piano action, the combination with the key A and lever E split as at e and operating the various parts connected thereto, of the upright C secured to the said key, the nut B adapted to bear on said piece C, and the double ended screw F, engaging in said lever and in said nut, substantially as and for the purposes described.

10. In a piano action, the combination with a pivoted hammer butt provided with a pin in front of said pivot, of a jack made in two portions pivoted together, and having its upper end slotted and engaging said pin, a spring secured to one of said portions and bearing on the other and normally tending to straighten said jack; a piano key, and mechanism connecting said piano key with the lower part of said jointed jack, substantially as and for the purposes described.

11. In a piano action, the combination with a pivoted hammer butt provided with a pin in front of said pivot, of a jack P made of two parts P' and P^3 of unequal length and pivoted together; the upper and shorter part being slotted and engaging said pin; a spring P^3 secured to one of said portions and bearing on the other and normally tending to straighten said jack, a piano key; and mechanism connecting said piano key and the lower part of said jointed jack, substantially as and for the purposes described.

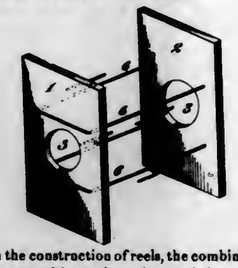
543,800. ELECTRIC HEATING-RUG. JESSE R. DAVIS, Parkersburg, W. Va., assignor of one-third to Charles A. Wade, same place. Filed July 11, 1894. Serial No. 517,236. (No model.)



Claim.—1. An electric heating rug, comprising a flat layer of electric heating medium of amorphous resisting material, a ring-shaped electrode of triangular cross section having its flat face uppermost, a second electrode of conical shape arranged with its base uppermost and in concentric relation to the ring, both being arranged in the same plane in the heating medium, and an insulating casing with flexible covering, substantially as and for the purpose described.

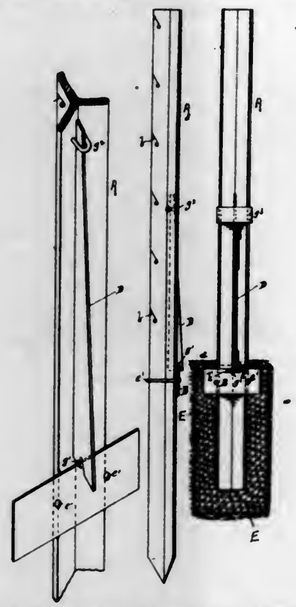
2. An electric heater comprising a casing containing a resistance material, two electrodes arranged concentrically therein, and a metallic distributing plate extending entirely across both electrodes and properly insulated therefrom substantially as shown and described.

543,801. REEL. WILLIAM EDENBORN, St. Louis, Mo. Filed Sept. 24, 1894. Serial No. 523,918. (No model.)



Claim.—In the construction of reels, the combination of two heads formed with the central journal openings and the pairs of wire receiving perforations arranged around the journal openings in each head, with the independent U-shaped wires having their legs spaced to fit the pairs of wire receiving perforations, and passed through the wire receiving perforations in the heads with the corresponding ends of the wires from the two heads extending inwardly toward each other and twisted together to unite them, substantially as set forth.

543,802. FENCE-POST. AMOS S. ENGLISH, St. Paul, Minn. Filed Nov. 19, 1894. Serial No. 529,222. (No model.)



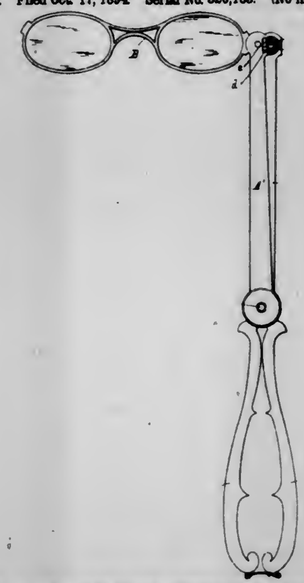
Claim.—1. In a fence post, the main post, a horizontal plate secured across the post at or near the level of the ground, and a perpendicular brace plate supported at its lower end by said horizontal plate and at its upper end to the body of the post, substantially as and for the purpose hereinbefore set forth.

2. In a fence post, the main post, a horizontal plate secured across the post at or beneath the level of the ground, and a perpendicular brace plate formed narrowest at its upper end and supported by an inclined notch fitting over said horizontal plate and a clip or ring embracing its upper part, whereby the upward pressure tends to strengthen the union between the parts, substantially as and for the purpose hereinbefore set forth.

3. In a fence post, the main post, a horizontal plate adapted to be secured across the post at or near the level of the ground, a perpendicular brace plate formed narrowest at its upper end and supported by an inclined notch fitting over said horizontal plate, a clip or ring embracing the upper part of said perpendicular plate, and a wedge inserted into said clip or ring, substantially as and for the purpose set forth.

4. In a fence post, the main post having a horizontal plate secured thereto, a perpendicular brace plate supported by its lower edge upon said horizontal plate and with portions of its lower edge turned off at right angles, and a cement or burnt clay base inclosing the lower end of said post, and brace plates, substantially as and for the purpose hereinbefore set forth.

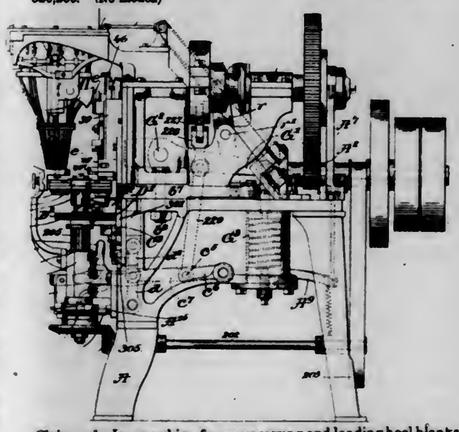
543,803. HANDLE FOR EYEGLASSES. JEAN FERL, Hanau, Germany. Filed Oct. 17, 1894. Serial No. 526,183. (No model.)



Claim.—1. In a lorgnette the combination of a handle consisting of two levers hinged together about half way of their length, an eye-glass frame pivoted to the upper end of one of said levers, and a stud projecting laterally from said eye-glass frame, to engage with a slot in the upper end of the other lever, substantially as set forth.

2. In a lorgnette, the combination of an eye-glass frame having a stud projecting therefrom, with a handle consisting of two levers hinged about half-way of their length, one lever having a slot in its upper end to receive said stud, and the other lever having a pivot about which said frame turns, and a spring one end of which is secured to said pivot, said spring being adapted to normally depress the eye-glass frame, substantially as set forth.

543,804. HEEL COMPRESSING AND LOADING MACHINE. CHAS. W. GLIDDEN, Lynn, and CHESTER C. SMALL, Newton, assignors to James W. Brooks, trustee, Petersham, Mass. Filed Oct. 16, 1894. Serial No. 526,286. (No model.)



Claim.—1. In a machine for compressing and loading heel blanks, a heel seat die carrier, a series of heal seat dies mounted thereon, a

lever co-operating with each of said heel seat dies, impaling pins actuated by or through said levers, a stop to effect the movement of its lever to thrust the impaling pins into a heel as the heel seat die rises, and a plurality of independent stops to co-operate each with its own lever to withdraw the impaling pins from a heel blank as the heel seat die descends, substantially as described.

2. The heel seat dies, their carrier, the levers 8 and impaling pins actuated thereby, combined with stops 205, attached to the nail-box spindle A^{13}, to operate the said lever as the carrier is lowered, substantially as described.

3. In a heel compressing and loading machine, the combination with a nail box carrier, a series of nail boxes thereon, means to move said carrier, a driver bar, a series of drivers connected therewith, and a guide in continuous engagement with the drivers, to guide the lower ends thereof into the holes in a nail-box, substantially as described.

4. The combination with the driver bar, and its attached drivers, of a driver-guide having openings therein for the loose ends of the drivers, a support therefor, and a nail-box having nail holes in alignment with and of the same size as the holes in the driver guide, substantially as described.

5. A heel seat die carrier, and a connected heel seat die, combined with an independently supported heel blank holder surrounding said die, substantially as described.

6. A heel seat die, a carrier therefor, and an independently supported yielding heel blank holder to operate, substantially as described.

7. The combination with a heel seat die, and means to move it vertically, of a yielding independently supported heel blank holder surrounding said heel seat die and adapted to receive within it the heel about to be compressed, substantially as described.

8. A vertically movable heel seat die carrier, a heel seat die mounted thereon, and heel compressing mechanism, combined with an independently spring supported vertically movable heel blank holder adapted to receive within it a heel blank to be placed on the heel seat die preparatory to compressing the same, substantially as described.

9. The combination with a heel seat die, of a vertically movable independently supported heel blank holder co-operating with the edges of the heel blank laid on said die, substantially as described.

10. A revoluble vertically movable heel-seat die-carrier, and a heel seat die mounted thereon, means to move said carrier and heel seat die laterally, combined with a heel blank guide located at the edges of the heel seat die and moved laterally in unison with the heel seat die carrier, substantially as described.

11. In machine for compressing and loading heel blanks, a revoluble vertically moving heel-seat die-carrier, combined with the elongated locking devices 301, and means to actuate the same to release the said heel-seat die-carrier when the latter is to be rotated, substantially as described.

12. An awl carrying bar or plunger, an awl plate holder having an attached open guide i^2, a removable awl plate therein provided with a series of awls, combined with a locking pin to engage and retain the awl plate in the guide, and a lever to operate the same, the movement of the lever actuating the pin to withdraw it from and to release the awl plate when it is desired to remove the same from the guide for a change of awls, substantially as described.

543,805. COMBINED RESERVOIR AND FILTER. NATHANIEL O. GOLDSMITH, Cincinnati, Ohio, assignor to Fred C. Weir, same place. Filed Aug. 9, 1894. Serial No. 519,834. (No model.)

Claim.—1. The combination with the reservoir C, and the filter case E secured thereto, of the cap K, and the filter cylinder G secured to said cap and removable therewith, substantially as described.

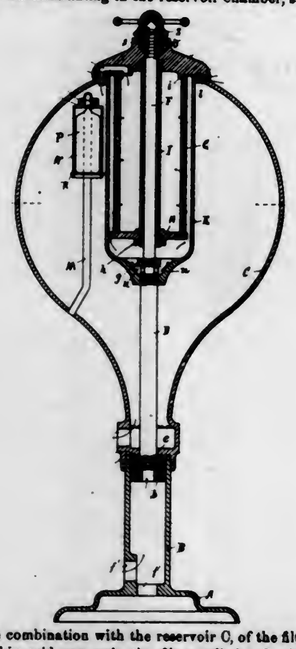
2. The combination with a reservoir C, and the cap K, of the hollow stem D, the filter case E, and the filter cylinder G suspended from the cap K, within the filter case, and having a passage M communicating with the reservoir, substantially as described.

3. The combination with the reservoir and the cap, of the filter suspended within the reservoir and from said cap and provided with a passage leading into the reservoir, and a filter case surrounding the filter, within the reservoir, and having a passage for entrance of water, substantially as described.

4. The combination with a reservoir and a filter and its casing suspended within the reservoir, the said casing being provided with an inlet passage for water and the filter having an outlet passage to the reservoir, of a valved air chamber suspended within the reservoir and communicating therewith and with the atmosphere, substantially as described.

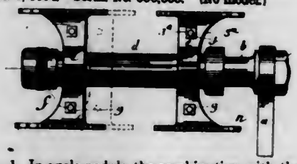
5. The combination with a reservoir, a removable cap for the reservoir, and a filter cylinder suspended from said cap and having a passage leading into the reservoir, of a filter case surrounding the filter cylinder and having an inlet for water, and a valved air chamber located in the reservoir, substantially as described.

6. In combination with a reservoir, a filter and filter case suspended within said reservoir and detachably removable therefrom, and a water passage *m* leading from the inner filter chamber around the filter case and terminating in the reservoir chamber, substantially as specified.



7. The combination with the reservoir C, of the filter case E suspended within said reservoir, the filter cylinder G within the filter case and means for supplying water to the chamber between the case and filter, and the water passage *m* leading from the interior of the filter chamber around the filter case and terminating in the reservoir, substantially as specified.

543,806. CYCLE-PEDAL. EDWARD M. GRAHAM, Chicago, Ill. Filed Dec. 5, 1894. Serial No. 530,885. (No model.)



Claim.—1. In cycle pedals, the combination with the spindle and its rotating sleeve, of the companion foot-bar sections mounted separately thereon and laterally adjustable to and from each other along the sleeve, substantially as described.

2. In cycle pedals, the combination with the spindle and its rotating sleeve, of the companion foot-bar sections mounted separately thereon and laterally adjustable to and from each other along the sleeve, said bars comprising dual clips to clamp the sleeve in reverse angular contour and having an outer upturned end to receive the foot, substantially as described.

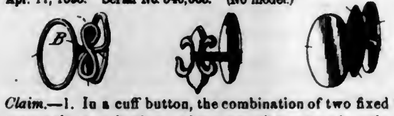
3. In cycle pedals, the combination with the rotating sleeve and with the dual clips clamped thereon to constitute a sectional foot-bar, the same having upturned ends with inner level face and raised outer edge forming a side guard of the overlapping elastic pad mounted upon and mutually embracing the upturned ends of the clips along the level faces thereof, substantially as described.

4. In cycle pedals, the combination with the rotating sleeve and with the companion foot-bar sections mounted separately thereon, each comprising dual clip-plates clamped to said sleeve and having out-turned ends, of the rubber pad overlapping said ends and secured thereto, substantially as described.

5. In cycle pedals, the combination with the rotating sleeve and with the companion foot-bar sections mounted separately thereon, each comprising dual clip-plates clamped to said sleeve and having out-turned ends, of the rubber pad overlapping said ends, the face plate therefor, and the tie-bolts to secure said pad in place, substantially as described.

6. In cycle pedals, the combination with the spindle and its rotating sleeve of the companion foot-bar sections mounted separately upon and adjustable laterally to and from each other along said sleeve and means substantially as described, to hold such sections level or aligned with each other upon the sleeve, substantially as set forth.

543,807. CUFF-BUTTON. JAMES R. HILLS, New York, N. Y. Filed Apr. 17, 1895. Serial No. 546,063. (No model.)

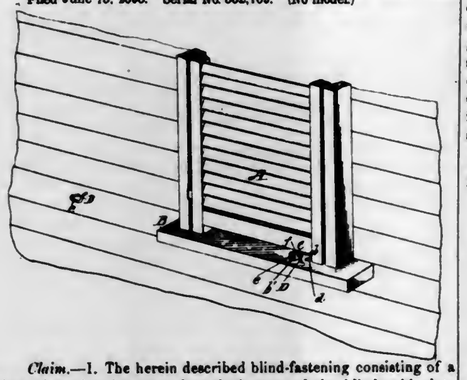


Claim.—1. In a cuff button, the combination of two fixed heads set at an angle to each other, and a connecting post or bar, the latter being secured eccentrically to one of the heads at or near its outer edge and at that point on said edge where it comes nearest the edge of the other head, the opposite end of said connecting bar being attached concentrically to its head; substantially as described.

2. In a cuff button, the combination of two fixed heads set at an angle to each other, and a post or bar connecting said heads together, said connecting bar being secured to one of the heads eccentrically the point of connection being at or near the outer edge of the head and at that place on said head where it comes nearest the edge of the other head the opposite end of said connecting bar being attached substantially concentrically to its head; substantially as described.

3. In a cuff button, the combination of two fixed heads set at an angle to each other, a connecting post or bar secured to one or both of said heads eccentrically, and a projection extending from opposite sides of said connecting post or bar in opposite directions substantially parallel with the edges of the cuff and adapted to engage the inner sides of the cuff on opposite sides of the button hole to hold the edges of said cuff in proper position and prevent the button heads from turning; substantially as described.

543,808. BLIND-FASTENING. LOUIS W. JORDAN, Boston, Mass. Filed June 13, 1895. Serial No. 552,709. (No model.)

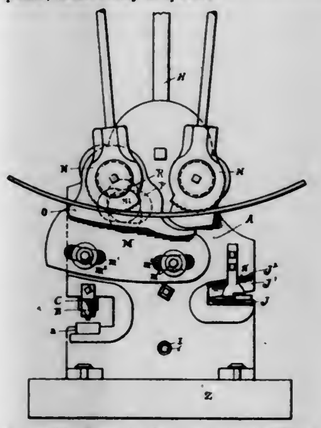


Claim.—1. The herein described blind-fastening consisting of a plate adapted to be secured to the bottom of the blind, said plate having depending side flanges or members each provided with a slot open at one end and having an upwardly extending notch or offset at its inner end, said slots being arranged reversely with respect to each other and adapted to engage respectively the keeper on the window sill, and that on the side of the building, substantially as described.

2. In a blind-fastening, the plate C, having oppositely disposed depending side flanges *b*, *b'*, each provided with a slot *d*, open at one end and having an upwardly extending notch or offset *f*, at its inner end, said slots being arranged reversely with respect to each other, and each flange having a portion 10, extending beyond the notch *f*, and forming a guard to limit the upward movement of the blind in releasing the fastening, in combination with keepers each provided with a bar *c*, adapted to enter one of said slots and engage the notch or offset *f*, of the same, substantially as described.

543,809. COMBINED SHEARS, PUNCH, AND TIRE-SHRINKER. HOLLIS W. MOORE, Olean, N. Y., assignor to the International Steam Power Company, same place. Filed Oct. 10, 1894. Serial No. 525,500. (No model.)

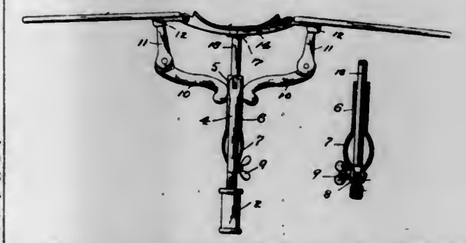
Claim.—1. In a combined punch, shear, and tire shrinking machine, the combination with the frame of an oscillating plate pivoted upon one face of said frame, a lever operated cam or eccentric arranged to oscillate said plate, a vertically reciprocating punch carrier working in guides on said frame and engaged by a nose on said plate, and a movable tire shrinking jaw upon the opposite face of the frame, said jaw having a boss engaging a slot in said oscillating plate through an opening of the frame whereby said jaw is operated simultaneously with the punch, substantially as specified.



2. In a combined punch, shear and tire-shrinking machine, the combination of an upright frame, an oscillating plate pivoted upon one face thereof, a multiple socket cam or eccentric pivoted upon said frame and engaging a slot of said plate, a punch carrier working in guides of the frame and operated by said plate, shear plates carried by the frame, an oscillating plate at the end of the machine opposite the punch, and a movable tire shrinking jaw upon the opposite face of the frame, and having a boss engaged by a slot in said oscillating plate, substantially as specified.

3. In a combined punch, shear and tire shrinking machine, the combination of the frame A, punch carrier C, working in guides upon one face of the frame, the oscillating plate D, its nose C' engaging a slot in the punch carrier, the cam or eccentric E, having a series of radial lever sockets, and engaging a slot of said plate, the operating shear plates J J', the movable jaw M upon the opposite face of the frame, its boss engaging a slot in said plate D, a tire supporting shelf or flange upon said frame, and the grip heads N N, substantially as specified.

543,810. BOOK STAND OR HOLDER. GEORGE W. PARKER, New York, N. Y., assignor to William Harris Arnold, same place. Filed July 26, 1894. Serial No. 518,631. (No model.)



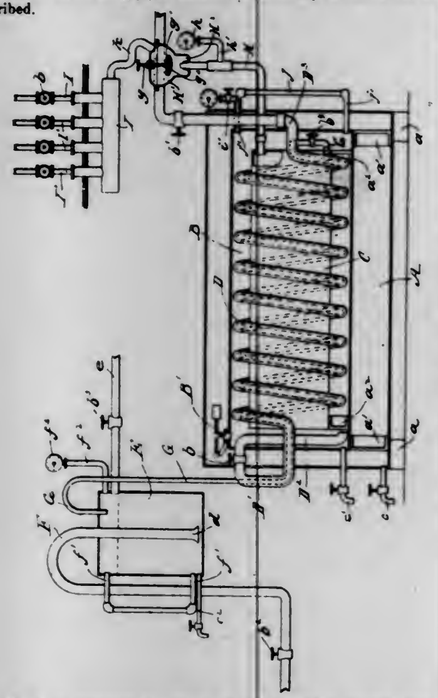
Claim.—1. In combination, the folding sides, the pivoted head, the support therefor and the frame for said sides arranged to raise and lower the book in the unfolding and folding movements, said frame being carried by the pivoted head and having pivotal movement therewith, substantially as described.

2. In combination, the head the arms extending laterally therefrom, the folding sides, the links pivotally connected to said sides and the ends of said arms, the raising and lowering frame comprising the central bar and the cross pieces at each end thereof, the clips pivotally connecting said folding sides to each end of said cross pieces and the stud depending from the center of said frame and guided by a socket in said head, substantially as described.

3. In combination, the folding sides, the main standard, the segmental extension secured on the upper end thereof, the supporting arm extending from said segmental extension, the head pivoted thereto, the connection between said head and the folding side and the clamp depending from said head and embracing said segmental extension, substantially as described.

543,811. HEATING, VENTILATING, OR OTHER APPARATUS. MONSURT PELLET, New York, N. Y. Filed Jan. 2, 1895. Serial No. 533,505. (No model.)

Claim.—1. In an apparatus for ventilating and heating or cooling buildings, the combination of a chamber or housing adapted to receive refrigerating material, a steam chamber within the same and an air chamber within said steam chamber, a steam coil within said steam chamber and surrounding said air chamber and opening into the steam chamber, a vessel having a water inlet communicating with the same, and a compressed air inlet extending vertically therethrough to the bottom thereof, an air-outlet pipe leading from the top of said vessel and passing through the steam coil and opening into the air chamber, an outlet leading from said chamber to a regulator and valve, and a pipe leading therefrom to a section or chamber with which air distributing pipes connect, substantially as shown and described.



2. In an apparatus for ventilating and heating or cooling buildings, the combination of an air chamber, a steam coil surrounding the same and connected to a suitable source of steam, a vessel having a water inlet communicating therewith, a compressed air inlet leading to the bottom of said vessel, an outlet pipe leading from the top of said vessel and passing through the whole of the steam coil and communicating with the air chamber surrounded thereby, a pipe leading from said chamber to a regulator in connection therewith, and a plurality of distributing pipes communicating with the regulator and with the various rooms of the building, said pipes being provided with valves for regulating the outflow of the air, substantially as shown and described.

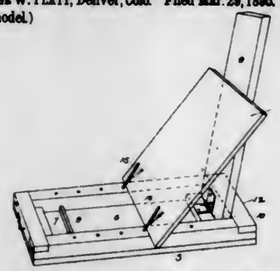
3. In an apparatus for ventilating and heating or cooling buildings, the combination of a chamber adapted to receive refrigerating material, a steam chamber located therein and an air chamber located within the steam chamber, a steam coil surrounding the said air chamber, in communication with a source of steam supply, an air pipe passing through said coil and communicating with the air chamber, said air chamber being also in communication with an air pressure regulator, and through said regulator with distributing pipes, substantially as shown and described.

4. In an apparatus for ventilating and heating buildings, the combination of a steam chamber, an air chamber located in said steam chamber, a steam coil in communication with a source of steam supply surrounding said air chamber within said steam chamber and also communicating with said chamber; an air supply pipe passing through said steam coil and communicating with said air chamber, an air pressure regulator also in communication with said air chamber, and air distributing pipes in communication with said regulator, substantially as shown and described.

5. The combination, in an apparatus for heating and ventilating rooms, of an air chamber, an air supply communicating therewith near the bottom thereof, a steam chamber, an air chamber within said steam chamber, a steam coil surrounding said air chamber within said steam chamber, a pipe communicating with the water chamber near the top thereof, extending through said steam coil and communicating with said air chamber, said air chamber being also in communication with a pressure regulator, and through distributing pipes with the various rooms of the building to be ventilated and heated, substantially as shown and described.

543,812. COMBINATION DESK-EASEL AND PENCIL-CASE.

GEORGE W. PLATT, Denver, Colo. Filed Mar. 29, 1895. Serial No. 543,772. (No model.)



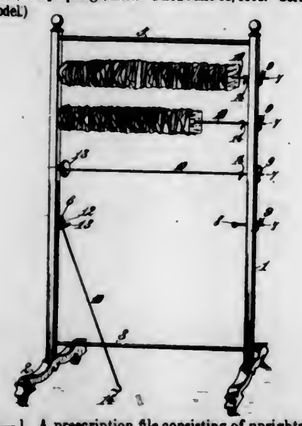
Claim.—1. The combined pencil case and desk easel comprising the case proper, the movable foot-block, and the lid hinged to said block, substantially as described.

2. The combination of the case proper having a series of recesses in each side, a movable foot-block, and the lid hinged to said block, substantially as described.

3. The combination of the case proper, the movable foot-block, the lid hinged to said block, and the pins adapted to enter apertures in the sides of the case, substantially as described.

543,813. PRESCRIPTION-FILE FOR PHARMACISTS.

JOHN H. ROBINSON, Holly Springs, Miss. Filed June 11, 1895. Serial No. 552,453. (No model.)



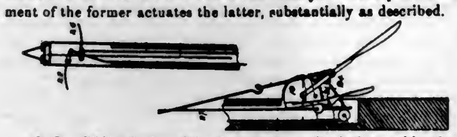
Claim.—1. A prescription file consisting of uprights mounted on a suitable base and rigidly connected, one upright provided with rigid hooks and the other with adjustable short wires having eyes or loops at the ends next the hooks on the other upright, and file-wires having loops at one end to engage the hooks on one upright, and hooks at the other end to engage the loops on the adjustable wires, substantially as described.

2. A prescription file consisting of uprights mounted on a suitable base and rigidly connected, one being provided with rigid hooks and the other with short wires adjustable horizontally in openings in the second upright, thumb-nuts turned upon the outer threaded parts of the short wires to effect the adjustment, and file-wires having loops at one end to engage the rigid hooks, and hooks at the other end to engage loops on the ends of the short, adjustable wires, said file-wires also having disks adjacent to their looped ends, substantially as described.

543,814. LIFTING DEVICE.

CARL A. ROUDER and PETER J. BLOOM, Denver, Colo., assignors of one-fourth to Charles J. Dewey, same place. Filed Nov. 16, 1894. Serial No. 529,070. (No model.)

Claim.—1. In a lifting device of the character described, the combination, with the rod having the segmental ratchet plate, of the lever fulcrumed on said plate and carrying a spring-actuated dog adapted to engage the toothed edge of the plate, a spring-held releasing plate eccentrically pivoted on the toothed plate, means for actuating said releasing plate whereby the locking dog may be disengaged from the ratchet plate, a pair of jaws attached to the end of the rod more remote from the lever, one of said jaws being movable, and a suitable connection between the lever and the movable jaw whereby the movement of the former actuates the latter, substantially as described.



2. In a lifting device of the character described, the combination, with the rod having the segmental ratchet plate, of the lever pivoted on said rod and carrying a spring-held dog, jaws attached to the end of the rod more remote from the lever, one of them being movable and spring-actuated, a triangular device having its apex pointing outward and two of its legs engaging apertures formed in the jaws, and a suitable connection between the lever and said triangular device, substantially as described.

3. In a lifting device of the character described, the combination, with the rod having the segmental ratchet plate attached thereto, of the lever fulcrumed on said plate and carrying the spring-held dog, the spring held releasing plate eccentrically pivoted on the ratchet plate and adapted to disengage the locking dog, the jaws attached to the end of the rod more remote from the lever, the triangular device engaging the jaws, and a suitable connection between the lever and said triangular device, substantially as described.

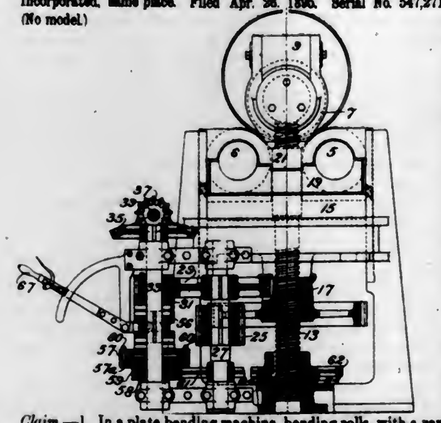
4. In a device of the character described, the combination, of the hollow rod having the segmental ratchet plate, the lever carrying the spring-held detent, jaws attached to the end of the rod more remote from the lever, one of said jaws being movable, a suitable connection between the movable jaw and the lever, another lever fulcrumed on the rod near the jaw-end thereof and projecting into the opening therein, another connection between said last named lever and the first lever whereby the movable lever may be actuated by either lever, substantially as described.

5. In a lifting device of the character described, the combination, of the hollow rod provided with the segmental ratchet plate, a locking device pivoted on the segmental plate and carrying a spring-held dog, jaws attached to the extremity of the rod more remote from the locking device, one of said jaws being movable, a suitable connection between the movable jaw and the locking device, the spring-held releasing plate eccentrically pivoted on the ratchet plate, a lever located near the extremity of the rod remote from the locking device, and a suitable connection between said lever and the releasing plate, substantially as described.

6. In a lifting device of the character described, the combination of the rod, a locking device attached thereto and comprising a lever, a segmental rack and a detent engaging the rack, jaws attached to the extremity of the rod remote from the locking device, one of said jaws being movable, and suitable means for connecting the lever with the movable jaw, substantially as described.

543,815. BENDING-ROLL.

WILLIAM SELLERS and WILFRED LEWIS, Philadelphia, Pa., assignors to the William Sellers & Company, Incorporated, same place. Filed Apr. 26, 1895. Serial No. 547,271. (No model.)



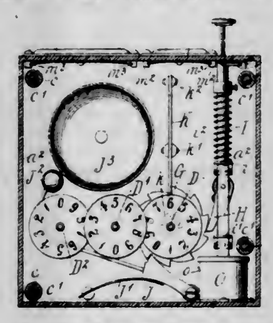
Claim.—1. In a plate bending machine, bending rolls, with a revoluble screw and two nuts at one end of the rolls, whereby the connection between the rolls at that end may be severed and restored at will.

2. In a plate bending machine, bending rolls, with a revoluble screw and two nuts at one end of the rolls, whereby the connection between the rolls at that end may be severed and restored at will, in combination with a revoluble nut on the screw, whereby the distance between the bending rolls may be adjusted.

3. In a plate bending machine, bending rolls, with a revoluble screw and two nuts at one end of the rolls, whereby the connection between the rolls at that end may be severed and restored at will, in combination with a frictional device for limiting the torsion of the screw.

543,816. VOTING-MACHINE.

CHARLES A. STITZER, Central City, Nebr. Filed Nov. 27, 1893. Serial No. 492,121. (No model.)



Claim.—1. A voting register and its casing, comprising a train of registering or counting gears, a ratchet wheel operatively connected with said train, an operating rod or lever for actuating said ratchet wheel, said operating rod extending through an aperture in the register casing and consisting of two sections separable at a point within the casing, and a locking closure for said aperture, comprising a spring actuated plate pivoted on the inner face of the casing, an inner support for said plate with which the free end thereof engages when in closed position, said closure being so arranged as to be accessible for unlocking from the interior only, substantially as set forth.

2. The combination with a register or counting device, of an operating member, mechanism actuated by said operating member acting to render the registering mechanism inoperative for a succeeding operation until said operating member has returned to its normal position, and a retarding device acting on said operating member to delay its return for a limited time to its normal position, substantially as set forth.

3. The combination with a register or counting device, of an operating member, mechanism actuated by said operating member acting to render the registering mechanism inoperative for a succeeding operation until said operating member has returned to its normal position, and a dash pot acting on said operating member to delay its return for a limited time to its normal position, substantially as set forth.

4. The combination with a voting register and its operating rod, of mechanism actuated by said operating rod acting to render the registering mechanism inoperative for a succeeding operation until said operating rod has returned to its normal position, and an air dash pot acting directly upon said operating rod to delay its return to its normal position, substantially as set forth.

5. The combination with a locking receptacle, of a card holder secured to its outer surface by means of transversely slotted lugs extending through the wall of said receptacle, and a bar or strip pivoted on the inner wall of the receptacle between and arranged to engage said slotted lugs within the receptacle, substantially as described.

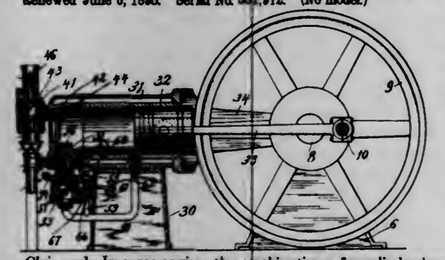
6. The combination with a register comprising a train of registering gears or counters, a ratchet wheel operatively connected therewith, an operating rod acting on said ratchet wheel, an alarm device arranged to indicate each operation of the register, a casing provided with apertures arranged opposite the registering gears, said casing being provided with a lid or cover protected by a seal, and with a shifting plate for closing said apertures, also protected with a seal, substantially as described.

7. The combination of a voting booth having inclosed sides and back and an open front, a plurality of register receptacles within said booth, each provided with an independent cover constituting an indicator when open and each receptacle identified with a single one of the different offices to be voted for, a separate independent register for each candidate, all of the registers of candidates for any one office being arranged within the receptacle identified with that office, and an alarm actuated by the operation of each register, whereby the voter must open a register receptacle for each office in order to vote therefor, and will sound an alarm each time he votes, substantially as set forth.

543,817.

WITHDRAWN.

543,818. GAS-ENGINE. HENRY A. WEEKS, Lake Geneva, Wis., assignor to Willis J. Perkins, Grand Rapids, Mich. Filed Mar. 30, 1894. Renewed June 6, 1895. Serial No. 551,912. (No model.)



Claim.—1. In a gas engine, the combination, of a cylinder having an open end, a chamber opening into the cylinder, and also communicating with the discharge pipe, another chamber adjacent to the first named chamber, a pipe connecting this chamber with the cylinder, a valve stem provided at one end with an exhaust valve adapted to close the opening of the first-named chamber to the cylinder, and at its opposite end provided with a valve-piston working in the last-named chamber, a piston working in the cylinder said piston adapted at the completion of its outstroke to uncover the pipe connecting one of the chambers with the cylinder to admit gas to pass into said pipe, and at the completion of its instroke to also uncover said pipe, to establish a passage from the pipe to the rear of the piston, whereby the gas is free to flow from the pipe through the open end of the cylinder, and means for feeding gas to the cylinder, substantially as set forth.

2. In a gas-engine, the combination, of a cylinder, a chamber opening into the cylinder, and also communicating with a discharge, another chamber adjacent to the first-named chamber, a pipe connecting this chamber with the cylinder, a valve-stem provided at one end with an exhaust valve adapted to close the opening of the first-named chamber leading to the cylinder, and at its opposite end provided with a valve piston working in the last-named chamber, a supplemental pipe leading from the pipe of the valve-piston chamber to the cylinder, a valve within said pipe, means for opening said valve, a piston working in the cylinder, said piston adapted at the completion of its outstroke to admit gas into the pipe connecting one of the chambers with the cylinder, and at the completion of its instroke to allow for the escape of the gas from the pipe to the exterior, means for operating said piston, and means for feeding gas to the cylinder, substantially as set forth.

3. In a gas-engine, the combination, of a cylinder, provided at its front end with an open-ended casing surrounded by, and communicating with, an evaporator-cup, a valve controlling the end of the casing leading to the cylinder, a piston reciprocating in the cylinder, means for feeding gas to the evaporator-cup which gas is drawn into the cylinder by the back stroke of the piston and the consequent opening of the valve controlling the open-ended casing, and means for exhausting the gas in front of the piston on the instroke of the piston, substantially as set forth.

4. In a gas-engine, the combination, of a cylinder provided at its front with an open-ended casing surrounded by, and in communication with, an evaporator cup, a valve controlling the end of the casing leading to the cylinder, a generator cup beneath the opposite open end of the casing, a piston reciprocating in the cylinder, means for feeding gas to the evaporator cup, which gas is drawn into the cylinder by the back stroke of the piston and the opening of the valve controlling the open-ended casing, means for exhausting the gas in front of the piston, and a conduit for the exhaust, said conduit carrying the exhaust in close proximity to the generator-cup for the purpose of heating the oil contained in said cup, and converting the same into gaseous form, substantially as set forth.

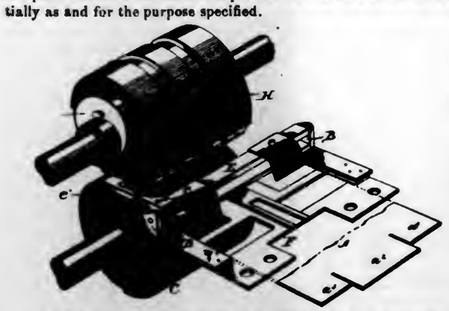
5. In a gas-engine, the combination, of a cylinder provided at its front with an open-ended casing, the upper open end of said casing communicating with a passage to the cylinder, said casing surrounded by, and in communication with, an evaporator-cup, a valve controlling the end of the casing leading to the cylinder, a pipe above the passage leading to the cylinder, said pipe having communication with a source of heat supply, an ignition tube within said pipe, said tube communicating with the passage leading to the cylinder, a piston reciprocating in the cylinder, means for feeding gas to the evaporator cup, which gas is drawn into the cylinder by the back stroke of the piston, and the consequent opening of the valve controlling the open ended casing, and means for exhausting the gas in front of the piston on the instroke of said piston, substantially as set forth.

6. In a gas engine, the combination, of a cylinder, a piston working therein, a piston rod extending therefrom, a shaft having one end provided with an eccentric extension, a secondary shaft passing through the first-named shaft, and provided upon its end with an eccentric, a fly wheel mounted upon the shaft and operated by the piston rod, a double pump having a valve-controlled communicating passage, one of said pumps communicating with a source of supply, and the other pump in communication with the cylinder for feeding gas to said cylinder, pistons working in the cylinders of the pumps, the piston rod of the pump communicating with the source of supply connected to the eccentric end of the main shaft, and the piston rod of the other pump connected to the eccentric of the secondary shaft, and means for rotating the secondary shaft, substantially as set forth.

7. In a gas engine, the combination, of a cylinder, a piston working therein, a piston rod exteuding therefrom, a shaft having one end provided with an eccentric extension, a secondary shaft passing through the first-named shaft, and provided upon its end with an eccentric, a fly wheel mounted upon the shaft, and operated by the piston rod, a double pump having a valve-controlled communicating passage, one of said pumps connected with a source of supply, and the other pump in communication with the cylinder for feeding gas to said cylinder, pistons working in the cylinders of the pumps, the piston rod of the pump communicating with the source of supply connected to the eccentric end of the main shaft, and the piston rod of the other pump connected to the eccentric of the secondary shaft, a crank upon the inner end of the secondary shaft, a bell-crank lever pivoted to the fly wheel, said lever having its long arm weighted, and its short arm connected to one end of a spring, the opposite end of said spring also connected to the fly wheel, and a link connecting the bell-crank lever with the crank of the secondary shaft, substantially as set forth.

543,819. MECHANISM FOR CONSTRUCTING PAPER BOXES. HARRY A. WILLARD, Oswego, N. Y., assignor to the Diamond Match Company, Chicago, Ill. Filed Mar. 11, 1895. Serial No. 541,319. (No model.)

Claim.—1. In a box making machine, the combination of mechanism to cut pieces from the stock from which the boxes are to be made, and an arm reciprocable to and from the path of the stock as it comes from the cutting mechanism, that impinges upon the side of the piece cut from the stock and presses the same therefrom substantially as and for the purpose specified.

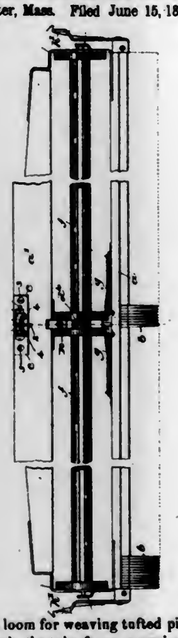


2. In a box making machine, the combination of mechanism to cut pieces from the stock from which the boxes are to be made, a rock shaft, arms carried by the latter adapted each to engage at its free end the upper side of a piece cut from the stock to press the same downward to expel it from the machine, and means to actuate the rock shaft, substantially as and for the purpose shown.

3. In a box making machine, the combination of mechanism to cut pieces from the stock from which the boxes are to be made, a vertically movable part to engage the upper side of each piece cut from the stock, means for raising said part that leave the same free to act upon said piece before it reaches such part, and means to feed the stock from the cutting mechanism, substantially as and for the purpose described.

4. In a box making machine, the combination of blank forming mechanism composed in part of a roller having knives that are adapted to cut waste pieces from the blank, a bridge over which the blank passes, a rock shaft journaled above said bridge, arms carried by such shaft to engage and expel said waste pieces from the machine, a cam carried by one of the rollers, for moving said arms in one direction, and a spring for moving them in the opposite direction, substantially as specified.

543,820. LOOM FOR WEAVING TUFTED FABRICS. HORACE WYMAN, Worcester, Mass. Filed June 15, 1894. Serial No. 514,694. (No model.)



Claim.—1. In a loom for weaving tufted pile fabrics, the shaft *m* having sprocket wheels, the tube-frame carrying chains m^4, a series of tube-frames having tuft-yarn spools, the gears m^3, and toothed gear *n*, combined with a toothed plate, and a locking device to connect said toothed plate and gear *n* at different points, a pawl and ratchet mechanism and actuating devices therefor, whereby the said shaft *m* may be rotated in such manner as to bring into working position and leave there only certain predetermined tube frames carried by said chain, and then by an adjustment of the toothed plate on the toothed gear bring into working position other tube frames not used at a previous rotation of the chain, substantially as described.

2. A tube frame and its connected series of tuft yarn tubes, combined with devices to effect the up and down bending of the bar carrying the tubes, substantially as described.

3. A tube frame and its connected series of tuft yarn tubes, combined with devices to effect the lateral bending of the bar to which the tubes are attached, substantially as described.

4. In a loom for weaving tufted fabrics, a tube frame composed of a top and bottom bar, and adjusting mechanism to co-operate therewith and effect the up or down bending of the bottom bar of the tube frame, substantially as described.

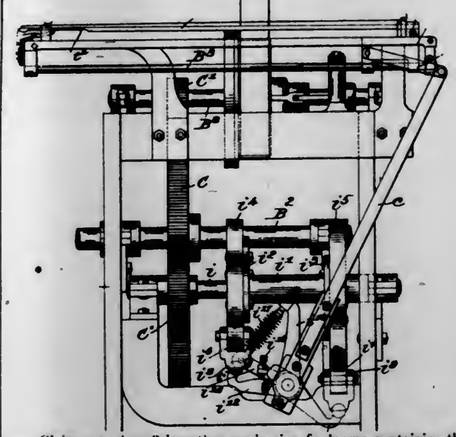
5. In a loom for weaving tufted fabrics, a tube frame composed of top and bottom bars connected to each other, combined with adjusting devices to effect the springing or bending of the bottom bar laterally, substantially as described.

6. A tube frame, combined with a plurality of tuft yarns carrying spools, and independent stands having bearings for the ends of said spools, substantially as described.

7. A tube frame, composed of top and bottom bars, a series of tubes connected to the bottom bar, bearings near the ends of said bars to support the outer ends of two tuft yarn spools, and intermediate bearings for the inner ends of said spools, substantially as described.

8. A tube frame composed of top and bottom bars connected at their ends, combined with a bearing stand connecting said bars between their ends, said stand being bifurcated at one end, and adjusting mechanism connected to said stand, substantially as described.

543,821. NEEDLE-LOOM. HORACE WYMAN and JOHN A. CLARK, Worcester, Mass., assignors to the Crompton Loom Works, same place. Filed Jan. 7, 1895. Serial No. 534,085. (No model.)



Claim.—1. A weft-inserting mechanism for looms, containing the following instrumentalities, viz;—a weft lever, two relatively adjustable cams continuously controlling and co-operating to vibrate said lever, and means to operate said cams, substantially as described.

2. A weft-inserting mechanism for looms, containing the following instrumentalities, viz;—a pivoted weft lever, two actuating cams therefor, two arms continuously acted upon by the respective cams and to independently move said weft lever in opposite directions, substantially as described

3. A weft-inserting mechanism for looms, containing the following instrumentalities, viz:—an actuating shaft; two actuating cams thereupon; a weft-lever and its pivotal shaft; actuating arms co-operating with said cams to positively rock said pivotal shaft, a spring to draw said arms toward their respective cams, and a stop to limit such spring-actuated movement, substantially as described.

4. A weft inserting mechanism for looms, containing the following instrumentalities, viz:—an actuating shaft; two actuating cams thereupon; roller carriers co-operating with and moved by said cams; a weft-lever, its pivot shaft and rocking arms therefor, actuated by said roller carriers, to vibrate said weft-lever, substantially as described.

5. A weft-inserting mechanism for looms, containing the following instrumentalities, viz:—an actuating shaft; two actuating cams thereupon; roller carriers co-operating with and moved by said cams;

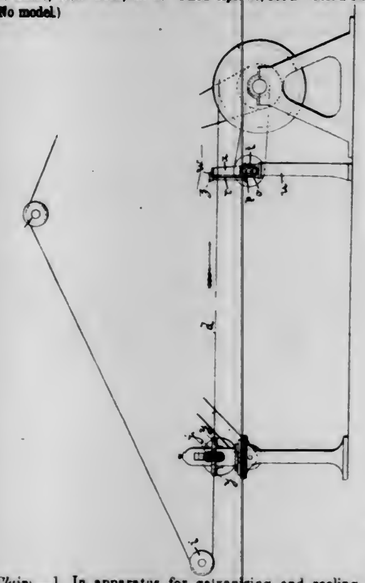
a weft-lever; its pivot shaft and rocking arms therefor, universal connections between said roller carriers and rocking arms, whereby the latter are rocked by the former, substantially as described.

6. The actuating shaft; the actuating cams thereupon; the roller carriers, and their rollers in contact respectively with said cams; the weft-lever; its pivot shaft; a rocker arm fast thereon and co operating with one of said roller carriers; a second rocker arm loose on said shaft and co-operating with the other of said roller carriers; and a spring connecting said rocker arms, substantially as described.

7. In a weft-inserting mechanism for looms, the combination with a weft-needle, and means to actuate the same, of a guide for the said needle; and a presser acting to press the said needle normally toward one guiding face of the said guide, substantially as described.

8. In a weft-inserting mechanism for looms, the combination with a weft-needle having a portion removed near its pointed end, and means to reciprocate the said needle, of a guide for the pointed end of the said needle, and a yielding presser acting at the cut away side of the needle to press the latter normally toward the guiding face at the opposite side of said needle, substantially as described.

543,822. APPARATUS FOR GALVANIZING STRIPS. THOMAS V. ALLIS, New York, N. Y. Filed Apr. 20, 1894. Serial No. 508,291. (No model.)



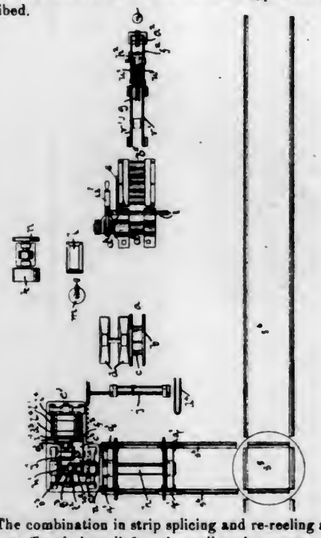
Claim.—1. In apparatus for galvanizing and reeling metallic strips, the combination of the galvanizing bath, wipers through which the strips pass upward, reel having means for driving it of such construction as to be controlled by the feed rolls, and the positively driven drawing and feeding rolls located intermediately of said bath and reel and having driving mechanism constructed to control the speed of the reel to feed said strips through the bath at a uniform rate of speed for uniform application of coating to said strips, and to favor uniform temperature of the bath substantially as described.

2. The combination with the drawing and feeding rolls and reel, of the traversing guide located between the rolls and the reel, and means for actuating it consisting of a single traverse guide screw, said traversing guide having the upwardly extended guide studs, the cross head on the upper ends of said guide studs, and the guide-supporting stand having the cross bar supporting said cross head of the guide studs against the pull of the strips substantially as described.

543,823. MACHINE FOR SPLICING AND RE-REELING FENCING-STRIPS. THOMAS V. ALLIS, New York, and JOSEPH H. TEMPLIN, Brooklyn, N. Y.; said Templin assignor to said Allis. Filed May 23, 1894. Serial No. 512,242. (No model.)

Claim.—1. The combination in strip splicing and re-reeling apparatus, of the paying off reel, the receiving reel, the truck carrying the receiving reel, driving apparatus for said receiving reel and means for automatically clutching said reel and the driving apparatus on return of the reel to its working position substantially as described.

2. The combination in strip splicing and re-reeling apparatus, of the paying off reel, having the removable disk, the receiving reel, the truck carrying the receiving reel, driving apparatus for said receiving reel, and means for automatically clutching said reel and driving apparatus on the return of the reel to its working position substantially as described.



3. The combination in strip splicing and re-reeling apparatus, of the paying off reel, the relief tension pulley, the counterweighted carriage for the pulley catch normally holding the carriage in position, mechanism for releasing the carriage, receiving reel and means for operating said receiving reel substantially as described.

4. The combination in strip splicing and re-reeling apparatus, of the paying off reel, the relief tension pulley, the counterweighted carriage for the pulley receiving reel, automatic stop mechanism for the receiving reel, and a trip for said stop mechanism controlled by said relief tension pulley substantially as described.

5. The combination in strip splicing and re-reeling apparatus, of the paying off reel, the inspector, the relief tension pulley, receiving reel, and means for operating said receiving reel substantially as described.

6. The combination in strip splicing and re-reeling apparatus, of the paying off reel, the correcting rolls, the relief tension pulley, trip and automatic stop mechanism, receiving reel, and means for operating said receiving reel substantially as described.

7. The combination in strip splicing and re-reeling apparatus of the paying off reel, the straightening rolls, the relief tension pulley, trip and automatic stop mechanism, receiving reel, and means for operating said receiving reel substantially as described.

8. The combination in strip splicing and re-reeling apparatus, of the paying off reel, the inspector, the relief tension pulley, receiving reel, means for operating said receiving reel, automatic stop mechanism for said driving apparatus, and a trip for said stop mechanism controlled by the tension relief pulley substantially as described.

9. The combination in strip splicing and re-reeling apparatus, of the paying off reel, the tension relief pulley, carrier for said pulley, automatic trip mechanism of the carrier, and the receiving reel, said trip mechanism for the carrier controlled by excessive tension of the strip substantially as described.

10. The combination in strip splicing and re-reeling apparatus, of the paying off reel, the tension relief pulley, carrier for said pulley, retarder for said carrier, automatic trip mechanism for the carrier, and the receiving reel, said trip mechanism for the carrier controlled by excessive tension of the strip substantially as described.

11. The combination in strip splicing and re-reeling apparatus, of the paying off reel, the inspector, the relief tension pulley, carrier for the tension pulley, receiving reel, automatic releasing device for the tension pulley carrier, and a trip for said releasing device controlled by excessive tension of the strip substantially as described.

12. The combination in strip splicing and re-reeling apparatus, of the paying off reel, the inspector, the relief tension pulley, carrier for the tension pulley, the retarder for said carrier, and the receiving reel substantially as described.

13. The combination in a strip splicing and re-reeling apparatus, of the paying off reel, the inspector, the relief tension pulley, carrier for said tension pulley, automatic releasing device for the tension pulley carrier, a trip for said releasing device controlled by excessive tension of the strip, and the retarder for the tension pulley carrier substantially as described.

14. The combination in a strip splicing and re-reeling apparatus, of the paying off reel, the tension relief pulley, one or more guards for directing and confining the strips on said pulley, and the receiving reel substantially as described.

15. The combination with the relief tension pulley and the carrier therefor, of the spring catch on the carrier, the holding and the releasing lever, and the spring buffer opposing the pull of the strips on the releasing lever substantially as described.

16. The combination with the clutch on the driving shaft, of the elbow lever for shifting said clutch, the rock-shaft, the jaw arm of said shaft connecting with said elbow lever, the rod, and arm connected with said rock-shaft for connecting the clutch, and the cam and rock-lever for disengaging said clutch substantially as described.

17. The combination with the clutch on the driving shaft, of the rock shaft connected with said clutch, the rock-lever on said rock shaft, rod, and arm connected with said shaft for operating it, the disk on the reel driving shaft, friction brake, the foot piece of the rock-lever, and the arm of the brake shaft all arranged to disconnect the driving shaft and apply the brake simultaneously substantially as described.

18. The combination with the rock-lever on the clutch operating shaft, and the brake shaft controlled by said rock-lever, of the cam and pulley geared with the driving pulley independently of the reel shaft, clutch and wedge controlling the cam, and the wedge shifting hook controlled by the hand lever for stopping the reel and applying the brake substantially as described.

19. The combination with the cam and pulley clutch controlling wedge, of the wedge controlling hook, the hook controlling rod, the pivoted connection of the hook and rod, and the arm and stop for disconnecting the hook from the wedge substantially as described.

20. The combination with the cam and pulley clutch controlling wedge, of the wedge controlling hook, the hook controlling rod, the pivoted connection of the hook with the rod, the arm and stop for disconnecting the hook from the wedge, and the arm and spring presser for engaging said hook with the wedge substantially as described.

21. The combination with the reel driving disk having the bolt sockets in the side, of the traveling reel having the automatically engaging clutch bolt in the end of the reel shaft substantially as described.

22. In re-reeling apparatus for metallic strips, the combination of a paying off reel located in a fixed position, a receiving reel located on a support adapted to transfer said reel from the place of receiving the strips to a different place of delivering them and back, driving mechanism for said receiving reel located in the relation to the paying off reel to connect with the receiving reel for operating it to receive the strips, and means to connect said receiving reel and driving mechanism when said reel is in the position for receiving the strips substantially as described.

23. In re-reeling apparatus for metallic strips, the combination of a paying off reel located in a fixed position, a receiving reel located on a support adapted to transfer said reel from the place of receiving the strips to a different place for delivering them and back, driving mechanism for said receiving reel located in the relation to the paying off reel to connect with the receiving reel for operating it to receive the strips, and an automatic clutch to connect said receiving reel and driving mechanism when the reel comes to the receiving position, and to disconnect them when said reel leaves said position substantially as described.

24. In re-reeling apparatus for metallic strips, the combination of a paying off reel located in a fixed position a receiving reel located on a support adapted to transfer said reel from the place of receiving the strips to a different place of delivering them, a traverse guide for the strips located relatively to the position of said receiving reel when receiving the strips for laying the coils thereon, driving mechanism for said receiving reel located in a fixed position relatively to said paying off reel and traverse guide for connecting with said re-reeling reel when in the position for receiving the strips, and means to connect said receiving reel and driving mechanism when in said position for receiving substantially as described.

543,824. ELECTRODEPOSITION OF ALLOY. HENRY J. ALTHAN, New York, N. Y., assignor of one-half to Max H. Fischer, same place. Filed Apr. 12, 1894. Serial No. 507,305. (No specimens.)

Claim.—1. As an improvement in the art of electro-plating with alloys of platinum, the herein described process, which consists in forming a suitable bath containing a chloride of platinum and the sulphate of the other metal or metals desired in the alloy to be electro-deposited, (which may be any suitable known metal or metals having a specific gravity between 2.6 and 9 at 0° centigrade under the ordinary atmospheric pressure,) immersing in the bath as a cathode the article to be plated and an anode composed of an alloy of the metals to be electro-deposited, and finally passing an electric current through the bath, substantially as described.

2. As an improvement in the art of electro plating, with alloys of platinum, the herein described process which consists in forming a suitable electrolytic bath or solution, containing a chloride of platinum and the sulphate of the other metal or metals desired in the alloy to be electro-deposited, (which may be any known metal or metals having a specific gravity between 2.6 and 9 at 0° centigrade under the ordinary atmospheric pressure,) a suitable ingredient used for conductive purposes, the chloride of sodium, a suitable alkaline material and a suitable organic base containing nitrogen, then immersing in the bath as a cathode the article to be plated and an anode composed of an alloy of the metals to be electro-deposited; and finally passing an electric current through the bath, substantially as described.

3. As an improvement in the art of electro-plating with alloys of platinum, the herein described process which consists in forming a suitable electrolytic bath or solution containing a chloride of platinum and the sulphate of nickel, immersing in the bath as a cathode the article to be plated, and an anode composed of an alloy of platinum and nickel, and then passing an electric current through the bath, substantially as described.

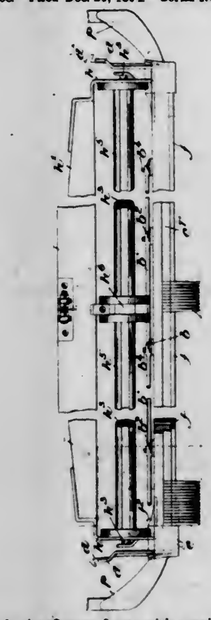
4. As an improvement in the art of electro-plating with alloys of platinum, the herein described process which consists in forming a suitable electrolytic bath or solution of the tetrachloride of platinum, the sulphate of nickel and ammonium, the chloride of sodium, a suitable alkaline material and a suitable organic base containing nitrogen, then immersing in the bath as a cathode the article to be plated, and an anode composed of an alloy of platinum and nickel, and finally passing an electric current through the bath, substantially as described.

5. As an improvement in the art of electro-plating with alloys of platinum, the herein described process which consists in forming a suitable electrolytic bath or solution consisting of the tetrachloride of platinum, the sulphate of nickel and ammonium, the chloride of sodium, caustic soda and ethylamine, then immersing in the bath as a cathode the article to be plated, and an anode composed of an alloy of platinum and nickel in approximately the proportions desired for the plating to be electro-deposited, and finally passing an electric current through the bath, substantially as described.

6. As a new composition of matter, the improved electro-plating solution herein described composed of salts of nickel and ammonium, dissolved in water, chloride of platinum and caustic soda, chloride of sodium and ethylamine, substantially as set forth.

7. As a new article of manufacture, an article of metal or other suitable material plated with an alloy of platinum and nickel, substantially as shown and described.

543,825. LOOM FOR WEAVING TUFTED FABRICS. CHARLES CROMPTON, Worcester, Mass., assignor to the Crompton Loom Works, same place. Filed Dec. 29, 1894. Serial No. 533,277. (No model.)



Claim.—1. A tuft-yarn frame with a series of tuft-yarn tubes, and carrying arms for the same, combined with an intermediate support for the tuft-yarn frame co-operating with said arms to prevent the

sagging or bending of the frame during weaving, substantially as described.

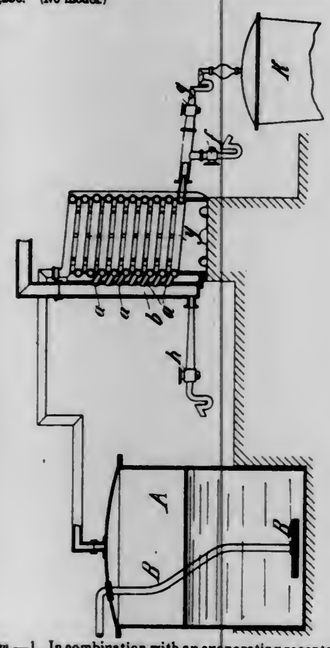
2. In a loom for weaving tufted fabrics, a tuft-yarn frame having a series of tuft-yarn tubes, and carrying arms for the same, combined with an intermediate support connecting said arms, to provide a stiff and unyielding support for the tuft-frame, and thereby prevent sagging or bending of the latter during weaving, substantially as described.

3. In a loom for weaving tufted fabrics, a tuft-frame, having a series of tuft-yarn tubes, combined with carrying arms for said frame, an intermediate support connecting the arms, to rigidly support the tuft-frame, and thereby prevent sagging of the same during weaving, and a locking device to securely lock the tuft-frame to the intermediate support, substantially as described.

4. In a loom for weaving tufted fabrics, a tuft-frame, and a series of tuft-yarn tubes, combined with carrying arms, an angle-bar, connecting said arms, to rigidly support the bottom-bar of the tuft-frame and thereby prevent sagging, a plurality of locking devices to lock the bottom-bar to the angle-bar, and means to simultaneously operate the locking devices, substantially as described.

5. In a loom for weaving tufted fabrics, a tuft-frame, having a slotted bottom-bar and a series of tuft-yarn tubes, combined with carrying arms connected by an angle-bar, to rigidly support the bottom-bar of the tuft-frame, and a rocker arm mounted on said angle-bar, to cooperate with the slot in the bottom bar and thereby lock it to the angle-bar, substantially as described.

543,826. APPARATUS FOR PURIFYING NITRIC ACID. WILHELM DIETERLE, Feuerbach, Germany. Filed Sept. 6, 1894. Serial No. 522,236. (No model.)



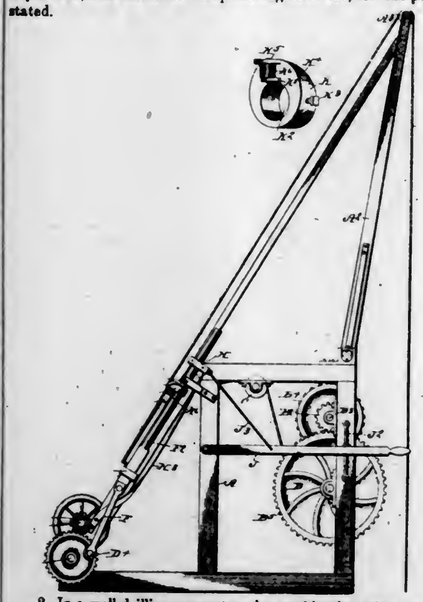
Claim.—1. In combination with an evaporating receptacle, a condenser connected therewith and comprising a series of coils, a vertical canal adjacent thereto, and tubes connecting the canal with said coils, substantially as described.

2. In combination with an evaporating receptacle, a condenser comprising a series of coils, a vertical canal adjacent thereto, a series of inclined tubes connecting the canal with said coils, a reservoir and siphon cock at the lower end of said canal, and a tube leading from the condenser to a receiver for the purified acid, substantially as described

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543,827. WELL-DRILLING MACHINE. MARCELLUS D. FLANDERS, Hamilton, Iowa. Filed Jan. 24, 1895. Serial No. 536,000. (No model.)

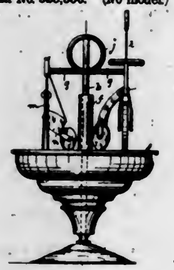
Claim.—1. In a well drilling apparatus the combination with a suitable frame having a drum thereon, a pulley fixed to an inclined stationary support, a cable wound upon said drum and passed over said elevated pulley, and well drilling tools on its ends, of a lever pivoted at one end to the machine frame, a pulley attached to its central portion and having said cable passed thereunder, a bar mounted in suitable bearings in the side of the machine frame at right angles to said lever and adapted to move longitudinally, a trip device thereon adapted to engage the free end of said lever and draw the lever downwardly until the end of the lever passes inwardly beyond the said trip device, and means for reciprocating said bar, for the purposes stated.



2. In a well drilling apparatus, the combination with a suitable frame having a drum thereon, a pulley fixed to an elevated stationary support and a cable wound upon said drum and passed over the elevated pulley and well drilling tools on its end, of a lever pivoted on an inclined part of the frame, a pulley attached to its central portion and having said cable passed thereunder, a trip bar slidingly mounted in the frame at approximately right angles to the lever and having its upper end capable of a movement downwardly from the said lever a yielding pressure device for holding the end of said bar upward, a trip device on said bar to engage the end of said lever and means for reciprocating said trip bar, for the purposes stated.

3. An improved well drilling machine, comprising a suitable frame, a drum mounted therein, means for operating the drum, a cable wound upon said drum, a pulley in the frame near the drum and a pulley at the top of the frame, a lever pivoted at one end of the frame, a pulley attached to said lever and having said cable passed thereunder, a trip bar slidingly mounted at the side of the frame with its upper end capable of swinging downwardly, a frame adapted to admit the upper end of said trip bar to slide therein, a yielding pressure device for holding the said frame upwardly, a lever connected therewith for drawing the frame downwardly, the trip device on said trip having a roller on its under side and a lug projecting beyond the roller for the purposes stated, a shaft adapted to be driven by suitable power and having a crank wheel thereon, a pitman pivoted to the crank wheel and to said trip bar and a shaft geared to the said power shaft and a fly wheel fixed thereto, substantially as and for the purposes stated.

543,828. TOY. JAMES GRUNDY, Paterson, N. J., assignor to James Mason, Bury, England, and Joseph C. Grundy, Paterson, N. J. Filed Oct. 9, 1894. Serial No. 525,336. (No model.)



Claim.—1. In a toy, the combination with the base, a revolving body, a central rod passing through said body, cross piece fastened to said central rod, figures fastened to said cross piece and resting on said revolving body, substantially as and for the purposes set forth.

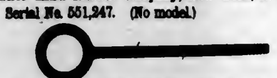
2. In a toy, the combination with the base, a body revolving in a groove recess, a frame fastened to the base, said frame extending upward and across said revolving body, figures suspended and fastened to the cross piece, central rod extending down from said cross piece and entering said revolving body, a winding post, all of said parts being arranged and combined substantially as set forth.

3. In a toy, the combination with the base *a*, central rod *b* fastened to said base and passing through the body *d* and winding post *f*, cross piece *g* fastened to said rod *b* and figures fastened to the ends of the cross piece *g*, substantially as and for the purposes set forth.

4. In a toy, the combination with the base *a*, frame *w* fastened to the base and extending upward and across a revolving body, rod *b* extending downward from said frame, and entering at the axis of said revolving body, winding post *f* fastened to said revolving body *d* of said toy, said body revolving in a groove recess in said base, figures suspended from said frame and resting lightly on the cover of said revolving body, substantially as shown and described.

5. In a toy, the combination with the base *a*, central rod *b* fastened to said base and passing through a revolving body *d*, winding post *f* fastened to said body *d*, cross piece *g* fastened to said rod *b*, a velocipede *e*, resting upon the cover of said revolving body, figures fastened to said cross piece and velocipede, said figures having slots in the body portion to allow vertical movement to the legs fastened to the pedals of said velocipede, substantially as set forth.

543,829. SYRINGE. ISAAC G. GURNEE, Butler, N. J., assignor to the Butler Hard Rubber Company, New York, N. Y. Filed May 31, 1895. Serial No. 551,247. (No model.)



Claim.—In a syringe, the combination of a syringe barrel, having a tip at one end and a head at the other, a piston sliding in said barrel, and a piston rod sliding in said head and connected to said piston, said piston rod having a metal core and provided with a coating of hard rubber vulcanized thereon.

543,830. STAND FOR DUPLICATING APPARATUS. AUGUSTUS D. KLARER, New York, N. Y., assignor to the Neostyle Company, of New Jersey. Filed May 20, 1892. Renewed Mar. 24, 1894. Serial No. 505,013. (No model.)

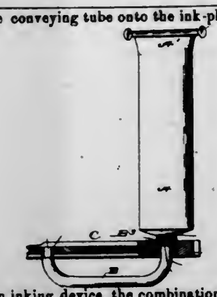


Claim.—1. In a cabinet or stand for a duplicating apparatus the combination with the body thereof having a closed bottom, a top for said stand or cabinet consisting of hinged lids to the under sides of which are secured the several parts of a duplicating apparatus, said duplicating apparatus being brought into operative position when the lids are open, and inclosed within the bottom of the stand when the lids are folded over in their closed position, substantially as described.

2. In a cabinet or stand, for a duplicating apparatus, the combination with the body thereof having a closed bottom so arranged below the top of said stand as to form a hollow compartment, a plurality of lids pivoted to the upper part of the stand, and to the under sides of which are secured the several parts of a duplicating apparatus, and a rod connecting the several lid sections, said duplicating apparatus being brought into operative position when the lids are open, and inclosed within the hollow compartment when the lids are closed, substantially as described.

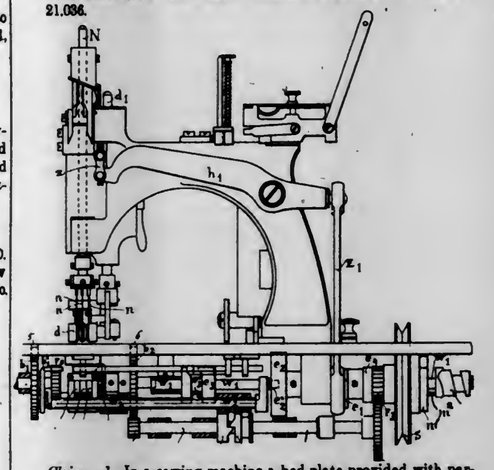
543,831. INKING DEVICE. AUGUSTUS D. KLARER, New York, N. Y., assignor to the Neostyle Company, of New Jersey. Filed Aug. 25, 1894. Serial No. 521,396. (No model.)

Claim.—1. In an inking device, the combination with an ink-plate of a frame surrounding said plate, an ink-conveying tube connecting said frame and plate, a flexible ink-containing body provided with a discharge aperture, and detachably connected to one end of said tube, and means detachably connected to the closed end of the flexible body for collapsing the latter and forcing its contents out through the conveying tube onto the ink-plate, substantially as described.



2. In an inking device, the combination with an ink-plate, of a frame surrounding said plate, an ink conveying tube connecting said plate and frame, an internally screw-threaded nipple mounted in the frame around the tube, a flexible ink-containing body having a discharge apertore at one end, an external screw-thread, around said apertured end whereby the flexible body may be connected to the nipple in the frame, and means detachably connected to the opposite end of the flexible body for collapsing the latter and forcing its contents out through the conveying tube onto the ink-plate, substantially as described.

543,832. SEWING-MACHINE. GUSTAV R. KOTT, Chemnitz, Germany, assignor to Bernhard Kohler, same place. Filed Apr. 25, 1894. Serial No. 508,989. (No model.) Patented in England Nov. 19, 1892, No. 21,036.



Claim.—1. In a sewing machine a bed-plate provided with parallel transverse grooves in the upper surface thereof, an opening in the bottom of each groove, feed wheels adapted to operate in the openings of the grooves, and a work carrier provided with parallel racks to operate in the aforesaid grooves and be engaged by the feed wheels, in combination with operating means for intermittently rotating the feed wheels, operating means for continuously rotating said feed wheels, and means for automatically connecting the said feed wheels first with one of said operating means and then with the other, for the purpose set forth.

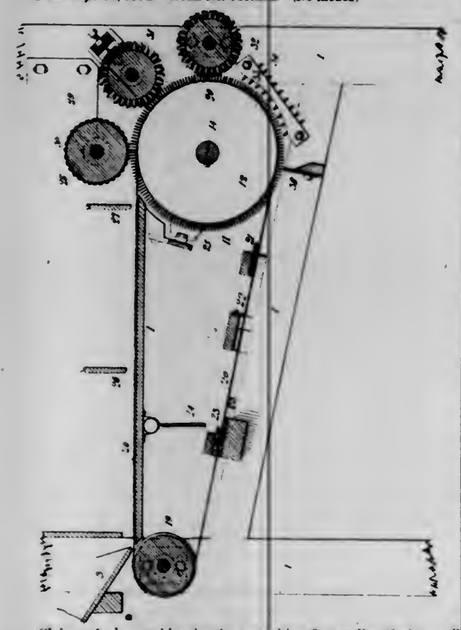
2. The combination, in a sewing machine, of stitch-forming and thread-cutting mechanism, a bed plate provided with parallel grooves in the top thereof, and feed wheels adapted to operate in the said grooves, a work-carrier with racks at the under side thereof, to operate in the bed plate grooves, as described, a lever for operating the thread-cutting mechanism, one side of the work-carrier being provided with a ledge having a bevel edge block and projection at the forward end thereof for engaging said lever for operating the thread-cutting mechanism, substantially as set forth.

3. The combination in a sewing-machine having a bed-plate provided with parallel grooves, openings in the bottom of each groove, and feed-wheels to operate in said openings, a work carrier having racks to fit the grooves and be engaged by the aforesaid feed-wheels, a ledge at one side of the work-carrier, a beveled block at the forward end of the ledge and an adjustable block secured in rear of the beveled-block, with a series of levers and connecting mechanism whereby the feed is changed from an intermittent to a continuous motion, or vice versa, and the sewing-devices and thread cutting mechanism operated substantially as set forth.

4. In combination with a sewing-machine having transverse, recessed, grooves in the bed-plate thereof, and feed-wheels arranged to operate in same, a work-carrier provided with bottom racks to slide in the grooves and be engaged by the feed-wheels, the said carrier having a trapezoidal opening therein, a slotted bar in the center of said opening, a slotted lever pivoted at each side of the slotted bar, and springs between the pivotal ends of the levers and bar, with means for holding the levers in parallel positions, substantially as and for the purpose set forth.

5. The combination in a sewing-machine having a bed-plate provided with recessed-transverse grooves and feed-wheels arranged to operate therein; as described, a work-carrier composed of an upper and lower plate, the lower plate provided with racks to fit the aforesaid grooves and be engaged by the feed-wheels, and the upper-plate having a trapezoidal opening with slotted central-bar, a pivoted slotted bar at each side of the central-bar, the levers roughened on their under-sides to engage the material to be stitched and hold same in desired position, substantially as set forth.

543,833. MECHANISM FOR SEEDING FRUIT. GEORGE C. LA DUE, Brooklyn, N. Y., assignor to the Fruit Cleaning Co., same place. Filed Sept. 17, 1894. Serial No. 523,234. (No model.)



Claim.—1. In combination in a machine for seeding fruit, a roll carrier composed of a series of teeth spaced to engage and exclude the seeds of fruit impaled thereon, one or more rolls acting to impale the fruit upon the said teeth and to exclude the seed from the fruit, and vibrating mechanism acting to remove the exposed seed from the teeth of said carrier, substantially as set forth.

2. In combination in a machine for seeding fruit, a carrier having a surface of points or teeth spaced to exclude the seed of the fruit, mechanism for rupturing the skin in contact with the seeds and forcing the same over the seed, and one or more wires under tension arranged in close position to the carrier surface and adapted to act upon the seed of the fruit to remove the same from the carrier surface, substantially as set forth.

3. In combination in a machine for seeding fruit, a carrier having a surface of points or teeth spaced to exclude the seed of the fruit, a roll or rolls acting to rupture the skin in contact with the seeds and force the same from over the seeds, and a series of wires arranged successively in nearer position adjacent to the surface of the carrier and acting to remove the seed from the teeth of the same, substantially as set forth.

4. In combination in a machine for seeding fruit, a carrier composed of a series of teeth spaced to engage and exclude the seeds of the fruit impaled thereon, a roll or rolls acting to rupture the skin of the impaled fruit and remove the same from the seeds thereof, and a vibrating mechanism or device having motion relatively to the surface of the carrier and acting to remove the exposed seeds from contact with the impaled fruit on the carrier, substantially as set forth.

5. In combination in a machine for seeding fruit, a carrier roll composed of a series of teeth spaced to engage and exclude the seeds of the fruit impaled thereon, a roll or rolls for impaling the fruit upon the teeth of the said carrier with the seed of the fruit left upon the points of the same, and a series of wires arranged between the series of teeth of the carrier and extending substantially tangentially therefrom and acting to strip the seeded fruit from the teeth of the carrier, substantially as set forth.

6. In combination in a machine for seeding fruit, a carrier roll composed of a series of teeth spaced to engage and exclude the seeds of the fruit impaled thereon, a roll or rolls acting to impale the fruit upon the said teeth and exclude therefrom the seeds thereof, and a series of cords or wires located in the circumferential spaces between said teeth and held under tension and adapted to strip the seeded fruit from the teeth of the carrier, substantially as set forth.

7. In combination with a cylindrical carrier for receiving and conveying fruit, the surface of which is composed of a series of points or teeth spaced to exclude the seeds of fruit impaled thereon, a roll or rolls for impaling the fruit upon the teeth of the said carrier and excluding the seed therefrom, and a roll located adjacent said carrier, and endless cords or wires lying in circumferential grooves between the said series of teeth on the said carrier and passing over the said adjacent roll which act to feed the fruit to the carrier and remove the seeded fruit from the teeth thereof, substantially as set forth.

8. In combination with a cylindrical carrier for receiving and conveying fruit, the surface of which is composed of a series of points or teeth spaced to exclude the seeds of fruit impaled thereon, a roll or rolls for impaling the fruit upon the teeth of the said carrier and excluding the seeds therefrom, and a wire or wires having motion relatively to the surface of the carrier for removing therefrom the exposed seeds of the fruit, and a roll located adjacent said carrier, and endless cords or wires lying in circumferential grooves between the said series of teeth on the said carrier and passing over the said adjacent roll which act to feed the fruit to the carrier and remove the seeded fruit from the teeth thereof, substantially as set forth.

9 In combination in a machine for seeding fruit, a carrier roll composed of a series of teeth spaced to engage and exclude the seeds of fruit impaled thereon, a roll or rolls acting to impale the fruit upon the teeth of the said carrier and exclude the seed from the fruit, a roll located adjacent to said carrier roll, and a series of endless wires running over the said adjacent roll and the said carrier roll and acting to remove the impaled fruit from the latter, and removable sponge, felt or like cleaning devices arranged in the path of the said wires and acting to cleanse the same of the fruit substance adhering thereto, substantially as set forth.

10. In combination in the herein described machine for seeding fruit, the carrier roll 9 composed of the circular toothed plates 10 and the intermediate spacing plates 12, whereby the teeth of the former plates are circumferentially spaced, a roll or rolls acting to impale the fruit upon the toothed plates and thereby exclude the seed from the fruit, and cords or wires held between the said plates 10 and acting to strip the seeded fruit therefrom, substantially as set forth.

11. In combination in a machine for seeding fruit, a carrier composed of a series of teeth spaced to engage and exclude the seeds of fruit impaled thereon, one or more rolls acting to impale the fruit upon the teeth of the said carrier and exclude the seed therefrom, and an endless belt acting to deliver the fruit to the said rolls, and a distributer 27 located adjacent said belt and operating to distribute the fruit thereon in a layer of thickness corresponding to that of the fruit, substantially as set forth.

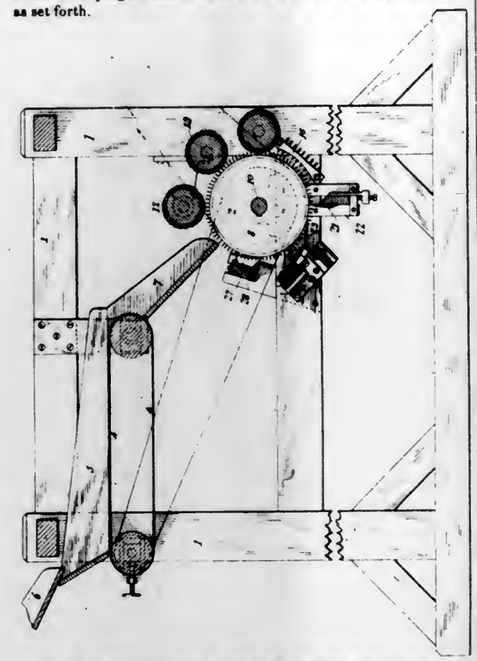
543,884. MECHANISM FOR SEEDING FRUIT. GEORGE C. LA DUE, Brooklyn, N. Y., assignor to the Fruit Cleaning Co., same place. Filed May 23, 1895. Serial No. 550,381. (No model.)

Claim.—1. In combination in a machine for seeding fruit, a carrier for conveying the fruit which is provided with a series of points or teeth spaced to engage the seed of the fruit, a pressure mechanism the surface of which moves to and from the carrier and acts to partially impale the fruit upon the carrier, and a puncturing mechanism the surface of which moves to and from said impaling surface and acts subsequently to the action of said impaling mechanism to perforate the skin over the seeds of the impaled fruit for the purpose of uncovering the seed of the fruit.

2. In combination in a machine for seeding fruit, a carrier for conveying the fruit which is provided with a series of points or teeth spaced to engage the seed of the fruit, pressure mechanism having motion angularly with relation to the carrier and acting to partially impale the fruit upon the carrier and by further action to puncture or rupture the skin over the seeds of the impaled fruit to free the seed preliminarily to removing the same from the body of the fruit.

3. In combination in a machine for seeding fruit, a roll for receiving and conveying the fruit the surface of which is provided with a series of points or teeth spaced to exclude the seeds of fruit impaled

thereon, a pressure roll acting to partially impale the fruit on the carrier teeth so that they engage the seed preliminarily to removing the same from the pulp, and a brush roll acting to rupture the skin of the fruit lying on and to force the same off the seed, substantially as set forth.



4. In combination in a machine for seeding fruit, a carrier roll provided with a series of points or teeth spaced to exclude the seed of the fruit, a roll acting to partially impale the fruit on the carrier so that its teeth engage the seed, a roll acting to puncture or rupture the skin of the fruit lying on the seed, and a roll acting to force the punctured skin and pulp of the fruit from around the exposed seed, substantially as set forth.

5. In combination in a machine for seeding fruit, a carrier roll provided with a series of teeth spaced to engage and exclude the seeds of fruit impaled thereon, and a series of two or more rolls adjusted at different distances from said carrier and successively acting to partially impale the fruit on the carrier teeth and rupture and displace the skin of the fruit lying over the seed preparatory to removing the seed, substantially as set forth.

6. In combination in a machine for seeding fruit a carrier provided with teeth spaced to engage the seed of the fruit when impaled upon said teeth, a roll acting to partially impale the fruit upon the said carrier, a roll acting to perforate the skin of the fruit over the seeds thereof, and a series of stripping wires 23 located between the teeth and acting to lift from the teeth the fruit impaled thereon.

7. In combination in a machine for seeding fruit, a carrier for conveying the fruit composed of a series of spaced teeth, a series of two or more rolls acting to impale the fruit upon the teeth and exclude the seeds therefrom, and a series of cleaning blades located in the circumferential spaces between the teeth and acting to remove therefrom collections of pulp or gum, substantially as set forth.

8. In combination in a machine for seeding fruit, a carrier for conveying the fruit composed of a series of spaced projections, pressure mechanism acting to press the fruit upon the carrier, puncturing mechanism acting independently of the pressure mechanism to open the fruit and expose the seeds thereof, and seed removing mechanism operating to detach the seed from the said carrier.

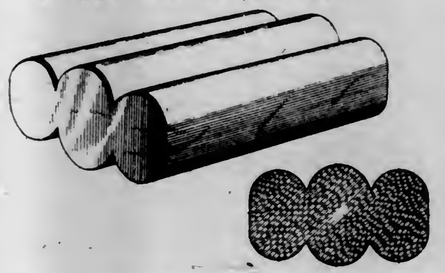
9. In combination with the toothed carrier, pressure mechanism acting to impale the fruit upon the carrier and exclude the seeds therefrom, and a wire or wires arranged parallel to the surface of the carrier and acting to loosen the seeds thereon, and a comb 21 acting to engage the loosened seeds and detach the same from the carrier.

10. In combination with the toothed carrier, pressure mechanism acting to impale the fruit upon the carrier and exclude the seeds therefrom, mechanism such as comb 21 arranged parallel to the surface of the carrier for engaging the excluded seeds, and an air jet or nozzle 30 located to direct a blast of air against the surface of the carrier for the purpose of removing the excluded seeds.

11. In combination in a machine for seeding fruit, a carrier for receiving and conveying the fruit, provided with a series of spaced teeth, pressure mechanism acting to preliminarily or partially impale the fruit upon the teeth and rupture the skin over the seed so as to exclude the same from the fruit, mechanism acting to dislodge or remove the seed from the carrier, a series of stripping wires 23 acting to remove the seeded fruit from the teeth of the carrier, and a series of blades located in circumferential spaces between the teeth and acting to remove therefrom collections of pulp or gum, as set forth.

DESIGNS.

24,506. CAKE OR BAR OF SOAP. WILLIAM GEORGE WEBB, Baltimore, Md., assignor to Thomas Armstrong, same place. Filed June 18, 1895. Serial No. 553,234. Term of patent 14 years.



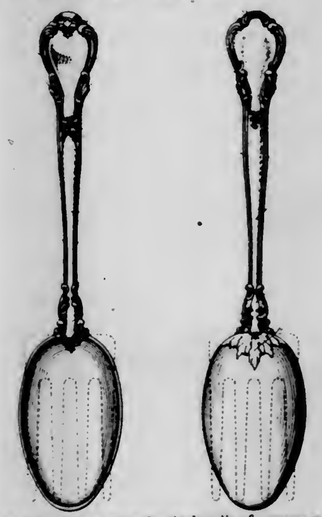
Claim.—The design for a bar or cake of soap shown and described.

24,507. SPOON. CHARLES C. WIENTGE, Providence, R. I., assignor to the Howard Sterling Company, same place. Filed June 26, 1895. Serial No. 554,141. Term of patent 7 years.



Claim.—The design for a handle for a spoon or similar article as herein shown and described.

24,508. SPOON, &c. WILLIAM C. CODMAN, Providence, R. I., assignor to the Gorham Manufacturing Company, same place. Filed June 12, 1895. Serial No. 552,595. Term of patent 7 years.

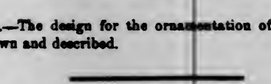


Claim.—1. In the design for the handle of a spoon or similar article, the obverse as herein shown and described.

2. In the design for the handle of a spoon or similar article, the reverse as herein shown and described.

3. The design for handles of spoons and similar articles, as herein shown and described.

24,509. SHANK FOR LINK CUFF-BUTTONS. JAMES R. HILLS, Brooklyn, N. Y. Filed June 1, 1895. Serial No. 551,413. Term of patent 14 years.

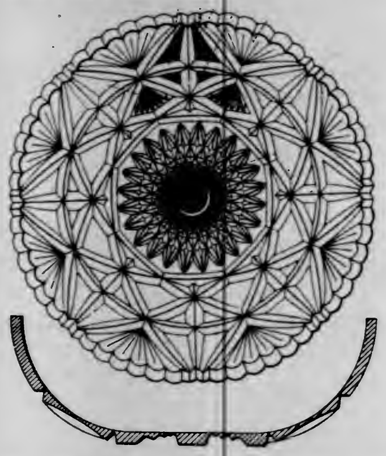


Claim.—The design for the shank of a link cuff-button substantially as herein shown and described.

24,510. LINK CUFF-BUTTON. JAMES R. HILLS, Brooklyn, N. Y. Filed June 1, 1895. Serial No. 551,414. Term of patent 14 years.

Claim.—The design for a link cuff button substantially as herein shown and described.

24,511. GLASS VESSEL. JAMES D. BERGEN, Hartford, assignor to the J. D. Bergen Company, Meriden, Conn. Filed June 3, 1895. Serial No. 551,573. Term of patent 3½ years.



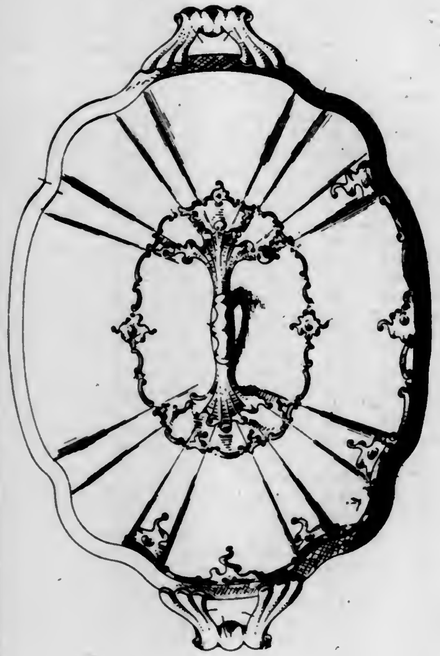
Claim.—The design for the ornamentation of glass vessels, as herein shown and described.

24,512. COVERED DISH. CHARLES GOETZ, Wheeling, W. Va., assignor to the Ohio Valley China Company, same place. Filed June 22, 1895. Serial No. 553,737. Term of patent 7 years.



24,512.





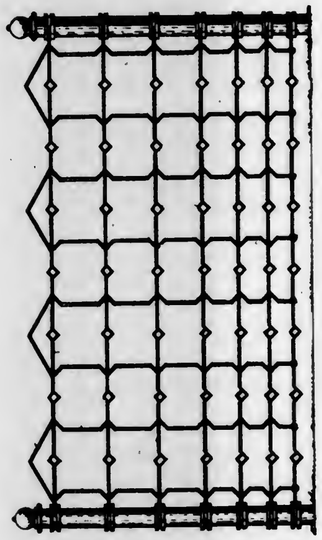
Claim.—The design for a covered dish, substantially as shown and described.

24,513. PLATTER. THEODORE HAVILAND, Ambazac, France. Filed May 28, 1895. Serial No. 551,002. Term of patent 7 years.



Claim.—The design for a dish or platter, as herein shown and described.

24,514. FENCE-PANEL. ROBERT E. POINDEXTER, Indianapolis, Ind. Filed Mar. 7, 1895. Serial No. 540,894. Term of patent 3½ years.



Claim.—The design for a fence panel, as herein shown and described.

24,515. FONT OF PRINTING-TYPE. RICHARD HALE SMITH and WILLIAM FRANK CLARK, Springfield, Mass., assignors to the R. H. Smith Manufacturing Company, same place. Filed Apr. 2, 1895. Serial No. 544,212. Term of patent 7 years.

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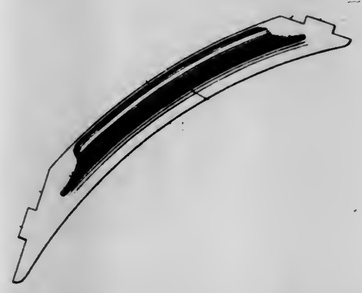
Claim.—The design for a font of printing-type, as herein described and shown.

24,516. WINDOW-FASTENING STRIP. ELMER HAUSE, Tecumseh, Mich. Filed June 13, 1895. Serial No. 552,732. Term of patent 7 years.



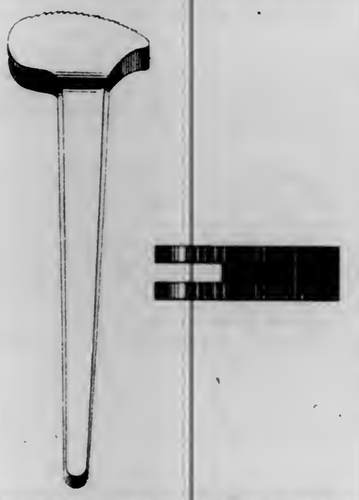
Claim.—The design for a window fastening strip as herein shown and described.

24,517. BRACE FOR SHELF-BRACKETS. THOMAS CORRIGAN, New Britain, Conn., assignor to the Stanley Works, same place. Filed Dec. 13, 1894. Serial No. 531,727. Term of patent 14 years.



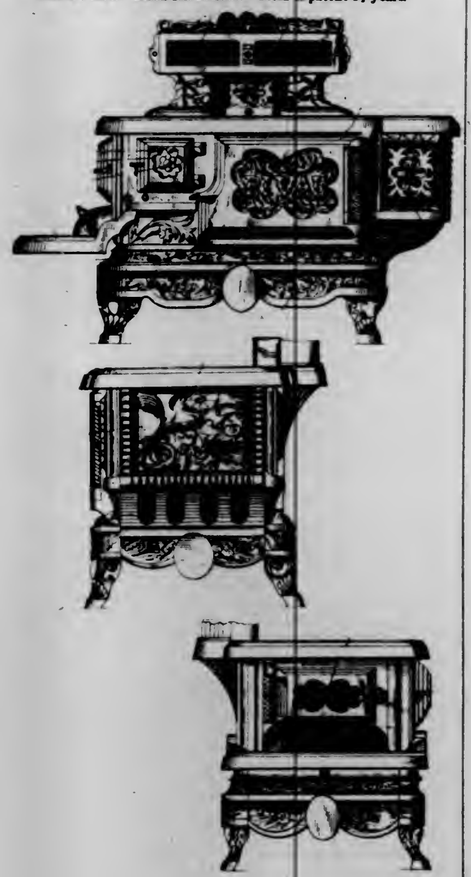
Claim.—The design for a brace for a shelf bracket substantially as shown and described.

24,518. HANDLED WRENCH-HEAD. WALTER T. JOHNSTON, Macon, Ga. Filed Apr. 12, 1895. Serial No. 545,532. Term of patent 14 years.



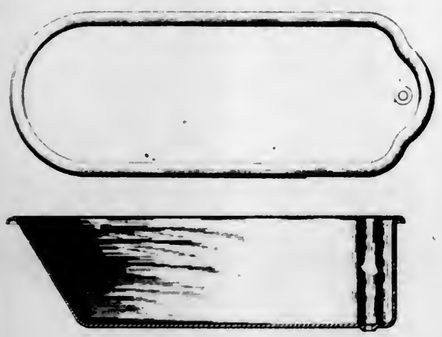
Claim.—The design for a wrench head and handle herein shown and described.

24,519. TOY STOVE. CHARLES A. BAILEY, Cromwell, Conn. Filed June 26, 1895. Serial No. 554,147. Term of patent 3½ years.



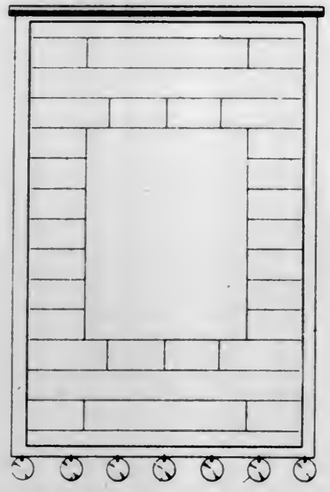
Claim.—The design for a toy stove substantially as herein shown and described.

24,520. BATH-TUB. FRANCIS J. TORRANCE, Allegheny, Pa. Filed Dec. 5, 1894. Serial No. 530,925. Term of patent 14 years.



Claim.—The design for a bath tub herein shown and described.

24,521. DISPLAY-BANNER. LUTHER L. HIGBY, Fort Worth, Tex. Filed Jan. 28, 1895. Serial No. 536,495. Term of patent 14 years.



Claim.—The design for an advertising or display banner, substantially as shown and described.

24,522. ORNAMENTAL FABRIC. ABRAHAM G. JENNINGS, Brooklyn, N. Y. Filed June 26, 1895. Serial No. 554,139. Term of patent 14 years.



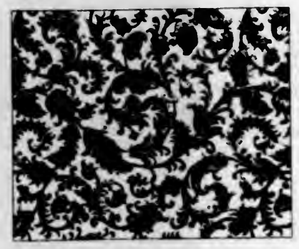
Claim.—The design for an ornamental fabric substantially as described and shown in the accompanying drawing.

24,523. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed June 26, 1895. Serial No. 554,154. Term of patent 3½ years.



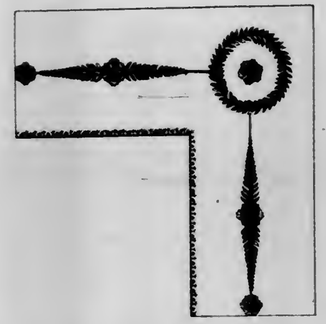
Claim.—The design for carpets, substantially as shown in the drawing accompanying this specification.

24,524. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed June 26, 1895. Serial No. 554,155. Term of patent 3½ years.



Claim.—The design for carpet, substantially as shown in the drawing accompanying this specification.

24,525. CARPET-BORDER. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed June 26, 1895. Serial No. 554,156. Term of patent 3½ years.



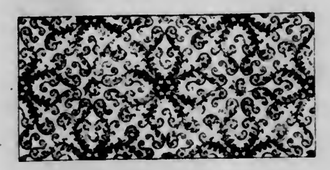
Claim.—The design for carpet border, substantially as shown in the drawing accompanying this specification.

24,526. CARPET-BORDER. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed June 26, 1895. Serial No. 554,157. Term of patent 3½ years.



Claim.—The design for carpet-border, substantially as shown in the drawing accompanying this specification.

24,527. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed June 26, 1895. Serial No. 554,158. Term of patent 3½ years.



Claim.—The design for carpet, substantially as shown in the drawing accompanying this specification.

TRADE-MARKS

REGISTERED JULY 30, 1895.

26,876. BOOKS, PAMPHLETS, CIRCULARS, AND PERIODICAL PUBLICATIONS. AUGUSTA W. FLETCHER, New York, N. Y. Filed May 2, 1895.



Essential feature.—The representation of a box locked with a padlock, to which is attached a key, the box being surmounted by a dragon. Used since April 1, 1895.

26,877. DOESKINS, JEANS, AND CHEVIOTS. EVANSVILLE WOOLEN MILL COMPANY, Evansville, Ind. Filed June 6, 1895.



Essential feature.—A portrait of Columbus, a horseshoe partially encircling the portrait, and an eagle perched upon the upper part of the horseshoe. Used since May 1, 1895.

26,878. COTTON GOODS. LOUIS SIEGBERT & BRO., New York, N. Y. Filed June 10, 1895.



Essential feature.—A monogram of the letters and character "L S & B" interlaced with the representation of an imperial crown. Used since January 1, 1895.

26,879. RUBBER HOSE, BELTING, AND PACKING. HOME RUBBER COMPANY, Trenton, N. J. Filed June 19, 1895.

RED ROSE.

Essential feature.—The words "RED ROSE." Used since January 1, 1895.

26,880. BRUSHES. J. J. ADAMS & CO., New York, N. Y. Filed July 3, 1895.

"Smada"

Essential feature.—The word "SMADA." Used since January 1, 1888.

26,881. CHOCOLATES AND OTHER BONBONS. THE WALTER M. LOWNEY COMPANY, Boston, Mass. Filed July 1, 1895.



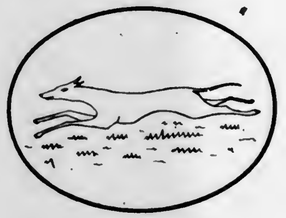
Essential feature.—The representation of two small boys dressed as chefs and carrying between them a bonbon. Used since February 1, 1895.

26,882. STARCH. J. C. HUBINGER BROS. CO., Keokuk, Iowa, and New Haven, Conn. Filed May 18, 1895.



Essential feature.—The representation of a sad-iron printed in black and the panels printed in red, by two of which the sad-iron is surrounded, the panel directly below the iron being in the nature of a substantially-straight scroll and the panel above the iron in a more or less curved scroll, the terminals of which nearly approach the straight scroll, the third panel being below the straight scroll and the whole being closed in a red border. Used since 1880.

26,883. CURED HAMS. HALSTEAD & CO., New York, N. Y. Filed June 10, 1895.



Essential feature.—The representation of a greyhound in an ellipse. Used since April 11, 1892.

26,884. MEDICINAL PLASTER, LOTION, OINTMENT, TOOTH PREPARATION, AND A TOILET SOAP. GEORGE M. TOURTELLOTTE, Worcester, Mass. Filed Apr. 17, 1894.

HAMALINE

Essential feature.—The word "HAMALINE." Used since January 1, 1878.

26,885. LINIMENT. THEODORE J. VOGELSBANG, Buffalo, N. Y. Filed May 25, 1895.



Essential feature.—The representation of a sitting squirrel. Used since May 11, 1895.

26,886. ABRADANT CONSISTING OF CRUSHED STEEL. DIAMANTSTAHL WERK, Altchemnitz, Germany. Filed May 24, 1895.



Essential feature.—The representation of a crystal surrounded by the conventional representations of rays of light. Used since January, 1894.

26,887. WATCH-MOVEMENTS. HAMPDEN WATCH COMPANY, Canton, Ohio. Filed June 10, 1895.



Essential feature.—The representation of a pennant extended from its staff bearing the word "HAMPDEN." Used since January 1, 1895.

26,888. WATCH-MOVEMENTS. HAMPDEN WATCH COMPANY, Canton, Ohio. Filed June 24, 1895.



Essential feature.—The representation of a waving pennant bearing the word "HAMPDEN," with the initial inclosing the letters "W. C. O." Used since January 1, 1895.

26,889. KNIVES, SHEARS, SCISSORS, AND CUTLERS' TOOLS.
THE CHRISTY KNIFE COMPANY, Fremont, Ohio. Filed July 8, 1895.

CHRISTY

Essential feature.—The word "CHRISTY." Used since July 1, 1890.

26,890. CERTAIN NAMED MERCHANDISE. PROVIDENCE ATHLETIC ASSOCIATION, Providence, R. I. Filed Aug. 6, 1894.



Essential feature.—The letters "P A A," with the base of each letter resting toward a common central point and the top of each letter located at an equal distance from the top of each other letter, forming substantially an equilateral triangle. Used since April 11, 1892.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

LA FLARE *v.* CHASE.

Decided July 5, 1895.

1. INTERFERENCE—PRIORITY—DILIGENCE.

C. and L. both had the intellectual conception of the invention independently of each other. L. left his thought in abeyance in the presence of the activities of C. in reducing it to tangible form and incorporating it into a car. L. did not proceed promptly after learning that C. had obtained a patent for the improvement. He stood by and saw C. reduce the invention to practice without any claim to the invention or for remuneration. The reduction and invention were C.'s.

2. INTERFERENCE—PATENTEE AND APPLICANT.

A patent is of weight as evidence in favor of the patentee upon his contention that he is the first inventor, and it is a sound and recognized administrative rule that a second patent should not issue for the same invention to a rival claimant except in a clear case.

APPEAL from the Examiners-in-Chief.

DOOR FOR REFRIGERATORS.

Application of Myron J. La Flare, No. 474,372, filed May 15, 1893. Patent to Rodney G. Chase, No. 479,978, granted August 2, 1892.

Messrs. Munday, Evarts & Adcock for La Flare.
Messrs. Raymond & Omohundro for Chase.

SEYMOUR, *Commissioner:*

This case comes up on appeal from the decision of the Examiners-in-Chief awarding priority of invention to La Flare on the following issue:

The packing for a door, consisting of a rigid strip faced with a yielding material, springs at the back of said strip, said strip and springs being located in a recess at the meeting edge of the door or jamb, and a strip of canvas or like flexible material covering over said recess.

The interference is between an application and a patent. The invention is a spring-packing to be used on a door or jamb of a refrigerator-car for the purpose of closely packing the joints. Prior to the making of this invention refrigerator-car doors were packed with felt or the like material; but owing to the alternations of dampness and dryness, on the one hand, they became so swollen that it was difficult to open them without the use of crowbars or sledges, and frequently the packing would become so compressed by the swelling of the door as to entirely lose its elasticity. On the other hand, the doors became so shrunken as to leave cracks in the joints of the doors or jambs, through which would readily pass strong currents of air, to which the cars were subjected while in transit. To remedy these defects in the old construction of refrigerator-car doors this invention was made.

At the time the invention was reduced to practice both parties to this interference were employed by the Chicago, Boston, and Liverpool Company, at Elsden, Ill., Chase as superintendent and La Flare as general foreman. This company was engaged in repairing and reconstructing old refrigerator-cars and building new ones. Chase came to Elsden in the employ of the company in March, 1891. La Flare was in the employ of the company several years prior to this, first as engineer, then as foreman of the woodshop, and finally as general foreman. Wells and Patch, witnesses for La Flare, are also employés of the company, the former as foreman of the woodshop and the other as car-repairer. These positions they held at the time the invention was put into practice.

On the 2d of July, 1891, an interview took place between Chase, La Flare, and Wells in the woodshop of which Wells was foreman, at which this improvement was discussed. Thereupon Wells said to La Flare: "He has got onto our spring-packing." There is some difference of statement between the witnesses as to what took place at that interview; but I think it clear that both Chase and La Flare had the conception of this improvement before any communication of it directly or indirectly took place from either to the other. They were independent, so far as the intellectual conception of this improvement goes. This view of the case renders it unnecessary to consider further and in detail the testimony going to show that La Flare communicated his inventive thought to others prior to the time that Chase came to the company. The record fails to show that either had that full conception with the other necessary for either to communicate the full invention to the other in the absence of a prior conception by the other.

As a result of the conversation on July 2, 1891, Chase told La Flare and Wells to go ahead and prepare a car for this packing. Accordingly car No. 7,501 of the National Despatch Line of refrigerator-cars was built at the shops of the Chicago, Boston, and Liverpool Company, at Elsden, Ill., embodying this invention. The improvement proved efficient and remained upon the car up to the time of taking testimony. Therein is found its full reduction to practice. The invention was also applied to one or more other cars under the order to build eleven cars, and to several but not all of ten cars which were built by the same company for the International and Wells Company. It was afterward applied to the cars of the Underwood Packing Company, to two hundred and fifty cars of the California Fruit Transportation Company, to about sixty cars of the Provision Dealers' Dispatch Company, and to about three hundred pairs of doors of the International Fruit Dealers' Dispatch.

At the time of taking testimony it was also being applied to about one hundred new cars building for the California Fruit Transportation Company and was on trial by Swift & Company and Nelson Morris & Company, of Chicago. Except three hundred of the three hundred and fifty cars for the California Fruit Transportation Company, they were equipped with this improvement by Chase's license. The first fifty cars of that company to which the doors were applied were applied under contract with Chase. For the remainder no contract was made. Chase received for the ten cars of the Provision Dealers' Dispatch Company for this improvement and others which he made in the cars the sum of fifty dollars a car. The California Fruit Transportation Company did not pay a license of five dollars a car for the use of this particular improvement, after making an agreement therefor, because La Flare served upon the company a notice that the improvement was claimed by him.

Chase applied for a patent on the improvement on April 30, 1892, and subsequently the patent in interference was issued to him on August 2, 1892.

From the time of the conversation which led to the order to construct the first car with this improvement thereon to the time Chase left the employment of the company on the 1st of April, 1893, but one conversation took place between La Flare and Chase in which the origin of the invention was referred to, and on this occasion La Flare asked Chase where his interest in the matter was, to which Chase made no reply. Chase refers to another conversation with La Flare at a time when La Flare and Chase were talking with a visitor about the device and were showing it on a car which was then in the yard, whereupon La Flare asked Chase if he had got the device patented, to which Chase replied, "No." La Flare said:

> It is going to be a good thing, and if you don't get it patented, I shall.

La Flare denies this conversation.

About the time Chase left the employment of the company—April 1, 1893—he went to La Flare to get him, with others, to sign an indorsement of the working of the device, presenting him with a paper upon the subject for his signature. La Flare refused to sign it, and when asked for his reason told Chase that he claimed the invention as his own, and referred to the previous conversation when he asked Chase where his interest in the matter was. This was the first intimation that Chase received from La Flare that he claimed the invention as his own.

La Flare applied for a patent May 15, 1893, nine months after Chase's patent issued to him and about seven months after La Flare knew of the issue of the patent.

The question is whether these embodiments of the improvement inure to the benefit of Chase or of La Flare. It was not treated by the parties as a joint reduction to practice, and is not such in fact or in law. While each had the intellectual conception of this improvement independently of the other, one left his thought in abeyance in the presence of the activities of the other in reducing it to tangible form and in incorporating it in a car. It is certain that La Flare did not proceed promptly after learning that Chase had obtained a patent for the improvement, and asserts the reason to be because he was not certain that the improvement was of value and was awaiting the opportunity to fully test it. This being so, he must have regarded the construction of car No. 7,501 of the National Despatch Line as other than his own reduction to practice. He not only stood by and saw the construction proceed, but he took some part in it himself, and an important part as he now considers it, without laying any claim to the invention, without business arrangements with the company for which he was employed looking to his own remuneration for the use of the invention. It was his right to neglect it if he chose. It was the right of Chase to embody it in his own behalf if he chose, the thought being original with him. It is difficult to imagine that La Flare was witnessing and assisting in the equipment of cars with something that could not lawfully be used without his license if he intended at the time to lay claim to it later on. No word escaped him, no act proceeded from him which betrayed a purpose to claim it. On the other hand, Chase was consistent in his conduct with the status of a recognized inventor; had business arrangements such that he lay claim to the reward of an inventor in the first cars equipped, and subsequently as to all those afterward equipped, and did assert such claim, and, so far as it was in his power, enforced it. The conduct of Chase is not equivocal in this respect, although his language in some instances is disputed, and in view of the dispute it may be considered that many of his assertions fall short of full proof. Whether there is that preponderance of testimony in favor of Chase that would be required to turn the scale in his favor were the burden of proof upon him and were this a contest between two applicants need not be determined. It is enough that the patent of Chase is of weight as evidence in his favor upon his contention that he is the first inventor, and it is a sound and recognized administrative rule that a second patent should not issue for the same invention to a rival claimant except in a clear case. It is thought, in view of the entire record, that Chase is the prior inventor.

The decision of the Examiners-in-Chief in awarding priority to La Flare is accordingly reversed and priority is awarded to Chase.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court.—Southern District of Ohio, Western Division.

STANDARD CARTRIDGE COMPANY *et al. v.* PETERS CARTRIDGE COMPANY.

Decided July 15, 1895.

1. SUIT UNDER SECTION 4915, REVISED STATUTES—WHAT CAN BE CONSIDERED.
   When the suit was under section 4915, and not under section 4918, of the Revised Statutes, it is a continuation of the interference contest in the Patent Office, and the only question that can be considered is whether the complainant is entitled to receive a patent for the invention described in the bill and as specified in his claim filed in the Patent Office.

2. SAME—SAME—SUFFICIENCY OF SPECIFICATION.
   Whether the specification in the patent issued to the defendant is sufficient is not involved in the case. It is wholly incompetent and cannot be inquired into.
3. SAME—SAME—BURDEN OF PROOF.
   The only question to be determined is the question of priority. The burden of proof is upon complainants, and they must establish their proof beyond a reasonable doubt.
4. SAME—SAME—SAME—NEW EVIDENCE.
   Where on a suit under section 4915, Revised Statutes, much additional testimony was introduced, but it was mostly either in corroboration or in contradiction of the testimony in the interference case in the Patent Office, *Held* that the decision of the Commissioner ought not be set aside upon merely cumulative or impeaching evidence, which is no ground for the granting of a new trial at law.

Mr. E. M. Marble and *Mr. R. H. Parkinson* for the complainant.

Mr. Frank T. Brown for the defendant.

SAGE, *J.:*

This suit is brought under section 4915 of the Revised Statutes of the United States to establish the right claimed by the Standard Cartridge Company to Letters Patent, denied by the Commissioner of Patents, for certain inventions in cartridge-loading machines, which, it is averred, were made by Charles S. Hisey and, by mesne assignment, are now the property of the complainant, the Standard Cartridge Company.

The defendant, as assignee of the right, title, and interest of George Ligowsky to certain improvements in cartridge-loading machines, set forth in an application filed by him in the Patent Office June 20, 1889, was granted a patent therefor on the 8th of December, 1891. On the 8th of June, 1889, Gershom Moore Peters filed his application for a patent upon similar improvements, and on the 24th of June, 1889, Charles S. Hisey filed his application. The Patent Office declared an interference between these three parties. Hisey had also filed an application on September 8, 1888, and that, too, was included in the interference. Much testimony was taken on behalf of each party in support of his claim to priority of invention.

The interference, which was bitterly contested, was decided by the Examiner of Interferences of the Patent Office April 29, 1891, in favor of George Ligowsky. From that judgment an appeal was taken to the Examiners-in-Chief, who reversed the decision as to Hisey and Ligowsky and found priority in favor of Hisey. An appeal to the Commissioner of Patents followed. On the 15th of October, 1891, he reversed the decision of the Examiners-in-Chief and awarded priority of invention to Ligowsky. A motion for rehearing was made by Hisey for alleged errors of fact and of law. The Commissioner on the 17th of November, 1891, again found in an elaborate opinion that Hisey was not the prior inventor and denied the motion. The complainant's record in this case covers 1,386 octavo pages; the defendant's, 1,150 pages. The complainant's book of exhibits contains 278 numbered pages, and copies of Letters Patent fill nearly as many more. The Ligowsky interference record, which is also introduced, contains 167 pages, and Hisey's 374. One brief for complainant contains 264 pages; another, 146 pages. The brief for defendant contains 284 pages. The total number of octavo printed pages in the case, exclusive of Letters Patent and of other certain exhibits, is 4,022.

It is obvious at the outset that it would be simply impossible to enter upon the details of evidence or of the arguments of counsel without exceeding by far the limits of any opinion that a *nisi prius* judge should be expected to prepare or that any one, excepting, possibly, the parties and their counsel, should be expected or would be likely to read.

From the beginning to the end of the record there is a conflict of evidence. The decision of the cause must depend upon the conclusions of fact to be deduced from the opposing and irreconcilable statements of witnesses, many of them interested. The questions of fact are the same that were presented to and passed upon by the officials of the Patent Office. Once they were decided in favor of the complainant, Hisey, and three times in favor of Ligowsky, defendant's assignor. Upon the final decision by the Commissioner the patent was issued to the defendant. More testimony has been taken on both sides, some in confirmation, some in denial—mostly cumulative or impeaching; but the same conflict remains and the same questions are to be determined as when the contest was in the Patent Office, with one exception. In this case the complainants made an attack upon the sufficiency of the specification of the patent issued to the defendant upon the Ligowsky invention. That attack cannot properly be made in this case, which is under section 4915 and not under section 4918 of the Revised Statutes and is a continuation of the interference contest in the Patent Office. The only question that can be considered is whether the complainant, the Standard Cartridge Company, holding under mesne assignment from the complainant, Charles S. Hisey, is entitled, according to law, to receive a patent for the invention described in the bill and as specified in his claim filed in the Patent Office.

Whether the specification in the patent issued to the defendant is sufficient or insufficient is not involved in this case. It is wholly incompetent and cannot be inquired into. (*Pentlarge* v. *Pentlarge*, 19 Fed. Rep., 817; *Lockwood* v. *Cleveland*, 20 Fed. Rep., 164; *American Clay Bird Co.* v. *Ligowsky Clay Pigeon Co.*, 31 Fed. Rep., 467.)

Inasmuch as it is conceded that if Hisey is the prior inventor he is entitled to his patent, the only question to be determined is the question of priority. The burden of proof is upon complainants, and they must establish their proof beyond a reasonable doubt. (*Coffin* v. *Ogden*, 5 O. G., 270; 18 Wall., 120; *Cantrell* v. *Wallick*, 35 O. G., 871; 117 U. S., 689; *Morgan* v. *Daniels*, 67 O. G., 811; 153 U. S., 120.) In *Morgan* v. *Daniels*, the latest, clearest, and most pointed of all cases, Mr. Justice Brewer, announcing the opinion of the Court, said that the case was something more than an appeal;

> that it was an application to the Court to set aside the action of one of the Executive Departments of the Government; * * * that it was something in the nature of a suit to set aside a judgment and as such not to be sustained by a mere preponderance of evidence, (citing *Butler* v. *Shaw*, 21 Fed. Rep., 321, 327.)

He further said that it was—

> a controversy over a question of fact which had been once settled by a special tribunal, intrusted with full power in the premises. As such it might be well argued, were it not for the terms of the statute, that the decision of the Patent Office was a finality upon every matter of fact.

Citing *Smith* v. *Goodyear Dental Vulcanite Co.* (11

O. G., 246; 93 U. S., 486) and *Lehnbeuter* v. *Holthause* (21 O. G., 1783; 105 U. S., 94) to the point that not only is the burden of proof upon the party setting up prior invention against a patent, but that every reasonable doubt should be resolved against him, he declared that these two cases were closely in point, because the plaintiff in *Morgan* v. *Daniels*, like the defendant in the case cited, was—

challenging the priority awarded by the Patent Office, and should, we think, be held as strict proof.

He referred to the—

presumption in favor of that which has been once decided—

and to the fact that presumption—

is often relied upon to justify an appellate court in sustaining the decision below.

Citing *Crawford* v. *Neal*, (144 U. S., 585, 596,) where the court below having concurred in the findings of fact and conclusions of law reported by a master, the Supreme Court said that they were—

to be taken as presumptively correct, and unless some obvious error has intervened in the application of the law, or some serious or important mistake has been made in the consideration of the evidence, the decree should be permitted to stand.

In *Morgan* v. *Daniels*, as in this case, the Examiner of Interferences found that the defendant was the original inventor. In *Morgan* v. *Daniels* the Assistant Examiner concurred in the finding. On appeal to the Examiners-in-Chief, two members being present, (as was the fact in this case,) they came to a different conclusion and awarded priority to the complainant. On further appeal the Commissioner of Patents reversed the judgment of the Examiners-in-Chief and sustained that of the original Examiners, as was done in this case. A motion for rehearing was brought before a succeeding Commissioner and overruled. In this case a motion for rehearing was brought before the same Commissioner and was overruled. In *Morgan* v. *Daniels* the case was submitted to the circuit court without any additional testimony, where the conclusion finally reached in the Patent Office was dissented from and the plaintiff was adjudged to be the original inventor. Justice Brewer said:

Evidently, therefore, the question as to which was the prior inventor is not free from doubt.

The Supreme Court reversed the judgment of the circuit court and remanded the case, with instructions to dismiss the bill.

In this case, as has already been stated, much additional testimony has been introduced; but it is mostly either in corroboration or in contradiction of the testimony in the interference case in the Patent Office. For illustration, in the decision by the Examiner of Interferences of the Patent Office he refers to the testimony of Ligowsky and of eight other witnesses as, in his opinion, clearly proving that Ligowsky made and disclosed to others in the fall of 1887 seven sketches or drawings of his invention, whereas Hisey did not claim to have made the invention until April, 1888.

The Commissioner of Patents, in his opinion, said:

If there be in the case a material allegation of fact, resting upon oral testimony, which is better supported by proof than any other, it is that during the year, 1887, Ligowsky produced seven sketches showing parts of the improvements in controversy, and that during that year made disclosures of these features to others.

In addition to the testimony of those nine witnesses the defendant now presents the testimony of five additional witnesses to the fact, making, altogether, fourteen witnesses who testify that Ligowsky made the invention in controversy in 1887. Of these five last called three are entirely disinterested, having no connection with Ligowsky or the Peters Cartridge Company. On the other hand, there are produced additional witnesses, including relatives and members of the family of Hisey, whose depositions were taken after Ligowsky's death, and who testify that Ligowsky admitted in their presence that Hisey was the inventor of the improvements for which he now seeks a patent.

It has been held that a new trial at law will not be granted upon the ground of the discovery of cumulative or of impeaching or contradicting evidence merely. (*Ames* v. *Howard*, 1 Sumn., 482; *Brown* v. *Evans*, 17 Fed. Rep., 912; *Carr* v. *Gale*, 1 Curt., 384; *U. S.* v. *Potter*, 6 McL., 182; *Macy* v. *De Wolf*, 3 W. & M., 193.) By parity of reasoning the decision of the Commissioner ought not to be set aside upon merely cumulative or impeaching evidence. The additional testimony cannot be said to so completely settle the disputed facts as to establish a reasonable doubt that the decision of the Commissioner of Patents was wrong. The fact referred to in the illustration above given is not only vital, but is a controlling fact of the case. The new evidence relating to other features of the case is of the same character.

The opinion of this court, after having heard the arguments of counsel, examined their briefs and the record, and considered the whole case, is that, independently of the rule as to the burden of proof, the decision of the Commissioner of Patents is right; that Ligowsky was the inventor, and that the attempt of Hisey to appropriate the invention was fraudulent. For the reasons stated in his opinions the conclusion of the court is that the equity of this cause is with the defendant.

The bill will be dismissed at the costs of the complainants.

U. S. Circuit Court of Appeals—First Circuit.

MARTIN & HILL CASH-CARRIER COMPANY *v.* MARTIN.

Decided May 9, 1895.

1. MARTIN—AUTOMATIC CASH-BOX SYSTEM—CONSTRUCTION—NON-INFRINGEMENT.

   Letters Patent No. 255,525, granted March 28, 1882, to J. C. Martin, for an automatic cash-box system, in view of the prior state of the art, *Held* not to be a pioneer patent, but to be limited to improvements in details of constructions. Hence claim 1 of said patent, which is limited to an endless-track system, is not infringed by a system constructed under Patent No. 399,150, granted March 5, 1889, to J. C. Martin, for conveying apparatus comprising a double track.

2. DEFENSES—ESTOPPEL OF ASSIGNOR.

   In a suit for infringement brought by the assignee against the assignor of a patent the latter is estopped from denying its validity; but the prior state of the art is admissible in evidence to aid the court in the construction of the patent. (*Ball & Socket Fastener Co.* v. *Ball Glove Fastening Co.*, 58 Fed. Rep., 818; *Babcock* v. *Clarkson*, 69 O. G., 1773; 63 Fed. Rep., 607.)

APPEAL from the Circuit Court of the United States for the District of Massachusetts.

STATEMENT OF THE CASE.

This was a suit in equity by the Martin & Hill Cash-Carrier Company against Joseph C. Martin, for infringement of certain patents for automatic cash-carrier systems for store-service. The circuit court found that there was no infringement, and dismissed the bill. (62 Fed. Rep., 272.) Complainant appeals.

Before COLT, PUTNAM, and NELSON, Judges.

Mr. M. B. Philipp (*Mr. Frank D. Allen*, *Mr. Edwin C. Gilman*, and *Mr. J. Steuart Rusk*, on the brief) for the appellant.

Mr. Frederick P. Fish and *Mr. William K. Richardson* for the appellee.

COLT, *J.*:

This bill was originally brought for the infringement of three patents, Nos. 255,525, 276,441, and 284,456, granted to the defendant, Martin, for improvements in automatic cash-carrier systems for store-service. These patents have been assigned to the plaintiff. By amendment to the bill the two latter patents were stricken out, and the suit as it now stands is limited to the first claim of patent No. 255,525, which issued March 28, 1882. In answer to the charge of infringement the defendant relies upon a subsequent patent, No. 399,150, issued to him March 5, 1889.

The first question which arises is how far the defendant is estopped in this action. In a suit for infringement brought against the assignor of a patent by his assignee the assignor is estopped from denying the validity of his patent. He cannot say that the patent has been anticipated by prior structures or that it is void for want of novelty or utility. (*Babcock* v. *Clarkson*, 69 O G., 1773, 11 C. C. A., 351, 63 Fed. Rep., 607; Id., 58 Fed. Rep., 581; *Ball & Socket Fastener Co.* v. *Ball Glove Fastening Co.*, 7 C. C. A., 498, 58 Fed. Rep., 818; *Faulks* v. *Kamp*, 17 O. G., 851; 3 Fed. Rep., 898; *Onderdonk* v. *Fanning*, 4 Fed. Rep., 148; *Purifier Co.* v *Guilder*, 9 Fed. Rep., 155; *Curran* v. *Burdsall*, 27 O. G., 1319; 20 Fed. Rep., 835; *Underwood* v. *Warren*, 21 Fed. Rep., 573; *Parker* v. *McKee*, 32 O. G., 137, 24 Fed. Rep., 808: *American Barrel Co.* v. *Laraway*, 37 O. G., 674, 28 Fed. Rep., 141; *Corbin Cabinet-Lock Co.* v. *Yale & Towne Manufg. Co.*, 58 Fed. Rep., 563: *Chambers* v. *Crichley*, 33 Beav., 374; *Hocking Co.* v. *Hocking*, 4 Rep. Pat. Cas., 434, 438, 442; *Walton* v. *Lavater*, 29 Law J. C. P., 275.)

But it is the settled rule with respect to the construction of patents that the prior state of the art is admissible in evidence—

to show what was then old, to distinguish what was new, and to aid the court in the construction of a patent. (*Brown* v. *Piper*, 10 O. G., 417, 91 U. S., 37, 41. *Eachus* v. *Broomall*, 33 O. G., 1265, 115 U. S., 429, 6 Sup. Ct., 229; *Grier* v. *Wilt*, 38 O. G., 1365, 120 U. S., 412, 7 Sup. Ct., 718.)

That this rule applies as between assignor and assignee has recently been held by this court in two carefully-considered cases—*Ball & Socket Fastener Co.* v. *Ball Glove Fastening Co.*, *ubi supra*, and *Babcock* v. *Clarkson*, *ubi supra*. In the latter case the Court, adopting the language used in the former case, says:

The record contains very much touching the state of the art and prior patents. From what we have already said, it is plain that they cannot be introduced here for the purpose of invalidating any of the patents covered by the contract, or any portion of any claim of any of such patents. Nevertheless, they, as well as the file-wrappers and their contents, are appropriate to be considered for ascertaining the true construction of the various patents involved, and especially for determining whether, according to such construction, the improvements were of a primary or secondary character, and how far the combinations admit of the doctrine of equivalents.

The appellant also claims an estoppel different from that which we have considered, to the effect that, under some circumstances, a patentee assigning his patent after it has been apparently embodied in a machine is estopped, as against his assignee, from denying that the machine correctly represents the substance of the patent; but in the present case several patents were assigned. Only one is brought before us, and we do not know the scope of the others. *Non constat* the patents which have not been brought to our attention, and not the one in suit, furnish the basis of this alleged estoppel, if such an estoppel can be maintained. Therefore we are not called on to consider this question, either as one of law or of fact.

Looking at what was old at that time, it is impossible for us to give the broad construction to the patent in suit which is contended for by the plaintiff. The patentee himself declares in the specification that the invention—

relates to the details of the construction of automatically-moving cash-boxes and devices for moving such boxes from one place to another.

At the date of this invention conveying apparatus of various kinds were old. One variety of conveying apparatus then existing was especially intended for use in stores. The Brown patent, No. 165,473, dated July 13, 1875, shows a conveying apparatus which is described as—

for transmission of goods, packages, money, etc., in general, but more particularly as an expedient and cheap method of transmitting packages, bills, and money in stores and sale-rooms from the salesmen to the cashier, and vice versa, without the aid of the now employed cash-boys.

The White patent, No. 229,783, dated July 6, 1880, also shows a conveying apparatus—

whereby articles are carried from the counters of a store to a central desk, and each back to the counter from which it was sent.

In our opinion the patent in suit cannot be considered in any proper sense a pioneer patent which lies at the foundation of a new art; but it is a patent, as the specification declares, for improvements in the "details of the construction." As a store-service apparatus it was crude and imperfect.

In the adaptation of the old cable conveying apparatus to store-service two problems presented themselves. First, it was necessary to provide tracks leading in all directions from a given point—such as the cashier's desk—to different stations at the various counters, and, second, it was essential to provide for the automatic delivery of different carriers at different points along a single line of track, so that one track connected the cashier's station with a number of different receiving-stations, and the boxes sent along one track must each be delivered at the station to which it belonged. The first of these objects is only imperfectly met, and the second is wholly unprovided for, by the patent in suit.

The first claim of the patent is as follows:

In an automatic cash-box system, the track *b*, the endless cord *c*, the cash-box *v*, and appliances, substantially as described, for attaching said box to said endless cord and for automatically detaching said box therefrom, and a suitable motor to give a motion to said cord, all combined and operating substantially as set forth.

This claim is for the combination of several elements—the track, the endless cord, the cash box or

carrier, the motor, and appliances for attaching and for automatically detaching the box from the endless cord. The prior state of the art, as exhibited in the various patents in this record, shows conclusively that the patentee is not entitled to claim, broadly, the combination of a track, carrier, endless cord, motor, and devices for attaching and automatically detaching the carrier to the endless cord, but that his patent must be limited to substantially the means described and shown in the specification and drawings. The track is essentially an endless one, over the entire length of which the carrier must travel in passing from one station to the other, and thence back to the first station. The cable is an endless one, extending throughout the entire length of the track. The motor is any suitable one to drive a cable. The carrier, which has a tube firmly attached to its under side, through which the cord runs, is one adapted to travel along and never be disengaged from the track. The appliances for attaching and automatically detaching the box from the cord consist of a grip device connected with the box, composed of two arms or clamping-jaws, one of which is stationary and the other movable. To the latter a spring is attached, and the gripping or ungripping takes place as the movable arm is pressed against or is released from the endless cord by the operation of the spring. The cash-box at each of the two stations runs into a trough provided with a hinged spring cover. This cover supports upon its lower side two converging cams or guards and two stops. By means of these cams and stops the box is stopped and is unclutched from the endless cord, and, after the box has been stopped under this cover, it cannot be clutched to the cord again until the cover is lifted by an attendant. The act of lifting the cover not only removes the cams and stops out of the road of the box, but permits the grip to work so as to again clutch the cord. In the patented device the cover, with its cams and stops, movable with respect to the track, is a necesary feature.

While defendant's apparatus contains elements corresponding with those of the patent in suit, it is, in substance and effect, a different system. The track in this apparatus is essentially a double track, the carriers traveling in one direction on one track and in an opposite direction on the other track. The carrier must be capable of removal from the track and cord, for it cannot go back to its starting-point by continuous movement in one direction. It must be wholly removed from one track and placed upon an adjoining track before it can be returned to the point from which it started. This apparatus has a gripping device; but the appliances for attaching and disconnecting the carrier from the cord are different from the patent in suit. It has no hinged cover with its converging cams and stops movable with relation to the track. The appliance for disconnecting the carrier from the cable is a cam or projection in fixed relation to the path of movement of the carrier along the track, which operates to release the grip, and the carrier continues to move on the track until it loses its momentum or is otherwise arrested. The carrier is then placed by the attendant upon the returning track. The system of the patent in suit is practically limited to a single carrier, because it must be remembered that it has only a single track and that the carrier always runs in the same direction, propelled by the endless cord. Now, if a second carrier were used and the operator at one station should move away the stop, and thus start the carrier, and the operator at the other station should fail to start the carrier from that station at the proper time, the carriers would collide and the ungripping devices would fail to properly operate. The defendant's apparatus is so constructed that an almost indefinite number of carriers may be used, and, while certain carriers will be automatically switched off from the main track and disconnected from the cable at certain stations, others will be switched off at the other stations. Giving as full a scope to the invention covered by the plaintiff's patent as the state of the art will warrant, we think it clear that the defendant's apparatus does not infringe.

Decree of the circuit court affirmed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 72.—No. 6. TUESDAY, AUGUST 6, 1895. PRICE—$5 per year.

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Notice.

It is hereby directed that in the printing of claims of applications for patents the punctuation of the claims as made by applicants be strictly followed, and that the punctuation of the specification made by applicants be not departed from except to cure a manifest absurdity.

Women Inventors.

The Patent Office has published and has for sale a volume containing a list of women inventors to whom patents have been granted by the United States from 1790 to July 1, 1888. 44 pages. Paper covers, 50 cents.

An Appendix to the above, covering the period from July 1, 1888, to October 1, 1892, has been published, and is now for sale. 18 pages. Paper covers, 25 cents.

Indexes to Periodicals.

The following journals containing indexes to periodical literature may be found on file in the reading room of the scientific library:

Engineering Review, London, a monthly synoptical index of periodical literature in the English, French, and German languages, including hydraulic, railway, mechanical, electrical, mining, metallurgical, marine, military, and gas engineering.

Abstracts of all the principal articles on "Physics" published in the American and Continental journals since January 1, 1895, will be found in the *Proceedings of the Physical Society of London*.

Electrical World, New York, a weekly digest of electrical articles.

Journal of the Association of Engineering Societies, Chicago, a monthly synoptical index of civil-engineering literature, mostly American.

Engineering Magazine, New York, a monthly title-index of engineering articles in the English language only.

Publishers' Catalogues.

This Office would be pleased to receive from manufacturers and publishers such catalogues, circulars, price-lists, or other advertisements relating to the sciences and mechanical arts as are published by them for gratuitous distribution; but notice is hereby given such manufacturers or dealers who feel disposed to send their publications that not less than three copies should be forwarded in order that the subjects may be properly indexed, classified, and subclassified in the Scientific Library for convenient and ready reference.

The Official Gazette.

THE OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $10; single copies, 10 cents, if mailed to foreign countries 10 cents additional for postage; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Amendment to the Rules of Practice.

The following regulations for the conduct of proceedings in the Patent Office are established:

65. An applicant will be considered to persist in his claim for a patent without altering his specification in case he fail to act in prosecution of the same for six months after the Office action thereon, and thereupon the Examiner will make a re-examination of the case.

134. In appealable cases in which no limit of appeal is fixed, no appeal will be entertained by any tribunal in the Office unless taken within six months from the action which puts the case in condition for appeal, unless it be shown to the satisfaction of the Commissioner that such delay was unavoidable.

68. In every case pending before the Office more than five years, in which the record raises the presumption that there have been intentional delays in prosecution, the Examiner may require the applicant to show cause why the case was not more rapidly prosecuted, and at the hearing thereon, or upon failure of the applicant to appear, the Examiner will determine, under all the circumstances of the case, whether there have been intentional and unreasonable delays in prosecution, and upon finding the fact to be so, he will reject the case for that reason. Present Rules 65, 69, and 134 are repealed, and present Rule 68 is renumbered 69.

The foregoing rules will be in effect on and after April 15, 1895, and will affect pending cases as though the last Office action were upon said date.

Privileges of the Scientific Library.

Persons who are not employés of the Office may, under the supervision and direction of the Librarian, make extracts, in pencil, from descriptions and drawings contained in the Scientific Library, such extracts, when in the nature of copies, not to exceed one-third of the descriptions or drawings from which the copies are made. Violation of this order will subject all persons and parties concerned in the violation to exclusion from thereafter making any such extracts or copies whatever.

Issue of August 6, 1895.

Patents	441—No. 543,835 to No. 544,275, inclusive.
Designs	4—No. 24,528 to No. 24,531, inclusive.
Trade-Marks	23—No. 26,891 to No. 26,913, inclusive.
Labels	None.
Prints	None.
Reissues	None.
Total issue	468

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Prints.	States.	Patents and Designs.	Trade-Marks and Prints.
Alabama	3	1	New Hampshire	.....	.....
Arizona Territory	.....	.....	New Jersey	17	1
Arkansas	.....	.....	New Mexico Territ'y	1	.....
California	12	.....	New York	62	6
Colorado	2	.....	North Carolina	3	.....
Connecticut	17	1	North Dakota	.....	.....
Delaware	.....	.....	Ohio	24	.....
District of Columbia	8	.....	Oklahoma Territory	1	.....
Florida	1	.....	Oregon	2	.....
Georgia	1	.....	Pennsylvania	45	2
Idaho	.....	.....	Rhode Island	5	.....
Illinois	32	.....	South Carolina	1	.....
Indian Territory	.....	.....	South Dakota	.....	.....
Indiana	17	.....	Tennessee	5	.....
Iowa	9	1	Texas	7	.....
Kansas	6	.....	Utah Territory	.....	.....
Kentucky	7	.....	Vermont	1	.....
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Massachusetts	43	1	Wisconsin	6	.....
Michigan	13	.....	Wyoming	1	.....
Minnesota	3	2	U. S. Army	.....	.....
Mississippi	1	2	U. S. Navy	.....	.....
Missouri	16	1	Total to citizens of the United States	396	18
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Nebraska	3	.....			
Nevada	.....	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentine Republic	.....	.....	Mexico	.....	.....
Austria-Hungary	.....	.....	Netherlands	.....	.....
Barbadoes	.....	.....	Newfoundland	.....	.....
Belgium	.....	.....	New South Wales	1	.....
Bermuda	.....	.....	New Zealand	.....	.....
Brazil	.....	.....	Norway	1	.....
Canada	6	.....	Portugal	.....	.....
Chile, Republic of	.....	.....	Queensland	.....	.....
Colombia	.....	.....	Roumania	.....	.....
Cuba	.....	.....	Russia	2	.....
Denmark	.....	.....	Scotland	3	.....
Ecuador	.....	.....	South African Republic	1	.....
Egypt	.....	.....	South Australia	.....	.....
England	23	2	Spain	.....	.....
France	3	.....	Sweden	.....	.....
Germany	6	2	Switzerland	3	.....
Guatemala	.....	.....	Victoria	.....	.....
Hawaii	.....	.....	West Australia	.....	.....
India	.....	.....	Total to citizens of foreign countries	49	5
Ireland	.....	1			
Italy	.....	.....			
Japan	.....	.....			

APPLICATIONS UNDER EXAMINATION.

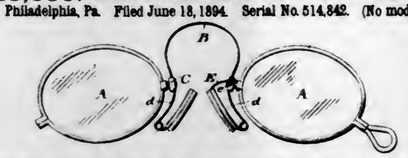
Condition at Close of Business July 30, 1895.

Division No.	Subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears.—Under one month.			
15	Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	July 1	July 29	59
31	Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	July 5	July 27	52
3	Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	July 1	July 27	67
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4	Civil Engineering, Fire-Proof Buildings, Fire Escapes and Ladders, etc.	July 19	July 23	48
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14	Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	July 1	July 19	88
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27	Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	July 1	July 19	130
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9	Hydraulics, Fire-Extinguishers, etc.	July 1	July 1	349
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32	Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels, etc.	June 27	July 9	229
30	Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, Optics.	June 15	July 1	233
5	Fine Arts, Stationery, Book-Binding, Music, etc.	June 14	June 26	199
	Total number of applications awaiting action			5,006
	Under one month in arrears.			
	Designs	July 8	July 8	110
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PATENTS

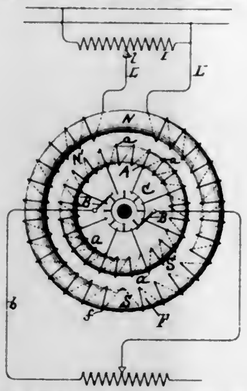
GRANTED AUGUST 6, 1895.

543,835. NOSE-PIECE FOR EYEGLASSES. ALBERT ABRAHAM, Philadelphia, Pa. Filed June 18, 1894. Serial No. 514,842. (No model.)



Claim.—An eyeglass or spectacle provided with nose-pieces extensible in planes perpendicular to the plane of the lenses, each of which consists of a strip of metal, one end of which is connected to the frame, the other end of which carries a piece of facing material for contact with the nose of the wearer, and the intermediate portion of which is bent to form a coil the axis of which is perpendicular to the plane of the lenses, substantially as set forth.

543,836. ALTERNATING-CURRENT MOTOR. ENGELBERT ARNOLD, Zurich, Switzerland. Filed Oct. 9, 1894. Serial No. 525,362. (No model.)



Claim.—1. The method of operating a single-phase alternating current motor—by supplying an alternating current to the field coils and directing and controlling the flow of induced currents in the armature at starting thereby producing poles and giving initial rotation to the armature, and thereafter short-circuiting the individual coils of the armature, substantially as set forth.

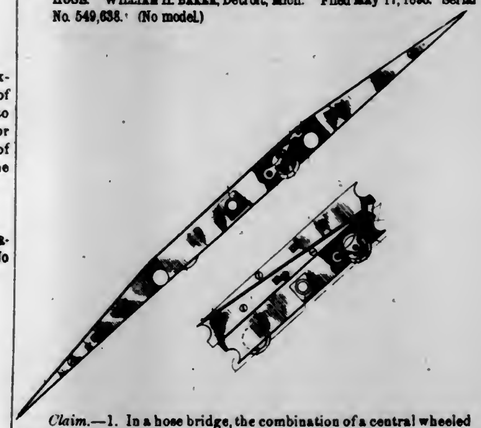
2. The method of operating a single-phase alternating current motor—by supplying an alternating current to the field coils and directing and controlling the flow of induced current in the armature at starting thereby producing poles and giving initial rotation to the armature, and thereafter automatically short-circuiting the individual coils of the armature, substantially as set forth.

3. In an alternating current electric motor, field coils having terminal connections for the external circuit, armature coils, a commutator therefor, commutator brushes, circuit *b*, and means for directly short-circuiting the armature coils, substantially as set forth.

4. In an alternating current electric motor, field coils having terminal connections for the external circuit, armature coils, a commutator therefor, commutator brushes, circuit *b*, and a device controlled by the speed of the motor for automatically directly short-circuiting the armature coils, substantially as set forth.

5. In an alternating current electric motor, field coils having terminal connections for the external circuit, armature coils, a commutator therefor, commutator brushes, circuit *b*, the said armature coils being connected with the segments of the said commutator and having no connection whatever with the external circuit, and means for individually short-circuiting the said armatures coils, substantially as set forth.

543,837. STREET-CAR BRIDGE FOR BRIDGING OVER FIRE-HOSE. WILLIAM H. BAKER, Detroit, Mich. Filed May 17, 1895. Serial No. 549,638. (No model.)



Claim.—1. In a hose bridge, the combination of a central wheeled section, and two end sections hinged to the end of said central section and adapted to fold over upon the same and being tapered downward toward their outer ends, the adjacent ends of the sections being recessed to embrace the lines of hose substantially as and for the purpose described.

2. In a hose bridge, the combination of a central section, wheels supporting said section, and adapted to travel on the car track, means carried by the truck for movably supporting said wheels, means for raising the truck for transportation and for lowering it to anchor it, and tapering end sections carried by the central sections, substantially as and for the purposes described.

3. A hose bridge consisting essentially of a wheeled truck, wings or end sections, and intermediate connections hinging the wings to the truck and adapted to lower the truck onto the track or wheels when the wings are swung outward and downward.

4. In a hose bridge, the combination of the central section, oscillatory bars pivoted to the sides of the same and carrying a wheeled axle, end sections, and levers fulcrumed on the sides of the central section and having their inner ends bearing on the free ends of the oscillatory bars and their outer ends pivoted to the inner ends of the end sections.

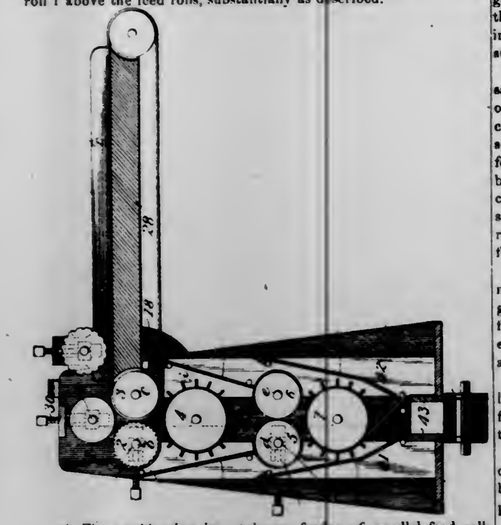
543,838. TOBACCO-FEEDER FOR CIGARETTE-MACHINES. BERNHARD BAROS, New York, N. Y. Filed Nov. 17, 1893. Serial No. 491,215. (No model.)

Claim.—1. The combination in a tobacco feeder, of parallel feed rolls occupying substantially the same horizontal plane, one of said rolls being plain and the other having grooves or serrations, means for driving said latter roll at a greater speed than the other roll, whereby the tobacco is subjected to a drawing action, and a picker cylinder arranged directly below the feed-rolls, substantially as described.

2. The combination with the feed rolls 2, 3, occupying substantially the same horizontal plane, and a picking cylinder 4 directly below said feed rolls, of an adjustable presser roll 1 above the feed rolls, substantially as described.

3. The combination in a tobacco feeder, of parallel feed rolls 2, 3, occupying substantially the same horizontal plane, devices for

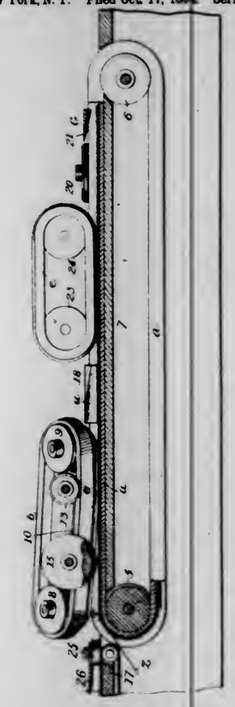
driving one of the feed rolls at a greater speed than the other, a picking cylinder 4 directly below the feed rolls, and an adjustable presser roll 1 above the feed rolls, substantially as described.



4. The combination in a tobacco feeder, of parallel feed rolls 2, 3, arranged in substantially the same horizontal plane, a picking cylinder 4, directly below the feed rolls, a feed band 9, a presser roll 1 above said feed rolls, and a feed roll 8 arranged above the said feed band and adjacent to said presser roll, substantially as described.

5. The combination in a tobacco feeder, of parallel feed rolls 2, 3, arranged in substantially the same horizontal plane, one of said rolls being plain and the other grooved, devices for driving one of said rolls at a greater speed than the other, a picking cylinder arranged directly below the feed rolls 2, 3, an adjustable presser roll 1 above said rolls, and a feed roll 8, substantially as set forth.

543,839. CONTINUOUS-CIGARETTE MACHINE. BERNHARD BARON, New York, N. Y. Filed Oct. 17, 1894. Serial No. 526,189. (No model.)



Claim.—1. The combination in a mold for forming rods, of three or more endless traveling bands of flexible material, all having grooved edges or faces which together form a circular chamber when the said bands are brought together, and means for gradually bringing the bands toward each other at one point to form said chamber, substantially as set forth.

2. The within described mold for forming a continuous rod, the same consisting of three or more traveling continuous flexible sections or bands all having grooved faces which together form a closed chamber of proper shape when the sections are brought together, supports for the said sections for holding them in separated positions for the introduction of the material between the same, and means for bringing the sections together to compress the material and form a closed chamber, and hold the material within said chamber while the said sections are traveling in unison, and means for gradually separating the sections to release the traveling rod after it has been formed, substantially as set forth.

3. The combination in a mold for molding rods of tobacco or other material, the same consisting of an endless traveling band having a groove or channel deepest at the center, and side bands, and supports for the bands whereby they are held in position separated near one end of the machine, gradually converging to form a closed chamber at one point, and then diverging, substantially as set forth.

4. A mold for forming continuous rods consisting of three endless grooved bands, means for driving the same in unison, and devices for converging the said traveling bands at one point to form a practically closed chamber at that point, substantially as described.

5. The combination with the traveling endless band *a* having a central groove, and the traveling endless bands *b*, *c*, and means for bringing all the bands together to form a closed chamber at one point, substantially as set forth.

6. The combination of a traveling band *a*, having a groove, and supporting wheels 5, 6, and two traveling bands 8, 9, and their supporting wheels, and guides arranged to deflect the latter bands into and from the groove of the band *a*, substantially as set forth.

7. The combination of the lower traveling band *a*, having a groove, and side bands *b*, *c*, and means for carrying the side bands in unison with the band *a*, and guides arranged to carry the side bands into and from the groove of the band *a*, substantially as set forth.

8. The combination of the endless band *a*, having a groove, and its supporting wheel or pulleys, and the endless side bands *b*, *c*, supported by pulleys and having faces which together with the face of the groove in the band *a* form a closed chamber when the bands are brought together, and means for bringing the said bands together at one point, substantially as set forth.

9. The combination of the traveling band *a* having a groove, the traveling side bands *b*, *c*, means for bringing the said bands together, and a pressure wheel 13, substantially as set forth.

10. The combination of the traveling bands *a*, *b*, and *c*, and means for bringing them together at one point to form a closed chamber, and a presser wheel 15 arranged in advance of the point where the bands are brought together, substantially as and for the purpose set forth.

11. The combination of the grooved band *a*, and its supporting wheels, the grooved bands *b* and *c* and their supporting wheels, and the independent guides 10, 11, for bringing said bands together to form between them a closed chamber, substantially as and for the purpose set forth.

12. The combination of a sectional traveling mold, consisting of three grooved endless bands and means for bringing them together to form a molding chamber, and supports and guides for a traveling strip of paper arranged to direct the strip into the groove of the lowermost of the said bands at a point in advance of that where the three bands are brought together, substantially as set forth.

13. The combination of the three grooved endless traveling bands *a*, *b* and *c*, forming a closed molding chamber between them when brought together, and devices for supplying a strip of paper to the band *a*, all arranged to permit the paper to travel upon the face of the latter band below the bands *b* and *c*, substantially as and for the purpose set forth.

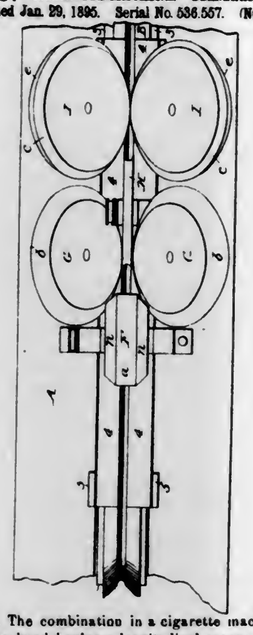
14. The combination of the traveling band *a*, having a groove and the molding bands *b*, *c*, and means for bringing them together above the band *a* to form a closed chamber, and a traveling band *c*, extending into the groove in the traveling band *a* at one side of the same, substantially as and for the purpose described.

15. The combination with the molding device including a traveling grooved band *a*, and means for feeding a wrapper strip to said band and for folding in one edge thereof onto the filler, of a traveling band above and extending partly over the groove in the band *a*, and adapted to engage and hold down said inturned edge of the wrapper, substantially as set forth.

16. The combination with the molding device, including a traveling grooved band *a*, and means for feeding a wrapper strip to said band and for folding in one edge thereof onto the filler, of a traveling endless grooved band *c*, above and extending partly over the groove in the band *a*, in a position to engage and hold down said inturned edge, and means in rear of said band *c*, for pasting and folding down the second edge of the wrapper, substantially as set forth.

17. The combination with the molding device including a traveling grooved band *a*, of a traveling band *c*, extending laterally over one side of and into said band *a*, and having a grooved face *n*, and a flange *m* bearing against one edge of the band *a*, substantially as set forth.

543,840. CIGARETTE-MACHINE. BERNHARD BARON, New York, N. Y. Filed Jan. 29, 1895. Serial No. 536,557. (No model.)



Claim.—1. The combination in a cigarette machine, of a continuous traveling band having a longitudinal groove, means for supplying a wrapper strip to the groove, and pairs of oppositely inclined wheels with their edges projecting into said groove, the wheels of the first pair being arranged to act upon opposite sides of the tobacco to collect it, while the wheels of the last pair, with the band, give the tobacco its final compression, substantially as described.

2. The combination in a cigarette machine, of a continuous traveling band having a longitudinal groove, means for supplying a wrapper strip to the groove, and pairs of oppositely arranged wheels with their edges projecting into said groove, the wheels of the first pair being arranged to act upon opposite sides of the tobacco to collect it into a row of uniform width, while the wheels of the last pair, with the band, condense the tobacco to a greater extent than the size of the finished cigarette, substantially as described.

3. The combination of the continuous traveling band having a longitudinal groove with flaring sides, means for supplying a wrapper strip to the groove, plates projecting into said groove parallel to the flaring sides thereof, and overlying the edges of the wrapper strip, and oppositely inclined wheels above and parallel to said plates and arranged to compress the tobacco upon the strip between the edges of the plates, substantially as described.

4. The combination with the grooved traveling band, and means for feeding a wrapper strip thereto, of inclined wheels G, G, having beveled faces *b*, vertical and parallel to each other at the point of closest proximity, and separated and arranged to act upon opposite sides of the tobacco to collect it into a row of uniform width in the groove of said band, substantially as set forth.

5. The combination with the traveling band having a permanently formed groove with flaring sides and an intermediate rounded portion, of inclined wheels G, G, having beveled faces *b*, *b*, vertical and parallel to each other at the point of closest proximity, and separated and arranged to act on opposite sides of the tobacco to collect it into a row of uniform width within said groove, and a vertical compressor wheel H having a peripheral groove forming a circle with said rounded portion of the band, said wheel H being in rear of the wheels G, G, substantially as described.

6. The combination in a cigarette machine of a traveling band having a permanently formed longitudinal groove with flaring sides and an intermediate rounded or curved portion, and vertical and oppositely inclined compressing wheels working in said groove in connection therewith to condense and mold the cigarette, substantially as set forth.

7. The combination with the traveling band having a longitudinal groove with flaring faces and an intermediate rounded or curved portion, of a vertical wheel F above the band, two inclined wheels G, G, with beveled faces *b*, *b*, operating in the groove a vertical compressor wheel H, and two inclined wheels I, I, in rear of said wheel H, and provided with edge grooves *e*, *e*, substantially as described.

8. The combination with the traveling band having a longitudinal groove with flaring faces, of the plates 4, 4, extending into the groove parallel with said faces, a vertical wheel F, two inclined wheels G, G, having beveled faces *b*, *b*, parallel to each other at the point of closest proximity and adapted to act on opposite sides of the tobacco, a vertical compressor wheel H, two inclined final compressor wheels I, I, in rear of wheel H, and having edge grooves *e*, *e*, and means for positively driving said wheels, substantially as described.

9. The combination with the continuous grooved band of stationary bars extending into the groove of said band and having projections 6, 7, and folder wheels extending into said groove from opposite sides of the band, and arranged respectively in advance of said projection substantially as set forth.

10. The combination of a traveling band having a groove with flaring sides, means for feeding a wrapper strip to the said groove, and a vertical wheel F having a transversely corrugated face *a* arranged to compress the tobacco in the strip, and corrugated inclined side faces *n*, *n*, substantially as set forth.

11. The combination with the continuous grooved band, of the bar J having a vertical face *w*, the bar J′ provided with the projection 7, a folder wheel in advance of said projection, a paster in rear thereof and opposite said vertical face, a second folder wheel, in rear of the paster, and a projection 6 supported by the bar J in rear of the second folder wheel, substantially as set forth.

12. The combination with the continuous grooved band, and means for feeding a wrapper strip thereto, of the bar J at one side of the band and provided with a vertical face *w*, the bar J′ at the opposite side of the band, the projection 7 upon said latter bar, the folder wheel in advance of said projection, the paster in rear thereof, a second folder wheel in rear of the paster, and the projection 6 in rear of the latter folder wheel, substantially as described.

543,841. STOVE-GRATE. JOHN H. BERRY, Milwaukee, Wis. Filed Oct. 15, 1894. Serial No. 525,938. (No model.)



Claim.—1. The combination with a grate frame, side grates pivoted therein and bridge pieces on the side grates, of a center grate carried by the frame underneath the side grates, and a flange on the bottom of the center grate adapted to support the bridge pieces, substantially in the manner and for the purpose specified.

2. The combination with a grate frame and side grates pivoted therein and bridge pieces on the side grates, of a center grate carried by the frame underneath the side grates and provided upon its bottom with a lateral flange adapted to support the bridge piece of one side grate to sustain the same at a suitable distance from the center grate, and means for limiting the movement of the other side grate whereby either of the side grates may be sustained out of close proximity with the center grate, substantially as specified.

3. The combination with a grate frame having semi-cylindrical bearings provided with depending stop lugs, of caps for said bearings, side grates journaled in the bearings, recessed terminal fingers upon the side grates adapted to strike against the caps and stop lugs, to limit the movement of the side grates in either direction, substantially as specified.

4. The combination with a grate frame having bearings protruding above its surface, dumping grates therein, and a removable ribbed and perforated false bottom provided with recesses to accommodate the protruding bearings whereby the false bottom may be retained upon the grate without special fastening mechanism, substantially as specified.

543,842. AUTOGRAPHIC REGISTER. HENRY C. BIETTE, Toronto Canada. Filed Nov. 15, 1894. Serial No. 528,954. (No model.)

Claim.—1. An autographic register consisting of a base frame, a spindle carrying frame within the base frame, a series of spindles journaled in the spindle carrying frame, means for drawing the spindles together as they discharge their load, a top frame mounted on the base frame for inclosing the spindle carrying frame, substantially as specified.

2. An autographic register consisting of a base frame, a chamber formed in the base frame, spindles journaled in the said chamber for carrying the transfer ribbon, a spindle carrying frame within the base frame, spindles journaled in the spindle carrying frame, means for automatically drawing the spindles together as they discharge their load, and a top frame which in conjunction with the base frame incloses the spindle carrying frame and interior mechanism, substantially as specified.



3. An autographic register consisting of a base frame, a chamber formed in the base frame, spindles journaled in the said chamber for carrying the transfer ribbon, a spindle carrying frame within the base frame, spindles journaled in the spindle carrying frame, means for automatically drawing the spindles together as they discharge their load, a top frame which in conjunction with the base frame incloses the spindle carrying frame and interior mechanism, and a delivery roller journaled in the spindle carrying frame and a delivery roller journaled in the top frame, substantially as specified.

4. An autographic register consisting of a base frame, a chamber in one side thereof, spindles journaled in the said chamber, a spindle carrying frame within the base frame, a roller at the feed end of the top of the spindle carrying frame, paper carrying spindles journaled in the spindle carrying frame, means for automatically drawing together the said spindles as they discharge their load, the top frame, and the delivery rollers, the under one of which is mounted in the spindle carrying frame, and the upper one of which is mounted in the top frame, substantially as specified.

5. An autographic register consisting of a base frame, a chamber in one side thereof, ribbon carrying spindles journaled in the chamber, the spindle carrying frame, a roller journaled at the top of the feed end of the spindle carrying frame, paper carrying spindles journaled in the spindle carrying frame, means for automatically drawing together the paper carrying spindles as they discharge their load, a delivery roller journaled in the top of the spindle carrying frame between the feed and delivery ends of the same, a winding roll and the top frame, which in conjunction with the base frame incloses the spindle carrying frame and interior mechanism, and a delivery roller journaled in the top frame vertically above the delivery roller in the spindle carrying frame when the several parts are assembled, substantially as specified.

6. An autographic register consisting of a base frame, a chamber in one side thereof, ribbon carrying spindles journaled in the chamber, the spindle carrying frame, a roller journaled at the top of the feed end of the spindle carrying frame, paper carrying spindles journaled in the spindle carrying frame, means for automatically drawing together the paper carrying spindles as they discharge their load, a delivery roller journaled in the top of the spindle carrying frame between the feed and delivery ends of the same, a winding roll, means for automatically revolving the winding roll, the top frame which in conjunction with the base frame incloses the spindle carrying frame and interior mechanism, and a delivery roller journaled in the top frame vertically above the delivery roller in the spindle carrying frame when the several parts are assembled, substantially as specified.

7. An autographic register consisting of a base frame, a chamber in one side thereof, ribbon carrying spindles journaled in the chamber, the spindle carrying frame, a roller journaled at the top of the feed end of the spindle carrying frame, paper carrying spindles journaled in the spindle carrying frame, means for automatically drawing together the paper carrying spindles as they discharge their load, a delivery roller journaled in the top of the spindle carrying frame between the feed and delivery ends of the same, a winding roll and the top frame, which in conjunction with the base frame incloses the spindle carrying frame and interior mechanism, a delivery roller journaled in the top frame vertically above the delivery roller in the spindle carrying frame when the several parts are assembled, and a stamp located between the delivery rolls and the delivery end of the register, substantially as specified.

8. An autographic register consisting of a base frame, a chamber in one side thereof, ribbon carrying spindles journaled in the chamber, the spindle carrying frame, a roller journaled at the top of the feed end of the spindle carrying frame, paper carrying spindles journaled in the spindle carrying frame, means for automatically drawing together the paper carrying spindles as they discharge their load, a delivery roller journaled in the top of the spindle carrying frame between the feed and delivery ends of the same, a winding roll, means for automatically revolving the winding roll, the top frame which in conjunction with the base frame incloses the spindle carrying frame and interior mechanism, a delivery roller journaled in the top frame vertically above the delivery roller in the spindle carrying frame when the several parts are assembled, a stamp located between the delivery rolls and the delivery end of the register, substantially as specified.

9. An autographic register consisting of a base frame, a chamber in one side thereof, ribbon carrying spindles journaled in the chamber, the spindle carrying frame, a roller journaled at the top of the feed end of the spindle carrying frame, paper carrying spindles journaled in the spindle carrying frame, means for automatically drawing together the paper carrying spindles as they discharge their load, a delivery roller journaled in the top of the spindle carrying frame between the feed and delivery ends of the same, a winding roll and the top frame, which in conjunction with the base frame incloses the spindle carrying frame and interior mechanism, a delivery roller journaled in the top frame vertically above the delivery roller in the spindle carrying frame when the several parts are assembled, a stamp located between the delivery rolls and the delivery end of the register, and a cushion on the spindle carrying frame vertically below the said stamp, substantially as specified.

10. An autographic register consisting of a base frame a chamber in one side thereof, ribbon carrying spindles journaled in the chamber, the spindle carrying frame, a roller journaled at the top of the feed end of the spindle carrying frame, paper carrying spindles journaled in the spindle carrying frame, means for automatically drawing together the paper carrying spindles as they discharge their load, a delivery roller journaled in the top of the spindle carrying frame between the feed and delivery ends of the same, a winding roll, means for automatically revolving the winding roll, the top frame, which in conjunction with the base frame incloses the spindle carrying frame and interior mechanism, a delivery roller journaled in the top frame vertically above the delivery roller in the spindle carrying frame when the several parts are assembled, a stamp located between the delivery rolls and the delivery end of the register, and a cushion on the spindle carrying frame vertically below the said stamp, substantially as specified.

11. An autographic register consisting of a base frame, a chamber in the side of the base frame, ribbon carrying spindles journaled in the chamber, a spindle carrying frame mounted in the base frme, a roller journaled at the top of the feed end of the spindle carrying frame, paper carrying spindles journaled in the spindle carrying frame, means for automatically drawing together the paper carrying spindles as they discharge their load, a delivery roller journaled in the top of the spindle carrying frame between the feed and delivery ends, a winding roll journaled in the base frame, a spring operated gear to automatically turn the winding roll, a tension roll journaled in the base frame around which passes the paper from one of the paper carrying spindles to the winding roll, the top frame, which in conjunction with the base frame incloses the interior mechanism, a delivery roller journaled in the top frame vertically above the delivery roller in the spindle carrying frame when the several parts are assembled, and a printing stamp between the delivery rollers and the delivery end of the register, substantially as specified.

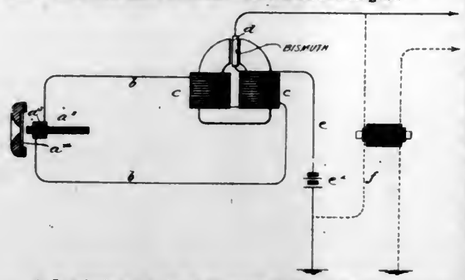
12. An autographic register consisting of a base frame, a chamber in the side of the base frame, ribbon carrying spindles journaled in the chamber, a spindle carrying frame mounted in the base frame, a roller journaled at the top of the feed end of the spindle carrying frame, paper carrying spindles journaled in the spindle carrying frame, means for automatically drawing together the paper carrying spindles as they discharge their load, a delivery roller journaled in the top of the spindle carrying frame between the feed and delivery ends, a winding roll journaled in the base frame, a spring operated gear to automatically turn the winding roll, a tension roll journaled in the base frame around which passes the paper from one of the paper carrying spindles to the winding roll the top frame which in conjunction with the base frame incloses the interior mechanism, a delivery roller journaled in the top frame vertically above the delivery roller in the spindle carrying frame when the several parts are assembled, a printing stamp between the delivery rollers and the delivery end of the register, and a cushion on the spindle carrying frame vertically below the printing stamp, substantially as specified.

543,843. TELEPHONE. JOHN S. BIGGAR, San Francisco, Cal. Filed Nov. 16, 1894. Serial No. 529,024. (No model.)

Claim.—1. In telephony, a means of varying the resistance of an electric circuit which consists of an electro-magnet, in the magnetic path of which is located a portion of said circuit consisting of material whose resistance to the flow of current can be varied by the passage of magnetic lines of force through it.

2. In a telephone transmitter, a section of the circuit consisting of material capable of changing its electric conductivity, when cut by magnetic lines of force, in combination with an electro-magnet in whose field of force said section of the circuit is located.

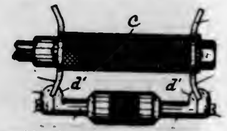
3. In a telephone transmitter, a section of the circuit consisting of material capable of changing its electric conductivity when cut by magnetic lines of force, in combination with an electro-magnet in whose field of force said section of the circuit is located, and a magneto-electric instrument in circuit with said electro magnet.



4. In telephony, a circuit in which electrical undulations are set up by sound waves, in combination with an electro-magnet in said circuit, and a main circuit, a portion of which, consisting of material capable of changing its electric conductivity when cut by magnetic lines of force, is located in the field of force of said magnet, for the purpose set forth.

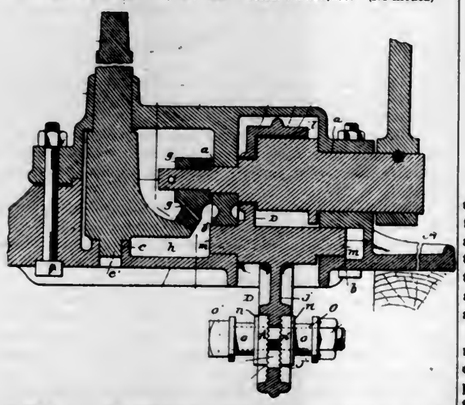
5. In telephony, a circuit in which electrical undulations are set up by sound waves, in combination with an electro-magnet in said circuit, and a main circuit, a portion of which, consisting of a piece of bismuth, is located in the field of force of said magnet, for the purpose set forth.

543,844. BALANCE ATTACHMENT FOR BICYCLE-PEDALS. JNO. R. BLIVEN, Daytona, Fla. Filed Nov. 19, 1894. Serial No. 529,256. (No model.)



Claim.—In combination with an axially supported pedal, having radial lips c' as set forth, right and left hand threaded rods whose outer ends are formed as clamps to engage said lips, and a threaded weight, adjustably mounted upon said threaded rods, all substantially as and for the purpose specified.

543,845. AUTOMATIC SWITCH-STAND. NATHANIEL W. BOYD, Carlisle, Pa. Filed May 23, 1895. Serial No. 550,415. (No model.)



Claim.—1. The combination with a horizontal, weighted rock-shaft, of a rocking lever geared to said shaft, a switch rod, and mechanism for connecting the switch rod to said rocking lever at variable distances from its fulcrum, substantially as and for the purposes described.

2. The combination with a rock shaft, of a rocking lever fulcramed independently of the rock shaft and geared to said rock shaft, and a switch rod coupled to the rocking lever by an adjusting device which permits the point of connection to be changed at variable distances from the center of oscillation of said rocking lever, substantially as and for the purposes described.

3. The combination with a rock shaft, and a rocking lever geared therewith and provided with a slotted roughened shank, a switch rod having a jaw, roughened washers fitted against the roughened faces of the shank, and a pivotal bolt, substantially as and for the purposes described.

4. A rocking lever provided with an internal gear, in combination with a shaft having a pinion which meshes with the internal gear of said rocking lever, and a switch rod coupled to the rocking lever, substantially as described.

5. The rocking lever provided with a slotted head and an internal gear; in combination with a shaft which passes through the slot in the lever and carrying a pinion which meshes with the internal gear of the lever, and a switch rod coupled to the lever, substantially as and for the purposes described.

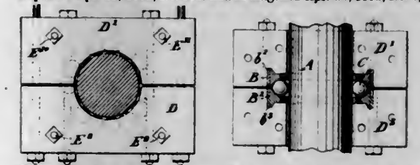
6. The combination with a bed, of a rock shaft journaled therein and provided with a segmental pinion, a slotted rocking lever which is fulcrumed at one side of and parallel to the axis of the shaft and provided with an internal gear which meshes with the pinion of the rock shaft, and a switch rod which is coupled adjustably to the rocking lever, substantially as and for the purposes described.

7. The combination with a bed, of an upright rocking lever fulcrumed in the bed and provided with an internal gear at its upper slotted end and with a pendent shank, a rock shaft passing through the slotted end of the rocking lever and carrying a pinion which meshes with the internal gear of said lever, and a switch rod coupled to the pendent shank of the rocking lever, substantially as and for the purposes described.

8. The combination of a rock shaft provided at an intermediate point of its length with a segmental pinion and at one end with a beveled gear, a signal staff carrying a gear which meshes with the bevel gear on the rock shaft, a slotted rocking lever provided with an internal gear and said lever fitted on and arranged in relation to the rock shaft to have its internal gear mesh with the pinion on said rock shaft, and a switch rod coupled to the rocking lever, substantially as described.

9. The combination with a bed and a cap forming the housing, of a rock shaft journaled therein and provided with a segmental pinion at an intermediate point of its length and with a beveled gear at one end, a signal staff stepped in the bed and fitted in the cap and provided with a beveled gear which meshes with the corresponding gear on the end of said rock shaft, a rocking lever fulcrumed below the rock shaft and having a slotted internally geared head which is fitted around the rock shaft to have the segmental pinion thereon mesh with the internal gear, and a switch rod coupled to a pendent shank on the rocking lever, substantially as and for the purposes described.

543,846. STAMP-BATTERY. THOMAS A. BURROWS and HERMAN MARTIENSSEN, Johannesburg, South African Republic. Filed July 11, 1892. Serial No. 439,653. (No model.) Patented in South African Republic Apr. 26, 1892, No. 362, and in England Apr. 27, 1892, No. 7,975.



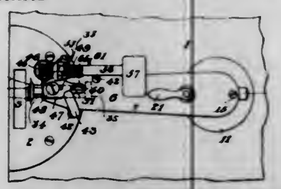
Claim.—1. In a stamp-battery, the combination, with a stem or stamp-rod, of two rings surrounding the stem or rod, the opposing faces of the rings being grooved and forming a ball-race, a series of anti-friction balls between the rings, and four supporting pieces bolted together by horizontal and vertical bolts, the horizontal bolts serving to secure the upper and lower pieces respectively to the framework and the vertical bolts to connect the upper and lower pieces and effect adjustment, substantially as herein set forth.

2. In a stamp-battery, the combination, with a stem or stamp-rod, of two solid grooved rings slipped over the stem or rod, a series of anti-friction balls working in the grooves of the rings, and four pieces of wood or metal held together and to the framework by vertical and horizontal bolts, these bolts serving to bring the rings toward each other to compensate for wear, and enabling the stem or rod to be readily taken out when required, substantially as herein set forth.

3. In a stamp-battery, the combination, with a series of anti-friction balls C and the two rings B and B', of the supporting blocks D, D', D^2 and D^3 and the bolts whereby the said blocks are fastened together, substantially as and for the purposes herein set forth.

543,847. TRIMMING ATTACHMENT FOR SEWING-MACHINES. HENRY CASE, Gloversville, N. Y. Filed Aug. 10, 1894. Serial No. 519,951. (No model.)

Claim.—1. A rotary cutter, a cutter shaft and means to rotate it, combined with a cutter guard, a rigid hood-bracket in which the cutter shaft is arranged, a post supporting the hood-bracket and cutter shaft, and a bearing applicable to a sewing machine bed-plate and receiving the post to permit the rotation of the post to bring the cutter into and out of operative position, and means to fasten the hood-bracket down upon and to the bed-plate to hold the hood-bracket in operative position and in fixed relation to the cutter-guard, substantially as described



2. A rotary cutter, a cutter shaft and means to rotate it, combined with a rigid hood-bracket in which said shaft is arranged and supported, and means whereby the said hood-bracket may be detachably connected to a sewing machine bed or cloth plate at one end and an adjusting medium applied to the other end of the said hood-bracket to adjust it so as to support the cutter at the proper height relative to the throat plate, substantially as described.

3. In a trimming attachment for sewing machines, a rotary cutter, a shaft therefor and means to support and drive the said shaft, combined with a rotary sharpener for such cutter, a cutter guard and gear wheels of different diameters interposed between said guard and the cutter shaft whereby the said guard is positively rotated, and the fin or feather raised on the cutter by the sharpener is removed, substantially as described.

4. In a trimming attachment for sewing machines, the combination with a rotary cutter, a cutter-shaft, means to support and drive the said cutter shaft, and a rotary sharpener for such cutter, of a cutter-guard, a shaft upon which it is mounted, a gear wheel on the cutter-shaft and a smaller gear wheel on the guard shaft in mesh with the said gear wheel on the cutter shaft to drive the cutter guard at a greater speed than the cutter and thereby remove the fin or feather from the cutter which is raised by the sharpener, substantially as and for the purpose described.

5. A seam trimming attachment for sewing machines comprising a rotary cutter, a shaft therefor, a hood-bracket in which said shaft is supported and having a detachable pivotal connection with the bed or cloth plate of a sewing machine, a driven gear wheel on said shaft, a driving gear wheel, a pawl and ratchet mechanism connected with the said driving gear wheel, and a retaining spring 30 applied to said driving wheel, and means to impart motion to said driving wheel's pawl and ratchet mechanism, substantially as described.

6. In a trimming attachment for sewing machines, the combination of a rotary cutter, a shaft therefor, means to support and drive such shaft, a rotary sharpening device, such as an emery wheel or oil stone, a longitudinally slidable shaft to carry and drive said sharpening device, said shaft being driven from the cutter shaft, a spring to hold the sharpening device in contact with the cutter and means to retract the slidable shaft to throw out of contact the sharpening device and cutter and so retain positively the sharpening device out of contact, substantially as described.

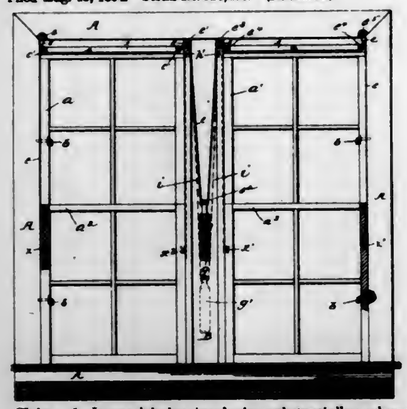
7. In a trimming attachment for sewing machines, the combination of a rotary cutter, a shaft therefor, means to support and drive the said shaft, a rotary sharpening device such as an emery wheel or oil stone, a movable head in which the said sharpening device is supported, a shaft and interposed gearing for rotating the said sharpening device, and gear wheels connecting the said shaft and the cutter shaft to transmit motion from the latter to the former, substantially as described.

8. In a trimming attachment for sewing machines, a rotary cutter, a shaft, a hood-bracket in which said shaft is supported and means to drive said shaft, a movable head having a laterally extended plate movably supported upon the said hood-bracket, a sharpening device arranged within said head, a sliding shaft united with said head, a spring normally projecting the said head and its sharpening device toward the cutter, a push rod and means to lock it to retract said head from the cutter, and means to drive the sliding shaft and to communicate its motion to the sharpening device, substantially as described.

9. In a trimming attachment for sewing machines, a cutter, a cutter shaft, a support for the latter, means to drive the said cutter shaft, a slidable shaft provided with a gear wheel which is adapted to be moved into and out of mesh with a driving gear wheel on the cutter shaft, and a sharpening device carried on one end of the slidable shaft and adapted to be rotated by said slidable shaft, substantially as described.

543,848. SASH-BALANCE. HENRY P. CAYCE, McGregor, Tex.

Filed Aug. 15, 1894. Serial No. 520,418. (No model.)

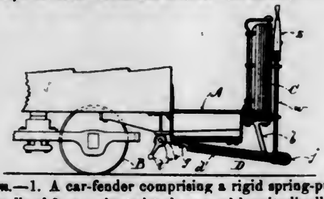


Claim.—1. In a sash balancing device, substantially as shown and described, the window-frame A, having the single central partition or weight-box B; sashes a, a', a^3 and a^4, working in said frame; sashes a and a', provided with grooves f; pulleys c' and c^4, journaled in said grooves in the upper part of said sashes a and a'; pulleys c, c', c^2 and c^3, secured to the lower face of the upper part of the frame A; cord e, secured to sash a^3, at point x, passing thence over pulley c, under pulley c', over pulley c', thence under pulley c^3, of the weight g, thence over pulley c^2, under pulleys c^4, over pulley c^5, and thence down along the edges of sashes a' and a^2, and secured to sash a^3, at the point x', substantially as shown and described and for the purposes set forth.

2. In a sash balancing device, the combination of the frame A, central weight-box B, weight g, operating in said weight box; cord e, having its ends attached to the outer edges of the lower sash, thence running over and under pulleys secured to the top part of the top sash, and to the under face of the top part of the frame, substantially as shown and described and for the purposes set forth.

543,849. CAR-FENDER. RUFUS O. CLARK, Marlborough, Mass.

Filed Apr. 15, 1893. Serial No. 470,478. (No model.)



Claim.—1. A car-fender comprising a rigid spring-pushed horizontally inclined frame adapted to be moved longitudinally of the car and housed under the platform.

2. A car-fender comprising a sliding frame supported from the platform and horizontally inclined downward; locking mechanism for said frame; and a spring for projecting the frame beyond the dasher.

3. A car-fender comprising a spring pushed horizontally inclined frame fitted to slide in ways supported from the car and project beyond the platform thereof; mechanism for locking said frame against said spring when housed and a pneumatic shoe or cushion on the outer end of said frame, substantially as described.

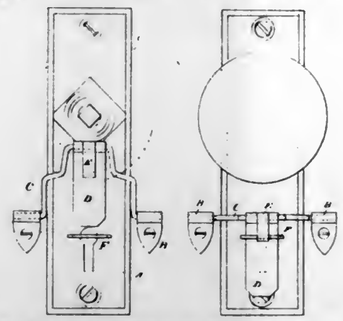
4. In a car-fender a horizontally inclined sliding frame supported from the car platform; push-spring for projecting said frame; mechanism for housing said frame against the force of the spring, and a device for locking the frame when housed combined and arranged substantially as described.

5. In a car-fender the combination of the horizontally inclined spring-pushed frame fitted to slide under the car-platform; the sliding locking-rod engaging said frame and operative from said platform.

6. In a car-fender the ways supported from the car-platform in combination with the fender-frame, D, fitted to slide therein; the pneumatic-shoe, j, on the outer end of said frame; the push-springs, q, for forcing said frame outward and mechanism for locking said frame when housed in said ways, substantially as described.

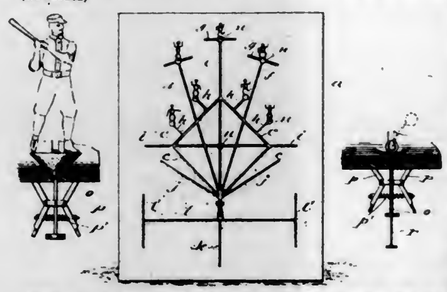
7. In a car-fender the inclined ways, d, supported from the car-platform in combination with the frame, D, fitted to slide in said ways and provided with the pneumatic shoe, j, the push-springs, q, for projecting said frame; the shaft, r, journaled on the car; a chain or belt connecting said frame and shaft whereby the frame may be housed.

543,850. KEY-FASTENER. EVEN I. COHN and THOMAS H. CAMPBELL, Seattle, Wash. Filed Mar. 16, 1895. Serial No. 542,003. (No model.)



Claim.—The combination in a key lock of an arm pivoted to the door above the key hole and so that it may be swung up against the side of the door or extended horizontally therefrom, a keeper pivoted to the outer end thereof so that it may be entered in the key handle, of a latch or hook pivoted to the arm at the same point as the keeper and adapted to hook over the key handle on the side of the keeper away from the door, substantially as shown and described.

543,851. BASE-BALL-GAME-ILLUSTRATING APPARATUS. SAMUEL R. CROWDER, Richmond, Va. Filed Dec. 19, 1894. Serial No. 532,329. (No model.)



Claim.—1. In an apparatus for graphically illustrating a base ball game, the combination of a board provided with a series of slots forming the diamond and another series of slots radiating from the home-base outwardly into the various fields, and a series of symbols representing the various players, said symbols working in said slots, substantially as described.

2. In an apparatus for illustrating a game of base ball, the combination of a support having formed in it a series of slots forming the diamond, another series of slots extending from the former slots into the various fields, a slot extending rearwardly from the home-base and another slot intersecting the latter slot behind the home-base, and a series of symbols representing the players and adapted to be moved around said in slots, substantially as described.

3. In an apparatus for illustrating a game of base-ball, a support provided with slots forming the diamond, the two slots forming the outer sides of the diamond being provided with outwardly extending branch slots, and a series of symbols working in said slots and representing the various players, substantially as described.

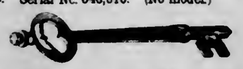
4. The combination of a slotted board representing a base ball field, a series of symbols indicating the players and working in said slots, and a symbol of a base ball also working in said slots, as and for the purposes herein shown and described.

5. The combination of a slotted board representing a base ball field, a series of symbols representing the players working in said slots, a symbol of a base ball also working in said slots, this symbol being carried by a bent rod adapted to be raised and turned to one side of the home base, as and for the purpose described.

6. The combination of a board representing a field, said board being provided with slots forming the diamond, slots extending radially into the various fields, slots j extending ontward from the home base and a transverse slot intersecting the field slots and the diamond slots, and a series of symbols representing the players, substantially as described.

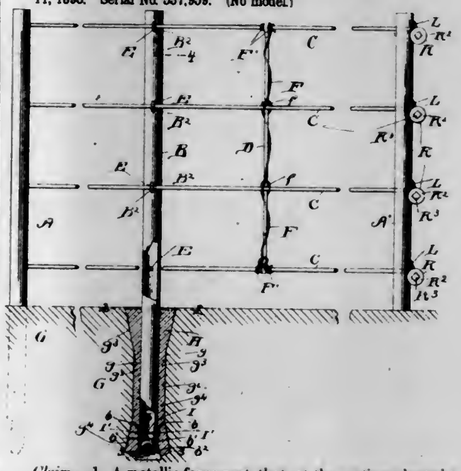
7. The combination of a board slotted to represent a base ball field and supported obliquely, blocks n working in said slots and carrying the symbols indicating the various players, said blocks having their under sides formed conical, and means for clamping the blocks in their adjusted positions, substantially as described.

543,852. KEY. WILLIAM H. DAGGETT, Somerville, Mass. Filed May 10, 1895. Serial No. 548,816. (No model.)



Claim.—The combination of a key and a clasp B, each end terminating in a half screw forming together the screw threaded shank C, said clasp surrounding the portion of the key forming the ring or the shank and being secured thereto by the nut D, fitting onto the shank C, all substantially as described.

543,853. FENCE. SIMEON C. DAVIS, Cleveland, Ohio. Filed Feb. 11, 1895. Serial No. 537,959. (No model.)



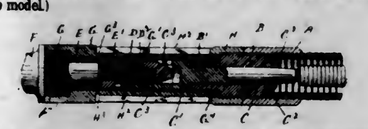
Claim.—1. A metallic fence-post, that, at the portion adapted to enter the ground, is provided with two plates b' b' secured to the outer surface of opposite sides, respectively, of the post, said plates being bent laterally and outwardly to form members b b, substantially as and for the purpose set forth.

2. The combination with the body-portion of a metallic fence-post, of two plates b' b' engaging the outer surface of opposite sides, respectively, of the post, and a pin or member extending through the body-portion of the post and instrumental in securing both of said plates in position, said plates being bent laterally and outwardly to form members b b, substantially as shown, for the purpose specified.

3. The combination with a metallic fence-post provided with a V-shaped lower end, of the two plates b' b' engaging the outer surface of opposite sides, respectively, of the post, a pin extending through said plates and post and provided with heads engaging the outer surfaces of the plates, said plates extending downwardly and having their lower ends bent to partially embrace the edges of the V-shaped end of the post, said plates being also bent laterally and outwardly to form members b b, substantially as shown, for the purpose specified.

4. The combination with the metallic post extending into the ground and provided with laterally-projecting members below the surface of the ground, of an anchorage of cement engaging and surrounding the underground portion of the post, said anchorage being gradually enlarged in thickness from the central part of said portion of the post both upwardly and downwardly, substantially as shown, for the purpose specified.

543,854. DENTAL-ENGINE HANDPIECE-COUPLING. CHARLES H. DAVIS, Worcester, Mass. Filed May 13, 1895. Serial No. 549,160. (No model.)

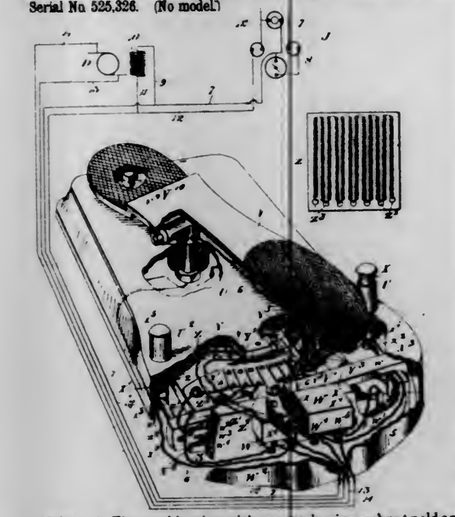


Claim.—1. In a coupling for dental engines, the combination of the barrel G provided with an annular groove G^2, and an inclosing split sleeve having elastic sections H', and ribs H^2 adapted to engage said annular groove G^2, substantially as described.

2. In a coupling for dental engines, the combination of the rotating spindle C provided with elastic jaws C^3, having faces C^4 forming a central chamber adapted to receive an angular shank, a spindle E and an angular shank D having sides D' and a tapered end D^3 and carried by said spindle and arranged to enter said elastic jaws, substantially as described.

3. A coupling for dental engine hand-pieces comprising a two-part spindle having their axes in alignment and detachably united by a telescopic joint, and a two-part casing, wherein said spindle is journaled, also detachably united by a telescopic joint, said joints being of such construction that one part thereof is elastic and capable of expansion by the entry therein of the other part, whereby the same are held in place and provision is made for variation in alignment of the parts, substantially as described.

543,855. SHORT-CIRCUITING DEVICE FOR STOPPING DENTAL MOTORS. FRANCIS N. DENISON, Toronto, Canada. Filed Oct. 9, 1894. Serial No. 525,326. (No model.)



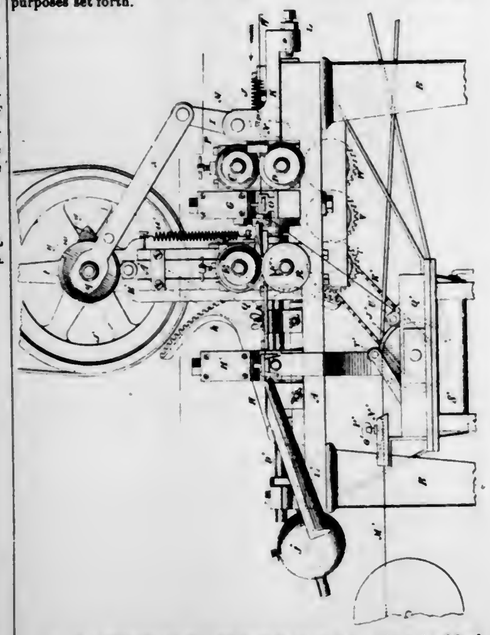
Claim.—1. The combination with a motor having a shunt neld and circuit completed through a foot switch as specified and the foot switch pedal pivoted and swiveled as specified and having a plug of insulating material extending downwardly from the toe portion through which runs the main circuit wire to the spring contact plate designed to be movable upon the plates of a resistance coil, so as to vary the amount of current through the main circuit and consequently the rate of speed of the motor, of two arc-shaped contact plates insulated from each other and each connected to the poles of the armature and a spring contact plate secured near the bottom of the toe plug of the pedal, insulated from the spring contact plate movable upon the plates of the resistance coil, and so arranged that when the heel of the pedal is pressed down such contact spring will be brought into sliding contact with the arc-shaped plates so as to bridge them as and for the purpose specified.

2. In combination with the motor having a shunt field and a circuit, a foot switch interposed in said circuit and comprising a hollow base plate having a rheostat beneath the same, the series of contacts connecting therewith, the arc shaped contact plates connected with the poles of the armature, and the foot lever pivoted to swing both vertically and laterally, and having a contact arm for engaging the said series of contacts as the pedal is swung laterally, and a second contact arm for connecting the two arc shaped plates as the pedal is swung vertically, substantially as described.

543,856. MACHINE FOR MAKING CORSET-STIFFENERS. JOHN DRAHER, Waterbury, Conn., assignor to Moritz Cohn, New York, N. Y. Filed Apr. 27, 1894. Serial No. 509,226. (No model.)

Claim.—1. In a machine for making covered corset stays the two pairs of feed rolls, and mechanism substantially as described for reciprocating the first pair of rollers toward and from the second pair thereof, combined with the cutters and folder intermediate said pairs of rolls, the whole being constructed and arranged to operate, substantially as and for the purposes set forth.

2. In a machine for making covered corset stays, the two pairs of feed rolls, and mechanism substantially as described for reciprocating the first pair of said rolls toward and from the second pair thereof, combined with the cutters and folder intermediate said pairs of rolls, and the cutters beyond the second pair of rolls, the whole being constructed and adapted to operate substantially as and for the purposes set forth.



3. In a machine for making covered corset stays, the pair of feed rolls mounted on a movable carriage, mechanism substantially as described for reciprocating said carriage from the main driving shaft, and the pair of feed rolls in line with and greater in diameter than the first mentioned rolls, combined with the cutters and folder intermediate said rolls, and the cutters beyond the second pair of said rolls; substantially as and for the purposes set forth.

4. In a machine for covering wire, the pair of reciprocating feed rolls, the pair of feed rolls mounted in stationary bearings, the shaft extending from one of said rolls and connected by a chain of gearing with the others thereof, the loose gear and pawl and fixed ratchet on said shaft, the segmental gear engaging said loose gear, the drive wheel, and the connecting rod intermediate said drive wheel and segmental gear, combined with the cutters and folder intermediate said pairs of rolls and the cutters beyond the second pair of rolls; substantially as and for the purposes set forth.

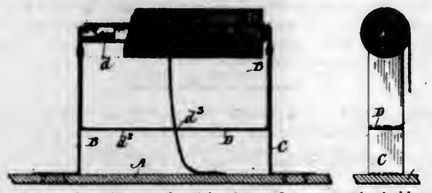
5. In a machine for covering wire, the two pairs of feed rollers, and mechanism for reciprocating the first pair of same, combined with the cutters and folder intermediate said pairs of rollers, the cutters beyond the second pair of rollers, the rock-shaft having cams in engagement with arms operating said cutters, the cam on the main driving shaft, the vertical slide engaged by said cam, and the arm on the rock-shaft below the lower end of said slide; substantially as and for the purposes set forth.

6. In a machine for covering wire, the two pairs of feed rollers, the rocking lever connected with the carriage of the first pair of said rollers, the spring acting on said lever, the connecting rod intermediate said lever and the driving shaft, and the cam on said shaft engaging said rod, combined with the folder and cutters intermediate said pairs of rollers; substantially as and for the purposes set forth.

7. In a machine for covering wire, the two pairs of feed rollers, and mechanism for reciprocating the first pair thereof, combined with the cutters and folder intermediate said pairs of rollers, and mechanism for revolving said rollers from the drive wheel, said mechanism consisting of the segmental-gear, the adjustably mounted connecting rod intermediate said gear and wheel and the shaft having the loose gear and clutch at one end and at the other connected with the train of gearing for said rollers; substantially as and for the purposes set forth.

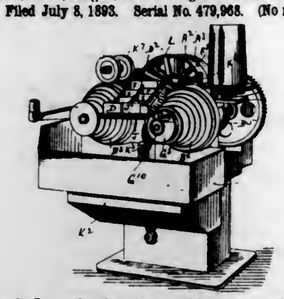
8. In a machine for making covered corset stays, the two pairs of feed rolls, mechanism for revolving the same from the driving shaft, and mechanism for reciprocating one pair of said rolls, combined with the paste roller for the strip of paper, the folder and cutters intermediate said pairs of rolls, gearing intermediate said roller and the gearing operating the said feed rolls, and the cutters beyond the second pair of feed rolls; substantially as and for the purposes set forth.

543,857. TWINE-HOLDER. WILLIAM H. DUSTIN, Lawrenceburg, Tenn. Filed Apr. 27, 1895. Serial No. 547,296. (No model.)



Claim.—As an improved article of manufacture, a twine holder or other analogous device comprising in its construction two vertical yielding attaching legs which are free at their upper ends and, when the holder is in position, are secured at their lower ends, and a U-shaped spring piece extended down between the legs about two thirds their length parallel therewith and horizontally across the entire width of the holder, and connected with the legs; and inwardly extending journals at the upper ends of the vertical legs, whereby the flexibility of the vertical legs is stiffened at their journal ends, and the upper ends of the legs are drawn to their inward normal positions by the horizontal portion of the U shaped spring, substantially as described.

543,858. WIRE-DRAWING MACHINE. VICTOR E. EDWARDS, Worcester, Mass., assignor to the Morgan Construction Company, same place. Filed July 8, 1893. Serial No. 479,968. (No model.)



Claim.—1. In a wire drawing machine, the combination with a pair of wire drawing drums, of an inclined die box placed between said drums, a series of dies held in said die box at different vertical planes, and means for feeding lubricating liquid to said die box at its highest side, whereby said lubricating liquid is caused to flow over said dies in succession, substantially as described.

2. In a wire drawing machine, the combination with a pair of wire drawing drums, of a die box placed between said drums and in an inclined position, means for feeding lubricating liquid to its highest side, whereby said liquid is caused to flow over said inclined die box, and a series of partitions placed transversely to the flow of said liquid over the surface of the die box, whereby said stream is impeded, and a series of dies held in the spaces between said partitions, substantially as described.

3. In a wire drawing machine, the combination of wire drawing drums, an inclined die box arranged to receive a flowing stream of lubricating liquid, transverse partitions of varying vertical height forming a series of dams over which said stream flows, and a series of dies held in said box, substantially as described.

4. In a wire drawing machine, the combination with a pair of wire drawing drums, of a die box held between said drums, and having side walls, as D^3 and D^4, parallel with the axes of said drums, means for feeding lubricating liquid to said die box and aprons, as at L, extending from the sides of said die box over said drums, whereby the overflow at the sides of said die box is conducted to and delivered upon said drums, substantially as described.

5. In a wire drawing machine, the combination of a pair of wire drawing drums, a wire block carried upon the end of one of said drums, wire gripping mechanism carried by said wire block and a pivoted die holding lever, capable of an angular motion by which the wire is allowed to traverse upon said block, substantially as described.

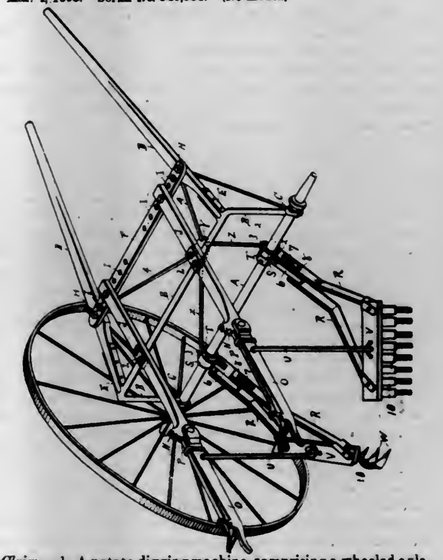
6. In a wire drawing machine, the combination of shaft B, a plate G concentric with said shaft and having a gib G', a wire block G^2, held by said plate, and having a sleeve G^4 inclosing said shaft and a screw G^7 carried by said block and acting against the end of said shaft to operatively connect the block and plate, substantially as described.

7. The combination with a drawing block of a bar H pivoted at one end to said block and having teeth H' at its opposite end arranged in a plane corresponding with the line of draft, a jaw H^3, provided with teeth H^5 arranged in a plane corresponding with the line of draft, lugs H^2 projecting from the jaw H^3, at right angles to the plane of the teeth and pivoted at their ends to said bar H, said bar H having a shoulder H^7, and said jaw H^3 having an opposing wall H^6, a spring inserted between said shoulder and said wall to close the teeth of the jaw upon the teeth of said bar and a projecting tail piece H^4, by which the jaw is opened, substantially as described.

8. In a wire drawing machine, the combination with a pair of wire drawing drums, of a die box placed between said drums having aprons L, L, extending from the sides of said box over said drums, a receiving pan K beneath said drums, a strainer K', a trough K^1, pipe K^2, pump K^4, valve K^5, in the pipe K^2 and a valve stem K^6 extending from the valve K^5 to the front of the machine, substantially as described.

9. In a wire drawing machine, the combination of a pair of conical wire drums B^2 and B^3, carried on the projecting ends of shafts B and B^3 having parallel axes, a die box placed above the plane of said shafts and at an inclination corresponding to the inclination of the upper sides of said conical drums, said box having side walls D^3 and D^4, provided with openings to receive the wire, transverse partitions at right angles to said side walls, and dies held between said transverse partitions, substantially as described.

543,859. POTATO-DIGGER. LEWIS FETCH, Van Buren, Ind. Filed Mar. 4, 1895. Serial No. 540,551. (No model.)



Claim.—1. A potato digging machine, comprising a wheeled axle, the elongated inverted U-bar attached to and over said axle, the thills attached to said bar, a transverse bar on said thills provided with a series of adjusting holes at the ends, the longitudinal ratchet-bars adjustably attached to the inverted U-bar and to the transverse bar, and provided with the ratchet at the ends, the lifting-levers, the tooth-bars pivoted to, and laterally adjustable on the axle, and provided with the digging-rakes at the ends, and the rods jointedly connecting the lifting-levers and digger rakes, substantially as set forth.

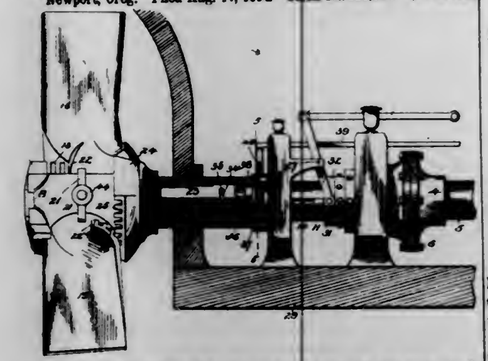
2. A potato digging machine, comprising a wheeled-axle, the elongated U-bar attached to and over said axle the thills attached to said bar, a transverse bar on said thills provided with a series of adjusting holes at the ends, the longitudinal ratchet-bars adjustably attached to the inverted U-bar and to the transverse bar and provided with the ratchet at the ends, the lifting-levers, the tooth-bars pivoted to, and laterally adjustable on said axle, and provided with digger-rakes at the ends, rods jointly connecting the lifting-levers and digger-rakes, the draft link, rods jointedly attaching said link and axle, and rods jointedly attached to said link and to the adjusting holes of the transverse bar, substantially as set forth.

3. In a potato-digger, the digger-rakes and two draw-bars for each, the rear ends of which draw-bars are pivotally attached one to each end of the digger-rakes, and their forward ends being attached to the machine so as to be adjusted longitudinally either independently or in unison to change the angle or position, or both the angle and position, of the digger-rakes, substantially as set forth.

4. The combination of a wheeled axle, digger-rakes, draw-bars attaching said digger-rakes to the axle, the ratchet-bars and their

lifting-levers pivoted thereto, and rods jointedly connecting the lifting-levers and digger-rakes, said draw-bars and ratchet-bars with their lifting-levers being laterally adjustable, substantially as set forth.

543,860. PROPELLER. JULIUS W. FLOWERS and MINOR J. FOX, Newport, Oreg. Filed Aug. 17, 1894. Serial No. 520,647. (No model.)

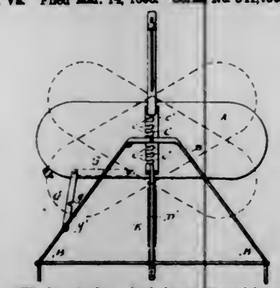


Claim.—1. In a propeller, the combination with the main shaft and a toothed grab secured to one end thereof, of a hub mounted on the end of said shaft, revoluble flukes or blades rotatably mounted on the hub and adapted to be held against movement by engagement with the toothed arms of said grab, means for moving said shaft lengthwise relatively to said hub for disengaging said grab from said flukes, and means for rotating said flukes, substantially as and for the purpose described.

2. In a propeller, the combination with the main shaft and a toothed grab secured to one end thereof, of a hub mounted on the end of said shaft, revoluble flukes or blades rotatably mounted on the hub and having teeth on opposite sides thereof, one set of which teeth are engaged by said toothed grab, a collar mounted for limited rotation on said shaft, a flanged head secured to said collar and provided with teeth which are adapted to engage teeth on the opposite side of said flukes, means for moving said shaft lengthwise relatively to said hub for disengaging said grab from said flukes, and means for rotating said collar, whereby said flukes are turned on their axes, substantially as and for the purpose described.

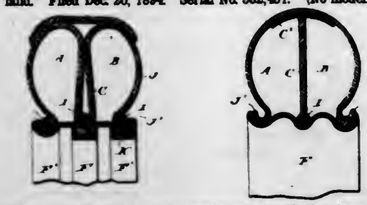
3. In a propeller, the combination with the main shaft and a toothed grab secured to one end thereof, of a hub mounted on the end of said shaft, revoluble flukes or blades rotatably mounted on the said hub having teeth on opposite sides thereof, one set of which is engaged by the toothed arms of said grab, a fixed sleeve surrounding said shaft having a longitudinal slot therein through which passes a pin secured to said shaft, a collar surrounding said sleeve and adapted to engage said pin, a lever pivoted to said collar and fulcrumed in a suitable standard or support, whereby said shaft may be moved lengthwise relatively to said hub, a second sleeve mounted for limited rotary movement on said first sleeve, and provided with notches at its rear end, a flanged head secured to said sleeve and having teeth which are adapted to engage the other set of teeth on said flukes, a clutch having teeth adapted to engage the notches in said sleeve, means for throwing said clutch into and out of engagement with said sleeve, and afterward rotating the same, substantially as and for the purpose described.

543,861. CHURN. JAMES E. GIBB and JAMES R. SHIPMAN, Bridgewater, Va. Filed Mar. 14, 1895. Serial No. 541,736. (No model.)



Claim.—The herein described churn comprising the rocking body, having the plates or castings C, one secured to each side thereof, and having each a series of open bearing slots at different heights, a support having side arms between which the body sets, said arms having studs or journals adapted to engage said slots, hand and foot levers detachably connected to said plates or castings, a spring connected to said body portion and to the support, a lock for holding said body stationary when desired, and a cover arranged to act as a cream brake, substantially as specified.

543,862. WHEEL-TIRE. CHRISTIAN H. GRAY, Silvertown, England. Filed Dec. 20, 1894. Serial No. 532,431. (No model.)



Claim.—1. In a wheel the combination with the rim of a flexible hollow tire and an unstretchable diaphragm secured to the tire near the tread surface and extended therefrom into operative connection with the rim, substantially as set forth.

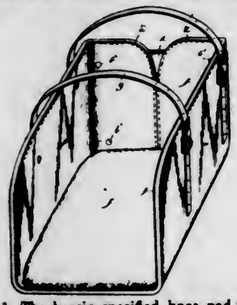
2. In a wheel the combination with the rim of a flexible hollow tire formed of a folded strip or sheet and an unstretchable diaphragm secured to the tire near the tread surface and extended therefrom into operative connection with the rim, the unstretchable diaphragm being formed by adjacent folded portions of the tire, substantially as set forth.

543,863. DOOR-CHECK. JOSIAH T. HAIR, Chicago, Ill., assignor of forty-nine one-hundredths to Frank C. Butts, same place. Filed Apr. 18, 1895. Serial No. 546,223. (No model.)



Claim.—The combination with a base-plate secured to the door and having a rib at a right angle thereto, provided with a projection on the side thereof about flush with the surface of the door-jamb, a ball or knob on said rib projecting beyond the base-plate, a pivotal lever having a longitudinal slot and secured to the jamb of a door in alignment with the rib on the base-plate, said slot adapted to receive at one end thereof the ball or knob, a button pivotally secured on the rib whereby when the button is extended through the slot and turned to an engaging position the face of the lever will be held in contact with the face of the projection on the side of the rib, substantially as described.

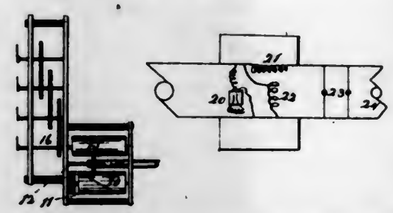
543,864. KNEE-PAD. JAMES W. HAMILTON and JOHN F. SIEBENTHALL, Honey Grove, Tex. Filed Oct. 9, 1894. Serial No. 525,412. (No model.)



Claim.—1. The herein specified knee pad for the purposes described, comprising a blank of flexible material, having parallel slits extending inward a short distance from one end, the side portions being folded vertically on parallel lines, the end portions of the side pieces being bent inward, and the middle portion between the slits being bent vertically and against the said inner bent portions of the side pieces, and firmly secured thereto, a cushion applied to the flat bottom portion of the device, a metal plate constructed to strengthen and brace the device and render the same moisture proof, and attaching straps for bracingly connecting the upper portions of the said side pieces, and serving to secure the pad upon the limb, substantially as set forth.

2. The herein shown and described knee pad for the purposes specified, comprising a leather blank having parallel slits extending inward a short distance from one end, the side portions being folded vertically on parallel lines, the end portions of the side pieces being bent inward and touching at their inner edges, and the middle portion between the slits being bent vertically and against the said inner bent portions of the side pieces and firmly secured thereto, a sheet metal plate applied to the inner side of the flat portion of the device and surmounted by a cushion, and attaching straps for bracingly connecting the upper portions of the said side pieces and serving to secure the pad upon the limb, substantially as set forth.

543,865. ELECTRIC METER. JESSE HARRIS, Lynn, Mass. Filed Oct. 4, 1894. Serial No. 524,869. (No model.)



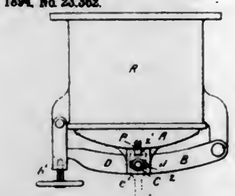
Claim.—1. The combination with a pressure coil and a motor, of a torsion spring connected to said coil and to said motor, whereby the torsion of the spring automatically balances the torque of the coil.

2. A pressure coil and its supporting shaft, in combination with a spring connected to said shaft and brought under tension by the torque of said coil.

3. A pressure coil mounted upon a shaft, a spring connected to said shaft and to a motor, and a motor in combination.

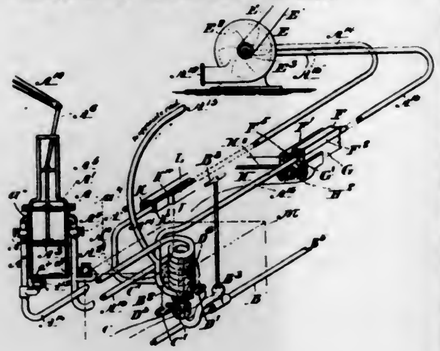
4. A pressure coil mounted upon a shaft, a spring connected to said shaft and to a motor, a current coil and a motor, and means to record the current passing through the current and pressure coils.

543,866. RETORT-LID. JAMES HENDERSON, Osmaston, England. Filed May 14, 1895. Serial No. 549,336. (No model.) Patented in England Dec. 5, 1894. No. 23,362.



Claim.—In combination, vessel R, its lid or cover A, having fixed bracket D with slotted bolt hole *d*, and fixed projection P, the bar B, with bolt C, all arranged substantially as shown and adapted to be operated by the lever L for the purpose set forth.

543,867. CONSTRUCTION AND OPERATION OF ELECTRIC RAILWAYS AND TRAMWAYS. ISAAC W. HETSINGER, Philadelphia, Pa. Filed Apr. 11, 1892. Serial No. 428,664. (No model.)



Claim.—1. In an electric railway, in combination with the trackway consisting of a sectionally solid line of rails along each side thereof for the support of the wheels of cars traveling thereupon, and a continuous electrical supply conducting lead along the said railway for supplying electric energy to the motor dynamo of said cars, said rails and said electrical conductor properly supported in place for permanent use, the series of heat conductors, A^{15} A^{15} A^{16}, extended along said railway, the heat conductors, A^{15} A^{15}, contiguous to the rails of said railway separate therefrom and adjacent thereto and the heat-conductor, A^{16}, contiguous to the electrical conducting lead thereof disconnected from said conducting leads and extended along substantially parallel thereto, and adapted, when filled with a current of heated fluid to communicate the warmth thereof to said rails, and to said conducting leads and the insulating supports thereof, together with means for supplying said heat conductors with a current of heated fluid, under pressure, the whole constructed substantially as and for the purposes described.

2. In an electric railway, in combination with the rails, F F, and the conductor K^{16} and supports K, extended along the lines thereof, the pipes, A^{15} A^{15}, separate from, parallel with, and extended along the said rails and contiguous thereto, and the pipe A^{16}, extended along the said conductor longitudinally, but disconnected therefrom, and said pipes secured to its supports, K K^{16}, and contiguous thereto, together with the forcing pump or blower, A, adapted to force a continuous or intermittent current of heated fluid through the said pipes, substantially as and for the purposes described.

3. In an electric railway, in combination with the rails, F F, and electric supply conductor, K K^{16}, properly supported, the continuous, or sectionally continuous heat pipes, A^{15} A^{15}, A^{16}, extended along the said rails and the said line of conductor, said pipes separate from said rails and said electric conductor, and parallel therewith, and provided with means of forcing currents of heated fluid through said pipes to warm and dry the same, together with one or more heating furnaces, M B^9 A^{15} A^{16}, along the said line of railway constructed and adapted to heat the currents of fluid passing through said pipes, or to restore the heat thereof previously expended along said rails and said conductor, substantially as described.

4. In an electric railway, in combination with the trackway for the wheels of the cars thereof, and an electric supply conductor extended along the same and adapted to supply electric energy to the traveling motor car of said railway, the independent heat pipes, A^{15} A^{15}, extended along said trackway, contiguous to but separate from the rails thereof, and the heat pipe, A^{16}, extended along said supply conductor and contiguous to but continuously disconnected from and parallel with said pipes, and secured to the supports and insulators thereof, together with force pump, or blower, A, adapted to force a current of fluid through said pipes, and one or more heating furnaces, M B^9, along said railway adapted to supply heat to the fluid contained in said pipes, substantially as and for the purposes described.

5. In combination with an electric railway having trackway, F F, and electric supply conductor, K^{16}, extended along the same, the independent tubular heat conductors A^{15} A^{16} extended along the said trackway, and contiguous to the rails thereof, said tubular heat conductors, A^{15} A^{16}, having a suitable heat retarding covering, a^6, and said tubular heat conductor, A^{16}, having a suitable heat retarding jacket or covering, K, either as a supporting jacket, or a simple heat retarder, said covering partially diathermal and so constructed as to gradually and equably distribute the internal heat of said tubular heat conductors to the laterally adjacent and separate metallic conductor and rails, and slowly and continuously dry and warm the same, the whole constructed substantially as and for the purposes described.

6. In an electric railway, in combination with the rails, F F, the continuous line of heat pipes, A^{15} A^{15}, contiguous to said rails but separate therefrom and parallel therewith and adapted to communicate the heat of said pipes thereto, the heat retarding covering, a^6, adapted to permit a slow and gradual emission of said heat to said rails and waterproof protection, a^5, together with means for forcing a current of heated fluid through the said pipes, substantially as and for the purposes described.

7. In combination with the trackway, F F, and supports for the rails thereof, the line of separate and parallel pipes, A^{15} A^{15}, extended along the rails of the said trackway, and contiguous thereto, and supported by the supports thereof, said pipes surrounded by an external and partially diathermal covering adapted to maintain a substantially equable temperature of said pipes against unequal radiation in combination with a force pump or blower, A, adapted to force a current of heated fluid through said pipes, and maintain the same under pressure and means for heating the said fluid, together with separate means for reheating the said fluids in the said pipes in transit at different points along the line thereof, substantially as described.

8. In combination with the rails, F F and supports thereof, the pipes, A^{15} A^{15}, carried along the lines of said rails, and contiguous thereto, said pipes supported in suitable grooved brackets or supports, beneath, and adapted to communicate the heat of their heated fluid

contents to said rails, said pipes having heat retarding covering, a^2, together with force pump or blower, A, and heating furnaces, M B^3, adapted to force a current of heated fluid along the interior of said pipes, substantially as described.

9. In combination with the supports H^4, the double line of rails, F F, supported thereupon, said supports suitably grooved for the reception of a continuous line of pipes, A^{15} A^{15}, and said grooves covered by the under surfaces of said rails, together with line of heat pipes, A^{14} A^{15}, occupying said grooves, beneath said rails, and adapted to communicate the heat thereof to the rails above, and warm and dry the same when required, substantially as described.

10. In combination with the supports, H H, having rail seats, H^4 H^4, and a line of rails, F F, supported thereby, the line of heat pipes, A^{15} A^{15}, extended along each of said rails, F, F, above said supports, and beneath said rails, and contiguous thereto, the said pipes adapted to communicate the heat of their heated contents slowly to said rails, and warm the same when required, substantially as described.

11. In combination with the force-pump or blower, A, having exit pipe, A^{15}, said exit pipe adapted to be heated, and thereby heat the fluid contents thereof, a series of separate heating furnaces, M B^3, together with lines of heated-fluid pipes, A^{15} A^{15}, extended outwardly and with no return circuit of said fluid along the rails, F F, of a railway, and contiguous thereto, and the distant extremities of said pipes being constructed to discharge said fluid from use, said pipes connected with said heating furnaces and adapted to receive a current of fluid under pressure from the said blower, and to transmit the same, when heated under pressure along the said pipes, A^{15} A^{15}, its contained heat being gradually exhausted, substantially as and for the purposes described.

12. In combination with the rails, F F, supports, H H, heat pipes, A^{15} A^{15}, blower, A, and manhole, or chamber, M, along the line of railway, the section of pipe in said manhole, forming a part of the heat pipes, A^{15} A^{15}, and adapted to have forced through said section, the current of fluid under pressure from said blower, a heating-furnace surrounding or contained within said section of pipe, B^3, and adapted, when heated to heat the said fluid during its transmission along the line of railway, substantially as described.

13. In an electric railway, in combination with the bare metal conducting lead, K^{10}, longitudinally exposed to contact with the current-gathering devices of an electric motor car, and the supporting insulators therefor, a heat pipe, A^{14}, extended along the said insulators and supported thereby, and contiguous to said conducting lead, but separate therefrom and located between said conductor and its permanent supports, and adapted to warm and dry the said insulators without unduly heating said conducting lead, and prevent the dissipation of electric energy, together with means for forcing a current of fluid under pressure along the interior of said pipe, A^{14}, and means for heating the same artificially, by separate furnaces located at different points along said line, together with connecting devices extended from said furnaces to the supply station of said line, and adapted to enable said furnaces to be controlled in their supplies of heat to said heat pipes directly from said supply station which furnishes the motive power or hot-air currents of said railway, substantially as described.

14. In an electric railway, in combination with the force-pump or blower, A, and a series of separate heating furnaces, M B^3, adapted to force a current of heated fluid along suitable pipes, and maintain the same under pressure the electrical conducting lead, K^{10}, together with the independent heat pipe, A^{14}, extended along contiguous to said lead and along its insulators, and adapted to warm and dry the said insulators without unduly heating the said leads, said pipe, A^{14}, connected with and operated by said force pump or blower, and said heating furnaces, so that, when desired, the said force pump and furnace may be put in operation and a current of heated fluid forced along within said pipe, A^{14}, together with controlling devices extended from said force pump or supply station to each of said separate furnaces, and adapted to enable said furnaces to be controlled in their supply of hot air to said pipes, by turning on or off their heat-generating energy from said common station, substantially as described.

15. The improvement in electric railways consisting in means for artificially warming and drying the continuously extended wooden bars which constitute the insulators and supports of the same, by an artificially heated surface extended along said insulating and lead-supporting bars between said supports, and the laterally extended bare metal leads of said electric railway, and adapted to be continuously maintained in a warm condition, substantially as and for the purposes described.

16. In an electric railway, in combination with the rails of the track way, F F, and the line of heat supplying pipes, A^{15} A^{15}, extended along the same, and the electric conducting lead, K^{10}, and the independent line of heat supplying pipe, A^{14}, extended along the same, the force pump or blower, A, separate outlets leading into the pipes, A^{15} and A^{14}, and separate cocks, A^9 A^{10}, A^{13} A^{15}, so constructed that a supply of fluid under pressure may be forced through either the pipe, A^{15}, or, A^{15} A^{15}, as desired, both at the same time, or at different times, together with furnaces, M B^3, through which pass the said pipes, A^{15} and A^{15}, so that both may be heated together, or separately as the current of heated fluid is driven through one or both, substantially as described.

17. In combination with the pipes, A^{14}, A^{15}, A^{15}, series of independent and more and more distant heating furnaces, M B^3, and track-way and electric conductor, F F, K^{10}, the suction fan, or exhaust, E, adapted to draw the heated fluid contents of said pipes through the same, outwardly from the source of heat of said pipes, and discharge the same externally, substantially as and for the purposes described.

18. The combination of a track way F, conduit J, conductor K^{10}, force pump, A, lines of independent heat supplying conductors, A^{14} A^{15}, extended along the rails and conductor, F F and K^{10}, a single line of heat conductor alongside each rail, and each conducting lead, and means for discharging the contents thereof along the line of said track way, the series of heating furnaces M B^3, and current of heated fluid maintained under pressure along said heat conductors adapted to warm and dry the contiguous rails and insulators of said conductor, substantially as described.

19. In combination with the force pump, A, heat pipes, A^{14} A^{15}, rails, F F, electric conductor, K^{10}, and heating furnace, the double coils of pipe, A^{14} A^{15}, contained within the chamber, M, the heating gas burner, B^3, the gas supply main, B, the electro-magnets, C D', the valve, D^5, operated by the armatures of said magnets, the electric gas lighting device, D^6, in contact with the current of burning-gas when turned on, together with the electric supply wires, C and D, supplied with electricity as desired, and operating to move the said armatures, upon said valve, D^5, to open said gas valve, and furnish a spark, at D^6, to ignite the same, or close the said valve and shut off the flow of said gas, from a distant station, substantially as described.

20. In combination with the continuous pipe, A^{14}, formed into a coil at different intervals along the line of an electric railway, and adapted to extend along and contiguous to but separate from the conducting lead thereof, means for forcing a current of fluid through the said pipe, A^{14}, together with a heating device such as a gas burner or burners within or in contact with said coils, said gas burner supplied from a gas pipe through a valve operated by electro-magnets, to turn on or off the said gas, and with an electric gas lighting device to ignite the same, said electro-magnets operated by electric currents from a distance through the electric wires, C and D, substantially as described.

21. The combination of force pump A, heat pipes, A^{15} A^{15}, rails, F F, and the series of different coils of pipe formed upon, A^{15}, at different points along the line, the gas heater, B^3, at each of said coils of pipe, and adapted to heat the same, gas pipe, B, electro-magnets, D' C, electric gas lighting device, D^6, valve, D^5, operated by said electro-magnets, and electric supply wires, C and D, substantially as and for the purposes shown and described.

22. In an electric railway, in combination with the conduit, J, having one side, J', integral with said conduit and terminating in a free margin along the slot, T, and the opposite side terminating along a free margin, J^3, of the opposite side of said conduit, at such distance transversely from the slot as to leave an enlarged open space between said slot margin and said terminal margin a continuous longitudinal cover, U, adapted to rest by its under side upon said free margin, J^3, and cover the interior of said conduit along the opposite side of said slot, the free margin of said cover forming the opposite side of said slot, T, said cover, U, removable in longitudinal sections, so as to uncover the said conduit and permit access to its interior together with a detachable system of conductors secured in place by the closing of said covers substantially as described.

23. In an electric railway in combination with a longitudinally extended line of electric conductors, the conduit, J, located between the tracks of said railway open above along one side of the slot, T and permanently closed upon the other so as to expose the interior across nearly one-half its diameter, a removable cover, adapted to form the cover of one side of said conduit, and face against the opposite side of said conduit, leaving slot, T, open; said cover constructed to form part of the street surface along one side of said slot, and having a recessed cover suitably paved over to conform to and be uniform with the said street surface upon the opposite side of said slot, T, substantially as described.

24. In combination with the conduit, J, having one side integral therewith and overarched along the slot, T, and opposite side terminated by the vertical side of said conduit beneath the street level, the hinged cover, U, formed in sections longitudinally, and having its upper surface recessed, and filled with street paving composition, and constructed when closed to form a part of the street paving, and when opened to expose the interior of the conduit along one side of the slot, T, together with a line of detachable electric conductors adapted to be inserted, fixed in, or removed from said conduit when thus opened, the whole constructed substantially as described.

25. In combination with the conduit, J, overarched along one side to the margin of the slot, T, and the other terminating back from the line of said slot, and beneath the surface level of the opposite side of said slot, T, so as to open and expose the said conduit upon one side J^4, thereof, the removable hinged cover, U, hinged laterally in rear of said opening, J^4, formed in longitudinal sections of a convenient length, and adapted to rest by its under surface upon the free vertical edge, J^3, of one side of said conduit, together with means for securing the said cover in place against accidental displacement, substantially as described.

26. In combination with the conduit, J, overarched at one side, J', and vertical upon the opposite side, leaving an open space, J^4, from the margin, J^3, to the slot, T, the substantially horizontal cover, U, having arms, U^5 U^6, extending laterally in rear of the edge, J^3, said cover adapted to be raised upon said hinges to uncover the said conduit, substantially as described.

27. In combination with the conduit, J, complete upon one side, J', and terminating at the vertical edge, J^3, upon the opposite side, the removable cover, U, adapted to rest upon the free edge, J^3, and extend over the space, J^4, to the margin of the slot, T, said cover, U, having hollow or dish-shaped top, and said dish filled permanently with street paving composition or material, the said cover and its contents adapted to be raised to open the said conduit, and closed to form a paved street surface, substantially as described.

28. In an electric railway conduit the continuously extended laterally open side, J^4, from the lateral edge J^3 of the conduit to the slot, T, the longitudinally and continuously extended series of hinged removable covers, U, dripping ledges, U^5 U^5, and conducting lead, K^{10}, laterally out of line with said slot, together with drain connecting pipe or pipes, N, leading into drain or sewer, O, and accessible for cleaning through the enlarged opening formed by removal of said cover, U, substantially as and for the purposes described.

29. The combination, in an electric railway, of trackway, F F, conduit, J, conducting leads, K^{10}, slot, T, force pump, A, series of separate reheating furnaces M B^3, heat pipe, A^{14}, adapted to be reheated at intervals by said furnaces, and extended along contiguous to conducting leads and in contact with insulators, removable cover of said conduit and drain, N, adapted to convey flood water from said conduit, and accessible through said opening formed by removal of said cover, substantially as described.

30. In an electric railway, in combination with the conducting supply lead, K^{10}, the kiln-dried and pitch-saturated wooden supporting bars, K, and insulators, L, said bars, K, bored or grooved from end to end, together with heat pipe, A^{14}, extended along said bars, and embedded therein, said wooden bars serving to protect the said heat pipes from rapid dissipation of heat, and means for supplying a current of heated fluid along said pipe, A^{15}, substantially as described.

31. In an electric railway, in combination with the conducting leads, K^{10}, the continuous wooden insulating and supporting bars K and heat pipes, A^{14}, contiguous thereto, and supported along the insulators of said leads the expansion joints, A^{21} A^{22}, adapted to permit expansion and contraction of said pipes longitudinally, without disturbance of insulation of said supports, substantially as described.

32. In an electric railway, in combination with the conduit, J, having vertical slots, J^5, along the walls thereof, open above, the insulator, L, supporting the conducting lead of said railway having its rear provided with a contracted neck, adapted to enter said slot, J^5, and a terminal enlargement to engage in rear of said slot, and adapted to prevent lateral displacement thereof by the current-gathering devices of a motor car moving along in contact with the same, together with a removable cover of said conduit constructed, when in place to prevent vertical upward displacement of the same, and when said cover is removed to permit said neck to enter or be removed from said slot, together with the insulators and conducting lead of said railway, substantially as and for the purposes described.

33. In an electric railway, the conduit, J, provided with slot, T, and open side, J^4, extending from the said slot down to the free vertical edge, J^3, and vertical slot or support, J^5, extended upward to the free edge of J^3, and a removable cover, U, adapted to extend over and close the opening, J^4, along one side of the slot, T, of said conduit, the electric lead, K^{10}, the support K, and insulator, L, said insulator having contracted neck adapted to fit into J^5, and an enlarged lead in rear, all in combination with each other, and so adapted together that, when said cover, U, is opened, the said electric leads and insulators may be formed up in a continuous line, and dropped into place, together with the line of heat pipe, A^{14}, secured along said conducting leads, and all inserted together as the different successive sections of the cover, U, are opened, the whole held securely in place by the cover U, resting above the said insulators, when closed, substantially as described.

34. In an electric railway the combination of force pump, A, furnaces, M B^3, insulating and supporting bars, K K, conducting leads, K^{10} K^{10}, insulators, L, heat pipe A^{14} communicating with said furnaces, M B^3, and extended along the line of said supporting bars and insulators, conduit, J, slot, T, removable side cover, U, yokes H, H, track supports, H^3, H^4, and rails, F F, the whole constructed to operate substantially as herein shown and described.

35. In an electric railway, having a trackway extended continuously forward, and an electric conducting lead extended along said trackway, an independent line of piping extended along parallel with said trackway, one pipe parallel with each rail thereof, and contiguous thereto, said pipes adapted to carry a current of fluid along the same, and separate enlarged points of heat supply at intervals along said pipes, and at each of said points a heating furnace adapted to replace the heat distributed to said rails in the advance of said current forward from its initial point of heating, together with a force pump and furnace at said initial point constructed to force a current of heated fluid along said pipes and means for controlling the operations of said furnaces from a distant station along said lines, substantially as and for the purpose described.

36. In an electric railway, in combination with a force-pump, a continuous pipe extended along the insulators of the conducting lead of said railway, said force pump constructed to force a current of fluid through said pipe, a series of separate heating furnaces distributed along the line of said pipe and adapted to restore or maintain the heat thereof at a relatively equal and moderate temperature, said furnaces and the heating processes thereof controlled by an independent connection with said station, substantially as described.

37. In an electric railway having a conduit, and a continuous conducting lead extended along the same, in combination with said lead a line of insulators secured to said conduit and constructed to support said lead, together with vertical dovetail supports of said insulators in said conduit, and a removable cover of said conduit, the whole so constructed that when said cover is in place it will rest upon and prevent upward displacement of said insulators, and when said cover is removed the said insulators and their attached conducting lead may be removed, inserted, or replaced, substantially as described.

38. In an electric railway having a conduit and secured to and along the same a longitudinal electric conducting lead, by means of a series of electrically insulating supports, a cover of said conduit having a recessed upper surface filled with concrete or other street paving material in permanent form, said paving material constructed to conform in purpose and material to the adjacent ordinary non-metallic street paving, and said cover its attached pavement removable to expose said conduit and said conducting lead, and said conducting lead and the supports thereof adapted to be removed when said cover is raised, and the same locked in place in slots or the like integral with said conduit by the closing of said cover therefrom, and said cover thus replaceable to form a permanent continuous street pavement, substantially as described.

39. In an electric railway a continuously extended pipe provided with a current of heated fluid, parallel with the conducting leads of said railway, and disconnected therefrom, located between said leads and their insulated conduit supports, said heat pipe provided with a partially diathermal non-metallic covering, adapted to gradually diffuse the heat thereof to the insulators of said conducting leads, said leads having their metal contacts exposed to the current gathering devices of a motor car of said railway, substantially as described.

40. In a railway, in combination with the tracks thereof a continuous heat supplying pipe extended along each rail of said trackway, separate from, and parallel and contiguous to the same, said pipe constructed to contain a current of heated fluid, and surrounded with a partially diathermal and water-proof, non-metallic covering, together with means for supplying through said pipes a continuous flow of a heated fluid, substantially as and for the purposes described.

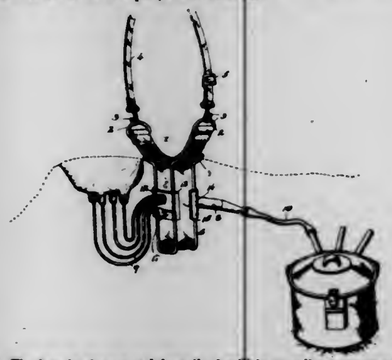
41. In an electric railway having a conducting supply lead extended along the same, and a continuous line of wooden insulating bars supported at intervals on bracket supports and insulators, in combination with a continuous heat pipe extended along said line of wooden bars from bracket to bracket and along said lead, and disconnected from contact therewith and along said line of wooden bars between the supports of said brackets and said lead, and adapted to heat said insulators without unduly heating said metallic lead, together with means for forcing a current of heated fluid through said pipe, substantially as and for the purposes described.

543,868. COW-MILKER. FRANK H. HILLMAN and EMERSON J. GUILE, Greenwich, N. Y. Filed Mar. 12, 1895. Serial No. 541,492. (No model.)

Claim.—1. In a milking appliance, the combination with a frame, and means for suspending the frame from the animal, of a receiving spout, provisions for vertically adjusting the receiving spout and securing the same to the frame in the adjusted position, and a plurality of milking tubes provided at one end with teat pieces and adapted to have their opposite ends inserted in one end of the said receiving spout, substantially as set forth for the purpose described.

2. In a milking appliance, the combination of a supporting strap, means for attaching the same to the animal, a frame pendent from

the supporting strap, a receiving spout having one end enlarged and the opposite end contracted, provisions for vertically adjusting the receiving spout upon the frame and attaching it thereto in the located position, a conveyer tube attached to the contracted end of the receiving spout, and a plurality of milking tubes provided at one end with teat pieces and adapted to have their opposite ends loosely inserted into the enlarged end of the aforesaid receiving spout, substantially as set forth for the purpose described.



3. The herein shown and described milking appliance, comprising a supporting strap, a back band having adjustable connection with the ends of the said supporting strap, an approximately U-shaped frame secured to the supporting strap, a receiving spout having a plate attached thereto provided with flanges to embrace the sides of the frame, a corresponding plate flanged at its edges to embrace the sides of the frame and apertured for the passage of the receiving spout, a binding screw to clamp the said plates upon the edges of the frame, a plurality of milking tubes having teat pieces at one end, and adapted to have the opposite end inserted within the receiving end of the said spout, and a conveyer tube to be attached to the delivery end of the receiving spout, substantially as herein set forth.

543,869. PAPER-BOX MACHINE. CLARENCE W. HOBBS, Lynn, assignor, by mesne assignments, to himself, Richard Sugden, and Harry W. Goddard, Spencer, Mass. Filed Oct. 10, 1892. Serial No. 448,318. (No model.)



Claim.—1. In a paper-box machine, the combination with mechanism for presenting gummed or pasted strips of paper to be applied to the surface of a box, of an arm pivoted in a plane between said gummed or pasted strips and capable of a rocking motion by which its free end is brought into alignment with either of said gummed or pasted strips, a former carried by the free end of said arm and stops by which the rocking motion of said arm is limited, substantially as described.

2. In a paper box machine, the combination with mechanism for presenting gummed, or pasted, strips of paper to be applied to the surface of a box, of an arm pivoted in a plane between said gummed or pasted strips and capable of a rocking motion by which its free end is brought into alignment with either of said gummed or pasted strips, a spindle journaled in the free end of said arm and at right angles with the axis of said arm, a former carried by said spindle and means for limiting the rocking motion of said arm, substantially as described.

3. In a paper box machine, the combination with a pair of gum boxes and mechanism for presenting gummed, or pasted strips of paper to be applied to the surface of a box, of a rod D^3, an arm E capable of rocking on said rod, a plate G attached to said rod, adjusting screws G^3, G^4 held by said plate, a spindle F journaled in said arm and a "former" H carried by said spindle, substantially as described.

4. In a paper box machine, the combination with mechanism for presenting gummed, or pasted strips of paper to be applied to the surface of a box, of an arm pivoted in a plane between said gummed, or pasted strips, and capable of a rocking motion by which its free end is brought into alignment with either of said gummed or pasted strips, a former carried by the free end of said arm and a latching mechanism by which said former is locked from rotation at one end of the angular movement of said rocking arm, substantially as described.

5. In a paper box machine, the combination of a rocking arm E, a spindle F journaled in said arm and carrying a "former" upon which the box to be covered is supported, plates K, K, provided with holes K', K', barrel I, sliding pin J' and spring J, and stops by which the angular motion of said rocking arm is limited, substantially as described.

6. In a paper box machine, the combination with the fixed framework of the machine, provided with lugs D, D', of a sliding rod D^3, adjustably held in said lugs, a plate G attached to said rod and provided with lugs G^3, G^3, set screws G^3 and G^4 held in said lugs, a rocking arm E, capable of an angular motion on said rod, a rotatable "former" carried by said arm and a locking mechanism, by which said "former" is alternately held from rotating as the arm is rocked, substantially as described.

543,870. CASTER. ERNEST G. HOFFMANN, New York, N. Y., assignor to the Standard Caster and Wheel Company, same place. Filed Feb. 15, 1895. Serial No. 538,457. (No model.)



Claim.—1. A blank for a caster socket comprising oppositely disposed elongated portions of generally rectangular form, and a laterally projecting tongue between said elongated portions, the edge of the blank on either side of and in proximity to said tongue having indentations, whereby as said blank is bent to form a tubular socket, said tongue shall stand in an opening between adjacent portions of the tube.

2. A caster socket having a tubular portion and also having an annular flange at one end of said tubular portion, said flange having an annular bead and a concave annular recess therein, in combination with a caster having a pintle held in said tubular portion of the socket, a ball bearing case free to rotate on said pintle and fitting into the annular recess of the socket flange, and bearing balls within said case and intervening between said case and the caster pintle and frame, substantially as set forth.

3. A caster socket having a tubular portion comprising longitudinally divided parts joined at their upper ends to form a continuous ring and having one or more detaining springs extended downward from said ring and located in an opening or openings between said parts formed by indentations in the edge thereof, said tubular portion and detaining spring or springs being in one piece, substantially as set forth.

4. A caster socket in one piece having a tubular portion and having an annular flange at the lower end of said tubular portion, said annular flange comprising an annular bead and a concave annular recess, and having points adapted to enter the article to which the caster is attached, said flange being made up of radially divided parts and said tubular portion being made up of parts longitudinally divided but joined at their upper ends, each of said annular parts being continuous with one of said tubular parts, in combination with a caster having a pintle held in said tubular portion of the socket, a ball bearing case free to rotate on said pintle and fitting into the annular recess of the socket flange and bearing balls within said case and intervening between said case and the caster pintle and frame, substantially as set forth.

5. A caster socket in one piece having a tubular portion comprising longitudinally divided parts joined at their upper ends to form a continuous ring and having one or more detaining springs located in an opening or openings between said parts, said socket also having an annular flange comprising an annular bead and a concave annular recess and being made up of radially divided parts each continuous with one of the tubular parts, in combination with a caster having a pintle held in said tubular portion of the socket, a ball bearing case free to rotate on said pintle and fitting into the annular recess of the socket flange, and bearing balls within said case and intervening between said case and the caster pintle and frame, substantially as set forth.

543,871. HOSE-COUPLER. LEON J. HOUSE, Hartford City, Ind. Filed Aug. 11, 1894. Serial No. 520,061. (No model.)

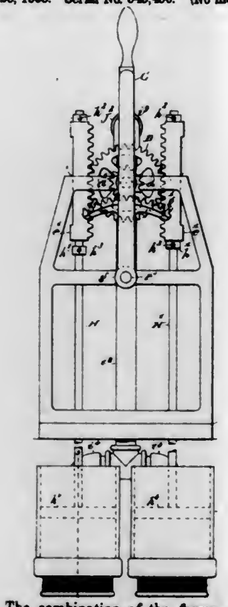
Claim.—1. A hose coupler consisting of two metal tube parts one provided with a shoulder on the inside and its inner walls flaring outwardly from the shoulder, the other provided with a shoulder upon its outside periphery, and a portion beyond the shoulder chamfered inwardly, and also provided at the end of the chamfer with a circular groove adapted to hold an elastic packing ring in place so that it will not fall off; the two shoulders adapted, when brought together, to engage and hold firmly a packing ring between them: an elastic packing ring: and means to draw the two tube parts together to make a tight joint and interlock them together.



2. In a hose coupler, an entrance part or tube provided with a shoulder and chamfered inwardly from thence a short distance: a circular groove at the end of the chamfer adapted to hold a packing ring, in combination with a receiving part or tube having a flaring entrance and provided with a shoulder at the inner end of the flaring part and adapted to receive the entrance part of the tube, so that a packing ring may be compressed between the two shoulders to form a tight joint: a rubber packing ring: and an interlocking device consisting of the lever 7 attached pivotally to one of the two connecting parts: the arm 8 pivotally attached to the lever: and lugs 15 attached to the other connecting part, adapted to engage the ends 11 of said arms; the whole being adapted to interlock the two parts together and tightly compress the rubber packing ring when the lever is forced down upon the tube.

3. In a hose or pipe coupler consisting of two metal tube parts which are adapted to be drawn together to form a tight joint with intervening packing: a lever provided with two arms, the ends of which are pivoted or fulcrumed on opposite sides of one of the tube parts: a projection or projections on the other tube part: arms provided at their ends with means to engage said projection or projections, and pivoted at their other ends to the said two arms of the lever, respectively, at a short distance above the fulcrumed points and also provided with a cross bar to hold the engaging parts in place; the whole adapted to draw the tube parts together and interlock them when the handle of the lever is forced down on the tube.

543,872. MEASURING-PUMP. WEBBER G. KENDALL, Lowell, Mass., assignor to the Kendall Automatic Oil Pump Company, Nashua, N. H. Filed Mar. 28, 1895. Serial No. 543,456. (No model.)



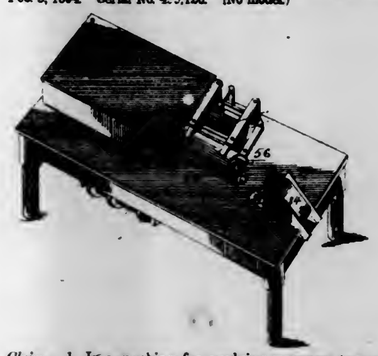
Claim.—1. The combination of the frame, a pump-cylinder, a plunger arranged therein and having a plunger-rod, a rack loose thereon and having stops to limit the movement thereof on said rod, and a gear, to engage said rack and impart a reciprocating movement thereto, as and for the purpose specified.

2. The combination of the frame, a pump-cylinder, a plunger arranged therein and having a plunger-rod, a rack loose thereon, a gear, to engage said rack and impart a reciprocating movement thereto, and stop collars, adjustably secured on said plunger-rod beyond the ends of said rack, to limit the movement of said rack on said rod, as and for the purpose specified.

3. The combination of the frame, two pump-cylinders, a discharge-pipe, common to both said cylinders, plungers, arranged in said cylinders and having plunger-rods, racks, loose on said plunger-rods, adjustable stops to limit the movement of said racks on said rods, a gear, engaging said racks, a pinion, concentric with said gear and rotary therewith, a lever, having its fulcrum on said frame, and a segment of a gear, secured on said lever and concentric with said fulcrum and engaging said pinion, as and for the purpose specified.

4. The drip-pan having a drain and outlet pipe and having a cover, arranged above said drain and having a central orifice, to receive drippings and adapted to catch on its under surface drops spattered upon said drain and rebounding therefrom, as and for the purpose specified.

543,873. MACHINE FOR APPLYING WRAPPERS TO NEWSPAPERS. JONAS KIBBELL and ISAAC P. KIBBELL, McComb, Ohio. Filed Feb. 5, 1894. Serial No. 499,126. (No model.)



Claim.—1. In a machine for applying wrappers to newspapers, the combination, of a revoluble wrapping cylinder, a yieldingly journaled pressure roller, laterally reciprocating guides carrying curved plates, an oscillatory drum located between the frames of said guides, and mechanism for operating said drum, to reciprocate the guides and their curved plates to and from the wrapping cylinder and reversely to each other, substantially as specified.

2. In a machine for applying wrappers to newspapers, the combination of the wrapping cylinder, the pressure roller mounted in a movable frame and mechanism for moving said frame to and from the wrapping cylinder, the laterally reciprocating guides carrying the curved wrapping plates, the oscillatory drum located between the frames of said guides and provided with pins working in grooves in the guides, and mechanism for operating the drum to reciprocate the guides and their curved plates to and from each other, substantially as specified.

3. In a machine for applying wrappers to newspapers, the combination, of the wrapping cylinder, the movable frame carrying the pressure roller, and mechanism for moving the frame and pressure roller to and from the wrapping roller, the reversely movable guides and their curved plates, the oscillatory drum having pins riding in vertical grooves in the guides, the rod extending from said drum downwardly and provided with an anti-friction wheel at its end, and the disk having a recess at one end in which said wheel normally rests, and the mechanism whereby the cam-wheel is operated to operate the folding mechanism, substantially as specified.

4. The combination, with the pressure roller, of a vertically movable frame, in which the journals of said roller have their bearings, the stationary hangers having ways in which the frame slides, springs to keep the frame normally elevated, an anti-friction roller mounted at the center of the lower edge of the said frame, and a cam secured to a transverse shaft, whereby the frame is depressed, substantially as specified.

5. The combination, with the driving shaft, of the cog miter wheel mounted thereon, the cog miter wheel loosely mounted on a transverse shaft and intermeshing with the first mentioned cog-wheel, the clutch mechanism and lever whereby the same is operated, the plate having a central recessed aperture to form a guide for the spring-lever, which is secured to the clutch head and adapted to bind or secure the loose miter cog-wheel to said shaft, substantially as specified.

6. The combination, with the driving-shaft having a band-pulley mounted thereon, the hollow shaft and wrapping-cylinder, a cog-wheel mounted on said hollow shaft and intermeshing with a loosely mounted cog-wheel, the pressure-roller provided with a cog-wheel intermeshing with a second loosely mounted cog-wheel, which intermeshes with the first loosely mounted cog wheel, and a band-pulley mounted on the hollow-shaft, substantially as specified.

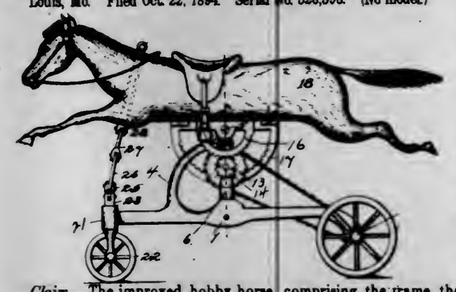
7. In a paper wrapping machine the combination, with the transverse shaft, the cog miter wheel loosely mounted thereon, the clutch-head and spring-lever having an anti-friction roller at its free end

the plate having a circular opening recessed at the top, and the lever fulcrumed to said plate and provided with a push rod, whereby the clutch lever is operated to cause the loose cog wheel to move with the transverse shaft, substantially as specified.

8. In a paper wrapping machine, the combination, with the transverse shaft of the cog wheel loosely mounted thereon, the clutch head mounted on said transverse shaft, the bifurcated clutch plate having a cross connection at its lower end, the leaf-spring secured to the clutch head, and bearing against the cross connection, and the spring lever and its operating lever and push rod, whereby the clutch is thrown into contact with the clutch cog wheel, substantially as and for the purposes specified.

9. The combination, with the horizontal shaft having a disk near one end and provided with a recess at its periphery, of a lever having an anti-friction roller bearing against said disk, a tensioned-drum through which said lever passes, a tension spring to hold the drum in normal position the oppositely sliding frames operated by said drum, and the reciprocating guides for holding the papers to the wrapping-cylinder during the wrapping, substantially as specified.

543,874. VELOCIPEDE HOBBY-HORSE. JOHN W. LATTY, St. Louis, Mo. Filed Oct. 22, 1894. Serial No. 526,598. (No model.)



Claim.—The improved hobby horse, comprising the frame, the driving wheels, a body mounted to rock upon said frame, driving gear connecting said body to said driving wheels, whereby when said body is rocked the machine will be propelled, a bifurcated standard 21 pivotally connected to said frame, a steering wheel in said standard, a lug 23 on the upper end of said standard, a bearing 24 connected to said lug, a horizontal cross-piece 25 mounted in said bearing, levers 26 pivotally connected to the opposite ends of said cross-piece, additional levers 27 pivotally connected at one end to the upper ends of said levers 26, a horizontal cross piece 28 at the upper ends of said levers 27 and pivotally connected thereto, a rod 29 passing vertically through said rocking body and mounted in a suitable bearing formed in said body, said cross-piece 28 being rigidly connected to the lower end of said rod 29 at a point beneath said body, and a handle 30 fixed upon the upper projecting end of said rod 29 above said body, substantially as herein specified.

543,875. ANTIFRICTION-BEARING. FRANCIS M. LECHNER, Columbus, Ohio. Filed Nov. 27, 1893. Serial No. 492,038. (No model.)

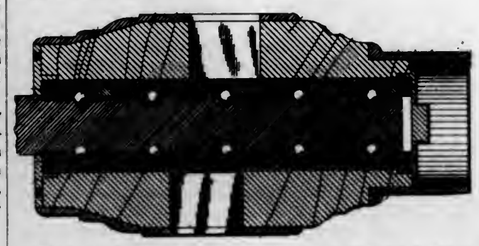


Claim.—The combination of the spindle provided with a collar, and having a series of equi-distant peripheral grooves, the sleeve formed with a series of corresponding grooves and having a longitudinal slot, the plate seated in said slot, said plate being flush with the sleeve both internally and externally and provided with grooves corresponding with the grooves in the sleeve, the countersunk half round latch heads pivoted to said sleeve, the roller bearings located in said grooves, the casing fitting over said sleeve, and the screw cap at the outer end thereof, substantially as described.

543,876. BALL-BEARING. FRANCIS M. LECHNER, Columbus, Ohio. Filed Mar. 9, 1895. Serial No. 541,122. (No model.)

Claim.—1. In a ball bearing the combination with a spindle or shaft having a number of peripheral grooves therein, of a boxing surrounding said spindle, said boxing consisting of a number of tubular sections or rings telescoped one within the other and bearing balls bearing partially in the spindle grooves and partially within corresponding grooves formed between the telescoped ring sections, substantially as and for the purpose specified.

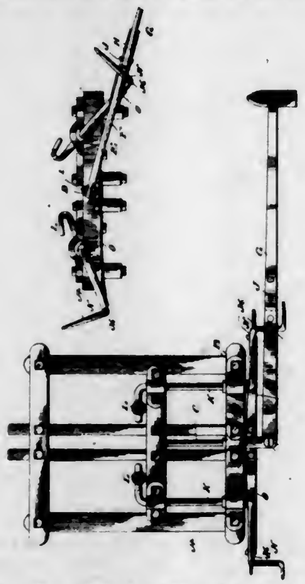
2. In a ball bearing the combination with a spindle or shaft *a* having peripheral grooves therein, of a tubular boxing surrounding said spindle, said boxing consisting of a number of ring sections *c* adapted to fit one within the other, each of said ring sections having an opening therethrough and grooves corresponding to those in the shaft, substantially as and for the purpose specified.



3. In a ball bearing the combination with a spindle or shaft having peripheral grooves therein, of a boxing loosely surrounding said spindle, said boxing consisting of a number of short tubes or ring sections, said sections having grooves corresponding to those in the shaft and inner and outer extensions of less thickness than the bodies of the rings, the inner extensions of said rings having openings therethrough and being adapted to overlap the outer extensions of adjoining rings, substantially as and for the purpose specified.

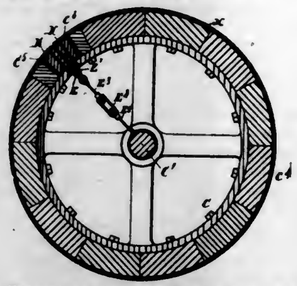
4. In a ball bearing the combination with a spindle or shaft, having grooves therein, a boxing sleeve having grooves in its inner surface loosely surrounding the same, bearing balls between said sleeve and spindle and bearing in said grooves and a hub body about said sleeve, of end caps *m* and *n* each having an inwardly extending internally threaded neck portion, the latter having a threaded engagement with the ends of said sleeve and the heads of said caps having a bearing against the ends of said hub body and the ends of the boxing, substantially as and for the purpose specified.

543,877. LAND-MARKER. WILLIAM M. LEWIS, Walnut, Ind. Filed May 13, 1895. Serial No. 549,144. (No model.)



Claim.—The combination with a corn planter frame, of a land marker attachment, consisting essentially of a marker arm E pivoted to the rear of the frame and adapted to swing vertically from one side to the other, a pair of rock shafts K extending longitudinally of the frame, one of said shafts being journaled on each side of the pivot of said marker arm and each rock shaft being provided at its forward end with an inwardly turned foot lever and at its outer end with an outwardly turned marker-supporting arm provided with a lateral rest for the marker arm, and springs secured to the frame and bearing on the under side of the marker-supporting arm and adapted to resiliently support the same, substantially as described.

543,878. SANDPAPERING-MACHINE. JOHN LOWRY, Tecumseh, Mich., assignor of one-half to Samuel McClure, same place. Filed July 25, 1894. Serial No. 518,511. (No model.)



Claim.—1. The sandpapering drum C herein described, provided with the blocks C^3, C^4 engaged in the rim of the drum, clamping arms E, E' having a wedged engagement between said blocks and means for tightening said clamping arms, substantially as set forth.

2. The sandpapering drum C provided with the blocks C^3 C^4 engaged in the rim of the drum, clamping arms E, E', means for tightening said clamping arms having a wedged engagement between said blocks and a sandpaper or analogous covering about said cylinder having its edges engaged between said clamping arms, substantially as set forth.

3. In combination, a rotatable shaft and the sandpapering heads G', G^3, said shaft having a yielding vertical movement and made vertically adjustable, substantially as set forth.

543,879. AUTOMATICALLY-OPERATED FIRE-ALARM. FRANK K. LUDLOW, Madisonville, Ohio. Filed Dec. 18, 1894. Serial No. 532,152. (No model.)

Claim.—1. In a fire-alarm, the combination of a plurality of alarm actuating make-and-break devices, a corresponding number of independently operative driving mechanisms, and a governor common to all the driving mechanisms for enforcing synchronous action in those that operate, substantially as and for the purpose set forth.

2. In a fire-alarm, the combination of a single alarm, a grounded circuit, an all-metallic circuit, a make-and-break wheel for each of said circuits, independently operative driving mechanisms for the respective make-and-break wheels, and a coupling between said driving mechanisms for compelling synchronous action of the make-and-break wheels, as and for the purpose explained.

3. In an automatic fire alarm two or more circuit wheels having independent driving connection, and single escapement controlling both the driving connections, substantially as and for the purpose set forth.

4. In an automatic fire alarm, the combination of an alarm actuating device, having means whereby it is operated by starting of a fire, two independently operative circuit wheels, having connection with the alarm to be actuated, and an escapement under control of the alarm actuating device and having connection with both circuit wheels through the medium of ratchets, whereby both circuit wheels are caused to move simultaneously when in operation, but each permitted to move with the escapement wheel if the other remains at rest, substantially as set forth.

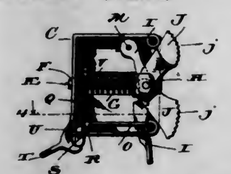
5. In an automatic fire alarm, the combination of the series of drop levers arranged to be released upon the starting of a fire in places with which they have operative connection, the drop frame 25 under control of said levers and having the uprights 26 movable in sliding bearings 27 and the circuit wheels under control of said frame, substantially as and for the purpose set forth.

6. In an automatic fire alarm, the combination of suitable circuit wheels, having driving connections, an escapement for controlling the movement of said driving connections, a drop frame normally in engagement with said escapement, and insulated therefrom, and a series of drop levers which are adapted to control said frame, and having connections whereby they are released by heat of a fire, substantially as set forth.

7. In an automatic fire alarm, the combination of the escapement controlling an alarm, the drop frame controlling the escapement, a grip 28, 30 for holding the frame in elevation with a yielding force and the drop levers adapted to depress said frame, as explained.

8. In an automatic fire alarm, the combination of the independent circuit wheels, independent driving connections for said circuit wheels, a pair of wheels having clutch connection with the drive connections for controlling them in one direction, a wheel for coupling the clutch wheels together and an escapement controlling said coupling wheel, substantially as and for the purpose set forth.

543,880. SASH-FASTENER. JOHN LUTZ, Albuquerque, N. Mex., assignor of one-half to George K. Neher, same place. Filed May 27, 1895. Serial No. 550,742. (No model.)



Claim.—1. In a sash fastener, the combination of the beveled rack bar secured to the window casing, the beveled segment pinions pivoted within a casing held to the window sash, and means for withdrawing the said segment pinions from engagement with the said rack bar, substantially as shown and described.

2. In a sash fastener, the combination with the beveled rack bar, the two segment pinions beveled and pivoted near their rear ends to the end of a spring actuated post, and a lever for depressing said post, substantially as shown and described.

3. In a sash fastener, the combination of the beveled rack bar, the segment pinions beveled and pivoted to the bifurcated end of a spring actuated post held within a suitable casing, a lever I having one end pivoted to a portion of the said casing, fulcrumed on the pivot carrying the segment arms, and its free end extended without the casing, substantially as shown and described.

4. In a sash fastener the combination of the rack beveled as described, the segment pinions pivoted to the upper bifurcated end of a post which is spring actuated, the lever I, the lug N thereon, and the rack post O, designed to engage with its teeth the said lug, and means for turning said rack post, substantially as shown and described.

5. In combination in a sash fastener, the segment pinions pivoted as described, the rack secured to the window frame, the lever I pivoted at one end to a pin carried by the casing, fulcrumed on the post between the ends of the segment pinions, the lug N on the said lever I, the vertically pivoted rack post, the integral lug carried thereby, the hook engaging in an aperture in said lug, the spring bearing against said rack, and a pivoted lever designed to press against said hook to cause the said rack post to be disengaged from the lug N, all substantially as shown and described.

543,881. NECKTIE-SLIDE. JOHN G. MAIER, Washington, D. C. Filed Apr. 4, 1895. Serial No. 544,397. (No model.)

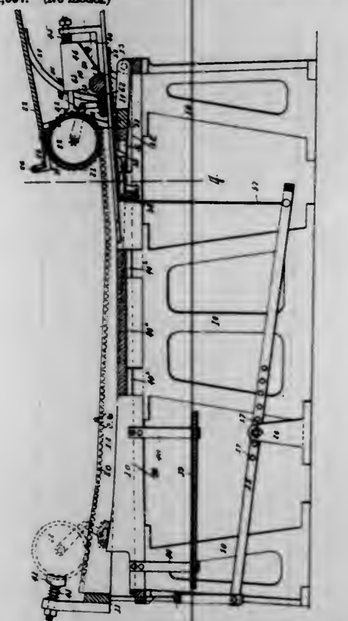
Claim.—1. A necktie holder and collar support, comprising upper and lower strips, supports connecting the said strips, keepers on the ends of the strips adapted to have and hold a necktie drawn through them, and clamps on the lower strip to grasp the inner edge of the turn-down of the collar, substantially as specified.

2. The necktie holder and collar support herein-described, comprising a lower strip A, an upper strip B, connecting supports 1, between the strips, a short keeper 2, and a longer keeper 3, on the re-

spective ends of the frame of the holder and clasps 5, 6, on the lower strip, substantially as specified.



543,882. CYLINDER PRINTING-PRESS. WILLIAM M. MARRINER and WILLIAM N. KAFF, Birmingham, Ala. Filed Aug. 30, 1894. Serial No. 521,697. (No model.)



Claim.—1. A printing press, comprising a supporting frame carrying the bed, a swinging frame mounted on the base frame, a treadle mechanism for raising and lowering the swinging frame so as to change its inclination, and an impression cylinder held to roll on the swinging frame and across the bed, substantially as described.

2. A printing press, comprising a stationary base frame carrying the bed, a cylinder frame pivoted on the base frame so as to swing vertically, a treadle mechanism for raising and lowering the cylinder frame, an impression cylinder held to roll on the cylinder frame and across the bed of the stationary frame, and automatic inking mechanism for the press, substantially as described.

3. The combination, of the stationary bed, the vertically swinging cylinder frame, the cylinder held to roll on the frame and across the bed, and the spring buffers at the ends of the frame, substantially as described.

4. In a printing press, the combination, of a stationary bed, the vertically swinging frame above the bed, a treadle mechanism for moving the frame, and an impression cylinder held to move back and forth on the frame, substantially as described.

5. In a printing press, the combination, of a stationary bed, a swinging frame held to move up and down above the bed, racks on the sides of the frame, an impression cylinder held to roll on the frame, and cog wheels on the ends of the cylinder to engage the racks, substantially as described.

6. A printing press, comprising a stationary inclined frame having a type-bed thereon, a vertically swinging frame hinged to the stationary frame, an impression cylinder held to roll back and forth on the swinging frame, trailing inking rollers connected with the shaft of the cylinder, and an automatic means for supplying ink to the rollers, substantially as described.

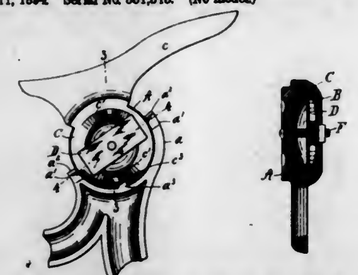
7. A printing press provided with a cylinder, a movable frame forming a runway for the cylinder to roll thereon, and means for changing the inclination of the frame to cause the cylinder to roll either forward or backward, substantially as described.

8. The combination, with the swinging frame, the cylinder arranged to roll thereon, the stationary bed in the path of the cylinder, the yielding inking fountain, the disk receiving the discharge from the fountain, the rollers trailing the cylinder and adapted to run on the disk and bed, and automatic means for turning the disk, substantially as described.

9. The combination, with the swinging frame the stationary bed, the cylinder adapted to roll on the frame, the ink rollers connected to the cylinder to move in unison therewith, the ink fountain, the inking disk beneath it and the ratchet wheel on the disk, of the treadle, for swinging the frame the spring bar having a tooth to engage the ratchet wheel, and an operative connection between the spring bar and treadle, substantially as described.

10. The combination, with the swinging frame, the stationary bed, the cylinder held to roll on the frame, the ink rollers trailing the cylinder, the ink fountain and the revolnble disk held to receive the discharge from the fountain, of a treadle mechanism for moving the swinging frame, and means for revolving the disk by the moving of the treadle, substantially as described.

543,883. SEAT-HINGE. BERNARD MEIS, Cleveland, Ohio, assignor to the Cleveland School Furniture Company, of Ohio. Filed Dec. 11, 1894. Serial No. 531,513. (No model.)



Claim.—1. In a seat hinge, the combination of the fixed and movable members hinged together, a flat spring plate lying between them, a boss on one of said hinge members bearing against the middle part of said spring plate, means for holding the spring plate in fixed relation to said hinge member, and projections with beveled ends on the other hinge member, which projections are adapted to bear directly against said spring plate when the movable member nears either of its extreme positions, substantially as and for the purpose pose specified.

2. In a seat hinge, in combination, the seat frame, having a disk A, a seat arm, a disk C on said seat arm having the projections c' c' with beveled ends, the cap B having the boss b and the ribs b^3 b^3, a flat spring plate lying between said ribs and against said boss, and means for connecting said parts together, substantially as and for the purpose specified.

3. In a seat hinge, in combination, the seat support having a disk A and an incomplete annular rim on said disk, the cap B which interlocks with said rim, the boss b and ribs b^3 b^3 on said cap, the seat arm, the disk C on said arm lying between said disk A and cap B, the projections with beveled ends on said disk C, a spring plate E lying between the ribs b^3 b^3 and against the boss b, and a bolt F, substantially as and for the purpose specified.

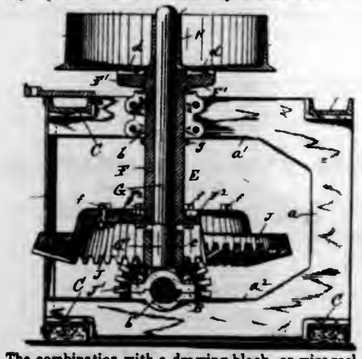
543,884. WIRE-REELING MACHINE. CHARLES H. MORGAN, Worcester, Mass. Filed July 9, 1890. Serial No. 358,142. (No model.)

Claim.—1. The combination with a drawing block or wire reel and a horizontal driving shaft, of an intermediate mechanism consisting of a cast metal shell journaled in a vertical bearing and rotated by said driving shaft, an iron or steel shaft inclosed in and united to said shell and forming a core, and a clutching device cast integrally with said shell and arranged to engage said drawing block, or wire reel, substantially as described.

2. The combination with a driving shaft and a drawing block, or wire reel, provided with a concentric sleeve, of the intermediate mechanism, consisting of a cast metal shell journaled in a bearing, a clutching device formed integrally with said shell and arranged to engage said drawing block, or wire reel, and an iron, or steel, core, inclosed in and united to said shell and projecting from the upper end of the shell to enter the concentric sleeve in said drawing block, or wire reel, substantially as described.

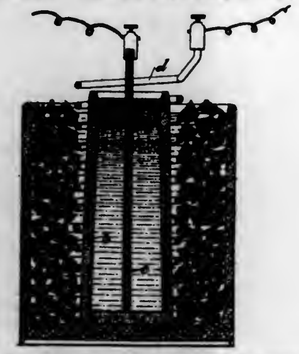
3. The combination with a drawing block or wire reel, and a driving shaft of an intermediate shaft consisting of a cast metal shell

driven by said driving shaft, a clutching device formed integrally with said cast metal shell and arranged to engage said drawing block, or wire reel, whereby the torsional strain is received by said shell and an iron or steel core inclosed in and united to said shell and projecting from the lower end thereof, and a step bearing supporting the projecting end of said core, substantially as described.



4. The combination with a drawing block, or wire reel, of a rotating driving shaft, a beveled pinion carried on said shaft, an intermediate spindle consisting of a cast metal shell, an iron or steel core inclosed in and united to said shell, a clutching device arranged to engage said drawing block or wire reel and cast integrally with said shell, a radial flange cast integrally with said shell, and a beveled gear attached to said flange and engaging said beveled pinion on the driving shaft, substantially as described.

543,885. ELECTRIC BATTERY. ROBERT McL. McDONALD and ALEXANDER McDONALD, Dalmuir, Scotland. Filed Nov. 13, 1894. Serial No. 528,683. (No model.) Patented in England May 3, 1894, No. 8,808.



Claim.—1. In combination, in a battery cell, the outer jar, the positive element, the porous pot, the cinders or like carbonaceous material constituting the negative element packed between the same and the wall of the jar and a copper spiral d between said pot and the cinders, said spiral serving as a conductor and as a means for holding the cinders in place and away from and out of contact with the porous pot substantially as described.

2. In combination in a battery cell, the outer jar, the inner electrode, the porous cup surrounding the same, the cinders within the jar, and the spiral around the porous cup, said spiral acting as a conductor and serving to retain the cinders in place, said cinders being supported between the spiral and the jar, substantially as described.

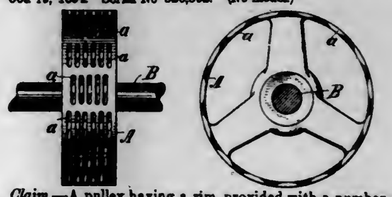
3. In combination in a battery cell, the outer jar containing the solution of sulphate of copper, the inner porous cell containing the chloride of sodium, the electrode in the porous cell, the cinders in the outer jar and the spiral conductor around the porous cell arranged to hold the cinders in place, said cinders being supported between the spiral and the jar, substantially as described.

543,886. CULTIVATOR OR PLOW STANDARD. JACKSON H. MCLAIN, Pursley, Tex. Filed Aug. 4, 1894. Renewed June 18, 1895. Serial No. 553,257. (No model.)

Claim.—In shovel plows or cultivators, the combination with the shoe F having slots f f, the bolts f' and the nuts f^2, of the standard C composed of two vertical arms having their lower ends bent rearwardly in a horizontal plane and embracing the shoe on either side as shown and described.

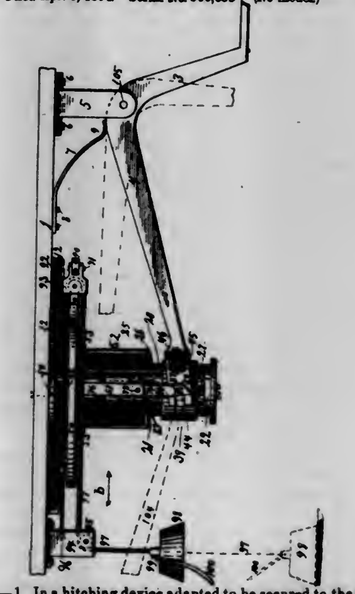


543,887. PULLEY. DARIUS E. NEWELL, New York, N. Y. Filed Oct. 19, 1894. Serial No. 526,392. (No model.)



Claim.—A pulley having a rim provided with a number of centrally tapering recesses or pockets positioned circumferentially and arranged in groups over its outer surface, the edges of the recesses or pockets on all sides being formed within the peripheral surface of the pulley, and the recesses or pockets being provided midway with holes or openings at their bottoms extending through the inner surface of the rim, the areas of these holes or openings at their inner surfaces being less than the area of the recesses or pockets at the outer surface of the pulley, and the recesses in the several groups being relatively staggered, substantially as specified.

543,888. HITCHING DEVICE. OLOF W. ORELL, St. Louis Park, Minn. Filed Apr. 9, 1894. Serial No. 506,855. (No model.)



Claim.—1. In a hitching device adapted to be secured to the bottom of a vehicle, the combination of the frame plate 10, having the ribs 12, the sliding yoke 13, having the internally toothed rack bars 15, and the studs 106, the segmentally toothed gear 30, adapted to engage alternately the said racks and having the spring-held pawl 34, and the shaft 31, the oscillating externally spiral-grooved spindle 25, having the central hole 29, for receiving the shaft 31, and the two notches 28, by which to engage the pawl 34, and rotate the gear;

the bridge or retaining plate 18, secured to the ribs 12, and having the central pocket or casing 20, with the side slots 21, and bottom stem 23, with the central cavity 24, forming journals respectively for the lower end of the spindle 25, and the shaft 31, the latter having its upper end journaled in the frame plate as at 49; a swinging yoke-shaped lever as 54, pivoted with one end to the frame plate and having its free or swinging end 90, provided with a hood as 92, carrying a sheave as 93, the bracket 94, having the sheave 95, and pin 96, the hitching weight 98, having attached to it the hitching strap 100, and the cord or strap 97, passing over the pulleys or sheaves 95, 93, and having its upper end secured to the pin or bolt 96; said lever 54, having the slots 56, embracing the studs 106, of the yoke 13, so as to receive motion from them; the ring 39, having the guiding ribs 40, the internal studs 41, adapted to engage the spiral grooves of the spindle 25, and the external studs or trunnions 43, the fork 46, having the notches 44, in its arms, fitting upon said trunnions; the bracket 5, and bell crank lever 3, 4, pivoted therein and having secured to one of its arms the fork 46, and to its other arm a step plate as 2, for the driver to step on in entering and leaving the vehicle, a spring for holding said step plate normally elevated and means for automatically locking the lever 54, both when the weight is down and when it is up, substantially as and for the purpose set forth.

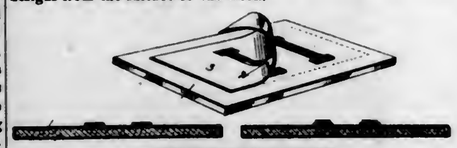
2. In a hitching device of the class described, and secured to a vehicle, the combination of a treadle or pivoted step adapted to be depressed by stepping on it and to be normally spring-held in an elevated position, a swinging arm rigidly connected with said step and having a fork-shaped end carrying an operating ring as 39, having internal studs, as 41, provided with anti-friction rollers as 42, an oscillating spiral grooved spindle having its spiral grooves engaging the said anti-friction rollers, and having notches by which it engages a pawl pivoted to a cam gear wheel, a toothed yoke operated by the teeth of said gear and having studs as 106, with anti-friction rollers as 57, a swinging lever as 54, pivoted at one end and having slots embracing the rollers 57, an arm as 90, provided with a pivoted sheave hood or block having a sheave as 93, engaging a loop of a cord, rope, or chain as 97, having one of its ends secured to a bracket bolted to the bottom of the vehicle and its other end passed over a sheave or guide pulley in the said bracket and secured to the weight of the hitching strap, the said lever 54, having locking notches as 58; the locking lever 51, pivoted in a bracket projecting from the frame of the device and having its upper end as 73, engaging alternately the two notches 58, and the lower end actuated by a projection as 87, formed upon the fork operating the spiral grooved spindle, so as to unlock the lever 54, every time it is to be moved, the spring 75, for throwing the lever end 73, back into the notches 58, the guiding edge 77, for holding the lever in readiness to enter the said notches 58, said lever 51, having its lower portion provided with a spring-held knee joint and a tooth or projection as 84, having two inclines as 85, 86, said projection 87, of the fork 46, being also provided with two inclines as 88, and 89, of which the incline 88, acts on the incline 85, of the lever portion or dog 80, so as to unlock the upper end 73, of the lever and the incline 89, acts against the incline 86, so as to bend the knee joint of the lever and let the fork pass upward without unlocking the levers 51, and 54, said lever 54, being provided with a spring having adjustable tension and being of a power sufficient to sustain about half of the gravity of the hitching weight, all arranged upon and secured to a suitable frame work, substantially as shown and described and for the purpose set forth.

3. A hitching device adapted to be secured to a vehicle, and having a pivoted swinging step for the driver to step on in entering and leaving the vehicle, a swinging lever operated by said step, said lever being pivoted at one end and having to its swinging end secured a sheave or pulley, over which passes a loop of a rope, belt or chain, having one of its ends secured to the vehicle and its other end secured to the hitching weight, after being passed over a pulley secured to the vehicle; so that the motion of the weight is twice that of the end of the swinging lever, and means for locking the lever, substantially as and for the purpose set forth.

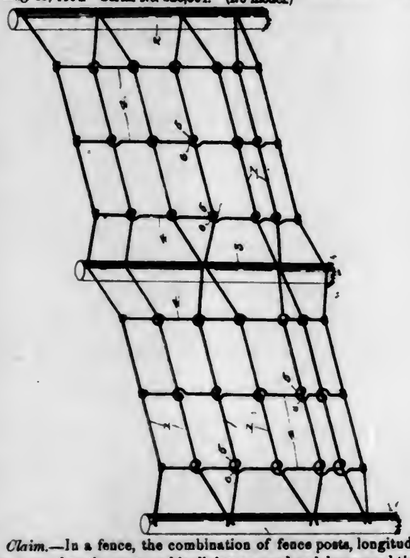
4. A hitching device adapted to be secured to a vehicle and having a pivoted swinging step adapted to be operated by the driver's foot in entering and leaving the vehicle, a swinging lever operated by said step, and which is pivoted at one end and by its swinging end raises and lowers the hitching weight, and a spring assisting in operating the lever so as to lift the weight, said spring being so arranged that it is wound up or given tension by the descension of the driver and the weight, and unwound or expanded when the driver uses the step for entering the vehicle and raising the weight, substantially as and for the purpose specified.

543,889. METHOD OF DECORATING GLASS PLATES. SILVIO PAINI, St. Louis, Mo. Filed Feb. 11, 1895. Serial No. 537,965. (No specimens.)

Claim.—The herein described process of ornamenting glass or analogous plates, which consists in stenciling the desired design upon the work with a compound of glue, whiting and glycerine in the proper proportions, then locating upon the surface of said work and stenciled design a suitable chipping compound, then re-stenciling upon the chipping compound the design so as to coincide with the first stenciled design, then allowing said chipping compound to act in the usual manner, and finally washing said chipping compound and stenciled designs from the surface of the work.

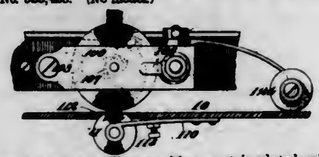


543,890. WIRE FENCE. JUDSON R. PECK, Atlanta, N. Y. Filed Aug. 15, 1894. Serial No. 520,391. (No model.)



Claim.—In a fence, the combination of fence posts, longitudinal wires secured to the posts and inclining upward and downward therefrom in opposite directions, and the stays arranged at intervals and connecting the fence wires and offsetting the same alternately in opposite directions to produce the desired tension in them, and provided with series of resilient loops loosely encircling the wires, and capable of expansion and contraction to permit the longitudinal wires to slacken to avoid breakage, said stays holding the central portions of the fence wires substantially parallel and horizontal, substantially as described.

543,891. STENCILING-MACHINE. CHARLES K. PICKLES and JOHN A. HOFF, St. Louis, Mo., assignors, by mesne assignments, to the American Stencil Machine Company, East St. Louis, Ill. Filed Sept. 18, 1894. Serial No. 523,425. (No model.)



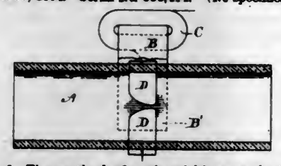
Claim.—1. In a stenciling machine a patrix plate having a series of hubs, vertically bored, said bores being of less diameter in the centers than at the ends and a patrix having a flattened vertical face, bushed in each of said bores.

2. In a stenciling machine, a feeding and guiding mechanism comprising a driven roller, a mating idle roller, a vertically adjustable tension bar and a runner carried by said bar, the said bar being adjustable rotatably to align or differentiate the path of said runner relative to the rotary path of the driven roller.

3. In a stenciling machine, a feeding and guiding mechanism comprising a driven roller, a mating idle roller, a vertically adjustable tension bar, and a disk carried by said bar, the said bar being adjustable rotatably to align or differentiate the path of rotation of said disk relative to the rotary path of the driven roller.

4. In a stenciling machine, a feeding and guiding mechanism comprising a clip pivoted on a stud at one end, an eccentric connecting the opposite end of the said clip to a stud, a spindle mounted in said clip, a feed roller and ratchet wheel mounted on said spindle, a pending lever, a pawl on said lever spring approximated to said ratchet wheel, a mating idle feed roller, a tension arm rotatably adjustably mounted on one of said studs, a guiding disk mounted on said arm, and means for actuating said pending lever and pawl against the spring influence.

543,892. METHOD OF AND MEANS FOR EXTINGUISHING ELECTRIC ARCS. WILLIAM B. POTTER, Schenectady, N. Y., assignor, by mesne assignments, to the General Electric Company, same place. Filed Nov. 30, 1894. Serial No. 530,414. (No specimens.)



Claim.—1. The method of extinguishing an electric arc, which consists in restraining the path of the arc to a line of direction substantially transverse to the lines of force from an arc-disrupting means tending to extinguish it.

2. The method of extinguishing an electric arc, which consists in confining the path of the arc to a line of direction substantially transverse to the lines of force of an arc-rupturing magnet.

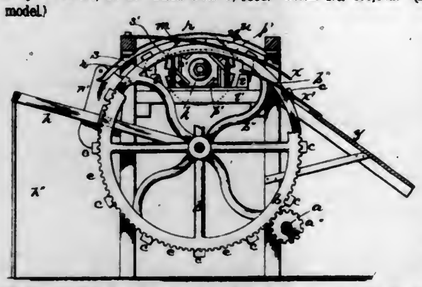
3. The method of extinguishing an electric arc, which consists in inclosing the arc within a chute of refractory insulating material closed at the sides and open at both ends, arranged to co-operate with other arc-extinguishing means.

4. The method of extinguishing an electric arc, which consists in inclosing the arc within a chute of insulating refractory material closed at the sides and open at both ends, and providing a magnetic field within the chute.

5. In combination, terminals at which an arc may be formed, a chute of insulating refractory material closed at the sides and open at both ends and inclosing such terminals, and an arc-extinguishing means co-operating with the chute.

6. In combination, terminals at which an arc may be formed, an electro-maguet having its poles closely approximated to such terminals, and a chute of refractory insulating material inclosing the terminals, the chute being open at both ends and closed at the sides.

543,893. STAVE-CROZING MACHINE. DOULA C. PUTNAM, Wayne Centre, N. Y. Filed Feb. 3, 1893. Serial No. 460,872. (No model.)



Claim.—1. The feed table, provided with stops, and the vertical and inwardly inclined springs which extend across the inner end of the table, the outer ends of the springs being rigidly held, while their inner ends are connected to an equalizing rocker, combined with the feed drum, provided with pockets, and means to revolve the drum, substantially as shown.

2. In a machine for making staves for barrels, a table upon which the staves are placed, equalizing springs which extend across the inner end of the table, a revolving feed drum provided with pockets, the curved top presser bars, each provided with a cutter, curved yielding tables placed below the presser bars, the bars for taking the staves from the pockets, and mechanisms at each end of the frame, for cutting off and finishing the ends of the staves, all combined to operate substantially as described.

3. The feed table, provided with a stop on each edge, the vertical and inwardly inclined spring plates, secured to suitable supports at their outer ends, and the pivoted rocking rod, mounted on the frame and to which the inner ends of the spring plates are fastened, all combined and arranged to operate, substantially as set forth.

4. A mechanism at each end of the frame for sawing off and finishing the ends of the staves, and a feed drum, provided with pockets, combined with the curved top presser bars, each provided with an adjustable cutter, substantially as specified.

5. A mechanism at each end of the frame for sawing off and finishing the ends of the staves, and a feed drum provided with pockets, combined with the curved top presser bars, each one of which is provided with an adjustable cutter, and each one having its outer end to extend out over the feed table, so as to guide the staves as they are carried upwardly by the feed roller, substantially as shown.

6. In a stave machine, a revolving drum, provided with pockets; and curved stationary presser bars, each one provided with a cutter; combined with curved spring actuated tables, placed below the presser bars, a rod to hold the stave down upon the drum, and a rod for removing the staves from the pockets of the drum, substantially as set forth.

7. A mechanism at each end of the frame for sawing off and finishing the ends of the staves, a feed drum provided with pockets, and the curved top presser bars, each provided with a stationary adjustable cutter, combined with the curved adjusting tables, having rods and springs applied to their inner sides, and the supporting boards provided with guides for the ends of the tables, substantially as specified.

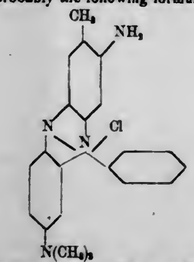
8. The drum heads b'', and the slotted fingers secured thereto and provided with the croze grooves d, inside chamfer bevels d'', and transverse ribs d''', combined with the curved presser bars provided with the cutters u, substantially as shown.

9. The drum heads b'', the slotted fingers secured thereto and provided with the croze groove d, inside chamfer bevels d'', and transverse ribs d''', and the curved presser bars provided with cutters u, combined with the curved tables, the rods, and springs applied thereto; and the supporting boards provided with guides between which the ends of the tables move, substantially as described.

543,894. AZIN DYE AND PROCESS OF MAKING SAME. RUDOLF REYHER, Elberfeld, Germany, assignor to the Farbenfabriken, vormals Fr. Bayer & Co., same place. Filed Apr. 20, 1895. Serial No. 546,553. (No model.)

Claim.—1. The process for the production of azin-dyes, which process consists in condensing salts of nitrosodialkylanilin with phenylmetatoluylenediamin in the manner hereinbefore described.

2. As new articles of manufacture the azin-dyes obtainable from condensing salts of nitrosodimethylanilin with phenylmetatoluylenediamin having in case nitrosodimethylanilin and phenylmetatoluylenediamin are used probably the following formula:



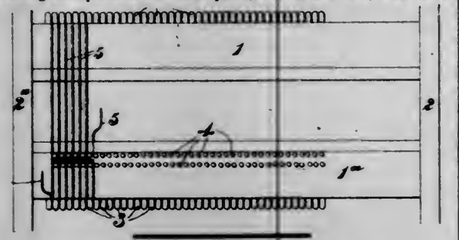
forming a greenish-black powder with metallic luster, easily soluble in water with a violet-red color, in alcohol with a blush-red color, insoluble in soda-lye, soluble in concentrated sulfuric acid (66° Baumé) with a green color, which turns first into blue on the addition of a small quantity of ice-water to the sulfuric-acid solution and finally into violet-red on the addition of a very large quantity of water producing on cotton mordanted with tannin brilliant violet-red shades of great fastness to the action of alkali and light.

543,895. CONSTRUCTION OF ARMATURES FOR DYNAMO-ELECTRIC MACHINES. WILLIAM B. SAYERS, Bearsden, Scotland. Filed Aug. 16, 1894. Serial No. 570,495. (No model.) Patented in England May 20, 1893, No. 10,134.

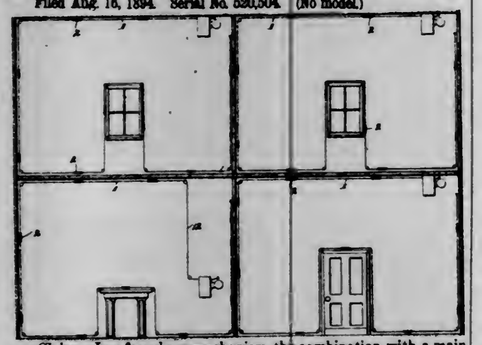
Claim.—1. The method of winding armatures for dynamo-electric machines which consists in fixing portions of the armature winding to the armature core, engaging other portions of the winding by a holding device, rotating the armature core with the portions of winding secured thereto, relatively to the holding device so as to cause portions of the winding at one or at each end of the core to become bent to the required extent in a symmetrical manner about the axis of the armature, and then securing said end portions in place, as set forth.

2. The herein described method of winding armatures for dynamo electric machines, which consists in winding the armature conductor

into the form of long loops or coils, arranging said coils around the armature core and securing one side of each of them thereto, engaging the other side of said coils in a holding device, rotating the armature core with the portions of the coils secured thereto relatively to said holding device until the portions of the coils held by the latter are brought opposite to the required parts of the armature core, and securing such portions of coils in place, in or on said core, as set forth.

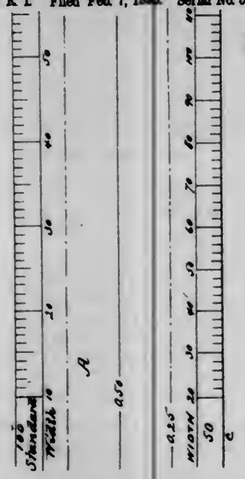


543,896. FIRE-ALARM. CHARLES F. SCOFIELD, Bridgeport, Ala. Filed Aug. 16, 1894. Serial No. 520,504. (No model.)



Claim.—In a fire-alarm mechanism, the combination with a main line wire or connection provided with spaced fusible links or parts, of a spring-actuated drum, an escapement device operatively connected with the drum for controlling the rotation thereof, said escapement mechanism including a ratchet-wheel and a detent lever in engagement therewith, a branch wire or connection between the detent lever and said main line wire or connection, a spring connected with the branch wire and held compressed in order to maintain the main line wire in a taut condition, an operating-wheel, connections between the same and the said drum, said operating-wheel having a series of spaced signal pins arranged at irregular intervals to form a distinctive signal, and a spring-actuated hammer having an arm arranged in the path of said signal pins and adapted to be actuated by its spring to strike a gong after being moved against the tension of its spring by the contact of the signal pins with the arm which is arranged in the path thereof, substantially as specified.

543,897. GRADUATED CLOTH-WEIGHT TEMPLET. ARNOLD SCHAER, Warren, R. I. Filed Feb. 7, 1895. Serial No. 537,572. (No model.)



Claim.—1. A templet or gage for ascertaining the number of yards to the pound of cloth by weighing a sample, graduated by lines numbered to indicate in connection with the width of the templet the length the sample should be cut to according to the width of the cloth, substantially as described.

2. A templet or gage for ascertaining the number of yards to the pound of cloth by weighing a sample, graduated by lines numbered to indicate in connection with the width of the templet the length the sample should be cut to according to the width of the cloth, and provided with proportional divisions to utilize small sized samples, substantially as described.

3. A templet or gage for ascertaining the number of yards to the pound of cloth by weighing a sample, graduated by lines numbered to indicate the length the sample should be cut to according to the width of the cloth, and provided with proportional divisions to utilize small sized samples, substantially as described.

543,898. GRADUATED YARN-templet. ARNOLD SCHAER, Warren, R. I. Filed Feb. 7, 1895. Serial No. 537,573. (No model.)



Claim.—1. A templet graduated with lines indicating in connection with the width of the templet, the size of a sample of any cloth required by its "number of count," to contain a certain number of yards of yarn, substantially as described.

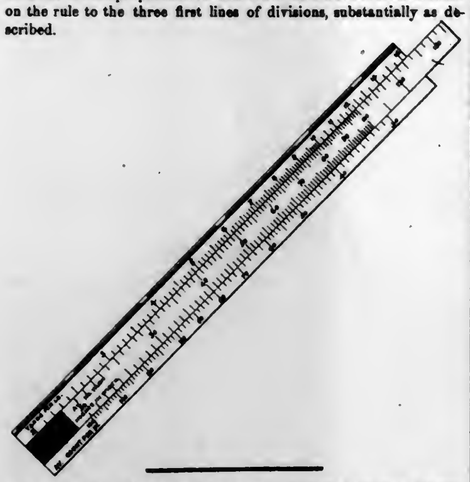
2. A templet graduated with lines indicating the size of a sample of any cloth required by its "number of count" to contain a certain number of yards of yarn, and also provided with lines for a proportional reduction in the size of the piece of cloth, for the purpose of utilizing small samples, substantially as described.

543,899. CLOTH AND YARN CALCULATING RULE. ARNOLD SCHAER, Warren, R. I. Filed Mar. 30, 1895. Serial No. 543,835. (No model.)

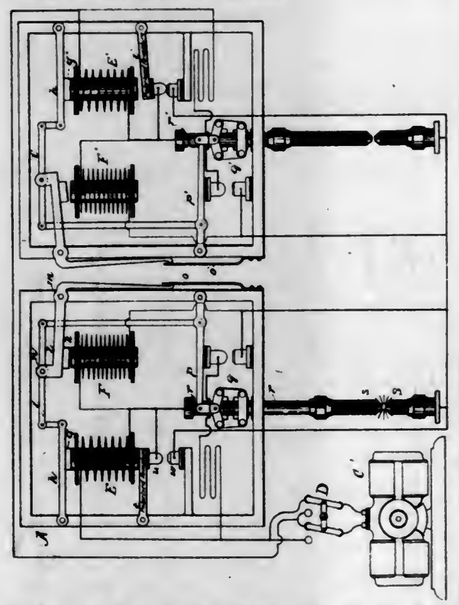
Claim.—1. A rule for use in calculating the relative size and weight of yarn and cloth, having a sliding portion in it marked with two rows of divisions increasing in logarithmic proportion to each other, from one end, a row of divisions on the rule to one side of the slide, agreeing with the divisions on the slide, and having a row of divisions increasing in logarithmic proportion to each other from the other end of the rule, substantially as described.

2. A rule for use in calculating the relative size and weight of yarn and cloth having a sliding portion in it marked with two rows of divisions increasing in logarithmic proportion to each other, from one end, the upper row being marked "Av. No. of yarn" and the lower row marked "No. inches in width," a row of divisions on the rule to one side of the slide, agreeing with the divisions on the slide and marked "No. of yards per lb.," a row of divisions increasing in logarithmic proportion to each other from the other end of the rule and marked "Av. count," substantially as described.

3. In a calculating rule the combination of three lines of divisions exactly agreeing with each other and increasing in logarithmic proportion to each other from one end of the rule, two of said lines being made on a slide movable on said rule, and the other line of the three made on the rule to one side of the slide, with a fourth line of divisions of like proportions to each other but made in reversed order on the rule to the three first lines of divisions, substantially as described.



543,900. ELECTRIC-ARC LAMP. CHARLES R. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Mar. 12, 1891. Serial No. 384,762. (No model.)

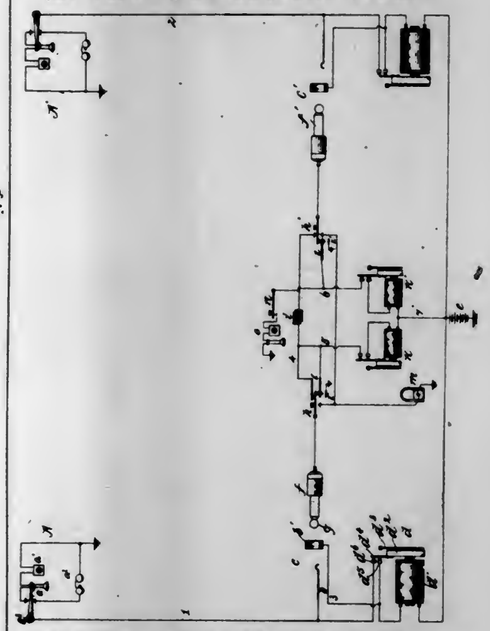


Claim.—1. The combination with two arc lamps, of an electromagnet and a polarized armature therefor provided in connection with each of said lamps, a pair of contacts controlled by each of said armatures for cutting the respective lamps into and out of circuit, said electro-magnets being wound relatively to their respective polarized armatures so that current in one direction will actuate one of said armatures to cut one lamp into circuit, while current in the opposite direction will actuate the second armature to cut the second lamp into circuit.

2. The combination of two arc lamps connected in series in reverse order, in an electric circuit, each provided with, included in the main circuit or in a branch circuit therefrom, an electro magnet having a permanently polarized armature adapted to assume one of two positions, in accordance with the magnetic relation of the polarized armature to the electro magnet, which polarized armature is provided with contacts adapted to be closed when the armature is in one of its positions, and when closed to complete a short circuit around the carbons of its lamp, and each lamp having the relation of the magnetizations of its electro magnet and polarized armature so arranged with reference to the other lamp that a current through both lamps shall cause the carbons of one lamp to be short circuited, as and for the purpose described.

3. The combination with two arc lamps connected in series in an electric circuit, of an electro-magnet and polarized armature therefor provided in connection with each of said lamps, a pair of contacts controlled by each of said armatures adapted when in contact to close a short circuit about the carbons of the lamp to which said contacts belong, said electro-magnets being wound relatively to their respective armatures so that current in one direction will actuate one of said armatures to open the contacts controlled thereby and thus cut the carbons of the lamp into circuit, while the current in the opposite direction will actuate the second armature to cut the second lamp into circuit.

543,901. TELEPHONE-EXCHANGE SYSTEM. CHARLES R. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Nov. 12, 1894. Serial No. 528,527. (No model.)



Claim.—1. The combination with a telephone line, of an annunciator and a battery normally included in the circuit of said line at the central station, a switch at the subscriber's station adapted to open the circuit of said line, and a pair of contact points in said line normally connected together, controlled by said annunciator and adapted to be opened to disconnect said annunciator from the line when the circuit of said line is interrupted by the switch at the subscriber's station.

2. The combination with a telephone line, of an annunciator and battery normally in circuit therewith at the central station, a switch at the subscriber's station for opening the circuit of said battery, contacts controlled by said annunciator adapted to be opened when the circuit of said battery is interrupted, and switch contacts closed together in the act of making connection with the line adapted to bridge the interruption of the circuit at the annunciator to restore the annunciator.

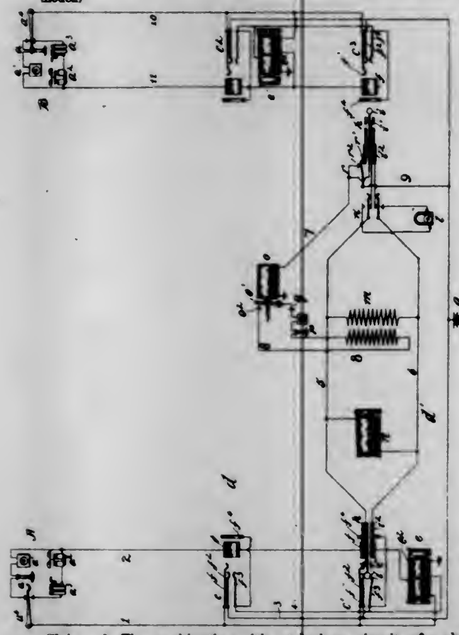
3. The combination with a telephone line, of an annunciator and a battery normally in circuit with said line at the central station, contacts controlled by said annunciator adapted to be opened when the circuit through said annunciator is interrupted, said line being provided at the subscriber's station with two branches of substantially equal resistance, one of said branches containing the telephonic apparatus and the other the calling apparatus, and a switch adapted to alternately include said branches in circuit with the line, and to momentarily open the circuit of said battery by the act of changing the connection through said branches.

4. The combination with a telephone line, of an annunciator and a battery in the line, contact points controlled by the annunciator adapted to open the circuit through the annunciator when the mag-

net of the annunciator is unexcited, a springjack for the line, and contact points therein adapted to be closed together when a plug is inserted in the springjack and to again connect the annunciator with the line, and means for interrupting the line circuit at the subscriber's station to operate the annunciator, substantially as described.

5. The combination with a telephone line, of means for interrupting the line circuit at the substation, a battery in the line at the central station, two annunciators in parallel branches of the circuit at the central station, each having contact points controlled by it adapted to open the circuit through it when the current through it is interrupted, and a circuit formed temporarily in the springjack, bridging the switch contacts of one of the annunciators, substantially as described.

543,902. APPARATUS FOR TELEPHONE-SWITCHBOARDS. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Dec. 8, 1894. Serial No. 531,301. (No model.)



Claim.—1. The combination with a telephone circuit, of a plug constituting the terminal of the circuit, a plug-seat-switch for the plug controlling the connection of an operator's telephone with the circuit, a relay also controlling the connection of the telephone with the circuit, the relay being itself controlled by circuit connections closed by the insertion of the plug into a springjack, substantially as described.

2. The combination with a telephone circuit, of a plug constituting the terminal thereof, a plug-seat-switch therefor controlling the connection of an operator's telephone with the circuit, a relay also controlling the connection of the telephone with the circuit, a normally open local circuit through the relay, and switch contacts adapted to be closed together to close the local circuit when the plug is inserted into a springjack, the relay being arranged to disconnect the telephone from the plug circuit when its magnet is excited, substantially as described.

3. The combination with a telephone circuit terminating in a plug, of a plug-seat-switch for the plug, a local circuit divided into two parallel branches, one of which is normally closed in the plug-seat-switch, and the other of which is open at contact points which are adapted to be closed together by the insertion of the plug in the springjack, a relay included, with a source of current, in the local circuit, and a telephone circuit whose connection with the circuits of the plug is controlled by the relay, substantially as described.

4. In combination, several pairs of connecting plugs, a plug circuit uniting the members of each pair, a repeating coil for each pair having one of its helices in the plug circuit and the other helix in circuit with an operator's telephone common to all the plug circuits, a plug-seat-switch for one plug of each pair controlling the circuit of the corresponding repeating coil with the telephone, a relay also controlling said circuit, and circuit connections adapted to operate the relay to open the said circuit when the plug is inserted into a springjack, substantially as described.

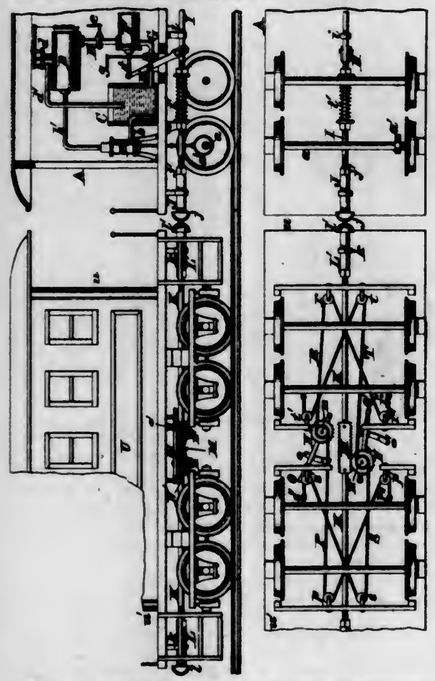
543,903. DEVICE FOR OVERCOMING DEAD-CENTERS. DAVID SEIBERT, Sr., Petoskey, Mich. Filed Apr. 20, 1894. Serial No. 508,312. (No model.)



Claim.—1. The combination with a treadle, a shaft having a crank, and a pitman extending from the treadle to the crank, of a spring having its lower end rigidly and adjustably connected with the treadle, said spring extending upward in front and above the shaft, and yielding connections between the pitman and the upper portion of the spring, said connections being adjustably and pivotally attached to the pitman and the spring, the point of attachment to the latter being above the shaft, substantially as described.

2. The combination with a treadle, a shaft having a crank, and a pitman extending from the treadle to the crank, of an oblong frame mounted on one end of the treadle and having upper and lower bars provided with perforations, a spring extending upward from the treadle in front and above the shaft and composed of a central resilient strip of metal and upper and lower arms provided with perforations, the lower arm being adjustably secured to the oblong frame by fastening devices passing through the perforations, and the yielding connection between the upper arm of the spring and the pitman comprising the telescoping sections having their outer terminals pivoted to the said spring and the pitman by fastening devices arranged in perforations of the same, and a spiral spring connecting the telescoping sections, substantially as described.

543,904. CAR-BRAKE. BERT SICKLES, Covington, Ky., assignor of three-eighths to Joseph S. Wohlgemuth, Cincinnati, Ohio. Filed Jan. 26, 1895. Serial No. 536,303. (No model.)

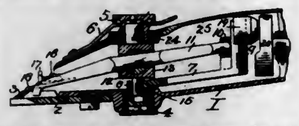


Claim.—1. A car provided with a single, central rod that is moved longitudinally, to operate suitable brake-mechanism, in combination with a pair of hand-shiftable devices capable of being readily engaged with said rod, or disengaged therefrom, for the purpose described.

2. The combination, in a brake-apparatus, of a compressor B; tank C; valve-guarded receiver D *d d'*; pipe E *e*; cylinder F *f*; and pipe G *g*, the piston of said cylinder being adapted to move a rod I, for the purpose described.

3. The combination, in a brake-apparatus, of the central, longitudinally-shiftable rod K, having a double rack M; a pair of pinions N, N', capable of being engaged with said rack, and disengaged therefrom, and connections that communicate motion from said pinions to the brake-bars, substantially as herein described.

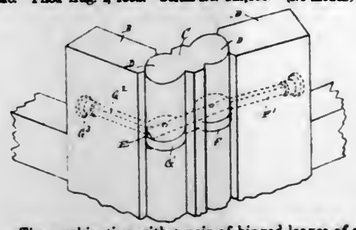
543,905. SHEEP-SHEARING MACHINE. DAVID SILVER and CHARLES T. SILVER, Tamworth, New South Wales. Filed Oct. 7, 1893. Serial No. 487,473. (No model.) Patented in England Sept. 4, 1893, No. 16,599.



Claim.—1. In combination in animal shears the cutter, the tension lever, the upper and lower bearings 4 and 5, the driving lever pivoted in the lower socket and the tension device having an upper portion fitting in the upper socket and a lower portion fitted in a socket formed in the end of the driving lever said driving and tension levers being pivoted together at their rear ends, substantially as described.

2. In combination, the cutter, the tension lever, the tension device comprising the pin with a central box and the upper and lower bearings for said pin, means for adjusting the pin vertically, the said tension lever being in the form of an open frame embracing the box and having a bearing in said box and the connection between the rear extension of the open frame and the driving lever, substantially as described.

543,906. HOSPITAL-SCREEN. ALGERNON S. SPAULDING, Worcester, Mass., assignor to the Flexible Door and Shutter Company, Portland, Me. Filed Aug. 4, 1892. Serial No. 442,199. (No model.)



Claim.—The combination with a pair of hinged leaves of an intervening strip C provided with barrels D, D, bars E, E, held transversely in said strip C and having pins E', E', concentric with said barrels, plate F hinged upon one of said pins and attached to one of said leaves and a plate G, provided with a radial slot G' by which it is hooked upon the other of said pins, said hooked plate being attached to the other of said leaves, substantially as described.

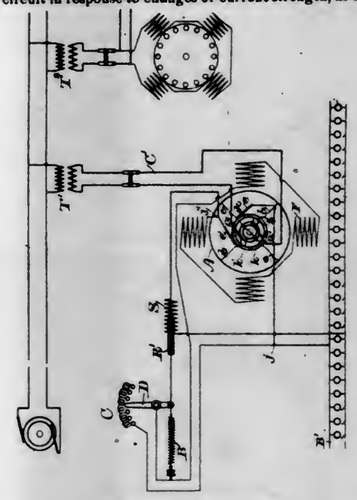
543,907. CONTROLLING PHASE RELATIONS. CHARLES P. STEINMETZ, Lynn, assignor to the General Electric Company, Boston, Mass. Filed Sept. 9, 1893. Serial No. 485,186. (No model.)

Claim.—1. The combination in an alternating current distribution system, of a phase controller coupled directly or indirectly in circuit so as to accelerate or retard the current relatively to the electro-motive force as required, and a regulator responsive to changes in current strength for varying said accelerating or retarding influence, as described.

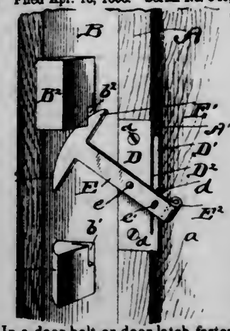
2. The combination in an alternating current distribution system, of an electro-dynamic phase controller comprising magnetic members which rotate relatively to one another, and adapted to exert an accelerating or retarding influence upon the current relatively to the electro-motive force, and an automatic regulator therefor regulating the action of said controller in response to changes in current strength, as set forth.

3. The combination in an alternating current system of distribution, of an electro-dynamic phase controller having magnetic members which rotate relatively to one another, and an electro-magnetic regulator responsive to variations in current strength, and regulating the inductive action in the controller, and thereby the phase relation between current and electro-motive force in the circuit, as set forth.

4. The combination in an alternating current system of distribution, of a synchronous electro-dynamic machine coupled in circuit so as to control the phase relation between current and electro-motive force, a resistance for regulating the field strength of said machine, and an electro-magnetic device acting to cut said resistance into or out of circuit in response to changes of current strength, as described.



543,908. DOOR LATCH OR BOLT FASTENING. JOHN T. STONE, Oakland, Cal. Filed Apr. 18, 1895. Serial No. 546,197. (No model.)



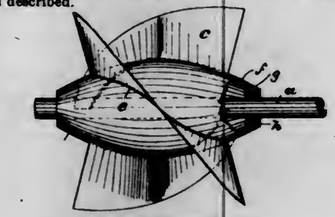
Claim.—1. In a door-bolt or door-latch fastening, the combination with a plate adapted to be secured to the edge of the door, a vertically-tilting latch pivoted to said plate, said tilting-latch being adapted to fasten the door-bolt or door-latch in the operative position of the latter, and the handle-forming end of the latch being provided with a hole, of a spring-catch formed upon the aforesaid plate and provided with a lug or projecting-member arranged to engage the aforesaid hole in the inoperative position of the fastening-latch, substantially as set forth.

2. In a door-bolt or door-latch-fastening, the combination of the plate D adapted to be secured to the edge of the door and slotted or slitted downwardly from its upper edge, as at D^2, to form a spring-catch D, and the latter being provided with a laterally-projecting lug or member d', and vertically-tilting latch E pivoted to the aforesaid plate and provided with hole e' and stop E^2, all arranged and operating substantially as shown, for the purpose specified.

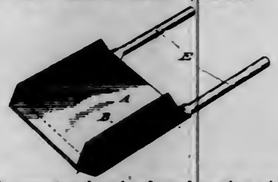
3. In a door-bolt or door-latch-fastening, the combination with a plate D adapted to be secured to the edge of the door and slotted or slitted vertically, as at D^2, to form a spring-catch D, and the latter being provided with a laterally-projecting lug or member d', of the vertically-tilting latch E pivoted, at its central portion, to the aforesaid plate and provided with hole e' and stop E^2, and the latch, at the end adapted to engage the bolt and latch of the door-lock, being enlarged upwardly and downwardly, as at D', all arranged and operating substantially as shown, for the purpose specified.

543,909. SCREW-PROPELLER. WALTER THOMPSON, Chicago, Ill., assignor to H. Duane Hurlburt, Paterson, N. J. Filed Oct. 16, 1894. Serial No. 526,060. (No model.)

Claim.—In a screw propeller the combination with the shaft, of a hollow elliptical hub secured on said shaft, and of a series of segmental shaped blades of uniform width arranged on said hub, and covering when viewed from either end the area of a complete circle, the outer or cutting line of each blade being substantially straight while its connecting line with the elliptical hub is curved, substantially as shown and described.

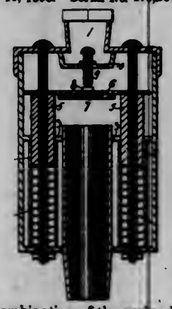


543,910. SNOW-SHOVEL. JOSEPH R. TORR, Philadelphia, Pa. Filed Nov. 7, 1894. Serial No. 528,141. (No model.)



Claim.—A snow shovel made of wood or other suitable material having a blade provided with a wear plate along the forward edge of its under side, guards suitably secured to its upper surface and having tapering forward edges, and handles having tapered ends secured to the lower side of said blade, extending along said blade beneath said guard, and forming a bearing surface, whereby said shovel is reversible, substantially as and for the purposes specified.

543,911. PRESSURE-REGULATOR. ROBERT A. TWISS, Fremont, Nebr. Filed June 19, 1893. Serial No. 478,207. (No model.)

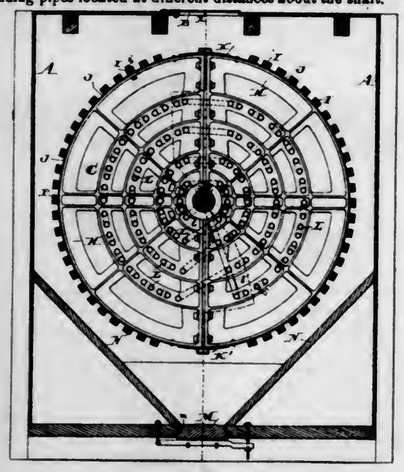


Claim.—1. The combination of the casing having a central portion and wings on opposite sides, springs mounted in sockets in the wings on opposite sides of the central part of the casing, a pipe or passage extending into the central part of the casing between the springs, a partition extending transversely across the casing near the inner end of the central pipe or passage, a valve-carrying plate between the end of the central passage and the entrance port, plungers on opposite ends of this plate extending into the spring sockets and a valve carried by this plate between openings x, x, located between the plungers.

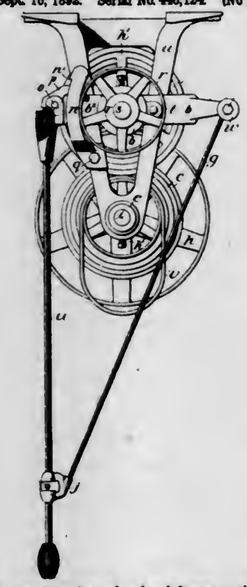
2. The combination of the casing having an entrance port at one end for connection with the main, a pipe for connection with the service pipes of the building extending through the opposite end of the casing, and having at its inner end a valve seat opposite the entrance port, a valve-carrying plate of large area within the casing opposite the entrance port, springs on opposite sides of the central pipe and in the lower portion of the casing, plungers carried by the valve-carrying plate and normally pressed toward the entrance port by the springs to hold the valve open, and an adjusting screw bearing on the valve-carrying plate to force it toward the inner end of the central pipe to vary the amount of fluid passing from the entrance port to the service pipe.

543,912. DRIER. PETER C. VOELLER, Philadelphia, Pa. Filed June 3, 1890. Serial No. 354,133. (No model.)

Claim.—A drying apparatus consisting of a closed chamber, a central rotary shaft extending through the chamber and having hollow ends, a rotary drying chamber carried by the rotary shaft, and a series of heating pipes within the rotary drying chamber, carried by it and extending longitudinally with reference to the central shaft and communicating with the hollow ends thereof and located at different distances from it so as to form concentric series of longitudinally extending pipes located at different distances about the shaft.



543,913. COUNTER-SHAFT. OAKLEY S. WALKER, Worcester, Mass. Filed Sept. 16, 1892. Serial No. 446,124. (No model.)



Claim.—1. The combination of a fixed frame, a shaft journaled in said fixed frame and a stepped pulley carried on said shaft, a pivoted frame, a shaft journaled in said pivoted frame, a stepped pulley carried on said shaft, an endless belt interposed between said stepped pulleys and a stop by which the angular motion of said pivoted frame is limited with relation to the shoulders of the steps of said pulleys, whereby said endless belt is restrained by said shoulders when the pulleys are operatively disconnected, substantially as described.

2. The combination of a fixed frame, a stepped pulley supported by said fixed frame, a pivoted frame, a stepped pulley supported by said pivoted frame, said pulleys having parallel axes, an endless belt interposed between said pulleys and a shipping rod connected with said pivoted frame, by which the pulley supported in said frame is carried toward, or away from, the other, substantially as described.

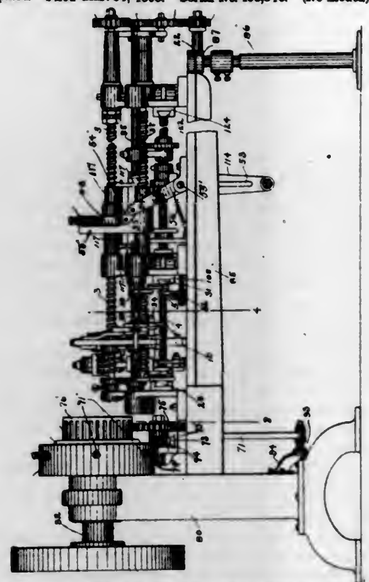
3. The combination of a hanger, a shaft journaled in said hanger, a stepped pulley carried on said shaft, a pivoted frame b, a shaft journaled in said frame, a stepped pulley carried on said shaft, a belt between said pulleys, a plate n attached to said hanger and curved concentric with the pivot of said pivoted frame, a pivoted lever carried by said pivoted frame and arranged to engage said curved plate, and means for actuating said pivoted lever, substantially as described.

4. The combination of hanger a, a stepped pulley c supported by said hanger, a pivoted frame b, a stepped pulley supported by said pivoted frame, a belt between said pulleys, a stop b on said frame, a pivoted lever p carried by said frame, a curved plate n attached to said hanger concentrically with the axis of said pivoted frame and said plate being placed between said stop and said pivoted lever and means for rocking said lever and gripping said curved plate, substantially as described.

5. The combination of hanger a, pivoted frame b, pulleys supported by said hanger and frame, an endless belt between said pulleys, a curved plate n attached to said hanger and concentrically with the axis of said pivoted frame, a pivoted lever p carried by said frame and arranged to bear against said curved plate, and a screw threaded rod held in said frame and bearing against said lever to press it against said curved plate, substantially as described.

6. The combination of the hanger a, pivoted frame b', stepped pulleys supported by said hanger and frame, a belt between said pulleys, rod u connected with one end of said pivoted frame, and a brace rod g connecting said rod u with the opposite end of said pivoted frame and a locking mechanism by which said pivoted frame is held from movement, substantially as described.

543,914. MACHINE FOR MANUFACTURE OF SWAGED-WIRE SPOKES. EDWIN J. WATSON and EDWIN W. VAUGHAN, Worcester, Mass., assignors to the Washburn & Moen Manufacturing Company, same place. Filed Mar. 31, 1893. Serial No. 468,510. (No model.)



Claim.—1. In machinery for making swaged wire bicycle spokes from a continuous wire, the combination with the swaging mechanism, of mechanism for gripping and drawing the wire through the swaging mechanism during the swaging operation, mechanism for moving apart the swaging dies to allow the wire to be drawn through the swaging mechanism without being swaged, mechanism for gripping and drawing the wire through the swaging mechanism during the cessation of the swaging operation, and mechanism for moving toward each other the swaging dies to continue the swaging operation, and means for operating said mechanisms in proper order, to continuously draw the wire through the swaging mechanism, substantially as set forth.

2. In automatic machinery for manufacturing swaged wire bicycle spokes from a continuous wire, the combination with mechanism for swaging the wire, and means for operating said mechanism, of mechanism for gripping the wire, and drawing it through the swaging mechanism during the swaging operation, mechanism for moving apart the swaging dies to allow the wire to be drawn through the swaging mechanism without being swaged, mechanism for gripping and drawing the wire through the swaging mechanism during the cessation of the swaging operation, to leave the full size of the wire for the ends of the spokes, mechanism for moving together the swaging dies to continue the swaging of the wire to form the reduced body portion of the spoke between the ends thereof, and means for automatically operating said several mechanisms in proper order to continuously draw the wire through between the swaging dies, substantially as set forth.

3. In automatic machinery for manufacturing swaged wire spokes from a continuous wire, the combination with mechanism for swaging the wire, and means for operating said mechanism, of two separate mechanisms for gripping the wire and drawing it through the swaging mechanism, during the swaging operation, and mechanism for moving apart the swaging dies to allow the wire to be drawn through the swaging mechanism without being swaged, mechanism for gripping and drawing the wire through the swaging mechanism during the cessation of the swaging operation, to leave the full size of the wire for the ends of the spokes, mechanism for moving together the swaging dies to continue the swaging of the wire to form the reduced body portion of the spokes, between the ends thereof, and means for automatically operating said several mechanisms in proper order, to continuously draw the wire through the swaging mechanism, to swage a portion thereof, and leave a portion unswaged, for the purpose stated, substantially as set forth.

4. The combination with the swaging mechanism, of mechanism for gripping the wire to be swaged, mechanism for giving motion to said gripping mechanism to draw the wire through between the swaging dies when the dies are closed, mechanism for operating the gripping mechanism to cause it to release the wire and return toward the swaging mechanism, mechanism for opening and closing the swaging dies, a second mechanism for gripping the wire, and mechanism for giving motion to said gripping mechanism to draw the wire through between the swaging dies when the dies are open, and a third gripping mechanism for gripping the wire when the dies are closed, and mechanism for giving motion to said gripping mechanism to draw the wire through between the closed dies, said third gripping mechanism alternating in operation with the first mentioned gripping mechanism, one moving away from the swaging mechanism while the other moves toward the swaging mechanism, so that the wire is drawn continuously through between the swaging dies, and means for automatically operating the several mechanisms in their proper order, substantially as set forth.

5. In machinery for swaging wire in continuous lengths, and adapted to swage a portion of the wire and leave a portion unswaged, the combination with swaging mechanism, and mechanism for opening and closing the swaging dies at regular intervals, to allow a portion of the wire to pass through between the dies without being swaged, of means for drawing the wire continuously between the swaging dies, said means consisting of mechanism for gripping the wire, and mechanism for giving motion to said gripping mechanism to move the same away from the swaging mechanism, and draw the wire through between the swaging dies when said dies are opened, said gripping mechanism after drawing the wire through between the open dies releasing the wire and returning to its first position, preparatory to again gripping the wire and drawing it through at the proper time, mechanism for gripping the wire and drawing it through between the swaging dies when said dies are closed, said mechanism consisting of a pair of travelers, each of said travelers supported and adapted to move on a rod away from, and toward the swaging mechanism, and provided with jaws or gripping surfaces for gripping the wire, and operated at the proper time to grip the wire and engage a screw threaded shaft to be moved away from the swaging mechanism, to draw the wire through between the closed swaging dies, and also operated at the proper time to release the wire and engage a screw threaded shaft and be returned toward the swaging mechanism, said travelers operated alternately to grip and draw the wire through between the closed swaging dies, so that when one reaches the limit of its travel away from the swaging mechanism, preparatory to releasing the wire, the other has reached the limit of its travel toward the swaging machine, preparatory to the gripping of the wire, and means for operating said travelers, substantially as set forth.

6. In machinery for swaging wire in continuous lengths, the combination with the swaging mechanism, and means for opening and closing the swaging dies at regular intervals, to allow a portion of the wire to be drawn through between the dies without being swaged, of means for drawing the wire through between the swaging dies when the dies are closed, consisting of two devices operating alternately to grip and release the wire, and mechanism for operating said devices to cause one to grip the wire and the other to release the wire, and one to be moved away from the swaging mechanism and the other to be moved toward the swaging mechanism, for the purpose stated, substantially as set forth.

7. The combination with swaging mechanism, of means for drawing the wire continuously through between the swaging dies during the swaging operation, consisting of two travelers, provided with grip-

ping devices, each of said travelers supported and adapted to move on a rod, and provided with screw threaded portions adapted to engage with revolving screw threaded shafts, to be moved away from the swaging mechanism, or toward the swaging mechanism, one traveler moving away from the swaging mechanism as the other traveler moves toward the swaging mechanism, and mechanism for operating said travelers to cause them to grip the wire at the end of their travel toward the swaging mechanism, and engage a screw threaded shaft to be moved away from the swaging mechanism, and also to release the wire at the end of their travel away from the swaging mechanism, and to engage a screw threaded shaft to be moved toward the swaging mechanism, for the purpose stated, substantially as set forth.

8. In a swaging machine, the combination with the swaging dies, and mechanism for actuating the dies to swage the wire, of mechanism for automatically opening the swaging dies, to allow the wire to be drawn through without swaging, and for closing the swaging dies to swage the wire, said mechanism consisting of wedges provided with yoke shaped outer ends to engage a flange on a gear, and said gear mounted and adapted to rotate on a screw on the stationary part of the swaging mechanism, and said screw, and means for operating the gear engaging said yoke shaped ends, to cause the wedges to be pushed in or withdrawn, for the purpose stated, substantially as set forth.

9. In machinery for swaging wire, the combination with the swaging mechanism, of mechanism for gripping the wire to draw it through between the swaging dies, consisting of a hub adapted to slide on a supporting rod and also have a partial rotation on said rod, and provided with a rigid arm extending up therefrom, provided with a half nut portion adapted to engage, in connection with a half nut portion hinged on said arm, a screw threaded shaft, and a stationary jaw or gripping surface at the upper end of said arm, a rigid arm extending out from the lower portion of said hub, provided with a half nut portion adapted to engage a second screw threaded shaft, and a sleeve mounted on said hub and adapted to move with said hub, and to have an independent rotary motion thereon, a link connecting said sleeve with the outer end of a lever pivoted on the upwardly extending arm of the hub, and said lever carrying at its inner end the movable jaw or gripping surface, for gripping the wire, substantially as set forth.

10. The combination with mechanism for gripping the wire to be drawn through a swaging machine, consisting of a hub adapted to slide on a supporting rod, and to have a partial rotation thereon, and having a rigid arm extending up therefrom provided with a half nut portion adapted to engage, in connection with a half nut portion hinged on said arm, a screw threaded shaft, and a stationary jaw or gripping surface at the upper end of said arm, a rigid arm extending out from the lower portion of said hub, provided with a half nut portion adapted to engage a second screw threaded shaft, and a sleeve mounted on said hub, and adapted to move with said hub, and to have an independent rotary motion thereon, a link connecting said sleeve with the outer end of a lever pivoted on the upwardly extending arm of said hub, and said lever, carrying at its inner end the movable jaw or gripping surface, for gripping the wire, of means for operating said gripping mechanism, to cause it to have a partial rotation on its supporting rod in one direction to grip the wire, and in the opposite direction to release the wire, substantially as set forth.

543,915. DRAW-GEAR AND BUFFING APPARATUS. GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa. Filed July 21, 1894. Serial No. 518,212. (No model.)

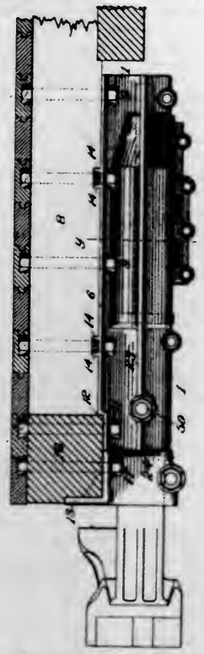
Claim.—1. A casing or frame, for draw gear or buffing mechanism, consisting of but two parts or sections, and forming, when the sections are bolted together side by side, a striking plate, one part of which is located on each section, a draw bar stirrup, and a guide and support for the draft or buffing apparatus, substantially as set forth.

2. A frame or casing, for draw gear or buffing apparatus, consisting of two sections which form a guide and support for the draft or buffing apparatus, a longitudinal flange on the upper side of each section which is adapted to be bolted to the end sill and draft timbers of a car, a shoulder on the flange adapted to bear against the inner lower side of the end sill and an upward extension adapted to bear against the outer side of the end sill whereby longitudinal movement of the frame, in either direction, relative to the end sill is resisted, substantially as set forth.

3. A two part casing or frame for draw gear or buffing apparatus, wherein each part or section shall contain one portion or side of the striking plate, one side of the guide and support for the draw bar and one side of a guide and support for the buffing apparatus, substantially as set forth.

4. The combination, in a buffing apparatus, of intercalated frictional devices having inclined or wedge-shaped frictional surfaces and mean for pressing the frictional surfaces together, substantially as set forth.

5. The combination, in a buffing apparatus, of intercalated wedge-shaped frictional devices adapted to be forced into contact for the purpose of creating a frictional resistance, and means for forcing the surfaces into contact, substantially as set forth.



6. The combination, in a buffing apparatus, of frictional devices, a carrier for actuating the frictional devices in a transverse or lateral direction for the purpose of creating a frictional resistance, and means whereby longitudinal movement of the frictional devices will produce an increasing frictional resistance, substantially as set forth.

7. The combination, in a buffing apparatus, of frictional devices having beveled or wedge-shaped frictional surfaces, whereby they are adapted to be wedged together transversely, and longitudinally inclined surfaces, whereby they are adapted to be wedged together longitudinally, and means for forcing said frictional devices into contact, substantially as set forth.

8. The combination, in a buffing apparatus, of an outer and an inner series of wedge-shaped bars, carrier plates adapted to act on and wedge the inner series of bars between the members of the outer series, and means for actuating the carriers, substantially as set forth.

9. The combination, in a buffing apparatus, of a wedge block, carrier plates surrounding the wedge block, two series of wedges, or wedge-shaped bars, surrounding the carriers, the members of each series projecting into the spaces between the members of the other series, and means for limiting the outer movement of the wedges, substantially as set forth.

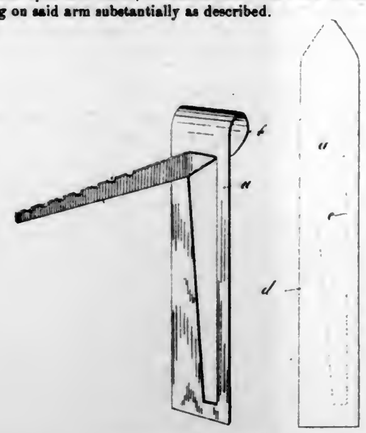
10. The combination, in a buffing apparatus, of a housing, frictional devices arranged in substantially cylindrical form within the housing, carrier plates formed of cylindrical segments, and means for actuating the carrier plates to force the surfaces into contact, substantially as set forth.

11. The combination, in a friction buffing apparatus, of a cylindrical housing, friction members located within the housing, carrier plates which are movable radially outward for forcing the surfaces of the frictional members into contact, and a wedge block in sliding contact with the carriers, whereby longitudinal movement of the draw bar may actuate the carriers to force the frictional members together, substantially as set forth.

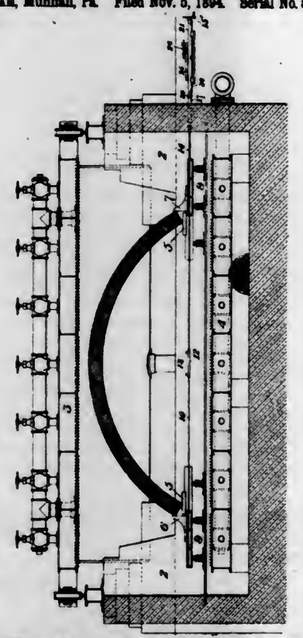
12. The combination, with a friction buffing mechanism, of a frame or casing formed of two longitudinal sections, a housing for the friction buffing mechanism which is located between the two sections, and stops formed integral with the sections of the frame or casing for limiting the longitudinal movement of the housing, substantially as set forth.

543,916. HOOK FOR TOASTING, &c. JOSEPH WHARTE, London, England. Filed Mar. 13, 1895. Serial No. 542,279. (No model.)

Claim.—A hook for toasting formed from a blank; a tongue or arm cut out and bent up; notches upon said arm; a turned over or bent end upon said blank, in combination with a rod or skewer engaging on said arm substantially as described.



543,917. REGULATING CHORD OF CURVED PLATES. WILLIAM WHEELAN, Munhall, Pa. Filed Nov. 5, 1894. Serial No. 527,876. (No model.)

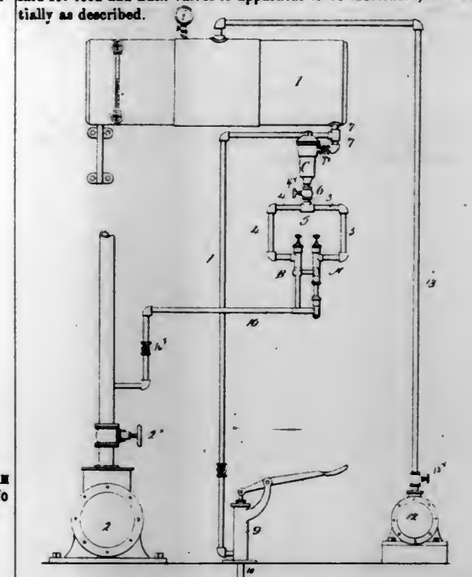


Claim.—The method of adjusting the chord of a curved plate in spraying the same during tempering, consisting in continuously measuring the same during the spraying operation and regulating the place of application of the cooling fluid to lengthen or shorten the chord according to the readings of the measuring device; substantially as described.

543,918. LUBRICATOR. PHINEAS S. WHITING, Des Moines, Iowa, assignor to the Wilson-Whiting-Davis Oiling Company, of New Jersey. Filed June 19, 1894. Serial No. 515,010. (No model.)

Claim.—1. The combination in a lubricating system, of a reservoir containing a lubricant under pressure, a main connected therewith, branches connected with said main, one of said branches having a set feed and the other a flush valve therein, and a single connection from said set feed and flush valves to apparatus to be lubricated, substantially as described.

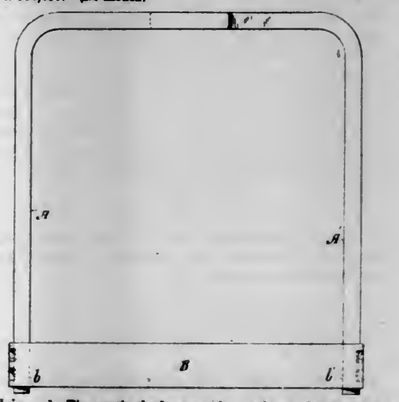
2. The combination in a lubricating system, of a reservoir containing a lubricant under pressure, a main connected therewith, branches connected with said main, one of said branches having a set feed and the other a flush valve, means for locking said set feed valve to a constant rate of feed, and a single connection from both said set feed and flush valves to apparatus to be lubricated, substantially as described.



3. The combination in a lubricating system, of a reservoir containing a lubricant under pressure, a main connected therewith, branches connected with said main one of said branches having a set feed and the other a flush valve therein, a single connection from said set feed and flush valves to apparatus to be lubricated, and a filter operatively connected with said system between the reservoir and said valves, substantially as described.

4. The combination in a lubricating system, of a reservoir containing a lubricant under pressure, a main connected therewith, branches connected with said main, one of said branches having a set feed and the other a flush valve therein, a single connection from both said set feed and flush valves to apparatus to be lubricated, and a valve connected with said system between said reservoir and said set feed valve and arranged to close automatically as the pressure in said apparatus falls, substantially as described.

543,919. METHOD OF CONNECTING ENDS OF ELECTRIC CONDUCTORS. JOHN T. BRENWICK, Brooklyn, assignor to the General Incandescent Arc Light Company, New York, N. Y. Filed Feb. 9, 1895. Serial No. 537,733. (No model.)

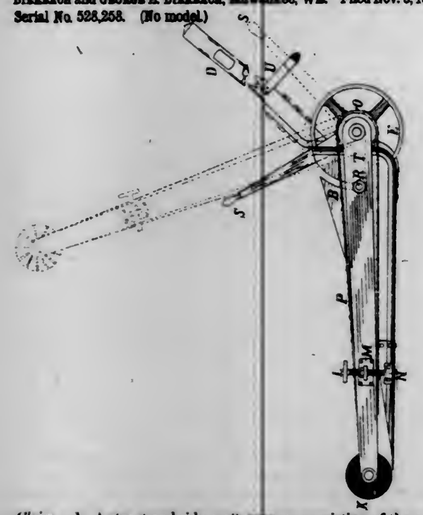


Claim.—1. The method of connecting rods or wires forming portions of an electric circuit, consisting in providing a rod or wire with a slot, inserting within said slot one of said rods or wires forming a portion of the electric circuit and which is provided with one or more notches, and finally forcing into said notch or notches a portion or portions of the rod or wire forming the side wall or walls of the slot, substantially as specified.

2. The method of connecting rods or wires forming portions of an electric circuit, consisting in providing a rod or wire with slots,

inserting within said slots the end portions of the rods or wires forming portions of the electric circuit, and which are provided with one or more notches, and finally forcing into said notch or notches a portion or portions of the rod or wire forming the side wall or walls of the slot, substantially as specified.

543,920. PAVEMENT OR SIDEWALK SCRAPER. CHARLES F. BIERBACH and GEORGE R. BIERBACH, Milwaukee, Wis. Filed Nov. 8, 1894. Serial No. 528,258. (No model.)



Claim.—1. A street and side-walk scraper consisting of the combination of the scraper plate A, the wheel-housings F, F formed in the rear portion thereof, and the pivotal supporting-wheels adapted to project into said housings, together with the manually operated actuating handle D extending upward and rearwardly from the body of said scraper and adapted to hold the same pivotally upon the wheels, substantially as described.

2. A street and side-walk scraper consisting of the combination of the scraper plate A, provided with the detachable wear edge C, sides B, and a raised back having the pocket W, the wheel-housings formed in the rear portion of the scraper plate and the pivotal supporting wheels adapted to project into said housings, together with the rearward projecting actuating handle D, adapted to hold the scraper pivotally upon said wheels, substantially as described.

3. A street and side-walk scraper, consisting of the combination of a scraper body or pan, having its rear portion supported upon wheels, a shaft upon which said wheels are located, projecting beyond the sides of the scraper, brush supporting bars loosely attached to said shaft and adapted to support a cylindrical brush immediately in front of the scraper, a rod connecting the supporting side bars near their rear ends, and a lever attached to said rod and adapted to raise said supporting bars and brush pivotally upon said shaft, together with a spring clip or lock adapted to engage said lever and lock the brush in a raised position, substantially as and for the purpose set forth.

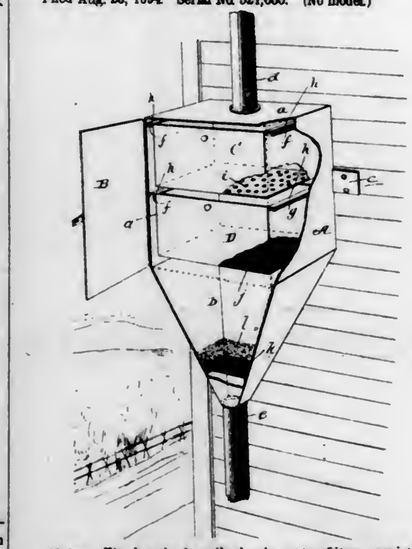
4. In a street and side-walk scraper, the combination with the supporting side bars I I, of an adjusting screw L adapted to operate through the flanged plate M and to bear upon the projecting lug N of the scraper pan, substantially as described.

543,921. CAR-COUPLING. WILLIAM R. BROWN, Labadie, Mo., assignor of one-half to Frank M. North, same place. Filed Feb. 13, 1895. Serial No. 538,198. (No model.)



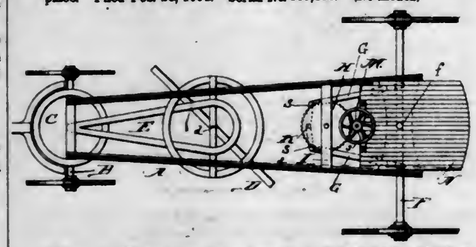
Claim.—In a car coupler, the combination with a suitable drawhead, a pin pivoted in the lower forward portion of the head, said pin comprising two members, C and C', a dog B arranged in the upper part of the head, with which member C of the pin co-operates, and a block D pivoted in the rear of the head, which block is recessed in its middle and at its forward under side, permitting member C of the pin to operate therein, the block, when the coupler is set, resting upon the outer end of member C', said block being also formed with side projections at its front end, which bear upon the link for holding it in a horizontal position, and with recesses *d* behind said projections, to receive the link; substantially as described.

543,922. FILTER. MINERVA R. BUCKLEY, Cherry Vale, Kans. Filed Aug. 23, 1894. Serial No. 521,055. (No model.)



Claim.—The herein described rain water filter, consisting essentially of the casing A, formed of sheet metal and provided with lugs *c*, for attachment to a building and having the upper chamber *a*, of rectangular form in cross section, the front of which is open and the lower chamber *b*, of rectangular form in cross section communicating with chamber *a*, and having flat side walls inclined inwardly and extending downwardly from the side walls of the chamber *a*, and also having the horizontal ledges *f*, *g*, on the side walls of the chamber *a*, and a door to close the front thereof, the removable drawer C, arranged in the chamber *a*, and having lateral flanges to engage the ledges *f*, and also having a foraminous bottom, the removable drawer D, arranged in the chamber *a*, below the drawer C, and having lateral flanges to engage the ledges *g*, and also having a screen bottom, the foraminated or screen support *k*, arranged in the chamber *b*, adjacent to the lower end thereof and filtering material placed upon the foraminated or screen support, all as and for the purpose set forth.

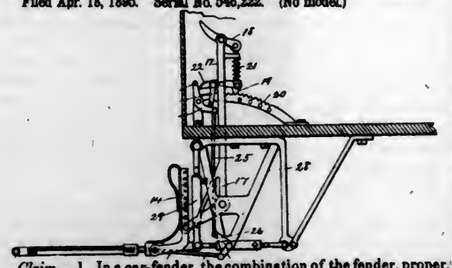
543,923. MACHINE FOR MAKING AND REPAIRING ROADS. MORTON G. BUNNELL, Chicago, Ill., assignor to Frederick C. Austin, same place. Filed Feb. 28, 1891. Serial No. 383,138. (No model.)



Claim.—1. The combination in a road-working machine of a diagonally adjustable scraper-blade arranged between the front and rear wheels, a horizontally swinging rear axle provided with a forwardly extending arm or hounds, a rotary gear carried by the body-frame, and a crank connection between the rotary gear and said arm or hounds; substantially as set forth.

2. The combination substantially as hereinbefore set forth, in a machine for making and repairing roads, of a body-frame pivotally connected with the front axle, a diagonally adjustable scraper-blade arranged to extend across the space between the front and rear wheels, a horizontally swinging rear axle provided with forwardly extending arm or hounds, a gear H supported upon the body-frame and connected with said arm or hounds by a crank connection forward of its pivotal support, a pinion supported upon the body-frame and arranged to engage the gear H, and a rotary shaft for operating said pinion.

543,924. CAR-FENDER. JAMES R. CAMPBELL, Pittsburg, Pa. Filed Apr. 18, 1895. Serial No. 546,222. (No model.)

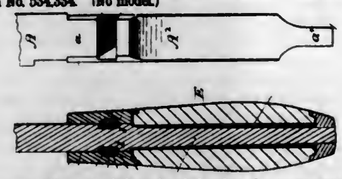


Claim.—1. In a car-fender, the combination of the fender, proper, the yokes connected thereto, a support carrying said yokes, the upwardly and rearwardly extending bent-bars with their lower ends arranged in said yokes and pivoted thereto, latches carried by said bent-bars and engaging projections on said fender, proper, and the lever connected to said bent-bars and adapted to be held in position, substantially as set forth.

2. In a car-fender, the combination of the fender, proper, the yokes connected to said fender, a support for said yokes, the rearwardly and upwardly extending bent-bars with their lower ends pivoted to said yokes, latches carried by said bent-bars and engaging projections on said fender, a bell-crank lever connected to said upwardly extending bent-bars, and a dog-pawl carried by said lever and engaging a rack, and a treadle pivoted upon the upper end of said lever and having a spring-pressed connection with said dog-pawl, substantially as set forth.

3. In a car-fender, the combination of the fender, proper, means for pivotally supporting it in position, the bell crank lever for actuating the same, having a dog-pawl adapted to be operated by the attendant and engage a retaining device or rack, a bell-crank adapted to be engaged by said dog-pawl, a locking device between said dog-pawl and one arm of said bell-crank, a second bell-crank, a rod or connection between said bell-cranks and a rod or connection between said second bell-crank and said fender, proper, substantially as specified.

543,925. WRENCH. FREDERICK L. COES, Worcester, Mass., assignor to the Coes Wrench Company, same place. Filed Jan. 9, 1895. Serial No. 534,334. (No model.)

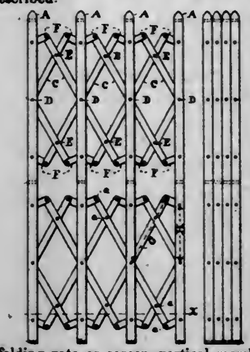


Claim.—1. The wrench-bar-shank having the transverse groove formed in the flat side thereof, with a square seating shoulder at the lower limit of said groove; in combination, with the ferrule having an opposite internal transverse groove, of less width, with seating shoulders at its upper and lower limit, and openings at the ends of such groove through the body of the ferrule, and the angular interlocking-key fitting the width of said ferrule groove, upset within the opposite grooves and against the lower seating shoulders of both the bar-shank and ferrule, for the purpose set forth.

2. The wrench-handle composed of the ferrule, its interior fitting upon the bar shank, and having transverse internal grooves and shoulders with openings at the ends of said grooves through the body of the ferrule, the end-tip attached to the shank end and the hand piece having a transversely oblong opening longitudinally therethrough, and reduced ends engaged by the tip of the ferrule; in combination with the bar-shank having transversely disposed grooves and shoulders in its sides, opposite those in the ferrule, and the rectangular keys inserted within said grooves and interlocking with both the ferrule and bar-shank, said keys upset within the groove spaces firmly against the shoulders, their ends riveted and dressed off flush with the exterior surface of the ferrule, substantially as set forth.

543,926. FOLDING GATE OR SCREEN. EVARISTE COPPIETERS San Francisco, Cal. Filed Mar. 25, 1895. Serial No. 543,120. (No model.)

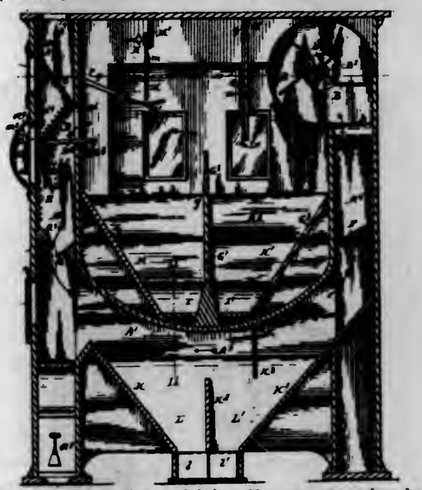
Claim.—1. In a folding gate or screen, a double set of vertical main bars or pickets A, rigidly joined together by cross struts B, with interposed long and short links C and F, connecting in the manner substantially as described.



2. In a folding gate or screen, vertical members or pickets in pairs, joined by cross bars or struts, in the manner described, a series of long links pivoted to each other and to adjacent vertical bars or pickets, and at their ends to short links attached to alternate pickets, in the manner substantially as described.

3. In a folding gate or screen, sets or pairs of vertical pickets joined together in the manner described, the pairs of pickets supported by long links or bars having five fulcra or pivotal points each, one on the pickets, two on corresponding links, and two on short links attached to alternate sets of vertical pickets, in the manner substantially as described.

543,927. PURIFIER, SEPARATOR, AND GRADER. DAVID J. DAVIDSON, Port Huron, Mich., assignor to the Davidson, Martin Manufacturing Company, same place. Filed Oct. 16, 1894. Serial No. 526,099. (No model.)



Claim.—1. In a continuous air belt purifier, separator and grader, the combination with a fan and fan case, of an air chamber communicating with the interior of the fan case, separating devices located in said air chamber, a vertical air trunk communicating with said air chamber, an air passage leading from the fan into said vertical air trunk separate from said air chamber, said vertical air trunk provided with a feed opening at its upper end, with a feed controlling valve beneath said opening, with an adjustable scattering plate, and with an adjustable depending lip pivoted at its upper end to have an oscillatory movement, substantially as and for the purpose described.

2. In a continuous air belt purifier, separator and grader, the combination with a fan and fan case, of an air chamber communicating with the interior of the fan case, separating devices located in said air chamber, a vertical air trunk communicating with said air chamber, an air passage leading from the fan into the vertical air trunk separate from said air chamber, an adjustable scattering plate provided with a depending lip located within said vertical air trunk, and means connected with said scattering plate for adjusting said plate and lip, substantially as set forth.

3. In a continuous air belt purifier, separator and grader, the combination with a fan and fan casing, of an air chamber communicating with the interior of said fan casing, separating devices located in said chamber, a vertical air trunk communicating with said air chamber, an air passage leading from the fan into said vertical air trunk separate from said air chamber, an adjustable scattering plate D and lip D' located in said vertical air trunk, an additional scattering plate E below the scattering plate D, deflecting devices located in said air trunk, a feed opening in the top of said vertical air trunk, an automatic feed controlling valve located in said air trunk below said opening, a discharge opening in the base of said air trunk, and an automatic discharge controlling valve located in said trunk above the discharge opening, substantially as set forth.

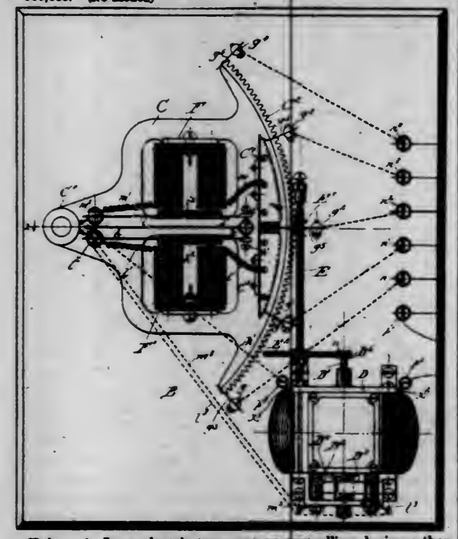
4. In a continuous air belt purifier, separator and grader, the combination of a fan and a fan casing, an air chamber communicating with the interior of the fan casing, a vertical air trunk communicating with said air chamber and bulged intermediate its extremities, an air passage leading from the fan into said vertical trunk separate from said air chamber, an adjustable scattering plate D, and lip D' located in said vertical air trunk adjacent to the bulged portion thereof, an additional scattering plate E below the bulged portion of the vertical trunk, a feed opening in the top of said vertical air trunk, an automatic feed controlling valve located in the air trunk below said opening, a discharge opening in the base of said vertical trunk, an automatic discharge controlling valve located in said trunk above the discharge opening, and separating devices located in said air chamber, the bulged portion of said vertical trunk providing a passage way in front of the scattering plate D and lip D' and serving as a deflector, substantially as set forth.

543,928. NECKTIE-HOLDER. JONAS F. DURLACHER, New York, N. Y., assignor to William Dreier and Florence R. Durlacher, same place. Filed Apr. 8, 1895. Serial No. 544,490. (No model.)



Claim.—As a new article of manufacture, a strip of elastic material provided at one end with a metallic clasp and a sharpened and rigid hook, and at the other end with a swivel hook formed with an end bent at right angles with itself, substantially as described.

543,929. ELECTRIC TEMPERATURE-CONTROLLING DEVICE. SVEN A. EKSTROM, Milwaukee, Wis. Filed May 1, 1894. Serial No. 509,683. (No model.)



Claim.—1. In an electric temperature-controlling device, a thermostat, fastened at one end to vibrate at its opposite end, and formed of two parallel extending differentially expanding sections, fastened together, one section being convoluted, substantially as described.

2. In an electric temperature-controlling device, the combination, with the valve or damper-shaft of the heater to be controlled electric circuit and source of electric energy, of a thermostatic device having contacts, an electric motor, and an electro-magnet contact-device geared to the motor-shaft, and having reversing electric connections with the motor, all said parts being in normally open generator circuits, controlled by said maguet device, whereby movement of the thermostat from one of its contacts to another closes one of said normally open circuits, to actuate the motor to turn the valve or damper-shaft, substantially as described.

3. In an electric temperature-controlling device, the combination, with the valve or damper-shaft of the heater to be controlled, electric circuit and source of electric energy, of a thermostatic device having three or more thermostatic contacts, an electric-motor in circuit with the thermostat, and a movable electro-magnetic contact device connected with the valve or damper-shaft and geared to the motor-shaft, carrying two contact-plates each in a separate normally-open generator circuit with one pole of the motor, an electro-magnet between each contact-plate and the motor, the maguets separately controlling the circuits to shunt the current through either said contact-plates and the motor, and terminals in the path of the said contact-plates separately in circuit with the thermostatic contacts, substantially as and for the purpose set forth.

4. In an electric temperature controlling device, the combination, with the valve or damper-shaft of the heater to be controlled, of a thermostatic device having a thermostat in a normally open generator circuit, a contact in position to be engaged by the thermostat at a predetermined normal temperature, and high temperature and low temperature thermostatic contacts on opposite sides thereof, an electric motor, and a movable electro-magnetic contact-device, connected with the valve or damper-shaft and geared to the motor-shaft, provided with two contact-plates insulated from each other and two electro-magnets each of which, with one of the said contact-plates and one of the poles of the motor, is in a separate normally open circuit controlled by the respective electro-magnet, and brush-terminals connected respectively with the respective thermostatic contacts and extending in the path of said contact-plates, in position to be engaged, only one at a time, by said plates respectively, the parts being so arranged that movement of the thermostat from one to another of the thermostatic contacts, closes the normally open circuit through the contact with which it engages, the brush-terminal of said contact, one said contact-plate and one pole of the motor to energize the respective electro-magnet to shunt the generator current through the respective motor pole and thereby actuate the motor to turn the electro-magnetic contact-device and through the latter to turn the valve or damper, substantially as described.

5. In an electric temperature-controlling device, the combination, with a thermostatic device having three or more thermostatic contacts, of valve or damper-turning mechanism comprising a base, an electric motor on the base in circuit with the thermostat, a swinging damper-turning lever pivotally mounted on the base having a segmental rack geared to the motor and carrying contact-plates, insulated from each other and connected respectively in circuit with the opposite poles of the motor, electro-magnets between the contact-plates and motor having circuit making and breaking armatures, brushes on the base located at intervals in the path of said contact-plates a distance apart slightly exceeding the lengths of said plates and in circuit with the respective thermostatic contacts, substantially as and for the purpose set forth.

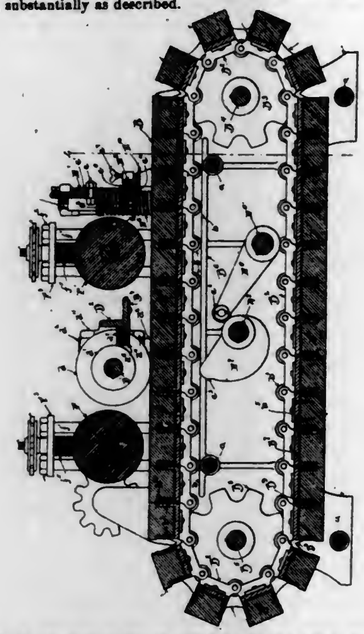
6. In an electric temperature-controlling device, the combination of a thermostatic device having thermostatic contacts g g' g^3 g^2 and g^4, and valve or damper-turning mechanism comprising a base, an electric motor on the base in circuit with the thermostat, an electro-magnet contact-device comprising a lever pivotally mounted on the base and connected with the valve or damper and having a segmental rack geared to the motor-shaft, binding-posts m^2 l^3 in circuit with opposite poles of the motor, a contact-plate C^4 in circuit through an electro-magnet F with the binding post m^2, a contact plate C^3 in circuit with the binding post l^3 through a magnet F', a spring i' normally engaging a contact-projection, k, and carrying the armature of the magnet F, a spring h on the terminal l^3 also normally engaging the contact k and provided between its ends with the armature of the magnet F', the contact k being in circuit with the motor field and terminals g g' g^2 g^3 g^4, each in circuit with one of the thermostatic-contacts and carrying a brush in the path of the contact-plates C^4 C^3, the whole being constructed and arranged to operate substantially as and for the purpose set forth.

543,930. MACHINE FOR CUTTING CANDY. GEORGE V. FRYE, Chicago, and BYRON B. CARTER, Hinsdale, Ill. Filed May 13, 1894. Serial No. 511,023. (No model.)

Claim.—1. In a machine for cutting caramels and other similar substances, the combination of slitting cutters, a reciprocating cross cutter, a cam applied to said cross cutter to impart thereto a sudden thrust or kick at the end of its cut, a bed or table upon which the mat of stock is supported, means to impart thereto an intermittent movement, and a roll or rolls adapted to press upon said mat of stock, and to hold the same immovable upon the bed or table, substantially as described.

2. In a machine for cutting caramels and other similar substances,

the combination of slitting cutters, the reciprocating cross cutter, a cam applied to said cross cutter to impart thereto a sudden thrust or kick at the end of its cut, a bed or table upon which the mat of stock is supported, means to impart thereto an intermittent movement, and a roll or rolls adapted to press upon said mat of stock and to hold the same immovable upon the table, said rolls being intermittently driven simultaneously with and at the same surface speed as said bed or table, substantially as described.



3. In a machine for cutting caramels and other similar substances, the combination of slitting cutters, a reciprocating cross cutter, a cam applied to said cross cutter to impart thereto a sudden thrust or kick at the end of its cut, a bed or table upon which the mat of stock is supported, the surface of said bed or table being made of wood thoroughly permeated with paraffin, means to impart to said table an intermittent movement, a roll or rolls adapted to press upon said mat of stock and to hold the same immovable relatively to said bed or table, said roll or rolls being intermittently actuated simultaneously with and at the same surface speed as said bed or table, substantially as described.

4. In a machine for cutting caramels and other similar substances, the combination of slitting cutters, a reciprocating cross cutter, a cam applied to said cross cutter adapted to impart a sudden thrust or kick thereto at the end of its cut, a brush or pads or pieces of felt, saturated with oil or other desired lubricant being supported in contact with the slitting cutters adjacent to their cutting edges, pads or pieces of felt saturated with a desired lubricant supported in contact with the cutting edge of the cross cutter, a bed or table upon which the mat of stock is supported, the surface of said bed or table being made of wood thoroughly permeated with paraffin, means to impart to said table an intermittent movement, a roll or rolls adapted to press upon the mat of stock and to hold the same immovable relatively to said bed or table, said roll or rolls being intermittently actuated simultaneously with and at the same surface speed as said bed or table, substantially as described.

5. In a machine for cutting caramels or other similar substances, the combination of slitting cutters, a reciprocating cross cutter, a cam applied to said cross cutter, adapted to impart thereto a sudden thrust or kick at the end of its cut, an endless, sectional bed or table supported upon suitable wheels or drums, means to impart thereto an intermittent movement, said means comprising a ratchet wheel secured to the shaft of one of the supporting wheels or drums, a plurality of pawls adapted to engage the teeth thereof, said pawls being mounted at the free end of an oscillating lever, and the ends thereof being separated by a distance equal to the pitch of the ratchet wheel, or a multiple thereof, and a fraction thereof over, said fraction being one over the number of pawls, or a multiple thereof, a roll or rolls adapted to press upon the mat of stock and to hold the same immovable relatively to the bed or table, said roll or rolls being intermittently actuated simultaneously with and at the same surface speed as said bed or table, substantially as described.

6. In a machine for cutting caramels and other similar substances, the combination of slitting cutters, a reciprocating cross cutter, a cam applied to said cross cutter to impart thereto a sudden thrust or kick at the end of its cut, an endless, sectional bed or table supported upon suitable wheels or drums, a ratchet wheel secured to the shaft of one of the supporting wheels or drums, a pawl or pawls adapted to engage the teeth thereof, mounted at the free end of a lever pivoted adjacent to said ratchet wheel, and means to impart to said lever a variable, oscillatory movement, said means comprising a rotating disk, an arm pivoted thereto, a clamp to adjustably secure the other end of said arm to said disk, and a rod connecting said arm and pawl-carrying lever, all of said points of attachment being eccentric relatively to the center of rotation of said disk, a roll or rolls adapted to press upon the mat of stock and to hold the same immovable relatively to the bed or table, said roll or rolls being intermittently actuated simultaneously with and at the same surface speed as said bed or table, substantially as described.

7. In a machine for cutting caramels and other similar substances, the combination with the cutters, the bed or table upon which the stock is supported and means to impart an intermittent movement to said bed or table, of retaining devices to hold the mat of stock immovable relatively to said bed or table, substantially as described.

8. In a machine for cutting caramels and other similar substances, the combination with the cutters, the bed or table upon which the stock is supported, and means to impart thereto an intermittent movement, of a roll or rolls adapted to press upon the mat of stock and to hold the same immovable relatively to said bed or table, substantially as described.

9. In a machine for cutting caramels and other similar substances, the combination with the cutters, the bed or table upon which the stock is supported and means to impart an intermittent movement to said bed or table, of a roll or rolls adapted to press upon the mat of stock and to hold the same immovable relatively to said bed or table, said roll or rolls being intermittently actuated simultaneously with and at the same surface speed as the bed or table, substantially as described.

10. In a machine for cutting caramels and other similar substances, the combination with the cutters, an endless, sectional table upon which the stock is supported, and means to impart an intermittent movement thereto, of a roll or rolls adapted to press upon the mat of stock and to hold the same immovable relatively to said bed or table, substantially as described.

11. In a machine for cutting caramels and other similar substances, the combination with an endless table, comprising a plurality of sections, secured to corresponding links of chain belts, of sprocket wheels to which said chain belts are adjusted and means for imparting an intermittent movement to said table, said means comprising a ratchet wheel rigidly secured to one of the table supporting shafts and a plurality of pawls adapted to engage the teeth thereof, said pawls being mounted at the free end of an oscillating lever and the ends thereof being separated by a distance equal to the multiple of the pitch of the ratchet wheel, and a fraction thereof over, said fraction being one (1) over the number of pawls or a multiple thereof, substantially as described.

12. In a machine for cutting candy and other similar substances, the combination with an endless, sectional table, wheels or drums upon which said bed or table is supported, a ratchet wheel secured to the shaft of one of the table supporting wheels or drums, a pawl or pawls engaging said ratchet wheel, mounted at the free end of a lever pivoted adjacent to said ratchet wheel, of means to impart to said lever a variable, intermittent movement, said means comprising a rotating disk, an arm pivoted at one end to said disk, a clamp to adjustably secure the other end of said arm to said disk, and a rod connecting said arm with the pawl-carrying lever, substantially as described.

13. In a machine for cutting caramels and other similar substances, the combination with a reciprocating cutter of means to impart thereto a sudden thrust or kick at the end of its cut, substantially as described.

14. In a machine for cutting caramels and other similar substances, the combination with a reciprocating cutter of means to impart thereto a slow movement during the cutting stroke and means to impart thereto a sudden thrust or kick at the end of its cutting stroke, substantially as described.

15. In a machine for cutting caramels and other similar substances, the combination with a reciprocating cutter, of a cam applied thereto, adapted to impart to said cutter a sudden thrust or kick at the end of the cut, substantially as described.

16. In a machine for cutting caramels and other similar substances, the combination with a reciprocating cutter, or a cam applied thereto, which will impart a slow movement to said cutter during its cutting stroke ending in a sudden thrust or kick at the end of the cut, substantially as described.

17. In a machine for cutting caramels and other similar sub-

stances, the combination with a reciprocating cutter of a cam applied thereto to depress the same, said cam terminating in a projection or tappet adapted to impart a sudden thrust or kick to said cutter at the end of its cut, substantially as described.

18. In a machine for cutting caramels and other similar substances, the combination with a cross cutter of operative connection between said cutter and a rock shaft whereby oscillation of said shaft will depress said knife, means to impart oscillatory movement to said rock shaft, said means comprising a lever secured to said shaft and a lever with which the free end of said cam engages, said cam ending in a tappet or projection adapted to impart a sudden thrust or kick to said cutter at the end of its cut and means to raise said cutter, substantially as described.

19. An endless table comprising a plurality of sections and aprons adapted to close the openings between adjacent sections thereof, substantially as described.

20. An endless bed or table, comprising a plurality of sections, each consisting of a metallic base plate and a facing of wood or other similar material, substantially as described.

21. An endless bed or table, comprising a plurality of sections, each consisting of a hollow metallic base plate and a facing block of wood or other similar material secured thereto, a tongue or reduced portion of which engages or is inserted into the recess formed in the base block, substantially as described.

22. An endless bed or table comprising a plurality of sections, each consisting of a metallic base plate and a facing block of wood thoroughly permeated with paraffin, substantially as described.

23. In a machine for cutting caramels and other similar substances, the combination with the cutters and the movable bed or table, of a retaining roll or rolls so supported as to yield away from said bed or table, and stops to limit the approach of said rolls to said table, substantially as described.

24. In a machine for cutting caramels and other similar substances, the combination with the cutters, the bed or table and a retaining roll or rolls of blocks in which the retaining roll shafts have suitable bearings and said blocks being movable toward and from the bed or table on rigid studs, supporting plates secured between nuts threaded to the upper ends of said studs, other studs rigidly secured in the bearing blocks which pass through holes in said supporting plates, nuts threaded to the ends of said studs and a spring inserted between the bearing blocks and the supporting plates, substantially as described.

25. In a machine for cutting caramels and other similar substances, the combination with the cutters, the bed or table and a retaining roll or rolls of blocks in which the retaining roll shafts have suitable bearings and said blocks being movable toward and from the bed or table on rigid studs, supporting plates secured between nuts threaded to the upper ends of said studs, other studs rigidly secured in said bearing blocks and which pass through holes in said supporting plates, sprocket wheels threaded to said studs above said supporting plates, and chain belts, connecting the sprocket wheels at opposite ends of the same roll, substantially as described.

26. In a machine for cutting caramels and other similar substances, the combination with the cutting knives of pads or pieces of felt or other absorbent material supported in contact with the sides of said cutters adjacent to the cutting edges thereof, said pads being saturated with oil or other desired lubricant, substantially as described.

27. In a machine for cutting caramels and other similar substances, the combination with a gang of slitting cutters and a stripper plate therefor, of pads or pieces of porous felt or other absorbent material, secured to said stripper plate in contact with the cutters, adjacent to their cutting edges, said pads being saturated with oil or other desired lubricant, substantially as described.

28. In a machine for cutting caramels, the combination with a reciprocating cutter and a plate, through an opening in which said knife plays, of pads of absorbent material secured thereto in contact with the sides of said knife, said pads being saturated with oil or other desired lubricant, substantially as described.

29. Knives for cutting caramels and other similar substances both sides of which are symmetrically beveled, adjacent to their cutting edges, at an angle of substantially two and one-fifth degrees, to a thickness of three sixty-fourths of an inch ($\frac{3}{64}$") at the edge, said cutters being brought to an edge by rounding off the beveled sides thereof on circular lines of about one quarter of an inch, ($\frac{1}{4}$") radius, tangent to the beveled surfaces, and intersecting at the middle of said cutters, substantially as described.

543,931. PRIMARY BATTERY. GEORGE H. GARDNER, Boston, Mass. Filed July 5, 1894. Serial No. 516,630. (No model.)

Claim.—In a primary battery, the combination of a binding post having a metallic connection passing through the bottom of the cell and terminating in a flat curved spring so arranged and located, as described, that in placing the zinc element into the cell, an automatic connection is made, substantially as and for the purpose set forth.

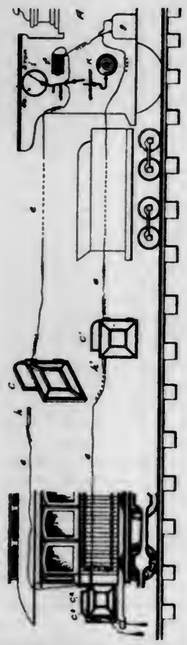


543,932. DRAFT-EXCLUDER FOR DOORS. WALTER T. HALL and WILLIAM J. BAYLISS, London, England. Filed Nov. 5, 1894. Serial No. 527,935. (No model.)



Claim.—An improved draft excluder for windows, doors and the like, formed from a length of chenille inclosed in a tube of baize, cloth or the like material, and fixed in the rabbet of the door frame or corresponding part of the window, substantially as and for the purposes specified.

543,938. ELECTRIC SIGNAL FOR RAILWAY-TRAINS. JOHN C. HENRY, Westfield, N. J. Filed Apr. 20, 1895. Serial No. 546,542. (No model.)

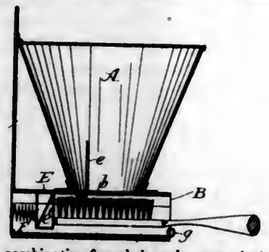


Claim.—1. In a signaling device for railway trains a magnetic electric alarm, located on the locomotive; a circuit completed throughout the train; switches arranged at the gates of the cars, and means whereby an alarm is actuated by opening any one of the gates, and the opposite alarm is given only by the closure of all of said gates.

2. In a signaling device for railway trains a magnetic electric alarm, located on the locomotive; a circuit completed throughout the train; switches arranged at the gates of the cars, and means whereby a signal is made on the locomotive by opening any one of the gates, and another signal is made when all of said gates are closed.

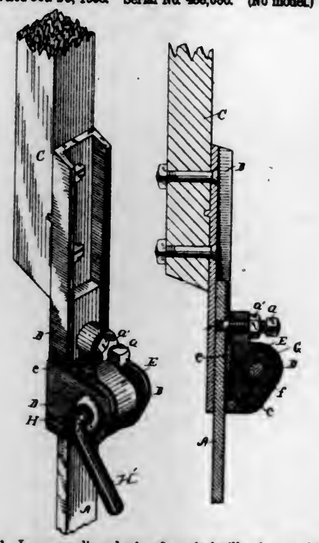
3. The combination with a railway car, of a gate protecting each entrance thereto, a switch adjacent to each gate and in position to be operated thereby, a signaling device in circuit with said switch, and means whereby one signal is given when a gate is opened and another when all the gates are closed, substantially as described.

543,934. TOOTH-BRUSH CHARGER. THOMAS HOLLIS, Milton, Mass. Filed May 3, 1895. Serial No. 547,980. (No model.)



Claim.—In combination funnel shaped receptacle A; slotted box B; valve E with its stud e' and stirrer e; spring F; drawer G and supporting plate D, all organized substantially as described.

543,935. COUPLING DEVICE. JOHN T. HOSTLER, Kalamazoo, Mich. Filed Oct. 20, 1893. Serial No. 488,680. (No model.)



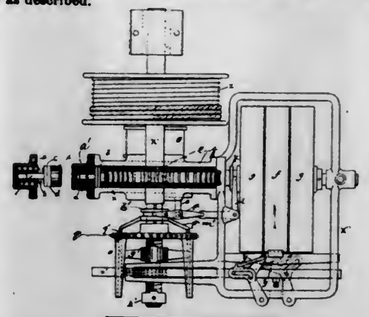
Claim.—1. In a coupling device for windmills, the combination, with a pump rod, C, piston-rod, A, and the slide, B, carrying the projecting plates, D, of a latch-piece, E, pivoted in the plates, D, and having the elongated slot, f, the adjustable bolt, a, carried by the latch-piece, E, the rod, H, having the handle, H', and the cam, G, carried on the rod, H, and working in the slot of the latch-piece and adapted to operate the pivoted latch in both directions and to hold it in position.

2. In a coupling device for windmills, the combination with a pump-rod, C, piston-rod, A, the slide, B, the projecting plates, D, thereon a latch-piece, E, pivoted in the plates, D, and having the elongated slot, f, a projecting part, a, on the latch-piece, E, the rod, H, the handle, H', and the cam, G, on the rod, H, working in the slot f of the latch-piece and adapted to operate the pivoted latch in both directions and hold it in position.

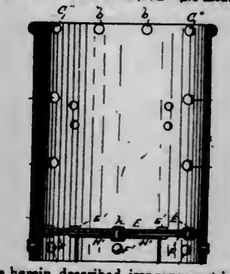
543,936. HOISTING-MACHINE. JOHN M. HOWARD, Chicago, Ill. Filed June 18, 1894. Serial No. 515,074. (No model.)

Claim.—1. The combination with the shaft h carrying fast and loose pulleys f, g, g, and belt shifting devices, of the shaft x', drum s thereon, a rope wound on said drum and carrying a load, gearing connecting shafts h, and x', the sprocket wheel q, a clutch adapted to connect sprocket wheel q with shaft x', connections whereby or between sprocket wheel q and the belt shifting devices, and means whereby the clutch is operated to connect the sprocket wheel q with the shaft x' and shift the belt shifting devices to stop the winding drum when the load meets with an obstruction in its descent, substantially as described.

2. The combination with the shaft h carrying fast and loose pulleys f, g, g, and belt shifting devices of the shaft x', drum s thereon, a rope wound on said drum and carrying a load, gearing connecting shafts h and x', collar k on shaft h, lever l engaging collar k, shaft m' connected to lever l, sprocket wheel q connected to shaft m', a clutch adapted to connect sprocket wheel q with shaft x', means whereby the clutch is operated to connect sprocket wheel q with shaft x' when the load meets with an obstruction in its descent, and connections between sprocket wheel q and the belt shifting devices, substantially as described.

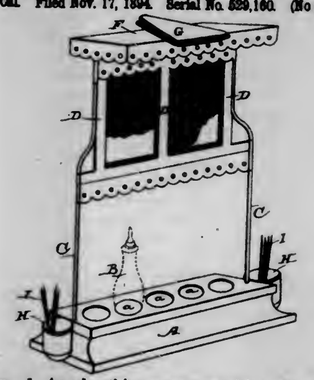


543,937. ASH-BARREL. CHARLES A. HURLEY, Boston, Mass. Filed Jan. 19, 1895. Serial No. 535,464. (No model.)



Claim.—The herein described improvement in ash-barrels, consisting of the combination with the steel sides strengthened by the rim B and uprights C C", the raised bottom E provided with the circular support F, and the central supporting feet consisting of the horizontal plates or strips H' crossing each other and secured centrally to the under side of the bottom and having their ends H bent downwardly thus producing four feet at equal distance from the center of the bottom, substantially as set forth.

543,938. ADVERTISING-CASTER. CHARLES E. LARRABEE, Berkeley, Cal. Filed Nov. 17, 1894. Serial No. 529,160. (No model.)

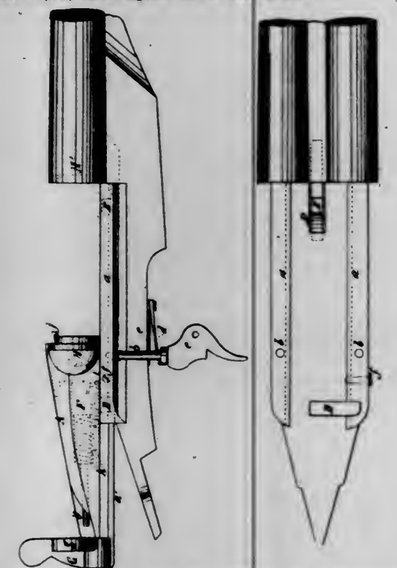


Claim.—1. An advertising caster comprising a frame adapted to contain caster bottles, an open bottom frame of grooved framing strips adapted to contain advertising cards, a broad flat shelf surmounting the frame and serving as a support for napkins, and a vertical support rising from the base and supporting the frame at such an elevation that a clear space is provided between the bottom of the frame and the caster bottles.

2. The combination, of a base, an upright frame rising therefrom and consisting of side standards and grooved framing strips between the upper portions of the standards adapted to receive advertising cards, said standards supporting at their top a broad flat shelf adapted

to hold napkins, and receptacles fixed to the base adapted to contain tooth-picks.

543,939. **BREECH-LOADING GUN.** PAUL B. LATRIGE, Saint-Etienne, France. Filed Oct. 23, 1893. Serial No. 488,920. (No model.) Patented in France Mar. 24, 1893, No. 228,736; in Belgium Mar. 27, 1893, No. 104,069, and in England Mar. 28, 1893, No. 6,539.

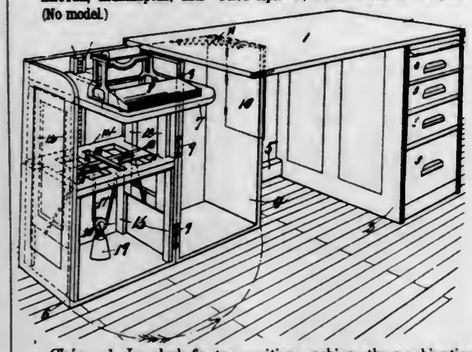


Claim.—1. In a breech-loading fire-arm, the combination with the breech having the longitudinal recess D and the transverse recess B, the ribs on opposite sides of the breech, the vertically-movable spring-actuated pins *b*, projecting upwardly through the breech, and the stop *f*, of the barrel having a hook engaging the recess D, the breech-block adapted to slide longitudinally of the breech and having grooves receiving the ribs on the breech, the projection *g*, on the breech-block adapted to enter the recess B, the breech-bolt carried by the breech block, the firing pins carried by the breech block, and a sear adapted to engage a firing pin and to be operated by a pin *b*, to release said firing-pin, all as and for the purpose specified.

2. In a breech-loading fire-arm, the combination with the breech, of the breech-block adapted to slide longitudinally thereon, the breech-bolt carried by the breech block and provided with helical grooves toward its front end and adapted to be turned transversely of the breech, the firing pins each provided with a lug engaging the grooves and adapted to be automatically moved backward to a cocked position by reason of the engagement of the lugs within the grooves when the breech bolt is turned as described, the springs surrounding the firing pins and adapted to be compressed by the backward movement of the firing pins, the extractors carried by the breech block and adapted for forward and backward movement therein, said extractors consisting each of a two-branched spring *u*, one of the branches terminating in a hook *j*, and having downwardly extending projection *t*, adapted to engage in a groove *t'* in the firing pin and be struck by the latter during the forward movement thereof to cause the extractor to move forward and its hook *j*, to engage the rim of the fired cartridge, all as and for the purpose specified.

3. In a breech-loading fire-arm, the combination with the breech, of the breech-block adapted to slide longitudinally thereon, the breech-bolt carried by the breech-block and provided with helical grooves toward its front end and adapted to be turned transversely of the breech, the firing pins each provided with a lug engaging the grooves and adapted to be automatically moved backward to a cocked position by reason of the engagement of the lugs within the grooves when the breech bolt is turned as described, the springs surrounding the firing pins and adapted to be compressed by the backward movement of the firing pins, the extractors carried by the breech block and adapted for forward and backward movement therein, said extractors consisting each of a two-branched spring *u*, one of the branches terminating in a hook *j*, and having downwardly-extending projection *t*, adapted to engage in a groove *t'* in the firing pin and be struck by the latter during the forward movement thereof to cause the extractor to move forward and its hook *j*, to engage the rim of the fired cartridge, and trigger mechanism for releasing the firing pins consisting of the sear *h*, terminating at one end in a hook adapted to engage in a notch in the firing pin, the spring *i'*, the vertically movable pin *h* adapted to strike the other end of the sear to cause the latter to release the firing pin, and a trigger adapted to operate the vertically-movable pin, all as and for the purpose specified.

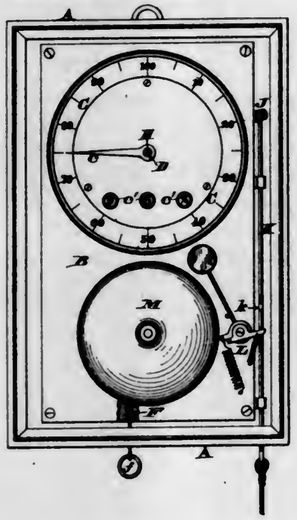
543,940. **DESK FOR TYPE-WRITING MACHINES.** HERMAN LAUTER, Indianapolis, Ind. Filed Apr. 30, 1894. Serial No. 509,583. (No model.)



Claim.—1. In a desk for type writing machines, the combination with a desk having an end casing or chamber with its front open, of a case or chamber hinged at one edge of its open side to the front of said desk chamber, a table inclosed in said hinged case and adapted to be raised or lowered vertically and sustained in any vertical position, suitable depending guides or runners for supporting said table, ways wherein said guides slide, suitable means for counterbalancing said table, and the means for supporting the same, substantially as and for the purpose set forth.

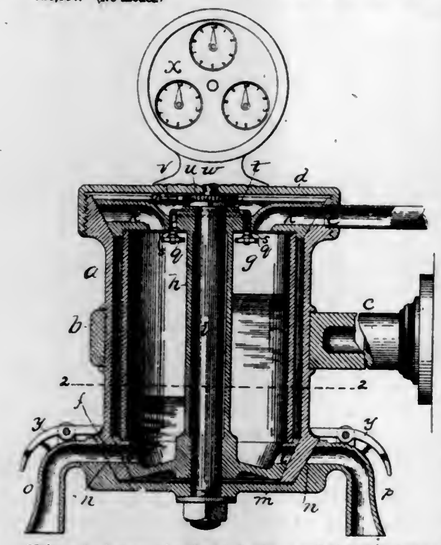
2. In a desk for type writing machines, the combination with a desk having an end compartment with its front open, of a case or chamber hinged to the front of said end compartment, a table adapted to be moved vertically in said hinged case, depending runners secured to the bottom side edges of said table, guide strips secured vertically on the inner sides of said hinged case, and between which said runners work, a pulley supporting frame resting on the top ends of said strips and secured within said hinged casing, suitable cord pulleys resting on said frame, a counterbalance weight suspended intermediate between and below said cord pulleys, and a counterbalance cord extending from said weight over said pulleys and connected at its ends to the bottom bars of said guide runners, and means for sustaining said table in position, substantially as and for the purpose set forth.

543,941. **REGISTER FOR OIL DELIVERED.** JOHN F. LORSTROM, Cincinnati, Ohio, and JOHN H. LORSTROM, Newport, Ky. Filed Apr. 15, 1895. Serial No. 545,740. (No model.)



Claim.—The combination, in a register, of a dial C; a pointer *c*, adapted to travel around said dial; a sleeve D that carries said pointer; a spool E, to which said sleeve is attached; a shaft H around which said sleeve turns; a ratchet-wheel I fastened to said shaft; a lever J *j*, for operating said ratchet-wheel; a stop-plate G *g g'* hung upon said sleeve; and a fixed stop *b*, that occupies the slot *g'*, of said plate, for the purpose described.

543,942. **MEASURING OR REGISTERING VALVE OR FAUCET.** MARTIN W. LYDON, Wallingford, Conn. Filed Oct. 25, 1894. Serial No. 526,907. (No model.)

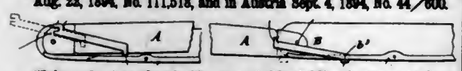


Claim.—1. A measuring faucet having a cylindrical casing provided with a single inlet port and a single exhaust port, a revoluble valve having a plurality of compartments each provided with an inlet aperture and an exhaust aperture, a spindle loosely mounted in said casing and having the valve rigidly mounted thereon, and a plate rigidly secured to said spindle and having a series of spouts, one for each exhaust aperture, substantially as set forth.

2. A measuring faucet, having an inlet port and an outlet port, and provided with a revoluble valve having a plurality of compartments, each compartment having an inlet port *k* and an outlet port *l*, and a series of spouts one for each compartment, and adapted to be revolved, whereby a spout and its corresponding port *l* will intermittingly register with the outlet port of the faucet, substantially as set forth.

3. A measuring and registering faucet having a stationary casing provided with a supply port and an exhaust port; and also provided with a projection on one side, a valve mounted in said casing and having a plurality of compartments each having an inlet aperture and a discharge aperture, and a plate having a series of spouts rigidly connected with said valve and locks on said plate to engage said projection, substantially as set forth.

543,943. **POCKET-KNIFE.** WALTER J. MEIFER, London, England, assignor of one-half to John Sanders, same place. Filed Feb. 9, 1895. Serial No. 537,788. (No model.) Patented in Germany Apr. 12, 1894, No. 78,364; in France Aug. 21, 1894, No. 240,867; in Belgium Aug. 22, 1894, No. 111,518, and in Austria Sept. 4, 1894, No. 44/600.

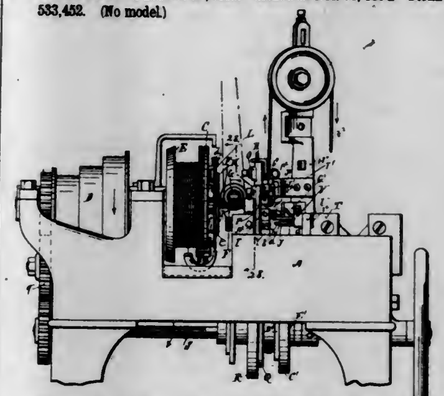


Claim.—1. A pocket-knife, or such like folding instrument, having an extension piece carried by and longitudinally movable in the tang of each blade of the knife or instrument, for the purpose, substantially, as described.

2. A pocket knife, or such like folding instrument, having an extension piece carried by and longitudinally movable in the tang of each blade or instrument, a shoulder upon the blade for limiting the movement of the extension to a predetermined extent, and a back spring having a recess and shoulder for receiving and holding the extension in a predetermined position.

3. A pocket knife, consisting of the combination of a pivoted blade, having a groove and a shoulder upon each side thereof, a back spring, having a recess and shoulder *c*, an extension piece having two arms fitting respectively in the grooves, and having at its respective ends a nose piece for abutting against the shoulder on the blade in a predetermined position, and a fork on the other end, adapted to engage with the said shoulder *c*.

543,944. **CHAIN-MACHINE.** WILLIAM A. PECK and FREDERICK A. PECK, Providence, R. I.; said Frederick A. Peck assignor to said William A. Peck. Filed Oct. 27, 1892. Renewed Dec. 31, 1894. Serial No. 533,452. (No model.)



Claim.—1. In a machine for making chain-links, the combination with the cutter, and the stationary mandrel, the revolving spindle, the reel held upon the spindle, and the face plate, of the spring-actuated levers attached to the face plate, and adapted to hold the wire against the mandrel, and to force the coils forward to the cutter, substantially as described.

2. In a machine for making chain-links, the combination with the cutter, the stationary mandrel, the swaging die and plunger, of the grooved and notched guide-bars, and the carrier, for conveying the severed link from the end of the mandrel, to the holding notch of the guide-bars, in front of the swaging-die, substantially as described.

3. In a machine for making chain-links, the combination with the cutter, the stationary mandrel, the swaging-die and plunger, of the grooved and notched guide-bars, the carrier for conveying the severed link from the end of the mandrel, to the holding notch of the guide-bars in front of the swaging-dies, and the finger for opening the guide-bars to release the link, substantially as described.

4. In a machine for making chain, the combination with the swaging-die and plunger, of the linking-jaws, adapted to seize the link upon the stem of the swaging-plunger, and means for withdrawing the said stem from the seized link, substantially as described.

5. In a machine for making chain, the combination with the swaging-die and plunger, and a suitable guide for the chain, of the linking-jaws adapted to seize the link upon the stem of the swaging-plunger, means for withdrawing the said stem from the seized link, and means for conveying the link to the end of the chain held in the guide and for bringing the jaws together, substantially as described.

6. In a machine for making chain, the combination with the swaging-die and plunger, and a suitable guide for the chain, of the linking-jaws, pivotally held upon a sliding bar, the cam for operating the sliding bar, a sliding wedge shaped cam, for operating the jaws, to seize the link upon the stem of the swaging-plunger, and to close the link in the chain, means for moving the said stem from the seized link, and the rotary cam for operating the wedge shaped cam to open and close the jaws, substantially as described.

7. In a machine for making chain, the combination with the swaging-die and plunger, and a suitable guide for the chain, of the linking-jaws, pivotally held upon a sliding-bar, the cam for operating the sliding-bar, the sliding wedge-shaped cam provided with the two operating portions, the adjustable shoes for engaging the said cam portions, and the rotary cam for operating the wedge-shaped cam, substantially as described.

8. In a machine for making chain, the combination with the chain guide, and the linking jaws adapted to close the link to the chain, of the feed pin adapted to enter the space within the link to be closed, and carry the end links of the chain upward with the guide, substantially as described.

9. In a machine for making chain, the combination with the chain guide, and the linking jaws adapted to close the link to the chain, of the feed pin provided with the pivoted head, and the actuating spring, and the inclined cam for imparting forward and backward movement to the feed pin, substantially as described.

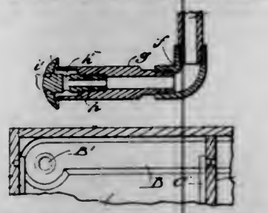
10. In a machine for making chain, the combination with the linking jaws, and the feed pin, of the chain guide adapted for a slight upward and downward movement with the linking jaws, and the holding jaws, adapted to clamp the chain upon the downward movement of the guide, substantially as described.

11. In a machine for making chain, the combination with the linking jaws, and the feed pin, of the chain guide adapted for a slight upward and downward movement with the linking jaws, the holding jaws adapted to clamp the chain upon the downward movement of the guide, and the spring fingers which serve to hold the lower link of the chain in proper position for engagement, substantially as described.

12. In a machine for making chain, the combination with the automatic chain linking mechanism, of the insulated electric contact pins, and means for operating the same automatically, substantially as described.

543,945. URINAL. SAMUEL J. PUTNAM, Prince's Bay, N. Y.

Filed Sept. 26, 1894. Serial No. 524,150. (No model.)



Claim.—1. In a device of the character described, an ejector secured against the wall thereof, comprising a forwardly ranging tube, a tubular plug therein opening into the mouth thereof, having a transverse groove extending therethrough near its outlet, and having an integral interiorly concaved imperforate cap thereon, said plug being screwed into the tube, and the cap thereby secured against the mouth of the tube to close the same, the upper edge of said tube being cut out to permit the device to spray upwardly and rearwardly, substantially as shown and described.

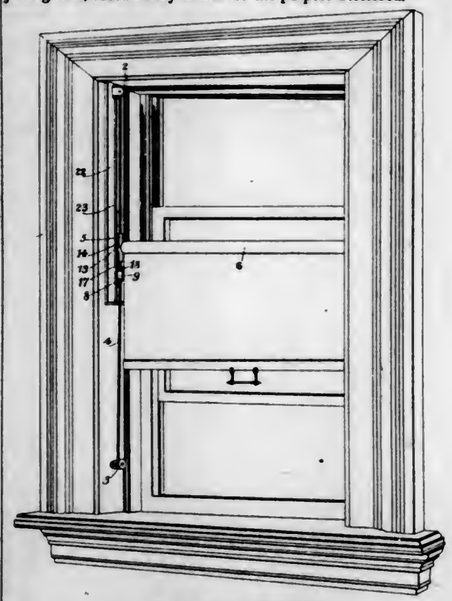
2. In a device of the character described, an ejector comprising a threaded tube adapted to be secured to the water outlet, and having an interiorly enlarged mouth at the end thereof, and cut out at the top only, a threaded tubular plug screwed in the end of said tube and provided with a transverse groove extending therethrough and opening into the said tubular plug, whereby the water enters the enlarged mouth of the tube and an integral interiorly concaved imperforate cap formed upon said plug and secured against the edge of the tube, whereby it closes the mouth of the same at the bottom and partially closes said mouth at the top, to cause said ejector to spray upwardly and rearwardly, substantially as shown and described.

3. A device of the character described, comprising a base having a trough therein and upwardly projecting walls, a water supply pipe, a branch leading therefrom and opening above the trough, and an ejector thereon comprising a forwardly ranging tube, a tubular plug therein opening into the mouth thereof, and an interiorly concaved cap secured against the mouth of the tube and closing the lower half thereof only, whereby the ejector sprays semi-spherically upward against the rear wall of the device, a normally closed valve in the supply pipe, and means for closing the same, substantially as shown and described.

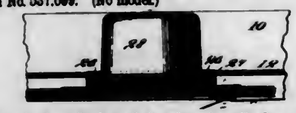
4. A device of the character described, comprising a base having a trough therein, toward which it slopes, and rear and side walls projecting upwardly therefrom, a water supply pipe above the walls, a valve therein having a bar or handle thereon normally raised by spring pressure to hold the valve normally closed, a branch pipe leading from the main pipe and opening above the trough, an ejector thereon held against the rear wall, open at the top only, and having an interiorly concaved head whereby it sprays semi spherically upwardly against the rear wall when the valve is opened, a platform pivoted in the side walls and normally held above the horizontal plane, and a rod pivoted thereto and to the handle of the valve whereby when the said platform is stepped upon the valve opens, and the ejector is caused to operate, substantially as shown and described.

543,946. WINDOW-CURTAIN FIXTURE. EDWIN I. PYLE, Bridgeport, Conn. Filed May 23, 1895. Serial No. 550,438. (No model.)

Claim.—In curtain fixtures of the character described, the combination of the adjusting cord, the pulleys around which said cord is passed, the bearings carried by said cord and in which the curtain roller is journaled, the screws depending from said bearings, the adjusting nuts on said screws provided with annular grooves, the swivels provided at one end with an eye and at the other end with an internal annular flange which engage the annular grooves on the adjusting nuts, substantially as and for the purpose described.



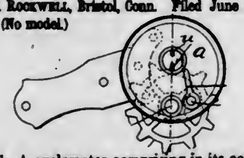
543,947. TRAY FOR CARRYING STRAW HATS IN SAMPLE-TRUNKS. WILLIAM C. RICHARDS, St. Louis, Mo. Filed Feb. 2, 1895. Serial No. 537,099. (No model.)



Claim.—1. In a device of the class described a tray comprising a bottom 12 having notched corners, side bars 16—17 fixed to said bottom 12 and of greater length than said bottom, legs 19 having reduced end portions engaging in the notches of said bottom and engaged by the end portions of said side bars, and end bars 21—22, having grooves 24 engaged by the ends of said bottom and notches 23 engaged by the extreme end portion of said side bars, which bottom is pierced by a plurality of apertures 25.

2. In a device of the class described a plurality of trays, each comprising a bottom 12 having a plurality of apertures arranged in rows, each of which apertures is lined by a strip 26 of cloth, a plurality of cushioning rings of felt fixed to said bottom and surrounding said apertures, side bars 16—17 fixed to said bottom, end bars 21—22 having grooves 24 engaged by said bottom, legs 19 to which said side bars and end bars are secured, straps fixed to the end bars and traversing said apertures in proximity to said rings, and handles 32—33 fixed to said end bars, arranged and combined as set forth for the purposes stated.

543,948. REGISTERING MECHANISM FOR CYCLOMETERS. ALBERT F. ROCKWELL, Bristol, Conn. Filed June 14, 1894. Serial No. 514,546. (No model.)



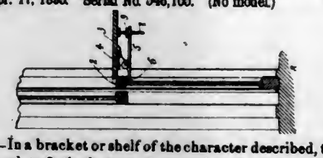
Claim.—1. A cyclometer comprising in its construction a shaft, a series of alternating indicating and frictional spacing disks arranged on the said shaft, the former being constructed to turn on the shaft and the latter fixed thereto to turn only with the shaft, means for holding the indicating disks against turning, and means connected with said disks for releasing the holding means of the next adjacent disk at each revolution of the other disk, to permit a step movement of the said adjacent disk.

2. A cyclometer comprising in its construction a shaft, a series of alternating indicating and frictional spacing disks arranged on the said shaft, the former being constructed to turn on the shaft and the latter fixed thereto to turn only with the shaft, pawls for engaging means on the indicating disks to hold the same against turning, means connected with the said disks for acting upon the said pawls of the next adjacent disk to release the same and permit a step movement of the said adjacent disk.

3. A cyclometer comprising in its construction a shaft, a series of alternating indicating and frictional spacing disks arranged on the said shaft, the former being constructed to turn on the shaft and the latter fixed thereto to turn only with the shaft, a series of pins projecting laterally from the disks, holding pawls for engaging the said pins, a pin connected with the next adjacent disk for acting upon the pawl in its path of travel to release the pawl and allow the disk controlled thereby to have a step movement imparted to it.

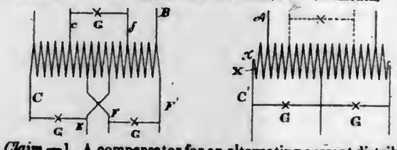
4. A cyclometer comprising in its construction a shaft, a series of alternating indicating and frictional spacing disks arranged on the said shaft, the former being constructed to turn on the shaft and the latter fixed thereto to turn only with the shaft, an indicating disk, supplemental to those aforesaid, rigid on said shaft, means for imparting a step by step movement to said supplemental indicating disk, means connected with the indicating disks for imparting a step by step motion from one to another to indicate or register the number of revolutions of a wheel, and means for rotating the shaft and moving all of the indicating disks at the same time to move them back to zero.

543,949. PORTABLE SHELF. CHARLES S. STONE, Erving, Mass. Filed Apr. 17, 1895. Serial No. 546,105. (No model.)



Claim.—In a bracket or shelf of the character described, the combination of a plate 3, the hangers 4 secured to the under side of said plate, a lever 5 pivoted between said hangers and having a clamping jaw 6 at one end and a longitudinal slot 7 at the other end thereof, screw fastened to the rear end of the plate 3 and operating in said slot in the lever and a nut 9 mounted on said screw above the lever and adapted to be adjusted to clamp the jaw 6 against a body arranged beneath the plate, substantially as described.

543,950. SYSTEM OF ELECTRIC DISTRIBUTION. ELIHU THOMSON, Swampscott, assignor to the General Electric Company, Boston, Mass. Filed June 28, 1894. Serial No. 516,006. (No model.)



Claim.—1. A compensator for an alternating current distribution system, adapted to subdivide the potential of the delivered current, consisting of a coil, an impressing circuit connected thereto, and impressed circuits fed therefrom, the connections from the impressed circuits overlapping each other, as herein described.

2. The method of regulating the potential of an alternating current, which consists in connecting the impressed circuit or circuits to points in a coil embracing between them a fraction of its length, and attaching the impressing circuit connections to the coil at various relative distances from the impressed circuit connections and from the ends of the coil, to determine the potential of the current delivered to the impressed circuits, as set out herein.

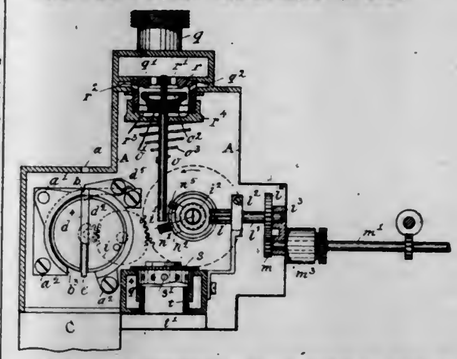
3. In a system of distribution of electric energy, a generator, lines leading therefrom, translating devices fed in parallel from such lines, and a compensating coil included between the lines having sets of connections therefrom to other translating devices, such connections in each set embracing parts of the coil less than its entire length, and the relative distances of the connections of the impressing circuit and the impressed circuits from the ends of the coil being fixed so as to determine the potential upon the impressed circuits suitable for the translating devices employed, substantially as herein set out.

4. In a compensator for an alternating current circuit, a coil connected between the leads of the impressing circuit, and two or more coils also connected in such impressing circuit and in the impressed circuit or circuits and acting to vary the effect of the first coil and thus determine the potential of the current delivered to the impressed circuit or circuits.

5. As a new article of manufacture, a compensator for alternating current circuits, consisting of a coil, connections for the impressing circuit attached to such a coil, and connections for impressed circuits also connected to the coil in overlapping positions, as herein described and for the purpose set forth.

6. The method of regulating the potential of an alternating current herein set out, which consists in connecting an impressing circuit to a coil at various distances from its ends, and connecting an impressed circuit to the coil at various distances from the impressing circuit connections.

543,951. PREPAYMENT GAS-METER. THOMAS THORP, Whitefield, THOMAS G. MARSH, Manchester, and JOHN HAYNES, Liverpool, England. Filed Oct. 22, 1894. Serial No. 526,630. (No model.)



Claim.—1. The combination with a prepayment gas meter of a hollow cylinder fixed in a casing both having slots for the insertion of a coin, two solid cylinders inserted into the fixed cylinder and held apart by a projecting segment on one of them and having slots in their faces for the insertion of said coin, a handle and pointer attached to the front solid cylinder outside of the casing, a lever under spring pressure extending into the space between the cylinders and arranged to eject the coin after half a turn of the cylinder, a lever fulcrumed in a slot of the front cylinder actuated by a fixed inclined segment so as to project and butt against a stop in the back cylinder at the moment of the ejection of the coin and release the stop when an entire revolution of the cylinders has been completed, and mechanism for opening the gas inlet valve operated by the revolution of the cylinders.

2. The combination with a prepayment gas meter of a coin receiver making one entire revolution for each coin inserted, a pinion fixed to the same driving a wheel having another wheel with lateral teeth attached thereto, a sleeve loose on the axis of said wheel, a pivot fixed in said sleeve at a right angle thereto, a pinion mounted on the pivot meshing with said wheel with lateral teeth; a second wheel with lateral teeth loose upon the sleeve and also meshing with said pinion, a crown wheel fixed to the second wheel and meshing with a pinion rotated by the index driving shaft of the meter in the opposite direction to that in which the first wheel is rotated by the pinion fixed to the back cylinder, a gas inlet valve having a stem projecting into the path of the pivot fixed into the sleeve and encountered by the same when the sleeve is rotated backward by said index driving shaft, substantially as and for the purposes described.

3. The combination with a prepayment gas meter of a lever under spring pressure for expelling the coin from the coin receiver, and making one oscillation for each coin inserted, a pawl fulcrumed on said lever and actuating a ratchet wheel on a spindle, and a coin totalizing index driven by said spindle.

4. The combination with a prepayment gas meter of a hollow cylinder fixed in a casing having slots for the insertion and ejection of a coin, two solid cylinders inserted into said fixed cylinder and held apart by a projecting segment on one of them and having slots in their faces for the insertion of said coin, a handle and pointer attached to the front cylinder outside of the casing, a lever under spring pressure extending into the space between said cylinders and arranged to eject the coin after half a turn of the cylinder, a pawl connected thereto actuating a coin totalizing index, a lever fulcrumed in a slot of the front cylinder actuated by a fixed inclined segment so as to project and butt against a stop in the back cylinder at the moment of the ejection of the coin and release the stop when an entire revolution has been completed; a pinion fixed to the back cylinder and driving a wheel having another wheel with lateral teeth attached thereto, a sleeve loose on the axis of said wheel, a pivot fixed in said sleeve at a right angle thereto, a pinion mounted on said pivot meshing with said wheel with lateral teeth, a second wheel with lateral teeth loose upon said sleeve and also meshing with said pinion, a crown wheel fixed to said second wheel and meshing with a pinion rotated by the index driving shaft in the opposite direction to that

in which the first wheel is rotated by the pinion fixed to the back cylinder, a gas inlet valve having a stem projecting into the path of the pivot fixed into the sleeve and encountered by the same when the sleeve is rotated backward by said index driving shaft.

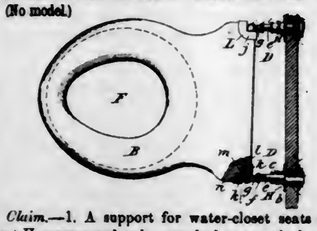
5. The combination with a prepayment gas meter of an inlet valve consisting of a valve chamber with central inlet and lateral outlets, a seating formed on the inside of said inlet, a recessed valve disk of larger diameter than said seating and having a flexible diaphragm stretched over it, said diaphragm having an opening in the center, a stem formed on said valve disk and attached gas tight to the center of a diaphragm stretched over the valve casing and attached thereto by means of a cap through which the valve spindle projects.

6. The combination with a prepayment gas meter of a hollow cylinder fixed in a casing having slots for the insertion and ejection of a coin; two solid cylinders inserted into said fixed cylinder and held apart by a projecting segment on one of them and having slots in their faces for the insertion of said coin, a handle and pointer attached to the front cylinder outside of the casing, a lever under spring pressure extending into the space between said cylinders and arranged to eject the coin after half a turn of the cylinder, a lever fulcrumed in a slot of the front cylinder actuated by a fixed inclined segment so as to project and butt against a stop in the back cylinder at the moment of the ejection of the coin and release the stop when an entire revolution has been completed; a pinion fixed to the back cylinder driving a wheel having another wheel with lateral teeth attached thereto, a sleeve loose on the axis of said wheel, a pivot fixed in said sleeve at a right angle thereto, a pinion mounted on said pivot meshing with said wheel with lateral teeth, a second wheel with lateral teeth loose upon said sleeve and also meshing with said pinion, a crown wheel fixed to said second wheel and meshing with a pinion rotated by the index driving shaft in the opposite direction to that in which the first wheel is rotated by the pinion fixed to the back cylinder; a valve chamber with central inlet and lateral outlets, a seating formed on the inside of said inlet, a recessed valve disk of larger diameter than said seating and having a flexible diaphragm stretched over it, said diaphragm having an opening in the center; a stem formed on said valve disk and attached gas tight to the center of a diaphragm stretched over the valve casing and attached thereto by means of a cap through which the valve spindle projects into the path of the pivot on the sleeve and is encountered thereby when the sleeve is rotated backward by said index driving shaft.

7. The combination with a gas meter provided with screwed gas inlet of a casing containing a valve and mechanism for opening the same by means of a coin inserted into the casing and closing it when the quantity paid for has been consumed, a port leading from the valve to the gas meter, an opening in the under side of the port fitting over said gas inlet and an opposite opening in the top side, a screwed flanged cap with lateral openings fitting into the same and attaching the casing to the meter by being screwed upon the inlet pipe.

8. The combination with a prepayment gas meter of a hollow cylinder fixed in a casing having slots for the insertion and ejection of a coin; two solid cylinders inserted into said fixed cylinder and held apart by a projecting segment on one of them and having slots in their faces for the insertion of said coin, a handle and pointer attached to the front cylinder outside of the casing, a lever under spring pressure extending into the space between said cylinders and arranged to eject the coin after half a turn of the cylinder, a lever fulcrumed in a slot of the front cylinder actuated by a fixed inclined segment so as to project and butt against a stop in the back cylinder at the moment of the ejection of the coin and release the stop when an entire revolution has been completed; a pinion fixed to the back cylinder driving a wheel having another wheel with lateral teeth attached thereto, a sleeve loose on the axis of said wheel, a pivot fixed in said sleeve at a right angle thereto, a pinion mounted on said pivot meshing with said wheel with lateral teeth, a second wheel with lateral teeth loose upon said sleeve and also meshing with said pinion, a crown wheel fixed to said second wheel and meshing with a pinion rotated by the index driving shaft in the opposite direction to that in which the first wheel is rotated by the pinion fixed to the back cylinder; a valve chamber with central inlet and lateral outlets, a seating formed on the inside of said inlet, a recessed valve disk of larger diameter than said seating and having a flexible diaphragm stretched over it, said diaphragm having an opening in the center; a stem formed on said valve disk and attached gas tight to the center of a diaphragm stretched over the valve casing and attached thereto by means of a cap through which the valve spindle projects into the path of the pivot on the sleeve and is encountered thereby when the sleeve is rotated backward by said index driving shaft; a port leading from the valve chamber outlet to the gas inlet pipe of the meter, an opening in the under side of said port fitting over said pipe and a flanged cap with lateral openings screwed upon the same through an opening in the top side of the port and thereby attaching the case to the meter.

543,952. SUPPORT FOR WATER-CLOSET SEATS. ADOLF C. TIEDEMANN, New York, N. Y. Filed Nov. 30, 1892. Serial No. 453,623. (No model.)



Claim.—1. A support for water-closet seats consisting of the socket H constructed to be attached to a vertical wall, the bar J having a pivotal connection for engagement with the seat at its outer end, and adjustably supported by said socket at its other end, and a screw for preventing the displacement of said socket and bar.

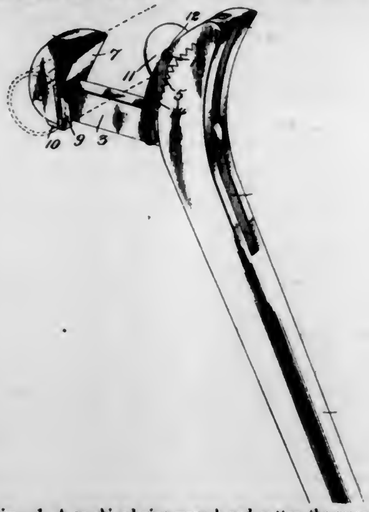
2. In supports for water-closet seats, the combination with the seat, of a bar, as J, pivotally connected thereto, and a socket, as H, constructed to be fixed to a vertical wall, said bar and socket connected adjustably together, and a screw for preventing their relative movement.

3. A support for water-closet seats consisting of a socket H, constructed to be secured to a vertical wall, having a hollow interior, and a forwardly extending portion c, in combination with a bar, as J, having a pivotal connection for engagement with the seat at its outer end, and having a cylindrical shank *e* entering the hollow interior of said socket, adjustable therein and snugly fitting the interior of said portion c, and means for preventing the displacement of said parts.

4. In a support for water-closet seats, the socket H and bar J adjustably connected together, in combination with the angle plate L constructed to embrace the corner of the seat, and having a notched corner constructed to receive the outer end of said bar J, said bar and plate constructed with reciprocal interengaging provisions constituting a pivotal connection therebetween.

5. A support for a water closet seat consisting of two members adjustably connected together, the one having a pivotal connection for engagement with the seat and the other constructed to be supported from a wall, and means for locking said members together, for the purpose set forth.

543,953. PIPE WRENCH AND CUTTER. FRANK A. WHITNEY and ARTEMAS W. WHITNEY, Sugar Grove, Ill. Filed May 21, 1895. Serial No. 550,125. (No model.)



Claim.—1. A combined pipe wrench and cutter, the same comprising a shank having a toothed or serrated operative face and bifurcated as shown, a pivoted jaw having its shank pivotally mounted in the bifurcated end of the main shank, and a revoluble cutting disk mounted in a frame or yoke detachable supported upon the operative face of the main shank or stationary jaw, substantially as described.

2. A combined pipe wrench and cutter, comprising a stationary jaw or shank having a bifurcated end and a toothed or serrated operative face, a pivoted jaw hinged to the fixed jaw, a yoke or frame comprising a pair of arms spaced a sufficient distance apart to stride the shank of the pivoted jaw, a rotary cutter disk journaled between said arms, and means for retaining said yoke or frame in position relatively to the fixed jaw or shank, substantially as specified.

3. A combined pipe wrench and cutter comprising a stationary jaw or shank having a bifurcated end and a rounded and toothed or serrated operative face, a pivoted jaw having its shank pivoted within the bifurcated end of the stationary jaw or shank, a yoke or frame consisting of a pair of curved arms toothed or serrated upon their concaved faces or edges to engage the teeth or serrations on the main jaw or shank, said arms being spaced a sufficient distance apart to stride the shank of the pivoted jaw and united to each other by a connecting web and a rotary cutting disk interposed between and journaled in said arms, substantially as and for the purpose specified.

4. A combined pipe wrench and cutter, comprising a main jaw or shank, a swinging jaw pivoted thereto, a rotary cutting disk detachably connected with the main jaw or shank, and a removable face plate adapted to be applied to the pivoted jaw, said face plate being provided with a smooth operative face, a toothed or serrated inner face corresponding to and adapted to engage with the toothed or serrated face of the pivoted jaw, and a pair of arms adapted to embrace the shank of the pivoted jaw and provided with hooked or bent ends for engaging the head of the pivoted jaw, whereby said face plate is retained in place, substantially as set forth.

543,954. PUMP. PETER R. WESTRAND, Kewanee, Ill. Filed Sept. 25, 1894. Serial No. 524,103. (No model.)



Claim.—1. The combination of a pump stand provided at its upper end with a recessed lug, a pump handle provided with a bearing lug having oppositely disposed spindles working in the recess of said lug, opposite clamp plates fitting against opposite sides of the lug and provided with inwardly disposed combined bearing and clamp flanges embracing the upper sides of said oppositely disposed spindles, and a bolt detachably clamping said plates to said lug, substantially as set forth.

2. The combination of a pump stand provided at its upper end with an attaching lug having opposite beveled and an upper recessed side, a pump handle provided with an integral bearing lug having oppositely disposed tapered spindles registering in the upper recessed sides of said attaching lug, opposite clamp plates having inner beveled sides fitting the similar sides of said attaching lug, and inwardly disposed curved combined bearing and clamp flanges embracing said oppositely disposed spindles, and a bolt detachably clamping said plates to said lugs, substantially as set forth.

543,955. CAR-SIGNAL. JOSEPH S. A. BAKER, Washington, D. C. Filed Nov. 6, 1894. Serial No. 528,042. (No model.)



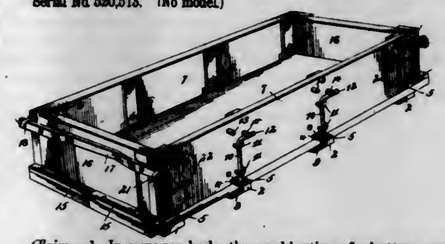
Claim.—1. In a vehicle the combination of a seat, a sound signal, and continuously accessible connections arranged along the edge of the seat for operating the signal.

2. In a car or vehicle the combination of a seat, a whistle an air compressor, and continuously accessible connections extending along the forward edge of the seat for operating the compressor and through it, the signal.

3. In a car or vehicle the combination of a seat, an air whistle and a compressible air tube communicating with the whistle arranged in a socket along the edge of the seat.

4. In a car or vehicle the combination of a whistle, an air compressor, an electromagnet arranged to operate the air compressor, an electric circuit and means arranged along the seat for opening and closing the circuit, substantially as described.

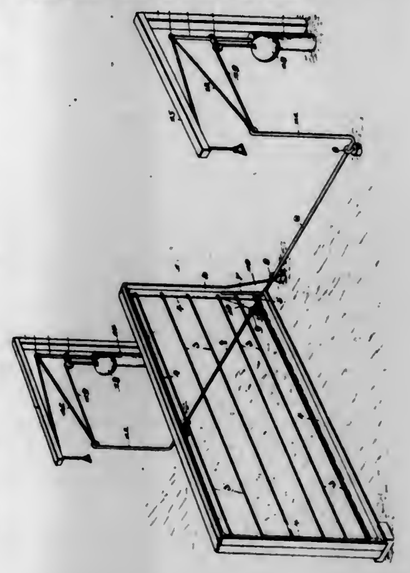
543,956. WAGON-BODY. BOWDAN L. BIRD, New Providence, assignor of one-half to J. I. Tippit, Legate, Tenn. Filed Aug. 16, 1894. Serial No. 520,513. (No model.)



Claim.—1. In a wagon body, the combination of a bottom, composed of two longitudinal sections hinged together at their adjacent edges, and provided on their upper faces at their outer edges with vertically disposed loops, the sides mounted on the upper face of the bottom and provided at their lower edges with recesses receiving the loops, the metal straps secured to the inner faces of the sides and having their lower ends bent outward at right angles and passing through the loops, and projecting beyond the outer faces of the sides, fastening devices mounted on the exterior of the sides and detachably engaging the projecting portions of the metal straps, an end-gate, and means for locking the end-gate to the sides, substantially as described.

2. In a wagon body, the combination of a bottom provided on its upper face at its outer edges with vertical loops, sides mounted on the bottom and provided at their lower edges with recesses receiving and concealing the loops, the metal straps secured to the inner faces of the sides and having their lower ends bent outward at right angles and forming lugs passing through the loops and projecting beyond the sides of the body, the vertically movable bolts mounted on the outer faces of the sides and located above the lugs and having their lower ends arranged to engage perforations thereof, said bolts being provided at their upper ends with horizontally disposed arms, and stops disposed in pairs and located adjacent to the bolts and adapted to be engaged by the arms thereof, whereby the bolts are locked both in and out of engagement, substantially as described.

543,957. GATE. BENJAMIN F. CAPODE, Mount Morris, Ill. Filed Sept. 29, 1894. Serial No. 524,496. (No model.)



Claim.—1. The combination of a tilting gate, a longitudinally-disposed rock-shaft extending from the gate in opposite directions and connected with the lower inner corner of the same and provided at its terminals with upward-extending arms, posts located adjacent to the ends of the rock-shaft and provided with upward-extending springs, and operating ropes loosely mounted on the springs and connected with the arms of the rock-shaft, substantially as described.

2. The combination of a tilting gate, a longitudinally-disposed rock-shaft extending from the gate in opposite directions and connected with the lower inner corner of the same and provided at its terminals with upward-extending arms, posts located adjacent to the ends of the rock-shaft and provided with upward-extending springs the operating ropes 12 loosely mounted on the springs and connected with the arms of the rock-shaft, and the ropes 19 provided with counterbalancing weights and attached to the arms of the rock-shaft and loosely connected with the posts and supported by the same, substantially as described.

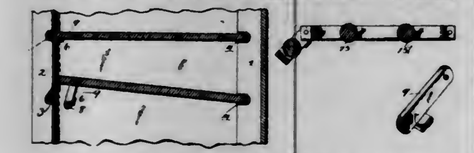
3. The combination of a tilting gate, a longitudinally-disposed rock-shaft provided at its ends with arms and having a central crank-bend connected with the gate at the lower inner corner thereof, operating ropes connected with the arms of the rock-shaft, and counterbalancing ropes connected with the said arms, substantially as described.

543,958. NUT-LOCK. CYRUS L. DARFORTH, Leavenworth, Kans., assignor to William B. McMaster and Frank W. Weise, same place. Filed Nov. 27, 1894. Serial No. 530,119. (No model.)



Claim.—In the herein described nut lock, the combination of a fish plate, the nut lock consisting of a washer having the center stamped out to form the ears 3 which pass through the holes 6 in said fish plate said ears 3 pressing snug against the rear side of said fish plate, and the groove 4 near the outer edge of said washer to permit the portion 5 to be bent over, substantially as shown and described.

543,959. RACK FOR BOOKS. CHARLES B. FOSTER, Washington, D. C., assignor to the Fenton Metallic Manufacturing Company, Jamestown, N. Y. Filed Feb. 28, 1891. Serial No. 383,165. (No model.)



Claim.—1. The combination with a notched shelf support, of a shelf the body of which is constructed of two sections, one of which is adapted to rest in the notches at one side of the case, and the other hinged or pivoted to the first, and adapted to rest within the notches at the opposite side of the case and to be turned down to facilitate insertion and removal, substantially as described.

2. The combination with a notched shelf support, of a shelf the body of which is constructed of a main section adapted to rest in the notches at one side of the case, and a supplementary section hinged directly to the main section and adapted to swing downward to rest within the notches at the opposite side of the case flush or even with the main section, substantially as described.

3. A shaft the body of which is constructed of two sections, one of which is pivoted to the other and adapted to swing from a horizontal position, and consisting of two pivoted side arms and a connecting cross bar, substantially as set forth.

4. The combination with the body of a shelf, of a supplementary section pivoted thereto and consisting of side arms and a connecting cross-bar arranged to occupy a position opposite the front edge of the body of the shelf when the latter is horizontal, substantially as described.

5. A shelf the body of which is constructed of two sections, one section comprising the side arms pivoted to the other section and connected to swing downward from a horizontal position, and provided with one or more anti-friction rollers between the said side arms, substantially as described.

6. The combination with the main body or section of a shelf, of a supplementary section connected thereto and adapted to swing downward from a horizontal position, said supplementary section being formed with a recess or retracted bend for the accommodation of the hand, and anti-friction rollers sustained in said supplementary section to opposite sides of such recess, substantially as set forth.

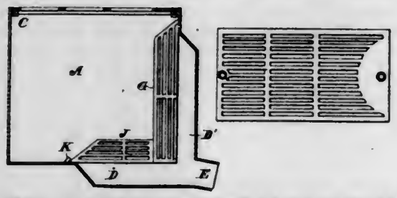
7. A shelf consisting of main and supplementary frames pivoted together, each carrying anti-friction rollers, and adapted when the shelf is in a horizontal position to lie in the same plane and means for preventing the supplementary frame from being swung above the horizontal plane of the other frame, substantially as set forth.

543,960. ELECTRICAL CONDUCTOR. GORHAM GRAY, Boston, Mass., assignor to the Spiral Wire Company, Portland, Me. Filed Dec. 14, 1894. Serial No. 531,791. (No model.)



Claim.—As an improved article of manufacture, an anti-inductive conductor for electric currents consisting of a wire grooved spirally in opposite directions, so that the spirals will intersect or cut across one another at each turn or twist around the wire; substantially as set forth.

543,961. SANITARY VENT AND DRAIN BOX. EDWIN HAYWARD, Brooklyn, N. Y. Filed Sept. 21, 1894. Serial No. 523,698. (No model.)



Claim.—1. A vent box provided with a horizontal channel in its base and a vertical channel in one end, having within an L-shaped vent and drain grid covering said channels, the vertical portion thereof having gratings on its sides and top, and the horizontal portion having gratings on the top and sides, substantially as set forth.

2. A vent box, provided with a horizontal channel in its base and a vertical channel in one end, having within a removable L-shaped vent and grain grid, adapted to cover said channels, substantially as herein set forth.

3. A vent box having a horizontal channel in its base, and a vertical channel in one of the end walls, said channels terminating in a pipe, and an L-shaped grid within said box, covering said channels, substantially as set forth.

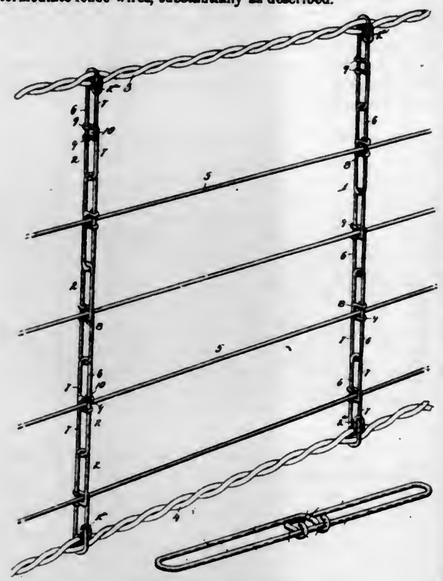
4. A vent box having a channel in the bottom and in one of the end walls which channels terminate in a pipe, in combination with a removable L shaped grid, the horizontal portion of which covers the channel in the bottom, and the vertical portion covering the channel in the end wall having gratings at its upper end, substantially as set forth.

5. A vent box having in the bottom a channel, and at one end a vertical channel both uniting at a drain or vent pipe in combination with a removable L shaped grid, covering said channels substantially as set forth.

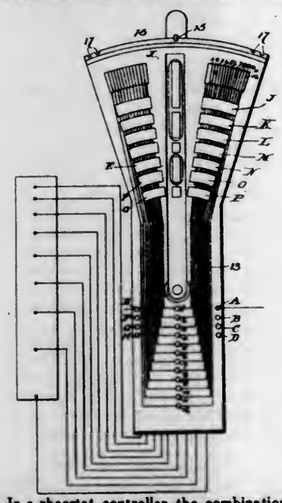
543,962. FENCE-STAY. CHARLES C. KEEDY, Mount Morris, Ill. Filed Mar. 5, 1895. Serial No. 540,647. (No model.)

Claim.—1. A fence stay, comprising a series of links loosely connected together and arranged in the form of a chain, and each constructed of a single piece of wire and composed of a continuous side, and the similar overlapping side portions having their terminals bent transversely of the link and engaged with the continuous side and forming an intervening opening adapted to receive loosely a horizontal fence wire, substantially as described.

2. The combination with top and bottom cables or twisted wires of a fence, and intermediate fence wires, of a stay comprising a series of links and having its terminals secured to the twisted wires or cables at the top and bottom of the fence, each of said links being constructed of a single piece of wire bent at opposite points to form a continuous side and overlapping side portions, the terminals of the side portions being bent at right angles and formed into eyes and extended across the link and engaging the continuous side thereof, and forming an intervening space or opening loosely receiving one of the intermediate fence wires, substantially as described.



543,963. RHEOSTAT-CONTROLLER. CLYDE LANDERS, Tacoma, Wash. Filed Mar. 27, 1894. Serial No. 505,264. (No model.)



Claim.—In a rheostat controller, the combination with an upright board, having a series of plates at its upper end and a series of buttons at its lower end, said plates and buttons being connected respectively by wires, and the said buttons being in circuit with a resistance coil, a series of reversing switches or segments beneath said plates, electrically connected with a series of buttons on the lower side of said board, and electrical connections between said buttons and the motors, connections between the trolley wire and one of said reversing switches or segments, and connections with the rail, of an operating lever pivoted in said board, carrying a series of contact points thereon, substantially as and for the purpose described.

543,964. BOILER-COVERING. HENRY C. MICHELL, Toronto, Canada. Filed Sept. 29, 1894. Serial No. 524,492. (No model.) Patented in Canada Sept. 20, 1894, No. 47,060.

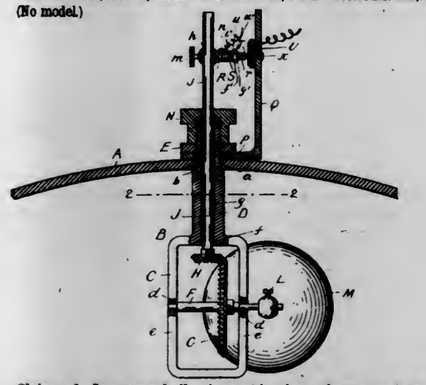
Claim.—1. A non intercommunicating interstitial non-compressible non-heat-conducting flexible covering in web form, substantially as described.

2. A non-heat-conducting covering composed of flakes of mica arranged in a common plane forming innumerable hollow non-communicating interstices and retained in web form by stitching or its equivalent maintaining said hollow interstices, substantially as set forth.



3. A non-heat-conducting covering composed of flakes of mica arranged in a common plane forming innumerable hollow non-communicating interstices, a layer of wire gauze on opposite sides and retained in web form by stitching or its equivalent holding the flakes against movement with relation to each other, and an outer covering of canvas or other suitable material, substantially as specified.

543,965. ELECTRICAL HIGH OR LOW WATER ALARM. BERNARD MCCABE, Boston, Mass. Filed Dec. 15, 1894. Serial No. 531,969. (No model.)



Claim.—1. In a steam boiler, in combination, a float, a rock shaft secured thereto, a gear on said shaft, a vertical rod arranged to turn in suitable bearings and extending outside of the boiler, a gear on its lower end engaging with said rock shaft gear, and an arm on its outer end making one electrode, and a plate on a suitable support making the other electrode of an electric circuit and electrically connected with a sounding device and annunciator for the purpose specified.

2. In a steam boiler, in combination, a float, a rock shaft secured thereto, a gear on said shaft, a vertical rod arranged to turn in suitable bearings and extending outside of the boiler, a gear on its lower end engaging with said rock shaft gear, and an arm on its outer end making one electrode, and two plates on a suitable support making two independent electrodes of an electric circuit and electrically connected with a sounding device, and each electrically connected with an independent annunciator for the purpose specified.

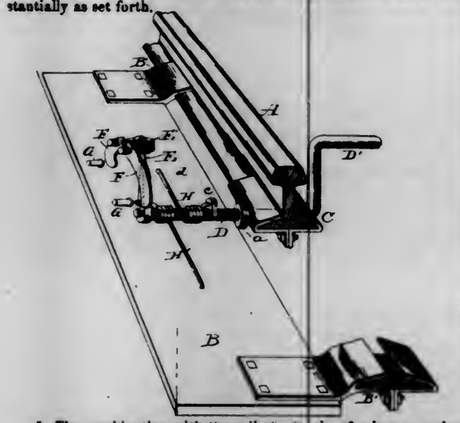
543,966. CIRCUIT-CLOSER. WILLIAM NUTT, Crawfordsville, Ind. Filed Nov. 6, 1894. Serial No. 528,065. (No model.)

Claim.—1. In a circuit closer, the combination with a crank shaft, and an arm carried thereby, of spring contact plates adapted to be engaged by said arm, contact pins with which said contact plates are adapted to engage, and springs for maintaining said arm normally out of contact with said contact plates and returning it to its normal position, substantially as set forth.

2. In a circuit closer, the combination with a crank shaft, of an arm secured thereto, a roller carried by said arm, spring contact plates adapted to be engaged by said roller, contact pins to be engaged by said plates, and springs for maintaining the roller out of contact with said plates and for returning it to its normal position, substantially as set forth.

3. In a circuit closer, the combination with a crank shaft, of an arm secured thereto, a roller carried by said arm, contact plates to be engaged by said roller, contact pins to be engaged by said plates, a spring coiled on said shaft, said spring being secured at one end to a lug on the shaft and at its other end to a device independent of the shaft and to one side thereof, and another spring coiled on the shaft, one end of said last-mentioned spring being secured to a device independent of the shaft and at the side thereof opposite the first mentioned spring, and the other end being secured to said arm, substantially as set forth.

4. The combination with a rail of a railroad, and a clip secured thereto, of a shaft mounted in said clip under the rail, a crank arm on one end of said shaft adapted to be engaged by a wheel of a car, an arm secured to the other end of the shaft, a roller mounted in said last-mentioned arm, spring contact plates adapted to be engaged by said roller, contact pins adapted to be engaged by said contact plates, and springs adapted to maintain the roller normally out of contact with the contact plates and to return it to its normal position, substantially as set forth.



5. The combination with the rail of a track, of a box or casing located to one side thereof, clips for securing said box or casing to the rail, a clip secured to the rail between the ends of a box or casing, a crank shaft mounted in said clip under the rail and adapted to be engaged by a wheel of a car, an arm carried by said shaft within the casing, a roller mounted on said arm, contact plates to be engaged by said roller, contact pins to be engaged by said plates, and springs adapted to maintain the roller normally out of contact with the contact plates and return it to its normal position, substantially as set forth.

543,967. GRINDING-MILL. JOHN POULSON, Phillipsburg, N. J. Filed Aug. 6, 1894. Serial No. 519,579. (No model.)

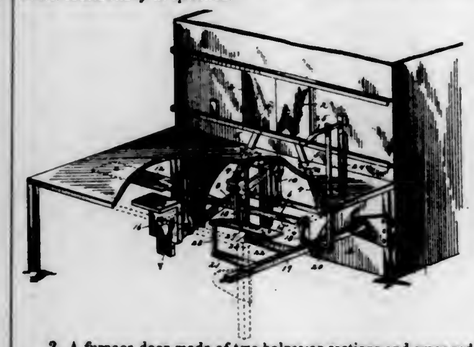


Claim.—1. In a grinding mill, the combination with the conical mill casing, of a tapering crusher or cracker, made in a pyramidal form, having a plurality of triangular plain faces, and provided on the meeting angles of said faces with spaced longitudinal rows of projecting teeth, having rounded sides and backs, and flat front faces forming a scalloped cutting edge along each angle of the pyramid, the teeth of one row alternating with those of the adjacent row, substantially as set forth.

2. In a grinding mill, the combination with the mill casing; of the removable cap plate provided with a bearing opening and having cast integrally on the outer side thereof an offset open boxing and transversely disposed brace ribs at both sides of said boxing, said offset boxing being open at its upper and lower ends and provided with an outer inclined wall and an integral threaded lug projected outwardly from the lower end of said inclined wall, the grinding shaft having one end working in said bearing opening and projecting inside of the open boxing, an upright wedge key working within the open boxing and of a greater length than the same, said key having an integral bifurcated flange at its lower end disposed parallel with the threaded lug of the boxing, and with an inner flat side bearing directly against the flat end of the shaft within the boxing, and an adjusting screw loosely engaging in the bifurcated flange of the key and working in the threaded lug of the boxing, substantially as set forth.

543,968. MEANS FOR OPENING OR CLOSING FURNACE-DOORS. DAVID R. ROBINSON, Arden, W. Va. Filed Feb. 27, 1895. Serial No. 539,882. (No model.)

Claim.—1. A furnace door, comprising twin halves or sections each composed of front and rear plates and mounted in suitable horizontal tracks or ways adapting said sections to move laterally in a horizontal plane, in combination with the pivoted and spring-actuated levers arranged with their ends between said plates and slotted to engage pins also arranged between said plates for operating the door sections, and one or more foot levers for operating said door levers, substantially as specified.



2. A furnace door made of two halves or sections and arranged to move in a horizontal plane between suitable ways or tracks, in combination with a pair of pivoted levers connected with said sections for opening and closing the same, a forwardly extending horizontal lever for operating said door levers, a foot post or standard connected with said horizontal lever, and extending to a point within convenient reach of the attendant, and a spring-actuated catch for holding the door sections open, substantially as specified.

3. The combination with a furnace door made in two sections, of two vertical levers for opening and closing the same, a horizontal lever connected with said vertical levers for operating the same, a spring-actuated catch for holding the door sections open, and a releasing mechanism consisting of a rock shaft and a push rod connected with said spring-actuated catch for closing the door sections, substantially as specified.

4. The combination with a furnace door made in two sections and provided with trunnions or pivots, of two vertical levers, slotted at their upper ends to engage said pivots, a pair of pivoted links or toggle levers connecting the lower ends of said vertical levers, a horizontal lever for operating said toggle lever, a foot post for depressing the horizontal lever, and a catch for engaging said foot post, as and for the purpose substantially specified.

5. A furnace door made in two sections, adapted to be moved laterally in a horizontal plane, means for opening and closing said door sections, and a pivoted catch for holding the same open, in combination with a rock shaft provided with a crank arm, a rod interposed between said crank arm and the pivoted catch, and means for operating said rock shaft, in the manner substantially as specified.

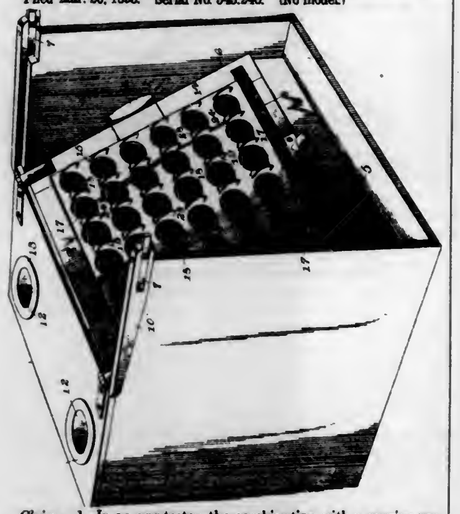
6. A furnace door made in two sections, means connected therewith for opening and closing the same, and a spring-actuated catch for holding the door sections open, in combination with a rod for releasing the catch, a rock shaft provided with a crank arm for operating said rod, a vertically extending rod connected with a crank arm on the rock shaft and passing up through the floor or platform, and a pivoted hand lever connected to said vertical rod, and located within convenient reach of the engineer or fireman, substantially as specified.

543,969. FOUNTAIN SHAVING-BRUSH. ELMER V. SANTEE, Watertown, N. Y. Filed June 13, 1894. Serial No. 514,455. (No model.)



Claim.—In a fountain shaving brush, the combination of a tubular reservoir handle provided at one end with a feed tube and with a transverse cylindrical valve chamber opening into the feed tube and provided with a valve opening arranged in a line with the feed tube and communicating with the interior of the handle, said valve chamber being closed at one end and provided with an opposite interiorly threaded open end, a centrally perforated screw plug removably and adjustably fitted in the interiorly threaded open end of the valve chamber and provided with a screw driver-groove in its outer side, a valve plug mounted to slide within the valve casing and provided at one side with a socket and at the opposite side with an integral stem normally projecting through and beyond the perforation of the screw plug and having a stop flange spaced from the valve plug and adapted to work against the inner side of the screw plug, and a sprig arranged in the valve chamber between the closed end thereof and the socketed side of the valve plug so as to be completely housed and kept from contact with the liquid within the brush, the tension of said spring being regulated by the adjustment of the screw plug with a screw driver or similar tool, substantially as set forth.

543,970. EGG-TESTER. THOMAS M. SPILMAN, Washington, D. C. Filed Mar. 26, 1895. Serial No. 543,240. (No model.)



Claim.—1. In an egg tester, the combination with a carrier provided with spring holders, of a frame having yielding connection with the carrier, and individual ejectors attached to the said frame and adapted to push the eggs from their respective holders after the carrier has been inverted, substantially as and for the purpose set forth.

2. The combination with an egg carrier having a series of openings, of wires extending parallel with the rows of openings and threaded through apertures in the said carrier, that portion of the wires between the apertures and opposite the openings in the carrier being upwardly deflected and providing spring holders, substantially as set forth for the purpose described.

3. The combination with an egg carrier formed of sheet material and having rows of openings, of a series of rods arranged in parallel relation between the rows of openings and against the under side of the carrier, and wires threaded through apertures in the carrier and having that portion opposite the openings therein upwardly deflected to form spring holders, the said wires crossing on the under side of the carrier and embracing the said rods, substantially as set forth for the purpose described.

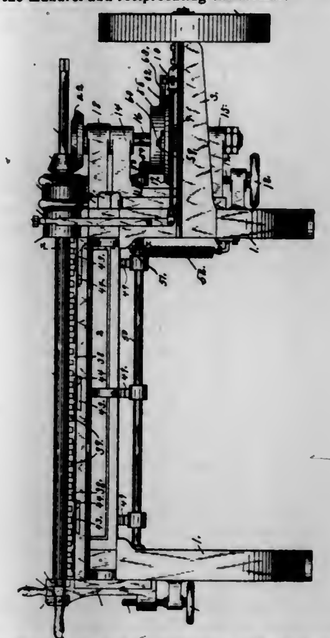
4. In an egg tester, the combination with a carrier having spring holders, of a frame having yielding connection with the said carrier, and ejectors formed from wire and having an open expanded head portion to engage with the eggs, substantially as described for the purpose set forth.

5. In an egg tester, the combination with a carrier provided with spring holders and with swinging handles, of a frame comprising side and cross bars having yielding connection with the carrier, and individual ejectors formed from wire and having open expanded end portions to engage with the eggs, and mounted upon the said cross bars, said ejectors being actuated to dislodge the eggs from the carrier after the latter has been inverted, substantially as described for the purpose set forth.

6. An egg tester comprising a case having a hinged frame on its open side which when lowered assumes an inclined position, catches to sustain said frame in an elevated position, a carrier provided with spring holders and ejectors, and adapted to be supported by the said hinged frame during the filling and testing operation, and heat-conducting tubes extending through the top of the case to carry off the heat and products of combustion, substantially as set forth.

543,971. MACHINE FOR FORMING SHEET-METAL PIPE-BLANKS. DANIEL H. STOLL, Buffalo, N. Y., assignor of one-half to Michael Newell, same place. Filed Sept. 5, 1894. Serial No. 522,205. (No model.)

Claim.—1. A machine for forming sheet-metal pipe-blanks consisting of a revoluble notched mandrel around which the sheet metal strip is shaped, a former movable to and from the mandrel for holding the sheet-metal strip against the mandrel during its revolution and for releasing the same for removal and automatic means for revolving the mandrel and reciprocating the former.



2. A machine for forming sheet-metal pipe-blanks consisting of a revoluble notched mandrel around which the sheet-metal strip is shaped, spring guides for directing the turned over edge of the sheet-metal strip into engagement with the notched mandrel, a reciprocating former for holding the sheet-metal strip against the mandrel during its revolution and means for revolving the mandrel and reciprocating the former.

3. A machine for forming sheet-metal pipe-blanks consisting of a pivoted revoluble notched mandrel around which the sheet metal strip is shaped, a former movable to and from the mandrel for holding the sheet-metal strip against the mandrel during its revolution and for releasing the same for removal and automatic means for revolving the mandrel and reciprocating the former.

4. A machine for forming sheet-metal pipe-blanks consisting of a pivoted revoluble notched mandrel around which the sheet-metal strip is shaped, spring guides for directing the turned over edge of the sheet metal strip into engagement with the notched mandrel, a reciprocating former for holding the sheet-metal strip against the mandrel during its revolution and means for revolving the mandrel and reciprocating the former.

5. A machine for forming sheet-metal pipe-blanks consisting of a revoluble notched mandrel around which the sheet metal strip is shaped a reciprocating former for holding the sheet-metal strip against the mandrel during its revolution and means for revolving the mandrel and reciprocating the former and automatically stopping the mechanism after the sheet metal strip has been shaped.

6. A machine for forming sheet-metal pipe blanks consisting of a revoluble notched mandrel around which the sheet-metal strip is shaped, spring guides for directing the turned over edge of the sheet-metal strip into engagement with the notched mandrel, a reciprocating former for holding the sheet-metal strip against the mandrel during its revolution and means for revolving the mandrel and reciprocating the former and automatically stopping the mechanism after the sheet metal strip has been shaped.

7. A machine for forming sheet-metal pipe-blanks consisting of a pivoted revoluble notched mandrel around which the sheet metal strip is shaped, a reciprocating former for holding the sheet-metal strip against the mandrel during its revolution and means for revolving the mandrel and reciprocating the former and automatically stopping the mechanism after the sheet metal strip has been shaped.

8. A machine for forming sheet-metal pipe-blanks consisting of a pivoted revoluble notched mandrel around which the sheet-metal strip is shaped, spring guides for directing the turned over edge of

the sheet metal strip into engagement with the notched mandrel, a reciprocating former for holding the sheet-metal strip against the mandrel and reciprocating the former, and automatically stopping the mechanism after the sheet-metal strip has been shaped.

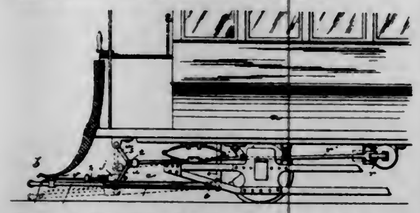
9. A machine for forming sheet-metal pipe-blanks consisting of a revoluble notched mandrel around which the sheet metal strip is shaped, a reciprocating former for holding the sheet-metal strip against the mandrel during its revolution and means for revolving the mandrel and reciprocating the former and automically stopping the mechanism after the sheet metal strip has been shaped and after the operative parts have been restored by power to their normal positions.

10. A machine for forming sheet-metal pipe-blanks consisting of a revoluble notched mandrel around which the sheet-metal strip is shaped, spring gnides for directing the turned over edge of the sheet-metal strip into engagement with the notched mandrel, a reciprocating former for holding the sheet-metal strip against the mandrel during its revolution and means for revolving the mandrel and reciprocating the former and automatically stopping the mechanism after the sheet metal strip has been shaped and after the operative parts have been restored by power to their normal positions.

11. A machine for forming sheet-metal pipe-blanks consisting of a pivoted revoluble notched mandrel around which the sheet metal strip is shaped, a reciprocating former for holding the sheet-metal strip against the mandrel during its revolution and means for revolving the mandrel and reciprocating the former and automatically stopping the mechanism after the sheet metal strip has been shaped, and after the operative parts have been restored by power to their normal positions.

12. A machine for forming sheet-metal pipe-blanks consisting of a pivoted revoluble notched mandrel around which the sheet-metal strip is shaped, spring guides for directing the turned over edge of the sheet metal strip into engagement with the notched mandrel, a reciprocating former for holding the sheet-metal strip against the mandrel during its revolution and means for revolving the mandrel and reciprocating the former and automatically stopping the mechanism after the sheet-metal strip has been shaped and after the operative parts have been restored by power to their normal positions.

543,972. CAR-FENDER. CORNELIUS SULLIVAN, Newark, N. J. Filed Dec. 17, 1894. Serial No. 532,010. (No model.)



Claim.—1. The improved fender for cars in which is combined with a suitable support, and a fender movable to and from the track, of an electrically controlled fender elevator and its electrical appliances, and means under the control of the motorman for affecting the electrical appliances to raise or lower the fender, substantially as set forth.

2. The combination with the car, of an electrically controlled fender and electrical appliances in connection therewith and under the control of the motorman for operating said fender, substantially as set forth.

3. The combination with the car and its electrical motive appliances, of an electro-magnet and its armature in circuit with said motive appliances, a vertically movable fender and a train of levers and rods connecting with said fender and armature, substantially as set forth.

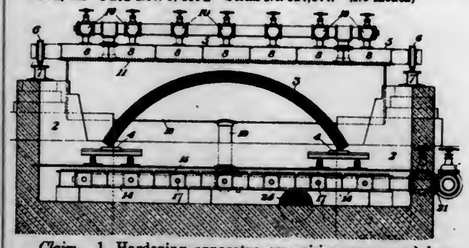
4. The combination with the fender and its supports having tubular extensions on which said fender slides, of a toggle for raising and lowering said fender, a connecting rod and levers operating said toggle, an armature and electro-magnet and electric circuit appliances under the control of the motorman.

5. The combination with the fender having tubular extensions, of a U-shaped border piece the ends of which slide in said tubular extensions, said U-shaped piece having near its forward part, the bar, *h*, of a grating, *i*, said grating carrying jaws, *j*, and having a movement independent of said U-shaped piece to admit an engagement of said jaws, substantially as set forth.

6. The combination in a fender, of tubular extensions attached to the car and having transverse bars, *f*, *f*, near their front and rear ends a U-shaped border piece carrying a pivotal grating and means for engaging said bars, *f*, *f*, holding said grating in its extended or rearward position, substantially as set forth.

7. The combination with the U-shaped piece and its grating or gridiron-like structure, and a supporting frame having transverse bars, of jaws movably secured to said grating and engaging said transverse bars and springs holding said jaws to said grating, substantially as set forth.

543,973. HARDENING APPARATUS. WILLIAM WEIGHAM, Munhall, Pa. Filed Nov. 5, 1894. Serial No. 527,877. (No model.)



Claim.—1. Hardening apparatus comprising upper and lower tanks divided by partitions into compartments having discharge nozzles, and means for separately controlling the supply of fluid to each compartment; substantially as described.

2. In hardening apparatus, a horizontally movable tank divided by partitions into separate compartments having discharge nozzles, and means for separately controlling the supply of fluid to each compartment; substantially as described.

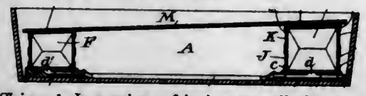
3. In hardening apparatus, a horizontally movable tank divided by partitions into separate compartments having discharge nozzles, and flexible valve controlled pipes leading to each compartment; substantially as described.

4. In hardening apparatus, a tank having inner partitions forming compartments, nozzles in each compartment, and caps arranged to close a portion of the nozzles of a compartment; substantially as described.

5. In hardening apparatus, a tank having inwardly extending nozzles provided with tapered upper ends, to prevent deposition of sediment thereon; substantially as described.

6. In hardening apparatus, a tank having a series of inwardly extending nozzles, arranged to spray a plate and closing caps for the outer ends of said nozzles; substantially as described.

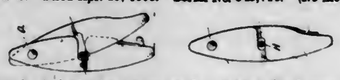
543,974. CASKET. JOHN ZWACK, Albany, N. Y. Filed May 6, 1895. Serial No. 548,213. (No model.)



Claim.—1. In a casket, a false bottom, a diaphragm placed beneath each end, a pipe connecting said diaphragms, with a means for inflating said diaphragms, substantially as described and for the purpose set forth.

2. In a casket, a false bottom, a diaphragm placed at each end, a pipe connecting said diaphragms, a means for inflating said diaphragms, with a valve for controlling said diaphragms, substantially as described and for the purpose set forth.

543,975. LOCK FOR SCREW-STUDS. CHARLES W. W. BALL, New York, N. Y. Filed Apr. 15, 1895. Serial No. 545,716. (No model.)

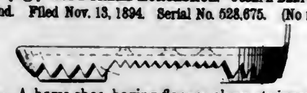


Claim.—1. A lock for screw studs composed of two shanks mounted to swing in substantially parallel planes each shank being provided with a notch in its inner edge at about half the length of the shank and one of said shanks being provided with a projection that can engage an edge of the other shank, substantially as herein shown and described.

2. A lock for screw studs composed of two shanks mounted to swing in substantially parallel planes each shank being provided with a notch in its inner edge at about half its length and one shank being provided with a flange on its outer edge at the free end, substantially as herein shown and described.

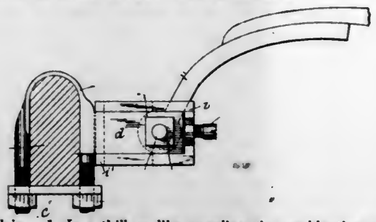
3. A lock for screw studs, composed of two shanks mounted to swing in substantially parallel planes each shank having a notch at about half its length in the inner edge, and means for engaging and locking the shanks together by spring tension when one shank is folded over the other, substantially as herein shown and described.

543,976. SOFT-TREAD HORSESHOE. JOSEPH BENFIELD, Walsall, England. Filed Nov. 13, 1894. Serial No. 528,675. (No model.)



Claim.—A horse shoe having flanges along its inner and outer edges, said flanges being reduced at certain points, both the flanges and the reduced portions being serrated, substantially as described.

543,977. THILL-COUPLING. ELIAS A. BENNER, Noblestown, Pa. Filed Dec. 4, 1894. Serial No. 530,769. (No model.)

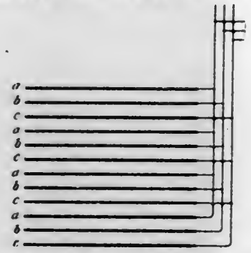


Claim.—1. In a thill or like coupling the combination with a suitable clip having a socket attached thereto, of a thill-iron having the inner end thereof secured within said socket, a bearing block within said socket, a clamp fitting on said socket and constructed to slide thereon, said clamp having an inner end portion entering said socket in the rear of said bearing block, and an outer end portion in front of the outer end of said socket, and mechanism for moving said clamp on said socket, whereby the distance between said outer end portion and the front end of said socket may be increased, substantially as set forth.

2. In a thill or like coupling, the combination with a suitable clip having a socket attached thereto, of a thill-iron having the inner end thereof secured within said socket, a clamp fitting on said socket, and constructed to slide thereon, said clamp having an inner end portion entering said socket in the rear of said bearing block, and an outer end portion in front of the outer end of said socket, and set-screws in said outer end portion abutting against the outer end of said socket, substantially as set forth.

3. The combination with a suitable clip, of the socket *d*, the thill-iron *f* having its end *f'* secured within said socket, the bearing-block *e*, the clamp *i* having the inner and outer ends *i*, *i*, and the set screws *k'* in said outer end i^2 and abutting against the front end of said socket, substantially as set forth.

543,978. ELECTRIC CONDENSER. CHARLES S. BRADLEY, Avon, N. Y. Filed May 11, 1895. Serial No. 548,889. (No model.)



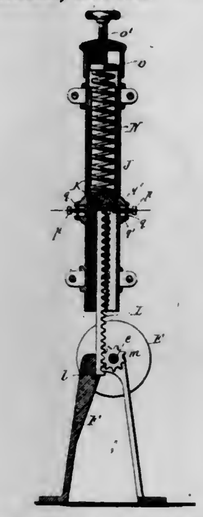
Claim.—1. A polyphase condenser comprising a series of conductive plates or surfaces connected in groups with polyphase terminals, the members of said groups being interleaved with one another.

2. A polyphase condenser comprising a series of conductive surfaces electrically connected respectively in consecutive order with three or more terminals.

3. A polyphase condenser comprising a series of conductive plates or surfaces separated by a suitable dielectric and provided with terminals for connection with a polyphase circuit, said terminals being electrically connected respectively in consecutive order with the several plates.

543,979. DOOR-OPERATING DEVICE. EMIL BROMBACHER, Buffalo, N. Y., assignor of one-half to John Eimer, same place. Filed Apr. 8, 1895. Serial No. 544,896. (No model.)

Claim.—1. The combination with a rotary drum and a door-operating cord wound thereon, of an actuating cylinder and piston, a pressure device operating against said piston, intermediate gearing whereby the movement of the piston is transmitted to said drum, a catch whereby said piston is held in its normal position and a releasing device whereby said catch is withdrawn from engagement with the piston, substantially as set forth.



2. The combination with a horizontally movable door, of a rotary drum having a pinion, a guide roller arranged above the drum, a door-operating cord having one end secured to said drum, passing upward and laterally over said guide roller and having its opposite end connected with the door, an actuating cylinder and piston, a pressure device operating against said piston, a gear rack connected with said piston and meshing with the pinion of the drum, and a catch whereby said piston is held in its normal position, substantially as set forth.

3. The combination with a rotary drum and a door-operating cord wound thereon, of an actuating cylinder and piston, a spring arranged in said cylinder and bearing at one end against said piston, an adjustable head or follower bearing against the opposite end of said spring, intermediate gearing whereby the movement of said piston is transmitted to said drum, and a catch whereby the piston is held in its normal position, substantially as set forth.

4. The combination with a rotary drum and a door-operating cord wound thereon, of an actuating cylinder and piston, intermediate gearing connecting said piston with said drum, a spring arm carrying a catch adapted to interlock with said piston, and a releasing cam engaging against said spring arm, substantially as set forth.

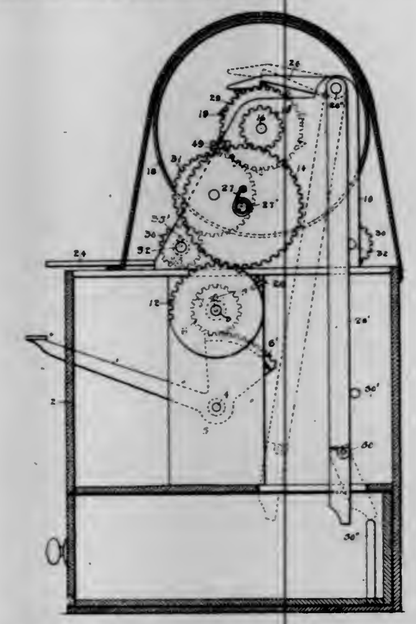
5. The combination with a rotary drum and a door-operating cord wound thereon, of an actuating cylinder and piston, a pressure device operating against said piston, intermediate gearing connecting said piston with said drum, a spring arm carrying a catch adapted to interlock with said piston, a releasing cam engaging against said spring arm and having an actuating arm, and an operating cord connected with said actuating arm and passing around suitably-arranged guide pulleys, substantially as set forth.

543,980. CASH REGISTER AND INDICATOR. GEORGE CALDER, Jr., Lancaster, Pa. Filed Dec. 14, 1894. Serial No. 531,822. (No model.)

Claim.—1. In combination a series of indicating numeral wheels 18, returning springs operative to return the wheels to zero, a series of adding numeral wheels 40, devices to prevent the automatic return of said latter wheels, key levers to suitably turn said indicating wheels when connected to a shaft 16, said shaft, a clutch to connect the shaft and wheels 18, intermediate devices including a clutch to connect said shaft 16 and numeral wheels 40 and the pivotally connected levers 24 and 22 to operate the clutches, all substantially as set forth.

2. In combination a series of indicating numeral wheels 18, returning springs operative to return the wheels to zero, a series of adding numeral wheels 40, devices to prevent the automatic return of said latter wheels, key levers to suitably turn said indicating wheels when connected to a shaft 16, said shaft, a clutch to connect the shaft and wheels 18, intermediate devices including a clutch to connect said shaft 16 and numeral wheels 40, said intermediate devices consisting of gears 29, 31 and 30 and the compound shaft having a clutch pin 36 and a ratchet wheel 37, and the pivotally connected levers 24 and 22 to operate the clutches, all substantially as set forth.

3. In combination a series of indicating numeral wheels 18 said wheels each having a hub 15 and head 18', returning springs operative to return the wheels to zero, a series of adding numeral wheels 40, devices to prevent the automatic return of said latter wheels, key levers 1 having quadrantal gears, numeral wheel shaft 16, intermediate gears whereby the keys turn the shaft, pins 25 on the shaft outside the heads, clutches 20 situated within the wheels and movable through the heads and levers 22 bent to extend within the wheels and operate the clutches, substantially as set forth.



4. In combination a series of indicating numeral wheels 18 said wheels each having a hub 15 and head 18', returning springs operative to return the wheels to zero, a series of adding numeral wheels 40, devices to prevent the automatic return of said latter wheels, key levers 1 having quadrantal gears, numeral wheel shaft 16, intermediate gears whereby the keys turn the shaft, pins 25 on the shaft outside the heads, clutches 20 situated within the wheels and movable through the heads and levers 22 bent to extend within the wheels and operate the clutches, ratchet wheels 19 fast on head of numeral wheel 18 and pawls 26, said pawls each having an arm 26' adapted to be operated to disengage a pawl and ratchet on the opening of a drawer, substantially as set forth.

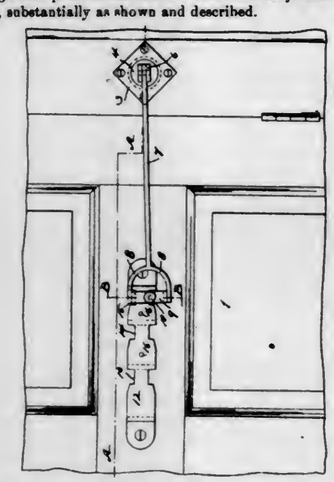
5. In combination with indicating mechanism including numeral wheels such as 18 and the intermediate gears and clutches, the case comprising plates 39 and 39", the shafts 34 the numeral wheels 40, the ratchet wheels 46 and pawls 44, the wheels 43 and bars 41 fixed on said shafts and provided with pins 42 and 47, the former being arranged to move the pawls simultaneously with the operation of the other to move its wheel the distance of a tooth, substantially as set forth.

6. In an adding machine the combination of two numeral wheels and numeral wheel shafts said shafts having bearings in a case, a holding pawl such as 44 pivoted to the case, a toothed wheel 46, a ratchet wheel 43, a numeral wheel 40, each wheel fast on one of the shafts, a bar 41 fast on the other shaft, said bar being adapted to simultaneously disengage the pawl from the ratchet and move the toothed wheels and numeral wheels and means for rotating the shaft that carries the bar with pins, substantially as set forth.

543,981. DOOR-FASTENER. JAMES CHALMERS, Perth Amboy, N. J. Filed Feb. 18, 1895. Serial No. 538,753. (No model.)

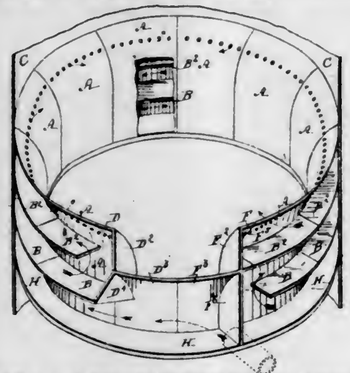
Claim.—1. In a lock, the combination, with a door and the casing thereof, of an upset plate secured to said door by inwardly projecting ends and having cut away portions in the sides thereof forming notches therein and inwardly projecting shoulders or braces, a lever or bar pivotally connected with the casing and provided with a clamp having inwardly directed arms adapted to grasp said bar, and a set-screw passing through the back of said clamp and adapted to hold the same in contact with the bar, substantially as shown and described.

2. In a lock, the combination, with a door and the casing thereof of a lever pivotally connected with a standard, which is in turn pivotally connected with the casing of the door, of a plate or bar adapted to be secured to the casing, and upset and cut away at intervals and provided with inwardly extending projections or shoulders, and a clamp pivotally connected with the free end of the lever and adapted to engage said plate or bar and be secured in any desired position thereon, substantially as shown and described.



3. In a lock, the combination, with a door and the casing thereof, of a plate, as 3 having a circular central opening, and secured to said casing, a circular plate, as 4, held in position by the plate 3, a lever, as 7, pivotally connected with the circular plate 4, a plate or bar, as 12, secured to the door, and a clamp pivotally connected with the free end of the lever 7 and adapted to engage the said plate or bar and be secured in any desired position thereon, substantially as shown and described.

543,982. FURNACE. JOHN R. CLAREY, Des Moines, Iowa. Filed Nov. 24, 1894. Serial No. 529,820. (No model.)



Claim.—1. An improved fire pot for stoves and furnaces comprising a series of sections that are straight and square ended at their lower end portions and adapted to rest upon a flat surface to project vertically, perforated and curved outward at their upper ends and provided with outward extensions at different points of elevation that terminate in the planes of their top edges to engage the inside surface of a cylinder to produce communicating air chambers extending horizontally, mating sections having integral vertical side portions adapted to produce a doorway and to close the ends of the upper horizontal air chamber and also to produce an air chamber under the doorway communicating with one end of the lower horizontal chamber, a flat ring fixed to a cylinder to support the said sections, and a cylinder in engagement with the top edges of the curved sections and the edges of their horizontal outward extensions, all arranged and combined in the manner set forth, for the purposes stated.

2. In a fire pot for furnaces, the section D having a vertical portion D^3, a horizontal extension D^2 and an inclined portion D^4, and the section F having a vertical portion F^2 and extensions F^3, F^4, and F^5 in combination with a series of sections A having lateral extensions B and B^2 and provided with perforations at their curved top end portions, a flat ring to support said sections and a cylinder to inclose all of the said sections, as shown and described, to produce a doorway and an air chamber under the doorway and communicating chambers extending horizontally from the chamber under the doorway for the purposes stated.

543,983. CORSET-FASTENING. HARRY DAVIDSON, New York, N. Y., assignor of one-half to Alfred C. Clapp, same place. Filed Oct. 21, 1893. Serial No. 488,831. (No model.)



Claim.—1. In a corset fastening the combination of the opposite busks, and a hook secured to one busk; with the keeper secured to the other busk having a slot in its face, and a locking-pin passing through said slot secured loosely in and playing freely longitudinally of the slot, and adapted to engage the head of the hook when inserted into the keeper and lock it therein, substantially as and for the purpose described.

2. A corset fastening comprising a series of hooks and keepers attached to opposite busks, each hook having a latch-head and rigidly fastened to one busk; and each keeper consisting of a metal plate rigidly fastened to the other busk opposite a hook, and having an upwardly inclined slot; a gravital locking pin playing in said slot and loosely retained therein, adapted to automatically engage and lock the hook when pushed thereby, and a head on the outer end of said locking pin, substantially as and for the purpose specified.

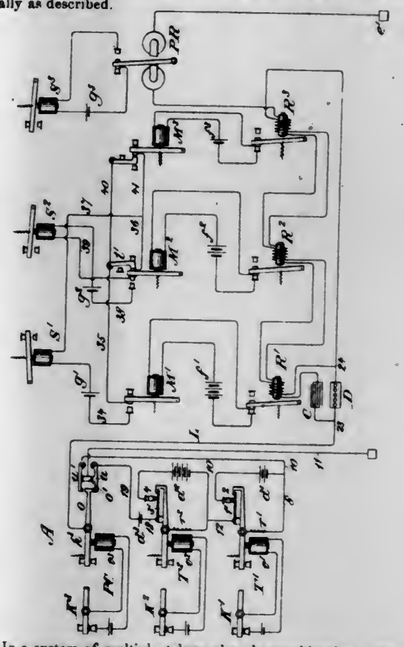
3. In a corset fastening the combination of a latch-headed hook fastened to one busk, with a keeper fastened to the other busk, opposite the hook, consisting of a plate having a slot inclined upwardly from left to right under which the hook head is passed, and a gravital locking pin playing in said slot adapted to engage the hook-head when inserted thereunder, and an enlarged head attached to the outer end of said pin for manipulating it by hand, to release the hook, substantially as and for the purpose set forth.

4. In a corset fastening a receiving and locking keeper formed of a single piece of metal folded upon itself and slotted at its bend, also having a slot in its side inclined upwardly from left to right, and a gravital pin loosely secured in said slot, in combination with a notched hook adapted to enter the end slot of the keeper and engage said pin, all constructed and arranged to operate substantially as and for the purpose set forth.

543,984. SYSTEM OF MULTIPLEX TELEGRAPHY. THOMAS B. DIXON, Henderson, Ky. Filed Oct. 19, 1894. Serial No. 526,349. (No model.)

Claim.—1. In a system of multiple telegraphy, the combination, with a line conductor, means for supplying current to the line, and transmitting instruments each adapted when operated to vary the current strength of the line to a degree different from that by which the other transmitter or transmitters vary the strength of said line current, of line relays of different sensitivenesses each corresponding to and adapted to respond to one of the different strengths of current produced by the operation of said transmitters, a receiving instrument corresponding to each transmitting instrument, circuits for controlling said receiving instruments, selecting relays corresponding to said line relays and adapted to prevent the operation of a receiving instrument when the transmitting instrument corresponding thereto is not affecting the current strength in the line, local circuits controlled by said line relays for controlling said selecting relays, the strengths of current in said local circuits varying in inverse order to the sensitivenesses of the line relays, and retractile springs for the armatures of said selecting relays varying in strength in inverse order to the strengths of the currents operating the selecting relays, substantially as described.

2. In a system of multiple telegraphy, the combination, with a line conductor, means for supplying current to the line, and two transmitting instruments each adapted when operated to vary the current strength of the line to a degree different from that by which the other transmitter varies the strength of said line current, of three line relays of different sensitivenesses each corresponding to and adapted to respond to one of the different strengths of current produced by the operation of said transmitters, two receiving instruments corresponding to said transmitters, circuits for controlling said receiving instruments, three selecting relays corresponding to said line relays and operated thereby, the first of said selecting relays being adapted when operated to close the circuit of the first receiver, the second of said selecting relays being adapted when operated to break the circuit of the first receiver and to close the circuit of the second receiver, and the third of said selecting relays being adapted when operated to close the circuit of the first receiver around the second selecting relay, and means for preventing the mutilation of the signals of the first receiver when the second receiver is operated, substantially as described.



3. In a system of multiple telegraphy, the combination, with a line conductor, means for supplying current to the line, and two transmitting instruments each adapted when operated to vary the current strength of the line to a degree different from that by which the other transmitter varies the strength of said line current, of three line relays of different sensitivenesses each corresponding to and adapted to respond to one of the different strengths of current produced by the operation of said transmitters, two receiving instruments corresponding to said transmitters, circuits for controlling said receiving instruments, three selecting relays corresponding to said line relays and operated thereby, the first of said selecting relays being adapted when operated to close the circuit of the first receiver, the second of said selecting relays being adapted when operated to break the circuit of the first receiver and to close the circuit of the second receiver, and the third of said selecting relays being adapted when operated to close the circuit of the first receiver around the second selecting relay, and means for regulating the times of movement of the armatures of said selecting relays, substantially as described.

4. In a system of multiple telegraphy, the combination, with a line conductor, means for supplying current to the line, and two transmitting instruments each adapted when operated to vary the current strength of the line to a degree different from that by which the other transmitter varies the strength of said line current, of two receiving instruments corresponding to said transmitters, three line relays of different sensitivenesses each corresponding to and adapted to respond to one of the different strengths of current produced by the operation of said transmitters, a selecting relay corresponding to each line relay, local circuits controlled by said line relays for controlling said selecting relays, the strengths of current in said local circuits varying in inverse order to the sensitivenesses of the line relays, retractile springs for the armatures of said selecting relays varying in strength in inverse order to the strengths of the currents operating the selecting relays, and contact points operated by said selecting relays and controlling said receiving instruments, the first of said selecting relays being adapted when operated to close the circuit of the first receiver, the second of said selecting relays being adapted when operated to break the circuit of the first receiver and to close the circuit of the second receiver, and the third of said selecting relays being adapted when operated to close the circuit of the first receiver around the second selecting relay, substantially as described.

5. In a system of telegraphy, the combination with a line conductor and a transmitting instrument arranged to vary the line current, of a receiving instrument corresponding to said transmitter and operated by a dead beat relay, and a second relay operated by variations in the line current, controlling said dead beat relay and arranged to cause the armature of said dead beat relay to be deflected in one direction or the other, according to the position of the armature of said second relay, substantially as described.

6. In a system of telegraphy, the combination with a line conductor and a transmitting instrument arranged to vary the line current, of a receiving instrument corresponding to said transmitter, a relay for operating said receiving instrument, having an armature and independent magnets acting oppositely on said armature, a circuit for each of said magnets and a second relay operated by variations in the line current, controlling the circuits of said magnets, and arranged to cause current to pass through one or the other of said magnets according to the position of the armature of said second relay, substantially as described.

7. In a system of multiple telegraphy, the combination, with a line conductor, means for supplying current to the line, and transmitting instruments connected to said line conductor, of a receiving instrument corresponding to one of said transmitters, a dead beat relay controlling said receiving instrument, a second relay controlling said dead beat relay and adapted to cause the armature of said dead beat relay to be deflected in the one direction or the other according as the armature of said second relay is in proximity to its magnet or away from said magnet, and means operated through changes in the line current for operating said second relay, substantially as described.

8. In a system of multiple telegraphy, the combination, with a line conductor, means for supplying current to the line, and two transmitting instruments each adapted when operated to vary the current strength of the line to a degree different from that by which the other transmitter varies the strength of said line current, of three line relays of different sensitivenesses each corresponding to and adapted to respond to one of the different strengths of current produced by the operation of said transmitters, three selecting relays corresponding to said line relays and operated thereby, means for regulating the times of movement of the armatures of said selecting relays, a relay I', a dead beat relay I² controlled by said relay and arranged to deflect its armature to one side or the other according as the armature of said relay is in proximity to its magnet or is away from said magnet, a receiving instrument controlled by said dead beat relay I², contact points of said selecting relays for controlling said relay I', the first selecting relay being adapted when operated to close the circuit of said relay I', the second selecting relay being adapted when operated to break the circuit of said relay I' and to operate a second receiving instrument, and the third of said selecting relays being adapted to complete the circuit of said relay I' around said second selecting relay, substantially as described.

9. In a system of multiple telegraphy, the combination, with a line conductor, means for supplying current to the line, current varying transmitting instruments each adapted when operated to vary the current strength of the line to a degree different from that by which the other transmitter or transmitters varies the strength of said line current, and a pole changing transmitter connected to said line conductor and adapted when operated to change the direction of current in the line, of line neutral relays of different sensitivenesses each corresponding to and adapted to respond to one of the different strengths of current produced by the operation of said current varying transmitters, a line polar relay adapted to respond to the reversal of the line current by said pole changing transmitter, a receiving instrument corresponding to said pole changing transmitter and a circuit controlling said receiving instrument and controlled by said polar relay, a receiving instrument corresponding to each of the current varying transmitting instruments, local circuits for controlling said last named receiving instruments, selecting relays corresponding to said line relays and adapted to prevent the operation of a receiving instrument when the transmitting instrument corresponding thereto is not affecting the current strength in the line, local circuits controlled by said line relays for controlling said selecting relays, the strengths of current in said local circuits varying in inverse order to the sensitivenesses of the line relays, and retractile springs for the armatures of said selecting relays varying in strength in inverse order to the strengths of the currents operating in the selecting relays, substantially as described

543,985. INCANDESCENT CONDUCTOR FOR ELECTRIC LAMPS.

THOMAS A. EDISON, Menlo Park, N. J., assignor to the Edison Electric Light Company, New York, N. Y. Filed Aug. 7, 1882. Serial No. 68,652. (No specimens.)

Claim.—1. A flexible carbon filament for the incandescing conductor of an electric lamp composed of carbonized unstructural cellulose or other carbo-hydrate or a compound thereof, substantially as set forth.

2. The method of producing flexible carbon filaments for the incandescing conductors of electric lamps, consisting in carbonizing unstructural cellulose or other carbo-hydrate or a compound thereof, the material being reduced to the proper size and shape before or after carbonization, substantially as set forth.

3. The method of forming flexible carbon filaments for the incandescing conductors of electric lamps, consisting in dissolving unstructural cellulose or other carbo-hydrate or a compound thereof, and forming the same into sheets or membranes, and in punching or cutting filaments therefrom before or after carbonization, substantially as set forth.

4. The method of forming flexible filaments for the incandescing conductors of electric lamps, consisting in forming unstructural cellulose or other carbo-hydrate or a compound thereof into filaments or sheets under heat and pressure, and subsequently carbonizing the same, substantially as set forth.

543,986. PROCESS OF TREATING AND PRODUCTS DERIVED FROM VEGETABLE FIBERS.

THOMAS A. EDISON, Menlo Park, N. J., assignor to the Edison Electric Light Company, New York, N. Y. Filed Oct. 20, 1882. Serial No. 74,785. (No specimens.)

Claim.—1. As a new article of manufacture, the transparent or translucent flexible material formed by treating vegetable fiber with hydrofluoric acid, substantially as set forth.

2. The process of converting vegetable fiber into a flexible, transparent or translucent substance, consisting in treating such fiber with hydrofluoric acid, substantially as set forth.

3. The process of forming flexible, transparent or translucent sheets, from vegetable fiber, consisting in treating such fiber with hydrofluoric acid and pressing the resulting material into sheets, substantially as set forth.

543,987. FILAMENT FOR INCANDESCENT LAMPS.

THOMAS A. EDISON, Menlo Park, N. J., assignor to the Edison Electric Light Company, New York, N. Y. Filed Oct. 20, 1882. Serial No. 74,786. (No specimens.)

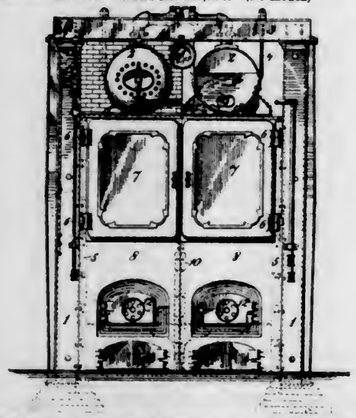
Claim.—1. A flexible filament of carbon for the incandescing conductor of an electric lamp, formed from vegetable fiber, treated before carbonization with hydrofluoric acid, substantially as set forth.

2. The process of forming flexible carbon filaments for the incandescing conductors of electric lamps, consisting in treating vegetable fiber with hydrofluoric acid and carbonizing the resulting material, such material being formed into filaments either before or after carbonization, substantially as set forth.

3. The process of forming flexible carbon filaments for the incandescing conductors of electric lamps, consisting in dissolving vegetable fiber by hydrofluoric acid, and pressing the resulting material into sheets, from which sheets the filaments are formed either before or after carbonization, substantially as set forth.

543,988. STEAM-BOILER.

GODFREY ENGEL, South Baltimore, Md. Filed Nov. 21, 1894. Serial No. 529,508. (No model.)



Claim.—1. In a boiler, the combination, with the side walls, and vertical channel columns embracing the ends of said walls, of transverse beams connecting and bracing said channel columns, whereby said columns are enabled to act as stays for said walls, and means for suspending the boiler from said columns, substantially as described.

2. In a boiler, the combination, with the side walls, and vertical channel columns embracing the ends of said walls, of transverse beams connecting and bracing said channel columns, whereby said columns are enabled to act as stays for said walls, means for suspending the boiler from said columns, and front plates and doors for the boiler connected to and supported by said channel columns, substantially as described.

3. In a boiler, the combination, with the side walls, of vertical channel columns secured to said walls, and angle plates secured to said channel columns and supporting the front doors and front plates of said boiler, substantially as described.

4. In a boiler, the combination, with the side walls, of vertical channel columns secured to said walls, angle plates secured to said columns, recessed to receive the front plates of the boiler, and having sockets adapted to receive the pintles of the front doors of the boiler, and a beam connecting the tops of said angle plates and abutting against the upper edges of said doors when the latter are closed, substantially as described.

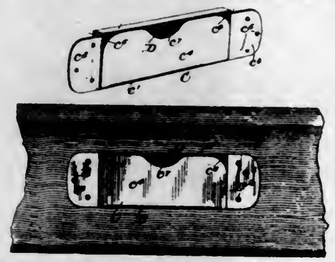
5. In a boiler, the combination, with the side walls, of vertical channel columns secured to said walls, a transverse beam connecting said columns, means for supporting the boiler drum from said beam, angle plates secured to said columns and supporting the front plates and doors, and a beam connecting the tops of said angle plates and supporting the front wall of the boiler, substantially as described.

6. In a boiler, the combination, with vertical columns at the side of the boiler, of front plates secured to and supported by said columns, and having in their surfaces corrugations adapted to permit expansion and contraction in said plates, whereby side stresses upon said columns are avoided, substantially as described.

7. In a boiler, the combination, with two front plates suitably supported at the sides, and having suitable furnace doors therein, of a plate 10 connecting the adjacent edges of said front plates and having laterally projecting shelves for supporting the dead plates of the boiler, substantially as described

543,989. MOISTENER FOR CIGAR-BOXES.

JAMES C. GLACCUM, New York, N. Y. Filed Mar. 6, 1895. Serial No. 540,745. (No model.)



Claim.—1. As an improved article of manufacture, a case for a cigar moistener, constructed of a single piece of sheet metal, comprising a perforated body portion to receive an absorbent pad, the integral ears at each end, by means of which said case is attached to a cigar box, and an integral flap or cover for holding a pad in said case, substantially as shown and described.

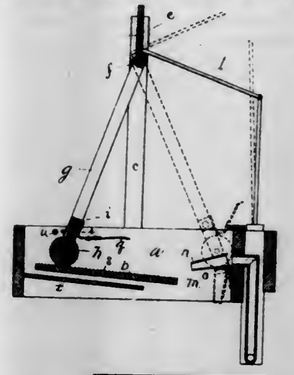
2. As an improved article of manufacture, a moistening device, comprising a perforated metallic case, formed of a single piece of sheet metal, having the integral ears at each end for attachment to a cigar box, and an integral flap for holding a pad within the case, and a pad of absorbent material arranged within said case, substantially as shown and described.

3. In a moistener for cigar and other boxes, the combination with a box, having an opening in its side, of a perforated metal case adapted to fit within said opening and having ears at each end by means of which it is attached to said box within the opening, a pad located within the case, and the outer flap or cover connected with said case and adapted to hold the pad therein, said flap being arranged upon the exterior of the box, whereby said flap may be opened, and the pad withdrawn or inserted, substantially as shown and described.

543,990. WASHING-MACHINE.

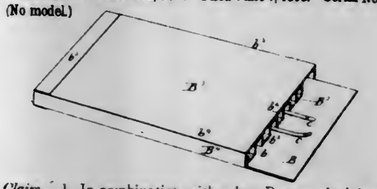
FRED D. HARDING, Baldwin, Me., assignor to Simon J. Harding, same place. Filed May 20, 1895. Serial No. 549,896. (No model.)

Claim.—In a washing machine, in combination, a suitable box, a corrugated scrubbing board set therein, standards attached to the sides thereof and having slots therein, a swinging frame having journals adapted to rest in said slots, a corrugated roller journaled in the lower extremities of the sides of said frame, a pump mounted in said box and adapted to be operated by said swinging frame, said pump having a delivery spout projecting through the end of said box and a supplemental delivery spout hinged to said box and adapted to register with the end of said delivery spout when in its normal position and to be bent downwardly, substantially as and for the purposes set forth.



543,991. CASE FOR SURGICAL INSTRUMENTS.

ROBERT W. JOHNSON, New Brunswick, N. J. Filed June 7, 1895. Serial No. 551,980 (No model.)



Claim.—1. In combination with a box D, a surgical instrument tray received therein and consisting of a sheet of card-board having its central portion forming the bottom B of said tray longer than said surgical instruments, and its side portions B² and B³ of shorter length, the side B² being corrugated to form the sides of pockets, and the side B³ folded upon the corrugated side B² to complete said pockets, the portions B, B² and B³ being connected together substantially as described.

2. In combination with a box D, a surgical instrument tray received therein, said tray having its bottom longer than said instruments and its sides and top of shorter length, and between said top, bottom and sides a sheet of rigid material corrugated to constitute the sides of pockets, said sheet having its corrugations cemented to the top and bottom of said tray substantially as and for the purpose specified.

543,992. PROCESS OF AND APPARATUS FOR MANUFACTURE OF GAS.

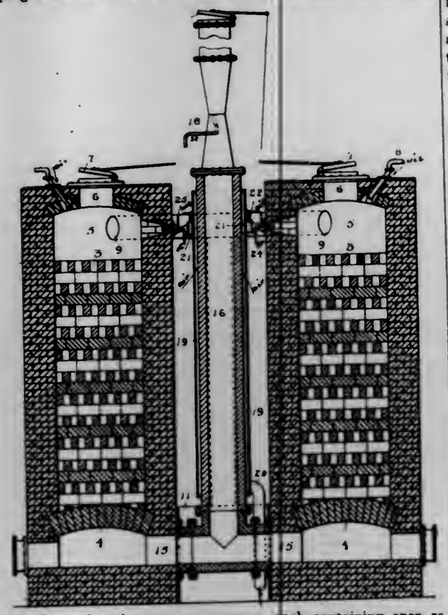
JOHN J. KIRKHAM, Terre Haute, Ind. Filed Sept. 6, 1894. Serial No. 522,275. (No model.)

Claim.—1. In an oil gas apparatus two regenerators supplied with refractory material, flues 15 communicating with the regenerators at their bottom and with a common stack 16, a combustion chamber 5 in each regenerator above the brickwork, oil burners having air supplying devices adapted to spray the oil and blend air and oil to produce combustion in said chambers, distinct oil pipes to supply oil independently of the burners to said chambers and regenerators, gas pipes 9 each having a valve 12 and connecting the upper parts of the regenerators with a common seal or holder, a valve 17 in the smokestack adapted to prevent escape of gas from flues 15 and means for diluting the gas after it passes out of the regenerators, substantially as set forth.

2. In combination, two regenerators each containing open refractory material, and having a combustion chamber above said material, a conduit by which their lower parts communicate, a stack to conduct products of combustion from said conduit, oil and air mixing burners adapted to spray the oil and blend it with air to heat the said chambers situated near the tops of the regenerators, independent oil pipes to supply oil to the heated chambers, gas pipes leading from the tops of the regenerators to a water seal, suitable valves, and an air pipe leading from a hot-air chamber to the said seal box, substantially as set forth.

3. The art of making gas which consists in vaporizing oil, superheating the vapor by itself thereby converting the same into a fixed gas, passing such superheated gas through the water in a water seal and simultaneously introducing hot air below the water level in the same seal and thereby diluting the heated oil gas with heated air, substantially as set forth.

4. The combination of the regenerators each having a combustion chamber, the stack provided with an air jacket, and means for supplying heated air from within said jacket to the said chambers, a water seal, an air conduit 13 leading from said jacket, and a gas pipe leading from a regenerator, both the air conduit and the gas pipe dipping below the water level in said seal, substantially as set forth.



5. In combination two regenerators each containing open refractory material, and having a combustion chamber above said material, a conduit by which their lower parts communicate, a stack to conduct products of combustion from said conduit, an air-heating jacket for the stack, oil and air mixing burners to heat said chambers situated near the top of the regenerators, air conduits for conveying heated air from the jacket to the burners, independent oil pipes to supply oil to the heated chambers, gas pipes and hot air pipes adapted to mingle air with the gas in the main, substantially as set forth.

543,993. LAWN-SPRINKLER. FREDERICK E. KOHLER, Canton, Ohio. Filed Dec. 17, 1894. Serial No. 532,014. (No model.)



Claim.—1. A lawn sprayer comprising in combination, a plug casing, passages extending diagonally therethrough, a spinner mounted to freely rotate above said casing, and a turn plug, operating in said casing, said plug provided with two ports which are adapted to be brought simultaneously into register with the said passages, and direct the stream against the spinner, at opposite sides thereof, and further provided with a third port which may be brought into register with but one of the passages, to direct the stream at but one side against the spinner, substantially as described and for the purpose set forth.

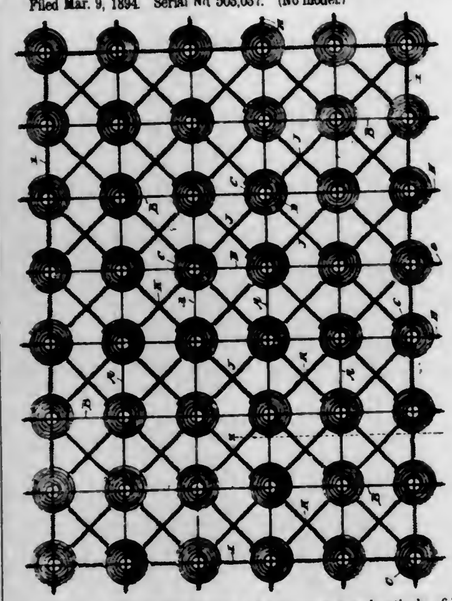
2. A lawn sprayer comprising in combination, a casing, having passages extending diagonally therethrough in opposite directions, a sprayer mounted to rotate above the casing, in line, to receive on its blades the streams from said passages, and a valve for controlling the flow of water, substantially as described and for the purpose set forth.

3. A lawn sprayer comprising in combination, a casing having passages extending therethrough, the outlet ends of which are of elliptical form, a spinner mounted to freely rotate above said casing, and receive the impact of the water on its blades, and a valve for controlling the flow of water, substantially as described and for the purpose set forth.

4. A lawn sprayer, comprising in combination, a casing, having oppositely diagonal passages, the outlet ends of which are of elliptical form, a spinner mounted above said casing and to be rotated by the impact of water against the blades, substantially as set forth.

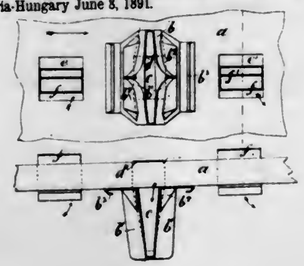
5. The combination with the base, a casing secured thereto, and provided with a hose nipple, a plug seat, passages a', a', a^2, a^2, the upper ones of which extend diagonally through the casing, and a spindle; a plug secured in said seat and provided with ports b b, b', and a spinner journaled upon said spindle above the passages a', a', to receive the impact of the stream or streams of water, and spray the same, substantially as described and for the purpose set forth.

543,994. WIRE BED-BOTTOM. JOHN R. LARIEW, Elmira, N. Y. Filed Mar. 9, 1894. Serial No. 503,037. (No model.)



Claim.—A bed bottom having a frame constructed entirely of intersecting longitudinal and transverse frame-wires of the same gage and extending beyond the outermost points of intersection to form frame-wire extensions, spiral springs seated, respectively, at the intersection of the frame-wires and having an interlocking connection therewith to connect the frame-wires and secure the spiral springs in place, said frame-wires being provided contiguous to their points of intersection with bends to prevent independent lateral movement of either wire, bridging springs connecting the spiral springs at their tops to prevent lateral deflection, and resilient braces consisting of helical springs secured at their lower extremities to the outer ends of the frame-wire extensions and at their upper extremities to the upper coils of the spiral springs, said braces inclining inward toward their upper ends whereby they exert a lateral outward strain upon the tops of the outermost spiral springs, to prevent inward deflection thereof, substantially as specified.

543,995. VENTILATOR. JOSEPH LEATHER, Liverpool, England. Filed Oct. 26, 1894. Serial No. 527,063. (No model.) Patented in England Nov. 7, 1890, No. 17,902, and Feb. 16, 1891, No. 2,759; in France Nov. 12, 1890, No. 209,453; in Belgium Nov. 13, 1890, No. 92,711, and in Austria-Hungary June 8, 1891.

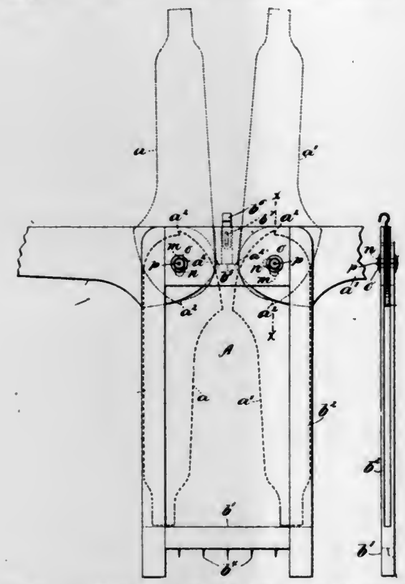


Claim.—1. In ventilating apparatus, the combination with a support having an aperture, of a projecting piece at one side of the same and cooperating therewith, said support and projecting piece having registering air-ways therethrough, substantially as described.

2. In ventilating apparatus, a support having apertures provided with pivoted louvers, of a projecting piece having curved surfaces located between and arranged to act in conjunction with said apertures, said projecting piece having an air-way in register with an air-way through the support; substantially as described.

3. In ventilating apparatus, a support having apertures provided with pivoted louvers, of a projecting piece having an air-way in register with an air-way through the support and being provided with curved surfaces located between and arranged to act in conjunction with said apertures, said projecting piece having deflecting pieces and turned-up flanges to intercept dust or other particles; substantially as described.

543,996. STRETCHER FOR UNDERWEAR. ALEXANDER LIGGET, Philadelphia, Pa. Filed Feb. 14, 1895. Serial No. 538,330. (No model.)

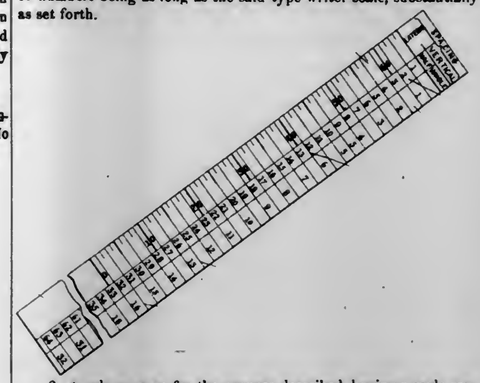


Claim.—1. A form for drying underwear or the like, consisting of a frame, two movable members pivoted in the frame, a block secured in said frame, a projection carried on the inner end of each movable member adapted to abut against said block to lock the members in a horizontal position with respect to said frame and pins securing the members to the frame, each pin passing through the frame and a slot in each of the movable members to constitute a pivotal connection to allow the members in horizontal position to be shifted laterally in said frame to permit the projections of the members to abut against or to clear the block of said frame, whereby said movable members may be moved into operative position to receive underwear and to be locked in such position and to be folded into the frame when not in use, substantially as described.

2. A form for drying underwear or the like, consisting of a frame, two movable members pivoted in the frame, a block secured in said frame, a projection carried on the inner end of each movable member adapted to abut against said block to lock the members in horizontal position with respect to said frame and a pin passing through the frame and a slot in the movable members to constitute a pivotal connection to allow the members in horizontal position to be shifted laterally in said frame to permit the projections of the members to abut against or to clear the block of said frame, whereby said movable members may be moved into operative position to receive underwear and to be locked in such position and to be folded into the frame when not in use, a slotted hook sliding in the block and secured thereto by a pin passing through the block and the slot of the hook and adapted to support the frame and its movable members, substantially as described.

543,997. SPACING RULE OR GAGE. ISAAC H. MALLIN, Chicago, Ill. Filed Jan. 12, 1895. Serial No. 534,616. (No model.)

Claim.—1. A rule or gage for the purpose described, having marked along one edge thereof a number of divisions or graduations representing a type writer scale, in combination with a row or column of figures approximately equal in number to half the number of spaces in said type writer scale, and being arranged in the reverse order of the graduations in said type writer scale, and division lines extending transversely across both said scale and column of figures, and each two of said division lines being so arranged as to inclose between them a single one of said numbers and two of the graduations in said scale, whereby each two of said graduations will be opposite a single one of said numbers and may be read with reference thereto, the column of numbers being as long as the said type writer scale, substantially as set forth.



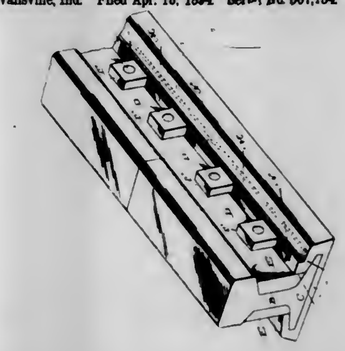
2. A rule or gage for the purpose described, having a scale representing the type writer scale, in combination with a row or column of characters approximately equal in number to half the number of spaces in the type writer scale which said first scale represents, the characters of lowest denomination in said column of characters being arranged to correspond with the spaces in said scale of highest denomination, substantially as set forth.

3. A rule or gage for the purpose described, having a scale divided into spaces corresponding to the scale of the type writer, in combination with a column divided into spaces corresponding to the vertical spacing of said type writer and said last spaces being numbered, and said numbers being arranged to correspond with every alternate space in said type writer scale, substantially as set forth.

4. A rule or gage for the purpose described, having a scale representing the type writer scale in combination with a column of numbers or characters representing the half vertical spacing of said type writer and a column of numbers or characters representing the whole vertical spacing of said type writer, the first said column being arranged between said scale and the last said column and each two spaces of said scale being arranged to correspond with one of the numerals or characters in said first column, substantially as set forth.

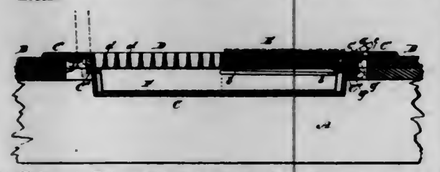
5. A rule or gage for the purpose described, having marked thereon a number of divisions or graduations representing a type writer scale, in combination with a column of figures approximately equal in number to half the number of divisions in said type writer scale and being arranged in the reverse order of the numbers in such type writer scale, each of said numbers of said column being arranged to correspond with two of the divisions in said type writer scale, substantially as and for the purposes set forth.

543,998. RAIL-CHAIR AND NUT-LOCK. EDWARD MILLER, Jr., Evansville, Ind. Filed Apr. 16, 1894. Serial No. 507,754. (No model.)



Claim.—The combination of the rail and fish plates with the chair made of a single piece of metal having the overlapping portions and one having the upward extending rib, and a spring seated in said rib and bearing against the nuts.

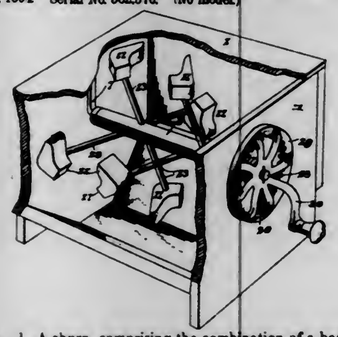
543,999. COMBINED MAT AND SCRAPER. JOHN M. MORTON, Cedar Rapids, Iowa. Filed May 27, 1895. Serial No. 550,886. (No model.)



Claim.—1. The combination with the floor of a railway coach or other apartment, of the tray C having marginal flanges and a closed bottom, and provided with supporting ledges or shoulders inside, the grate D having transverse bars *d d* about half its length and a recess the other half to hold a mat, said grate being hinged to the tray, and provided with suitable means for holding it in normal position, and for lifting one end, a mat secured in said recess, and a pan set in said tray below the grate, to catch the dirt falling through.

2. The combination with the floor of a railway coach or other apartment, of the tray C, having marginal flanges C', shoulder C'', holes *e e*, and socket *e'*, the grate D having transverse bars *d d* occupying about half its length, a perforated recess formed in the remainder thereof, and provided with lugs D' D' and *d' d'*, the mat E secured in said recess, the handle G having latch *g g* hinged to lugs *d' d'* and having a limited movement to engage and disengage with the tray, and a pan F set in the tray below said grate, substantially as and for the purpose set forth.

544,000. CHURN. CALVERT R. MCGARVEY, Elkton, Va. Filed Mar. 6, 1894. Serial No. 502,576. (No model.)
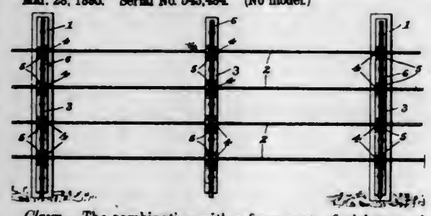


Claim.—1. A churn, comprising the combination of a body-portion, a dasher-shaft therein, a lever pivoted to the body and adjacent to one end of the shaft and to which one end of the lever is revolubly connected, a spring actuating the remaining arm of the lever, whereby it is kept in engagement with the shaft and the shaft given a normal endwise tendency, a spindle connected to the remaining end of the shaft and pressed endwise thereby, the spindle having an enlargement thereon and adapted to be pressed against the body of the churn, whereby a water-tight bearing is formed, and means connected to the spindle by which it can be rotated and the dasher-shaft operated in consequence thereof, substantially as described.

2. The herein described churn dasher comprising a horizontal shaft, opposite sets of dasher arms fitted to the shaft and disposed diagonally thereto, the dasher arms of each set being arranged in parallel planes to each other, and dasher blocks fitted to the outer ends of said arms, each of said dasher blocks being arranged spirally to travel partly in the same circular path as the dasher block immediately in advance thereof, substantially as set forth.

3. The herein described churn dasher comprising a shaft, opposite sets of dasher arms disposed diagonally to the shaft, the diagonal arms of each set being arranged in parallel planes, and the dasher blocks fitted to the outer ends of said arms and provided with inner compoundly curved faces disposed toward the center of the churn body in which the dasher is placed, said dasher blocks being arranged in a spiral order successively nearer toward the vertical center of the churn body and each arranged to travel partly in the same circular path as the dasher block immediately in advance thereof, substantially as set forth.

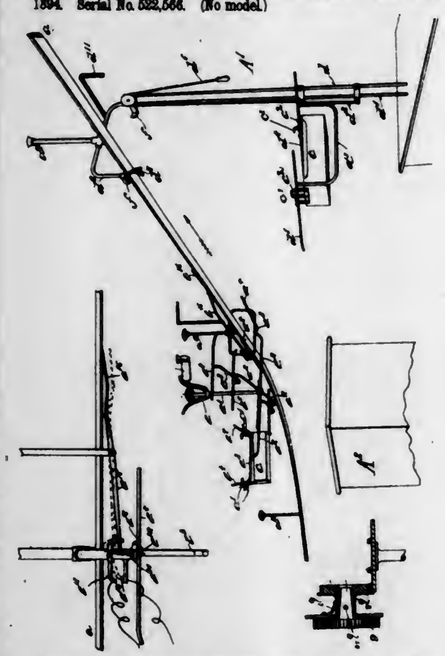
4. A churn dasher comprising a shaft, dasher arms fitted to the shaft, and dasher blocks fitted diagonally to the outer ends of said arms and provided with inner compoundly curved faces 25, inclined straight rear faces 26, outer straight faces 24 merging into one end of the compoundly curved inner faces and curving into the inclined straight rear faces 26, and plain faces 27 formed at one end of the faces 25 and 26, substantially as set forth.

544,001. WIRE FENCE. THOMAS MCKERNS, Greason, Pa. Filed Mar. 28, 1895. Serial No. 543,434. (No model.)



Claim.—The combination with a fence post, of pickets made of sheet metal and adapted to be bolted or otherwise secured thereto or to the line wires between the posts, each of said pickets being fluted laterally at intervals throughout its length forming its rear surface substantially flat, its front surface with ridges and recesses for the passage of the line wires therethrough and slotted in said fluted portions and a vertically disposed securing rod or wire passing through the said slots in the rear of the line wires, substantially as and for the purpose described.

544,002. STORE-SERVICE APPARATUS. HARRY M. NEER, Springfield, Ohio, assignor to O. S. Kelly, same place. Filed Sept. 10, 1894. Serial No. 522,566. (No model.)



Claim.—1. In a store service apparatus, a flat horizontal track, and a motor car having track wheels to operate against said track, said track wheels being arranged above and below the track and one or more of said track wheels being yieldingly supported so as to bear yieldingly against said track, a motor on said car having a single field magnet and independent armatures, each of said armatures being connected to the driving wheels on one side of said track, substantially as specified.

2. The combination, with a motor car and a flat horizontal track on which the same operates, a motor on said car having a single field magnet and two independent armatures, track wheels on said motor car adapted to operate on said track, the track wheels on opposite sides of said car being connected independently to the respective armatures, each set of track wheels including one or more wheels above and below said track, and means as described for keeping said track wheels in contact with said track, substantially as specified.

3. In a store service apparatus, a flat horizontal track, a motor car having track wheels to operate against said track, said track wheels being arranged above and below said track and having their peripheries covered with rubber or other flexible material, guides or ways on said car, and carrying receptacles having suitable hook-shaped arms to be engaged by said guides or ways, substantially as and for the purpose specified.

4. In a store service apparatus, a series of stations and a track extending in proximity to said stations, an electrically operated motor car on said track having guides or ways, and stationary supporting devices at each of said stations adapted to support carrying receptacles having hook-shaped arms which lie along the line of travel of said guides or ways, stop projections on said receptacles and stations respectively, and a revolving discharging apparatus operated electrically by the movement of said car to receive said receptacles as the car passes the same, substantially as specified.

5. In a store service apparatus, a moving car having guides or ways to receive carrying receptacles, as described, a revolving shaft having projecting arms carrying guides or ways adapted in their normal positions to rest adjacent to the line of travel of said car, a spring connected to said shaft, and a solenoid for operating said spring, and means as described for sending an electrical impulse through said solenoid at the same time said shaft is released, substantially as specified.

6. The combination with a stationary track, of a revolving shaft having projecting arms, a car on said track adapted to carry receptacles as described, and guides or ways on said projecting arms to engage said receptacles, a spring connected to said shaft, and a solenoid for operating said spring, a pivoted catch for retaining said projecting arms in their normal position, and electrical contacting devices connected to said catch, said contacting devices being adapted to establish an electrical circuit through said solenoid, and means as described for operating said catch and said contacting devices as the car passes along said track, substantially as specified.

7. The combination with a track, a motor-car on said track, guides or ways on said car, gravity latches on one end of said guides or ways and pivoted arms at the other end of said guides or ways, said pivoted arms being adapted to be operated by stationary projections as the car passes along said track, substantially as specified.

8. The combination with the track, and a motor car adapted to travel thereon, supporting track wheels supported in rigid bearings on said car, and auxiliary track wheels arranged opposite the main track wheels, said auxiliary track wheels being connected to the driving mechanism by a joint as described, and a spring for holding said auxiliary wheels yieldingly in contact with said track, substantially as specified.

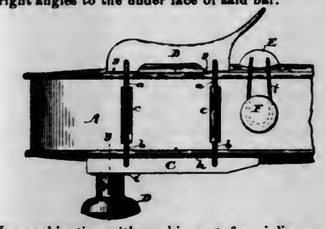
9. The combination with the track, and a motor operating thereon, of main supporting track wheels, and auxiliary track wheels geared thereto, said auxilary track wheels being yieldingly connected to said driving gear, and a spring for holding said auxiliary track wheels yieldingly in contact with said track, substantially as specified.

10. The combination with a stationary track, of a moving car, guides or ways on said car, carrying receptacles to engage the said guides or ways, stations along said track each consisting essentially of standards having a movable frame with a U-shaped support on which said receptacles are adapted to rest, a spring-catch for holding said traveling frame in an elevated position, and a pivoted latch adapted to rest at one end against said spring catch and at the other in position to be engaged by said receptacle when discharged from said motor car whereby the weight of said receptacle disengages said spring catch and causes the frame to descend, substantially as specified.

11. The combination with a stationary track and a movable car stations at intervals along said track each consisting of a stationary standard having a movable frame, a U-shaped supporting frame adapted to hold receptacles in proximity to said track so as to be engaged on said car, a spring catch for holding said frame in its normal position, a pivoted latch adjacent to said spring catch having a projection adapted to be engaged by said receptacles, stop projections at said stations corresponding to similar stop projections on said receptacles, whereby as the car passes said station the receptacle is discharged and engaging with said pivoted latch disengages said spring catch, substantially as specified.

544,008. CHIN AND SHOULDER REST. HENRY O. PEABODY, Boston, Mass. Filed Apr. 24, 1895. Serial No. 547,007. (No model.)

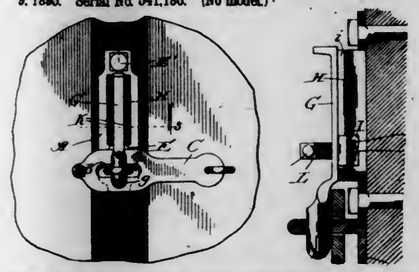
Claim.—1. The combination of a chin rest; a clamping bar to engage the opposite side of the violin; turn-buckle connections between said rest and clamp; and a shoulder rest in the form of a circular knob having its outer end face serrated or roughened and movably connected to the outer end of said clamping bar with its axis at right angles to the under face of said bar.



2. In combination with a chin rest for violins a non-metallic clamping bar to engage the back of the instrument, a pair of turn-buckles connecting said chin rest and clamping bar; a metal nut embedded in said non-metallic clamping bar; and a shoulder rest provided with a screw shank to engage said nut and projecting at right angles from the under surface of said clamping bar, as set forth.

3. The combination of the clamp bar C of non-metallic material; a metallic nut embedded therein; the shoulder rest knob D of non-metallic material; a metallic screw embedded in said knob; and means for clamping said bar and shoulder rest to a violin.

544,004. SEAL-LOCK. JOHN PLAYER, Topeka, Kans. Filed Mar. 9, 1895. Serial No. 541,180. (No model.)



Claim.—1. In a seal lock, the combination of a frame portion provided with a staple and sealing perforation, and a locking bolt provided with a sealing slit opening to one side and adapted to register with the seal perforation of the frame portion when in its locked position with a connected seal so that such parts cannot be unlocked until the seal has been mutilated or the parts destroyed, substantially as described.

2. In a seal lock, the combination of a frame portion provided with a staple and saddle portion having a sealing perforation, a locking bolt provided with an inwardly projecting dovetail engaging with the saddle portion of the frame and provided with a sealing perforation adapted to register with the seal perforation of the saddle when in its locked position, substantially as described.

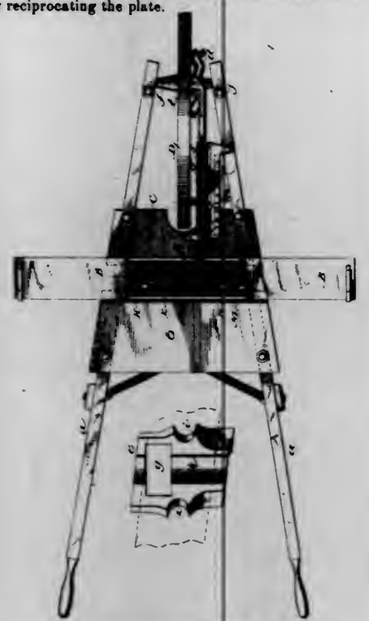
3. In a seal lock, the combination of a frame portion provided with a staple near one end, a saddle portion near the other end having a sealing perforation, between which the saddle portion and staple a bolt is arranged to secure the frame portion to the sill of a car so that such securing bolt cannot be released until the parts are unlocked, and a locking bolt provided with an inwardly projecting dovetail portion inserted in the saddle of the frame having a sealing perforation adapted to register with the perforation of the saddle when the parts are in their locked position, and such dovetail portion arranged to abut against a securing bolt of the frame portion to prevent the entire withdrawal of the locking bolt, substantially as described.

544,005. MACHINE FOR SOWING GRASS-SEED. GEORGE H. PRESTON, Shortsville, N. Y. Filed Nov. 29, 1892. Serial No. 453,545 (No model.)

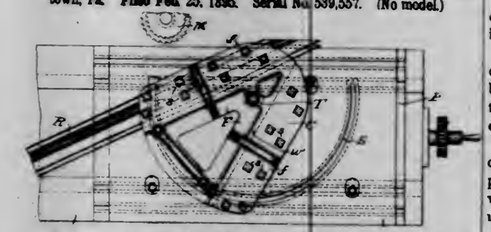
Claim.—1. In a wheelbarrow seeder the combination with the two side bars, of an axle, a head on one end of the axle, a nut on the opposite end, a wheel on the axle, two plates applied to the side bars and formed with grooves to receive the axle and with mortises to receive the head and nut, and fastening devices for holding the plates firmly in place on the side bars.

2. In a seeding machine the combination with a seed hopper, provided in its bottom with a longitudinally extending groove of a flat spirally twisted discharge slide fitting snugly in said groove and exposed at intervals throughout its length to the overlying seed in the hopper, and means for reciprocating said slide bodily within the hopper to discharge the seed.

3. In a seeding machine the combination with the hopper of the reciprocating seed discharging device located therein, a horizontally slotted plate applied to the outside of the hopper, screws or equivalent fastening devices extending through the slots in the plate and serving to hold the same in place and permit its movement, suitable connections between the plate and the seed discharging device and means for reciprocating the plate.



544,006. CHUCK FOR MACHINE-TOOLS. WARD RAYMOND, Johnstown, Pa. Filed Feb. 25, 1895. Serial No. 539,557. (No model.)



Claim.—1. A chuck for metal working tools, said chuck having a body with a narrow end or apex toward the operating end and a wider rear end, two flanges, one overhanging each side of the body, and clamping members in said flanges, said chuck being adapted to be adjustably secured to the platen of the machine.

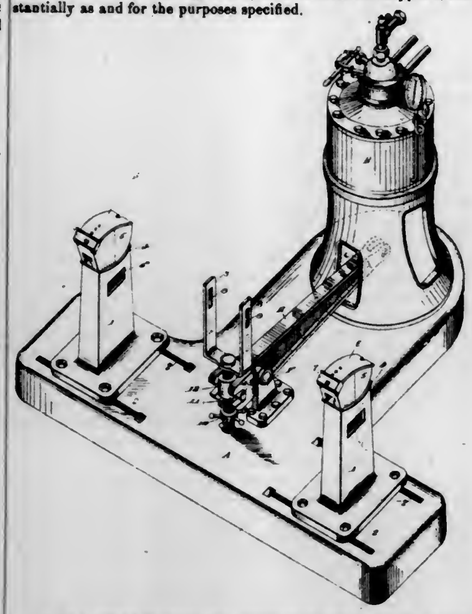
2. A chuck for metal working tools, said chuck comprising a V shaped body portion adapted to be pivoted near its apex to the platen of the machine, flanges, one overhanging each side of the body portion, clamping members on said flanges, and holding down members near the rear end of the body portion adapted to rigidly secure it to the platen of the machine.

3. In a metal working tool in combination with the platen of the machine a chuck having a V shaped body pivoted near its apex to said platen and flanges, overhanging each side of said body portion, clamping members in said flanges, a slot in said platen and bolts passing through said slot and the chuck near the rear end whereby the chuck is rigidly secured upon the platen.

4. In combination with the platen of a metal working tool, a chuck comprising two vertical sides angularly disposed toward each other, outwardly projecting flanges at the top of said vertical sides, and clamping members carried by said flanges; the whole being pivotally mounted near its narrow end upon the said platen, and adapted to be clamped thereupon.

544,007. TESTING-MACHINE. HENRY R. ROBISCHUNG, Kalamazoo, Mich., assignor to the Chicago Railway Equipment Company, Chicago, Ill. Filed Feb. 13, 1894. Serial No. 500,066. (No model.)

Claim.—1. In a testing machine, the combination with a plurality of pedestals or supports each having an adjusting block, said blocks parallel with each other and at an angle to the plane of the pedestals, of power mechanism arranged to operate between said supports, substantially as and for the purposes specified.



2. In a testing machine, the combination with a plurality of pedestals or supports each having a rotatable adjusting block, said blocks parallel with each other and at an angle to the plane of the pedestals, of power mechanism arranged to operate between said supports, substantially as and for the purposes specified.

3. In a testing machine, the combination with power mechanism, of pedestals or supports provided with movable adjusting blocks having convex upper faces; substantially as and for the purposes specified.

4. In a testing machine, the combination with a plurality of pedestals or supports and adjusting blocks, each of said pedestals and blocks having the one a concave and the other a convex face in juxtaposition, of power mechanism arranged to operate between said pedestals or supports; substantially as and for the purposes specified.

5. In a testing machine, the combination with power mechanism of pedestals or supports, and adjusting blocks arranged thereon, said pedestals and blocks having the one a concave and the other a convex face in juxtaposition, and the adjusting block having a convex upper surface; substantially as and for the purposes specified.

6. In a testing machine, the combination with a plurality of pedestals each having an adjusting block, of a power mechanism arranged to operate between said pedestals, said power mechanism having a swivel connection for engaging the power mechanism with the article to be operated upon; substantially as and for the purposes specified.

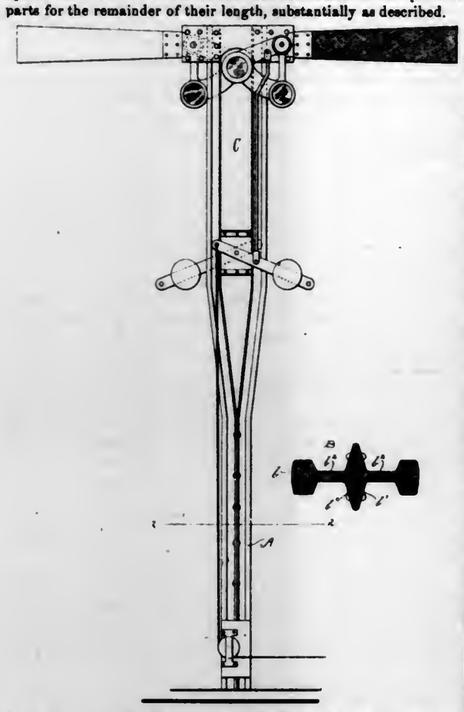
7. In a testing machine, the combination with a plurality of pedestals, each having an adjusting block, of power mechanism arranged to operate between the pedestals, and an adjustable swivel connection for engaging the power mechanism with the article to be operated upon, substantially as and for the purposes specified.

8. In a testing machine, the combination with power mechanism, of pedestals or supports for the article to be operated on, a swivel yoke, and a journaled nut or threaded collar and screw connection between the yoke and power mechanism; substantially as and for the purposes specified.

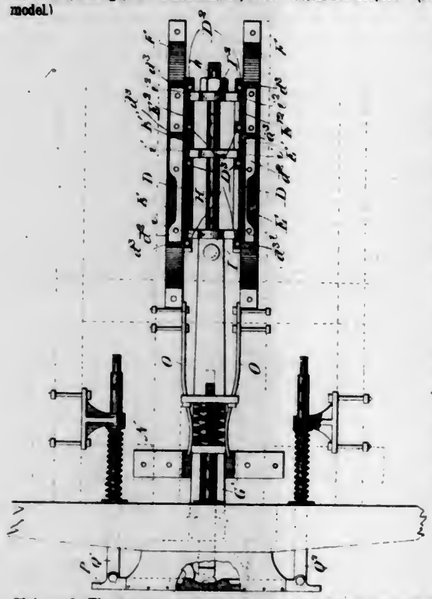
9. In a testing machine, the combination with a forked lever, of a nut or threaded collar journaled thereon, a screw arranged in said nut or threaded collar, a swiveled connection adapted to hold the article to be operated on, and suitable pedestals or supports for the article to be operated on; substantially as and for the purposes specified.

544,008. RAILWAY-SIGNAL. SHERBURN SANBORN, Chicago, Ill. Filed June 3, 1895. Serial No. 551,449. (No model.)

Claim.—A post for railway signals, comprising two bars provided with heads and bases connected with webs, and being attached or fastened together base to base for a portion of their length, and spread apart to afford room for the location and attachment of the operative parts for the remainder of their length, substantially as described.



544,009. DRAFT-RIGGING FOR RAILWAY-CARS. CHARLES A. SCHROYER, Chicago, Ill. Filed Mar. 10, 1893. Serial No. 465,463. (No model.)



Claim.—1. The combination of a draw bar, draft irons provided with pockets, follower plates mounted upon the draw bar and moving in such pockets, and two springs of unequal length mounted between such follower plates on the draw bar, the parts being proportioned substantially as described, whereby the draw bar is allowed to move inward to an extent equal substantially to the sum of the compression distance of the two springs, but is allowed to move outward only to an extent substantially equal to the compression distance of one of such springs, substantially as described.

2. The combination of a buffer, a draw bar, draft irons secured to the draft timbers and provided with pockets, follower plates mounted on the draw bar and traveling in such pockets, and two springs mounted upon the draw bar between the follower plates, the parts being arranged and proportioned substantially as described, whereby when the draw bar is moved in both of the springs will be compressed allowing the buffer faces to come into contact, and when the draw bar is moved outward one of such springs will only be compressed, thereby limiting the forward movement of the bar, substantially as described.

3. The combination of a buffer, a draw bar carrying the coupler, draft irons secured to the car timbers, follower plates loosely mounted upon the draw bar and traveling in pockets in the draft irons, and two sets of springs mounted upon the draw bar between the follower plates and so relatively adjusted that one set is compressed prior to the other, whereby as the draw bar is forced in the first set of springs will be compressed and will then be carried backward with the draw bar while the second set of springs is compressed, thereby affording longitudinal motion to the draw bar equal to the sum or the compression distance of the two springs and insuring the contacting of the buffers, substantially as described.

4. The combination of a draw bar, draft irons secured to the car timbers and provided with three pockets, follower plates mounted upon the draw bar and traveling in such pockets, two sets of springs mounted upon the draw bar between the follower plates, one set of such springs being weaker than the other, and the parts being all relatively proportioned and adjusted substantially as described, whereby when the draw bar is forced in the weaker spring will first be compressed, after which the second will be compressed, and as both springs become fully compressed one of the follower plates will contact with the end of its pocket, preventing further inward motion of the draw bar, and when the draw bar is drawn out only one of the series of springs will be compressed, after which the rearward follower plate will contact with the end of its pocket to prevent too great a motion of the draw bar, substantially as described.

5. In a device of the class described, a draft rigging comprising flanged draft irons adapted to be secured to the car timbers and provided with pockets open at their lower sides, carrier irons bolted to such draft irons to form the lower side of the pockets, and brace irons bent around the draft irons and bolted to the car timbers, substantially as described.

6. The combination of a draw bar, draft irons secured to the car timbers and provided with a series of pockets, follower plates mounted upon the draw bar and traveling in such pockets, and two sets of coiled springs mounted upon the draw bar between the follower plates, one set being compressible before the other, the parts being adjusted and proportioned substantially as described, whereby as the draw bar is forced in the weaker spring will first be compressed, followed by the compression of the stronger spring, so that both springs are compressed in buffing, but when the draw bar is moved outward the rearward spring will alone be compressed.

7. In a device of the class described, the combination of a draw-bar, draft irons secured to the car timbers and provided with pockets, follower plates loosely mounted upon the draft irons and sliding in such pockets, and springs placed between the follower plates, the parts being constructed and arranged substantially as described, whereby when the draw-bar is moved in both springs will be compressed until one of the follower plates reaches the rearward end of the pocket in which it travels, when the spring behind such follower plate will cease to be compressed, substantially as described.

8. In a device of the class described, the combination of a draw-bar, draft irons provided with at least three pockets, three follower plates loosely mounted on the bar and sliding in such pockets respectively, and two springs mounted between such follower plates, whereby when the draw-bar is moved in both springs will be compressed until the middle follower plate reaches the rear end of its pocket, after which only the forward spring will be compressed, and as the draw-bar moves outward only one of the springs will be compressed, substantially as described.

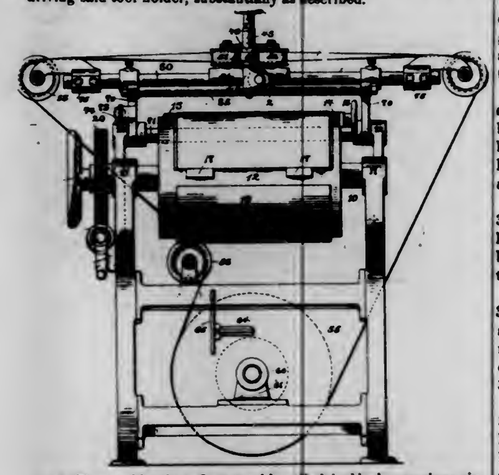
544,010. ROUTING-MACHINE. WILLIAM SPALCKHAVER, Brooklyn, assignor to Robert Hoe, Theodore H. Mead, and Charles W. Carpenter, New York, N. Y. Filed Sept. 17, 1894. Serial No. 523,228. (No model.)

Claim.—1. The combination of a rotatable cylindrical bed, a rotary tool holder, a carriage for said tool holder pivotally mounted on and free to slide on a rod parallel with the axis of the bed, and means for driving the tool holder, substantially as described.

2. The combination of a rotatable cylindrical bed, a rotary tool holder, a carriage for said tool holder pivotally mounted on and free to slide on a rod parallel with the axis of the bed, and a driving belt for said tool holder, substantially as described.

3. The combination of a rotatable cylindrical bed, a carriage piv

otally mounted on and free to slide on a rod parallel with the axis of the bed, a rotary tool holder carried by an arm extending forward from the carriage, an operating handle by which the carriage is reciprocated to move the tool longitudinally of the bed and is rocked to carry the tool into and out of operative position, and means for driving said tool holder, substantially as described.



4. The combination of a rotatable cylindrical bed, a carriage pivotally mounted on and free to slide on a rod parallel with the axis of the bed, a rotary tool holder carried by an arm extending forward from the carriage and adjustable thereon, an operating handle by which the carriage is reciprocated to move the tool longitudinally of the bed and is rocked to carry the tool into and out of operative position, a guide bar which limits the downward movement of the arm by which the tool holder is carried, and means for driving said tool holder, substantially as described.

5. The combination of a rotatable cylindrical bed, a carriage mounted to reciprocate longitudinally of the bed, a rotary tool holder carried by an arm extending forward from the carriage, the outer end of which arm serves as an operating handle by which the carriage is reciprocated to move the tool longitudinally of the bed, and by which the arm may be moved to carry the tool into and out of operative position, a guide bar which limits the downward movement of said arm, and means for driving said tool holder, substantially as described.

6. The combination in a routing machine, of a carriage pivotally mounted on and free to slide on a rod, a rotary tool holder carried by the carriage, and a driving belt for said tool holder which lies parallel with and near to said rod in either direction from the carriage, substantially as described.

7. The combination of a rotatable cylindrical bed, a carriage pivotally mounted on and free to slide on a rod parallel with the axis of the bed, a rotary tool holder carried by the carriage, and a driving belt for said tool holder which lies parallel with said rod in either direction from the carriage, substantially as described.

8. The combination of a rotatable cylindrical bed, a carriage pivotally mounted on and free to slide on a rod parallel with the axis of the bed, a rotary tool holder carried by the carriage, and a driving belt for said tool holder which lies parallel with and near to said rod in either direction from the carriage, substantially as described.

9. The combination of a rotatable cylindrical bed, a carriage pivotally mounted on and free to slide on a rod parallel with the axis of the bed, a rotary tool holder carried by the carriage, a driving belt for said tool holder, guide sheaves for said belt mounted on the carriage, and stationary guide sheaves for said belt so positioned that the belt between said stationary sheaves and the sheaves on the carriage shall be parallel with and near to said rod in either direction from the carriage, substantially as described.

10. The combination of a rotatable cylindrical bed, a carriage pivotally mounted on and free to slide on a rod parallel with the axis of the bed, a rotary tool holder carried by the carriage, a driving belt for said tool holder, guide sheaves for said belt mounted on the carriage, and stationary guide sheaves for said belt so positioned that the belt between said stationary sheaves and the sheaves on the carriage shall be parallel with said rod in either direction from the carriage, substantially as described.

11. The combination of a carriage pivotally mounted on and free to slide on a rod, said rod, a rotary tool holder carried by an arm extending forward from the carriage, an operating handle by which the carriage may be reciprocated and rocked to carry the tool into and out of operative position, a guide bar which limits the downward movement of the arm by which the tool holder is carried, adjustable pivoted brackets for said rod and said guide bar, and means for driving said tool holder, substantially as described.

12. The combination of a rotatable cylindrical bed, a rod parallel with the axis of the cylindrical bed, a sleeve loose on said rod, an arm carried by said sleeve, a rotary tool holder carried by said arm, a guide bar parallel with said rod which limits the movement of the arm toward the bed, and means for driving said tool holder, substantially as described.

13. The combination of rod 30, a carriage pivoted on and free to slide on rod 30, a rotary tool holder carried by the carriage, guide bar 35 for said carriage, adjustable brackets 70 by which rod 30 and bar 35 are supported, and a driving belt for said tool holder which lies parallel with the rod 30 in either direction from the carriage, substantially as described.

14. The combination of rod 30, sleeve 31 loose on rod 30, arm 33 carried by sleeve 31 and the end of which serves as an operating handle 34, a rotary tool holder adjustably mounted on arm 33, guide bar 35 for arm 33, and means for driving said tool holder, substantially as described.

15. The combination of rod 30, sleeve 31 loose on rod 30, arm 33 carried by sleeve 31, a rotary tool holder adjustably mounted on arm 33, a driving belt for said tool holder which lies parallel with rod 30 in either direction from the carriage, and sheaves for said belt carried by brackets 75 adjustable on the extended ends of the rod 30, substantially as described.

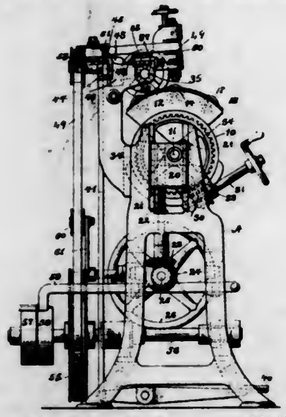
16. The combination of rod 30, sleeve 31 loose on rod 30, arm 33 carried by sleeve 31 and the end of which serves as an operating handle 34, a rotary tool holder carried by arm 33, an adjustable guide bar 35 for arm 33, and means for driving said tool holder, substantially as described.

17. The combination of rod 30, sleeve 31 loose on rod 30, arm 33 carried by sleeve 31, a rotary tool holder carried by arm 33, a driving belt for said tool holder, guide sheaves 51 and 52 for said belt carried by sleeve 31, and stationary guide sheaves 53 and 54 for said belt positioned so that the belt shall lie parallel with the rod 30 between the sheaves 51 and 53 and between the sheaves 52 and 54, substantially as described.

18. The combination of rod 30, a carriage pivoted on and free to slide on rod 30, a rotary tool holder carried by the carriage, a driving belt for said tool holder, guide sheaves 51 and 52 for said belt carried by the carriage, guide sheaves 53 and 54 for said belt carried by brackets 75 adjustably mounted on the extended ends of the rod 30, said sheaves being positioned so that the belt shall lie parallel with the rod 30 between the sheaves 51 and 53 and between the sheaves 52 and 54, substantially as described.

19. The combination with a rotatable cylindrical bed, of rod 30 parallel with the axis of the cylindrical bed, sleeve 31 loose on rod 30, forwardly extending arm 33 carried by sleeve 31, a rotary tool holder carried by arm 33 and adjustable thereon, guide bar 35 which limits the downward movement of arm 33, adjustable brackets 70 by which rod 30 and bar 35 are supported, and means for driving said tool holder, substantially as described.

544,011. **ROUTING-MACHINE.** William Spalckhaver, Brooklyn, assignor to Robert Hoe, Theodore H. Mead, and Charles W. Carpenter, New York, N. Y. Filed Sept. 17, 1894. Serial No. 523,229. (No model.)



Claim.—1. The combination of a rotary tool holder, a carriage for said tool holder, a worm shaft by which said carriage is reciprocated and on which it is pivoted, and means for driving said tool holder, substantially as described.

2. The combination of a rotary tool holder, a carriage for said tool holder, a worm shaft by which said carriage is reciprocated and on which it is pivoted, means for driving said tool holder, means for rotating said worm shaft, and means for rocking the carriage on the worm shaft to move the tool into operative position, substantially as described.

3. The combination of a rotary tool holder, a carriage for said tool holder having a sleeve threaded internally to engage the thread on a worm shaft, said worm shaft, means for driving said tool holder, means for rotating said worm shaft, and a foot treadle and connections for rocking the carriage on the worm shaft to move the tool into operative position, substantially as described.

4. The combination of a rotary tool holder, a carriage for said tool holder pivoted on a shaft, means for reciprocating the carriage on said shaft, means for driving said tool holder, and a foot treadle and connections for rocking the carriage on said shaft to move the tool into and out of operative position, substantially as described.

5. The combination of a rotary tool holder, a carriage for said tool holder, a worm shaft by which said carriage is reciprocated and on which it is pivoted, means for driving said tool holder, means for rotating said worm shaft, means for rocking the carriage on the worm shaft to move the tool into operative position, and means for locking said carriage to said worm shaft, substantially as described.

6. The combination of a rotary tool holder, a carriage for said tool holder, a worm shaft by which said tool holder is reciprocated and on which it is pivoted, and a driving belt for said tool holder which lies parallel with and near to said worm shaft in either direction from the tool holder, substantially as described.

7. The combination of a worm shaft, a carriage pivoted on the worm shaft by means of a sleeve threaded to engage the thread of the worm shaft, a rotary tool holder carried by the carriage, and a driving belt for the tool holder which lies parallel with said worm shaft in either direction from the carriage, substantially as described.

8. The combination of a worm shaft, a carriage pivoted on the worm shaft by means of a sleeve threaded to engage the thread of the worm shaft, a rotary tool holder carried by the carriage, a driving belt for said tool holder, guide sheaves for said belt carried by the carriage, stationary guide sheaves so positioned that the belt between the stationary sheeves and the sheaves on the carriage shall be parallel with the worm shaft in either direction from the carriage, a hand wheel by which the worm shaft is rotated to reciprocate the carriage, and a foot treadle and connections for rocking the carriage on the worm shaft to move the tool into operative position, substantially as described.

9. The combination of a rotatable cylindrical bed, a rotary tool holder, a carriage for said tool holder, a worm shaft parallel with the axis of the bed by which said carriage is reciprocated and on which it is pivoted, means for driving said tool holder, means for rotating said cylinder and said worm shaft, and means for rocking said carriage on said worm shaft, substantially as described.

10. The combination with a rotatable cylindrical bed and means for rotating said bed, of a worm shaft parallel with the axis of the bed and means for rotating said worm shaft, a rotary tool holder, a carriage for said tool holder pivoted on the worm shaft by means of a sleeve threaded to engage the thread of the worm shaft, means for driving said tool holder, and means for rocking the carriage on the worm shaft to move the tool into operative position, substantially as described.

11. The combination with a rotatable cylindrical bed and means for rotating said bed, of a worm shaft parallel with the axis of the bed and means for rotating said worm shaft, a rotary tool holder, a carriage for said tool holder pivoted on the worm shaft by means of a sleeve threaded to engage the thread of the worm shaft, means for driving said tool holder, and a foot treadle and connections by which the carriage is rocked on the worm shaft to move the tool into operative position, substantially as described.

12. The combination with a rotatable cylindrical bed and means for rotating said bed, of a rotary tool holder, a carriage for said tool holder pivoted on a shaft parallel with the axis of said bed, means for reciprocating the carriage on said shaft, means for driving said tool holder, and a foot treadle and connections for rocking the carriage on said shaft to move the tool into operative position, substantially as described.

13. The combination in a routing machine for operating on curved plates, of a rotatable cylinder, means whereby the cylinder is adapted to support plates of different curvatures, a rotary tool holder mounted to reciprocate longitudinally of the cylinder, and means for driving said tool holder, substantially as described.

14. The combination in a routing machine for operating on curved plates, of a rotatable cylinder, means whereby the cylinder is adapted to support plates of different curvatures, a rotary tool holder mounted to reciprocate longitudinally of the cylinder, means for driving said tool holder, and means for adjusting the distance between the axis of said cylinder and said tool holder, substantially as described.

15. The combination in a routing machine for operating on curved plates, of a rotatable cylinder, means whereby the cylinder is adapted to support plates of different curvatures, a rotary tool holder mounted to reciprocate longitudinally of the cylinder, means for driving said tool holder, and adjustable bearings for said cylinder whereby it may be adjusted toward and away from the tool holder, substantially as described.

16. The combination in a routing machine for operating on curved plates, of a rotatable cylinder, and means whereby the cylinder is adapted to support plates of different curvatures, substantially as described.

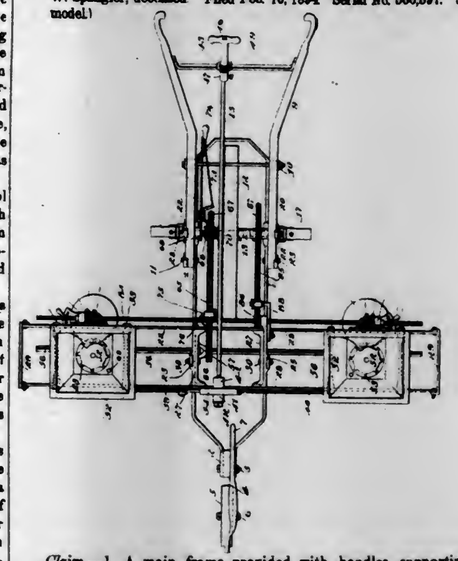
17. The combination in a routing machine for operating on curved plates, of a rotatable cylinder and a segmental bed for the plates adapted to be secured to the cylinder, substantially as described.

18. The combination of a carriage pivotally mounted, a tool holder carried by the carriage, treadle 40, connecting rods 41, cross bar 42, a rearwardly extending arm of the carriage having a sliding connection with the cross bar 42, and means for reciprocating the carriage, substantially as described.

19. The combination of a carriage pivotally mounted, a tool holder carried by a forwardly exteoding arm of the carriage, treadle 40, connecting rods 41, cross bar 42, rearwardly exteoding arm 43 having a sliding connection with the cross bar 42, counter weight 46, and means for reciprocating the carriage, substantially as described.

20. The combination of a carriage pivotally mounted, a tool holder carried by the carriage, treadle 40, connecting rods 41, cross bar 42, adjustable slots 44 for the ends of cross bar 42, a rearwardly extending arm of the carriage having a sliding connection with the cross bar 42, and means for reciprocating the carriage, substantially as described.

544,012. **PARIS-GREEN OR FERTILIZER DISTRIBUTER.** Jacob W. Spangler, York, Pa.; Laura S. Spangler executrix of said Jacob W. Spangler, deceased. Filed Feb. 16, 1894. Serial No. 500,397. (No model.)



Claim.—1. A main frame provided with handles, supporting wheels arranged tandem in said frame, and a hopper-supporting frame arranged substantially at right angles to the main frame, hoppers mounted upon the hopper-supporting frame on opposite sides and clear of the wheels and movable toward and from one another, feeding devices in said hoppers, and means to drive the said feeding devices, substantially as described.

2. A main frame, provided with handles supporting wheels arranged in said frame in tandem, a hopper-supporting frame mounted adjustably upon uprights rising from the main frame, hoppers arranged upon the hopper-supporting frame and adjustable toward and from one another, feeding devices in said hoppers, means to drive them, and means to adjust the wheels and the main frame relatively to one another, substantially as described.

3. A main frame and a hopper-supporting frame arranged thereupon transversely, hoppers adapted to be moved toward and from each other upon said hopper-supporting frame, racks and a pinion interposed between them, an operating spindle for said pinion extend-

ing to within reach of the machine operator, and connections between the said racks and the said hoppers, substantially as and for the purpose described.

4. In a machine for distributing paris-green and other substances or materials, a hopper having a suitable feed mechanism of any approved construction, a discharge spout, a vertical spindle, a countershaft with which said spindle is geared, a main shaft, and driving connections between the main shaft and countershaft, and a reversible, ribbed distributer disk or plate arranged beneath the said discharge spout on said vertical spindle whereby it is adapted to be rotated, substantially as described.

5. A main frame provided with handles, supporting wheels arranged tandem in said frame, gravity legs pivotally connected with the main frame and standing off from the same at an angle, a hopper-supporting frame arranged substantially at right angles to and upon the main frame, hoppers mounted upon the hopper-supporting frame on opposite sides and clear of the wheels, and movable toward and from one another thereon, feeding devices in said hoppers, and means to drive the said feeding devices, substantially as described.

6. In a machine for distributing paris green and other substances or materials, a main frame and its supporting wheels arranged in tandem therein, a hopper-supporting frame, and hoppers thereon, and handles, combined with gravity legs pivotally connected with the main frame by means of the socket-pieces 18 provided with hubs 20 and fitted to journals 21 on wear-plates 22, the legs standing off from the frame at an angle, substantially as described.

7. In a machine for distributing paris green and other substances or materials, a main frame, means to adjust it vertically, and its supporting wheels arranged tandem, combined with gravity legs pivotally connected with the main frame and standing off from the same at an angle, the pivot-pieces of said legs being provided with slots whereby said legs are capable of adjustment longitudinally, substantially as described.

8. In a machine for distributing paris green and other substances or materials, a hopper having a bed-plate provided with depending loops, a feed mechanism and a supporting spider therefor constructed with projections for detachable engagement with said loops and adapted to be secured in place by a single bolt and to be detached bodily from the hopper by removing the said bolt and sliding its projections out of the loops, thereby to permit the ready removal and insertion of the feed mechanism, substantially as described.

9. In a machine for distributing paris green and other substances or materials, a main frame and guiding handles therefor a hopper, a feed mechanism therein, a driving shaft for said feed mechanism, a main wheel for the said machine, a chain and sprocket connection between the shaft of the said main wheel and the driving shaft of the feed mechanism, a clutch for connecting the chain and sprocket mechanism with the main wheel and disconnecting it therefrom, and a clutch-operating pedal arranged within convenient reach of the machine operator's foot, substantially as described.

10. In a machine for distributing paris green and other substances or materials, a main frame and a hopper-supporting frame arranged thereon, hoppers mounted upon said hopper-supporting frame, means to adjust said hoppers toward and from one another, upon such hopper-supporting frame and a device for actuating the said hopper-adjusting mechanism comprising a spindle extended to within easy reach of the machine operator, and a change bearing for said spindle, substantially as and for the purpose described.

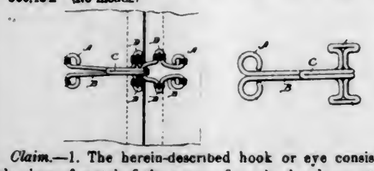
11. In a machine for distributing paris green and other substances or materials, a hopper having a suitable feed mechanism of any approved construction, a discharge spout, a vertical spindle, a countershaft with which the spindle is geared, a main shaft and driving connections between the main shaft and countershaft, and a reversible distributer plate or disk arranged on said spindle beneath the said discharge spout and adapted to be rotated, substantially as described.

12. In a machine for distributing powdery or other substances, a hopper having a bed-plate provided with depending loops, a feeding device arranged therein, a spider having projections at one end to engage the loops on such bed-plate and having an arm at its other end extending beneath and supporting the feeding device, and an adjustable support for such arm, whereby the said spider may be adjusted upon its hinge so as to bring the feeding device into more or less close connection with the bed-plate, and to separate the two to prevent rusting together, substantially as described.

13. In a machine for distributing powdery and other substances, a hopper having a bed-plate provided with depending loops, a feeding device arranged therein, a spider having projections at one end to engage the loops on said bed-plate and having at its other end an arm extending beneath and supporting the feeding device, a bolt, spring and nut for adjustably connecting the spider with the hopper, substantially as described.

14. A main frame, supporting wheels, a hopper-supporting frame arranged substantially at right angles to the main frame upon uprights rising from such main frame, and means to adjust such hopper-supporting frame at various elevations upon the said uprights, hoppers mounted upon the hopper-supporting frame, and means to move such hoppers upon such hopper-supporting frame toward and from one another to vary their distance apart, feeding devices in said hoppers, and means to drive the said feeding devices, substantially as described.

544,013. HOOK AND EYE. KATHARINE STEPHENS, (now by marriage KATHARINE BORT,) Elgin, Ill. Filed Apr. 2, 1894. Serial No. 506,134. (No model.)

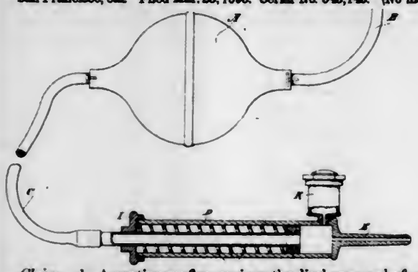


Claim.—1. The herein-described hook or eye consisting of a single piece of metal of the proper form, having loops at the rear part for attaching to the garment, and having near the front part lateral T-shaped arms extending substantially at right angles from the body of the hook or eye so that the thread may be passed through the fabric and over said arms in such manner as to firmly bind them to the garment and prevent any movement of the device upon the fabric; substantially as and for the purposes set forth.

2. The herein described hook or eye, consisting of a single piece of metal of the proper form, having loops at the rear part for attaching to the garment, and having near the front part arms extending from the body of the hook or eye in a forwardly bending curve, substantially as and for the purpose set forth.

3. The herein described hook or eye consisting of a single piece of metal of proper form provided with means at the rear end for attaching to the garment, and having near the front part arms extending from the body of the hook or eye so that the thread may be passed through the fabric and over said arms in such a manner as to firmly bind them to the garment and prevent any movement of the device upon the fabric.

544,014. CONTINUOUS-FLOW SYRINGE. FRANK TERRANOVA, San Francisco, Cal. Filed Mar. 25, 1895. Serial No. 543,143. (No model.)



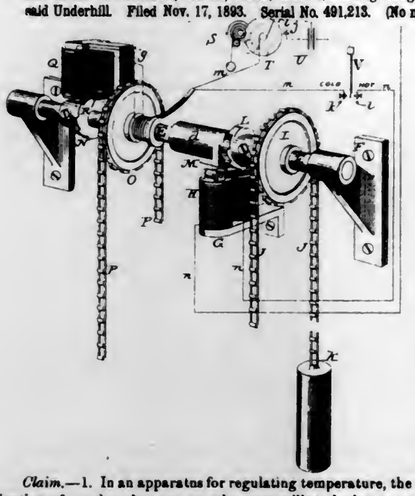
Claim.—1. A continuous flow syringe the discharge end of which is provided with a chamber into which the fluid enters, said chamber having a discharge nozzle, a plunger in the chamber having a hollow rod to permit the fluid to enter the chamber in front of the plunger, and a spring behind the plunger for holding the latter forward against the pressure of the column of fluid in front of it whereby a constant pressure is exerted upon the contents of the chamber.

2. In a syringe an elastic bulb, induction and eduction pipes connected therewith with valves whereby the return of the liquid is prevented, a tubular chamber having a nozzle attached to its outer end, a plunger automatically movable therein under the influence of the liquid entering the chamber, said plunger having a spring acting to press it normally toward the discharge end of the chamber, a hollow plunger rod extending through the plunger at one end having the opposite end extending through the closed end of the chamber and connected with the eduction pipe from the bulb.

3. A continuous flow syringe having a chamber connected with its discharge end, and provided with a nozzle whose area is less than the passage through which the liquid enters the chamber, and a spring-actuated plunger in the chamber, said plunger having a hollow rod connecting directly with the discharge of the syringe and also with the chamber whereby the plunger is forced inward against the power of its spring by reason of the accumulation of liquid in front of it, and said spring re-acting against the plunger to exert a constant pressure on the liquid and a continuous flow from the nozzle.

4. In a syringe, an elastic bulb, induction and eduction pipes connected therewith, a discharge pipe or nozzle, a chamber or reservoir intermediate between the syringe eduction pipe and the terminal nozzle, a spring-actuated plunger automatically movable within the chamber to exert a constant pressure upon the contents, and a reservoir with a connecting passage between it and the chamber near the discharge nozzle.

544,015. TEMPERATURE-REGULATOR. GEORGE H. UNDERHILL and ERNST GLANTZBERG, Boston, Mass.; said Glantzberg assignor to said Underhill. Filed Nov. 17, 1893. Serial No. 491,213. (No model.)



Claim.—1. In an apparatus for regulating temperature, the combination of a valve, damper, or other controlling device, means for imparting motion thereto, magnetically-controlled detents for normally holding the actuating means out of action; a generator or source of electric energy, a periodic circuit closer included in the battery circuit, and a thermostat in circuit with the battery and adapted, jointly with the periodic circuit closer, to close the circuit through the electro-magnet of one or the other of the detents whenever the temperature rises or falls to a predetermined limit.

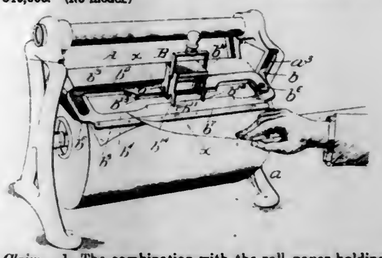
2. The herein-described temperature regulating apparatus, consisting of a valve, damper or equivalent heat-controlling device, a shaft, means for rotating said shaft, a wheel made fast upon said shaft, a stop adapted to engage said wheel, an electro-magnet for withdrawing said stop, a second wheel made fast upon the shaft, a stop adapted to engage said second wheel, an electro-magnet for withdrawing said stop, a third wheel loosely mounted upon the shaft, carrying the second electro-magnet and stop, and normally held at rest thereby, a connection between said third wheel and the valve, damper or heat-controlling device, a source of electric energy, a thermostat, independent circuits connecting the two electro-magnets with the source of energy, and a periodic circuit closer in circuit with the battery and with both the electro-magnets.

3. In a temperature regulator, the combination of a shaft, means for rotating said shaft, a ratchet wheel carried by said shaft, a detent for engaging said ratchet wheel, an electro-magnet for withdrawing said detent, a second ratchet wheel also carried by said shaft, a loose wheel mounted upon said shaft and provided with a locking device to engage the second ratchet wheel, an electro-magnet for withdrawing said locking device, a damper, valve, or heat-controlling device, a connection between the loose wheel and said heat-controlling device, a periodic circuit closer and a thermostatic circuit closer, both included in circuit with a source of electric energy and with the said electro-magnets, all substantially as set forth.

4. The combination in a heat-regulating apparatus, of a shaft, means for rotating said shaft in one direction, a detent to hold said shaft against rotation, means for withdrawing said detent, a wheel loose upon said shaft, a locking device for locking said wheel to the shaft, a valve, damper or heat-controlling device, a connection between the heat controlling device and the loose wheel, and means for withdrawing the wheel-locking device and permitting said wheel to turn independently of the shaft.

5. The combination in a heat-regulating apparatus, of a shaft, means for rotating said shaft in one direction, a detent to hold said shaft against rotation, a wheel loose upon said shaft, a locking device for locking said wheel to the shaft, a valve, damper or heat-controlling device, a connection between the heat-controlling device and the loose wheel, and electro-magnets for withdrawing the detent or the locking device as required, and thereby permitting the shaft to turn and carry the loose wheel with it, or the loose wheel to turn independently of the shaft.

544,016. ATTACHMENT FOR PAPER-HOLDING STANDS. DWIGHT F. WALKER, Philadelphia, Pa. Filed Aug. 6, 1894. Serial No. 519,608. (No model.)



Claim.—1. The combination with the roll paper holding stand, of an attachment, comprising a platen movable in ways of the stand, plates removably secured to and above the platen and forming a guide for the paper, one of the plates being provided with a projecting curved portion terminating in a cutting edge, and a hand stamp detachably locked between the plates, for the purpose described.

2. The combination with the roll paper holding stand, of an attachment, comprising a platen movable in ways of the stand and having its under side provided with a rib adapted to rest upon the roll, plates removably secured to and above the platen in a manner to form a guideway for the paper, one of the plates having a projecting upward curved portion terminating in a cutter, and a hand stamp detachably locked between the plates, for the purpose described.

544,017. PLOW. HENRY WESTPHAL, Indianapolis, Ind. Filed Mar. 19, 1895. Serial No. 542,370. (No model.)

Claim.—1. The combination, in a plow, of the axle, frame-pieces extending forward from said axle, standards extending upwardly from said axle, plow-beams pivoted on the forwardly extending frame-pieces and running thence back between the upwardly extending standards, and plow-shares adjustably secured by suitable means, such as the standards S and braces C and their adjustable connections upon the rear end of said plow-beams, and each capable of independent adjustment and use, substantially as shown and described.

2. The combination, in a plow, of the axle, the frame-pieces, standards attached to said axle, two plow-beams pivoted to said frame pieces and guided by said standards, and plow-shares carried by standards attached to the rear ends of said plow-beams and adjustable vertically thereon, and adjustable braces connecting said standards and said plow-beams, substantially as set forth.

3. The combination, in a plow, of a suitable frame-work, two pivoted plow-beams attached to said frame-work, a plow-share adjustably secured to each of said plow-beams by means of standards S having a series of perforations, with bolts *b*, and adjustable braces C having also a series of perforations, and the two parts whereof are united by bolts *c*, substantially as shown and described.

4. The combination, in a plow, of a suitable frame-work, two pivoted plow-beams attached to said frame-work, and a plow-share adjustably secured by suitable means to each of said plow-beams and provided with standards S each having a stud *s* upon which the other plow may be supported when lifted out of operative position, said several parts being arranged and operating substantially as set forth.

544,018. MATCH-SAFE. HORACE E. WHITNEY, Cambridge, assignor to the Dover Stamping Company, Boston, Mass. Filed Feb. 28, 1895. Serial No. 539,980. (No model.)



Claim.—1. A match safe having a pocket for unburned or good matches and a holder containing a receptacle for burned matches the said holder having a recess or slot and the said receptacle being removable from the holder, and having a recess or slot corresponding to that of the holder, as and for the purposes described.

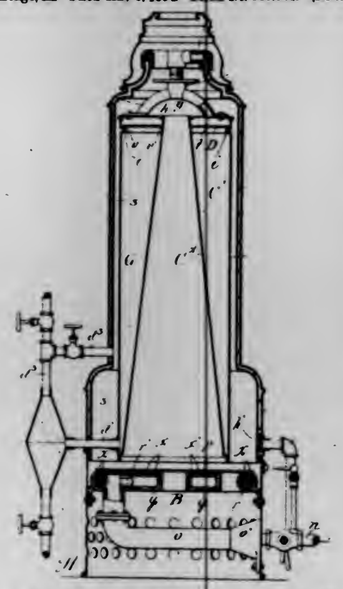
2. A match safe having a pocket for matches, and an attached cylindrical holder having a long opening in its upper part and a cylindrical receptacle contained in said holder and having a long slot or recess on one side thereof, and adapted to be turned in said holder.

3. A match safe having a pocket for matches and a holder for burned matches or for a receptacle for holding them, made from two pieces of sheet metal, one of which provides a back to the safe and forms the holder for the burned matches, or their receptacle, by being fashioned or turned upon itself so that its lower edge is united to its back, and thereby forming a bottom for a pocket for holding good matches, which pocket is completed by the attachment to the said formed blank of the second plate or blank which forms the sides and front of the said pocket, the said parts being united to each other by ears extending through slots or recesses in the part forming the back, which ears are bent upon the back as and for the purposes described.

4. As an improved article of manufacture, a match safe made from two metal blanks A and E; the blank A having the small slots c' and c', the large slot c^3, the tongues c^3 and the roughened surface d; the blank E being oblong in shape and having the tongues e, as and for the purposes described.

5. A match safe having a pocket for unburned matches and a receptacle for burned matches, having the foot a^3 made by turning down a portion of the back of the safe, substantially as described.

544,019. WATER-HEATER. GEORGE WILSON and SAMUEL BERNSTEIN, Chicago, Ill. Filed May 8, 1894. Serial No. 510,531. (No model.)



Claim.—1. In a water-heater having a burner in its base-portion, the combination with the intercommunicating water-jacket and water-chamber forming the intermediate passage for products of combustion, of a water-supply pipe leading into the jacket, a hollow head into which the water-chamber discharges and having a draw-off pipe, and a steam-pipe connecting the head, from its upper end, with the said intermediate passage, substantially as described.

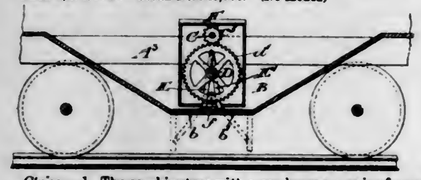
2. In a water-heater the combination of a burner in the base-portion, an annular water-heating chamber about a central passage for products of combustion from the burner, a water-jacket surrounding said chamber and forming therewith an intermediate passage for products of combustion from the burner, a distributing-head into which the jacket empties at its upper end, an annular spraying-head surmounting said chamber and provided with circumferential and internal openings thereto, a water-supply pipe leading into the jacket at the base thereof, and an outlet-pipe leading from said chamber, substantially as described.

3. In a water-heater the combination of a burner in the base-portion, an annular water-heating chamber about a central passage for products of combustion from the burner, a water-jacket surrounding said chamber and forming therewith an intermediate passage for products of combustion from the burner, a distributing-head into which the jacket empties at its upper end, an annular spraying-head surmounting said chamber and provided with circumferential and internal openings thereto, a hollow yoke between the distributing and spraying-heads, a water-supply pipe leading into the jacket at the base thereof, and an outlet-pipe leading from said chamber, substantially as described.

4. In a water-heater, the combination with the water-jacket C provided with an inlet and the water-chamber G provided with an outlet and forming with said jacket the passage s, of a burner in the base-portion, a distributing-head F at the upper end of the water-jacket and having a depending yoke E and a circumferentially serrated spraying-head supported over said water-chamber below the yoke and upon which said legs discharge, substantially as described.

5. In a water-heater, the combination with the water-jacket C provided with an inlet and the water-chamber G provided with an outlet and forming with said jacket the passage s, of a burner in the base-portion, a distributing-head F at the upper end of the water-jacket and having a depending yoke E, a covering plate h for the chamber G and through which said legs open at their lower ends, and an annular spraying-head D supported over said water-chamber below the covering plate and provided with circumferential and internal serrations, substantially as described.

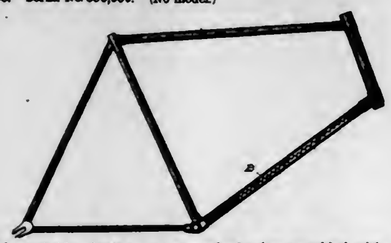
544,020. DUMPING-CAR. NATHAN BARNEY, Brooklyn, N. Y. Filed Apr. 1, 1895. Serial No. 543,968. (No model.)



Claim.—1. The combination with a car having a pair of swinging doors in its bottom, of a main shaft extending through the car body, a pinion carried by said shaft, a crank shaft, a gear wheel on the crank shaft intermeshing with the said pinion, and branch rods connecting the crank shaft with the doors, whereby the turning of the main shaft operates the doors, substantially as set forth.

2. The combination with a car having a pair of swinging doors in its bottom, of a car frame comprising side and center longitudinally extending timbers, a main shaft extending transversely across the car body and mounted in bearings on the said timbers, a pinion on said shaft, a crank shaft mounted in bearings on the center timbers, a gear wheel thereon intermeshing with the pinion on the main shaft, and branch rods connecting the crank shaft with the swinging doors, whereby as the main shaft is rotated the doors are opened or closed, substantially as set forth.

544,021. BICYCLE-FRAME. WILLIAM K. BELLIS, Indianapolis, Ind., assignor to the Bellis Cycle Company, same place. Filed May 28, 1895. Serial No. 550,969. (No model.)

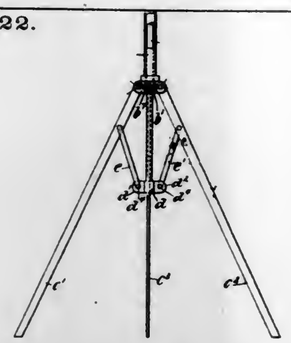


Claim.—A bicycle frame composed of tubes provided with internal reinforcement composed of the members 1, 2 and 3, the members 2 and 3 being of a serpentine form longitudinally, whereby a large bearing surface between them and the tube is secured, substantially as shown and described and for the purpose specified.

544,022. FOLDING MUSIC-STAND. JULIAN BERG, Warsaw, Russia. Filed Aug. 13, 1894. Serial No. 520,100. (No model.)

Claim.—In a folding music-stand, the combination with a folding holder, of a detachable support therefor, consisting of a vertical rod, a tube in sliding engagement with said rod provided with a set-screw and having a bearing provided with bifurcations for pivotally supporting legs thereto, the lower end of said rod having a bearing with bifurcations, links pivoted thereto and to said legs and said links being of greater length than the distance from the pivoted points of the legs to the points where the links are attached, whereby the legs may be reversed and folded against said tube, substantially as described.

544,022.

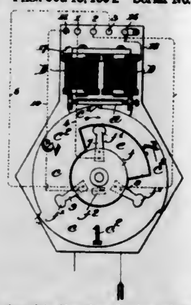


544,023. EXTINGUISHER FOR OIL STOVES OR LAMPS. WILLIAM M. BOWMAN, Plymouth, Mass. Filed Apr. 9, 1891. Serial No. 388,208. (No model.)



Claim.—The combination, in an oil stove or lamp, of the stand B having a bearing formed therein, the plate C, the wire gauze or perforated plate c', and an extinguisher-trimmer F having one or more pivots held in said bearing by the plate C, substantially as described.

544,024. VISUAL INDICATING DEVICE. CLARENCE C. BRAINWELL, Hyde Park, Mass. Filed Oct. 18, 1894. Serial No. 526,275. (No model.)



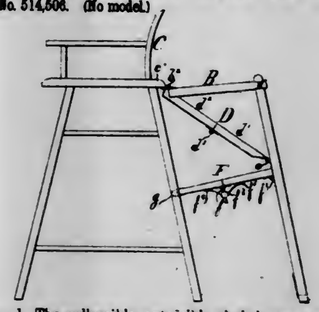
Claim.—1. In a visual indicating device of the class described, a rotatable conducting member having a notched periphery, and an insulated segment upon the face of the same, combined with one or more insulated contacts acting upon the faces of said member and segment; an electro-magnet and its armature co-operating with the said notched periphery, to operate, substantially as described.

2. In a visual indicating apparatus, a base, a stud thereon; a rotatable disk-like conducting member having a notched periphery journaled upon the said stud; a weight to rotate the said disk in one direction, and an electro-magnet and its armature co-operating with the notches in the said conducting member to control rotation of the latter; a segmental circuit changing member arranged upon the face of said conducting member; a series of fixed contacts bearing upon the faces of the said conducting member and circuit changing member, and passing from one to the other during rotation of the said members; a fixed contact f^3 bearing continuously upon the said circuit changing member; and an audible alarm, and magnet controlling the same electrically connected with the said contact f^3 and operated by and during rotation of the said members, substantially as described.

3. In a visual indicating apparatus, a base, a stud projecting therefrom a rotatable conducting member loosely mounted upon the said stud and having a notched periphery; a segmental circuit changing member arranged upon the face of said conducting member; a series of fixed contacts acting upon the face of said members, and a carrier therefor mounted upon the end of said stud; an electro-magnet, and its armature co-operating with the notches in the periphery of said conducting member, and an audible alarm arranged, to operate, substantially as described.

4. In a visual indicating device of the class described, a rotatable conducting member provided at its periphery with a series of ratchet toothed stops, an insulated segment upon the face of said member, one or more insulated contacts acting upon the faces of said member and segment, an electro-magnet and its armature co-operating with said ratchet toothed stops to admit rotation of the conducting member freely in one direction, but to restrain rotation in an opposite direction except when attracted by its magnet, a weight and its cord for rotating the said conducting member in the direction normally restrained by said armature, opposite or free rotation of the said conducting member winding the said cord, substantially as described.

544,025. CHAIR-BRACE. JOHN E. CARROLL, Philadelphia, Pa., assignor of one-half to Frank J. Campbell, same place. Filed June 14, 1894. Serial No. 514,506. (No model.)

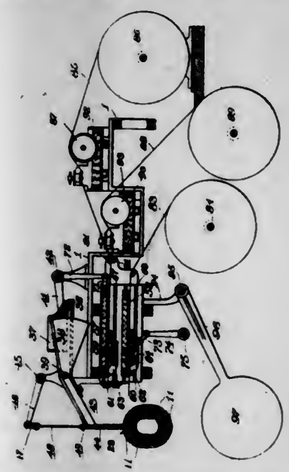


Claim.—1. The collapsible, extensible chair-brace consisting of the combination of the arms B, the supporting leg pivoted between the converging end portions of said arms B, the two-part knee-jointed brace bar, and the jointed or flexible connection F, together with means for pivotally attaching the free ends of said arms and bars to a chair, substantially as and for the purpose set forth.

2. The combination with a chair of the divergent arms pivoted to the chair, the supporting leg pivoted to and between said arms, the oblique two part knee jointed brace bar D pivoted to said chair, and to the intermediate portion of said supporting leg and the jointed or flexible connection F, below the brace bar D all constructed and adapted to operate substantially as and for the purpose set forth.

3. The collapsible, extensible chair brace consisting of the combination of the arms B, the supporting leg pivoted thereto, the two part knee jointed brace bar D, the two part knee jointed bar F, and the spring f^2, together with means for pivotally attaching said arms and bars to a chair, substantially as and for the purpose set forth.

544,026. MACHINE FOR MAKING BANDBOXES FROM PASTEBOARD. HENRY F. CLARK, Danbury, Conn. Filed Nov. 1, 1894. Serial No. 527,657. (No model.)



Claim.—1. The combination of the hollow chuck spindle 6 terminating at the forward end in a head provided with radial slots, perforated blocks 10 confined within said slots and capable of sliding freely therein, the jaws secured to said blocks, the rod 15 supported within said spindle and capable of a free lengthwise movement, the pivoted links 16 connecting said rods and blocks, the extension 25 capable of being rigidly secured to said rod and extended outward through

an elongated slot in the spindle, the collar 17 loose around the spindle and to which said extension is secured and provided with a circumferential groove, and the pivoted yoke surrounding said collar and having pins extending within said groove, whereby when said yoke is reciprocated the jaws will be spread and contracted, substantially as set forth.

2. The combination of the disk, means for elevating and lowering the same, the rotary expansible chuck, and means for moving said chuck bodily against said disk when the latter is in elevated position, substantially as set forth.

3. The combination of the rock shaft 95 having rigid therewith the lever 96 carrying a disk 97 and the crank 98, the rotary cam against which the free end of said crank bears, the rotary chuck having its spindle journaled in loose bearings, and means for imparting to said chuck a lengthwise reciprocation, substantially as set forth.

4. The combination of the reciprocatory cutter blocks carrying cutters and having pivoted thereto blocks which also carry cutters and having studs which extend laterally therefrom, the grooves within which said studs extend, the pivoted pawls near the extremities of said grooves whereby the latter are diverted upward, and means for operating said blocks, substantially as set forth.

5. The combination of the blocks 57, 58 capable of sliding within ways and carrying cutters 59, 60 respectively, the blocks 61, 62 pivoted respectively to the first mentioned blocks and carrying cutters 63, 64, the studs 65, 66 extending from the blocks 61, 62 within grooves 67, 68 in the frame of the machine, and the pivoted pawls 69, 70 having their tails inclined downward to the level of said grooves whereby the latter are diverted upward, and means for reciprocating the blocks 57, 58, substantially as set forth.

6. The combination of the block 58 carrying the cutter 60 and having pivoted thereto the block 62 carrying the cutter 64, the stud 66 extending from the block 62 within the groove 68 in the frame of the machine, the pawl 70 pivoted to said frame and having its tail inclined downward to the level of said groove whereby the latter is diverted upward, the rock shaft 75 having extending therefrom the crank 74, the pivoted link 73 whereby said crank and block 62 are connected, the crank 82 on the rock shaft 75, the rotary cam, the strap around the same, and the rod 81 extending from said strap and pivoted to the crank 82, substantially as set forth.

7. In a machine for making pasteboard bandboxes, the combination of the power and secondary shafts provided with intermeshing spur gears, the eccentrics 79ª and 76 and cam 55, all carried by said secondary shaft, means for delivering the pasteboard, the covering and securing strips, cutting mechanisms and operative connections between said mechanisms and eccentrics whereby said pasteboard and strips are cut into predetermined lengths, means for assisting to form said pasteboard into the shape of a box with the edges overlapping, and means automatically controlled and operated by connections from the cam 55 for securing said overlapping edges by metal staples, substantially as set forth.

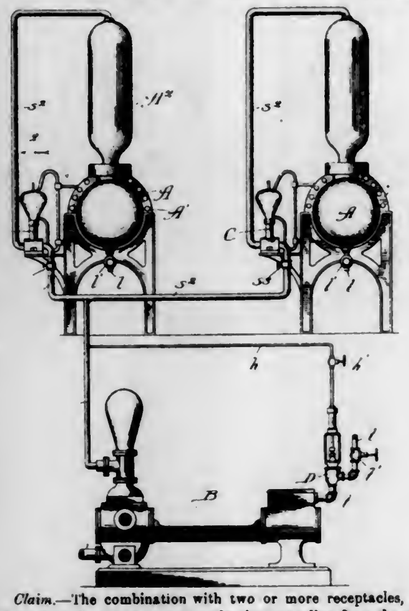
8. In a machine for making pasteboard bandboxes, the combination of a rotary chuck capable of expansion and contraction and provided with fastening pins, means for delivering the pasteboard to the operator, whereby when the edge of said pasteboard is secured to said pins and the drum revolved the sides of the box may be formed, means for cutting the pasteboard into predetermined lengths whereby when the sides of the box are formed the edges will overlap, appliances for securing said edges by staples, instrumentalities for delivering to the operator the covering and securing strips attached together and with their under surfaces covered with paste whereby when said strips are placed in contact with the box after the bottom has been inserted and the chuck revolved said covering strip will be secured around the sides of the box while the securing strip may be crimped by hand over the corner of the box against the bottom thereof, the swinging disk capable of being elevated and lowered, and means for forcing the closed end of the box firmly against said disk, substantially as set forth.

9. In a machine for making bandboxes from pasteboard, the combination of the rotary chuck capable of being distended and contracted and provided with fastening pins, means for delivering the pasteboard strip whereby the edge of the latter may be fastened to said pins, means for revolving the chuck after the pasteboard has been secured thereto, means for cutting said strip into predetermined lengths whereby when the chuck has made a complete revolution the body of a box may be formed with overlapping edges, and means for securing said edges with metallic staples, substantially as set forth.

10. In a machine for making bandboxes from pasteboard, the combination of the rotary chuck capable of being distended and contracted and provided with fastening pins, means for delivering the pasteboard strip whereby the edge of the latter may be fastened to said pins, means for revolving the chuck after the pasteboard has been secured thereto, means for cutting said strip into predetermined lengths whereby when the chuck has made a complete revolution the body of a box may be formed with overlapping edges, means for securing said overlapping edges by metallic staples, means for delivering the covering and securing strips attached together and with their under surfaces covered with paste, and means for revolving the chuck after the covering and securing strips have been applied to the pasteboard body and after the bottom of the box has been inserted, substantially as set forth.

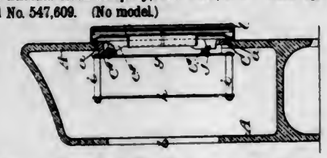
11. In a machine for making bandboxes from pasteboard, the combination of the chuck, means for delivering to the operator the pasteboard, the covering and securing strips in proper relation preparatory to initially attaching them by hand to said chuck and to the partially formed box respectively, means for revolving the chuck throughout the periods when the box is formed and covered, the swinging disk and means for elevating and lowering the same, and means for moving said chuck with the completely formed box thereon toward and against said disk when the latter is in elevated position whereby the bottom of the box is properly set and finished, substantially as set forth.

544,027. WATER-SUPPLY REGULATOR. RICHARD E. CONVERT, Chicago, Ill. Filed Jan. 11, 1895. Serial No. 534,513. (No model.)



Claim.—The combination with two or more receptacles, of a steam actuated pump, a water-supply-pipe extending from the pump and communicating with all the receptacles, a water-supply regulator at each receptacle comprising a valve interposed between the respective receptacle and the supply-pipe, and valve closing means operated by the rise of water in the receptacles above a predetermined level, and means for stopping the pump when all the said valves are closed, comprising a valve interposed in the steam supply-pipe, a stem on the valve, a chamber in open communication with the water-supply-pipe, a movable abutment in the chamber connected with the said stem and subject on one side to pressure from the water supply-pipe and a spring operating counter to the water pressure to maintain said abutment normally in the position of opening the said valve, the parts being so constructed and arranged that rise of pressure in the water supply-pipe will move the abutment against the resistance of the spring and close the said valve in the steam supply-pipe, substantially as and for the purpose set forth.

544,028. CLOCK-CASE. WALTER D. DAVIES, Brooklyn, assignor to the Ansonia Clock Company, New York, N. Y. Filed Apr. 30, 1895. Serial No. 547,609. (No model.)



Claim.—1. The combination of a clock case having an opening in its front, a metal ring inserted within said opening and having an external flange overlapping the margin thereof, clamping buttons applied behind said ring and projecting within the case beyond the margin of said opening, screws for attaching said buttons to the back of said ring, a dial in front of said ring and screws for attaching the dial to said ring independently of the case, substantially as herein set forth.

2. The combination of a clock case having in it an opening, a frame for a clock movement, a ring having an external front flange overlapping the margin of said opening and having provided on its back or inner face brackets which project through said opening into the case, clamping devices for clamping said ring to the case, and screws for attaching said frame to the said brackets independently of the attachment of the ring to the case, substantially as herein described.

544,029. GAS-BURNING FIREPLACE. HENRY G. DAWSON and WILLIAM R. DAWSON, Chicago, Ill. Filed Oct. 25, 1894. Serial No. 526,932. (No model.)



Claim.—1. The combination in a fire place having an air flue behind its fire back, of a draft plate K, before the upper part of the fire back spaced apart therefrom, and extending upwardly to form a flue with the back of the fire place, the air flue behind the fire back discharging in the said flue behind the draft plate.

2. In a gas fire place the combination with the case B, the asbestos fire back C, and the bars D, secured to the back wall of the case and carrying the fire back, of the gas burner E, the plate H, in front of and spaced apart from the burner so as to form therewith an air flue, the lip *h*, being a continuation of the plate H, and overhanging the burner, and the draft plate K, before and spaced apart from the top of the fire back and extending upwardly therefrom, substantially as described and for the purpose set forth.

3. A gas burning fire place having a fire back adapted to have a flame spread over its front surface, an air circulating flue behind the fire back and discharging forwardly above the fire back into the apartment, and a passage leading from before the fire back into the body of the air flue whereby the circulation of the air is promoted, substantially as described and for the purpose specified.

544,030. BRUSH. WILLIAM R. DEER, Baltimore, Md. Filed Oct. 3, 1892. Serial No. 447,627. (No model.)



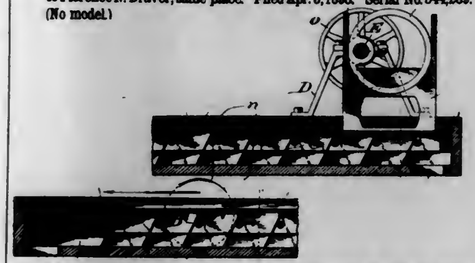
Claim.—1. A brush head consisting of a ferrule open entirely through or from top to bottom and formed of a series of arcs or semi-circles having inclined inner peripheries and opening into a common center, combined with bristles and with a central tapering plug for securing said bristles in said head, said plug having its larger end toward the part of said head having the greatest internal diameter.

2. A brush comprising a ferrule open entirely through, or from top to bottom, and composed of a series of semi-circles or arcs having inclined inner peripheries and opening into a common center, bristles mounted in said ferrule, and a central tapering plug or wedge for holding said bristles in place, said ferrule having one or more openings, as *d*, for the reception of a nail or pin to secure said plug or wedge in place

3. A brush comprising a ferrule open entirely through, or from top to bottom, and composed of a series of semi-circles or arcs having inclined inner peripheries and opening into a common center, bristles mounted in said ferrule, a central tapering plug or wedge for holding said bristles in place, said ferrule having one or more openings, as *d*, for the reception of a nail or pin to secure said plug or wedge in place, and a cap above said plug or wedge for covering the ends of said bristles.

4. A brush head consisting of a ferrule open entirely through, or from top to bottom, and formed of a series of arcs or semi-circles opening into a common center, combined with bristles and with a central tapering plug for securing said bristles in said head, substantially as described.

544,031. CONVEYER. EMIL R. DRAVER, Alliance, Nebr., assignor to Florence N. Draver, same place. Filed Apr. 3, 1895. Serial No. 544,289. (No model.)



Claim.—1. In a conveyer, the combination with the box, of side-bars reciprocably supported therein, shovel-gates pivotally and reversibly supported between said side-bars at suitable intervals apart to engage at their lower free ends the material, tie-bars connecting the side-bars at intervals and affording stops against which said shovel-gates are reversible, and driving means for imparting the reciprocating motion to the side-bars, substantially as described.

2. In a conveyer, the combination with the box, of side-bars reciprocably supported therein along the sides of the box, covering-strips extending from said sides over the side-bars, shovel-gates pivotally and reversibly supported between said side-bars at suitable intervals apart to engage at their lower free ends the material, tie-bars connecting the side-bars at intervals and located directly beneath the shovel-gate pivots and affording stops against which said shovel-gates are reversible, and driving means for imparting the reciprocating motion to the side-bars, substantially as described.

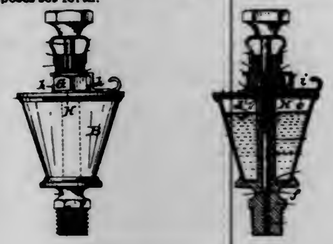
3. In a conveyer, the combination with the box having longitudinal slots *g* in its sides, of reciprocable shovel-gate supports in the box, shovel-gates pivoted reversibly on said supports, and stops thereon for the shovel-gates, located directly beneath the shovel-gate pivots, shafts passing at their opposite ends through said slots and carrying said shovel-gate supports, and bearings for the projecting ends of said shafts at the outer sides of the box, substantially as described.

4. In a conveyer, the combination with the box having longitudinal slots *g* in its sides, of side-bars B and B′ reciprocably supported therein, shovel-gates C pivotally and reversibly supported between said side-bars at suitable intervals apart to engage at their lower free ends the material, tie bars B^2 connecting the side-bars at intervals and located directly beneath the shovel-gate pivots and affording stops against which said shovel-gates are reversible, shafts B^3 and B^4 extending at their opposite ends beyond the side-bars through said slots *g* and carrying wheels *f*, tracks *f′* for said wheels, and driving means for imparting the reciprocating motion to the side-bars, substantially as described.

544,032. LUBRICATOR. HENRY R. FRISBIE, Newark, assignor to the Eastwood Wire Manufacturing Company, Belleville, N. J. Filed Apr. 18, 1895. Serial No. 546,174. (No model.)

Claim.—In an oiler, the combination with the cover having a filling aperture therein, of a tubular extension passing through said cover and threaded at the upper portion both exteriorly and interiorly; a threaded spindle working in said extension; a nut mounted on said extension and having an upward projection, the upper portion of which is serrated and the lower portion threaded exteriorly; a

spring actuated valve working on said threaded lower portion; a yoke, M, carried by said spindle and engaging with the serrated portion of said nut, and means to prevent loosening of said nut, as described, and for the purposes set forth.



544,033. GAGE-COCK. HENRY R. FRISBIE, Newark, assignor to the Eastwood Wire Manufacturing Company, Belleville, N. J. Filed Apr. 18, 1895. Serial No. 546,177. (Model.)

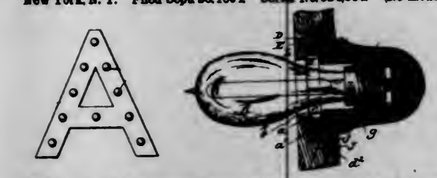


Claim.—1. In a gage cock, the combination with the tubular shank thereof, of a plunger working therein, a valve-cap carried by said shank, engaging with said plunger and having an exit flue, a weighted lever pivotally mounted upon said shank and having a chamber in which said cap works, and adapted when raised to open said gage cock and when released to close the same automatically and to move said plunger as and for the purposes set forth.

2. In a gage cock, the combination with the tubular shank thereof, of a valve cap, carried thereby, having an exit flue, a weighted lever, pivotally mounted upon said shank, having a chamber in which said cap works means to limit its movement to prevent the cap from being accidentally blown off said shank, said lever being adapted when raised to open said gage cock and when released to automatically close the same, as described, and for the purposes set forth.

3. In a gage cock, the combination with the tubular shank thereof, of a plunger working therein, and a weighted lever pivoted upon said shank and adapted to automatically operate said plunger, as described, and for the purposes set forth.

544,034. ELECTRIC-LIGHTING SYSTEM. EDWARD F. GAVIN, New York, N. Y. Filed Sept. 23, 1894. Serial No. 524,384. (No model.)



Claim.—1. An illuminated sign or ornament, comprising a letter-form or like lamp support provided with a plurality of sets of insulated contact pieces, a plurality of lamp sockets detachably secured thereto, said lamp sockets being, provided with insulated contact pieces for engagement with the contact pieces of the bulb stems, and also with contact pieces for engagement with the insulated contact pieces on the lamp support, and conducting wires extending along the lamp support and permanently connected with the said insulated contact pieces on said support, substantially as described.

2. An illuminated sign or ornament comprising a letter-form or like lamp support, provided with insulated contact pieces, a plurality of lamp sockets detachably connected with the lamp support and provided with contact pieces for engagement with the contact pieces on the bulb stems, and also with contact pieces for engagement with the contact pieces on the lamp support, and conducting wires extending along and secured to the rear face of the lamp support, said wires being permanently connected with the insulated contact pieces on said lamp support, substantially as described.

3. The combination, with a letter form or other lamp-support adapted to hold a plurality of lamps, the same being provided with a plurality of holes for the bulb-stems, of lamp sockets which are closed at their rear ends to exclude moisture and are sustained by attachment at their front or open ends to the lamp-support, said sockets being located at the rear face of the same, opposite said holes and projecting rearwardly from the lamp-support, so as to bring the lamp-bulbs near the front face thereof, substantially as described.

4. The combination, with a letter form or other lamp-support adapted to hold a plurality of lamps, the same being provided with a plurality of holes for the bulb-stems, of lamp-sockets which are closed at their rear ends to exclude moisture and are sustained by attachment at their front or open ends to the lamp-support, said sockets being located at the rear face of the same opposite said holes and projecting rearwardly from the lamp support, and conducting wires extending along the rear-face of the support and connected with the contact pieces of the sockets, substantially as described.

5. The combination with a letter form or other lamp-support provided with holes for the bulb-stems, sockets detachably secured to the lamp-support and projecting from the rear face thereof, and insulated contact pieces on the lamp-support and sockets adapted for engagement with each other when the sockets are secured to the lamp-support, substantially as described.

6. The combination with a letter form or other lamp-support, provided with holes for the bulb-stems of rings of insulating material attached to the lamp-support sockets having detachable connection with said rings, and contact pieces on the rings and sockets, substantially as described.

7. The combination with a letter form or other lamp-support, provided with holes for the bulb-stems of lamp-sockets and rings of insulating material attached to the lamp support, said rings and the sockets being provided with interlocking parts and with contact pieces, substantially as described.

8. The combination with a letter form or other lamp-support provided with holes for the bulb-stems, of rings of insulating material attached to the lamp-support, lamp-sockets having detachable connection with the rings, contact pieces on the rings and sockets and conducting wires extending along the rear surface of the lamp-support and connected with the contact pieces of the rings substantially as described.

9. The combination with a letter form or other lamp-support provided with holes for the bulb-stems of rings of insulating material attached to the lamp-support sockets detachably secured to the rings, contact pieces on the rings and sockets and wires extending along the rear surface of the lamp-support and passing through the insulating material of the rings to the contact pieces thereon, substantially as described.

10. The combination with a letter form or other lamp-support provided with holes for the bulb-stems, of rings of insulating material attached to the lamp-support, sockets adapted to engage the said rings, and metal contact pieces on the rings and sockets, provided with interlocking parts for holding the sockets in engagement with the rings, substantially as described.

11. The combination with a letter form or other lamp-support, provided with holes for the bulb-stems, of lamp-sockets detachably secured to the said lamp support, contact pieces on the lamp-support and sockets, and means for packing the joints between opposing surfaces of the socket and lamp-support at either side of the contact pieces to exclude moisture from the same, substantially as described.

12. The combination with a letter form or other lamp-support, of a ring of insulating material secured to the lamp-support, a lamp-socket detachably engaged with the said ring, contact pieces on the socket and ring, and means for packing the joints between opposing surfaces of the ring and socket at either side of the contact pieces to exclude moisture from the said contact pieces, substantially as described.

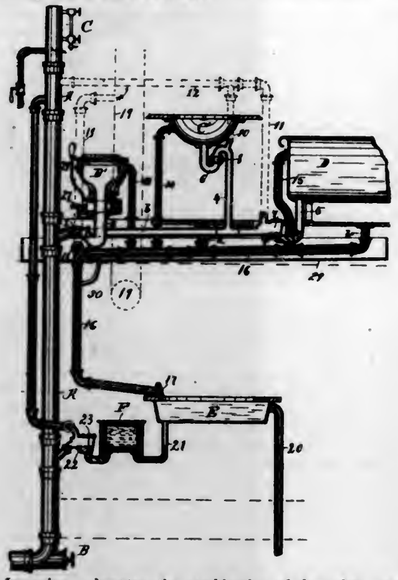
13. The combination with a letter form or other lamp-support provided with holes for the bulb-stems, rings of insulating material seated in rabbets surrounding the holes, sockets detachably secured to the rings, and contact pieces on the rings and sockets, substantially as described.

14. The combination with an apertured letter form or other lamp-support, of a ring of insulating material having contact pieces embedded therein, and a socket detachably secured to the ring, and also made of insulating material having contact pieces embedded therein, substantially as described.

15. The combination with an apertured letter-form or other lamp-support, of a detachable lamp-socket, said support and lamp-socket being provided with oppositely arranged, insulated, segmental, contact plates provided with inclined ribs or screw threads adapted to be interlocked by rotary motion of the socket, substantially as described.

544,035. SANITARY PLUMBING. MICHAEL J. GIBBONS, Dayton, Ohio. Filed Feb. 14, 1895. Serial No. 538,351. (No model.)

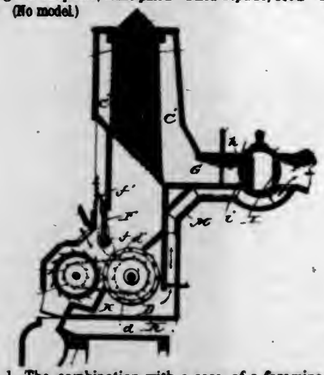
Claim.—1. In sanitary plumbing, the combination of the overflow and local ventilation pipe —16—, safety connections between said pipe and the bath tub and wash-stand, separate overflow and local ventilation pipes —13—, 14— and —15 between the closet, wash-stand and bath tub, respectively, and said pipe —16—, and a pipe communicating with the latter pipe and with a warm air flue, whereby means are provided for obtaining local ventilation, and an outlet for the overflow and leakage from the fixtures through said pipe —16— substantially as shown and described.



2. In sanitary plumbing, the combination of the safety waste and local vent pipe (16); overflow and local vent pipes (13) (14) and (15) communicating with the water closet, wash bowl, and bath tub; a waste pipe having traps provided with ball valves; vent pipes communicating with said traps and with the soil pipe, substantially as described.

3. In sanitary plumbing, a soil or sewer pipe, provided with a valve or cut off at a point where said pipe enters the premises; a water gage on said soil or sewer pipe at a point above the fixtures, in combination with trapped waste pipes; vent pipes for said traps communicating with said soil or sewer pipe; ball valves in said traps; safety waste and local vent pipes communicating with the water closet, wash bowl, bath tub, and kitchen sink; a vent pipe communicating with said safety waste pipe, and with said warm air flue, substantially as described.

544,036. COTTON ELEVATOR, CLEANER, AND DISTRIBUTER. MOSES M. GINN, Brenham, Tex., assignor of one-half to Joseph Beaumier and George A. Shepherd, same place. Filed Sept. 25, 1894. Serial No. 524,036. (No model.)

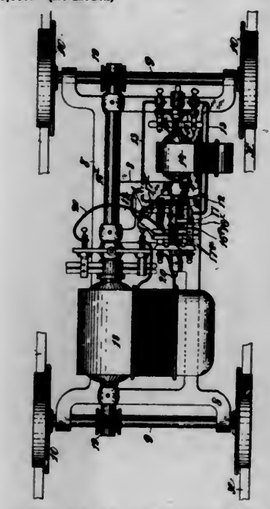


Claim.—1. The combination with a case, of a foraminous cage arranged therein and open at the top and bottom, the flue G, leading from the case, the screen and picker rolls arranged within the case and below the cage, the flue M, leading from the bottom of the case, at the rear of the screen roll and the exhaust connected with both the flues G and M, substantially as shown and described.

2. In a machine of the character described, the combination with the case, of the screen and picker rolls, the said case having an opening L, and flue M, and the catch board K, arranged between and below the screen and picker drums, the flue B, leading into the case, and the flue G, leading from said case, substantially as shown and described.

3. The combination with the case having a cage, the flues G and M leading therefrom, the exhaust, the screen and picker drums located in the case and below the cage, the leveler board, and the catch board K, all arranged substantially as shown and described.

544,037. CONVERTER SYSTEM FOR ELECTRIC RAILWAYS. THOMAS HARPER, New Brunswick, N. J. Filed June 29, 1894. Serial No. 516,065. (No model.)



Claim.—1. In an electric railway, a transformer coil having a closed magnetic circuit and having a slotted conduit for the secondary coil formed in said circuit with its axis parallel with the axis of the coil.

2. In an electric railway, a transformer comprising a slotted, iron conduit united integrally with the core of the primary coil, and the said coil having its axis parallel with the axis of the conduit.

3. In an electric railway, the combination with a vehicle, an electric motor carried thereon, a secondary coil carried by the vehicle and in circuit with the motor thereon, a stationary slotted iron conduit which provides a way for the secondary coil and forms a part of a closed magnetic circuit, a transformer coil on a core integral with said conduit, and a generator in circuit with said coil.

4. In an electric railway, the combination with a series of transformers, the coils of which are in circuit with a generator, the said transformers arranged at intervals along the railway and having closed magnetic circuits in the form of slotted conduit sections, a movable, flexible, secondary coil in said conduit, the axis of the coil being parallel with the axis of said conduit, a vehicle which carries the secondary coil, and a motor in said vehicle in circuit with said coil.

5. In an electric railway, the combination with a vehicle, a motor thereon, an arm 1, on the vehicle and detachably connected to a secondary coil, the motor on the vehicle being in circuit with said coil, a series of transformers arranged at intervals along the roadway, their coils being in circuit with a generator and their magnetic circuits having in them slotted conduits for the passage of the secondary coil, and the primary generator.

544,038. DRAFT-GATE FOR FIRE-DOORS. HENRY R. HOFFMAN, Hamilton, Ohio. Filed Feb. 13, 1895. Serial No. 538,229. (No model.)

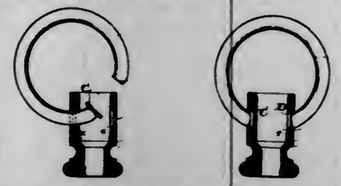
Claim.—1. In combination with a fire-door having an air-inlet-opening, a bridge secured in front thereof, a draft-gate supported thereon in a manner to be capable of being moved to or from the door, an operating lever-handle for the draft-gate having a circular disk-shaped enlarged end by which it is supported on the bridge, hook-shaped lugs 18 on the draft-gate and flanges 19 at the enlarged end of the lever which by engaging with the hook-shaped lugs 18 of the gate connect the latter to the lever-handle.

2. In a draft-gate for fire-doors, the combination of the fire-door,

a bridge with guide-ways stretching across the air-inlet-opening therein, a draft-gate with guides whereby it is supported in the guide-ways of the bridge in a manner to be moved to or from the door, an operating lever-handle having an enlarged disk-shaped end by which it is eccentrically pivoted to the bridge, hook-shaped lugs 18 on the draft-gate and flanges 19 on the disk-shaped enlarged end of the lever-handle which engage with lugs 18 for the purpose of connecting gate and handle, notches 20 in said flanges to permit such connection and notches 21 in the bridge to clear lugs 18 during the extreme outward position of the draft-gate.



544,039. WATCH-BOW FASTENER. ERNEST H. HUNTER, Philadelphia, Pa., assignor to the Keystone Watch Case Company, same place. Filed Aug. 8, 1891. Serial No. 402,068. (No model.)



Claim.—1. The combination with the pendant of a watch case having apertures on its opposite sides, of a bow having one end smaller than said apertures so that it may be passed through them, and the other end provided with a head of larger diameter than one of the apertures so that it may not pass through said aperture, whereby the small end may be inserted through one aperture from the interior of the pendant and the bow turned until the head upon the other end is brought upon the interior adjacent to the aperture, and means to fasten the other or smaller end of the bow upon the interior of the pendant adjacent to the other aperture

2. The combination with the pendant of a watch case provided upon opposite sides with apertures, of a bow having one end provided with a head of larger diameter than one aperture and the other end plain, and independent fastening devices for fastening the plain end within the interior of the pendant when it is passed through the other aperture.

3. As a new article of manufacture, a watch case bow having one end only provided with an integral head or enlargement and the other end plain.

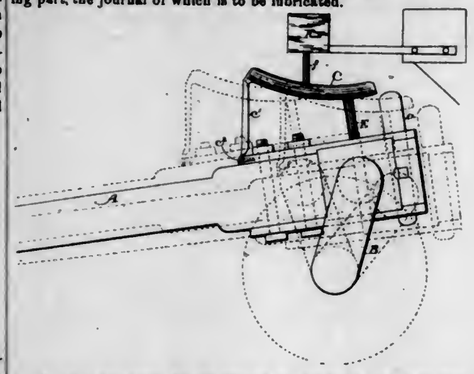
4. In a watch bow fastener the combination of a pendant provided upon opposite sides with apertures, and projecting into the interior of the pendant, a bow having its ends journaled in said apertures and having one end formed with a head or enlargement fixed to the body of the bow and located upon the interior of the pendant, and an independent fastening device separate from the other end of the bow and adapted for attachment thereto on the interior of the pendant.

5. As a new article of manufacture a watch case bow having one end, provided with a head or enlargement integral with the metal of the bow and the other end plain and provided with a detachable head.

6. The combination of the pendant A having the apertures *a* on diametrically opposite sides with the internal recesses *c* surrounding said apertures and the bow B having one end thereof provided with a fixed enlargement or head C adapted to fit into one of the internal recesses *c* and the other end plain and adapted to be inserted in the aperture *a* on the other side of the pendant, and means to fasten said plain end D within the corresponding recess *c*.

544,040. LUBRICATOR. JAMES JANDA, Korbel, Cal. Filed May 13, 1895. Serial No. 549,174. (No model.)

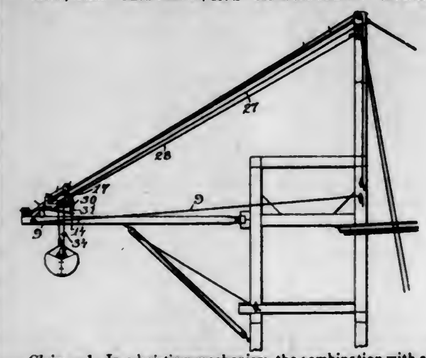
Claim.—1. In a lubricator for the bearing or journal of a moving part, and in combination with a suitable fixed drip cup having a discharge tube, a wiper cup or vessel secured to the moving part and having a tube or pipe in communication with the bearing or journal to be oiled, said cup or vessel having an open top and containing absorbent material leading to the bearing or journal and adapted to be reached by the discharge tube of the drip cup through the open top of said wiper cup or vessel whereby the oil is taken from the drip cup by the absorbent material and conveyed to the bearing, and said cup or vessel being curved in the direction of its length on an arc having a radius greater than the radius of the circle described by the moving part, the journal of which is to be lubricated.



2. In a lubricator for the bearing or journal of a moving part, and in combination with a suitable fixed drip cup having a discharge tube, a wiper cup or vessel secured to the moving part and having a tube or pipe in communication with the bearing or journal to be oiled, said cup or vessel having an open top and containing absorbent material leading to the bearing or journal and adapted to be reached by the discharge tube of the drip cup through the open top of said wiper cup or vessel, whereby the oil is taken from the drip cup by the absorbent material and conveyed to the bearing, and said cup or vessel being curved in the direction of its length on an arc having a radius greater than the radius of the circle described by the moving part, the journal of which is to be lubricated, and having also one end higher than the end from which its tube or pipe leads to the journal bearing.

3. A lubricator for the bearings or journals of moving parts, consisting of a stationary oil cup having a drip tube discharge, and an open topped cup or vessel curved in the direction of its length on an arc having a radius greater than the radius of the circle described by the moving part, and having within it and exposed to the discharge tube of the drip cup through its open top an absorbent material, a leg or standard by which one end of the cup or vessel is supported in a higher plane than the opposite end, and an outlet tube from the other end of said cup or vessel communicating with the bearing to be lubricated and having the absorbent material extending down therein.

544,041. HOISTING MECHANISM. GEORGE F. JENNINGS, Fall River, Mass. Filed Mar. 24, 1894. Serial No. 504,991. (No model.)



Claim.—1. In a hoisting-mechanism, the combination with an inclined stay, and a carriage having wheels movable thereon, of a check-stop adjustable on the stay and provided with a shoulder for intercepting the carriage, a step to prevent the undue upward movement of the carriage, an inclined way extending upwardly from said step and means for adjusting the check-stop.

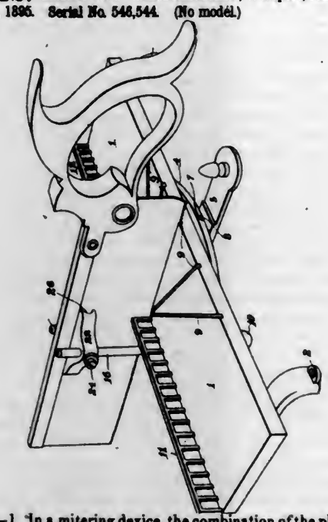
2. In a hoisting-mechanism, the combination with an inclined stay, a carriage having wheels traveling thereon, and a step for preventing the undue upward movement of the carriage by engaging one of its wheels, of a lever pivoted to a support and adapted to lift the carriage out of engagement with the step when raised, as described.

3. In a hoisting-mechanism, the combination with an inclined stay, a carriage having wheels mounted on the stay, a hoisting-cable pulley journaled in said carriage and having a V-shaped groove, means for locking said pulley against rotation, a hoisting cable passing over said pulley, and a cross arm at the lower end of the cable, of a check-stop having a bearing to intercept the carriage, a step for preventing the undue upward movement of the carriage, and a lever pivoted to the check-stop adapted to be engaged by the cross arm on the cable and to lift the carriage out of engagement with said check.

4. The combination with the inclined stay 5, means for supporting the same in position, the check-stop 8 mounted on said stay having the shoulder 11 and weight 12 and provided with the way 17, the step 18 and the check 21, the forked lever 14 pivoted to the stop, and the cables 9 and 10 for adjusting the location of the stop, of the carriage 22, the wheels 23—23 of which are mounted on the stay, the pulley 26 having a V-shaped groove, and the ratchet 29 journaled in said carriage, the pawl-lever 30 having the cross-bar 31, the pawl 32 and the end 33 pivoted to the frame of the carriage, the hoisting cable 28 passing over said pulley 26, and the cross-bar 34 on the end of said cable.

5. The combination with an inclined stay, of the tubular check-stop 8 mounted on the stay and having the shoulder 11 and weight 12 and provided with the way 17, the step 18 and the check 21, and a lifting-lever pivoted to the check-stop, as and for the purpose described.

544,042. MITER-BOX. THEODORE R. KING, Westport, Conn. Filed Apr. 20, 1895. Serial No. 546,544. (No model.)



Claim.—1. In a mitering device, the combination of the platform, the angle plate secured thereto, the angle bar pivoted thereon and adjustable to suitable positions, the vertical cylindrical rods secured to the extension of said bar, the yoke block having perforations through which these rods pass, one of the perforations being larger than the rod passing through it and having a set screw to clasp the rod therein, and jaws secured to said bars in position to bear against the saw blade, all substantially as described.

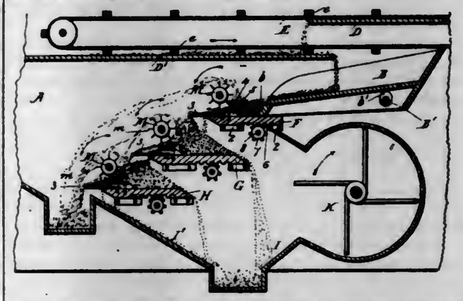
2. In combination with the platform, angle plate, and angle bar pivoted thereto, the flexible vertical cylindrical rods secured to the angle bar, means for flexing these rods with relation to each other, and a jaw on each rod, said jaw having an opening through which the rod passes and adjustable to any height and circumferentially adjustable thereon by means of a set screw, all substantially as described.

544,043. GRAIN-CLEANING DEVICE. FRANK F. LANDIS, Waynesborough, Pa. Filed Feb. 4, 1895. Serial No. 537,261. (No model.)

Claim.—1. In a grain separator, the combination, with a plate for the grain to rest on, and means for automatically delivering a regulated quantity of grain to the said plate; of a push piece above the said plate, and driving mechanism operating to impart short and quick reciprocations to the said push piece, whereby, a quivering motion being imparted to the grain, the rubbish is worked to the top of the grain and the grain is moved slowly and step by step across the said plate, substantially as set forth.

2. The combination, with a grain plate, of a reciprocatory shoe provided with a push piece resting on the grain plate, and a revoluble toothed roller arranged above the grain plate to the rear of the said push piece, substantially as set forth.

3. In a grain separator, the combination, with a plate for the grain to rest on, of a push piece above the said plate, driving mechanism operating to impart short and quick reciprocations to the said push piece whereby a quivering motion is imparted to the grain, and a revoluble toothed roller operating on the light rubbish which is worked to the top of the grain, substantially as set forth.

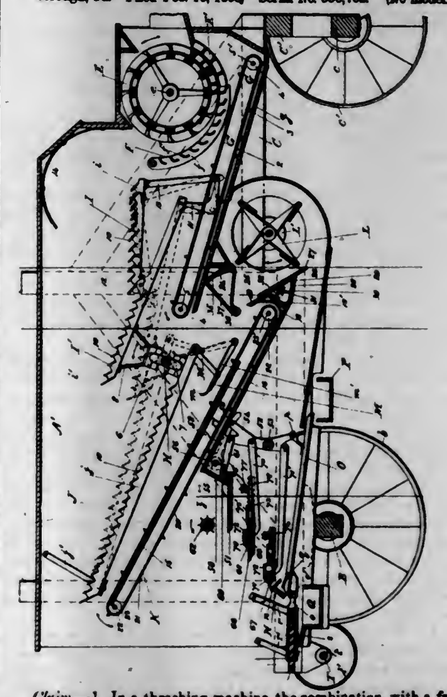


4. The combination, with a grain plate, of a removable toothed comb provided with a downwardly-projecting flange engaging with a groove in the grain plate, and fastening devices for attaching the toothed comb to the grain plate, substantially as set forth.

5. The combination, with a grain plate, and means for adjusting it longitudinally; of a revoluble toothed roller journaled above the said plate near its rear edge, and driving mechanism operating to revolve the said roller in a direction opposite to the direction of the movement of the grain across the said plate, whereby the light rubbish is carried over the top of the roller, substantially as set forth.

6. The combination, with an upper grain plate provided with a toothed comb at its rear edge, and a toothed roller above the said comb for removing the large light rubbish; of a second grain plate provided at its rear edge with a toothed comb and arranged under the aforesaid comb whereby the grain falling between the teeth of the upper comb will slide down the front side of the pile of grain on the lower grain plate, and the small light rubbish will fall from the points of the teeth of the upper comb onto the rear side of the said pile of grain and slide down it onto the lower toothed comb, substantially as set forth.

544,044. THRASHING-MACHINE. FRANK F. LANDIS, Waynesborough, Pa. Filed Feb. 16, 1895. Serial No. 538,702. (No model.)



Claim.—1. In a thrashing machine, the combination, with a fan, and the blast board 24 at the upper part of its casing; of the inclined crosspiece 19 arranged at the rear of the fan, and the blast passages

25 and 26 leading to the straw-shaking and grain-cleaning devices respectively; the slidable blast deflector 27 resting on the crosspiece 19 and controlling the area of the passage 26, and the blast deflector 35 consisting of a pivoted curved plate normally supported behind the said blast board and controlling the area of the upper passage 25, substantially as set forth.

2. In a thrashing machine, the combination, with a fan, and the casing provided with two passages 25 and 26 leading to the straw-shaking and grain-cleaning devices respectively; of the crosspieces arranged at the rear of the fan and forming a chamber 32 between the two said passages, an inclined blast deflector 27 supported above the said chamber, and operating mechanism for sliding the said blast deflector, arranged in the said chamber, substantially as set forth.

3. The combination, with a revoluble crank shaft provided with cranks arranged at opposite sides of its center; of the first shaker having its rear end connected to the said crank shaft, said first shaker being formed of two parts I and I' each consisting of side bars and inclined slats, the rear end of the part I being pivoted to the middle portions of the side bars of the part I', the oscillatory bell-crank levers 11 and the connecting rods 13 connecting the rear ends of the said parts I and I'; a second straw shaker provided with inclined slats and having its front end connected to the said crank shaft, and means for supporting the rear end of the second straw shaker, substantially as set forth.

4. The combination, with a revoluble crank shaft; of a straw shaker formed of two parts, I and I', each consisting of side bars and inclined slats, the rear end of the rear part, I', being operatively connected with the said crank shaft; the oscillatory bell-crank levers pivotally supporting the front end of the part, I'; and connecting rods pivoted to the front end of the front part, I, and to the other arms of the said bell crank levers, the rear end of the part, I, being pivoted to the middle portions of the side bars of the part, I', substantially as set forth.

5. The combination, with a fan, and a straw shaker; of a vibrator arranged intermediate of the said parts and operating to cause a continual change in the angle at which the blast strikes the under side of the straw shaker, substantially as set forth.

6. The combination, with a fan, and a straw shaker; of a vibrator pivoted at its lower end, and means for oscillating the vibrator continuously and thereby changing the angle at which the blast strikes the straw shaker, substantially as set forth.

7. The combination, with a fan, and a straw shaker; of a vibrator pivoted at its lower end, and driving devices operating to raise and lower the upper part of the vibrator and the lower part of the straw shaker synchronously, substantially as set forth.

8. The combination, with a fan, a straw shaker, and means for continuously raising and lowering the lower end of the straw shaker; of a vibrator having its lower end pivotally supported below the straw shaker, and an arm pivotally connecting the vibrator with the lower part of the straw shaker, substantially as set forth.

9. The combination, with a fan, and a straw shaker; of a vibrator consisting of a plate having an upwardly curved edge, and pivoted supporting arms; and means for oscillating the vibrator continuously, substantially as set forth.

10. The combination, with a grain plate, a push piece above the grain plate, and reciprocatory arms passing through apertures in the grain plate and operating to reciprocate the push piece; of a guard secured to the front part of the grain plate and extending rearwardly over the push piece, substantially as set forth.

11. The combination, with a grain plate, of an extension piece provided with a thin plate resting on the front part of the grain plate, whereby the effective width of the grain plate may be varied, substantially as set forth.

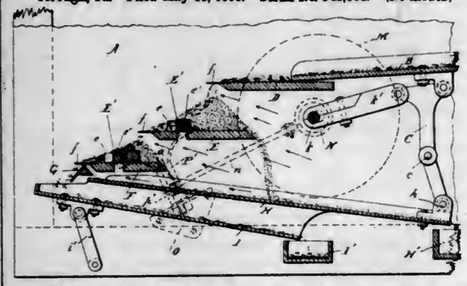
12. The combination, with the three grain plates, and their push pieces provided with arms substantially as set forth; of the pivoted rocker arms and means for reciprocating them, the push piece arms of the second and third grain plates being pivoted to the rocker arms above and below the rocker arm pivots, and the push piece arms of the first grain plate being pivoted to the upper parts of the rocker arms above the aforesaid arms, substantially as set forth.

13. The combination, with a grain plate, a push piece above the grain plate, and driving mechanism operating to impart short and quick reciprocations to the push piece, whereby the material resting on the said plate is separated into layers and worked to the rear of the plate; of a substantially horizontal guard plate secured over the said push piece between it and the pile of grain, assisting to support the said pile of grain, and permitting the grain to slide both to the front and rear, substantially as set forth.

14. The combination, with the gatherboard O, and the reciprocatory rocker arms 52 at its lower end; of the side plates R, the downwardly and rearwardly inclined links *r r'* pivotally supporting the said side plates, the said links *r* having lugs *o* supporting the upper end of the said gatherboard; and the slidable grate carried by the said side plates, substantially as set forth.

15. The combination, with a grain plate, of a dividing bar having its front and rear sides inclined downwardly in opposite directions and pivots at its apex, the said apex being arranged under the rear edge of the grain plate and remaining substantially stationary in that position when the said bar is turned on its pivots to adjust the inclination of its sides and to direct the blast with greater or less force against the edge of the said grain plate, substantially as set forth.

544,045. GRAIN-CLEANING DEVICE. FRANK F. LANDIS, Waynesborough, Pa. Filed May 10, 1895. Serial No. 548,861. (No model.)



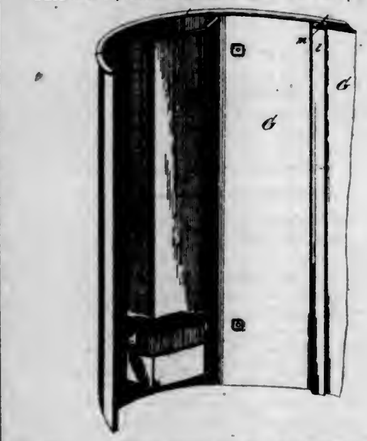
Claim.—1. In a grain separator, the combination, with a plate for the grain to rest on, of a serrated push piece above the said plate, and driving mechanism operating to impart short and quick reciprocations to the said push piece in a direction longitudinal of the said plate, whereby the said serrations impart a quivering motion to the grain, separate it into layers and move it step by step across the said plate, substantially as set forth.

2. In a grain separator, the combination, with a plate for the grain to rest on, of a push piece having serrations on its rear side and arranged above the said plate, a guard covering the front side and top of the said push piece, and driving mechanism operating to impart short and quick reciprocations to the said push piece in a direction longitudinal of the said plate, whereby the grain is separated into layers and moved across the plate, substantially as set forth.

3. The combination, with two grain plates arranged in the form of steps, and serrated push pieces on the said plates; of a pivoted Y-shaped lever having its arms operatively connected with the ends of the said push pieces, and an eccentric and an eccentric rod, said rod being operatively connected to an arm projecting laterally from the said lever, substantially as set forth.

4. The combination, with three grain plates arranged in the form of steps, a shoe resting on the first grain plate, and serrated push pieces on the second and third grain plates; of driving mechanism operating to impart short and quick reciprocations to the said shoe crosswise of the first grain plate, and to the said serrated push pieces longitudinally of the second and third grain plates, substantially as set forth.

544,046. HEATING-STOVE. JOHN P. LYNOTT, Louisiana, Mo. Filed Mar. 14, 1895. Serial No. 541,711. (No model.)



Claim.—A heating stove, having the sections G, secured to its inner side, which sections form a double thickness of metal with the side of the stove, and have their edges so shaped as to engage with the edge of an adjoining section or a draft flue, combined with a removable draft flue, which has its vertical edges so shaped as to engage with those of the sections G; substantially as described.

544,047. RHEOSTAT. WILLIAM O. MEISSNER, Chicago, Ill. Filed Nov. 20, 1893. Renewed Jan. 11, 1895. Serial No. 534,593. (No model.)



Claim.—1. In a rheostat, the combination of a rotatable cylinder with a spiral ridge therealong and resistance wires thereabout.

2. In a rheostat, the combination of a rotatable cylinder, with a spiral ridge therealong and resistance wires thereabout, said resistance wire bare, but its successive coils separated from each other.

3. In a rheostat, the combination of a rotatable cylinder with a spiral ridge therealong and resistance wires thereabout, said resistance wire bare, but insulated from said cylinder and ridge.

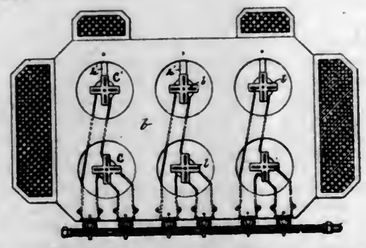
4. In a rheostat, the combination of a rotatable cylinder with a spiral ridge therealong and resistance wires thereabout, said resistance wire bare, but insulated from said cylinder and ridge, and its successive coils separated from each other.

5. In a rheostat, the combination of a rotatable cylinder with a spiral ridge therealong and resistance wires thereabout, and a contact bar along such cylinder, and adapted to engage the spiral ridge at successive points, as the cylinder is turned.

6. In a rheostat, the combination of a rotatable cylinder with a spiral ridge thereabout, insulation covering for ridge and cylinder, a resistance wire wound about such cylinder and ridge, its successive coils separated from each other, a connection with one end of such resistance wire, a contact bar along such cylinder, a connection therefrom, said contact bar in such proximity to the cylinder, that the latter is rotated if the contact bar engages the resistance wire on the top of the ridge.

7. In a rheostat, the combination of a cylinder with a spiral ridge thereon and resistance wire thereabout and a contact bar along such cylinder, said bar and cylinder movable with reference to each other so that the spiral ridge is successively engaged at different points by the contact bar.

544,048. STOVE AND RANGE AND ATTACHMENT FOR STOVES. WILLIAM GORDON MILLER, WILLIAM H. BRADLEY, and ARTHUR W. MILLER, Allegheny, Pa.; said Bradley and Arthur W. Miller assignors to said William Gordon Miller. Filed Sept. 8, 1894. Serial No. 522,515. (No model.)

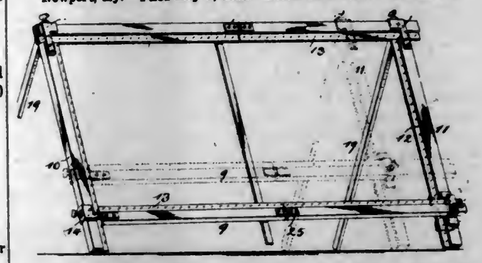


Claim.—1. The combination with a rotating gas valve having an arm extending out at one side, a horizontal bracket secured to the valve body and extending out in line with the valve handle and having a curved slot formed therein, and an adjustable stop in said slot in the course of the valve handle, substantially as and for the purposes set forth.

2. The combination with a rotating gas valve having an arm extending out at one side, a horizontal bracket secured to the valve body and extending out in line with the valve handle and having a curved slot formed therein, and an adjustable stop in said slot in the course of the valve handle, said stop extending through the slot in the bracket and having a thumb nut screwing thereon, substantially as and for the purposes set forth.

3. In combination with a stove top plate having circular openings therein, a water-heating tank, extending under the top plate, and secured thereto and having two main chambers and between the main chambers a passage for communication between the main chambers, the walls of which correspond to the circular openings of the top plate between the two main chambers, substantially as and for the purposes set forth.

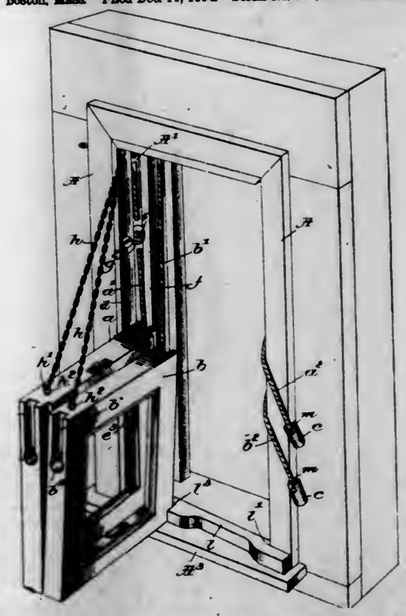
544,049. CURTAIN-STRETCHER FRAME. WILHELM NIEMAND, Newport, Ky. Filed May 3, 1895. Serial No. 547,960. (No model.)



Claim.—1. In a collapsible curtain-stretcher frame of adjustable size, the combination of two short and two long rails, fittings at the upper ends of the short rails to receive the upper long rail, fittings to support the lower long rail on the short sides, each of the long rails being in two sections which are hinged together by hinges 25, flanges 26 and 27 at the reverse side of the sections near their meeting ends and projecting at right angles therefrom, a screw 28 carried loosely by one of the flanges of each set, a collar 29 on each screw whereby in conjunction with its handle it is confined to the flange by which it is carried and a screw-threaded opening in the other flange adapted to be engaged by screw 28 for the purpose of drawing the two rail-sections endwise together to render them rigid.

2. In a collapsible curtain stretcher frame of adjustable size, the combination of two short rails with fittings at their upper ends, a long rail 8, adapted to be received by them, a long rail 9, also supported on the short rails, being provided for such purpose at one end with a permanently secured fitting and resting near its other end in a loose fitting adjustable on either of the rails meeting thereat, the long rails being in two sections connected by hinges 25, flanges 26 and 27 projecting rearwardly from the sections near their meeting ends, a screw 28 carried loosely by one of the flanges in each set, a collar 29 on each screw whereby in conjunction with its handle it is confined to the flange by which it is carried and a screw-threaded opening in the other flange adapted to be engaged by screw 28 for the purpose of drawing the two rail-sections endwise together.

544,050. WINDOW-CASING AND MEANS FOR SECURING SASH THEREIN. WILLIAM RANDEL, Elizabeth, N. J., and CHARLES A. FRENCH, Boston, Mass. Filed Dec. 11, 1894. Serial No. 531,472. (No model.)



Claim.—1. The combination, with a window casing and a sash movable therein, and fixed cylindrical shell-like coupling members with slotted outer ends secured in round recesses in the sides of the casing, of a removable inner stop bead, rotatable coupling members

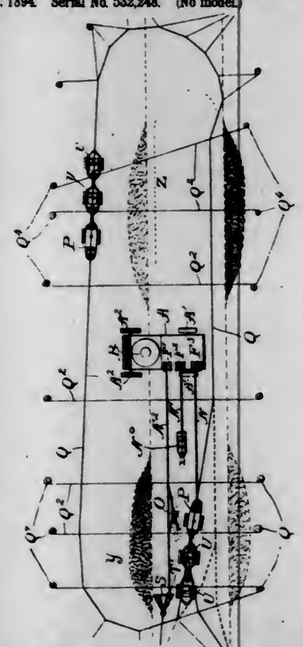
mounted therein and having elongated shanks and projections on their inner ends to co-operate with the slotted outer ends of said fixed members and hold the bead in place, sash cords, and a detachable connection between one of said cords and the sash, whereby the latter can be swung into the room about its connected edge as a pivot when the stop bead is removed, substantially as described.

2. A window casing having a vertical groove in its side to receive a parting bead, a segmental holder provided with a projecting rim on its rounded side, inserted in the casing with its straight side adjacent the edge of the groove, and a segmental disk or latch rotatable on the holder and flush with the rim, combined with a parting bead adapted to enter the casing groove and having an undercut recess in its side, to be entered at times by the disk, substantially as described.

3. A detachable coupling, consisting of a cylindrical shell-like member having a slotted outer end, and adapted to enter a cylindrical recess, and a co-operating member having a cylindrical shank to form a journal provided with a projection on its inner end, to enter the slot in the outer end of the other member, partial rotation of one member relative to the other locking them together, substantially as described.

4. The combination, with a window casing and a sash movable therein, of a removably secured inner stop bead, sash cords, a detachable connection between the sash and the cord adjacent the said bead, whereby by removal of the bead the sash may be removed from that side of the casing and disconnected from the adjacent sash cord, an overhead auxiliary support for the free side of the sash, and a detachable locking device notched to receive the inner vertical edge of the sash when swung out about a vertical axis, and adapted to be held in place on the casing to lock the sash in place, substantially as described.

544,051. GRADING AND EXCAVATING DEVICE. THOMAS R. REDMOND, Chattanooga, Tenn., and SOLON Z. RUFF, Atlanta, Ga. Filed Dec. 18, 1894. Serial No. 532,248. (No model.)



Claim.—1. In an apparatus of the character described, the combination with a dirigible electric locomotive, and a trolley carried thereby, of a source of electricity, and a laterally movable conducting wire receiving its current therefrom, a plurality of transverse supporting wires stretched above said conducting wire, and a frame provided with an upper grooved roller and lower guide rollers all of said rollers being made of insulating material, and the said rollers being adapted to receive the said transverse wire and to travel thereon, and supporting said conducting wire, substantially as described.

2. In an apparatus of the character described, the combination with a dirigible electric locomotive, and a trolley carried thereby, of a source of electricity, and a laterally movable conducting wire receiving its current therefrom, a plurality of transverse supporting wires stretched above said conducting wire, and a frame provided with an upper grooved roller and lower guide rollers all of said rollers being made of insulating material, and the said rollers being adapted to receive the said transverse wire and to travel thereon, and sister hooks suspended from said frame and inclosing and supporting said conducting wire, substantially as described.

3. In an apparatus of the character described, the combination with an endless drag rope, means for propelling the same, of a deadman provided with a vertically and laterally movable pulley adapted to receive the said drag rope, substantially as and for the purposes described.

4. In an apparatus of the character described, a deadman comprising a frame with guideways therein and means for securing the said frame in position, of a second frame provided with antifriction rollers and adapted to slide laterally in said outer frame, the said inner frame being itself provided with guideways, and a wheeled frame traveling in said inner guide ways and carrying the pulley, substantially as and for the purposes described.

5. An apparatus for excavating and grading, comprising a source of electricity; a laterally movable conducting wire; an electric locomotive, a trolley attached to said locomotive and adapted to move said conducting wire laterally, and thus allow changes in the route of said locomotive; excavating devices attached to said electric locomotive; an engine provided with a plurality of drums, and ropes adapted to connect one or more of said drums to said locomotive, substantially as described.

6. An apparatus for excavating and grading, comprising a continuous conducting wire arranged in a closed system, laterally movable overhead supports connected to various parts of said conducting wire and supporting the same, a source of electricity connected to said conducting wire; an electric locomotive, a trolley attached to said locomotive and adapted to move said conducting wire laterally, and thus allow changes in the route of said locomotive, excavating devices attached to said electric locomotive; an engine provided with a plurality of drums, and ropes adapted to connect one or more of said drums to said locomotive, substantially as described.

7. An apparatus for excavating and grading, comprising a continuous conducting wire arranged in a closed system; cross wires above said conducting wire and suspended from suitable supports, insulated movable carriers free to travel on said cross wires and supporting said conducting wire; a source of electricity connected to said conducting wire; an electric locomotive; a trolley attached to said locomotive and adapted to move said conducting wire laterally, and thus allow changes in the route of said locomotive; excavating devices attached to said electric locomotive; an engine provided with a plurality of drums, and ropes adapted to connect one or more of said drums to said locomotive, substantially as described.

8. An apparatus for excavating and grading, comprising a source of electricity; a laterally movable conducting wire; an electric locomotive; a trolley attached to said locomotive and adapted to move said conducting wire laterally, and thus allow changes in the route of said locomotive; excavating devices attached to said electric locomotive; an engine provided with a plurality of drums, and ropes adapted to connect one or more of said drums to said locomotive; a plow; a deadman, and an endless rope connecting said plow with said deadman, substantially as and for the purposes described.

9. An apparatus for excavating and grading, comprising a continuous conducting wire arranged in a closed system; laterally movable overhead supports connected to various parts of said conducting wire and supporting the same; a source of electricity connected to said conducting wire; an electric locomotive, a trolley attached to said locomotive and adapted to move said conducting wire laterally, and thus allow changes in the route of said locomotive, excavating devices attached to said electric locomotive; an engine provided with a plurality of drums, and ropes adapted to connect one or more of said drums to said locomotive; a plow; a deadman, and an endless rope connecting said plow with said deadman, substantially as and for the purposes described.

10. An apparatus for excavating and grading, comprising a continuous conducting wire arranged in a closed system; cross wires above said conducting wire and suspended from suitable supports, insulated movable carriers free to travel on said cross wires and supporting said conducting wires; a source of electricity connected to said conducting wire; an electric locomotive; a trolley attached to said locomotive and adapted to move said conducting wire laterally, and thus allow changes in the route of said locomotive; excavating devices attached to said electric locomotive; an engine provided with a plurality of drums, and ropes adapted to connect one or more of said drums to said locomotive; a plow; a deadman, and an endless rope connecting said plow with said deadman, substantially as and for the purposes described.

11. An apparatus for excavating and grading, comprising a source of electricity; a laterally movable conducting wire; an electric locomotive; a trolley attached to said locomotive and adapted to move said conducting wire laterally, and thus allow changes in the route of said locomotive; excavating devices attached to said electric locomotive; an engine provided with a plurality of drums, and ropes adapted to connect one or more of said drums to said locomotive; a plow; a deadman provided with a vertically and laterally movable pulley, and an endless rope connecting said plow with said pulley, substantially as and for the purposes described.

12. An apparatus for excavating and grading, comprising a continuous conducting wire arranged in a closed system; laterally movable overhead supports connected to various parts of said conducting wire and supporting the same; a source of electricity connected to said conducting wire; an electric locomotive; a trolley attached to said locomotive and adapted to move said conducting wire laterally, and thus allow changes in the route of said locomotive; excavating devices attached to said electric locomotive; an engine provided with a plurality of drums, and ropes adapted to connect one or more of said drums to said locomotive; a plow; a deadman provided with a vertically and laterally movable pulley; and an endless rope connecting said plow with said pulley, substantially as and for the purposes described.

13. An apparatus for excavating and grading, comprising a continuous conducting wire arranged in a closed system; cross wires above said conducting wire and suspended from suitable supports, insulated movable carriers free to travel on said cross wires and supporting said conducting wire; a source of electricity connected to said conducting wire; an electric locomotive; a trolley attached to said locomotive and adapted to move said conducting wire laterally, and thus allow changes in the route of said locomotive; excavating devices attached to said electric locomotive; an engine provided with a plurality of drums, and ropes adapted to connect one or more of said drums to said locomotive; a plow; a deadman provided with a vertically and laterally movable pulley, and an endless rope connecting said plow with said pulley, substantially as and for the purposes described.

14. In an apparatus of the character described, the combination with a dirigible electric locomotive, and a trolley carried thereby, of a source of electricity, and a laterally movable conducting wire receiving its current therefrom, a plurality of transverse supporting wires stretched above said conducting wire, and movable carriers traveling along said transverse wires and insulated therefrom, and sister-hooks detachably connected to said carriers and supporting said conducting wire, substantially as described.

15. In an apparatus of the character described, the combination with a dirigible electric locomotive, and a trolley carried thereby, of a source of electricity, and a laterally movable conducting wire receiving its current therefrom, a plurality of transverse supporting wires stretched above said conducting wire, and a frame provided with an upper grooved roller and lower guide rollers all of said rollers being made of insulating material, and the said rollers being adapted to receive the said transverse wire and to travel thereon, guides attached to the bottom of said frame and sister-hooks provided with holding arms adapted to slide into said guides, the said hooks supporting said conducting wire, substantially as described.

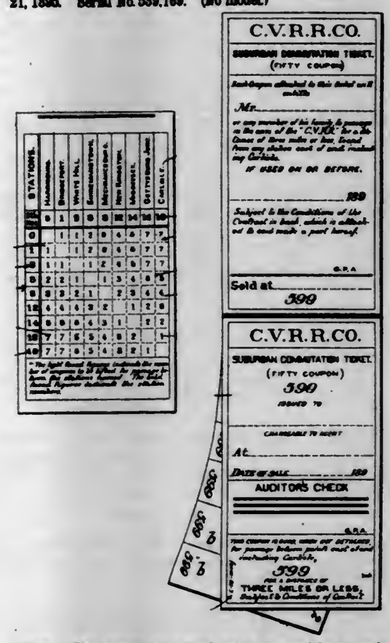
16. In an apparatus of the character described, the combination with a dirigible electric locomotive, and a trolley carried thereby, of a source of electricity, and a laterally movable conducting wire receiving its current therefrom, a plurality of transverse supporting wires stretched above said conducting wire, and a frame provided with an upper grooved roller and lower guide rollers all of said rollers being made of insulating material, and the said rollers being adapted to receive the said transverse wire and to travel thereon, and sister-hooks detachably connected to and suspended from said frame and inclosing and supporting said conducting wire, substantially as described.

17. In an apparatus of the character described, the combination with a dirigible electric locomotive, and a trolley carried thereby, of a source of electricity, and a laterally movable conducting wire receiving its current therefrom, a plurality of transverse supporting wires stretched above said conducting wire, dogs secured at each end of said wire and adapted to engage in wooden supports therefor, and movable carriers traveling along said transverse wires and supporting said conducting wire, substantially as described.

18. In an apparatus of the character described, a deadman comprising a vertical frame with guideways therein; braces connected to said frame and means for securing the said frame in position, of a second frame provided with antifriction rollers and adapted to slide laterally in said outer frame, the said inner frame being itself provided with guideways, and a wheeled frame also provided with antifriction rollers and traveling in said inner guide ways, and a grooved pulley journaled in said inner frame, substantially as and for the purposes described.

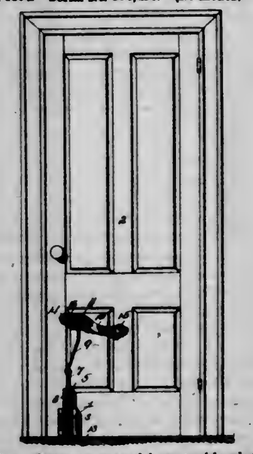
19. In a scraper for use in apparatus of the character described, the combination with a frame and a scraper body, mounted thereon of two wheels one at either side thereof and supporting the same; a fork journaled in the forward portion of said scraper frame and a guide wheel journaled in said fork, and a coupling link rigidly attached to said fork and adapted to turn said fork and said guide wheel in the direction of the draft strain, substantially as and for the purposes described.

544,052. RAILWAY-TICKET. HENRY A. RIDDLE, Chambersburg, Pa., assignor of one-fourth to John S. Kennedy, same place. Filed Feb 21, 1895. Serial No. 539,169. (No model.)



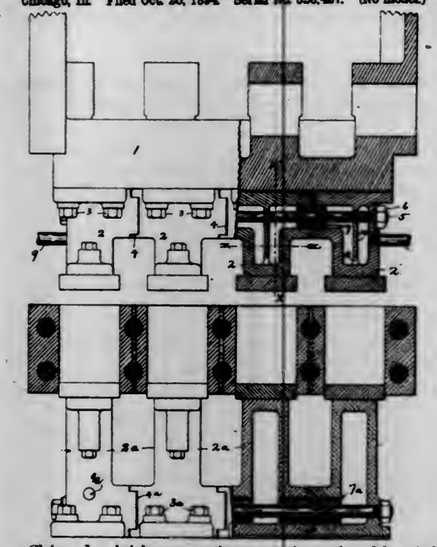
Claim.—The herein described ticket, comprising a series of coupons; an auditor's stub having the first of said coupons permanently united thereto so as to be collected therewith; and a leaf or page containing a table to be used in connection with the coupons, and containing the last of the coupons, all substantially as shown.

544,053. DOOR-CHECK. ROSS C. SIMMONS, East Tawas, Mich. Filed Nov. 30, 1894. Serial No. 530,430. (No model.)



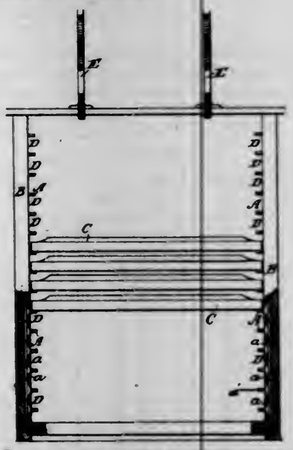
Claim.—A door fastener, comprising a guide plate provided at its top with a perforated ear and having at its sides inward extending flanges forming a way, a bolt passing through the perforated ear and provided at its lower end with a loop having straight sides to slide in said way, and provided with a lower portion or end adapted to engage a keeper, a lever fulcrumed at one end and having at its other end a handle, and a link connecting the bolt with the lever, substantially as described.

544,054. PLUNGER FOR BRICK-PRESSES. PETER L. SIMPSON, Chicago, Ill. Filed Oct. 20, 1894. Serial No. 526,427. (No model.)



Claim.—In a brick press, a plunger head, a series of detachable legs connected to said plunger head, a continuous steam passage through said series of legs, and a bolt passing through the steam space in said legs and serving to clamp them together.

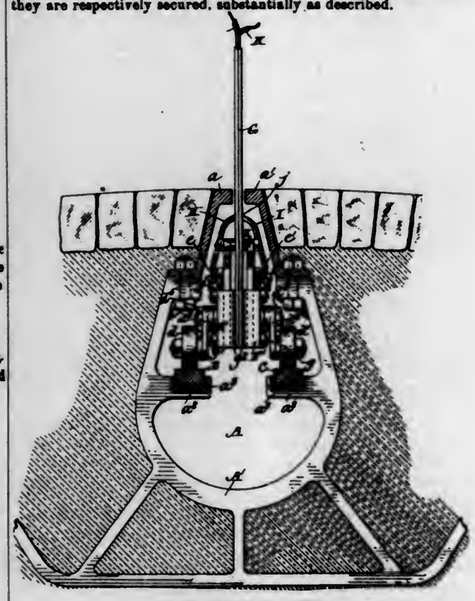
544,055. TYPE-CASE FRAME. WILLIAM SMITH, Glasgow, Scotland. Filed Oct. 1, 1894. Serial No. 524,639. (No model.) Patented in England July 3, 1894, No. 12,844.
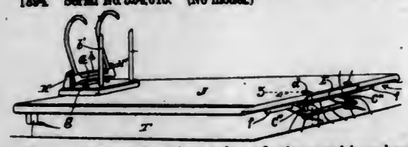


Claim.—In a type-case cabinet, the combination with the frame having an upright B at each of the four corners thereof, the pair of uprights at each end being provided with vertical grooves a^2—a^2 facing each other and extending from top to bottom of said uprights; of a plurality of supports each consisting of the metal runner A having flanges or distance-pieces a—a and rectangular transverse lugs a'—a' integral with said runner; the said lugs on each runner fitting in the slots in the end uprights A—A, and the said flanges on each runner abutting against the flanges of the runner next above or below, and being of the desired width for separating the type-case supports sufficiently to allow the said type-cases to enter between said supports, substantially as and for the purpose described.

544,056. CONDUIT SYSTEM FOR ELECTRIC RAILWAYS. JAMES THOMAS and WILLIAM R. THOMAS, Catasauqua, Pa. Filed Dec. 6, 1894. Serial No. 531,004. (No model.)

Claim.—In combination with a conduit, positive and negative conductors, insulating brackets for supporting said conductors in said conduit, trolley wheels adapted to engage said conductors, a trolley bar composed of two grooved plates bolted together, insulated guide plates provided with right angular flanges and bolt passages, and located upon each side of said bar, insulating sleeves in said bolt-passages, securing bolts passing through said sleeves, insulating washers between the heads and securing nuts of said bolts and said guides, slides mounted between said guide plates and having base flanges adapted to pass under the right angular flanges and thus guide the slides in their vertical movements, bow springs for actuating said slides; each of said springs having one end attached to the trolley bar and the opposite end secured to its respective slide, whereby said slide is normally depressed and can rise only under spring pressure, segmental bars pivoted near their centers to said slides respectively, and adapted to support the trolley wheels upon their ends and permit vertical movement of said wheels irrespective of the slides, and conductors for electrically connecting the slides with the car above; said conductors passing through the grooves in said trolley bar but passing out of the same a proper distance from the tops of the slides to which they are respectively secured, substantially as described.



544,057. BILL AND LETTER FILE. SIDNEY R. WHITESIDE, New York, N. Y., assignor to Thomas F. McGarry, Pasadena, Cal. Filed Oct. 1, 1894. Serial No. 524,613. (No model.)



Claim.—1. The bill and letter file set forth comprising a base plate having at one end the two divided staples and their operative mechanism, and having on its under side at the other end the perforating appliance adapted to form a support for such other end and arranged to be operated by a downward pressure upon the base plate and having two perforating devices arranged at a distance apart equal to the distance between the file staples.

2. The bill and letter file set forth having on the under side of its base plate at the end opposite that upon which the staples are fixed, a perforating appliance adapted to form a support for that end of the base plate and arranged to be operated by a downward pressure upon that end of the base plate.

3. The combination of the perforated base plate, the punch carrier and spring support arranged beneath the end of the base plate and provided with punches arranged to enter the perforations in the base plate.

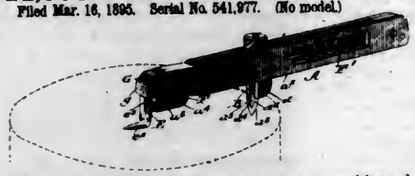
4. The combination of the base plate; the punch carrier and spring support secured to the under side of the base plate and provided with the punch projecting upward therefrom; the guide plate arranged between the punch carrier and the base plate and perforated to allow the punch to play therethrough.

5. The combination of the perforated base plate, the punch carrier and spring support arranged beneath the end of the base plate and provided with a punch projecting upward therefrom, and the spring guide plate arranged between the punch carrier and the base plate and perforated to allow the punch to play therethrough.

6. The bill file comprising the perforated base plate having its under side cut away at the front end to form the gage recess; the punch carrier and spring support arranged beneath the end of the base plate and provided with a punch projecting upward therefrom; the spring guide plate arranged between the punch carrier and the base plate and perforated to allow the punch to play therethrough.

7. The combination of the perforated base plate, the punch carrier and spring support arranged beneath the end of the base plate and provided with a punch tubular at its cutting end and formed into V shape at such end and arranged to enter the perforation in the base plate.

544,058. CAN-OPENER. AUGUST G. CHALOUPKA, Charlevoix, Mich. Filed Mar. 16, 1895. Serial No. 541,977. (No model.)



Claim.—1. A device of the class described, comprising a slotted body carrying an adjustable slide or plate upon the end of which is pivotally mounted a knife or cutter, the latter being adapted to be secured in either operative or closed position by adjustment of the slide, substantially as set forth, a point or prod pivotally mounted at the end of said slotted body and adapted to be folded rearwardly upon its pivot and inclosed within the slot, and means for securing the point or prod in open operative position, substantially as and for the purpose set forth.

2. A device of the class described, comprising a longitudinally slotted body, a plate or slide mounted within said slot and carrying the set nut, a knife or cutter pivotally carried upon the end of said slide and embodying a body portion and a cutter projecting therefrom, said knife or cutter being adapted to be secured in operative or closed position by adjustment of the slide and set nut, substantially as set forth, a point or prod having an elongated bearing and pivotally mounted at the end of said slot, the point or prod being provided with lateral studs or pins adapted to engage recesses or notches in the front edge of the slotted body, and a spring bearing upon said point or body and adapted to retain the studs in such engagement, the prod being adapted to be moved upon its elongated bearing from engagement with the spring and turned rearwardly upon its pivot for inclosure within the slot, substantially as and for the purpose set forth.

3. The herein described device of the class described, comprising the longitudinally slotted body, the slide or plate mounted within said slot, the set nut, the knife or cutter pivotally mounted upon said slide and embodying the body portion having an abutting end and the knife or cutter proper, the point or prod embodying the body portion having the elongated opening by which it is pivotally mounted in the slotted body and provided with the lateral studs or pins adapted to engage the recesses or notches in the front edge of the slotted body portion, the latter being provided with a flat spring plate bearing against the edge of the body portion of the point or prod and with the extension at the under side of its front end, substantially as and for the purpose set forth.

4. An improved can opener of the class described, embodying a pivotal bearing point or fulcrum and having a slotted body, and a plate or slide adjustable within said slot and carrying at its end a pivotally mounted knife or cutter embodying an abutting end or edge adapted to bear against the under edge of the body and adapted to be turned into closed position against the edge of the body, said knife or cutter being secured in either operative or closed position by the adjustment of the slide, substantially as and for the purpose set forth.

5. A can opener of the class described, embodying a pivotal point or fulcrum at one end and provided with a longitudinally slotted body, a plate or slide mounted within said slot, a set nut, and a knife or cutter pivotally mounted upon and carried by the end of said slide which projects from the slot and embodying a body portion having an abutting end or edge adapted to bear against the bottom edge of the slotted body and a projecting knife or cutter proper, the knife or cutter being adapted to be secured in either open position or folded in closed position against the edge of the body by adjustment of the carrying slide and set nut, substantially as and for the purpose set forth.

6. A device of the class described, comprising a slotted body, a point or prod pivotally mounted within said slotted body upon an elongated bearing and provided with lateral studs or pins adapted to engage recesses or notches in the edge of said body, and a spring device for holding said studs into such engagement, the point or prod being adapted to be turned upon its pivot into open operative position or into closed position within the slot, substantially as and for the purpose set forth.

7. A device of the class described, comprising a slotted body, a point or prod pivotally mounted at the front end of said slot and embodying a body portion having an elongated bearing and lateral studs or pins adapted to engage recesses or notches in the front edge of said slotted body and a projecting angular point or prod proper, and a flat spring plate secured to the slotted body and bearing against the front edge of the body of the point or prod, substantially as and for the purpose set forth.

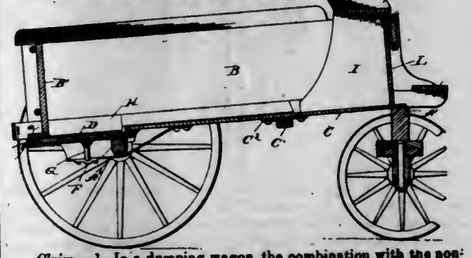
8. An improved can opener of the class described, having at one end a pivotally mounted or hinged point or prod adapted to be turned into closed position within the body of the device, and a sliding cutter adapted to be folded into closed position against the edge of the body, the relative arrangement being such that the folded or closed cutter forms a support for the point or prod when the latter is in closed position within the body, substantially as and for the purpose set forth.

9. An improved can opener of the class described, having a point or prod pivotally mounted or hinged at one end and adapted to be folded or turned into closed position within the body of the device, and means for retaining the point or prod in open operative position, and a longitudinally adjustable slide or plate carrying a knife or cutter pivoted upon the projecting end of the slide and adapted to be secured in open operative position against the edge of the body or turned or folded into closed position against said edge of the body of the device, substantially as and for the purpose set forth.

544,059. COFFEE SURROGATE. JOSEPHUS W. CURRY, Beda, Ky. Filed June 8, 1895. Serial No. 552,068. (No specimens.)

Claim.—A substitute for coffee including rye, extract of licorice, sugar, white of egg and fluid extract of dandelion, in substantially the proportions specified.

544,060. DUMPING-VEHICLE. OTIS E. DAVIDSON, Nashville, Tenn. Filed Mar. 19, 1895. Serial No. 542,399. (No model.)



Claim.—1. In a dumping wagon, the combination with the non-dumping frame mounted on the running gear, of a pivoted section forming one end of the bottom of the wagon body and an independent pivoted section movable toward and from the first section to lock the same and an operating lever for the latter section; substantially as described.

2. In a dumping wagon, the combination with the non-dumping frame mounted on the running gear, of a section pivoted on said frame forming a portion of the bottom of the wagon body and an independently pivoted section having a bodily movement in beneath the edge of the first mentioned section, whereby the latter is locked against movement and an operating lever; substantially as described.

3. In a dumping wagon the combination with the non dumping frame and floor section pivoted in fixed bearings on said frame and an independent floor section pivoted on movable bearings and cooperating with the first mentioned section to lock the same and an operating lever; substantially as described.

4. In a dumping wagon, the combination with the non dumping frame, the floor section pivoted thereon and the independent floor section pivoted on the crank shaft and bodily movable thereby cooperating with the first section to lock the same; substantially as described.

5. In a dumping wagon, the combination with the non dumping frame rigidly connected with a rear cross axle, of a floor section having its forward edge overlying and supported by said cross axle, a crank shaft journaled in the non dumping frame for moving said floor section and an operating lever; substantially as described.

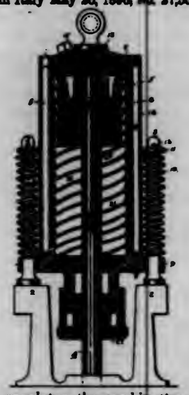
6. In a dumping wagon, the combination with the non-dumping frame and cross axle rigidly secured thereto, of the floor section pivoted on a crank axle and overlying and supported by the rigid cross

axle at one edge, the projections at the opposite edge of said section the clips carried by the wagon frame in which said projections are received, and means for turning the crank axle to move the section, and withdraw the projections from the cleats, substantially as and for the purpose set forth.

7. In a dumping wagon, the combination with the non-dumping frame, the floor section pivotally mounted thereon and the cross axle rigidly connected with said frame, of a second floor section pivoted on the crank shaft and having its forward edge overlying and resting on the cross axle and underlying and supporting the cooperating floor section when in normal position and an operating lever; substantially as described.

8. In a dumping wagon, the combination with the non dumping frame having the cross axle rigidly secured thereto and the forward floor section pivoted thereon and weighted to automatically assume normal position, of the rear floor section, a crank shaft journaled in the non dumping frame and pivotally connected with the rear floor section, chips and projections forming the supporting connections between the non dumping frame and rear edge of the rear floor section and an operating lever for said crank shaft, the relative proportioning of said parts being such that when in normal position the forward edge of the rear floor section will overlie the cross axle and project beneath and support the rear edge of the front floor section; substantially as described.

544,061. GOVERNOR FOR ENGINES. AUGUSTE DIDSCOTTE, Odessa, Russia. Filed Nov. 10, 1891. Serial No. 411,535. (No model.) Patented in Belgium Jan. 8, 1890, No. 89,115; in France Jan. 23, 1890, No. 208,322, and in Italy May 20, 1890, No. 27,533 .431.



Claim.—1. In a regulator, the combination of a plurality of opposing surfaces, each provided with continuous threads, the threads of the opposing surfaces being inclined so as to cross each other, a reservoir containing fluid acted upon by said threads, a movable part controlled by said fluid, a motor or equivalent device, by which said piston is caused to revolve, and suitable connections between said reservoir and admission valve of said motor, or equivalent device, to control the admission of the acting fluid.

2. In a regulator, the combination of a plurality of opposing cylindrical surfaces, each provided with continuous threads, the threads on the opposing surfaces being inclined so as to cross each other, one of said cylinders being free to move longitudinally and the other being adapted to revolve, a reservoir containing fluid acted upon by said threads having a movable part controlled by said fluid, a motor or equivalent device, by which one of the elements is caused to revolve, and suitable connections between said movable part and the admission valve of said motor, or equivalent device, to control the admission of the acting fluid.

3. In a regulator, the combination of an inclined cylindrical surface provided with continuous threads, a piston provided with continuous threads inclined so as to cross the threads on the case, a motor, or equivalent device by which said piston is caused to revolve, a reservoir containing fluid acted upon by said threads, said case being adapted to move longitudinally, suitable connection between said case and the admission valve of said motor, or equivalent device, to control the admission of the acting fluid.

4. In a regulator, the combination of a case provided with continuous threads, a piston provided with continuous threads, the threads on the piston and case being inclined so as to cross each other, an annular reservoir surrounding said case, said case being adapted to move longitudinally, a motor or equivalent device, by which said piston is caused to revolve and suitable connections between said case and the admission valve of said motor, or equivalent device, to control the admission of the acting fluid.

5. In a regulator, the combination of a case provided with continuous threads, a piston provided with continuous threads, the threads on the piston and case being inclined so as to cross each other, said case being adapted to move longitudinally, guides for the case and means for transmitting the movements of the case to the admission valve of the motor, or analogous structure, to be regulated.

6. In a regulator the combination of a case provided with continuous threads, a piston provided with continuous threads, the threads on the piston and case being inclined so as to cross each other, a motor or analogous structure, to be regulated, a shaft connecting a moving part of the motor and said piston, said shaft being bored at its upper end and a pin projecting from the upper cover of the case into the bored end of the piston, a reservoir containing fluid acted upon by said threads, a movable part controlled by said fluid and suitable connections between said case and the admission valve of said motor, or analogous structure, to control the admission of the acting fluid.

7. In a regulator the combination of a case provided with continuous threads, a piston provided with continuous threads, the threads on the piston and case being inclined to cross each other said case being controlled by fluid acted upon by said threads adapted to have a longitudinal motion and said piston being adapted to have a rotary motion, guides for controlling the movements of the case, a spring for resisting the propelling action of the piston against said case, a motor or equivalent device, by which said piston is caused to revolve, and suitable connections between said case and the admission valve of said motor, or equivalent device, to control the admission of the acting fluid.

544,062. BANDAGE. RICHARD JACKS, Quincy, Cal. Filed Dec. 15, 1894. Serial No. 531,966. (No model.)



Claim.—1. In a device of the class described, the combination of a frame having a temple-loop, adapted to extend over the front of the head, a chin-loop having its sides pivotally connected at intermediate points to the extremities of the temple-loop, and adapted to extend around the back of the head, a contractile or elastic strap connecting the front portion of the chin-loop with the sides of the temple-loop, to hold the loops normally in perpendicular planes, and a pad carried by the chin-loop to support the lower jaw of the wearer, substantially as specified.

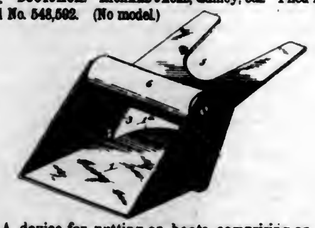
2. In a device of the class described, the combination with a frame having temple and chin-loops, and means for securing them upon the head of a wearer, of a pad to support the lower jaw of the wearer, an apron attached to the chin-loop for supporting the pad, and means for vertically adjusting the intermediate portion of the apron to vary the pressure of the pad, substantially as specified.

3. In a device of the class described, the combination with connected temple and chin-loops, and means for securing them to the head of a wearer, of a pad to support the lower jaw of the wearer, an apron having opposite flaps connected at their outer ends to the chin-loop and extending under the pad, keepers or loops on the outer surface of the pad, and cords or tapes attached to the free edges of the flaps, extending through said keepers or loops, on the pad and adapted to be tied beneath to support the pad in the desired position to exert the requisite pressure against the jaw, substantially as specified.

4. In a device of the class described, the combination of pivotally connected temple and chin-loops constructed of pliable metal, whereby they may be bent to conform to the head of the wearer, contractile or elastic straps connecting the front portion of the chin-loop to an intermediate part of the temple-loop, means for securing said loops in operative positions upon the head, and a pad carried by the chin-loop for supporting the lower jaw, substantially as specified.

5. The combination of a temple-loop, a chin-loop pivotally connected at its sides to the extremities of the temple-loop and extending in rear thereof, cords or tapes attached to the extremities of the chin-loop and adapted to be tied in rear of the head of the wearer, contractile or elastic straps connecting the front portion of the chin-loop to an intermediate part of the temple-loop, a pad supported by the chin loop to bear against the lower jaw, a covering of fabric attached at its front edge to the temple-loop and at its lower edge to the rear portion of the chin-loop, and cords or tapes for taking up the slack of the covering, substantially as specified.

544,063. BOOTJACK. RICHARD JACKS, Quincy, Cal. Filed May 8, 1895. Serial No. 548,592. (No model.)

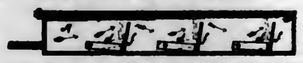


Claim.—1. A device for putting on boots, comprising an open frame or stirrup, a semi-cylindrical rib or support secured beneath said stirrup, and a roller interposed between the side arms or ears of said stirrup, substantially as and for the purpose described.

2. In a boot jack, an open frame or stirrup, in combination with a roller mounted within said frame or stirrup at or near the top thereof, and a rearwardly projecting fork located about in the same horizontal plane with said roller, all arranged and adapted to operate in the manner specified.

3. In a boot jack, an open frame or stirrup made from a single piece of sheet metal, comprising an extended base, inclined side arms at right-angles to said base, and a rearwardly extending fork also formed integrally with said stirrup, in combination with a roller interposed between the side arms of said stirrup, and a semi-cylindrical rib or support located beneath said stirrup, substantially as and for the purpose described.

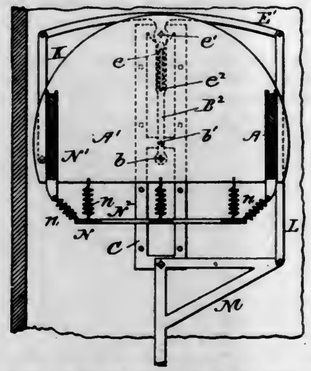
544,064. MUD-PAN. HENRY R. JUDD, Elmira, N. Y. Filed Sept. 12, 1894. Serial No. 522,535. (No model.)



Claim.—1. A mud pan having its sides converging as it approaches the bottom, having an inlet pipe at one end and an opening at its opposite end, a cover and gates swingingly mounted transversely within the pan, as set forth.

2. A mud pan having an inlet pipe at one end, an opening at its opposite end, gates mounted transversely therein, said gates comprising the bracket, means for swingingly mounting it and a wing secured thereto.

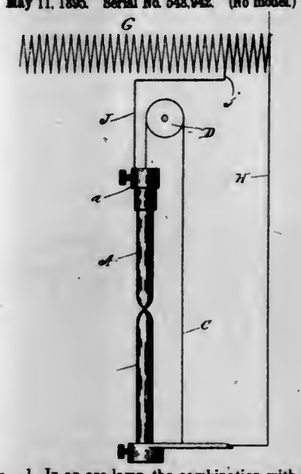
544,065. SELF-LEVELING BERTH. WILLIAM T. MILLIGAN, Boston, Mass., assignor, by mesne assignments, to the Briggs Ship's Berth Company, Portland, Me. Filed Jan. 3, 1895. Serial No. 533,687. (No model.)



Claim.—1. In a self leveling berth mechanism, a berth pivotally hung from a vertical lever of the first order and mechanism comprising a weighted lever and suitable connections between said weighted lever, said vertical lever and said berth, whereby said berth is oscillated about its axis and the upper end of said vertical lever is simultaneously rocked to move the axis of the berth laterally, as set forth.

2. In a self-leveling ship's berth, mechanism whereby the berth is moved laterally while it maintains a horizontal position, said mechanism consisting of a lever pivoted to a suitable support and pivotally connected at its lower end to the berth, its upper end being provided with a slot, a yoke pivoted above the berth to said support and having a vertical arm provided at its lower end with a pin located in said slot a weighted lever hung below said berth and connections substantially as described between said governor said yoke and said berth, all as and adapted for the purposes described.

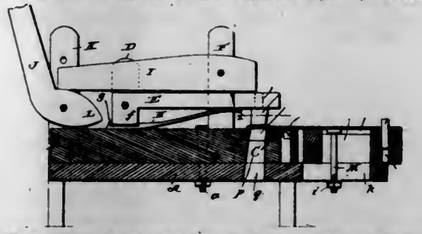
544,066. ELECTRIC-ARC LAMP. JOHN A. MOSHER, Chicago, Ill. Filed May 11, 1895. Serial No. 548,942. (No model.)



Claim.—1. In an arc lamp the combination with a service electric circuit leading to the lamp, and with an electro-magnet G, within the lamp, and whose coil is included within the service circuit, of a second electric circuit comprised within the lamp, and being wound upon the magnet G, and electrically connected with the service circuit at one side of the magnet and also intermediate of the ends of the magnet, and a pair of mutually approaching carbons forming a part of the lamp circuit and having their points continuously in contact.

2. As an article of manufacture an arc lamp comprising a frame, a transforming agent carried by the frame and having its secondary circuit wholly within the lamp, and a pair of movable electrodes forming a part of the secondary circuit and means for maintaining the electrodes in continuous contact, substantially as described and for the purpose specified.

544,067. SAW-GUMMER. WILLIAM MCLEAN and EDWARD DAVIES, Tie Siding, Wyo. Filed Apr. 16, 1895. Serial No. 545,956. (No model.)



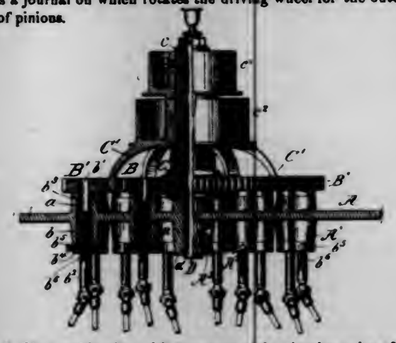
Claim.—In the saw gummer described, the combination of a bed, uprights D, rising from the bed, the arm E, pivoted between said uprights and having the depending portion *f*, at its connected end, a punch carried by the free end of said arm, uprights F, arranged in advance of the uprights D, the lever I, fulcrumed adjacent to its forward end between the uprights F, above the arm E, and having its rear end extending to the rear of said arm, uprights K, arranged in rear of the uprights D, the hand lever J, fulcrumed between the uprights K, below the rear end of the lever I, and having the cam portion L, adapted to engage the under side of said lever I, and the spring H, having the recess *g*, receiving the depending portion *f*, of the arm E, and interposed between said depending portion and the bed; said spring bearing at its forward end against the under side of the arm E, adjacent to the free end thereof, all substantially as specified.

544,068. DRIVING MECHANISM FOR MULTIPLE DRILLS. AUGUST J. OEHRING, Chicago, Ill. Filed June 11, 1892. Serial No. 436,307. (No model.)

Claim.—1. The combination with a supporting plate of a shaft mounted in and projecting at right angles from said plate, concentric circular series of pinions mounted on said plate about the shaft in a plane parallel with the plate, independently revolubie driving gears mounted on said shaft and intermeshing with said pinions and jointed drill spindles projecting from the pinions.

2. The combination, with two concentric circular series of shaft

pinions, one external to the other, of two independently rotatable driving wheels engaged one with the inner and the other with the outer of said series of pinions, the driving wheel having engagement with the inner series of pinions being provided with a hub which forms a journal on which rotates the driving wheel for the outer series of pinions.



3. The combination with two concentric, circular series of shaft pinions arranged one within the other, in the same plane, of two independently rotatable driving wheels of which that engaging the outer series of pinions is dished to embrace the inner series of pinions and of which that engaged with the said inner series of pinions is provided with a hub that forms the journal on which the other of said driving wheels rotates.

4. The combination with a frame supporting two concentric, circular series of shaft pinions, of a shaft in the common axis of said series of pinions, a driving wheel for the inner series of pinions, mounted on said shaft and provided with an elongated hub, a driving wheel for the outer series of shaft pinions, mounted to rotate on said hub as a journal, and a pulley removably secured to the said hub externally to the last mentioned driving wheel.

5. In combination with a frame supporting two or more circular, concentric series of shaft pinions and a shaft in the common axis of said series of pinions, a driving wheel for an inner series of pinions having a hollow hub surrounding said central shaft, a belt pulley removably secured to said hub, and a driving wheel for the next outer series of pinions journaled on said hollow hub, between the belt pulley and the driving wheel having said hollow hub.

544,069. FLUME-GATE. BENJAMIN PEARSON, Redlands, Cal. Filed May 16, 1894. Serial No. 511,475. (No model.)



Claim.—1. In a flume-gate, the combination of a body or valve having an upturned hand-piece and a spring stem for pivoting the body to the flume, having its upper end spoon-shaped; substantially as described.

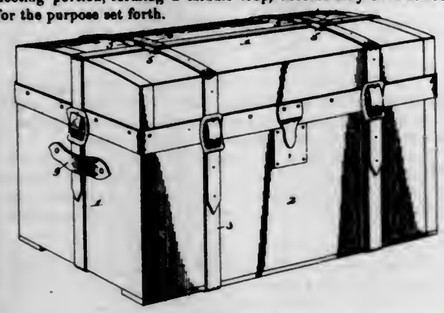
2. In a flume gate, the combination of a body or valve having its outer edge up-turned, a flat central raised strip thereon, a spring stem for pivoting the body to the flume, said stem having one of its ends inserted beneath said strip and having its opposite end spoon-shaped, substantially as described.

3. In a flume gate the combination of a body, a spring stem by which the body may be pivoted to a flume, a plate connected with the flume for supporting the gate and a thimble against which the gate rests when in its closed position, substantially as described and for the purpose set forth.

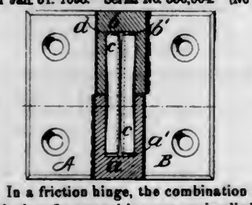
544,070. TRUNK-STRAP LOOP. LOUIS PHELAN, San Francisco, Cal. Filed Apr. 28, 1894. Serial No. 509,373. (No model.)

Claim.—1. The combination with crossing trunk and package straps, of a keeper, located at the point of crossing of the said straps to hold them in a relative fixed position, the same consisting of three loops in communication at their contiguous ends for the passage of one of the straps through the several loops, and the middle loop having lateral openings intermediate of the end loops for the free passage therethrough of the other, or crossing strap, the two straps being held together at the point of crossing by the sides of the middle loop, substantially as described.

2. A keeper for crossing trunk and package straps, to be located at the point of crossing of the said straps to hold them in a fixed relative position, after being properly adjusted, the same consisting of a blank of flexible material, having oppositely disposed side flaps, at each end, said flaps being folded to form end loops, and a connecting portion spanning the space between the end loops and attached to the flaps on each side of their meeting, or inner ends, the space comprised between the body portion of the blank and the said connecting portion, forming a middle loop, substantially as described, for the purpose set forth.



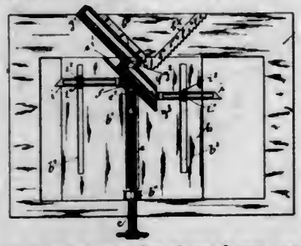
544,071. FRICTION-HINGE. EMMELINE W. PHILBROOK, Boston, Mass. Filed Jan. 31, 1895. Serial No. 536,864. (No model.)



Claim.—1. In a friction hinge, the combination with the leaves, of a pin or pintle therefor comprising two semi-cylindrical parts having their flat faces adjacent, and correspondingly bowed or bent toward each other, and a rod between said parts for forcing them apart, substantially as described.

2. In a friction hinge, the combination with the leaves, of a pin or pintle for connecting the same, comprising two semi-cylindrical parts having their flat faces adjacent, each having a longitudinal groove along said faces and being correspondingly bowed or bent in opposite directions, and a rod or pin in said groove, substantially as described.

544,072. TOOL FOR MAKING FRAMES. JOHANN SCHULER, Schwabach, Germany. Filed May 22, 1895. Serial No. 550,193. (No model.) Patented in Germany Sept. 14, 1894, No. 79,670.

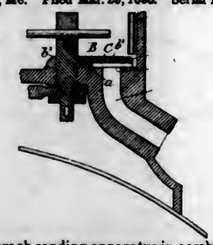


Claim.—1. A tool for making picture-frames, consisting of a guide-frame, a carriage mounted to slide in said guide-frame, a screw-spindle mounted on said carriage transversely to the guide-frame, adjustable pressure-bars arranged on the carriage at each side of the screw-spindle, a clamp adapted to be actuated by the screw-spindle, and means on the guide-frame co-acting with the clamp and pressure-bars for holding the picture-frame sections in the proper position, substantially as set forth.

2. A tool for making picture-frames, consisting of a guide-frame, a carriage mounted to slide therein and provided with slots, a screw-threaded spindle mounted on the carriage parallel with said slots and transversely to the guide-frame, pivoted pressure-bars having means for adjusting them along said slots, a clamp adapted to be operated by the screw-threaded spindle, and means on the guide-frame co-acting with the clamp and the pressure-bars for securing the picture-frame sections in proper position, substantially as set forth.

3. A tool for making picture-frames, consisting of a guide-frame provided with serrated or toothed cleats arranged at right angles to each other and located at one side of the guide-frame, a carriage guided in said frame, a screw-threaded spindle mounted on the carriage, transversely to the guide-frame, pivoted and adjustable pressure-bars mounted on the carriage, and a clamp adapted to be operated by the screw-threaded spindle, substantially as set forth.

544,073. TRACK-SANDING APPARATUS. CHARLES W. SHERBURNE, Boston, Mass., assignor to The Automatic Track Company, same place and Portland, Me. Filed Mar. 29, 1895. Serial No. 543,630. (No model.)



Claim.—1. In a track sanding apparatus in combination with the floor of a sand box or stationary surface in which is the opening to the sand supply pipe or passage, a swinging valve B, the pipe covering section of which is separated from the said surface about the opening by a relatively deep recess or space, and an air injecting or supply pipe, the outlet of which is within the sand box in operative proximity to the said valve when over the sand supply opening, substantially as described.

2. In a track sanding apparatus the combination of a swinging valve and a scraper for removing adhesions from its surface.

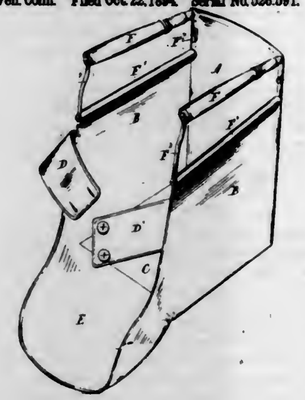
3. In a track sanding apparatus the combination of the inlet to the sand supply pipe or passage, a swinging valve the surface of which is raised above said inlet and a stationary scraper adjacent to the inlet over which the valve is moved in uncovering the opening to the supply pipe or passage and by which adhesions are removed from its surface, substantially as described.

4. In a track sanding apparatus in combination with the sand box, the sand supply delivery pipe or passage and its controlling valve movable in the box, and the air injecting or supply pipe, the outlet to which is in the sand box above the entrance to the sand distributing pipe and out of line with the direct thrust of the valve in its movements, as and for the purposes described.

5. The combination in a track sanding apparatus of a sand box, the sand outlet a^2, the valve B, and an air supply pipe the end of which is vertically arranged in relation to the valve and sand outlet and the outlet to which is out of line with the thrust of the valve, as and for the purposes described.

6. In a track sanding apparatus in combination with a track sanding box, the said outlets, the valves B, B', the air supply pipe taking its air through a reducer from a common source and having two outlets near each sand opening which are brought out of line with the thrusts of the valves by bending the ends of said pipe downward so that they occupy a vertical relation at their ends to the said valves, as and for the purposes described.

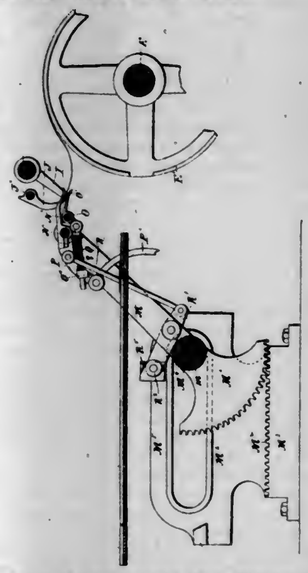
544,074. PORTABLE BABY-CARRIER. ALBERT W. WEBSTER, New Haven, Conn. Filed Oct. 22, 1894. Serial No. 526,591. (No model.)



Claim.—1. A frameless, portable baby-carrier, comprising a flexible back two flexible sides, and a seat with which the said sides and back have flexible connection, provided at the upper ends of its sides with handles, furnished at the forward ends of its sides with means for securing the child in place, and having at the forward edge of its seat a depending flap, substantially as set forth, and whereby the carrier may be folded into compact form when not in use, on account of its frameless character.

2. A frameless, portable baby-carrier consisting of a chair-like body having a flexible back, flexible sides and a seat, handle bars secured to the upper ends of the said sides, handle links secured to the ends of the said bars, and handles secured to the upper ends of the said links, substantially as described.

544,075. PRINTING-PRESS. STURGES WHITLOCK, Shelton, assignor to the Whitlock Machine Company, Birmingham, Conn. Filed Jan. 5, 1894. Serial No. 495,782. (No model.)



Claim.—1. In a printing-press, the combination with the registering devices thereof, of an impression cylinder, transfer devices located horizontally or substantially horizontally in front of the said registering devices, a flier constructed and arranged to take the sheets when it is in motion, from the transfer devices, at a point located close to the impression cylinder and below the top thereof, and a delivery table to receive the sheets when they are released by the flier, substantially as described, and whereby the sheets are fed with their printed sides uppermost and without face contact, by the transfer devices to the flier when the latter is in motion.

2. In a printing-press, the combination with the registering devices thereof, of an impression cylinder, transfer devices located horizontally or substantially horizontally in front of the registering devices, and including a transfer shaft, transfer fingers, transfer grippers, and means for rotating the said fingers and grippers, and also means for operating the grippers to move them toward and away from the fingers; a flier provided with grippers for taking the sheets, when it is in motion, from the transfer devices at a point located close to the impression cylinders and below the top thereof, means for operating the grippers of the flier, and a delivery table, substantially as described, and whereby the sheets are fed, with their printed sides uppermost and without face contact, by the transfer devices into the grippers of the flier when the latter is in motion.

3. In a printing press, the combination with the registering devices thereof, of an impression cylinder, vertically movable boxes in which the same is mounted, grippers carried by the said cylinder, operating devices for the said grippers, transfer devices connected with the boxes of the said cylinder, so as to partake of the reciprocating movement thereof and including transfer fingers and transfer grippers, a rotary shaft on which the said fingers are mounted, a rock-shaft carried by the said rotary transfer-shaft, revolved thereby and having the transfer grippers mounted upon it; means for rocking the said gripper-shaft and thus operating the grippers, including a reciprocating cam arranged to move horizontally into and out of the path in which an arm mounted on one end of the said rock-shaft revolves; and con-

nections between the said cam and the operating devices of the grippers of the impression cylinder, substantially as described.

4. In a printing-press the combination with an impression cylinder journaled in vertically movable boxes, means for imparting vertical reciprocation to the said boxes and hence to the cylinder, registering devices located above the cylinder, transfer devices connected with the boxes of the cylinder so as to partake of the vertical reciprocations thereof, and located horizontally in front or substantially horizontally in front of the registering devices, a circular or disk-shaped slitter or die having a circumferential groove, combined with the transfer devices, and partaking of the movement thereof, a circular knife entering the groove of the die, a plunger in the outer end of which the knife is mounted, a socket-piece containing the said plunger, a spring located in the socket-piece and arranged to act upon the plunger to lift the knife against the die, and a shaft connected with the frame of the press, and carrying the said socket-piece, substantially as described, and whereby the knife is lifted by the spring to follow the slitter when the same is moved upward with the transfer devices and cylinder, and whereby the spring is compressed to permit the knife to be pushed downward by the die when the transfer devices and cylinder make their downward movement.

5. In a printing-press, the combination with the other instrumentalities thereof, of a flier comprising two arms terminating at their lower ends in toothed segments, and a tie connecting the said arms; stationary horizontal racks with which the segments intermesh, operating connections with the flier whereby the said segments are rocked back and forth on the racks, and brackets connected with the frame of the press and containing horizontal slots receiving the ends of the tie to assist in holding the flier in place, substantially as described.

6. In a printing-press, the combination with the other instrumentalities thereof, of a fly comprising two fly-arms movably connected at their lower ends with the press-frame, a tie uniting the said arms, and brackets connected with the press-frame and containing horizontal slots receiving the ends of the tie to assist in holding the fly in place, substantially as described.

7. In a printing-press, the combination with the other instrumentalities thereof, of a fly including fly-arms, an upper gripper-shaft mounted in the upper ends of the said arms so as to rock therein, and carrying a series of grippers, a lower gripper shaft carried by the upper gripper shaft and having a series of grippers mounted upon it, a spring for holding the grippers on the lower shaft normally closed, and means for rocking the lower gripper shaft for opening the lower grippers, comprising a link, means connecting the link and lower gripper shaft, a lever fulcrumed on one of the fly-arms, and two toes located in different planes and substantially at the opposite ends of the instroke and outstroke of the fly, in position to be engaged by the said lever for operating the same, substantially as described.

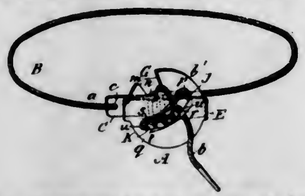
8. In a printing-press, the combination with the other instrumentalities thereof, of a fly comprising two fly-arms having movable connection at their lower ends with the press-frame, an upper gripper-shaft mounted in the upper ends of the arms so as to rock therein, a lower gripper-shaft connected with the upper gripper-shaft and arranged to rock in its bearings, a rocker-arm connected with the upper gripper shaft, a rocker-rod connected with the said rocker-arm and also connected with the press-frame at a point below the connection therewith of the fly-arms, and means for operating the lower gripper-shaft independently of the upper gripper-shaft, substantially as described.

9. In a printing press, the combination with the delivery table thereof, of a reciprocating jogger located at the outer end of the said table, constructed with a series of upwardly extending pins, connected with the lower face of the table so as to leave the upper face thereof unobstructed and furnished with a depending operating arm; an oscillating flier comprising two fly arms, and a tie located below the table and uniting the said arms, between which it extends transversely; and a spring for retracting the jogger after the same has been forced outward away from the table by the engagement of the tie of the flier with the depending arm of the jogger, near the end of the outward movement of the flier, substantially as set forth.

10. In a printing-press, the combination with the other instrumentalities thereof, of a fly including two fly-arms having movable connection at their lower ends with the press-frame to which they are in effect movably fulcrumed, a tie connecting the said arms, a link connected with one of the arms, a long fly-lever connected at its upper end with the said link, and fulcrumed to the press-frame, a short link connected with the lower end of the fly-lever, and a driving-crank connected with the said link last mentioned, and shorter than the same, substantially as set forth, and whereby the fly is caused to move comparatively slowly on its outward stroke, and very slow as it approaches the end thereof.

11. In a printing-press, the combination with the other instrumentalities thereof, of a flier comprising two arms terminating at their lower ends in toothed segments, and a tie connecting the said arms; stationary horizontal racks with which the segments intermesh, means for holding the said segments upon the racks as the former rock back and forth upon the latter, a link connected with the flier, a long lever connected at its upper end with the said link, and fulcramed between its ends to the frame of the press, a short link connected with the lower end of the said lever, and a driving-crank connected with the link last mentioned, and shorter than the same, substantially as described, and whereby the flier is caused to move comparatively slowly on its outward stroke, and very slowly as it nears the end thereof.

544,076. FASTENING FOR CORDS OR THE LIKE. HARRY H. ABELL, Port Ewen, N. Y. Filed Apr. 9, 1895. Serial No. 545,056. (No model.)

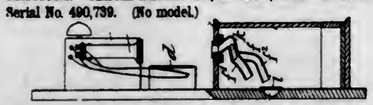


Claim.—1. The improved fastening, consisting of a fastener, having a body, a shank at rear thereof, and an eye carried by said shank, in combination with a cord fixed at one end in said eye, and free at its other end, and there adapted to be fastened to said fastener, said fastener having on the outer part of its body a recess, and at the face of said body a holder, whereby said cord can be fastened at its free end to said fastener by winding it around said shank, passing it through said recess and engaging it with said holder.

2. The improved fastener for cords and the like consisting of a body *b'* having rearwardly extending shanks C and E meeting near the center of the body, a peripheral notch at the edge of the body, and a tongue near the center of the body, said tongue and notch disposed at substantially right angles, and said shanks disposed obliquely relatively to said tongue and notch.

3. In a fastener for cords and the like, a metal body, said body having a long shank folded from its edge at one point toward the center at rear, and extending thence outwardly, and having fastening provisions whereby it can be secured to an object, and said body having another and shorter shank folded from its edge at another point toward its center at rear and joined to first mentioned shank, to reinforce it, said shanks adapted to receive the winding of a cord fastened to the fastener.

544,077. COIN SIGNAL APPARATUS FOR TELEPHONE PAY-STATIONS. SAMUEL ALEXANDER, Hartford, Conn. Filed Nov. 13, 1893. Serial No. 490,739. (No model.)



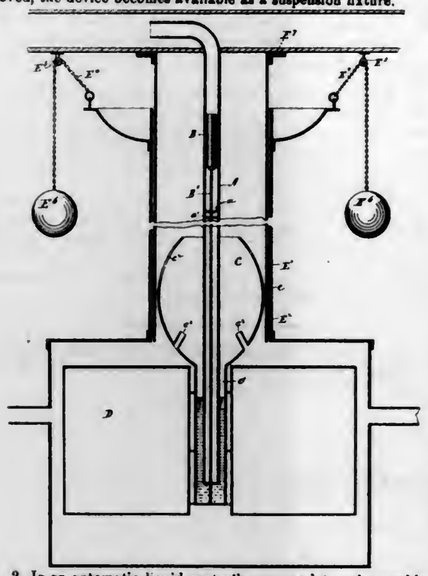
Claim.—1. In a signal sounding device for a telephone pay station, in combination, a back-board, a signal box secured thereto and having a cavity in the wall of the box, a coin guide or channel having an opening through the wall of the box and its lower end directed so as to discharge a coin against the cover plate of the cavity, all substantially as described.

2. In a signal sounding device for a telephone pay station, in combination, a back-board, a signal box secured thereto, a cavity in the inner wall of the box having a cover plate, and an open guide or channel having a series of openings adapted to throw the coin in succession and in alternation against the surface of the box and the cover plate of the cavity, all substantially as described.

3. In combination in a coin signal device for telephone pay stations, a back-board, a signal box secured to said board, a coin channel having a backwardly inclined inlet, the substantially horizontal run with trap in the side wall, and an inclined runway with its mouth adapted to discharge the coin against the inner wall of the signal box, all substantially as described.

544,078. LIQUID-CONTROLLING DEVICE. SAMUEL ALEXANDER, Meriden, Conn. Filed Mar. 27, 1894. Serial No. 505,235. (No model.)

Claim.—1. In an automatic liquid controller or regulator, the combination with a vertically arranged stationary feed pipe, of a vertically movable cup located below the said pipe, which is extended into it from its upper end, a sealing liquid located in the said cup and of greater specific gravity than the liquid fed through the pipe, a vertically movable fount located below the cup and arranged to receive the liquid discharged therefrom, and a float located in the said fount and constructed and arranged to lift the cup to increase the immersion of the lower end of the feed-pipe in the sealing liquid, substantially as described and whereby, by adapting the fount to be vertically moved, the device becomes available as a suspension fixture.



2. In an automatic liquid controller or regulator, the combination with a feed pipe, of a vertically movable cup having the said pipe extended into it, a sealing liquid of greater specific gravity than the liquid fed, located in the said cup, a vertically movable fount into which the liquid fed is discharged, a float located in the said fount and arranged to lift the cup to increase the immersion of the lower end of the feeding-pipe in the said liquid, and means for cutting off the feeding of the liquid through the pipe when the fount and cup are drawn down below their normal positions, substantially as described.

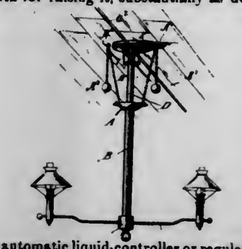
3. In an automatic liquid controller or regulator, the combination with a feed-pipe, of a vertically movable cup having the said pipe extended into it, a sealing liquid of greater specific gravity than the liquid fed, located in the said cup, a vertically movable fount into which the liquid fed is discharged, a float located in said fount and arranged to lift the cup to increase the immersion of the lower end of the feed pipe in the sealing liquid, and a valve located in the feed pipe and normally situated above its seat, and connected with a movable part of the device so that it is drawn down upon its seat when the fount is drawn down below its normal position, substantially as described.

4. In an automatic liquid controller or regulator, the combination with a feed pipe, of a vertically movable cup having the said pipe extended into it, a sealing liquid of greater specific gravity than the liquid fed, located in the said cup, a vertically movable fount into which the liquid fed is discharged, a float located in the said fount and arranged to lift the cup to which it is attached to increase the immersion of the lower end of the feed pipe in the sealing liquid, and a valve located in the feed pipe, normally located above its valve seat and connected with a movable part of the device, and drawn down upon its seat when the fount is pulled down below its normal position, substantially as described.

544,079. AUTOMATIC FLUID-REGULATOR. SAMUEL ALEXANDER, Meriden, Conn. Filed May 14, 1894. Serial No. 511,139. (No model.)

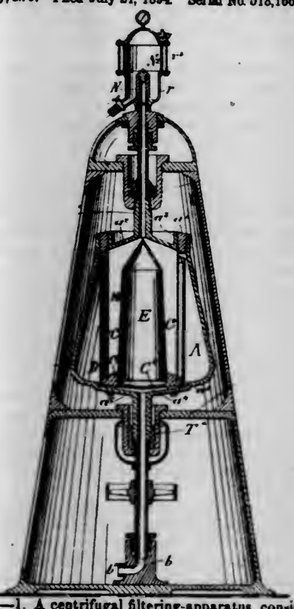
Claim.—1. In an automatic liquid controller or regulator, the combination with a stationary, vertically arranged feed-pipe, of a vertically movable cup located below the lower end of the said pipe, which is extended downward into it, a sealing liquid located in the said cup and of greater specific gravity than the liquid fed through the said pipe, a vertically movable fount located below the said pipe and cup, and arranged to receive the liquid fed as it is discharged from the cup, a float constructed independent of the cup and disconnected therefrom, and located in the fount in position to lift the cup for the purpose of increasing the immersion of the lower end of the pipe in the sealing liquid contained in the cup, and means for supporting the cup in position to maintain the immersion of the feed-pipe in its contained sealing liquid when the fount is drawn downward for the extension of the fixture, substantially as described.

2. In an automatic liquid controller or regulator, the combination with a feed-pipe, of a vertically movable cup having the said pipe extended into it, a sealing liquid of greater specific gravity than the liquid fed located in the said cup, a weight connected with the cup, and normally sustained in an elevated position, but operating to lift the cup on occasion, a vertically movable fount into which the feed pipe discharges, and a float located in the said fount and made independent of the cup and disconnected therefrom, but arranged to engage therewith for raising it, substantially as described.



3. In an automatic liquid-controller or regulator, the combination with a feed-pipe, of a vertically movable cup having the said pipe extending into it, a sealing liquid of greater specific gravity than the liquid fed located in the said cup, a weight connected with the cup, a stationary pipe encircling the feed-pipe and cup, a vertically movable pipe encircling the stationary pipe, a vertically movable fount connected with the lower end of the vertically movable pipe, and receiving liquid fed into it through the stationary pipe from the cup, a float located in the said fount, and made independent of the cup and disconnected therefrom and arranged to engage therewith for raising it, and a canopy connected with the upper end of the vertically movable pipe, and arranged to normally sustain the said weight in an elevated position in which it does not draw on the cup which it lifts to stop the flow of oil from the feed pipe when the fount, and hence the canopy, are drawn downward, substantially as described.

544,080. CENTRIFUGAL FILTERING-MACHINE. GUSTAV A. BACHMANN, Newark, assignor of one-fourth to Charles R. Myers, Atlantic City, N. J. Filed July 21, 1894. Serial No. 518,166. (No model.)



Claim.—1. A centrifugal filtering-apparatus, consisting of a rotary bowl, provided with an annular bottom supply-channel, a lower tubular shaft, an upper tubular shaft, a partition in the bowl separated from the same at the upper end, a screen surrounded by said partition, and a distributer at the center of the bowl, substantially as set forth.

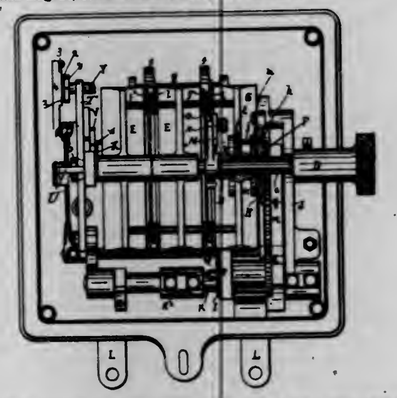
2. A centrifugal filtering-apparatus, consisting of a closed rotary bowl, tubular shafts at the top and the bottom of the bowl, an interior collar supported on the bowl and forming between it and the latter an annular supply-channel, a shoulder at the outer termination

of said channel, a partition supported in the bowl, a screen also supported in the bowl inside of the partition, and a central distributer inside of the screen, substantially as set forth.

3. A centrifugal filtering-apparatus, consisting of a closed rotary bowl, tubular shafts arranged at the top and bottom of the bowl, an interior collar supported on the bottom of the bowl and forming an annular supply-channel, a shoulder at the outer end of the channel, a cylindrical partition attached to said collar and provided with an inwardly-flaring upper edge, a screen supported by the collar and the top of the bowl, and a central distributer inside of the screen, substantially as set forth.

4. The combination of a closed rotary bowl, provided with supply-channels, a partition in the same, a screen inside of the partition, a distributer at the center of the bowl, tubular shafts at the top and bottom of the bowl, a nozzle at the upper end of the upper shaft, said nozzle being provided with radial outlet-openings, and a speed-reducing receptacle surrounding said nozzle and provided with a valved discharge-pipe leading therefrom to the vessels to be filled, substantially as set forth.

544,081. CAR-FARE REGISTER. STEPHEN M. BALSER, New York, N. Y., assignor of one-half to William H. Humphrey, Norfolk, Conn. Filed Aug. 14, 1894. Serial No. 520,245. (No model.)



Claim.—1. In a register, a registering wheel and a shaft therefor, combined with a ratchet and pawl, said ratchet having a series of holes, a sleeve on said shaft having a pin to enter said holes in said ratchet said sleeve being connected with said registering wheel, and means for operating said sleeve to cause the pin to release the ratchet, substantially as described.

2. In a register, a registering wheel and a shaft therefor, combined with a sleeve having a pin movable in a portion of said wheel, a ratchet wheel having apertures to receive said pin for turning said registering wheel, means for operating said pin to hold and release said ratchet wheel, and a pawl to operate said ratchet wheel, substantially as described.

3. In a register, the combination of a registering wheel, a longitudinally movable shaft carrying it, a pin carried by said shaft to turn said wheel, a ratchet wheel having holes to receive said pin, and a pawl to operate said ratchet wheel, whereby said shaft can be moved longitudinally to engage and disengage said pin from said ratchet wheel, substantially as described.

4. The combination of a longitudinally movable shaft and a pawl carried thereby, with a registering wheel mounted on said shaft, and a tooth or projection connected with said wheel for engagement with said pawl, whereby when said shaft is moved longitudinally said pawl can be brought into engagement with said tooth on said wheel, substantially as described.

5. The combination of a registering wheel, a ratchet wheel and means for operating said registering wheel by said ratchet wheel, a shaft for said wheels, a knob having a shank on said shaft, a lever and pawl to actuate said ratchet wheel, said lever having a recess to receive said shank when the shank is pushed in to prevent further movement of said lever, substantially as described.

6. A registering wheel carrying a tooth and a longitudinally movable shaft having a collar or projection 8, and a pawl to engage said tooth combined with a lever to engage said collar or projection, a bell-crank lever to engage both said shaft and said lever, and a spring to operate the latter lever, substantially as described.

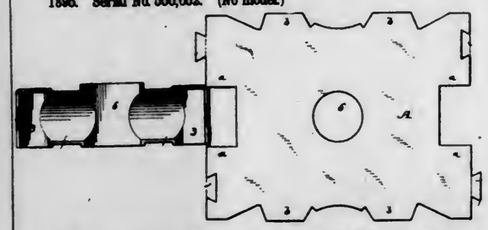
7. The combination of a registering wheel having a tooth, a longitudinally movable shaft having a collar or projection 8 and a pawl to engage said tooth, a lever T having a recess *t*, a spring to actuate said lever, a bell-crank lever to engage both said shaft and the lever T, a dog to hold said lever T in two positions and means to operate said dog to return the lever T, substantially as described.

8. The combination of trip registering wheels, a longitudinally movable shaft carrying them, a lever T to hold said shaft when pressed outwardly, means for depressing said lever by the movement of said shaft, a dog for holding said lever, and means connected with one of said wheels to operate said dog to release said shaft, substantially as described.

9. The combination of a longitudinally movable shaft having a collar or projection, a lever T operating with said shaft, a projection on said lever, a dog having two portions to engage said projection, means to operate said dog to release said lever, a spring to actuate said lever and a bell-crank lever to operate on said shaft and on said lever T, substantially as described.

10. The combination of a longitudinally movable shaft having a collar or projection, a registering wheel carried by said shaft, an arm connected with said wheel, a lever T, a spring to operate it, a pin on said lever, a dog to engage said pin, said dog having a pin to be engaged by said arm, and a bell-crank lever to operate on said shaft and on said lever T, substantially as described.

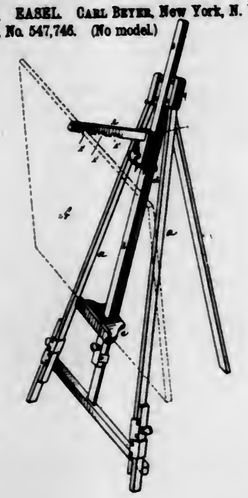
544,082. CROWN-PIECE FOR BICYCLE-FORKS. FRANK H. BERGNER and ROBERT G. COMFORTH, Seymour, Conn. Filed May 21, 1895. Serial No. 550,052. (No model.)



Claim.—1. A crown piece for bicycles shaped from a single blank of metal and consisting of a rounded body, a central hub open at both ends and adapted to receive the steering bar and sockets which are adapted to receive the side bars of the fork, said blank being provided at its ends with portions *a*—*a* which are closed together to form the ends of the sockets and with portions *b*—*b* which are closed together to form the under side of the body and the edges of which assist in forming the hub and sockets.

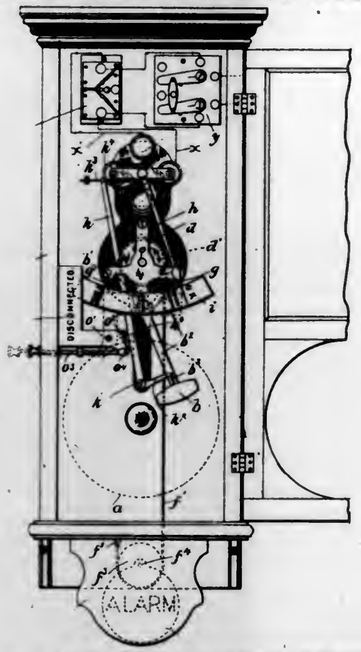
2. A crown piece for bicycles shaped from a single blank of metal and consisting of a rounded body, a central hub open at both ends and adapted to receive the steering bar and sockets which are adapted to receive the side bars of the fork, said blank being provided at its ends with portions *a*—*a* which are closed together to form the ends of the sockets, said portions *a*—*a* being provided with tongues and recesses whereby the portions of the blank which form the ends of the sockets are locked together, and with portions *b*—*b* which are closed together to form the under side of the body and the edges of which assist in forming the hub and sockets.

544,088. EASEL. CARL BEYER, New York, N. Y. Filed May 1, 1895. Serial No. 547,746. (No model.)



Claim.—An easel provided with a guide rail, a slotted head block engaging the same and a retaining arm pivoted to the head block, and having a squared rear end all being constructed as described so that when the arm is swung into its horizontal position, its squared rear end will abut against the guide rail, substantially as specified.

544,084. FIRE-ALARM SIGNALING APPARATUS. GILMAN W. BROWN, West Newbury, Mass., assignor of one-half to Haydn Brown, same place. Filed Sept. 1, 1892. Serial No. 444,729. (No model.)



Claim.—1. A multipolar electro magnet having its poles arranged around a common center and each provided with a slot the sides of which constitute the acting surfaces of the poles, combined with a multipolar polarized armature mounted to rotate in a plane substantially parallel with said surfaces, and between the sides of said slots, as set forth.

2. A multipolar electro magnet having slotted poles, the sides of the slots constituting the acting surfaces of the poles, combined with a multipolar polarized armature mounted to rotate or oscillate in a plane substantially parallel with said surface and provided with beveled sides, as set forth.

3. The combination of an electro magnet, a polarized armature mounted to rotate or oscillate in a plane substantially parallel with the acting surfaces of the poles of the electro magnet, a pointer or visual signal affixed to said armature, an audible signal or gong having a striking mechanism, and a let off mechanism controlled by said armature, as set forth.

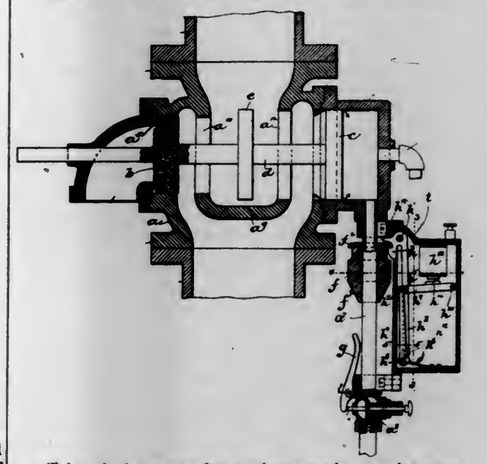
4. The combination of an electro magnet, a polarized armature mounted to rotate or oscillate in a plane substantially parallel with the acting surfaces of the poles of the electro magnet, an audible signal or gong having a striking mechanism, and a let off mechanism comprising first a pivoted lever having an arm or detent adapted to arrest the striking mechanism, secondly a notched or recessed collar affixed to the polarized armature, and thirdly a latch or weighted arm pivoted to said lever and adapted to engage a tooth on said weighted arm and thus lock the lever and the striking mechanism when the said arm is engaged with the recessed collar, said arm being displaced by a movement of the armature and collar, as set forth.

5. The combination of an electro magnet, a polarized armature mounted to move in a plane substantially parallel with the acting surfaces of the poles of said magnet, a gong or audible signal having a striking mechanism, a let off mechanism for said striking mechanism controlled by said armature and adapted to be operated to release the striking mechanism by a movement of the armature from its normal position, and a combined indicator and resetting device adapted to restore the let off mechanism to its hammer locking position, as set forth.

6. The combination of an electro maguet, a polarized armature mounted to rotate or oscillate in a plane substantially parallel with the acting surfaces of the poles of the electro magnet, an audible signal or gong having a striking mechanism, a let off mechanism comprising first a pivoted lever adapted to arrest the striking mechanism, secondly a collar affixed to the armature and provided with two recesses in its periphery, and thirdly a latch or weighted arm pivoted to the lever and adapted to engage one of said notches, a fixed tooth or detent arranged to engage a tooth on said weighted arm when the latter is engaged with one of said notches, and a pivoted plate or indicator within the casing, provided with an operating rod and with a pin or projection arranged to co-operate with cam or projection on said lever in resetting the let off mechanism, as set forth.

7. The combination of a polarized armature, a pointer or visual signal connected therewith and adapted to be moved by changes of position of the polarized armature, an electro-mechanical gong, and a let-off mechanism which is released by a movement of the said armature.

544,085. APPARATUS FOR STOPPING ENGINES. GILMAN W. BROWN, West Newbury, Mass., assignor of one-half to Haydn Brown, same place. Filed June 8, 1895. Serial No. 552,050. (No model.)



Claim.—1. As a means for stopping an engine, a casing or conduit provided with a steam-outlet, a normally closed outlet-valve, a normally open shut-off valve, a normally inoperative pressure-actuated motor for simultaneously opening the outlet-valve and closing the shut-off valve, and a let-off device whereby the motor may be made operative.

2. As a means for stopping an engine, a casing or conduit provided with a steam-outlet and with a cylinder having a vent, a normally closed outlet-valve, and a normally inoperative governing piston movable in said cylinder and connected with the outlet-valve, said piston being operative by the steam pressure to open the outlet-valve when the vent is opened.

3. As a means for stopping an engine, a casing or conduit provided with a steam outlet and with a cylinder having a vent, a piston movable in said cylinder, a normally closed outlet-valve, and a normally open shut-off valve connected with said piston, the piston being operative by the steam pressure to open the outlet-valve and close the shut-off valve when the said vent is opened.

4. A casing adapted to form a part of a steam conduit and provided with a steam-outlet, a cylinder having a vent, and a partition having two steam-ports or passages, combined with a valve located between the outlet and one of said ports and adapted to be held against the outlet by steam-pressure, a piston connected with said outlet-valve and located in said cylinder, and a shut-off valve connected with the outlet-valve and piston and adapted to close the other port or passage.

5. An engine-stopping apparatus comprising a casing provided with a steam-outlet and with a cylinder having a vent, an outlet-closing valve within the casing adapted to be held in its closed position by the steam pressure, and a piston connected with the outlet-valve and located in the cylinder, said piston being formed to admit steam around it to the cylinder and maintain a balancing pressure therein, and means for opening said vent to release the said pressure and unbalance the piston.

6. As a means for stopping an engine, a casing adapted to form a part of the steam conduit which supplies the engine and provided with a steam-outlet and with a cylinder having a vent, an outlet-clos-

ing valve within the casing adapted to be held in its closed position by the steam pressure, a valve-governing piston movable in said cylinder and connected with the outlet-valve, a valve adapted to close said vent, a valve-operating device adapted to be set for action, and a trigger or trip whereby said operating device may be released.

7. As a means for stopping an engine, a casing adapted to form a part of the steam conduit which supplies the engine and provided with a steam-outlet and with a cylinder having a vent, an outlet-closing valve within the casing adapted to be held in its closed position by the steam pressure, a valve-governing piston movable in said cylinder and connected with the outlet-valve, a valve adapted to close said vent, an external arm connected with the valve, a valve-operating weight movable on a fixed guide into and out of contact with said arm, a trigger or trip formed to engage said weight and hold it in an elevated position, and an electrically controlled trigger-locking and releasing device.

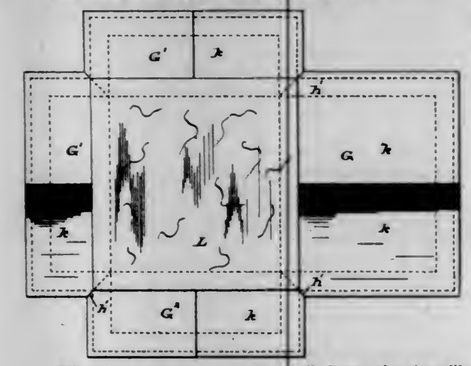
8. A casing adapted to form a part of a steam conduit and provided with an offset partition between its receiving and discharge ends, said partition having two ports connecting the ends of the conduit, a steam-outlet at the discharge side of said partition, a valve-seat surrounding said outlet, and a cylinder also at the discharge side of the partition and provided with a vent, said valve-seat, ports, and cylinder being arranged in line with each other; combined with a piston located in the cylinder and prevented from moving therein when the vent of said cylinder is closed, a shut-off valve and an outlet-valve, connected with said piston, and means for opening and closing the said vent.

9. The combination of a steam conduit having an outlet and a cylinder, a piston movable in said cylinder, an outlet-closing valve and a shut-off valve, both connected with said piston, a vent controlling the operation of said piston and valve as described, and speed-controlled means for opening said vent.

10. A safety appliance for a steam conduit, the same comprising a casing forming a part of said conduit and provided with a cylinder and with an outlet open to the atmosphere, a piston movable in said cylinder, an outlet-closing valve and a shut-off valve in said casing connected with the piston, a vent controlling the operation of said piston and valve, and means for opening said vent.

11. A safety appliance for a steam conduit, the same comprising a casing forming a part of said conduit and provided with a cylinder, a piston movable in said cylinder, a shut-off valve in said casing connected with the piston, and a closed tube communicating at one end with the cylinder and extending therefrom along the conduit, said tube being attached to the conduit, so that in the event of breakage of the conduit the tube will be broken and constitute a vent for the cylinder.

544,086. MAUSOLEUM. RODNEY F. CARTER, Hardwick, Vt. Filed May 3, 1895. Serial No. 547,965. (No model.)

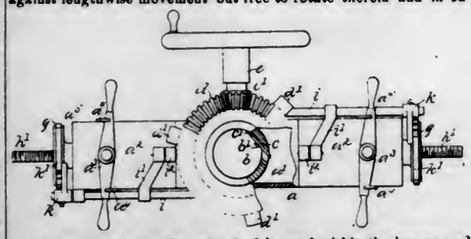


Claim.—1. A stone structure whose walls form a plan shape like a cross with four roof stones each covering one of the wings of the said cross and each of said roof-stones having two mitered corners which abut those adjoining, and a central cap-stone resting on all four of the roof-stones and covering the said mitered joints thereof.

2. A mausoleum having, in combination, walls in the form of a cross; four roof-stones each having two mitered corners, *h*, and a top horizontal face, *i*, and placed on the walls with their mitered corners adjoining and forming close joints; and a cap-stone covering the center and resting on the said horizontal faces of all four roof stones and covering the said mitered joints which are above the walls.

544,087. MACHINE FOR GRINDING BONE. HENRY P. CHAPMAN, Ivoryton, Conn. Filed Apr. 11, 1895. Serial No. 545,299. (No model.)

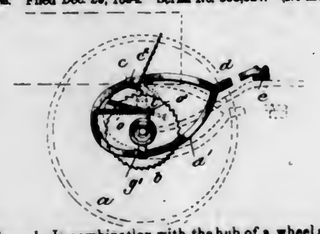
Claim.—1. In combination in a bone grinding machine, a box, a grinding cylinder mounted therein and forming the end walls of hoppers located on opposite sides thereof, knives projecting from the surface of the cylinder, a gear wheel secured to the upper end of the cylinder, a pinion in mesh with the gear wheel, a driving shaft secured to the pinion, lugs borne on the gear wheel, a rock shaft located in operative relation to said lugs to be rocked thereby, pawls secured to the rock shaft, a ratchet wheel borne in the end of the box and held against lengthwise movement but free to rotate therein and in engagement with the pawls, and a feed located within the hopper and having a threaded shank extending through the threaded inner surface of the ratchet wheel, all substantially as described.



2. In combination in a bone grinding machine, a box, a grinding cylinder mounted in the box, grinding knives projecting from the cylinder, a cog wheel secured to the upper end of the cylinder, a pinion secured to a driving shaft and in engagement with the cog wheel, the driving shaft, means for rotating the same, lugs borne on the gear wheel, rock shafts secured on opposite sides of the box and of the cylinder and having arms adapted to be engaged by the under surface of the lugs, a pawl borne on each rock shaft and in engagement with a ratchet wheel, ratchet wheels secured in each end of the box against lengthwise movement but free to rotate therein, followers located on opposite sides of the grinding cylinder and having shafts with threads of opposite pitch fitting corresponding threads on each of the ratchet wheels, all substantially as described.

3. In combination in a bone grinding machine, a box, a grinding cylinder mounted therein and forming the end walls of a hopper on each side thereof, knives projecting from the surface of the cylinder, a gear wheel secured to the upper end of the cylinder, a pinion secured to a driving shaft and in engagement with the cog wheel, the driving shaft, means for rotating the driving shaft, lugs borne on the gear wheel, rock shafts secured on opposite sides of the box and of the cylinder and having arms for engagement with the upper surface of the lugs, a pawl pivotally connected with each rock shaft and in engagement with a ratchet wheel, ratchet wheels secured to the outer end of a flanged collar in each end of the box, collars secured in each end of the box and having a flange on their inner ends and with screw threaded openings of opposite pitch in each of said collars, and followers located on opposite sides of the grinding cylinder and having screw threaded shanks fitting the opening in the collars, all substantially as described.

544,088. DEVICE FOR STARTING VEHICLES. JOHN DARLING, London, England, assignor of one-half to Leonidas H. Cress, Newton, Mass. Filed Dec. 29, 1894. Serial No. 533,327. (No model.)



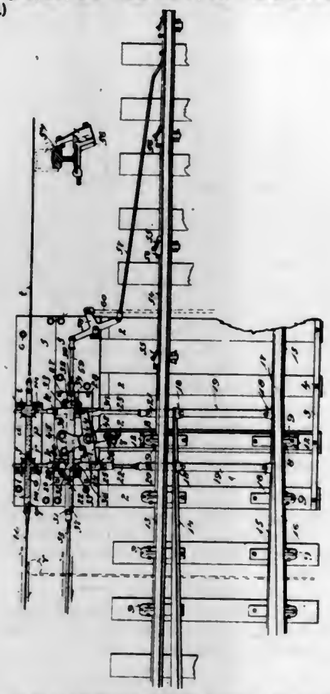
Claim.—1. In combination with the hub of a wheel and a ratchet connected thereto, a lever supported from the axle of said wheel and having a pawl in position to engage said ratchet when the lever is rocked, and the traction bar connected to said lever, substantially as described.

2. In combination with the axle of a vehicle, a yoke fixed thereto, a looped lever pivoted to said yoke at one side of the axle and rocked on said pivot by a spring at the other side, a pawl carried by the lever and a ratchet with which said pawl engages connected to the hub of the vehicle wheel, and the traction bar connected to said lever, all substantially as described.

3. In a vehicle starting apparatus the combination of the wheel, hub, and ratchet wheel connected to the hub, of a looped lever supported by the axle, a pawl on said lever in position to engage said ratchet when the lever is rocked, and the traction device connected to said lever, all substantially as described.

4. The combination with the wheel, hub, and ratchet wheel thereon, of the looped lever having a pawl in position to engage said ratchet, and the spring connected to the axle and to one arm of the looped lever, all substantially as described.

544,089. INTERLOCKING SWITCH MECHANISM. JOHN DIEFENBACH, Springfield, Ohio. Filed Mar. 27, 1895. Serial No. 543,318. (No model.)



Claim.—1. In an interlocking switch apparatus, the combination with notched pitmen and connected notched locking bolts, of a keyed locking bar and a keyed signal bar adapted, respectively, to intersect the pitmen and locking bolts to lock said pitmen and said bolts, and also adapted to reciprocate to unlock the same, and a lever connected to one of the pitmen and operated by the locking bar.

2. In an interlocking switch apparatus, the combination with a notched pitman and a connected notched locking bolt, of a keyed locking bar and a keyed signal bar, adapted respectively to intersect said pitman and bolt to lock the same and also adapted to reciprocate and unlock them, and a lever connected to said pitman and operated by the locking bar.

3. In an interlocking switch apparatus, the combination with a double notched pitman and a double notched connecting bolt, of a keyed locking bar, and a keyed signal bar, adapted respectively to intersect with and lock said pitman and bolt and to reciprocate to unlock the same, and a lever connected to the pitman and operated by the locking bar, a movement of the latter being adapted to move said pitman and bolt a distance equal to that between the two notches in each.

4. In an interlocking switch apparatus, the combination with a base plate having a block slotted in two directions a notched pitman fitted to one slot and a keyed locking bar fitted to the other, a lever pivoted on the said plate connected to said pitman, and operated by said bar, of another plate, a block thereon slotted in two directions, a notched locking bolt fitted to one of the slots and connected to said pitman, and a keyed signal bar fitted to the other slot, the said bars intersecting and locking the pitman and bolt and adapted to reciprocate to unlock the pitman and bolt respectively.

5. In an interlocking switch apparatus, the combination with a plate having blocks each slotted in two directions, a notched pitman in each block in one of the slots, a keyed locking bar in the blocks and fitted to the other slots, a lever pivoted to the plate and to one of the pitmen, and operated by the locking bar, of another plate with blocks each having two slots, notched locking bolts connected to said pitmen, and one in a slot of each block, and a keyed signal bar in the other slots of the block, said bars acting to lock said bolts and pitmen respectively and arranged so that by adjusting the signal bar the bolts are unlocked, and then by adjusting the locking bar the pitmen are unlocked, and the lever is vibrated to move one of the pitmen.

6. In an interlocking switch apparatus, the combination with two switch rails, two double notched pitmen connected thereto and a double notched locking bolt connected to each pitman, of a keyed locking bar adapted to reciprocate to lock and unlock the pitmen, a lever pivoted to the plate and connected to one pitman and operated by said locking bar, and a keyed signal bar adapted to reciprocate to lock and unlock the locking bolts, the arrangement being such that the unlocking of said bolts must precede the movement of the pitmen and bolts by said lever and locking bar.

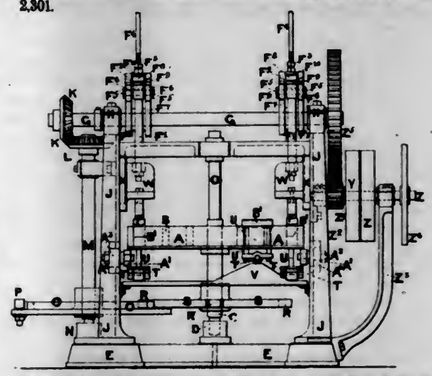
7. In an interlocking switch apparatus, the combination with a plate having blocks slotted in different directions, a double notched pitman fitted to each block in one of its slots, a keyed locking bar fitted to the other slot of each block, and arranged so that when its keys are in the notches the pitmen are locked and when the pitmen are in spaces between its keys said bar is unlocked, and the lever carried by the plate connected to one pitman and operated by the said bar.

8. In an interlocking switch apparatus, the combination with a plate having a block with slots in two directions, a notched pitman fitted in one of said slots, and a keyed locking bar in the other, a lever pivoted to the plate and to the pitman, rollers carried by the lever and forming shoulders, and shoulders on said bar to operate against said rollers to vibrate the lever, the arrangement being such that when the keys are in the notches the pitman is locked, and when the pitman is in the space between the keys said bar is unlocked.

9. In an interlocking switch apparatus, the combination with a plate having blocks, each with two slots, a notched pitman in one slot of each block, the pitman being transferable from one block to the other, a T-lever carried by the plate and adapted to connect with one pitman when in either block, and a keyed locking bar fitted to the other slots in the blocks and arranged to operate said lever.

10. In an interlocking switch apparatus, the combination with a plate having blocks with slots in different directions, and caps, a notched pitman fitted to a slot in each block, one pitman having a bracket, a T-lever pivoted to the plate and fitted under said bracket and pivoted to said pitman, and having a slot in its operating arm, a keyed locking bar fitted to the other slots in the blocks and passing through the slot in the lever, one arm of the lever also extending over the other pitman, whereby when the bar is locked the parts are inseparable or non-detachable and the pitmen rendered unlockable while the bar remains locked.

544,090. MACHINE FOR MOLDING AND PRESSING BRICKS OR THE LIKE. WILLIAM A. GILL, Leeds, England. Filed Jan. 23, 1895. Serial No. 535,915. (No model.) Patented in England Feb. 2, 1894, No. 2,301.

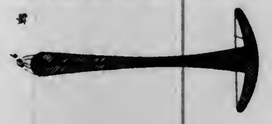


Claim.—The combination, with the vertical rods F' and the dies F operatively connected with the said rods, and the nuts F⁸ and the washers F¹⁰ carried by the said rods; of the weighted block F³ engaging with the said rods, and provided with rollers F⁴ journaled on pins projecting from its sides; the cushions F⁶ interposed between the blocks F³ and the said washers; and the revoluble cams arranged under the said rollers and operating to raise the said dies, substantially as set forth.

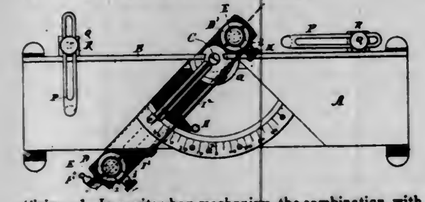
544,091. PESSARY. GEORGE J. GLADMAN, Syracuse, N. Y. Filed Aug. 27, 1894. Serial No. 521,305. (No model.)

Claim.—As a new article of manufacture, the herein described pessary, the same comprising a disk or plate *a* having a convex outer

face a^1, and a concave inner face a^2 for engaging the neck of the uterus, and an arm or stem a' for entering the uterine cavity formed integral with the disk or plate a and projecting vertically from substantially the central portion of said concave face and having its upright wall formed concave longitudinally, said arm or stem having its central portion formed of less diameter than either extremity and decreasing gradually in diameter from each extremity toward its central portion, said pessary being formed with a series of branch apertures a^4 leading downwardly from the upper end of its arm or stem, and a longitudinal aperture a^3 leading from the former apertures through said arm or stem and the disk or plate, substantially as set forth.



544,092. MITER-BOX. ALBERT D. GOODELL, Shelburne Falls, assignor to the Langdon Miter Box Company, Miller's Falls, Mass. Filed Apr. 10, 1895. Serial No. 545,158. (No model.)



Claim.—1. In a miter-box mechanism, the combination, with the bed-frame having the larger and smaller concentric circular arcs, and the swing-bar carrying saw-guides and pivotally connected with said frame; of the grooved gib or rest its ends respectively supported upon said circular arcs, its under groove embracing the top of an upwardly projecting fin fixed on said swing-bar, the lever-block beneath said bar, clamp-bolts connecting said block and grooved gib, and the hand-screw for depressing said lever-block and binding the parts upon said arcs, for the purpose set forth.

2. In a miter-box mechanism, the combination, of the bed-frame having its circular arc provided with a graduated face-plate thereon, the swing-bar pivoted to said frame and carrying the saw-guides, the grooved gib mounted upon an upwardly projecting portion of said swing-bar, radial to said arc, the index point on the end of said gib, and means substantially as described for clamping said gib and swing-bar upon the arc for retaining their adjustment at any position, as set forth.

3. The combination, with the vertically movable saw-guides, and their supporting sockets, of catch-bars or plates pivotally connected with the heads of said saw-guides, and engaging lugs and notches, respectively disposed on said catch-bars and sockets, that engage for sustaining said saw-guides elevated, said catch-bars adapted to swing said lugs and notches into engagement, automatically, when the saw is lifted from the work and said saw-guides raised to high position, substantially as set forth.

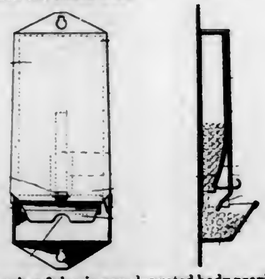
4. The combination with the vertically movable saw guides and their supporting sockets, of the angle-lever catch-bars pivoted to the saw-guides and having notches or lugs at their lower ends, the studs for engaging therewith fixed on the sockets, and the lifting-bar pivotally connected with the inwardly projecting arms at the top of said catch-bars, for the purposes set forth.

5. In a miter-box mechanism, the combination of the swing-bar having upright sockets thereon, the saw-guides vertically movable in said sockets, the catch-bars respectively pivoted to the saw-guide heads, said catch-bars having longitudinal slots therein and fitted with engaging notches or lugs at their lower ends, the catch-studs fixed on said sockets for engagement of said catch-bars, and the thumb nut stop-studs adjustably secured upon said catch-bars for contact with the shoulder of the sockets, for the purpose set forth.

6. The combination with the bed-frame, its notched circular arc, and the swing-frame carrying the saw-guides, of the thumb-latch pivoted within the swing-frame, its rear end engaging with the notch in said circular arc; said thumb-latch having its forward arm extended upward in front of the saw-guide-socket adjacent to the side of the saw, and a saw having a projecting stud at its handled end adapted for contact with said thumb-latch, for the purpose set forth.

544,093. MATCH-SAFE. JOHN GREEN, Renovo, Pa. Filed May 11, 1895. Serial No. 548,930. (No model.)

Claim.—1. A match-safe having an elongated body provided with sides having flanges on their upper edges and an extension at the lower end of the body forming a pocket, and a sliding cover having flanges on its edges to engage the flanges on the sides of the safe and an inwardly projecting flange on the lower end of the cover of less width than the match-safe.



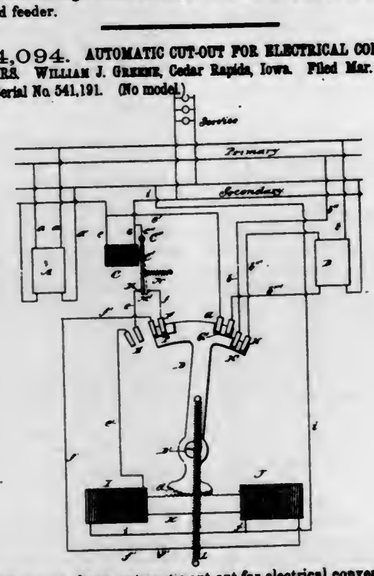
2. A match-safe having an elongated body provided with resilient sides having flanges on their upper edges, and an extension at the lower end of the body forming a pocket, and a sliding cover having flanges on the sides of the safe and constructed to draw the sides inward and curve the back of the safe outward and an inwardly projecting flange on the lower end of the cover.

3. A match-safe having an elongated body and an extension at the lower end of the body forming a pocket, and a sliding cover having an inwardly projecting flange at its lower end of less width than the match-safe and provided with a match feeder.

4. A match-safe having an elongated body and an extension at the lower end of the body forming a pocket, and a sliding cover having an inwardly projecting flange at its lower end of less width than the match-safe and provided with a finger port, and a resilient match feeder attached to said cover.

5. A match-safe having a pocket at its lower end and provided with a sliding cover having an inwardly projecting flange at its lower end and a match feeder attached to the cover, in combination with a match-box having a resilient tongue in one of its sides to be engaged by said feeder.

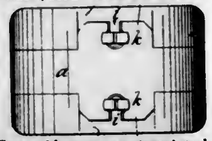
544,094. AUTOMATIC CUT-OUT FOR ELECTRICAL CONVERTERS. WILLIAM J. GREENE, Cedar Rapids, Iowa. Filed Mar. 9, 1895. Serial No. 541,191. (No model.)



Claim.—1. In an automatic cut-out for electrical converters the combination of a switch-lever, the working or service converter, contact plates carried by said switch-lever and adapted to connect and disconnect said converter from primary and secondary mains, a pair of electro-magnets or solenoids adapted to operate said switch-lever, and means for alternately energizing said electro-magnets or solenoids, consisting of a permanent source of electrical energy, and an electro-magnet in series with the secondary circuit and having an armature in electrical connection with the secondary circuit and connections through said electro-magnet, armature and secondary circuit whereby said armature alternately connects said electro-magnets or solenoids with said permanent source of electrical energy.

2. The combination with a permanent source of electrical energy, and primary and secondary mains communicating therewith, of the converter B in circuit with the primary and secondary mains through switches G and H, the electro-magnet C in circuit with one of the wires of said secondary main, the armature C' having electrical connection with the secondary main, and provided with the spring N, the terminals M M', switches E F, switch-lever D, electro-magnets I and J, and electrical connections thereof with the contact-points M M', substantially as and for the purpose set forth.

544,095. DENTAL FLASK. MALCOLM R. GRISWOLD, Hartford, Conn. Filed Jan. 2, 1894. Serial No. 495,311. (No model.)



Claim.—1. In combination in a dental flask or the like, a reversible central section, the T-lock located on the central section, the reversible outer sections adapted to fit upon either side of the central section, and locking means on the outer sections adapted to engage the T-lock, all substantially as described.

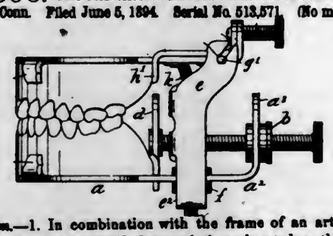
2. In combination in a dental flask or the like, a reversible center section, the T-lock secured to the section, the locking recesses located within the lock, the reversible outer sections adapted to fit the central section and provided with interchangeable locking means adapted to fit the recesses in the T-lock, all substantially as described.

3. In combination in a dental flask or the like, a reversible central section, the locks located upon opposite sides of the central section and counterparts of each other, the recesses located in the locks, the interchangeable outer sections provided with depressions for receiving the T-lock, the locking screws located in the outer sections and adapted to engage the locking recesses in the central section for securing the sections together, and a clamping screw adapted to fit the locking screw, all substantially as described.

4. In combination in a dental flask or the like, a reversible center section, reversible outer sections adapted to fit upon either side of the central section and to be secured thereto, an opening located in an outer section, and a slide adapted to close said opening, all substantially as described.

5. In combination in a dental flask or the like, a reversible center section, reversible outer sections adapted to fit upon either side of the center section, an opening located in an outer section, a depression formed adjacent to the opening, and a slide pivoted in the depression and adapted to close the opening, all substantially as described.

544,096. DENTAL ARTICULATOR. MALCOLM R. GRISWOLD, Hartford, Conn. Filed June 5, 1894. Serial No. 513,571. (No model.)



Claim.—1. In combination with the frame of an articulator a jaw adapted to hold a mold, flattened pivots located on the jaw and engaging locking sockets in the frame, and slots of a width equal to the shortest diameter of the pivot and extending from the locking sockets outward to the edge of the frame, all substantially as described.

2. In an articulator in combination, a lower jaw, an adjusting nut borne in the jaw, a clamp screw borne in the nut, a clamp borne on the screw, a frame having a vertical and horizontal adjustment on the jaw, a swinging jaw secured to the upper end of the frame, a sliding clamp secured to the upper jaw, and a clamp screw borne in a threaded socket in the upper jaw and in engagement with the clamp whereby the latter is reciprocated in the rotation of the screw, all substantially as described.

3. In combination in an articulator, a jaw adapted to hold a mold, flattened pivots located on the jaw and engaging locking sockets in the frame, slots of a width equal to the shortest diameter of the pivot extending from the locking sockets outward to the edge of the frame, the frame, a sliding clamp located on the jaw, and a clamp screw borne in a threaded socket in the jaw with its end in engagement with the sliding clamp, all substantially as described.

4. In an articulator in combination, a lower jaw, a horizontal adjusting nut borne in the jaw, a clamp screw extending through the nut, a clamp secured to the outer end and adapted to be reciprocated as the screw is turned, a frame having a threaded socket fitting said clamp screw, a vertical adjusting nut borne in the jaw and engaging a threaded portion on the frame, an upper jaw pivoted in the frame, a sliding clamp borne on the upper jaw, and a clamp screw in engagement with the clamp whereby the latter is reciprocated as the screw is rotated, all substantially as described.

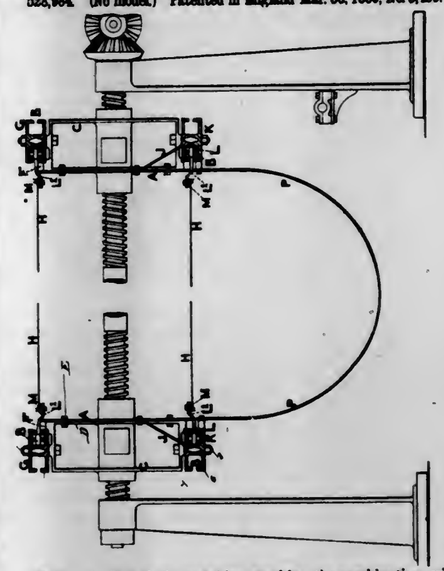
5. In an articulator in combination, a jaw having a shank with an upturned portion, a slot extending along the shank and upturned portion, a crosswise slot intersecting the lengthwise slot, an adjusting nut borne in the slot in the upturned portion, a clamp screw borne in the adjusting nut, and a clamp borne on the end of the screw and adapted to be reciprocated by the rotation of the latter, all substantially as described.

544,097. MILK-VESSEL CASE. WILLIAM G. HART, Bristol, Conn., assignor of one-half to Henry D. Warner, same place. Filed Jan. 31, 1895. Serial No. 536,760. (No model.)



Claim.—In combination; the cylinder section a having the floor b attached thereto; the cylinder section c hinged to the section a and having attached thereto the centrally raised roof d covering and overhanging the edges of both sections; and the ticket pocket f attached to the section c; all substantially as described and for the purposes set forth.

544,098. CLOTH-STRETCHING MACHINE. JOSEPH HORTON and WILLIAM HORTON, Copley, England. Filed Nov. 16, 1894. Serial No. 528,984. (No model.) Patented in England Mar. 30, 1889, No. 5,459.



Claim.—1. In a cloth stretching machine, the combination, with the upper and lower rails, connected together and provided with chain races and inwardly projecting brackets D; of the vertical partition plates A secured to the said brackets one on each side of the machine leaving spaces F between them and the said rails the inclined guide plates J secured to the lower rails and to the plates A under the said spaces; and the chains sliding in the chain races and provided with arms for supporting the cloth, substantially as set forth.

2. In a cloth stretching machine, a reversible chain rail formed of an upper part and a lower part, and central bolts 8 securing the said parts together, separate races being formed by the said parts, one on each side of the central bolts, substantially as set forth.

544,099. RAILWAY-RAIL JOINT. DANIEL N. HURLBUT, New York, N. Y. Filed Oct. 16, 1894. Serial No. 536,110. (No model.)

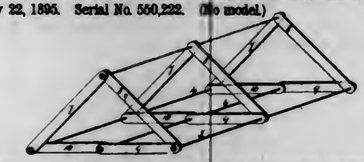
Claim.—1. A pair of overlapping railway rails, having mortises in the overlapping ends, in combination with a key fitting into the

said mortises, the said overlapping ends having L-shaped bearings upon the said key.



2. A pair of overlapping railway rails having mortises in the overlapping ends, in combination with a key fitting into the said mortises, the said mortises being so cut that the key, in fitting them, will extend at each end into the solid web and entirely across the same.

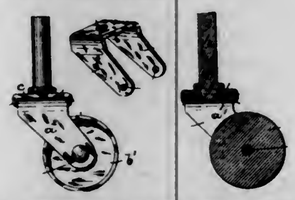
544,100. LOBSTER-TRAP. GEORGE HURST, Canso, Canada. Filed May 22, 1895. Serial No. 550,222. (No model.)



Claim.—1. A knock-down lobster trap having a body comprising two side and two bottom frames pintled together and forming a triangular tube when set up, the ends of said tube closed or covered by a flexible netting tubular and tapering, and provided with a ring at the small end, to admit the lobsters, and cords to hold the netting stretched, as set forth.

2. A lobster trap having a collapsing body comprising rectangular frames made of slats and cross bars nailed at the intersection and hinged together to form a triangular tube, and a flexible tubular netting closing the ends of the tube and tapering inwardly and provided with an aperture at the small end and a ring surrounding the aperture and cords to stretch the netting, as set forth.

544,101. CASTER. HENRY ILL, Newark, N. J. Filed Apr. 25, 1895. Serial No. 547,153. (No model.)



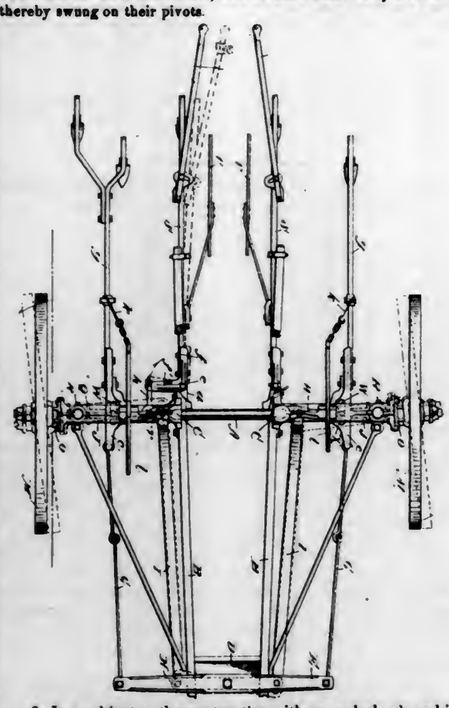
Claim.—1. As an improved article of manufacture, a caster, comprising therein, a frame *a* having a top-plate *a'*, and the downwardly extending ears a^2, and a separately constructed strengthening plate *c*, having its free ends bent down at right angles, or approximately so, and turned beneath the under surface of said top-plate and between said arms, substantially as and for the purposes set forth.

2. As an improved article of manufacture, a caster, comprising therein, a frame *a* having a top-plate *a'*, downwardly extending ears a^2 and a hole or opening a^3, a separately constructed strengthening plate *c* having a perforation c^3, and having its free ends bent down at right angles, or approximately so, and turned beneath the under surface of said top-plate, and a post in said perforations a^3 and c^3, all arranged, substantially as and for the purposes set forth.

544,102. CULTIVATOR. MARTIN L. KINSELL, Springfield, Ohio, assignor to the P. P. Mast & Company, same place. Filed Sept. 17, 1894. Serial No. 523,208. (No model.)

Claim.—1. In a cultivator, the combination with an axle, a frame swiveled to the axle near each end thereof, a wheel carried by each frame, shovel beams coupled to the axle, and one of them connected with one of said frames, and one or more of the remaining beams rigid laterally, and a direct connection between said frames, so that by laterally moving on its pivotal joint with the axle the beam which is attached to one of said frames, both of said frames are, by such beam, thereby swung on their pivots.

2. In a cultivator, the combination with an axle, a frame swiveled thereto near each end thereof, wheels carried by said frames, two sets of beams connected with said axle, the beams of each set being interconnected in a rotary direction, one beam of one set connected to one of said frames, and a direct connection between said frames, so that by laterally moving on its pivotal joint with the axle the beam which is attached to one of said frames, both of said frames are by said beam thereby swung on their pivots.



3. In a cultivator, the combination with an arched axle and its tongue, a frame swiveled to the axle near each end thereof, a pivoted yoke and bars connecting the respective ends of the yoke to the respective frames, of a coupling sleeve on the axle near each frame, a rigid and a pivoted beam connected to each sleeve, one of the pivotal beams being connected with one of the swivel frames, whereby the beams of each set are raised and lowered by operating one beam of each set, and whereby the whole machine is run off laterally by manually operating one beam in a lateral direction.

4. In a cultivator, the combination with an arched axle and its tongue, a yoke pivoted to the tongue, a bar connected to each end of the yoke, a frame swiveled to each end of the axle, each frame having an arm connected to the yoke bars respectively.

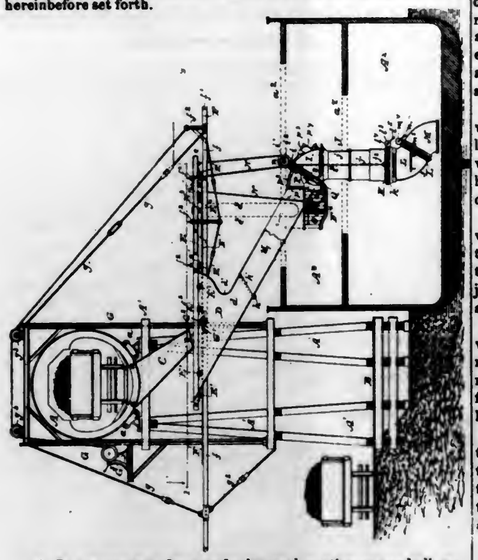
5. In a cultivator, the combination with an arched axle, a frame swiveled to the axle near each end thereof, a sleeve on the axle inside of each swivel-frame, an outside beam fastened rigidly to each sleeve, an inside beam pivoted to each sleeve on a vertical bolt, a lateral projection on one of the latter beams and a connection between it and one of the frame arms.

6. In a cultivator, the combination with an arched axle and its tongue, draft rods suspended from the tongue and a sleeve on the axle with which said rods are engaged, a beam rigidly secured to the sleeve, and a beam pivoted to the sleeve, a frame swiveled to the axle, a wheel carried by the frame, and a connection between the pivoted beam and the said frame, whereby the draft is utilized to draw both beams toward the ground, and whereby one beam is manipulated laterally to deflect the rigid beam, and up and down to raise and lower both beams.

7. In a cultivator, the combination with an axle, of a frame swiveled thereto and having an arm, a beam connected to the axle and having a vertical pivot, and a lateral projection, and a connection between said projection and the frame arm adjustable to and from the bearings of the frame.

544,103. TRANSFERRING APPARATUS FOR COAL. EDWARD LINDSLEY and CHARLES B. LINDSLEY, Cleveland, Ohio, assignors to the Lindsley Terminal Equipment Company, of Illinois. Filed Dec. 27, 1890. Serial No. 376,156. (No model.)

Claim.—1. In an apparatus for transferring coarse bulk material, a fixed feed hopper having a contracted outlet with a movable hopper beneath it of larger area than the discharge opening of the feed hopper, said movable hopper so constructed and arranged that it may be moved horizontally back and forth through a wide range to trim the material flowing from it yet be continuously fed at any point within its range of movement from the fixed hopper, substantially as hereinbefore set forth.



2. In an apparatus for transferring coal or other coarse bulk material, the combination of a fixed hopper and a movable broad mouthed receiving hopper beneath it with a pipe or conduit leading therefrom to a lower level and provided at its lower end with a device to check the flow of material and regulate its speed substantially as hereinbefore set forth.

3. In an apparatus for unloading coarse bulk material from railway cars, the combination of a car dumping device, a receptacle for the material dumped from the cars having a delivery outlet, a movable hopper into which said outlet discharges, the mouth of the hopper being much larger in area than the said delivery outlet, a pipe or conduit leading from the hopper to a lower level, with means at the lower end of the pipe to control and check the flow of material therefrom, all arranged substantially as and for the purpose hereinbefore set forth.

4. The combination of a fixed feed hopper with its delivery outlet, a broad mouthed horizontally movable hopper continuously fed from the fixed hopper at any point within its range of movement, an inclined chute, a vertical pipe dropping from the end of the chute, and means at the lower end of the pipe to control the flow,—substantially as hereinbefore set forth.

5. In an apparatus for transferring coarse bulk material, an inclined chute, and a vertical pipe pivotally connected to the end of the chute, with mechanism for changing and maintaining in any relative position the chute and pipe,—substantially as and for the purpose set forth.

6. The combination of a chute terminating at its lower end in an elbow section, a vertical pipe pivotally connected to the chute and having at its upper end an elbow section that fits over and outside of the elbow on the chute with means for adjusting and holding the two sections in any relative position for the purpose set forth.

7. The combination of a chute and its elbow section, the vertical pipe pivoted to the chute, an elbow on the vertical pipe that fits over the chute elbow, with worm gear racks on the chute elbow and worms on the pipe elbow that take into the racks,—substantially as hereinbefore set forth.

8. The combination of the chute and the elbow section at its lower end, the vertical telescopic pipe having at its upper end an elbow section that fits over the elbow section of the chute, and is pivotally connected to the chute, a shaft with winding drums mounted on bearings on the elbow section of the telescopic pipe with lifting chains extending from said drums to the lower telescopic section of the tube substantially as and for the purpose set forth.

9. The combination of the pipe or conduit and the rotatable elbow at its lower end, the annular ledge or rib K' on the end of the pipe and the ring L' on the elbow, having a ledge at each side of the ledge K' with a row of antifriction balls at each side of the ledge K' substantially as and for the purpose set forth.

10. The combination of a pipe or conduit having an elbow so connected to its end that it may revolve freely, with an annular gear rack on the pipe and the worm on the elbow substantially as and for the purpose set forth.

11. The combination of a fixed feed hopper, a horizontal frame or carriage lying below said feed hopper and supporting a movable receiving hopper, a chute hinged at one end to the receiving hopper and supported at its free end by lifting ropes which pass to the outer end of the carriage frame immediately above it, with suitable mechanism for winding up said ropes to raise the end of the chute substantially as hereinbefore set forth.

12. The combination of a trestle or frame work supporting a railway track and in proximity thereto a hopper having a contracted outlet, a carriage mounted on rails at right angles to and beneath the railway track, a wide-mouthed movable hopper supported on said carriage below the delivery outlet of the fixed hopper and having a chute or conduit depending therefrom, substantially as hereinbefore set forth.

13. The combination of a trestle or frame work supporting a railway track, a pair of track rails at right angles thereto supported on the trestle below the railway track and extending out beyond the side of the trestle in the form of a jib with a movable carriage mounted on the jib rails and a pipe or conduit supported by the carriage and leading to a lower level substantially as hereinbefore set forth.

14. The combination of a frame work or trestle supporting a railway track, a movable carriage supporting a conducting chute or pipe mounted on rails at right angles to and below the railway track said rails extending out on a jib which projects from the side of the trestle frame and hinge-jointed to fold up against the trestle substantially as hereinbefore set forth.

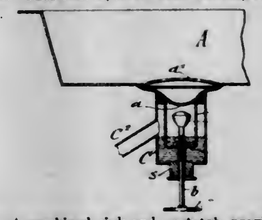
15. The combination of a trestle, the jib hinged to the trestle the track rails and the geared racks extending along the jib and back through the trestle the axis of the hinge pivots being on the line of the tops of the rack teeth with a conduit supporting carriage mounted on the jib rails and the pinions thereon meshing into the rack substantially as hereinbefore set forth.

544,104. BISMUTH OXYIODIDGALLATE AND PROCESS OF PREPARING SAME. FRITZ LÜDY, Basle, Switzerland, assignor to Hoffmann, Traub & Co., same place. Filed Dec. 12, 1894. Serial No. 531,584. (Specimens.)

Claim.—1. The process of manufacture of bismuthoxyiodidgallate by the reaction of gallic acid upon bismuthoxyiodid, substantially as described.

2. As a new article of manufacture, the herein described bismuthoxyiodid-gallate, constituting in a dry state, a grayish green, amorphous powder, which is insoluble in water and ordinary solvents, soluble in potash or soda lye, not decomposable by light but decomposes slowly under the influence of moist air.

544,105. SINK AND WASHTUB. FREDERIK S. MADSEN, Jersey City, N. J. Filed Mar. 11, 1895. Serial No. 541,368. (No model.)



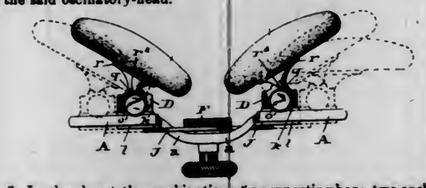
Claim.—A combined sink and wash-tub, provided with an outlet-opening, a sewer-trap below said outlet-opening formed of an exterior cylinder and an interior cylinder open at its lower end, a waste-pipe connected with the exterior cylinder above the lower end of the interior cylinder, a valve passing through said trap and adapted for opening and closing the outlet-opening, and a strainer extending over the outlet-opening, substantially as set forth.

544,106. HEAD-REST. WILLIAM B. MANN, Baltimore, Md. Filed Apr. 2, 1895. Serial No. 544,150. (No model.)

Claim.—1. In a head-rest, the combination of a supporting bar for attachment to a dental chair, having its center depressed below its ends and the latter provided with slideways; a cushion-support mounted on each slideway; a revoluble spindle extending through the bar at the depressed center; an oscillatory-head fixed on the upper end of said spindle and having position in the said center depression; a link attached by one end to each of said cushion-supports below the bar and the other end of each link engaging with the oscillatory-head above the bar; and an adjusting knob attached to the lower end of the spindle below the said bar, substantially as described.

2. In a head rest, the combination of a supporting bar; two cushion-supports movable on the bar; a spindle extending through the said bar; an oscillatory-head fixed on the said spindle below the plane

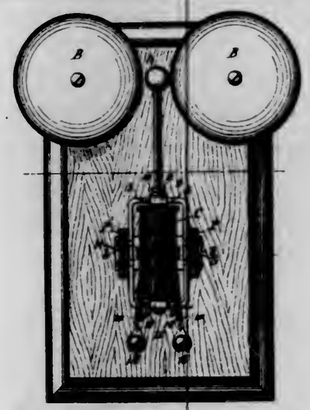
of the major portion of the bar; two links each having one end attached to one of said cushion-supports and the other ends of the links curved and connected with the said oscillatory-head at points diametrically opposite each other, one link extending along one edge of the bar and the other link extending along the opposite edge of the bar and an adjusting knob fixed on the spindle at the side of the bar opposite the said oscillatory-head.



3. In a head-rest, the combination of a supporting bar; two cushion-supports movable on the bar; an oscillatory head; a connection between each of the said cushion-supports and the oscillatory head, whereby said cushion-supports may be adjusted toward or away from each other simultaneously and in unison; and means whereby each cushion may be adjusted independently of the other at various angles of inclination.

4. A head-rest having a supporting bar; two cushion-supports mounted on the bar and each provided at its side with a socket and having at the top of the support a number of holes spaced apart and all extending to said socket; a cushion for each support and provided with a pin adapted to enter either of said holes and its end be exposed at the said socket; and a set-screw entered in the socket and adapted to clamp the said pin.

544,107. MAGNETO-ELECTRIC BELL. LELAND MOORE, Brooklyn, N. Y., assignor of one-half to John C. Reilly, same place. Filed Apr. 11, 1895. Serial No. 545,284. (No model.)

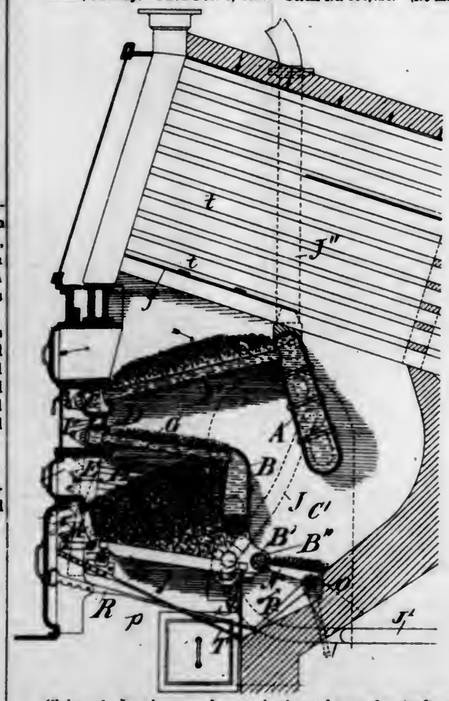


Claim.—1. In a magneto-electric bell the combination of an electro-magnet pivoted at or near the central point of its major axis, four permanently magnetic pole pieces arranged in pairs of similar polarity, one pair upon each side of said axial line, one or more pole pieces for said electro-magnet in the form of a key-stone, adjustably connected to said electro-magnet, non magnetic springs in the form of a sheet or blade, each fixed to a pole piece and located between the poles of the permanent magnet and the electro magnet whereby the oscillating return movement of the electro-magnet is initiated and accelerated, a hammer fixed to said electro-magnet and a gong or sounding device therefor, arranged and operating substantially as described.

2. In a magneto-electric bell the combination of an electro-magnet pivoted at or near the central point of its major axis, four permanently magnetic pole pieces arranged in pairs of similar polarity, one pair upon each side of said axial line, one or more pole pieces for said electro-magnet, sheets of spring brass fixed thereto in position to make contact with the poles of the permanent magnets and initiate the oscillating return movement, a hammer fixed to said electro-magnet and a gong or sounding device therefor, substantially as described.

3. In a magneto-electric bell the combination of an electro-magnet or spool pivoted at or near the center of its major axis, permanent magnetic poles fixed, respectively, upon opposite sides of each pole of said electro-magnet, and pole pieces for said electro-magnet, in the form of a key-stone, adjustably connected thereto, whereby the extent of oscillating movement may be varied by varying the position of the key-stone pole piece, a hammer fixed to said electro-magnet and a gong or sounding device therefor, substantially as described.

544,108. STEAM-BOILER FURNACE. RUDOLPH MÖLLER, Christiania, Norway. Filed Feb. 8, 1895. Serial No. 537,720. (No model.)



Claim.—1. In a heat producer, a horizontal row of updraft magazine furnaces, a water-back common to all said furnaces and provided with an opening above the grate of each furnace, in combination with an auxiliary down draft furnace of greater depth than and extending the full length of the horizontal row of furnaces above the same, a depending rearwardly inclined water-back for said upper furnace terminating above the openings in the water-back for the horizontal row of furnaces, and a flue common to all the furnaces and formed in part by the water-back of the aforesaid upper furnace, for the purpose set forth.

2. In a heat producer, a horizontal row of up-draft magazine furnaces, a rearwardly inclined roof and a water-back for said furnaces, said water-back provided with an opening above the grate of each of the furnaces, in combination with an auxiliary down draft furnace of greater depth than and extending the full length of said horizontal row of furnaces above the same, said upper furnace having a forwardly inclined grate and a depending rearwardly inclined water-back terminating above the openings in the water-back for the lower furnaces, a grate in rear of the said openings and a flue common to all the furnaces and the last named grate, said flue formed in part by the water-back for the upper furnace, for the purpose set forth.

3. In a heat producer, a horizontal row of down draft magazine furnaces having tubular partitions, a like rearwardly inclined roof, and a water back provided with an opening above the grate of each of said furnaces, an auxiliary down draft furnace of greater depth than and extending the full length of the horizontal row of furnaces above the same, said upper furnace provided with a forwardly inclined tubular grate and with a depending rearwardly inclined water back terminating above the openings in the water back for the horizontal row of furnaces and a grate in rear of said openings, in combination with means for supplying air separately to the several furnaces and to the last named grate, means for circulating water through the tubular elements and the water backs for the furnaces, and a flue common to all said furnaces, said flue formed in part by the water back for the upper furnace, substantially as and for the purpose set forth.

4. In a tubular boiler, the combination with the water tubes, the horizontal row of updraft furnaces, the down draft furnace above the same constructed and arranged substantially as set forth, and a flue common to all said furnaces and formed in part by the water back for the upper furnace, of the plates *f* between the lower row of water tubes arranged to form the roof of the upper furnace, substantially as and for the purpose set forth.

5. In a heat producer the combination with a plurality of primary combustion chambers consisting of a horizontal row of such provided with a water back and a rearwardly inclined roof, said roof and the side walls of the chambers constructed of hollow bodies, a combustion chamber extending from end to end of the aforesaid row of such, above the same and having a tubular grate and water back, and means for circulating water through the aforesaid hollow bodies grate and water backs, in combination with an auxiliary combustion chamber common to all the primary chambers arranged below the water back of the upper chamber and in rear of the water back of the lower chamber, a grate in said auxiliary combustion chamber adapted to collect fuel dropping from the roof of the horizontal row of combustion chambers, and means for supplying air to said grate at different points, for the purpose set forth.

6. The combination with the water backs A and B, the water boxes C and D connected by water legs I, the water legs E the water tubes F connecting water back A with water box C, and the water tubes G connecting water back B with water box D, of water tubes H connecting the water back B with water legs E and forming vertical partitions below water tubes G, and the grates L at the foot of said partitions, substantially as and for the purpose set forth.

7. A furnace wall constructed of water tubes and spacing pieces, as U, of prismatic form in section, having their angles truncated and concaved to form seats for the tubes and of such dimension as to leave a space *u* between them when applied to the tubes, substantially as and for the purpose set forth.

8. The combination with the grate F, the magazine furnaces 2 and the water back B thereof having rearward extensions B″ connected by a hollow fire bridge, and the water tube grate F above said furnaces 2, of the grate N, and means substantially such as described for admitting air from the ash pit at different points of said grate, for the purpose set forth.

544,109. METHOD OF PRODUCING GRILLE OR SCROLL WORK. JOSEPH P. MCHUGH, New York, N. Y. Filed Mar. 20, 1895. Serial No. 542,455. (No model.)

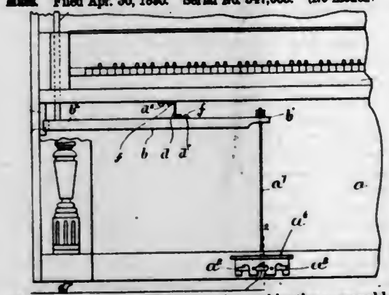


Claim.—1. The improvement in the method of producing grille or scroll work described, which consists in producing upon a suitable base, any required open work design, and subsequently applying to one or both surfaces of said base, a plastic open work ornament corresponding in general outline to said design.

2. In a grille or scroll work, the combination of a base with an open work design formed therein, and a plastic open work ornamentation corresponding in general outline to the design of the base and applied to one or both surfaces of said base.

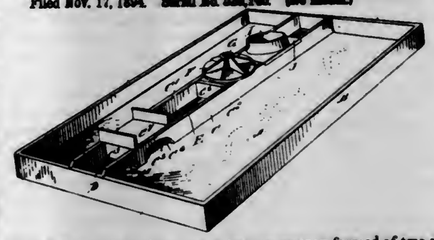
3. As a new article of manufacture, a screen, grille or decorative panel, comprising an open work base formed of three layers of wood with the grains crossed, and having an exterior surface or surfaces formed of a decorative plastic material corresponding in general outline to the design of the open work base.

544,110. PIANO-PEDAL ACTION. ALBERT F. NORRIS, Boston, Mass. Filed Apr. 30, 1895. Serial No. 547,685. (No model.)



Claim.—In a piano pedal action in combination a movable pedal, a bar *b*, a ⅂ shaped spring having feet d', d^3, arranged on different sides of the body portion of said spring, one of said feet being connected with said bar, and the other of said feet being connected to the framework of the piano, and suitable connections between said pedal and one end of said bar, substantially as and for the purpose set forth.

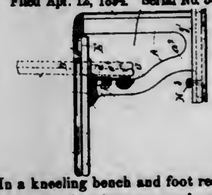
544,111. GAME APPARATUS. JOEL NORTHRUP, Otisville, N. Y. Filed Nov. 17, 1894. Serial No. 529,149. (No model.)



Claim.—1. In a game apparatus, a causeway formed of two sides connected by transverse boards forming receptacles, one of which is provided with an opening in one side, the said causeway being also provided with a covered portion and openings in its sides forming a bridge, and with a revolving device, and a projection over its top, substantially as described.

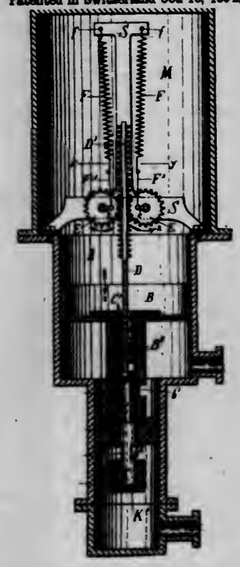
2. A game apparatus, comprising a flanged board or frame, and a causeway extending across the board or frame and formed of two sides connected by transverse boards forming receptacles, one of which is provided with an opening in one side, the said causeway being also provided with a covered portion and openings in its sides forming a bridge and with a revolving device, and a projection on its top, substantially as herein shown and described.

544,112. KNEELING OR FOOT BENCH. HUGH J. O'NEIL, Rochester, N. Y. Filed Apr. 12, 1894. Serial No. 507,250. (No model.)



Claim.—In a kneeling bench and foot rest, the double standard A, A^2, suitably separated at its upper ends, combined with the bar B hinged to the top of the standard A, and the base G, in which the standard is slidingly placed; the bar being provided with an extension on its rear edge, and adapted to be changed from a horizontal to a vertical position, and the upper end of the standard A^2 being provided with an extension upon its top which practically forms a portion of the kneeling surface of the bar, when in a horizontal position, substantially as set forth.

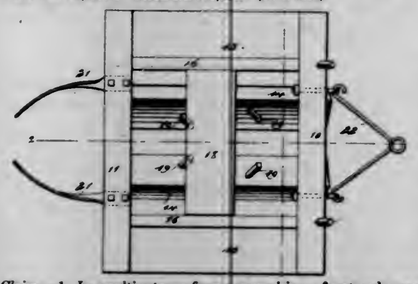
544,118. LIQUID-METER. EMILE PACCAUD and FRÉDÉRIC DE CAPPET, Lausanne, Switzerland. Filed Apr. 3, 1895. Serial No. 544,282. (No model.) Patented in Switzerland Oct. 10, 1894, No. 9,150.



Claim.—1. In an improved liquid meter the combination of two superposed cylinders of different diameters, the smaller one having an inlet-opening and the larger one an outlet-opening for the liquid which is to be measured, a double-piston having two heads of sizes corresponding to the interior diameter of the respective cylinders, each head of which is adapted to play in the proper cylinders, a tubular-connection between said two heads of the double-piston, the said tubular-connection having openings connecting the interior of the same with the space between the two piston-heads and openings connecting the interior with the space beneath the smaller piston, a slide-valve adapted to play in the said tubular-connection so as to alternately close and open the respective openings, and a rack connected to the said slide-valve and acting upon by means of any suitable gearing one or more cranks connected to one or more springs which tend to raise the slide-valve and which are extended by the down-motion of the said slide-valve, substantially as shown and described and for the purpose specified.

2. In liquid meters, a double piston B B' having openings b' b^3 and a sleeve C', in combination with a slide-valve C a rack D connected with the slide-valve, gearing adapted to act upon the rack and cranks e e' connected to springs F, substantially as shown and described and for the purpose specified.

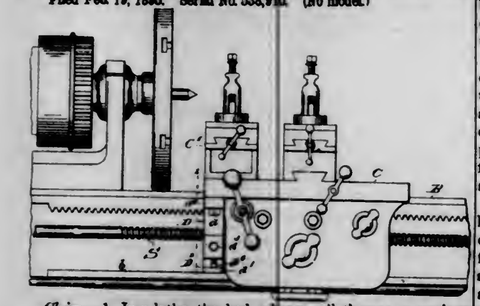
544,114. CULTIVATOR. THOMAS J. PAYNE, Tecumseh, Okla. Filed Dec. 24, 1894. Serial No. 532,854. (No model.)



Claim.—1. In a cultivator, a frame comprising a front and a rear cross bar, each of said cross bars being provided with an angular extension at each side of the central portion of its lower edge, forming thereby a central triangular opening in said edge, runners attached to the outer surfaces of corresponding extensions of the cross bars, the lower edges of the runners forming continuations of said extensions and being inclined in direction of each other, and teeth carried by the said runners, substantially as shown and described.

2. In a cultivator, the combination, with a frame, comprising a forward and a rear cross bar, said cross bars being each widest at the center and provided in the lower edge of their central portion with a triangular opening, runners extending from the outer edges of the wider portions of the cross bars and forming continuations of the sides of said triangular openings therein, the runners being diagonally located, inclining at their lower edges in direction of each other, the said runners being also polygonal in cross section, and having their lower edges at angles to the horizontal teeth projected from the runners in an outwardly and downwardly direction, and knives located one at each side of the widest portion of the rear cross bar, said knives being curved in direction of each other, substantially as and for the purpose specified.

544,115. ENGINE-LATHE. FRANCIS S. PERKINS, Lowell, Mass. Filed Feb. 19, 1895. Serial No. 538,910. (No model.)

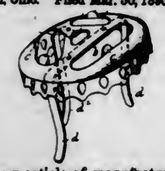


Claim.—1. In a lathe, the bed, a brace rail thereon, a carriage movable along the bed, a longitudinally adjustable brace rigidly secured to the carriage and adapted to slide upon the brace-rail, and means to maintain the longitudinal adjustment of the brace, substantially as described.

2. A bed, an overhanging carriage longitudinally movable thereon, a brace rail parallel to its path, a two-part brace, one member of which is rigidly secured to the carriage, the other member resting on the rail, and means to adjust the members vertically one upon the other, substantially as described.

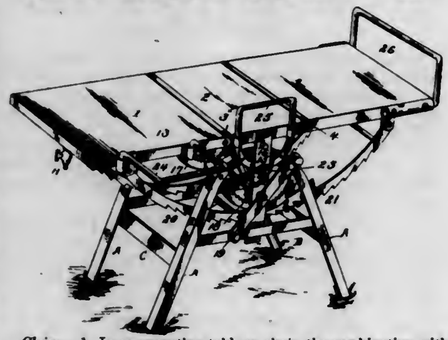
3. A bed, an overhanging carriage longitudinally movable thereon, a brace rail parallel to its path, a two-part brace, one member of which is rigidly secured to the carriage, the other member resting on the rail, means to adjust the members vertically one upon the other, and a positioning device to positively maintain the members in adjusted position, substantially as described.

544,116. HEATER ATTACHMENT FOR LAMPS. ERNEST F. PFLUEGER, Akron, Ohio. Filed Mar. 30, 1895. Serial No. 543,872. (No model.)



Claim.—As a new article of manufacture, the herein described attachment for lamps for heating curling irons, and for general heating purposes, said attachment consisting of a flat circular sheet metal body portion having a surrounding, depending flange or skirt designed to fit around the upper edge of a lamp chimney, said body portion having also therein a number of openings of different sizes and shapes to receive different sizes and styles of curling irons, and also small lips struck up from the edges of said openings and designed to support a pan or other receptacle and spring legs having their upper portions bent horizontally and secured rigidly to the under side of said body portion, substantially as specified.

544,117. OPERATING TABLE OR CHAIR. GEORGE PITKIN, Washington, D. C. Filed Sept. 6, 1894. Serial No. 522,278. (No model.)



Claim.—1. In an operating table or chair, the combination with a suitable supporting frame or base, of a hollow water-tight section adjustably connected to said frame or base, an inlet and outlet port for said section, a similar hollow section hinged to each end of the aforesaid section and provided with inlet and outlet ports, and flexible pipes connecting the ports of the hinged sections with the ports of the central section whereby any fluid entering one of the end sections will circulate through the others, substantially as described.

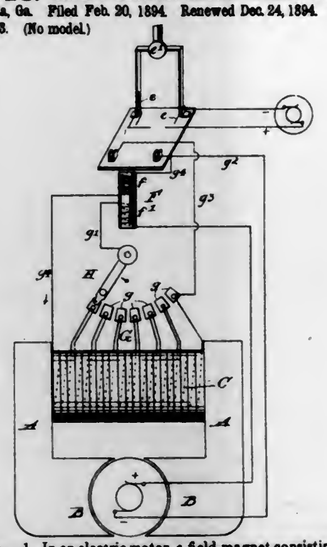
2. In an operating table or chair, the combination with the base or frame thereof, of a hollow water-tight section pivotally connected to said base and means for adjusting said section to various inclines, a hollow water-tight section pivotally connected to each end of the central section, a flexible pipe connection between said sections, and pet-cocks secured to the outer sections and adapted to control the flow of liquid entering within and discharging from said sections, substantially as described.

3. In an operating chair or table, the combination with the hollow sections hinged together and adjustably supported upon a frame or base, a curved rack bar secured to each side of said frame, teeth formed upon the concave face of the bar downwardly extending arms secured to each side of the central section, a rod connecting said arms above the racks, pinions connected to the rod and meshing with said racks, and handles connected to each end of said rod and adapted when turned to tilt the chair sections, substantially as described.

4. In an operating table or chair, the combination with the base or frame thereof, provided on each side with a curved rack-bar the teeth of which are upon the concave face of said bar of a hollow water-tight section adjustably connected to said base, a hollow water-tight section hinged to each end of the aforesaid section, flexible pipes connecting said sections, and adapted to supply heat from one to the other, downwardly extending arms secured to each side of the central, hollow section, rods connecting the upper and lower ends of said arms, a rod connected to and passing through the central portion of the arms above said curved rack-bars, pinions secured to the central rod and meshing with the racks, hand operating devices on the outer ends of said latter named rod, and curved rack-bars pivotally connected to the under side of the end sections and adapted to engage with the lower arm connecting rod, substantially as described.

5. In a surgical table or chair, the combination with the metallic frame or base thereof, consisting of the standards A, bent in a substantially inverted U shape form and provided with the side-braces B and end braces C, of a hollow metallic section pivoted to the top of the bent portion of said standards, nipples projecting downward from said hollow sections, a hollow metallic section hinged to each end of the pivoted section and each provided with nipples at the bottom thereof near their hinged ends, and with pet-cocks at their free ends, flexible pipes connecting the nipples of the three sections, and means for adjusting the sections, substantially as described.

544,118. SAFETY ELECTRIC MOTOR. WILLIAM R. POLK, Jr., Atlanta, Ga. Filed Feb. 20, 1894. Renewed Dec. 24, 1894. Serial No. 532,893. (No model.)

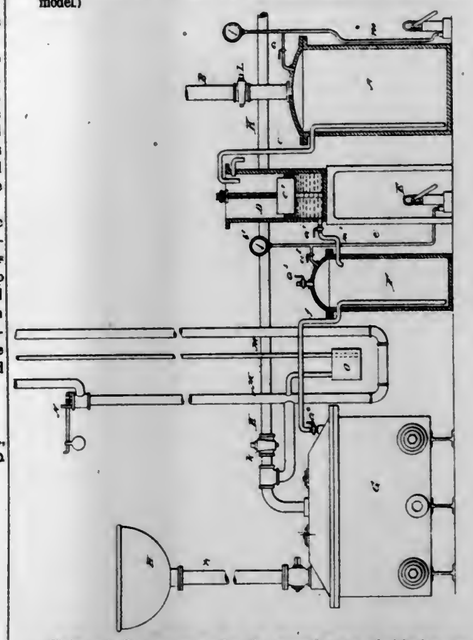


Claim.—1. In an electric motor, a field-magnet consisting of pole-pieces, an exciting coil therefor, a switch having a lever spring-pressed to an open position, a magnet core in the line of motion thereof so situated as to be contacted with by said lever when the same is in closed position, a coil thereon connected terminally with a line bearing a practically constant current and an oppositely wound coil thereon in series with the armature coil substantially as and for the purpose specified.

2. In an electro-magnetic switch, the combination of the motor, the main circuit leading to and from the same, the spring pressed lever or switch controlling the same, the magnetic core, when suitably magnetized, adapted to hold the lever or switch against the action of the spring to close the main circuit, the coil surrounding the said core to magnetize the same to so hold the lever or switch, the said coil being interposed in the shunt circuit of the motor, and the oppositely wound coil surrounding the said core to neutralize the action of the first mentioned coil, the neutralizing coil being interposed in the armature circuit of the motor, substantially as described.

3. In an electro-magnetic switch, the combination of an electric circuit, the spring pressed lever or switch controlling the same, the magnetic core, when suitably magnetized, adapted to hold the lever or switch against the action of the spring to close the said circuit, the coil surrounding the said core to magnetize the same to so hold the lever or switch, the said coil being interposed in a circuit having a constant resistance, and the oppositely wound coil surrounding the said core to neutralize the action of the first mentioned coil, the neutralizing coil being interposed in a circuit having a variable resistance, substantially as described.

544,119. APPARATUS FOR MAKING CHLORIN. JAMES J. POWERS, Cortlandt, N. Y. Filed Apr. 11, 1895. Serial No. 545,379. (No model.)



Claim.—1. In apparatus for the manufacture of chlorine gas, the combination of a storage tank for acid constructed to resist pressure, an open top measuring tank connected by a pipe with the storage tank, means for forcing air into the storage tank, to cause the transfer of acid from the storage tank to the measuring tank, a pressure tank for receiving acid discharged by gravity from the measuring tank, means for creating an air pressure in the pressure tank, and a generating still connected by a pipe with the pressure tank, substantially as specified.

2. In apparatus for the manufacture of chlorine gas, the combination of acid storage and pressure tanks having imperforate lower portions made of homogeneous acid resisting material, an open top measuring tank, a generator, and means for transferring acid from the storage tank to the measuring tank and from the pressure tank to the generator, substantially as specified.

3. The combination of the pressure tanks A and F, measuring tank D, still G and safety column M, with a safety valve N, substantially as shown and described.

544,120. LOCOMOTIVE SNOW OR ICE FLANGER. AUGUSTUS F. PRIEST, Duluth, Minn. Filed Dec. 18, 1894. Serial No. 532,153. (No model.)

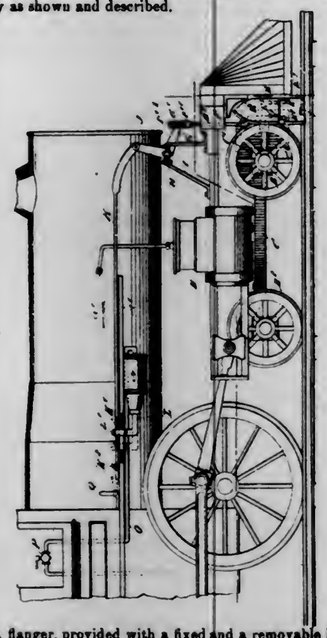
Claim.—1. A flanger, provided with a cross bar for supporting the flanger blades having each end bent to stand at an angle to the bar, and angle irons fastened on the said bar and having their faces in alignment with the faces of the said bent ends, substantially as shown and described.

2. A flanger, provided with a cross bar for supporting the flanger blades and having each end bent to stand at an angle to the bar, angle irons fastened on the said bar and having their faces in alignment with the faces of the said bent ends, and flanger blades secured on the said aligned ends and angle irons, substantially as shown and described.

3. A flanger, comprising slotted guideways formed on the heads of the equalizer bars, a cross bar fitted to slide in the said guideways and having its ends bent to stand at an angle to the bar, angle irons fastened on the bar and having their faces in alignment with the faces of the said bent ends, the said angle irons abutting on the said guideways to prevent lateral movement of the cross bar, and flanger blades supported on the said bent ends and angle irons, substantially as shown and described.

4. A flanger, comprising slotted guideways formed on the heads of the equalizer bars, a cross bar fitted to slide in the said guideways and having its end bent to stand at an angle to the bar, angle irons fastened on the bar and having their faces in alignment with the faces of the said bent ends, the said angle irons abutting on the said guide-

ways to prevent lateral movement of the cross bar, flanger blades supported on the said bent ends and angle irons, each flanger blade comprising a cutter knife and a deflecting and reinforcing plate, substantially as shown and described.



5. A flanger, provided with a fixed and a removable bolt, a cutter knife formed with an aperture and a notch, of which the latter is adapted to engage the said fixed bolt, and an opening adapted to be engaged by the said removable bolt, substantially as shown and described.

6. A flanger, provided with a cutter knife formed with a bolt aperture and a bolt notch, substantially as shown and described.

7. A flanger, provided with an equalizer bar formed with a recess adapted to fit on the truck box, the said equalizer bar being also provided with vertical guideways for the cross bar of the flanger blades, and an angle iron secured on the head and adapted to engage the inner face of the truck box, substantially as shown and described.

8. A flanger comprising a reinforcing plate, adapted for attachment to the locomotive, a depending cutter detachably secured on the reinforcing plate and an upwardly-extending deflecting plate secured to the said reinforcing plate, substantially as set forth.

9. A flanger, comprising equalizer bars having their front ends provided with notches and having depending heads forming the front sides of the notches, said heads provided with vertical guideways, a bar guided at its ends in said guideways, and flanger blades mounted on the bar, substantially as set forth.

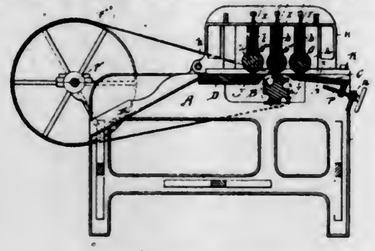
10. A flanger comprising a supporting bar, a reinforcing plate secured thereto, a cutter detachably secured to the front face thereof and extending below said reinforcing plate, and an upwardly-extending deflecting plate secured to said reinforcing plate, substantially as set forth.

11. A flanger, comprising equalizer bars having depending heads at their forward portions, U-shaped bars having their ends secured to said heads and having their central portion spaced apart from the head and parallel thereto, whereby guide-ways are formed, a bar guided in said guide-ways, and flanger blades mounted on said bar, substantially as set forth.

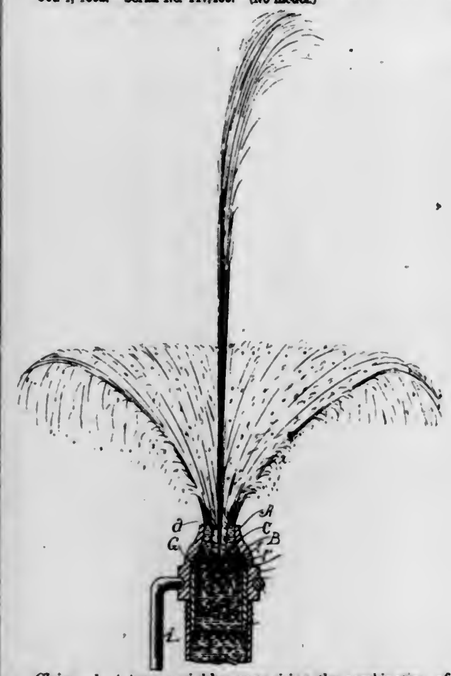
12. In a flanger, the combination of a support having a vertical slotted guide-way, a bar extending through the guide-way and movable along the same, and a flanger blade secured to said bar on opposite sides of the guide-way with its central part separated from the bar by a space adapted to receive one member of the guideway, substantially as described.

544,121. SHINGLE-PLANING MACHINE. WILLIAM J. PUGH, Muscatine, Iowa. Filed Dec. 5, 1894. Serial No. 530,901. (No model.)

Claim.—In a machine for planing shingles, the combination of a main frame, a cutter head having its shaft journaled transversely in said frame, an upwardly inclined front feed table C adjustable in lateral guides of said frame and having its rear end portion extending partially over the cutter, a rear feed table D, a supplementary frame H hinged to said main frame, the positively driven yieldable and adjustable feed rolls G, G^2 one of which is journaled in said frame H above the table C forward of the cutter head, and the other above the table D, an idle roll G' directly over the cutter, and gear for driving said rolls G G^2 and the cutter head, substantially as specified.



544,122. LAWN SPRINKLER AND FOUNTAIN. NICHOLAS L. RIGBY, Los Angeles, Cal., assignor to H. W. Fitch, Englewood, Ill. Filed Oct. 1, 1892. Serial No. 447,469. (No model.)



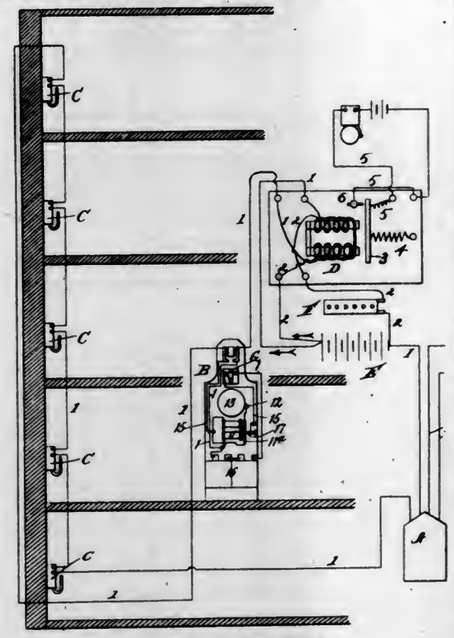
Claim.—1. A lawn sprinkler comprising the combination of a short outwardly tapering shell or nozzle; a thin diaphragm arranged at the base of such nozzle and provided with a series of radial slots extending through such diaphragm and having the wings between such radial slots arranged spirally.

2. A lawn sprinkler comprising the combination of a short shell or nozzle provided in its base with a diaphragm seat and provided below such diaphragm seat with a seat for a washer; and a disk or diaphragm arranged in such diaphragm seat and provided with a series of oblique radial slots extending through such diaphragm.

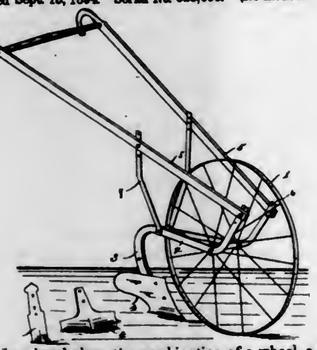
3. The combination of the shell or nozzle and the diaphragm seated at the base of the discharge of the nozzle and comprising the ring and the body portion provided with the L shaped slots having one member of the slots radial and the other member parallel with the rim, the intermediate portion *p* of such body portion being bent spirally as specified.

544,123. ELECTRIC SIGNALING SYSTEM. CHARLES A. ROLFE, Chicago, Ill. Filed Jan. 8, 1895. Serial No. 534,213. (No model.)

Claim.—An electric signaling system comprising a signal transmitting mechanism from which alarm signals are transmitted over the main line; an auxiliary circuit including means for starting the signal transmitting mechanism and also including one of the windings of a differential relay; a balancing circuit including the other winding of said relay; a battery from which the current divides between the two circuits and passes through the relay windings in opposite directions; a rheostat arranged in the balancing circuit as a means for dividing the current equally between said two circuits; and an alarm controlled by the differential relay and operating when the circuits are out of balance, substantially as set forth.



544,124. HAND WHEEL-PLOW. JACOB V. ROWLETT, Richmond, Ind. Filed Sept. 15, 1894. Serial No. 523,090. (No model.)

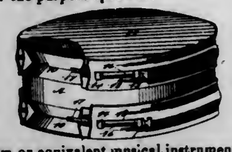


Claim.—In a hand-plow, the combination of a wheel, a plowing tool, a beam having arms which rise from the plowing tool in contact with each other to substantially the level of the axle of the wheel and then continuously diverge to the respective ends of the axle of the wheel and thence forward and upward at an obtuse angle, handles extending from the ends substantially at right angles and likewise diverging, and supports for the handles extending thereto from the point of divergence of the beam, substantially as described.

544,125. DEVICE FOR SECURING DRUM OR SIMILAR HEADS. ISAAC H. SAPP, Bucyrus, Ohio. Filed Nov. 20, 1894. Serial No. 529,395. (No model.)

Claim.—1. In a drum or like instrument, the combination, with the body thereof, and the head connected at its edges thereto, of a tension band passed around the head inside its point of attachment to the body, and a tension device connected with the said band, whereby the same may be made to bind more or less firmly against the head, substantially as shown and described.

2. In a drum or equivalent musical instrument, the combination, with the body and a head stretched across one end of the body and extending along the outer face of the same, the body being provided with a depression at that point covered by the extending portion of the head, of a band held in engagement with the extension of the head, the ends of the band being connected with an adjusting screw, whereby the head may be pressed more or less firmly against the body, as and for the purpose specified.



3. In a drum or equivalent musical instrument, the combination, with the body portion thereof, the said body being provided with an exterior groove and a head stretched across one end of the body, a portion of the head extending over the aforesaid groove, of a cord or band engaging with the outer face of the extension portion of the head, an adjusting screw, blocks carried by said screw, and means, substantially as described, for attaching the ends of the band or cord to the said blocks, the ends of the band being made to cross one another, as and for the purpose set forth.

4. In a drum, or like musical instrument, the combination, with the body, the said body being provided with an exterior annular groove or channel substantially angular in cross section, of a head stretched across one end of the body, the said head being made to extend over the groove in the body, a tension cord engaging with the outer surface of the extended portion of the head, a band covering the cord and provided with an opening, blocks held to slide in the opening of the band, the ends of the cords being secured to said blocks, and an adjusting screw whereby the blocks may be simultaneously moved to or from one another, as and for the purpose specified.

5. In a drum or like musical instrument, the combination, with the body portion thereof, the said body being provided with an annular groove upon its outer face adjacent to one of its ends, of a head stretched across an end of the body, a portion of the head being carried over the aforesaid groove, a tension cord engaging with the extended portion of the head and serving to draw the said head into contact with said groove, a cover band likewise engaging with the said head, blocks to which the ends of the tension cord are secured, said ends being made to cross one another, and an adjusting screw controlling the movement of the said blocks, as and for the purpose specified.

6. In a drum or the like, the combination of a body having a groove formed in its outer side, a head having its edges connected to the body beyond said groove, whereby said groove is covered by the head, and means for forcing the head into the said groove in the body, substantially as set forth.

7. In a drum or the like, the combination of a body having a recess formed in its outer side, a head having its edge portions extending along the outer side of the body beyond said recess and secured at their margins to the said body, whereby a cylindrical form is given to the edge portion of the head, and means for changing the diameter of the said cylindrical portion of the head, substantially as set forth.

8. In a drum or the like the combination of a circular body, a head stretched across said body and having its edge portions bent over at the edges of the body and secured to the sides of the body said body and head having a recess formed between them, a circular band adapted to bear on the said head at said recess and means for changing the diameter of the band, substantially as set forth.

544,126. SNAP-HOOK. WILLIAM A. SCHLEICHER, Cleveland, Ohio. Filed Mar. 2, 1895. Serial No. 540,318. (No model.)

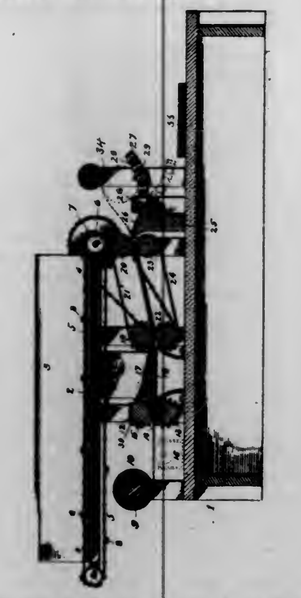


Claim.—A snap hook having a tongue, the butt of which is curved so as to form a hub encircling pintles in a bifurcated shank, said hub having a throat or opening sufficiently large to permit insertion of the coil of a V-shaped spring, and a V-shaped spring having a central coil set within the hub but unconfined therein; substantially as described.

544,127. BOTTLE OR CAN LABELING MACHINE. RICHARD SCHMIDT and CORNELIS F. SCHMIDT, Leavenworth, Kans. Filed Nov. 28 1894. Serial No. 530,343. (No model.)

Claim.—1. In a bottle and can labeling machine, the combination with a belt or carrier carrying bottles, of rolls feeding and cutting a web of labels, means advancing the severed labels at increased speed, a support having an inclined face beneath the end of the carrier and onto which the cans or bottles fall as they pass from the carrier, a

frame having a series of rolls to receive the bottle, an elastic roll arranged above said rolls, and means for driving the elastic roll, substantially as and for the purposes described.



2. In a bottle and can labeling machine, the combination with an endless belt or carrier carrying bottles or cans, of rolls feeding and cutting an endless web of labels beneath the belt or carrier, means advancing the severed labels over the can or bottle as it rests upon a drop-frame, a drop consisting of a pivoted spring sustained frame, the side arms of said frame supporting rolls, an elastic roll arranged above said rolls, and driven by suitable means, and mechanism for periodically tilting the pivoted drop-frame downward, substantially as and for the purposes described.

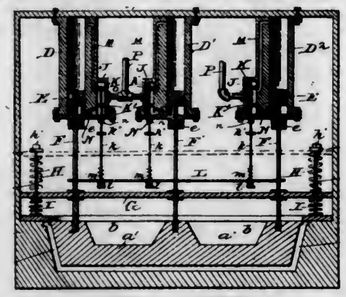
3. In a bottle and can labeling machine, the combination with an endless belt or carrier carrying bottles or cans, of rolls feeding and cutting labels from an endless web beneath the belt or carrier, belts for advancing the severed, gummed labels, means for driving said belts at an increased speed, a pivoted spring sustained drop-frame having a series of rolls, a positively driven elastic roll arranged over said rolls, and a shaft carrying a crank-arm which at each revolution impinges on a laterally projecting arm on the drop-frame, to tilt the the same downward, substantially as and for the purposes described.

4. In a bottle and can labeling machine, the combination with a can or bottle carrier, of a pivoted spring sustained drop-frame having a series of rolls sustained by its side arms and provided with a laterally projecting arm, means for periodically impinging on said laterally projecting arm to depress the drop-frame and tilt the same downward, means for delivering labels to the bottles or cans on said drop-frame, and a driven roll to press the labels onto the cans or bottles and revolve the latter, substantially as and for the purposes described.

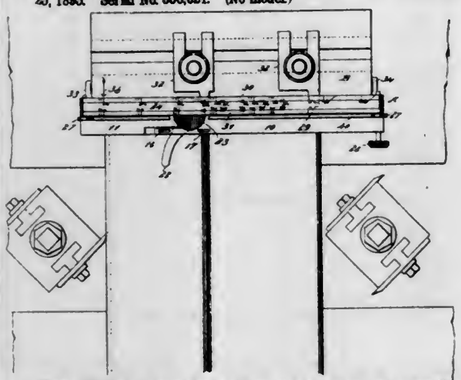
5. In a bottle and can labeling machine, the combination with an endless belt or carrier, carrying bottles or cans, of rolls feeding and cutting labels from an endless web, a guide plate to receive the severed portions of the web from the cutting rolls, belts for advancing the severed gummed labels, a support placed beneath the end of the belt or carrier to receive the bottle or can from said belt or carrier, a drop frame to support the bottle or can while the label is being applied, a roller for pressing the label on the bottle or can, and means for tilting said drop to discharge the bottle or can after the label is applied, substantially as and for the purposes described.

544,128. PNEUMATIC PRESS. GOTTLIEB SCHNASSE, Jr., and THEODOR PAFFRATH, Elwood, Ind. Filed Apr. 12, 1895. Serial No. 545,516. (No model.)

Claim.—In a pneumatic press of the described type, the combination with the recessed bed containing the mold or intaglio-die and the reciprocatory platen or cameo-die, of the piston rods fastened in said die and connected by the apertured plate G and parallel connecting bar L; guide-rods H; springs I; pistons F; valve-rods *k* provided with buffer-springs *l* and *m*, and collars *k'*; and air-cylinders provided with valve-chests, inlet-ports and exhaust, constructed and arranged to operate substantially in the manner and for the purpose shown and set forth.



544,129. DEVICE FOR SETTING UP MATCHERS FOR PLANING-MILL MACHINERY. CHARLES SCHOEN, Rhinelander, Wis. Filed May 25, 1895. Serial No. 550,621. (No model.)



Claim.—1. In a device for molders and matchers, an extensible body, means for adjusting the body endwise, and an endless tape carried by the body and having scales produced thereon, as and for the purpose specified.

2. A device for molders and matchers, the same consisting of a body constructed in sections having sliding connection with each other, a device for extending the sections, an endless tape carried by the body, rollers over which the said tape passes, one of which is provided with means for rotating it, the said tape having scales produced thereon for use in connection with either the upper or the lower cylinder of the machine, and patterns of the moldings to be produced, as and for the purpose set forth.

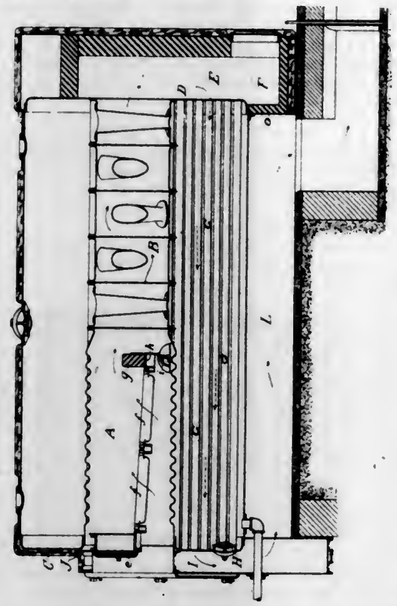
3. In a device for molders and matchers, a body comprising two sections having sliding and guided movement one on the other, a cam adapted to force the said sections apart, being in engagement with the inner ends thereof, a lever whereby the cam is operated, and an endless belt provided with guide rollers and bearing scales for adjusting the beader knives, representations of the patterns to be produced, and means, substantially as shown and described, for rotating the said endless tape, as and for the purpose specified.

4. In a device for molders and matchers, a body comprising two sections having sliding and guided movement one on the other, a cam adapted to force the said sections apart, being in engagement with the inner ends thereof, a lever whereby the cam is operated, an endless belt provided with guide rollers and bearing scales for adjusting the beader knives, representations of the patterns to be produced, clamps secured to the said body, one of the said clamps being adjustable, and means, substantially as shown and described, for rotating the roller over which the tape passes, as and for the purpose set forth.

544,130. STEAM-BOILER. WILLIAM SELLERS, Philadelphia, Pa., GEORGE S. STRONG, New York, N. Y., and HENRY B. BRADFORD, Wilmington, assignors to the Edge Moor Iron Company, Edge Moor, Del. Filed May 1, 1895. Serial No. 547,741. (No model.)

Claim.—1. An internally fired return tubular boiler, provided with two or more furnaces with combustion chambers, which respectively connect the front and back heads of the boiler, and open through both to a smoke flue outside the back head, in combination with return tubes secured in both heads, between and below the tops of the furnaces and combustion chambers.

2. An internally fired return tubular boiler arranged to discharge products of combustion outside of its back and front heads respectively, into downward smoke flues, provided with cleanable receptacles for ashes and cinders, below that point in each flue, where the direction of its gaseous current is changed and with doors leading into said receptacles.



3. An internally fired return tubular boiler provided with horizontal return tubes arranged in vertical lines in combination with a smoke box on the front of the boiler into which said tubes open, and a cover for said smoke box made in jointed sections with the joints lying in planes passing between vertical lines of tubes, and each cover section hinged to the adjacent section so as to fold back upon it and leave all tubes normally covered by it exposed.

4. An internally fired boiler, provided with a smoke flue, the top of which is the boiler, from which the two sides and one end of the flue are suspended, in combination with a seal of granular material supported on the independent bottom of the flue and into which the suspended plates extend to a depth which will practically exclude the air.

5. An internally fired boiler provided with two fixed supports at one end and two roller supports at the other, the weight at the roller end transmitted to the roller supports respectively, through two ball and socket joints.

6. An internally fired return tubular boiler provided with two or more furnaces, and a series of return tubes arranged between and below the furnaces and a descending smoke flue on the front boiler head, which flue is outside of and between and below the fire door frames and forms an extension of the ash pits under the furnaces.

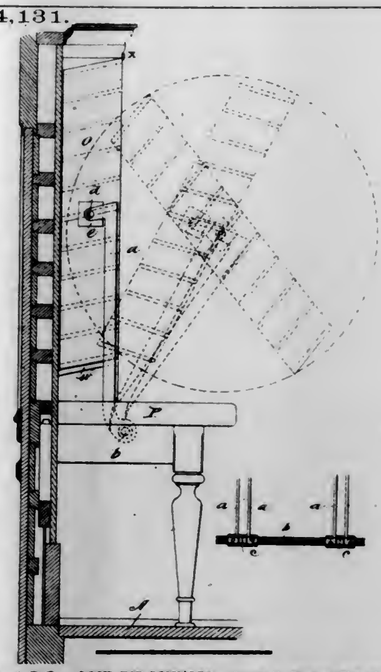
544,131. POSTAL-CAR LETTER-CASE. HENRY H. SESSIONS, Chicago, Ill., assignor to the Pullman's Palace Car Company, same place. Filed Jan. 2, 1895. Serial No. 533,545. (No model.)

Claim.—1. A postal car letter case, consisting of a rectangular frame having its body divided into a series of open ended compartments, and swinging arms upon which the case is pivotally mounted whereby it may be reversed as to position, substantially as described.

2. The combination with a reversible letter case substantially as described, of supports therefor comprising a pair of supporting arms pivotally connected to the sides of the case and having their lower ends rigidly connected to a rock shaft whereby the letter case may be drawn forward and reversed as to position, substantially as described.

3. The combination with a reversible letter case substantially as described, of supports therefor comprising a pair of supporting arms pivotally connected to the sides of the case and having their ends bent at an angle to their bodies, the upper ends being provided with pintles adapted to enter sockets in the side walls of the case and the lower ends being rigidly secured to a rock shaft, substantially as and for the purpose described.

544,131.



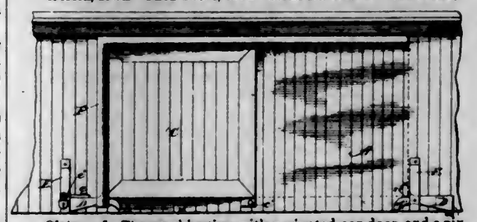
544,132. LOCK FOR BICYCLES. JAMES D. SHOOTS, Horseheads, N. Y. Filed Dec. 14, 1894. Serial No. 531,816. (No model.)



Claim.—1. The herein described lock for bicycles, comprising the sectional case, its attachment clip, its bolt barrel, the slidable bolt working in said barrel and case and having therein a series of circumferential grooves, the spindle journaled in said case, the series of notched disks rotatably seated on said spindle, an adjustable pin on said spindle, similar pins on each disk, and a dial plate also carried by said spindle, substantially as specified.

2. In a bicycle lock, the combination with the lock case, its attachment clip and bolt barrel, the spindle, its apertured dial plate, and the series of notched locking disks rotatably seated on said spindle, of the bolt adapted to be slid between the spokes of one of the bicycle wheels, said bolt having therein a series of circumferential grooves, arranged to be engaged by said disks, and also other grooves adapted to be engaged by one of said disks and by the dial plate, substantially as specified.

544,133. CAR-DOOR. WILLIAM T. SMITH and JOHN C. HARTMAN, Creston, Iowa. Filed Dec. 8, 1894. Serial No. 531,238. (No model.)



Claim.—1. The combination with a pivoted car door, and a pivoted locking catch for the same, of a frame adjacent to said catch, and a book on said catch designed to engage said frame, for the purpose specified.

2. The combination with a car door pivoted at one corner, of pivoted catches for locking the door in open and closed position respectively, each of said catches having a shouldered and reduced end for

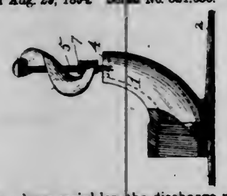
engaging a corner of the door and its other end weighted, and stops for limiting the extent of the downward movement of said weighted ends of the catches, substantially as described.

3. The combination with a pivoted car door and a pivoted locking catch for the same, of a frame adjacent to said catch, said frame having a perforation, and a hook on said catch, designed to extend through said perforation in the frame and having in its end a perforation to receive a seal or lock, substantially as described.

4. The combination with a pivoted car door and a pivoted locking catch therefor, said catch having a weighted free end, of a frame having its end in the path of the downward movement of said weighted end of the catch so as to form a stop therefor, said frame being formed with a perforation, and a hook pivoted upon said catch and designed to extend through said perforation, substantially as described.

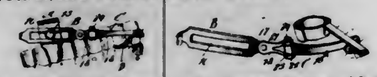
5. The combination of a door pivoted at one corner, a pivoted catch for engaging a corner of said door, a frame adjacent to said catch, said frame being formed with a perforation, and a hook pivoted upon said catch and designed to extend through said perforation, substantially as described.

544,134. LAWN-SPRINKLER. HENRY C. STRALEY, Cleveland, Ohio. Filed Aug. 29, 1894. Serial No. 521,655. (No model.)



Claim.—In a lawn sprinkler, the discharge nozzle provided with the openings through its end for separate jets of water, combined with the pivotal rod which projects above the end of the nozzle, and is provided with a stop at its upper end, and the spirally bent plate which extends around and revolves upon the rod, and is provided with a ring at each end through which the rod passes, and which rings hold the plate loosely in position, substantially as shown and described.

544,135. DENTAL CLAMP. JOSEPH M. STROUT, Portland, Me. Filed Dec. 27, 1894. Serial No. 533,120. (No model.)



Claim.—1. The combination, with a clamp to engage with one tooth, of an arm extending laterally from the clamp to engage with its free end a tooth other than the one engaged by the said clamp, the said arm being constructed in pivotally connected sections and provided with means for holding the sections in predetermined positions with relation to each other, as and for the purpose specified.

2. The combination, with a clamp to engage with one tooth, of an arm extending laterally from the clamp to engage with its free end a tooth other than the one engaged by the said clamp, the said arm being constructed in pivotally connected sections, the sections having clutch faces at their points of intersection, and means for drawing said faces together, substantially as and for the purpose set forth.

3. A retaining arm for a dental clamp, constructed in sections, the said sections being united by a clutch joint, and a support for said arm, as and for the purpose set forth.

4. In a dental clamp, the combination, with the clamping section, of a retaining arm carried thereby, the said retaining arm being provided with a socket terminal adapted to receive a foot piece, guard or like article, as and for the purpose specified.

5. In a dental clamp, the combination, with the body thereof, of an arm in adjustable connection therewith and provided with an adjustable matrix section adapted for engagement with a wisdom tooth as and for the purpose set forth.

6. A dental clamp, comprising a body having a neck adapted to engage a tooth, and having a perforation and a screw fitting in the perforation and adapted to secure the clamp to the tooth, a retaining arm held on said screw, and a nut on said screw adapted to hold the retaining arm in position, substantially as set forth.

7. A dental clamp comprising a support adapted to be secured to a tooth, a retaining arm, and means for securing said arm on either side of said support, substantially as set forth.

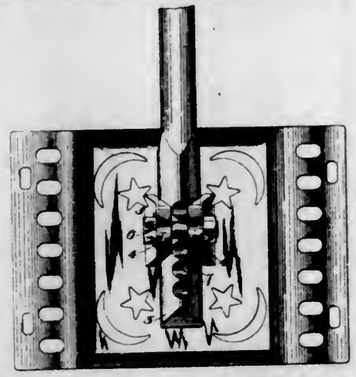
8. A dental clamp comprising a body having a neck to engage a tooth, a head above the neck, a screw extending across said head, nuts screwing on opposite sides of the screw, and a retaining arm adapted for attachment under each of said nuts, substantially as set forth.

9. In a dental clamp, the combination of a body adapted to be secured to one tooth, and a retaining arm connected to said body and composed of sections adjustably connected together, substantially as set forth.

10. A dental matrix or dam holder having a shank extending from its body portion in combination with a retaining arm, having a support and means for holding said matrix or dam holder in position on said support, substantially as set forth.

11. The combination of a support, a retaining arm mounted thereon and having a perforation, and a matrix or dam holder having a shank bent to a hook shape with the point of its hook adapted to pass through the said perforation in the retaining arm, substantially as set forth.

544,136. VEHICLE-STEP. HENRY C. SWAN, Oshkosh, Wis. Filed Oct. 3, 1894. Serial No. 524,786. (No model.)

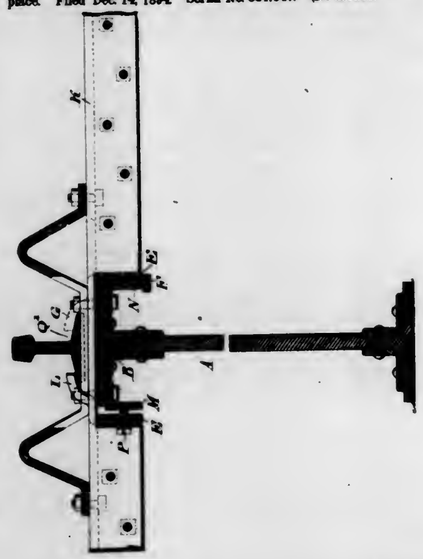


Claim.—1. A vehicle step having on its under side integral clamping lugs, with an intermediate socket in which the shank can be adjustably fitted, and means for clamping the lugs together upon the shank; substantially as described.

2. A vehicle step having on its under side integral clamping lugs, with an intermediate socket in which the shank can be adjustably fitted, and means for clamping the lugs together upon the shank, said lugs and shank being of wedge-shape; substantially as described.

3. A vehicle step having on its under side integral clamping lugs, with an intermediate socket in which the shank can be adjustably fitted, a clamping bolt, and a shank having notches adapted to fit the bolt; substantially as described.

544,137. RAILROAD-RAIL GUARD AND SUPPORT. ENOCH L. TAYLOR, Philadelphia, Pa., assignor of one-half to Henry Wood, same place. Filed Dec. 14, 1894. Serial No. 531,847. (No model.)



Claim.—1. A support, a chair having a cheek piece connected therewith, depending limbs on said chair, angle bars secured to said support, and mechanism connected with said chair bearing against one of said angle bars for adjusting said chair, substantially as described.

2. A rail guard formed of a piece of metal having elevated side portions, a central portion adapted to have a rail seated thereon, and means for securing it to a support, said central portion joining the inner limbs of said side portions, substantially as described.

3. A column having a top, an angle bar connected with said top, a chair with a depending limb, and a flange on the lower end of the latter, the bar being seated on said flange, the parts named being combined substantially as described.

4. A column having a top, an angle bar connected with said top, a chair with a depending limb, and a screw which is fitted to said limb and adapted to bear against said bar, the parts named being combined substantially as described.

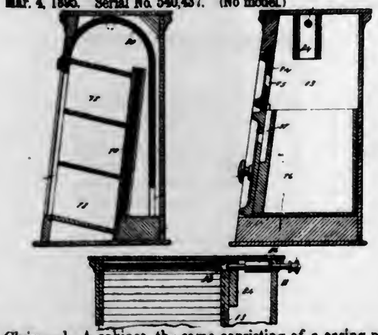
5. A chair, a beam part of which is seated on said chair, a support for the seat and part, angle bars connected with said support, a flange on one of the limbs of said chair on which one of said bars is sustained, and a screw on the opposite limb engaging the other angle bar, said parts being combined substantially as described.

6. A rail guard formed of a single piece of metal, having upwardly crimped side portions a flat central portion adapted to have a rail seated thereon, and feet for securing the guard to the rail support, substantially as described.

7. A rail-supporting beam and rail-supporting column, in combination with a chair, and a rail guard the side portions of which are elevated, and the central portion rests on said chair and has the rail superimposed thereupon, the parts being combined substantially as described.

8. A rail guard formed of elevated side portions, a flat central portion, supporting and securing feet on said side portions, and cut away portions to admit the projections of cheek pieces, substantially as described.

544,188. CABINET. PETER ULLRICH, Cedar Rapids, Iowa. Filed Mar. 4, 1895. Serial No. 540,437. (No model.)



Claim.—1. A cabinet, the same consisting of a casing provided with grooves therein, a roll front or top having movement in the said grooves, the upper portion of the grooves being semi-circular, and a bolt-brake having sliding movement in the casing, one end of the bolt-brake being adapted to enter a groove in which the top or front has movement and having frictional engagement with the said top or front, as and for the purpose set forth.

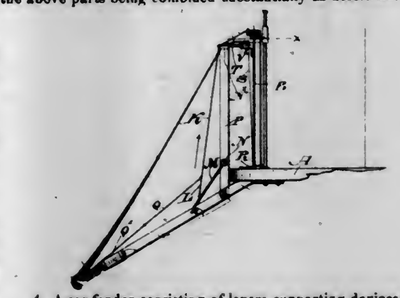
2. A cabinet consisting of a casing provided with corresponding grooves in the inner faces of its side walls, the upper portions of said grooves being semi-circular, a roll front arranged to slide in said grooves, and a bolt-brake having sliding movement in the casing and adapted to enter one of said grooves wherein the roll front slides, said bolt-brake having a rounded end adapted to engage under and wedge the said roll front against movement in said grooves, substantially as set forth.

544,139. CAR-FENDER. CHARLES M. VANDEGRIFT, Philadelphia, Pa. Filed Apr. 19, 1895. Serial No. 546,328. (No model.)

Claim.—1. In a car fender, the pivoted levers D suitably connected, and provided with the eyes M', the pivoted latches M, and the connections K, attached to said latches, said parts being combined substantially as described.

2. In a car fender, the levers D, pivoted to the brackets C, and having lugs on their outer ends, the rods V^3 mounted in said lugs, the straps Q^3 pivotally attached to said rods, and the connections K, with portions Q secured to said straps, said parts being combined substantially as described.

3. In a car fender, the levers D, the bars P, and the cross-pieces N, the catch T adapted to engage the latter, and having a spring U bearing thereon, the end of said catch having a connection leading to the treadle R, the latches M common to said levers and bars, the connection K leading to said latches, a cross bar common to said levers D, the transverse buffer V pivotally attached to rods which are movably mounted on said levers D, the springs X and the netting A, the above parts being combined substantially as described.



4. A car fender consisting of levers, supporting devices therefor, rods movable in said levers, hooks pivotally attached to said rods, springs inclosing the latter, a buffer mounted in said hooks, and a netting, said parts being combined substantially as described.

5. In a car fender the pivoted levers D, having the eyes M', the latches M engaging said eyes, lugs on said levers, the rods V^3 in said lugs, the straps Q^3 pivotally attached to said rods, and the connections K, having a portion L secured to said latches, and a portion Q secured to said straps, said parts being combined substantially as described.

6. A car fender consisting of a netting, levers and bars, latches and eyes common thereto, a buffer attached to yielding devices mounted in said levers, means for raising the fender and unhooking said latches in unison, and means for sustaining said fender in its normal position, substantially as described.

7. In a car fender, pivoted levers, having lugs thereon, rods in said lugs, straps pivotally secured to said rods, a buffer supported in said straps, and springs bearing against said lugs and straps, said parts being combined substantially as described.

544,140. FILTERING POT OR URN. WILLIAM A. VAN DEUREN, Brooklyn, N. Y. Filed Oct. 4, 1894. Serial No. 524,920. (No model.)



Claim.—1. The combination of a coffee pot or the like, a drip-cup located therein and provided with a foraminous bottom, a strainer bowl or cup adapted to contain the coffee, said strainer bowl being also provided with a foraminous bottom located above the bottom of the drip-cup and a paper filter arranged loosely between the drip cup and strainer bowl bottoms, said filter being relieved from pressure by the latter, the drip cup and strainer being so spaced that the filtering paper will, by the weight of the fluid upon it, sag to and be supported by the drip cup, substantially as set forth.

2. The combination of a coffee pot or the like having a drip-cup, provided with a perforated bottom, a removable false bottom arranged in the lower part of the pot, above the bottom thereof whereby a steam chamber is formed between the false bottom and the bottom of the pot, a tube communicating at its lower end with the steam chamber and having its upper end extending through the drip-cup, and having a branch projecting laterally from it above the drip-cup, said tube being formed of two sections threaded together and independent of the drip cup and coffee pot, and a strainer bowl adapted to be supported in the drip-cup and having a concavity formed in its side wall to receive said tube, substantially as set forth.

544,141. BRUSH. WILLIAM VAN KLEECK, Lansingburg, N. Y. Filed Nov. 9, 1891. Serial No. 411,262. (No model.)



Claim.—1. In a brush, the combination with a knot of bristles; of a knot-inclosing band, a cover with depending band-lapping portions, placed on top of the knot of bristles; and a wire inclosing the depending portions of the cover and the band, and projecting from the band to form a handle-support for the brush, substantially as described.

2. In a brush, the combination with the brush-head, and a head-inclosing wire, of a mud-scraper inserted between and supported by the head and inclosing wire, substantially as described.

3. A grooved brush-head and a grooved handle block secured together by a wire loop which incloses both the head and block, and is twisted intermediately of the head and block, whereby the inclosing wire is firmly seated in the respective grooves in the brush-head and handle block, substantially as described.

544,142. COMBINED PILE-WIRE HOLDER AND CUTTER FOR LOOMS. VICTOR VIRET, New Rochelle, N. Y. Filed May 27, 1895. Serial No. 550,899. (No model.)



Claim.—1. The herein-described combined pile wire holder and cutter, comprising a blade portion, and a sheath extending longitudinally thereof and formed integrally therewith, substantially as described.

2. The herein-described combined pile wire holder and cutter, comprising a face portion provided with a cutting edge, and a heel portion folded over against that end which carries the cutting edge, and spaced from the other end to form a sheath for the reception of the pile wire, substantially as described.

3. A blank for a combined pile wire holder and cutter, the said blank having a face portion and a heel portion provided with substantially straight and parallel edges, the face portion also having a curved edge adapted to form a cutter, and a notch located at the division between the face portion and the head portion and upon a line drawn approximately centrally between the parallel edges of the blank and parallel thereto, substantially as described.

4. A blank for a combined pile wire holder and cutter, comprising a face portion and a heel portion of substantially identical shape, and each provided with a curved edge adapted for a blade, and also with a straight edge adapted to form a sheath for the pile wire, substantially as described.

5. As a new article of manufacture, the herein-described blade for pile cutters, said blade being formed with a sheath extending longitudinally thereof and adapted to receive the pile wire, as set forth.

544,143. ATOMIZER. CHARLES WAGNER, New York, N. Y. Filed Oct. 29, 1894. Serial No. 527,210. (No model.)

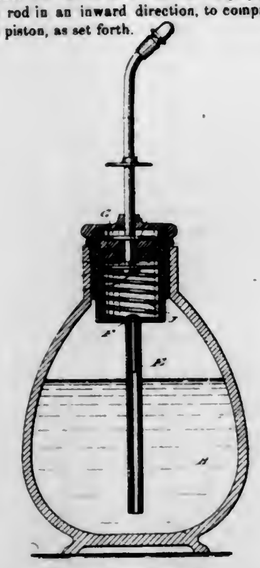
Claim.—1. An atomizer, provided with a hollow piston rod having an inlet port in its side, and a piston having a limited sliding motion longitudinally of the said piston rod to cover or uncover the inlet port in the side thereof, substantially as described.

2. An atomizer comprising a cylinder, a piston fitted to slide in the cylinder, and a hollow piston rod likewise constructed to slide in the cylinder, the piston being slidable longitudinally of the piston rod, and the latter having a port adapted to be opened and closed by the said piston, substantially as described.

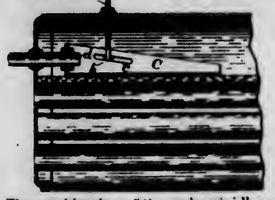
3. An atomizer comprising a cylinder, a piston fitted to slide in the said cylinder, and a hollow piston rod mounted to slide in the cylinder and provided within the same with collars, between which the said piston slides on the piston rod, the latter being provided with ports adapted to be opened and closed by the said piston, substantially as shown and described.

4. An atomizer comprising a cylinder, a piston fitted to slide in the said cylinder, a hollow piston rod mounted to slide in the cylinder and provided within the same with collars, between which the said piston slides on the piston rod, the latter being provided with ports adapted to be opened and closed by the said piston, and a spring pressing on one of the collars on the said piston rod to return the piston rod, substantially as shown and described.

5. An atomizer comprising a cylinder, a valved suction pipe for the said cylinder, a hollow spring-pressed piston rod fitted to slide in the cylinder and forming the discharge pipe for the liquid from the cylinder, a piston in the said cylinder and actuating a projection, such as the disk, substantially as described, located on the piston rod between the cylinder and the outlet of the discharge pipe for moving the said piston rod in an inward direction, to compress the spring pressing on the piston, as set forth.

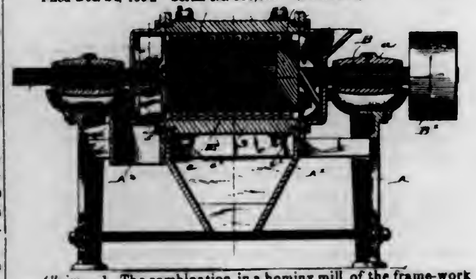


544,144. BOILER-CLEANING DEVICE. DAVID WAIGHT, Beaver Falls, Pa. Filed Oct. 23, 1894. Serial No. 526,743. (No model.)



Claim.—The combination of the yoke rigidly supported within and by a steam boiler, and having the pair of outwardly turned feet, with the triangular based skimmer having the inclined side walls and, in those walls, the inclined slots adapted to engage the feet of the yoke aforesaid; the said skimmer having also the orifice in its back wall in communication with the ordinary outlet pipe of such a cleaner, and the whole constructed and arranged as and for the purposes hereinbefore described.

544,145. HOMINY-MILL. JESSE WARRINGTON, Indianapolis, Ind., assignor of one-half to the Nordyke & Marmon Company, same place. Filed Dec. 24, 1894. Serial No. 532,857. (No model.)



Claim.—1. The combination, in a hominy mill, of the frame-work having heads, and longitudinal bars extending between said heads, a grinding roll and its shaft, said shaft being mounted in bearings outside said heads, adjustable grinding plates located between said longitudinal bars above the grinding roll, adjustable sieving plates located between said longitudinal bars below said grinding roll, and bolts and set screws connected to projections from said plates and entering and bearing upon said longitudinal bars, said several parts being arranged and operating substantially as set forth.

2. The combination, in a hominy mill, of the frame-work, the longitudinally-corrugated grinding roll, the surrounding cylinder, the ingress hopper at one end, feeding devices within the hopper at the feeding end of the grinding roll consisting of spirally set wings C' and spirally-corrugated section C², a retarding discharge gate at the other end of the grinding roll, and a conveying or forcing device B' mounted on the shaft at that end of the roll, whereby the treated stock is forced through said retarding discharge gate, substantially as shown and described.

3. The combination, in a hominy mill, with the grinding roll having straight or approximately straight corrugations, and its surrounding cylinder, of feeding devices at the head or receiving end of said roll and extending out in line therewith consisting of spiral wings C', and a spirally-grooved cylindrical section C², said parts being constructed and operating substantially as shown and described.

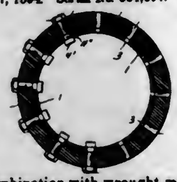
4. The combination, in a hominy mill, with the frame-work, the grinding roll, and its surrounding cylinder, having a space at the discharging end of the roll to receive the finished stock, from which space a discharge orifice leads downwardly, and a retarding gate F supported on a pivot *f* beyond which the arm F' extends carrying the adjustable weight F², whereby the discharge of stock is held back to a predetermined pressure, substantially as and for the purposes set forth.

5. The combination, in a hominy mill, of the frame-work, the grinding roll, the surrounding cylinder to said roll, an ingress hopper at one end of said roll, a space within or at the bottom of said hopper at the end of said roll containing force feed devices, a space at the other end of said roll into which the treated stock may be discharged from the grinding roll, with an orifice therein, and a gate arranged over said orifice of a less size than said orifice whereby spaces are left for the discharge of stock independent of the position of said gate, an arm extending from said gate, and an adjustable weight on said arm, substantially as shown and described.

544,146. FENCE-POST. HORACE A. WARTMAN, Sydenham, Canada. Filed Apr. 20, 1893. Serial No. 471,234. (No model.)

Claim.—A fence comprising a series of posts formed each of four oblique stakes crossing each other at the top, and bound together thereat, two of said stakes being substantially in the line of the fence, and two at right angles thereto, four foot braces connecting the stakes of each post shortly above the ground, two of said braces crossing each other diagonally and two forming straight connections between the respective pairs of stakes, and longitudinal wires or rails supported by and secured to such posts, alternate posts being placed in different relations to the fence to bring corresponding stakes upon opposite sides thereof, substantially as specified.

544,147. STEAM-PIPE FITTING. GEORGE H. WEBB, Pawtucket, R. I. Filed Dec. 7, 1894. Serial No. 531,097. (No model.)



Claim.—The combination with wrought metal pipe, and a metal flange, said pipe and flange provided with a series of cylindrical holes therein, of bolts provided with a taper portion below the head thereof, said bolts adapted to be inserted from the inside of the pipe, the material of the pipe being compressed around the bolt and the taper portion thereof drawn into the cylindrical holes in the pipe, to make a steam-tight joint under the head of the bolt, by screwing up the nuts on the ends of the bolts, substantially as set forth.

544,148. DEVICE FOR CLEANING OUT TUBED WELLS. HENRY J. WELTER and LOUIS R. SACHSTEDER, Tiffin, Ohio. Filed Feb. 28, 1895. Serial No. 540,105. (No model.)

Claim.—In a device for cleaning tubed wells, the combination with the cylinder formed with a series of holes intermediate its ends and provided at its upper end with a socket and screw plug, of the socket at the lower end of the cylinder, contracted at its lower end forming a shoulder the tube fitting therein, the ball valve seated on the upper end of said tube the nut and the washer clamped between said nut and the socket, substantially as described.



544,149. METALLIC BUTTONHOLE-EYELET. JOHN B. WHEAT, Hubbard City, Tex. Filed May 31, 1895. Serial No. 551,130. (No model.)



Claim.—1. An expansible metallic button-hole eyelet consisting of two members pivotally connected together and having their free ends abutting against each other when closed to form a complete loop or eye, substantially as and for the purposes described.

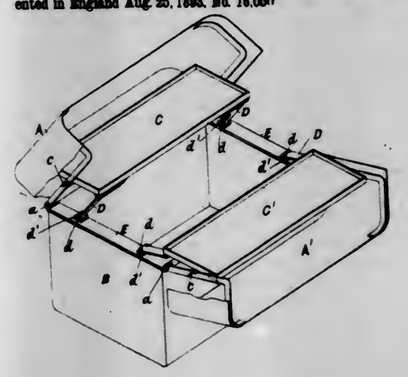
2. A metallic button-hole eyelet comprising a rigid member and a yielding member, the whole forming a complete loop or eye, substantially as and for the purposes described.

3. A metallic button-hole eyelet comprising a rigid member B and a yielding member C, the two members being pivotally connected together, and the eyelet provided with a circumferencial groove, substantially as and for the purposes described.

4. An expansible button-hole eyelet having a pivoted member and provided with a groove or channel in its outer edge and with the stitch-receiving apertures which intersect with said groove, substantially as and for the purposes described.

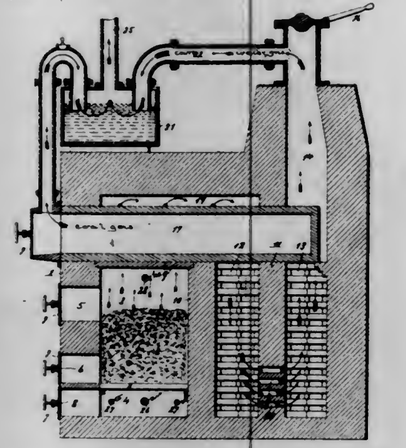
5. A metallic button-hole eyelet comprising a perforated member having ears, a grooved perforated member provided with lugs which overlap the ears of the first named member, and a pivot which connects the members together, substantially as and for the purposes described.

544,150. TRAVELING-BAG. WILLIAM F. WILLIAMS, London, England. Filed Dec. 19, 1894. Serial No. 532,293. (No model.) Patented in England Aug. 25, 1893. No. 16,050.



Claim.—In a top-fitted dressing or traveling bag, the combination, with the bag head frame, of two trays or tray carrier frames each of which is pivoted toward its inner edge to a pair of radius links jointed to the bag mouth frame and likewise pivoted to one of the bag head frames, so that the bag head frames will act conjointly with the radius links as parallel link tray-supporting mechanism whereby the trays may be moved out completely over the bag-heads while maintaining a horizontal position, by the act of throwing back the bag heads and are moved in over the bag body by the act of closing the bag heads, substantially as specified.

544,151. GAS-MANUFACTURING APPARATUS. REUBEN D. WIRT, Independence, Mo. Filed Nov. 17, 1894. Serial No. 529,112. (No model.)



Claim.—A gas-furnace, provided with a bridge-wall and a partition-wall, to form conjointly with each other and with the front and rear walls of the furnace the generating-chamber and the parallel fixing-chambers, which communicate with each other through said partition-wall near its lower end, and provided also with a flue or chimney communicating with the upper end of the rearmost of said fixing-chambers, an arch above the bridge-wall and above the foremost of said fixing-chambers and said generating-chamber, retorts for the distillation of coal extending longitudinally of the furnace, and suitably supported over the said generating and fixing-chambers and below the arch, a water-seal, a pipe connecting the flue or chimney with the water-seal, a pipe connecting the coal-retort with the said water-seal, a pipe leading from said water-seal, steam and air-blast pipes communicating with the interior of the generating-chamber, a pipe connected to the supply of liquid hydro-carbon communicating with said generating-chamber, a shield protecting the coal-retort, and a weighted valve closing the upper end of said flue or chimney, substantially as set forth.

544,152. STEAM-BOILER. JOSÉ D. DE BENJUMEA, New York, N. Y. Filed Nov. 10, 1894. Serial No. 528,399. (No model.)

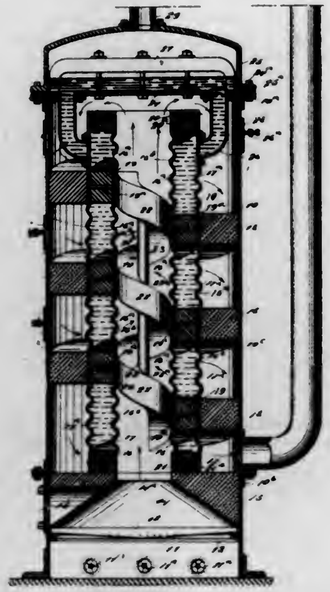
Claim.—1. A steam-boiler, comprising a casing, having a fire box and concentric shells arranged to form a tubular water space and inner and outer heating spaces, one of the heating spaces having one end in communication with the fire-box and the other heating space having its adjacent end connected to the outlet flue and separated from the fire-box, the other ends of the said heating spaces being connected together, substantially as set forth.

2. A steam-boiler comprising concentric shells arranged to form a tubular water space, an inner heating space inclosed by the water space, and an outer heating space inclosing the water space, and spiral partitions in the said spaces, substantially as set forth.

3. A steam-boiler comprising three concentric shells arranged to form a tubular water space, an inner inclosed heating space and an outer inclosing heating space, the inner shells, a crown sheet arranged above the top of the water-space, a steam-dome over the crown-sheet and connected to the water-space, and a fire-box connected to the foot of the inner heating space, substantially as set forth.

4. In a steam boiler, the combination with an outer cylindrical shell, and two cylindrical shells, one of greater diameter than the other, located concentrically within said outer shell, the said inner shells having spiral corrugations, of a spiral partition between the outer shell and the outermost of the inner shells, a spiral partition between the inner shells, a second spiral partition within the innermost of the inner shells, and closing rings at the top and bottom of the inner shells, substantially as described.

5. In a steam boiler, the combination with an outer cylindrical shell, two concentrically disposed inner cylindrical shells, spiral partitions between and within the inner shells and the outer shell, and a closing ring at each end of the inner shells, of a steam dome on the shell above the spiral partitions, and branch pipes extending from the space between the inner shells to tap the dome, substantially as described.



6. In a steam boiler, the combination with an upright, cylindrical shell having a fire chamber in its base, and two cylindrical shells of different diameters, within and concentric with the outer shell, of a spiral partition within the innermost shell and forming an up-take for hot gases from the fire chamber, sealing rings between the ends of the two inner shells, forming a water holding space between said shells, a spiral partition in said space, a spiral partition between the larger of the inner shells and the outer shell, forming a spiral down-take passage for products of combustion, a draft pipe at the lower end of said passage, a deflecting crown sheet on the top of the outer shell and spaced from the upper ends of the inner shells, a steam dome on the outer shell, and connecting pipes between the water space and the dome, substantially as described.

7. A steam-boiler comprising concentric rings having corrugations separated by spiral plain surfaces, said rings being arranged to form concentric heating and water spaces, and spiral partitions secured to said spiral plain surfaces of the rings, substantially as set forth.

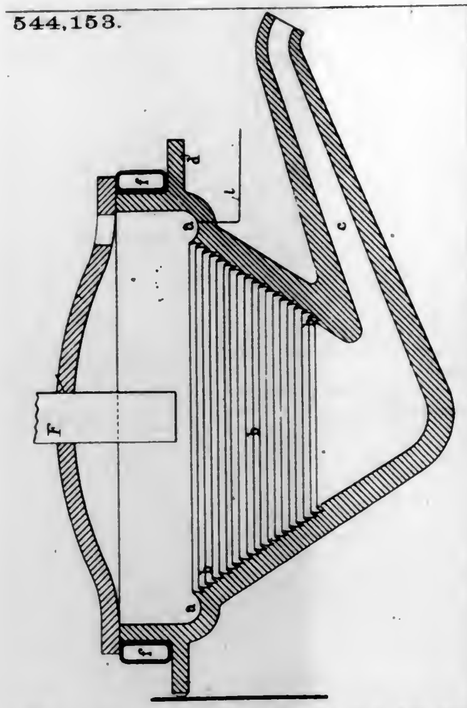
544,153. VESSEL FOR ELECTROLYTIC SEPARATION. WILHELM BORCHERS, Duisburg, Germany. Filed Dec. 31, 1894. Serial No. 533,376. (No model.)

Claim.—1. The vessel for the electrolytic treatment of metals having an interior surface with numerous grooves, one above the other and a discharge opening from the bottom whereby the material exposed to the electrolytic action flows downwardly from one groove to another, substantially as specified.

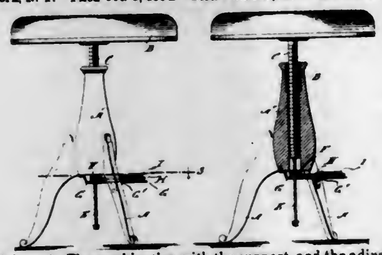
2. The vessel for the electrolytic treatment of metals having a gutter around the top, an interior surface with numerous grooves, one above the other and a discharge opening from the bottom whereby the material exposed to the electrolytic action flows downwardly from one groove to another, substantially as specified.

3. The vessel for the electrolytic treatment of metals having a gutter around the top, an interior surface with numerous grooves, one above the other and a discharge opening from the bottom whereby the material exposed to the electrolytic action flows downwardly from one groove to another, and a cooling ring surrounding the top of the vessel, substantially as specified.

544,153.



544,154. INDICATOR FOR PIANO-STOOLS. CARLO BRIZZI, New York, N. Y. Filed Oct. 9, 1894. Serial No. 525,325. (No model.)



Claim.—1. The combination with the support, and the adjustable seat having a spindle constructed to screw into the support, of an indicator controlled by the seat and indicating the position thereof, substantially as described.

2. The combination with the support, and the adjustable seat having a spindle constructed to screw into the support, of a stationary part attached to the support and a movable part operatively connected with the seat to move in unison therewith, the said stationary and movable parts conjointly forming an indicator, substantially as described.

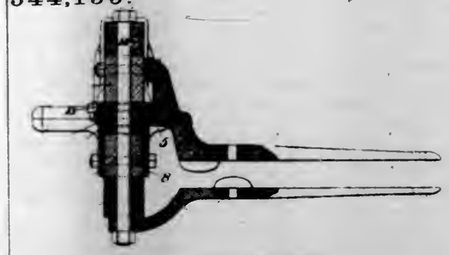
3. An indicator for piano stools, comprising a rod held on the spindle of the stool, a pinion mounted to turn with and to slide on the said rod, a graduated disk formed with gear teeth in mesh with the said pinion, and a fixed pointer indicating on the said graduated disk, substantially as shown and described.

4. An indicator for piano stools, comprising a rod held on the spindle of the stool, a pinion mounted to turn with and to slide on the said rod, a movable part formed with gear teeth in mesh with the said pinion, and a stationary part forming an indicator with the said movable part, substantially as described.

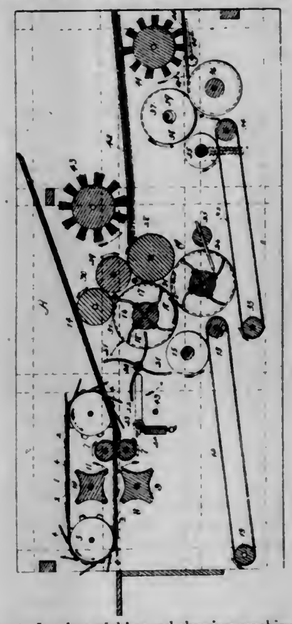
544,155. FIFTH-WHEEL. WILLIAM P. CHAMPNEY, Cleveland, Ohio. Filed June 27, 1894. Serial No. 515,810. (No model.)

Claim.—A fifth-wheel, having a top axle-plate provided with a central aperture to receive a tubular socket upon the perch-iron, said plate having continuous depending front and rear flanges extending past the central aperture and arranged to strengthen the axle at the point where it is weakened by the king-bolt hole, said flanges being connected by transverse bolts, substantially as described.

544,155.



544,156. HOP PICKER AND CLEANER. WARREN H. CLARK, West Burlington, N. Y. Filed Jan. 31, 1895. Serial No. 536,829. (No model.)



Claim.—1. In a hop picking and cleaning machine, the combination with the pair of rotating pickers or strippers and the pair of feed rollers journaled behind said pickers, of the endless feed chain having the forks arranged to hold the vines and carry them to the feed rollers, said chain extending through between the pickers or strippers and between the feed rollers at one end thereof, substantially as specified.

2. In a hop picking and cleaning machine, the combination with a pair of longitudinally ribbed, rotary pickers or strippers, the pair of feed rollers journaled behind said pickers, and means for rotating the pickers reversely to the feed rollers, of the endless feed chain having the pivoted forks arranged to hold the vines and carry them to the feed rollers, said chain extending through between the pickers or strippers and between the feed rollers at one end thereof, substantially as specified.

3. In a hop picking and cleaning machine, the combination with the endless traveling apron, of the hop guide and separator 15 having the disks or flanges, the upper and lower pickers and separators 16 and 19 having the broad deep flanges or disks, and the curved fingers between said flanges or disks, the rock-shaft 25 having the fingers 26, the leaf rollers 28, 29 and 30, the reel 20, and the series of knives 22, substantially as specified.

4. In a hop picking and cleaning machine, the co-acting rotary picker and separator devices 16 and 19, one of which is journaled above and forward of the other, said devices consisting each of a shaft having thereon a series of broad faced disks or flanges and a series of fingers between said disks or flanges, substantially as specified.

5. In a hop picking and cleaning machine, a device comprising a shaft having thereon a series of flanges or disks having broad peripheral edges, and separated from each other, and a series of pins carried by the shaft between said flanges or disks, together with parts adjacent to the said peripheral edges whereby the hop leaves

are caught thereby while the hops or hop clusters are carried between said flanges by said fingers, substantially as specified.

6. In a hop picking and cleaning machine, the combination with the co-acting rotary pickers and separators 16 and 19 of a number of smooth-surfaced rollers turning in close relation to the said pickers and separators for the purpose of taking the leaves therefrom, and guards for preventing said rollers from catching the hops, substantially as specified.

7 In a hop picking and cleaning machine, the combination with the rotary pickers and separators 16 and 19, of a reel journaled in front of the picker and separator 19 and having a series of fingers arranged to pass those of said picker and separator and a series of knives in front of said reel, substantially as specified.

8. In a hop picking and cleaning machine, the combination of the rotary pickers and separators 16 and 19, having the flanges or disks and the fingers, the shaft journaled behind the picker and separator 19 and having a series of stationary, but yielding, fingers which co-operate with those of said picker and separator 19, and a rotary shaft 20 journaled in front of the picker and separator 16, and which carries a series of fingers which co-operate with those of said picker and separator 16, and rollers journaled with their peripheral surfaces adjacent to the flanges of said pickers and separators, substantially as specified.

9. In a hop picking and cleaning machine, the combination with the rear apron 32, of the hop guide and separator 35 the flanged roller 36, and the shaft 37 above said roller and having thereon a series of loose disks, substantially as specified.

10. In a hop picking and cleaning machine, the combination with the picker and separator 36, of the shaft 37 journaled above and somewhat forward of the shaft of 36, and a series of alternating broad and narrow-faced disks hung on said shaft 37 the broad-faced disks being arranged to contact with the flanges of the separator 36, and the narrow-faced disks to work between said flanges, substantially as specified.

11. The herein described hop picking and cleaning machine, consisting essentially of a pair of oppositely rotated picking or stripping drums, feed rollers journaled behind said drums, a feeding device to carry the vines to said feed rollers, an endless traveling apron below said feeding and stripping devices, a vine-discharging platform, a series of rotating pickers and separators which take the hops from the said apron, and separate them from the clusters and stems and take out the leaves, a leaf-discharging brush and driving gear, substantially as specified.

12. A hop picking machine, having at its upper forward portion mechanism for feeding the vines and stripping them, a traveling apron below such mechanism, a rotary guide and separator in contact with said apron, a flanged separator and picker forward of said guide and separator and having between its flanges a series of fingers, a second and similar separator and picker above and forward of the first, a series of knives in front of said second separator and picker, a reel between the knives and said separator and picker, a series of fingers operating in connection with those of the first separator and picker, a second feed apron, a second set of leaf separators at the rear portion of the machine, and means for discharging the leaves and vines separately from the hops, substantially as specified.

13. In a hop cleaning machine, a separating device comprising a shaft having thereon a series of broad deep flanges, whose peripheral faces are circumferentially grooved, substantially as specified.

14. In a hop picking machine, a picking or stripping device, comprising a drum composed of a series of sections placed side by side upon a common central shaft, and having each a central opening of larger diameter than the shaft, said openings having internal wings or flanges which engage longitudinal grooves in the said shaft, substantially as specified.

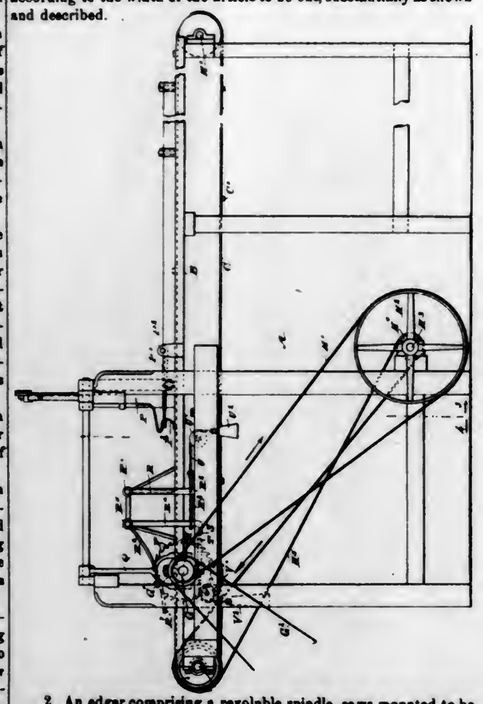
544,157. TROLLEY-WHEEL. JESSE CONWAY, Baltimore, Md., assignor of five-eighths to James F. Morrison, same place. Filed Jan. 4, 1895. Serial No. 533,798. (No model.)



Claim.—A trolley-wheel having a central annular groove and two side flanges, each of said flanges, one on each side of the central groove, having on its inner side a continuous spiral groove, adapted to direct the line-wire from the flange to the central groove.

544,158. EDGER. JOHN COX, Victoria, Canada. Filed Dec. 13, 1894. Serial No. 531,689. (No model.)

Claim.—1. An edger comprising a carrier belt for moving the article forward to the saws, and shifting devices actuated by the forwardly-moving article to set the saws transversely on their spindle according to the width of the article to be cut, substantially as shown and described.



2. An edger comprising a revolable spindle, saws mounted to be shifted on the said spindle and revolving with the same, and shifting devices adapted to be actuated by the forwardly-moving article to be edged, the said devices being connected with the said saws to shift the latter transversely on their spindle, substantially as shown and described.

3. An edger comprising an endless feed belt for carrying the articles to be edged, forward, a spindle mounted to revolve, saws mounted to turn with the said spindle and fitted to slide transversely thereon, tripping devices adapted to be actuated by the article carried on the said belt, the said tripping devices being connected with the said saws to shift the latter transversely on their spindle, substantially as shown and described.

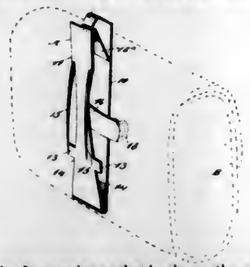
4. An edger comprising an endless feed belt for carrying the articles to be edged, forward, a spindle mounted to revolve, saws mounted to turn with the said spindle and fitted to slide transversely thereon, tripping devices adapted to be actuated by the article carried on the said belt, the said tripping devices being connected with the said saws to shift the latter transversely on their spindle, and means, substantially as described, for returning the said tripping devices to their normal position after the article has passed the said tripping devices, as set forth.

5. An edger comprising a carrier for moving the article forward to the edging tools, shifting devices actuated by the forwardly-moving article to adjust the said tools transversely corresponding to the width of the article and a locking device actuated by the moving article, for preventing outward movement of the edging tools, yet allowing inward movement thereof, substantially as described.

6. An edger comprising a carrier for moving the article forward to the edging tools, shifting devices actuated by the forwardly-moving article to adjust the said tools transversely corresponding to the width of the article, a locking device actuated by the moving article, for preventing outward movement of the edging tools, yet allowing inward movement thereof, and another locking device actuated by the moving article after the first named locking device, for holding the edging tools against both inward and outward movement, substantially as described.

544,159. POCKET SECURING DEVICE FOR POCKET-BOOKS, WATCHES, &c. PATRICK CURRAN, Romeo, Ill. Filed May 27, 1895. Serial No. 550,807. (No model.)

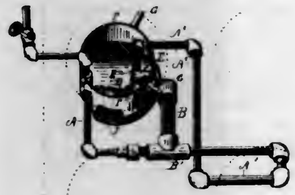
Claim.—1. A device for securing pocket books or other articles in a pocket, the same consisting of a strip of metal bent upon itself to form two opposing members, one of said members being provided with lugs extending from opposite sides, and pins adapted for engagement with the lugs at their free ends, both of the said members having tongues at their upper ends, the said tongues being adapted substantially to interlock, as and for the purpose specified.



2. A device for securing pocket books or other articles in a pocket, the same consisting of a strip of spring material bent upon itself to form opposing and substantially parallel members, the inner member having laterally-extending ears, and pins integral therewith, adapted for engagement at their free ends with said ears, each member being provided at its upper end with downwardly and inwardly extending tongues arranged to interlock, as and for the purpose specified.

3. The combination, with a pocket book or like article provided with a loop secured thereto, of a device adapted to secure the pocket book or other article in the pocket, said device consisting of a strip of spring material bent upon itself to form substantially parallel members, the inner member having laterally extending ears at opposite sides above its lower end, and pins adapted at their free ends for engagement with the said ears, being located at opposite sides of the said rear member and adapted to be passed through the material of the pocket, the outer member of the device being adapted to pass through the said loop, and interlocking tongues formed at the upper extremities of the said members of the said fastening device, as and for the purpose set forth.

544,160. OIL-GAS BURNER. ANDREW F. DICK, Joliet, Ill. Filed Apr. 12, 1895. Serial No. 545,496. (No model.)

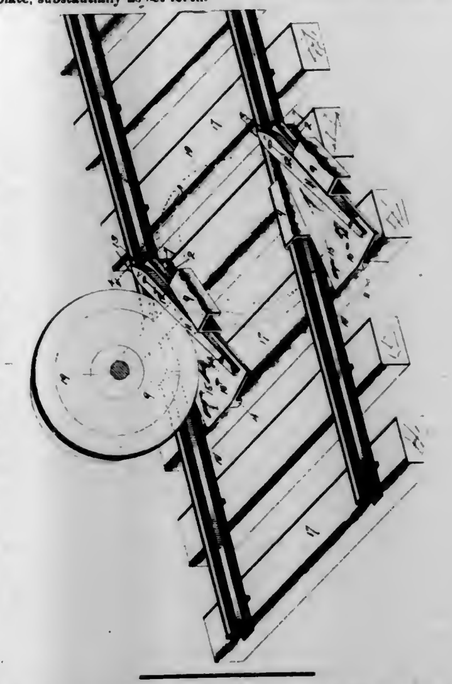


Claim.—In an oil gas burner the combination of the case F having a closed bottom forming a pan, and having a lid R provided with a draft damper S, and having the side openings J, the supply pipe A, nozzle pipe K having a drip orifice L arranged opposite the generator, generator B arranged in a horizontal position and on a plane above the burners, pipe L leading from said generator to the interior of said case and terminating in a burner D having burner orifices, and shield E for covering said burner orifices, and for protecting the gas jet from draft while in said case, all arranged to operate substantially as and for the purpose set forth.

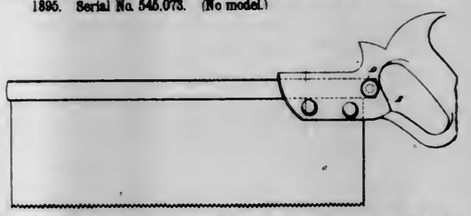
544,161. DEVICE FOR REPLACING DERAILED RAILWAY-CARS. PATRICK H. DURACK, Pecos, Tex. Filed Apr. 5, 1895. Serial No. 544,581. (No model.)

Claim.—1. A car-replacing appliance, comprising a plate whose side-margins converge and whose upper surface inclines upwardly from its rear to its front end, a tongue or lever pivoted near its front end upon and near the front end of said plate, a pin engaging an aperture in said tongue or lever near its rear end and adapted to engage one or another of a series of apertures in said plate, downwardly-disposed hook-arms secured to opposite sides of said plate, and one of them engaging a track-rail when in operative position, and an adjustable bolt carried at the front end of the plate and engaging the under side of the head of said track-rail, substantially as set forth.

2. A car-replacing appliance, comprising a plate whose side-margins converge and whose upper surface inclines upwardly from its rear to its front end, a tongue or lever pivoted near its front end upon and near the front end of said plate, a pin engaging an aperture in said tongue or lever near its rear end and adapted to engage one or another of a series of apertures in said plate, downwardly-disposed hook arms secured to opposite sides of said plate, and one of them engaging a track-rail when in operative position, an adjustable bolt carried at the front end of the plate and engaging the under side of the head of said track rail, a depending flange or shoulder at the rear end of said plate, and pointed dogs depending also from said plate, substantially as set forth.



544,162. SAW. HENRY J. EDLUND, Brooklyn, N. Y. Filed Apr. 9, 1895. Serial No. 545,073. (No model.)



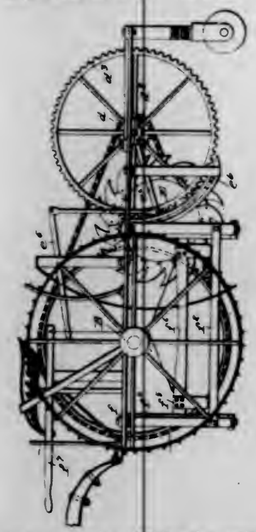
Claim.—1. A saw having its handle secured directly to the blade and recessed on each side of the blade, and provided with a back, comprising two parallel members connected at one end and spaced apart a distance equal to the thickness of the saw blade, said back fitting upon the saw blade with its closed end resting against the end of the blade and the free ends of its members projecting into the recess of the handle and secured thereto, substantially as described.

2. The combination with a saw having its handle secured directly to the blade and formed with a longitudinal recess on each side of the blade, of a back comprising two parallel members connected at one end and spaced apart a distance equal to the thickness of the blade, said back having its closed end resting against the end of the blade and the free ends of its members extending into the recesses of the handle, and a screw or bolt passing through the handle and the ends of the members of the back, substantially as described.

3. A saw, provided with a blade formed with a notch in one end, a handle formed with recesses, and a U-shaped back separate from the handle and engaging the said blade and handle, substantially as shown and described.

4. A saw, provided with a blade formed with a notch in its end, a handle formed with recesses, a U-shaped back separate from the handle and engaging the said blade and handle, and a screw for engaging the projecting ends of the said back, to secure the latter in place, substantially as shown and described.

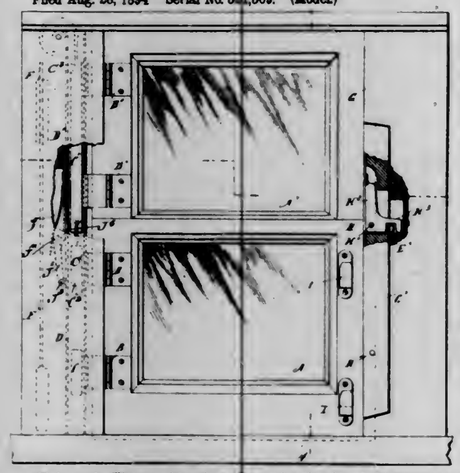
544,163. ICE-CUTTING MACHINE. MARTIN FEY, Tamaqua, Pa. Filed Oct. 3, 1893. Serial No. 487,076. (No model.)



Claim.—1. In an ice-cutting machine, the combination with the cutter, of a dependent frame arranged alongside the same, vertical guide posts which are adjustable laterally in the frame or toward and from the cutter, a horizontal bar which is slidable vertically on such posts, and vertical, aligned guides which are attached to and pendent from said horizontal bar, and adapted to run in a kerf or cut in the ice, substantially as shown and described.

2. In an ice-cutting machine, the combination with the cutter, of a frame arranged alongside the same, and having two sets of horizontal parallel and slotted bars fixed at each end of such frame, a vertical and grooved guide post secured between the two slotted bars of each pair means for clamping and holding the posts fixed in any lateral adjustment, a horizontal bar extending between the posts and adapted for adjustment vertically thereon, aligned guides pendent from such bar and adapted to run in a kerf or cut in the ice, and means for raising and lowering the guides, as shown and described

544,164. WINDOW. JOHN B GRATTAROLA, New York, N. Y. Filed Aug. 28, 1894. Serial No. 521,509. (Model.)



Claim.—1. The combination of a casing having guideways, one of which is provided with a removable part at one side, a sash pivoted to the side of the casing a slide plate arranged to move in the guideway opposite to that guideway having the removable part, a sash pivoted to the slide plate and adapted for sliding movement along the guideways, means for locking said removable part to the casing, and means for locking the removable part to the sash when the same is to be swung upon its pivot, substantially as set forth.

2. The combination of a casing having a sliding sash adapted to be removed when set in a predetermined position, and a stop device mounted on the casing and adapted to stop the sash against movement when the same is in its predetermined position, said stop being engaged and normally held out of operative position by the said sash, substantially as set forth.

3. The combination of a casing having sliding sashes one of which is adapted to be removed when in a predetermined position, a stop device mounted on the casing and adapted to stop said sash in said predetermined position when the same is to be removed, said stop-device being normally held out of operative position by the other sash, substantially as set forth.

4. A window, comprising a counterbalanced bar fitted to slide in guideways in the window frame, a lower sash hinged on the said slidable bar and provided at its free side with catches, a guideway in the window casing and adapted to be engaged by the free side of the said lower sash, part of the said guideway being removable, and a locking mechanism adapted to lock the said removable part of the guideway to either the said window casing or to the said sash, substantially as shown and described.

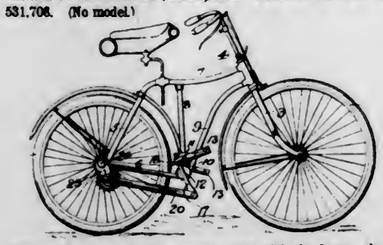
5. The combination of a casing having sliding sashes adapted to be removed when in a predetermined position and a stop device for stopping both sashes in said predetermined position, said stop device being normally held out of operation by the upper sash and being released by the downward movement thereof, substantially as set forth.

6. The combination of a casing having guide ways, sashes arranged to slide in said guide ways, one of the guide ways having at one side a removable lower part adapted to be locked to the casing and when unlocked to permit the removal of both sashes from the guide ways at that side of the casing and a stop-device mounted on the casing and adapted to stop said sashes in position opposite the removable part of the guideway said stop device being held out of operation by the upper sash when the same is raised, substantially as set forth.

7. The combination of a frame having guide-ways, sashes adapted when set in a predetermined position to be swung clear of the guide-ways and each having a slide-bar pivoted to one side, said slide bars being both at one side of the casing and adapted to slide therein and being provided with notches located adjacent to the upper end of each sash, and spring-actuated arms mounted on the casing and adapted to engage the notches in the slide-bars, substantially as set forth.

8. The combination of a casing having sliding sashes one of which is adapted to be removed when in a predetermined position, and a normally inoperative stop-device mounted on the casing in position to engage and stop the removable sash in said predetermined position, said stop-device being adapted to be actuated by the sliding movement of one of the sashes, substantially as set forth.

544,165. BICYCLE. GEORGE A. GRAVES, Joplin, Mo., assignor of one-half to John C. McKee, same place. Filed Dec. 13, 1894. Serial No. 531,706. (No model.)

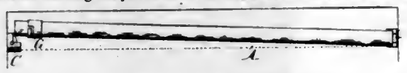


Claim.—In a bicycle, the combination with the frame, the treadle shaft, the intermeshing pinions secured thereto, the treadles and the adjustable arm connected with one of said treadles, of the pitman, the sleeve secured thereto, the crank in which said sleeve is journaled, the pinion fixed to said sleeve, the intermeshing pinion, the shaft upon which said crank rotates, the sleeve mounted upon said shaft, and the driving-wheel secured to said sleeve, substantially as described.

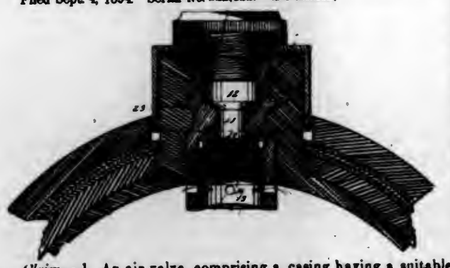
544,166. CURTAIN-POLE SOCKET. ROBERT S. GREGORY, Detroit, Mich., assignor of one-half to Ira J. Beam, same place. Filed Nov. 20, 1894. Serial No. 529,426. (No model.)

Claim.—1. The combination with the sockets of a pole fastening device of the character described, of projections or spurs provided in one socket and an abutment extending across the face of the other socket adapted to cooperate with the spurs of the first mentioned socket to hold the pole from revolving, substantially as described.

2. In a curtain pole fastening device, the combination with the pole, of the socket B provided with the spurs *a* and the socket C provided with the fin E, extending across the face of the socket and having its projecting edge inclined or cut away all arranged to operate as a means for holding the pole from revolving, substantially as described.



544,167. AIR-VALVE. FRANK GUSTAVESON, Wabasha, Minn. Filed Sept. 4, 1894. Serial No. 522,122. (No model.)

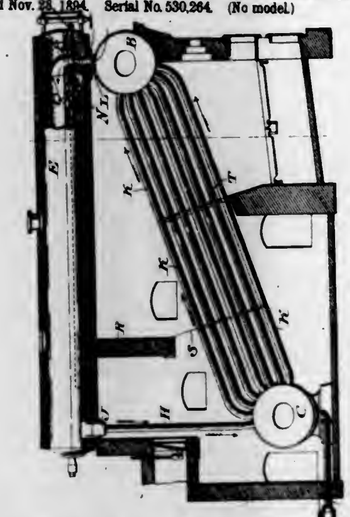


Claim.—1. An air valve, comprising a casing having a suitable controlling valve therein, and an external flange thereon, a flexible sleeve in which the said casing is held, the sleeve having a washer at its inner end adapted for attachment to a tire, and a cap covering the outer portion of the flexible sleeve, substantially as described.

2. An air valve, comprising a casing having a suitable controlling valve therein, a flexible sleeve encircling the casing and extending to within a short distance of the outer end thereof, the said sleeve being adapted for attachment to a tire, means for closing the outer end of the valve casing, and a cap covering the outer portion of the flexible sleeve, substantially as described.

3. An air valve, comprising a casing having outer and inner chambers connected by an air passage, a screw plug to close the outer chamber, a valve held in the inner chamber and adapted to seat itself over the air passage, a flexible sleeve secured to the casing and having a washer at its inner end adapted for attachment to a tire, the inner end of the said casing projecting beyond the inner end of the flexible sleeve provided with side ports, and a cap covering the outer portion of the flexible sleeve, and a washer arranged between the outer end of the sleeve and the cap substantially as described.

544,168. STEAM-BOILER. WILLIAM S. HALLOWELL, Wyncote, Pa. Filed Nov. 23, 1894. Serial No. 530,264. (No model.)



Claim.—1. In a boiler, a longitudinally-extending steam drum, a cylindrical header drum arranged under the latter transversely thereto, a connection from the top of said header drum to the bottom of said steam drum, a cylindrical mud drum located in the lower portion of the furnace, upright water tubes forming a continuous communication between the top of said mud drum and the under side of said steam drum, a series of water tubes connecting said mud drum and header drum in unbroken line, whereby a continuous and uninterrupted circulation between said steam, mud and header drums is effected, and conflicting circulations within the boiler are avoided, substantially as described.

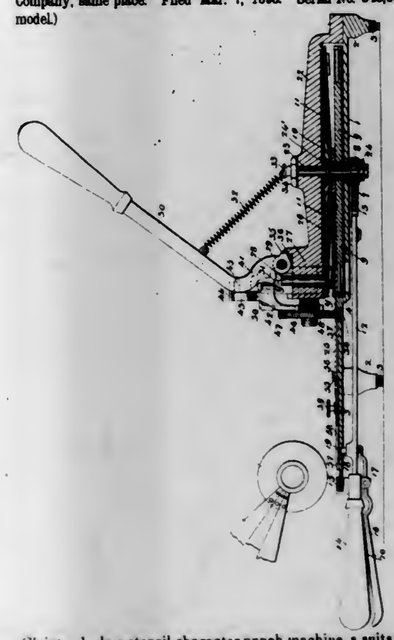
2. In a boiler, a longitudinally-extending steam drum, a header drum and a mud drum, the latter being in the line of the direct circulation, water tubes forming a continuous, unbroken communication between said steam drum and said mud drum, other tubes connecting the latter to the header drum, in continuous unbroken line and a connection from the upper portion of said header drum extending upwardly into the steam drum from the bottom portion thereof to a point at or above the normal water line, and adapted to increase the density of the water in the water tubes and header drum, and to insure a positive circulation of water throughout the boiler, substantially as described.

3. An attachment for increasing the density of water in water tube and other boilers, by carrying the ascending current in the front part of such boilers into the upper part of the steam drum, at or above the water line, the same consisting of a channeled connection adapted to be attached to the front part of a steam drum, and an adjacent water drum, one portion of said channel forming a closure for the end of said steam drum, and another portion being extended upwardly into the latter, to a point at or above the normal water level of said drum, substantially as described.

4. In a water tube boiler, a longitudinal steam drum E, header drum B, and a mud drum C, each arranged transversely to said steam drum, the water tubes H forming a continuous unbroken connection between said steam drum and mud drum, the water tubes K connecting the latter and the header drum, a connection from the latter drum to the front of said steam drum, said connection having a portion extending upwardly into the steam drum to a point at or above the normal water line, a feed pipe G located substantially as shown, the depending wall R, and baffle plates S, T, the above parts being combined substantially as described.

5. In a water tube boiler, having a longitudinally extending steam drum, a header drum, and suitable connections therefrom, to the rear of said steam drum, whereby a continuous unbroken circulation is created, a duct or ducts leading from said header drum into the forward portions of said steam drum, and having a portion thereof extended up into said steam drum to a point at or above the normal water line of the same and turned rearwardly, whereby the ascending current of water and steam passing through said duct or ducts, is liberated, at or above the normal water line in the steam drum, without agitating the water in the lower portion thereof, and the density of the water in the water tubes is increased.

544,169. STENCIL-CHARACTER PUNCH-MACHINE. STEPHEN D. HARTOG, Jr., St. Louis, Mo., assignor to the Eureka Stencil Machine Company, same place. Filed Mar. 7, 1895. Serial No. 540,805. (No model.)



Claim.—1. In a stencil-character punch machine, a suitable base, an operating table extending therefrom, a series of characters dis-

posed about the operating table, a common axis mounted on said base, a rotating die plate carried by the axis and having its upper surface substantially on a plane with the operating table, a pinion carried by the axis of the die plate, a swinging lever having a terminal toothed arc controlling said pinion, an index controlled by the swinging lever and co-operating with the index-characters, a series of punches for the dies of the die plate, a suitable plunger for said punches carried by the stationary part of the machine, an operating lever for controlling the plunger, and a suitable feeding device mounted above the operating table, substantially as set forth.

2. A stencil-character punch machine comprising a suitable base, a series of rotatable punches and corresponding dies, a plunger carried by the machine and adapted to co-operate with the series of punches, an operating lever for said plunger, suitable feed mechanism controlled by the operating lever, and suitable devices between the feed mechanism and operating lever for actuating the former in advance of the plunger, substantially as set forth.

3. In a stencil-character punch machine, an operating lever pivotally mounted on the machine frame, a guide plate movable in said frame in proximity to the lever, a cam on said lever for operating the guide plate in one direction, a pawl pivoted to said guide plate, an extension on said pawl, a second cam on said lever for operating the pawl and guide plate simultaneously in the opposite direction, a spring plate carried by the guide plate co-operating with the pawl, and a suitable feed disk controlled by the pawl, substantially as set forth.

4. In a stencil-character punch machine, a suitable bed plate, a slotted guide-way on said plate, a transverse guide bar on said bed plate, an overlapping edge carried by the same, a fork forming a part of or secured to the guide bar and inserted in the guide-way of the bed plate, and suitable feed mechanism co-operating with said guide bar, substantially as set forth.

5. In a stencil-character punch machine, a suitable base, a spider carried by the same and extending a suitable distance above said base plate, a pin rigidly passed through the spider and base, a sleeve loosely embracing the pin and passing through the base, a collar on the pin above the sleeve for limiting the movement of the sleeve in one direction, a die plate and corresponding punch carrying plates secured to the sleeve, a pinion carried by the lower end of the sleeve, a plate for the support of said pinion secured to the lower or under surface of the base, and suitable mechanism for rotating the pinion, sleeve and parts carried thereby, substantially as set forth.

544,170. BOOK-SUPPORT. CHARLES H. HAY, Carmi, Ill. Filed Mar. 13, 1895. Serial No. 541,565. (No model.)



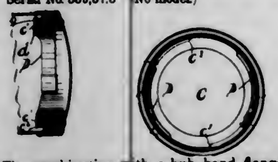
Claim.—1. A book support, comprising a counterbalancing beam frame, shelves held on the free ends of the said frame, and a spring pressed locking device adapted to lock the said frame in any desired position, substantially as shown and described.

2. A book support, comprising a counterbalancing beam frame, shelves held on the free ends of the said frame and placed a suitable distance apart, a locking device for locking the frame in any desired position and means for holding said locking device out of engagement with the frame, substantially as shown and described.

3. A book support, comprising a counterbalancing beam frame, shelves held at the ends of the said frame, a segmental gear wheel secured to one end of the frame, a spring pressed rod provided with a toothed head adapted to engage the segmental gear wheel, a lever for disengaging the said rod and means for locking the lever, substantially as shown and described.

4. A book support, comprising a counterbalancing beam frame, shelves held on the free ends of the said frame, a spring pressed locking device adapted to engage said frame and hold it in position, and links pivotally connected at one end with the said shelves and at the other end with fixed pivots below the trunnions of the beam frame, substantially as shown and described.

544,171. HUB-CAP. HENRY HIGGIN, Newport, Ky. Filed Feb. 23, 1895. Serial No. 539,373. (No model.)



Claim.—The combination with a hub band flange, having projections, *a*, on its inner periphery, of a cap, C, having a flange, *c*, provided with extensions, *c'*, having grooves, *c*³, adapted to take over the projections, *a*; cam surfaces, *c*⁴, adapted to contact with the projections, and spring pawls, D, adapted to hold the projections against accidental movement in the grooves, substantially as and for the purpose set forth.

544,172. SKATE. CAROLINE A. HIRSCH and WILLIAM G. PRICE, Sioux City, Iowa. Filed Dec. 28, 1894. Serial No. 533,189. (No model.)



Claim.—1. In a skate the combination with a suitable sole plate, of a spring runner consisting of a single piece of metal split longitudinally along a portion of its length and having said split portions bent apart so as to be normally separated; one of said portions being attached to the sole plate and the other being free and capable of vertical spring movement, substantially as described.

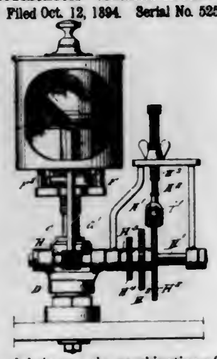
2. In a skate the combination with a suitable sole plate and clamping devices, of a spring runner consisting of a single piece of metal split along a portion of its length and having said split portions bent apart; one of said portions being attached to the sole plate and the other being free so as to be capable of vertical spring action, and devices for guiding the vertical movements of said runner, substantially as described.

3. In a skate the combination with a suitable sole plate and clamping devices of a spring runner consisting of a single piece of metal split along a portion of its length and having said split portions bent apart so as to be capable of vertical spring action, one of said portions being provided with a slotted extension, and the other with a projecting nose adapted to slide and be guided in said slotted extension, substantially as described.

4. In a skate the combination with a suitable sole plate and clamping devices of a spring runner consisting of a single piece of metal split along a portion of its length, and having said split portions bent apart so as to be capable of vertical spring action, the lower portion being provided with an upwardly extending slotted portion, the lower wall of the slot being beveled, and the upper portion being provided with a projecting nose having a knife edge and adapted to slide and be guided in said upwardly extending portion, substantially as described.

5. In a skate the combination with a suitable sole plate and clamping device of a spring runner consisting of a single piece of metal split along a portion of its length from the front toward the rear, and from the rear toward the front so that said runner is capable of vertical spring movement at its forward and rear ends, and devices for guiding the split portions of the runner in their vertical movements, substantially as described.

544,173. LUBRICATOR. CHARLES P. HOGUE and JOSEPH W. SMITH, Portland, Oreg. Filed Oct. 12, 1894. Serial No. 525,669. (No model.)



Claim.—1. In a lubricator, the combination of a perforated vessel adapted to contain the lubricant and having an outlet therefor, a half-nut pivotally mounted on the vessel adjacent to the perforation therein, a piston in said vessel a threaded stem for the piston passing through the perforation in the vessel and adapted to be engaged by the half-nut, a spring connected to the half-nut and adapted to hold the same normally into engagement with the stem of the piston, and means for simultaneously rotating the vessel and holding the half nut in engagement with the said stem, substantially as set forth.

2. A lubricator, comprising a vessel to contain the lubricant, having slots in its bottom, a piston fitted in the said vessel and provided with a screw threaded stem extending through the bottom of the vessel, half nuts mounted on the bottom of said vessel adjacent to the slots therein and engaging the threaded portion of the stem, and a worm wheel rotatably mounted on the stem and provided with pins extending through the slots in the bottom of the vessel, said pins being adapted when the worm wheel is rotated in one direction to engage the half nuts and hold the same in engagement with the screw threads of the piston stems, and when the worm wheel is rotated in the other direction to be disengaged from said half nuts, substantially as set forth.

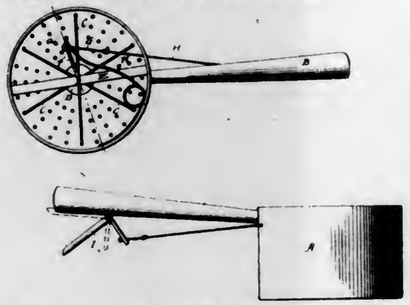
3. In a lubricator, the combination of a vessel, adapted to contain the lubricant and provided with an outlet for the same, the shaft H' journaled adjacent to said vessel, means operated from said shaft for forcing the oil out of the vessel, a frame, a series of worm wheels, slidingly mounted on the shaft H', a shaft I' carried in the frame, and adapted to receive rotary movement from the part to be lubricated, a worm on shaft I' adapted for engagement with either of the series of worm wheels on shaft H', and means for adjusting said shaft I' in said frame to bring said worm into operative position, substantially as set forth.

4. In a lubricator, the combination of a perforated vessel adapted to contain the lubricant and having an outlet therefor, a half-nut pivotally mounted on said vessel adjacent to the perforation therein, a piston in the vessel, a threaded stem for the piston passing through the perforation in the vessel and adapted to be engaged by the half-nut, means for positively holding the half-nut into engagement with said stem when the vessel is rotated in one direction, and means for holding the half-nut elastically in engagement with the stem when the vessel is rotated in the reverse direction, substantially as set forth.

5. A lubricator comprising a vessel adapted to contain the lubricant and having an outlet therefor, a piston having a stem, reciprocal screw threads formed on adjacent parts of said stem and vessel, one of such parts being movable into and out of engagement with the other part, and having partial screw threads and being provided with means for elastically holding it in engagement with the other at all times, means for imparting rotary movement to one of said parts, and means for simultaneously holding such parts positively in engagement, substantially as set forth.

6. In a lubricator, the combination of a vessel adapted to contain a lubricant and provided with a central opening, a piston located in the vessel, a screw threaded stem for the piston passing through the central opening in the vessel, a half nut pivoted on the vessel and adapted to engage the screw threaded stem, a wheel rotatably mounted adjacent to the vessel, and a pin on the said wheel adapted, when the wheel is rotated in one direction to engage the free end of the half nut on the casing whereby the said half nut is held in engagement with the screw threaded stem, said pin being also adapted when the wheel is rotated in the other direction to be moved out of contact with the half nut, whereby said half nut is released, substantially as set forth.

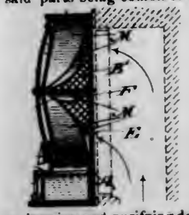
544,174. PLANT-DUSTER. JACOB B. HYZER, Janesville, Wis. Filed May 2, 1895. Serial No. 547,870. (No model.)



Claim.—The herein described plant duster, comprising a receptacle having a perforated bottom and a handle, an agitator comprising a series of radial arms which are arranged to work in close relation to said bottom, a vertical shaft journaled within the receptacle and to which said arms are fastened, said shaft having its upper portion bent horizontally and vertically to form a crank, a spring secured within the receptacle and having an arm which bears against the vertical arm of said crank, a bell crank lever pivotally secured to the under side of the handle, and links connecting one arm of said lever with the vertical arm of said crank, substantially as specified.

544,175. AIR MOISTENING AND PURIFYING ATTACHMENT FOR HOT-AIR REGISTERS. HENRY ILLOWIEI, Philadelphia, Pa. Filed Sept. 12, 1894. Serial No. 522,774. (No model.)

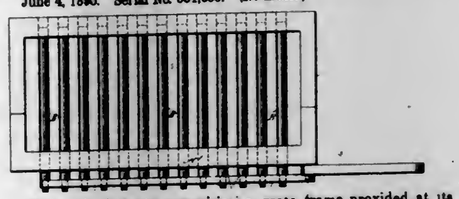
Claim.—1. In a device of the character described, a casing having an open back, a closed top and openings in its sides and front, a pan suitably supported, a fan rotatably mounted within said casing above said pan, and having a closed head adjacent the front of said casing and curved blades, which increase in width from the center to the periphery, said parts being combined substantially as described.



2. An air moistening and purifying device, consisting of a casing having a pan in the base thereof, a fan mounted in the casing above said pan, and hot air inlets and outlets, said fan consisting of a closed head and blades of curved form increasing in width from center to periphery, substantially as described.

3. In an air moistening and purifying device, a casing having a pan in the lower portion thereof, a fan rotatably mounted above said pan, said fan consisting of a closed head and curved blades, increasing in width from center to periphery, in combination with suitable means for gaining access to the interior of said casing, substantially as described.

544,176. GRATE. SAMUEL L. JETER, Montgomery, Ala. Filed June 4, 1895. Serial No. 551,655. (No model.)



Claim.—1. A grate comprising a grate frame provided at its front with a basket, grate bars journaled on the said frame and each provided at its outer end with a crank arm extending upward in front of the basket to form part thereof, substantially as shown and described.

2. A grate comprising a grate frame provided at its front with a basket, grate bars journaled on the said frame and each provided at its outer end with a crank arm extending upward in front of the basket to form part thereof, a connecting rod for connecting the said crank arms with each other, and a lever connected with the said connecting rod for imparting a shaking motion to the said grate bars, substantially as shown and described.

544,177. DEVICE FOR FORMING BELT-LACING. CHARLES K. JUDSON, Washington, D. C. Filed Feb. 16, 1895. Serial No. 538,603. (No model.)



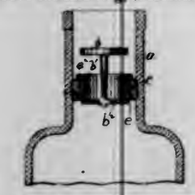
Claim.—1. In a device for forming belt-lacing, pins or the like arranged and constructed to provide at suitable intervals wire holding spaces, in combination with stationary arms 4" situated each opposite a wire holding space and in a plane transverse to the length of said space, substantially as set forth.

2. In a device for forming belt lacing, pins or the like arranged and constructed to provide at suitable intervals wire holding spaces, in combination with stationary arms 4" situated each opposite a wire holding space and in a plane transverse to the length of said space, and means for varying the distance between the arms and spaces, substantially as set forth.

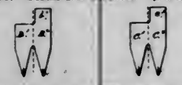
544,178. STOPPERING BOTTLES. WILLIAM J. KELLY, Manchester, England, assignor of one-half to Edward Turner Whitelow, same place. Filed Mar. 18, 1895. Serial No. 542,262. (No model.)

Claim.—A flat disk valve *b* provided with a stem *b'* and cross-piece *b*², in combination with a tubular valve seat *c* having its upper end screw-threaded, a stop-cap *d* which is screw threaded to turn on the said upper end, and a rubber ring *e* surrounding the said seat to

hold it in the neck of a bottle the upper end of the said valve seat being extended above the said ring, substantially as set forth.



544,179. TWIN-POINTED PEN. ABRAHAM KLINE, Manheim, Pa. Filed Mar. 11, 1893. Serial No. 465,633. (No model.)



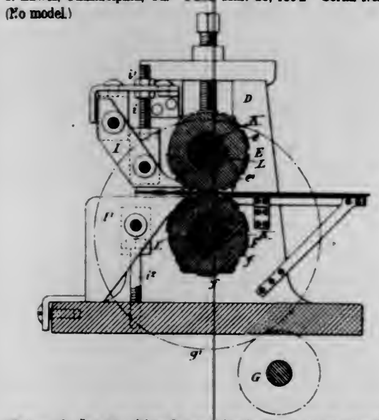
Claim.—1. A writing or ruling pen comprising two portions having V-shaped points and secured in separate parallel planes, said points brought together and outwardly rounded, and a vertical cut in the forward end of each of said points whereby a cross-slit is formed in the nib of said pen, with an end provided for securing to a holder, all substantially as described and for the purpose hereinbefore set forth.

2. A twin-pointed pen consisting of two pieces having V-shaped ends and set in two separate parallel planes, the points bent inwardly together and outwardly rounded, a vertical cut in the forward end of each of said points whereby a cross-slit is formed at the nib of said pen, and a projecting end provided for securing to a holder, substantially as described and for the purpose hereinbefore set forth.

3. A twin-pointed pen, as described, with inwardly bent V-shaped forward ends brought together and having vertical cuts in their nibs whereby a cross-slit is formed at the writing point, and means provided for attaching to a holder, substantially as and for the purpose hereinbefore set forth.

4. The herein described pen comprising the portions in one piece cut from sheet metal and folded over in two parallel planes, having V-shaped ends bent inwardly together and outwardly rounded with longitudinal cuts in their nibs to form a cross-slit at the point, and the projecting upper end for securing to a holder, all substantially as and for the purpose hereinbefore set forth.

544,180. MACHINE FOR MAKING BATTERY-PLATES. THOMAS T. LEWIS, Philadelphia, Pa. Filed Mar. 23, 1894. Serial No. 504,772. (No model.)



Claim.—1. In a machine for making battery plates, the shafts K, K, suitably journaled, the threaded sleeves L, L, secured to said shafts, a series of notched cutting disks secured on each sleeve, and spacing disks therebetween of greater width than said cutting disks, the cutting disks of one roll being in line with the spacing disks of the other roll, said notched and cutting portions of the disks being in longitudinal alignment, and vertically adjustable strippers arranged as shown, the relative arrangement of said rolls being such that when the cutting segments of one roll are pressing the bands of metal to one side of the plate, the cutting segments of the other roll are simultaneously pressing the adjacent bands to the other side of said plate, the above parts being combined substantially as described.

2. A machine for the purpose named, consisting of a frame, shafts journaled therein, with rolls formed of spacing disks, and notched cutting disks, the notches in the latter being in longitudinal alignment with each other, and the cutting disks of one roll being in alignment with the spacing disks of the other roll, strippers arranged adjacent said cutting disks, and adapted to contact with said spacing disks, and means for adjusting said strippers, the relative arrangement of said rolls being such that when the cutting segments of one roll are pressing the bands of metal to one side of the plate, the cutting segments of the other roll are simultaneously pressing the adjacent bands to the other side of said plate, the above parts being combined substantially as described.

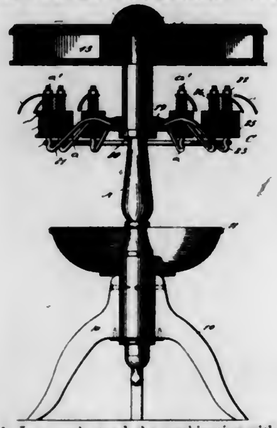
544,181. HUB-ATTACHING DEVICE. HARTWELL T. LEWIS, Calumet, Mich. Filed Jan. 7, 1895. Serial No. 534,077. (No model.)



Claim.—1. A device of the class described, comprising an axle formed with two flanges on its spindle, a nut mounted to turn loosely on the spindle between the flanges, a wheel hub closed at its outer end and formed in its bore near the inner end of the hub with a thread engaging the said nut, and a bushing arranged within the hub and fitted over the outermost flange of the spindle to form a bearing edge for one face of the nut, substantially as shown and described.

2. A device of the character described comprising an axle having two flanges on its spindle, one of said flanges being provided with a perforation extending through it, a wheel hub having a bore adapted to fit the flanges on the axle and provided with a screw-threaded portion, a nut engaging the screw threads in the wheel hub and held between the flanges on the axle, said nut being provided with a perforation corresponding with the perforation in the flange of the axle, a longitudinally movable locking pin carried by the axle with its ends closely fitting the perforation in the axle flange, and adapted to close the same and adanted when moved longitudinally to engage and enter the perforation in the nut of the wheel hub, and a spring connected to the said pin and adapted to hold the same normally in the perforation in the axle flange and out of the perforation in the nut on the wheel hub, substantially as set forth.

544,182. WORK-STAND. CLINTON R. LINCOLN, Morehead City, N. C. Filed Feb. 25, 1895. Serial No. 539,637. (No model.)



Claim.—1. In a work stand, the combination with a standard or support, of a thread rack comprising a hub loosely mounted on the said standard, a series of angular arms removably secured to the hub, means for holding the arms in position in the hub, each of said arms having a vertical member adapted to support a spool, and a tension device carried by each of said arms, as and for the purpose specified.

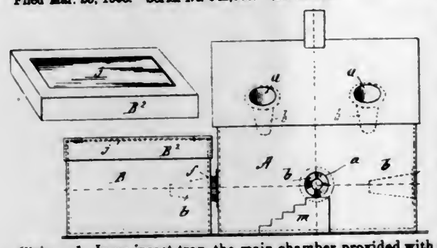
2. In a work stand, the combination with a standard or support, of a thread rack mounted thereon and comprising a series of arms each having a vertical member adapted to support a spool and a binding-ring clamping the arms in position and removable from the arms, as and for the purpose set forth.

3. In a work stand, the combination, with a standard or support of a thread rack comprising a hub, arms radiating from the hub each adapted to support a spool, a retaining-band in engagement with all of the arms, supporting them in position in the hub and removable from the arms, and a tension device carried by each arm adapted for engagement with the spool, as and for the purpose set forth.

4. In a work stand, the combination with a standard or support, of a thread rack mounted to revolve thereon, comprising a hub, a series of angular arms radiating from the hub, a retaining band maintaining the said arms in proper position in the hub, being removable from the arms, a tension device carried by each arm, and thread cutters mounted on the arms, substantially as described.

5 In a work stand, the combination with a standard or support, of a cabinet having a central solid portion mounted to revolve on said standard, a recess formed in the top of said central portion, a cap plate fitting said recess, a screw passing loosely through the cap plate and secured to the said standard, the upper surface of the said cabinet forming a table, and the said upper surface being provided with an undercut recess adapted to receive a cushion, substantially as shown and described.

544,183. ROACH-TRAP. LEONIDAS MARCHESE, Springfield, Mass. Filed Mar. 23, 1895. Serial No. 542,993. (No model.)



Claim.—1. In an insect trap, the main chamber provided with a roof having slanting sides, combined with tubular conical entrances through both the sides and roof, those entrances through the sides being adapted to be closed so as to shut off all escape for the trapped insects, substantially as described.

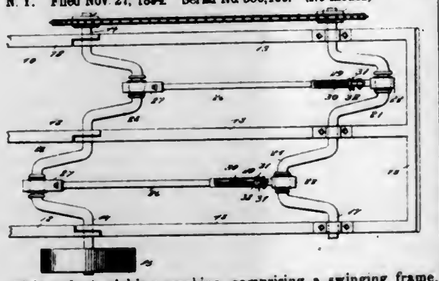
2. In an insect trap, the main chamber A, having a slanting roof, tubular conical entrances through both roof and sides, and a tubular conical exit, combined with the base which projects beyond the main chamber on all sides, the stairs, and the chamber B having a removable transparent cover; the chamber B and stairs being supported upon the projecting portions of the base, substantially as set forth.

544,184. PLANTER. LEWIS F. MILLER, Canton, N. C. Filed Oct. 23, 1894. Serial No. 526,702. (No model.)



Claim.—In a planter, a seed-wheel having recesses in its periphery, each recess having one side arranged radially of the wheel and having its other side arranged at right angles to said radial side, straps each bent to a U-shape with their ends secured to opposite sides of the seed-wheel adjacent to one of said recesses, whereby pockets are formed, the bottoms of said pockets being formed by the radial sides of the recesses, slotted links secured to the straps and set screws passing through the slots of the links and screwing into the seed-wheels, substantially as set forth.

544,185. PICKING MACHINE. SYLVENUS D. MOSHER, Storm King N. Y. Filed Nov. 27, 1894. Serial No. 530,169. (No model.)



Claim.—1. A picking machine, comprising a swinging frame, crank shafts arranged at the outer and inner ends of the frame, and a series of picks operatively connected with the two crank shafts, substantially as described.

2. A picking machine, comprising a swinging frame, crank shafts near the outer and inner ends of the frame, an operative driving connection between the two crank shafts, rods journaled to the outer crank shaft, picks having their upper ends pivoted to the said rods, and a second set of rods pivoted to the picks and to the inner crank shaft, substantially as described.

3. The combination of the swinging frame, the crank shaft at the foot of the frame, and the cutter suspended from the swinging frame and connected with the cranks of the crank shaft, substantially as described.

4. A picking machine, comprising a vertically swinging frame, crank shafts journaled at the outer and inner ends of the frame, an operative connection between the two crank shafts, a series of yielding rods pivoted to the outer crank shaft, a series of picks having their upper portions connected with the said rods, a second set of rods carried by the inner crank shaft and connected to the picks, and a cushion between the upper parts of the picks and the second rods, substantially as described.

5. A picking machine, comprising a vertically swinging frame, a series of picks supported from the frame, mechanism carried by the frame to swing the picks up and down, and reciprocating cutters supported on the frame and arranged at the sides of the picks, substantially as described.

6. A picking machine, comprising a vertically swinging frame, a series of picks carried by the frame, mechanism to operate the picks, and a hoisting device to raise and lower the frame, substantially as described.

7. In a picking machine, the combination with a supporting frame, picks, and means for vertically reciprocating the picks from one end of the frame, of a crank shaft at the other end of the frame, rods pivoted on the cranks of the shaft and having their other ends pivoted to the picks, and a cushion between the said rods and the picks, substantially as described.

8. In a picking machine, the combination with a supporting frame, a pick, and means for vertically reciprocating the pick from one end of the frame, of a crank shaft at the other end of the frame, a rod pivoted to the crank shaft and to the pick, a frame secured to the rod, and a sliding and spring pressed cross head carried by the frame and pivoted to the pick, substantially as described.

9. In a picking machine, the combination with a supporting frame, of a crank shaft at each end of the frame, a driving connection between the crank shafts, picks, rods pivoted to the upper ends of the picks and to one of the crank shafts, said rods having spring sections, rods pivoted to the picks between their ends and to the other crank shaft, and a cushion between the last named rod and the pick, substantially as described.

10. In a picking machine, the combination with an inclined frame, of a crank shaft at each end of the frame, picks, rods pivoted to the upper ends of the picks and to the crank shaft at the upper end of the frame, rods pivoted to the crank shaft at the lower end of the frame, and to the picks between their ends, substantially as described.

544,186. PIGEON-TRAP. JORDAN L. MOTT, Jr., New York, N. Y. Filed Mar. 20, 1895. Serial No. 542,526. (No model.)

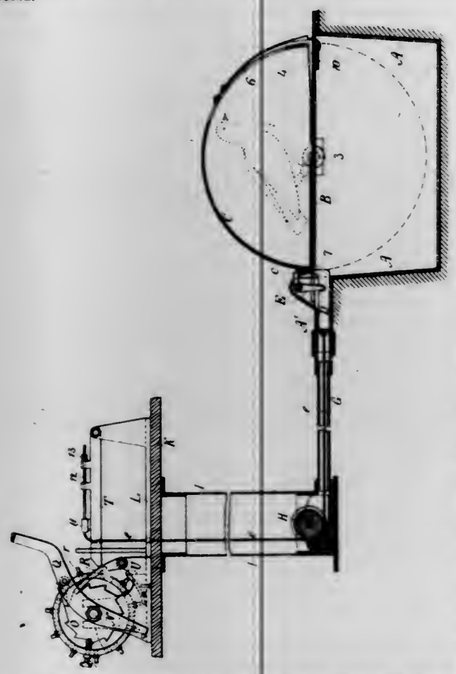
Claim.—1. The combination in a trap for pigeons or other birds, of a box having a rigid top plate for supporting the bird, a semi-circular hood pivoted on the box there being a slot in the top through which the said hood can be swung down into the box, mechanism actuated from a distance for pressing down one edge of the hood into the box to cause it to swing down by gravity and uncover the bird and to strike on the under side of the top plate of the box, substantially as specified.

2. The combination in a trap, of a box having a top plate, a pivoted hood adapted to cover the bird, there being an opening in the top plate through which the pivoted hood can be swung down into the box in uncovering the bird, a bolt for holding the pivoted hood, and a pivoted finger acting to bring down one side of the hood in swinging the same, substantially as set forth.

3. The combination in a trap for pigeons or other birds, of a box having a rigid top plate for supporting the bird, a semi-circular hood pivoted on the box there being a slot in the top through which the said hood can be swung down into the box, mechanism actuated from a distance for pressing down one edge of the hood into the box to cause it to swing down by gravity and uncover the bird and to strike on the under side of the top plate of the box and a spring for holding the hood when swung down into the box, substantially as set forth.

4. The combination in a trap for pigeons or other birds, of a box having a rigid top plate for supporting the bird, a semi-circular hood pivoted on the box, there being a slot in the top through which said hood can be swung down into the box, a bolt for holding the hood and a finger for moving the same, and a connection therefrom by which the bolt and finger can be operated from a distance to un-

bolt the hood and swing it down into the box, substantially as set forth.



5. The combination with the traps for holding and uncovering the birds, of wires or ropes extending from such traps and by which they are operated, an inclosure or desk into which such wires or ropes are passed, and keys with which they are connected, a pin cylinder for acting upon such keys, and a lever, pawl and ratchet for progressively rotating the cylinder, substantially as set forth.

6. The combination with the trap for holding and uncovering the birds, of wires or ropes extending from such traps and by which they are operated, an inclosure or desk into which such wires or ropes are passed, and keys with which they are connected, a pin cylinder for acting upon such keys, and a lever, pawl and ratchet for progressively rotating the cylinder, the pin cylinder having ranges of holes for the movable pins, substantially as set forth.

7. The combination in an apparatus for actuating traps, of a shaft, a lever, pawl and ratchet wheel for rotating the shaft progressively, a pin cylinder upon such shaft with ranges of holes longitudinally and peripherally, movable pins within such holes, a bolt for holding the cylinder in its proper position upon such shaft, a range of keys acted upon by the pins of the cylinder and connections from such keys to the respective traps, substantially as set forth.

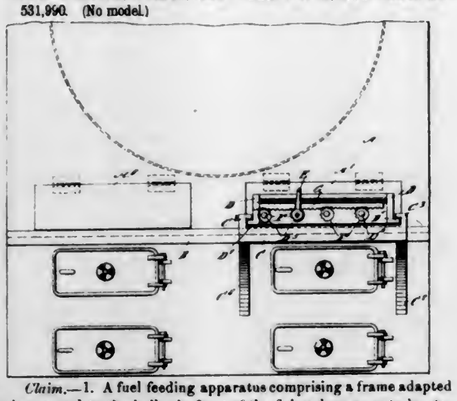
8. The combination in an apparatus for actuating traps, of a shaft, a lever and pawl and ratchet wheel for rotating the shaft progressively, a pin cylinder upon such shaft with ranges of holes longitudinally and peripherally, removable pins within such holes, a spring bolt for holding the pin cylinder in position upon the shaft and automatic means for sliding the cylinder endwise upon the shaft, substantially as set forth.

9. The combination with the traps for holding pigeons or other birds, keys and connections between the traps and the keys, of a cylinder with projections for acting upon the keys and means for rotating the cylinder progressively by hand, substantially as set forth.

10. The combination with the traps for holding pigeons or other birds, keys and connections between the traps and the keys, of a cylinder with projections for acting upon the keys and means for rotating the cylinder progressively by hand and automatic mechanism for moving the cylinder endwise for bringing different ranges of projections upon the cylinder into action upon the keys, substantially as set forth.

11. The combination with the traps for holding pigeons or other birds, of keys and connections between the traps and the keys, a cylinder with projections for acting upon the keys, means for rotating the cylinder progressively by hand, a plate with intersecting grooves inclined in opposite directions, a switch upon the cylinder for engaging the grooves of the plate and moving the cylinder endwise first in one direction and then in the other, substantially as set forth.

544,187 FUEL-FEEDING APPARATUS FOR BOILERS. ADELBERT O. MÜLLER, Fremont, Nebr. Filed Dec. 15, 1894. Serial No. 531,990. (No model.)



Claim.—1. A fuel feeding apparatus comprising a frame adapted to be secured to the boiler in front of the firing door so as to be stationary relatively thereto, and a fuel carrier supported on the said stationary frame and fitted to slide thereon to pass into the fire box, substantially as described.

2. A fuel feeding apparatus comprising a frame provided with attaching devices whereby it may be secured to the boiler in front of the firing door so as to be stationary relatively thereto, and a fuel carrier fitted to slide on the said stationary frame to pass into the fire box, substantially as described.

3. The combination of the furnace having a firing door and a rail adjacent thereto, the frame provided with hooks adapted to engage the said rail and support the frame in front of the firing door, and the fuel carrier fitted to slide on the frame to pass into the fire box, substantially as described.

4. The combination of the supporting frame secured to the boiler directly in front of the firing door, the fuel carrying box fitted to slide on the said frame, the pivoted bottom sections having pinions on their trunnions exteriorly of the box, and a connection between the pinions to cause them to move in unison, substantially as described.

5. A fuel feeeding apparatus, provided with a fuel carrier having a bottom made in sections, and yieldingly mounted bearings carrying the trunnioned ends of the said sections, substantially as shown and described.

544,188. MEAT-TENDERER. WILLIAM G. MUMMA, Warrensburg, Mo. Filed Nov. 24, 1894. Serial No. 529,800. (No model.)



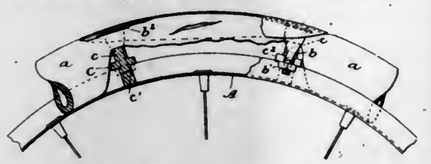
Claim.—1. A meat tenderer, comprising a handled head formed with grooves in its margin, a series of depending cutters secured on the under side of the said head, and a raising device formed of spring wires crossing each other beneath the head, the said wires engaging the said grooves and having their ends secured to the head, substantially as shown and described.

2. A meat tenderer, comprising a handled head, a series of radially arranged cutter blades spaced apart and secured to the under side of the said head, the said blades decreasing in width toward the center of said cutter head and sets of cutters turned upon the said blades and extending downwardly therefrom, the said cutters being arranged radially from the center of the cutter head, substantially as shown and described.

3. A meat tenderer, comprising a handled head, a series of radially arranged cutter blades secured to the under side of the said head, sets of cutters turned up on the said blades and extending downwardly therefrom, a screw for each blade to fasten the latter to the cutter head, and a second screw screwing in the said head and engaging and holding with its head the inner ends of all the radially arranged cutter blades, substantially as shown and described.

4. A meat tenderer, comprising a handled head, a series of cutters on the under side thereof, and a raising device consisting of the spring wires extending across the under side of the cutter head, and crossing each other approximately at right angles beneath the head, the said wires being bent upwardly and passing through grooves in the sides of the cutter head, and the ends of the said wires being secured to the top of the said cutter head, substantially as shown and described.

544,189. MEANS FOR REPAIRING BREAKS IN PNEUMATIC TIRES. FREDERICK H. NIES, Brooklyn, N. Y. Filed May 22, 1895. Serial No. 550,169. (No model.)



Claim.—1. A device for clamping a torn or punctured hollow tire, comprising a clamp for compressing the tire on each side of the puncture therein, and means for holding that portion of the tire between the clamps approximately in line with the outer peripheral surface of the inflated portion, for the purpose set forth.

2. A device for clamping a torn or punctured hollow tire, comprising an outer yoke section and an inner clamp section, said sections being adapted to receive and clamp a tire therebetween, and a support adapted to be inserted between the tire and the rim of the wheel for holding the clamped portion of the tire approximately in line with the outer peripheral surface of the inflated portion thereof, substantially as described.

3. A device for clamping a torn or punctured hollow tire, comprising an outer yoke section and an inner clamp section, said sections being adapted to receive and clamp a tire therebetween, and an elastic support adapted to be inserted between the tire and the rim of the wheel for holding the clamped portion of the tire approximately in line with the outer peripheral surface of the inflated portion thereof, substantially as described.

4. A device for clamping a torn or punctured hollow tire comprising an outer yoke section and an inner clamp section, said sections being adapted to receive and clamp a tire therebetween, and said clamp section uniting the legs of the outer yoke section to prevent spreading thereof, substantially as described.

5. A device for clamping a torn or punctured hollow tire, comprising an outer yoke section and an inner elastic clamp section, said sections being adapted to receive and clamp a tire therebetween, and said elastic clamp section serving to unite the legs of the outer yoke section to prevent spreading thereof, substantially as described.

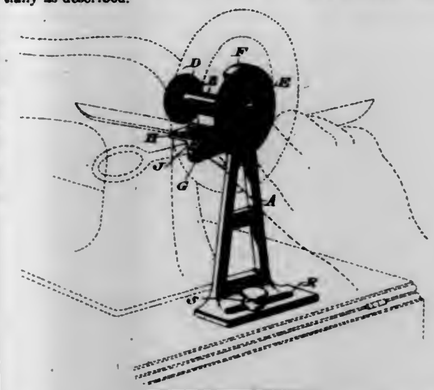
6. A device for clamping a torn or punctured tire, comprising an outer arched yoke section and an inner arched clamp section, said sections being adapted to receive and clamp a tire therebetween, and the arching form of the sections serving, when the device is applied, to maintain the clamped portion of the tire approximately in line with the outer peripheral surface of the inflated portion, substantially as described.

7. A clamp for repairing a torn or punctured tire, comprising inner and outer arched sections, the inner section uniting the legs of the outer section to prevent spreading thereof, and the arched formation of the clamp sections, when applied, serving to maintain the clamped portion of the tire approximately in line with the outer peripheral surface of the inflated portion, substantially as described.

544,190. GRINDING AND POLISHING ATTACHMENT FOR SEWING-MACHINES. HENRY M. MORRIS, Philadelphia, Pa., assignor to the Appleton Manufacturing Company, of Pennsylvania. Filed Sept. 22, 1894. Serial No. 523,826. (No model.)

Claim.—1. In a grinding and polishing attachment for a sewing machine, a standard having an outwardly-projecting lip with an inclined upper face, a table having a depending limb, with an oblique slot therein, and provided on its side with an inclined shoulder adapted to rest on the inclined face of the said lip, and a screw for fastening said table to said lip, said parts being combined substantially as described.

2. A standard adjustable on a support and having a boss and a hood connected therewith, a shaft journaled in said boss, carrying a grinding wheel, said wheel extending beyond said hood, a lip on said standard having an inclined upper face, a table having a depending limb with a slot therein and a shoulder on its side and a screw passing through said slot in said lip, said parts being combined substantially as described.



544,191. BEER-PIPE CLEANER. ALBERT B. OGDEN, Denver, Colo., assignor of three-fourths to John H. Reddin, Ina F. Williams, and A. D. Canning, same place. Filed May 4, 1895. Serial No. 548,137. (No model.)



Claim.—1. In a pipe cleaner, a case or receptacle, divided longitudinally into two compartments by a partition, and having a valve casing arranged at the bottom of said case or receptacle, a two way valve arranged in said case, the passage leading from the valve casing into the compartments at the bottom of said compartments, a cap arranged upon the top of the case or receptacle, and a pipe section arranged in the top of one of the compartments, and projecting upward into the cap substantially as shown and described, whereby the water passing through one of the compartments will be passed out through the cap without contacting with the contents of the other compartment.

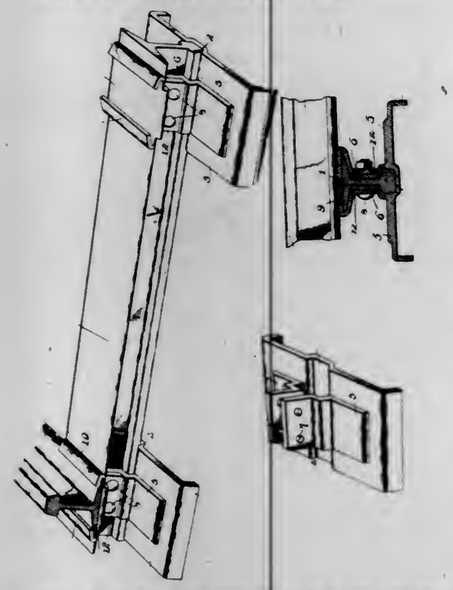
2. In a pipe cleaner, the combination, with a receptacle, divided into compartments and provided with passages and a valve chamber, of a valve having a plurality of ways, a cap for said receptacle, and a pipe section arranged in one of the compartments, and carrying a strainer or screen, substantially as shown and described.

3. In a pipe cleaner, a receptacle divided into compartments, and having passages leading thereto, the valve, having a plurality of ways, the dome-shaped cap, the pipe section arranged beneath the cap, and at the top of one of the compartments, and the circular strainer or screen arranged upon the upper portion of said pipe, all arranged substantially as shown and described.

4. In a pipe cleaner, a receptacle or case, divided longitudinally into two compartments by means of an integral partition, one of said compartments being adapted to contain an alkali and having a discharge cock about midway its height, the valve casing arranged in the bottom of the case or receptacle, and carrying a two-way valve, independent communication being had between the valve casing and the separate compartments, the cap arranged upon the top of the receptacle or case, and the pipe section arranged in the top of one of the compartments, and projecting upward into said cap, substantially as shown and described.

5. An improved pipe cleaner, consisting of a receptacle formed with two compartments, and a valve casing, and having passages leading from the valve casing to the compartments, a valve arranged in the casing, the pipe section having a flange near one end and tubular at the opposite end, the circular strainer or screen arranged upon said tubular end, the dome-shaped cap and draw off cock, all arranged substantially as shown and described.

544,192. RAILWAY-TIE. JOHN W. PAISLEY, East Randolph, N. Y. Filed Nov. 30, 1894. Serial No. 530,413. (No model.)



Claim.— 1. A railway tie consisting of a tie proper comprising a horizontal top plate or flange, a web extending vertically from the under side of the same and having a bead or tread at its lower edge, a bed piece at each end of the tie proper and each consisting of a plate having a transverse groove in its upper side in which the bead or tread aforesaid is seated, the bed pieces also having upwardly-projecting lugs respectively lying on each side of the web of the tie proper, and a rail chair for each end of the tie proper and arranged over the respective bed pieces, each chair comprising a main portion having upwardly and inwardly projecting side flanges, and lugs at the ends of the main portions and extending inwardly and thence downwardly under the top portion or flange of the tie proper and on the outer sides of the respective lugs of the bed pieces, the parts being held in place by bolts passing horizontally through the lugs of the bed pieces and of the chair and through the web of the tie proper, substantially as described.

2. A railway tie consisting of a tie proper comprising a horizontal top plate or flange, a downwardly and vertically extending web at the under side thereof, and a bead or tread at the lower edge of the web, a bed piece at each end of the tie proper, each bed piece being provided with upwardly-projecting lugs embracing the web of the tie proper, and a rail chair located over each bed piece and provided with downwardly-extending lugs and embracing the web of the tie proper, and securing bolts passed through the lugs of the bed pieces and chairs and through the web of the tie proper, substantially as described.

544,193. STENCIL-CUTTING MACHINE. CHARLES K. PICKLES and JOHN A. HOFF, St. Louis, Mo., assignors, by mesne assignments, to the American Stencil Machine Company, East St. Louis, Ill. Filed Oct. 18, 1894. Serial No. 526,308. (No model.)

Claim.—1. A stencil cutting machine comprising a table, matrix and patrix plates mounted for conjunctive rotation on said table and separated a short distance from each other, a yoke-bar mounted for rotation independently of or conjunctively with said plates, patrices mounted in said patrix plate and adapted for vertical reciprocation therein, an operating bolt mounted in said yoke bar, a hand-lever fulcrumed in said yoke bar and adapted for manual actuation, a bolt-lever fulcrumed in said hand-lever, connections between said levers, and feed mechanism and means whereby the feed mechanism is connected with said bolt-lever as set forth.



2. In a machine of the class described a yoke-bar having a bifurcated end portion, a hand-lever mounted for manual oscillation in the bifurcation of said yoke-bar and having a bifurcated portion, a bolt-lever mounted in the bifurcated portion of the hand-lever and having a common fulcrum therewith and a notched end portion, a pin in said hand-lever having a travel in said notch and engagement with the bolt-lever, patrix and matrix plates, patrices, an operating bolt, and a table.

3. In a machine of the class described a table having a vertically extending ring, an axial bolt, patrix plate having guide-posts and matrix plate mounted on said axial bolt within said ring, a yoke bar mounted on said axial bolt and in engagement with said ring at both ends, which yoke bar is provided with a bifurcated portion, a hand-lever mounted in said bifurcated portion of said yoke bar the patrix operating bolt, means for operating the latter from the hand-lever and a tongue on said hand-lever forming a connection between said yoke bar and the guide posts of the patrix plate.

4. In a machine of the class described a patrix plate having a series of patrices therein, a yoke bar located above said patrix plate, an operating bolt mounted for vertical reciprocation in said yoke bar and mechanism whereby said operating bolt is caused to engage individual patrices consisting of a hand-lever, a bolt-lever engaging the bolt, a pivot pin common to both of the levers whereby the latter are pivoted to the yoke-bar, and pin and slot connection between the levers.

5. In a machine of the class described a patrix having oppositely arranged transverse recesses, and operating bolt having engaging arms adapted to embrace the recessed portion of said patrix and mechanism whereby said bolt and patrix are conjunctively operated consisting of a supporting bar, a hand-lever, a bolt-lever engaging the bolt, a pivot-pin common to both of the levers whereby the latter are pivoted to the bar, and pin and slot connection between the levers.

6. In a machine of the class described an operating bolt having a transverse slot, a bolt-lever extended through said slot and means whereby said bolt-lever is oscillated to reciprocate said bolt consisting of a supporting bar, a hand-lever, a pivot pin common to both of the levers whereby they are pivoted to the bar, and a pin and slot connection between the levers.

7. In a machine of the class described, the combination of a table having a ring formed with an aperture, a bolt operated through the aperture and mechanism comprising the mating feed-wheels located respectively above and beneath the table, a ratchet located on the upper feed wheel and a trigger pivoted to the ring and having an apexed upper end formed with an inclined forward face normally in the vertical plane of the bolt, a pawl pivoted to the trigger and engaging the ratchet, and a spring for returning the trigger to normal position, substantially as described.

8. In a machine of the class described, the feeding mechanism comprising mating feed-wheels located respectively above and beneath the table, a ratchet located on the upper feed wheel, an upwardly extending trigger having the inclined face at the top thereof, and a pawl pivoted to the trigger and overhanging and engaging the ratchet, an operating bolt adapted to engage the inclined face of the trigger and to oscillate the latter, a bolt-lever, and a hand-lever connected with the bolt-lever; substantially as described.

9. In a machine of the class described, the feeding mechanism comprising mating feed-wheels located respectively above and beneath the table, a ratchet located on the upper feed-wheel, an upwardly extending trigger having an inclined face at the top thereof, a pawl pivoted to the trigger and overhanging and engaging the ratchet, a clip on which the upper feed-wheel is mounted, a spring holding down the clip, and an adjustable trailer supporting the rear end of the clip, an operating bolt adapted to engage the inclined face of the trigger and to oscillate the latter, and mechanism whereby the bolt is reciprocated.

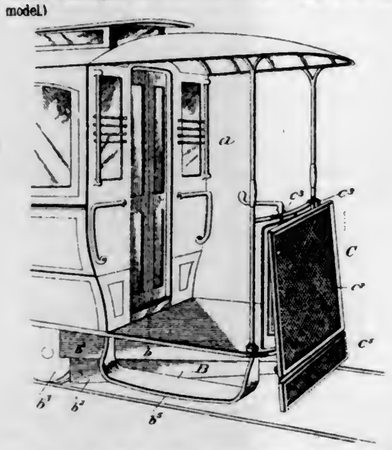
10. In a machine of the class described, the combination of a support, a patrix, a bolt-lever, an operating bolt having a slot of greater depth than the width of the arm of the bolt-lever passing therethrough, a feeding mechanism, a bolt operating the feeding mechanism, and connected with the bolt of the feeding mechanism, so as to depress it in advance of the slotted bolt, a hand-lever having a pivot in common with the bolt-lever, and means for connecting the levers; substantially as described.

544,194. CAR-COUPLING. ALFRED P. REDMON, Adrian, Kans. Filed May 10, 1895. Serial No. 548,847. (No model.)



Claim.—The herein described car coupling comprising the drawhead having a chamber open at its ends, upper and lower holes or openings, a cross-rod located in said chamber, a coupling pin, a shaft having a central crank arm to the outer end of which said pin is pivotally connected, a spring acting on said crank arm, a crank shaft journaled to the forward end of the car having a central crank portion, outer crank operating handle-ends, and an ejector having a forward flanged or downwardly exteoded portion, said ejector being connected at its rear end to said crank portion of said latter shaft, substantially as set forth.

544,195. CAR-FENDER AND WHEEL-GUARD. GEORGE K. SHOEMAKER, Philadelphia, Pa. Filed Feb. 11, 1895. Serial No. 537,992. (No model.)



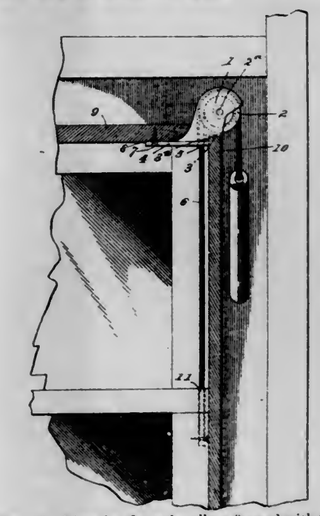
Claim.—1. In combination, a fender formed of a series of spring actuated V-shaped sections, connected and mounted to partially or wholly telescope one within the other, an automatic trip, and a controlling device adapted, to be operated by the hand or foot, by which the fender is raised and lowered, for the purpose described.

2. A buffer, comprising two sections hinged together, the lower section being spring-held, for the purpose described.

3. In combination, a buffer mounted in advance of the dash, a spring-seated projecting frame supporting the buffer, a collapsible wedge-shaped fender beneath the car and adapted to be adjusted to operative position by the blow of collision, the fender being held with its forward end elevated clear of road inequalities, for the purpose described.

4. A collapsing wedge-shaped fender consisting of a number of sections pivoted at their inner ends and having their outer ends held normally elevated and adapted to be released by the foot or automatically by the blow of collision with a yielding buffer in advance of the dash, and a spring-seated frame beneath the platform connecting the fender and buffer, for the purpose described.

544,196. HOUSING FOR SASH-PULLEYS. JOHN H. SHULL, Wellesley, assignor of one-half to F. W. Stevens, Newton, Mass. Filed Jan. 2, 1895. Serial No. 533,589. (No model.)



Claim.—1. A housing for sash pulleys formed with the load-bearing seat 3 constructed to rest upon the top of the stile above the lower face of the head jamb and an inwardly projecting attaching base, in a lower plane than the seat 3, whereby it is adapted to face with the under side of the head jamb, substantially as herein set forth.

2. In combination with the window frame, having the head-jamb slotted as shown to receive the pulley housing, the herein described housing in which the pulley is journaled, formed with a load-bearing seat 3 resting upon the top of the vertical stile of the window frame, in the slot and having the inwardly projecting lateral extension 4 lapping on or facing with the surface of the head-jamb and covering the slot, as explained.

3. In combination with a window frame, the herein described housing 1 having a pulley journaled therein at 2, and formed with the load-bearing seat 3 at a point within the vertical line of the pulley journal, and the shoulder 3^a for the reception of the upper end of the vertical jamb 10 of the window, and provided with the laterally projecting base 4 recessed at 5 for the passage of the sash cord 6, substantially as and for the purposes set forth.

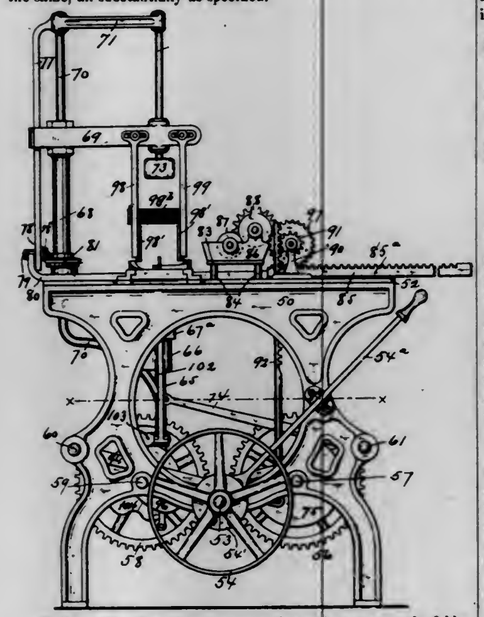
4. A housing for sash pulleys formed in two parts, each formed with a load-bearing seat 3 and one of which carries the lateral attaching base 4, said parts being secured together by the pulley-journal, as explained.

544,197. BAG-MACHINE. ELISHA S. STAPLES, Norwich, assignor of three-eighths to Elias W. Staples, Essex, Conn. Filed Sept. 17, 1894. Serial No. 523,297. (No model.)

Claim.—1. In combination with a reciprocating plunger, a folder throat consisting of two pendent plates having angular side flap turners as set forth and having journaled therein, on opposite sides, rolls provided with pawl and ratchet devices that limit the rotary movement of said rolls to one direction only, substantially as and for the purpose specified.

2. In combination with a main plunger and an upper plunger, a folder throat between said plungers consisting of two pendent plates each having secured thereto angle-plates for folding the side flaps of a bag, said angle-plates being so relatively located on the two pendent plates that those of one plate engage and turn the flaps of one side of the bag in advance of those of the opposite side, and means

for holding the open end of the bag during the operation of turning the same, all substantially as specified.



3. In combination with a reciprocating main plunger and a folder throat of the class referred to, an upper or follower plunger, mechanism for moving said upper plunger to cause it to follow the main plunger as the latter recedes after a bag has been formed thereon and means for holding the open end of the bag during the operation of turning the same.

4. In combination with a reciprocating main plunger, a folder throat of the class referred to, an upper plunger and mechanism for moving the latter to follow the main plunger as the latter recedes, and means for holding the open end of the bag during the operation of turning the same, a delivery plate and mechanism for moving said plate beneath said folder throat to receive the folded bag, all substantially as specified.

5. In combination with a reciprocating plunger and a folder throat of the class referred to, pasting mechanism adjacent to said plunger, consisting of an elevated paste-pan with distributing rolls journaled therein and a paste roll with circumferential projections as set forth, a blank carrier mounted to travel beneath said paste-roll and to deliver a blank between the plunger and throat and means consisting of racks and pinions, for connecting said carrier and paste-roll, all substantially as specified.

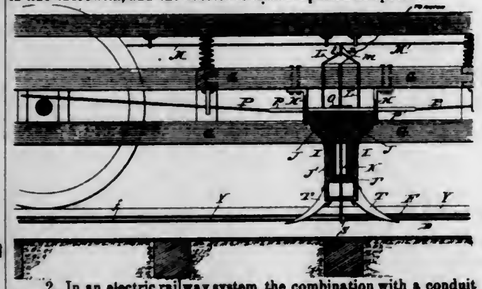
6. In combination with a main plunger, mounted upon a reciprocating rod, a tube mounted to slide on said rod and bearing a flange adapted to slip over the end of the plunger, and mechanism substantially as described for sliding the said flange over the plunger end, for the purpose specified.

7. In combination with a reciprocating main plunger, having a groove 67^b near one end, and mechanism for folding a bag blank upon said plunger, mechanism as set forth for placing a string around said bag, and means, consisting of a flange adapted to slide over the plunger end, for turning the bag over said string.

8. In combination with a reciprocating main plunger and mechanism for folding a bag-blank thereon, mechanism for placing a string around said plunger consisting of a plate movable transversely to the movement of the plunger, said plate having arms that may straddle the plunger one of which bears at its free end, string cutting devices as set forth, the other arm having at its free end fingers for grasping the string end, and mechanism both for swinging said last named arm into engagement with the first named and for opening and closing said fingers, all substantially as specified.

544,198. ELECTRIC RAILWAY. FRANCIS TAYLOR, Charlotte N. C., assignor of one-half to Irvin W. Durham, same place. Filed Nov. 30, 1894. Serial No. 530,392. (No model.)

Claim.—1. In an electric railway, the combination with the slotted conduit, having a live wire at one side, of a rotatable brush carrier having a contact member or brush projected horizontally therefrom, said carrier being vertically movable, the said contact member being of a less thickness than the width of the conduit slot, whereby such member is adapted to be lifted out of the conduit slot, when adjusted in line therewith, and the carrier is drawn upward as specified.



2. In an electric railway system, the combination with a conduit and the live wire held on one of the side walls thereof, of the car frame, a vertically movable frame suspended therefrom, having plow members projected at the front and rear into the conduit slot, a shank member or transmitter held to rotate in the said frame, and the brush secured to the lower end of the shank, and projected at an angle therefrom to engage the live wire substantially as shown and for the purposes described.

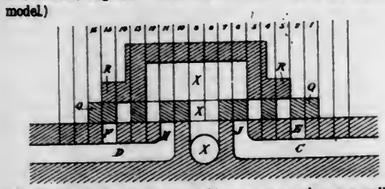
3. In an electric railway, the combination with a conduit having the live wire held at one side of the slot of a rotatable transmitting shank, having a brush at the lower end to engage the wire, a vertically movable frame supported on the car body, for carrying the said shank and mechanism operated from the car platform for raising the said frame, and for rotating the shank substantially as shown and described.

4. In an electric railway a brush or current transmitter member, in combination with the conduit, and the live wire held at one side of the slot, said transmitter comprising a rotatable shank having a brush detachably secured to the lower end thereof projected at an angle therefrom, and mechanism for turning such brush member in line with the conduit slot and for raising such brush and shank out of the conduit substantially as shown and described.

5. In an electric railway, the combination with a conduit having the live wire at one side of the slot, and the motor carrying frame, of the vertically movable transmitter frame, the crank shaft connected therewith, and having an operating lever, the brush carrying shank held to rotate in the said frame, and having a toothed wheel, and a longitudinally reciprocating bar held on the car frame, and having a rack member meshing with the said wheel and means for reciprocating the said bar from the car platform as specified.

6. In an electric railway, the combination with the truck frame of the car body, a yoke like frame supported and vertically movable on the truck frame, means for adjusting the said yoke frame from the car body, a brush carrying shank held to rotate in the yoke frame, said shank having a toothed wheel, a longitudinally reciprocating rod having a central rack portion held to engage the aforesaid toothed wheel and rack portions at its ends, and hand operated shafts projected down from the car platform having toothed wheels meshing with such end rack sections, all arranged substantially as shown and for the purposes specified.

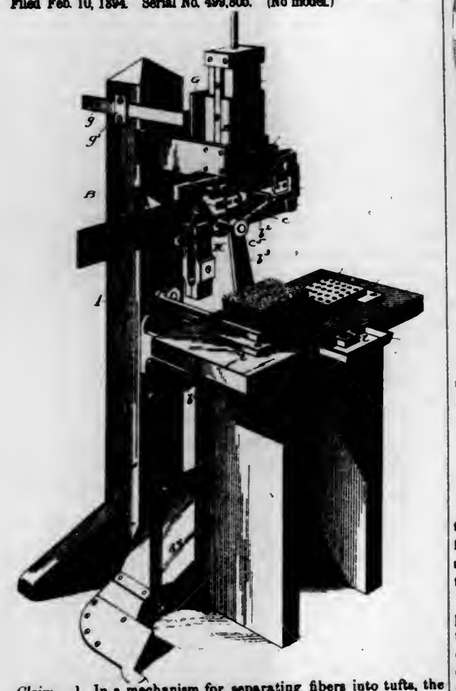
544,199. VALVE FOR STEAM-ENGINES. COURTENAY W. THOMPSON, London, England. Filed Dec. 18, 1894. Serial No. 532,181. (No model.)



Claim.—1. In engines operated by steam or other expansible fluid or vapor, the combination with the main slide, of a cut-off slide, and means, substantially as described, whereby two independent motions are secured for separately operating the said valves from the engine, so as to cause the cut off slide to control, first, the inlet ports to regulate the admission of motive fluid to the cylinder, second, the exhaust ports to regulate the cushioning in the cylinder, and third, the inlet ports to cut off the fluid for regulating the expansion, substantially as and for the purpose set forth.

2. In an engine operated by steam or othe expansible fluid, the combination with the main slide, of a cut-off slide, and means, substantially as described, whereby two independent motions for separately operating the said valves are secured to cause the cut-off slide to commence its travel in either the same or opposite directions to that of the piston at the moment that the main slide has half or about half completed its travel in the same direction with the cut-off slide, the said means being so arranged as to cause the main valve to travel always in advance of the cut-off slide and to cause the cut-off valve to perform the functions of admission, cut-off and exhaust, substantially as and for the purpose set forth.

544,200. BRUSH-MACHINE. MCCLINTOCK YOUNG, Frederick, Md. Filed Feb. 10, 1894. Serial No. 499,805. (No model.)



Claim.—1. In a mechanism for separating fibers into tufts, the combination with means for supporting the fiber, a reciprocating notched blade, the secondary, independently movable blade, a tension device offering a yielding resistance to the movement of the main blade, and operating devices connected with the secondary blade for imparting a reciprocating motion thereto, and thence to the main blade.

2. In a mechanism for separating fibers into tufts, the combination with means for supporting the fibers, of a reciprocating notched blade, a secondary independently movable blade, a clamp embracing the notched blade and movably supported by the frame, the blade being movable through said clamp, stops on the frame to limit the movement of the clamp, and operating devices connected to the secondary blade, whereby movement is imparted to the notched blade from the secondary blade.

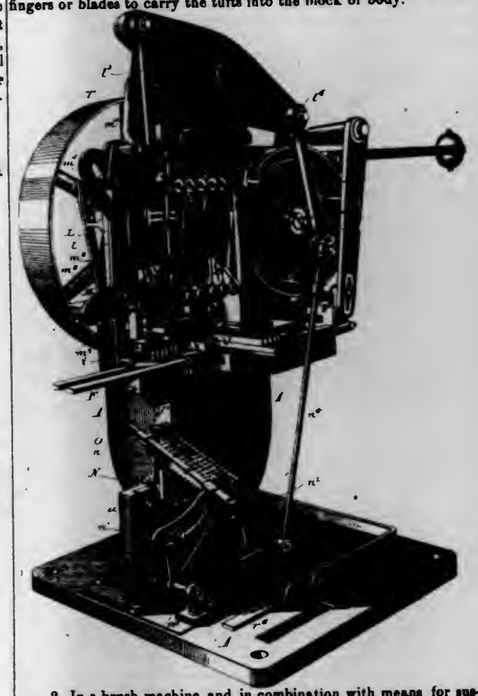
3. In a mechanism for separating fibers into tufts the combination with the movable blade provided with a notch to receive the tufts, of means for varying the width of the notch to vary the size of the tuft.

4. In a mechanism for separating fibers into tufts the combination with the movable blade provided with a notch to receive the tufts, of means for varying the width and means for varying the depth of said notch.

5. In a mechanism for separating a mass of fibers into tufts the combination with a reciprocating blade, of a notch therein, a plate adjustably connected to the blade and formed with a lateral lip overlying one wall of the notch, and a second adjustable plate formed with a lip overlying the bottom of the notch; whereby the adjustment of said plates will act to vary both the width and depth of the notch.

544,201. BRUSH-MACHINE. MCCLINTOCK YOUNG, Frederick, Md. Filed May 7, 1894. Serial No. 510,378. (No model.)

Claim.—1. In a brush machine and in combination with means for supporting a slice or layer of bristles, fingers to divide the slice into tufts, fingers to maintain the separation of the tufts, and driving fingers or blades to carry the tufts into the block or body.



2. In a brush machine and in combination with means for sustaining a slice or layer of bristles, the separating fingers, the guide fingers for the tufts, the driving fingers or blades and means for presenting the tuft fasteners beneath the driving blades and above the tufts.

3. In a brush machine and in combination with means for supporting a slice or layer of bristles, the dividing fingers to separate the tufts, the guide fingers arranged to contact with the brush block, the driving blades or fingers, means for presenting the fasteners to the driving blades and guide blades such as f^3, between which the tufts are carried to the block or body.

4. In a brush machine and in combination with the magazine for the bristles, the reciprocating slicing blade b^1, and a movable finger or pusher acting in the magazine on the bristles and means for moving the pusher to force back the bristles, substantially as described.

5. In a brush machine and in combination with means for seating the tufts in the brush block or body, a bed-plate or holder for the brush block provided in its vertical side or edges with grooves or slots in angular relations corresponding with the angular direction of the holes in the brush block, and a support for said bed-plate extending beneath and sustaining the same and provided with a vertical portion adapted to enter the grooves therein, substantially as described; whereby the block may be held and presented in different relations to the driving mechanism.

6. In a brush machine the combination of a support or holder for the brush block, provided with a series of grooves extending transversely across the bottom and across one edge and an angular supporting blade adapted to engage in said grooves and sustain the block in position, substantially as described.

7. The holder for a brush block consisting of a bottom portion provided with vertical side walls one of said walls being of less height than the others, ears at the opposite ends of the low wall and a longitudinal wedge seated upon said wall, engaging at one edge against the ears and at its opposite edge against the side of the brush block throughout its length.

8. In a brush machine and in combination with the centrally arranged driving blades, the dividing fingers and the tuft guiding fingers, arranged in pairs on opposite sides of the driving blades.

544,202. SYSTEM OF TESTING SAMPLES OF GARMENTS. MARCUS A. ADLER, New York, N. Y. Filed May 31, 1895. Serial No. 551,233. (No model.)

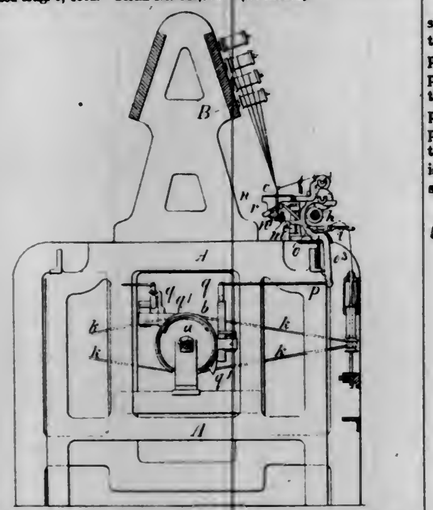
Claim.—1. The method of testing samples of garments which consists in sponging the goods, cutting from said goods strips of one

size, finishing said strips to exhibit profile cuts or samples of garments, and superimposing said samples to show the changes caused in the goods by the various stages of manufacturing and finishing, substantially as described.



2. The method of testing samples of garments which consists in sponging the goods, cutting from said goods strips of one size, finishing said strips at one edge to exhibit profile cuts or samples of garments, and superimposing said samples with the smallest sample on top and the remaining samples ranged downward in gradation according to size with the largest sample underneath to show the changes caused in the goods by the various stages of manufacturing and finishing, substantially as described.

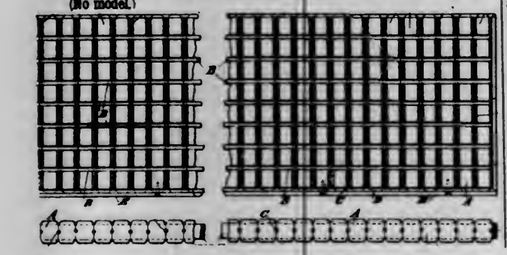
544,203. MACHINE FOR TWISTING OR DOUBLING YARN. SMITH AMBLER, Keighley, England, assignor to Prince Smith & Son, same place. Filed Aug. 9, 1892. Serial No. 442,549. (No model.)



Claim.—1. In a machine for twisting or doubling yarn, the combination of a series of detectors held up by threads, a driving shaft, band pulleys thereon provided with projecting snails, brake rings adjacent to the band pulleys, twisting spindles, driving bands connecting the pulleys and spindles, band forks, and mechanism connecting the detectors and band forks to ship the belt on the breaking of a thread, substantially as described.

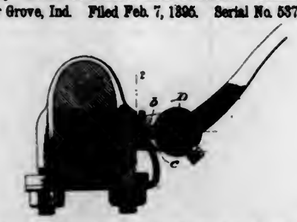
2. In a machine for twisting or doubling yarn, the combination of the rollers, the lever frame supporting the same, the series of detectors c adapted to be held up by the tension of the threads, the arm i having a joint i^3 and an eye through which the threads may pass, the block i^4 on said arm, rotating striker m adapted to strike said block, lever O, wire p connected thereto, a fork actuated by said wire, pulleys provided with snails b', twisting spindles and driving bands connecting the twisting spindles and driving pulleys, substantially as described.

544,204. STAIR-TREAD, LANDING, OR THE LIKE. JOSEPH T. ANDREWS, London, England. Filed Aug. 28, 1894. Serial No. 521,500. (No model.)



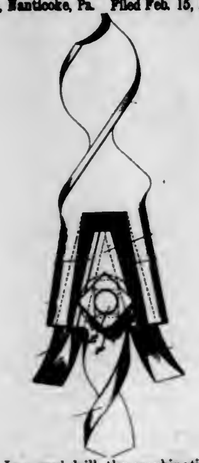
Claim.—A tread or wearing surface for stairs, &c., composed of series of rows of short wooden blocks, provided with grooves in their sides and having the grain of the wood vertical, with metal bars of narrower depth than the blocks extending along the sides of the blocks, each of the blocks of said rows being supported by bolts or rivets passing through the metal bars and the grooves in the sides of the block, whereby a self-supporting tread is secured with wooden surfaces presented on both sides, substantially as described.

544,205. THILL COUPLING AND SUPPORT. CHARLES H. ANSPACH, Cedar Grove, Ind. Filed Feb. 7, 1895. Serial No. 537,650. (No model.)



Claim.—In a thill coupling, the combination, of an axle-clip, a spring C attached to the clip and provided with an upwardly projecting portion which extends between the ears or lugs of the clip, said portion having below its upper end a transverse recess c the upper part of which projects outwardly abruptly from the body portion of the spring, together with a thill-iron having a rearwardly-projecting portion b curved to correspond with the curvature of the spring and provide an angle edge for engagement with the recess e in the spring, the parts being organized as shown, whereby an anti-rattling device is provided as well as means for holding the thills in an elevated position.

544,206. MINING COAL-DRILL BIT FOR BORING IN COAL, &c. GEORGE H. BITTENBENDER, Plymouth, assignor of one-half to Fred T. Bittenbender, Nanticoke, Pa. Filed Feb. 15, 1895. Serial No. 538,502. (No model.)



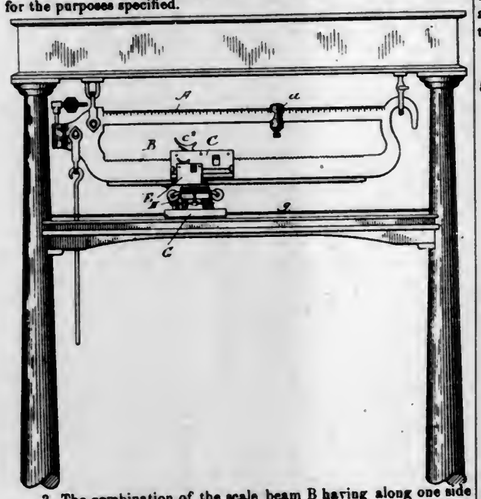
Claim.—1. In a coal drill, the combination with an auger having a recessed end, of the diverging cutters located therein, and the wedge block for holding the cutters in place, said block having an auger point, and provided with a clamping bolt, substantially as described.

2. In a coal drill, with an auger having a recessed end formed with diverging dovetail grooves, of the inclined-faced adjustable cutters, and the inclined-faced wedge-block located between the cutters, and carrying a central cutter, together with clamping means for said block, substantially as described.

544,207. SELF-REGISTERING SCALE. JEREMIAH CAMPBELL, Chelsea, Mass. Filed Jan. 19, 1895. Serial No. 535,480. (No model.)

Claim.—1. In a scale a beam having a line of impressing or printing numerals or weight indicators and a series of graduated notches occupying the full operative length of the beam, in combination with a counterpoise movable thereon and having a latch for engaging said notches which seats itself therein and centers the counterpoise and whereby the counterpoise cannot be held upon the scale beam at a point between the centers of the notches, as and for the purposes described.

2. The combination in a recording scale of a scale beam having a line of graduated notches d, and a line of weight indicating figures or devices, a counterpoise C movable on said beam having a latch to engage the notches thereof and a supplemental beam D which it supports and carries and which is provided with a line of graduated notches, a secondary counterpoise E mounted on said first named counterpoise by means of said beam having a latch to engage the notches thereof and a line of weight indicating numerals or other devices upon the same level as that of the line carried by the main scale beam, and independent recording devices mounted upon a slide beneath the scale beam and parallel thereto, comprising a horizontally movable slide and a vertically movable table, means for moving said table vertically in relation to the scale beam, one or more pairs of rolls for feeding inking or other printing ribbons carried by said table and movable vertically therewith and a support or supports for one or more cards or slips upon said table, the counterpoises and the scale beam being so arranged and operated in relation to each other that the indicating numerals or devices of each are adapted to be brought into the same line and the recording apparatus to be moved horizontally in line therewith and the table then to be lifted to secure a record of the weight in the same line upon the receiving cards or slips, as and for the purposes specified.



3. The combination of the scale beam B having along one side of its upper edge the line b of notches and also having a track or level section upon one side thereof, a counterpoise C mounted upon said scale beam to slide thereon and carrying a latch in line with the line of notches b, and rolls to run upon said track, and also having downwardly extending sections upon both sides of the scale beam one of which has a tongue to enter a groove formed in the scale beam, all as and for the purposes described.

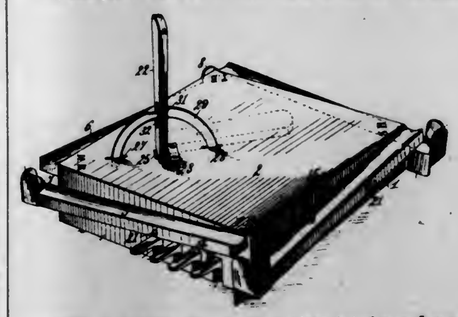
4. In a scale the combination of the beam B having the line b of notches with the counterpoise C having a latch to engage the notches and downwardly extending sections upon each side of the scale beam, the front section of which is provided with an integral bar or rail, a notched bar carried by said bar or rail and a counterpoise movable upon said bar or rail having a latch to engage the notches of the notched bar carried thereby, the said counterpoise also supporting a line of printing characters, as and for the purposes described.

5. The combination of a scale beam B having a line of notches b and a horizontal track and a line of printing weight indicating characters, a counterpoise C arranged to slide upon said scale having a latch to engage the notches and rolls to run upon the track and downward extending sections on each side of the scale beam, one of which has a tongue to enter a groove in the side of the scale beam, and the back side of which counterpoise is thicker and heavier than the front side, a rail or bar carried upon the front side of said counterpoise having a line of notches, a second counterpoise mounted upon said rail or bar and having a latch to engage the notched section thereof and downwardly extending sections upon each side of the bar, the outer of which sections supports in line with the line of printing weight indicating characters carried by the main beam a second line of printing weight indicating characters, all as and for the purposes described.

6. In a recording apparatus for scales the combination of a scale beam having a line of weight printing characters, a counterpoise carried by said beam and movable thereon, a second counterpoise carried by the first counterpoise and movable in relation thereto and a line of weight printing characters carried thereby, the counterpoises and weight printing characters of the beam being arranged in relation to each other as specified, with an independent recording apparatus comprising a slide horizontally movable beneath the beam upon a suitable support, a vertically movable table carried thereby, means for moving the table vertically in relation to the slide, two pairs of rolls arranged in series of two at each end of the table and attached thereto and printing ribbons extending from one of each pair of rolls to the other, means for operating one of each pair upon the vertical movement of the table in relation to the slide and a support upon the upper side of the table for the cards or strips upon which the record is made, all as and for the purposes described.

7. The combination in a weight recording apparatus of the character specified of the slide, a table mounted thereon adapted to have vertical movements imparted to it and provided with a support for the cards or ribbons to be printed, a diaphragm carried by the table and having an aperture in line with said support, two pairs of rolls carried by the table and movable vertically therewith, printing ribbons upon said rolls extending over the support and beneath the diaphragm in line with each other but separated from each other, ratchet wheels carried by said rolls and pawls to engage said ratchet wheels, the said pawls being constructed and connected to be moved into and out of operative relation with the ratchet wheels of one of each pair of rolls according to the direction in which it is desired that the ribbons shall travel and by one movement, as and for the purposes described.

544,208. GAME APPARATUS. EDWARD CHASE, Washington, D. C., assignor of one-half to Andrew J. Sanford and George W. Sanford, Jr., same place. Filed Jan. 31, 1895. Serial No. 536,838. (No model.)



Claim.—1. A game apparatus comprising a board or surface representing the infield of a base-ball ground, a series of inclined ways constituting a base line or course for rolling objects, a normally erect and vertically swinging batter mounted on the said board adjacent to home base, and means for locking the batter in an erect position until released by the impact of a ball thereon, substantially as described.

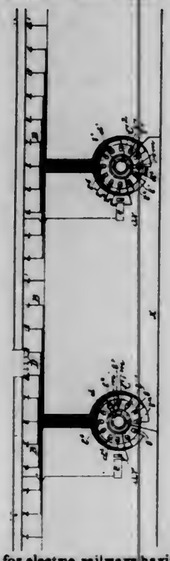
2. A game apparatus comprising a board having thereon positions representing the bases of a base-ball ground, a mechanical and automatically actuated batter pivotally supported on the upper side of the board, mechanism for holding the batter in a normally erect position until released by the impact of a ball or other object, spring mechanism for causing the batter to rebound forcibly and thereby drive the ball, and tilting ways constituting a base-line or course from base to base and over which rolling objects may be caused to pass either forward or back between the bases, substantially as described.

3. A game apparatus comprising a board representing the infield of a base-ball ground, an automatically actuated and rebounding batter supported on the said board in position to receive and respond to the impact of a ball, marble or other suitable object, tilting ways constituting a base line or course over which rolling objects may be caused to pass either forward or back between the several bases of the infield, and mechanism for operating said tilting ways to cause them to incline either forward or backward, substantially as described.

544,209. ELECTRIC RAILWAY AND TRAMWAY. JEAN CLARET, Lyons, and OLIVIER WUILLEUMIER, Clermont-Ferrand, France. Filed July 25, 1893. Serial No. 481,388. (No model.) Patented in France Nov. 3, 1892, No. 228,291, and in England June 2, 1893, No. 10,843.

Claim.—1. An electric railway system, having a series of spaced contact surfaces, a main conductor to supply current to said surfaces in succession, in combination with an automatic distributer having terminals connected to said surfaces, and means for automatically bringing said contact surfaces successively into electrical connection with the main conductor one at a time, and locking such connection until the succeeding contact surface is reached by the car, all substantially as described.

2. A distributer for electric railways having a series of insulated terminals to be connected up with the contacts along the line, in combination with a wheel carrying a contact to make contact with the said terminals, means for turning the said wheel and devices controlled from the traveling car for automatically releasing and locking the said wheel.



3. A distributer for electric railways having a series of insulated terminals to be connected up with the contacts along the line, in combination with a wheel carrying a contact to make contact with the said terminals one at a time, means for turning the said wheel, and electro-magnetic devices adapted to be thrown into and out of circuit by the vehicle in its movements to release and lock the wheel.

4. A distributer for electric railways having a series of insulated terminals to be connected up with the contacts along the line, in combination with a toothed contact wheel to make contact with the said terminals, successively, an electromagnet adapted to be thrown in and out of circuit by the vehicle in its travel, an armature for the said electromagnet and provided with a catch adapted to engage the toothed wheel and means for turning the latter, all substantially as and for the purposes set forth.

5. A distributer for electric railways having a series of insulated terminals to be connected up with the contacts along the line, in combination with a toothed wheel carrying two contacts of which the second is to supply current to the motors on the cars through the line contacts, means for rotating the said wheel, an electro-magnet whose coil is electrically connected in circuit with the first contact on the wheel and an armature for the said electro-magnet, provided with a catch to engage the toothed wheel, all substantially as and for the purposes set forth.

6. A distributer for electric railways having a series of insulated terminals to be connected up with the contacts along the line, in combination with a toothed wheel carrying three contacts, of which the intermediate one is to convey the motive current to the car, means for rotating the said wheel, an electro-magnet and a switch to electrically connect the coil of the electro-magnet through one or other of the two side contacts on the wheel, according to the direction the vehicle is to travel, an armature for the said electro-magnet and devices controlled by the said armature to release and lock the contact carrying wheel, all substantially as and for the purposes set forth.

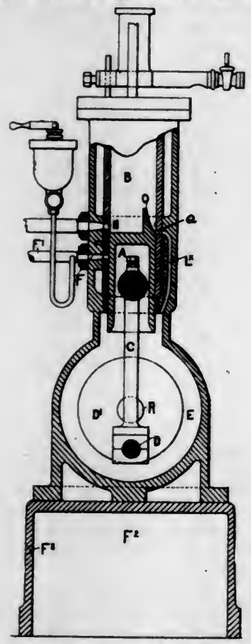
7. In an automatic distributer for distributing the electric current for the purposes of electric traction or propulsion on railways or tramways, a series of insulated terminals or contact makers such as l' to l^{13} which are respectively placed in electrical communication with the contacts B on the line in combination with arms m and m' the arm m being attached to a ring d^3 connected with the terminal b^3 and the arm m' being attached to a ring d' connected with the terminal b' the terminal b' being electrically connected with the main conductor, substantially as hereinbefore set forth.

8. In an automatic distributer for distributing the electric current for the purposes of electric traction or propulsion upon railways and tramways, a series of terminals or contact makers such as l' to l^{13}, rings d' and d^3 provided with arms m' and m and terminals b' and b^3, in combination with an electro-magnet c energized by a wire connected to the terminal b^3 on the one hand and to the rails A on the other hand and having an armature ar capable of locking a wheel r having a constant tendency to rotate under the influence of two bevel wheels $e\,e'$ and weight p or other force in the manner and for the purpose substantially as hereinbefore set forth.

9. In an automatic distributer for distributing an electric current for the purposes of electric traction or propulsion upon railways and tramways a series of contacts such as l' to l^{13}, rings d' and d^3, carrying arms m' and m and connected with terminals b' b^3, in combination with a third ring d^5, arm m^5, toothed gearing c, e' e^5, a rotary spindle c', a circular armature q', two electro magnets q, a spring r^5, a wheel r, a drum p' and a weight or other motor in the manner and for the purpose substantially as hereinbefore set forth.

10. In an automatic distributer for distributing the electric current for the purposes of electric traction or propulsion on railways and tramways, the combination of a series of terminals or contacts such as l' to l^{13}, rings d' d^3 d^5 having arms m m', bevel wheels e e' e^5, a circular armature q', two electro-magnets q, a spring r^5 with a lever lv, a switch cm switch arms or contact makers l' l^5 l^3, electro magnets c and k and their armatures controlling contacts i' i^3 i^2 i^4 in the manner and for the purpose substantially as hereinbefore set forth.

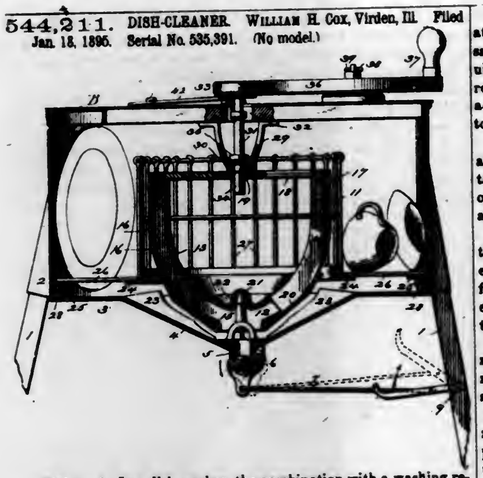
544,210. GAS ENGINE. FREDERIC W. C. COCK, Erith, assignor to Joseph Day, Bath, England. Filed Mar. 10, 1894. Serial No. 503,189. (No model.) Patented in England Oct. 15, 1892, No. 18,513.



Claim.—1. In a gas engine, the combination of a cylinder and a piston therein, the cylinder being divided by the piston into a combustion chamber and a compression chamber, and a passage connecting the two chambers, the said passage being opened and closed by the piston, with air and gas inlet ports opening into the compression chamber, the said ports being covered and uncovered by the piston itself, substantially as set forth.

2. In a gas engine, the combination of a cylinder, a compression chamber at one end thereof, a piston adapted to reciprocate within the cylinder and to compress the explosive mixture in the compression chamber during its downward or outward stroke, a port or passage leading from the compression chamber into the cylinder, its lower end being adapted to remain constantly open and its opposite end adapted to be closed by the piston from near the beginning of its inward stroke until said piston has nearly reached the limit of its outward stroke and to be opened when the piston is completing its outward stroke, air and gas inlet ports leading into the cylinder and adapted to be closed by the piston from near the beginning of its inward stroke until near the completion of its return or outward stroke, and an exhaust port communicating with the cylinder and adapted to be closed by the piston from near the beginning of its inward stroke until near the end of its return or outward stroke and to be opened while said piston is terminating its outward stroke and during a portion of its inward stroke, all substantially as described, for the purpose specified.

544,211. DISH-CLEANER. WILLIAM H. COX, Virden, Ill. Filed Jan. 18, 1895. Serial No. 535,391. (No model.)



Claim.—1. In a dish washer, the combination with a washing receptacle, of a substantially U-shaped rotary dasher, each arm of which is provided with a discharge orifice, the said dasher being provided with an internal water passage affording communication between the discharge orifices and a receiving orifice formed through the base of the dasher, mechanism for driving the dasher, and a dish rack surrounding the dasher and provided with a series of dish receiving slots tangentially disposed in relation to the path of movement of said dasher, all being so arranged and combined that when the dasher is set in motion by the driving mechanism, water in the receptacle will be drawn up through the base of the dasher and projected laterally and tangentially through the discharge orifices, and impinge upon the faces of the dishes, substantially as described.

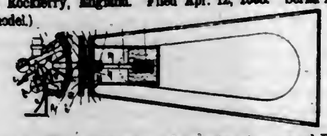
2. In a dish washer, the combination of a washing receptacle having its bottom formed into a depending inverted conical portion, breakwater devices projecting from the said conical portion of the bottom, a substantially U-shaped dasher provided with discharge orifices communicating, by means of an internal water passage, with a receiving orifice in the base of the dasher, said dasher being so disposed that its lower portion projects into the conical bottom of the dasher, driving mechanism for operating the dasher, and a dish-rack surrounding the dasher, and having slots adapted for the reception of dishes, and an upright guard portion to protect the dishes from being struck by the dasher, all being so disposed and related that when the dasher is in operation water will be drawn up thereby and projected laterally therefrom against the dishes, substantially as described.

3. In a dish washer, the combination with a dish washing receptacle, of a centrifugal dasher, a dish-like shell in which the base of the dasher is seated, and mechanism for rotating the dasher, substantially as described.

4. In a dish-washer, a hinge valve, governing a drainage duct from the water receptacle, which is adapted to be actuated by a rod connected thereto and pivoted to a lever which is suitably fulcrumed, and whose free end is provided with an upturned portion adapted to be sprung across the said rod to hold the valve on its seat.

5. In combination with a wheel mounted on the spindle which drives the dasher of a dish-washer, a lever suitably fulcrumed whose free end is adapted to press the said wheel into engagement with driving mechanism and hold it in yielding contact therewith, through the medium of a spring-rod connected to the said lever and whose free end is adapted to be held by suitable means.

544,212. ATTACHMENT FOR SEXTANTS. SAMUEL M. W. CROSSKEY, Rockferry, England. Filed Apr. 12, 1895. Serial No. 545,495. (No model.)



Claim.—1. The combination of a casing A, a vessel D mounted in gimbals at the top of said casing; a disk G mounted in gimbals at the top of said vessel; a weight J carried by said disk and immersed in a liquid within said vessel; a bearing spindle N at the top of said disk G; a revolving table O mounted on said bearing spindle; and a sextant carried by said revolving table, substantially as set forth.

2. The combination of a casing A, a vessel D mounted in gimbals at the top of said casing; a disk G mounted in gimbals at the top of said vessel; a weight J carried by said disk G and immersed in a liquid within said vessel; a bearing spindle N carried by said disk G; a revolving table O mounted on said bearing spindle N; a standard Q adjustably mounted on said table O; and a sextant removably secured to said standard Q, substantially as set forth.

3. The combination with a sextant, of an artificial horizon removably attached thereto, comprising two sights supported in a horizontal plane, said sights being of different lengths and having enlarged outer ends or heads, whereby said enlarged outer ends or heads will appear side by side when in operation, substantially as set forth.

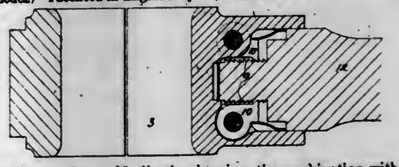
4. The combination with a sextant, of an artifical horizon attached thereto, comprising two sights supported in a horizontal plane, one on each side of the horizon glass of the sextant, said sights being of different lengths and having enlarged outer ends or heads, whereby said enlarged outer ends or heads will appear side by side when in operation, substantially as set forth.

5. The combination with a sextant of a removable artificial horizon attached thereto, and comprising two luminous sights in a horizontal plane; and a blackened screen supported behind said luminous sights, substantially as set forth.

6. The combination with a sextant of a removable artificial horizon attached thereto, comprising two luminous sights in a horizontal plane, and a removable blackened screen behind said sights, substantially as set forth.

7. The combination with a sextant of a removable artificial horizon attached thereto, comprising a vessel j; a curved arm o pivoted at the top of said vessel; a sight adjustably secured to each end of said curved arm; a weight p within said vessel for keeping said sights in a horizontal plane; a recess q in said weight; a liquid in said vessel in which the weight p is partly immersed; and a partition r at the top of said vessel, substantially as set forth.

544,213. AUTOMATIC ADJUSTMENT FOR BRASSES. JOHN H. DALES, Leeds, England. Filed June 26, 1894. Serial No. 515,780. (No model.) Patented in England Apr. 8, 1893, No. 7,274.



Claim.—1. In a self adjusting bearing, the combination with an adjustable portion of the bearing, of a ratchet wheel, a pawl engaging said ratchet wheel and adapted to be vibrated by the lost motion of said adjustable portion of the bearing, a pawl for preventing backward movement of said ratchet wheel, and mechanism actuated by the said ratchet wheel for tightening the bearing for taking up wear, substantially as described.

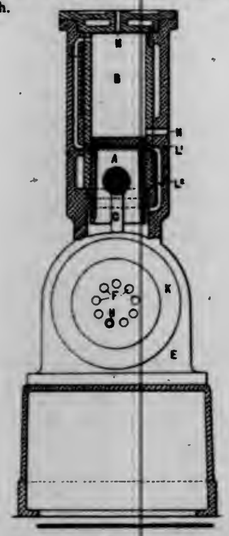
2. In a self adjusting bearing, the combination with an adjustable portion of the bearing, of a ratchet wheel, a series of pawls of varying lengths engaging said ratchet wheel and adapted to be vibrated by the lost motion of said adjustable portion of the bearing, means for preventing the backward movement of the ratchet wheel, and mechanism actuated by the said ratchet wheel for tightening the bearing for taking up wear, substantially as described.

544,214. GAS-ENGINE. JOSEPH DAY, Bath, England. Filed Mar. 8, 1894. Serial No. 502,866. (No model.) Patented in England Apr. 14, 1891, No. 6,410; in France Oct. 19, 1891, No. 216,842; in Italy Dec. 31, 1891, XXV, 30,615; in Switzerland June 3, 1892, No. 5,493; in Norway June 7, 1892, No. 2,773; in Spain June 15, 1892, No. 13,340; in Victoria July 18, 1892, No. 9,803; in New South Wales July 20, 1892, No. 3,872; in South Australia July 21, 1892, No. 2,268; in Queensland July 23, 1892, No. 2,119; in West Australia July 26, 1892, No. 355, and in New Zealand Aug. 3, 1892, No. 5,688.

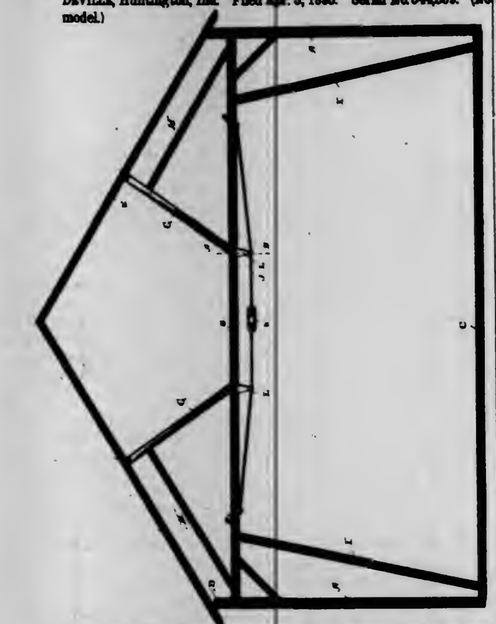
Claim.—1. In a gas engine, the combination of a cylinder and a piston therein, the said cylinder being divided by the piston into a combustion chamber on one side and a compression chamber on the other side, with passages L^3 and L^2, the said piston being provided with an annular groove adapted to open communication between the passages L^3 and L^2 at a given time in the stroke of the piston, substantially as set forth.

2. In a gas engine, the combination of a cylinder having an exhaust port and a piston therein, the said cylinder being divided by the piston into an explosion chamber, B, on one side, and a compression chamber, E, on the other, and two passages L^2, L^3, one communicating with the outer end of the chamber E and the other with the outer end of the chamber B, the other ends of the passages L^2 L^3

being covered by the piston and the said piston being provided with a groove adapted to connect the said ends of the passages L^2, L^3, with separate air and gas ports leading into the chamber, E, and a disk valve, I, secured to the inside of the chamber, so that its free edges cover both air and gas ports, the said disk valve being adapted to be automatically opened by the suction of the piston, and to close over the ports by the compression action of the piston, all substantially as set forth.



544,215. FRAME FOR BARNS OR OTHER BUILDINGS. PETER DEVILLE, Huntington, Ind. Filed Apr. 3, 1895. Serial No. 544,339. (No model.)



Claim.—An improved frame for buildings comprising side posts A, girder B connecting them, the upwardly extended inwardly inclined posts I leading to the said girder, the truss brace on the under side of the girder and between posts I, the rafters, the purlins, braces G leading to girder B, and braces H extending from the purlin braces backward and downward to the girder, substantially as shown and described.

544,216. DISPLAY-RACK. HENRY DROSTE, Philadelphia, Pa., assignor to the Stewart & Mattson Manufacturing Company, same place. Filed Apr. 22, 1895. Serial No. 546,710. (No model.)

Claim.—The combination in a display rack, of the projecting arm having a hub with worm segment thereon, a supporting head formed in one piece and comprising opposite projecting ears with transverse lugs connecting the base portions of said ears at top and bottom, each of said lugs having a semicircular recess in its forward face, a transverse pin whereby the hub of the arm is pivoted to the ears, and a worm engaging with the worm segment on the hub of the arm and contained between the upper and lower projecting lugs of the supporting head, said worm being carried by a shaft adapted to the recesses in the lugs, and held in position therein by the engagement of the worm segment and worm, substantially as specified.



544,217. CUSHION-TIRE FOR VEHICLE-WHEELS. HOWARD M. DU BOIS, Philadelphia, Pa. Filed Aug. 2, 1894. Serial No. 519,305. (No model.)



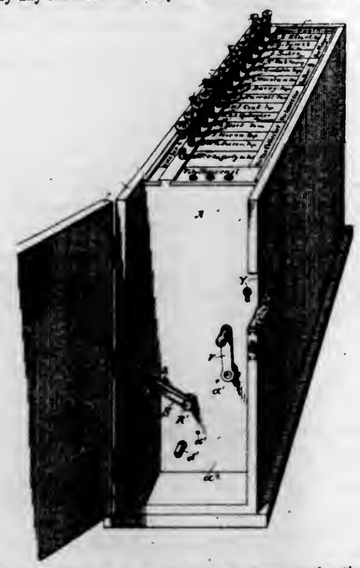
Claim.—1. A vehicle wheel comprising a rim, a tire having flanges and an elastic cushion normally of greater width than the rim and of greater thickness than the space occupied by it between the tire and the rim, the tire having its flanges overlapping the sides of the rim and being compressed against the face and sides of the cushion and against the sides of the rim, as set forth and for the purpose set forth.

2. A vehicle wheel comprising a tapered rim, a tire having tapered flanges and an elastic cushion normally of greater width than the rim and of greater thickness than the space occupied by it between the tire and the rim, the tire having its flanges overlapping the sides of the rim and being compressed against the face and sides of the cushion and against the sides of the rim, as set forth and for the purpose set forth.

544,218. VOTING-MACHINE. SALOMON DUCAS, San Francisco, Cal. Filed Apr. 8, 1895. Serial No. 544,996. (No model.)

Claim.—1. In a voting apparatus, a table or surface containing the names of the candidates to be voted for, movable spindles corresponding with each of the names and capable of being depressed by the voter, punches attached to each of the spindles and movable therewith, a roll or sheet coiled upon a drum having the names or numbers of all the candidates written at one side, and corresponding in position with the respective spindles, and names as indicated upon the table, so that the depression of any spindle will actuate the punch and perforate the sheet at a point corresponding with the name of the candidate to which the spindle is appropriated and means whereby any line of votes may be canceled upon said sheet.

2. In a voting machine, a table or surface carrying the names of all the candidates, movable spindles corresponding with each of said names, a drum carrying a roll of paper having the names or numbers of the candidates printed at one side and corresponding in position with the spindles and the names upon the tables, punches actuated by said spindles and adapted to perforate the paper in line with the names of the candidate who is voted for, and springs by which the spindles are returned to their normal position when released and means whereby any recorded vote may be canceled upon said sheet.



3. In a voting machine, a table or surface carrying the names of the candidates, movable spindles corresponding with the names of said candidates, a drum with a roll of paper having the names or numbers of the candidates printed at one side corresponding with the spindles and the names upon the surface, punches actuated by the spindles when the latter are depressed, adapted to perforate the paper in line with the name of the candidate for whom the vote is cast, a series of indicators situated beneath the surface and corresponding with the names of each of the candidates, means whereby any recorded vote may be canceled upon said sheet a mechanism by which either of said indicators is advanced whenever the corresponding spindle is first depressed whereby the number of votes cast for any candidate is shown by the indicator and also by the coil upon the drum.

4. In a voting machine, a table or surface carrying the names of the candidates, spindles corresponding with each of the names and depressible by the action of the voter, a sheet coiled upon a drum, punches actuated by the spindles so as to perforate the sheet in line with the names of the candidates which are voted for, a series of indicators or registers corresponding with the names of the candidates upon the table, mechanism including a pivoted lever and pawl by which said indicators are advanced by the depression of the voting spindles so as to register the number of votes cast for each candidate, and a locking mechanism comprising a spring g the lower portion of which is formed with independent seats and a pin on the register actuating lever adapted to alternately occupy said seats whereby any register actuated mechanism is locked so that a second depression of any spindle will fail to operate the register.

5. In a voting apparatus, a table or surface carrying the names of the candidates, spindles corresponding with the name of each candidate and adapted to be depressed by the voter, a ratchet wheel with advancing and holding pawls and a swinging bail the free end of which is in the path of movement of the spindles, and is designed to engage the advancing pawl, whereby the depression of a spindle will advance the ratchet wheel one tooth, stop pins attached to said ratchet wheels whereby a further movement of the wheels is arrested after the full number of candidates for any one office has been voted for.

6. In a voting apparatus, a table or surface carrying the names of the candidates, spindles corresponding with each of the names and depressible so as to actuate indicators and show the vote cast for any candidate, a mechanism consisting of ratchet wheels with advancing and holding pawls, stop pins fixed to the ratchet wheels adapted to arrest their movement when the full number of candidates for any office have been voted for, bails or yokes pivotally hung at one end and with their free ends so disposed with relation to the spindles that they will be actuated by the depression of any of the spindles corresponding to the number of candidates for that office, and a mechanism connected with the bails and with the advancing pawls of the ratchet wheels whereby the latter will be rotated and advanced a tooth for the depression of each spindle until the full number have been voted for, and the arresting stop prevents further movement of the ratchet wheel.

7. In a voting machine, a table or surface carrying the names of the candidates, spindles corresponding with each of the names and movable by the action of a voter, a sheet or roll having the names or numbers of the candidates imprinted thereon, corresponding with the spindles and the names upon the table, punches carried by the spindles adapted to perforate the sheet in line with the name of the candidate voted for, means whereby any recorded vote may be canceled upon said sheet a second series of indicators also corresponding with the names and movable by the depression of the spindles whereby two registrations are made of each vote, a mechanism for locking the registers and preventing more than one vote being cast for one person, and an eccentric extending beneath the register actuating mechanism whereby the locking devices are simultaneously released after the voter has left the booth.

8. In a voting apparatus, a table or surface carrying the names of the candidates, spindles corresponding with said names or numbers, a roll of paper upon which the names are also printed, and independently movable mechanism whereby the duplicate registration of each vote is had, mechanism whereby one of the registers is stopped after recording a single vote, means whereby any recorded vote may be canceled upon said sheet mechanism consisting of rotary ratchet wheels with pawls whereby they are advanced and held, stops to prevent the rotation of said ratchets after the proper vote has been registered, and a mechanism for returning the parts to their normal position after the complete vote has been registered, and advancing the roll of paper for the next vote.

9. In a voting apparatus, a table or surface carrying the names of the candidates, movable spindles corresponding with each name, and registers actuated by the movement of said spindles to indicate each additional vote, a roll or sheet having the names or numbers of the candidates marked thereon corresponding in position with the spindles and with the names upon the table, punches moved by the spindles and adapted to perforate the paper in lines corresponding with the names of the candidates which are voted for, a mechanism for advancing the roll after a vote has been completed, and a stamp and actuating mechanism whereby any line of votes may be canceled upon the sheet.

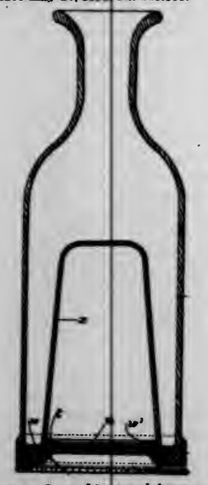
10. In a voting machine, a table or surface with the names or numbers of the candidates, movable spindles corresponding with the names, registering disks and pawl and lever mechanism by which they are advanced whenever a spindle is depressed, a spring catch having independent seats alternately engaging a pin upon the pawl actuating lever to hold it down after it has been depressed, independent toothed ratchet wheels and pawl carrying arms or bails, and arms upon the spindles adapted to engage the free ends of the bails and advance the ratchet wheels when the spindles are depressed and stops by which the movements of the ratchet wheels are limited, a rotary eccentric extending beneath all of the pawl actuating levers by which the latches are disengaged and the parts are returned to their normal position, when the shaft is turned.

11. In a voting machine, a table or surface with the names or numbers of the candidates, movable spindles corresponding with said names, registering disks and a pawl and lever mechanism by which they are advanced by the depression of the spindle and lever, a lock comprising a pin on the actuating lever and an adjacent spring having two independent seats for the pin, by which the lever is held to prevent more than one number being added until the apparatus has been reset, ratchet wheels and pawls actuated by the depression of the spindles, and stops by which said wheels are arrested when the proper number of votes has been cast, a rotary shaft and an eccentric extending beneath all of the actuating levers by which the parts are returned to their normal positions, and a total adder having an actuating lever also moved by the returning shaft, whereby the total as well as the individual vote is registered.

12. In a voting machine, a table or surface carrying the names or numbers of the candidates, corresponding depressible spindles, registering mechanisms and actuating devices, ratchet wheels and reciprocating bails carrying pawls by which the ratchets are advanced, in combination with a movable carrier having an aperture adapted to receive an independent slip or ticket and deposit it in a receptacle, a spring for temporarily holding the slip or ticket in the carrier and then ejecting it into the receptacle and a connection by which each movement of the carrier moves the corresponding bail and ratchet.

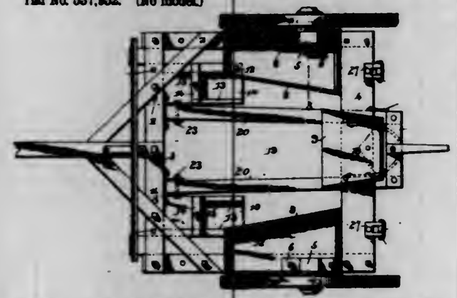
13. In a voting machine and in combination with a table or surface carrying the names or numbers of the regular candidates, and a mechanism for indicating and registering said votes, a supplemental chambered carrier adapted to receive an independent ticket, a spring by which the ticket is retained until the carrier has been depressed, and ejected when it reaches the proper point, a receptacle for said tickets and a connection between the carrier and the main registering devices whereby all independent votes are registered and controlled in conjunction with the regular votes.

544,219. DECANTER FOR COOLING LIQUIDS. LOUIES G. GODET, Vincennes, France. Filed Feb. 20, 1895. Serial No. 539,112. (No model.) Patented in France May 27, 1890. No. 205,895.



Claim.—A decanter for refrigerated beverages, consisting of a beverage vessel *r*, an independent ice-vessel *x* by which contact with the beverage to be refrigerated is avoided, a ring *s* for connecting the two vessels *r* and *x*, a joint-forming material *y* between *r* and *x*, and a plug *u* screwed into the ring *s*, substantially as described and shown.

544,220. COMBINED POTATO-PLANTER AND MARKER. ELONSO J. GORDON, Greenville, Mich., assignor of two-thirds to Thomas J. Potter and Rufus F. Sprague, same place. Filed Feb. 11, 1895. Serial No. 537,962. (No model.)



Claim.—1. In a hand dropping potato planter, a wheeled frame mounted to travel in close proximity to the ground, seed boxes arranged at directly opposite sides of the frame and provided with closed bottoms, and an operator's seat supported at a point between the seed boxes, whereby the operator can conveniently reach the seed potatoes in either box by hand and also place the same on the ground between the boxes, substantially as set forth.

2. In a hand-dropping planter, the combination of the machine frame, opposite upwardly disposed wheel standards secured on opposite sides of the frame and provided near their upper ends with outwardly disposed wheel carrying spindles, seed boxes secured on opposite sides of the frame adjacent to the wheels, an operator's seat secured on the rear end of the frame between the seed boxes, a coverer frame pivotally and detachably connected at its front end to the front end of the machine frame and carrying at its rear end, in rear of the operator's seat, a pair of rearwardly convergent covering shovels, a handle attached to the rear end of the coverer frame, a latch connected to the rear end of the coverer frame and adapted to detachably engage over the rear end frame bar, and self-adjusting spacing feet attached to the rear end of the frame at both sides of the operator's seat, substantially as set forth.

3. In a hand-dropping planter, the combination of the machine frame having opposite upwardly disposed wheel standards provided near their upper ends with wheel carrying spindles, oppositely located seed boxes, an operator's seat arranged on the rear end of the frame between the seed boxes, a coverer arranged to work below and in rear of said seat, bracket plates attached to the rear end of the frame at both sides of the planter's seat, and depending swinging spacing feet pivotally suspended from their upper ends in said brackets, substantially as set forth.

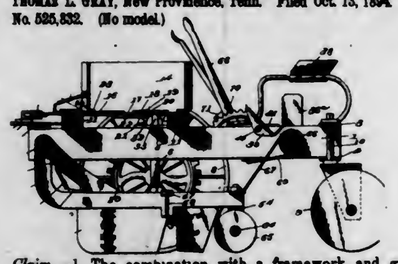
4. In a machine of the class described, the combination of the wheeled machine frame having a draft tongue at its front end, a transverse marker beam detachably hinged at its front lower edge on the front end of said machine frame, said marker beam carrying a series of depending marker feet and being provided at a central point with a stop projection having a catch flange at one side, an adjusting handle attached to said marker beam at one side of its center, an attaching block pivotally mounted on the draft tongue in front of the marker beam, and an adjustable catch bar pivotally connected at its front end to said pivoted attaching block and provided at its rear end with an adjusting handle, and a catch shoulder adapted to engage in front of the stop projection of the marker beam, said adjustable catch bar being further provided on its under side at an intermediate point with an intermediate catch shoulder adapted to engage with the catch flange of said stop projection, substantially as set forth.

544,221. BOB-SLEIGH. CHARLES E. GOULD, Fremont, Mich., assignor of one-half to George Tate, same place. Filed Apr. 4, 1895. Serial No. 544,473. (No model.)



Claim.—A knuckle-joint for sled knees consisting of castings B' and C having convex recesses to provide bearing surfaces having side walls and projections with apertures which register with each other so that both castings are secured to the cross-bar by the same bolts, a casting D having side bearing surfaces and a central web *d* which are complementary to the bearing surfaces and recesses of the casting C attached to the under side of the cross-bar, and a bar or rave E having a horizontal portion which engages with the convex bearing surface of the casting B' secured to the upper side of the cross-bar, the ends of the bar or rave being attached to the runner, substantially as shown, whereby the bar or rave holds the parts in engagement with each other, for the purpose set forth.

544,222. COMBINED GRAIN-PLANTER AND TOBACCO-HILLER. THOMAS L. GRAY, New Providence, Tenn. Filed Oct. 13, 1894. Serial No. 525,832. (No model.)



Claim.—1. The combination with a framework and ground-wheels, a hopper, a seed-slide, and a lever connected to the seed slide, of a pivotal arm 30 mounted to swing in a vertical plane, a spring 37 for holding said arm in its normal position, means including the lever for moving the arm in opposition to its actuating spring, a master gear arranged to receive motion from a ground-wheel, a pinion carried by said arm and adapted to mesh with the master gear when the arm is in its normal position a crank arm on the spindle of the pinion, and a connecting rod between the crank arm and the operating lever to communicate motion to the lever, substantially as specified.

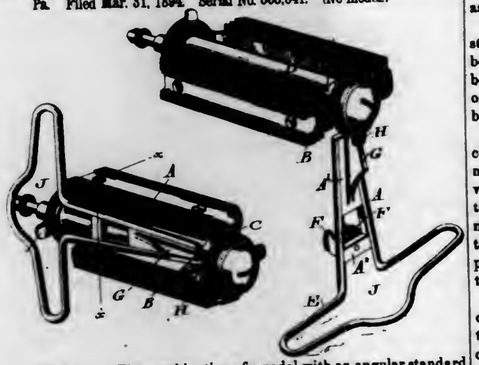
2. The combination with a framework, of a pivotal frame having side and intermediate bars, a furrow opening shoe pivotally mounted between the intermediate bars and provided with actuating springs to maintain it in its normal position, furrow closing shovels pivotally mounted upon the side bars and provided with actuating springs to hold them in their normal positions, pulverizing disks arranged in rear of the furrow closing shovels, and mounted upon said pivotal frame, a packing roller arranged to follow the pulverizing disks, and means for elevating the free end of the pivotal frame, substantially as specified.

3. The combination with a supporting framework, ground-wheels, a hopper, and seed slides mounted in the hopper to control the outlet therefor, of a pivotal operating lever connected at an intermediate point to the seed slides and having a short arm, a spring-actuated foot-lever, a crank-arm operatively connected with one of the ground-wheels, connecting rods attached to said crank-arm and the foot-lever respectively, and means for detachably connecting said rods to the operating lever, substantially as specified.

4. The combination with a supporting framework and ground-wheels, a hopper, a seed-slide, and an operating lever connected to the seed-slide, of a pivotal spring-actuated arm, a pinion carried by the arm and adapted when the arm is in its normal position to mesh with a gear on one of the ground-wheels, connections between the pinion and the operating lever, a frame supporting the furrow opening and closing devices and pivotally connected to the framework, a hand-lever provided with a lateral arm engaging said pinion supporting arm, whereby the pinion may be removed from engagement with the gear on the ground-wheel, and connections between said pivotal frame and the hand-lever whereby when the hand-lever is operated to throw the pinion out of engagement with the gear the furrow opening and closing devices are elevated, substantially as specified.

5. The combination with a framework and ground-wheels, a hopper and means operated by the ground-wheels to control the discharge from said hopper, of a frame pivotally connected to one end of the framework, means connected to the other end of the framework for elevating the same, said frame comprising side-bars and parallel intermediate bars, a furrow opening shoe pivotally mounted between the intermediate bars of the frame and provided with return springs whereby when deflected by contact with an obstruction the shoe is returned to its normal position, the shoe and contiguous portions of the intermediate bars being provided with lateral ears which are connected by said return springs, and the ears on the shoe being adapted to engage the edges of the intermediate bars to limit the movement of the shoe, furrow closing shovels pivotally mounted upon the side bars of the frame and provided with forwardly extending arms, return springs connected to said arms of the furrow closing shovels, and pulverizing disks mounted upon the frame in rear of the furrow closing shovels, substantially as specified.

544,223. BICYCLE-SUPPORT. WILLIAM H. HART, Jr., Philadelphia, Pa. Filed Mar. 31, 1894. Serial No. 505,841. (No model.)



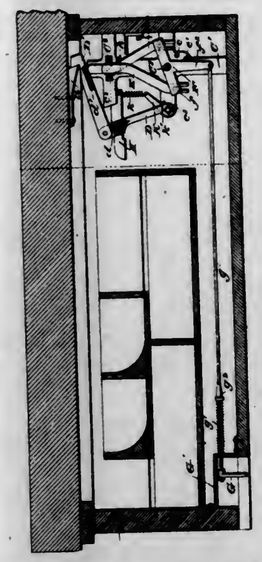
Claim.—1. The combination of a pedal with an angular standard of open form, pivoted to said pedal the base limb of which has an outwardly-extending swell, substantially as described.

2. A pedal, a standard pivoted thereto and of open form adapted to receive the toe of a rider's shoe, and a spring clasp connected with said standard and engaging a sleeve on said pedal, said parts being combined substantially as described.

544,224. ELECTRIC ALARM-LOCK FOR TILLS. CHARLES HELM, Indianapolis, Ind. Filed Apr. 23, 1895. Serial No. 546,941. (No model.)

Claim.—1. In combination with a till lock constructed substantially as shown, of a rocking member carrying a pivoted latch operated by a series of tumblers or wards, a latch-plate pivoted to the rocking member, and a contact-plate with which the latch-plate engages, together with an electric bell and battery, substantially as described.

2. In combination with a till-lock having a rocking member, carrying a pivoted latch, of a latch-plate attached to said member and adapted to lock the same at the limit of its rearward movement, said latch-plate being electrically connected to a battery, and a contact-plate carried by the till so that the latch plate will engage therewith when the rocking member which carries the same is moved rearward, together with an electric alarm and connections substantially as shown, whereby an electric circuit is completed when the latch plate engages with the contact-plate, for the purpose set forth.



3. A till-lock comprising a suitably supported frame having a guide bar and shaft, bell-crank levers connected to keys for actuating the same, and provided with laterally-projecting pins wards or tumblers having bifurcated lower ends which engage the projecting pins of the bell-crank levers, said wards or tumblers passing through the guide-bar of the frame, a member pivoted to the frame and having in pivotal engagement therewith a latch with a transverse plate with which the upper ends of the wards or tumblers engage, substantially as shown, and for the purpose set forth.

4. In a till-lock, the combination, of a frame constructed substantially as shown, bell-crank levers supported by the frame, said bell-crank levers having a depending member and a cross-bar or member, as *f*, headed pins *f'* projecting from the member *f*, and wards or tumblers having bifurcated lower ends for engagement with the bell-crank levers, substantially as shown and for the purpose set forth.

5. In a till-lock, the combination of a frame, bell-crank levers connected to operating keys and to wards or tumblers, a pivoted member having a cross-bar to which is pivoted a latch with a transverse plate, the plate being adapted to rest upon the upper ends of the wards or tumblers, a spring for holding the pivoted frame normally to the limit of its forward movement, and a latch for limiting the movement of the pivoted frame, the latch engaging lugs or stops projecting from the frame of the lock, substantially as shown and for the purpose set forth.

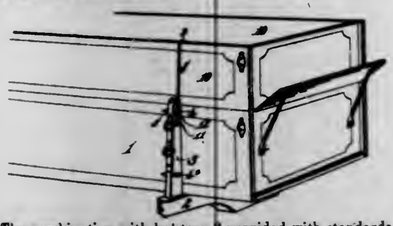
6. In a till-lock, the combination with a supporting frame, of an oscillating member carrying a pivoted latch with which the wards or tumblers of the lock engage, lugs c^4 and c^5 projecting from the frame of the lock, and a latch-plate H pivoted to the oscillating member and having at one end a head with projecting portions which are adapted to engage the lugs on the lock-frame and at the other end a laterally-projecting portion forming a thumb-rest for operating said latch-plate, substantially as shown and for the purpose set forth.

7. In a till-lock, the combination, of a frame constructed substantially as shown and provided with an oscillating member which carries a latch, a latch-plate pivoted to the oscillating member, said latch-plate being adapted to engage with lugs or stocks on the lock-frame, an arm K pivoted on the frame, a spring connecting the arm with the latch-plate, and a lug projecting from the arm and engaging one of the members of the oscillating frame, substantially as shown and for the purpose set forth.

8. In a till-lock, the combination, of an oscillating frame, a latch-plate pivoted thereto and having a head with projecting portions, and studs or projections on the frame of the lock with which the latch-plate engages, substantially as shown, whereby when the oscillating member is moved rearward the rear end of the latch will fall, for the purpose set forth.

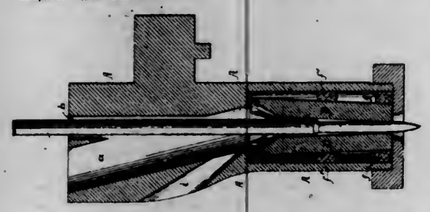
544,225. WAGON-BED ATTACHMENT. HEZEKIAH M. HICKMAN, Wellington, Kans., assignor of one-half to John Staub, same place. Filed May 23, 1895. Serial No. 550,434. (No model.)

Claim.—1. The combination with bolsters 2 provided with standards 3, and the wagon box supported upon said bolsters between the standards, of eye-bolts 4 secured to said standards, hooked rods 8 engaging the upper edges of the wagon box and at their lower ends passing through said eye-bolts, and nuts 12 for adjustably securing said eye-bolts and rods together, substantially as described.



2. The combination with bolsters 2 provided with standards 3, and the wagon-box supported on said bolsters between the standards, of eye-bolts 4 and 4ª secured to said standards one above the other in vertical alignment, hooked rods 8 for engaging the upper edges of the wagon box and adapted to pass through said eye-bolts, and nuts 12 for adjustably securing said eye-bolts and rods together, substantially as described.

544,226. NAIL-BOX FOR AUTOMATIC NAILING-MACHINES. HOWARD H. HIGHAM, Philadelphia, Pa. Filed July 25, 1892. Serial No. 441,107. (No model.)



Claim.—1. A nail box for automatic nailing machines having dies constructed to engage the nail and hold the same in position for the action of the forcing punch in combination with springs encircling said dies, and adjustable vertically thereon so as to act upon different parts of the dies as required, substantially as specified.

2. A nail box for automatic nailing machines having dies in two or more sections constructed to engage the nail and hold the same in position for the action of the forcing punch, in combination with springs encircling each section of the dies, and adjustable vertically thereon so as to act upon different parts thereof, substantially as described.

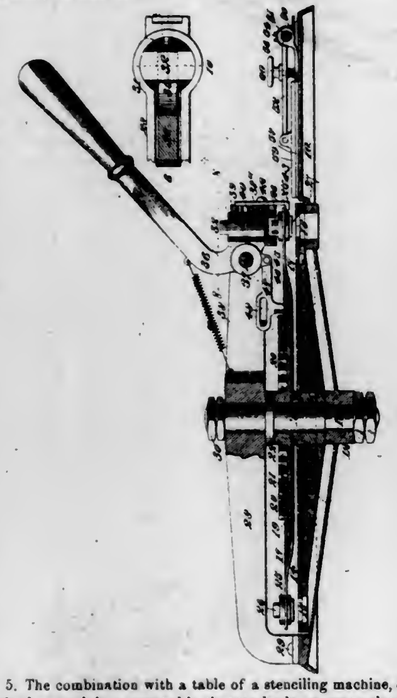
544,227. STENCIL-CUTTING MACHINE. JOHN A. HOFF and CHARLES K. PICKLES, St. Louis, Mo., assignors, by mesne assignments, to the American Stencil Machine Company, East St. Louis, Ill. Filed Nov. 16, 1894. Serial No. 529,014. (No model.)

Claim.—1. A stencil cutting machine comprising a radially slotted plate, providing spring arms, carrying the patrices a plunger adapted to positively engage and move the patrices with their spring arms, in both directions, a guide-plate surmounting the slotted plate, having a series of posts, a radially sliding guiding-arm engaging the posts and a lever connected with the plunger and with the guiding-arm.

2. The combination of the table provided with an annular portion having a hub, the yoke-bar secured to the table, the bolt supported on the hub, and by the yoke-bar, the matrix-plate surrounding the bolt, the radially slotted patrix-plate providing spring-arms and surrounding the bolt, and supported on and rotating with the matrix-plate, the patrices secured to the outer ends of the spring-arms, the plunger sliding in the yoke-bar for depressing the patrices, having means for returning the patrices to normal position, and an operating lever, pivoted to the yoke-bar, having an arm engaging the plunger, substantially as described.

3. The combination of the table, provided with an annular portion having a hub, the yoke-bar secured to the table, the bolt supported on the hub and by the yoke-bar, the matrix-plate, surrounding the bolt, the radially slotted patrix-plate, providing spring arms, surrounding the bolt, and supported on and rotating with the matrix-plate, the patrices secured to the outer ends of the spring-arms, the plunger sliding in the yoke-bar for depressing the patrices, the slide, secured to the plunger having an inwardly extending flange for returning the patrices to normal position and an operating lever, pivoted to the yoke-bar, having an arm engaging the plunger, substantially as described.

4. The combination of the table provided with an annular portion having a hub, the yoke-bar secured to the table, the bolt supported on the hub, and by the yoke-bar, the matrix-plate, surrounding the bolt, the radially slotted patrix-plate providing spring-arms and surrounding the bolt, and supported on and rotating with the matrix-plate the patrices secured to the outer ends of the spring-arms, the guide-plate, surmounting the patrix-plate, having posts, the guiding arm secured to the yoke-bar sliding thereon and adapted to engage the posts, the plunger sliding in the yoke-bar, for depressing the patrices, and an operating lever, pivoted to the yoke-bar, having an arm engaging the plunger, and an arm connected with the guiding-arm; substantially as described.



5. The combination with a table of a stenciling machine, of the standards, a rack-bar mounted in the standards, an upper plate having a horizontal bearing on the rack-bar, the lower plate having horizontal bearings on the rack-bar, the pressure plate hinged to the upper plate, the adjusting screw working in the upper plate and seated in the lower plate, and the latch-pin, substantially as described.

6. The combination of a table having a graduated margin a bar mounted on said table in alignment with said graduated margin and provided with notches registering with the graduations of said margin, a clamp mounted for travel on said bar, a spring pressed detent mounted on said clamp and adapted for successive engagement with said notches and means for adjusting the clamp-members.

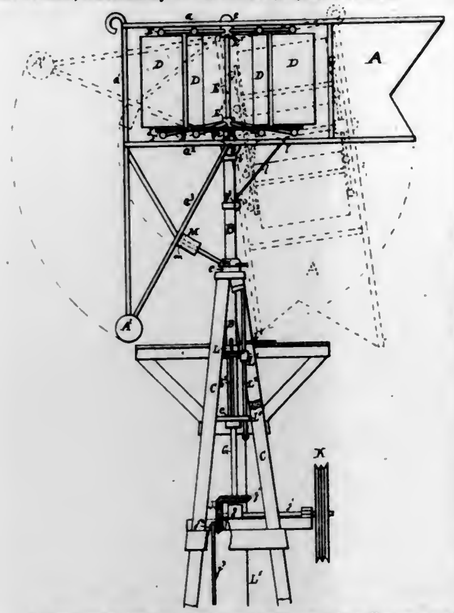
544,228. WINDMILL. HENRY S. HOPPER, Detroit, Mich. Filed June 16, 1894. Serial No. 514,792. (No model.)

Claim.—1. In a wind motor the combination of a vane connected by horizontal pivots to a hollow vertical mast adapted to turn with the vane, and a wind-wheel rotating a vertical shaft journaled upon the vane, substantially as described

2. In a wind motor the combination of a vane connected by horizontal pivots to a hollow vertical mast adapted to turn with said vane, a wind-wheel rotating a shaft journaled upon the vane, a vertical power shaft rotating within the hollow mast, and a universal coupling connecting the wind-wheel shaft with the power shaft, substantially as described

3. In a wind motor the combination of a vane connected by horizontal pivots to a hollow vertical mast adapted to turn with the vane, a wind-wheel rotating a shaft journaled upon said vane, a counterbalance weight adapted to hold the wind wheel shaft vertical in ordinary winds, and a universal coupling communicating motion to a vertical power shaft rotating within the hollow mast, substantially as described.

4. In a wind motor the combination of a vane pivotally connected with a hollow vertical mast adapted to be turned thereby, a wind-wheel rotating a shaft journaled upon said vane, a weight suspended from the windward end of the vane, a chain or cable attached to the leeward end of the vane and extending through the hollow mast, and a slot in the lower portion thereof to a sliding collar, a shifter fork engaging a groove in the sliding collar, and means for drawing it and the sliding collar downward to incline the wind wheel and shaft from the vertical, substantially as and for the purpose described.



5. In a wind motor the combination of a vane pivotally connected to a hollow vertical mast adapted to be turned thereby, a wind-wheel rotating a shaft journaled upon the vane, a ring or link rigidly attached to one end thereof, a vertical power shaft rotating within the hollow mast, a ring or link rigidly attached to the upper end thereof, and a loose ring engaging the rigid rings upon the said shafts, substantially as and for the purpose described.

6. In a wind motor the combination of a vane connected by horizontal pivots to a vertical mast adapted to be turned thereby, a wind-wheel rotating a vertical shaft journaled upon the vane, a weight attached to a bracket suspended from the windward end of the vane, a dash-pot attached to said bracket, and a plunger attached to the vertical mast adapted to fit into the dash-pot and form a cushioned stop against which the vane is held in ordinary winds, substantially as described.

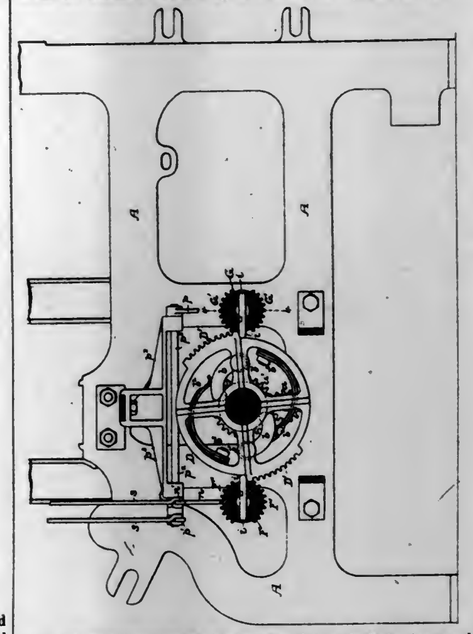
7. In a wind motor the combination of a vane connected by horizontal pivots to a vertical mast adapted to be turned thereby, a counter-balance weight attached to the windward end of the vane, a shaft journaled upon said vane, having wheels attached thereto, and sails located between said wheels and pivotally attached to the periphery thereof, substantially as described.

544,229. DROP-BOX MECHANISM FOR LOOMS. EDMUND INGRAHAM, Philadelphia, Pa., assignor of one-half to the Fairmount Machine Company, same place. Filed Dec. 26, 1894. Serial No. 532,952. (No model.)

Claim.—1. The combination of a hollow box-operating crank shaft having a toothed segment, a transversely sliding bolt, the end of which constitutes the initial tooth of said segment, a rod adapted to slide longitudinally in said hollow shaft and having a pin and slot connection with said bolt, whereby the longitudinal movement of the rod causes transverse movement of the bolt, and means for reciprocating said rod, substantially as specified.

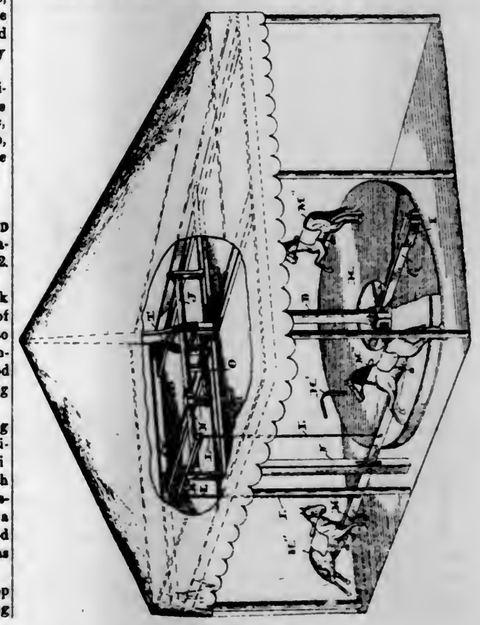
2. The combination of a hollow box-operating crank shaft having a toothed segment, a transversely sliding bolt, the end of which constitutes the initial tooth of said segment, a rod adapted to slide longitudinally in said hollow shaft and having a pin and slot connection with said bolt, whereby the longitudinal movement of the rod causes transverse movement of the bolt, means for reciprocating said rod, and a pin carried by the hollow shaft and adapted to a groove in the rod so as to prevent turning of the latter in the shaft, substantially as specified.

3. The combination in drop box mechanism for looms, of the drop box lever, the drum having toothed segments, the crank shafts having segments with movable initial teeth, means for advancing and retracting said movable teeth, devices for rotating the drum, connections between the crank pins of the crank shaft and the drop box lever, and a yielding clutch element whereby the arrest of the drop box operating mechanism is permitted without interfering with the continued movement of the driving shaft, substantially as specified.



4. The combination of the drop box lever, shafts having crank pins connected to said lever, means for operating said shafts, a supporting arm for the lever, a spring for lifting said arm, a ratchet wheel connected to said spring and a retaining pawl for said ratchet wheel, substantially as specified.

544,230. MERRY-GO-ROUND. JOSHUA R. KIDDER, Dawson, Mo., assignor of one-half to Samuel Mecham, same place. Filed Feb. 5, 1895. Serial No. 537,393. (No model.)

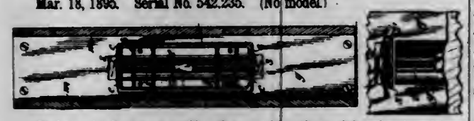


Claim.—1. A merry-go-round comprising a revoluble support, a fixed bearing for its lower end, a vibratory bearing for its upper end, a teeter, and a suitable connection between the teeter and the said vibratory bearing for actuating the latter, substantially as shown and described.

2. A merry-go-round comprising a revoluble support, a fixed bearing for its lower end, a rock shaft and a means for oscillating the same, a lever forming at one end a bearing for the upper end of the said central support, and a loose connection between the opposite end of the lever and said rock-shaft, substantially as shown and described.

3. An improved merry-go-round comprising a revoluble support, the central bearing therefor, the axial post, a lever O bifurcated at one end to embrace the post and fulcrumed between its ends, rock shaft J, arms N' depending therefrom to vibrate bar O, and a means for actuating the rock shaft, substantially as shown and described.

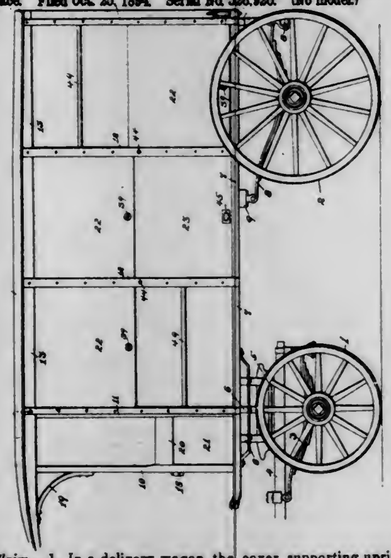
544,231. LETTER-FILE. ARMIN KRAH, Berlin, Germany. Filed Mar. 18, 1895. Serial No. 542,235. (No model.)



Claim.—1. In a paper file, the combination with a back, of two sheet retaining clips hinged to said back, and a spring plate secured to said back at each end of said hinged clips, said spring plates having grooves adapted to be engaged by said hinged clips and operating to hold said clips closed, substantially as described.

2. In a paper file, the combination with the back *h* and the leaves *m*, *m* hinged thereto, of the plate *g* secured to said back and provided with two tubular channels *i* wires *d*, *c*, seated in said channels and provided at their opposite ends with lateral extensions *c*, *c*, rods *c'*, *d'*, connecting the outer ends of said extensions, curved fingers *a*, *b*, carried by said rods, and spring plates *s*, *s*, secured to said back and provided with recesses *s'*, *s'*, adapted to be engaged by the extensions *c*, *c*, substantially as described.

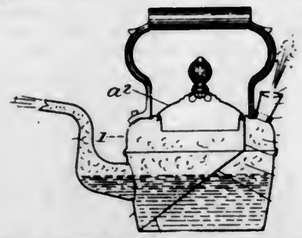
544,232. DELIVERY-WAGON. WILLIAM LEONHARDT, Baltimore, Md., assignor to the Leonhardt Wagon Manufacturing Company, same place. Filed Oct. 25, 1894. Serial No. 526,920. (No model.)



Claim.—1. In a delivery wagon the cover supporting uprights faced inside with metal plates extending beyond the edges thereof and having the front and rear sides faced with T-irons, whereby the uprights are incased in metal and formed into double sashes on each side, as set forth.

2. In combination two adjacent cover supporting uprights faced with metal inside and out and with T-irons front and rear, said T-irons forming metal faces and parting beads, two vertical sliding panels between said uprights, one on each side of the parting beads, roller bearings between the metal faces and panels, double acting bolts in the upper panel to hold it up, and single or double catches on the uprights to hold the bottom panels up, substantially as set forth.

544,233. ALARM OR BRONCHITIS KETTLE. HENRY R. S. MAITLAND, Bath, England. Filed Apr. 14, 1894. Serial No. 507,588. (No model.)

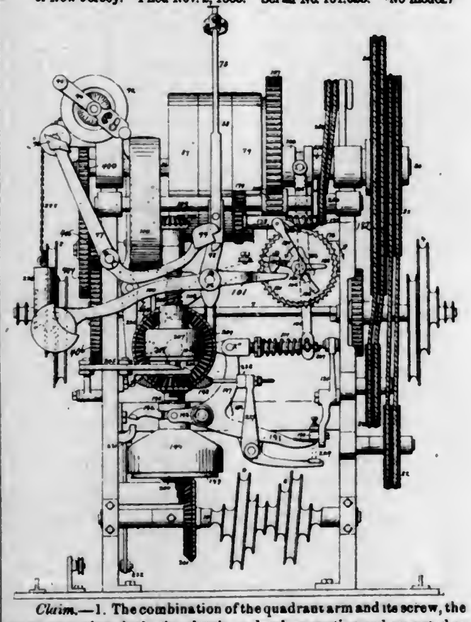


Claim.—1. A kettle comprising an internal steam collecting chamber extending at its lower end over the entire area of the bottom of the kettle or nearly so, and at its upper end terminating in a contracted part, an escape opening in the top of the kettle connected with the contracted part of the steam collecting chamber and adapted to receive an alarm device or the like, and an opening or circulation way between the bottom of the chamber and the body of the kettle; substantially as described.

2. A kettle comprising a partition or diaphragm extending from the upper part of the kettle at one side of the lid thereof to or near the bottom of the kettle at the other side thereof, forming a steam collecting chamber extending at its lower end over the entire area of the bottom of the kettle or nearly so, and at its upper end terminating in a contracted part, an escape opening in the top of the kettle connected with the contracted part of the steam collecting chamber and adapted to receive an alarm device or the like, and an opening or circulation way at the bottom of the partition or diaphragm between the chamber and the body of the kettle; substantially as described.

3. A kettle constructed with a partition or diaphragm extending from the upper part of the kettle at the rear of the lid downward at an inclination to the front of the kettle at or near the bottom thereof, a circulation way at the lower part of the partition and an alarm device in the upper part of the kettle behind the partition and adapted to be operated by the steam, substantially as herein shown and described and for the purpose stated.

544,234. SELF-ACTING SPINNING-MULE. BENJAMIN F. MEYER, Camden, N. J., assignor to the M. A. Furbush & Son Machine Company, of New Jersey. Filed Nov. 2, 1885. Serial No. 181,623. (No model.)



Claim.—1. The combination of the quadrant arm and its screw, the screw operating shaft, the clutch, a clutch operating rod mounted so as to be free to turn in bearings on the quadrant arm and having two beveled arms, one projecting in one direction and the other in the opposite direction from the rod, and a nut on the quadrant screw having oppositely projecting lugs for acting on said arms, substantially as specified.

2. The combination of the quadrant arm; its screw and nut; the screw operating shaft; the clutch, the rod connected thereto; an operating rod having an arm 42; and a spring through the medium of which said arm acts to throw the clutch into gear; all substantially as specified.

3. The combination of the builder rail screw, the wheel connected thereto; two arms, each carrying a pawl engaging with the wheel, but capable of being disengaged therefrom; gearing between said arms whereby the arms are caused to be moved in opposite directions; and means for vibrating one of said arms; all substantially as specified.

4. The combination of the builder rail screw and its wheel; the arm 57 having a pawl engaging with said wheel but capable of being disengaged therefrom; the arm 60, having a similar pawl and a segmental rack, and an arm 63 pivoted eccentrically to the arms 57 and 60, but connected to said arm 57, and having a segmental rack engaging with that on the arm 60; all substantially as specified.

5. The combination of the builder rail screw and its wheel; the two arms 57 and 60, and their pawls; the arm 63, inclined in respect to the arm 57, and geared to the arm 60, but pivoted eccentrically in respect thereto; and the connecting bolt adapted to longitudinal slots in said arms 57 and 63; all substantially as specified.

6. The combination of the quadrant; the builder rail screw and its wheel; pawls engaging with said wheel but capable of being disengaged therefrom; an arm for actuating the said pawls; an operating rod connected to said arm; and a lever, one arm of which is connected to the quadrant, and the other arm connected to the said operating rod; all substantially as specified.

7. The combination of the cylinder shaft; the drum for the backing off chain; the faller shaft and its arm 123; the faller leg; the loose arm 122; the spring acting thereon; a backing off chain, passing around a bearing on the arm 122, and connected at one end to the chain drum, and at the other end to a fixed point on the carriage; and a bearing whereby the arm 122 acts on the arm 123 when moving in one direction, but has no influence on said arm when moving in the contrary direction; all substantially as specified.

8. The combination of the cylinder shaft; the drum for the backing off chain; the faller shaft and its arm 123; the faller leg; the arm 122 and its spring; a lever 125 connected to the faller leg; a bearing on said lever and a backing off chain, passing around said bearing on said lever, and round a bearing on the arm 122, and having one end connected to the winding drum, and a fixed connection at the opposite end; all substantially as specified.

9. The combination of the cylinder shaft 84 and gearing, including a ratchet wheel and pawl, whereby said shaft is rotated on the inward movement of the carriage, a pawl-lifting sleeve; its actuating lever and retainer therefor and backing-off mechanism acting upon said retainer, substantially as specified.

10. The combination of the cylinder shaft and gearing, including a ratchet wheel and pawl, whereby said shaft is rotated on the inward movement of the carriage, a pawl-lifting sleeve, the actuating lever therefor; a bolt for retaining said lever; a lever forming part of the backing-off mechanism, and constructed to actuate said locking bolt; and a spring acting upon the bolt when released from the control of said lever; all substantially as and for the purpose specified.

11. The combination of the cylinder shaft and gearing, including a ratchet wheel and pawl, whereby said shaft is rotated on the inward movement of the carriage, a pawl-lifting sleeve, its actuating lever; a cam for operating said lever when the carriage reaches the limit of its inward movement; a retainer for the lever; and backing-off mechanism acting on said retainer; all substantially as specified.

12. The combination of the cylinder shaft and gearing, including a ratchet wheel and pawl, whereby said shaft is rotated on the inward movement of the carriage, the pawl-lifting sleeve; a lever for moving the same; a spring 157; and mechanism whereby said spring is caused to act upon the lever to move it in both directions; all substantially as specified.

13. The combination of the rock shaft 155; the lever 154 thereon; an arm 160, having a bearing on said lever; the lever 158 hung to the arm 160, and having one arm bearing upon the lever 154; and a spring 157 acting upon the other arm; all substantially as specified.

14. The combination of the pawl and its lug 153; the stud carried by said lug; the retaining nut; and washers interposed between one side of the lug and the head of the stud, and between the other side of the lug and the retaining nut; as set forth.

15. The combination of the cylinder shaft and its ratchet wheel; the pawls acting thereon; the pawl carrying disk having a series of openings for the reception of the pivot pins of the pawls, said openings being at different distances from the center of the disk; as set forth.

16. The combination of the cylinders, the central portion of the cylinder shaft, winding gearing carried thereby; a driving pulley on the shaft of one cylinder; a coupling for connecting said pulley to the central portion of the cylinder shaft; a slotted hub carried by the other cylinder, and a key whereby said slotted hub is secured to the end of the central portion of the cylinder shaft, substantially as specified.

17. The combination of the belt shifter, a wheel combined with means for imparting a determinate movement thereto, a ratchet wheel carried by said moving wheel, a pawl engaging with said ratchet wheel, and an arm carrying said pawl and serving as a stop for the belt shifter, all substantially as specified.

18. The combination of the draft clutch 219, and its operating cam 215, with a clutch shifting device, consisting of a rigid arm under control of the cam; a loose arm also under control of the cam; a spring connecting said loose arm to the rigid arm; a clutch; a catch for locking the two arms together; and a pin for operating said catch, as the loose arm swings; all substantially as specified.

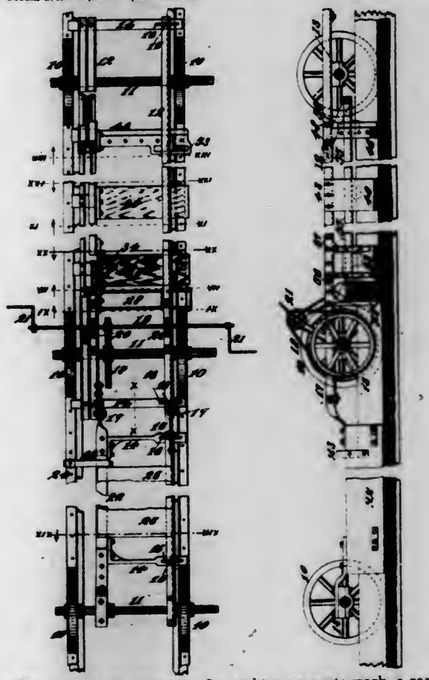
19. The combination of the clutch for the pulling in scroll; its actuating lever; a cam for moving said lever in one direction; a spring tending to move it in the opposite direction; a lever connected to said spring, and bearing on the clutch-operating lever, and a projection on the carriage for operating said lever and withdrawing it from contact with the clutch lever, whereby the latter, when acted on by the cam, is relieved from the tension of the spring, all substantially as specified.

20. The combination of the slubbing shaft; the pinion 254; the opposite clutches 253 and 261 therefor; the main clutch 247; and the operating lever therefor having an arm whereby one clutch 253 is thrown out of gear, and the other clutch 261, released so as to be thrown into gear; all substantially as specified.

21. The combination of the slubbing shaft; the pinion 254; the clutch sleeve 261, and means for rotating the same; an operating lever for said clutch; and the traversing wheel 255, having a lug to strike said lever, and throw the clutch out of gear; all substantially as specified.

22. The combination of the slubbing shaft; the pinion 254; the clutch 261 and means for rotating the same; the operating lever 265 therefor; the traversing wheel 255, having a lug for throwing the clutch out of gear; and the main clutch lever 246, having an arm whereby the clutch 261 is held out of gear, after the action of said lug; all substantially as specified.

544,235. APPARATUS FOR FORMING CONCRETE CURBS AND GUTTERS. SAMUEL P. MCKELVEY, Chicago, Ill., assignor of one-half to John Dolese and Jason H. Shepard, same place. Filed Mar. 18, 1895. Serial No. 542,187. (No model.)



Claim.—1. In an apparatus for making concrete work, a carriage, a receptacle for containing the top or surface dressing, and a float supported by the carriage back of said receptacle, in combina-

tion with mechanism mounted on the carriage for forming a curb, substantially as set forth.

2. In an apparatus for making concrete work, a carriage, a receptacle for containing the top or surface dressing adjustably secured to the carriage, and a float supported by the carriage back of said receptacle, in combination with mechanism mounted on the carriage for forming a curb, substantially as set forth.

3. In an apparatus for making concrete work, a carriage, a receptacle for containing the top or surface dressing, and a float adjustably secured to the carriage back of said receptacle, in combination with mechanism mounted on the carriage for forming a curb, substantially as set forth.

4. In an apparatus for making concrete work, a carriage, a receptacle for containing the top or surface dressing and which is adjustably secured to the carriage, and a float adjustably secured to the carriage back of said receptacle, in combination with mechanism mounted on the carriage for forming a curb, substantially as set forth.

5. In an apparatus for making concrete work, a carriage, a receptacle for containing the top or surface dressing, a float supported by the carriage back of said receptacle, and a trowel supported by the carriage back of said float, in combination with mechanism mounted on the carriage for forming a curb, substantially as set forth.

6. In an apparatus for making concrete work, a carriage, a receptacle for containing the top or surface dressing, a float supported by the carriage back of said receptacle, and a trowel adjustably secured to the carriage back of said float, in combination with mechanism mounted on the carriage for forming a curb, substantially as set forth.

7. In an apparatus for making concrete work, a carriage, a receptacle for containing the top or surface dressing, a float supported by the carriage back of said receptacle, a trowel supported by the carriage back of said float, and a finishing trowel supported by the carriage back of the first mentioned trowel, in combination with mechanism mounted on the carriage for forming a curb, substantially as set forth.

8. In an apparatus for making concrete work, a carriage, a receptacle for containing the top or surface dressing, a float supported by the carriage back of said receptacle, a trowel supported by the carriage back of said float, and a finishing trowel adjustably secured to the carriage back of said first mentioned trowel, in combination with mechanism mounted on the carriage for forming a curb, substantially as set forth.

9. In an apparatus for making concrete work, a carriage, a receptacle for containing the top or surface dressing and which is hinged with its connection to the carriage, and a float secured to the carriage back of said receptacle, in combination with mechanism mounted on the carriage for forming a curb, substantially as set forth.

10. In an apparatus for making concrete work, a carriage, a receptacle for containing the top or surface dressing, and a hinged float secured to the carriage back of said receptacle, in combination with mechanism mounted on the carriage for forming a curb, substantially as set forth.

11. In an apparatus for making concrete work, the combination of a carriage, a receptacle for containing the top or surface dressing, a float secured to the carriage back of said receptacle, and a jointed trowel secured to the carriage back of said float, substantially as set forth.

12. In an apparatus for making concrete work, the combination of a carriage, a receptacle for containing the top or surface dressing, a float secured to the carriage back of said receptacle, a trowel secured to the carriage back of said float, and a jointed finishing trowel secured to the carriage back of the first mentioned trowel, substantially as set forth.

13. In an apparatus for making concrete work, the combination of a carriage, a receptacle hinged to its connection with the carriage, a jointed float secured to the carriage back of the receptacle, a jointed trowel secured to the carriage back of said float, and a jointed finishing trowel secured to the carriage back of the first mentioned trowel, substantially as set forth.

14. In an apparatus for making concrete work, a carriage, a receptacle secured to the carriage for containing the top or surface dressing, and a trowel secured to the carriage back of said receptacle, in combination with mechanism mounted on the carriage for forming a curb, substantially as set forth.

15. In an apparatus for making concrete work, a carriage, a receptacle for containing the top or surface dressing, and a finishing trowel secured to the carriage back of said receptacle; said trowel being set at an angle with a thin working surface, in combination with mechanism mounted on the carriage for forming a curb, substantially as set forth.

16. In an apparatus for making concrete work, the combination of a carriage, a receptacle secured to the carriage for containing the top or surface dressing, and a float secured to the carriage back of said receptacle; said float having an approximately horizontal and an approximately vertical portion set at an angle, substantially as shown and described.

17. In an apparatus for making concrete work, the combination of a carriage, a receptacle, a float and a trowel secured to the carriage and each being jointed so as to permit its free end to move up and down, and arms secured to the carriage and which engage the free ends of the receptacle, float and trowel, substantially as set forth.

18. In an apparatus for making concrete work, the combination of front and back boards provided with rails, a carriage adapted to be supported by said rails, a receptacle, a float and a trowel secured to said carriage and each having a joint to permit its free end to always bear upon said front board, substantially as set forth.

19. In an apparatus for making concrete work, the combination of front and back boards, rails secured to the front and back boards, a carriage supported on said rails, a receptacle, float and trowel secured to said carriage and each having a joint, and arms secured to the carriage and adapted to engage the free ends of said receptacle, float and trowel, substantially as set forth.

20. In an apparatus for making concrete work, a carriage, and means supported by the carriage for delivering the top or surface dressing and working the same onto the rough concrete, in combination with mechanism mounted on the carriage for forming a curb, substantially as set forth.

21. In an apparatus for making concrete work, the combination of a back board and a carriage provided with a strip located in the side frame thereof for forming with the back board the rough concrete work of a curb, substantially as set forth.

22. In an apparatus for making concrete work, the combination of a back board and a carriage, and a strip secured to the carriage at an inclination and which is adapted to form the rough concrete work of the curb, substantially as set forth.

23. In an apparatus for forming concrete work, the combination of a back board and a carriage, a strip for forming the rough work of the curb of a gutter and which is set at an inclination, a receptacle for containing the top or surface dressing, and float and trowels for applying the dressing to the gutter and curb, substantially as set forth.

24. In an apparatus for making concrete work, a carriage, a receptacle for containing the top or surface dressing, a frame movably secured to the carriage, and a float secured to said frame to press the dressing on the top of the curb, in combination with mechanism mounted on the carriage for forming a gutter, substantially as set forth.

25. In an apparatus for forming concrete work, a carriage, a receptacle for containing the top or surface dressing, a frame movably secured to the carriage, and a float and trowels secured to said movable frame for applying the dressing to the top of the curb, in combination with mechanism mounted on the carriage for forming a gutter, substantially as set forth.

26. In an apparatus for making concrete work, a carriage, a receptacle for containing the top or surface dressing, a float and trowels secured to the carriage back of said receptacle for applying the dressing to the gutter and vertical part of the curb, and a float and trowels secured to the carriage back of said receptacle for applying the dressing to the top and rounded corners of the curb, in combination with mechanism mounted on the carriage for forming a gutter, substantially as set forth.

27. In an apparatus for making concrete work, the combination of a carriage, a receptacle for containing the top or surface dressing, a float and trowels secured to the carriage back of said receptacle for applying the dressing to the gutter and vertical part of the curb, and a float and trowels movably secured to the carriage for applying the dressing to the top and rounded corners of the curb, substantially as set forth.

28. In an apparatus for making concrete work, the combination of a carriage, a receptacle secured to the carriage, a float and trowels secured to the carriage back of said receptacle, for applying the dressing to the gutter and vertical part of the curb, a frame movably secured to the carriage, and a straight edge, float and trowels secured to said frame for applying the dressing to the top and rounded corner of the curb, substantially as set forth.

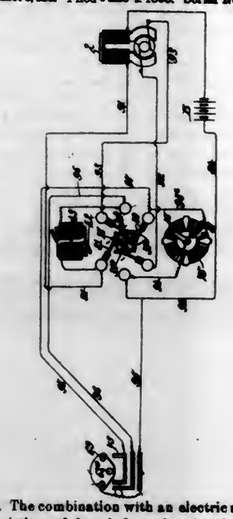
29. In an apparatus for making concrete work, the combination of a carriage having a frame adjustable in width, a box for containing the top or surface dressing, and a float and trowels secured to the carriage back of said receptacle, for forming the gutter, curb and rounded corner of the curb, substantially as set forth.

30. In an apparatus for making concrete work, the combination of a carriage having a jointed frame, said carriage being provided with a strip for forming the curb of a gutter in advance of the joint in the frame, and being provided with a receptacle and float and trowels back of the joint in the frame, substantially as and for the purpose set forth.

31. In an apparatus for making concrete work, the combination of a carriage having a hinged frame, and a strip secured to the frame forward of the hinge for forming the curb of a gutter, and having a receptacle and a float and trowels secured to the frame back of the hinge, substantially as set forth.

544,236. CONTROLLING-SWITCH FOR ELECTRIC MOTORS.

WILLIAM J. POHLMAN, Woodbrook, assignor of one-half to J. Edgar Orrison, Baltimore, Md. Filed June 4, 1895. Serial No. 551,669. (No model.)



Claim.—1. The combination with an electric motor, of a controlling switch consisting of four independent brushes, a disk carrying two contacts arranged in a space inclosed by said brushes, means for intermittently revolving said disk a definite part of a revolution, a pivoted sector on the hand instrument having two contact points, three adjacent contacts two of which are adapted to be engaged by the contact points, alternately, the third contact being in permanent electrical connection with the sector, an electro-magnet, an armature for the same connected to and rotating the disk, a circuit for said magnet including one of the contact-points on the sector and one of the three adjacent contacts, and a circuit for the motor including the four brushes and the two contacts of the controlling switch, a rheostat series, and a contact finger movable over and in contact with said series, substantially as described.

2. The combination with an electric motor of a controlling-switch comprising a rocking, electrically conducting sector mounted on the hand-instrument and provided with two contact-points normally out of engagement with two corresponding contacts on the hand instrument, a third contact having permanent electrical connection with the sector and both its contact-points, one or more electro-magnets, an armature attracted by said magnets, four independent brushes arranged substantially at right angles one to another, two parallel contacts arranged and insulated in the quadrangular space inclosed by the four brushes, the insulating support being connected to the pivotal axis of the magnetically attracted armature, and a circuit for the electro-magnet including a contact-point on the sector, a contact on the hand-instrument, and the field-coils of the motor, substantially as described.

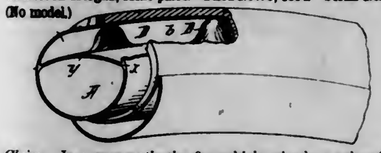
3. The combination with an electric motor of a controlling switch, comprising an electro-magnet, an armature for the same, contacts which receive a definite movement by the vibration of said armature, brushes arranged about said contacts, a circuit making and breaking sector having contact-points normally out of engagement with adjacent contacts, a separate contact having permanent electric connection with the said sector and with one pole of a battery, and a circuit for the electro-magnet including one of the contact-points on the sector, the corresponding adjacent contact, and the separate, permanently connected contact, substantially as described.

4. The combination with an electric-motor of a controlling switch to start, stop, and reverse said motor, said switch consisting of a movable, electrically conducting, circuit-making and breaking sector having two contact points two adjacent contacts normally out of engagement with the said contacts, a third separate contact permanently connected to the sector and one pole of a battery, an electro-magnet having an armature turning when attracted upon a pivotal axis, two parallel contacts pivotally mounted and advanced a definite part of a revolution at each vibration of the magnetic armature, independent brushes surrounding said contacts and adapted to be engaged thereby, in pairs, at each alternate advance of the parallel contacts, a circuit for the electro-magnet including the field-coils of the motor, the sector, one of the adjacent contacts and the third separate contact, and a circuit including the second contact point on the sector, the corresponding adjacent contact, two of the brushes, the armature-brushes of the motor, and the two remaining brushes, substantially as described.

5. The combination with an electric-motor of a controlling-switch consisting of a pair of parallel contacts, electrically controlled means for turning said contacts one eighth, or other definite part of a revolution, four brushes arranged substantially at right angles, one to another, about said parallel contacts and electrically coupled in pairs at each alternate part revolution of the parallel contacts, a rocking, or movable circuit-making and breaking sector having two contact points, two adjacent contacts normally out of engagement with the contact-points, a third contact permanently connected to the sector and one pole of a battery, a circuit for the electro-magnet including one of the contact points on the sector and, one of the adjacent contacts, and completed through the field-coils of the motor, the battery and the third contact, and a circuit for the motor including the field-coils, two of the brushes, the armature of the motor, and the two remaining brushes, a resistance series having a contact finger movable over said series, and connected to one pole of the battery, and a shunt to the third, permanently connected contact around said resistance series substantially as described.

544,237. ELASTIC TIRE FOR VEHICLE-WHEELS.

WILLIAM J. RYAN and JAMES A. MURPHY, Holyoke, Mass., assignors of one-third to Charles H. Morgan, same place. Filed Nov. 3, 1894. Serial No. 527,826. (No model.)



Claim.—In a pneumatic tire for vehicle wheels, a tube of elastic rubber comprising internally between its lateral sides an attached wall or diaphragm of rubber between which and the tread part of the tube are included a series of elastic protuberances for holding the said tread part of the tube distended from the diaphragm, said protuberances being as a unity of one of said last named parts, and a valved passage through which to inflate the portion of the tube within said diaphragm, substantially as described.

544,238. DIVING-CHAMBER.

GEORGE A. RUSSELL, Newport, England. Filed Apr. 4, 1895. Serial No. 544,492. (No model.)



Claim.—1. A hermetically sealed or closed diving chamber having its walls made of steel or the like, and having its center part bulged or enlarged and made to taper or contract from the center to the edge or rim, said edge or rim being sharp or contracted about the entire exterior of the chamber, substantially as described.

2. A diving chamber having a surrounding sharp rim or edge provided with perforations, bolts made to extend through said perforations, a flanged packing tube or bushing in said perforations, and weight carrying rings, said rings and bolts being screw threaded for detachably engaging one another, substantially as described.

3. A diving chamber provided with an opening and a flexible bag or hood tightly secured about the opening, a grasper made to extend centrally through the hood, and distending springs for the hood placed on each side of the grasper and braced against the chamber wall, substantially as described.

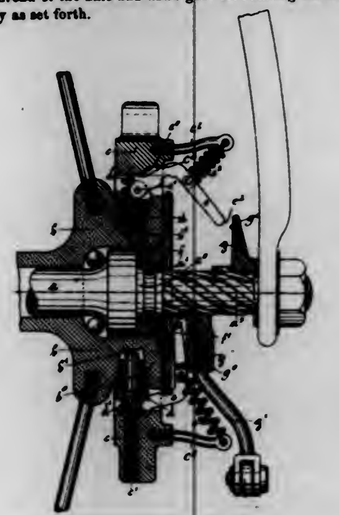
544,239. DRIVING-GEAR FOR CYCLES.

CARL H. H. STEUDEL, Dresden, Germany. Filed Apr. 16, 1895. Serial No. 545,957. (No model.) Patented in England Dec. 13, 1894, No. 21,940; in Belgium Dec. 15, 1894, No. 112,871, and in Austria Jan. 3, 1895, No. 45/11.

Claim.—1. In driving-mechanism for cycles the combination with the pedals of a ring in operative connection with said pedals radial guides carried by the ring friction blocks movable on said guides levers *c* operatively connected with the friction block springs d^1 and d^2 a friction wheel b^2 in operative connection with a road-wheel of the cycle an axle *a* a disk *f* freely rotatable on the axle a nut *g* movable along the axle and hand-gear for moving that nut substantially as set forth.

2. In driving mechanism for cycles the combination with the pedals of a ring in operative connection with said pedals radial guides carried by the ring friction blocks movable on said guides levers *e* operatively connected with the friction blocks springs *d*' and *d*^{3} a friction wheel *b*^{2} in operative connection with a road-wheel of the cycle a non-rotative axle partially screw-threaded a disk *f* freely rotatable relatively to the axle a nut *g* engaged with the screw-thread of the axle and hand gear for rotating the said nut substantially as set forth.

3. In driving mechanism for cycles the combination with the pedals of a ring in operative connection with said pedals radial guides carried by the ring friction blocks movable on said guides levers *e* operatively connected with the friction blocks springs *d*' and *d*^{3} a friction wheel *b*^{2} in operative connection with a road-wheel of the cycle a non-rotative axle partially screw-threaded a nut *g* engaged with the screw-thread of the axle and hand gear for rotating the said nut substantially as set forth.



544,240. HOSE-BRIDGE. JOHN P. TERRY, Baltimore, Md., assignor to Edward D. Boos, same place. Filed Feb. 8, 1894. Serial No. 499,502. (No model.)



Claim.—1. A hose bridge constructed to fit the top of a railway rail having a clamp to engage under the inner edge of the rail and a horizontally and vertically-adjustable hook-clamp to engage under the outer edge of the rail, substantially as set forth.

2. The combination of a hose bridge constructed to fit the top of the rail; a clamp consisting of a hooked bar having a vertical slot; a bolt passing horizontally into the bridge through said slot; and a set-screw for tightening which passes down through the upper end of the bar and bears against the said bolt, as set forth.

3. A hose bridge constructed to fit the top of the rail, provided with an outer clamp consisting of a hooked bar having a vertical slot; a horizontal bolt passing into the bridge through said slot and having a square portion, 40, and a round shank, 41; and a tightening set-screw passing down through the upper end of the bar and bearing against the said square portion of the bolt, as set forth.

544,241. KICKING-HOPPLE. JOSEPH R. TURNER Burgin, Ky., assignor of one-half to George M. McCabe, same place. Filed Nov. 30, 1894. Serial No. 530,432. (No model.)

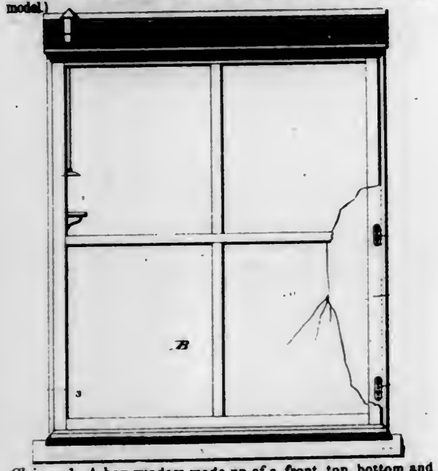


Claim.—1. The herein described hopple, the same consisting of the oblong wire frame, the ends of which are inwardly bent and at each corner forwardly extended and adapted to embrace the foreleg of the animal above and below the knee, one of the said ends being provided with a prod, and the attaching straps secured to the frame near the ends thereof, substantially as specified.

2. The hopple, the webbing A, the straps B secured to the webbing at the ends thereof, the oblong wire frame C, said frame consisting of the wire blank bent at its center to form the rearwardly disposed bend *c* at each side of the same, laterally bent to form the loops *c*', beyond the loops upwardly disposed, and near their upper ends laterally disposed to form the loops *c*^{3}, slidably coupled as at *c*^{4}, one end of the wire being extended to form the spur *c*^{5} and the short keepers D secured to the straps B and loosely connecting the wire frame, substantially as shown and described.

3. The herein described hopple, the same consisting of the oblong elastic section, the straps secured to the ends thereof and provided with keepers and the oblong wire frame held by the keepers the opposite ends of which are bent to embrace the foreleg of a horse above and below and in rear of the knee joint thereof, one of the said ends being provided with a prod, substantially as and for the purpose set forth.

544,242. BAY-WINDOW. JAMES R. TURNER and HARRY A. HARRINGTON, Coudersport, Pa. Filed June 6, 1895. Serial No. 551,865. (No model.)



Claim.—1. A bay-window made up of a front, top, bottom and side sections which are removably connected to each other, the front and side sections having at their lower ends transverse strips with which the sections *e* and *e*' of the flooring or base E engage, and means for drawing the sections *e* and *e*' toward each other so that they will clamp upon the strips, substantially as specified.

2. A bay-window comprising sections or frames B and C having fixtures for connecting them together, fixtures carried by the sections C and adapted to engage fixtures attached to the window-frame to which the device is applied, a bottom for such a structure made up of sections *e* and *e*' connected to each other so as to clamp upon strips attached to the lower ends of the sections B and C, the upper section *e* extending beyond the lower one *e*' so as to engage the sub-sill of the window-frame while the lower section engages the outer edge of the sill, substantially as shown and for the purpose set forth.

544,243. CASH REGISTER AND INDICATOR. EARL G. WATROUS, Hoosick Falls, assignor to the Capital Cash Register Company, Troy, N. Y. Filed July 21, 1893. Serial No. 440,763. (No model.)

Claim.—1. The combination of the described ratchet wheel with the multi-toothed pallet, and means for actuating said pallet; the pitch of the teeth of the ratchet being a multiple of the pitch of the pallet teeth, substantially as described and for the purpose set forth.

2. The combination of the described ratchet wheel, with the multi-toothed pawl or detent, the pitch of the teeth of the ratchet being a multiple of the pitch of the teeth of the pawl, substantially as described and set forth.

3. The combination in a cash register of a series of register wheels each of which carries a series of lugs for actuating the transfer device of an adjacent check lever, and a series of sectoral indicators said wheels and indicators being arranged in pairs and both pivoted on a common axis, a series of operating levers and a series of check levers similarly arranged in pairs and both pivoted on a common fulcrum and adapted to oscillate in parallel planes, each of said check levers (save one) carrying a transfer device for advancing the next wheel, and a series of indicator supporting devices, constructed and arranged to operate substantially as specified.

5. The combination with the operating and check levers, of the cash drawer carrying a lock provided with the described spring catch having a contact face of sufficient breadth to span the whole series of levers, and also having provisions for locking said catch down or up against the under side of the operating levers, substantially as and for the purposes set forth.

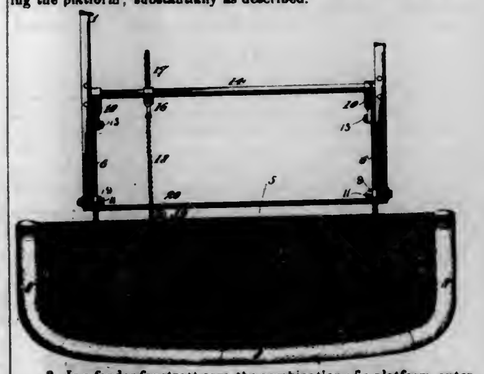
6. The combination in a cash register of two register wheels one of which is provided with transfer lugs for throwing into action a transfer pallet or dog interposed between the wheels, with a check lever equipped with a transfer pallet adapted to act on the adjacent wheel and provisions connected with the transfer pallet and lying in the path of rotation of the transfer lugs for throwing said pallet into position to be worked by the elevation of the check lever, substantially as specified.

7. The combination in a cash registering mechanism of an actuating registry wheel equipped with a tripper actuating device;—a fulcrumed pawl tripper located in the path of said actuating device adapted when actuated by said device to throw a pallet connected with a key actuated lever (next mentioned), into engagement with another toothed registry wheel, and when uninfluenced by said lug to hold said pawl out of effective engagement with said last named wheel;—a lever placed under the control of the operating keys and carrying said pallet;—and a toothed registry wheel with which said pallet engages.

544,244. STREET-CAR FENDER OR GUARD. CASPER S. YOST, GEORGE W. BAUMHOFF, AUGUST H. HAGENEIER, FRANK FITZLER, and OTTO SCHMID, St. Louis, Mo., assignors of one-sixth to James Adkins, same place. Filed Jan. 5, 1895. Serial No. 533,857. (No model.)

Claim.—1. A fender for street cars comprising the pivoted outer links, the pivoted inner links, the platform connected with the outer links and hinged to the inner links, the rock-shaft, the spring connected with the rock-shaft for holding the platform in retracted position, and means, connected with the rock shaft, for projecting the platform: substantially as described.

2. A fender for street cars comprising the pivoted outer links, the pivoted inner links, the platform having pin and slot connection with the outer links and hinged to the inner links, the rock-shaft, the spring connected with the rock-shaft for holding the platform in retracted position and means connected with the rock-shaft for projecting the platform; substantially as described.

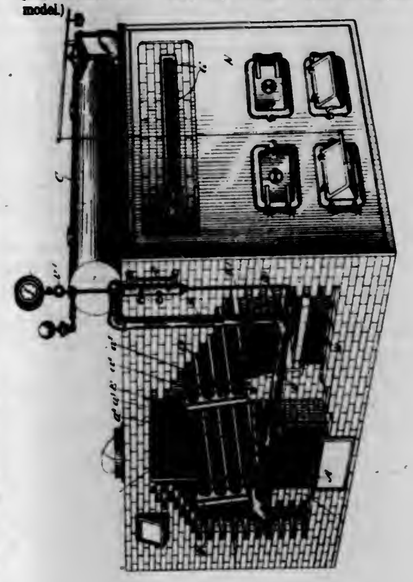


3. In a fender for street cars, the combination of a platform, outer links connecting the platform to the car body, inner links pivoted to the platform at their lower ends, a rock-shaft to which said inner links are secured at their upper ends, a lever secured to said rock-shaft, a spring connecting the lower end of said lever to the car body, an operating shaft, a chain connecting a crank on said shaft to said lever, a stop pin secured to said shaft and working in a slot in one of the boxes of the shaft, and a handle on the upper end of said shaft by which the fender is moved in opposition to said spring; substantially as and for the purpose set forth.

4. A fender for street cars comprising the pivoted outer links, the pivoted inner links, the platform hinged to the inner links, the rock-shaft with which the inner links are connected and by which they are pivotally supported, the lever secured to the rock-shaft, the spring secured to the lever, the operating rod having a crank, the chain connecting the lever with the crank, and means for locking the rod from movement; substantially as described.

5. In a fender for street cars, the combination of a platform, outer links connecting the platform to the car body, inner links pivoted to the platform at their lower ends, a rock shaft to which said inner links are secured at their upper ends, a lever secured to said rock-shaft, and a spring connecting the lower end of said lever to the car body, by means of which the platform is held in normal position, substantially as set forth.

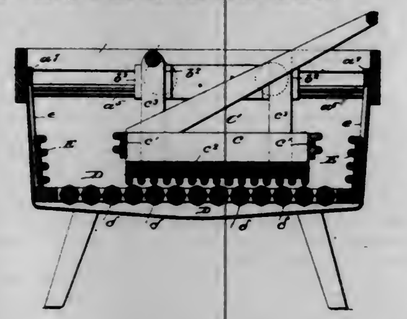
544,245. SECTIONAL STEAM OR HOT-WATER BOILER. JOHN R. BANHAM, Philadelphia, Pa., assignor to the George P. Steel Iron Company, Camden, N. J. Filed May 17, 1895. Serial No. 549,610. (No model.)



Claim.—1. In a sectional steam or hot water boiler, a series of sections each provided with a series of open ended tubes, the interior of the openings of which are tapered and join corresponding openings of contiguous tubes oppositely tapered, a series of double tapered nipples uniting the contiguous tubes at certain portions thereof, and a tapering ring interposed between said nipples at other portions thereof, substantially as and for the purposes described.

2. In a sectional steam or hot water boiler, a series of sections each provided with open ended tubes, the interior of the openings of which are tapered and join corresponding openings of contiguous tubes which are oppositely tapered, a series of double tapered nipples uniting the openings of contiguous tubes to form therewith transverse headers or manifolds, the joining openings being concaved on their face to form a triangular or tapered ring-like cavity, and plastic material located in said cavity and confined by said nipples, substantially as described.

544,246. WASHING-MACHINE. CORNELIA A. BREWER, La Porte, Ind. Filed Apr. 4, 1895. Serial No. 544,466. (No model.)



Claim.—1. In a washing machine, the combination with a tub or receptacle, of a roller-bed D, end pieces E, and removable carriages or roller-frames B together with a reciprocating rubber C having end pieces *c*, the rubber having an operating handle and upwardly-projecting pieces c^3 which engage with the removable carriages or roller-frames carried by the tub, substantially as shown.

2. In a washing machine, the combination with a tub, of a pair of carriages consisting of vertical boards B′ having guides on one side for a reciprocating rubber, a longitudinal strip B^3 attached to the opposite side of the board, said strip carrying rollers, a strip *b* for engagement with a recessed strip a^2 attached to the sides of the tub, said tub also having roller ways *a*, substantially as shown.

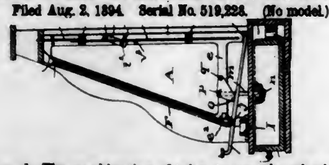
3. In a washing machine, the combination, of a tub or receptacle having on each of its longitudinal sides housings made up of strips *a*, *a′* and a^2, the tub being provided with longitudinal slots which communicate with the housings, grooved strips a^2 secured to the inner sides of the tub below the longitudinal slots, together with frames each consisting of a strip B′ having guides with which the reciprocating rubber engages and strips B^3 and *b* which are secured to the strip B′, the strip *b* engaging with the grooved strip a^2, and rollers journaled in the strip B^3 so as to bear on the strip *a′* of the housing, the parts being organized substantially as shown and for the purpose set forth.

4. In a washing machine, the combination, of a tub or receptacle having a roller-bed D, transverse strips a^7, and end pieces E adapted to engage with the roller-bed and with the strips a^7, substantially as shown and for the purpose set forth.

5. In a washing machine, the combination, of a tub or receptacle having a roller-bed and end pieces E, strips a^4 secured adjacent to the upper part of the tub, together with a reciprocating rubber having corrugated ends and bottom and vertical portions which engage with guides carried by the board B, said board having a projecting portion on its opposite side which engages with the recessed strip a^4, substantially as shown and for the purpose set forth.

6. In a washing machine, the combination with a tub or receptacle having a washboard located in the bottom part thereof, of housings or ways secured to the side pieces of the tub or receptacle and consisting of upper and lower strips *a* and *a′* connected to each other by a strip a^3, carriages or roller-frames moving in the housings or ways, said carriages being made up of vertical boards B′ having projections b^3, a longitudinal strip B^3 secured to the board B′, and rollers journaled in the strip B^3 and in a strip B^3 secured to the strip B^3 by means of interposed blocks; together with a rubber frame C having vertical stripe which engage the projections b^3 of the carriages, substantially as shown and for the purpose set forth.

544,247. CASH-REGISTER. CHARLES J. CARROLL, Baltimore, Md., assignor of two-thirds to David Stewart and William Assheton, same place. Filed Aug. 2, 1894. Serial No. 519,228. (No model.)



Claim.—1. The combination of tubes to contain spherical counters; pivoted operating levers provided with a side notch or pocket immediately above the pivot—said side-notch being normally in position below the lower end of the counter tube; a stationary plate at the side of said side-notch when the lever is in normal position; and a receptacle below the levers to receive the spherical counters as they drop from the side-notch when the lever is depressed.

2. The combination of a spring-actuated money drawer; tubes to contain spherical counters; pivoted operating levers: a counter-releasing device provided with a side-notch which is normally in position below and coincident with the lower end of the counter tube; a stationary plate at the side of said side-notch when the releasing device is in normal position at rest; a horizontal bar supported so as to swing and extending crosswise of all of said operating levers—said bar being moved by either one of said levers; and detents actuated by said swinging bar and engaging the money drawer.

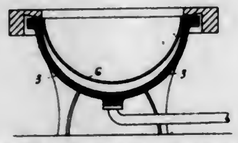
3. The combination of pivoted operating levers; indicator plates having vertical rods each of which is provided with a rear-projecting lug and a front-projecting lug said rods being lifted by the levers; and a catch device to sustain each plate and rod when lifted and consisting of two parallel horizontal bars one above the other connected at their ends by cross-heads, *u*, and pivoted so that the lower bar is free to swing—and serve as a sustaining bar, while the upper bar serves as a stop bar—one of said bars extending across at the rear of said vertical rods and the other across at the front thereof.

4. The combination of tubes to contain spherical counters; pivoted operating levers; a counter-releasing device provided with a side notch which is normally in position below and coincident with the lower end of the counter tube; a stationary plate at the side of said side-notch when the releasing device is in normal position at rest; indicator plates having vertical rods each of which is provided with a projecting lug; and a catch device to sustain each plate and rod when lifted—comprising a horizontal bar supported so as to swing—said bar extending crosswise of said vertical rods and co-acting with the projecting lugs thereon.

5. The combination of tubes to contain spherical counters; pivoted operating levers; and a revoluble counter-releasing device comprising a plural number of disks or circular heads united and co-acting with an equal number of said tubes and one lever, whereby successive depressions of the same lever will cause the release of counters from said tubes in succession—one after the other.

6. In a cash register, the combination of tubes to contain spherical counters; a series of pivoted operating levers all mounted on a horizontal shaft; and revoluble counter releasing devices mounted on the same shaft as the operating levers and actuated by the movement of said levers and co-acting with the tubes to release therefrom one counter at a time.

544,248. APPARATUS FOR BENDING AND SHAPING SHEET-GLASS. WILLIAM CUTLER, Birmingham, England. Filed Feb. 7, 1895. Serial No. 537,632. (No model.) Patented in England Dec. 8, 1894, No. 23,917.

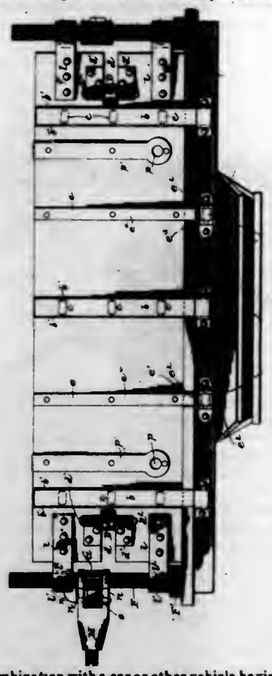


Claim.—The combination in an apparatus for bending and shaping glass, of a mold on the outer edge of which the edges of the glass are supported, an eduction-pipe for exhausting air from the interior of the mold, and a weighted frame bearing against the edge portions of the glass and holding the same in close contact with the edge of the mold, substantially as and for the purposes described.

544,249. DUMPING-CAR. WILLIAM M. DUNMAN, Rusk, Tex. Filed Apr. 4, 1895. Serial No. 544,447. (No model.)

Claim.—1. The combination with a car or other vehicle having a movable side continuous from end to end, of jacks located at the ends of the side for moving said side, substantially as set forth.

2. The combination with a car or other vehicle having a vertically movable side continuous from end to end of the car, of jacks located at the ends of the side and constructed and adapted to be operated for raising and lowering said side, substantially as set forth.



3. The combination with a car or other vehicle having a vertically movable side, of a movable false bottom constructed and adapted to operate automatically to discharge the contents of the car when the side is raised, substantially as set forth.

4. The combination with a car or other vehicle having its sides movable vertically, of a false bottom constructed and adapted to discharge the contents of the car when one side thereof is raised, and means for elevating a portion of said false bottom when the other side of the car is raised, whereby to cause the entire contents of the car to be discharged at one side of the car, substantially as set forth.

5. The combination with a car or other vehicle having vertically movable sides, of a sectional false bottom constructed and adapted to discharge the contents of the car when one side of the car is raised, and pins projecting through the opposite side of the car and under a section of the false bottom, whereby when the latter side is raised a portion of the false bottom will be raised by the engagement of said pins therewith and cause the entire contents of the car to be discharged at one side of the car, substantially as set forth.

6. The combination with a dumping car, of brackets located on the upper face of the bottom thereof, a false bottom on said brackets, said false bottom comprising two parts, each part being made in sections hinged together, and pivoted feet on said false bottom having a bearing on the car bottom, substantially as set forth.

7. The combination with a dumping car, of brackets located on the car bottom, a false bottom located over said brackets, said false bottom comprising two wide sections and a narrow section hinged to each wide section, said narrow sections being adapted to bear against each other and form a projecting ridge from one end of the car to the other centrally between the sides thereof, and feet on said wide sections having their bearings in sockets in the car bottom, substantially as set forth.

8. The combination with a dumping car, of a series of brackets located therein, each bracket having two beveled edges inclining toward the sides of the car, a sectional false bottom over said brackets, feet for normally supporting portions of said false bottom in horizontal position, and means for raising the side of the car, substantially as set forth.

9. The combination with a car or other vehicle having vertically movable sides, of a false bottom in said car, and rollers mounted in the outer edges of said false bottom and adapted roll to on the sides of the car when the latter are raised, substantially as set forth.

10. The combination with a car or other vehicle having vertically movable sides, of plates secured to the inner faces of said sides, a false bottom in said car or vehicle, and rollers mounted in the outer edges of said false bottom and adapted to roll on said plates, substantially as set forth.

11. The combination with a car or other vehicle having vertically movable sides and jacks connected therewith for moving them, of removable brackets in said car or vehicle and a removable false bottom over said brackets, substantially as set forth.

12. The combination with a car or other vehicle, of a removable false bottom composed of two sections, and each section composed of two hinged sections, of brackets or hooks for supporting the sections of said false bottom parallel with the sides of the car when not in use, substantially as set forth.

13. In a car, the combination with the bottom thereof, of movable sides, each side being continuous from end to end of the car, jacks for elevating said sides, standards secured to said bottom and projecting upwardly parallel with said sides, and rollers mounted in said standards and adapted to roll on the sides, substantially as set forth.

14. The combination with a car having movable sides, each side being continuous from end to end of the car, and jacks for moving said sides vertically, of standards secured to the car bottom and projecting upwardly parallel with said sides, plates secured to the outer face of said sides and rollers mounted in said standards and adapted to roll on said plates, substantially as set forth.

15. The combination with a car bottom and movables sides, of brackets secured to said bottom, bars or standards secured to the sides and adapted to project through said brackets, and rollers mounted in said brackets and adapted to roll on said bars or standards, substantially as set forth.

16. The combination with a car bottom and movable sides, of brackets secured to said bottom, bars or standards secured to said sides and projecting through said standards, plates secured to said bars or standards and rollers mounted in said brackets and adapted to roll on said plates, substantially as set forth.

17. The combination with a car bottom and its ends, of movable sides, rods or bolts connected with said ends, and swinging latches connected to said sides and adapted at their free ends to receive said rods, substantially as set forth.

18. The combination with a car bottom and ends, of movable sides, rods connected with said ends, swinging latches connected with said sides and having slots at their free ends for the reception of said rods, and rollers mounted in said slots adapted to roll on said rods, substantially as set forth.

19. The combination with a car or other vehicle having vertically movable sides, of screws located at the respective ends of said sides and connected therewith, ratchet wheels on said screws, a lever connected with each screw and a dog carried by each lever and adapted to engage the ratchet wheel on the latter, substantially as set forth.

20. The combination with a car or other vehicle having movable sides, of screws located at the respective ends of said sides, arms having screwthreaded perforations for the passage of said screws, secured to the ends of said sides, a ratchet wheel on each screw, a lever connected with each screw and reversible spring-actuated dogs carried by said levers and adapted to engage said ratchet wheels, substantially as set forth.

21. The combination with a car having vertically movable sides, of screws connected with the respective ends of each side, a bearing block at the lower end of each screw revolubly mounted in the car bottom, a ratchet wheel on each screw, a lever connected with each screw and a dog carried by each lever and adapted to engage said ratchet wheel, substantially as set forth.

22. The combination with a car having vertically movable sides, of arms projecting from the ends of said sides and having screw-threaded perforations, screws passing through said perforated arms, a revolvable block secured to the lower end of each screw adapted to enter a socket in the car bottom, antifriction balls under said blocks, a ratchet wheel on each screw, a lever connected with each screw and a dog in each lever adapted to engage said ratchet wheel, substantially as set forth.

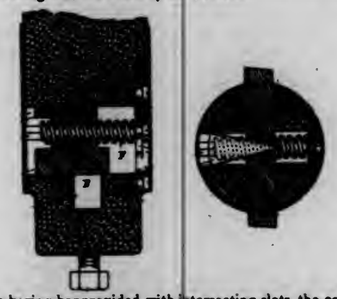
544,250. BORING-BAR. JOSEPH E. FLUKE, Covington, Ky. Filed Mar. 28, 1895. Serial No. 543,557. (No model.)

Claim.—1. In a boring-bar provided with intersecting slots C, D, the combination of the cutters B, B′, seated in one of said slots, a traveling head E, seated in the remaining slot and carrying wedge shaped engaging plate interposed between the inner edges of the cutters, and a screw threaded shaft swiveled to the boring-bar and tapping the traveling head, substantially as specified.

2. In a boring-bar employing radial cutters seated in a slot thereof, the combination with said cutters of the head E, the wedge H, the adjusting screw F tapping said head and swiveling in the bar whereby said wedge is adjusted radially in its slot, substantially as specified.

3. In a boring-bar the cutter adjusting devices, consisting of the head E, the wedge H, and the screw F swiveled in plate G secured

to the boring-bar, and having the wrench seat *c* upon the opposite side of the boring-bar, substantially as specified.



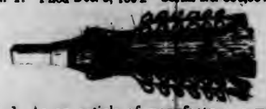
4. In a boring-bar provided with intersecting slots, the combination with the cutters freely mounted in one of said slots, of a traveling head mounted in the other slot, and carrying a wedge which enters between the cutters whereby they are adjusted longitudinally, a screw passing through the traveling head whereby the latter is moved, a slotted plate secured to the boring-bar and serving as a journal for one end of said screw, and a wrench seat formed upon the opposite end of the screw, substantially as described.

544,251. WATER-CLOSET BOWL. MICHAEL GARLAND, Seabright, N. J., assignor to Julia A. Garland, same place. Filed Aug. 1, 1894. Serial No. 519,140. (No model.)



Claim.—The combination with a water closet bowl provided with openings on the opposite sides of its neck and a pipe and a stopper interchangeably fitted to loosely enter the said openings, of a clamp having its shank arranged to pass through the space formed by the branches of the trap and having its ends turned to overlap a portion of the pipe and a portion of the stopper, and a clamping screw engaged with one end of the clamp for the purpose of simultaneously forcing the stopper and the pipe toward the bowl, substantially as set forth.

544,252. MOP. GEORGE B. GREEN and RACHEL R. GREEN, New York, N. Y. Filed Dec. 5, 1894. Serial No. 530,937. (No model.)



Claim.—1. As an article of manufacture, a mop of knitted or woven fabric provided with tucks, and a fastening device whereby it may be secured to the broom, substantially as and for the purpose described.

2. As an article of manufacture, a mop in the form of a sleeve of knitted or woven fabric having tucks and a fringe, said sleeve having also a fastening device, substantially as and for the purpose described.

3. As an article of manufacture, a sleeve of fabric arranged to fit over a broom-head, provided with a fringe and tucks at each end, and having a fastening device near its center, substantially as and for the purpose described.

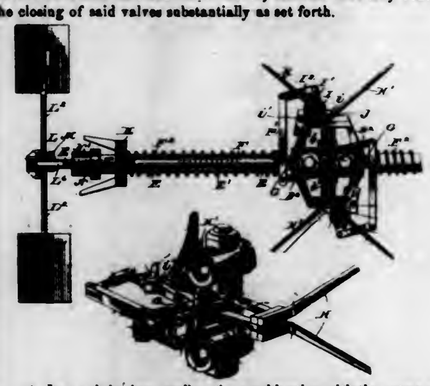
4. As an article of manufacture, a sleeve of fabric arranged to fit over a broom and provided with a fringe and tucks, and having a contracted central portion, in combination with a fastening device arranged near the said contracted portion, substantially as and for the purpose described.

544,253. AIR-BRAKE COUPLING. WILLIAM A. HARRIS and BENJAMIN S. H. HARRIS, Greenville, S. C. Filed July 14, 1894. Serial No. 517,587. (No model.)

Claim.—1. In an air brake coupling the combination with the coupling heads and their valves, of a shifting regulating device set or adjusted by the movement of the train and operating to limit the movement of the valve controlling devices variably under different conditions substantially as set forth.

2. An air brake coupling provided with valves and with a shifting regulating device automatically set or adjusted by the movement of the train and operating to limit the movement of the valve closing devices variably under different conditions substantially as set forth.

3. In an air brake coupling the combination with the valves of a wind vane operated upon by the draft created by the movement of the cars and movable thereby into one or the other position and devices intermediate said vane and valve whereby the said vane may control the closing of said valves substantially as set forth.



4. In an air brake coupling the combination with the valves of a wind operated device arranged for operation by the draft created by the movement of the cars and intermediate devices between said valves and wind operated device whereby the closing of the valves should the train break may be regulated substantially as and for the purposes set forth.

5. In an air brake coupling the combination of the head and its valve the carrier member supporting said head, the carrier member along which said head carrying member slides a wind vane movable upon the head carrying member and stops upon the other member for engagement by said vane and operative connections between the valves and the member in relation to which the valve carrying member slides substantially as set forth.

6. In an air brake coupling the heads the valves and the carrier composed of members sliding one upon the other combined with an automatically shifting regulating device supported on one of said members and engaging stops upon the other member and operative connections between the valve and the member in relation to which said valve slides, substantially as set forth.

7. In an air brake coupling the combination with the carrier members sliding one upon the other, the heads and their valves and operative connections between said valves and the member in relation to which the valves slide of the wind vane journaled upon one of the carrier members and limiting stops upon the other member for engagement by said vane substantially as set forth.

8. In an air brake coupling the combination of the valves the carrier members sliding one upon the other, one of said members being provided with stops arranged one in advance of the other, a wind vane having its hub journaled upon the other member and provided with projecting portions arranged to engage one or the other of the stops of the other member in case the train breaks and operative connections between the valves and the member in relation to which the valves slide substantially as and for the purposes set forth.

9. In an air brake coupling the combination of the valves, devices by which said valves are opened and closed independent of devices on the meeting coupling, and an automatically shifting regulating device by which to control the said valves in case the train breaks substantially as set forth.

10. In an air brake coupling the combination of the heads and their valves operative connections with said valves, a wheel like vane journaled centrally and having the opposite sails and the intermediate counterbalance and stops for engagement by the said vane whereby to limit the movement of the operative connections and thereby control the closing of the valves substantially as set forth.

11. In an air brake coupling substantially as described a coupling head carrier composed of longitudinal members sliding one upon the other combined with a shifting regulating device by which to control the extent of such movement substantially as set forth.

12. In an air brake coupling a coupling head carrier composed of members sliding one upon the other a spring operating between said members, a support in which the carrier is movable bodily and a spring operating between said support and carrier the valves and their operating devices and wind operated regulating devices whereby to control the longitudinal movement of the carrier members, substantially as set forth.

13. In an air brake coupling the combination of the carrier composed of members sliding one upon the other, the heads and their valves, said heads being supported on one of the carrier members, and connections between the other member and the valves whereby

the movement of said members upon each other will effect the opening and closing of the valves combined with an automatically shifted regulating device by which to control the movement of said members and thereby control the closing movement of the valve operating devices substantially as set forth.

14. In an air brake coupling the combination with the carrier formed in members movable longitudinally one upon the other, the heads and their valves supported on one of said members, connections between the other member, and the valves and a shifting regulating device set or adjusted by the movement of the train and operating to limit the movements of said members variably under different conditions substantially as and for the purposes set forth.

15. In an air brake coupling the combination of the heads and their valves having crank arms, the carrier member to which said heads are secured, such member being movable along a second member and a pitman connecting the latter with the crank arms of the valves whereby the movement of the members upon each other will operate the valves, and a shifting regulating device whereby to control such movement variably substantially as set forth.

16. In a coupling substantially as described the combination of the head provided at one side with a flaring fork and having at the rear side of said fork a seat or bearing for the lock of the meeting coupling, and provided at its opposite side with a finger the lock device pivoted to said head in rear of such finger whereby the latter will direct it into position to engage the meeting-head and devices by which said lock is operated substantially as set forth.

17. The combination substantially as described of the brake valve, the signal valve, a valve closing device common to both such valves and connections between such device and the valves whereby one of the valves may be closed subsequent to the other substantially as set forth.

18. A coupling for brakes having a valve, devices by which said valve may be actuated toward closed position a wind operated regulating device and intermediate devices whereby the said regulating device may control the closing movement of the valve substantially as set forth.

19. A coupling for airbrakes, having a valve, devices by which the valve may be actuated toward closed position and a shifting regulating device by which the closing movement of the valve may be controlled, said regulating device being automatically shifted to opposite position as the coupling is moved longitudinally in one or the other direction substantially as set forth.

20. In an air brake coupling a coupling head provided upon opposite sides with ribs or flanges one of which forms a seat for engagement by the standard head and the other a seat for engagement by a box like clamp engaging therewith and with a corresponding part in said standard head substantially as set forth.

21. The combination with the coupling head having a projecting rib or seat and the standard head engaged at one side with said coupling head and having a rib or seat corresponding to that of the said coupling head of the box like clamp embracing said ribs whereby to unite the two heads substantially as set forth.

22. In an air brake coupling the combination with the valve and its closing devices of a wind operated regulating device journaled centrally and having opposite wind vanes and intermediate devices whereby said regulating device will control or limit the movement of the valve closing devices substantially as set forth.

23. In an air brake coupling the combination of the valve, its closing device and the wind operated regulating device pivoted centrally and having opposite vanes and an intermediate pendent counterbalance and connections between the wind vane and the valve closing device substantially as and for the purposes set forth.

24. An air brake coupling provided at its outer end with guiding devices composed of a flaring fork arranged at one side of the center, a finger arranged at the opposite side of the center and an upright arranged at the base of said finger substantially as and for the purposes set forth.

25. In an air brake coupling the combination with the heads of the carrier frame having inner and outer sections secured to the front and rear ends of the heads, the head valves having their stems extended between said front and rear frame sections and the valve operating devices connected with said stems substantially as set forth.

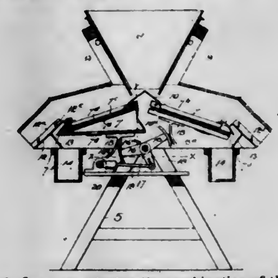
26. The combination in an air brake coupling of the heads the carrier frame having inner and outer sections supporting the opposite ends of the heads the head valves having portions projecting between said frame sections and the guide devices supported on said end frame substantially as and for the purposes set forth.

27. The combination in an air brake coupling of the carrier member provided with the head frame having front and rear sections and supporting the heads between the same, the other carrier member and the valve operating and locking devices connected with both such members substantially as set forth.

28. In an air brake coupling the head carrier provided with an end frame having front and rear sections, the guide devices supported by said frame, the heads arranged between the front and rear sections thereof the valve its operating devices and the locking mechanism all substantially as and for the purposes set forth.

29. The combination substantially as described of the brake valve, the signal valve, devices by which said valves may be closed one subsequent to the other, and automatically shifting regulating devices by which to limit the movement of the valve closing devices substantially as set forth.

544,254. CONCENTRATOR. THOMAS J. HATCH, Denver, Colo., assignor of one-half to Elisha J. Nolds, same place. Filed Sept. 22, 1894. Serial No. 523,805. (No model.)



Claim.—1. In a concentrator, the combination of the framework, an inclined bellows mounted thereon, its upper side being composed of screen, a rock shaft having an arm provided with a segment, a counterpart segment attached to the bottom of the bellows, cords for connecting the segmental faces in operative relation, and suitable means for operating the rock shaft, substantially as described.

2. In a concentrator, the combination with the framework, of the bellows having its upper side covered with screen, a rock shaft carrying a segment attached to a suitable arm, another corresponding segment attached to the bottom of the bellows, suitable cords or cables connecting the segmental faces in operative relation, another shaft journaled in the frame, and a pitman connecting the last named shaft with the rock shaft, substantially as described.

3. In a concentrator, the combination with the framework, of a casing supported thereon, a bellows located between the two sides of the casing and having an upper screen face, a plate located at the lower extremity of the bellows and so located as to divide the mineral from the gangue, and suitable means connected with the lower side of the bellows for oscillating the same, said means consisting of a rock shaft carrying a segmental plate, a similar plate attached to the bellows, and cords connecting the adjacent faces of these plates in operative relation substantially as described.

4. In a concentrator, the combination with the framework, of a pair of bellows supported thereon in suitable proximity, and provided with screen faces, a plate located at the lower extremity of each bellows and adapted to divide the mineral from the gangue, a rock shaft having two arms provided with segmental faces, corresponding segmental faces or plates attached to the bottom of each bellows, means for connecting the segmental faces in operative relation a main shaft, and a pitman for connecting the last named shaft with the rock shaft, substantially as described.

5. In a concentrator, the combination of the framework, a plural number of inclined bellows supported thereon and having screen-sides or faces, means located at the lower extremity of each bellows for dividing the mineral from the gangue, a rock shaft journaled in the framework and carrying segmental plates, other similar plates attached to the bellows, cords connecting the adjacent faces of these plates, and suitable means for operating the rock shaft, substantially as described.

6. In a concentrator, the combination with the framework, of a plural number of bellows supported thereon and having the upper sides composed of screen adapted to receive the material to be treated, each bellows being provided with a segmental plate attached to its lower or oscillating side, a rock shaft journaled in the frame and provided with arms terminating in segmental plates cords connecting said plates in operative relation with the similar plates attached to the bellows, a main shaft also journaled in the frame, and a pitman connecting the last named shaft in operative relation with the rock shaft, substantially as described.

7. In a concentrator, the combination with the framework, of a plural number of bellows supported thereon, their upper sides or faces being composed of screen, and the lower faces adapted to oscillate, a main shaft and an intermediate rock shaft, a pitman connecting the two shafts, and suitable means for connecting the rock shaft with the oscillating sides of the bellows whereby the bellows are operated by the rotation of the main shaft, said means consisting of segmental

plates and cords connecting the adjacent faces of the plates substantially as described.

8. In a concentrator, the combination with the framework, of the bellows having a screen upper face, a rock shaft carrying a segmental plate, other similar plates attached to the bellows, cords connecting the adjacent faces of the segmental plates, a main shaft provided with a crank arm having an adjustable wrist pin, and a pitman connecting said wrist pin with a suitable crank arm on the rock shaft, substantially as described.

544,255. BALING-PRESS. JOHN W. HUFFER, Macon, Miss. Filed Feb. 26, 1895. Serial No. 539,762. (No model.)



Claim.—1. In a baling press, the combination with a rebounding plunger pitman, of co-axially mounted sweep and operating arms, the operating arm having a cam face for engagement with the pitman, clutch mechanism for connecting the sweep to the operating arm, trip devices for disengaging the clutch mechanism at intervals, and a guide for the pitman having a swinging arm mounted eccentrically with the operating arm and connected to the pitman, whereby as the latter advances the point of engagement between the pitman and the operating arm moves toward the axis of the operating arm, substantially as specified.

2. In a baling press, the combination with a rebounding plunger pitman, of co-axially mounted sweep and operating arms, said operating arm being adapted to engage and communicate forward motion to the pitman, clutch mechanism for connecting the sweep to the operating arm, trip devices for releasing the clutch mechanism at intervals to allow return movement of the pitman, and a guide for the pitman comprising a limiting member having a limited swinging movement, and a swinging member pivotally connected at one end to the free end of the limiting member and at the other end to the pitman, said limiting member maintaining the pivotal point of the swinging member eccentric with the operating arm to shift the point of contact between the pitman and the operating arm inward or toward the fulcrum point of the latter as the pitman advances, substantially as specified.

3. In a baling press, the combination with a rebounding plunger pitman and a sweep, of an operating arm mounted co-axially with the sweep and having a cam face terminating adjacent to its axis in a pocket adapted to receive an anti-friction roll carried by the pitman, clutch mechanism for connecting the sweep to the operating arm, trip devices for disengaging the clutch mechanism at the limit of the advance movement of the pitman, and guiding devices for the pitman comprising a limiting arm mounted at one end upon a fixed pivot, a keeper for limiting the movement of said member, and a swinging arm pivotally connected at one end to the free end of the limiting member and at the other end to the pitman, substantially as specified.

4. In a baling press, the combination with a rebounding plunger pitman and a sweep, of a cam-faced operating arm mounted co-axially with the sweep and adapted to engage an anti-friction roll carried by the pitman, means for guiding the pitman whereby the point of contact between said roll and the operating arm is shifted toward the axis of the latter as the pitman approaches the limit of its advance movement, a spring-actuated clutch tongue pivotally mounted upon the operating arm to engage the sweep, a trip arm connected to the clutch tongue, and a detent or stop arranged in the path of the trip arm to displace the clutch tongue and thereby disengage it from the sweep at the limit of the forward movement of the pitman, substantially as specified.

544,256. SIFTER. FRANK A. IDDINGS, Warren, Ohio. Filed Apr. 1, 1895. Serial No. 544,065. (No model.)



Claim.—1. In a sifter having an inclined false-bottom provided with a central opening, a sieve within said opening, a sifting wheel above said sieve, a retaining lug projecting from said false-bottom above said sifting wheel and a flexible shaft connected to said wheel and extended upwardly above said false-bottom and provided with an operating handle, substantially as set forth.

2. The herein-described improved sifter comprising the can or receptacle having a lower opening, a pan or drawer extended through said opening and having its sides corrugated horizontally, an inclined false-bottom above said pan or drawer having a lower central opening, a sieve within said opening, a sifting wheel over said sieve having a central lug, a retaining lug projecting from said false-bottom above said sifting-wheel a flexible shaft connected at its lower end to said former lug and having at its upper end a short shaft, a sleeve or bearing for the latter secured to the side of said can or receptacle, and a crank-handle connected to said short shaft, substantially as set forth.

3. A sifter having a can or receptacle, a hollow bearing or bushing attached to the side thereof, a sieve or screen, a wheel over the latter, a short shaft fitted in said bearing or bushing and having a collar thereon, provided with a recess, an operating handle on the outer end of said short shaft, and a flexible shaft consisting of a coiled wire having one end secured in said recess of said collars and at its other end to said wheel, substantially as set forth.

544,257. SIFTER. FRANK A. IDDINGS, Warren, Ohio. Filed Apr. 6, 1895. Serial No. 544,767. (No model.)

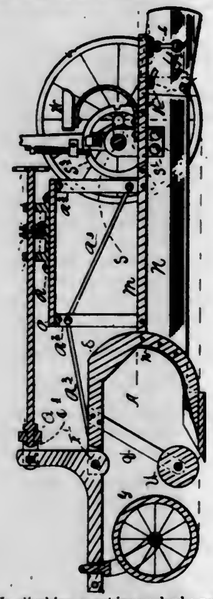
Claim.—1. In a sifter having a centrally located removable sieve provided with a central hole or opening, a sifting wheel located over said sieve and having a lower lug fitted in said hole or opening, and also provided with an upper lug, an agitator arm extending from said wheel, and a flexible operating shaft carrying a mandrel adapted to engage the upper lug of said agitator wheel, substantially as set forth.

2. In a sifter having a bell-shaped false bottom provided with a central opening, a sieve or screen removably fitted in said opening and provided with an upper flange resting on said bottom, a sifting wheel above said screen having an arm extending therefrom and designed to move over the lower portion of said bottom, and a flexible operating shaft carrying a mandrel adapted to engage said wheel, substantially as set forth.

3. The herein-described improved sifter, comprising the can or receptacle having a false-bottom of approximately bell-shape and provided with a central hole or opening, a ring having an upper flanged end designed to fit in said hole or opening, and having a sieve or screen, a central bushing supported by said sieve or screen, a sifting wheel above the latter having a lower lug fitted in said bushing, and an upper opposite lug, a flexible shaft composed of a continuous wire, a mandrel carried by said flexible shaft and adapted to engage said upper lug, an agitating arm extending from said wheel over the lower portion of said false bottom, a bushing secured to the side of said can or receptacle, a short shaft supported by said bushing and having the upper end of said flexible shaft connected thereto, and the crank-operating handle attached to the outer end of said short shaft, substantially as set forth.



544,258. TILE-DITCHING MACHINE. CHARLES W. JESCHKE and EDWARD JESCHKE, Vickery, Ohio. Filed Jan. 3, 1895. Serial No. 533,787. (No model.)

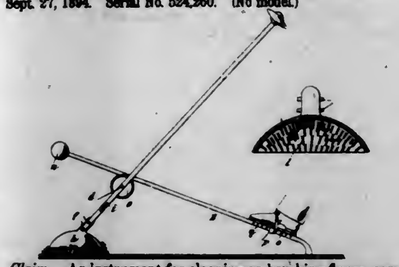


Claim.—1. In ditching machines a body portion composed of a rigid bent beam E, the two side or mold boards N N, the platform M and the oval or scoop shaped point J secured to each other and the lugs S' supported by the bent axle S and carried by the wheels T, T, all in combination substantially as and for the purpose set forth.

2. The table P, rack R, operating rod O carrying a worm wheel engaging said rack, swivel joint Q, the bent lever or bell crank F, hinged to the forward end of the plow beam E, the arms H, provided with the vertical pivot H and journaled to and carrying the grade wheel G, together with ordinary means provided for securing the several parts together, together with the table supports R^2 and the stay rods P^2 secured to said supports and the plow beam E, all in combination substantially as and for the purpose set forth.

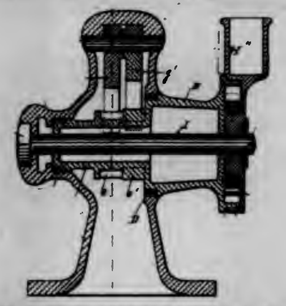
3. A body piece consisting of the rigid bent beam E the two side or mold boards N, N, the platform M and the rounded or scoop shaped point J the rods L L the wings K K and the means provided for securing the several parts together all in combination substantially as and for the purpose set forth.

544,259. SCRUBBER. JULIUS JUHS, Stuttgart, Germany. Filed Sept. 27, 1894. Serial No. 524,260. (No model.)



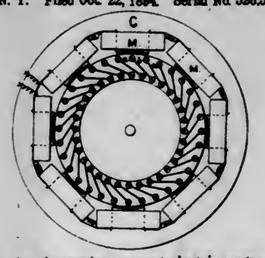
Claim.—An instrument for cleaning or brushing floors, consisting of a handle-bar *a* forked at its lower end to provide arms *b*, a roller *c* carried by said arms, a cleaning or brushing implement secured to said arms, and a treadle-bar passing between the arms *b* and resting freely upon the roller *c*, substantially as described.

544,260. SHEET-HOLDER AND WINCH. ELBRIDGE G. KELLEY, Peabody, Mass. Filed Jan. 14, 1895. Serial No. 534,933. (No model.)



Claim.—The herein described sheet holder and winch, comprising a hollow metal post provided with interior bearing surfaces and having a side projection A", a drum journaled in said post and adapted to turn upon the said bearing surfaces thereof, an interiorly toothed ring at the end of said drum, a pawl carrying disk journaled on said ring, pawls carried by the disk adapted to engage said toothed ring, wings or projections carried by the disk and serving as rests for said pawls, a pair of ratchet wheels provided on the drum within the hollow post, the teeth of one of said wheels being arranged opposite to the spaces between the teeth of the other wheel, a pair of independent pawls arranged within said hollow post above the ratchet wheels and adapted to engage said wheels, a bolt passing through said hollow post and disk and binding the same together whereby the mechanism is entirely inclosed to be free from liability of becoming clogged and affording no obstruction for the rope to become engaged or entangled with, substantially as described.

544,261. ALTERNATING-CURRENT MOTOR. ROBERT LUNDELL, Brooklyn, N. Y. Filed Oct. 22, 1894. Serial No. 526,531. (No model.)



Claim.—1. An alternating current electric motor having an inductive part provided with coils or windings disposed at angles to the

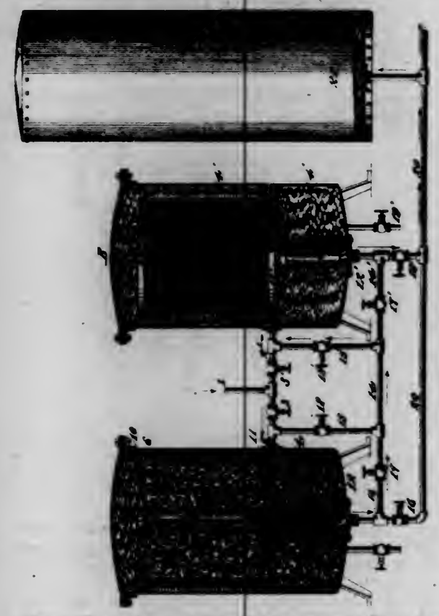
radial lines of the core or axis of said part, and adapted through such angular disposition to establish repulsive poles on one side of the inducing pole or poles of a second inducing part.

2. An alternating current electric motor having two inductive parts provided with independent windings, the windings of one part being closed upon themselves in short circuit and disposed at angles to the radial lines of the axis or core thereof.

3. An alternating current electric motor having two sets of inductive coils, one of which sets is angularly disposed with relation to the other in such manner as to establish repulsive poles at one side, one of said sets of coils acting as an inducing primary circuit and the other as a movable or rotary secondary with relation thereto, said motion or rotation being due to the united action of the aforesaid established repulsive poles.

4. An alternating current electric motor having two sets of inductive coils, one of which acts as a primary and the other as a rotary secondary thereto, the coils of the secondary being closed upon themselves and disposed at angles to the radial lines of the axis about which they rotate.

544,262. WATER-FILTER. MARCUS L. MITCHELL, St. Louis, Mo., assignor of one-fourth to Joseph R. La Tour, same place. Filed Apr. 5, 1895. Serial No. 544,662. (No model.)



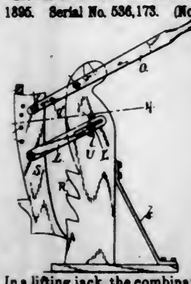
Claim.—The combination with a filtering tank, of a filtering basket packed with mineral wool, a perforated pipe 7 in the center thereof, top 10 and bottom 11 to said filtering basket and bolt 9 to hold the same in position, an exit pipe from the said central perforated pipe 7, adapted to filter the water from the outside to the center of said basket, substantially as described.

544,263. BOOT OR SHOE. WILLIAM NORTON, Lynn, Mass. Filed Jan. 21, 1893. Serial No. 459,290. (No model.)



Claim.—The improved shoe having an opening in the upper thereof at the side of the shoe and some distance from the front of the latter, an elastic gore secured to the rear quarter of the upper, the said opening and gore extending down to a point which is close to the edge of the sole and also down to the hollow of the foot of the wearer, and a series of eyelets and corresponding series of hooked fastenings applied to the respective meeting edges, the hooks of such fastenings being reduced in width, curved in transverse section to conform to the interior of the eyelets having short bills to enable them to be engaged and disengaged by slight lateral pressure, and provided with securing prongs projecting to the same side as the bills, substantially as described.

544,264. LIFTING-JACK. ANTHONY RHODES, Shenandoah, Iowa. Filed Jan. 25, 1895. Serial No. 536,173. (No model.)

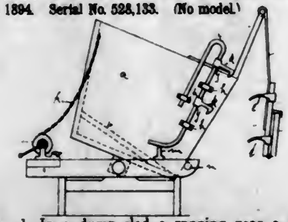


Claim.—1. In a lifting jack, the combination with an upright having a ratchet in its front edge, and a lever pivoted between its ends to the upper end thereof; of an upright lifting bar adjacent said front edge with its lower end adapted to engage the ratchet teeth therein, a pivot connecting the forward end of the lever with the bar near its upper end and at a point to one side of the transverse center of the bar, links pivoted to the body of the bar near its center and having slots in their outer ends, and a bolt or pin through the upright over which said slots slide, as and for the purpose set forth.

2. In a lifting jack, the combination with a base, an upright rising from the front end of the base and having a ratchet in its front edge, and a lever pivoted between its ends to the upper end of the upright; of a lifting bar whose lower end is adapted to engage the teeth of said ratchet and whose upper end is provided with a lifting face, a pivot through the front end of the lever and the body of the bar near the upper end of the latter and at one side of its transverse center, and means substantially as described for limiting the horizontal movement of the lower end of the bar, as and for the purpose set forth.

3. In a lifting jack, the combination with an upright having a ratchet in its front edge, and a forked lever pivoted between its extremities astride the upper end of the upright; of a lifting bar whose lower end is adapted to engage the teeth of said ratchet and whose upper end passes through and extends above the fork of the lever, a pivot through said fork and bar at that side of the transverse center of the latter remote from the upright, links pivoted to opposite sides of the bar near its center and having slots in their outer ends, and a bolt through said upright and over which the slots slide, as and for the purpose set forth.

544,265. DUMP-SLED. AMORY H. ROGERS, Portland, Me. Filed Nov. 7, 1894. Serial No. 528,133. (No model.)



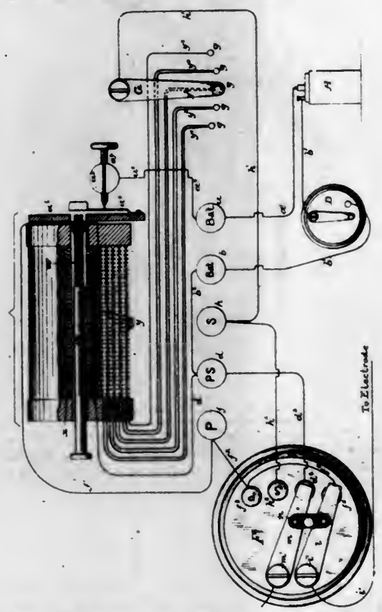
Claim.—1. In a dump sled, a running gear, a body pivotally mounted on said running gear, standards projecting above the top of the body and a swinging door having two longitudinal sections hinged together and supported by hangers pivotally attached to said standards, substantially as and for the purposes set forth.

2. In a dump-sled, a running gear a body wider at the top than at the bottom, and pivotally mounted on said running gear and adapted to be turned on said pivot standards projecting above the top of the body, a swinging side supported by hangers pivotally attached to said standards, the bottom of said body inclining toward said swinging side, and means for securing said swinging side to the body, substantially as and for the purposes set forth.

3. In a dump sled, a body, having an inclined bottom, standards projecting above the top of the body, a swinging side supported by hangers pivotally attached to said standards, means for securing said swinging side to the body, means for automatically releasing said swinging side and means for holding said body in an upright position, substantially as and for the purposes set forth.

4. In a dump sled, a body having an inclined bottom, standards projecting above said body, a swinging side supported by said standards and having two longitudinal sections hinged together, gooseneck irons having offsets at their lower extremities movably attached to the front and rear ends of the body, said gooseneck irons having catches firmly attached thereto and adapted to engage eyes on the swinging side for holding said side firmly in position, lugs rigidly attached to the bunk of the forward and after sleds to trip said gooseneck irons and means for holding said body in an upright position, substantially as and for the purposes set forth.

544,266. MEDICAL INDUCTION-COIL. JAMES TATHAM, Philadelphia, Pa., assignor of one-half to Robert H. Engle, same place. Filed Oct. 15, 1891. Serial No. 408,797. (No model.)



Claim.—The combination of a battery and an induction coil, with a switch having four points disposed as described, and two arms adjustable so as to bear upon any two adjoining points of said switch, and connections, substantially as described, whereby the current controlled by the switch may be either a primary current, a secondary current, or a combined primary and secondary current, substantially as described.

544,267. MEANS FOR OBTAINING TWO SPEEDS IN BICYCLES. PERRY B. TURPIN, Washington, D. C., administrator of Septimus J. Collier, deceased. Filed Apr. 8, 1895. Serial No. 544,971. (No model.) Patented in England May 29, 1889, No. 8,893.

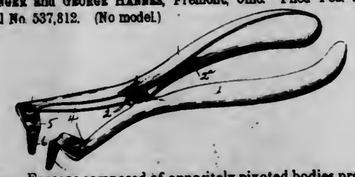


Claim.—1. A two-speed driving mechanism for cycles, which mechanism consists in the combination of a crank axle revolubly mounted eccentrically in a larger axle mounted in bearings in the machine frame, a spur pinion fast on the crank axle, a combined chain sprocket wheel and internal toothed wheel mounted concentrically upon the larger axle and in gear with the pinion on the crank axle, and means for locking the two axles together so as to cause them and the spur gears to normally revolve together about the axis of the larger axle at the same angular velocity with the pedals, and chain sprocket wheel and means for temporarily unlocking the axles, and at the same time locking the large axle to the frame, substantially as specified.

2. A two-speed driving mechanism for cycles, which mechanism consists in the combination of a crank axle mounted eccentrically in a larger axle mounted in bearings in a machine frame, a spur pinion fast on the crank axle, a combined chain sprocket wheel and internal toothed wheel mounted concentrically upon the larger axle and in gear with the pinion on the crank axle, means for locking the two axles so as to cause them and the spur gears to revolve together as one, and means substantially as described for temporarily unlocking them and of locking the larger axle to the frame, so as to cause the crank axle and its pinion to revolve about their own axis, and the internal toothed chain sprocket wheel to revolve at a lesser angular velocity about the stationary axle when the machine is to be "geared down" for power, as described.

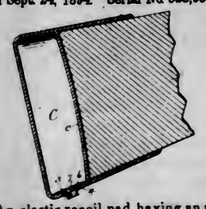
3. A two-speed driving mechanism for cycles, which mechanism consists in the combination of a crank axle mounted eccentrically in a larger axle mounted in bearings in the machine frame, a spur pinion fast on the crank axle, a combined chain sprocket wheel and internal toothed wheel mounted concentrically upon the larger axle and in gear with the pinion on the crank axle, a spring-pressed bolt adapted to slide longitudinally on the larger axle and to engage at one end with a hole in the pinion, an outwardly projecting lug on the other end of the bolt engaged in a recess in the larger axle, an arm having on its outer face oppositely inclined cam surfaces, an intermediate recess, and a notch, the arm being pivoted to the frame and adapted to be actuated by the said lug and by a spring so as to bring the cam inclines into position to act on the lug for disengaging the bolt from the pinion and engaging the lug in the notch of the cam, substantially as specified.

544,268. BULB OR TUBE STRETCHER OR EXPANDER. PETER UNSINGER and GEORGE HANNES, Fremont, Ohio. Filed Feb. 9, 1895. Serial No. 537,812. (No model.)



Claim.—Forceps composed of oppositely pivoted bodies provided with lugs or ears, each body being of a single piece of metal grooved longitudinally a pivotal pin fitting in apertures of the lugs or ears, a spring surrounding the pivotal pin with the ends pressing against the handles, seats formed in the extremities, tapering jaws riveted therein with the free ends extending at right angles thereto, substantially as described.

544,269. RECOIL-PAD FOR GUNS. JACOB R. WINTERS, Clinton, Mo. Filed Sept. 24, 1894. Serial No. 523,955. (No model.)



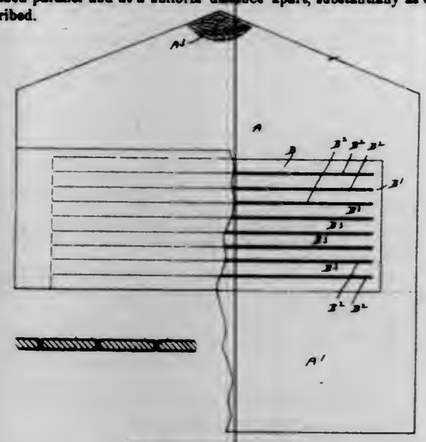
Claim.—An elastic recoil-pad having an air-chamber, an air-inlet opening leading into said chamber, an elastic strip spanning said opening, and a valve carried by the strip, whereby the valve is adapted to close said opening independent of the pressure within the chamber.

544,270. MAILING-WRAPPER. FLINT W. WRIGHT, Worcester, Mass., assignor of one-third to Henry A. Fowler, same place. Filed Oct. 23, 1894. Serial No. 526,697. (No model.)

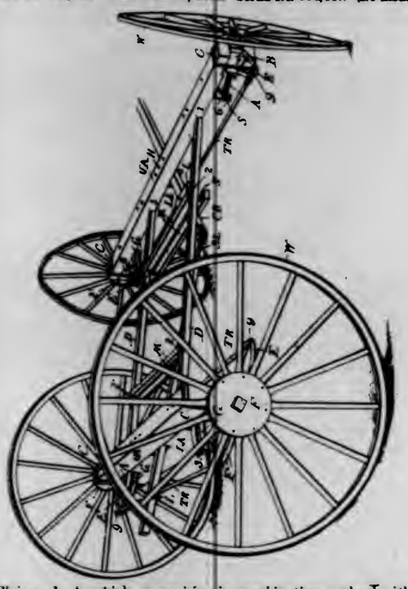
Claim.—1. As an article of manufacture the within described mailing wrapper comprising the paper cover A, and an inclosed cardboard strip B attached to said cover, said cardboard strip having slits B^3, and being united at its ends, whereby the edges of said slits are maintained parallel and at a uniform distance apart, as and for the purpose specified.

2. As an article of manufacture, a mailing wrapper consisting of a cover A and a piece of cardboard B attached to said cover, said cardboard having a series of slits by which the cardboard is divided into parallel strips, said strips being left united through a portion of

their length, whereby said strips are hinged together and also maintained parallel and at a uniform distance apart, substantially as described.



544,271. RUNNING-GEAR FOR WAGONS. JAMES BENNETT, Greencastle, Ind. Filed Jan. 10, 1893. Serial No. 534,447. (No model.)

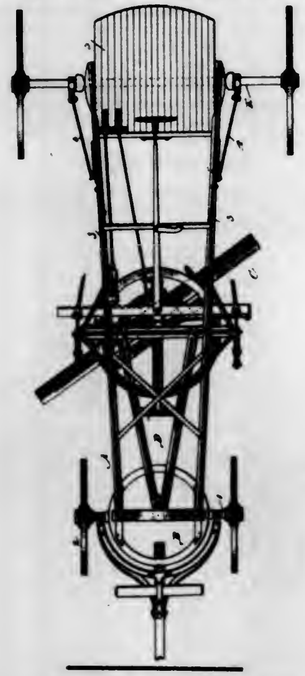


Claim.—1. A vehicle comprising in combination a wheel without a mortised hub: the spokes of which being mitered and cut to a point, so as to form a solid nave, with flanges thereon to hold spokes in position, and to take the place of a mortised hub: said wheel being mounted on an axle journaled and mounted in a box, which box has projections or pivots resting in a thimble embedded in axle frames: said box having an elbow attached thereto to which is connected a turning bar running parallel with said axle frame the entire length thereof, in the center of which rods is attached a loop through which loop runs a jointed controlling bar, to which controlling bar is attached a pole or tongue, whereby and with which the vehicle can be turned in any position, or direction desired: all constructed and connected substantially as described above.

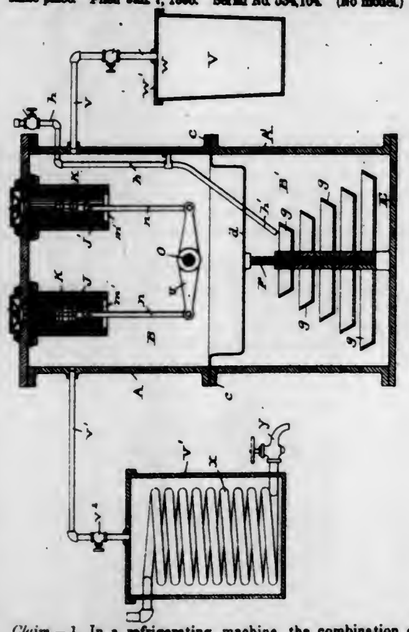
2. In a wagon running gear, a box journaled upon the axle, said box consisting of an upper and lower section secured together by bolts, each section being provided upon its outer face with projections or pivots, and elbows fastened to said boxes and connected to turning rods as and for the purpose described.

544,272. MACHINE FOR MAKING AND REPAIRING ROADS. MORTON G. BUNNELL, Chicago, Ill., assignor, by mesne assignments, to Anna B. Austin. Filed Oct. 27, 1894. Serial No. 569,464. (No model.)

Claim.—The combination substantially as hereinbefore set forth with the body-frame in a road working machine provided with a diagonally adjustable scraper-blade, of the horizontally swinging rear axle, and guide bearings H through which the rear axle is extended, said guide bearings being provided with curved outer edges so as to form guides 11, and the axle being provided with shoulders or abatments 12 arranged to bear against said guides 11, for the purpose described.



544,273. VACUUM REFRIGERATING-MACHINE. WILLIAM J. FERGUSON, Baltimore, Md., assignor of one-half to William G. H. Stump, same place. Filed Jan. 7, 1895. Serial No. 534,104. (No model.)

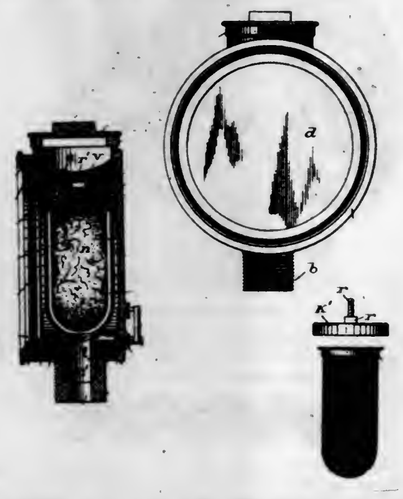


Claim.—1. In a refrigerating machine, the combination of a vacuum chamber provided with an exhaust pump at its upper part; acid pans in its lower part; a screen diaphragm separating the upper and lower parts; and a pipe to supply acid to said pans.

2. In a refrigerating machine, the combination of a vacuum chamber provided with an exhaust pump at its upper part; a stand in the lower part supporting a series of acid pans of graduated sizes the largest being at the bottom and the smallest at the top; and a pipe which supplies acid to the uppermost pan.

3. In a refrigerating machine, the combination of a vacuum chamber; acid pans in the chamber; two exhaust pumps in the upper part of the chamber each having a check valve, *f*, opening to the atmosphere; and a rock-shaft, *o*, provided with a lever, U, which connects with the pistons of both pumps.

544,274. LUBRICATOR. WILLIAM J. FERGUSON, Baltimore, Md., assignor of one-half to William G. H. Stump, same place. Filed May 22, 1895. Serial No. 550,227. (No model.)



Claim.—1. An automatic oiler comprising an exterior case having at its bottom a neck with a passage in it for discharging oil; an interior cup having a passage which connects with the said discharge passage of the case and said exterior case forming an oil-chamber which surrounds the cup; a perforated holder inside of the interior cup with a surrounding space between the two and said holder containing absorbent material; and a cap closing said interior cup—said cup having an inlet hole.

2. An automatic oiler comprising an exterior case having at its bottom a neck with a passage in it for discharging oil; an interior cup having a passage which connects with the said discharge passage of the case and said exterior case forming an oil-chamber which surrounds the cup; a perforated holder inside of the interior cup with a surrounding space between the two said holder being secured by its top and hanging pendent within the cup; a cap closing said cup, and a plate with graduated holes to control the feed of oil into the said cup and holder.

3. An automatic oiler comprising an exterior case having at its bottom a neck with a passage in it for discharging oil; an interior cup having a passage which connects with the said discharge passage of the case and said exterior case forming an oil-chamber which surrounds the cup; a cap closing said interior cup and having an inlet hole and provided with an upward-projecting stem; and an adjustable plate resting on said cap and provided with a series of holes of graduated size either one of which may register with said hole in the cap.

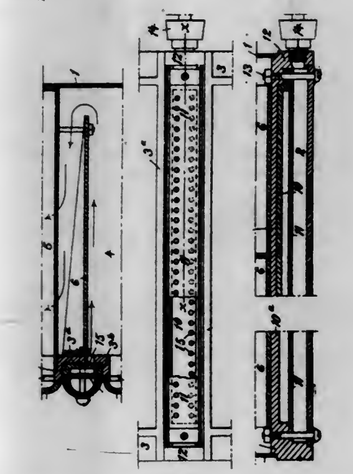
4. An automatic oiler comprising an exterior case having at its bottom a neck with a passage in it for discharging oil; an interior cup having a passage which connects with the said discharge passage of the case and said exterior case forming an oil chamber which surrounds the cup; a cap closing said interior cup and having an inlet hole and provided with an upward-projecting stem having a square base and a screw-threaded end; an adjustable plate resting on said cap and provided with a series of holes of graduated sizes either one of which may register with said inlet hole in the cap and said plate having a square hole to fit about the said square base; and a screw nut to take on the said stem and retain the adjustable plate in position.

5. An automatic oiler comprising an exterior case having at its bottom a neck with a passage in it for discharging oil; an interior cup having a passage which connects with the said discharge passage of the case and said exterior case forming an oil chamber which surrounds the cup; an oil inlet at the top of the said cup; a feed hole direct from the oil-chamber to the oil-discharge passage below the cup; and a valve to open and close said feed hole,—the stem of said valve passing through the oil-chamber and the exterior case to the outer side.

544,275. GAS-STOVE. JOSEPH B. LAURENT, New York, N. Y. Filed Aug. 11, 1894. Renewed July 8, 1895. Serial No. 555,289. (No model.)

Claim.—1. A gas stove having a burner made with two main parts, the outer part forming practically a detachable portion of the outer stove body wall which when removed gives access to the interior of the burner; the gas supply pipe being connected independently of the outer detachable portion of the burner, substantially as described.

2. A gas stove having a burner made with two main parts and an intermediate removable baffle plate, the outer main part being practically a detachable portion of the outer stove body wall which when removed gives access to the interior of the burner and to the removable baffle plate; the gas supply pipe being connected independently of the outer removable portion of the burner, substantially as described.



3. A gas stove having a burner made with two main parts, the outer part forming practically a detachable portion of the outer stove body wall, said wall having fixed lugs between which the ends of the detachable burner portion are fitted; the gas supply pipe of the burner being connected at one of said lugs and independently of the outer removable portion of the burner, substantially as described.

4. A gas stove made with a burner having two separable and removable main parts, the outer one forming practically a detachable portion of the outer stove body wall; the gas supply pipe of the burner being connected independently of the removable main portions thereof, substantially as described.

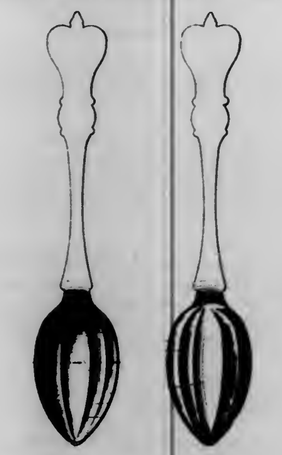
5. A gas stove made with a burner having two separable and removable main parts, the outer one forming practically a detachable portion of the outer stove body wall, and an intermediate removable baffle plate; the gas supply pipe of the burner being connected independently of the removable main portions thereof, substantially as described.

6. A gas stove made with a lower broiling or roasting chamber, an upper oven or baking chamber, a guard plate arranged horizontally below the oven, a burner having two main parts, the outer part forming practically a detachable portion of the outer stove body wall, said burner being adapted to flame inward beneath the oven guard plate, and a gas supply pipe connected independently of the detachable part or parts of the burner, substantially as described.

7. The combination in a gas stove, of a front wall plate having a recess, said plate having lugs 12, to one of which the fuel supply pipe is connected, and a burner comprising body portions 9, 10, and interior baffle plate 11, and fitted in said recess and removable therefrom, substantially as described.

DESIGNS.

24,528. SPOON. GEORGE P. TILTON, Newburyport, Mass., assignor to the Towle Manufacturing Company, same place. Filed June 18, 1895. Serial No. 553,333. Term of patent 7 years.



Claim.—The design for a spoon herein shown and described.

24,529. TOY. SAMUEL ALLAND, Boston, Mass. Filed June 10, 1895. Serial No. 552,342. Term of patent 14 years.



Claim.—The design for a toy herein shown and described.

24,530. CUSPIDOR-CASE. CHARLES HOFMANN, Chicago, Ill. Filed June 21, 1895. Serial No. 553,607. Term of patent 14 years.



Claim.—The design for a cuspidor-case as herein shown and described.

24,531. PORTIERE-ROPE. BERTHA CRONENBERG, Buffalo, N. Y., assignor to Morris Bernhard, same place. Filed June 17, 1895. Serial No. 553,139. Term of patent 7 years.



Claim.—The design for a portière rope, substantially as herein shown and described.

TRADE-MARKS

REGISTERED AUGUST 6, 1895.

26,891. BLIND-LADDER TAPES. JAMES CARR & SONS, Manchester, England. Filed Oct. 6, 1894.

CCL

Essential feature.—The letters "C C L" and representations of an arrow and ladders. Used since 1891.

26,892. KNITTED FABRICS AND GARMENTS. OWEN OSBORNE, Philadelphia, Pa. Filed June 24, 1895.



Essential feature.—A double pictorial representation comprising two adjacent pictures, one of a pair of sheep and the other of a cotton-field with negroes gathering cotton. Used since January 1, 1895.

26,893. CERTAIN NAMED LINEN GOODS. JOHN S. BROWN & SONS, Belfast, Ireland, and New York, N. Y. Filed Apr. 5, 1895.



Essential feature.—The picture of a shamrock. Used since 1861.

26,894. DUCK. HARDING, WHITMAN & Co., Boston, Mass. Filed July 8, 1895.

DEFENDER

Essential feature.—The word "DEFENDER." Used since June 25, 1895.

26,895. DUSTERS AND POLISHING-CLOTHS. JOHNS BROTHERS & Co., Manchester, England. Filed Dec. 5, 1894.

SELVYT.

SUPERIOR TO CHAMOIS LEATHER.

A POLISHING CLOTH.

SELVYT.

Essential feature.—A rectangular figure which is formed of a single heavy line and located parallel with and near the margin of the goods, and words arranged exterior to and parallel along each side thereof. Used since December, 1893.

26,896. BAG GRANULATED SMOKING-TOBACCO. THREEFOOT BROS. & Co., Meridian, Miss. Filed June 24, 1895.

PURE GOLD

Essential feature.—The words "PURE GOLD." Used since June 26, 1893.

26,897. CIGARS. GERALD PIERCE, Minneapolis, Minn. Filed May 17, 1895.

LITTLE LAMB

Essential feature.—The words "LITTLE LAMB." Used since January 3, 1894.

26,898. SODA-WATER SIRUPS. JOHN P. MAYO, Columbus, Miss. Filed July 10, 1895.

Kolaphate

Essential feature.—The word "KOLAPHATE." Used since June 1, 1892.

26,899. CREAM OF TARTAR SUBSTITUTE. THE NICHOLS CHEMICAL COMPANY, New York, N. Y. Filed June 24, 1895.



Essential feature.—The representation of a woman wearing a hood, cape, and slippers and having her skirts closely drawn about her. Used since February 1, 1895.

26,900. GELATINE, BAKING-POWDER, AND FLAVORING EXTRACTS. PAUL W. THAYER, Philadelphia, Pa. Filed July 2, 1895.

MINUTE

Essential feature.—The word "MINUTE." Used since January 1, 1895.

26,901. OZONIZED COD-LIVER OIL. THE OSONE COMPANY, New York and Brooklyn, N. Y. Filed July 6, 1895.

KODOZONOL

Essential feature.—The word "KODOZONOL." Used since September, 1894.

26,902. CERTAIN NAMED REMEDIES. JOHN J. KETCHUM, Rutherford, N. J. Filed June 26, 1895.

BLUE LABEL

Essential feature.—The words "BLUE LABEL." Used since December 17, 1894.

26,903. CERTAIN NAMED MEDICAL COMPOUND. APTA PHARMACY Co., St. Louis, Mo. Filed July 1, 1895.

APTA

Essential feature.—The word "APTA." Used since May 1, 1895.

26,904. REMEDY FOR HEADACHE. NORMAN B. LICHTY, Des Moines, Iowa. Filed Apr. 25, 1895.

KRAUSE'S HEADACHE-FIZZ.

Essential feature.—The words "KRAUSE'S HEADACHE-FIZZ." Used since April 12, 1895.

26,905. CERTAIN NAMED CHEMICAL AND PHARMACEUTICAL AND TOILET PREPARATIONS. COLLIER DRUG COMPANY, Birmingham, Ala. Filed June 18, 1895.



Essential feature.—The representation of a crescent and a pair of scales hanging from the top horn of the crescent. Used since October, 1893.

26,906. ANTISEPTICS. SPETER & GRUND, Frankfort-on-the-Main, Germany. Filed July 14, 1894.

Thioform.

Essential feature.—The word "THIOFORM." Used since December 1, 1893.

26,907. SOAP. AMERICAN CHEMICAL COMPANY, Minneapolis, Minn. Filed Apr. 1, 1895.



Essential feature.—A picture of a railroad passenger-coach with the words "CAR CLEANER" arranged around it. Used since April 15, 1892.

26,908. POTASH AND LYE. A. MENDLESON & SONS, Albany, N. Y. Filed June 10, 1895.

GIANT

Essential feature.—The word "GIANT." Used since January 1, 1895.

26,909. CHEMICALS AND COLORS. G. SIEGLE & Co., Stuttgart, Germany. Filed July 10, 1895.



Essential feature.—The representation of a heraldic horse rampant. Used since April 1, 1889.

26,910. TOILET-COMBS. THE BUTLER HARD RUBBER COMPANY, New York, N. Y. Filed June 15, 1895.

MALTESE

Essential feature.—The word "MALTESE," in connection with the figure of a Maltese cross. Used since May 1, 1895.

26,911. BRUSHES. J. J. ADAMS & Co., New York, N. Y. Filed July 9, 1895.

INVINCIBLE

Essential feature.—The word "INVINCIBLE." Used since January 1, 1895.

26,912. KNIVES, FORKS, SPOONS, AND OTHER ARTICLES OF TABLE-SERVICE MADE OF STEEL AND TINNED. R. WALLACE & SONS MANUFACTURING COMPANY, Wallingford, Conn. Filed June 17, 1895.

WBW

Essential feature.—The letters "W. B. and W." Used since May 1, 1895.

26,918. CERTAIN NAMED VEHICLES AND THEIR ATTACHMENTS AND PARTS. NATIONAL MERCANTILE COMPANY, New York, N. Y. Filed June 20, 1895.



Essential feature.—The representation of a bicycle, wagon, and harnessed horse arranged within a circle. Used since March 15, 1895.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

KELLEHER AND GRIMM *v.* MAYHEW.

Decided July 27, 1895.

1. INTERFERENCE—APPLICANT AND PATENTEE—NOTICE TO CAVEATOR.

The application which eventuated in the Mayhew patent was filed during the life of the Kelleher and Grimm caveat. Kelleher and Grimm made application after the expiration of the caveat and the grant of the Mayhew patent. The presumption is that the Office did its duty in notifying Kelleher and Grimm of the filing of the interfering application, and the burden was upon them to establish their allegation of no notice by adequate proof.

2. SAME—SAME.

The patent to Mayhew may not be treated as an application, because the presumption is against the lack of notice to the caveator and because there is no direct evidence that Kelleher and Grimm did not know of the Mayhew application.

3. SAME—PRIORITY OF INVENTION.

Priority awarded to Mayhew, because Kelleher and Grimm not original inventors, and, further, because Mayhew was the first to conceive and it was not clearly shown that he was not diligent in reducing to practice.

APPEAL from the Examiners-in-Chief.

METHOD OF CONSTRUCTING ARTIFICIAL STONE.

Application of John P. Kelleher and Joseph V. Grimm filed August 3, 1893, No. 482,257. Patent granted Rubertus G. Mayhew June 6, 1893, No. 499,173.

Mr. Paul Bakewell for Kelleher and Grimm.

Messrs. Knight Bros. for Mayhew.

SEYMOUR, *Commissioner:*

This is an appeal taken by Mayhew from the decision of the Examiners-in-Chief affirming the decision of the Examiner of Interferences in adjudging priority to Kelleher and Grimm on the following issues:

1. The method of forming joints between blocks of concrete or artificial stone, which consists in placing in position a frame to form the vertical edges of the blocks, then inserting a division strip, then forming the blocks, then applying a foot-piece, and finally withdrawing the division strip; substantially as set forth.

2. The improved apparatus for forming joints between adjacent blocks of concrete or artificial stone, which consists of the notched, longitudinal strips 3 and 4, division strips 7, provided with lugs fitting in the notches of said strips 3 and 4, and the slotted foot-piece 11, substantially as set forth.

A patent for the alleged improvement of the issues was granted to Mayhew June 6, 1893, upon an application filed by him January 16, 1893. On July 20, 1892, Kelleher and Grimm filed a caveat for the matter in controversy, and on August 3, 1893, thirteen days after their caveat ceased to be in force and almost two months after Mayhew's patent issued, filed their application. Mayhew's application was filed during the life of the caveat.

While the principal question in this case is one of priority, in one aspect there is involved the question of originality. A subsidiary question is raised and contested, which is material and should be decided first. It is contended by Kelleher and Grimm that they had no notice of Mayhew's application under section 4904 of the Revised Statutes relating to caveats, and that therefore Mayhew's patent improperly issued, and that thereby an act of injustice was done them. They also contend that Mayhew in this interference must be treated on this account as an applicant and not as a patentee, and can have none of the presumptions in his favor that attach by reason of a patent already issued to him.

I find it necessary to examine the grounds of this contention in view of the frequent claims made in proceedings in the Patent Office that patents have from time to time been inadvertently granted. First, as to the proof of the allegation that Kelleher and Grimm had no notice. The caveat certificate and a duly-certified copy of the petition, specification, oath, and drawings in the matter of the caveat of Kelleher and Grimm, filed July 20, 1892, have been introduced into the record and are in evidence, and the file-wrapper and contents of Mayhew's application are before me. The certificate attached to these papers does not indicate whether the copies to which it is annexed are the entire contents of the caveat file-wrapper, nor is there a copy of the caveat file-wrapper in evidence, nor is the file-wrapper itself in evidence. It does not appear that in any of these exhibits there is any memorandum of a notice having been sent to Kelleher and Grimm, nor is there before me any copy of such notice, and for the purposes of this discussion I will assume that no memorandum of such notice and no minute of its having been sent appears upon the exhibits or upon any file-wrapper and that no copy is found. Neither Kelleher nor Grimm testifies that he received no notice, nor is there any showing that they were without actual notice of the pendency of Mayhew's application, nor does it appear that they would have filed an application or would have desired to do so had they received such notice. They did not renew their caveat, nor file an application while it was in force. The question is, what is the effect of this record upon this point and what is there upon which to sustain a finding, as desired by Kelleher and Grimm, that no notice was sent? Manifestly nothing but that no memorandum appears of a notice having been sent, and no copy. On the other hand, the statute, section 4904, requires that notice shall be sent in such cases, and does not require that any evidence of the sending of such notice shall be preserved in the

Patent Office. The presumption is that the Office did its duty.

In *Hoe* v. *Kahler* (23 Blatchf., 334) a petition for a reargument was filed, setting forth that the oath to the application by Mr. Hoe, the patentee and one of the plaintiffs, was not taken before an officer authorized to administer oaths, and that as a matter of law no oath to the application was ever taken by Mr. Hoe. A certified copy of the file-wrapper and contents in the matter of the patent was in evidence, and it was contended that it was the practice in the Patent Office to preserve all papers in support of the application for a patent, as well as the communications between the applicant and the Office, a memorandum of which is placed on the file-wrapper, together with the date of the receipt of each paper and of the sending of any communication from the Office in respect thereto and of all other proceedings had in the Office, and that the file-wrapper and contents are *prima facia* evidence of the complete record of the application for a patent, and of the papers filed in support thereof, and of the communications in respect thereto, and can only be rebutted by competent evidence. The petition further prayed that a rehearing should be ordered that the proofs might be opened, if necessary, to show the practice in the Patent Office in this regard.

The Court held that under the pleading and evidence the defense was not properly made out, although it appeared in the file-wrapper that there was an oath by Mr. Hoe taken before an officer who was claimed to be incompetent to administer oaths.

The Court held that the plaintiffs sustained whatever *prima facie* burden there was upon them, because of the averment as to due application, by introducing the patent; that there was no evidence put in to rebut the presumption from the grant of the patent that there was a proper oath by Mr. Hoe tending to show that there was no such oath by him or that the oath appearing was the only oath he made; that the copy of the file-wrapper and contents was a copy certified January 9, 1881, and spoke only as to what were the contents of the file-wrapper on that date. The papers are not—

evidence to show that there was not a proper oath by Mr. Hoe, other than the one referred to, even if that were an improper one.

And the Court further remarks that it is very clear that the defendant in this case does not show the existence of such a defect or want by any competent evidence, and on the rehearing the Court says that the point of the former decision was that, even though the defendant could show in defense a defect in or want of the preliminary affidavit, he did not show the existence of such a defect or want in any competent evidence. It was remarked that this view still remained good and was not obviated by anything in the case or which it was proposed to introduce.

Showing what were the contents of the file-wrapper in January, 1881, or what are its contents now, or what was the practice of the Patent Office in regard to preserving papers filed in applications for patents, and letters to and from the Office, and in regard to the record of the proceedings, and the dates of filing papers, and of receiving and sending communications, and the scope and functions of a file-wrapper and contents in the matter of a patent, is not sufficient to rebut the presumption that the Commissioner required and received a proper preliminary oath from Mr. Hoe. The affirmative probative force of a paper in a file-wrapper, to show the existence of its contents, is one thing, but its negative probative force, to show that a paper or a fact not shown by anything in its contents did not exist, is quite a different thing.

The case just cited concerns the existence of a paper to be preserved in the files of the Office, while this case brings up the question of the existence of a notice to be sent to the caveator and not to be preserved in the files of the Office, and, therefore, for a stronger reason, the absence of any minute that such paper was sent is of less moment than the absence of a paper which the rules and the statutes call for as a prerequisite to the issue of a valid patent. I have examined the cases upon this point upon which Kelleher and Grimm rely. In *Weston* v. *White* (13 Blatchf., 447) the Court quotes the decision of the Examiner of the Patent Office to the effect that the patent had been granted without reference to a caveat, and that the patent was therefore improperly issued. The question is one of fact, requiring proof by competent evidence, like any other fact, and what the proof was is not stated. It may be assumed, however, that it was upon competent evidence.

In *Frevert* v. *Gahr* (C. D., 1873, 92,) Thatcher, Commissioner, held that where no notice was taken of a caveat and a patent issues, the caveator is not to be prejudiced thereby, and the case will be treated as though both parties were applicants; but in that case both the caveator and his attorney swore that such notice was not received, and thus furnished direct testimony upon which such finding might be made. In *Tingley* v. *Carpenter* (C. D., 1871, 236) the Commissioner held simply that the Office was bound to give notice of the filing of a subsequent application during the life of a caveat, and this is not doubted.

Proof of the alleged facts to which to apply the law is wanting in the case before me, and as the alleged error concerns the administration of my predecessor in office there is propriety as well as regularity in holding that the proof must be adequate.

On the authority of *Hoe* v. *Kahler* it is held that there is no competent evidence in this record that Kelleher and Grimm did not receive notice of the filing of Mayhew's application or that the patent to Mayhew did not properly issue.

Second, there is another objection to treating the Mayhew patent in this interference as a mere application in that there is no direct evidence that Kelleher and Grimm did not know of the pendency of Mayhew's application. The nearest approach to such evidence is Grimm's statement that he did not know of Mayhew's claiming the invention as his own until shortly before the time when he was testifying. This is not precisely the point, nor is it uncontradicted. There is much in the record to indicate that Kelleher and Grimm knew of Mayhew's operations in making the templet and overgear in 1890, and there is proof that Kelleher and Grimm knew of the operations of Major in 1890 and 1891, in which he employed the method of one of the appealed claims, even if he did not use the apparatus of the second claim in carrying out the method; and in case Kelleher and Grimm received no official notice of the pendency of Mayhew's application, if they had actual notice of its pendency, or if it is not shown that they did not have actual notice, their allegation is not true that injustice has been

done them in the grant of the Mayhew patent. The decision of the case, therefore, should proceed upon the assumption that Mayhew has a valid patent and that Kelleher and Grimm must, therefore, make out a case clear beyond reasonable doubt before the Office will be justified in issuing a second patent for the same invention to another.

The prior practice of laying sidewalks or curbs and gutters of artificial stone in blocks was to set the frame and form the blocks alternately, sanding the ends of the finished blocks first made before laying the intermediate blocks. The advantage of laying artificial stone in rather large blocks, instead of making the sidewalks continuous, was to avoid the cracking caused by the slight heaving of the earth by frost. The object of the improvement in question is to enable the blocks to be formed and laid consecutively, obtaining the divides by a thin sheet of iron or a thin piece of wood between the blocks, which would be withdrawn soon after the material began to set. The second count of the issue covers an apparatus for this purpose, consisting of the overgear with a slot, through which works a templet with holes near one or both ends, through which hooks are inserted to pull the templet up through the slot. The object of the overgear was to prevent the chipping of the edges of the newly-formed blocks as the templet was withdrawn.

Mayhew, on the 3d of July, 1890, left Chicago and went to St. Louis upon business connected with the making of sidewalks of artificial stone. Immediately on his arrival in St. Louis he caused a templet and overgear to be made at Newkum's shop adapted to the shape of a curb and gutter. These were made of boards, with notches on the back-board and front-board, and when finished he placed the templet in the slot across the boards, placed the overgear over the templet, and moved the templet up and down through the slot to see how it would work. This was done about the 31st of July, 1890. The templets and overgear in actual service are usually made of iron or steel. These of Mayhew's were intended as a pattern in order to have the overgear cast or made out of wrought-iron. Templets and overgear of iron were made for him about the 10th of November, 1892, like those made in 1890 of wood, except that the overgear made of wood had no foot-tread or projecting end upon which the workman could stand while withdrawing the templet.

Kelleher and Grimm, both having practical experience in the business of granitoid paving, early in January, 1892, discussed the idea of making iron templets and placing them between front and back boards for forming gutters, with means on the boards to attach the templets, the templets to be withdrawn in connection with an overgear. Kelleher made little samples of a piece of tin for the templets, then samples of the overgear, and then a frame of wood with a slot in the center for the overgear. Kelleher made a model in January, 1892. Kelleher and Grimm then gave an order to the Shickle, Harrison & Howard Iron Company for three wrought-iron or steel templets, the patterns for which were furnished by Grimm. They were delivered on April 6, 1892. They afterward ordered of Martin Maurer forty-two curb and gutter plates, which were templets, and a frame, which was the overgear, and these were made and delivered May 4, 1892. They were put into actual operation on that day on work on which Kelleher was employed by the St. Louis Sidewalk Company, of which Grimm was a member and Kelleher an employé. Afterward other templets and overgear were ordered, and all these embodied the alleged invention and are described in the application of Kelleher and Grimm and in their caveat.

It appears, *prima facie*, without opportunity of contradiction by Mayhew, that in the summer of 1890, at Compton Heights, in the city of St. Louis, a considerable amount of granitoid sidewalk was laid with two straight-edges and a blade between the straight-edges—that is, with overgear and templet, which are the gist of this invention. The only difference between this work and that for which the Mayhew templet and overgear were made was that the one was adapted to the making of flat sidewalks and the other to curbs and gutters. This occurred some time between the 1st and 15th of July, 1890.

There is great contradiction in the record, and scarce any question is proved on either side beyond a reasonable doubt. Nevertheless it appears that Mayhew was the first to conceive this improvement and that he made the wood templet and overgear of 1890. It is claimed by Mayhew that this constituted the consummation of the inventive act. It is not so alleged in his preliminary statement, and Kelleher and Grimm press this objection. An exhibit in this case of an overgear made of wood is before me. Now, the cases are sufficiently clear that a mere model or pattern is not a reduction to practice; but whether a given construction is a mere pattern is one purely of fact, and in this case, upon the whole record and taking into account Mayhew's preliminary statement, there is much to be said in favor of Mayhew's contention. It is not clear beyond a reasonable doubt that it was nothing but a pattern. I have examined the cases cited by Kelleher and Grimm upon this question. In *The Stillwell & Bears Manufacturing Co.* v. *Cincinnati Gas-Light & Coke Co.* (7 O. G., 829) the model which was thought not to be a reduction to practice was a heater for feed-water for steam-boilers and was made of wood. Manifestly wood is an inadequate material out of which to make a part which must be steam-tight and under considerable internal pressure, and, while the court found that the testimony seemed to establish the existence of the model, it considered that the parties contending against the patent had not proceeded to the point of complete invention; but the case passed off on the inadequacy of proof required to defeat the patent, and the question is somewhat different when applied to the doings of a patentee who recites them for the purpose of supporting his patent. In *The Union Paper-Bag Machine Co.* v. *Pultz & Walkley Co.* (16 Blatchf., 76) the case turned upon the question whether a part of a mechanism of which a model had been built had been discarded. The case does not appear to be pertinent to this contention. Adverse comment is made by Mayhew upon the record of Kelleher and Grimm in rebuttal in that it at-

tempts to show that this invention was in public use in 1890 on Compton Heights.

I am at a loss to account for the conduct of Kelleher and Grimm in applying for a patent in view of these operations of Major.

Counsel for Kelleher and Grimm contends that the use of the templets and overgear at the curb and gutter works on Compton Heights is the same idea embraced in the Mayhew patent, the only difference being the curve given to the overgear to correspond with the shape of the curb and gutter. They say that the case turns wholly on the use of the overgear and templet, whether for pavement or for curb and gutter work. They say, again, that the combination of the overgear and templet is the gist of the invention described in Mayhew's patent and Kelleher and Grimm's caveat and application, and again as follows:

> In view of the testimony of Major and Friedmann regarding the use of a device similar to the one in controversy at Compton Heights in June and July, 1890, it may be that this Office will hold that there is no novelty in the invention at issue, in which case, as we have shown that both parties stand before this Office as if both applications were still pending, and Mayhew's patent having been issued without notice of the caveat filed by Kelleher and Grimm the preceding year, should the decision be that neither party to this interference is entitled to claim the subject-matter of the issue, perhaps substantial justice will be done.

This argument is made regarding testimony in rebuttal, and whatever its effect may be upon the patent to Mayhew it appears to dispose of the case of Kelleher and Grimm, for it must be held that, as between the Major apparatus, a blade and overgear for constructing granitoid sidewalks in blocks is not materially different in a patentable sense from the curved blade and curved overgear to conform to the surface of a curb and gutter. Kelleher and Grimm having shown that they were working on McPherson avenue in 1891 for Von Pfuhl, under Major's observation, where a joint-iron was used, and having shown that Von Pfuhl, at Major's suggestion, had six joint-irons made (called "blades" or "templets" in other parts of the record) and overgears cut out of one piece of wood used upon sidewalks, though not upon curb and gutter work, it follows that Kelleher and Grimm when they say that the subject-matter of this issue was conceived by them in January following can mean no more than that they thought of using a device not original with them upon work presenting a different surface, but in other respects the same as that upon which they had themselves worked under Von Pfuhl. Thus Kelleher and Grimm show in their own behalf that they are not original in this alleged improvement, and if not original they cannot have an award of priority in their favor.

What the effect of this record and this finding may be upon the patent to Mayhew need not be considered, for the Office has no jurisdiction over it. Nor is it necessary to determine what Mayhew was doing in 1891. I do not pass upon the question whether this improvement is patentable.

Mayhew's patent stands presumably valid. It is entitled in the courts to be treated as valid until shown to be invalid. It is entitled to the same treatment in this Office.

It was admitted by counsel for Kelleher and Grimm at the argument that the first issue—the method involved in the use of this apparatus—is not patentable.

Upon the second issue it is considered that Kelleher and Grimm have shown that the alleged improvement was not original with them, and this might be treated as the sole ground of a decision against them; but other questions have been much discussed and the summary of my conclusions may properly be given upon them. So it is further considered that Kelleher and Grimm have not made out such a clear case as would warrant the issue of a second patent for the same invention to them in view of the patent to Mayhew; that Mayhew appears to be the first to conceive; that he appears to have put the invention into practical use, though at an interval of two years and four months after its first conception; that there is much doubt, in view of the use of the wood overgear and wood forming-boxes for blocks of pavement, whether Mayhew's wood overgear and blades made in 1890 were not the completion of the inventive act, seeing that they were of full size and were adapted to be used for the actual formation of blocks of granitoid pavement according to the process described, and that it has not been clearly shown that Mayhew, in view of his poverty, while falling short of extreme diligence, was not, nevertheless, excusable for going no further until he should be in control of contract work of his own in which to apply it.

There is error in the decision of the Examiners-in-Chief in awarding priority to Kelleher and Grimm, and it is reversed.

BOSTAD AND KRABOL *v.* JOHNSON.

Decided July 6, 1895.

REHEARING—NEW TRIAL—NEWLY-DISCOVERED EVIDENCE.

A petition for a new trial, brought as a motion for rehearing, dismissed, it appearing that the evidence was not newly discovered, much less that it might not have been discovered prior to the previous hearing by the exercise of reasonable diligence. (*Spill* v. *Celluloid Co.*, 22 Blatchf., 441, 459; *Giant Powder Co.* v. *California Powder Co.*, 18 O. G., 1339; 5 Fed. Rep., 197, 201.)

MOTION for rehearing.

BASE FOR FURNITURE.

Application of Christian Bostad and Olaus Krabol filed February 1, 1894, No. 498,726. Application of Andrew C. Johnson filed October 26, 1893, No. 489,237.

Mr. Louis K. Gillson for Bostad and Krabol.
Mr. A. O. Behel for Johnson.

SEYMOUR, *Commissioner:*

This motion for rehearing is essentially a petition for a new trial upon the ground of newly-discovered evidence. The evidence upon which the motion is based is that of Krabol, one of the parties, as given in another interference,—*Krabol* v. *Stair* v. *Woodruff*, No. 16,738,—and also the testimony of Bostad, another party in the same interference, and the testimony of both these witnesses is set forth in the motion at length.

But it does not appear that the evidence is newly discovered, much less that it might not have been discovered by the exercise of reasonable diligence. It is well established that in a petition like the present one it must be shown that the petitioner could not, with reasonable diligence, have obtained, prior to the previous hearing, the testimony which he now seeks

to adduce. (*Spill v. The Celluloid Manufacturing Company*, 22 Blatchf., 441, 459; *Giant Powder Company v. California Vigorit Powder Company*, 18 O. G., 1339; 5 Fed. Rep., 197, 201.)

The petition must, therefore, be dismissed, and it is so ordered.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court of Appeals—First Circuit.

ANDREWS *et al. v.* THUM *et al.*

Decided February 21, 1895.

1. THUM—STICKY FLY-PAPER—VOID.
   The claim of Letters Patent No. 278,294, granted May 22, 1883, to Otto Thum, for sticky fly-paper, construed and *Held* void.
2. SAME—SAME—SAME.
   Claim 3 of Letters Patent No. 305,118, granted September 16, 1884, to Otto Thum, for manufacture of fly-paper, construed and *Held* to be void.
3. PATENTABILITY—ARTICLE OF MANUFACTURE.
   It is not sufficient that the patentee has produced a better or more merchantable article, but there must be some invention in the article itself.

APPEAL from the Circuit Court of the United States for the District of Massachusetts.

STATEMENT OF THE CASE.

This was a bill by Otto and William Thum against John A. Andrews, William Y. Wadleigh, B. F. Bullard, and William A. Dole, trading under the name of John A. Andrews & Co., for alleged infringement of two patents relating to fly-paper. The circuit court rendered a decree for complainants (32 O. G., 1356; 53 Fed. Rep., 84) and defendants appealed. On June 23, 1894, a motion made by the appellees to dismiss the appeal was denied by this court. (12 C. C. A., 77; 64 Fed. Rep., 149.) The case is now heard upon the merits.

Before COLT, WEBB, and ALDRICH, Judges.

Mr. John M. Perkins for the appellants.
Mr. Thomas J. Johnston for the appellees.

COLT, *J.:*

Since the decision rendered June 23, 1894, denying the motion to dismiss this appeal, the objections to the validity of the appeal now urged by the appellees are not open, and the case comes before the court at this time for decision on its merits.

The Peck patent, No. 125,326, which is printed in the record, cannot be considered by the court, for the reason that it was not set up in the answer and was first introduced as evidence in the court below in support of a motion for rehearing and to reopen the case, which was denied.

This suit was brought for the infringement of Letters Patent No. 278,294, dated May 22, 1883, and of Letters Patent No. 305,118, dated September 16, 1884, both issued to Otto Thum. These patents relate to fly-paper.

Patent No. 305,118 is for an improved method of applying the adhesive compound to the paper by means of rollers and for the improved article produced thereby. The suit is not pressed as to the first and second claims, which relate to the improved method, but only as to the third claim, for the product. This claim reads as follows:

> 3. As a new article of manufacture, the fly-paper with adhesive faces placed together, so as to be packed without folding, and adapted to be separated when ready for use, substantially as described.

We are unable to discover anything patentable in this claim, considered by itself, or apart from the mechanical means set forth in the patent by which the article is produced. There certainly can be no invention in placing two sheets of fly-paper together, with their sticky surfaces face to face, although in this form they may be packed without folding and may be readily separated for use. The invention, if any, in this patent must reside in the mechanical means by which this was effected, and it is not shown that the defendants have made use of these means.

Patent No. 278,294 is for an improvement in fly-paper and contains a single claim, as follows:

> A sheet of fly-paper partially covered with a sticky composition, the latter being surrounded with a band or margin of less but still slightly adhesive material.

The specification says:

> My invention relates to an improved method of making and packing sticky fly-paper; and its object is to prevent the running and spreading of the adhesive coating under any circumstances, so that large quantities of the paper may be packed and transported without deterioration, and kept on hand. The invention consists in surrounding the adhesive coating with material of such a nature that it will adhere slightly to an adjoining sheet, but will separate readily for use, and when the sheets are in contact will prevent the adhesive coating from spreading.

The only new result which seems to have been accomplished by this method of making fly-paper is the production of an article which can be packed in large quantities and kept on hand without deterioration. It is undoubtedly true that this method produces a very merchantable article; but the question arises whether its adoption called for the exercise of invention, in view of what was old and well known. It is not contended that there was anything new in the adhesive substances themselves or in the mechanical means by which they are applied; but the simple question is whether there was any invention in coating the body of a sheet of paper with an adhesive composition and surrounding it with a border of less adhesive material. If the patentee had been the first to apply two compositions, one of which was more adhesive than the other or one of which was adhesive and the other not, to a single sheet of paper, and this accomplished a new and useful result, it might, perhaps, be said that it involved invention in the eye of the patent law; but this can hardly be true if we find that substantially all this was old.

In the preparation of medicinal plasters it was common to spread upon a sheet of leather or paper a medicated composition, either slightly or not at all adhesive, and to surround it with a margin of more adhesive substance, intended to secure the plaster to the surface on which it was to be applied. Thus the use of two substances, the one slightly adhesive and the other readily adhesive, upon the same sheet of leather or paper was common long before the date of the patent. To apply this old method in the preparation of fly-paper only called for the transposition of these materials. All the patentee did was to reverse the order and put the less adhesive material on the outside or margin and the more adhesive in the middle of the sheet. Such a rearrangement required no invention, but would suggest itself to any one skilled in the art. It is not sufficient that the patentee may

have produced a better and more merchantable article, but there must have been something novel in the means which were employed in its production. What constitutes patentability in this class of cases is clearly expressed by the Supreme Court in the recent case of *Knapp* v. *Morss*, (65 O. G., 1593; 150 U. S., 221; 14 Sup. Ct., 81.) On page 228, 150 U. S., and page 81, 14 Sup. Ct., the Court says:

> Tested by these authorities, the validity of the patent in question must be ascertained, not from a consideration of the purposes sought to be accomplished, but of the means pointed out for the attainment thereof; and if such means, adapted to effect the desired results, do not involve invention, they can derive no aid or support from the end which was sought to be secured. All that Hall did was to adapt the application of old devices to a new use, and this involved hardly more than mechanical skill, as was ruled in *Avon* v. *Railway Co.*, (39 O. G., 1355; 132 U. S., 85; 10 Sup. Ct., 24,) where it was said: "The same device employed by him [the patentee] existed in earlier patents. All that he did was to adapt them to the special purpose to which he contemplated their application, by making modifications which did not require invention, but only the exercise of ordinary mechanical skill, and his right to a patent must rest upon the novelty of the means he contrived to carry his idea into practical application."

For these reasons Patent No. 278,294 and the third claim of Patent No. 305,118 must be held to be void for want of patentable novelty.

The decree of the circuit court is reversed and the cause remanded, with directions to dismiss the bill, with costs.

U. S. Circuit Court of Appeals—Sixth Circuit.

KINZEL *v.* LUTTRELL BRICK COMPANY *et al.*

Decided May 7, 1895.

1. KINZEL—BRICK-KILNS—NON-INFRINGEMENT.
   The claim of Letters Patent No. 471,769, granted March 29, 1892, to John C. Kinzel, for brick-kilns, construed and *Held* not infringed.
2. INFRINGEMENT—WHAT CONSTITUTES—MATERIAL ELEMENTS.
   To constitute infringement of a combination the alleged infringing device must include every element of the combination as claimed. The fact that the omitted element is not of the essence of the invention is immaterial.

APPEAL from the Circuit Court of the United States for the Eastern District of Tennessee.

STATEMENT OF THE CASE.

This was a bill by John C. Kinzel against the Luttrell Brick Company, M. R. Grace, F. J. Leeland, and E. A. Hamilton for the alleged infringement of Letters Patent No. 471,769, issued March 29, 1892, to the complainant for an improvement in brick-kilns. The circuit court dismissed the bill on the ground that the patent was invalid because of prior public use authorized and encouraged by the complainant for more than two years previous to filing his application for a patent. Defendants appealed.

This was a bill to restrain the infringement of a patent. The complainant, the patentee, was John C. Kinzel, of Knoxville, Tenn. The patent was granted the 29th of March, 1892, and was for a brick-kiln in which the brick are both dried and burned by coal fire and the usual preliminary drying by wood or coke fire is dispensed with. The patent describes the kiln as follows: The base or floor of the kiln is constructed of dirt suitably banked up above the level of the ground. At the sides of the kiln are two brick walls seven or eight feet in height. Through these walls are openings into furnace-pits. The pits are lined with brick walls, which extend upward to the level of the floor. There is a grate-bar in each pit at least one foot below the level of the base of the kiln, and below the grate-bars are the ash-pits. There are doors closing the openings into the furnace-pits, through which the furnace may be fed, and openings are also provided to which access may be had to the ash-pits. The furnaces extend inwardly from both walls toward the longitudinal center of the kiln and may be of any desired depth or length. The brick to be burned are built up between the side walls in the usual manner, tunnels or flues being formed transversely in the kiln directly over the furnaces. Two furnaces are arranged opposite each other, so that one tunnel or flue will serve to connect two of the furnaces. In piling the brick in the kiln the individual bricks are so arranged in relation to each other as to admit the passage of the flame and combustion in the usual way. The brick, having been piled within the kiln, are surrounded by a casing consisting of a four-inch wall slanting toward the top in two steps or terraces. The lower part of the casing is made to rest upon the side walls. The ends of the kiln are banked up with dirt, kept in place by means of planks and braces, and provided with a cap, also constructed of planks. When the kiln is built according to the foregoing description, it may be sweated or dried out with soft slack coal, which is much less expensive and requires much less attention than either wood or coke. A kiln constructed in accordance with this invention, it is said, may be burned in from seventy-five to eighty hours, while with other kilns it takes nearly twice that time. The fires may be raked and the clinkers removed during burning without opening the furnace-doors, thus preventing cold air from entering and damaging the brick while in the kiln. This is owing to the arrangement of the grate-bars, say, one foot below the floor-level of the kiln, as herein described, thus giving space for raking the fires without the necessity of opening the doors. The claim of the patentee is as follows:

> In a brick-kiln, the combination of the bed or base, the other independent side walls having front openings for the furnace-doors and ash-pits, parallel pairs of open furnaces extending inwardly from said front openings in the side walls and opening their entire length directly into the space inclosed by said walls and the body of the kiln, the casing composed of upwardly-sloping terraces supported upon said side walls, the end walls, composed of dirt, banked up and overlapping the lower edges of the ends of the supported terraces and an inclosing covering and cap composed of closely-laid planking completely covering the outer faces of said end walls and curved over and capping the top of the same and meeting the faces of the overlapping terraces, substantially as set forth.

Before TAFT, LURTON, and SEVERNS, District Judges.

Messrs. Ingersoll & Peyton for the appellant.
Messrs. Cooper & Davis for the appellees.

TAFT, *J.*, (after stating the facts:)

The answer below denied infringement. It is conceded by the counsel, as it was by the plaintiff upon the stand, that the defendants do not use the short side walls, the casing of upward-sloping terraces, supported on the side walls or the end walls, composed of dirt, or the closely-laid plank covering or the plank-capping. The claim of the patent includes all these things as necessary elements of the combination stated. It is well settled that, in order to constitute the infringement of a combination, it must appear that the alleged infringing device includes every element of the combination as claimed. (*Electric Signal Co.* v. *Hall Ry., etc., Co.*, 31 O. G., 515; 114 U. S., 87; 5 Sup. Ct., 1069; *Voss* v. *Fisher*, 30 O. G., 1096; 113 U. S., 213; 5 Sup. Ct., 511; *Gage* v. *Herring*, 23 O. G., 419; 107 U. S., 640; 2 Sup. Ct., 819; *Water-Meter Co.* v. *Desper*, 101 U. S., 332; *Dunbar* v. *Myers*, 11 O. G., 35; 94 U. S., 187; *Reedy* v. *Scott*, 7 O. G., 463; 23 Wall., 352, and cases cited.)

It is immaterial that the elements claimed in the patent of plaintiff and omitted in the defendants' device are not of the essence of the real invention.

In *Water-Meter Co.* v. *Desper* (101 U. S., 332) Mr. Justice Bradley, speaking for the Supreme Court, said:

> It may be observed, before concluding this opinion, that the courts of this country cannot always indulge the same latitude which is exercised by English judges in determining what parts of a machine are or are not material. Our law requires the patentee to specify particularly what he claims to be new, and, if he claims a combination of certain elements or parts, we cannot declare that any one of these elements is immaterial. The patentee makes them all material by the restricted form of his claim.

The result is that no infringement was made out. Therefore no injunction should have been issued. The court below reached the same result on another ground, which we do not find it necessary to consider.

The decree of the court below is affirmed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[*BY AUTHORITY OF CONGRESS.*]

VOL. 72.—No. 7. TUESDAY, AUGUST 13, 1895. PRICE—$5 per year.

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The Official Gazette.

THE OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $10; single copies, 10 cents, if mailed to foreign countries 10 cents additional for postage; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Periodicals.

The following journals containing indexes to periodical literature may be found on file in the reading room of the scientific library:

Engineering Review, London, a monthly synoptical index of periodical literature in the English, French, and German languages, including hydraulic, railway, mechanical, electrical, mining, metallurgical, marine, military, and gas engineering.

Abstracts of all the principal articles on "Physics" published in the American and Continental journals since January 1, 1895, will be found in the *Proceedings of the Physical Society of London.*

Electrical World, New York, a weekly digest of electrical articles.

Journal of the Association of Engineering Societies, Chicago, a monthly synoptical index of civil-engineering literature, mostly American.

Engineering Magazine, New York, a monthly title-index of engineering articles in the English language only.

Women Inventors.

The Patent Office has published and has for sale a volume containing a list of women inventors to whom patents have been granted by the United States from 1790 to July 1, 1888. 44 pages. Paper covers, 50 cents.

An Appendix to the above, covering the period from July 1, 1888, to October 1, 1892, has been published, and is now for sale. 18 pages. Paper covers, 25 cents.

Oaths of Applicants in Foreign Countries.

It is hereby directed that oaths accompanying applications for patents made within the following-named foreign countries must be taken before a minister, charg6 d'affaires, consul, or commercial agent holding commission under the Government of the United States:

Austria-Hungary.	Netherlands.
Argentine Republic.	Norway.
Belgium.	Peru.
Brazil.	Portugal.
Costa Rica.	Russia.
Denmark.	San Salvador.
Haiti.	Servia.
Honduras.	Sweden.
Italy.	Switzerland.
Mexico.	

Applications filed in this Office presenting oaths not executed in compliance with this order will be treated as incomplete.

Amendment to the Rules of Practice

The following regulations for the conduct of proceedings in the Patent Office are established:

65. An applicant will be considered to persist in his claim for a patent without altering his specification in case he fail to act in prosecution of the same for six months after the Office action thereon, and thereupon the Examiner will make a re-examination of the case.

134. In appealable cases in which no limit of appeal is fixed, no appeal will be entertained by any tribunal in the Office unless taken within six months from the action which puts the case in condition for appeal, unless it be shown to the satisfaction of the Commissioner that such delay was unavoidable.

68. In every case pending before the Office more than five years, in which the record raises the presumption that there have been intentional delays in prosecution, the Examiner may require the applicant to show cause why the case was not more rapidly prosecuted, and at the hearing thereon, or upon failure of the applicant to appear, the Examiner will determine, under all the circumstances of the case, whether there have been intentional and unreasonable delays in prosecution, and upon finding the fact to be so, he will reject the case for that reason. Present Rules 65, 69, and 134 are repealed, and present Rule 68 is renumbered 69.

The foregoing rules will be in effect on and after April 15, 1895, and will affect pending cases as though the last Office action were upon said date.

Publishers' Catalogues.

This Office would be pleased to receive from manufacturers and publishers such catalogues, circulars, price-lists, or other advertisements relating to the sciences and mechanical arts as are published by them for gratuitous distribution; but notice is hereby given such manufacturers or dealers who feel disposed to send their publications that not less than three copies should be forwarded in order that the subjects may be properly indexed, classified, and subclassified in the Scientific Library for convenient and ready reference.

Issue of August 13, 1895.

Patents	371—No. 544,276 to No. 544,646, inclusive.
Designs	40—No. 24,532 to No. 24,571, inclusive.
Trade-Marks	40—No. 26,914 to No. 26,953, inclusive.
Labels	None.
Prints	None.
Reissues	None.
Total issue	451

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Prints.	States.	Patents and Designs.	Trade-Marks and Prints.
Alabama	2	....	New Hampshire	1	1
Arizona Territory	....	....	New Jersey	16	....
Arkansas	....	....	New Mexico Ter.	....	....
California	9	1	New York	69	9
Colorado	2	....	North Carolina	1	....
Connecticut	8	1	North Dakota	2	....
Delaware	....	....	Ohio	28	2
District of Columbia	3	....	Oklahoma Ter.	....	....
Florida	1	....	Oregon	....	....
Georgia	....	....	Pennsylvania	43	4
Idaho	....	....	Rhode Island	2	....
Illinois	55	4	South Carolina	....	....
Indian Territory	....	....	South Dakota	1	....
Indiana	10	....	Tennessee	2	....
Iowa	3	....	Texas	2	....
Kansas	4	....	Utah Territory	....	....
Kentucky	6	1	Vermont	1	....
Louisiana	2	....	Virginia	6	....
Maine	5	....	Washington	1	....
Maryland	1	2	West Virginia	3	....
Massachusetts	31	4	Wisconsin	12	1
Michigan	14	....	Wyoming	1	....
Minnesota	4	3	U. S. Army	....	....
Mississippi	....	....	U. S. Navy	1	....
Missouri	18	1	Total to citizens of the United States	373	34
Montana	1	....			
Nebraska	2	....			
Nevada	....	....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentine Republic	....	....	Japan	....	....
Austria-Hungary	2	....	Mexico	1	....
Barbadoes	....	....	Netherlands	....	....
Belgium	....	....	Newfoundland	....	....
Bermuda	....	....	New South Wales	....	....
Brazil	....	....	New Zealand	....	....
Canada	7	....	Norway	....	....
Chile, Republic of	....	....	Porto Rico	1	....
Colombia	....	....	Portugal	....	....
Cuba	....	....	Queensland	....	....
Denmark	....	....	Roumania	....	....
Ecuador	....	....	Russia	....	....
Egypt	....	....	Scotland	....	1
England	10	2	South Australia	....	....
Finland	....	....	Spain	....	....
France	4	....	Sweden	2	....
Germany	10	1	Switzerland	....	1
Greece	....	....	Venezuela	....	....
Guatemala	....	....	Victoria	1	....
Hawaii	....	....	West Australia	....	....
India	....	1			
Ireland	....	....	Total to citizens of foreign countries	38	6
Italy	....	....			

APPLICATIONS UNDER EXAMINATION.

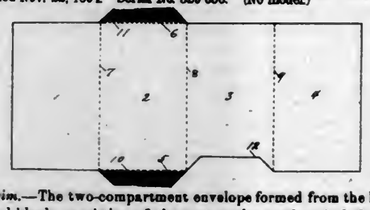
Condition at Close of Business August 6, 1895.

Division No.	Subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears.—Under one month.			
13	Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	July 15	Aug. 5	48
3	Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	July 10	Aug. 5	72
15	Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	July 8	Aug. 5	60
11	Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	July 8	Aug. 2	115
31	Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	July 13	Aug. 1	55
14	Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	July 8	Aug. 1	75
16	Telegraphy, Telephony, Electric Lighting and Signaling.	July 6	Aug. 1	108
33	Instruments of Precision, Acoustics, etc.	July 8	July 31	107
12	Mechanical Engineering, Stores-Service, etc.	July 22	July 29	123
18	Steam-Engineering, etc.	July 8	July 29	75
17	Paper-Manufactures and Printing	July	July 29	124
34	Railway Brakes, Draft Appliances, and Rolling-Stock.	July 8	July 29	139
8	Furniture, Beds, Store Furniture, etc.	July 8	July 29	209
4	Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	July 27	July 27	67
10	Carriages and Wagons	July 9	July 27	124
20	Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	July 8	July 27	106
21	Textiles, etc.	July 8	July 23	99
27	Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	July 8	July 23	138
35	Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone-Working, Vegetable Cutters and Crushers.	July 9	July 22	171
29	Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	July 8	July 22	99
32	Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels, etc.	July 8	July 20	247
22	Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	July 8	July 16	131
6	Chemistry, Explosives, Medicines, Fertilisers, Preserving, Photography, Sugar and Salt, Surgery.	July 6	July 15	161
26	Pneumatics, Refrigeration, Air and Gas Engines, etc.	July 6	July 15	198
7	Harvesters, Games and Toys, and Velocipedes.	July 8	July 13	396
2	Farm Stock, Products, etc.	July 9	July 10	178
5	Fine Arts, Stationery, Book-Binding, Music, etc.	July 8	July 10	189
30	Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, Optics.	July 8	July 10	204
24	Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	July 9	July 8	193
28	Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	July 6	July 8	106
19	Stoves and Furnaces	July 6	July 8	243
	Between one and two months.			
1	Tillage and Fences	July 1	July 8	253
9	Hydraulics, Fire-Extinguishers, etc.	July 1	July 6	349
	Total number of applications awaiting action			4,962
	Under one month in arrears.			
	Designs	July 29	July 30	38
	Trade-Marks	Aug. 3	Aug. 5	18

PATENTS

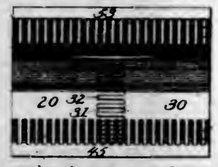
GRANTED AUGUST 13, 1895.

544,276. TWO-COMPARTMENT ENVELOPE. CHARLES D. ALBERT, Chicago, Ill., assignor of one-half to Henry B. Lind, same place. Filed Nov. 22, 1894. Serial No. 529'658. (No model.)



Claim.—The two-compartment envelope formed from the herein described blank, consisting of the rectangular sections 1, 2, 3 and 4, section 2 being provided with the adhesive flaps 5 and 6, section 3 being provided with the incision 12, the blank being folded so that section 4 will be superposed upon section 3 and sections 3 and 4 upon section 2, the adhesive flap 6 being secured to section 3 and the adhesive flap 5 lying within the walls of the incision 12 and being secured to section 4, substantially as described.

544,277. SAFETY-ENVELOPE. OREN ANDREW, Richmond, Va., assignor of one-half to John N. Gorman and Ralph D. Williams, same place. Filed June 29, 1895. Serial No. 554,403. (No model.)



Claim.—1. An envelope having an overlying flap provided with a series of slits adjacent to its end, said slits forming a series of parallel detective tongues which are united at their inner ends with the body of the flap and at their outer ends with a border strip, said border strip being adapted to be torn off after sealing the outer ends of the detective strips being independent of one another.

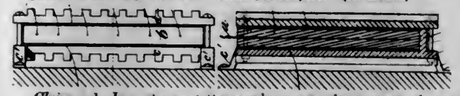
2. An envelope having an overlying flap provided with a series of parallel slits forming detective tongues, said tongues being connected at their inner ends with the body of the flap and at their outer ends with the border strip thereof, said border strip being partially separated from the flap at the outer ends of said tongues whereby it may be readily severed from the flap after the latter is sealed, leaving the outer ends of the detective tongues independent of one another.

3. An envelope having an overlying flap provided with a series of slits forming detective tongues, said detective tongues being united at their inner ends with the body of the flap and at their outer ends with the border strip thereof, the slitted portion of the flap being provided with gum and the border strip being ungummed and partially severed from the flap along the ends of the detective tongues for removal.

4. A safety envelope having an overlying flap provided with a series of slits forming detective tongues, said tongues being crimped transversely and united at their inner ends to the body of the flap and at their outer ends to a border strip thereof, said flap being adapted to be sealed along the tongued portion and its border strip being ungummed and partially severed and adapted to be torn off after sealing to leave said detective tongues independent of each other.

5. An envelope in which both an end and a side flap are provided at their edges with a series of detective tongues independent of one another at their outer ends and all sealed to the back, said envelope having a final sealing flap provided with slits and intermediate detective tongues and with a detachable border strip connecting the outer ends of said tongues.

544,278. ELECTRIC RHEOSTAT. FRANCIS B. BADT, Chicago, Ill., assignor to the Siemens & Halske Electric Company of America, same place. Filed May 31, 1895. Serial No. 551,138. (No model.)

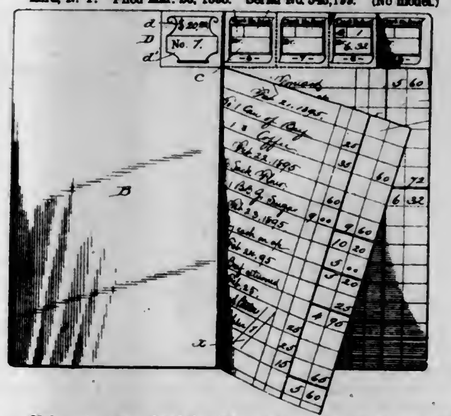


Claim.—1. In a rheostat the combination with a glass plate, of electrical resistance conductors embedded in said plate and extended from the plate at intervals for connection with the contact terminals of the rheostat, and metallic plates between which said glass plate is adapted to be clamped, and supported, substantially as described.

2. In a rheostat, the combination with a glass plate, of electrical conductors or resistance coils embedded or molded in said plate, metallic radiating plates upon the opposite sides of said glass plate, and a layer of yielding material interposed between said glass plate and each of said radiating plates, to permit the expansion of the glass; substantially as described.

3. In a rheostat, the combination with the glass plate *b*, of the electrical conductors or resistance coils *a a*, embedded or molded therein, the radiating plate *c* carrying the shelf c^3 upon which said glass plate is adapted to rest, radiating plate *d* between which and the radiating plate *c* said glass plate is clamped, and the layers *f* and *g* of yielding, heat-conductive material interposed between said glass plate and said radiating plates respectively; substantially as described.

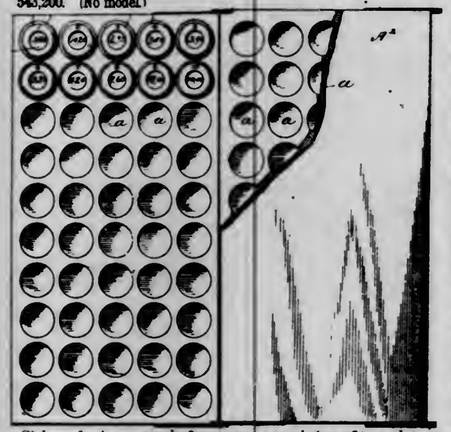
544,279. PASS-BOOK. URIAH G. BECK and WARREN F. BECK, Elmira, N. Y. Filed Mar. 26, 1895. Serial No. 543,199. (No model.)



Claim.—1. A pass book having a series of pass leaves provided with a series of consecutively numbered coupons detachably connected to their upper ends and detachably connected with each other, said book having on the page opposite the first pass leaf in line with the coupons and beyond the edges of the pass leaves an inclosed space approximately of the same size as one of the coupons and containing suitable headings or prefixes for entries, substantially as and for the purpose described.

2. A pass book having a series of leaves provided with a series of detachable, consecutively numbered coupons at their upper ends, each coupon having spaces inclosed by printed lines and separated by dividing lines and having suitable headings, said book having at the top of the page, opposite the first pass leaf and in line with and adjacent to the coupons above the edges of the pass leaves, blank spaces inclosed by lines and of approximately the same size as one of the coupons and containing suitable headings or prefixes for entries, substantially as and for the purpose described.

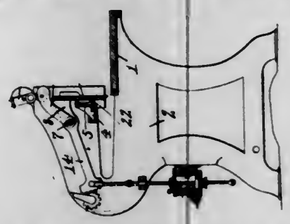
544,280. RECEPTACLE FOR HOLDING COUPONS. URIAH G. BECK and WARREN F. BECK, Elmira, N. Y. Filed Mar. 26, 1895. Serial No. 543,200. (No model.)



Claim.—1. A receptacle for coupons, consisting of two plates or slabs hinged together so as to fold one upon the other, each formed with a series of recesses, around the top of each of which is secured a screw threaded ring, to which is removably secured a screw-threaded cap having a large central opening through which coupons or tickets may be inserted, and a plate or disk within the cell beneath the cap and pressed toward the cap by a spring, the fixtures of said recesses or cells being close to the body of the slabs or plates to permit of the two sections being folded together, substantially as described.

2. The combination of a series of three or more plates or slabs provided with a series of cells or compartments having caps or covers arranged around and projecting a short distance above the cells, and hinges for connecting the plates and slabs together, having laterally projecting lugs for holding the plates apart to accommodate the fixtures of the cells, the lugs of two plates being longer than those connecting other plates in order that the plates may be folded and lie flat upon each other to occupy the least possible space.

544,281. METAL-SHEARING MACHINE. CHARLES A. BERTSCH, Cambridge City, Ind. Filed Jan. 24, 1895. Serial No. 535,998. (No model.)



Claim.—1. In a shearing machine, the combination, substantially as set forth, of a table, lower shear blade, housings, a gate bearing the upper shear blade, mechanism for operating the shear blade, a bridgetree extending from housing to housing to the rear of the gate, a roller carried by said bridge tree and bearing against the rear lower portion of the gate, and mechanism, substantially as described, for adjusting said roller forwardly.

2. In a shearing machine, the combination, substantially as set forth, of a table bearing a lower shear blade, housings, a gate mounted therein and bearing an upper shear blade, a rock-shaft journaled in the housings to the rear of and parallel with the gate, forwardly projecting arms on said shaft and engaging said gate, a power-arm on said shaft, and mechanism, substantially as set forth, for giving motion to said power arm.

3. In a shearing machine, the combination, substantially as set forth, of a table bearing a lower shear blade, housings, a gate guided thereby and bearing an upper shear blade, a rock-shaft mounted in the housings to the rear of and parallel with the gate, an arm fast on said rock-shaft and engaging the gate, a second arm clutched to said rock-shaft and engaging the gate, a power arm fast on said rock-shaft, and means, substantially as described, for giving motion to said power arm.

4. In a shearing machine, the combination, substantially as set forth, of a table bearing a lower shear blade, housings, a gate guided thereby and bearing an upper shear blade, actuating arms engaging said gate by teeth having convex flanks and faces, and mechanism, substantially as set forth, for giving motion to said arms.

5. In a shearing machine, the combination, substantially as set forth, of a table bearing a lower shear blade, housings, a gate guided thereby and bearing an upper shear blade, a pivoted arm engaging said gate, mechanism, substantially as set forth, for giving motion to said pivoted arm, a spring having its upper end supported by the framing of the machine, and a flexible connection passing from the lower end of said spring to said pivoted arm and under a part of said gate.

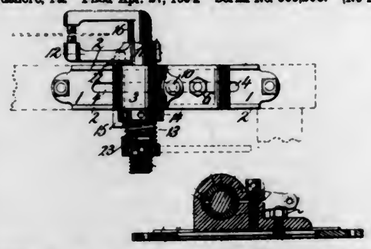
6. In a shearing machine, the combination, substantially as set forth, of a table bearing a lower shear blade, housings, a gate guided thereby and bearing an upper shear blade, a rock-shaft mounted in the housings to the rear of and parallel with the gate, arms extending forwardly from said rock-shaft into engagement with the gate, a power arm projecting from the rock shaft, and a steam cylinder supported by the framing of the machine and having its piston rod connected with said power arm.

7. In a shearing machine, the combination, substantially as set forth, of a table bearing a lower shear blade, housings, a gate guided thereby and bearing an upper shear blade, a rock shaft mounted in the housings to the rear of and parallel with the gate, arms on said rock-shaft and engaging the gate, a power arm projecting from said rock shaft and having a segment of teeth, and a pinion mounted on a housing and having a crank and engaging said segment of teeth.

8. In a shearing machine, the combination, substantially as set forth, of a table bearing a lower shear blade, housings, a gate guided thereby, a rock-shaft mounted in the housings to the rear of and parallel with the gate, arms upon said rock shaft engaging the gate, an arm upon said rock shaft projecting forwardly over the gate near one end of the gate, and a cam lever mounted on one of the housings and engaging said forwardly projecting lever.

9. In a shearing machine, the combination, substantially as set forth, of a table bearing a lower shear blade, housings, a gate guided thereby and provided upon its rear face near each end with rack teeth, a shear blade secured to said gate below and with its cutting edge in the vertical plane of the pitch line of said rack teeth, arms pivoted to the housings and having segments of teeth engaging said rack teeth, and means for giving motion to said arms.

544,282. SAW-GUIDE. HARRY N. BIGGER and LEROY A. BIGGER, Dushore, Pa. Filed Apr. 27, 1894. Serial No. 509,260. (No model.)



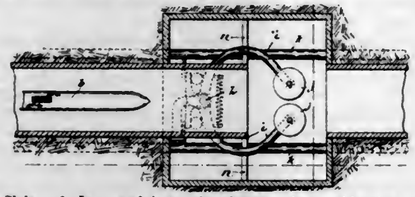
Claim.—1. In a saw guide, the combination with the guide arm provided with a split sleeve, of a second guide arm provided with a shank fitting in the split sleeve, and means for clamping the shank and sleeve together, substantially as and for the purposes described.

2. In a saw guide, the combination of a carrier-box having an extension on one side lying above the lower portion of the box with a space between the lower portion and said extension to render a portion of the box elastic or compressible, guide arms having one a split sleeve and the other a shank passing through said box, and means acting on said side extension of the carrier-box to compress the same for the purpose of clamping the sleeve and shank of the guide arms in the box, substantially as and for the purposes described.

3. In a saw guide, the combination of the guide arm formed with an expansible sleeve having a portion thereof threaded, a second guide arm having a shank passing through said sleeve and held therein by contraction of said sleeve, and a nut working in the threads of the sleeve and held against movement lengthwise of the sleeve for the purpose of moving longitudinally both the shank and the sleeve by turning of the nut, substantially as and for the purposes described.

4. In a saw guide, the combination of the carrier box formed with a slotted projection or flange, the guide arm formed with a threaded sleeve passed through the carrier box, the nut fitted to the threaded portion of said sleeve and working in the slot of said projection or flange whereby the nut is held against movement longitudinally of said sleeve, the guide arm provided with a threaded shank passing through said sleeve, and the half-lock nut swiveled to said sleeve and engaging the threads of said shank, substantially as and for the purposes described.

544,283. CONDUIT FOR ELECTRIC CONDUCTORS FOR RAILWAYS. FRANK L. CAPPS, Newark, N. J. Filed Sept. 18, 1894. Serial No. 523,317. (No model.)



Claim.—1. In a conduit for electric cars, the combination with pairs of separable arms having extensions carrying terminals adapted to be brought into electrical connection, of a compressible protector covering said terminals, substantially as set forth.

2. In a conduit for electric cars, the combination with a slotted conduit box or wire and circuit connections, *k*, a pair of pivoted terminal carriers disposed at intervals in said conduit iron adapted to be operated by a moving shoe connected with the car to bring the terminals into electrical connection, of elastic protectors arranged within said conduit iron and extending over the terminals, substantially as set forth.

3. In a conduit for electric cars, normally open electrical contact devices having arms extending upward into the plane of the horizontally movable car shoe, said arms being adapted to be spread apart by said shoe, and having terminals adapted to be closed by the operation of said arms, substantially as set forth.

4. The combination with the conduit irons forming a slotted passage for the car shoe, of man holes arranged at substantially uniform distances apart, the said irons projecting into said holes and forming bearings for a bracket, *g*, carrying a shaft, *h*, shear-like arms pivoted on said shaft and extending into the plane of the said shoe passage and carrying terminals adapted to be brought into contact by the operation of said arms, substantially as set forth.

5. The combination with the conduit iron forming a slotted passage for the car shoe, of man holes arranged at substantially uniform distances apart, shear-like arms arranged at the said man holes and extending into the plane of the said shoe passage to be operated by the moving shoe, the extensions of said arms, opposite those engaged by the shoe, carrying electric circuit terminals which are changed in relation by the shoe engagement to affect the circuit, substantially as set forth.

6. The combination with a slotted conduit, having at intervals therein brackets, *g*, with vertical shafts, *h*, of separable arms pivoted on said shaft but insulated therefrom and between which the car shoe may pass, and produce an effective operation of said arms, and terminals of an electric circuit adapted to be brought into electrical contact by the operation of said arms, substantially as set forth.

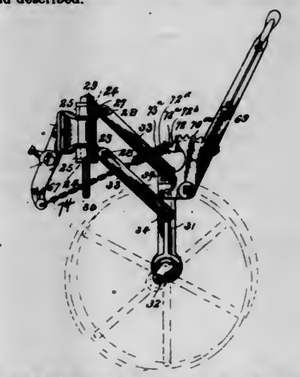
7. The combination with the slotted conduit, of separable arms arranged at intervals in the length of the main conducting wire in electrical connection with said main conducting wire and insulated from one another, said arms being pivoted and bent to move horizontally in a plane near the slot of the conduit, said conducting wire, contact rollers arranged on said arms, and springs connecting the arms of each pair to prevent undue separation and hold said arms in electrical contact with the shoe of the car, substantially as set forth.

8. The improved electrical conductor and conduit herein described in which is combined with the U-shaped irons having angle irons at the top secured to the upwardly extending flanges of said U-shaped irons and forming a central slot through which the car connections pass, of brackets secured at openings or breaks in the said U-shaped iron, shafts, *h*, curved arms pivoted on said shafts and extending up into the plane of said U-shaped iron and thereat having contact rollers, said arms having extensions, *i'*, *i'*, terminals, *i''*, *i'''* normally out of contact and one of which is in electrical connection with the main conductor, said main conductor, elastic coverings imperviously covering said terminals and interposed between said arms and the extensions thereof, and springs, *m*, holding said terminals normally separate and said rollers in contact with the car shoe, substantially as set forth.

544,284. WHEEL OR GANG PLOW. WILLIAM L. CASADAY, South Bend, Ind. Filed Mar. 13, 1895. Serial No. 541,562. (No model.)

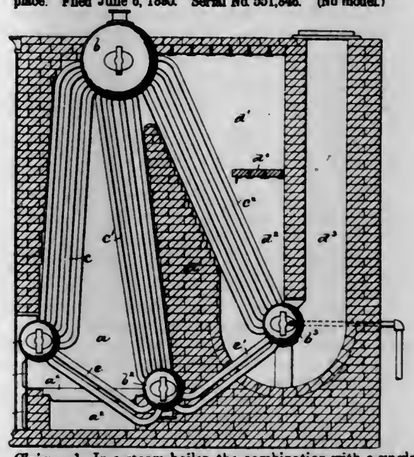
Claim.—1. In a wheel or gang plow, the combination with the land wheel arm or axle, carrying the land wheel, pivoted links connecting said axle with the plow frame, a land wheel lever pivoted to the upper end of the land wheel axle, and means for locking said lever as adjusted, of a rock shaft, a chain or other connection secured to said rock shaft, and a spring connecting the chain and land wheel lever, all constructed, arranged and operating substantially as shown and described.

2. In a wheel or gang plow, the combination with a land wheel arm or axle 31, carrying the land wheel, pivoted links connecting said axle to the plow frame, and a land wheel lever 69, pivoted to the upper end of said arm or axle 31, of a rock shaft having a rock arm 67, a chain or other connection 74 secured at one end to the rock arm 67 and a spring 73^a, connecting the said chain with the land wheel lever, all constructed, arranged and operating substantially as shown and described.



3. In a wheel or gang plow, the combination with a land wheel arm or axle 31, carrying a land wheel, a toothed sector 70^a, secured to said axle, and a land wheel lever 69 pivoted to said axle and provided with a spring locking dog, adapted to engage the sector, of a rock shaft having a rock arm, and loops 72^b and 72^d and spring 73^a connecting the chain with the land wheel lever, all constructed, arranged and operating substantially as shown and described.

544,285. WATER-TUBE BOILER. JAMES F. CASEY, Chattanooga, Tenn., assignor to the Casey & Hedges Manufacturing Company, same place. Filed June 6, 1895. Serial No. 551,846. (No model.)



Claim.—1. In a steam boiler, the combination with a single collecting or steam drum, of three water drums, two of said drums being arranged at the front and rear respectively of the furnace, and the third water drum being arranged in a passage separated from said furnace by a bridge wall, as described, and circulating pipes from each of said water drums to said steam drum whereby the products of combustion in leaving the furnace are brought into contact with the coolest portions of the boiler, substantially as specified.

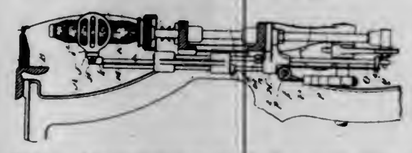
2. A boiler consisting essentially of three water drums and a single steam or collecting drum, circulating pipes connecting each of said water drums with said steam drum, some of said pipes being arranged within the furnace wall, as described, and two of said water drums being arranged at the front and rear respectively of the boiler furnace, a bridge wall between said furnace and the rear water drum, and circulating pipes connecting the respective water drums, substantially as specified.

3. The combination with a furnace, a bridge wall in the rear thereof, and a downwardly-extending passage from said furnace in the rear of said bridge wall, a steam drum arranged at the top of said furnace, and three water drums, one arranged at the front of said fur-

nace, one at the rear of said furnace, and one in the passage leading from said furnace to the uptake, a feed water connection to the rear drum, and circulating pipes connecting the respective water drums, and a series of tubes connecting each of said water drums to the collecting or steam drum, substantially as specified.

4. The combination with three water drums, the center drum being arranged below the two side drums, one of which is located in the front of the furnace, and the other located in a passage leading from said furnace, a steam drum at the top of said furnace, a bridge wall separating said furnace from said passage, circulating pipes from each of said water drums to said steam drum, one or more of which are located in the walls of said furnace, and a circulating pipe from one of said water drums to the other, and means for introducing feed water into the rear water drum, substantially as specified.

544,286. YARN-SEPARATOR FOR SPINNING-FRAMES. GEORGE E. CHANDLER, Chelmsford, and WALTER A. CHANDLER, Lowell, Mass. Filed Nov. 14, 1892. Serial No. 451,852. (No model.)



Claim.—1. The combination of the stationary vertical guide-rod, a sleeve, having a vertical hole which loosely receives said guide-rod, a collar, secured on said guide-rod, below said sleeve and limiting the downward movement of said sleeve, the cross-shaft having an arm provided with a horizontal stud, a vertical push-rod, having at its lower end a loop, which loosely surrounds said stud, said push-rod loosely fitting another vertical hole, with which said sleeve is provided, a collar, secured on said push-rod below said sleeve and adapted to raise said sleeve when said push rod is raised by the rocking of said cross-shaft, a separator-rod, fixed in said sleeve, a separator-bar, supported on said separator-rod and separators, supported on said separator-bar, as and for the purpose specified.

2. The combination of the separators and their supporting parts and a push-rod, adapted when lifted to raise said separators and supporting parts, and having a loop, the cross shaft, having an arm provided with a stud which enters said loop and is loose therein, and an over-balancing weight connected to said push-rod, to keep said loop at all times in contact with the under side of said stud, as and for the purpose specified.

3. The combination of the stationary vertical guide-rod, a sleeve, having a vertical hole which loosely receives said guide-rod, a collar, secured on said guide-rod, below said sleeve and limiting the downward movement of said sleeve, the cross-shaft, having an arm provided with a horizontal stud, a push-rod, having at its lower end a loop, which loosely surrounds said stud, said push-rod loosely fitting another vertical hole, with which said sleeve is provided, a collar, secured on said push-rod below said sleeve and adapted to raise said sleeve when said push-rod is raised by the rocking of said cross shaft, a separator-rod fixed in said sleeve, a separator-bar, supported on said separator-rod, separators, supported on said separator-bar, and an over-balancing weight connected to said push-rod, to keep said loop at all times in contact with the under side of said stud, as and for the purpose specified.

4. The combination of the separators and their supporting parts, and a push-rod, adapted when lifted to raise said separators and supporting parts, and having a loop, the cross-shaft, having an arm provided with a stud which enters said loop and is loose therein, a pulley, turning on a fixed horizontal axis, a weight, having a greater gravity than the push-rod and the parts raised thereby, and a flexible connection, joining said weight and said push-rod and passing over said pulley, to keep said loop at all times in contact with the under side of said stud, as and for the purpose specified.

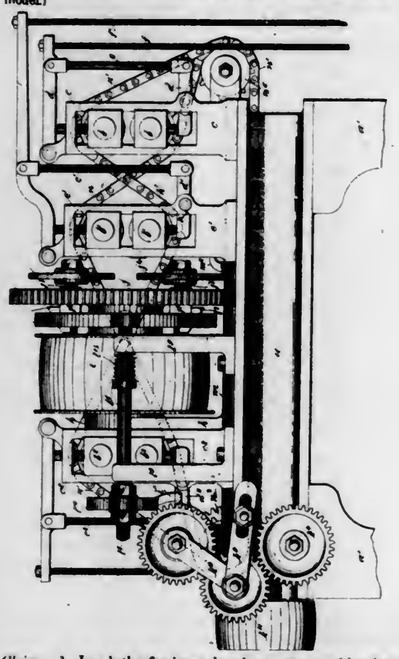
544,287. LACING-HOOK. LEANDER B. COBB, Boston, Mass. Filed Aug. 3, 1894. Serial No. 519,321. (No model.)



Claim.—1. As a new article of manufacture, a lacing hook comprising a head *a*, a fastening *b*, and a hook proper consisting of two portions, the portion *c*, extending upward from the head, and the portion *d*, rounded in cross section, extending directly over the head and curved in a plane parallel therewith, the circle of the curved portion *d* surrounding a vertical line through the center of the head, so that when the lacing is wrapped around the portion *d*, it will cover and protect the hook from abrasion, as set forth.

2. The combination of two series of lacing hooks, one series on each side of the meeting edges of the material to be laced, each hook having the head or plate *a*, the fastening *b*, and the hook proper formed with portion *c* extending upward at one side of said head or plate, and the portion *d* rounded in cross section extending directly over the head or plate in a plane parallel therewith, being curved in said parallel plane, substantially as shown, and for the purpose of causing the lacing hook to cover and act as a protection for the entire hook except the extreme ends thereof, the ends of the curved portion of each hook being substantially in lines parallel with the meeting edges of the material to be laced for the purpose set forth.

544,288. LATHE FOR IRREGULAR SHAPES. HENRY W. N. COLE, Brooklyn, N. Y. Filed Apr. 23, 1894. Serial No. 508,622. (No model.)



Claim.—1. In a lathe for irregular shapes, the combination with a tool and means for rotating said tool upon its axis, of means for revolving said tool in an orbit parallel to the desired cross contour of the article to be produced and for varying the orbit of motion of the rotating tool in accordance with the desired contour of the article, as the tool operates at different points along the length of said article, substantially as set forth.

2. In a lathe for irregular shapes, the combination with a tool, of means for revolving said tool in an orbit parallel to the desired cross contour of the article and varying the shape of said orbit as the tool operates at different points along the length of said article, substantially as set forth.

3. In a lathe for irregular shapes, the combination with a tool, of means for revolving said tool about the article, and a peripherally varying guide controlling the orbit of movement of said tool, said guide being of different shape at different portions of its length, and means for causing relative longitudinal movements of said guide, substantially as set forth.

4. In a lathe for irregular shapes, the combination with a tool and means for rotating the same upon its axis, of means for revolving said tool about the article in an orbit parallel to the cross contour desired to be produced and varying the shape of said orbit as the tool operates at different points along the length of the article, substantially as set forth.

5. In a lathe for irregular shapes, the combination with a tool and means for rotating the same upon its axis, of means for revolving said tool about the article, and a peripherally varying guide controlling the orbit of movement of said tool, said guide being of different

shape and different dimensions at different portions of its length, and means for causing relative longitudinal movements of said guide, substantially as set forth.

6. In a lathe for irregular shapes, the combination with a tool and means for revolving the same about the article, of a guide controlling the orbit of revolution of said tool, said guide having sections of different shape so as to vary the orbit of revolution of said tool at different points along the length of said article, substantially as set forth.

7. In a lathe for irregular shapes, the combination with a tool and means for revolving the same about the article, of a guide controlling the orbit of revolution of said tool, said guide having sections of different shape and of different dimensions so as to vary the shape and dimensions of the orbit of revolution of said tool at different points along the length of said article, substantially as set forth.

8. In a lathe for irregular shapes, the combination with a rotating tool head and one or more tools carried thereby and mechanism for feeding the blank or article through said tool head, of means for rotating said tools upon their axes as they are caused to revolve about the article, and a guide controlling the movement of said tools in accordance with the desired irregular contour of the article, substantially as set forth.

9. In a lathe for irregular shapes, the combination with a rotating tool head and one or more tool shafts fitted to rotate therein and one or more tools carried thereby, the bearings of said shafts being so constructed as to permit the tools to approach to and recede from the axis of revolution, and mechanism for feeding the blank or article through said tool head, and gears upon said tool shafts and a driving gear with which said gears of the tool shafts are held in engagement in their revolution about the article, and means for rotating said driving gear independently of the rotation of the tool head, and a guide controlling the movement of said tools and means for operating said guide so that it will actuate the tools in accordance with the desired irregular contour of the article, substantially as set forth.

10. In a lathe for irregular shapes, the combination with a rotating tool head and one or more tool shafts carried thereby, and tools upon said shafts and means for rotating said tool shafts, and mechanism for feeding the blank or article through said tool head, of a guide having its contour varied in accordance with the contour desired in the article, and one or more contact devices connected to said tools, and means for moving said guide so as to bring said contact devices into contact with different portions of said guide according to the desired contour of the article, substantially as set forth.

11. In a lathe for irregular shapes, the combination of a rotating tool head, one or more tool shafts held at one end in a bearing having a fixed position on said tool head and at the other end by a bearing fitted to slide in said tool head and one or more tools carried by said tool shafts, said bearings permitting said tools to move toward and from the axis of revolution, means for rotating said tool shafts and tools upon their axes, and a guide controlling the movement of the tools and tool shafts to and from the axis of revolution in accordance with the desired irregular contour of the article, substantially as set forth.

12. In a lathe for irregular shapes, the combination of a rotating tool head, one or more tool shafts held in bearings thereon, and one or more tools carried thereon, said tool shaft bearings being so constructed as to permit the tools to move toward and from the axis of revolution, means for rotating said tool shafts independently of the rotation of the tool head, and a guide controlling the movement of said tools and tool shafts to and from the axis of revolution, and having its contour varied in accordance with the contour desired in the article, and means for moving said guide so as to bring different portions of its surface into operation upon said tools in accordance with the desired irregular contour of the article, and means for feeding the article under the action of said tools, substantially as set forth.

13. In a lathe for irregular shapes, the combination with a rotating tool head and one or more tools carried thereby, and a non-rotary head stock carrying said tool head and having a tubular opening therethrough, of spring guides held in said head stock and adapted to center and guide the article as it passes through the bore of the head stock, and a suitable feeding mechanism adapted to co-operate with said spring guides in feeding the article under the action of said tools, substantially as set forth.

14. In a lathe for irregular shapes, the combination with a rotating tool head and one or more tools carried thereby, and a non-rotary head stock carrying said tool head and having a tubular opening therethrough, of spring guides held in said head stock and adapted to center and guide the article as it passes through the bore of the head stock, and the sets of feed rollers b, b', and b^3, both of said sets of feed rollers b and b' being adapted to guide the article under the action of the tools until the article is guided at one end by said spring guides, and the set of feed rollers b' continuing to guide said article until the article enters the feed rollers b^3, whereby the article is at all times guided at two points along its length when under the action of the tools, substantially as set forth.

15. In a lathe for irregular shapes, the combination with a rotating tool head and one or more tools carried thereby, and a guide controlling the movement to and from the axis of revolution of said tools, and actuating mechanism for said guide, of feeding mechanism for the blank or article, and means operated by said blank or article for starting and stopping said guide actuating mechanism, substantially as set forth.

16. In a lathe for irregular shapes, the combination with a rotating tool head and one or more tools carried thereby, and a movable guide controlling the movement to and from the axis of revolution of said tools, and actuating mechanism for said guide, of means for feeding a blank or article under the operation of said tools, and a yielding finger interposed in the path of said blank or article, and a mechanism actuated by said finger for stopping and starting the guide actuating mechanism, substantially as set forth.

17. In a lathe for irregular shapes, the combination with a rotating tool head and one or more tools carried thereby, and a movable guide controlling the movement of said tools to and from the axis of revolution in accordance with the desired irregular shape of the article, of means for feeding a blank or article under the operation of said tools, and a yielding finger interposed in the path of said blank or article, an oscillating shaft connected to or engaging with said finger and a clutch mechanism connected to or engaging with said oscillating shaft, and a driving shaft and mechanism operating said guide for the tools, between which driving shaft and guide operating mechanism the said clutch is interposed, substantially as set forth.

18. In combination, a rotating tool head and one or more tools carried thereby, a movable guide controlling the movement of said tools to and from the axis of revolution in accordance with the desired shape of the article, means for feeding the blank or article under the operation of said tools, the yielding finger m^2 interposed in the path of said blank or article, the shaft m and arm m^3 engaging with said finger m^2, the yoke m' on said shaft m, a driving shaft, a cam mounted so as to rotate independently of said driving shaft, a clutch adapted to connect said shaft and cam and engaged by said yoke m', and a contact device bearing against said cam and connected to said guide, substantially as set forth.

19. In combination, a head stock having a tubular bore, a driving pulley fitted to rotate thereon, and having an internal gearing surface formed thereon, a tool head fitted to rotate around said head stock and one or more tool shafts and tools carried thereby, said tool shafts being provided with pinions meshing into said internal gearing surface of the driving pulley, the bearings for said tool shafts being constructed so as to permit said tools to rotate upon their axes and to move toward and from the axis of revolution, and said tool head having a face plate provided with a gearing surface, a gear meshing into said gearing surface of the face plate and means for actuating said gear, and means for controlling the movement toward and from the axis of revolution of said tools, substantially as set forth.

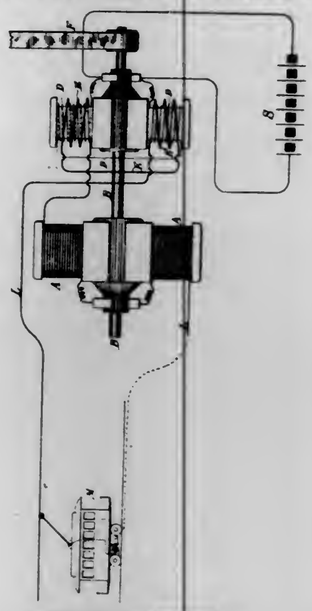
20. In combination, the head stock h having a tubular bore, the driving pulley i fitted to rotate thereon and having an internal gearing surface, the tool head j having a face plate j' and fitted to rotate upon the sleeve of said driving pulley i, one or more tool shafts j^3 fitted to rotate on their axes in said tool head and held at or near one end by a bearing having a fixed position but permitting angular movement of the shaft and at or near the other end by a bearing fitted to slide in a slot in the face plate j' of said tool head, pinions j^7 on said tool shafts meshing with said internal gearing surface of the pulley i, a gear meshing into a gearing surface formed upon the face plate j' and means for actuating said gear, a movable guide surrounding said tool shafts and a contact point for each of said tool shafts working against the face of said guide, and means for actuating said guide, and a feeding mechanism for the blank or article, the actuating mechanism of which is connected to said guide actuating and gear actuating mechanisms, substantially as set forth.

544,289. SYSTEM OF ELECTRICAL DISTRIBUTION. STANLEY C. C. CURRIE, New York, N. Y. Filed Nov. 27, 1893. Renewed Dec. 21, 1894. Serial No. 532,517. (No model.)

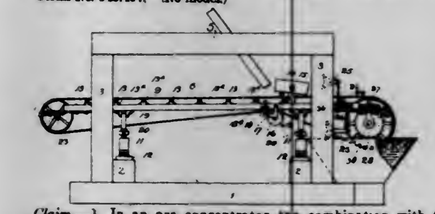
Claim.—1. In a system of electrical distribution the method of maintaining a constant load on the prime motor, which consists in driving two mechanically connected dynamos by the prime motor, supplying the main or working circuit by one, charging secondary batteries by the second, and varying the field magnetism of the second by the current of the first whereby the electro-motive force of the second will be varied inversely as the load on the first, and the said second machine driven as a motor by the battery, when the load on the line is excessive, as set forth.

2. The combination with a prime motor of two mechanically connected dynamos driven thereby, a working circuit supplied by one of said dynamos and secondary batteries permanently in circuit with

the second, the said second dynamo having a neutralizing field coil connected with the main or working circuit, as herein set forth.



544,290. ORE-CONCENTRATOR. FREDERICK D. DARRAGH, CHARLES W. BETTS, and JAMES A. KILTON, Denver, Colo., assignors to the Colorado Ore Concentrator Company, of Colorado. Filed Apr. 12, 1895. Serial No. 545,497. (No model.)



Claim.—1. In an ore concentrator, the combination with two drums, a gear on the shaft of one of them, and a belt moving around said drums; of a worm engaging said gear and having conical cavities in its ends, a shaft extending loosely through the worm, a pair of cones on the shaft adapted to enter said cavities, and means substantially as described for approximating the cones, as and for the purpose set forth.

2. In an ore concentrator, the combination with a table, drums supported thereby and one of them having a gear on its shaft, and an endless belt moving around the drums; of a worm engaging said gear and having conical cavities in its ends, a shaft extending loosely through the worm and threaded near one end thereof, a cone fixed on the shaft and entering one cavity, a second cone loose on the shaft entering the other cavity, a friction nut on the threads adjacent the loose cone, and means for turning the shaft, substantially as described.

3. In an ore concentrator, the combination with a laterally reciprocating table, drums journaled across its ends and one of them having a worm gear on its shaft, and an endless apron moving around the drums and table; of a worm engaging said gear and loosely mounted on a shaft, connections substantially as described for turning the shaft with a step by step movement from the reciprocating motion of the table, the extremities of the worm having conical cavities, cones mounted on the shaft and seated in said cavities, and a friction nut on the shaft adjacent one cone, as and for the purpose set forth.

4. In an ore concentrator, the combination with a laterally reciprocating table, drums journaled across its ends and one of them having a worm gear on its shaft, and an endless apron moving around the drums and table; of a worm engaging said gear and mounted on a shaft, bearings on the table in which said shaft is journaled, a ratchet fast on the shaft, a lever journaled on the shaft and having a spring-actuated pawl engaging said ratchet, the outer end of the lever being slotted, and a link pivotally connected at one extremity to some stationary part of the framework and adjustably pivoted at its other extremity in said slot of the lever, as and for the purpose set forth.

5 In an ore concentrator, the combination with a laterally reciprocating table, drums journaled across the ends and one of them having a worm gear on its shaft, and an endless apron moving around the drums and table; of a worm engaging said gear and loosely mounted on a shaft, the extremities of the worm having conical cavities, cones mounted on the shaft and seated in said cavities, a friction nut on the shaft adjacent one cone, bearings on the table in which said shaft is journaled, a ratchet fast on the shaft, a pair of levers pivoted at their inner ends on said shaft, and having spring-actuated pawls engaging the ratchet, and a pair of links pivotally connected at their outer extremities with some stationary part of the framework and adjustably connected at their inner extremities with the outer ends of the levers, as and for the purpose set forth.

6. In an ore concentrator, the combination with a table, mechanism for reciprocating the same laterally, means for adjusting the degree of reciprocation, drums journaled across the ends of the table, and an endless apron moving around the table and drums; of a shaft journaled in bearings on the table, means for turning the shaft automatically by the movement of the table, and a worm and gear connecting said shaft with one of the drums, as and for the purpose set forth.

7. In an ore concentrator, the combination with a table, mechanism for reciprocating the same laterally, means for adjusting the degree of reciprocation, drums journaled across the ends of the table, and an endless apron moving around the table and drums; of a shaft journaled in bearings on the table, connections between said shaft and one drum for communicating the rotation of the shaft to the drum, levers journaled on the shaft, pawl and ratchet connections between the levers and shaft, and links connected at one extremity with some stationary part of the framework and adjustably connected at their other extremities with said levers, as and for the purpose set forth.

8. In an ore concentrator, the combination with a main framework having sills, a table, and an apron moving longitudinally over the table; of legs btween the edges of the table and the subjacent sills, each leg being pivoted at one extremity to one member, a rocker segment connected to the other extremity of the leg with its rounding face contacting with the other member, and means for adjusting the angle of this segment to its leg, as and for the purpose set forth.

9. In an ore concentrator, the combination with a main framework having sills, a table, and an apron moving longitudinally over the table; of legs between the edges of the table and the subjacent sills, each leg being pivoted at one extremity to one member, a rocker segment pivotally connected to the other extremity of the leg with its rounding face provided with teeth, a flat toothed plate on the other member with which said teeth engage, and means for adjusting the angle of this segment to its leg, as and for the purpose set forth.

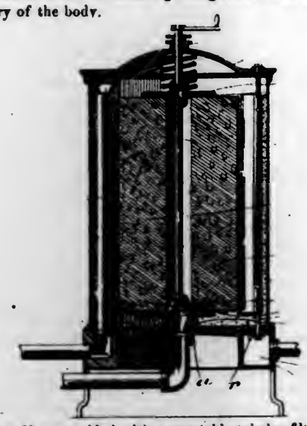
10. In an ore concentrator, the combination with a main framework having sills, a table, and an apron moving longitudinally over the table; of legs between the edges of the table and the subjacent sills, each leg being pivoted at one extremity to one member, a rocker segment pivotally connected to the other extremity of the leg with its rounding face provided with teeth, a flat toothed plate on the other member with which said teeth engage, an eye-bolt pivoted to said segment remote from its pivot to the leg, and an ear on the leg with which said bolt is adjustably connected, as and for the purpose set forth.

11. In an ore concentrator, the combination with a main framework having sills, a table, and an apron moving longitudinally over the table; of legs between the edges of the table and the subjacent sills, each leg being pivoted at one extremity to one member, a rocker segment pivotally connected to the other extremity of the leg with its rounding face contacting with the other member, an eye-bolt pivoted to said segment remote from its pivot to the leg, and an ear on the leg with which said bolt is adjustably connected, as and for the purpose set forth.

12. In an ore concentrator, the combination with a main framework having sills, a table, and an apron moving longitudinally over the table; of legs between the edges of the table and the subjacent sills, each leg being pivoted at its upper end in a bracket secured to the table, a flat toothed plate carried by the subjacent sill, a segment having a recess embracing the lower end of the leg, a pivot between these parts, the segment having a toothed rocker-face engaging the teeth on said plate, an eye-bolt pivoted to the remote end of the segment, and an ear on the leg with which said bolt is adjustably connected, as and for the purpose set forth.

544,291. FILTER. JOHN M. DAVIDSON, Allegheny, assignor, by direct and mesne assignments, of two-thirds to C. Y. Mercer and the Shook, Anderson Manufacturing Company, (Incorporated,) Pittsburg, Pa. Filed Nov. 27, 1894. Serial No. 530,178. (No model.)

Claim.—1. A filter provided with a revoluble tubular filtering body and a granular bed surrounding said body in combination with an inclined deflector for directing free granular material against the periphery of the body.



2. A filter provided with a revoluble tubular filtering body and a free granular bed surrounding said body, an inclined deflector and means for raising said bed and scouring the walls of the filter and filtering material.

3. A filter provided with a base having a concentric water-chamber provided with perforations in its upper side and a hollow journal bearing, in combination with a revoluble filtering body supported on said bearing and a spring between the cover of the filter and the filtering-body.

4. A filter provided with a revoluble filtering body, a granular bed surrounding said body, and a bar set at an angle to the periphery of the body, in combination with a water supply below the granular bed and a waste pipe above said bed.

544,292. CLAMP. GEORGE B. DAVIS, Detroit, Mich. Filed July 14, 1894. Serial No. 517,579. (No model.)



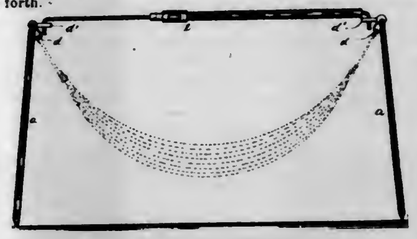
Claim.—1. In a clamp for use as herein described, the combination with two parts, and hooks at the edges of one part; of a fork adapted to span the other part and having hooked ends removably engaging said hooks, a wedge under the fork, a socket at the outer end of the fork, and a handle removably inserted in said socket, as and for the purpose specified.

2. In a clamp for use as herein described, the combination with two parts, and hooks at the edges of one part; of a fork adapted to span the other part and having hooked ends removably engaging said hooks, a wedge between the latter part and the fork, and a socket at the outer end of the fork consisting of upright side pieces connected by top and bottom plates having teeth on their inner faces, the upper plate standing near the fork and the lower plate standing remote from the fork with an opening between its inner edge and the fork, as and for the purpose specified.

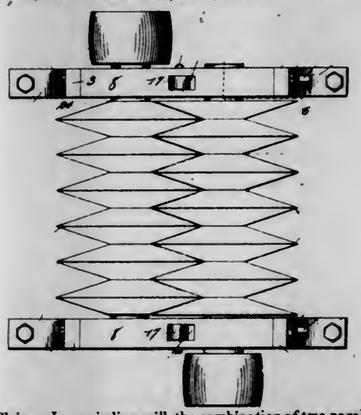
3. In a clamp for use as herein described, the combination with two parts, and a fork for drawing them together substantially in the manner set forth; of a socket at the outer end of the fork consisting of upright side pieces connected by top and bottom plates having teeth on their inner faces, the upper plate standing near the fork and the lower plate standing remote from the fork with an opening between its inner edge and the fork, and a rectangular handle removably inserted in said socket, as and for the purpose specified.

544,293. DEVICE FOR SUPPORTING HAMMOCKS. ARTHUR D. EMBURY, Syracuse, N. Y. Filed Oct. 4, 1894. Serial No. 524,875. (No model.)

Claim.—A device for supporting hammocks, comprising U-shaped end frames consisting of standards, recessed at their upper ends, cross rods having their ends adapted to engage with said recesses, provided with downwardly extending hooks —*d*— and inwardly extending arm —*d'*— and adjustable longitudinal connecting bars and bars —*b'*— connecting the lower ends of the end frames together laterally, as set forth.

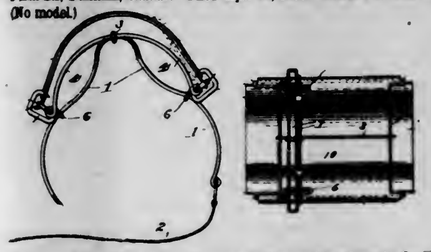


544,294. GRINDING-MILL. JOHN D. EVANS, St. Louis, Mo. Filed Mar. 4, 1895. Serial No. 540,498. (No model.)



Claim.—In a grinding-mill, the combination of two parallel shafts mounted in suitable bearings, one of said shafts being provided with a continuous right-hand screw-thread and the other one of said shafts being provided with a continuous left-hand screw-thread, and a series of separate grinding-disks mounted upon said shafts, whereby when the latter are revolved toward each other, said disks will tend to automatically lock themselves in position, substantially as herein specified

544,295. FLY-CATCHER FOR USE ON ANIMALS. ARLINGTON I. FARNAM, Dunham, Canada. Filed Apr. 27, 1895. Serial No. 547,376. (No model.)



Claim.—1. In a fly catcher for animals the combination of a frame bent to approximately fit an animal's back, curved bars 4 and 5 carried thereby, said bars being formed into open loops 7 and 9 at their ends, side-bars 8 connecting said loops, and a removable plate or sheet carried by said frame, said plate or sheet carrying a fly catching compound, and means for securing the frame to the animal, substantially as described.

2. In a fly catcher for animals the combination of a frame, bent to approximately fit an animal's back, an open frame carried thereby, a removable spring metal plate and means for removably securing it to the open frame, a fly-catching composition carried by said plate, and means for securing the device to an animal, substantially as described.

3. The combination of a frame bent to approximately fit an animal's back, bars 4 and 5 carried thereby, said bars forming the open

loops 7 and 9, the bar 4 forming the closed loops 6, side-bars 8, 8 connecting the closed loops 7 and 9, hooks 11, 11 carried by the frame, the plate 12 carrying a fly-catching compound and formed with the flange 15 and apertures 14, and means for securing the device to the animal's back, substantially as described and for the purpose set forth.

4. In a fly catcher for animals the combination of a frame composed of bars 1 bent to approximately fit an animal's back, a semicircular bar 10 carried thereby and formed at its lower ends into upwardly turned hooks 11, and a detachable flexible plate bent over the frame and provided with apertures into which hooks 11 engage, and a fly catching compound carried by said plate, substantially as described.

544,296. VETERINARY OBSTETRICAL FORCEPS. WILLIAM E. FARNHAM, Blair, Nebr. Filed Oct. 1, 1894. Serial No. 524,642. (No model.)



Claim.—1. In an obstetrical forceps the combination of a pair of oppositely disposed jaws having handled shanks inseparably pivoted together by a stud on one shank to loosely slide in a longitudinal slot in the other shank, whereby one jaw may be advanced and inserted before the other; the handle of the advanced jaw adapted to rest parallel with and against the opposite shank, where both may be grasped with one hand and thus retained during the insertion of the advanced jaw, substantially as described.

2. In an obstetrical forceps the combination of a pair of looped ductile jaws having handled shanks inseparably pivoted together by a stud on one shank to slide loosely in a longitudinal slot in the other shank, whereby one jaw may be advanced and inserted before the other, the latter adapted to be used as a transverse handle to the advanced jaw and shank, substantially as described.

3. In an obstetrical forceps the combination of a pair of elastic jaws having rigid shanks inseparably pivoted together by a stud on one shank to loosely slide in a longitudinal slot in the other shank and a lateral branch off the slot, to receive and retain the stud to hold the jaws in oppositely disposed positions, substantially as described.

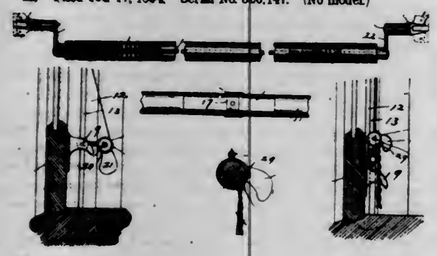
4. In an obstetrical forceps the combination of a pair of rigid shanks centrally pivoted and having corresponding jaw ends, each provided with elastic loop shaped jaws consisting of spring wire, attached to the end of the shank, and a reinforcing web extending from the shank onto the back of the jaw substantially as described.

5. In an obstetrical forceps the combination of a pair of flat rigid shanks centrally pivoted to swing edgewise, and having jaw ends consisting of integral T heads at right angles to their plane of motion, each head having a jaw consisting of a single piece of spring wire bent to form a loop the ends of the wire fastened in opposite ends of the head, and an integral web extending from the head onto the back of the loop or jaw, substantially as described.

6. In an obstetrical forceps the combination of a pair of shanks pivoted by a stud on one, to slide in a longitudinal slot in the other, each having an elastic jaw formed of a single piece of spring wire bent to form a loop of the desired shape, and fastened to the end of the shank, substantially as described.

7. In an obstetrical forceps the combination of the shank 2, having the pivot 9, fitted to slide loosely in the slot 4 and the branch or notch 5 in the shank 3, each shank having a handle portion 10, and a jaw 8, consisting of a single piece of spring wire bent to the form of loop shown, the ends of the wire fastened to the end of the shank in an integral T shaped head 6, having an integral web 7, to reinforce the jaw, substantially as described.

544,297. HOLDING MECHANISM FOR SPRING-ACTUATED SHADES. HENRY H. FORSYTH, Sr., and HENRY H. FORSYTH, Jr., Chicago Ill. Filed Oct. 17, 1894. Serial No. 526,147. (No model.)



Claim.—1. In a holding mechanism for spring actuated shades a spring actuated rod slidably mounted in the shade and having a bearing end projected beyond the side margin thereof, the rod having a portion offset or eccentric to a plane passing through the bearing end, substantially as and for the purpose described.

2. In a friction holding mechanism for spring actuated shades, a rod carried by the shade and having a bearing end normally held in frictional contact with a fixed part of the window and its body offset or eccentric to its bearing end whereby the position of the lower margin of the shade with reference to the window may be varied and the body of the rod may rock axially to the bearing end, substantially as described.

3. In a holding mechanism for spring actuated shades, a spring actuated rod slidably mounted in the shade and having a bearing end projected beyond the side margin thereof, the projected end being offset from the body of the rod, substantially as and for the purpose described.

4. In a holding mechanism for spring actuated shades, the combination with a spring actuated rod slidably mounted in the lower margin of the shade and having one end projected beyond the side margin thereof, the projected end being offset from or eccentric to its body, and means for withdrawing the rod against the action of the spring, substantially as described.

5. In a holding mechanism for spring actuated shades, the combination with a tube to be carried by the shade, of a spring actuated rod slidably mounted within the tube and having a bearing end projected beyond the tube, the body of the tube being eccentric to the bearing end whereby it may rock about said bearing end as an axis, substantially as described.

6. In a holding mechanism for spring actuated shades, the combination with a tube to be carried by the shade, of a spring actuated rod slidably mounted within the tube and having a projected portion eccentric to the body of the tube and a swiveling tip holder mounted in said projected portion, substantially as described.

7. In a holding mechanism for spring actuated shades, spring actuated rods slidably mounted in the shade and having bearing ends projecting beyond the margins thereof, the rods each having a portion offset or eccentric to a plane passing through the bearing ends, groove stops in which the tips of the rods work, and locks in the path of the tips, substantially as described.

8. In a holding mechanism for spring actuated shades, the combination with a metal tube, a frictional holding rod slidably mounted therein and having an actuating spring, said tube having its walls slotted between its ends, a hand piece projecting through the slot of the tube and detachably connected with the rod, a fixed block embraced by the walls of the tube at the slot and affording a stop for the movable holding rod and an escutcheon detachably secured to the block, substantially as described.

9. In a holding mechanism for spring actuated shades, the combination with a tube having a slotted aperture to receive a hand piece and a cover plate detachably secured to the tube over the aperture thereof, said cover plate having its body laterally curved and its margin curved on a smaller radius than its body whereby to impinge the shade, substantially as described.

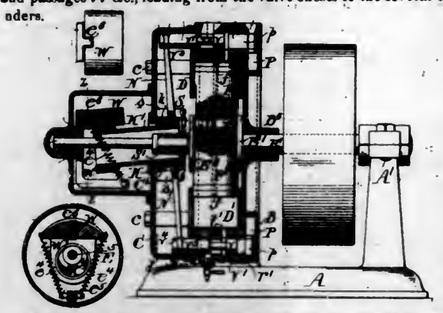
10. In a holding mechanism for spring actuated shades, the combination with a tube having a slotted aperture to receive a hand piece, and a cover plate detachably secured to the tube over the aperture thereof, said cover plate having a depending lip, substantially as and for the purpose described.

11. In a friction holding mechanism for spring actuated shades a rod carried by the shade and having a bearing end offset or eccentric to its body, whereby the position of the lower margin of the shade with reference to the window may be varied and the body of the rod may rock axially to the bearing end, substantially as described.

544,298. STEAM-ENGINE. JAMES T. HALSEY, Philadelphia, Pa. Filed July 28, 1894. Serial No. 518,851. (No model.)

Claim.—1. In an engine, the combination of the oppositely arranged cylinders D D′, the cylinder G, pistons F F′ attached to the cylinder G and working in the cylinders D D′, a piston J fitting in the cylinder G and having recesses J^3 of substantially the same area as the heads of the pistons F F′ arranged as described, a bearing J^2 in said piston, a crank pin turning in said bearing, passages for putting the recesses J^3 in communication with the steam spaces of the cylinders D D′, valve chests r r' &c., arranged beyond the ends of the cylinders, ports t t' &c., leading therefrom to the cylinders, and valves operating in said chests and adapted to govern the flow of motive fluid to and from said cylinders.

2. In an engine, the combination of the oppositely arranged cylinders D D′, the cylinder G, pistons F F′, attached to the cylinder G and working in the cylinders D D′ and having perforations f, a piston J fitting in the cylinder G and having recesses J^3 of substantially the same area as the heads of the pistons F F′ arranged, as described, to communicate with the perforations f, a crank pin turning in a suitable bearing in the piston J, valve chests r r' &c., arranged beyond the ends of the cylinders, piston valves adapted to reciprocate therein and passages t t' &c., leading from the valve chests to the several cylinders.



3. In an engine, the combination with the oppositely arranged cylinders D D′ of the cylinder G, pistons F F′ connected to the cylinder G and operating in the cylinders D D′, a piston J in the cylinder G, and means to balance it substantially as described, piston valves V V′ &c., arms N N′ &c., connected to the valves and means for actuating the arms, substantially as and for the purpose specified.

4. In an engine, the combination of the oppositely arranged cylinders D D′, the cylinder G, pistons F F′ connected to the cylinder G and operating in the cylinders D D′, a piston J in the valve G and means to balance it substantially as described, valve chests v v' &c., arranged at the ends of the cylinders, ports t t' &c. opening from said chests to the cylinders, valves V V′ &c. arranged in the chests, arms N N′ connected to the valves, and means for actuating the arms, substantially as and for the purpose specified.

5. In an engine, the combination of the oppositely arranged cylinders D D′, the cylinder G, pistons F F′ operating in the cylinders D D′ respectively, and connected to the cylinder G, a piston J in said cylinder, means to balance it as described, valves V V′ for governing the flow of motive fluid to and from the cylinders, arms N N′ connected to the valves, means for operating the arms, and a governor for altering the movement of the arms and so regulating the throw of the valves for the purpose of regulating the speed of the engine.

6. In an engine, the combination of the oppositely arranged cylinders D D′, the cylinder G, pistons F F′ operating in the cylinders D D′ respectively, and connected to the cylinder G, a piston J in said cylinder, means to balance it as described, valves V V′ for governing the flow of motive fluid to and from the cylinders, arms N N′ connected to the valves, a hub K to which the arms are secured, a sleeve K′ secured to the hub and a suitable eccentric for giving the proper motion to the sleeve K′ and through the hub K and arms N N′ &c. to the valves.

7. The combination in an engine of oppositely arranged cylinders D D′, pistons F F′ operating therein, a cylinder G to which the pistons F F′ are connected, a piston J having recesses J^3 J^3 arranged in the cylinder G, a steam connection from the steam spaces of the cylinders D D′ to the recesses J^3 of the piston J, valves V V′ &c., arranged substantially as described and a valve gear consisting of the arms N N′ &c., hub K, sleeve K′, and eccentric W′ for actuating said valves.

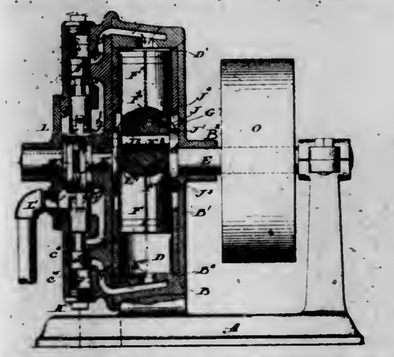
8. The combination in an engine of oppositely arranged cylinders D D′, pistons F F′ operating therein, a cylinder G to which the pistons F F′ are connected, a piston J having recesses J^3 J^3 of substantially the same area as the heads of the pistons F F′ arranged in the cylinder G, a steam connection from the steam spaces of the cylinders D D′ to the recesses J^3 of the piston J, valves V V′ &c. arranged substantially as described, a suitable valve gear for actuating said valves and a casing inclosing the valve gear substantially for the purpose specified.

9. In an engine, the combination with the oppositely arranged cylinders D D′, cylinder G, pistons F F′ operating in the cylinders D D′ respectively, and connected to the cylinder G, a piston J adapted to reciprocate in said cylinder, a crank pin E^3 turning in a bearing in said piston, valves V V′ &c., for governing the flow of motive fluid to and from the cylinders, arms N N′ &c., secured to a hub K and connected to the valves V V′ &c., a sleeve K′ secured to the hub K, a ring W″ adapted to surround the sleeve K′ and actuate it so as to operate the valves, and a weight W connected to the ring and adapted to change its position, and consequently the throw of the valves.

10. An engine consisting of two sets of cylinders D D′, pistons adapted to reciprocate in each cylinder, cylinders G, each of which is connected to the pistons operating in one set of cylinders D D′, pistons J J, one in each cylinder G, having recesses J^3 of substantially the same area as the heads of the pistons operating in the cylinders D D′, steam connections from the steam spaces in the cylinders D D′ to the recesses J^3 of each piston J and a shaft E having a number of cranks, the pins E^3 of which turn in the bearings J^2 of the pistons J substantially as described.

11. In an engine, the combination with the oppositely arranged cylinders D D′, a cylinder G, pistons F F′ connected to the cylinder G and adapted to operate in the cylinders D D′ a piston J operating in the cylinder G provided with recesses J^3 of substantially the same area as the heads of the pistons F F′ and having a bearing J^2 in which a suitable crank pin turns, the said cylinders D D′ and pistons F F′ having a different area from that of the cylinder G and piston J, suitable conduits, whereby motive fluid exhausted from the smaller of the cylinders will be conducted to those of larger effective area and suitable valves for governing the flow of the motive fluid.

544,299. ENGINE. JAMES T. HALSEY, Philadelphia, Pa. Filed Mar. 23, 1893. Renewed Jan. 16, 1895. Serial No. 535,165. (No model.)



Claim.—1. In a fluid pressure engine the combination with a cylinder and piston relatively movable, a yoke connected to the piston and adapted to be moved thereby, a journal sliding in said yoke, a recess arranged between the adjacent faces of the yoke and journal and a conduit for conveying fluid under pressure to said recess whereby the pressure of the yoke on the sliding journal is balanced substantially as and for the purpose specified.

2. In a fluid pressure engine the combination with a cylinder and piston relatively movable, a yoke connected to the piston and adapted to be moved thereby and having an interior area greater than that of the piston, a journal sliding in said yoke substantially at right angles to the movement of the yoke, a recess arranged between the adjacent faces of the yoke and journal and a conduit for conveying fluid under pressure to said recess whereby the pressure of the yoke on the sliding journal is balanced substantially as and for the purpose specified.

3. The combination in a fluid pressure engine of a cylinder and piston relatively movable, a yoke connected to the piston and adapted to be moved thereby, a journal sliding in said yoke substantially at right angles to the movement of the yoke, a recess of substantially the same area as the area of the piston arranged between the adjacent faces of the yoke and journal and a conduit for conveying the motive fluid to said recess whereby the pressure of the yoke on the sliding journal is balanced substantially as and for the reason described.

4. In an engine the combination of a movable cylinder as G, a piston J working in said cylinder, and having recesses J^3 formed in its sides as described, cylinders D D′ arranged on each side of cylinder G, pistons F F′ moving in said cylinders D D′ and connected to cylinder G, steam connections to cylinders D D′ and to the recesses J^3 arranged as described and so that steam will be simultaneously admitted to and exhausted from a cylinder and corresponding recess J^3 and a crank pin having a bearing in piston J and moving in a slot in cylinder G.

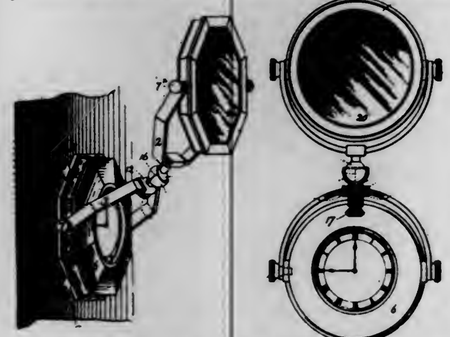
5. In an engine the combination of its oppositely arranged cylinders D D′, the cylinder G, the pistons F F′ attached to cylinder G and working cylinders D D′ said cylioders having perforations F^3 extending through them to the inside of cylinder G, the piston J fitting in cylinder G and having recesses J^3 arranged as described to communicate with perforations F^3 and a crank pin turning in a suitable bearing in piston J and moving in slots in cylinder G.

6. In an engine the combination with a frame having bearing faces B^2 B^4 and steam ports b^3 b^4 b^7 b^8 of cylinders D D′ connected with ports b^3 b^4, a movable cylinder G connected at its end with ports b^7 b^8, pistons F F′ connected to cylinders G and moving in cylinders D D′ said pistons having perforations F^3 leading through them to the inside of cylinder G, a piston J fitting in cylinder G and having recesses J^3 arranged to connect with perforations F as described

and a crank pin journaled in piston J and moving in slots in cylinder G.

7. In an engine the combination with a frame having bearing faces B^3 B^4 and steam ports b^3 b^4 b^7 b^8 of cylinders D D' connected with ports b^5 b^6, a cylinder G, sliding cylinder heads H H fitted to the ends of cylinder G and having recesses H^3 adapted to maintain connection with ports b^7 b^8 and to counter balance the pressure on the inside of said heads, pistons F F' connected to cylinder G and moving cylinders D D' said pistons having perforations F leading through them to the inside of cylinder G, a piston J fitting in cylinder G and having recesses J^3 arranged to connect with perforations F^6 as described and a crank pin journaled in piston J and moving in slots in cylinder G.

544,300. UNIVERSALLY-MOVABLE SUPPORT FOR MIRRORS, &c. JOHN F. HANLON, Concord, N. H., assignor of one-half to Maurice B. Quimby, same place. Filed Oct. 23, 1894. Serial No. 527,099. (No model.)



Claim.—1. The combination with a base, a universally movable frame, twin yokes pivotally attached to said base and frame, and clamping screws in the extremities of the yokes, of an interconnecting joint comprising a ball, a split socket having a sectional tubular stem, and a clamping device adapted to cause the socket to clasp the ball on one yoke, and the stem to engage the opposite corresponding yoke, substantially as stated.

2. In combination with two similar yokes, a separable joint for uniting the same, and comprising a ball secured to one yoke, a stud transversely on the corresponding yoke, a split socket having an exteriorly threaded stem, and a clamping nut which serves to clasp the socket about the ball and the socket stem about the stud, substantially as described.

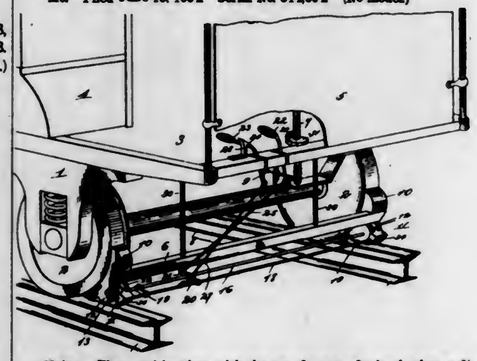
544,301. IRONING-TABLE. CHARLES W. HILLENBRAND, Kansas City, Kans., assignor of one-half to Phoebe A. Bartles, same place. Filed Aug. 13, 1894. Serial No. 520,108. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of an ironing-board, with a supporting stand, comprising a longitudinal bar, a standard pivoted thereto, and having an extended foot-portion, and a cross-bar at its upper end upon which one end of the ironing-board rests, a second standard having a foot-portion detachably engaged by the opposite end of the longitudinal bar, and having a notched cross-bar at its upper end, a supporting arm bearing against the under side of the ironing-board and formed with a shoulder bearing against the inner side of the cross-bar of the last-mentioned standard, and with a tongue projecting through the notch thereof and pivoted to the upper end of said standard, and an inclined brace-bar, pivotally connected at its opposite ends to the said standard and to the longitudinal bar.

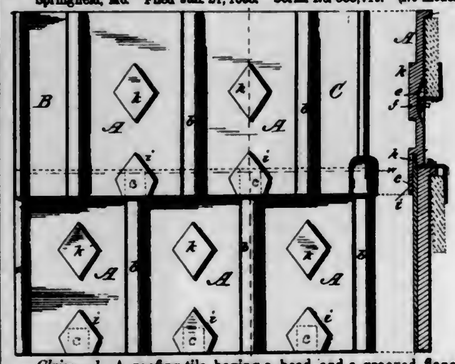
2. The combination, substantially as hereinbefore set forth, of a notched ironing-board, with a supporting stand, comprising a longitudinal bar, a standard pivotally connected thereto and supporting one end of said ironing-board, a second standard detachably engaged by the opposite end of said longitudinal bar, a brace-bar pivotally connecting the last-mentioned standard and the longitudinal bar, a supporting-arm pivotally carried by the last-mentioned standard and bearing at the under side of the ironing-board, bolts pivotally supported from said last-mentioned standard and engaging the notches of the ironing-board, and clamping-nuts engaging said bolts and said ironing-board at its upper side.

544,302. COMBINED WHEEL AND RAIL BRAKE. JOHN R. HOAGLAND, BENJAMIN W. THORNHILL, and JACOB M. KIESEY, St. Louis, Mo. Filed June 18, 1894. Serial No. 514,894. (No model.)



Claim.—The combination with the car-frame, of a brake-beam G' suspended from said frame, wheel-shoes 10 fixed on said beam and provided with perforated ears 12, rail-shoes pivoted to said ears at a point in a plane below the center of the car-wheels to contact with the track-rails, the rod or bar 16 extending the full length of said brake-beam and located in the perforations of said wheel-shoes and said rail-shoes, a transverse rod or bar 18 extending parallel with said rod or bar 16 and securely connecting said rail-shoes and movable therewith independently of movement of said wheel-shoes, a series of links 19 perforated near their ends and mounted upon the parallel rods or bars 16 and 18 to space them apart and form bearings for the same, a lever 20 connected to said parallel rods or bars and having a rearward and upward perforated extension 21, foot-levers pivoted to the front portion of the car, a rod 25 connecting a foot-lever to the perforated extension of the lever 20, and another rod 27 connecting a foot-lever to the rod or bar 18, substantially as herein specified.

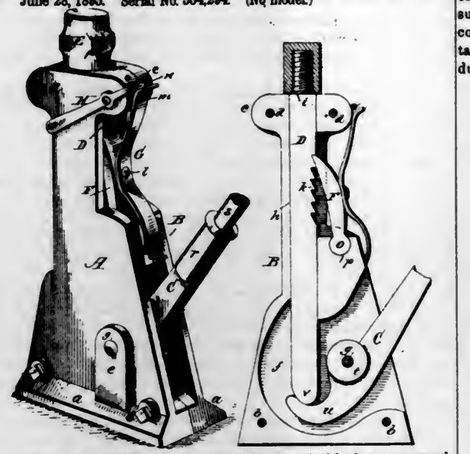
544,303. ROOFING-TILE. MICHEL HOFFELT and MATT HOFFELT, Springfield, Mo. Filed Jan. 21, 1895. Serial No. 535,719. (No model.)



Claim.—1. A roofing-tile having a bead and a grooved flange upon its respective edges, a central groove between said bead and flange having a hole or perforation in the end wall thereof, a mortise upon the under side of the tile and a bar extending transversely thereof and having a hole or perforation therein, substantially as and for the purpose set forth.

2. A roofing-tile having a bead and a grooved flange upon its respective edges, a central groove between said bead and flange, and a mortise upon the under side of the tile having a transverse bar with a hole or perforation therein, and a wire clamp having its spur and arm extending in opposite directions and substantially parallel with each other, as and for the purpose described.

544,304. LIFTING-JACK. WILLIAM S. HOUGH, Temple, Tex. Filed June 28, 1895. Serial No. 554,294. (No model.)



Claim.—1. A lifting jack consisting of a suitable frame or standard, a vertically movable lifting bar with ratchet teeth, a pivoted lever operating against the lower end of the lifting bar, and a device for holding and releasing said bar, consisting of a pawl having its lower end curved to seat itself in a correspondingly curved mortise in the frame or standard, a double-arm spring connected to the pawl and having its upper end curved, and a pivoted releasing lever having a curved end to act upon the curved end of the spring substantially as and for the purpose specified.

2. A lifting jack consisting of a suitable frame or standard, a vertically movable lifting bar provided at its upper end with an adjustable and removable bearing head and having a curved lower end and provided with ratchet teeth, a pivoted operating lever having a curved extension upon which the curved end of the bar rests, a pawl to engage with the ratchet teeth, a double-arm spring connected thereto, and a pivoted releasing lever to operate the spring, substantially as and for the purpose described.

544,305. TOY CHAIR OR SOFA. JOSEPH J. JONES, Brooklyn, N. Y. Filed Feb. 1, 1895. Serial No. 536,958. (No model.)

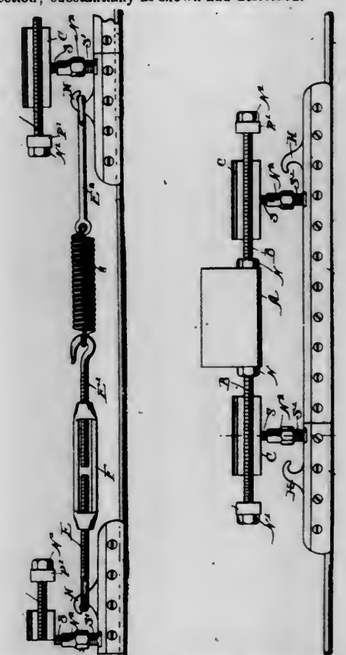


Claim.—A toy chair or sofa provided with an imitation cushion having the top or front portion 5 thereof made of layers of pasteboard or similar material and cloth pasted together in a flat blank and converted into convexo-concave form, and having a bottom or back 6 glued to the edge of the portion 5 and extending beyond it, whereby a flange 60 is formed, the portion 5 of the cushion being surrounded by and projecting through the chair or sofa frame and the flange 60 resting against the under side or back of the frame, substantially as described.

544,306. CONDUCTOR FOR ELECTRIC RAILWAYS. PAUL G. JUST Chicago, Ill., assignor to Albert G. Wheeler, same place. Filed Feb. 6, 1893. Serial No. 461,106. (No model.)

Claim.—1. In a conductor of the class described, the combination with the adjacent ends of two conductor sections, of a suitably supported clamp of conducting material which is rigidly attached at one end to one of said adjacent conductor ends, and is provided at its opposite end with a detachable clamping plate connected with the body of the clamp by adjustable securing means, whereby the said plate may be loosened to permit sliding of the other conductor-end within the clamp, or may be made to clamp the said conductor-end more or less tightly as desired, substantially as described.

2. In a conductor of the class described, the combination with the contiguous ends of two conductor sections, of a clamp made up of suitably connected opposing plates adapted to clasp the ends of the conductor sections, a portion of one of the clasping plates being detachable to permit withdrawal of the corresponding end of the conductor section; substantially as shown and described.



3. The combination with the conductor sections, W, W', of the clamp provided with suitable means for its suspension and made up of the plates, D, D', D^3, the plate, D, forming one jaw of the clamp and the plates, D', D^3, the opposite jaw, and the plate, D^3, being detachable; substantially as shown and described.

4. The combination with the conductor-sections W W', of the clamp consisting of the plates D D' D^3, of which the plates D D' are rigidly connected together with one conductor-end located between them and secured thereto by solder, and the plate D^3 is attached to the plate D by adjustable securing means by which the other conductor end may be held or clamped more or less tightly as desired, substantially as described.

5. In a conductor of the class described, the combination with the contiguous ends of two conductor sections, W, W, of clamps rigidly fastened to the ends of said sections and provided with means for their support, an intermediate conductor section supported by said clamps but free to move longitudinally in one of them, and an elastic connection interposed between said clamps and tending to draw them together, whereby the distance between said clamps may vary with the expansion and contraction of the conductor sections.

6. In a conductor of the class described, the combination with the contiguous ends of two conductor sections, of clamps rigidly fastened to the ends of said sections, and provided with means for their suspension, an intermediate conductor section supported by said clamps but free to slide longitudinally therein, and an elastic connection interposed between the clamps and tending to draw them together, whereby the distance between them may vary with the expansion and contraction of the conductor sections.

7. The combination with the conductor sections, W, W, of two clamps, each made up of plates, D, D', D^3, an intermediate section W', lying between the clamps and supported by them, and a spring connection formed substantially as shown and described, tending to draw the clamps together, the ends of the sections, W, W, being rigidly fastened between the plates, D, D', of the corresponding clamps, and the ends of the section, W, being loosely held between the plates, D, D^3, of the two clamps.

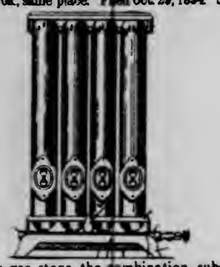
8. The combination with two suitably separated stationary brackets, A, A, of rods, B, B, supported by said brackets, insulators, C, C, supported by said rods and free to slide thereon, conductor clamps supported by said insulators, conductor sections supported by said clamps, and a spring connection interposed between the clamps, and tending to draw them together; substantially as shown and described.

9. The combination with the brackets, A, A, rods B, B, insulators, C, C, and conductor clamps supported by said insulators and free to slide with reference to the brackets, of the spring connection interposed between the clamps and provided with means for adjusting its length and thereby varying its tension; substantially as shown and described.

10. The combination with the brackets, A, A, and clamps, D, D', D^2, suspended therefrom and free to slide with reference thereto substantially as shown and described, of the interposed spring connection made up of rods, E, E', a suitable spring and a turnbuckle connecting the rods and adapted to vary the length of the entire connection; substantially as shown and described.

11. The combination with suitable supporting means of the clamps made up of plates, D, D', D^2 substantially as shown and described, and the spring connection, E, E', *s*, interposed between the clamps, the plate, D, of each of the clamps being formed with a hook, F, adapted to receive the corresponding end of the spring connection; substantially as shown and described.

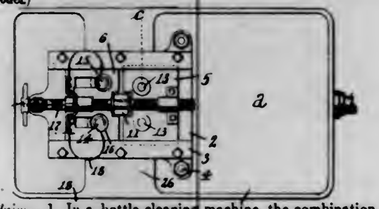
544,307. GAS-STOVE. LAZARD KAHN, Hamilton, Ohio, assignor to F. & L. Kahn & Bros., same place. Filed Oct. 29, 1894. Serial No. 527,130. (No model.)



Claim.—1. In a gas stove, the combination, substantially as set forth, of a base structure having eyes for a burner pipe and having one of said eyes gapped in its upper portion, a burner pipe provided with upwardly projecting nipples and engaging said eyes, a cock upon one end and a cap upon the other end of said burner pipe, and abutting inwardly against said base structure and a tube-structure secured to the base over said burner pipe.

2. In a gas stove, the combination, substantially as set forth, of a base structure having eyes for a burner pipe and a noncircular seat, a burner pipe supported in said eyes, a noncircular cap on said pipe engaging said seat, a cock upon the other end of the burner pipe, and a tube structure secured to said base above said burner pipe.

544,308. BOTTLE-WASHER. JOHN L. KIRK and WILLIAM T. REED, Hamilton, Ohio. Filed Apr. 13, 1895. Serial No. 545,566. (No model.)



Claim.—1. In a bottle cleaning machine, the combination, substantially as set forth, of a support for an inverted bottle, a cluster of elastic vertical rolls in position to surround and engage the bottle, means for supporting said rolls and for adjusting the distance between them, a driving-shaft arranged to transmit motion to said rolls, and jet pipes for supplying water to a bottle engaged by the rolls.

2. In a bottle cleaning machine, the combination, substantially as set forth, of a table to support an inverted bottle, a head-plate supported above the same, bearing-plates sliding in guide-ways in said table and head-plate, a cluster of elastic vertical rolls journaled in said bearing-plates, means for adjusting said bearing-plates to move the rolls, a driving-shaft arranged to transmit motion to the rolls, and jet pipes for supplying water to a bottle engaged by the rolls.

3. In a bottle cleaning machine, the combination, substantially as set forth, of a table to support an inverted bottle, a head-plate supported above the table, bearing-plates sliding in guide-ways in the table and head-plate, a cluster of elastic vertical rolls journaled in said bearing-plates, screws for adjusting the bearing-plates and rolls, springs urging two of the rolls toward the other rolls, a shaft arranged to transmit motion to the rolls, and jet pipes for supplying water to a bottle engaged by the rolls.

4. In a bottle cleaning machine, the combination, substantially as set forth, of a support for an inverted bottle, a cluster of vertical elastic rolls arranged to engage and give motion to the bottle, a supporting framework for said rolls stationary brushes attached to said framework to engage the bottle, and water jets to supply the bottle with water.

5. In a bottle cleaning machine, the combination, substantially as set forth, of a table having an opening and a beveled seat, a cluster of elastic vertical rolls arranged around said seat, a supporting framework for said rolls a shaft arranged to transmit motion to said rolls, and a jet pipe spouting upwardly through said seat.

6. In a bottle cleaning machine, the combination, substantially as set forth, of a table, a head-plate supported above the same, a cluster of vertical elastic rolls, a shaft arranged to transmit motion to the rolls, jet pipes for the supply of cleansing water, and a brush supported adjustably by said table and presenting itself within the cluster of rolls.

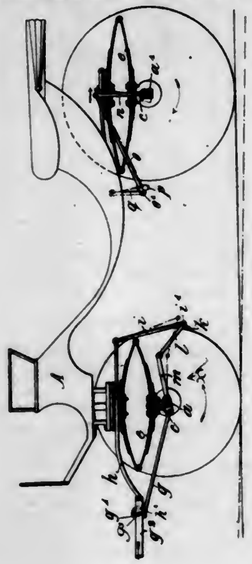
7. In a bottle cleaning machine, the combination, substantially as set forth, of a table, a head-plate above the same, a cluster of vertical elastic rolls, a shaft arranged to transmit motion to the rolls, jet pipe for the supply of cleansing water, an adjustable support extending to within the cluster of rolls between the table and head-plate, and a downwardly presenting brush elastically held by such support.

8. In a bottle cleaning machine, the combination, substantially as set forth, of a table, posts rising therefrom, a head-plate supported by said posts, bearing-plates sliding in the head-plate and table, screws for adjusting the bearing-plates, a cluster of vertical elastic rolls journaled in the bearing-plates, a shaft arranged to transmit motion to the rolls, brushes presenting within the cluster of rolls, and jet pipes for the supply of cleansing water.

9. In a bottle cleaning machine, the combination, substantially as set forth, of a table, posts rising therefrom, a head-plate supported by the posts, bearing-plates sliding in the head-plate and table, screws for adjusting the bearing-plates, a cluster of vertical elastic rolls journaled in the bearing-plates, a shaft arranged to transmit motion to the rolls, a support vertically adjustable on said posts and reaching to within the cluster of rolls, and a downwardly presenting brush carried by said support within the cluster of rolls.

10. In a bottle cleaning machine, the combination, substantially as set forth, of a pair of elastic vertical rolls, a third roll parallel therewith, a fourth roll parallel therewith and closer than the third roll to the vertical plane of said pair of rolls, a shaft arranged to transmit motion to said rolls, supports for the rolls a support for an inverted bottle, and jet pipes to supply cleansing water.

544,309. VEHICLE-BRAKE. ADOLF KLIETSCH, Görlitz, Germany, assignor of one-half to Louis Hoffmann, same place. Filed Oct. 1, 1894. Serial No. 524,634. (No model.) Patented in Germany July 9, 1894, No. 80,167; in Austria July 11, 1894, No. 44/4,583; in Hungary July 14, 1894, No. 1,497; in Switzerland Aug. 13, 1894, No. 9,000; in France Sept. 17, 1894, No. 241,445, and in Italy Sept. 23, 1894, No. 37,262/105.



Claim.—1. In a vehicle an axle partially rotatable about a journal disposed above the said axle, in combination with a brake-bar suspended by links from the vehicle-body, brake-shoes on said brake-bar, an arm rigidly secured to said axle and a link between the free extremity of said arm and said brake-bar, substantially as and for the purposes set forth.

2. In a vehicle an axle hinged in brackets secured to the vehicle-body and having its pivotal points above the center of the axle, in combination with a brake-bar suspended from the said body by links, one or more arms rigidly secured to the said axle, a link or links connecting the said arm or arms with the said brake-bar, substantially as and for the purposes set forth.

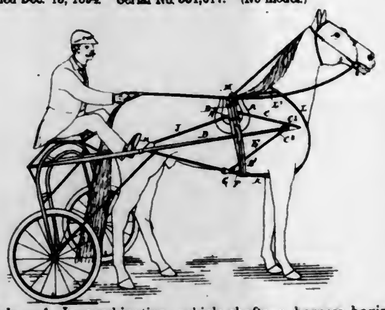
3. In a vehicle an axle hinged in brackets whose pivotal points are above the center of the axle, an arm on said axle, a brake-bar suspended from the vehicle-body by links, brake shoes on said bar, a link between the said arm and said brake-bar, a forked link pivotally secured to said axle and connected to the vehicle pole by a bolt, substantially as and for the purposes set forth.

4. In a vehicle an axle hinged in brackets whose pivotal points are above the center of the axle, an arm on said axle, a brake-bar suspended from the vehicle-body, brake-shoes on said bar, a link connecting the said arm with the brake-bar, a forked link pivotally secured with its prongs to said axle the united end of the prongs being formed into a collar, hounds attached with one end to the said vehicle-body and having their other ends contracted, bifurcated and slotted to engage the said collar, a pole engaging the said bifurcation and a bolt passing through holes in the collar, the pole and the said slots in the hounds, substantially as and for the purposes set forth.

5. In a vehicle an axle hinged to the vehicle-body above its center, a brake-bar suspended from the said body and carrying brake-shoes, an arm on said axle, a link connecting said arm with said brake-bar, a pole and links between said pole and the said axle, substantially as and for the purposes set forth.

6. In a vehicle an axle hinged to the vehicle-body above its center, a brake bar suspended from the said body and carrying brake-shoes, an arm on said axle, a link connecting said arm with said brake-bar, hounds secured at one end to said vehicle-body, and having their free extremity slotted, links pivotally attached to said axle, poles attached to said hounds and links by bolts, substantially as and for the purposes set forth.

544,310. HARNESS. MORTIMER L. KNOWLES, Detroit, Mich. Filed Dec. 13, 1894. Serial No. 531,617. (No model.)



Claim.—1. In combination, vehicle shafts, a harness having a back saddle pad A, a back strap B fastened upon said saddle pad, traces engaged at their forward ends directly with said back saddle pad A independent of the back strap B, above the vehicle shafts, and devices engaging the traces, intermediate their ends, to said shafts whereby the strain of the traces will be communicated directly to the saddle pad at an acute angle to the saddle pad, substantially as set forth.

2. In combination, vehicle shafts, a harness having a back saddle pad A, a back strap B, a girth B', an under pad F, the traces J engaged at one of their extremities directly with said back pad A above the shafts and engageable at their other extremities with said under pad F, holdback straps engaged directly with said back pad, and devices engaging the traces, intermediate their ends, the said shafts, whereby the strain of the traces will be communicated directly to the saddle pad at an acute angle to the saddle pad, substantially as set forth.

3. In a harness, the combination of a back saddle pad A formed with a soft pad A' and leather covering A^3, draft straps A^3 A^3 secured to the covering A^3 toward the extremities thereof, holdback straps C C' secured to the forward ends of said draft straps, traces J J secured to the rear ends of said draft straps, a back pad B, additional straps permanently secured to said covering engaging said back pad upon the saddle pad, and a girth B, the holdback straps and traces being secured directly to the back saddle pad A independent of the back pad B, substantially as and in the manner set forth.

4. In combination, a harness having the extremities of its traces attached at different points to other parts of the harness rearward of the front portion of the back pad, and shafts provided with pulleys attached thereto to support the draft, said traces led over said pulleys, substantially as set forth.

5. In a harness, the combination of the back saddle pad A, the back strap B, the under pad F, the girth B', and the traces J engaged at their extremities with said back pad and with said under pad, substantially as set forth.

6. In combination, the back saddle pad A, the back strap B, the girth B', the traces J engaged at one end to said back pad, shafts, and spring pulleys attached to said shafts over which said traces are led intermediate their ends, substantially as set forth.

7. In a harness, the combination of the back saddle pad A, the back strap B, the girth B, the hold back straps C C' engaged with the back strap at their rear ends, shield C^3 engaged with the forward ends of said hold back straps, and the safety girth E engageable intermediate its ends under said girth and connected at its extremities with said shields, substantially as set forth.

8. In a harness, the combination of the back saddle pad A, the back strap B, the girth B', the holdback straps and traces engaged with said back pad independent of the back strap, and the safety girth, said hold back straps provided with shields at their forward ends, substantially as set forth.

9. In a harness, the combination of the back saddle pad A, the back strap B, the girth B, the traces J secured to said saddle pad, the hold back straps C secured to the saddle pad, the safety girth E, the martingale K, and the neck strap L, substantially as set forth.

10. In a harness, the combination of the back pad A, the under pad F provided with a strap G, the back strap B and girth B', and the traces J, said traces each engaged with said back pad and having the opposite extremities engaged with the strap G, substantially as set forth.

544,311. EYELET. ALBERT LATHAM, Springfield, Mass. Filed Apr. 12, 1895. Serial No. 545,425. (No model.)



Claim.—1. An eyelet or analogous fastening having its metallic body constructed at its upper portion with a series of separated marginal members which have besides their radial extensions also hooked or curling formations, whereby the applied plastic covering material in addition to having a multiplicity of separate engagements or anchorages between and surrounding the said members, each as a whole, also is embedded within each thereof, substantially as described.

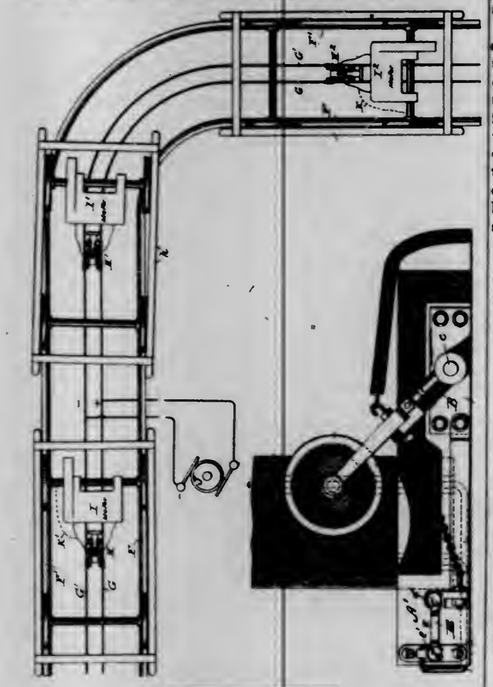
2. An eyelet consisting of a body having at its top a series of separate radially extending outwardly tapered members which are overturned and inwardly deflected leaving, between them, downwardly opening and upwardly convergent spaces and the plastic material covering the top of the eyelet and surrounding and engaging with the said members, substantially as described.

544,312. TROLLEY FOR UNDERGROUND ELECTRIC RAILWAYS. MYRON D. LAW, Washington, D. C., assignor to Albert G. Wheeler, Chicago, Ill. Filed Jan. 31, 1894. Serial No. 498,646. (No model.)

Claim.—1. The combination with a slotted conduit, motor and two line conductors, of a traveling contact device embracing two trolley wheels or contact pieces moving in contact with the line conductor, a supporting bar extending through the conduit slot, insulated connecting wires extending from the said trolley wheels or contact pieces along said supporting bar to opposite terminals of the motor, and fusible couplings or fuses interposed between the said trolley wheels or contact pieces and the said connecting wires, said couplings or fuses being constructed to carry a current greater than the current-carrying capacity of the motor but less than that supplied by the generator, whereby grounding of the current through the trolley wheels or contact pieces in contact with opposite line conductors, will cut out one or both of the motors which are in circuit with the defective conductors, substantially as described.

2. The combination with a car, two line conductors and a slotted conduit, in which the line conductors are located, of a supporting bar extending from the car into the conduit, trolley carrying arms mounted on, but insulated from the said bar, insulated conductors extending from the motor on the car along the supporting bar to the said arms, and fusible couplings or fuses interposed between the said insulated

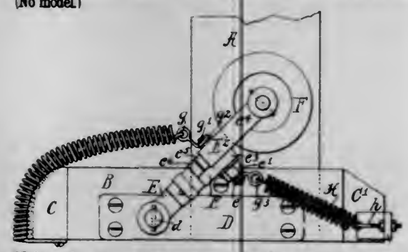
connecting wires and the said trolley carrying arms, said couplings or fuses being constructed to carry a current greater than the current-carrying capacity of the motor, but less than that supplied to the conducting wires by the generator, substantially as described.



3. A traveling contact device for electric railways, comprising a supporting bar, a trolley wheel or contact piece, a trolley arm mounted to oscillate in a plane parallel with the line of travel of the contact device, and consisting of three parts, of which the inner one is connected with the intermediate one by a pivotal joint the axis of which is longitudinal of the arm, and the intermediate one is connected with the outer one by a transverse, pivot pin rigidly attached to the outer arm and exteading through and adapted to turn in the end of the intermediate one, a lifting spring, a restraining member, and a connecting arm attached to the said pivot pin and reaching to a point laterally distant from both the longitudinal and transverse axes of said pivotal joints, substantially as described.

544,313. TRAVELING CONTACT DEVICE FOR ELECTRIC RAILWAYS.

JOHN C. LOVE, Philadelphia, Pa., assignor to the Love Electric Traction Company, Chicago, Ill. Filed Sept. 5, 1893. Serial No. 484,328. (No model.)

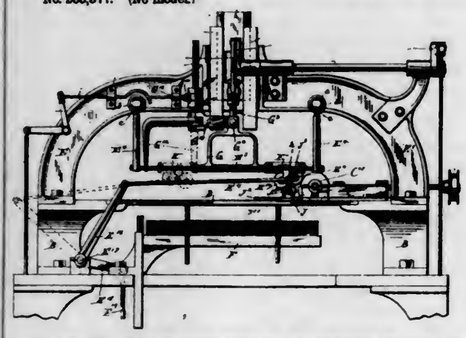


Claim.—1. A traveling contact device for electric railways, comprising a supporting bar, a trolley wheel or contact piece, a trolley arm mounted to oscillate in a plane parallel with the line of travel of the contact device and provided between its ends with pivoted or swiveled joints, one permitting movement of the trolley wheel about an axis longitudinal of the arm and the other a lateral movement thereof about an axis transverse to the arm, a lifting spring, and a restraining member, both of which are connected with the outer section of said arm, and one or both of which are applied to act on the said outer section of the arm at a point or points in the plane of oscillation of the arm and laterally distant from the said longitudinal axis and also from said transverse pivotal axis, whereby the trolley tends to remain in its central position and plane of oscillation, substantially as described.

2. A traveling contact device for electric railways, comprising a supporting bar, a trolley wheel or contact piece, a trolley arm mounted to oscillate in a plane parallel with the line of travel of the contact device and consisting of three parts connected by pivotal or swiveled joints, one connecting the inner and intermediate parts so as to permit movement of the trolley about an axis longitudinal of the arm, and the other connecting the intermediate and outer parts so as to permit a lateral movement of the trolley about an axis transverse to the trolley arm, a lifting spring, a restraining member, and an arm or arms for connecting said lifting spring or restraining member or both with the outer part of the trolley arm, said connecting arm or arms being rigidly attached to the said outer part of the trolley arm at its inner or pivoted end, and extending to a point or points laterally distant from both the longitudinal and transverse pivotal axes of the trolley arm, substantially as described.

544,314. ENVELOPE-MACHINE.

EVERETT M. LOW and WILLIAM R. EMERSON, Worcester, Mass., assignors, by mesne assignments, to the Worcester Envelope Company, same place. Filed Aug. 21, 1888. Serial No. 283,377. (No model.)



Claim.—1. In an envelope machine, the combination with a revolving gum box roll, and pickups for gumming the envelope blanks, of a pair of gumming rolls held in bearings and having a traverse motion across the gumming surfaces of said pickups, said gumming rolls having a rocking motion whereby one of said gumming rolls is moved into contact with the pickups, as said rolls are moved in one direction, and the other of said rolls is moved into contact with the pickups as said rolls are moved in the opposite direction, substantially as set forth.

2. In an envelope machine, the combination with a rotating gum box roll, of a pair of gumming rolls having a traverse motion toward and away from said gum box roll, and said gumming rolls having a positive rotation while in contact with the gum box roll, independently of the rotation of the gum box roll, whereby the gum solution taken from the gum box roll is evenly distributed between said gumming rolls, substantially as described.

3. The combination with a gum box roll rotating partially immersed in a gum solution, of the traverse gumming rolls E^{11} and E^{13}, pinions E^{12} and E^{14}, shaft J, gear J′, actuating rack J^3, and partial gear J^4, all arranged and operated, substantially as described.

4. In an envelope machine, the combination with the pickups for gumming the envelope blanks, of a pair of gumming rolls having a traverse motion across the gumming surfaces of the pickups, sleeves E^4 sliding on ways, swinging blocks E^5 pivoted to said sleeves, said blocks having bearings for the gumming rolls, and studs to which the roll actuating mechanism is attached, and roll actuating mechanism by which said rolls are moved across the gumming surfaces of the pickups, substantially as described.

5. The combination with parallel ways E^6, sleeves capable of sliding on said ways and provided with tapering chambers, semi-elastic washers held in said tapering chambers, of gumming rolls supported by said sleeves, and plates E^7 connected with said sleeves by tightening screws, whereby the pressure of said semi-elastic washers on said ways is increased, substantially as described.

6. The combination with pick ups, for gumming the seal and back flaps of an envelope blank, attached to a vertically reciprocating plate, of a pick up for gumming one of the side flaps of the envelope blank, said side pickup being pivoted to the vertically moving plate and adapted to have a quarter rotation in a horizontal plane, whereby said side pickup is moved into position to gum the side flap at the downward end of its motion, and into position to be gummed by the gumming roll when at the upward end of its motion, substantially as set forth.

7. The combination with the pickups for gumming an envelope blank, of arm G^{10}, pickup G^{13} for gumming the side flap of the envelope blank, pivoted in the free end of the arm G^{10}, shaft G^{11} coincident with the axis of the side pickup, arm G^{14} having a spline connection but held from longitudinal movement on said shaft G^{11}, and connected actuating mechanism, substantially as described, whereby said shaft G^{11} is given a partial rotation for the purpose of bringing the side pickup from a position for gumming the blank, to a position to receive gum from a gumming roll, and vice versa, substantially as described.

8. The combination with the horizontal bar G^9 carrying a pickup for gumming the back flap of the envelope blank, and an arm G^{10}, of a side pickup for gumming the side flap of the envelope blank, said side pickup being pivoted in said arm G^{10} and capable of a partial rotation from a position for gumming the side flap, to one in line with the back flap pickup for the purpose of receiving gum from the roll used in gumming the back flap pickup, substantially as described.

9. The combination with pickups G, and G′, of arm G^{10}, pickup G^{13} adapted to gum the side flap of the envelope blank, and pivoted in said arm, shaft G^{11}, arm G^{14}, having a spline connection with said shaft and held in lugs on the rigid part of the machine, connecting rod G^{16}, and bell crank lever G^{17}, substantially as described.

10. The combination with pickups G, G′, and pivoted side pickup G^{13}, of gumming rolls E^{11} and E^{13}, having a traverse motion across the pickups G. G′, substantially as described.

11. The combination with a rotating gum box roll, of a pair of gumming rolls having parallel axes, and having pinions by which they are rotated, and an actuating pinion having a rocking motion, and engaging said roll pinions while the gumming rolls are in contact with the gum box roll, substantially as described.

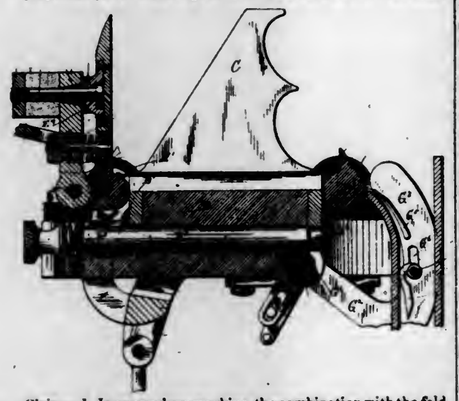
12. The combination of roll shafts E^9 and E^{10}, rolls E^{11} and E^{13}, pinions E^{12} and E^{14}, located between the sections of the rolls, shaft J, gears J′ and J^4, sliding rack J^3 having a reciprocating motion, and engaging the gear J′, and the gear J^4 engaging the roll pinions, whereby the rolls are given a rotary motion while they are in contact with the gum box roll, substantially as described.

13. The combination with the pickups G, and G′, and pickup G^{13} pivoted about a vertical axis so as to be capable of making a partial rotation, of the gumming rolls E^{11} and E^{13}, carried in rocking blocks E^5, pivoted upon sleeves E^6 having a frictional resistance upon guide rods, and said guide rods, and actuating mechanism connected with said rocking blocks, substantially as described.

14. The combination with pickups G, G′, and side pickup G^{13} pivoted so as to be capable of a partial rotation in a horizontal plane, of a pair of gumming rolls having a traverse motion across the gumming surfaces of said pickups, and means for operating said rolls, substantially as set forth.

544,315. ENVELOPE-MACHINE.

EVERETT M. LOW, Worcester, Mass., assignor, by mesne assignments, to the Worcester Envelope Company, same place. Filed Aug. 21, 1888. Serial No. 283,378. (No model.)



Claim.—1. In an envelope machine, the combination with the folding bed, and a ring surrounding said bed, of spindles having eccentric sections supporting said ring, and similar grooves around the spindles, and tapering pins screwed into the frame work, and entering said grooves, whereby the spindles are held from turning, substantially as described.

2. In an envelope machine, the combination with a folding bed, and a ring surrounding said bed, of eccentrics supporting said ring, and springs attached to said ring and to the frame work of the machine, with their tension applied to hold said ring in contact with said eccentrics, substantially as described.

3. In an envelope machine, the combination with a folding bed upon which the envelope blank is folded, of a back flap folder consisting of two wings, each of which has a yielding pressure, and one of said wings folding the edge of the back flap, and the other of said wings pressing the gummed surface of the back flap, said wings having a simultaneous movement through connected actuating mechanism, substantially as described.

4. In an envelope machine, the combination with the folding bed upon which the envelope blank is folded, of a spindle journaled at the side of and parallel with said folding bed, and having a rocking motion, a wing on said spindle which is brought to bear upon the folding bed by the rocking motion of the spindle, a plate with its face in the same plane as said wing, and an actuating arm having a vibratory motion and being operatively connected with said wing, and said plate, whereby the said wing and said plate are brought simultaneously upon the folding bed, substantially as described.

5. The combination in the folder for folding the back flap of an envelope, of a spindle having a rocking motion, lugs projecting from said spindle and carrying a pin, a vibrating arm pivoted on said pin, and two wings, one of said wings being carried by said spindle and the other of said wings being carried by said vibrating arm, said wings having their corresponding surfaces in the same plane, and having a simultaneous movement upon the folding bed of the machine, substantially as described.

6. In the back flap folder of an envelope machine, the combination with a spindle having a rocking motion, and a wing adapted for folding the edge of the envelope, of an arm pivoted upon said spindle, a spring interposed between said arm and said wing, whereby a yielding pressure is applied to said wing, substantially as described.

7. In the back flap folder of an envelope machine, the combination with a rocking spindle having a wing forming a folding plate or blade for folding the edge of the envelope, of an arm pivoted in lugs on said rocking spindle, and operatively connected with said wing, whereby the vibratory movement of said arm is communicated to said wing, substantially as described, a pressure plate adapted to press upon the gummed surface of the back flap and having a convex plate seated in a concave washer carried by said arm, a bolt connecting said arm and said pressure plate and having a nut, and an elastic washer between said arm and the nut, substantially as described.

8. In the back flap folder of an envelope machine, the combination of a spindle E, lugs E^4 carrying pin E^5, arm E^6, wing E^8 integral with the spindle E, bolt E^9 attached to said wing, and extending through the arm E^6, nut E^9, and spring E^{11}, as and for the purpose set forth.

9. In an envelope machine, the combination with a folding bed on which the blank is folded, and a back flap folder moved about an axis at the side of and parallel with said folding bed, of lifting blades, passing through slots in the folding bed, and having a motion concentric with the movement of the back flap folder, whereby the folded envelope is raised from the folding bed, simultaneously with the raising of the back flap folder, substantially as described.

10. In an envelope machine, the combination with a spindle carrying the back flap folding wings, of curved arms journaled on said spindle and carrying a bar placed beneath and lengthwise of the bed upon which the envelope blank is folded, and a series of lifting plates or blades attached to said bar, and passing through slots in the bed upon which the envelope blanks are folded, substantially as described.

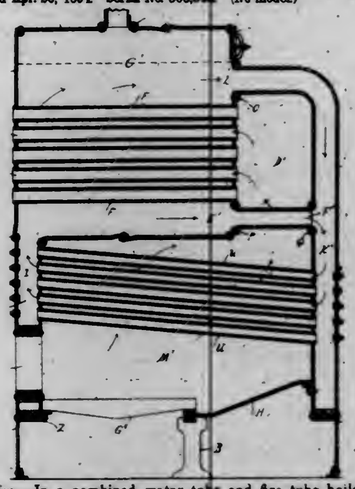
11. In an envelope machine, the combination with the folding bed on which the envelope blanks are folded, of lifting blades passing through slots in the folding bed, and having a motion by which the seal flap side of the folded envelope is raised above the seal flap folder, a seal flap folder having a motion away from the folding bed to release the seal flap inside of the envelope and a reverse motion to reduce the distance from the bed to the top of the seal flap folder, and mechanism, substantially as described, for removing the envelope from the lifting blades over the seal flap folder, as and for the purpose set forth.

12. In an envelope machine, the combination with a folding bed, and lifting blades by which the folded envelope is raised from said bed, of the radial arms G^3, plates G^3, fixed jaws G^3, spindle G^{12} passing through slots in the plates G^3, pinions G^{11}, racks G^7 attached to the plates G^3 and engaging said pinions, and movable jaws G^{12} attached to the spindle G^{12}, and mechanism substantially as described by which said pinions are rolled along said fixed racks, and the jaws G^{12} rotated toward or away from said fixed jaws, substantially as and for the purpose set forth.

13. In an envelope machine, the combination with a folding bed upon which the envelope blanks are folded, and lifting blades by which the folded envelope is raised from off said bed, of the envelope delivering mechanism, comprising the arms G^3, plates G^3 having slots G^4, racks G^7, spindle G^{10}, attached jaws G^{12}, fixed jaws G^3, pinions G^{11}, radial arms G^{14}, links G^{15}, said arms G^{14} having a movement relatively to the movement of the arms G^3 so the pinions G^{11} are rolled along the racks G^7 for the purpose of opening and closing the envelope seizing jaws, as and for the purpose set forth.

14. In an envelope machine, the combination with a folding bed upon which the envelope blanks are folded, and lifting blades by which the folded envelope is raised from said folding bed, of the shaft G having the radial arms G^{14}, sleeve G^{7} journaled on the shaft G, radial arms G^{3}, plates G^{2} having slots G^{6}, racks G^{7}, attached to the plates G^{2}, spindle G^{10}, jaws G^{15} attached to the spindle G^{10}, fixed jaws G^{4}, and links G^{12} connecting the arms G^{14} with the spindle G^{10}, substantially as described.

544,316. WATER-TUBE BOILER. JOHN MASER, Bay City, Mich. Filed Apr. 20, 1894. Serial No. 508,344. (No model.)



Claim.—In a combined water tube and fire tube boiler of a cylindrical shell having circular heads, fire tubes, connecting the said heads in combination with the front and rear water legs made rectangular in form and extending the full width of the said cylindrical shell, the rear circular boiler head provided with an opening between the water line and the flues, the full width of the said head, the right angle bend formed on the upper end of the rear water leg and secured to the said opening formed in the said rear circular head, and the smoke box provided by the rear water leg and its right angle bend, substantially as described.

544,317. TYPE-CASTING MACHINE. WALTER S. MARDER, St. Louis, Mo., assignor to the American Type Founders' Company, of New Jersey. Filed Aug. 31, 1894. Serial No. 521,315. (No model.)



Claim.—1. In a type casting machine, the combination with a mold, of a box for the reception of the matrix, said box being independent of the matrix and having dressed faces adapted to fit against the face of the mold, and means for pressing said box against the mold, substantially as set forth.

2. In a type casting machine, the combination with mold sections having register blocks and a stool-piece, of a box for receiving and holding a matrix, adapted to fit between said blocks and stool and having the broadened faces adapted to fit against the mold sections, and means for holding said box in place, substantially as set forth.

3. In a type casting machine, the combination with the mold sections having register blocks and a stool-piece, of a box for receiving and holding a matrix, adapted to fit between said blocks and stool piece and having broadened faces adapted to fit against the mold sections, set screws arranged in the side of said box and adapted to impinge the matrix, and means for holding said box in place, substantially as set forth.

4. In a type casting machine, the combination with a mold having register blocks, of a box for receiving and holding a matrix, adapted to fit between said register blocks, set screws countersunk in the side of said box and adapted to impinge said matrix, and means for holding said box in place, substantially as set forth.

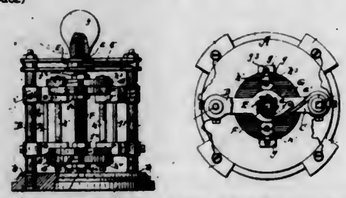
5. In a type casting machine the combination with a mold, of a box for receiving and holding a matrix, consisting of a plate, two blocks secured to said plate with a space between them and having broad dressed outer surfaces adapted to fit against the mold, the gage bar 9 secured across the ends of said blocks, set screws passing through one of said blocks and adapted to impinge the matrix, and means for holding said matrix box in place, substantially as set forth.

6. As a new and useful article of manufacture, a matrix box provided with the blocks 6 secured together and having their ends beveled, and said box being provided with a space between said blocks 6, for receiving and removably holding a matrix, substantially as set forth.

7. In a type casting machine, the combination with the mold having register blocks, of a matrix box having the blocks 6 provided with dressed surfaces adapted to fit against the mold, and the plates 22 secured to the blocks 6 and adapted to come against the said register blocks, substantially as set forth.

8. In a type casting machine the combination with the mold block and mold provided with a matrix spring, of a box for receiving and removably holding the matrix, adapted to fit against the mold and being provided in its outer side with a socket for the reception of the end of the said matrix spring, substantially as set forth.

544,318. MULTIPLE-FUSE SWITCH. JOSEF MELZER, Saaz, Austria-Hungary, assignor, by direct and mesne assignments, of eleven-sixteenths to Ernest Konigslow, Francis C. McMillin, and Albert W. Mayers, Cleveland, Ohio. Filed Oct. 20, 1893. Serial No. 488,706. (No model.)



Claim.—1. A multiple fuse switch, comprising a rotative member having heads of insulating material, recesses in such heads, removable fuse carriers secured therein and means for rotating the assembled parts contiguous to terminal contacts, adapted to successively make contact with the opposite ends of the removable fuse carriers, substantially as set forth.

2. A multiple fuse switch comprising an insulated revoluble member, having recesses therein, a series of removable fuse carriers placed in such recesses and suitable set screws or the like adapted to hold the said parts in an assembled position, substantially as set forth.

3. A multiple fuse switch, comprising a suitable insulating base and standards thereon, an insulating keeper connecting the said standards, bearings formed in the said base and keeper, a spindle placed therein, insulating flanges or heads upon said spindle, and a series of detachable fuse holders located upon said heads, and contact points or terminals adjacent to the ends of one or more of the said fuse holders, substantially as set forth.

4. A multiple fuse switch, comprising a rotative member, consisting substantially of a spindle and insulated heads adjustably secured to said spindle, adjustable and detachable fuse holders secured upon said heads, means secured to said spindle whereby the radial position of each of the fuse holders is determined as well as the vacant or unoccupied space upon said heads located between said holders, and suitable contact points or terminals located adjacent to said heads, so that upon the rotation of the same the said fuse holders will alternately be placed in circuit and out of circuit during the rotation of the spindle, and means whereby said spindle is prevented from being turned in but one direction, substantially as set forth.

5. A multiple fuse switch, comprising a suitable base and standards thereon, suitable keepers connecting said standards, and bearings formed therein for a spindle; insulated disks or heads upon said spindle, and a series of detachable fuse holders located upon said heads, and contact points or terminals adjacent to the same upon one or more sides thereof, said terminals, fuse holders, and disks or heads being respectively adjustable, substantially as set forth.

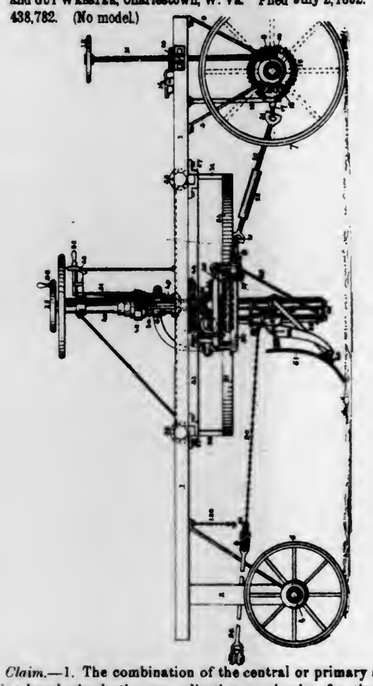
6. A multiple fuse switch, comprising a revoluble drum or the like, insulating heads thereon, removable fuse carriers supported by such heads, and suitable contacts for one or more of such carriers, and means for preventing the turning of such drum in one direction substantially as set forth.

544,319. PROCESS OF EXTRACTING ALUMINIUM OXID. AXEL W. NIBELIUS, Hackettstown, N. J., assignor of two-thirds to John W. Mackay, Jr., New York, and William P. Ferguson, Brooklyn, N. Y. Filed Aug. 17, 1894. Serial No. 520,587. (No specimens.)

Claim.—1. The process of extracting alumina from clay, clay-slate, anthracite-slate, minerals and rocks, consisting in mixing with the raw material the sulfate or bisulfate of an alkali, then subjecting the mixture while heated to a petroleum air flame, condensing the acid, utilizing the condensed acid for lixiviating the alumina, and finally precipitating the alumina.

2. The process of extracting alumina from clay, clay-slate, anthracite-slate, minerals and rocks, consisting in mixing pyrites with such clay, clay-slate, anthracite-slate, minerals and rocks, then adding to said mixture the chlorid, the sulfate, or bi-sulfate of an alkali, subjecting the mixture, while heated, to a petroleum air flame, condensing the acid, utilizing the condensed acid for lixiviating the alumina and finally precipitating the alumina.

544,320. ROAD-SCRAPING MACHINE. FREDERICK M. PENNOCK and GUY WEBSTER, Charlestown, W. Va. Filed July 2, 1892. Serial No. 438,782. (No model.)



Claim.—1. The combination of the central or primary shaft and driving bevel wheels thereon, adjusting mechanism for the plowing or scraping blade, and a pinion forming part of said adjusting mechanism and movable into or out of engagement with said bevel wheels, substantially as specified.

2. The combination of the central or primary shaft, bevel wheels thereon, adjusting mechanism for the plowing or scraping blade, and a bevel pinion forming part of said adjusting mechanism and movable into engagement with either of said bevel wheels, or out of engagement with both of the same, substantially as specified.

3. The combination of the central or primary shaft, single and double bevel wheels thereon, adjusting mechanism for the blade having a pinion movable into or out of engagement with said bevel wheels, and a pinion engaging with the duplex bevel wheel, and driven from one of the wheels or axles of the machines, substantially as specified.

4. The combination, in a road machine, of a scraping or plowing blade constructed for horizontal angular adjustment and vertical end adjustment, and an operating shaft governing said vertical end adjustment, and located at the axis of the horizontal angular movement of the blade, all substantially as specified.

5. The combination, in a road machine, of a scraping or plowing blade constructed for horizontal angular adjustment and vertical end adjustment, and an operating shaft governing both the horizontal angular and vertical end adjustments of the blade, and located at the axis of said horizontal angular movement, as set forth.

6. The combination of a slide having a depending hanger arm, with a blade, a bracket having a pivotal connection with said blade, and a pivoted rod adapted to said hanger arm and carried by the bracket, substantially as specified.

7. The combination of the plowing or scraping blade, vertically adjustable slides having hangers forming supports for the opposite ends of said blade, and brace rods connected to the opposite ends of said blade and extending to a longitudinally pivoted ring centrally located in respect thereto substantially as specified.

8. The combination of the plowing or scraping blade, the ring, the carriage thereon, having depending hangers forming the support for the blade, the central operating shaft, the bars extending from the blade and its carriage to said central operating shaft and forming an X-shaped brace, all substantially as specified.

9. The combination of the carrying wheels, the plowing or scraping blade, a compound operating shaft for the blade comprising concentric sections, and located axially in respect to the horizontal swing of the blade, and gears connecting said compound shaft to the blade and to the carrier wheels, substantially as specified.

10. The combination of the blade pivoted at the lower portion, with a snail, and a guided rod connected to the upper portion of the blade, and having a pin adapted to said snail, substantially as specified.

11. The combination of the blade pivoted near its lower edge, the rotated snail, and a guided rod having a pin adapted to said snail, and having connection with the upper portion of the blade constructed to permit free lateral play of the rod, substantially as specified.

12. The combination of the plowing or scraping blade, the frame of the machine, the ring mounted thereon, and having an annular worm wheel, the carriage traveling on said ring and carrying the blade and its adjusting mechanism, and a worm adapted to bearings on said carriage and engaging with the worm on the ring, an axial shaft for operating said worm, and gearing connecting the worm and shaft, substantially as described.

13. The combination of the scraping blade, with draft mechanism carrying the attachment for the team, and unconfined laterally at the draft end, whereby it is free to automatically adjust itself laterally to the varying line of draft, all substantially as specified.

14. The combination, in a road machine, of the scraping blade with draft mechanism carrying the attachment for the team, and unconfined both laterally and vertically at the draft end, substantially as specified.

15. The combination of the draft bar, its chain, and the drums to which the ends of the same are attached, with the scraping or plowing blade, mechanism for effecting the horizontal angular adjustment of the same, and gearing for operating the drums to take up or deliver the slack of the draft chain in accordance with the horizontal angular adjustment of the blade, substantially as described.

16. The combination of the plowing or scraping blade, laterally movable on the fixed frame, with draft mechanism carrying the team-attaching devices, and laterally unconfined at the draft end, with side chains which can be attached to or detached from the draft mechanism, all substantially as specified.

17. The combination of the pinion forming part of the blade-operating mechanism of the machine, a slide controlling said pinion, and a lever connected to said slide and provided with means for securing it in different positions.

18. The combination of opposite bevel wheels forming part of the adjusting gearing of the blade of a road scraper, a pinion movable into gear with either of said wheels, or out of gear with both, a slide controlling said pinion, a lever connected to said slide, and springs acting on said lever and tending to maintain it in the intermediate position, all substantially as specified.

19. The combination of the main frame, a supplementary frame guided thereon, and adjustable at right angles to the longitudinal line of the main frame, and a scraping blade, and centrally located adjusting mechanism therefor carried by said supplementary frame, all substantially as specified.

20. The combination, in a road scraping machine, of the main frame, the supplementary frame laterally adjustable thereon, a ring mounted on said laterally adjustable frame, a carriage moving on said ring, and a blade, and adjusting devices therefor hung to said carriage, substantially as specified.

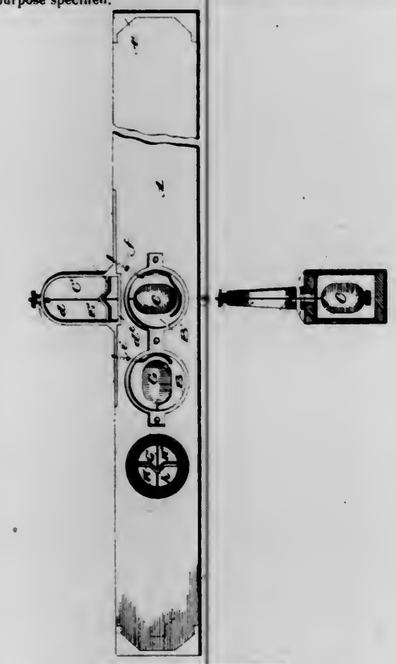
21. The combination of the blade, the ring upon which it is mounted, an adjustable frame mounted on the main frame, racks on said adjustable frame, and connected worms mounted upon the main frame of the machine and gearing into said racks, substantially as described.

22. The combination of the frame of a road machine, the rotatable rear axle composed of sections longitudinally adjustable in respect to each other and each carrying one of the wheels, a rack on each of the adjustable sections, and a pinion engaging with said rack whereby the movement of the adjustable axle sections may be effected substantially as specified.

544,321. PLUMB-LEVEL. LEWIS C. RAYMOND, Rutland, Vt. Filed Mar. 13, 1895. Serial No. 541,574. (No model.)

Claim.—1. In a level, the combination of the body portion, a flanged arched support secured thereto and formed with an integral transverse bar parallel with the length of the body portion and having a central upward angular extension with a central opening, and a line secured to the under side of the arched support at the top and passed through the opening in said angular extension and carrying a plumb, substantially as described

2. In a level, the combination of a body portion with a chamber, a flanged arched support having its flanges seated in recesses in the body portion said support being formed with a transverse bar having centrally upwardly extending angular portion with central opening, a detachable cover to said chamber, a plumb in said chamber, the line attached at one end to said plumb and passed through the opening in the angular extension of the support, and a screw rod having an eye to which the end of said line is attached, and a thumb screw on the end of the rod above the arch of the support, substantially as and for the purpose specified.



544,322. TRACKER FOR MECHANICAL MUSICAL INSTRUMENTS.

HENRY C. REICHARDT, Pottsville, Pa., assignor to Kock & Wieser, Brooklyn, N. Y. Filed Dec. 18, 1894. Serial No. 532,187. (No model.)



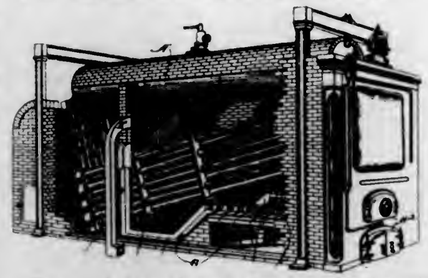
Claim.—1. An electric tracker for mechanical musical-instruments, comprising a tracker provided with a number of metallic tracker-pins passing through the same, metallic fingers each forming contact with one end of each of said tracker-pins, a perforated music-sheet passing across the tracker, and electric connections between the tracker-pins and fingers, for actuating the operating parts, substantially as set forth.

2. An electric tracker for mechanical musical instruments, consisting of a tracker provided with a number of metallic pins, a music-sheet passing across said tracker, means for moving said music-sheet across the same, metallic fingers forming contact with the tracker-pins, means for moving all the fingers simultaneously in outward direction so as to give access to the music-sheet, and electric connections between the tracker-pins and fingers, so as to produce the operation of the actuating-mechanisms, substantially as set forth.

3. The combination of a tracker provided with a number of metallic tracker-pins passing through the same, a perforated music-sheet passing across said tracker, means for moving said music-sheet across the same, metallic fingers forming contact with the tracker-pins, a transverse supporting-bar to which said contact fingers are attached, means for turning the finger-supporting bar so as to remove the fingers and return the same into position, a contact-plate applied to the finger-supporting bar, a transverse metallic bar electrically connected with the tracker-pins, and electric connections between said contact fingers and the transverse metallic bar, substantially as set forth.

544,323. BOILER-FURNACE.

DWIGHT S. RICHARDSON, Brooklyn, N. Y. Filed June 1, 1895. Serial No. 551,406. (No model.)



Claim.—1. In a steam boiler furnace, the combination with the tubular boiler of the elevated deflector for causing the products of combustion to circulate through between the tubes, an air intake for said deflector and an exit from said hollow deflector extending to and discharging into the fire box; substantially as described.

2. In a steam boiler furnace, the combination with the tubular boiler of the elevated hollow deflector for causing the products of combustion to circulate through between the tubes, an air intake for said deflector with an exit extending to and discharging into the ash pit; substantially as described.

3. In a steam boiler furnace, the combination with the tubular boiler of the elevated hollow deflector for causing the products of combustion to circulate through between the tubes, an air intake for said deflector with an exit discharge both into the ash pit and fire box; substantially as described.

4. In a steam boiler furnace, the combination with the tubular boiler of the hollow deflector located above the tubes for causing the products of combustion to pass down through between the tubes, air inlets for said deflector extending down below the level of the surface of the fire, air exits from said deflector extending forward to the fire box and foraminous partitions through which the heated air is discharged; substantially as described.

5. In a steam boiler furnace, the combination with the tubular boiler, and the baffle plate for causing the products of combustion to pass up through between said tubes, of the hollow deflector for causing the products to pass through between the tubes, located above and in rear of the baffle plate, air inlets for said hollow deflector extending down below the level of the surface of the fire, air exits for said deflector leading forward to the fire box with discharge openings; substantially as described.

6. In a steam boiler furnace, the combination with the tubular boiler, the baffle plates for causing the circulation of the products of combustion through between the tubes, of the hollow deflector forming a continuation of one of said baffle-plates at the top of the tubes, air inlets for said deflector and air exits leading therefrom forward to the pipe box with discharge openings; substantially as described.

7. In a steam boiler furnace, the combination with the tubular boiler of an air heater located above and transversely of said tubes at a point intermediate the ends of the tubes, air intakes for said heater and air exits therefrom leading forward to the fire box with discharge openings; substantially as described.

8. In a steam boiler furnace, the combination with the inclined tubular boiler having baffle plates for causing the circulation of products of combustion through between the tubes of an air heater located above and transversely of said tubes in the path traversed by the products of combustion, air intakes for said heater and air exits therefrom leading down and forward to the fire box, and discharge openings; substantially as described.

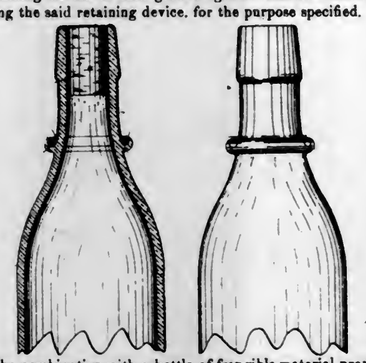
9. In a steam boiler furnace, the combination with the inclined tubular boiler and the baffle plates causing the products of combustion to circulate through between said tubes, of the air heater located above one of the baffle plates and transversely of the tubes, air intakes for said heater extending down below the level of the surface of the fire and air exits for said heater extending forward to the fire box with discharge openings; substantially as described.

544,324. BOTTLE.

SAMUEL C. ROWELL, Boston, Mass., assignor of one-fourth to Henry D. Dupee and Edward Ellis, same place. Filed Feb. 7, 1895. Serial No. 537,577. (No model.)

Claim.—1. The combination with a bottle provided on its exterior with a groove, the walls of which are firmly attached to the bottle against removal bodily, a cork or stopper fitted into the neck of the bottle to close its mouth, a cork retaining device having its lower end inserted into said groove, and means to lock the said retaining device in said groove against removal without rupturing the said cork retaining device, for the purpose specified.

2. The combination with a bottle provided on its exterior with a flange of frangible material firmly attached to the bottle against removal bodily and forming a groove, a cork or stopper fitted into the neck of the bottle to close its mouth, a cork retaining device having its lower portion inserted into said groove, and means to lock said cork retaining device in said groove against removal without first destroying the said retaining device, for the purpose specified.



3. The combination with a bottle of frangible material provided on its exterior with a flange integral with the bottle and forming therewith a groove, a cork or stopper inserted into the neck of the bottle to close its mouth, a cap of tin foil fitted over the neck and mouth of the bottle and having its lower part or edge inserted into said groove, and a cementing substance filling the groove and locking the lower edge or portion of the cap in the groove against removal bodily, substantially as described.

544,325. AXLE-SKEIN.

JOHN SALAY, South Bend, Ind. Filed Apr. 25, 1895. Serial No. 547,109. (No model.)



Claim.—1. An axle skein comprising a socket, journal and collar formed of two sheet metal blanks, each welded at their longitudinal edges and lap welded together at the collar, substantially as described.

2. An axle skein comprising a socket section having a crimped inner edge, and a journal section also having a crimped inner edge adapted to be welded together to form an intermediate collar, substantially as described.

3. An axle skein comprising two sheet metal blanks, one to form the socket and the other to form the journal portion thereof struck up and welded together, substantially as described.

4. An axle skein of malleable sheet metal comprising two sections, each having flanges, one to overlay the other and welded together to form an intermediate collar, substantially as described.

544,326. SASH-FASTENER.

GEORGE H. SPRING, Lemars, Iowa. Filed Apr. 16, 1894. Serial No. 507,759. (No model.)



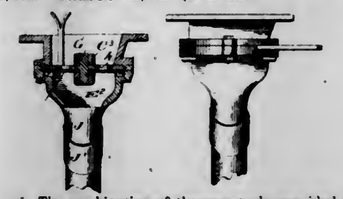
Claim.—1. The combination with a sash having a mortise or recess, of the button or holder pivoted within the mortise or recess said button being pivoted intermediate the ends, and having one end heavier than the other, means extending through the same for operating the button, and the stops arranged in the path of said button for engagement with the same, substantially as shown and described.

2. The combination with a frame having stops of the sash having a mortise or recess a button or holder pivoted within the said mortise or recess said button being heavier at one end than at the other and provided with lateral extensions and the studs or pins connected to said extensions whereby the button is operated the said sash being cut away to permit the movement of said studs or pins.

3. An improved sash locking device consisting of a button or plate, symmetrical in shape, and pivoted upon its longitudinal axis about midway its length, said button or plate having one of its arms narrow and light and the opposite end broad and heavy said button being so constructed that each end is capable of operation in two positions, substantially as shown and described.

544,327. SAND-BOX.

HENRY SPRINGSTUBE, Allentown, Pa. Filed Apr. 15, 1895. Serial No. 545,771. (No model.)



Claim.—1. The combination of the receptacle provided with a screen, a sand box arranged beneath the same, a discharge spout and an interposed centrally pivoted plate for controlling the discharge of the sand, and a stirrer fixedly mounted on said plate, substantially as described.

2. The combination of the two-part sand box, a centrally pivoted rotatable plate interposed between said parts, and carrying a stirrer fixedly supported thereon and springs bearing upon the under side of said plate, substantially as described.

3. The combination of a two-part sand box, each part having a stirrer fixedly mounted thereon and a boss centrally disposed and an interposed plate having an integral central pin extended upon opposite sides of said plate and held in said bosses, substantially as described.

4. The combination of a two-part sand box, each part having a stirrer fixedly mounted thereon and a boss centrally disposed and an interposed plate having a central pin extending above and below the plate and held in said bosses, and springs bearing upon the under side of said plate, substantially as described.

5. The combination of a two-part sand box, each part having a boss centrally disposed and an interposed plate having an integral central pin held in said boss, and a stirrer carried by said plate, substantially as described.

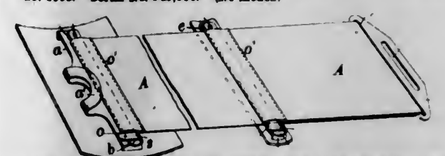
6. The combination of a two-part sand box, each part having a boss centrally disposed and an interposed plate having an integral central pin held in said boss, and springs bearing upon the under side of said plate, and a stirrer carried by said plate, substantially as described.

7. The combination with a two-part sand box, each part having flanges and one part with diametrically disposed recesses, of springs arranged in said recesses, and a rotatably mounted plate interposed between said springs and the flange of the upper part of the box, substantially as shown and described.

8. The combination of a two-part box having flanges and each part with centrally disposed oppositely extending bosses, and a plate having also a stirrer fixedly mounted thereon and centrally disposed oppositely extending integral projections entering said bosses and forming a pivot upon which the plate may turn, substantially as described.

544,328. BELT.

JOHN H. THEBERATH, Newark, N. J. Filed Mar. 26, 1895. Serial No. 543,016. (No model.)

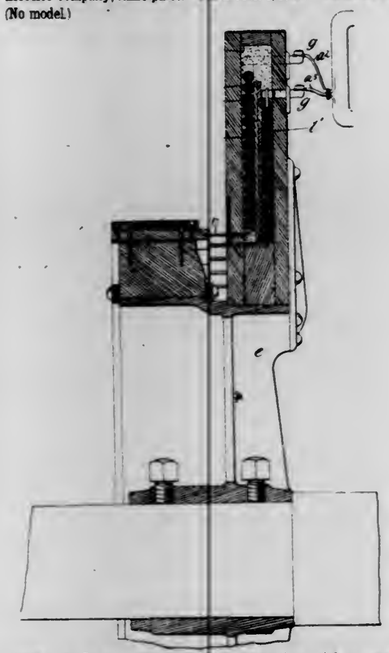


Claim.—1. In a belt clasp, the combination, with the hook-plate *a* having the forwardly projecting slot-hook *a'* in the middle of its forward edge, of the flat tongue *b* pivoted upon one end of the hook-plate by pin *p*, and arranged to turn parallel with the rear side of the plate at a little distance from the same, and the backwardly projecting latch-hook *s* at the opposite end of the plate, adapted to engage the free end of the tongue, the tongue being held within the hook *s* by the tension of the belt when applied, and the hooks *a'* and *s* projecting inwardly from the opposite edges of the plate to resist the tension of the opposite ends of the belt, substantially as herein set forth.

2. In a belt clasp, the combination, with the shield plate *d*, of the clasp-plate *a* attached thereto by offset feet at its opposite ends, the plate *a* having the hooks *a'* and *s* projected in opposite directions, as set forth, the tongue *b* pivoted upon washer *w* by pin *p* at one end of the plate *a*, and adapted to turn parallel with the rear surface of

the plate, and to engage the hook *s* as described, and to push beneath the hook *a'*, to disengage from the hook *s*, substantially as herein set forth.

544,329. COMMUTATOR CONNECTION FOR DYNAMO-ELECTRIC MACHINES. HENRY H. WAIT, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Mar. 1, 1895. Serial No. 540,129. (No model.)



Claim.—1. In an armature, the combination with a connection box, of conductors connecting the armature coils with the commutator segments, and inclosed in said box to protect the same from injury, substantially as described.

2. In an armature, the combination with a connection box, of conductors connecting the armature coils with the commutator segments, located in said box, and a substance in said box and surrounding said conductors to maintain the same in position, substantially as described.

3. In an armature, the combination with a connection box, of conductors connecting the armature coils with the commutator segments, located in said box, and an insulating substance flowed or forced into said box and about said conductors to insulate the conductors and maintain the same in position, substantially as described.

4. The combination with a connection box, of conductors connecting the armature coils with the commutator segments, located in said box, said box being detachably connected to the armature coils, substantially as described.

5. The combination with a spider removably mounted upon the armature shaft, of a commutator and a connection box mounted upon said spider, said connection box containing the conductors joining the armature coils with the commutator segments, substantially as described.

544,330. COIN-DELIVERING APPARATUS. ELKANAH H. WALKER, Augusta, Me. Filed Jan. 23, 1895. Serial No. 535,916. (No model.)

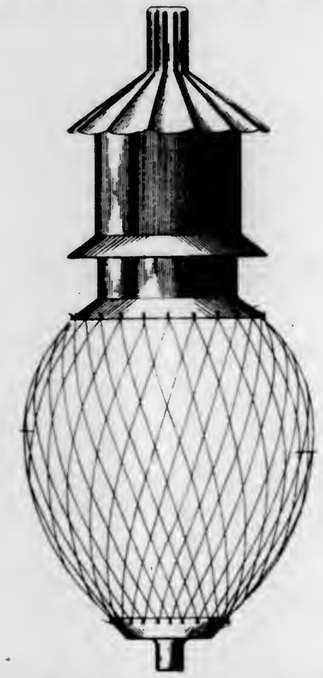


Claim.—1. In a change-delivering apparatus, the combination of a series of tubes, holding coins of different denominations, and a reciprocating plate moving across the ends of said tubes and by its operation keeping one coin from each tube projected in a position to be grasped by the operator, substantially as described.

2. In a change-delivering apparatus, the combination of the casing *a*, tubes *b b* arranged near the front of said casing, and the reciprocating slide *c* fitted to project from said tubes and through the front of the casing, by one operation, one coin from each or from any number of said tubes, substantially as described.

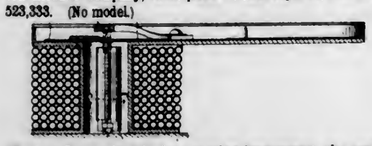
3. In a change-delivering apparatus, the combination of the casing having a bottom plate *a''*, the coin tubes *b b b*, supported above said bottom plate, the reciprocating slide *c* moving between said tubes and said bottom plate and which is capable of operating upon the coins in all of said tubes at one time, and means whereby said slide can be moved back and forth, substantially as described.

544,331. GLOBE-NETTING FOR ARC LAMPS. ERNEST P. WARNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Sept. 18, 1894. Serial No. 523,332. (No model.)



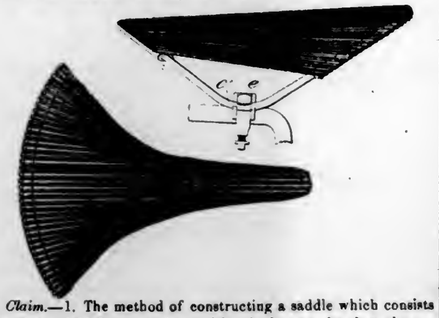
Claim.—The combination with an upper and a lower holder between which the globe is adapted to rest, of pins or catches provided around the edges of said holders, and a wire or wires looped back and forth over said pins to form a removable netting; substantially as described.

544,332. ELECTROMAGNETIC DAMPER FOR MEASURING-INSTRUMENTS. ERNEST P. WARNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Sept. 18, 1894. Serial No. 523,333. (No model.)



Claim.—In an electrical measuring instrument, the combination with a coil or helix through which the current to be measured is passed, of an armature mounted within said coil and adapted to rotate about an axis parallel to or coincident with the axis of the coil, an index finger carried upon said armature and adapted to move over a scale, and a metallic disk mounted to rotate with said armature, the disk being adapted to rotate in its own plane and in front of the end of the coil to act as a damper, substantially as described.

544,333. SADDLE. JOHN C. WELLS, East Hampton, Conn., assignor to the Climax Manufacturing Company, same place. Filed Apr. 8, 1895. Serial No. 544,853. (No model.)

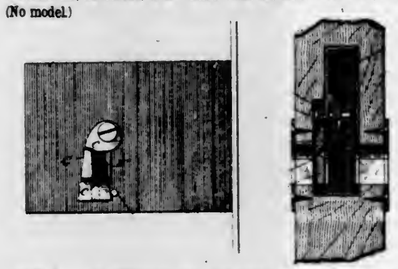


Claim.—1. The method of constructing a saddle which consists in forming a rigid frame to shape with raised pommel and cantle portions, providing the pommel and cantle with flexible anchoring points for the seat fabric, then forming a seat blank of a continuous length of coiled wire with the corresponding coils on the opposite sides of the center line of substantially equal length, then securing this blank to the saddle frame, two or more lengths being united simultaneously on opposite sides of the frame, and working toward or from the center line of said frame, all substantially as described.

2. In combination in a saddle, a frame with raised cantle and pommel, flexible anchor points secured to the cantle and the pommel, a seat composed of a compound elastic and flexible coil of strands of wire nested together, in lengths stretched back and forth from cantle to pommel with each length secured to the anchor points which are bent down to secure the seat to the frame and a cushion underlying the end of each length of the coil at the anchor points, all substantially as described.

3. In combination in a saddle for a bicycle, a rigid frame consisting of a continuous rod bent inward and downward at the center of the frame, the side parts of the frame at the center being substantially parallel and extending forward and upward to form the narrow pommel portion, and upward and outward to form the broad cantle portion, flexible anchor points on the cantle and pommel, and a flexible and elastic seat consisting of a small compound elastic and flexible coil of wire of several strands which are nested together the said coils extending in separate lengths back and forth from pommel to cantle and secured to the frame by the downturned anchor points, all substantially as described.

544,334. KEYHOLE-GUARD. CLINTON H. WESTON and MICHAEL J. SULLIVAN, La Crosse, Wis. Filed June 15, 1895. Serial No. 552,929. (No model.)



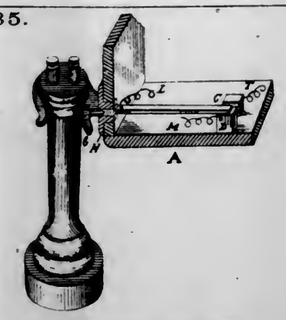
Claim.—1. An improved key hole guard adapted to be attached to the exterior of a lock case, and having a recess or socket upon one face, and a beveled portion upon the opposite face, substantially as shown and described.

2. The combination with the lock case, of a keyhole guard, pivoted upon one side thereof, said guard having a recess or socket upon its inner face, and the beveled portion upon its outer face, and the stop pin for limiting the motion of said guard, substantially as and for the purpose specified.

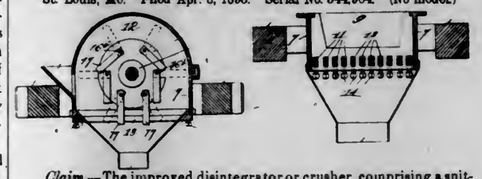
544,335. TELEPHONE-SWITCH. FRANK R. WHITNEY, Lewiston, Me. Filed June 30, 1894. Serial No. 516,202. (No model.)

Claim.—In a telephone switch the combination of a pair of contact surfaces in the same horizontal plane, a switch arm turning upon a pivot and shifting from one to the other of the contact surfaces, and a spring holder for a telephone which is rigidly attached to the switch arm and opens in the direction of its motion; all as set forth.

544,335.

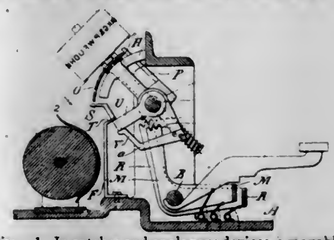


544,336. DISINTEGRATOR OR CRUSHER. MILTON F. WILLIAMS, St. Louis, Mo. Filed Apr. 8, 1895. Serial No. 544,904. (No model.)



Claim.—The improved disintegrator or crusher, comprising a suitable frame, a plurality of annular series of rotary hammers supported by said frame and each series spaced a distance apart, a rectangular metallic box 7 supported by said frame and having at its lower edges an inwardly-projecting flange or lip 10, the opposite walls of said box at points adjacent said lower edges having formed in them a series of rectangular slots 11, a suitable cover and hopper for said box, a series of metallic bars or slats 13 extending across the said box and having their ends loosely mounted in said slots, and screw-bolts 14 passed upwardly through said flange or lip into engagement with said bars or slats, substantially as specified.

544,337. TYPE-WRITING MACHINE. DAVID C. WILLIAMSON, New York, N. Y. Filed Mar. 7, 1895. Serial No. 540,864. (No model.)



Claim.—1. In catches and analogous devices, a movable member, and a catch adjacent thereto, said member movable toward said catch, and said catch movable away from and normally supported in juxtaposition to said member, and a removable support for said catch holding it toward said member and in its normal position and freeing it when moved, said catch substantially unsupported when thus freed, and then movable with said member.

2. In catches and like devices, a movable member, and a catch free to move therewith, opposed to said member, said member moving toward said catch, and a removable support for said catch, normally maintaining the latter toward and in position relatively to said member, and when the latter moves toward said catch freeing said catch and leaving it unsupported.

3. In catches and like devices, a movable member, and a catch in the path of movement thereof and movable freely and unresistingly therewith when engaged thereby, swinging on an axis and unsupported during part of the movement of said member toward it.

4. In typewriters or analogous instruments, a member D, a sector H, a rack O, a stop P, a catch S, means for operating said sector to rotate said member and to move it radially toward said catch, and a support V for said catch, substantially as and for the purpose set forth

5. In typewriters and analogous machines a member D, a sector H, a rack O, a catch S, a support for the latter, means for operating said sector to rotate said member and to move it radially, means for releasing said support to permit movement of said catch with said member, and means for restoring said catch to its initial position after such movement, substantially as and for the purpose set forth.

544,338. REVOLVING STEEL DOME ATTACHMENT FOR MAIL OR EXPRESS CARS. ROBERT L. WILSON, St. Louis, Mo., assignor of two-thirds to Henry F. Schwenker and Maggie Wilson, same place. Filed Nov. 14, 1894. Renewed June 29, 1895. Serial No. 554,504. (No model.)



Claim.—1. An attachment for railway cars, comprising a boom pivoted upon said car, and telescoping cylinders carried by said boom.

2. An attachment for railway cars, comprising a boom pivoted upon the car, telescoping cylinders carried by said boom, and means for moving the boom to any angle relative the car.

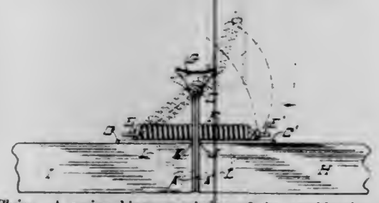
3. An attachment for railway cars, comprising a boom pivoted to the top of and at the longitudinal center of the car, metallic cylinders carried by the ends of said boom, metallic domes provided with loop-holes telescoping upon said cylinders, and mechanism operating from one of the cylinders to the center of the boom for moving said boom at any angle relative the car upon which it is mounted.

4. An attachment for railway cars, comprising a bearing bolted to the top of and in the longitudinal center of the car, a boom pivoted upon said bearing, a face-gear-wheel bolted to the top of the car around and concentric with said center bearing, cylinders carried by the ends of said boom, cylindrical domes adapted to telescope upon said cylinders, the tops of said domes being flaring and provided with loop-holes, swinging-doors adapted to cover said loop-holes, spring-catches adapted to hold the domes in their extended positions, a shaft mounted in bearings fixed to the dome and extending from the face gear-wheel on top of the car to one cylinder, pinions mounted upon said shaft, one of which meshes with the face-gear-wheel, the other pinion meshing with a gear-wheel, the shaft of which is operated from the interior of the cylinder, and sprocket-chains and sprocket-wheels mounted upon the inner sides of the dome and cylinder for raising or extending said cylinders when desired.

5. The combination of a railway car, and a boom pivoted upon the top of said car, said boom carrying bullet proof cylinders and domes on its outer ends.

6. The combination of a railway car, a boom pivoted to the top of said car, said boom carrying on its ends bullet proof metallic cylinders upon which telescope bullet proof steel-domes, and means for moving said boom at any angle relative the car upon which it is mounted.

544,339. SPRING-HINGE. ORSON E. WOODBURY, Madison, Wis., assignor, by direct and mesne assignments, to Edward A. Hardy, same place, and William H. Hardy, Jr., and Clarence F. Hardy, Waukesha, Wis. Filed Feb. 18, 1895. Serial No. 538,772. (No model.)



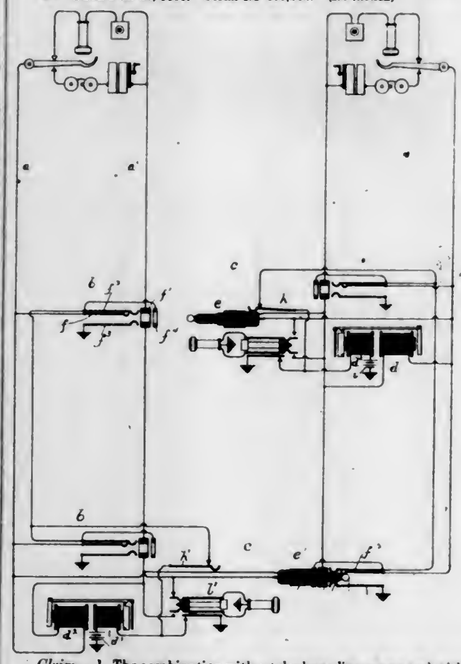
Claim.—A spring hinge, consisting of the combination of the hinged leaves provided with a recess in their interlocking edges and having arms projecting laterally from the plane thereof, the yoke arched over said recess and connected at each end with the pintles or with one of the leaves, and the actuating spring extending through the recess and connected at each end with the arms, substantially as described.

544,340. INHALER. FRANK P. WRIGHT, Chicago, Ill. Filed Feb. 2, 1895. Serial No. 537,132. (No model.)



Claim.—In an inhaler, the combination of a cylindrical body part containing a chamber for medicated material, a mouth piece at one end of the cylindrical body, with recesses on opposite sides of the mouth piece arranged to receive the teeth of the person using the inhaler, and an end adapted to fit the nostril on the end of the cylindrical body part opposite to the mouth piece, with a neck part between such end and the cylindrical body part; substantially as described.

544,341. MULTIPLE-SWITCHBOARD SYSTEM. ORO A. BELL, Brooklyn, N. Y., assignor to the Western Electric Company, Chicago, Ill. Filed Feb. 21, 1893. Serial No. 463,202. (No model.)



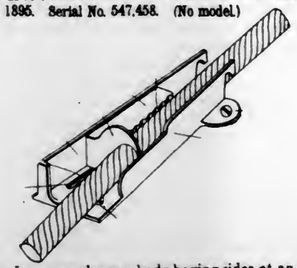
Claim.—1. The combination with a telephone line connected with springjacks upon different switchboards and terminating in a connecting plug at one of the switchboards, of a test circuit independent of the line circuit extending to the different springjacks and connected with test contacts near the same, and a cord switch for the said terminal plug adapted to alter the connection of the test circuit with a source of electricity to change the electrical condition of the test contacts, when the plug is removed from its socket, substantially as described.

2. The combination with a telephone line extending to the central station, of an annunciator thereat having an actuating coil in the telephone circuit and a retaining coil included with a source of electricity in a local circuit, means for closing said local circuit when connection is made with said line as the line of a called subscriber to thereby render said annunciator irresponsive to clearing out currents, and means for making connection between said line as the line of a calling subscriber and a second telephone line without closing said local circuit to thereby include the annunciator in the telephone circuit to respond to clearing out currents, substantially as described.

3. The combination with two telephone lines extending to the central station, of an annunciator thereat for each of said lines, said annunciators each comprising an actuating coil included in the telephone circuit, and a retaining coil included with a source of electricity in a local circuit, and means for connecting said telephone lines together at the central station and adapted to close the local circuit of one of said annunciators to render said annunciator irresponsive to clearing-out currents, but to leave the local circuit of the other annunciator open, whereby the latter annunciator remains in circuit to respond to clearing out currents, substantially as described.

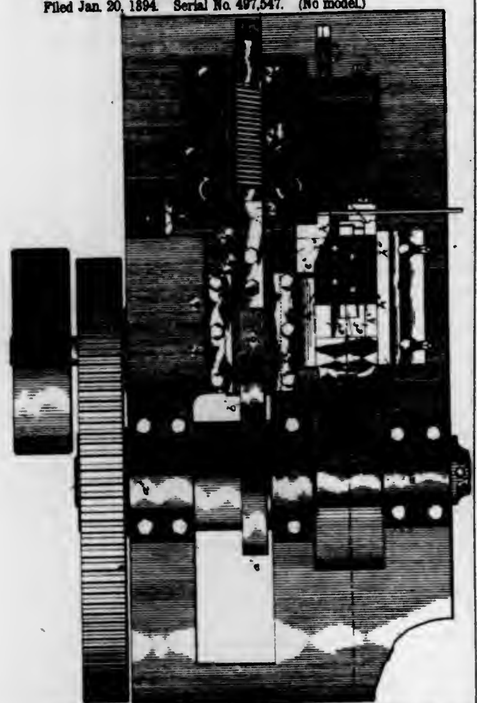
4. The combination with a telephone line extending to switches at the several boards of an exchange and terminating in a plug at one of said boards, of an annunciator at the central station having an actuating coil in the telephone circuit and a retaining coil included with a source of electricity in a local circuit, means for closing said local circuit when a plug is inserted in one of the switches of the line to loop the line in circuit with another line, and means for maintaining said local circuit open when the terminal plug is inserted in the switch of a second telephone line, substantially as described.

544,342. ROPE-CLAMP. LOUIS O. BOWER, Toledo, Ohio. Filed Apr. 29, 1895. Serial No. 547,458. (No model.)



Claim.—In a rope clamp, a body having sides at an angle to each other, a wedge shaped jaw movably secured between the same, one edge of said jaw being serrated, a flange extending from the jaw to the opposite side and serving to hold the rope in the clamp.

544,343. MAGNET-FORMING MACHINE. ORLANDO P. BRIGGS, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Jan. 20, 1894. Serial No. 497,547. (No model.)



Claim.—1. In a magnet forming machine, the combination with a reciprocating cross-head carrying a cutting-off tool, of a stationary cutting-off tool adapted to coact therewith to sever from a bar fed to the machine material of the proper length for the magnet to be formed, a reciprocating plunger situated by the side of the cross-head, and a pair of rollers between which said plunger is adapted to pass to bend the material cut from the bar about the end of the plunger to form the magnet, substantially as described.

2. In a magnet forming machine, the combination with the main shaft comprising the concentric portions a^3, a^4, and the intermediate eccentric portion a^2, of the cam a' mounted upon the concentric portion a^3, and adapted to reciprocate the plunger b^3, and the eccentric strap e mounted upon the eccentric portion a^2 and adapted to reciprocate the slide c', substantially as described.

2. In a magnet forming machine, the combination with a reciprocating plunger, of a pair of rollers located one upon each side of said plunger, the journals of said rollers being eccentrically mounted in bearings, whereby the distance between the peripheries of said rollers may be adjusted, substantially as described.

4. In a magnet forming machine, the combination with a reciprocating cross-head, of a support for the bar from which the magnets are to be formed mounted upon said cross-head, a cutting-off tool provided upon said cross-head, and a stationary cutting-off tool adapted to coact therewith, a plunger adapted to engage the portion of the bar cut off by said cutting-off tools, and a pair of rollers between which said plunger is adapted to be passed to bend the material about the plunger, substantially as described.

5. In a magnet-forming machine, the combination with a pair of rollers, of a plunger adapted to be passed between the peripheries of said rollers to bend the bar from which the magnet is to be formed about the end and sides of said plunger, a channel or recess being provided in the surface of said plunger in the plane of travel of the plunger and having a width corresponding to the width of the bar, the bar being adapted to fit snugly in said recess to prevent the bending of the bar with a wind, substantially as described.

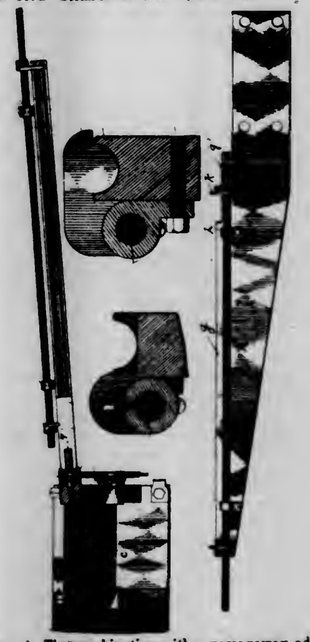
6. In a magnet forming machine, the combination with a pair of rollers, of a plunger adapted to be passed between said rollers to bend the bar from which the magnet is to be formed about the end and sides of the plunger, a channel or recess being provided in the surface of the plunger in which said bar is adapted to fit as the same is bent about the plunger, said rollers being each provided with a peripheral channel or recess situated opposite the recess in the plunger and adapted to receive the bar, and means for relatively adjusting said plunger and rollers to maintain said recesses at the proper height, substantially as described.

7. In a magnet forming machine, the combination with the plunger b^3 provided in its surface with a recess or channel in which the bar to be bent is adapted to fit, of the rollers n n situated one on each side of said plunger and provided with peripheral channels situated opposite the channel in said plunger, the tapering seat r provided beneath the plunger, and the screw r' for adjusting said seat in position to raise or lower said plunger, substantially as described.

8. In a magnet forming machine, the combination with the rollers provided with eccentrically mounted adjustable journals, of the bar n^4 fitting the end of said journal and provided with the arc shaped slot and a bolt passing therethrough to secure the same in position, substantially as described.

9. In a magnet forming machine, the combination with the main shaft of the reciprocating slide c' eccentrically driven by said shaft and carrying cutting-off tool h and support k, stationary cutting-off tool m, cam a' mounted upon the main shaft, cross-head carrying roller b' and plunger b^3 and resiliently connected with stationary part of machine by spring c^3, and adjustable rollers n n, substantially as described.

544,344. WIRE-COILING MACHINE. ORLANDO P. BRIGGS, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Jan. 20, 1894. Serial No. 497,548. (No model.)



Claim.—1. The combination with a passageway adapted to impart to the wire a helical form in passing therethrough, of a pair of feeding rollers between which the wire is passed and thereby fed

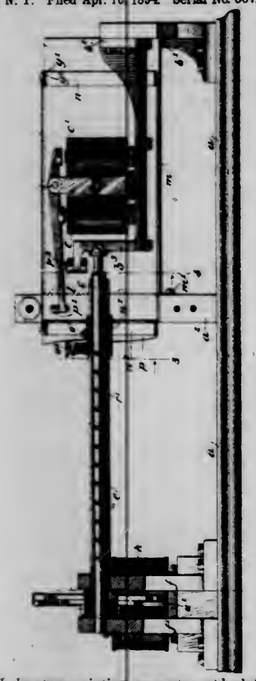
through said passageway, the periphery of the roller engaging with the surface of the wire which is to form the interior of the coil being knurled or otherwise roughened to readily grasp the wire, the periphery of the roller engaging the surface of the wire which is to form the exterior of the coil being smooth, whereby the exterior surface of the coil is maintained uninjured, substantially as described.

2. In a wire coiling machine, the combination with the guide-way along which the coiled wire is fed, of the longitudinally movable gaging rod, the distance piece upon the outer end of said rod adapted to be engaged by the end of the coiled wire, and the distance piece upon the inner end of said rod adapted to indicate the point where the coil is to be severed, substantially as described.

3. In a wire coiling machine, the combination with the guideway along which the coiled wire is fed, of the anvil surface g' provided thereon, the longitudinally movable gaging rod h, the distance piece k' upon the outer end of said rod adapted to be engaged by the end of the coiled wire, and the distance piece k upon the inner end of said rod situated opposite said anvil surface g' and adapted to indicate the point where the coil is to be severed, substantially as described.

4. In a wire coiling machine, the combination with the mandrel block f provided with a bore adapted to receive the mandrel, of the rollers a a' adapted to feed the wire through the passage between said mandrel and mandrel block, guide way g comprised in part by the anvil surface g', and the gaging apparatus, comprising the longitudinally movable rod h, brackets h' h^2, and distance pieces k k', substantially as described.

544,345. PRINTING-TELEGRAPH. CHARLES L. BUCKINGHAM, New York, N. Y. Filed Apr. 16, 1894. Serial No. 507,673. (No model.)



Claim.—1. In a type printing apparatus, a blank formed as an endless band or tube in combination with means for moving the blank step-by-step in the same direction both for letter and word spaces, and by an enlarged single step across the space between the end of one line and the beginning of the next.

2. In a type printing machine, a blank returning upon itself to bring its edges together, in combination with means for feeding said blank in the direction of the letter space feed from the end of one line to the beginning of the next by a lengthened feed step.

3. In a type printing machine, a blank mounted in the machine as an endless band or tube upon which the lines are printed circumferentially or in the direction of the travel of the band, in combination with step-by-step mechanism for moving the band or tube in the direction of the letter or word space feed, said mechanism having a long feed space or spaces for crossing the edge at the end of the line to the beginning of a new line by a longer step or steps.

4. In a type printing machine, a paper or other blank mounted as a tube or endless band, in combination with means for feeding it in the same direction to print the lines around its circumference as well as to cross the gap from edge to edge of the blank by a lengthened feed step in order to begin a new line, and means for feeding said blank axially to cover the space between lines.

5. In a type printing machine, a paper blank formed as a tube or endless band, and a feeding mechanism rotating said blank adjusted to move by an enlarged or amplified step or steps at the end of a line.

6. The combination with the blank, feeding always in the same direction both for letter or word spaces and for the space from the end of one line to the beginning of the next, of a feed mechanism moving the blank in the direction of letter and word spaces having an enlarged or amplified feed space adjusted, as described, to come into operation at the end of each line.

7. In a type-by-type printer, the combination with a blank mounted to feed as an endless band or tube and with an edge forming a spiral or a diagonal to the line of feed as described, of a feeding mechanism operating always in the same direction and adjusted as described to feed said band or tube more or less than a complete rotation for each complete rotation of the feed controlling wheel.

8. In a type by type printer, a blank consisting of a tube adapted to rotate upon a stationary support, and a frictional feeding device engaging directly with the surface of the paper for feeding the same step by step.

9. In a type by type printer, the combination, substantially as described, of a tubular blank, a supporting cylinder within the same, and a frictional feed wheel engaging with the surface of the paper tube for rotating the same upon the cylinder.

10. In a type by type printer, the combination with the paper tube and the frictional feed wheel for rotating said tube step by step, of means for giving said wheel a movement of translation bodily parallel to the axis of the tube.

11. In a type by type printer, the combination with a blank formed as a tube or endless band, a fixed support therefor means for rotating the tube step by step upon its support and continuously in the same direction, as described, and means for giving said blank a movement of translation in the direction of its axis of rotation to produce the vertical space between lines.

12. In a type-by-type printer, the combination with the blank formed as a tube or endless band, of a continuously rotating feed shaft or wheel connected with said tube, a step-by-step escapement wheel carried by said shaft, and a screw shaft with which a pin or lug rotating with the tube engages, as and for the purpose described.

13. In a type-by-type printer, the combination of a paper feed wheel, a longitudinally slotted shaft supporting the same and connected with an escapement wheel, and a screw shaft with which a pin carried by the wheel engages through the slot.

14. In a type-by-type printer, the combination with a paper feed wheel, of a screw shaft, a hollow longitudinally slotted shaft surrounding the same, and a spring actuated pin connected with the wheel and engaging the screw thread, as and for the purpose described.

15. In a type by type printer, the combination, substantially as described, of a paper feed wheel, a longitudinally slotted spindle on which said wheel slides axially, and a screw shaft with the thread of which the wheel is connected through the slot, as and for the purpose described.

16. In a type printing machine, the combination substantially as described, with a paper feed, of a forked lever w, embracing an anchor escapement wheel, and a pivoted detent pallet mounted on one arm of said lever and provided with a spring for moving the toe of the pallet backward to meet an advancing tooth when the said pallet is moved radially away from engagement with the wheel.

17. The combination, substantially as described, with the paper feed in a type printing machine, of two toothed wheels r^3, r^4, and an anchor escapement one of whose pallets is yielding, as described, the two pallets thereof engaging respectively with said wheels.

18. The combination, substantially as described, with an anchor escapement having a yielding pallet, of two toothed wheels engaged respectively by the pallets, and one provided with a blank space, as and for the purpose described.

19. The combination, substantially as described, of two toothed wheels and an escapement lever having two pallets engaging respectively with said wheels, one of said pallets being pivoted as described and provided with a spring and stop, said spring being applied to move the toe of the pallet in a direction to meet the rotation of the wheel.

20. The combination with a type printer, of two toothed wheels connected with the feeding mechanism, one of said wheel having a blank space and an escapement lever, the pallets of which engage respectively with said wheels, as and for the purpose described.

21. In a printing telegraph, the combination of a type-wheel a press pad operated positively in both directions by an electro-magnet or magnets and means at the receiving station for energizing the said magnet or magnets in alternation first to effect an impression and then to withdraw the pad immediately and independently of the condition of the line circuit.

22. In a printing telegraph, the combination with the press mechanism, of two operating magnets, one acting to produce the impression, the other to restore the press to normal position, and means at the receiving station for energizing said magnets alternately.

23. The combination with the type wheel of a press pad, an armature lever carrying the same, two electro-magnets acting on said lever at opposite sides of its fulcrum respectively, and a circuit controller for throwing said magnets into circuit alternately one as soon as the type-wheel is set to position for printing and the other immediately thereafter to throw off the pad.

24. The combination with a type wheel having two or more rings of type and capable of an axial movement as well as a movement of rotation, of one or more drivers and followers arranged in line with the axis of said wheel, said followers being capable of rotation in a plane parallel to the plane of rotation of the type-wheel, and means for converting the rotation of the final follower directly into an end thrust to produce an axial movement of the type wheel.

25. The combination with a type wheel having two or more rings of type, of means for moving said type wheel axially consisting of two or more axially movable drivers mounted in line with the type wheel axis, and two or more corresponding rotating followers rotating parallel with the type wheel, the final follower being connected directly with an axial extension of the type wheel shaft incapable of rotation but adapted to move axially.

26. The combination of a type wheel having three or more rings of type, of two series of rotating drivers and followers all arranged axially in line with the said wheel, and one of said series being provided with means for imparting a movement of rotation to the type wheel while the other series is provided with means for imparting an axial movement to said wheel, as and for the purpose described.

27. The combination with the selecting relays and a sunflower or distributer for closing connection to said relays in succession, of a differentially wound controlling magnet governing the circuit through the sunflower, and a main relay having front and back contacts connected respectively to the differential coils.

28. The combination with the selecting relays, of a differential magnet controlling the circuit thereof, and means for alternately closing the circuit of the differential coils by the main line pulsations.

29. The combination, substantially as described, with the selecting relays and the type wheel impelling devices controlled thereby, of a differential magnet governing the circuits of said selecting relays, said controlling magnet being adapted, as described, to respond to a prolongation or modification in a rapid succession of currents flowing through its coils alternately.

30. The combination, substantially as described, of a type-wheel adjusted to its various positions for printing by a series of impelling devices acting singly or in various combinations, a press apparatus brought into operation automatically on the completion of each cycle of actions in the type-wheel adjusting apparatus, a power driven feed mechanism, an electro-magnet for releasing the same, and means for controlling said magnet to release said feed mechanism on the reverse movement of the press apparatus after each impression.

31. The combination, substantially as described, in a type by type printer, of a tubular blank and a step-by-step feed therefor, a sunflower or distributer governing the position of the type-wheel, a press apparatus controlled by said sunflower, and means for releasing the feed devices on reverse movement of the press after each impression.

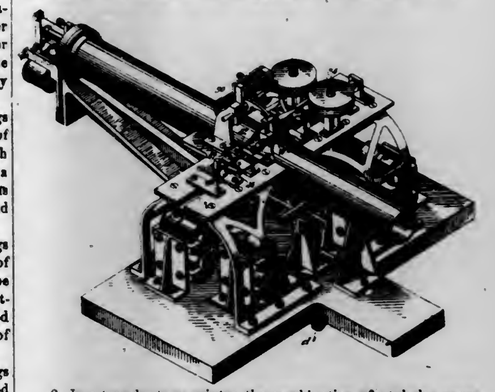
32. The combination, substantially as described, in a type by type printer, of a paper feed mechanism, a wheel of which has an enlarged or amplified feed space as described, a driving power therefor, a step-by-step feed adjusted to release the paper feed mechanism on movement in one direction only, an electro-magnet controlling said step-by-step devices, and a press governing the circuit of said electro-magnet by a back contact.

33. In a type-by-type printer, a blank formed as an endless band or tube in combination with a stationary support therefor and paper feed devices engaging directly with the surface of the paper for rotating the blank continuously in the same direction in the printing of lines and for moving it axially to cover the space between lines.

34. The combination, substantially as described, of the paper feed devices and escapement mechanism acting to release the paper feed on movement in one direction only, an electro-magnet controlling the same, a press governing the circuit of said magnet, a sunflower or distributer for the type-wheel adjusting apparatus, and means for changing the circuit of the press magnet once for each cycle of changes produced by the sunflower or distributer.

544,346. PRINTING-TELEGRAPH. CHARLES L. BUCKINGHAM, New York, and EMIL GERMANN, Brooklyn, N. Y.; said Germann assignor to said Buckingham. Filed Jan. 10, 1895. Serial No. 534,479. (No model.)

Claim.—1. In a type by type printer, the combination of the paper tube blank, a cylinder upon which the same slides longitudinally and circumferentially, means engaging with the surface of the tube for turning it in the same direction for letter and word spaces as well as across the space from the end of one line to the beginning of the next, and an intermittent or step-by-step axial feed device operated at the end of each line and also engaging with the paper surface.



2. In a type-by-type printer, the combination of a tubular paper blank on which the characters are printed in circumferential lines, a stationary cylinder upon which the said tube is adapted to slide longitudinally, and a step-by-step axial feed device engaging with the surface of the tube and operated automatically at the end of each line.

3. In a type-by-type printer, the combination, with the paper tube and its circumferential feed mechanism, of an axial feed device normally out of contact with the tube, and means for automatically bringing it into engagement at the end of each line.

4. The combination in a type-by-type printer, of a paper tube on which the lines are printed circumferentially, and a friction pad normally out of contact with the paper tube and adapted to feed the same axially and automatically at the end of each line.

5. In a type by type printer, the combination with the paper tube and its circumferential feed mechanism, of an axial feed, an actuating spring therefor in which power from the driving power of the circumferential feed mechanism is stored during the movement of the same in printing a line, and means for releasing said spring at the end of the line.

6. The combination in a type-by-type printer, of a paper tube fed circumferentially in the printing of a line, an axial feed device normally disengaged, an actuating spring therefor in which power is stored during the printing of a line, mechanism for bringing the axial feed devices into engagement on the completion of the line, and an automatic release for the spring timed to operate on engagement of the axial feed.

7. The combination in a type-by-type printer, of a paper tube fed circumferentially in the printing of a line, an axial feed device normally disengaged, an actuating spring therefor, mechanism for bringing the axial feed devices into engagement on the completion of the line, and an automatic release for the spring timed to operate on engagement of the axial feed.

8. In a type by type printer, the combination with a paper tube, of a friction feed wheel engaged with the paper for rotating the said tube, and a reciprocating friction pad adapted to engage the paper directly and reciprocating in the direction of the tube's axis.

9. In a type by type printer, the combination with the paper tube and its circumferential step-by-step feed mechanism, of an axial feed mechanism, and means for disengaging the circumferential feed mechanism during the axial feed operation.

10. In a type by type printer, the combination with the paper tube and its rotary feed mechanism normally engaged with the tube, of a reciprocating axial feed device normally disengaged, and an operating cam therefor connected with the rotary feed, as and for the purpose described.

11. In a type by type printer, the combination with the paper tube and its circumferential feed device, of an axial feed device and mechanism for simultaneously throwing both devices out of action when a new tube is to be slipped into printing position upon the support.

12. In a type by type printer, the combination with the paper blank fed circumferentially step-by-step, of means for withdrawing the paper feed device at the end of a line, and a locking device timed to lock said paper feed device before the withdrawal movement begins.

13. In a type by type printer, the combination, substantially as described, in a type-by-type printer, of a blank formed as a paper tube upon which the lines are printed circumferentially, a feed wheel moving intermittently and step-by-step to rotate the paper tube, and

a driving gear two wheels of which are formed as described to have a lost motion one with relation to the other at the end of the feed by which the margins on the page are covered.

14. The combination, substantially as described, in a type-by-type printer, of a paper tube upon which the lines are printed circumferentially, a paper feed wheel engaging with said tube to rotate it around its longitudinal axis, means for withdrawing the wheels at the end of a line, and a driving gear having a blank which permits a lost movement of the gear with respect to the feed wheels.

15. In a type by type printer, the combination with the paper tube and the feed wheel engaging therewith to rotate it around its longitudinal axis, of a driving gear having a lost movement, as described, and a locking device for bringing the feed wheel to a positive stop in the lost movement.

16. In a type by type printer, the combination, substantially as described, of the paper tube upon which the lines are printed step-by-step circumferentially, a feed controlling mechanism having an enlarged or amplified movement at the end of each line, and devices actuated by said driving power for removing the wheel from engagement with the paper at the end of each line, said devices being adjusted to come into operation in the latter part of the enlarged or amplified feed movement of the escape devices.

17. In a type by type printer, the combination, substantially as described, of the paper tube and its feed wheel, an escapement device having an enlarged or amplified feed for every whole revolution of the tube, and mechanism for withdrawing the feed wheel from engagement with the tube in the latter part of the enlarged or amplified movement of the escape wheel, as and for the purpose described.

18. In a type by type printer, the combination, substantially as described, of the paper tube on which lines are printed circumferentially, a feed wheel driven by any suitable power and controlled step-by-step, an escapement having an enlarged or amplified feed adjusted to come into action at the termination of each line, and an actuating device for withdrawing the feed wheel from engagement with the paper, said device being operated by the power which drives the escapement wheel.

19. In a type by type printer, the combination, substantially as described, with a paper tube on which the lines are printed circumferentially, of a paper feed wheel, a driving wheel for turning the same intermittently, mechanism for withdrawing the wheel from engagement with the tube once in every whole revolution thereof, and an intermediate gear between said wheel and driving wheel having a lost movement, as and for the purpose described.

20. In a type by type printer, the combination, substantially as described, of a main driving shaft, a tube, an escapement mechanism having an enlarged or amplified feed movement for every revolution of the tube driven from said shaft, an actuating arm secured to the shaft for throwing the circumferential feed mechanism out of action at the end of each line, and an axial feed mechanism operated from said shaft, as and for the purpose described.

21. The combination, substantially as described, with the paper tube upon which the lines are printed circumferentially, of a driving shaft, a gear wheel secured thereto, a circumferential paper feed device connected with said wheel through a mechanism having a lost movement, an escapement device having an enlarged or amplified movement for each revolution of the tube and secured to said shaft, and mechanism operated from said shaft for depressing or removing the feed wheel from engagement with the paper prior to the beginning of each line.

22. The combination with the paper tube fed circumferentially step-by-step for printing letters or characters around its circumference, a driving shaft, a wheel secured to said shaft and connected with the circumferential feed device, an escapement wheel having an enlarged or amplified movement at every whole revolution of the tube and secured to said shaft, a movable support for the paper feed wheel, an arm carried by the driving shaft for operating upon said support, an axial feed device, and a controlling device for the latter secured to the shaft and timed to operate the same after the wheel has been withdrawn from engagement with the paper.

23. The combination with the paper tube on which the lines are printed circumferentially, of a rotary feed wheel for producing a circumferential feed of the paper, an escapement device having an enlarged or amplified feed movement for each revolution of the tube, an axial device, and mechanism actuated from the driving power of said circumferential feed for temporarily withdrawing the circumferential feed device and bringing the axial feed into engagement and then operating it, as and for the purpose described

24. In a type by type printer, the combination with a paper tube upon which the lines are printed circumferentially type-by-type, of an axial feed pad engaging directly with but normally out of contact with the paper, a spring actuated lever supporting said pad, and a cam actuated support for said lever.

25. In a type by type printer, the combination, substantially as described, with a paper tube, of the paper feed pad mounted on a swinging arm, a reciprocating support carrying said arm, and a spring connected to the arm for bringing the pad into engagement with the paper when the end of the arm is lowered.

26. The combination, substantially as described, with the paper tube, of a circumferential feed wheel mounted on a movable support and continually engaged with the paper during the printing of the line, an axial feed pad supported on the swinging arm, and mechanism for withdrawing the feed wheel and then bringing the axial feed pad into engagement with the paper and giving it a feed movement while the feed wheel is withdrawn.

27. In a type by type printer, the combination with the paper to be fed, of the paper feed wheel mounted on a swinging support, an axial feed device mounted on a swinging support and normally held out of engagement with the paper, and mechanism operated by the feed power for simultaneously withdrawing the feed wheel and permitting the axial feed pad to engage the paper.

28. In a type by type printer, the combination, substantially as described, of the tube, the feed wheel rotating the paper tube circumferentially, a driving power therefor, an axial feed device, a cam connected to the driving power for the feed wheel, a spring, and means for withdrawing the feed wheel and releasing the spring to operate the axial feed pad.

29. The combination with the paper tube upon which the lines are printed circumferentially, of an escapement having an enlarged or amplified feed movement at the end of each line, a feed wheel engaged with the paper, and an actuating device moving with the escapement wheel and timed to move the feed wheel out of engagement with the paper during the latter part of the enlarged or amplified feed movement.

30. In a type by type printer, the combination with the paper tube and its feeding devices movable into and out of operative engagement, of means for positively stopping the paper tube just before or at the instant it is freed from the control of said feed devices.

31. In a type by type printer, the combination with the tubular blank fed circumferentially, of a tubular support therefor, a feed wheel exterior to the support, and a friction wheel mounted within the same and engaging with the inside of the paper tube opposite the said feed wheel.

32. In a type by type printer, the combination, substantially as described, with the paper feed and its escapement mechanism, of means for simultaneously withdrawing the paper feed devices and freeing the escapement wheel.

33. In a type by type printer, the combination, substantially as described, with the paper feed and the escapement wheel, of means for simultaneously withdrawing the paper feed and freeing the escapement wheel, and a zero stop engaged by said wheel when thus freed.

34. The combination, substantially as described, with a paper tube on which lines are printed circumferentially, of a feed wheel, an escapement wheel governing the action of said feed wheel, means for withdrawing the feed wheel from engagement with the paper, and mechanism operating simultaneously with said withdrawal to free the escapement wheel from its escapement and allow it to move without impediment to its zero position.

35. The combination, substantially as described, with a paper tube on which lines are printed character-by-character circumferentially, of a circumferential feed mechanism, an escapement controlling the action thereof, and means for disengaging the escapement mechanism and freeing the escapement wheel from its detent or stop devices to allow it to rotate freely to the zero position.

36. In a type by type printer, the combination, substantially as described, of the paper tube, a circumferential feed wheel, a driving power therefor, an escapement wheel connected to said driving power, means for withdrawing the feed wheel from engagement with the paper, and means for simultaneously freeing the escapement wheel from its escapement to allow it to rotate freely to the zero position.

37. In a type by type printer, the combination, substantially as described, of a paper tube, a feed wheel for rotating it step-by-step circumferentially, an axial feed device for moving it step-by-step in the direction of its axis, and means for simultaneously withdrawing the circumferential feed device and holding the axial feed device out of engagement.

38. In a type by type printer, the combination, substantially as described, with the paper tube and its circumferential feed wheel normally engaged therewith, of an axial feed for moving it step-by-step at the end of each line, an escapement wheel governing the action of the circumferential feed wheel, and means for simultaneously withdrawing the feed wheel, holding the axial feed out of operation and freeing the escapement from its detent devices to allow it to rotate to zero position.

39. In a type by type printer, the combination, substantially as described, with the paper tube, of a circumferential feed wheel, an axial feed device, means for withdrawing the circumferential feed and bringing the axial feed into operation automatically at the end of each line, and a manually controlled device for withdrawing said circumferential feed wheel and holding the said axial feed out of operative position.

40. In a type by type printer, the combination, substantially as described, with the circumferential feed wheel and its controlling escapement wheel driven from any suitable power and having periodically an enlarged or amplified feed movement, of means for withdrawing the said circumferential feed device and at the same time freeing the escapement wheel from its escapement.

41. The combination, substantially as described, with a paper tube having a circumferential as well as axial feed movement, of an escape wheel governing the circumferential feed, and means for simultaneously throwing out of action the escapement devices and freeing the escapement wheel to allow it to rotate to zero position.

42. The combination, substantially as described, with the paper tube on which the lines are printed circumferentially, of a feed wheel mounted on a movable support, an escapement wheel governing the action thereof, a driving power operating on said movable support at the end of each line, and a manual device operating also on said support and adapted to move the escapement wheel out of engagement with its escapement devices to permit it to rotate freely to zero position.

43. The combination, substantially as described, with the paper tube on which the lines are printed circumferentially letter by letter, of the feed wheel, the driving power therefor, a movable support for said feed wheel, a hook connected to said support, an arm connected to the driving power, and a release pin engaged by the hook for releasing the support and allowing the feed wheel to return to engagement with the paper.

44. The combination, substantially as described, with the feed wheel engaging with the paper tube, of a driving power, and an escapement device therefor having an enlarged feed movement, a movable support carrying said feed wheel, an arm operated by the driving power for moving said support and disengaging the wheel from the paper, an axial feed device mounted on a movable support, and a manual actuator engaging with the devices which operate the support for the feed wheel and with means for holding the axial feed out of engagement with the paper.

45. The combination with the paper tube and its circumferential feed wheel, of an axial feed, means for withdrawing the feed wheel from the paper at the end of each line, and a gear wheel between the feed and its driving power having a space 31, with which a controlling tooth 30, engages previously to the operation of the mechanism which withdraws the wheel.

46. In a type by type printer the combination with the paper feed mechanism and its escapement wheel, of a manual controller for freeing the wheel from its escapement, and an automatically retractible cushioning zero stop, as and for the purpose described.

47. In a type by type printer the combination with the paper feed mechanism of an escapement wheel adjusted to move axially, an escapement magnet, a manual controller for moving the wheel axially to free it from the escapement, and a circuit controller governed by said manual controller for simultaneously discharging the magnet.

48. The combination with the escapement wheel movable axially on its shaft of a zero stop, a rod carrying the same, and a spring engaging the said rod, as and for the purpose described.

49. The combination with the step-by-step paper feed mechanism, of a manual device for freeing the same to allow the feed train to rotate to zero position, and an automatic brake connected with the manual device, as and for the purpose described.

50. The combination with the type-wheel, a press magnet, a paper feed mechanism, and the manual device for freeing the paper feed escapement, of a circuit controller actuated by said manual devices and adapted to throw out of action both the escapement and the press magnet.

51. The combination with the type-wheel having a dogging magnet, of a press magnet, a step-by-step paper feed magnet, a manual controller for throwing the step-by-step mechanism out of action to permit the feed to rotate to zero, and a circuit breaker controlled by the manual device and placed in a circuit common to said magnets, as and for the purpose described.

52. The combination in a type-by-type printer, of a feed mechanism and controlling escapement therefor, and a motor exerting a constant torque and connected with said escapement devices through a spring which is kept under uniform tension by said motor to drive the escapement.

53. The combination, substantially as described, in a type-by-type printer, of a paper feed mechanism, a driving wheel fastened to a shaft, an escapement device also secured to said shaft, a driving motor, exerting a constant torque and an intermediate spring one end of which is connected to the shaft and the other to a wheel loose upon the shaft and in continuous operative connection with the constant driving power.

54. The combination, substantially as described, in a type-by-type printer, of a paper feed, a driving wheel therefor, an escapement connected to said wheel, a driving motor, exerting a constant torque and a spiral spring kept under constant tension by said motor and interposed between the motor and said driving wheel.

55. The combination with the type-wheel and its impelling or adjusting devices operating singly or in various combinations according to the letter to be printed, of a series of selecting relays, and two circuits controlled by each relay, one to move the impelling device from position of rest and the other to restore it to normal position.

56. The combination with the type-wheel and an impelling or adjusting device having positive mechanical connection therewith, so as to move it positively in opposite directions, of a pair of actuating magnets, operating on the impelling device oppositely and means for energizing the same alternately.

57. The combination with the type-wheel and impelling devices operating singly or in various combinations to adjust the type-wheel to its various positions for printing, of an electro magnet or magnets for actuating each of said impelling devices positively by a magnetic pull or push in both directions, and means for alternately energizing the magnet or magnets to cause said impelling devices to move to and fro.

58. The combination with the type-wheel and its impelling devices operating singly or in various combinations to adjust the wheel to its various positions for printing, of two actuating magnets for each impelling device acting alternately on the same one to move the same in a direction to set the type-wheel into position for printing the desired character and the other to restore the impelling device to position preparatory for the next transmission.

59. The combination with the type-wheel and the series of positively acting impelling devices, of a corresponding series of selecting relays, a back contact for each relay controlling the circuit of an electro-magnet which operates on the impelling or adjusting device in a direction to hold or restore the same to normal position, and a front contact for each relay controlling a circuit by which the impelling device is moved in a direction to set the type-wheel to position for printing.

60. The combination of a type wheel and a series of adjusting devices operating singly or in various combinations to move the type-wheel into position for printing its various characters, actuating magnets therefor each in a separate circuit, a distributer for closing in succession the controlling circuits of said actuating magnets, a dogging device normally disengaged from the type-wheel shaft, an actuating magnet therefor, and means for automatically operating the same when the type-wheel has reached any one of its positions.

61. The combination with a type-wheel having two or more rings of type axially and circumferentially adjustable for bringing its various characters into position for printing, of a conical dogging pin, and a perforated or recessed cylinder on the type-wheel shaft having holes corresponding in number and relative position to the type-wheel characters.

62. In a type-by-type printer, a fixed paper supporting cylinder supported from one end only and adapted to permit a tubular blank to be slipped endwise upon its free end, said cylinder having sufficient space at its supported end for a filled blank to be slid endwise away from position for printing in the operation of sliding a fresh blank into position, as and for the purpose described.

63. The combination with a type-wheel, of a dogging magnet, and a press magnet in a local controlled by said dogging magnet.

64. The combination, substantially as described of a type-wheel, a series of adjusting devices and a distributer, of a dogging magnet controlled from a circuit of the distributer, and a press magnet controlled by the dogging magnet.

65. The combination, substantially as described, of a type-wheel dogging magnet, a press magnet in a local controlled by the dogging magnet, and a paper feed magnet locally controlled by the press magnet.

66. The combination with the type-wheel, a series of selecting relays, a corresponding series of adjusters, magnets for restoring the same to normal position, a dogging magnet, and a restoring circuit through said relays controlled by the dogging magnet circuit.

67. The combination with a type-wheel having its characters arranged in two or more rings of type, of a stop or lock cylinder movable therewith and having two or more corresponding rings of locking points or seats and a conical dogging pin or lock.

68. The combination of a type-wheel having two or more rows of type, adjusting devices for adjusting it by a single movement into position for printing any character of the row, means for moving the type-wheel axially for shifting it to position to print from the desired row, a dogging device, and means for actuating said dogging device on the completion of each adjusted movement of said type-wheel axially or circumferentially, as and for the purpose described.

69. The combination with a type-wheel and a series of adjusting devices operating singly or in various combinations, of a conical dogging device, an actuating magnet therefor, and means for bringing

the latter into action at the conclusion of each adjusting operation by one or more of said adjusting devices.

70. The combination with a type-wheel, of a series of adjusting magnets in separate circuits, a distributer closing the circuits of said magnets in succession, a dogging device for holding the wheel in each of its adjusted positions, and a controlling magnet therefor brought into action at the conclusion of each cycle of circuit changes in which any adjustment takes place.

71. The combination, substantially as described, of a type-wheel, a series of adjuster magnets operating singly or in various combinations to control the position thereof, a distributer or sunflower which closes the circuits of said magnets in succession, and a dogging magnet whose circuit is closed by the said sunflower at the conclusion of each cycle of changes in which the adjuster magnets are controlled.

72. The combination with a type-wheel having two or more rings of type and axially and circumferentially adjustable as described, of a conical locking dog, and a cylinder upon the same shaft with said type wheel and having corresponding rings of locking points or seats to receive the dog, as and for the purpose described

73. The combination with a type-wheel having two or more rings of type, of a series of adjuster magnets, a dogging magnet, and a sunflower or distributer whose cycle of changes includes the circuits for controlling the said adjusting magnets and concludes with the circuit which controls the action of the said dogging magnet.

74. The combination with a type-wheel, of a series of adjuster magnets, a dogging magnet, a sunflower or distributer for closing in succession controlling circuits of said adjuster magnets and dogging magnet, and a press circuit controlled by said dogging magnet.

75. The combination with the type-wheel having two or more rings of type, of a series of adjuster magnets, a sunflower or distributer, a dogging circuit closed at the conclusion of each cycle of changes in which said adjuster magnets are brought into operation, and a press magnet in a local circuit controlled from said dogging circuit.

76. The combination with the type-wheel having two or more rings of type, of a locking cylinder moving coaxially therewith, a locking dog or pin for holding the wheel against rotation and a magnet for actuating the locking dog or pin at the conclusion of each circumferential movement of the type-wheel by which a character is brought into position for printing.

77. The combination with a type-wheel having two or more rings of type and adjustable circumferentially and axially as described, of a series of adjusting magnets, a sunflower or distributer, a dogging magnet, a restoring circuit, and a relay controlling the latter circuit and placed in a circuit with the dogging magnet, as and for the purpose described.

78. The combination of a type-wheel, a series of adjuster magnets, a distributer, and an auxiliary device for assisting the adjusting action of the magnet or magnets which are called into action at the latter part of the cycle of actions produced by the sunflower.

79. The combination with the type-wheel and a series of adjusting magnets brought into action consecutively to produce the desired adjusted positions of the type-wheel, of an auxiliary power for aiding the operation of those magnets which come into operation toward the close of each cycle of actions in which each adjustment is effected.

80. The combination of a type-wheel or platen, a press pad, and a strip of elastic material fed between the pad and wheel and of sufficient thickness as described to act as a resilient cushion to assist in the recoil of the pad.

81. In a type-by-type printer, the combination with the type and the pad, of an endless band or strip of elastic material fed between the pad and the paper.

82. In a type-by-type printer, the combination with the press pad, of a strip of elastic material fed between the pad and the paper, and means for feeding said strip from the paper feed mechanism.

83. The combination with the cylinder carrying the paper tube, of a press pad within the same, a paper feed roll projecting outside the cylinder to engage the paper, and a band of elastic material passing over the rolls mounted within the cylinder at opposite sides of the pad and over a third roll mounted to revolve with the feed roll.

84. The combination with the paper tube and its supporting cylinder, of a press pad mounted on a bell-crank lever within the tube, and an operating magnet mounted exteriorly to the cylinder and having its armature connected with the said bell-crank lever by a rod or link, as and for the purpose described.

85. The combination with the paper supporting cylinder, of the press pad mounted within the cylinder, an operating magnet mounted outside the cylinder on an adjustable frame, and means for connecting said magnet and press pad as and for the purpose described.

86. The combination with a type-wheel and an adjusting device positively connected thereto for adjusting it by a single movement to position for printing, of an electro-magnet in a normally closed circuit for holding the adjuster in normal position, and means for giving said adjuster a bias in a direction against the power of the magnet, as and for the purpose described.

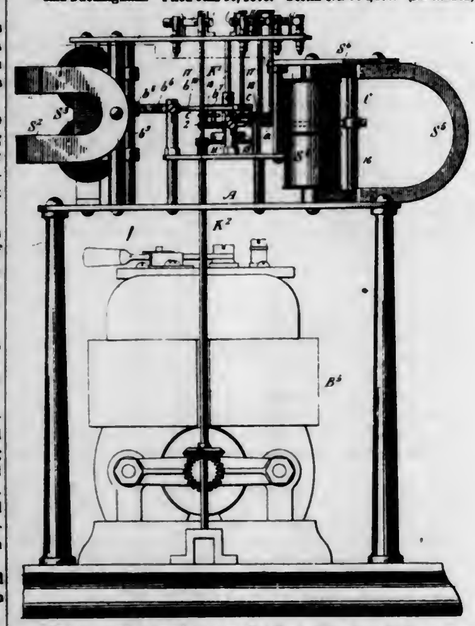
87. The combination with a type-wheel, of a series of adjusters, a distributer by which the same may be successively called into action, and means for giving a bias to one or more of those adjusters which operate late in the cycle of changes produced by the distributer, as and for the purpose described.

88. The combination with a type-wheel, of a series of adjusters operating in succession in a cycle of actions in which the desired adjustment of the type-wheel to position for printing is effected, the adjuster which operates last in the cycle having a bias which tends to move it away from normal position or position of rest, as and for the purpose described.

89. The combination with the type-wheel and its impelling or adjusting devices operating singly or in various combinations according to the letter to be printed, of a series of selecting relays, a distributer, magnets for moving said adjusters in opposite directions, and means for assisting the action of those adjusters which are at a disadvantage in point of time in producing the necessary movement of the type-wheel.

90. The combination with the series of adjusters, of a distributer, a series of relays controlling the action of said adjusters, and biasing springs for assisting the action of the adjusters called into action by the distributer at the end of its cycle of changes, as and for the purpose described.

544,847. PRINTING-TELEGRAPH. CHARLES L. BUCKINGHAM, New York, and EMIL GERMANN, Brooklyn, N. Y.; said Germann assignor to said Buckingham. Filed Jan. 10, 1895. Serial No. 534,480. (No model.)



Claim.—1. In a sunflower or distributer, a series of vibrating or rocking circuit breakers, in combination with an operating wheel whose successive actuating lugs or spaces are differential to the spaces of the said circuit breakers so that all the circuit breakers shall be operated in a movement of the wheel equal to one of the spaces of the operating wheel.

2. The combination in a distributer, closing in rapid succession the branches of the circuit, of a series of rockers each having a circuit closing arm and an actuating arm, and a wheel having lugs or projections for engaging the arms of said rockers in succession to operate all the rockers in turn and then repeat the cycle of operation on partial rotation of the wheel.

3. In a sunflower or distributer, the combination with a vibrating or rocking circuit maker and breaker, of an actuating wheel connected to an escapement and adapted to produce a complete operation of the said circuit maker and breaker to cause a make and break of circuit or vice versa on movement of the wheel permitted by one movement of the escapement.

4. In a sunflower or distributer, a series of vibrating or rocking circuit controllers governing the several local circuits or branches, in combination with a step by step actuating wheel operating on said circuit controllers in succession as described to cause them to successively make and break the connection of the several local circuits

or branches, each producing its make and break by a movement of the wheel one step, as and for the purpose described.

5. The combination, substantially as described, in a distributer, of a series of rock shafts each having an attached actuating arm, means for operating said arms in succession, and a series of circuit closing arms attached respectively to said rock shafts for closing the several branches of a circuit in succession, said circuit closing arms being each adjustably fastened on its shaft so as to be capable of circumferential adjustment thereon independently of the actuating arm.

6. In a sunflower or distributer, the combination with a series of independently mounted circuit controllers and governing respectively the separate branches or circuits whose condition electrically is to be changed in succession and an actuating wheel moving step by step, operating on said circuit controllers to cause each to produce a complete change of electrical condition in its circuit, from normal and back to normal on movement of said wheel one step.

7. In a sunflower or distributer, the combination, of a series of circuit closers and breakers, a circuit branched therethrough and an actuating wheel having operating lugs or pins spaced as described to operate said circuit closers and breakers in succession, and to repeat the cycle of operations once for each movement of the wheel equal to the spacing of the lugs.

8. In a sunflower or distributer, the combination, of a series of rock shafts having actuating and circuit closing arms, a circuit branched through said circuit closing arms of an operating wheel having lugs or projections the spaces between which are less than the spaces between the actuating arms for the rock shafts.

9. In a sunflower or distributer, the combination, with a series of circuit closers and breakers, a circuit branched therethrough and an operating wheel having a series of actuating pins, an escapement wheel secured thereto, and one or more unison pins or stops connected to said escapement wheel.

10. The combination with the rock shaft, of the hubs or collars fastened thereon and each carrying two blade springs, one constituting a circuit closing arm and the other a retracting spring kept in tension by engagement with a stop through which electrical connection is maintained.

11. In a distributer or sunflower, the combination with a series of circuit makers and breakers, of a wheel having a series of actuating pins or lugs spaced as described to produce a complete cycle of circuit changes on movement over the space between two pins or lugs, and an escapement wheel whose teeth are spaced with reference to the number of contacts so as to produce a complete cycle of changes on movement of the wheel a whole number of teeth equal to one half the number of contacts.

12. The combination with the escapement, of a pair of polarized armatures of opposite polarity respectively, a double wound magnet core whose opposite polar ends are presented respectively to said armatures, and means for causing a rapid succession of currents in alternation in the windings in said core, as and for the purpose described.

13. The combination of a pair of armatures of opposite polarity respectively, a pair of double wound magnet cores between whose ends the armatures vibrate, and means for causing a rapid succession of currents in the two windings in said cores, as and for the purpose described.

14. The combination with two polarized armatures, of two actuating magnet cores whose opposite pole ends respectively embrace said armature, and a double winding for each of said cores, one winding of each being included in circuit with a winding on the other, and means for causing currents to flow in opposite directions in the sets of windings alternately, as and for the purpose described.

15. The combination of the permanent magnet carrying an armature at each end, a pair of actuating magnet cores each having its opposite poles presented to said armatures respectively, and at a side thereof opposite the poles of the other and windings for each of said cores through which currents are caused to flow in alternation but in direction to reverse the polarity of both cores simultaneously.

16. The combination with a sunflower or distributer operating step-by-step in response to a series of line pulses, of a double wound unison magnet the circuits of whose coils are closed alternately, and a unison stop carried by an armature thereof and normally standing in position to stop the sunflower.

17. The combination with a unison stop, of a double wound or differential controlling magnet adapted to respond to a prolongation or modification in a rapid succession of currents flowing through its coils alternately, and a unison stop carried by an armature thereof and normally standing in position to obstruct the movement of the mechanism after a succession of step-by-step movements thereof.

18. The combination with a receiving instrument having a unison stop device, of a differentially or doubly wound stop-controlling magnet, a relay to whose front and back stops the two coils of said magnet are respectively connected, and a unison stop carried by an armature of the said stop controlling magnet and normally standing in position to arrest the mechanism.

19. The combination with a receiving instrument, of a polarized unison stop magnet differentially or doubly wound, and adapted to respond to a prolongation or modification in a rapid succession of currents flowing alternately through its two coils.

20. The combination with a distributer moving step-by-step, of a main line relay, a local through coils of the controlling magnets for said distributer, and a polarized unison stop magnet in said local.

21. In a printing telegraph in which each letter or character is transmitted by a definite number of impulses one or more of which is prolonged or modified, a synchronizing magnet responsive to a prolonged or modified impulse following each transmission, and a stop controlled thereby and normally standing in position to arrest the mechanism.

22. In a printing telegraph in which each letter or character is transmitted by the same number of impulses one or more of which is prolonged or modified, a synchronizing stop adapted to bring the receiving apparatus to rest after each transmission.

23. In a printing telegraph in which each letter or character is transmitted by a definite number of alternately positive and negative impulses one or more of which are prolonged, a polarized synchronizing magnet responsive to a prolonged or modified impulse of a determinate polarity following each series of impulses by which a letter or character is transmitted.

24. In a printing telegraph in which each letter or character is transmitted by a definite number of alternately positive and negative impulses, a unison stop for the receiver adapted to bring the same to rest after each letter transmission, and a controlling polarized magnet for said stop responsive to a modified impulse at the termination of a series of impulses the same in number as used in transmitting a letter or character.

25. The combination, substantially as described, of a sunflower or distributer moving step-by-step in obedience to a series of main line pulses, a series of type adjusting magnets controlled thereby, a unison stop normally in position to stop the sunflower at the completion of each cycle of changes produced thereby, and a controlling magnet for said stop responsive to a prolongation or modification in the final pulse of each cycle of main line pulses.

26. The combination with the receiving sunflower or distributer moving step-by-step in obedience to a series of main line pulses, a unison stop adapted to stop the sunflower at the completion of each cycle of circuit changes produced thereby, and a stop magnet responsive to a prolongation or modification in the final pulse of each cycle of main line pulses.

27. The combination with the receiving sunflower or distributer moving step-by-step in obedience to a series of main line pulses alternately positive and negative, of a unison stop adapted to stop the sunflower at the completion of each cycle of circuit changes produced thereby, and a stop magnet responsive to a prolongation or modification in the final pulse of each cycle of main line pulses.

28. The combination, substantially as described, of a double wound unison magnet and a double wound controlling magnet governing the circuits for the selecting relays, both included in the same local circuit and each adapted as described to respond to a prolongation or modification in a rapid succession of currents flowing through their coils alternately.

29. The combination, substantially as described, of the distributer, the polarized escapement magnet therefor having a double winding, and a double wound magnet controlling the circuits of the selecting relays run by said distributer, said controlling magnet having its two windings included in the circuits of the windings for the escapement magnet and adapted to respond to a prolongation or modification in a rapid succession of currents flowing through the coils alternately.

30. The combination, substantially as described, in the same local circuit, of the double wound escapement magnet for the distributer, a double wound controlling magnet governing the circuits for the selecting relays connected to the distributer, and the double wound unison magnet for said distributer.

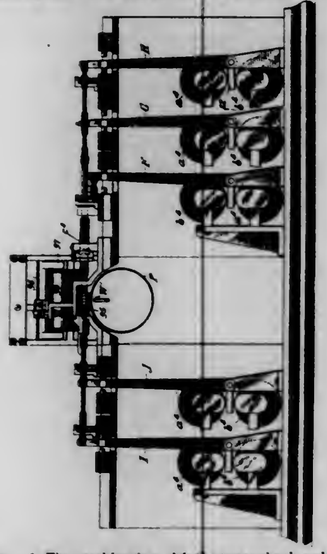
31. The combination, substantially as described, of the polarized escapement magnet having a double winding as described, means for closing the circuits of its coils or windings alternately in obedience to the main line pulsations, a unison magnet also having two windings included respectively in said local circuits, said unison magnet being adapted to respond to a prolongation or modification in the rapid succession of currents flowing through the coils of the polarized escapement magnet, and a unison stop carried by an armature of said magnet and standing normally in position to arrest the escapement.

32. The combination, substantially as described, with an escapement, of two actuating circuits alternately closed by the main line pulsations, and a polarized unison stop magnet double wound and having its coils or windings included respectively in the said actuating circuits, said unison magnet being adapted to respond to a prolongation or modification in the rapid succession of currents by which the escapement is operated

33. The combination, substantially as described, of a main line polar relay and a local circuit the two branches of which are closed in succession by movements of the main line relay, each branch of said circuit including, as described, one coil of an escapement magnet, of a unison magnet, and of a local circuit controlling magnet adapted to respond to a prolongation in the rapid succession of currents flowing through said branches successively

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544,348. PRINTING-TELEGRAPH. CHARLES L. BUCKINGHAM, New York, and EMIL GERMANN, Brooklyn, N. Y.; said Germann assignor to said Buckingham. Filed May 20, 1895. Serial No. 549,861. (No model.)



Claim.—1. The combination with the type-wheel or platen, of two adjuster magnets, and an intermediate lever having two fulcrums around either or both of which it may turn under the action of said adjuster magnets working singly or in combination.

2. The combination with the type-wheel or platen having three or more rings or rows of type, of two adjuster magnets, and a lever connected to the type-wheel axis and to said adjuster magnets and having two fulcrums around which said lever turns under the action of the adjuster magnets respectively.

3. The combination with the type-wheel or segment of wheel, of an axially moving reciprocating head or block connected therewith through devices adapted to rotate the said wheel positively in both directions, two or more adjuster magnets, and a lever connecting the said magnets with the head and adapted to move around either or both of two fulcrums according to the magnet or magnets operated.

4. The combination with the type-wheel, of a reciprocating head or follower connected with said wheel through devices adapted to rotate the same, two or more adjuster magnets, and a lever connecting the said magnets with the head and adapted to move around either or both of two fulcrums according to the magnet or magnets operated.

5. The combination with a type-wheel, of three adjusting and two connecting levers each adapted to move around either or both of two fulcrums according to the adjuster or combination of adjusters operating.

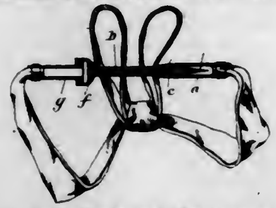
6. The combination with the distributer, of a series of selecting relays and adjuster magnets controlled thereby, of a restoring circuit, and a controlling relay for the latter in one of the distributer branches.

7. The combination with the distributer, of a series of selecting relays, a series of adjuster magnets, a restoring circuit, a type-wheel, a dogging magnet for holding the type-wheel in adjusted position, and a distributer branch including the dogging magnet and a relay for the restoring circuit.

8. The combination with the type-wheel or platen, of a whiffletree or system of whiffletrees, and two or more adjuster magnets, as and for the purpose described.

9. The combination with a type-wheel or platen adjustable in one direction to bring different rows of type into position for printing and in a direction at right angles to the first to bring different type of a row into position, of two whiffletree levers or system of levers connected therewith to give both said motions, and two or more adjusters or actuators acting singly or in combination as described upon each lever or system of levers.

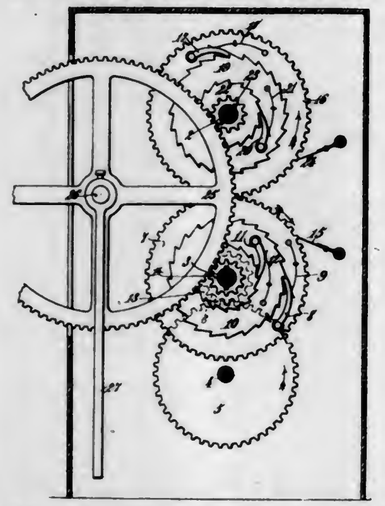
544,349. SHOE-LACE FASTENER. KATE BURBIE, San Francisco, Cal. Filed May 24, 1894. Serial No. 512,353. (No model.)



Claim.—1. A shoe lace having a female tip on one end and a pointed male tip on the other having co-operating interlocking parts to secure the lace in a tied position, substantially as specified.

2. A shoe lace having a female tip on one end and a pointed male tip on the other end having co-operating interlocking parts, said male tip also having a swivel or loose joint so that it may be turned without turning or twisting the lace to which it is attached, substantially as specified.

544,350. SPRING-MOTOR. THOMAS A. CROSS, Bardwell, Ky. Filed Dec. 14, 1894. Serial No. 531,755. (No model.)

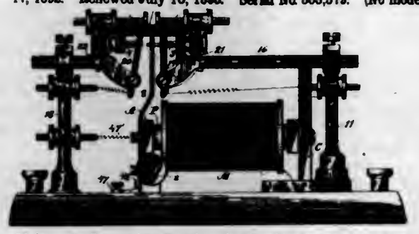


Claim.—1. In a spring-motor, the combination of the spring-carrying shafts, the loose spur gears mounted on said shafts in mesh with each other and each provided with a pawl, ratchet wheels fast on said shafts and having their teeth engaged with the pawls on said spur gears, each of said fast ratchet wheels being provided with a pawl, pinions loose on said shafts and having ratchet wheels that are engaged with the pawls of the fast ratchet wheels and an oscillatory winding gear that is in mesh with the said pinions of all the spring carrying shafts, whereby the spring or springs on one shaft will be wound while the motor is operated from another spring carrying shaft, substantially as described.

2. In a spring-motor, the combination of shafts that are each provided with a series of coiled springs, the springs on the respective shafts being coiled in opposite directions, spur gears loosely mounted on said shafts in mesh with each other and each provided with a pawl, ratchet wheels fast on said shafts and having their teeth engaged with the pawls on said spur gears, each of said fast ratchet wheels being provided with a pawl, pinions loose on said shafts and having ratchet wheels that are engaged with the pawls of the fast ratchet wheels, the ratchet wheels of alternate shafts being right and left running, respectively, and arranged in opposite directions, an oscillatory winding gear in mesh with the loose pinions of the spring carrying shafts, whereby the springs on one or more shafts will be wound while the springs on another shaft are engaged in operating the motor, a pinion secured to the spur gear of one of the spring carrying shafts, and a power transmitting shaft having a spur gear in mesh with said pinion substantially as described.

3. In a spring-motor, the combination of shafts having springs attached thereto and coiled in opposite directions on alternate shafts, intermeshing spur gears loosely mounted on said shafts and one of said spur gears having a pinion secured thereto for gearing with a power transmitting shaft, oppositely operating ratchet mechanisms mounted on the respective spring carrying shafts and adapted to connect in one direction with the loose spur gears on said shafts, and a winding gearing connecting the spring-carrying shafts and adapted to operate for winding one set of springs while another set is engaged in operating the motor, substantially as described.

544,351. RELAY. THOMAS B. DIXON, Henderson, Ky. Filed Nov. 17, 1892. Renewed July 10, 1895. Serial No. 555,579. (No model.)



Claim.—1. In a relay for electric circuits, the combination, with an electro-magnet, a pivoted armature therefor, and a retractile spring attached to said armature, of two contact rods carried by said armature and insulated from each other, set screws engaging with one of said contact rods, on opposite sides thereof, and so adapted to limit the movement of the armature, one or both of said screws being likewise adapted to serve as electrical contact points and to make electrical contact with said contact rod, and two swinging and spring-actuated contact levers engaging with the other contact rod, on opposite sides thereof, and adapted to make electrical contact therewith, substantially as described.

2. In a relay for electrical circuits, the combination, with an electro-magnet, a pivoted armature therefor, a retractile spring attached to said armature, and means for limiting the movement of the armature, of an extension of the armature provided with a contact point, a pivotally supported contact lever adapted to engage with said contact point, means for causing said contact lever to press against said contact point, and a stop 25 having a flanged head adapted to engage with the end of said contact lever and to cause it to break contact with the armature contact point when the armature operates, substantially as described.

3. In a relay for electric circuits, the combination, with an electro-magnet, a pivoted armature, a retractile spring acting on said armature, and means for limiting the motion of the armature, of contact rods, as 8, carried by the armature and insulated from each other, pivoted and spring actuated levers as 19 and 20 adapted to engage with said armature contact rods, and screws, as 25 and 27, having flanged heads adapted to engage with the ends of the contact levers, by which the movement of the said contact levers is limited, substantially as described.

4. In a relay for electric circuits, the combination, with an electro-magnet, a pivoted armature therefor, a retractile spring acting on said armature, and means for limiting the motion of the armature, of a contact rod, as 8, projecting from the armature, a longitudinally adjustable support, as 16, having a forked end, a contact lever pivoted in said fork and adapted to engage with said contact rod 8, a spring acting on said contact lever and tending to hold it in contact with said contact rod, and an adjustable stop screw, 25, carried by said support 16, engaging with said contact lever, and adapted to cause said lever to break contact with the contact rod 8, substantially as described.

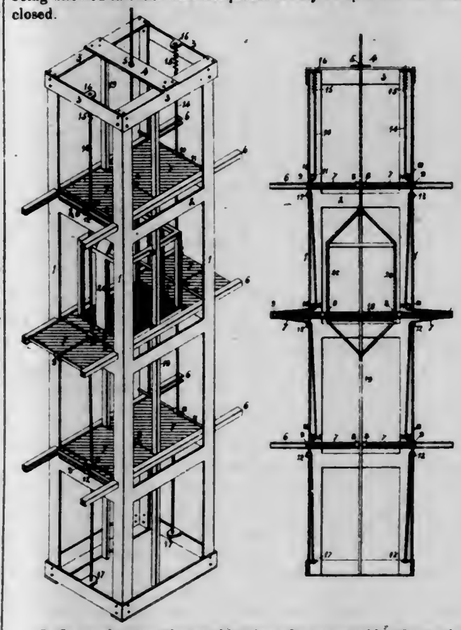
5. In a relay for electric circuits, the combination, with an electro-magnet, a pivoted armature therefor, a retractile spring acting on said armature, and means for limiting the motion of the armature, of a contact rod, as 8 projecting from the armature, a support 16, a contact lever 19 pivoted to said support 16 and adapted to engage with said contact rod 8, a spring connected to said lever 19 and adapted to hold said lever in contact with the contact rod 8, a projection 21 of said support 16, and a stop screw 25 adjustably mounted in said projection 21, and having a flanged end engaging with the contact lever 19, and adapted to cause said contact lever to break contact with the contact rod 8 when the armature is operated, substantially as described

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544,352. ELEVATOR. ALBERT A. FRENCH, Baileyville, Ill., assignor of one-half to John W. Kampen, same place. Filed Mar. 1, 1895. Serial No. 540,261. (No model.)

Claim.—1. In an elevator, the combination of a car capable of a vertical movement, a horizontally slidable platform for each of the different floors, cable connections between the platforms having their ends connected to stationary portions of the framework so that the movement of the car will open the platform in its advance and close the platform after it.

2. In an elevator, the combination of a car capable of a vertical movement, a series of platforms each composed of two sections capable of a horizontal sliding movement, cables each connected with stationary supports at each end and each cable passing outside of one of the sections of each platform and guides above and below each of the sections inside of which guides the cables pass, sufficient slack being allowed in order that one platform may be open and the others closed.



3. In an elevator, the combination of a car capable of a vertical movement, two vertical series of platform sections capable of a horizontal sliding movement, cables for each series, each cable passing outside of one of the sections of each platform and guides above and below the sections, inside of which the cables pass, the car forcing open the sections of the platform in its advance and closing those after it.

4. In an elevator, the combination of a car capable of vertical movement, a vertical series of platform sections in pairs and capable of a horizontal sliding movement, and each section being provided with a roller at its outer edge, and each pair of sections being also provided with rollers at the meeting edges of the pair, and rollers, one above and one below each section, said last named rollers and those on the outer edges of the sections forming guides for the cables, the car in its movement coming between the rollers on the meeting edges of the sections and forcing open the sections of the platform in its advance and closing those after it.

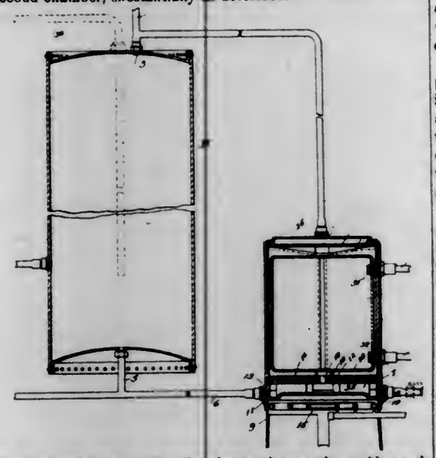
544,353. WATER-HEATER. EUGENE G. GOODWIN, Chicago, Ill. Filed May 29, 1894. Serial No. 512,923. (No model.)

Claim.—1. The combination with an outer chamber provided with an outlet port at one end, a second chamber within said outer chamber with its end situated adjacent to the said outlet port conforming to the contour of said outer chamber so as to make a water tight joint therewith, an inlet port at the other end of said second chamber, said outer and second chambers being shaped to form flues between their walls, and a heater situated within said second chamber, substantially as described.

2. A water heater consisting of an outer chamber having an inlet port, a second chamber situated within said outer chamber and consisting of a plurality of hollow wings communicating with each other at their inner ends, one end of said second chamber being closed and provided with a port communicating with a source for supplying water thereto, the other end of said second chamber, or the end adjacent to said outlet port of the outer chamber conforming to the contour of said outer chamber to make a water tight joint therewith, and a heater consisting of a plurality of hollow wings communicating with each other at their inner ends situated within said second chamber and provided with inlet and outlet ports for the inlet and outlet of a heating medium, substantially as described.

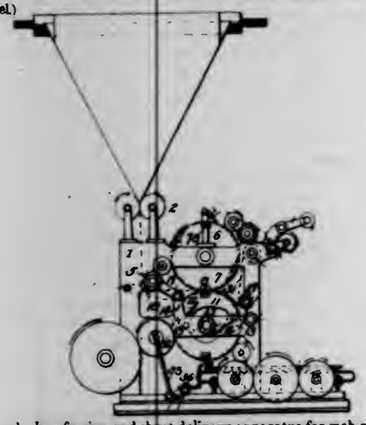
3. The combination with an outer chamber provided with an outlet port at one end, a second chamber within said outer chamber with its end situated adjacent to the said outlet port conforming to

the contour of said outer chamber so as to make a water tight joint therewith, the upper end of said second chamber being inclined upwardly therefrom to said outer chamber, an inlet port at the other end of said second chamber, said outer and second chambers being shaped to form flues between their walls, and a heater situated within said second chamber, substantially as described.



4. In a water heater, a heating drum, a burner situated beneath said heating drum, upright passages 35 through said heating drum, a water supply for said heating drum, a heater mounted upon said heating drum and consisting of an outer chamber resting upon the heating drum and having passages 37 near its upper end, a second chamber having wings situated within said outer chamber said second chamber being closed at its lower end and communicating with the said heating drum and opening at its upper end into the outer chamber 14, an outlet port at the upper end of said outer chamber, a heater within said second chamber and having wings and inlet and outlet ports 31 and 32, substantially as described.

544,354. FOLDING AND DELIVERY DEVICE FOR PRINTING-PRESSES. SAMUEL G. GOSS, Chicago, Ill., assignor to the Goss Printing Press Company, same place. Filed Sept. 19, 1893. Serial No. 485,931. (No model.)



Claim.—1. In a folding and sheet delivery apparatus for web perfecting presses, the combination with a cutting cylinder, and folding mechanism mounted therein and adapted to fold the web transversely, of a co-acting cutting cylinder, delivery mechanism mounted upon said cylinder and adapted to deliver the folded sheet from said cylinder, and devices cooperating with the folding mechanism to complete the fold and to transfer the sheet to the said delivery mechanism, substantially as described.

2. In a folding and sheet delivery apparatus for web-perfecting presses, the combination with devices for folding a web longitudinally, of a cutting and folding cylinder and a delivery cylinder cooperating therewith to sever the longitudinally folded web transversely, and devices cooperating with the cutting and folding cylinder and the delivery cylinder to complete the folding of the severed sheet and transfer it to the delivery cylinder, substantially as described.

3. In a folding and sheet-delivery apparatus for web-perfecting presses, the combination of a folding and cutting cylinder having folder devices, folders cooperating therewith for folding the web transversely, a cutter and delivery cylinder cooperating with the folding and cutting cylinder to sever the web, delivery devices carried by the cutter and delivery cylinder for delivering the folded sheet from said cutter and delivery cylinder, and mechanism for transferring the transversely folded sheet to the delivery devices of the cutter and delivery cylinder, substantially as described.

4. In a folding and sheet delivery apparatus for web-perfecting presses, the combination with a former, and co-operating fold-creasing rollers at the apex of the former to fold a web longitudinally, of a cutting and folding cylinder and a delivery cylinder cooperating therewith to sever the longitudinally folded web transversely, devices cooperating with the cutting and folding cylinder to fold the sheet transversely, and devices for transferring the transversely folded sheet to the delivery cylinder, substantially as described.

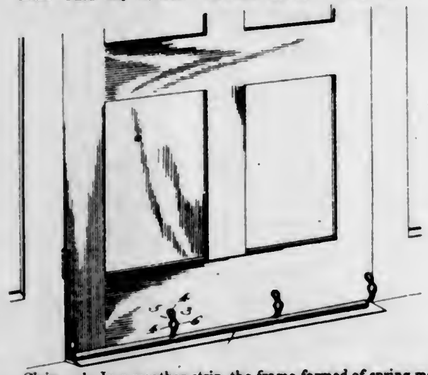
5. In a folding and sheet-delivery apparatus for web-perfecting presses, the combination with a V-shaped former, and co-acting fold-creasing rollers at the apex thereof for folding the web longitudinally, of a cutting and folding cylinder and a delivery cylinder cooperating therewith to sever the longitudinally folded web transversely, devices cooperating with the cutting and folding cylinder and delivery cylinder to complete the fold of the severed sheet and transfer it to the delivery cylinder and mechanism for delivering the sheet from the latter, substantially as described.

6. In a folding and sheet delivery apparatus for web perfecting presses, the combination with a V-shaped former, and co-acting fold-creasing rollers at the apex of said former, whereby the web is folded longitudinally, of cutting and folding cylinder 6 provided with impaling pins 10, with longitudinal grooves 8 and with folding blades 7, a co-acting cutting and delivery cylinder 11 provided with longitudinal cutting blades 12 adapted to co-act with said grooves 8 in said cylinder 6, grippers 13 carried by said cylinder 11, mechanism for operating said grippers, cooperating folding rollers 19—20, tapes 30—31 adapted to carry said severed and transversely folded sheet and deliver the same upon said cylinder 11, and strippers 36 adapted to strip the sheets from said cylinder 11, substantially as described.

7. The combination with a cutting and folding cylinder, and a delivery cylinder cooperating therewith to sever the web transversely, and devices cooperating with the cutting and folding cylinder and the delivery cylinder to complete the folding of the severed sheet and transfer it to the delivery cylinder, of a rock-shaft, strippers mounted on the rock-shaft, and mechanism for rocking said shaft, whereby the strippers may be moved toward and from the delivery cylinder, substantially as described.

8. The combination with the cutting and folding cylinder 6, a delivery cylinder 11 co-acting therewith and provided with a cutting blade 12, and devices cooperating with the cutting and folding cylinder and delivery cylinder to complete the folding of the severed sheet and transfer it to the delivery cylinder, of a rock-shaft 34, strippers 36 mounted upon the rock shaft, and mechanism for rocking the rock-shaft, whereby the strippers may be alternately moved away from the delivery cylinder to permit the free passage of the cutting blade and against said cylinder to strip the folded sheet therefrom, substantially as described.

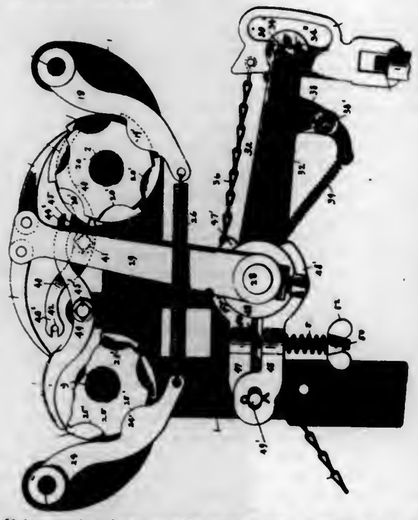
544,355. WEATHER-STRIP. SUMNERS M. HORNER, Potterville, Mich. Filed May 14, 1895. Serial No. 549,289. (No model.)



Claim.—1. In a weather strip, the frame formed of spring metal covered with a suitable packing and provided with upwardly extending securing loops bent inwardly at their upper ends whereby the strip is held under spring tension when secured in position for use, substantially as described.

2. In a weather strip, the frame formed of spring metal covered with a suitable packing, upwardly extending securing loops formed integral with the horizontal body of the frame and bent inward at their upper ends and provided with a series of apertures in each loop, and fastening means passing through one of said series of apertures, substantially as described.

544,356. LOOM. GEORGE F. HUTCHINS, Worcester, Mass., assignor to the Knowles Loom Works, same place. Filed Mar. 22, 1895. Serial No. 542,825. (No model.)



Claim.—1. In a loom provided with a main pattern chain, and an auxiliary or multiplier pattern chain, arranged alongside of each other on two separate studs, each stud provided with a hand wheel, and adapted to be turned, to move either chain independently of the other, the combination with the main pattern chain, the pattern chain cylinder, and the ratchet wheel connected with said cylinder, and the multiplier pattern chain, pattern chain cylinder, and the ratchet wheel connected with said cylinder, of means for operating the main pattern chain, and the multiplier pattern chain, said means consisting of a swinging arm carrying two pawls thereon, one adapted to engage and operate the ratchet wheel connected with the main pattern chain cylinder, and the other adapted to engage and operate the ratchet wheel connected with the multiplier pattern chain cylinder, and a pawl shield to prevent the pawl from operating the main pattern chain, said shield connected with and operated by the indicator lever on the multiplier pattern chain and said indicator lever, and a pawl shield to prevent the pawl from operating the multiplier pattern chain, said shield connected with and operated by the indicator lever on the main pattern chain and said indicator lever, substantially as set forth.

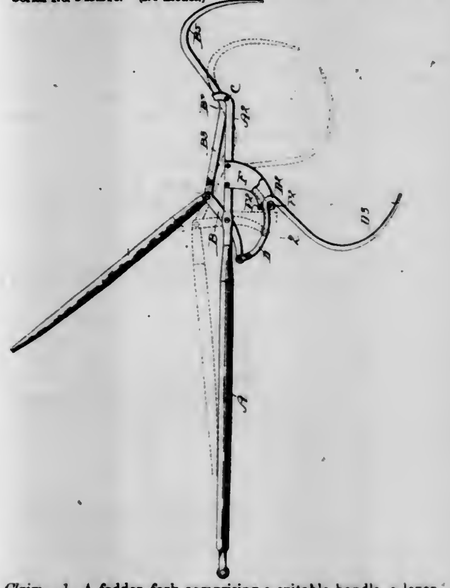
2. In a loom, provided with a main pattern chain, and an auxiliary or multiplier pattern chain, arranged alongside of each other, on two separate studs, each stud provided with a hand wheel, and adapted to be turned, to move either chain independently of the other, the combination with the main pattern chain, the pattern chain cylinder, the stop wheel, lock lever, and ratchet wheel connected with said cylinder, and the multiplier pattern chain, pattern chain cylinder, stop wheel, lock lever, and ratchet wheel connected with said cylinder, of means for operating the main pattern chain, and the multiplier pattern chain, said means consisting of a swinging arm carrying two pawls thereon, one adapted to engage and operate the ratchet wheel connected with the main pattern chain cylinder, and the other adapted to engage and operate the ratchet wheel connected with the multiplier pattern chain cylinder, and a pawl shield to prevent the pawl from operating the main pattern chain, said shield connected with and operated by the indicator lever on the multiplier pattern chain and said indicator lever, and a pawl shield to prevent the pawl from operating the multiplier pattern chain, said shield connected with and operated by the indicator lever on the main pattern chain and said indicator lever, substantially as set forth.

3. In a loom provided with a main pattern chain, and a multiplier pattern chain, arranged alongside of each other on two separate studs, each stud provided with a hand wheel, and adapted to be turned, to move either chain independently of the other, means for operating the pattern chains, consisting of a swinging arm carrying thereon two pawls, one adapted to engage the ratchet wheel connected with the main pattern chain cylinder and said ratchet wheel and cylinder, and the other adapted to engage the ratchet wheel connected with the multiplier pattern chain cylinder and said ratchet wheel and cylinder, and means for communicating motion to said swinging arm from some driven part of the loom, in combination with a lock-joint or give-way connection, intermediate said swinging-arm, and said driven part of the loom, for the purpose stated, substantially as set forth.

4. In a loom provided with a main pattern chain, and a multiplier pattern chain, the combination with a swinging arm carrying two pawls thereon, one pawl adapted to engage a ratchet wheel connected with the main pattern chain cylinder and said ratchet wheel and cylinder, and the other pawl adapted to engage a ratchet wheel connected with the multiplier pattern chain cylinder and said ratchet wheel and cylinder, of a vertically moving rod adapted to communicate motion to said swinging arm through an intermediate connection, and a lock-connection for said rod, and means for disconnecting said rod, to automatically stop the motion of said swinging arm, for the purpose stated, substantially as set forth.

5. In a loom provided with a main pattern chain, and a multiplier pattern chain, the combination with a swinging arm carrying two pawls thereon, one pawl adapted to engage a ratchet wheel connected with the main pattern chain cylinder and said ratchet wheel and cylinder, and the other pawl adapted to engage a ratchet wheel connected with the multiplier pattern chain cylinder and said ratchet wheel and cylinder, of a vertically moving rod, to communicate motion to said swinging arm, and a lock-connection for said rod, and means for disconnecting said rod to automatically stop the motion of said swinging arm, said means, consisting of a connection from said rod to the stop motion shaft of the loom, so that the operation of said stop motion shaft to stop the loom will disconnect said rod, substantially as set forth.

544,357. FODDER-FORK. JAMES W. JAMISON, Ackworth, Iowa, assignor of one-third to D. A. Jamison, same place. Filed Mar. 26, 1895. Serial No. 543,210. (No model.)

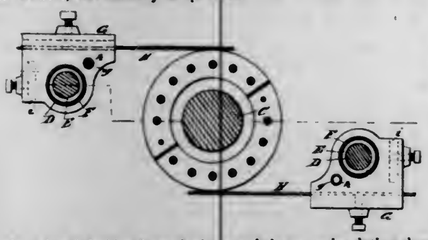


Claim.—1. A fodder fork comprising a suitable handle, a lever fulcrumed near one end of the handle, tines pivotally connected with the opposite ends of said lever, guides fixed to the handle to admit said tines, and a second handle fixed to said lever, for the purpose stated.

2. A fodder fork, comprising a suitable stationary handle, a flat bar doubled and having its central portion bent at right angles and its ends inserted in the handle, a bolt in said central portion, two plates fixed to the said bar and having two bolts in its ends, a lever fulcrumed between the sides of the bar, a tine or jaw pivoted in each end curved as shown and passed between the guiding bolts, substantially as and for the purposes stated.

544,358. COMMUTATOR-BRUSH HOLDER. GEORGE J. JUNKER, Mount Vernon, Ill. Filed Nov. 9, 1894. Serial No. 528,303. (No model.)

Claim.—1. A compound brush holder, formed of a number of separate hoiders insulated from their support and from each other, and provided with an insulated rod passing through the series of brush holders, substantially as specified.



2. A brush holder formed of a metal sleeve, an insulating sleeve mounted on the metal sleeve, a series of brush holders mounted on the insulating sleeve, and a rod extending through the brush holders but insulated therefrom, substantially as specified.

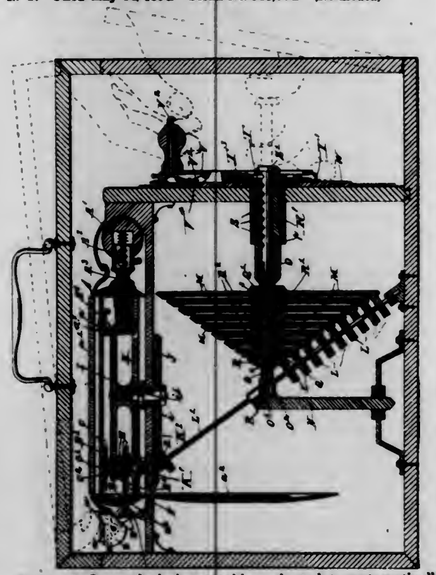
544,359. DEVICE FOR CARRYING SPITTOONS. CHARLES E. KOCH, Dunkirk, N. Y. Filed Dec. 22, 1894. Serial No. 532,637. (No model.)



Claim.—1. A device for lifting and carrying cuspidors, consisting of a holding bar provided with arms carrying a parallel lifting bar, the whole rigidly connected together, in combination with a similar parallel lifting bar, and arms connecting it to the holding bar and having their ends adapted to swing on the holding bar, whereby the lifting bars may be made to swing toward or from each other by turning the holding bar, by the hand, substantially as described.

2. A device for lifting and carrying a series of cuspidors placed side by side, consisting of a holding bar, provided with arms 3 and a lifting bar 8, rigidly secured to said arms, in combination with a lifting bar 12, having at each end an arm rigidly secured to it each of said arms having one end pivoted to the holding bar, substantially as and for the purposes described.

544,360. CALCULATING-MACHINE. CHARLES S. LABOFISH, Troy, N. Y. Filed May 14, 1894. Serial No. 511,074. (No model.)



Claim.—1. In a calculating machine adapted to automatically solve problems in addition and subtraction, the combination of an outer case, an upper plate within the same, provided with elliptical shaped sight holes, a centrally journaled, geared driving wheel, arranged to be connected to suitable mechanism adapted to automatically solve in combination with said calculator, problems in division and multiplication, a rotatable stem as a means of rotating said driving wheel, and a series of number disks, each provided with a gear wheel, arranged around, and adapted to gear with the central wheel, said number disks fixed upon the top of shafts upon which they are adapted to rotate, the opposite end of said shafts being lodged in slots formed in a bottom plate, and arranged to collapse a spring located in said slot, and slide radially under pressure induced by a push button, located upon the perimeter of the case, as herein shown and described.

2. The combination in a calculating machine of an upper plate with sight holes, a lower plate with radial slots, a central driving wheel operated by a rotatable stem, a plurality of number disks rotatably fixed on the ends of non-rotatable shafts, the opposite ends of said shafts lodged in radial slots formed in an under plate, and adapted to collapse springs in said slots under the pressure induced by push buttons on disks attached to said shafts, and a series of levers journaled on eccentrics, fixed to hollow shafts sleeved over the number disk shafts, said levers adapted to communicate by means of pawls, fixed on their ends, and operating in the toothed wheel of the next adjoining number disk, one unit of rotation to every complete rotation of the number disk to which the eccentric is attached, as herein shown and described.

3. The calculating device herein described consisting of a case containing a main rotatable wheel, a plurality of rotatable number disks, mounted on non-rotatable shafts, arranged circumferentially about, and in juxtaposition with said main wheel, and adapted to rotate under a plate having sight holes perforated through it, a lever eccentrically journaled and adapted to work progressively, or retrogressively with the rotations of said disks, a guide dial with an index hand, located upon the perforated plate the said device adapted to have its operative parts thrown into working order, and gear, by pressure upon a push button, said pressure being transmitted to a disk upon the shaft of one of said number disks inducing a radial movement to said shaft, and collapsing a spring located in a slot upon the bottom plate, the device while thus held in gear, adapted to be operated by a revoluble crown pin, located in the stem or handle of the case, as herein shown and described.

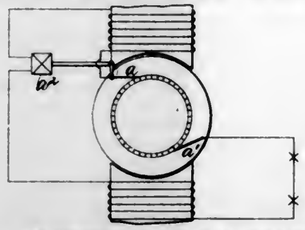
4. In a calculating machine, consisting of a case containing suitable mechanism for solving problems in addition and subtraction, in combination with a box containing suitable mechanism when connected with said mechanism in said case, to solve problems in multiplication and division, the duplex keys herein described, which consist of a series of double keys, located in openings upon the box of said machine, said keys adapted when pressed to operate cams on the inside of said box, in combination with a push bar, and push button, adapted to throw into, and out of gear, the operating parts of said calculating machine, as herein shown and described.

5. The combination in a calculating machine of a metallic case containing suitable mechanism adapted for automatically solving problems in addition and subtraction operated by a rotating crown pin and push button, and a box containing suitable mechanism adapted when said case is lodged in said box, and coupled with the mechanism in said box, and the combined mechanism of both case and box, operated by a crank, to solve by such operation problems in multiplication and division, as herein shown and described.

6. In a calculating machine, the multiplying wheels having central keyways, notched key and crank by which the same is operated, as herein shown, in combination with the series of aligned uniform wheels L, shaft L', bevel-gear wheel J, power wheel I, number disks C rotatably mounted on non-rotatable shafts, gear wheel D adapted to rotate said number disks and to gear singly with said power wheel, duplex keys u, cams Z, and push button A^4, the said duplex key and cam arranged to operate said push button, push-button rod Z^3, and disk F, said rod Z^3 being arranged when the push button is operated to press against the disk F and cause the shaft of said disk to slide radially, base plate K, slot K' and spring K^3 located in said slot and arranged, when pressure is induced upon the disk F, to slide radially in the slot K' as herein shown and described.

7. In a calculating machine operated by a crank, the dial W, over which said crank operates, said dial having a series of perforations and numbers upon it, the spring pin V^3 located in the handle of said crank and arranged to spring said pin in said perforations, notched rod and hollow spindle O and key-rod R', the said notched and key rod located in the said hollow spindle spring P located in the bottom of said hollow spindle, spring key Z', located at the top of the hollow spindle, the spring P controlling the notched and key rod in their movements in one direction and the spring-key T' controlling it in the other, the multiplying wheels M having central keyways formed upon them and adapted to be rotated singly by the key-rod R', in combination with the wheels L, shaft L', bevel wheel J gearing with one of the wheels L, power wheel I operated by the wheel J, duplex keys u, push buttons A^4 operated by the keys u, disk F, number disk C, gear wheel D operating said number disk and attached to the same shaft, base plate K, slot K' and spring K^3, pressure from the keys u communicated to the disk F through the push buttons A^4, causing the shaft of the disk F to slide radially in the slot K' and collapse the spring K^3 as herein shown and described.

544,361. CONSTRUCTION AND METHOD OF OPERATING DYNAMO-ELECTRIC MACHINES. FREDERICK H. LOVERIDGE, Coldwater, Mich. Filed Aug. 2, 1894. Serial No. 519,259. (No model.)



Claim.—1. The combination with a dynamo electric machine having two or more sets of pole pieces, of pairs of brushes and independent circuits equal in number to the sets of pole pieces, the separate brushes forming the pairs of brushes constituting the terminals of the different circuits, respectively, being placed under adjacent pole pieces of different signs, and one brush of each pair being adapted to be adjusted, the adjustable brushes of the different pairs being all of the same sign, whereby the currents of the different circuits may be regulated and maintained each at the desired value, substantially as and for the purpose specified.

2. The combination with a dynamo electric machine having two or more sets of pole pieces, of pairs of brushes and independent circuits equal in number to the sets of pole pieces, the separate brushes forming the pairs of brushes constituting the terminals of the different circuits, respectively, being placed under adjacent pole pieces of different signs, and one brush of each pair being adapted to be adjusted, the adjustable brushes of the different pairs being all of the same sign, and the fixed brushes of the different pairs being connected by an equalizer.

3. The combination with a dynamo electric machine having two or more sets of pole pieces, of pairs of brushes and independent circuits equal in number to the sets of pole pieces, the separate brushes forming the pairs of brushes constituting the terminals of the different circuits, respectively, being placed under adjacent pole pieces of different signs, and one brush of each pair being adapted to be adjusted, the adjustable brushes of the different pairs being all of the same sign, and the fixed brushes of the different pairs being connected by an equalizer, the said fixed brushes thus connected being placed at positions of practically equal potential.

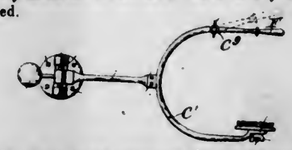
4. The method of operating dynamo electric machines, which consists in subjecting the armature coils to individual magnetizing forces constituting the field, and utilizing the electrical energy developed in different definite fractional parts of the armature by the individual forces to supply different and independent circuits, each independent circuit being supplied with energy from a particular one of said individual magnetizing forces, equalizing the electro motive force at one terminal connection of each of all the independent circuits, and independently maintaining the currents respectively of said independent circuits each of a practically constant predetermined volume under variations of circuit resistance.

5. The method of operating dynamo electric machines, which consists in subjecting definite fractional parts of the armature coils to individual magnetizing forces constituting the field, and utilizing the electrical energy developed in said different definite fractional parts of the armature by the individual forces to supply different and independent circuits, each independent circuit being supplied with energy from a particular one of said individual magnetizing forces, and independently maintaining the currents respectively of said independent circuits each of a practically constant predetermined volume under variations of circuit resistance.

544,362. BATH-BRUSH APPARATUS. MICHAEL J. LYONS, Duluth, Minn., assignor of one-fourth to Levi Beemer, same place. Filed Dec. 13, 1894. Serial No. 531,715. (No model.)

Claim.—1. In a bath brush apparatus the combination of a supporting standard, a lever pivoted on the same and provided with a yoke, a scrubbing device on one arm of said yoke and an operating handle on the other arm, substantially as described.

2. In a bath brush apparatus the combination of a supporting standard, a lever provided with a yoke and a counterbalance weight, a brush connected to one arm of said yoke and an operating handle adjustably mounted on the other arm of said yoke, substantially as described.

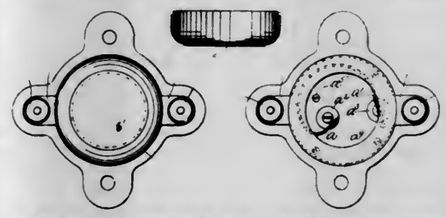


3. In a bath brush apparatus the combination of a supporting standard provided with a yoke, a weighted lever having trunnions which are mounted in the arms of said yoke, another yoke attached to said lever and carrying a brush and an operating handle on its respective arms substantially as described.

4. In a bath brush apparatus the combination of a supporting standard, a lever pivoted on the same and provided with a yoke, a brush adjustably mounted on one arm of said yoke and an operating handle adjustably mounted on the other arm of said yoke, substantially as described.

5. In a bath-brush apparatus the combination of a supporting standard, a lever pivoted on the same and provided with a counterbalance weight, the latter extending over a bath tub or the like and a yoke, a scrubbing device adjustably mounted on one arm of said yoke and an operating handle adjustably mounted on the other arm of said yoke substantially as described.

544,363. THERMOSTATIC INSTRUMENT. MORRIS MARTIN, Malden, Mass. Filed June 5, 1893. Serial No. 476,609. (No model.)



Claim.—1. The combination with a thermostatic instrument, of a protective hood inclosing the instrument and passively co-operating therewith and responsive to a rise in temperature to expose the said instrument without directly effecting the operation of the same, for the purpose specified.

2. The combination with a thermostatic instrument, of a protective hood independent of and disconnected from the active parts of the said instrument but normally covering the same, and a fusible material to secure the said hood in operative position and operated by heat to permit the hood to expose the active parts of the said instrument without directly effecting the operation of the same, for the purpose specified.

3. The combination with a thermostatic instrument, of a protective hood inclosing the said instrument and passively co-operating therewith, the said hood having a movable member rendered active by an increase in temperature to expose the instrument to the action of heat but not to operate the same, substantially as described.

4. The combination with a thermostatic instrument, of a protective hood inclosing the said instrument and having a movable member independent of the thermostatic instrument and capable of movement without operating the said instrument, and a fusible material governing the action of the movable member of the said hood, substantially as described.

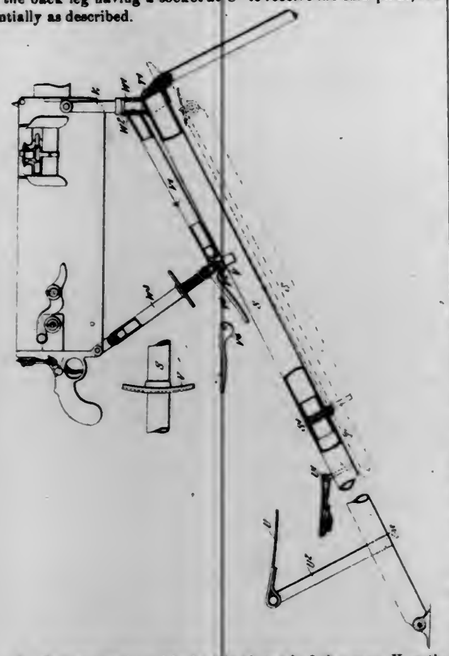
5. The combination with a thermostatic instrument provided with circuit terminals or members, one of which is expansible, of a protective hood passively co-operating with the said instrument and consisting of a stationary member inclosing the instrument, and a movable member fusibly connected to the stationary member and capable of movement independent of the thermostatic instrument, substantially as described.

544,364. TRIPOD STAND FOR GUNS. HIRAM S. MAXIM, Bexley, and LOUIS SILVERMAN, Crayford, England. Filed Mar. 27, 1895. Serial No. 543,402. (No model.) Patented in France Sept. 21, 1894, No. 241,573; in Belgium Sept. 22, 1894, No. 111,977, and in Austria Dec. 29, 1894, No. 45/470.

Claim.—1. A tripod stand having an extended back leg provided with a hinge to permit its being folded and two short front legs having projecting lugs or fingers T', adapted to bear against the forward end of the back leg, as set forth.

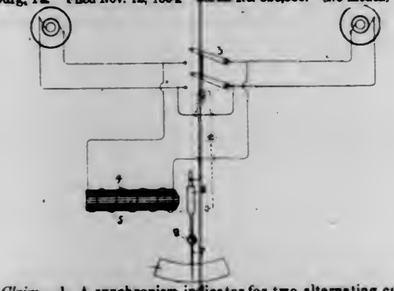
2. The combination with a tripod stand of a seat connected at one end to the back leg of the stand and at the other end to a pillar

U⁸, the back leg having a socket at U⁹ to receive the said pillar, substantially as described.



3. The combination with the tripod stand of the sector V on the back leg the hook shaped piece V⁷ which engages the sector and on which the gun rests, and the pivoted lever V⁸ having the cam face V⁶, substantially as described and for the purpose specified.

544,365. SYNCHRONISM-INDICATOR. RALPH D. MERSHON, Pittsburg, Pa. Filed Nov. 12, 1894. Serial No. 528,559. (No model.)



Claim.—1. A synchronism indicator for two alternating current electromotive forces comprising means for producing a varying magnetic field through the joint action of such electromotive forces, and a movable armature in said field the position of which indicates the relation of said electromotive forces, substantially as described.

2. A synchronism indicator comprising a coil in series with the two machines to be synchronized and a movable armature in inductive relation to said coil, the position of which indicates the relation of said machines, substantially as described.

3. The combination with two alternating current electric machines, of a coil in series with said machines and a pivoted armature in inductive relation to said coil, the position of said armature serving to indicate the relation of said machines, substantially as described.

4. The combination with two alternating current machines, of a coil in series with said machines, a pivoted armature in proximity to said coil and an indicating device carried by said armature, substantially as described.

544,366. PROCESS OF RECOVERING GLYCERIN FROM SOAP-UNDERLYE. HARLEY J. MORRISON, Clifton, Ohio. Filed Oct. 19, 1894. Serial No. 526,396. (No specimens.)

Claim.—1. In the art of recovering glycerine from soap underlye, the improvement in the preliminary treatment thereof which consists of the conversion of the soluble salt of sodium chloride into the insoluble bicarbonate of soda by adding a carbonate of ammonia, removing the precipitate, adding to the remaining liquor an oxide or salt which will decompose the ammonium chloride formed and form an insoluble salt with the chlorine, such as lead oxide or carbonate, removing the precipitate thus formed, concentrating the remaining liquor, adding thereto a carbonate of ammonia, removing the precipitate, adding to the remaining liquor an oxide or salt which will decompose the ammonium chloride formed such as calcium oxide or carbonate, concentrating the remaining liquor, adding thereto sulphuric acid, removing precipitate formed, then adding an oxide or carbonate of lead to the remaining liquor and removing the precipitate, substantially as specified.

2. In the art of recovering glycerine from soap underlyes, the improvement in the preliminary treatment thereof which consists of the following feature, to wit: the conversion of the soluble chloride of sodium and organic impurities into the insoluble bi-carbonate of sodium and an insoluble modification of such organic impurities by adding thereto bi-carbonate of ammonia, substantially as specified.

3. In the art of recovering glycerine from soap underlyes, the improvement in the preliminary treatment thereof which consists of the following feature to wit: the conversion of the soluble chloride of sodium and organic impurities into the insoluble bi-carbonate of sodium and an insoluble modification of such organic impurities by adding thereto ammonia and carbonic acid, substantially as specified.

4. In the art of recovering glycerine from soap underlyes, the improvement in the preliminary treatment thereof which consists of the conversion of the soluble chloride of sodium into the insoluble bi-carbonate of sodium by adding thereto bi-carbonate of ammonia, removing the precipitate, adding an oxide or salt or mixture thereof which will decompose the ammonium chloride formed such as calcium oxide or carbonate then adding sulphuric acid, substantially as specified.

5. In the art of recovering glycerine from soap underlyes, the improvement in the preliminary treatment thereof which consists of the conversion of the soluble chloride of sodium into the insoluble bi-carbonate of sodium by adding thereto ammonia and carbonic acid, removing the precipitate, adding an oxide or salt or mixture thereof which will decompose the ammonium chloride formed such as oxide or carbonate of calcium, then adding sulphuric acid, substantially as specified.

6. In the art of recovering glycerine from soap underlyes, the improvement in the preliminary treatment thereof which consists of the following process, to wit: treating the liquor with bi-carbonate of ammonia, then removing the insoluble salt formed, boiling the remaining liquor with an oxide or salt or mixture thereof which will decompose the ammonium chloride formed such as oxide or carbonate of calcium, removing the precipitate, adding sulphuric acid, removing precipitate formed then adding oxide or carbonate of lead and removing the precipitate, substantially as specified.

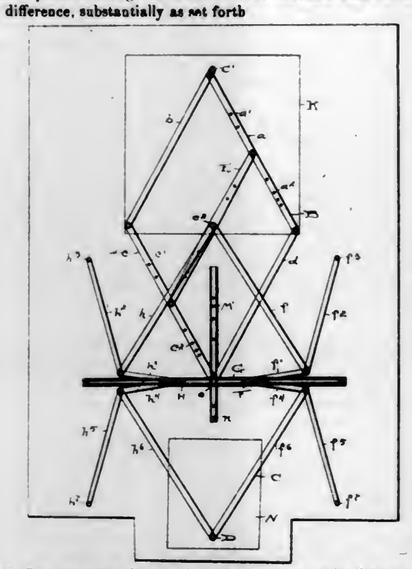
7. In the art of recovering glycerine from soap underlyes, the improvement in the preliminary treatment thereof which consists of the following process, to wit: treating the liquor with ammonia and carbonic acid gas, then removing the insoluble salt formed, boiling the remaining liquor with an oxide or salt or mixture thereof which will decompose the ammonium chloride formed, such as oxide or carbonate of calcium, adding sulphuric acid, removing the precipitate formed, then adding oxide or carbonate of lead and removing the precipitate, substantially as specified.

8. In the art of recovering glycerine from soap underlye, the improvement in the preliminary treatment thereof which consists of the conversion of the soluble salt of sodium into the insoluble bicarbonate of soda, by adding thereto bicarbonate of ammonia, removing the precipitate, adding to the filtrate an oxide or carbonate of lead or of other metal or mixture thereof which forms an insoluble salt with chlorine removing the precipitate, concentrating the filtrate, then again treating with bicarbonate of ammonia, removing the precipitate, adding to the filtrate an oxide or salt or mixture thereof which will decompose the ammonium chloride formed, such as oxide or carbonate of calcium, then adding sulphuric acid, substantially as specified.

9. In the art of recovering glycerine from soap underlye, the improvement in the preliminary treatment thereof which consists of the conversion of the soluble salt of sodium into the insoluble bicarbonate of soda by adding thereto ammonia and carbonic acid, removing the precipitate, adding to the filtrate an oxide or carbonate of lead, or of other metal, or mixture thereof, which forms an insoluble salt with chlorine, removing the precipitate, concentrating the filtrate, then again treating with ammonia and carbonic acid, removing the precipitate, adding to the filtrate an oxide or salt or mixture thereof which will decompose the ammonium chloride formed such as oxide or carbonate of calcium, then adding sulphuric acid, substantially as specified.

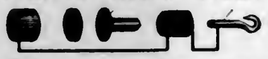
544,367. CARTOGRAPHIC MACHINE. CHARLES F. W. MUEHLENBECK, Cleveland, Ohio. Filed Mar. 26, 1895. Serial No. 543,223. (No model.)

Claim.—1. Two similar figures represented by bars —*f*—, —*h*—, —*f'*—, —*h'*—, —*f*²—, —*h*²—, and —*f*⁴—, —*h*⁴—, —*f*⁵— —*h*⁵—, —*f*⁶— and —*h*⁵— and transverse bar —G— forming the axis of the abscissas of rectangular co-ordinates whereby the absolute values of the co-ordinates of the corresponding points are either equal to each other or in a desired proportion, and whereby in the latter case the possible parallel change of the line of the abscissas does not make any difference, substantially as set forth



2. The apparatus described, comprising two similar figures composed of bars —*f*— and —*h*—, —*f'*— and —*h'*—, —*f*²— and —*h*²— in one figure, and bars —*f*⁴— and —*h*⁴—, —*f*⁵— and —*h*⁵—, and —*f*⁶— and—*h*⁵— in the other figure and the median line bar —G— between said figures and the reproducing point, in combination with the actuating frame —B— having a tracing point, substantially as set forth.

544,368. STRONG-CURRENT ARRESTER. FRANK R. MCBERTY, Downer's Grove, assignor to the Western Electric Company, Chicago, Ill. Filed May 31, 1894. Serial No. 513,062. (No model.)



Claim.—1. The combination with a heating coil, of a small quantity of conducting material adapted to be fused by the heat of the coil, a switch spring held under tension by said fusible conducting material, and an electric circuit including said heating coil, fusible material and spring switch in series, whereby the fusing of said fusible material permits the movement of said spring switch to open the circuit; substantially as described.

2. The combination with a small resistance coil, of a spool of good heat conducting material upon which the coil is wound, a stem secured to said spool by easily fusible solder, a spring adapted to move said stem out of contact with the spool when the solder is fused, and an electric circuit including said coil, spool, solder and stem in series; whereby the detachment of said stem from the spool effects the opening of the circuit.

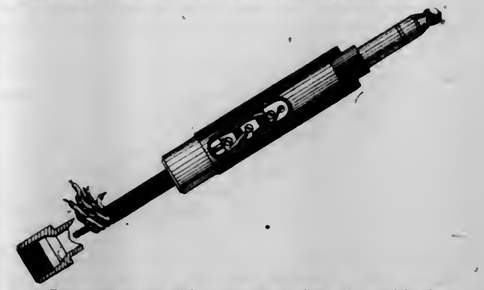
3. The combination with the flanged spool *b*, the coil *a* wound thereon, and the stem *c* soldered in the spool, of the perforated cylinder *d* having the shoulder *d'* against which the flange of spool *b* rests and the contact block *f* forming one terminal of the resistance coil, substantially as described.

4. In combination the slotted plate *g*, the cylinder *d* having a flange *d*³ and containing the coil *a*, spool *b*, projecting hook *c* and the contact block *f*, the spring *l* tending to withdraw hook *c*, and a spring *i* bearing upon the contact block *f*, substantially as described.

544,369. PLUG AND CORD FOR TELEPHONE-SWITCHBOARDS. FRANK R. MCBERTY, Downer's Grove, assignor to the Western Electric Company, Chicago, Ill. Filed Sept. 18, 1894. Serial No. 523,315. (No model.)

Claim.—1. The combination with a conducting cord having a suitable covering, of a sleeve within the covering, and means for clamping upon the covering outside of the sleeve, substantially as described.

2. The combination with a connecting plug, of a cord having a covering, a sleeve within the covering, and a device in the body of the plug adapted to grasp the covering outside the sleeve to compress the same against the sleeve, substantially as described.



3. The combination with a connecting plug, of a cord having a braided covering, a sleeve within the covering, a tapered opening in the plug, means for forcing the sleeve together with the surrounding covering into the tapered opening, and means for attaching the conductors within the plug, substantially as described.

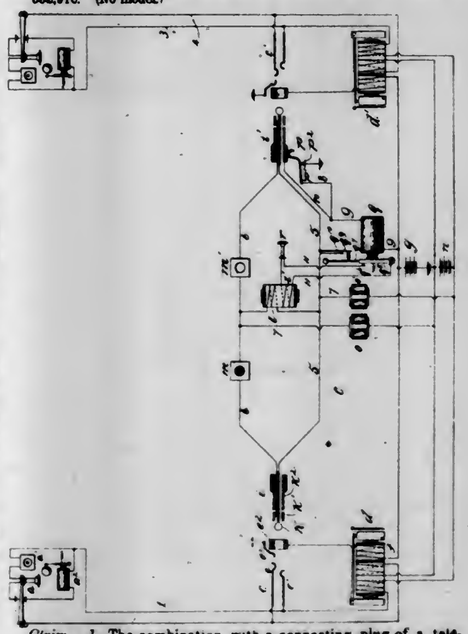
4. The combination with a connecting plug, of a conducting cord having a suitable covering, means for attaching the covering of the cord to the plug independently of the inclosed conductors, and means for attaching the conductors of the cord within the plug, the conducting strands being wound in spiral form to permit of longitudinal extension of the conductors, substantially as described.

5. The combination with a central cord, of several conducting strands wound in a close spiral about the cord, the turns of the different conductors being separated by interposed cords of insulating material.

6. In combination, in a switchboard cord, a central cord of insulating material, several flexible conducting strands, and interposed cords of insulating material, separating the conducting strands from one another, the different strands being wound in a close spiral about said central core, as described.

7. The combination in a switchboard cord, of several strands of conducting material, strands of insulating material interposed between said conducting strands, said strands being wound in close spirals, and a flexible envelope of insulating material, as described.

544,370. AUTOMATIC SIGNALING DEVICE FOR TELEPHONE-SWITCHBOARDS. FRANK R. MCBERTY, Downer's Grove, assignor to the Western Electric Company, Chicago, Ill. Filed Dec. 26, 1894. Serial No. 532,910. (No model.)



Claim.—1. The combination with a connecting plug of a tele-

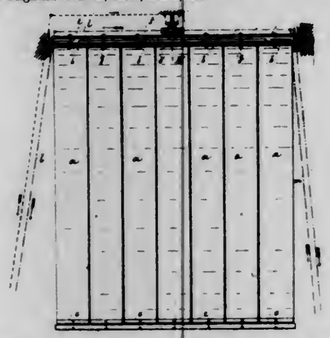
phone switchboard, of a source of electric current, a pair of switch contacts adapted to connect the source of current with the terminal contact piece of the plug and to disconnect it therefrom, mechanism adapted to separate said switch contacts periodically a limited number of times, an electromagnet controlling the mechanism, and means for exciting the electromagnet to operate the mechanism in the act of establishing connection with the line, substantially as described.

2. In combination with a telephone line provided at a substation with a single-stroke signal bell and terminating in a springjack in the telephone switchboard, of a connecting plug adapted to be inserted into the springjack, a pair of switch contacts controlling the connection of a source of electric current with the said plug, mechanism adapted to separate the switch contacts periodically a limited number of times, an electromagnet controlling the said mechanism, and circuit connections including the electromagnet adapted to be closed by the insertion of the plug in the springjack, whereby the signal bell at the substation of the corresponding line is caused to ring.

3. The combination with a connecting plug of an electromagnet, a flexible weighted tongue or pendulum carried by the armature thereof, a switch spring adapted to be struck by said tongue in its vibration and to be separated thereby from its anvil, a normally open local battery circuit including the said magnet and co-operating switch contacts in the connecting plug and the springjack into which it may be inserted to close the local circuit when the plug is inserted into the springjack, and a source of electric current whose connection with the terminal plug is controlled by the switch contacts of the relay, substantially as described.

4. The combination with a pair of connecting plugs of a conductor uniting the plugs, a source of electric current permanently connected with the conductor, an electromagnet and the armature thereof, a pair of contact points adapted to be closed together by the armature when in its unattracted position, a weighted reed or pendulum carried by the armature, a switch spring adapted to be struck by said reed when the same is thrown into vibration by the movement of the armature and to be separated from its normal resting anvil thereby, the switch spring and its anvil being included in the conductor of the plug circuit, a telephone and a connection therefrom to the said conductor of the plug circuit through the said switch contacts, a local battery circuit including the electromagnet and divided into two parallel branches, a plug-seat-switch operated by one of said plugs controlling one of said branches of the local circuit, and registering contact pieces in the said plug and in the springjack adapted to receive it controlling the other of said parallel branches of the local circuit, whereby the telephone is disconnected and the current in the plug circuit is interrupted to sound the substation bell when one of the connecting plugs is inserted into the springjack of a telephone line.

544,371. WINDOW-BLIND. PAUL ORTMANN, Zittau, assignor to Gustav Nathan, Leipsic, Germany. Filed Sept. 23, 1891. Serial No. 406,557. (No model.) Patented in Germany Apr. 18, 1889, No. 50,792, and in England Jan. 22, 1890, No. 1,189.



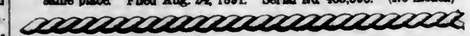
Claim.—1. The combination in a window blind of flexible slats pivoted at the top and bottom with means for rolling them up in the direction of their longer axes, and with means for simultaneously vibrating them on their pivots, substantially as specified.

2. The combination of a divided flexible blind, with bars *b*, secured thereto, a roller *e*, to which the bars are pivoted and rod *f*, connecting the blind sections, substantially as specified.

3. The combination of a divided flexible blind with bars *b*, *c*, secured thereto, roller *e*, and rod *d*, to which the bars are respectively pivoted and rods *f*, connecting the blind sections, substantially as specified.

4. The combination of a divided flexible blind with roller *e*, and an arbor *h*, secured to one of the blind sections, a key *k*, for engaging the arbor and connecting rods *f*, substantially as specified.

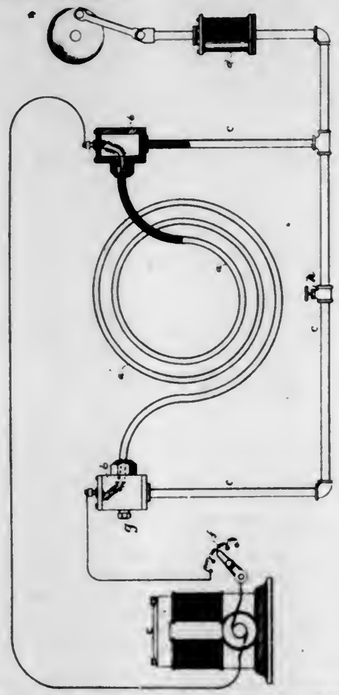
544,372. MANUFACTURE OF ELECTRIC CABLES. WILLIAM R. PATTERSON, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Aug. 24, 1891. Serial No. 403,598. (No model.)



Claim.—1. The method of insulating electric conductors and forming the same into cables, which consists in spirally winding tightly upon the individual wires the paper tape, and then bunching the insulated wires together, the wires being placed in position to bring the individual winding of tape upon each in the same direction and then twisting the wires in mass in a direction opposite that of the winding of the tape to partially untwist and thereby loosen the individual windings in the act of forming the strands into a cable, whereby air spaces are formed next to the wires thereby reducing the electrostatic capacity of the cable, substantially as and for the purpose specified.

2. The combination with two or more conductors, of a flat paper tape wound spirally around each of said conductors, the tape being wound about the several conductors in the same direction, said conductors being twisted together to form the cable, the twist being in a direction opposite to that in which the tape is wound about the several conductors; whereby the tape wound about each conductor is loosened to form air spaces about the individual conductors, substantially as described.

544,373. ART OF DRYING ELECTRIC CABLES. WILLIAM R. PATTERSON, Chicago, and CHARLES H. RUDD, Evanston, assignors to the Western Electric Company, Chicago, Ill. Filed Sept. 30, 1891. Serial No. 407,229. (No model.)

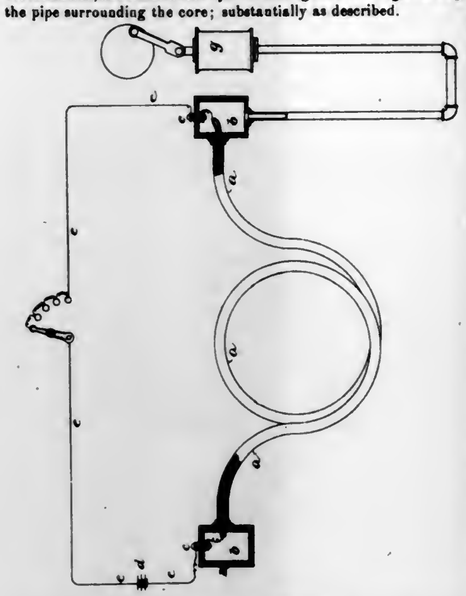


Claim.—The herein described method of removing moisture from the cores of cables, which consists in placing a core in a sheath or chamber passing through the conductors of the core a current of electricity of a quantity sufficient to heat said conductors to a temperature which will vaporize the moisture contained in the core without carbonizing the insulation, and simultaneously maintaining a vacuum in the sheath or chamber surrounding the core.

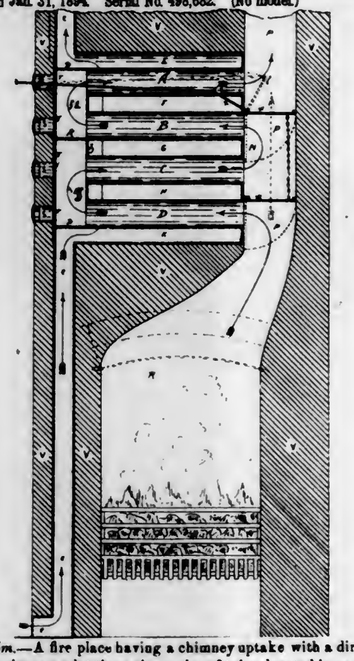
544,374. ART OF DRYING CORES OF ELECTRIC CABLES. WILLIAM R. PATTERSON, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Apr. 18, 1892. Serial No. 429,632. (No model.)

Claim.—The herein described method of removing moisture from the cores of cables provided with a protecting sheath, which consists in sending through the conductors thereof an electric current of sufficient strength to heat the core by conduction to a temperature which will vaporize the moisture contained in the core without carbonizing

the insulation, and simultaneously maintaining a current of gas through the pipe surrounding the core; substantially as described.



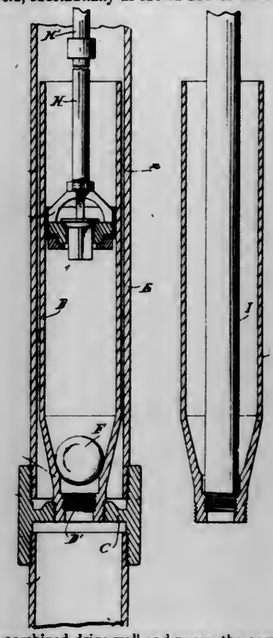
544,375. SANITARY GRATE. GEORGE PHILLIPS, Victoria, Canada. Filed Jan. 31, 1894. Serial No. 498,682. (No model.)



Claim.—A fire place having a chimney uptake with a direct outlet and a zigzag outlet through a series of tubes located in an air passage, provided with two pivoted valves connected and arranged so as to open or close each outlet alternately to produce a free draft or to heat and cause circulation of air, as desired, substantially as set forth.

544,376. COMBINED DRIVE-WELL AND PUMP. FINLAY R PORTER, Southampton, N. Y. Filed June 8, 1894. Serial No. 513,864 (No model.)

Claim.—1. In a combined drive well and pump, the combination, with a suitable driving shaft or point, of a coupling secured thereon and screw-threaded at the top, a pipe section engaging therewith, a cylinder within the pipe removably secured to the coupling and reduced in diameter at the lower end, a ball adapted to fit within the said end when dropped in the cylinder, and a plunger adapted to be inserted therein, substantially as shown and described.



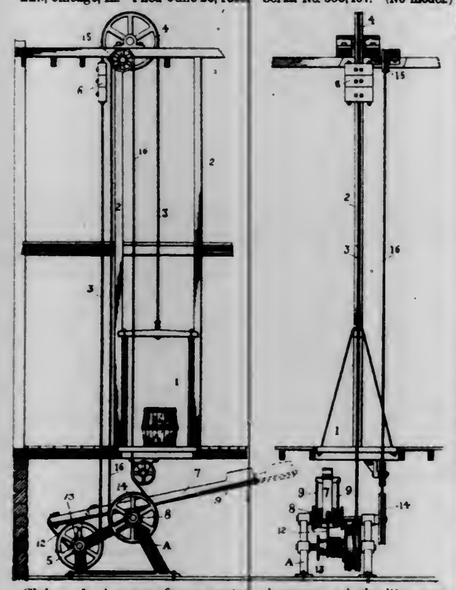
2. In a combined drive well and pump, the combination, with a driving shaft or point, of a coupling secured thereon, and screw-threaded at the top, a pipe section engaging therewith, an annular screw-threaded flange at the inner side of the coupling, a cylinder within the pipe having a reduced lower end to form a valve seat and screw-threaded to engage with the flange, a reversed screw-thread formed upon the interior of the cylinder, a solid ball adapted to fit within the lower end of the cylinder, and a plunger adapted to be inserted in the said cylinder, substantially as shown and described.

544,377. AUTOMATIC CUT-OFF FOR WATERING-TANKS. THOMAS P. POTTER, near Clifton City, Mo. Filed Mar. 28, 1894. Serial No. 505,440. (No model.)



Claim.—The water trough, the supply pipe leading thereto, and the hood, placed in one end of the trough and above the operating mechanism; combined with a valve, applied to the outer end of the pipe, a rod connected to the valve and extending through the pipe to the trough, a weighted lever, pivoted above the end of the pipe, and having the valve rod connected thereto; and a bucket, loosely connected to the lower end of the lever; the hood serving as a stop to the upward movement of the free end of the lever, substantially as shown.

544,378. **MEANS FOR OPERATING ELEVATORS.** JOHN E. PUTMAN, Chicago, Ill. Filed June 20, 1895. Serial No. 553,407. (No model.)



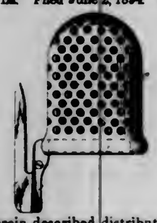
Claim.—1. A means for operating elevators and the like, comprising a lever, a weight, such as a cage, suitable connections intermediate said weight and said lever, and means for shifting the fulcrum of said lever, substantially as and for the purpose specified.

2. A hoisting-lever, a hoisting-drum, connections between one end of said lever and said hoisting-drum, and a roller or shaft forming a fulcrum for said lever, in combination with means for rotating said roller or shaft, whereby said lever is moved longitudinally and the fulcrum-point of said lever is shifted, substantially as and for the purpose specified.

3. A hoisting-lever, a weight, such as a cage, suitable connections intermediate said lever and its load, and means for shifting the fulcrum of said lever, in combination with means for movably securing said lever against displacement from its fulcrum-piece, substantially as and for the purpose specified.

4. A hoisting-lever, a lifting-drum, a drum of less diameter on the shaft of said lifting-drum, a rope leading from one end of said lever around said drum of lesser diameter, a weight, such as an elevator cage, and a rope leading from said weight to said lifting-drum, in combination with a roller or shaft forming a fulcrum for said lever, a pulley on said roller or shaft, and a rope leading around said pulley and to a point convenient to the operator, all substantially as and for the purpose specified.

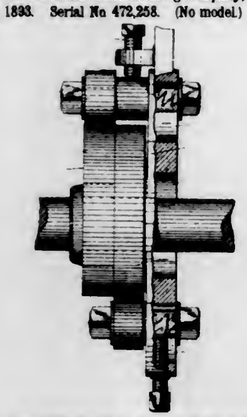
544,379. **COMBINED THIMBLE AND KNIFE.** WILLIAM J. QUINN, New Orleans, La. Filed June 2, 1894. Serial No. 513,318. (No model.)



Claim.—1. The herein described distributing thimble, the same consisting of a soft rubber thimble, a blade, an arm secured to the same, and a connection between said arm and thimble located wholly within the latter, as and for the purpose set forth.

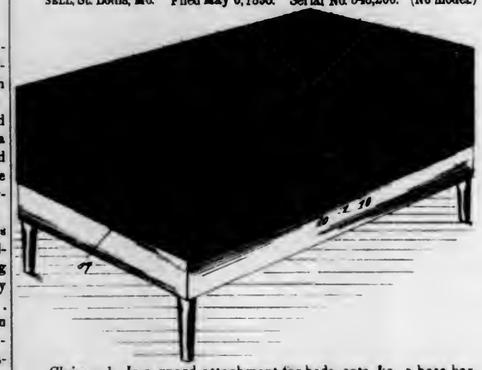
2. The herein described distributing thimble, the same consisting of a thimble whose outer face is of soft clinging material, a blade, an arm removably secured to the same, and a ring connected with the arm and secured to the thimble wholly within the latter, as and for the purpose set forth.

544,380. **CAM MECHANISM.** WALTER ROBERTS, Beacon Falls, assignor to the Beach Manufacturing Company, Hartford, Conn. Filed Apr. 28, 1893. Serial No. 472,258. (No model.)



Claim.—In combination the cam-wheel A having two paths of like contour, rollers *m*, *n*, mounted upon studs, the cam-lever *g* having elongated slots in which said studs are adjustably secured, and set screws *q*, *r*, adjustable upon said lever adapted to bear against said studs to prevent accidental displacement, substantially as described.

544,381. **GUARD ATTACHMENT FOR BEDS, &c.** LEWIS A. RUSSELL, St. Louis, Mo. Filed May 6, 1895. Serial No. 548,266. (No model.)



Claim.—1. In a guard attachment for beds, cots, &c., a base-bar, a casing adapted to be elevated from said base-bar, arms connected to and operating from said casing, a tube having its ends fixed to the outer ends of the arms, and tubes telescoping within said tube.

2. In a device of the class described, a base-bar, bars adjustably fixed to said base-bar, a casing hinged to the upper ends of said adjustable bars, longitudinally and vertically adjustable arms carried by and operated from said casing, a tube having its ends fixed to the outer ends of said arms, a tube fixed to the under side of the first mentioned tube, tubes telescoping in the ends of said first mentioned tube, and rods sliding in the ends of the second mentioned tube.

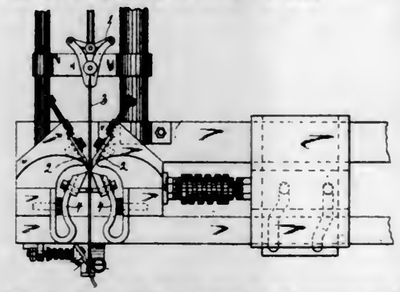
3. In a device of the class described, base bars adapted to be attached to the sides of a bed, cot, &c., said base-bars having longitudinal slots or grooves in their upper sides, bars that are normally located and move in said grooves, slotted rods carried in the under sides of said base bars, and a casing carried by said movable bars and adjustable arms carried by the said casing.

4. In a device of the class described, a base-bar, bars adjustably fixed to said base bar, a casing hinged to the upper ends of said adjustable bars, arms having their inner ends pivoted in said casing, hollow arms sliding upon the first mentioned arms, latching devices

for said arms, a tube fixed at its ends to the outer ends of said hollow arms, tubes arranged to slide in each end of said tube, a tube carried by the first mentioned tube, rods arranged to slide in each end of said second mentioned tube, and a net adapted to be hung upon said sliding rods.

5. In a device of the class described, a base-bar, bars adjustably fixed to said base-bar, a casing hinged to the upper ends of said adjustable bars, vertically adjustable arms carried by and operated from said casing, hollow arms mounted to slide upon said vertically adjustable arms, a tube having its ends fixed to the outer ends of said arms, tubes arranged to slide in the end of said first mentioned tube, tubes arranged to slide in the first set of sliding tubes and to be turned at right angles thereto, a tube fixed to the under side of the first mentioned tube, jointed rods arranged to slide in each end of said last mentioned tube, and a net adapted to be fixed to said jointed rods.

544,382. **HOOP-SHAVING MACHINE.** HENRY SCHMIDT, Elgin, Ill. Filed May 10, 1894. Serial No. 510,727. (No model.)



Claim.—1. A hoop shaving machine having reciprocating hoop tongs or grippers and means for actuating the same, in combination with a cutter arranged to engage the broad side of the hoop, a stop arranged opposite said cutter, said stop and cutter being movable with relation to each other, a cam for producing the said relative movement so timed with reference to the movement of the said grippers as to force the stop and cutter together when the butt end of the hoop reaches the said cutter, hoop shaving knives arranged between said cutter and grippers, and guides arranged in advance of said knives between the latter and said cutter, for directing the hoop to the said knives, substantially as set forth.

2. A hoop shaving machine having hoop grippers, means for actuating the same and shaving devices for reducing the thickness of the hoop, in combination with a device for beveling and severing the end of the hoop arranged in advance of the said shaving device and consisting of a knife having its edge presented to the broad side of the hoop, an oscillatory stop arranged opposite the edge of the said knife and a quickly acting cam for periodically forcing said stop against said knife, substantially as set forth.

3. A hoop shaving machine having hoop shaving knives and hoop tongs or grippers and means for actuating the same, in combination with a movable cutter, arranged in advance of said knives, a guard arranged in advance of the cutter for holding the uncut hoop normally and entirely away from the cutter, and being fixed relatively to and movable with the cutter, and a periodically oscillating stop arranged opposite said cutter and adapted to deflect the hoop into engagement therewith at certain intervals, substantially as set forth.

4. A hoop shaving machine having hoop tongs or grippers and means for actuating the same, in combination with a cutter having its cutting edge arranged to engage the broad side of the hoop, a stop arranged opposite said cutter, said stop and cutter being movable with relation to each other, means for producing the said relative movement so timed with reference to the movement of said grippers as to force the stop and cutter together when the butt end of the hoop reaches said cutter, non-rotating hoop shaving knives arranged between said cutter and grippers, and hoop guides arranged adjacent to said shaving knives and between the latter and said cutter; whereby the butt end of the hoop will be cut off before reaching the shaving knives and thereby prevented from sticking between said knives and guides, substantially as set forth.

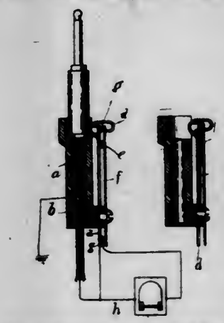
5. A hoop shaving machine having hoop tongs or grippers and means for actuating the same, in combination with a cutter having its cutting edge presented to the broad side of the hoop, a stop arranged opposite said cutter, said stop and cutter being movable with relation to each other and means for moving one toward and from the other for beveling and severing the end of the hoop, whereby the severed end will be permitted to drop from the machine when the cutter and stop separate, hoop shaving knives arranged between said cutter and grippers, and hoop guides arranged between said shaving knives and said cutter, substantially as and for the purpose set forth.

6. A hoop shaving machine having in combination, hoop tongs or grippers, hoop shaving knives for reducing the hoop, a pair of pivoted arms arranged to oscillate in substantially the same plane, a cutter for beveling the hoop mounted upon one and a stop mounted upon the other of said arms in advance of the shaving knives, one of said arms being in the form of a lever, means for oscillating said lever to force the stop and cutter together for beveling and severing the end of the hoop, means for oscillating said lever in the opposite direction to cause said stop and cutter to separate, the other of said arms being cushioned, and a guard arranged to normally hold the hoop out of contact with said cutter, substantially as set forth.

7. A hoop shaving machine having in combination hoop tongs or grippers, hoop shaving knives, a pair of pivoted arms arranged to oscillate in substantially the same plane, a cutter for beveling the hoop mounted upon one and a stop mounted upon the other of said arms, in advance of the shaving knives; one of said arms being in the form of a lever, a quickly acting cam for oscillating said lever in one direction, a spring for oscillating said lever in the opposite direction; and a guard arranged to normally hold the hoop out of contact with said cutter, substantially as set forth.

8. A hoop shaving machine having in combination hoop shaving knives, a pair of pivoted arms, a cutter for beveling the hoop mounted upon one and a stop mounted upon the other of said arms in advance of said shaving knives, one of said arms being in the form of a lever, means for oscillating said lever in both directions, a stem projecting from the other of said arms, a bracket through which said stem projects, a spring on said stem between said bracket and arm, and a guard arranged to normally hold the hoop out of contact with said cutter, substantially as set forth.

544,383. **ELECTRIC GROUNDING-SWITCH.** CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Dec. 6, 1887. Serial No. 257,062. (No model.)



Claim.—1. The combination with a terminal plug, provided with a metallic heel, of a socket into which the heel of said plug is adapted to be inserted, a hole being provided in the bottom of said socket for the passage of the cord to which cord the plug is attached and a contact spring having a free end adapted to bear upon said metallic heel when said plug rests in the socket, substantially as described.

2. A metallic frame provided with sockets *c* and cord holes, one connected with each socket, the rubber strip *b* provided with corresponding plug holes and wider than the thickness of the metallic frame to which it is attached, in combination with sets of contact springs, one set of springs mounted upon said rubber strip opposite each socket, one spring of each set being bent and adjusted to project through a slot provided in the frame to hold the plugs in place when inserted in in their sockets.

3. The combination, with the metallic socket provided with the cord hole, of a plug with its heel inserted in the socket, a contact spring normally insulated from said socket rigidly secured at one end and having a free end adapted to bear upon said heel and to press it against the side of said metallic socket, substantially as specified.

4. The combination with the metallic socket of a metallic spring or presser *d*, a contact spring or connecting piece *f* and a terminal plug provided with a metallic heel; whereby the dresser may be connected with the socket or the contact spring *f* by inserting the heel of the plug in the socket and removing it therefrom.

5. The grounding switch provided with the lever or spring *d* having a hood placed above the contacts of said switch to protect the same from dust, substantially as shown and described.

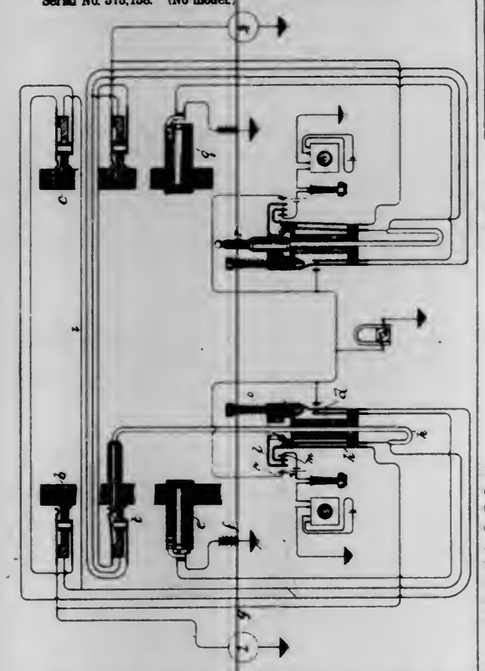
6. The contact spring or lever *d*, the fixed contact *g* and the contact *f* placed between the said contacts *g* and *d*, said contact *f* normally standing out of contact with both contacts *g* and *d* and the plug,

whereby when the plug is lifted from its socket said contacts are closed, substantially as and for the purpose specified.

7. The combination with a socket for a terminal plug, of a spring arranged parallel to the axis of the plug projecting into the socket so as to be wedged aside by the insertion of the plug therein, a normally insulated contact spring, a contact point therefor, an insulating stud mechanically connecting said contact spring with the spring in the socket, said contact spring being so arranged that when the terminal plug is removed from the socket, the spring in the socket presses upon the contact spring and forces it into contact with the contact point, substantially as described.

544,384. SINGLE-CORD GROUNDED-CIRCUIT SYSTEM FOR MULTIPLE SWITCHBOARDS.

CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Dec. 1, 1890 Serial No. 373,138. (No model.)



Claim.—1. A telephone line extending from the subscriber's station thereof through switches on each of two or more switch boards and through an annunciator to ground, in combination with a branch wire *g* and springs *k l* included therein of the cord switch and the flexible cord and plug, said cord having a permanent connection with the test circuit provided for said line, substantially as and for the purpose specified.

2. The combination with a telephone line connected with switches on two or more switch boards and provided with a test circuit connected with the insulated frames of said switches, of a flexible cord provided with a terminal plug with which said test circuit is permanently connected, said plug being normally disconnected from the line, substantially as and for the purpose specified.

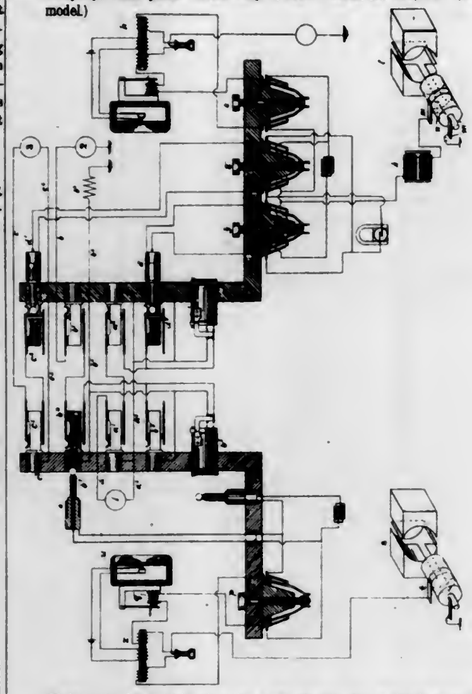
3. The combination with the test circuit of a telephone line, of the terminal plug and cord thereof normally disconnected from said line, the operator's telephone, and a cord switch, adapted to connect said plug with said line when actuated, whereby the plug is connected with the line and the telephone when the plug is lifted from its socket in the cord switch.

4. The combination with the subscriber's telephone line branched in two paths, one branch including the springs and contacts of the spring jacks and the annunciator, the other branch including a cord switch and the plug and cord, and a test battery, whereby when the plug of a line is used in making a connection the annunciator thereof is left in circuit as a clearing out signal, and whereby on making a connection at a spring jack switch the said annunciator is disconnected from the circuit.

5. The cord switch provided with a socket for the terminal plug of that line with which the cord switch is connected, said plug and cord, the operator's telephone and the pivoted cam lever provided with the plunger *o*, substantially as and for the purpose specified.

544,385. TEST-SIGNAL FOR MULTIPLE SWITCHBOARDS.

CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed July 7, 1891. Serial No. 398,717. (No model.)



Claim.—1. In combination, in a test circuit for multiple switch board systems, a connected series of test rings of spring jacks, a branch circuit from one of the test rings, including a source of electric energy, to earth, a second branch circuit from another of the test rings including the coil of an electro magnet provided with an armature adapted, when actuated, to strike a telephone transmitter, and with means for adjusting the armature to respond to different degrees of attraction to its magnet, and a telephone adapted to respond to changes in the current of the transmitter, substantially in the manner and for the purpose specified.

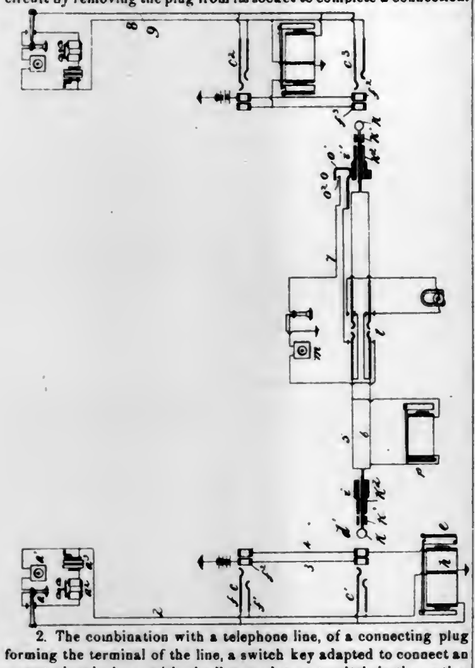
2. In a test system for multiple switch boards, the combination of a connected series of test rings of spring jacks, with a branch circuit from one of the test rings to earth including a source of intermittent or pulsatory current of constant direction, and a second branch connection from another of the test rings to earth through the coil of a polarized electro magnetic responsive device adapted, when actuated, to strike a telephone transmitter, a telephone adapted to respond to variations in the strength of the current which is electrically connected with the transmitter, and through a source of intermittent current whose direction is opposite to that of the first and whose periods of flow coincide with the periods of intermission of the current from the source in the first branch, in the manner and for the purpose specified.

3. In a test circuit for multiple switch boards, the combination of a source of intermittent current of constant direction, and a second source of current of opposite direction to that of the first, and whose periods of intermission coincide with the periods of flow of the current from the first source, with a polarized electro magnetic responsive device whose coil is included in the test circuit adapted, when actuated, to strike a telephone transmitter, and a telephone having a coil included in the test circuit, and adapted to be affected in response to disturbances in the transmitter, substantially in the manner and for the purpose specified.

544,386. TELEPHONE-SWITCHBOARD APPARATUS.

CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Dec. 26, 1894. Serial No. 532,960. (No model.)

Claim.—1. The combination with a telephone line, of a springjack connected therewith, a plug forming one terminal of a plug circuit inserted in the springjack, an operator's telephone in a conductor connected with the plug circuit, a plug forming the other terminal of the plug circuit, and a plug-seat-switch in the resting socket of the latter plug, the separated switch contacts of the plug-seat-switch being included in the conductor containing the telephone, whereby the telephone may be brought into complete connection with the plug circuit by removing the plug from its socket to complete a connection.



2. The combination with a telephone line, of a connecting plug forming the terminal of the line, a switch key adapted to connect an operator's telephone with the line, a plug-seat-switch in the resting socket of the plug having normally separated switch contacts included in circuit with the telphone, a calling key adapted to connect a source of signaling current with the terminal plug, and mechanism adapted to be actuated in the operation of the calling key to return the listening key to its position of disconnecting the telephone, substantially as described.

3. The combination with a telephone circuit, of a plug constituting the terminal thereof, a switch key capable of being thrown into three different positions, in one of which it connects an operator's telephone with the telephone line, in another of which it disconnects the said telephone, and in the third of which it connects a source of signaling current with the terminal plug, and a plug-seat-switch having normally separated contacts included in circuit with the telephone, whereby raising the plug to make connection closes the circuit through the telephone, and operating the calling keys opens the circuit through the telephone.

4. In combination, several pairs of connecting plugs with their uniting plug circuits, a telephone and listening key for each plug circuit adapted to connect the terminals of a conductor including the telephone with the corresponding plug circuit, a plug-seat-switch for the final or test plug of each pair, the switch contacts thereof being included in the conductor between the telephone and the corresponding plug circuit to open the connection normally, a calling key and mechanism for simultaneously operating the calling key to signal and the listening key to disconnect the telephone, substantially as described.

544,387. ELECTROMAGNETIC SIGNAL.

CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Jan. 8, 1895. Serial No. 534,210. (No model.)

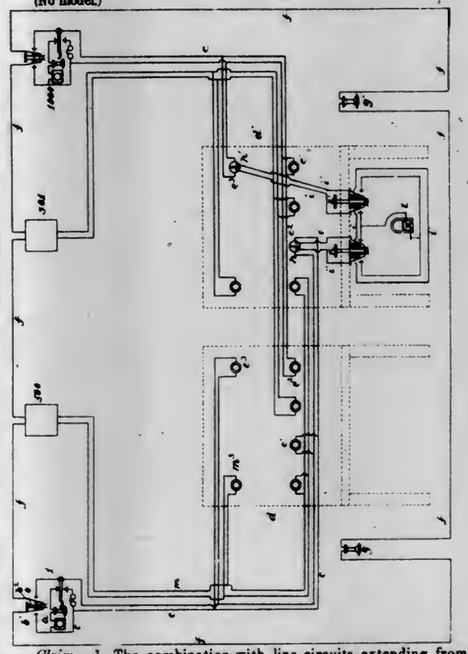


Claim.—1. In an annunciator, the combination with a solenoid or helix, of two bars or strips of soft iron extending through the opening or bore of said helix, and an annunciator target adapted to be displayed by the relative movement of said strips, substantially as described.

2. In an annunciator, the combination with a solenoid or helix, of a pair of thin strips of magnetic material mounted at one end in a support and extending through the opening or bore of said helix, said strips carrying upon their opposite ends targets, one normally covering and hiding the other from view, said strips being adapted to be moved transversely when said helix is energized to separate said targets and disclose the normally covered target to view; substantially as described.

544,388. TELEPHONE-EXCHANGE SYSTEM.

CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed May 13, 1892. Renewed Feb. 11, 1895. Serial No. 538,043. (No model.)



Claim.—1. The combination with line circuits extending from each of several substations to an exchange, of several switch boards at the exchange, an answering jack for each line provided upon each of the boards, a line jack for each line provided upon some one of the boards, a calling circuit extending to all of the substations, and an electro-magnetic receiving device at each of said boards included in said calling circuit, the several electro-magnetic receiving devices being adapted to simultaneously respond to calling currents from the substations, substantially as described.

2. The combination with line circuits extending from each of several substations to an exchange, of several switch boards at the exchange, an answering jack for each line provided upon each of the boards, a line jack for each line provided upon some one of the boards, a calling circuit extending to all of the substations, an electro-magnetic receiving device at each of said boards included in said calling circuit, and means at each of the substations for signaling over the calling circuit to the exchange to simultaneously actuate all of said receiving devices, substantially as described.

3. The combination with line circuits extending from each of several substations to an exchange, of several switch boards at the exchange, an answering jack for each line provided upon each of the boards, a line jack for each line provided upon some one of the boards, a calling circuit extending from the exchange to each of the substations, a telephone receiver at each of the boards included in said calling circuit, and means for including the telephone apparatus at the substation in the calling circuit, substantially as described.

4. The combination with line circuits extending from several substations to an exchange, of multiple switch boards at the exchange, each switch board comprising two or more sections, an answering jack for each line at one section of each of the multiple switch boards, a line jack for each line at each section of one of the multiple switch boards, calling circuits each extending to a different group of substations, and including an electro-magnetic receiving device at that section of each switch board whereon are the answering jacks of the particular substations with which it is connected, the several receiving devices being adapted to simultaneously respond to calling currents from the substations, substantially as described.

5. The combination with line circuits extending from several substations to an exchange, of multiple switch boards at the exchange,

each switch board comprising two or more sections, an answering jack for each line at one section of each of the multiple switch boards, a line jack for each line at each section of one of the multiple switch boards, connecting apparatus adapted to connect any line spring jack with any answering jack, different calling circuits extending from different groups of substations, and each including a telephone receiver at each section of the switch board whereon are the answering jacks of the particular substation with which it is connected, and means at each substation for including the telephone apparatus thereat in the calling circuit, substantially as described.

6. The combination with line circuits extending from each of several substations to an exchange, of several switch boards at the exchange, a spring jack for each line provided upon each of the boards, a calling circuit extending to each of the substations, an electro-magnetic receiving device at each of said boards, said receiving devices being included in said calling circuit and adapted to simultaneously respond to calling currents sent from any substation, substantially as described.

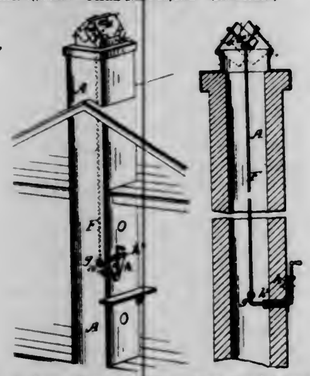
7. The combination with line circuits extending from each of several substations to an exchange, of several switchboards at the exchange, a springjack for a different line upon each of the switchboards, a calling circuit extending to all of the substations, an electromagnetic receiving device at each of said boards included in said calling circuit, and means at each of the substations for signaling over the calling circuit to the exchange, to simultaneously actuate all of said receiving devices, substantially as described.

544,389. ARTIFICIAL TOOTH-CROWN. WILLIAM M. SEEGER, Louisville, Ky. Filed Dec. 13, 1894. Serial No. 531,710. (No model.)



Claim.—The combination with an artificial tooth crown, of a pin secured to its base by a universal joint and adapted to be secured in the natural tooth root.

544,390. CHIMNEY-COWL. CYRUS N. SHANNON, St. Cloud, Minn. Filed Mar. 4, 1895. Serial No. 540,494. (No model.)



Claim.—1. In combination with a chimney and its cap, two baffle plates hinged to said cap and having flaps overlapping each other, rods *e* pivotally secured to said plates, a rod F pivotally secured to the rods *e*, and a crank rod pivotally connected to the rod F and passing the walls of the chimney substantially as described.

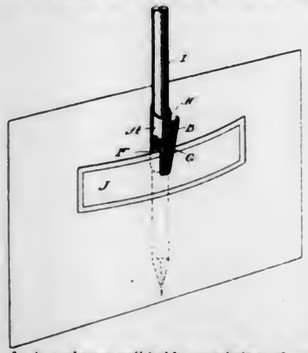
2. In combination with a chimney and its cap, two baffle plates hinged to said cap and having flaps overlapping each other, the flaps of one plate having slots therein and the flaps of the second plate having pins received in the slots of the first plate, rods *e* pivotally secured to said plates, a rod F pivotally secured to the rods *e* and means to operate the rod F substantially as described.

544,391. ELECTRIC-RAILWAY CONDUIT SYSTEM. LORENZO H. SHERWOOD, Mount Vernon, N. Y. Filed Sept. 7, 1894. Serial No. 522,382. (No model.)

Claim.—In a conduit system for electric railways, the combination of the main conduit, a tubular insulated secondary conduit supported within the main conduit entirely out of contact with all of the walls of the main conduit and provided at one side with a slot and with a wire tube, the service wire supported longitudinally within and above the bottom of the secondary conduit, the main conductor supported within the main conduit outside of the secondary conduit, a branch feed wire passed through said wire tube and connecting the service wire with the main conductor, a longitudinal guide rail arranged within the secondary conduit above and parallel with the service wire, and the compoundly curved trolley arm carrying within the secondary conduit a vertically disposed double bearing frame having a lower trolley wheel traveling on top of the service wire and an upper guide wheel traveling beneath and against the guide rail, substantially as set forth.



544,392. POCKET PENCIL-HOLDER. EDWARD S. SMITH, Waterbury, Conn. Filed Feb. 20, 1895. Serial No. 539,061. (No model.)



Claim.—1. A pocket pencil-holder consisting of a tube, longitudinally adjustable on a pencil, a clasp pivotally mounted thereupon, a spring bent upon itself as described and supported by the pivotal bearing of the clasp, one end of said spring pressing against the rear under side of the clasp, the opposite end of said spring projecting through a recess in the tube and normally bearing against the edge of said recess nearest the pivotal support when not in engagement with a pencil, substantially as described.

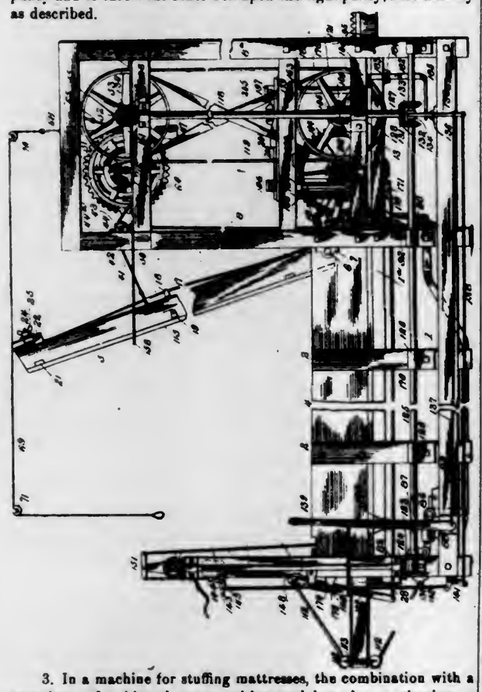
2. A pocket pencil-holder consisting of a tube longitudinally adjustable on the pencil, said tube carrying upwardly projecting lugs, a spring pressed clasp supported thereby, a spring for actuating said clasp said spring being supported by the pivotal support of the clasp, the lower extremity of said spring projecting into the tube through a recess therein, substantially as and for the purpose specified.

3. A pocket pencil-holder consisting of tube A, lugs E E, formed out of and projecting upwardly from said tube, a recess H in said tube, a clasp B pivotally supported on the lugs E E, a spring D supported on the pivotal bearing G, one end of said spring pressing against the rear under side of the clasp B, the opposite end being supported by the tube A and projecting through the said recess H to engage a pencil that may be inserted into said holder, substantially as described.

544,393. MACHINE FOR STUFFING MATTRESSES. EDWIN N. STEPHENSON, Waco, Tex. Filed May 10, 1895. Serial No. 548,864. (No model.)

Claim.—1. In a machine for stuffing mattresses, the combination with a press-box, of a hinged top, a rope and rope-drum to raise and lower the same, a clutch on the shaft of the rope-drum, a plunger movable in the press-box, means for operating said plunger by power derived from the shaft of the rope-drum, two independent belt-shifters acting upon a straight and a crossed belt which connect pulleys on said drum-shaft with similar pulleys on a shaft between it and the plunger-bar, devices for operating said belt-shifters, and a lever and cam-lug, the former actuated by an automatically adjusted part of the machine, and the latter by a cam-lug on the plunger-bar, substantially as described.

2. In a machine for stuffing mattresses, the combination with a press-box, of a hinged top, means for lowering and raising the same, a presser-bar vertically adjustable over the end of the lowered top, threaded shafts to effect said adjustment, a power-shaft, a shaft having pulleys belted thereto by a straight and a crossed belt, two separate belt-shifters to shift either belt from its loose pulley to a central tight pulley, a plunger movable in the press-box, a lever operated by a cam-finger on the presser-bar to shift one belt to the tight pulley, and cam-lugs on the bar of the plunger to return said belt to its loose pulley and to throw the other belt upon the tight pulley, substantially as described.



3. In a machine for stuffing mattresses, the combination with a press-box, of a hinged cover, raising and lowering mechanism, a power-shaft operating the same, a plunger and plunger-bar, the latter having a rack bar thereon, a shaft carrying a gear meshing with said rack, a shaft belted to the power-shaft by a straight and a crossed belt, independent belt-shifters to shift said belts from loose pulleys to a tight pulley, a presser-bar, a lever operated by a cam-lug on said presser-bar to throw one of the belts on the tight pulley, a gate normally closing the mouth of the press-box, a weighted lever connected to said gate, an angular cam to operate the latter lever, a cam rib on the plunger-bar to operate the angular cam, and cam-lugs to operate the belt-shifters and reverse the movement of the plunger, substantially as described.

4. In a machine for stuffing mattresses, the combination with a press box, of a hinged top, a drum loose on a power-shaft to raise and lower said top, a clutch to lock said drum to the shaft, and a lever operated by the hinged top to release said clutch when the top is raised to its highest point, substantially as described.

5. In a machine for stuffing mattresses, the combination with a press-box, of a plunger movable therein, mechanism for operating said plunger, a rising and falling gate to close the mouth of the press-box, means for operating said gate, a plunger-bar having a lateral cam-rib terminating short of its forward end, and an angular cam and a lever operated thereby, said cam having an arm lying in the path of the rib on the plunger-bar, substantially as described.

6. In a machine for stuffing mattresses, the combination with a press-box, of a hinged top, a presser-bar vertically movable over the end of said top when lowered, mechanism for raising and lowering said presser-bar, a shaft operating said mechanism, a shaft belted to the power-shaft by a straight and a crossed belt, a clutch on the shaft operating the presser-bar, a belt-shifter controlling one of said belts, a plunger movable in the press-box and provided with means for operating said belt-shifter, and a lever operated by a cam-finger on the presser-bar to actuate the clutch on the presser-bar shaft, substantially as described.

7. In a machine for stuffing mattresses, the combination with a press-box, of a plunger movable therein and having a plunger-bar provided with a lateral cam-rib terminating short of its forward end, a gate normally closing the mouth of the press-box, a weighted lever partly balancing the gate, a lever connected to said weighted lever, and an angular cam having one arm lying in the path of the lateral cam-rib on the plunger-bar and the other arm acting upon the end of the lever which operates the weighted lever, substantially as described.

8. In a mattress-stuffing machine, the combination with a press-box, of a hinged cover, a plunger and plunger-bar, a gate normally closing the mouth of the box and opened by a weighted lever, a lever connected to said weighted lever to open the gate, and an angular cam operating said lever by a lateral cam-rib on the plunger-bar, the forward end of said rib being located in rear of the forward end of the plunger-bar, whereby the latter may compress the stuffing material in the press-box before the gate is opened, substantially as described.

9. In a mattress-stuffing machine, the combination with a press-box, of a hinged cover, a presser-bar to fasten its free end, threaded shafts to raise and lower said presser-bar, a series of shafts geared to each other to operate the threaded shafts, one of the series being provided with a beveled gear two beveled gears permanently meshed therewith both being loose on another shaft, a clutch splined on the latter shaft between the loose bevel-gears, a clutch-operating lever, and disengaging lever fulcrumed upon the front end of the machine in the path of a lug on the end of the presser-bar, substantially as described.

10. In a mattress-stuffing machine, the combination with a press-box, of a gate normally closed by its own gravity at the mouth of the box, a plunger movable in said box, the plunger-bar having a cam-rib on one side, and levers connected to the gate and adapted to be operated to lift said gate by means of the cam-rib, which makes its operative engagement after the plunger has advanced far enough in the box to suitably compress and shape the stuffing material, substantially as described.

11. In a mattress-stuffing machine, the combination with a press-box, of a gate normally closing the mouth of said box by its own gravity, a plunger movable in the box, the plunger-bar being provided with a cam-rib extending from the rearward end of said bar to a point between the center and forward end of the same, gate-levers adapted to lift the gate and open the mouth of the press-box, and a series of levers connected to said gate-levers and to each other, the last lever of the series being so arranged as to be operated by the cam-rib to lift the gate after the plunger has effected a suitable compression of the stuffing material, substantially as described.

12. In a mattress-stuffing machine, the combination with a press-box, of a gate movable vertically and normally closing the front end of the press-box, a plunger movable in said box, a pair of gate levers connected to the ends of the gate and to one arm of the bell-crank lever, a second lever connected at one end to the other arm of said bell-crank lever, and an angular cam adapted to operate said second lever and to be itself operated by a cam-rib on the plunger-bar extending from its rearward end to a point between its center and forward end, whereby the gate remains closed until the forward movement of the plunger shall have compressed and shaped the stuffing material in the press-box, substantially as described.

13. In a mattress-stuffing machine, the combination with a press-box, of a hinged top or cover, a presser-bar, screw-shafts to raise and lower the same, a driving-shaft geared to the power-shaft a clutch on one of the shafts and a lever connected to said clutch the end of said lever lying in the path of a lug on one end of the presser-bar to arrest the downward movement of the latter, substantially as described.

544,394. ARTICLE OF CONFECTIONERY. GEORGE H. STILLE and THEODORE J. STILLE, St. Louis, Mo. Filed Jan. 14, 1895. Serial No. 534,827. (No model.)



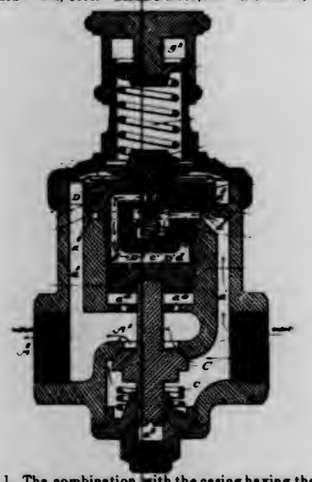
Claim.—1. The combination with an extensible wire having eyes or hooks formed at its ends, one end of which is embedded in or otherwise secured to an article to be suspended, and a hood C for incasing said extensible wire, said hood being formed with indentations to hold it in position, substantially as described.

2. The combination with wire B wound in convolutions, one end of which is attached to an article to be suspended, a hood C, and indentations *c* on said hood, which indentations engage the convolutions of the wire B, substantially as described.

3. The combination with a stick of candy formed with a reduced portion near one end, of a coiled wire B having one end embedded in the end of the stick of candy nearest the reduced portion, and a

hood C having indentations c which engage the convolutions of the wire B, permitting said hood to be screwed in position and retained on the coil, substantially as described.

544,395. PRESSURE-REGULATOR. WILLIAM G. TAAFFE, Newark, Ohio. Filed Jan. 2, 1895. Serial No. 533,627. (No model.)



Claim.—1. The combination with the casing having the inlet and outlet, an apertured partition therebetween and a cylinder above the said partition, of an upwardly closing main valve seating against the lower side of the partition, and held closed by the high pressure fluid, a piston in the cylinder acting on the upper end of the valve stem to force it down, a downwardly opening secondary valve above the piston and controlling a passage leading from the high pressure side of the casing to the upper side of the piston, a pressure regulating spring acting on the upper end of the secondary valve to unseat it against the high pressure, and a passage leading from the low pressure side of the casing to the lower side of the pressure regulating device to assist in forcing it away from the secondary valve, substantially as set forth.

2. The combination with the casing having the inlet and outlet, an apertured partition therebetween, a piston cylinder above the partition, and a removable longitudinally bored end cap below the partition, of an upwardly closing main valve seated by high pressure against the lower side of the partition, removable through the lower end of the casing, and having the lower end of its stem accessible through said cap above from the exterior of the case for rotation by a suitable tool, a piston in the cylinder engaging but disconnected from the upper end of the valve stem, a secondary valve controlling communication between the high pressure side of the case and the upper side of the piston and a pressure regulating device for unseating the secondary valve, substantially as set forth.

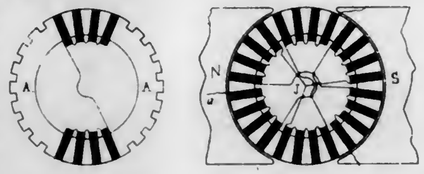
3. The combination with the casing having an inlet and an outlet, an apertured partition therebetween, a piston cylinder above the partition, and a removable longitudinally bored end cap at the lower end of the casing, of the main valve seated by high pressure against the lower side of the partition and having the lower end of its stem entering said cap bore for rotation from the exterior of the casing, a cushion on the inner side of the said cap below the valve, a piston in the cylinder engaging but disconnected from the upper end of the valve stem, a secondary valve controlling communication between the high pressure side of the casing and the upper side of the piston, and a pressure regulating device engaging the said secondary valve to unseat it, substantially as set forth.

4. A pressure regulator comprising the casing having an inlet and outlet, an apertured partition therebetween, a main valve closing upwardly by high pressure against the under side of the partition and removable through the bottom of the casing, a piston in the cylinder engaging but disconnected from said main valve, an upwardly closing secondary valve above the piston and controlling communication between the high pressure side of the casing, and upper face of the piston, a diaphragm in the upper end of the casing and engaging the upper end of the secondary valve, a pressure regulating spring bearing on the diaphragm, and a passage leading from the low pressure side of the casing to a closed space under the diaphragm, substantially as set forth.

5. A pressure regulator comprising the casing, having an inlet and outlet, an apertured partition therebetween, a cylinder above the partition, and open at the upper end and communicating at its lower end with the low pressure side of the casing, a main valve closing upwardly by high pressure against the lower sides of the partition, a piston in the low cylinder engaging the upper end of the main valve to unseat it, a screw plug closing the upper end of the cylinder and provided with a central chamber closed at its bottom by a screw plug, and communicating with the high pressure side of the casing, a secondary valve working in a bore through the top of the plug and closing upwardly, a passage leading from the valve to the upper side of the piston, a spring pressed diaphragm engaging the upper end of the secondary valve to unseat it, and a passage leading from the low pressure side of the casing to the closed space below the diaphragm, substantially as set forth.

6. A pressure regulator comprising the casing having an inlet and outlet, an apertured diaphragm therebetween, removable bottom and top end caps, a piston cylinder above the partition and having its upper open end beveled, a main valve seated upwardly by high pressure, against the lower side of the partition and removable through the bottom of casing, a piston in the cylinder separably engaging the upper end of the main valve stem, a plug screwed into the cylinder, and having a beveled surface fitting the beveled surface thereof, an annular channel between said two beveled surfaces, and communicating by channel a' with the high pressure side of the casing, a central chamber in the plug having radial channels leading to the said annular channel, and provided with an opening through its top communicating by a channel d^3 with the upper side of the piston, a removable plug closing the bottom of said plug chamber, a valve closing upwardly against said top opening and controlling communication between the plug chamber and the channel d^3, a diaphragm held over the upper end of the casing by the upper end cap and bearing on the upper end of the secondary valve, a channel a^3, leading from the low pressure side of the casing to the space under the diaphragm, a pressure regulating spring in the upper end cap, and means for regulating the tension of the spring, substantially as set forth.

544,396. WINDING OF DYNAMO-ELECTRIC MACHINES OR MOTORS. ELIHU THOMSON, Swampscott, Mass., assignor to the General Electric Company, of New York. Filed Jan. 27, 1894. Serial No. 498,182. (No model.)

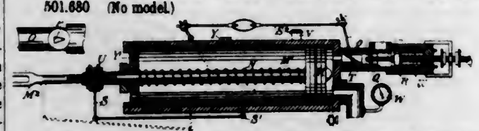


Claim.—1. In a dynamo electric machine, motor, or similar electrical apparatus, a laminated core provided with projecting iron extensions between the coils, and having each single coil or circuit which generates or utilizes an alternating impulse, divided and interspersed between projections that occupy different positions around the structure.

2. In a dynamo or motor a projection armature the induction circuits of which, for each alternating impulse, are divided into portions which are wound between successive projections and connected in series, so that the currents in them will be in synchronism in the different divisions of the coil, while the electro-motive-forces may or may not be in synchronism.

3. In a dynamo electric machine or laminated structure having projections, a number of conductors wound between successive projections the electro-motive-force of which would not necessarily be in phase, but the current in which is of one phase and is the resultant of the current producing tendencies in each of the divisions.

544,397. AUTOMATIC ADJUSTABLE GOVERNOR. EDWARD THUNDERBOLT, Melbourne, Victoria. Filed Feb. 27, 1894. Serial No. 501,680. (No model.)



Claim.—In governors for controlling the speed of machinery—the combination with a cylinder as L, of a pressure regulator consisting of an outlet passage as O and port as P, with a slide valve as Q, provided with openings as Q' and valve rod as Q^3 secured to piston as R, said piston having rod as R^3, encircled by a spring and terminating in a screw thread adjustment, as and for the purposes described.

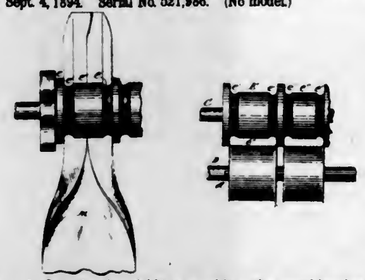
544,398. MEASURING DEVICE. JASPER L. ACKERMAN, Mondon, Ind. Filed Aug. 11, 1894. Serial No. 520,011. (No model.)



Claim.—1. The herein-described measuring device comprising a supporting handle, a cylindrical measure 3 carried by the handle and open at both ends, a cylindrical scraper 7 having a diameter corresponding to that of the measure and being open at both ends, a cylindrical section 4 having a fixed bottom and open at its upper end, the bottom of said section 4 constituting the bottom for the measuring device, and said section 4 being adjustable vertically within the measure 3 and adapted to form a prolongation thereof when extended to increase the measuring capacity of the device, an arm secured to the scraper, a second operating arm having a pivotal connection with the first arm, and said first arm having such pivotal connection with the handle as to effect a horizontal arc-shaped swinging movement of the scraper across the upper edge of the measure 3 to sweep the surplus material therefrom, and a spring acting upon the arms to normally hold the scraper over and in alignment with the measure.

2. The herein-described measuring device, comprising a supporting handle, a cylindrical measure 3 carried by the handle and open at both ends, a cylindrical scraper 7 having a diameter corresponding to that of the measure and being open at both ends, a cylindrical section 4 having a fixed bottom and open at its upper end, the bottom of said section 4 constituting the bottom for the measuring device, an angular arm secured at one end to the scraper and having a pivotal connection at its other end with the handle, a second arm pivotally connected at one end with the said angular arm intermediate the ends of the latter and having a sliding bearing at its opposite end upon a support carried by the handle, said second arm being arranged at an angle to the longitudinal axis of the supporting handle and also at an angle to the said angular arm, and a spring operating to maintain the arms in such normal position as to cause the scraper to lie over and in alignment with the measure 3, all arranged for the purpose specified.

544,399. LEATHER-FOLDING MACHINE. ALONZO B. ARNOLD, Le Grand, Iowa, assignor of one-half to D. M. Helfenstine, same place. Filed Sept. 4, 1894. Serial No. 521,986. (No model.)



Claim.—1. In a leather-folding machine, the combination of a flanged roll, having a cylindrical portion of smaller diameter than the flanges and between said flanges, and grooves between said cylindrical portion and said flanges, and a roll corresponding in length to the space between said flanges, and provided with an upturned lip at each end, with means substantially as described for retaining, adjusting and actuating said rolls.

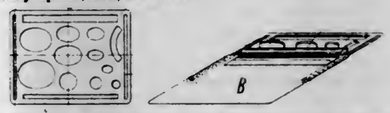
2. In a leather folding machine, the combination of the splined shaft *D d* and a series of collars F F of varying width, having terminal lips *f f* at each end, whereby they are adapted to form the under side of the fold with suitably rounded edges, and a roll substantially as described, that is to say, having a central, cylindrical portion, terminal flanges, and intermediate grooves, and adapted to fold the strip inwardly at each side and form a seat for the layer, with a bead each side.

544,400. HAME OR COLLAR FASTENER. JOHN P. BAIRD, Lockport, N. Y. Filed Apr. 3, 1895. Serial No. 544,335. (No model.)



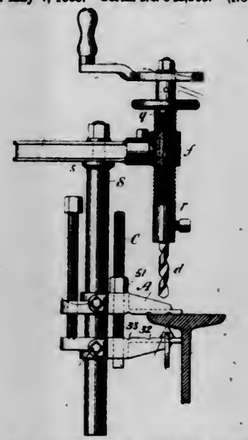
Claim.—A hame or collar fastener, composed of two shells, one of which is provided in its upper wall with an aperture and in its lower wall with a slot and with a tapering extension and a spring secured in said shell and provided with a toe which projects out through the slot therein; the other shell being provided with a lug to engage the aperture of the first named shell and with an aperture to be engaged by the toe of the spring; and shackles secured to the outer ends of said shells.

544,401. PLASTER-BOX. CLEMENS BREUL, Barmen, Germany. Filed Apr. 6, 1895. Serial No. 544,766. (No model.) Patented in Germany Apr. 14, 1894, No. 25,658.



Claim.—A plaster box of rectangular circular or any other convenient form consisting of two plates A and B the one of which being provided with recesses of any form and size into which are placed a number of likewise shaped plasters which are prevented from falling out of the recesses by a piece of paper pasted to said plate, both plates being flanged together and fitted with recesses and projections for limiting the for- and backward shifting of the lid and allowing only to open the box partly from both sides all substantially as and for the purpose set forth.

544,402. PORTABLE HAND-DRILL. ORIGEN C. CRANE, New York, N. Y. Filed May 7, 1895. Serial No. 548,365. (No model.)

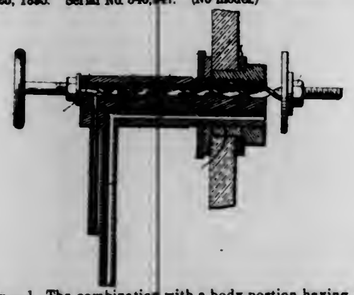


Claim.—1. The combination in a portable drilling machine of a main post or standard, two parallel plates to support said standard upon its work, set screws in said plates to fixed said standard at any desired point to provide for drills of varying length, two parallel screws upon opposite sides of said standard, respectively, one screw being fixed to the first plate and connected with the second plate by means of a nut, the other screw being screw threaded into said second plate and abutted against said first plate, a slotted arm located on a bearing at the upper end of said standard, a set nut to fix the end of said arm at any radial distance from the standard, a feed nut engaging said arm by a screw threaded connection to vary its radial distance from the end of the arm, a feed sleeve having a threaded surface engaging a corresponding thread in the feed nut, a drill spindle and drill carried by said sleeve, means for rotating said spindle, and a set screw for fixing the feed sleeve at any desired angle with respect to the standard and the work to be operated upon, substantially as described.

2. The combination of a standard carrying an adjustable arm, a feed sleeve carried by said arm, a drill spindle and drill carried by said sleeve, two parallel plates perforated to receive said standard, set screws for supporting said standard at any desired elevation and two screws upon opposite sides of said standard, respectively, one screw being fixed to the first plate and connected with the second plate by means of a nut, the second screw being screw threaded into said second plate and abutted against said first plate whereby said plates may be caused to grip the work and support the standard, while the standard may be raised and lowered without changing the connection between the drill standard and the work, substantially as described.

3. The combination of a standard carrying an adjustable arm, a feed sleeve carried by said arm, a drill spindle and drill carried by said sleeve, two parallel plates having their adjacent or opposite surfaces traversed by grooves in diagonal and transverse lines, each groove in one plate having a corresponding and parallel groove in the other plate, a perforation in each plate to receive said standard; set screws to permit of adjusting and holding said standard at any desired height, and two independent screws located upon opposite sides of said standard, respectively, one screw being fixed to the first plate and connected with the second plate by means of a nut, the second screw being threaded into said second plate and abutted against said first plate, all so arranged that said plates may be caused to engage the flanges of an I-beam or the arc of a pipe surface without marking or injuring the surface, substantially as described.

544,403. FAUCET. GEORGE DECKER, Montgomery, Pa. Filed Apr. 23, 1895. Serial No. 546,947. (No model.)

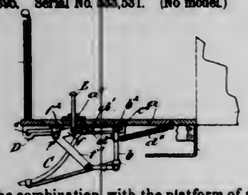


Claim.—1. The combination with a body portion having an outlet passage and an air inlet passage, the latter of which extends through both ends of the body and is situated above the outlet passage and each passage being provided with a tube, of a rod carrying at each end a valve, said rod located in the air inlet passage and adapted to be reciprocated to open or close the inner ends of both passages and to open and close the outer end of said inlet passage.

2. The combination with a body portion having an outlet passage and an air inlet passage, the latter of which is situated above the outlet passage and extends through both ends of the body and is provided with a stud or feather, of a spirally grooved rod located in the last named passage and provided at each end with a disk valve for the purposes set forth, the groove of said rod engaging the said stud or feather.

3. The combination with a body portion having an outlet passage and an air inlet passage, the latter of which is situated above the outlet passage and extends through both ends of the body, tubes communicating with said passages, a rod located in the air inlet passage and provided with valves for the purposes described, a flanged collar screwed on the inner end of said body and washers 14, 15 and 16, substantially as described.

544,404. CAR-FENDER. JOHN S. DETWILER, Philadelphia, Pa. Filed Jan. 2, 1895. Serial No. 533,531. (No model.)



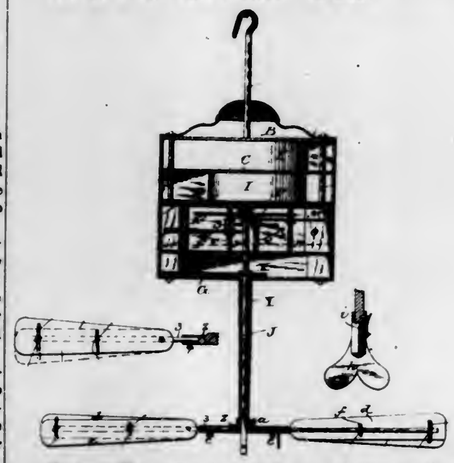
Claim.—1. The combination, with the platform of a car provided with slides or bearers, each having an oblong slot and end socket, of a fender provided with a frame with projecting cross-rods, pintles or pins engaging said slides or bearers, said fender having an inclined carrier-apron, retracting springs connected with said frame and with said platform of the car, a foot lever extending through said platform and connected with a bell crank lever pivotally supported from a bearing secured to said platform and linked to the rear of said fender frame, substantially as and for the purposes set forth.

2. The combination, with a car, of a fender comprising a tubular frame supporting an inclined position a carrier-apron, said frame provided with cross-rods or pintles, oblong slotted slides or bearers with end sockets, retracting springs connected with said fender frame and with the platform of the car, a foot lever in movable engagement with a bell crank lever linked to said frame and said bell crank lever fulcrumed to a bearing on the under side of the platform of the car, substantially as and for the purposes set forth.

3. The combination, with a car provided with a platform having slotted sides or bearers secured to the under side thereof and with end sockets, of a fender provided with pintles or pins engaging the slots of said sides or bearers, retracting springs connected with the frame of said fender and with the platform of the car, a foot lever operating a bell crank fulcrumed to a support secured to said car, said bell crank lever linked to the rear frame of the fender, the construction and arrangement being such that by depressing said foot lever the fender-frame with its carrier-apron is shifted in advance of the platform and locked in its extended position in the sockets of said slides or bearers and upon the release of the pressure exerted against said foot lever by means of said retracting springs the fender-frame is returned to initial position in rear of the dash-board and beneath the platform of the car, substantially as described.

4. The combination, with a car, of a fender provided with a tubular frame and an inclined meshed wire carrier-apron, said frame provided with inwardly projecting cross-rods or pintles, slotted slides or bearers secured to the platform of the car and having sockets at one of their ends, the rods or pintles of said fender-frame engaging said slides and a bell crank mechanism connected with said frame and in movable engagement with a foot lever for shifting said fender from its normal position to a locked position with the fender extended close to the ground, substantially as and for the purposes described.

544,405. MECHANICAL FAN. JAMES O. FLEECE, Wildwood, Fla. Filed Feb. 15, 1895. Serial No. 538,551. (No model.)



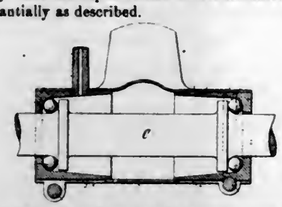
Claim.—1. The combination with a train of spring actuated gearing, of the main spring post, a sleeve loosely carried by said post and actuated by the gearing, a cross head carried by said sleeve and provided with a downward projected arm, blades supported by said cross head, and a key removably secured to the main spring post and having portions thereof extending within the path of rotation of the arm carried by the cross head, whereby the fan is locked against operation while the key is on the post.

2. In combination, a supporting frame, a main spring, a post secured to the free end of said spring and projecting downward below the frame, a drive wheel loosely mounted on said post, a pawl and ratchet connection between the post and drive wheel, a sleeve on the lower end of the post, a gear wheel fixed to said sleeve, interposed gearing for transmitting the motion of the drive gear to the sleeve carrying gear, a cross head secured to said sleeve and provided with a downward projected arm, blades supported by said cross head, and a key removably secured to said post within the path of movement of the arm carried by the cross head, substantially as set forth.

544,406. BALL-BEARING. ROBERT F. HALL, Moseley, England. Filed Oct. 8, 1894. Serial No. 525,259. (No model.)

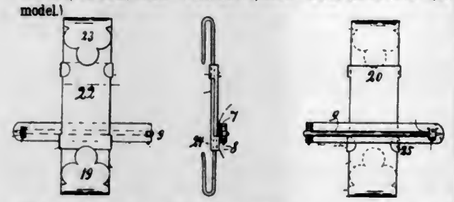
Claim.—1. In a ball-bearing the combination of a bracket-sleeve which is slit at its ends, ball-race cups having plain cylindrical surfaces within the ends of the sleeve, clamping bolts by which the said sleeve can be caused to grip the ball-cups, a pin fixed in one of the parts and engaging a spiral or inclined groove or slot in the other part, whereby when the cup is turned it is simultaneously adjusted in the axial direction, substantially as described.

2. In an adjustable ball-bearing, the combination of a bracket-sleeve which is slit at its ends, ball-race cups, having plain cylindrical surfaces, within the ends of the sleeve, clamping bolts by which the said sleeve can be caused to grip the ball cups and means for axially adjusting said cups said means consisting of a pin on one of the cups and a spiral or inclined slot in the sleeve through which the pin projects, whereby when the cup is turned it is simultaneously adjusted axially, substantially as described.



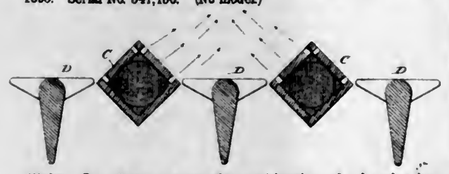
3. In an adjustable ball-bearing, the combination of a bracket sleeve which is slit at the ends, ball-race cups adapted to slide within the ends of the sleeve, clamping bolts by which the sleeve can be caused to grip the ball-cups means for axially adjusting said cups said means consisting of an outwardly projecting pin on one of the cups and a spiral or inclined slot in the sleeve through which the pin projects, the said adjusting pin being provided with an axial thoroughfare through which oil may be introduced to the bearings and a dust cap to fit over and close said thoroughfare, substantially as described and for the purposes specified.

544,407. ADJUSTABLE SKIRT AND BELT FASTENER. ALICE L. HENDRY, St. Paul, Minn. Filed Nov. 6, 1894. Serial No. 528,015. (No model.)



Claim.—In a device of the kind described, the combination of the belt holding-hooks 19, and 23, having the bodies or plates 18, and 22, held in a sliding position upon each other by hooks as 21, and 25, said plates also having their bodies bulged toward each other so as to produce frictional resistance for holding the plates and their hooks in position when adjusted; the pin bar 7, secured transversely upon one of the plates or hooks and having the offset or embossment 15, forming the clearings 30, for the guiding hooks 25, to pass through; the catch 12, and the pin 9, pivoted as at 8, substantially as and for the purpose shown and described.

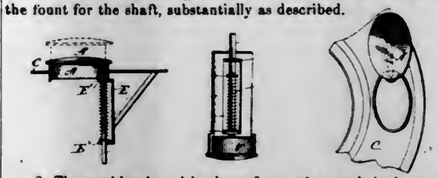
544,408. GRATE. JOHN N. HUSTON, Petersburg, Va. Filed Mar. 9, 1895. Serial No. 541,150. (No model.)



Claim.—In a furnace grate the combination of a bearing bar, a blast feed pipe extending parallel with the bearing bar and having male sockets at intervals in its length, hollow blast bars arranged in parallel relation and supported on the bearing bar and the blast feed pipe and having pendent female sockets to form a slip joint with the said male sockets, the engaging faces of the two sockets being beveled, said hollow blast bars being rectangular and placed with their opposite angles in vertical and horizontal relation, and having the upper sides perforated, and rocker bars disposed between the blast bars and having their upper faces about in a plane corresponding with the plane of the horizontally disposed angles of the blast bars, whereby alternate ribs and depressions are formed, and whereby the jets from adjacent blast bars will intersect over the rocker bars and create a forced draft, substantially as set forth.

544,409. FILLING NIPPLE AND CAP. JOSEPH JAUCH, Meriden, Conn., assignor to The Bradley & Hubbard Mfg. Co., same place. Filed Nov. 26, 1894. Serial No. 530,017. (No model.)

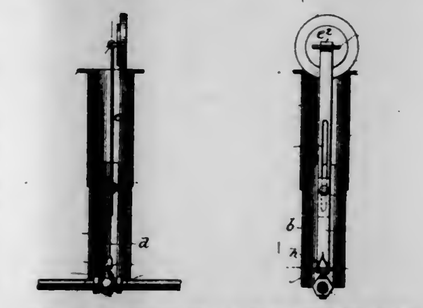
Claim.—1. The combination with a lamp-fount, of a non-cylindrical nipple mounted therein, a non-cylindrical cap conforming in shape to the shape of the nipple and held against rotation by its shape and the shape of the nipple, a shaft secured to the cap at one side of the center thereof and at a right angle to the plane thereof, and extending downward through the nipple, a spring applied to the lower end of the shaft for drawing the same downward, and a bearing within the fount for the shaft, substantially as described.



2. The combination with a lamp-fount, of an oval nipple mounted therein, an oval cap conforming in shape to the shape of the nipple, but smaller in external diameter than the internal diameter of the nipple, a shaft secured to one end of the cap, and passing downward through one end of the nipple, a spring applied to the shaft for drawing it downward, and a bearing within the fount for the said shaft, substantially as described.

3. The combination with a lamp-fount, of a non-cylindrical nipple mounted therein, a non-cylindrical cap conforming in shape to the shape of the nipple and held against rotation by its shape and the shape of the nipple, a shaft secured to the cap at one side of the center thereof, and at a right angle to the plane thereof, and extending downward through the nipple, a spring applied to the lower end of the shaft for drawing the same downward, and a bearing for the said shaft, consisting of a perpendicularly arranged arm formed integral with the nipple, and provided with lugs or flanges through which the shaft passes, and in which it is free to move vertically, substantially as described.

544,410. ADJUSTABLE ROD AND BOX FOR WATER OR OTHER PIPES. PHILIP J. KOTTCAMP, York, Pa. Filed Mar. 25, 1895. Serial No. 543,079. (No model.)



Claim.—1. The combination with the box consisting of upper and lower sections, adjustable, one upon the other, to vary its depth, of the lid adapted to the upper section of the box, and the extensible operating rod connected to and arranged to be turned by the lid, said rod being provided at its lower end with means for attachment to a valve stem, substantially as described.

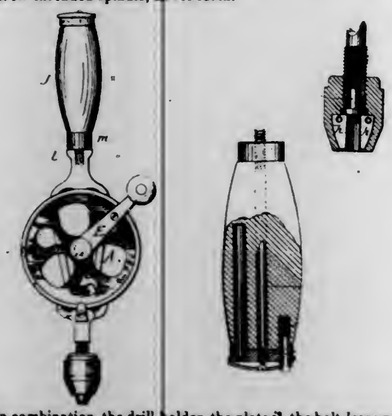
2. The combination with a box composed of adjustable upper and lower sections, of a lid for the box, and a valve rod having upper and lower sections adjustably connected, the upper section being hinged to the box cover and the lower section being adapted for attachment to a valve stem, substantially as described.

3. The combination with the box composed of upper and lower sections adjustable one upon the other, and a lid fitting the upper section, of a bail or rod *f* upon the lid, and a valve operating rod consisting of two plates having a pin and slot connection, the upper plate having an eye through which the bail of the cover passes, and the lower rod section having two tongues or branches which are perforated for engagement with the handle of a valve, substantially as described.

544,411. HAND-DRILL. HERBERT D. LANPAIR, Westminster, Cal., assignor to Goodell Brothers, Greenfield, Mass. Filed Sept. 19, 1894. Serial No. 523,484. (No model.)

Claim.—1. The chuck composed of the following parts, viz: jaws, in three or more parts, of wedge form, rectangular at their bases, held apart by separating springs, a stud and a spindle arranged to receive said stud, a housing or shell having a cavity of form to receive the several parts of the jaws, the headed stud and a screw-threaded spindle, all arranged and combined as set forth.

2. The combination with the chuck composed of jaws, springs, a headed stud and a housing or shell, all formed as described, of the hollow screw-threaded spindle, as set forth.



3. In combination, the drill holder, the plate i^3, the bolt *l* screwed into said plate i^3 running entirely through the handle and the frame of the drill secured to said bolt, as specified.

544,412. SPRAYING ATTACHMENT FOR HOSE-NOZZLES.

DAVID A. MAGEE, Trenton, N. J. Filed Oct. 9, 1894. Serial No. 525,444. (No model.)



Claim.—1. A spraying attachment for hose-nozzles, consisting of a stem adapted to be thrust into a nozzle, and to be there held by frictional contact, having upon its free end a plate adapted to break into a spray the current of liquid issuing from the nozzle.

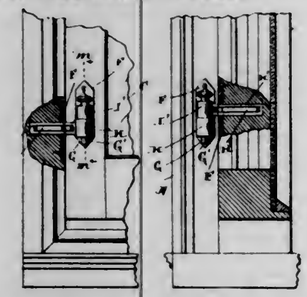
2. A distributer adapted to be attached to a nozzle for spraying the stream issuing therefrom consisting of a stem adapted to enter the nozzle and bent to form a spring which will engage the interior of said nozzle while its outer end projects in line with the axis of the nozzle, in combination with vanes rotarily mounted upon the outer end of the stem, and having surfaces inclined to the direction of the issuing stream, substantially as described.

3. A distributer adapted to be attached to a nozzle for spraying the stream issuing therefrom consisting of a stem adapted to enter the nozzle and bent to form a spring which will engage the interior of said nozzle in combination with a sprayer mounted on the end of the stem, substantially as described.

4. In a spraying apparatus, the combination with a nozzle of a stem having a section coincident with a line of projection from the nozzle, and a sheet metal plate mounted rotarily on such section of the stem as an axis, such axis being approximately coincident with the plane of the plate in its central line, and vanes formed of the plate by lateral projections coincident with the axis line next to the nozzle, and bent at their outer ends screw like so as to throw the water into a rotating spray, substantially as set forth.

544,413. HINGE.

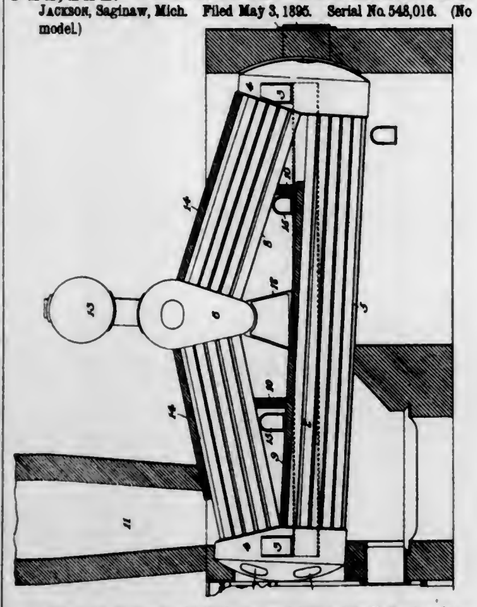
ROLANDO G. MCCLELLAN, San Francisco, assignor to A. J. Hare and R. B. McClellan, Alameda County, Cal. Filed Jan. 18, 1895. Serial No. 535,417. (No model.)



Claim.—In a window having holes in its frame and sash and plates having smaller holes secured over the first-mentioned holes, the herein described separable hinge consisting of two members, each having a shank adapted to enter the hole in a plate, said shank being provided with a longitudinal groove, and a spring secured at its inner end within the groove, having a shoulder near its other end standing normally out of the groove, and continued beyond this shoulder into a handle also standing normally out of the groove, as and for the purpose set forth.

544,414. WATER-TUBE BOILER.

JAMES MCGREGOR and JOHN L. JACKSON, Saginaw, Mich. Filed May 3, 1895. Serial No. 548,016. (No model.)



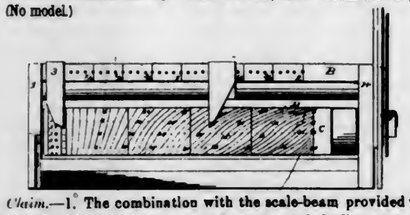
Claim.—1. A water-tube boiler comprising end shells having inner heads whose lower portions are substantially parallel and are connected by water tubes, while their upper portions extend at opposite angles, an upper drum, and tubes connecting the angled portion of each head therewith; substantially as described.

2. A water-tube boiler having end shells provided with inner heads, the upper parts of which are inclined at an angle, while the lower substantially parallel portions are connected by water tubes, a horizontal baffle-wall above these water tubes, a steam and water drum having its sides substantially parallel with the angled portions of the heads, and tubes connecting the said angled portions of the heads therewith; substantially as described.

3. A water tube boiler having end shells supported upon longitudinal I-beams extending along the sides of the boiler, said shells having their inner heads connected with each other by water tubes, an intermediate steam and water drum, and tubes connecting the same with the end shells, substantially as described.

544,415. CALCULATOR ATTACHMENT FOR SCALES.

ALONZO MCGREW, Madisonville, Ky. Filed Feb. 23, 1895. Serial No. 539,374. (No model.)



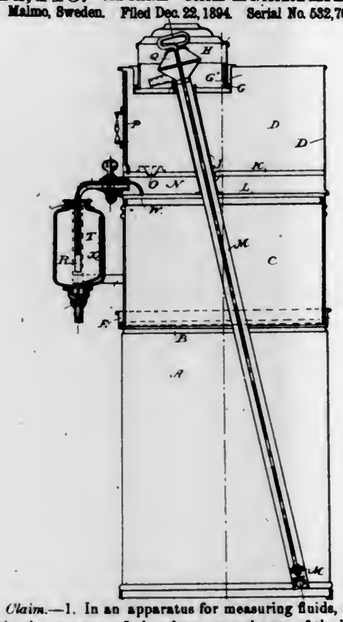
Claim.—1. The combination with the scale-beam provided with weight-graduations, of a rotatable cylinder journaled adjacent thereto and provided with spirally arranged lines thereon bearing proportional relation to the graduation of the scale-beam, and an annular price-scale at one end, an indicator to designate the numbers on the price scale, and a slide on the beam to indicate the weight on the beam and designate the whole cost on the lines of the cylinder together with the dial and the finger or indicator traversing the face of said dial, substantially as set forth.

2. The combination with the scale beam provided with a pointer or indicator at its inner end, and the slide on the beam to indicate the weight on the beam a cylinder journaled adjacent to the scale-beam and provided with an annular-scale of graduations at its end to indicate the price per pound, a vertically adjustable dial at the opposite end of the cylinder having a vertically arranged scale thereon to indicate the number of pounds to the bushel and the graduated dial to indicate the cost per bushel, and a finger or pointer connected to the axle of the cylinder and traversing the face of the dial substantially as and for the purpose set forth.

3. The combination with the scale-beam provided with weight-graduations, of a rotatable cylinder provided with spirally arranged cost-lines thereon bearing proportional relation to the weight-graduations on the scale-beam and an annular price-scale at one end, an indicator to indicate the numbers on the annular price-scale, a slide on the beam to indicate the weight and designate the whole cost on the lines of the cylinder, a vertically adjustable dial having the weights and costs of bushels indicated thereon, and a pointer on the end of the cylinder to turn therewith, whereby the number of pounds and cost to the bushel, the price per pound, and the cost and weight of the amount purchased may be ascertained, as set forth.

544,416. OIL-TANK.

GUSTAF M. NYSTRÖM and ASBAR C. LENNEK, Malmo, Sweden. Filed Dec. 22, 1894. Serial No. 532,700. (No model.)



Claim.—1. In an apparatus for measuring fluids, the lower reservoir, the upper one fitting down over the top of the lower one, and provided with the two partitions, so as to form a chamber to receive the fluid after it has been strained, and the pipe J, combined with the pump which passes down through the two reservoirs, substantially as shown.

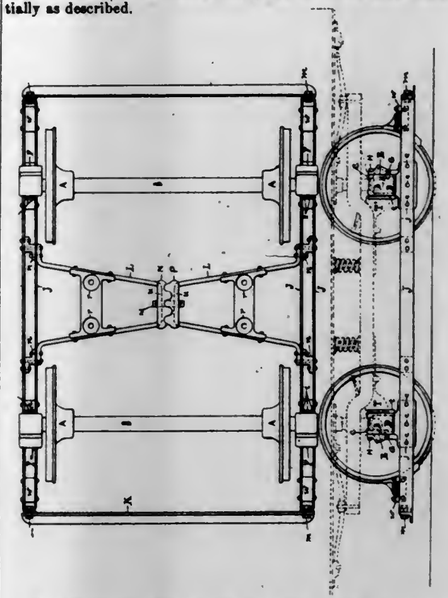
2. A reservoir, provided with a chamber, suitable stop cocks connected to the chamber, pipes R, extending from the stop cocks, a measuring vessel into which the lower ends of the pipes extend, and an air pipe for each stop cock, combined with the pipes W, which form an extension of the air pipes, and pass down through the bottom of the chamber; the lower reservoir, and a pump for pumping the fluid from the lower reservoir into the upper one, substantially as described.

544,417. TRUCK FOR STREET-RAILWAY CARS.

LOUIS T. PYOTT, Philadelphia, Pa., assignor of one-half to Daniel E. Waters and William G. Vernon, same place. Filed Mar. 12, 1895. Serial No. 541,444. (No model.)

Claim.—1. In a street car truck, wheels for the truck, axles for the wheels, the axles placed in bearings inserted in axle boxes which are rigidly and unyieldingly attached to a frame suspended under them and connecting them fixedly together, and means for inserting or removing the axles from the sides of the axle boxes without removing the axle boxes from their frame, or the separation of the frame, the truck construction being separate and distinct from the car to which it is applied, substantially as described.

2. In a car truck, the combination of wheels, axles for the wheels, bearings for the axles, axle boxes for the bearings securely attached to an under frame, side openings in the axle boxes for the insertion or removal of the axles and the extension of the frame composed of integral bars beyond the wheels, and guides for brake shoes, substantially as described.



3. A street car truck having axle boxes rigidly attached to a suspended side frame work of integral bars, the frame work extending beyond the wheels, and the two sides of the frames connected at each outer end by a crosstie having pivotal connection for vertical radial movement with each side frame work, substantially as described.

4. A street car truck having on each side axle boxes rigidly secured together longitudinally, and at its central lateral connection means for radial movement, and interlocking corrugated plates to control contact and pressure for longitudinal movement, substantially as described.

5. In a street car truck rigid and unyielding side frames, axle boxes firmly fixed thereon, means for connecting the two sides of the truck yieldingly together for vertical-radial movement at the ends and the center, and supports for motors attached to the central cross-braces—substantially as described.

6. In a street motor car truck, rigid side frames, side opening axle boxes immovably secured thereto, and one side of each of said axle boxes engaging with pedestals from the car, the truck structure being independent of the car and removable and detachable therefrom, substantially as described.

7. The combination in a street car truck of wheels, axles for the wheels axle boxes with side openings and integral bar frames rigidly secured to said axle boxes, substantially as described.

8. The combination in a street car truck of axles, wheels on the axles, bearings for the journals of the axles, side opening boxes for the bearings, framing for the boxes rigidly attached thereto and extending beyond them, and guides on the extended ends of the framing for directing and controlling the movement of brake shoes, substantially as described.

9. The combination in a street car truck of wheels, axles for the wheels, bearings for the axles, axle boxes with side openings for the bearings, and tongues and grooves on one side of each axle box, substantially as described.

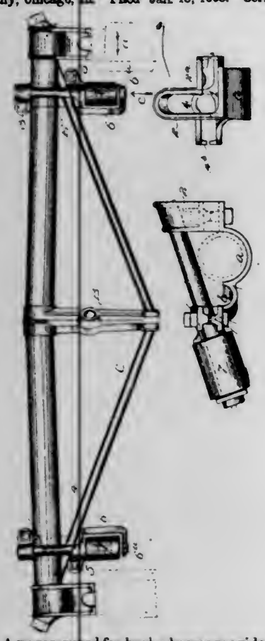
10. The combination in a street car truck, of wheels, axles for the wheels, bearings for the axles, side opening boxes rigidly attached to the frame, and each side of the truck joined to the other side with means for flexible radial movement at the point of union, substantially as described.

11. The combination in a street car truck, of wheels, axles for the wheels, bearings and boxes for the axles, the boxes having side openings and being rigidly attached to the frames, and means to connect the frames laterally at their ends for pivotal movement substantially as described.

12. In a street car truck, the combination of wheels, axles for the wheels, bearings and boxes for the axles, rigidly attached frames to the axle boxes, pivotal union of the frames transversely and means for interlocking at the point of union to join the two parts of the truck longitudinally, substantially as described.

13. In a street car truck independent of the car it carries, a frame on each side unyieldingly secured to the axle boxes of that side, and means for joining the two sides flexibly at the center, and at each end, substantially as described.

544,418. FINGER-GUARD FOR BRAKE-BEAMS. HENRY R. ROBISCHUNG, Kalamazoo, Mich., assignor to the Chicago Railway Equipment Company, Chicago, Ill. Filed Jan. 15, 1895. Serial No. 535,032. (No model.)



Claim.—1. A finger-guard for brake-beams provided with a loose sleeve or roller journaled thereon, substantially as and for the purposes specified.

2. The combination with a finger-guard, of a bracket having a bearing for the free end of the finger-guard, and a sleeve or roller journaled on the finger-guard within the bracket; substantially as and for the purposes specified.

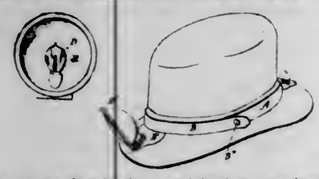
3. The combination with a brake-beam finger-guard of a loose sleeve or roller, a clamp having a base-plate and one or more clamp folds, and provided with a bracket or extension bearing for the free end of the finger-guard; substantially as and for the purposes specified.

4. A finger-guard clamp having a base-plate, a plurality of clamp folds adapted to hold a finger-guard, and a beam seat between the clamp folds, substantially as and for the purposes specified.

5. A finger-guard clamp having a clamp fold adapted to bind on the guard finger or pin, and a bracket provided with a bearing for the free end of the guard finger or pin; substantially as and for the purposes specified.

6. A finger-guard clamp, having a plurality of clamp folds adapted to bind on a guard finger or pin and provided with an extension or bracket having a bearing for the free end of the finger or pin; substantially as and for the purposes specified.

544,419. ELECTRIC-WIRE-CONTAINING HAT OR CAP BAND. ALFRED M. RODRIGUEZ, Brooklyn, N. Y., and EDWARD D. ROCKWELL, Bristol, Conn. Filed June 10, 1895. Serial No. 552,253. (No model.)



Claim.—1. An electric wire-containing hat or cap band, provided with terminals for the application and removal of an electric lamp, and the application and removal of wires bringing an electric current to the band, and hence the lamp, substantially as described.

2. An electric wire-containing hat or cap band, adapted to be adjusted to hats and caps of different sizes, and provided with terminals for the application and removal of an electric light, and of wires for bringing a current to the band and hence to the light, substantially as described.

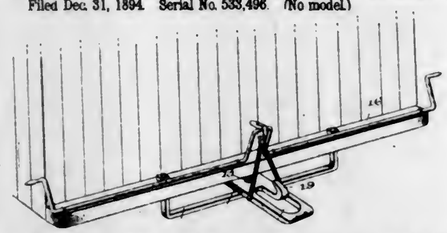
3. An electric wire-containing hat or cap band, provided with one or more offsetting tabs carrying exposed electric terminals, substantially as described.

4. An electric wire-containing hat or cap band, provided with two offsetting tabs, each furnished with two exposed electric terminals, those of one tab providing for the removable attachment of an electric lamp, and those of the other tab providing for the removable attachment of the body-wires which supply an electric current to the lamp, substantially as described.

5. An electric wire-containing hat or cap band, composed of two members, the ends of which are adapted to be adjustably connected together, and which are adapted for the removable attachment of an electric lamp, and body-wires for supplying an electric current thereto, substantially as described.

6. An electric wire-containing hat or cap band, comprising two members, one of which is furnished at its ends with contact plates, and the other of which is furnished at its ends with sockets, the said plates and sockets receiving buttons which couple the lapped ends of the band together, substantially as described.

544,420. CAR-COUPLING. GEORGE A. SEIDEL, Norristown, Pa. Filed Dec. 31, 1894. Serial No. 533,496. (No model.)

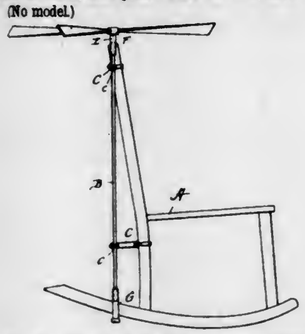


Claim.—1. In a car coupling, the combination with a car having parallel draft timbers, sectional bearings mounted on the draft timbers and capable of a limited movement longitudinally of the car, springs engaging the bearings, whereby the sections thereof are adapted to yield and a draw-bar journaled in the bearings and capable of longitudinal movement and adapted to swing vertically and horizontally, laterally of a car substantially as and for the purpose described.

2. In a car coupling, the combination with a car having parallel draft timbers provided with longitudinal slots with oppositely beveled upper and lower walls, of the sectional bearings provided in their upper and lower edges with V-shaped grooves fitting the beveled portions of the draft timbers, and slidingly mounted in the grooves, the cushioning springs mounted in rear of the sectional bearings, and a draw-bar having journals arranged in said bearings whereby it is capable of a longitudinal movement and an upward and horizontal swinging motion, substantially as described.

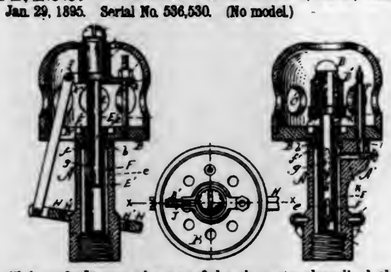
3. In a car coupling, a draw-bar provided with a hook and having an opening extending in advance and in rear of the hook, substantially as and for the purpose described.

544,421. FAN ATTACHMENT FOR ROCKING-CHAIRS. JOSEPH S. URBAN, Anderson, Ind., assignor of two-thirds to Alexander P. McKee and William E. Jones, same place. Filed Nov. 12, 1894. Serial No. 528,555. (No model.)



Claim.—The fan attachment for rocking chairs, consisting of an elongated tubular casing designed to be supported in substantially vertical relation to a chair, an elongated rod D which extends entirely through said casing, said rod having channeled therein two beveled-wall helical grooves *d*, *d*, and having above said grooves a short extension *d'*, a sleeve E rigidly secured to said extension and working loosely upon the upper portion of a casing B, a fan head F carried by said sleeve and having detachable blades, the pins *f* held in the casing B and engaging respectively the grooves *d*, *d*, the sleeve G in which the lower portion of the rod D is secured and which is arranged to slide and to turn upon the casing B, said sleeve having a button or cushion adapted to contact with the floor, and the helical spring H coiled around said rod within said sleeve and casing, and confined between internal flanges thereof, substantially as specified

544,422. GAS-BURNER. EUGENE H. YORKE, Boston, Mass. Filed Jan. 29, 1895. Serial No. 536,530. (No model.)

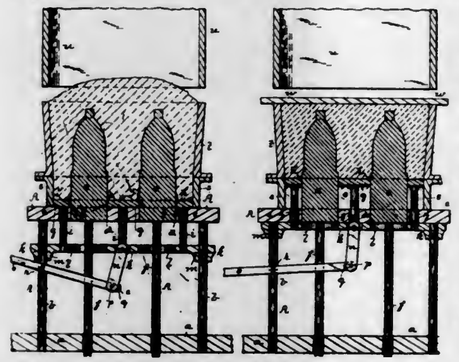


Claim.—1. In a gas-burner of the character described, the combination of a cylinder set within the gas pillar and of suitable diameter to allow of a space between it and the inner wall of said pillar, said cylinder being provided with the long port *g*, a hollow piston adapted to move vertically in said cylinder and extend through the upper end thereof supporting the tip socket, said piston being provided with the port *e* and above said port with the perforation *e'*, and mechanism for lifting the hollow piston whereby the perforation *e'* comes into coincidence with the port *g* in advance of the coincidence of the port *e* with the port *g*, substantially as described.

2. In a gas-burner of the character described, the combination of the gas pillar A supporting the hood C, the cylinder F supported centrally in said pillar and provided with the port *g*, the hollow piston E adapted to move vertically in said cylinder and provided with the port *e* and perforation *e'*, the tip socket D' supported by the hollow piston, the perforated extension K extending horizontally from the tip socket, and the vertical guide rod L extending from the base of the hood and provided with the stop nut L', substantially as set forth.

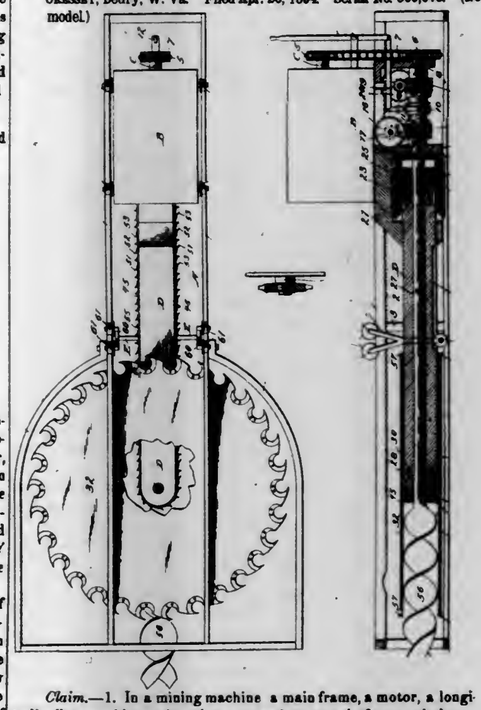
3. In a gas burner of the character described, in combination, the gas pillar A supporting the hood C, the cylinder F supported centrally in said pillar and provided with the port *g*, the hollow piston E adapted to move vertically in said cylinder and provided with the port *e* and perforation *e'*, the tip socket D' supported by the hollow piston, the clamping ring K, lever H H' pivoted to the gas pillar, the link J connecting one end of said lever with the clamping ring, and the rod I and handle I' depending from the other end of said lever, substantially as described.

544,423. METHOD OF FORMING SAND MOLDS. STEPHEN J. ADAMS, Pittsburg, Pa. Filed Nov. 23, 1891. Serial No. 412,858. (No model.)



Claim.—The herein-described method of forming sand molds, consisting in feeding sand to the flask in bulk and at sufficient velocity to practically finish the packing of the upper part of the mold, and then compressing the sand in the flask by pressure operating in the opposite direction to that in which the sand enters the flask, to complete the mold, substantially as set forth.

544,424. MINING-MACHINE. JOSEPH L. BEURY and JOHN T. CRESSEY, Beury, W. Va. Filed Apr. 26, 1894. Serial No. 509,070. (No model.)



Claim.—1. In a mining machine a main frame, a motor, a longitudinally movable stock or beam, a main auger shaft, oppositely rotating cutting disks, and a pair of chains moving in opposite directions and provided with cutters and scrapers, substantially as described

2. In a mining machine, a main frame, a motor traveling upon said frame, a movable stock or beam, a truck supporting the beam, a main auger shaft passing through the beam, a pair of oppositely moving cutting disks, a pair of oppositely moving chains provided with cutters, and connections for operating these parts from the motor, substantially as described.

3. In a mining machine, the motor, the stock or beam, the main operating and auger shaft passing through said beam, the clutch and its gear, the beveled gear wheels, and the sprocket wheels working therewith in one end of the beam, the cutting disks, and the sprocket wheels also connecting therewith and working in the opposite end of the beam, and the sprocket chains passing around the ends of the beam and formed or provided with knives or cutters arranged at different positions or angles, substantially as described.

4. In a mining machine, a main frame, a motor, a stock or beam moving with said motor, a main shaft extending through the stock or beam, operating and reversing connections between the motor and shaft, a pair of oppositely rotating cutting disks, an auger operating in advance of said disks, and chains also moving in opposite directions and provided with cutters arranged at different positions or angles, substantially as described.

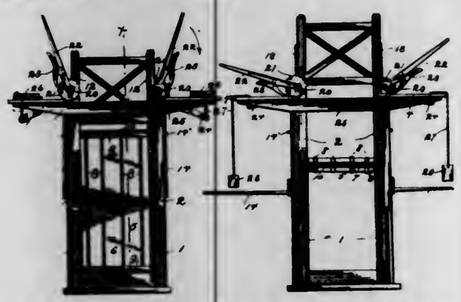
5. In a mining machine, the combination of the movable stock or beam formed with grooves in its under surface, the main frame bars 1, 1, and the trucks mounted upon the bars 1, 1, and provided with guide wheels or rollers entering the grooves in the under side of the movable stock, substantially as and for the purposes set forth.

6. In a mining machine the cutting disks provided with hubs 37 threaded and shouldered as described, in combination with the sprocket wheels 28 and 29 adapted to receive the hubs of the disks, whereby the disks may be arranged at variable distances apart, substantially as and for the purposes described.

544,425. FLOOD-GATE. GEORGE BRUCE and CHARLES L. VAN BURKIRK, Lodi, Cal. Filed Dec. 27, 1894. Serial No. 533,045. (No model.)

Claim.—1. The combination with a sluice, of standards carried thereby, uprights adapted to slide vertically within said standards, a

flood gate rotatably supported by said uprights and adapted to move vertically therewith, means for raising said gate and its supporting uprights, and locking levers pivoted to the standards and projecting through openings therein to adapt said levers to lock the gate and its uprights from movement as described.



2. The combination with a sluice, of standards carried thereby, uprights adapted to slide vertically within said standards, a flood-gate, a shaft upon which said gate is mounted, said shaft having its bearings in said uprights, means for raising said gate and its supporting uprights and the shaft, levers pivoted to the standards and projecting through openings therein to adapt said levers to lock the gate and its uprights from movement, for the purpose specified.

3. The combination with a sluice, of standards carried thereby, uprights adapted to slide within said standards, a flood gate rotatably supported by said uprights, means for raising said gate and its supporting uprights, levers pivoted to the standards and adapted to project through openings therein to lock the gate and its uprights from movement, said standards being provided with openings below said levers to adapt an implement to be inserted therethrough and to raise the gate uprights, for the purpose specified.

4. The combination with a sluice, of standards carried thereby, uprights adapted to slide within said standards, a flood gate rotatably supported by said uprights, and means for raising the gate and uprights consisting of racks secured to said uprights, gear wheels meshing with said racks, ratchet wheels on the shafts of said gear wheels, levers provided with pawls or dogs engaging said ratchet wheels, platforms carried by the standards, and pivoted pawls adapted to normally engage said ratchets to prevent retrograde movement thereof, cords or ropes secured to said pawls and passing upwardly through the platforms, and weights secured to said cords or ropes, all adapted to co-operate in the manner specified.

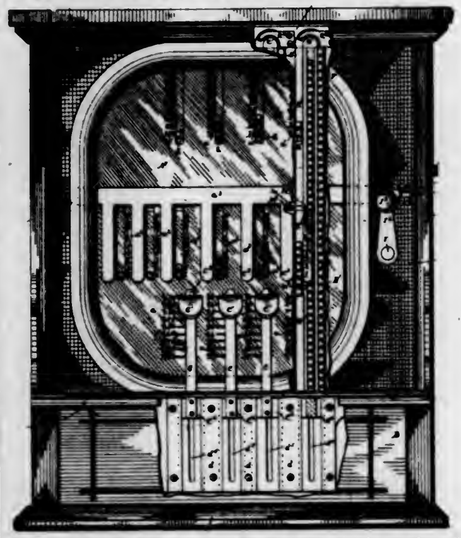
5. The combination with a sluice, standards carried thereby, uprights adapted to slide within said standards and means for raising said uprights, of a flood gate rotatably supported by said uprights, and comprising a series of boards arranged lengthwise, centrally arranged braces secured to said boards, rods arranged lengthwise of the gate and passing over the braces and secured at opposite ends to the ends of the gate and rubber belting secured to the gate at its edges, for the purpose specified.

6. The combination with a sluice, of standards carried thereby and provided with grooves, uprights fitting and adapted to slide in said grooves, a shaft having bearings in said uprights, a flood gate mounted on said shaft, racks secured to the uprights upon opposite sides thereof, platforms secured to the standards, bearing blocks secured also to said standards at their upper ends, horizontal shafts mounted in said blocks, gear wheels on said shafts and meshing with the racks, ratchet wheels on projecting ends of the shafts, levers pivoted upon the shafts, dogs pivoted to the levers and engaging the said ratchet wheels, pawl levers pivoted intermediate their ends to adapt the inner ends thereof to normally be raised and to engage the said ratchets to prevent retrograde movement thereof, cords or ropes secured to the outer ends of the said pawl levers and passing upwardly through the platforms, weights secured to said cords or ropes, substantially as described.

544,426. CASH REGISTER AND INDICATOR. WILLIAM H. CLARK, Erie, Pa., assignor of one-half to Benjamin B. Brown, same place. Filed Dec. 4, 1894. Serial No. 530,775. (No model.)

Claim.—1. In a cash register, the combination with a guide way for tally pieces; and the registering mechanism adapted to receive the tally pieces; of a single operating finger piece; and actuating means for said tally pieces, to register any of several amounts by a single operation of said finger piece.

2. In a cash register, the combination with a receptacle for a store of tally pieces; and a register that is read from the accumulation of said tally pieces; of a single operating finger piece; means actuated by said finger piece, for separating from said store, different numbers of tally pieces; and means for indicating in the register, the equivalent of the tally pieces so separated.



3. In a cash register, the combination with a guide way for tally pieces, comprising a storage way, and a way leading to the register; of a transfer bar, for transferring tally pieces from said storage way, to the way leading to the register; and setting mechanism carried by said transfer bar, for controlling the number of tally pieces transferred.

4. In a cash register, the combination with a guide way for tally pieces, comprising a storage way, and a way leading to the register; of a transfer bar for transferring tally pieces from said storage way, to the way leading to the register; and setting mechanisms actuated by a single operating finger piece, to effect a transfer of the number of tally pieces desired.

5. In a cash register, the combination with a guide way for tally pieces, comprising a storage way, and a way leading to the register; of a transfer bar for transferring tally pieces from said storage way to a way leading to the register; a scale of numbers; and setting mechanism actuated by a single operating finger piece which traverses said scale of numbers, when operated, to effect a transfer by the transfer bar, of the number of tally pieces indicated by the position of said finger piece on said scale of numbers.

6. In a cash register, the combination with a series of guide ways for the passage of tally pieces; of a transfer bar adapted to receive different numbers of tally pieces to be registered as desired, from one of said ways, and to carry the number of tally pieces so received, to another of said ways, and to there eject them.

7. In a cash register, the combination with a series of guide ways for the passage of tally pieces; of a transfer bar adapted to receive tally pieces and transfer them from one way to another; and a setting mechanism for controlling the number of tally pieces received and transferred.

8. In a cash register, the combination with a series of guide ways for the passage of tally pieces; of a transfer bar adapted to receive tally pieces and transfer them from one way to another; and a setting mechanism carried by said transfer bar, for controlling the number of tally pieces received and transferred.

9. In a cash register, the combination with a guide way for tally pieces, comprising a storage way, a way leading to the register, and a way leading from the register; of a transfer bar adapted to receive tally pieces from the storage way and transfer them from the way leading to the register and to receive tally pieces from the way from the register and transfer them to the storage way.

10. In a cash register, the combination with a guideway for tally pieces, comprising a storage way, and a way leading to the register; of a transfer bar having a way therein, adapted to be brought alternately into line with the storage way and the way leading to the register; a plug slide in said transfer way for regulating the number of tally pieces received from the storage way; means for setting said plug slide for the number of tally pieces desired; and means for actuating said plug slides to eject the tally pieces in the transfer way into the way leading to the register.

11. In a cash register, the combination with a guideway for tally pieces, comprising a storage way, and a way leading to the register; of a transfer bar having a way therein adapted to be brought alternately into line with the storage way and the way leading to the register; a plug slide in said transfer way for regulating the number of tally pieces received from the storage way; a single operating finger piece for setting said plug slide for the number of tally pieces desired; and means for actuating said plug slide to eject the tally pieces in the transfer way into the way leading to the register.

12. In a cash register, the combination with a guide way for tally pieces, comprising a storage way, a way leading to the register, and a way leading from the register; of a transfer bar having a register transfer way, for transferring tally pieces from the storage way into the register way, and a discharge transfer way for transferring tally pieces from the way from the register to the storage way; plug slides in said transfer ways; means for setting the plug slide in the register transfer way to receive the number of tally pieces desired into said way from the storage way; and means for actuating the plug slides in said register transfer way and discharge transfer way to eject the tally pieces in said ways into the way leading to the register and storage ways respectively.

13. In a cash register, the combination with a guide way for a series of tally pieces; of a single operating finger piece; means actuated by said finger piece for separating in said series different numbers of tally pieces in said series, as desired; and a catch mechanism connected with said finger piece graduated to catch said finger piece at the point of separation for each tally piece.

14. In a cash register, the combination with a scale of numbers; and a guide way for a series of tally pieces; of a single operating finger piece, that traverses said scale of numbers as operated; means actuated by said finger piece to separate in said series to the number of tally pieces indicated by the position of said finger piece on said scale; and a catch mechanism for said finger piece for catching said finger piece at each number on said scale.

15. In a cash register, the combination with a guide way for a series of tally pieces; of a single operating finger piece; means actuated by a movement of said finger piece in one direction for separating different numbers of tally pieces in said series as desired; and a catch mechanism connected with said finger piece graduated to catch said finger piece at the point of separation for each tally piece and from which said finger piece is disengaged by a movement of said finger piece lateral to its movement for separating tally pieces.

16. In a cash register, the combination with a guide way for a series of tally pieces; and a register read from the tally pieces; of a single operating finger piece; means actuated by said finger piece for separating in said series different numbers of tally pieces as desired; mechanism for indicating in the register the equivalent of the tally pieces so separated, and for bringing the operating finger piece back to normal; and a catch mechanism connected with said finger piece graduated to catch said finger piece at the point of separation for each tally piece and to maintain said finger piece at normal until operated.

17. In a cash register, the combination with a guide way for a series of tally pieces; a single operating finger piece; means actuated by said finger piece for separating in said series different numbers of tally pieces as desired; a stationary rack O^2, graduated to the size of the tally pieces; and a pawl connected with said finger piece and adapted to engage said rack at each graduation.

18. In a cash register, the combination with a guide way for tally pieces; a setting mechanism for setting the machine to actuate tally pieces to register the amount desired; of means for indicating in the register the equivalent of the tally pieces so actuated and a separate mechanism for operating the machine so set.

19. In a cash register, the combination with a guide way for tally pieces; a setting mechanism for setting the machine to actuate tally pieces to register the amount desired; means for indicating in the register the equivalent of the tally pieces so actuated of a crank operated mechanism that operates the machine to register the amount so set, and to bring the parts to normal with one complete revolution.

20. In a cash register, the combination with a guide way for tally pieces; of a setting mechanism operated by a single operating finger piece to actuate said tally pieces to register different amounts as desired; means for indicating in the register the equivalent of the tally pieces so actuated and a separate operating mechanism for operating the machine so set.

21. In a cash register, the combination with a series of guide ways for the passage of tally pieces; a transfer bar adapted to receive tally pieces from one of said ways and to discharge into another of said ways; a setting mechanism for regulating the number of tally pieces received in said bar; an operating crank; and means connected with said crank for actuating said transfer bar; and ejecting the tally pieces from said transfer bar into the way to which they belong.

22. In a cash register, the combination with a guideway for tally pieces; of means for actuating said tally pieces to indicate separately for each operation the amount desired to register, and a registering mechanism adapted to receive the tally pieces and in communication with said guideway, whereby the sum of the operation is registered by means of the tally pieces.

23. In a cash register, the combination with a guide way for tally pieces; of means for discharging from view, the tally pieces indicating the amount of the previous operation; and means of bringing the tally pieces indicating the amount desired to register in the present operation, to view.

24. In a cash register, the combination with a guide way for tally pieces, comprising a storage way, and an indicating way; of a stop in the indicating way for sustaining the tally pieces in view in said indicating way; mechanism for actuating said stop to discharge from view the tally pieces in said indicating way at the beginning of each operation; mechanism for transferring the tally pieces desired to be indicated, from the storage way to the indicating way; said mechanisms being so timed with relation to each other, that said stop is actuated first to release the tally pieces indicating the previous operation and then to move back to position in time to receive the tally pieces indicating the operation in progress.

25. In a cash register, the combination with a guide way for tally pieces, comprising a storage way and an indicating way; of a stop G, for sustaining the tally pieces in said indicating way; a sliding bar G', carrying said stop; a crank operated cam pin i^3; the cam lever L, having the cam notch L', in which said cam pin i^3, operates to actuate the lever L, said lever L, actuating by its movement, the sliding bar G', in one direction; a spring for actuating said bar in the opposite direction; mechanism for transferring the tally pieces desired to be indicated, from the storage way to the indicating way, said mechanism being so timed as to effect the transfer of said tally pieces after said bar G', has been actuated and returned to position.

26. In a cash register, the combination with a guide way for tally pieces; of means for actuating said tally pieces to register the sum of the amounts registered from a plurality of operations; and an indicating mechanism for indicating separately, the amounts to be registered at each operation.

27. In a cash register, the combination with a guide way for tally pieces; of means for actuating said tally pieces to indicate separately the amount to be registered at each operation and to register the sum of the amounts indicated in a plurality of operations.

28. In a cash register, the combination with a guide way for tally pieces, comprising an indicating way, and a registering way; of means for separating and bringing into the registering way the number of tally pieces desired to be registered at one operation; and means for discharging at each operation the tally pieces from the indicating way into the registering way.

29. In a cash register, the combination with a way leading to the register; for the passage of tally pieces; of the friction plate e^3, for the purposes set forth.

30. In a cash register, the combination with the guide ways E', e, and E^2 for the passage of tally pieces; of a friction plate e^3, over the way e, for the purposes set forth.

31. In a cash register, the combination with guide ways for tally pieces, comprising storage ways, and for each storage way, a way leading to the register; of a single transfer bar for transferring tally pieces from said storage ways to their companion ways leading to the register; and setting mechanisms, one for each system of ways, carried by said transfer bar, for controlling each for its system of ways, the number of tally pieces transferred.

32. In a cash register, the combination with systems of guide ways for tally pieces, each containing a storage way, a way leading to the register, and a way leading from the register; of a single transfer bar adapted to transfer tally pieces, from said storage way to their companion ways leading to the register and to transfer tally pieces from the register to their companion storage ways.

33. In a cash register, the combination with the register; and systems of guide ways for tally pieces, each containing a storage way and a way leading to the register; of setting mechanisms one for each system of ways, for separating the number of tally pieces from the storage way to register the amounts desired to be registered in the system to which it belongs; means for transferring the tally pieces, so separated to the ways of their system leading to the register; and a single bail from which the tally pieces so separated in all the systems are actuated to transfer an equivalent number of tally pieces into their proper ways in the register.

34. In a cash register, the combination with the register; and systems of guide ways for tally pieces, each containing a way leading from the register, and a storage way; of a transfer bar having a series of ways adapted to be brought alternately into line with the ways leading from the register and the storage way; slides in said ways which actuate the tally pieces received in said transfer ways; and a single bail which at each operation actuates all of said slides in said transfer ways to eject the tally pieces in said transfer ways into the storage way.

35. In a cash register, the combination with systems of guide ways for tally pieces, each containing a storage way, a way leading

into the register and a way leading from the register; of a transfer bar having two transfer ways for each of said systems of ways, one the setting way which is adapted to be brought into line with the storage way and the way leading to the register and the other the discharge way which is adapted to be brought alternately into line with the way leading from the register and the storage way; slides in said setting ways for actuating the tally pieces received by said setting ways when desired; slides in said discharge ways to actuate tally pieces received from the register; and a single bail for actuating said slides.

36. In a cash register, the combination with a series of registers of different denominations; and a guide way for a series of tally pieces; of a single operating finger piece; means actuated by said finger piece, for separating in a series, different numbers of tally pieces as desired; mechanism for indicating in the register the equivalent of the tally pieces so separated; and mechanism that transfers a register indication in the operated register, the equivalent of a unit of a higher denomination, to an equivalent register indication in the register of said higher denomination.

37. In a cash register, the combination with a guide way for a series of tally pieces; and a series of registers of different denominations which are read by the accumulation of tally pieces therein; of a single operating finger piece; means actuated by said finger piece, for separating in a series, different numbers of tally pieces as desired; mechanism for carrying into the operated register the number of tally pieces so separated; and means actuated when there is accumulated in the operated register, tally pieces the equivalent of a unit of a higher denomination for carrying into the register for said higher denomination, a tally piece to indicate said equivalent unit.

38. In a cash register, the combination with a guide way for a series of tally pieces; and a series of registers of different denominations which are read by the accumulation of tally pieces therein; of a single operating finger piece; means actuated by said finger piece for separating in a series of different numbers of tally pieces as desired; mechanism for carrying into the operated register the number of tally pieces so separated; means, actuated when there is accumulated in the operated register, tally pieces, the equivalent of a unit of a higher denomination, for carrying into the register for said higher denomination, a tally piece to indicate said equivalent unit; and mechanism for discharging from said operated register the tally pieces accumulated equivalent to said unit of the higher denomination.

39. In a cash register, the combination with a guide way for a series of tally pieces; and a series of registers, one for each series of tally pieces, of different denominations, which are read by the accumulation of tally pieces therein; of a single operating finger piece; means, actuated by said finger piece, for separating in a series of different numbers of tally pieces as desired; mechanism for carrying into the operated register the tally pieces so separated; means, actuated by a tally piece in the operated register, for actuating a tally piece in a register of a higher denomination, when there is accumulated in the operated register, tally pieces, the equivalent of a tally piece in the register of said higher denomination, and also for discharging the tally pieces so accumulated in the operated way.

40. In a cash register, the combinations of systems of guide ways for tally pieces, representing different denominations, each containing a registering way, a storage way, and a carrying way; of means for carrying the tally pieces from a storage way to a registering way of the same system; means for carrying the tally pieces from a carrying way to a registering way of its system when there is accumulated in a registering way of a lower denomination, tally pieces, the equivalent of the tally piece of the higher denomination carried from the carrying way; and means of discharging the equivalent accumulated tally pieces in the registering way of the lower denomination.

41. In a cash register, the combinations of systems of guide ways for tally pieces of different denominations, each containing a registering way a storage way and a carrying way; of a carrying lever for each of said carrying ways that is actuated by a tally piece in a registering way of a lower denomination, when there is accumulated in the registering way of the lower denomination the equivalent of a tally piece in the way to which said lever belongs, said lever having a pocket for receiving a tally piece from its carrying way and carrying said tally piece to its registering way when actuated.

42. In a cash register of the type shown, the combination with the registering way and the carrying way; of a carrying lever having a pocket for receiving a tally piece from the carrying way and depositing it, when the lever is actuated, in the registering way, said lever also having a gate m^5, for closing the carrying way while the lever is being actuated to carry said tally piece.

43. In a cash register, the combination with a series of registers of different denominations; and guide ways for a series of tally pieces; of a single operating finger piece for each register; means actuated by each of said finger pieces, for separating in its series different numbers of tally pieces as desired; mechanism for indicating in each register the equivalent of the tally pieces so separated by the actuation of its operating finger piece; and mechanism that transfers a register indication in the operated register, the equivalent of a unit of a higher denomination to an equivalent register indication of said higher denomination.

44. In a cash register, the combination with guide ways for tally pieces; registers of different denominations read from said tally pieces; and an indicator for separately indicating the amount of each operation; and carrying mechanism that transfers a register indication from a register of lower denomination to an equivalent register indication in a register of higher denomination, when the register of lower denomination has a register indication the equivalent of the higher denomination.

45. In a cash register, the combination with guide ways for tally pieces; registers of different denominations read from said tally pieces; an indicator for separately indicating the amount of each operation that is also read from said tally pieces; and carrying mechanism that transfers a register indication from a register of lower denomination, to an equivalent register indication in a register of higher denomination, when the register of the lower denomination has a register indication the equivalent of a unit of the higher denomination.

46. In a cash register, the combination with series of guide ways for tally pieces, comprising an indicating way, and registering ways of different denominations; of means for separating and bringing into the indicating way, the number of tally pieces desired to be registered at one operation; and means for discharging at each operation the tally pieces from the indicating way into the registering way; and carrying mechanism that transfers a register indication from a register way of lower denomination to a register way of higher denomination when the register way of lower denomination has a register indication of a unit of the higher denomination.

47. In a cash register, the combination with guide ways for tally pieces comprising an indicating way and registering ways of different denominations; and mechanism that actuates said tally pieces to first pass to the indicator to indicate the amount of each operation and then to the register to indicate the sum of the indications; of a carrying way having tally pieces therein; mechanism for transferring a tally piece from said carrying way to the register of its denomination when there is accumulated in a registering way of a lower denomination, tally pieces, the equivalent of tally pieces carried into the registering way of the higher denomination.

48. In a cash register the combination with guide ways for tally pieces comprising an indicating way and registering ways of different denominations; mechanism for actuating said tally pieces to first pass into the indicator way to indicate the amount of each operation, and to discharge said tally pieces into the register, to indicate the sum of the indications; and carrying mechanism for transferring a register indication in a registering way of a lower denomination to a register indication in a registering way of higher denomination, when there is a register indication in the registering way of the lower denomination the equivalent of a unit of the higher denomination, said carrying mechanism, being actuated after the discharge of the tally pieces indicating the previous operation from the indicating way.

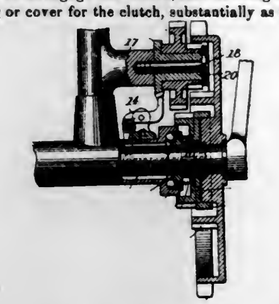
49. In a cash register, the combination with the register operating mechanism; of a cash receptacle; mechanism connected with the operating mechanism for opening said cash receptacle at each operation; and a flexible link in said connecting mechanism that allows the operating mechanism to be brought to normal before the money receptacle is closed.

50. In a cash register, the combination with the lever K′, actuated by the operating mechanism; of the money receptacle; mechanism for opening the money receptacle from the movement of said lever K′; and the flexible link N′, forming a link in said connecting mechanism for the purposes set forth.

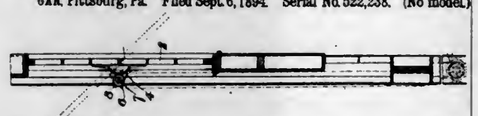
51. In a cash register, the combination with the operating mechanism; and the cash receptacle; a gong carried by said cash receptacle, that is in position to be actuated by the operating mechanism when the cash receptacle is closed and is out of position to be actuated by the said mechanism when the said cash receptacle is open, the opening and closing of said cash receptacle being timed by said operating mechanism; and a moving part of the register operating mechanism that actuates said gong in its movement, said moving part being timed to move before the cash receptacle opens and to return to normal before the cash receptacle closes.

544,427. BICYCLE. HARRY R. COLLINS and EDMUND T. COLLINS, South Bethlehem, Pa. Filed Mar. 12, 1895. Serial No. 541,459. (No model.)

Claim.—In a bicycle the combination with the crank shaft, of a sprocket wheel loose upon said shaft and provided on its inner face with a gear 6 and clutch projection 7, a gear 9 adapted to slide upon and turn with the shaft and having clutch projections upon its outer face adapted to engage with the sprocket wheel, a flat ring 13 encircling the clutch members of said gear and sprocket wheel, a lever pivoted above the shaft and having its lower end forked and connected with the ring 13 by links 15, a double pinion arranged to be thrown into and out of engagement with the gears upon the shaft and sprocket wheel, and means for throwing the double pinion into engagement with said gears and simultaneously operating the forked lever and the ring 13 to disengage the clutch, said flat ring forming a dust proof casing or cover for the clutch, substantially as described.



544,428. SASH-OPERATING MECHANISM. EDWARD G. FLANAGAN, Pittsburg, Pa. Filed Sept. 6, 1894. Serial No. 522,238. (No model.)



Claim.—The combination with a pivoted window-sash, of a centrally located brace plate having a segmental rack opposite the pivotal point of said window, a pinion engaging said rack at substantially the same level as the pivot and means for operating the pinion; substantially as described.

544,429. PENCIL-GUARD. ALFRED FORNANDER, New York, N. Y., assignor to the American Lead Pencil Company. Filed Oct. 11, 1894. Serial No. 525,543. (No model.)

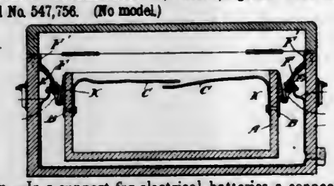


Claim.—1. The improved pencil guard consisting of the gripping jaws formed of the doubled loop the extremities of which are adapted to grip the pencil inserted between the extremities and through the loops to hold the guard thereon, the prongs of one jaw adapted also to receive the edge of the pocket flap between it and the pencil at the same time, and the curved lever attached to the pronged jaw, and adapted to have a fulcrum bearing on the pencil to which the guard is attached, for opening the jaws substantially as described.

2. The improved pencil guard consisting of the gripping jaws formed of the doubled loop, the extremities of which are adapted to grip the pencil inserted between the extremities and through the loop to hold the guard thereon, the prongs of one jaw adapted also to receive the edge of the pocket flap between it and the pencil at the same time, and the curved lever attached to the pronged jaw, and adapted to have a fulcrum bearing on the pencil to which the guard is attached, for opening the jaws all formed of one integral piece of metal substantially as described.

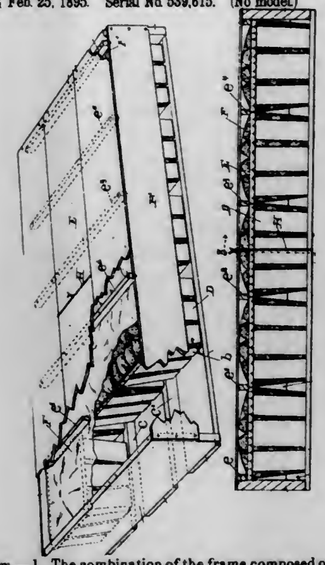
3. The improved pencil guard consisting of the gripping jaws as *d*—*g*, connecting looped side members as *f*, tongue lever *e*, joined to jaw *g*, between side members *f*, and the prongs *c′* at the extremities of jaw *g*, and projecting in the direction of jaw *d*, substantially as described.

544,430. SUPPORT FOR ELECTRICAL BATTERIES USED ON VEHICLES. THOMAS PROCTER, London, England. Filed May 1, 1895. Serial No. 547,756. (No model.)



Claim.—In a support for electrical batteries a connecting piece elastically mounted upon and insulated from the part upon which it is mounted in combination with another connecting piece adapted to make electrical connection with the elastically mounted connecting piece so as to absorb vibration and prevent its transmission from one to the other substantially as described

544,431. BERRY-PACKAGE. SAMUEL W. FUNK, Glendora, Cal. Filed Feb. 25, 1895. Serial No. 539,615. (No model.)

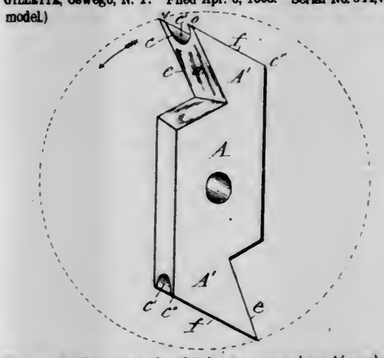


Claim.—1. The combination of the frame composed of the heads, the sides narrower than the heads and secured thereto above the bottom edges of the heads; the berry baskets having rectilinear tops and sides and being of less height than the heads fitted in the frame and arranged in rows; the bottom slats, each narrower than the bottom of one of the baskets and arranged respectively, one beneath each longitudinal row of baskets; the lid provided with the transverse truss bars arranged pressing upon the transverse rows of the upper edges of the walls of the baskets; the fruit cover clamped between such walls and truss bars; and means for fastening the lid in place.

2. The combination of the frame, composed of the heads and sides; the berry baskets having rectilinear tops and sides, and fitted in the frame in rows with their sides fitting closely together at their top edges; the bottom slats, each narrower than the bottom of one of the baskets and arranged beneath a row of baskets; the lid provided with the transverse truss bars arranged to press upon the transverse rows of the upper edges of the walls of the baskets, and the wire passed around the middle bottom slat and around one of the baskets and through the lid and fastened to form a band.

3. In a berry package, the combination set forth of the berry baskets having rectilinear tops and sides, and arranged in rows in the frame on the bottom of the case with their sides fitting closely together at their top edges; the lid provided with the transverse truss bars arranged to press upon the edges of the baskets; and the flexible fruit covering sheet clamped between the truss bars and the edges of the baskets as set forth.

544,432. ROTARY CUTTER FOR WOODWORKING. GEORGE D. GILLETTE, Oswego, N. Y. Filed Apr. 6, 1895. Serial No. 544,710. (No model.)



Claim.—1. The cutter head A having two wings A′, each formed with a front face —*a*— beveled laterally and reversely to that of the opposite wing so as to have clearing edges —*e*— at alternate front side corners, an outer face —*f*— grooved longitudinally and centrally,

and a draw-cut cutting edge at the angle between said faces comprising narrow side edges —c—c— and an interposed shaping edge —c— at the forward end of said groove, substantially as and for the purpose set forth.

2. The cutter head A having wings A′, each formed with a front face —a— beveled laterally and reversely to that of the next adjacent wings and having a clearing edge —e— at its front corner, an outer edge —f— grooved longitudinally and centrally, and a draw-cut cutting edge at the angle between said faces comprising straight oblique narrow side edges —c—c— with the one at the outer end of the clearing edge farther from the center than the other one, and an interposed shaping edge —c— at the forward end of said groove, substantially as and for the purpose set forth.

544,433. MACHINE FOR POLISHING MARGINS OF CAVITIES IN TEETH. ABRAHAM I. GILMER, Quincy, Ill. Filed May 28, 1895. Serial No. 551,018. (No model.)



Claim.—1. A device for polishing margins of cavities in teeth or fillings therein, the same comprising a sleeve or barrel adapted to be applied to the hand piece of a dental engine, an actuating roller carried thereby and mounted upon a spindle adapted to be coupled to and driven by the dental engine shaft, an endless polishing band embracing said actuating roller, and means for holding said polishing band in engagement with and adapting it to be driven by the actuating roller, substantially as specified.

2. A device for polishing margins of cavities in teeth or fillings therein, the same comprising a suitable frame, means for connecting said frame with the hand piece of a dental engine, a rotary spindle adapted to be coupled to and driven by the dental engine shaft, a roller secured to said spindle, a supplemental roller in frictional engagement with the same, and an endless polishing band passing between said rollers and adapted to be driven thereby, substantially as specified.

3. A device for polishing margins of cavities in teeth or fillings therein, the same comprising a suitable frame adapted to be applied to the hand piece of a dental engine, a spindle capable of being coupled to and driven by the dental engine shaft, a roller mounted thereon, a second roller revolving in frictional contact therewith, a spring pressed frame or yoke for controlling said friction roller and an endless polishing band passing between said rollers, substantially as and for the purpose specified.

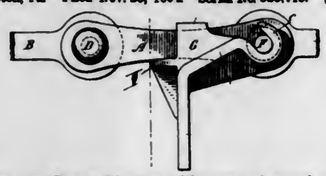
4. A device for polishing margins of cavities in teeth or fillings therein, the same comprising a suitable frame capable of being attached to the hand piece of a dental engine, an actuating roller mounted in said frame and adapted to be driven by said engine, a friction roller operating in contact therewith, end disks or flanges carried by one of said rollers and partially embracing the other roller means for holding one of said rollers in frictional contact with the other roller and allowing the same to be separated when desired and an endless polishing band passing between said rollers, for the purpose specified.

5. A device for polishing margins of cavities in teeth or fillings therein, the same comprising a suitable frame, a pair of rollers revolubly mounted therein and operating in frictional contact, means for driving one of said rollers from the dental engine shaft, a spring pressed yoke in which one of said rollers is journaled, a handle or stem for operating said yoke against its normal tendency, and an endless polishing band passing between said rollers substantially as and for the purpose described.

6. A device for polishing margins of cavities in teeth or fillings therein, the same comprising a suitable frame, means for attaching the same to the hand piece of a dental engine, a pair of rollers operating in frictional contact and having motion imparted thereto by the dental engine shaft, an endless polishing band passing between said rollers and a pair of spring arms carried by the device and disposed in such relation to the rollers as to prevent the endless polishing band from accidentally running or escaping from between said rollers, said spring arms also serving to assist in holding said rollers in alignment and in place within the frame of the device, substantially as and for the purpose specified.

7. A device for polishing margins of cavities in teeth or fillings therein, the same comprising a sleeve or barrel adapted to embrace the hand piece of a dental engine, a frame formed integrally therewith and provided with oppositely disposed slots, a pair of friction rollers carried by said sleeve or barrel and its frame and adapted to be driven by the dental engine shaft, a spring actuated frame or yoke carrying one of said friction rollers, the shaft of said roller projecting at its ends and adapted to operate within the slots in the main frame and an endless polishing band passing between said rollers, all arranged for joint operation, substantially as described.

544,434. CONVEYER ATTACHMENT. THOMAS R. GRIFFITH, Pittston, Pa. Filed Nov. 23, 1894. Serial No. 529,715. (No model.)

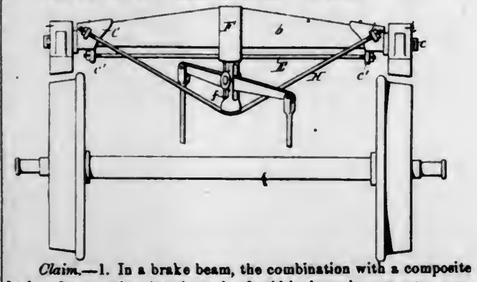


Claim.—1. The combination, with a conveying or elevating chain, of a conveyer attachment composed of a vertical plate, to which the conveyer proper is attached; parallel wings attached to the said plate at its upper end at each side, arranged to embrace the upper surface of the links of the chain to which the conveyer is to be attached; and a parallel and bent arm on each side terminating in hooks, which encircle the extremities of a rivet in the chain.

2. The combination, with a conveying or elevating chain, of a conveyer attachment composed of a vertical plate, or hanger, to which the conveyer proper is attached; parallel wings attached at each side to said plate at its upper end and extending at either side under the links of the chain, to which the conveyer is to be attached; and parallel and bent arms on each side terminating in hooks which encircle the extremities of a rivet in the chain.

3. The combination, with a conveyer or elevator chain, provided at the point of attachment, with a rivet the ends of which are not turned down, of a conveyer attachment so constructed as to grasp and hold firmly the ends of the rivet whereby the latter cannot turn in the chain, and which attachment can be removed and the chain opened, without injuring the rivet.

544,435. BRAKE-BEAM. JAMES HOWARD, New York, N. Y. Filed Nov. 10, 1894. Serial No. 528,423. (No model.)



Claim.—1. In a brake beam, the combination with a composite body, of caps embracing the ends of said body, a sleeve or strap embracing the body between said caps and having a strut, and a tie rod secured at its ends to said caps and bearing against said strut, substantially as set forth.

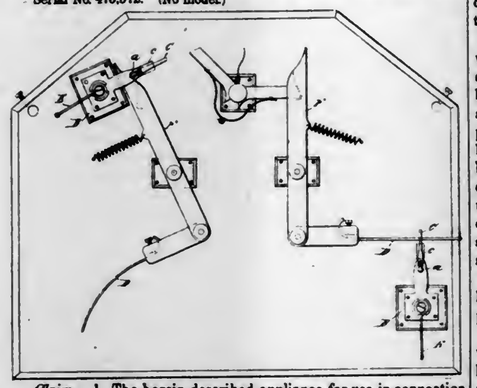
2. In a brake beam, the combination with the body thereof, of caps applied to the ends of the body and provided on the front side of the beam with lugs or ears, and a tie rod arranged in front of said body and secured at its ends to said lugs or ears, substantially as set forth.

3. In a brake beam, the combination with the body of the beam, of caps applied to the ends of the body and each provided with outwardly projecting journals and with lugs, and a tie rod connecting said caps and secured to the lugs thereof, substantially as set forth.

4. In a brake beam, the combination with the body of the beam, of caps applied to the ends of the body and each provided on its front side with a lug and on its rear side with an extension projecting inwardly beyond the front side of the cap and a tie rod arranged on the front side of the body and secured at its ends to the lugs of the cap, substantially as set forth.

5. In a brake beam, the combination with a composite body, of caps inclosing opposite ends of the body and each provided on its upper side with a lug, on its front side with a lug and on its rear side with an extension projecting inwardly beyond the front side of the cap, a sleeve or strap embracing the middle of the body and having a strut, a tie rod arranged on the front side of the body and secured at its ends to the front lugs of said caps, and a truss rod secured at its ends to the upper lugs of said caps and bearing against said strut, substantially as set forth.

544,436. AUTOMATIC SAFETY APPLIANCE FOR ELECTRIC CONDUCTORS. ADELBERT R. HUTCHINS, Detroit, Mich. Filed May 9, 1893. Serial No. 473,572. (No model.)

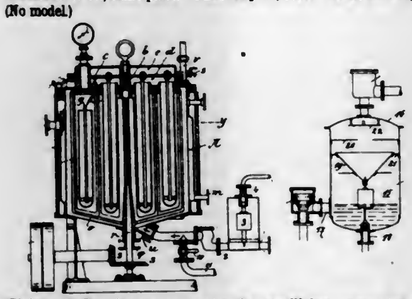


Claim.—1. The herein described appliance for use in connection with electric conductors, the same consisting of forked arms between which the conductor is received and by which it is grasped and held as soon as it leaves its normal position, and a conductor of low resistance connected with said arms, substantially as and for the purposes set forth.

2. In an appliance of the character herein set forth, the combination with the main wire, of the forked arms one of which is provided with a spring actuated latch pivoted thereon, said latch being arranged to be displaced by the main conductor as it falls and to return to its original position, substantially as and for the purposes set forth.

3. In an appliance of the character herein set forth, the two spring arms forked as explained and arranged to catch and hold the main conductor when disturbed, a section of an auxiliary conducting arm, a plate located in the path of one of said spring arms, the plate being connected with another section of the auxiliary conductor and the parts arranged to close the auxiliary circuit, combined and arranged substantially as shown and for the purposes set forth.

544,437. APPARATUS FOR STERILIZATION OF MILK OR OTHER LIQUIDS. FRITZ A. KLEEMANN, Berlin, Germany, assignor to Kleemann & Co., same place. Filed May 15, 1894. Serial No. 511,319. (No model.)



Claim.—1. In a heater or cooler for sterilizing apparatus, the combination with a chamber for holding the liquid to be sterilized, of inlets and outlets to such chamber, located one at the top and the other at the bottom, a cover for the receptacle formed with a chamber in the same, a horizontal diaphragm dividing the chamber in the cover into two parts, tubes closed at the bottom and open at the top inserted in the bottom plate of the cover and communicating with the lower chamber thereof, smaller tubes open at both ends inserted in the dividing diaphragm extending into the first tubes and communicating with the upper chamber of the cover, an inlet to the lower chamber of the cover, and an outlet to the upper chamber, substantially as shown and described.

2. In a heater or cooler for sterilizing apparatus, the combination with a chamber for holding the liquid to be sterilized, of inlets and outlets to such chamber, located one at the top and one at the bottom, an annular chamber surrounding the first chamber also provided with an inlet and outlet at the top and bottom thereof, a cover for the receptacle formed with a chamber in the same, a horizontal diaphragm dividing the chamber in the cover into two parts, tubes closed at the bottom and open at the top inserted in the bottom plate of the cover and communicating with the lower chamber thereof, smaller tubes open at both ends inserted in the dividing diaphragm extending into the first tubes and communicating with the upper chamber of the cover, an inlet to the lower chamber of the cover, and an outlet to the upper chamber, substantially as shown and described.

3. In a heater or cooler for sterilizing apparatus, the combination with a chamber for holding the liquid to be sterilized, of inlets and outlets to such chamber, located one at the top and the other at the bottom, a cover for the receptacle formed with a chamber in the same, a horizontal diaphragm dividing the chamber in the cover in two parts, tubes closed at the bottom and open at the top inserted in the bottom plate of the cover and communicating with the lower chamber thereof, smaller tubes open at both ends inserted in the dividing diaphragm extending into the first tubes and communicating with the upper chamber of the cover, an inlet to the lower chamber of the cover, an outlet to the upper chamber, and a stirrer located in the sterilizing chamber and adapted to be rotated therein as desired, substantially as shown and described.

4. In a sterilizing or similar apparatus, the combination with the heater or like receptacle thereof, of a foam-trap located in the inlet pipe thereof, substantially as shown and described.

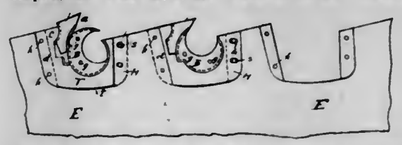
5. In a heater or cooler for sterilizing apparatus, the combination with two chambers located one above the other for receiving the liquid to be sterilized, of a series of tubes forming communication between the two chambers, an annular casing forming a closed chamber around said tubes an inlet and an outlet to such closed chamber, an inlet to the lower chamber, and an inlet to the upper chamber, a cover for the upper chamber having an upper and lower chamber therein divided one from the other by a horizontal diaphragm, a series of tubes open at the top and closed at the bottom secured in the bottom plate of the cover communicating with the lower chamber of the cover and extending through the communicating tubes into the lower chamber of the receptacle, a series of tubes open at both ends secured in the dividing diaphragm of the cover communicating with the upper chamber thereof and extending into the tubes closed at the bottom, an inlet to the upper chamber of the cover, and an outlet to the lower chamber thereof, substantially as shown and described.

6. In a sterilizing or similar apparatus, the combination with a heater or like receptacle, of an outlet pipe 6 in communication therewith, a gas and air-trap D in communication with the pipe 6, through a normally closed check valve 23 opening away from the heater, an outlet pipe 25 in communication with the lower part of the trap D, and an outwardly opening automatic safety valve 24, in communication with the upper portion of the trap D, substantially as shown and described.

7. In a sterilizing or similar apparatus, the combination with a heater or like receptacle, of an outlet pipe 6 in communication therewith, a gas and air-trap D in communication with the pipe 6 through a normally closed weighted check-valve 23, opening away from the heater, an outlet pipe 25 in communication with the lower part of the trap D, and an outwardly opening automatic safety-valve 24 in communication with the trap D, and more heavily weighted than is the valve 23, substantially as described.

8. In a sterilizing or similar apparatus, the combination with a heater or like receptacle, of a pipe in communication with the heater, a trap D in communication with the pipe and having an air or gas outlet in the upper and a liquid outlet in the lower portion, a valve for closing the liquid outlet, and a float in the trap the raising and lowering of which will actuate the valve so as to open and close the liquid outlet of the trap, substantially as shown and described.

544,438. DETACHABLE-TOOTH SAW. ANDREW KRIEGER, Indianapolis, Ind. Filed May 3, 1895. Serial No. 547,968. (No model.)



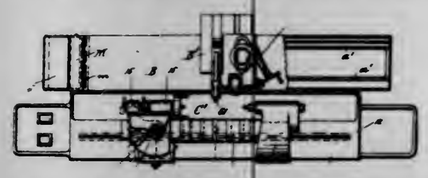
Claim.—1. The combination with a saw-blade, a bridge-piece T or support, having formed therein, a recess or socket for the reception of tooth A, and clamp B to correspond thereto in shape; said bridge-piece being rigidly fastened by its end *d* nearest to tooth, to the saw-blade, while the other, or clamp end H, is held and secured so as to allow it to move in the direction of the pressure exerted by the clamp, substantially and for the purpose as shown and described.

2. The combination with a saw-blade, a bridge-piece T provided with recess for tooth A and clamp B to correspond thereto, all parts being rigidly fastened by end of said bridge-piece nearest to the tooth, while the other or clamp end is left free to move edgewise by means of oblong holes or slots S, the corresponding part of saw-blade having pins A to enter said oblong holes or slots S, and headed so as to secure to its place sidewise, the said bridge-piece, for the purpose and in the manner as shown and described.

3. The combination with a saw-blade, a bridge-piece T containing a socket, a tooth A and clamping device B to correspond thereto in shape; said bridge-piece being rigidly fastened by its end *d* nearest the tooth to the saw-blade, its clamp end H being movable edgewise, accommodating itself to and supplementing the pressure of the clamp while its bottom is left to move edgewise and sidewise, for the purpose and substantially as shown and described.

4. The combination with a saw-blade, a bridge-piece T with socket, tooth A and clamp B, provided with a rigid and a movable end, each terminating in a lap, but on opposite sides from one another, and corresponding to like laps on saw-blade, and so constructed and applied as to alternate in order from side to side of saw-blade, for the purpose and in the manner as shown and described.

544,439. GRINDING-MACHINE. ABRAHAM R LANDIS, Waynesborough, Pa. Filed Jan. 31, 1895. Serial No. 536,805. (No model.)



Claim.—1. In a grinding machine, the combination, with a revoluble spindle provided at one end with a conical portion, and a ratchet-toothed screwthread, the apices of the said conical portion and of the spiral cone of the screwthread being pointed toward each other; of a carrying device, such as a sleeve or hub, fitting on the said conical portion and screwthread, and thereby held absolutely concentric with the spindle, substantially as set forth.

2. In a grinding machine, the combination, with the revoluble headstock spindle, and a sleeve secured on its front end and provided with a circumferential groove; of a keeper ring formed in parts and provided with a tapered hole at the junction of two parts, a disk on the sleeve, and a screw provided with a tapered point engaging with the said tapered hole and operating to secure the said disk to the sleeve, substantially as set forth.

3. In a grinding machine, the combination, with the revoluble headstock spindle, and the driving disk carried thereby; of a ring provided with a shoulder and secured on the periphery of the driving disk, and operating as a supplemental driving pulley and driving disk, substantially as set forth.

4. In a grinding machine, the combination, with the headstock provided with two bearings, and the headstock spindle journaled therein; of a collar, for taking the end thrust, secured on the spindle between its bearings and provided with a slot in its periphery, and a locking screw engaging with the headstock and adapted to enter the said slot, substantially as set forth.

5. In a grinding machine, the combination, with the footstock, and its spindle; of a lever engaging with the said spindle, pivoted to the footstock and provided with a handle for operating it; and a spring-actuated pin bearing against the said lever and normally holding the spindle forced forward in the footstock, substantially as set forth.

6. In a grinding machine, the combination, with the footstock, and its spindle; of a lever pivoted in a cavity in the footstock, engaging with the said spindle, and provided with a projecting handle for operating it; a spring-pressed pin carried in a hole in the footstock and bearing against the lever, and a screw for adjusting the pressure of the spring on the lever, substantially as set forth.

7. In a grinding machine, the combination, with the table, and the headstock; of a rod carried by the headstock parallel with the table, and a water feeder consisting of a series of curved plates having eyes engaging with the said rod, and having their lower portions resting on the table, substantially as set forth.

8. In a grinding machine, the combination, with the table, and the headstock provided with a curved flange on its side; of a rod slidable in a hole in the headstock parallel with the table, and the curved end plate of the water feeder having an eye engaging with the said rod, passing under the said flange, and resting on the table, substantially as set forth.

9. In a grinding machine, the combination, with the bracket R provided with a longitudinally slotted lug at its outer end, and the shaft, for adjusting the position of the emery wheel, journaled in the said bracket; of a hand wheel secured on the end of the said shaft, an adjustable stop dog, and means for clamping it to the hand wheel; and a retractible stop bar slidable in the said slotted lug and projecting into the path of the stop dog, substantially as set forth.

10. In a grinding machine, the combination, with the emery wheel spindle, and its bearing; of a non-revoluble collar splined to said bearing and journaled on the end of the spindle, movable endwise with it, and provided with an external screwthread; a recessed ring secured to the end of the bearing; and a sleeve for adjusting the spindle longitudinally, journaled in the said ring and engaging with the said screwthread, substantially as set forth.

11. In a grinding machine, the combination, with the emery wheel spindle, and its bearing; of a non-revoluble collar splined to the said bearing and journaled on the end of the spindle, an adjustable nut screwed on the end of the spindle and operating to hold the said collar in position; a recessed ring secured to the end of the bearing; and a sleeve, for adjusting the spindle longitudinally, journaled in the said ring and provided with an internal screwthread engaging with a similar screwthread on the periphery of the said collar, substantially as set forth.

12. In a grinding machine, the combination, with the table C provided with the water pan C′ in its rear part, of the slidable base portion D′ of the headstock secured to the front portion of the said table, the bracket F pivoted on the vertical pin *f* projecting from the base D′ and provided with a clamping nut, the said bracket having bearings 15 for the headstock spindle projecting rearwardly over the said water pan, and the said pin *f* being arranged at the front part of the said bracket, whereby the work supported by the headstock is held over the said water pan whether the said bracket is placed in position for face grinding or for shaft grinding or in intermediate positions, substantially as set forth.

13. In a grinding machine, the combination, with the emery wheel spindle 60 provided with the screwthreaded end 73 smaller in diameter than the spindle, and the nut 75 on the said end; of a bearing for the said spindle, a recessed ring 80 secured to the said bearing, the internally screwthreaded sleeve 79 journaled in the said ring, the screwthreaded collar 74 journaled on the said spindle-end 73 and engaging with the said sleeve, and the pin 77 engaging with holes in the said bearing and collar and preventing the collar from revolving when the sleeve 79 is revolved, substantially as set forth.

14. In a grinding machine, the combination, with the footstock provided with a bearing *i* and an extension 45 and a groove 46 at its front end; of the spindle I provided with the groove 47 at its front end opposite the groove 46, and means for retracting the said spindle, substantially as set forth.

15. The combination, with the stationary guides on the bed of the machine, and the carriage slidable longitudinally on the said guides; of a roller carried by the said carriage, a spring operating to revolve the said roller and a dust guard of flexible material wound on the said roller and provided at its free end with means for engaging the end of the bed, substantially as set forth.

16. The combination, with the stationary guides on the bed of the machine, and the carriage slidable longitudinally on the said guides; of a spring-actuated roller carried by the said carriage, a dust guard of flexible material wound on the said roller and provided at its free end with a hooked plate for engaging with the end of the bed, and a plate secured to the under side of the carriage and operating to engage with the said hooked plate and hold it in position when the end of the carriage slides beyond the end of the guides, substantially as set forth.

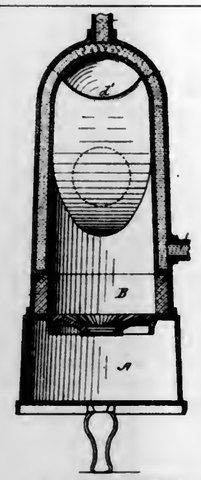
544,440. HOT-WATER HEATER. FRANK A. MAGEE, Wenham, assignor to the Magee Furnace Company, Boston, Mass. Filed May 20, 1895. Serial No. 550,025. (No model.)

Claim.—1. The combination in a hot water heater of the inlet pipe F, the water chamber D conical in shape surrounding the combustion chamber, the water chamber D′ extending almost vertically from the lower part of the combustion chamber below the escape port E′ to the upper part thereof, connected at its sides with the water chamber D, and the outlet F′, as and for the purposes described.

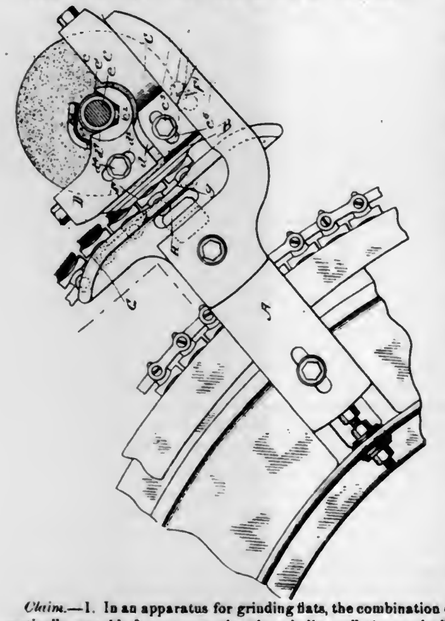
2. The combination in a hot water heater of the water chamber D surrounding the fire-pot and combustion chamber and the water chamber D′ extending from the lower back portion of the combustion chamber to the upper central portion thereof, connected with the water chamber D at the sides, and having a curved top, as and for the purposes described.

3. The combination in a hot water heater of the water chamber D, conical in shape and the water chamber D′ extending vertically through the combustion chamber and cast integral therewith, as and for the purposes described.

544,440.



544,441. APPARATUS FOR GRINDING CARDS. LOREN W. PENNEY, Newton, Mass., assignor to the Pettee Machine Works, same place. Filed July 21, 1894. Serial No. 518,256. (No model.)



Claim.—1. In an apparatus for grinding flats, the combination of a vertically movable frame supporting the grinding roll, the vertically movable guides F carried by the frame, the table G cut away at *g*, the flats' support H and the flats, as and for the purposes described.

2. In an apparatus for grinding flats, the combination with open brackets having inclined supporting surfaces, of a cradle or support for the grinding roll resting upon said inclined surfaces and free to slide thereon, and a grinding roll mounted in said cradle, substantially as described.

3. In an apparatus for grinding cards, the combination with brackets having inclined supporting surfaces, of a cradle or support for the grinding roll mounted in said brackets and free to slide upon said inclined surfaces, a grinding roll adjustably mounted in said cradle, and means carried by said cradle for guiding the flats in their travel past the grinding roll, substantially as described.

4. In an apparatus for grinding flats, the combination with open supporting brackets vertically adjustable relative to the main frame, a grinding roll mounted in said brackets and means for adjusting said grinding roll vertically with respect to said supporting brackets, substantially as described.

5. In an apparatus for grinding cards, the combination with supporting brackets vertically adjustable relative to the main frame, of a grinding roll mounted in said brackets and means for adjusting said roll laterally with respect to said supporting brackets, substantially as described.

6. In an apparatus for grinding cards, the combination with supporting brackets vertically adjustable relative to the main frame, of a grinding roll mounted in said brackets and means for adjusting said roll vertically and laterally with respect to said supporting brackets, substantially as described.

7. In an apparatus for grinding the flats of carding engines, the combination with supporting brackets, of a grinding roll adapted to bear upon the flats during the grinding operation, compound slides mounted in said supporting brackets and forming a cradle for said roll, and means for adjusting said compound slides in said supporting brackets whereby the said grinding roll, mounted in said slides, may be adjusted relative to said flat guides and flats.

8. In an apparatus for grinding flats, the combination with the supporting brackets A, of the grinding roll cradle or support B detachably mounted in said brackets and the grinding roll E mounted in said cradle.

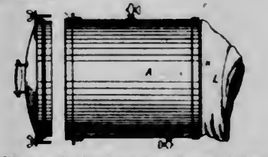
9. In an apparatus of the character specified, the slides D having open bearings for the roll shaft *e* and its collars *e′* and the stops *e²*, as and for the purposes described.

10. The combination of the end pieces *b′* connected together by an intermediate connection *b*, the said end pieces also carrying the guides F and a compound slide consisting of the parts C D arranged upon each end of the end pieces, the slide C being adjusted directly thereon, and the slides D being adjustable upon arms of the slides C and the said slides D having bearings for the roll E, as and for the purposes described.

11. The combination of the cradle or support having the end pieces *b′*, the slide C adjustable upon said end pieces by means of the adjusting screws *c²* and locked to said end pieces by the locking screws *c³* which pass through slots therein, and the slides D adjustable upon the slides C by the adjusting screws *d²* and locked to said slides by the locking screws *d³* which pass through slots therein, the said slides D having bearings for the roll E and the said adjusting and locking screws being in positions to be operated when the roll and its support are in operative position upon the machine, as and for the purposes described.

12. In a flat grinding-machine, the combination with suitable supporting brackets, of a grinding-roll-cradle mounted in said brackets, and a grinding-roll carried by said cradle, said cradle and grinding-roll being adapted to be borne by or floated upon the flats during the grinding operation.

544,442. MEDICAL DRY BATH. THOMAS H. REES, EVELYN D. T. SHEFFIELD, and LEWIS A. TALLERMAN, London, England; said Rees assignor to said Sheffield and Tallerman. Filed Apr. 18, 1894. Serial No. 507,975. (No model.)



Claim.—1. The method of treating parts of the human body which consists of first inclosing them in a suitable air-tight casing, applying heat to the casing on the exterior, until a desired temperature is attained, ventilating the casing to remove moisture and heating again, thus subjecting the limb to the action of dry air heated to a high temperature, substantially as described.

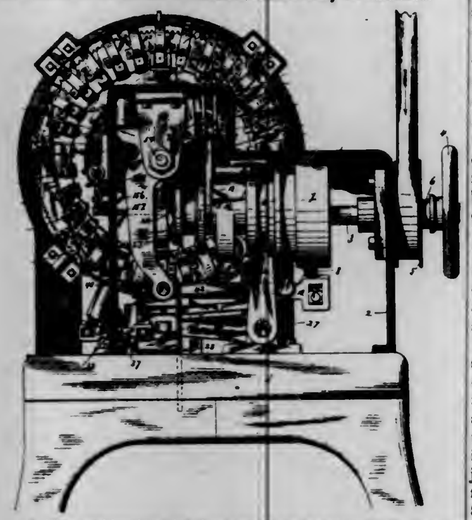
2. In a medicated bath the combination of a steam tight jacket or tub suitable for application to a member or part of the human body, said tub or jacket consisting of an exterior solid case and an inner perforated casing, said inner casing being lined with felt or other similar absorbent material, and means for admitting fluid or gas to the jacket and withdrawing the same therefrom, substantially as described.

3. In a medicated bath the combination of a steam tight jacket provided with a steam tight cover at one end and a sleeve of flexible material impervious to steam secured by a steam tight joint to the other end, and a perforated cylinder within the jacket lined with felt or other similar absorbent material on its interior, the exterior of the jacket being provided with stop cocks for the admission or emission of gas or fluid, substantially as described.

544,443. MACHINE FOR KNITTING RATTAN. HENRY M. RICE, Athol, and EDWARD L. TAFT, Gardner, Mass. Filed Oct. 24, 1888. Serial No. 289,072. (No model.)

Claim.—1. The combination of a prong or jaw serving as a fulcrum around which the strand is bent in forming the loop; a recip

rocating needle and a toothed wheel pivoted on said needle by which the surface of the strand is indented, substantially as described.



2. The combination with the mechanism for forming a loop of the strand of rattan, comprising in its essential features devices for holding the strand from lateral displacement, a reciprocating needle, and a prong or fulcrum around which the strand is bent, of a toothed wheel pivoted upon said needle and provided with a series of teeth adapted to slightly indent the surface of the strand of rattan as the strand is being bent by the action of the reciprocating needle, substantially as described.

3. The combination with a prong or jaw around which the strand of rattan is bent as a fulcrum and a reciprocating needle, of a strand tube 108 contiguous to and parallel with said reciprocating needle, through which the strand of rattan is conducted, substantially as described.

4. The combination with a prong or jaw serving as a fulcrum about which the strand of rattan is bent and a strand tube through which the strand of rattan is conducted, of a reciprocating needle and a wheel pivoted upon said needle, said wheel being provided with teeth adapted to slightly indent the surface of the strand of rattan, as the loop is being formed by the action of the reciprocating needle, substantially as described.

5. The combination with a prong or jaw serving as a fulcrum about which the strand of rattan is bent and a reciprocating needle, of a pair of parallel walls 71 71 inclosing the sides of the loop as formed by the action of said receiprocating needle, whereby the loop is held laterally, substantially as described.

6. The combination of a ring or frame for supporting a series of loop-holders, posts 46 hinged to said ring or frame, a block sliding on said post, a tongue 51 hinged on said block, spring 49, means as described for holding the strand during the formation of the loop, a pawl pivoted on said sliding block, a shoulder projecting from said ring or frame a reciprocating needle by which said block is moved on said post, and a pawl spring by which said pawl is made to engage said projecting shoulder, substantially as described.

7. The combination of sliding block 50, provided with a transverse recess 57, a loop-holding tongue having a raised portion 56 entering said recess when the tongue is raised a reciprocating needle by which said tongue is raised and loop former 65 provided with the curved notch 168 fitting the edge of the curved portion of said tongue, and a mortise 79, substantially as described.

8. The combination of post 46, sliding block 50 having a stud 54 and pin 55, and a blade spring 49 fixed to said post and provided with a hole to receive the pin 55 and thereby retain the sliding block in its lowest position, substantially as described.

9. The combination of post 46, sliding block 50 carrying a loop-holding tongue, pin 52 projecting from said sliding block and slotted plate 171 fixed to said post, substantially as described.

10. The combination of jaw 81 around which the strand of rattan is bent, a reciprocating needle, parallel walls 110, 110 placed beneath said jaw 81, and a strand tube 108 parallel with said needle, substantially as described.

11. The combination of a ring provided with teeth and a reciprocating rack-bar engaging said teeth, an actuating cam by which said rack-bar is moved, a series of loop-holders attached to said ring and arranged radially thereon and a reciprocating needle, placed in a plane parallel with said ring, a rotating crank and connecting mechanism whereby said needle is actuated radially to said ring as the several loop holders are brought into alignment with said needle, and the loop former 65, substantially as described.

12. The combination with a ring having a series of loop-holders hinged thereto, and arranged radially upon the side of said ring, of the band 114 provided with an off-set 116 but otherwise placed with its edge parallel with the side of said ring, by which the loop holders are held against the side of the ring, substantially as described.

13. The combination with a ring supporting a series of loop-holders, of a series of loop-holders arranged radially upon the side of said ring, a reciprocating rack bar engaging said ring, an actuating cam by which said rack bar is moved, a lever pivoted upon a stud coincident with the axis of said ring, a loop-former 65 pivoted upon said lever, said lever being connected with said reciprocating rack bar by which said lever is given an oscillating angular motion corresponding with the intermittent motion of said ring and said loop-former being capable of an angular motion in a plane at right angles with the plane of said ring, and connected operating mechanism for imparting said angular motion to said loop-former, substantially as described.

14. The combination with mechanism for holding the loops, substantially as described and a reciprocating needle by which the strand of rattan is bent and carried upon said loop-holding mechanism, of a rotating crank and connecting mechanism by which said needle is actuated, the loop-former 65 provided with jaws 80, 81, arm 84 carrying jaws 90, 91, said jaws capable of an oscillating motion about coincident axes, whereby the strand of rattan is transferred from the jaws 80, 81 to the jaws 90, 91 and vice versa, and connected means for imparting an oscillating motion to said loop former and said arm 84 substantially as described.

15. The combination of a ring a reciprocating rack-bar engaging said ring and actuating cam by which said rack-bar is moved, pivoted lever 8 and means, as described by which said rack bar is carried into and out of engagement with said ring, a series of loop-holders attached to said ring and arranged radially thereon a loop-former, a reciprocating needle placed in a plane parallel with said ring a rotating crank and connecting mechanism by which said needle is moved radially to said ring and a strand tube through which the strand of rattan is conducted, substantially as described, said strand tube being parallel with said needle.

16. The combination of a ring a toothed rack-bar engaging said ring, an actuating cam by which said rack-bar is reciprocated, pivoted lever 8 and means as described, by which said rack bar is carried into and out of engagement with said ring a series of loop holders attached to said ring and arranged radially thereon, a loop-former a reciprocating needle placed in a plane parallel with said ring a rotating crank and connecting mechanism whereby said needle is moved radially to said ring, and a toothed wheel pivoted on said needle, whereby the strand of rattan is slightly indented, substantially as described.

17. The combination with a ring provided with teeth, a reciprocating rack-bar engaging said teeth, an actuating cam by which said reciprocating rack-bar is moved pivoted lever 8 and means, as described, by which said rack bar is carried into and out of engagement with said ring and a series of loop-holders arranged radially thereon, a loop-former of a reciprocating needle by which the strand of rattan is bent into a loop and carried upon said loop holders, a rotating crank and connecting mechanism by which said needle is moved and a pair of vertical walls 110, 110, inclosing the strand of rattan and holding it from lateral displacement as the loop is formed, substantially as described.

18. The combination with a ring provided with teeth, a reciprocating rack-bar engaging said teeth, an actuating cam by which said reciprocating rack-bar is moved pivoted lever 8 and means as described, by which said rack bar is carried into and out of engagement with said ring and a series of loop-holders arranged radially on said ring, of a loop-former a reciprocating needle by which the strand of rattan is bent into a loop and carried upon said loop-holders, a rotating crank and connecting mechanism by which said needle is moved a toothed wheel pivoted upon said needle, whereby the strand of rattan is slightly indented, and a pair of vertical and parallel walls inclosing the strand of rattan and holding it from lateral displacement substantially as described.

19. The combination with a ring having a series of loop-holders, arranged radially thereon said ring being provided with teeth, a reciprocating rack-bar engaging said teeth and an actuating cam by which said reciprocating rack-bar is moved, of the loop-former, a reciprocating needle, a rotating crank and connecting mechanism by which said needle is moved a toothed wheel pivoted upon said needle, a pair of vertical and parallel walls inclosing the strand of rattan, and a strand tube parallel with said reciprocating needle, pivoted lever 8 and means, as described, by which said bar is carried into and out of engagement with said ring all arranged substantially as described.

20. The combination with mechanism for holding the loops, substantially as described, and a reciprocating needle for bending the strand of rattan, of a rotating crank and connecting mechanism for actuating said needle the front jaws 80, 81, back jaws 90, 91 and a pair of parallel walls inclosing the strand of rattan, said front and back jaws being capable of simultaneous rocking motion about coincident axes, and means for imparting a rocking motion to said jaws substantially as described.

21. The combination with mechanism for holding the loops, substantially as described and a reciprocating needle for bending the strand of rattan, of a rotating crank and connecting mechanism for actuating said needle the front jaws 80, 81, back jaws 90, 91, said jaws being capable of a simultaneous rocking motion about coincident axes, and means, as described, for imparting a rocking motion to said jaws a pair of parallel walls inclosing the strand of rattan and a strand tube through which the strand of rattan is conducted to the needle, substantially as described.

22. The combination with mechanism for holding the loops, substantially as described and a reciprocating needle for bending the strand of rattan, of a rotating crank and connecting mechanism by which said needle is actuated the front jaws 80, 81, back jaws 90, 91, said jaws being capable of a simultaneous rocking motion about coincident axes, and means, as described, for imparting a rocking motion to said jaws a pair of parallel walls inclosing the strand of rattan, and a toothed wheel pivoted on said reciprocating needle, whereby the strand of rattan is slightly indented, substantially as described.

23. The loop-former 65 with its jaws 80, 81; arm 84 with its jaws 90, 91, said arm and loop-former having a rocking motion about coincident axes, lever 73 connected with the loop-former, lever 86 connected with the arm 84, links 77 and 87 oscillating lever 18 and actuating cam 17, all combined substantially as described.

24. The loop-former 65 with its jaws 80, 81, arm 84 with its jaws 90, 91, said arm and loop-former being capable of a rocking motion about coincident axes, lever 73 connected with the loop-former, lever 86 connected with the arm 84, links 77 and 87, oscillating lever 18, actuating cam 17 and a series of loop-holders arranged radially upon the side of a ring, a ring carrying said loop-holders and having an intermittent rotary motion, connected actuating mechanism consisting of a rack-bar engaging said ring and a cam by which a reciprocating motion is imparted to said rack-bar pivoted lever 8 and means by which said rack bar is carried into and out of engagement with said ring all combined substantially as described.

25. The loop-former 65 with its jaws 80, 81, arm 84 with its jaws 90, 91, lever 73 connected with the loop-former, lever 86 connected with the arm 84, links 77 and 87, oscillating lever 18, actuating cam 17, loop holding mechanism substantially as described, a reciprocating needle by which the strand of rattan is bent, a rotating crank and connecting mechanism by which said needle is actuated all combined, substantially as described.

26. The loop-former 65 with its jaws 80, 81, arm 84 with its jaws 90, 91, lever 73 connected with the loop-former, lever 86 connected with the arm 84, links 77 and 87, oscillating lever 18, cam 17, loop-holding mechanism, substantially as described, a reciprocating needle by which the strand of rattan is bent a rotating crank and connecting mechanism by which said needle is actuated and a toothed wheel pivoted upon said needle by which the surface of the strand is slightly indented, all combined substantially as described.

27. The combination of loop former 65 with its jaws 80, 81, arm 84 with its jaws 90, 91, lever 73 connected with the loop-former, lever 86 connected with the arm 84, links 77, and 87, oscillating lever 18, cam 17, loop-holding mechanism, substantially as described, a reciprocating needle by which the strand of rattan is bent, a rotating crank and connecting mechanism by which said needle is actuated a toothed wheel pivoted upon said needle, and a pair of parallel walls inclosing the strand and holding it from lateral displacement as the jaws are oscillated, substantially as described.

28. The loop-former 65 with its jaws 80, 81, arm 84 with its jaws 90, 91, lever 73 connected with the loop-former, lever 86 connected with the arm 84, oscillating lever 18 provided with a stud 78, actuating cam 17, links 77 and 87 provided with hooks adapted to engage the stud 78 and arms 75 and 88, all combined substantially as described.

29. The combination of actuating cam 17, oscillating lever 18, link 77 provided with a slot 76 and having a sliding motion in the arm 89 attached to the rigid part of the machine, oscillating loop-former 65 pivoted upon a lever 61, lever 61 having a rocking motion in a plane at right angles to the plane of the oscillation of the loop-former, and lever 73 connected with the loop-former and carrying a stud 74, having a transverse and longitudinal sliding motion in the slot 76 of the link 77, whereby the operative connection is maintained between the link 77 and the lever 73, substantially as described.

30 The combination of the back jaws 90, 91 pivoted at 92, 93, spring 103 applied to bring said jaws together, front jaws 80, 81 one of said front jaws having a pin 82 projecting between opposing shoulders upon the back jaws, by which the back jaws are brought into alignment with the front jaws at each end of the traversing movement of said front jaws, substantially as described.

31. The combination of the back jaws 90, 91 having arms 94, 95 so connected that a vibrating motion of one of said jaws will produce a similar vibrating motion of the other jaw, but in the opposite direction, spring 103 applied to said jaws to bring them together, and front jaws 80, 81, one of said front jaws having a pin 82 projecting between said back jaws, whereby said back jaws are brought into alignment with said front jaws at each end of the traversing motion of the front jaws, substantially as described.

32. The combination of back jaws 90, 91 pivoted at 92, 93 and having arms 94, 95 operatively connected, substantially as described, spring 103, applied to bring the back jaws together, stop pin 104, by which the inward movement of the jaws is limited, and front jaws 80, 81, one of said front jaws having a pin 82 projecting between said back jaws, whereby the back jaws are brought into alignment with said front jaws, substantially as described.

33. The combination of arm 84 pivoted upon a bracket 83, bracket 83 attached to the rigid portion of the machine, back jaws 90, 91 pivoted upon the arm 84, spring 103 applied to bring the back jaws together, lever 61 having an angular motion upon a stud 59, means as described for actuating said lever loop-former 65 pivoted in the lever 61 with its axis coincident with the axis of the arm 84 and having jaws 80, 81, and pin 82 projecting between the back jaws and alternately brought into contact with each of said jaws as the lever 61 is oscillated upon the stud 59, thereby bringing said back jaws into alignment with the jaws 80, 81, substantially as described.

34. The combination of the loop-former 65 provided with front jaws 80 and 81, one of said front jaws having a pin 82 projecting between the back jaws, an arm 84 provided with the back jaws 90 and 91 pivoted at 92, 93, spring 103, shoulder 99 and pawl 100 having a pawl spring 102, cam 17 and connecting mechanism by which said jaws are actuated, substantially as described.

35. The combination of a reciprocating needle by which the strand of rattan is bent into a loop, a rotating crank and connecting mechanism by which said needle is actuated a ring carrying a series of loop-holders arranged radially upon the side of said ring, said ring being provided with a "T" shaped slot, a ring supporting stand having roll supporting brackets and rolls held by said brackets and rolls 29 supporting said ring, a reciprocating rack-bar engaging said ring and an actuating cam by which said rack-bar is moved and said ring and said reciprocating needle moving alternately pivoted lever 8 and means by which said rack bar is carried into and out of engagement with said ring substantially as described.

36. The combination of a ring having a series of loop-holders radially attached to its side and provided with circumferential teeth, a reciprocating rack engaging said teeth, an actuating cam by which said rack is moved, a pivoted lever connecting said rack and said actuating cam a sliding plate having a reciprocating motion radially to said ring and provided with ways in which said reciprocating rack is held, an actuating cam and connecting mechanism by which said sliding plate is moved, whereby said rack-bar is made to engage the teeth on said ring alternately and impart an intermittent rotating motion to said ring, substantially as described.

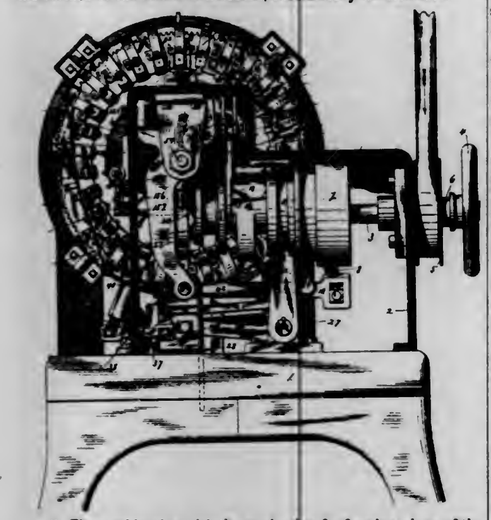
37. The combination with a ring provided with teeth and carrying a series of loop-holders, of a plate having a reciprocating motion radially to said ring, a rack sliding in ways on said reciprocating plate, and alternately engaging the teeth on said ring an oscillating lever actuated by said reciprocating plate, a sliding locking bar provided with teeth and operated in correspondence with the motion of said reciprocating plate and said sliding rack to lock said ring and hold it from rotation when said rack is disengaged from the ring, an actuating cam and connecting mechanism for moving said sliding plate and an actuating cam and connecting mechanism for moving said sliding rack substantially as described.

38. The combination of ring 30 carrying a series of radial loop-holders and provided with circumferential teeth, a sliding plate 15, rock shaft 13, arms 12 and 14 cam 11 sliding rack 10 and cam 7 with lever 8, substantially as described.

39. The combination of ring 30, provided with circumferential teeth and carrying a series of radial loop-holders, a sliding plate 15 having ways for a sliding rack, a sliding rack 10, lever 8, actuating cam 7, cam 11 rock shaft 13, arms 12 and 14 actuating said plate 15, lever 37, and sliding locking bar having teeth adapted to engage the teeth on said ring substantially as described.

40. The combination of ring 30 provided with circumferential teeth and carrying a series of loop-holders attached radially to the side of said ring, a sliding plate 15 having a sliding motion in ways radially to said ring and being provided with ways for a sliding rack, a sliding rack 10, lever 8 operating said rack, actuating cam 7, lever 61 pivoted concentrically with said ring a loop former 65 carrying strand holding jaws, and link 62, connecting said lever with the slid-

rocating needle and a toothed wheel pivoted on said needle by which the surface of the strand is indented, substantially as described.



2. The combination with the mechanism for forming a loop of the strand of rattan, comprising in its essential features devices for holding the strand from lateral displacement, a reciprocating needle, and a prong or fulcrum around which the strand is bent, of a toothed wheel pivoted upon said needle and provided with a series of teeth adapted to slightly indent the surface of the strand of rattan as the strand is being bent by the action of the reciprocating needle, substantially as described.

3. The combination with a prong or jaw around which the strand of rattan is bent as a fulcrum and a reciprocating needle, of a strand tube 108 contiguous to and parallel with said reciprocating needle, through which the strand of rattan is conducted, substantially as described.

4. The combination with a prong or jaw serving as a fulcrum about which the strand of rattan is bent and a strand tube through which the strand of rattan is conducted, of a reciprocating needle and a wheel pivoted upon said needle, said wheel being provided with teeth adapted to slightly indent the surface of the strand of rattan, as the loop is being formed by the action of the reciprocating needle, substantially as described.

5. The combination with a prong or jaw serving as a fulcrum about which the strand of rattan is bent and a reciprocating needle, of a pair of parallel walls 71 71 inclosing the sides of the loop as formed by the action of said receiprocating needle, whereby the loop is held laterally, substantially as described.

6. The combination of a ring or frame for supporting a series of loop-holders, posts 46 hinged to said ring or frame, a block sliding on said post, a tongue 51 hinged on said block, spring 49, means as described for holding the strand during the formation of the loop, a pawl pivoted on said sliding block, a shoulder projecting from said ring or frame a reciprocating needle by which said block is moved on said post, and a pawl spring by which said pawl is made to engage said projecting shoulder, substantially as described.

7. The combination of sliding block 50, provided with a transverse recess 57, a loop-holding tongue having a raised portion 56 entering said recess when the tongue is raised a reciprocating needle by which said tongue is raised and loop former 65 provided with the curved notch 168 fitting the edge of the curved portion of said tongue, and a mortise 79, substantially as described.

8. The combination of post 46, sliding block 50 having a stud 54 and pin 55, and a blade spring 49 fixed to said post and provided with a hole to receive the pin 55 and thereby retain the sliding block in its lowest position, substantially as described.

9. The combination of post 46, sliding block 50 carrying a loop-holding tongue, pin 52 projecting from said sliding block and slotted plate 171 fixed to said post, substantially as described.

10. The combination of jaw 81 around which the strand of rattan is bent, a reciprocating needle, parallel walls 110, 110 placed beneath said jaw 81, and a strand tube 108 parallel with said needle, substantially as described.

11. The combination of a ring provided with teeth and a reciprocating rack-bar engaging said teeth, an actuating cam by which said rack-bar is moved, a series of loop-holders attached to said ring and arranged radially thereon and a reciprocating needle, placed in a plane parallel with said ring, a rotating crank and connecting mechanism whereby said needle is actuated radially to said ring as the several loop holders are brought into alignment with said needle, and the loop former 65, substantially as described.

12. The combination with a ring having a series of loop-holders hinged thereto, and arranged radially upon the side of said ring, of the band 114 provided with an off-set 116 but otherwise placed with its edge parallel with the side of said ring, by which the loop holders are held against the side of the ring, substantially as described.

13. The combination with a ring supporting a series of loop-holders, of a series of loop-holders arranged radially upon the side of said ring, a reciprocating rack bar engaging said ring, an actuating cam by which said rack bar is moved, a lever pivoted upon a stud coincident with the axis of said ring, a loop-former 65 pivoted upon said lever, said lever being connected with said reciprocating rack bar by which said lever is given an oscillating angular motion corresponding with the intermittent motion of said ring and said loop-former being capable of an angular motion in a plane at right angles with the plane of said ring, and connected operating mechanism for imparting said angular motion to said loop-former, substantially as described.

14. The combination with mechanism for holding the loops, substantially as described and a reciprocating needle by which the strand of rattan is bent and carried upon said loop-holding mechanism, of a rotating crank and connecting mechanism by which said needle is actuated, the loop-former 65 provided with jaws 80, 81, arm 84 carrying jaws 90, 91, said jaws capable of an oscillating motion about coincident axes, whereby the strand of rattan is transferred from the jaws 80, 81 to the jaws 90, 91 and vice versa, and connected means for imparting an oscillating motion to said loop former and said arm 84 substantially as described.

15. The combination of a ring a reciprocating rack-bar engaging said ring and actuating cam by which said rack-bar is moved, pivoted lever 8 and means, as described by which said rack bar is carried into and out of engagement with said ring, a series of loop-holders attached to said ring and arranged radially thereon a loop-former, a reciprocating needle placed in a plane parallel with said ring a rotating crank and connecting mechanism by which said needle is moved radially to said ring and a strand tube through which the strand of rattan is conducted, substantially as described, said strand tube being parallel with said needle.

16. The combination of a ring a toothed rack-bar engaging said ring, an actuating cam by which said rack-bar is reciprocated, pivoted lever 8 and means as described, by which said rack bar is carried into and out of engagement with said ring a series of loop holders attached to said ring and arranged radially thereon, a loop-former a reciprocating needle placed in a plane parallel with said ring a rotating crank and connecting mechanism whereby said needle is moved radially to said ring, and a toothed wheel pivoted on said needle, whereby the strand of rattan is slightly indented, substantially as described.

17. The combination with a ring provided with teeth, a reciprocating rack-bar engaging said teeth, an actuating cam by which said reciprocating rack-bar is moved pivoted lever 8 and means, as described, by which said rack bar is carried into and out of engagement with said ring and a series of loop-holders arranged radially thereon, a loop-former of a reciprocating needle by which the strand of rattan is bent into a loop and carried upon said loop holders, a rotating crank and connecting mechanism by which said needle is moved and a pair of vertical walls 110, 110, inclosing the strand of rattan and holding it from lateral displacement as the loop is formed, substantially as described.

18. The combination with a ring provided with teeth, a reciprocating rack-bar engaging said teeth, an actuating cam by which said reciprocating rack-bar is moved pivoted lever 8 and means as described, by which said rack bar is carried into and out of engagement with said ring and a series of loop-holders arranged radially on said ring, of a loop-former a reciprocating needle by which the strand of rattan is bent into a loop and carried upon said loop-holders, a rotating crank and connecting mechanism by which said needle is moved a toothed wheel pivoted upon said needle, whereby the strand of rattan is slightly indented, and a pair of vertical and parallel walls inclosing the strand of rattan and holding it from lateral displacement substantially as described.

19. The combination with a ring having a series of loop-holders, arranged radially thereon said ring being provided with teeth, a reciprocating rack-bar engaging said teeth and an actuating cam by which said reciprocating rack-bar is moved, of the loop-former, a reciprocating needle, a rotating crank and connecting mechanism by which said needle is moved a toothed wheel pivoted upon said needle, a pair of vertical and parallel walls inclosing the strand of rattan, and a strand tube parallel with said reciprocating needle, pivoted lever 8 and means, as described, by which said bar is carried into and out of engagement with said ring all arranged substantially as described.

20. The combination with mechanism for holding the loops, substantially as described, and a reciprocating needle for bending the strand of rattan, of a rotating crank and connecting mechanism for actuating said needle the front jaws 80, 81, back jaws 90, 91 and a pair of parallel walls inclosing the strand of rattan, said front and back jaws being capable of simultaneous rocking motion about coincident axes, and means for imparting a rocking motion to said jaws substantially as described.

21. The combination with mechanism for holding the loops, substantially as described and a reciprocating needle for bending the strand of rattan, of a rotating crank and connecting mechanism for actuating said needle the front jaws 80, 81, back jaws 90, 91, said jaws being capable of a simultaneous rocking motion about coincident axes, and means, as described, for imparting a rocking motion to said jaws a pair of parallel walls inclosing the strand of rattan and a strand tube through which the strand of rattan is conducted to the needle, substantially as described.

22. The combination with mechanism for holding the loops, substantially as described and a reciprocating needle for bending the strand of rattan, of a rotating crank and connecting mechanism by which said needle is actuated the front jaws 80, 81, back jaws 90, 91, said jaws being capable of a simultaneous rocking motion about coincident axes, and means, as described, for imparting a rocking motion to said jaws a pair of parallel walls inclosing the strand of rattan, and a toothed wheel pivoted on said reciprocating needle, whereby the strand of rattan is slightly indented, substantially as described.

23. The loop-former 65 with its jaws 80, 81; arm 84 with its jaws 90, 91, said arm and loop-former having a rocking motion about coincident axes, lever 73 connected with the loop-former, lever 86 connected with the arm 84, links 77 and 87 oscillating lever 18 and actuating cam 17, all combined substantially as described.

24. The loop-former 65 with its jaws 80, 81, arm 84 with its jaws 90, 91, said arm and loop-former being capable of a rocking motion about coincident axes, lever 73 connected with the loop-former, lever 86 connected with the arm 84, links 77 and 87, oscillating lever 18, actuating cam 17 and a series of loop-holders arranged radially upon the side of a ring, a ring carrying said loop-holders and having an intermittent rotary motion, connected actuating mechanism consisting of a rack-bar engaging said ring and a cam by which a reciprocating motion is imparted to said rack-bar pivoted lever 8 and means by which said rack bar is carried into and out of engagement with said ring all combined substantially as described.

25. The loop-former 65 with its jaws 80, 81, arm 84 with its jaws 90, 91, lever 73 connected with the loop-former, lever 86 connected with the arm 84, links 77 and 87, oscillating lever 18, actuating cam 17, loop holding mechanism substantially as described, a reciprocating needle by which the strand of rattan is bent, a rotating crank and connecting mechanism by which said needle is actuated all combined, substantially as described.

26. The loop-former 65 with its jaws 80, 81, arm 84 with its jaws 90, 91, lever 73 connected with the loop-former, lever 86 connected with the arm 84, links 77 and 87, oscillating lever 18, cam 17, loop-holding mechanism, substantially as described, a reciprocating needle by which the strand of rattan is bent a rotating crank and connecting mechanism by which said needle is actuated and a toothed wheel pivoted upon said needle by which the surface of the strand is slightly indented, all combined substantially as described.

27. The combination of loop former 65 with its jaws 80, 81, arm 84 with its jaws 90, 91, lever 73 connected with the loop-former, lever 86 connected with the arm 84, links 77, and 87, oscillating lever 18, cam 17, loop-holding mechanism, substantially as described, a reciprocating needle by which the strand of rattan is bent, a rotating crank and connecting mechanism by which said needle is actuated a toothed wheel pivoted upon said needle, and a pair of parallel walls inclosing the strand and holding it from lateral displacement as the jaws are oscillated, substantially as described.

28. The loop-former 65 with its jaws 80, 81; arm 84 with its jaws 90, 91, lever 73 connected with the loop-former, lever 86 connected with the arm 84, oscillating lever 18 provided with a stud 78, actuating cam 17, links 77 and 87 provided with hooks adapted to engage the stud 78 and arms 75 and 88, all combined substantially as described.

29. The combination of actuating cam 17, oscillating lever 18, link 77 provided with a slot 76 and having a sliding motion in the arm 89 attached to the rigid part of the machine, oscillating loop-former 65 pivoted upon a lever 61, lever 61 having a rocking motion in a plane at right angles to the plane of the oscillation of the loop-former, and lever 73 connected with the loop-former and carrying a stud 74, having a transverse and longitudinal sliding motion in the slot 76 of the link 77, whereby the operative connection is maintained between the link 77 and the lever 73, substantially as described.

30 The combination of the back jaws 90, 91 pivoted at 92, 93, spring 103 applied to bring said jaws together, front jaws 80, 81 one of said front jaws having a pin 82 projecting between opposing shoulders upon the back jaws, by which the back jaws are brought into alignment with the front jaws at each end of the traversing movement of said front jaws, substantially as described.

31. The combination of the back jaws 90, 91 having arms 94, 95 so connected that a vibrating motion of one of said jaws will produce a similar vibrating motion of the other jaw, but in the opposite direction, spring 103 applied to said jaws to bring them together, and front jaws 80, 81, one of said front jaws having a pin 82 projecting between said back jaws, whereby said back jaws are brought into alignment with said front jaws at each end of the traversing motion of the front jaws, substantially as described.

32. The combination of back jaws 90, 91 pivoted at 92, 93 and having arms 94, 95 operatively connected, substantially as described, spring 103, applied to bring the back jaws together, stop pin 104, by which the inward movement of the jaws is limited, and front jaws 80, 81, one of said front jaws having a pin 82 projecting between said back jaws, whereby the back jaws are brought into alignment with said front jaws, substantially as described.

33. The combination of arm 84 pivoted upon a bracket 83, bracket 83 attached to the rigid portion of the machine, back jaws 90, 91 pivoted upon the arm 84, spring 103 applied to bring the back jaws together, lever 61 having an angular motion upon a stud 59, means as described for actuating said lever loop-former 65 pivoted in the lever 61 with its axis coincident with the axis of the arm 84 and having jaws 80, 81, and pin 82 projecting between the back jaws and alternately brought into contact with each of said jaws as the lever 61 is oscillated upon the stud 59, thereby bringing said back jaws into alignment with the jaws 80, 81, substantially as described.

34. The combination of the loop-former 65 provided with front jaws 80 and 81, one of said front jaws having a pin 82 projecting between the back jaws, an arm 84 provided with the back jaws 90 and 91 pivoted at 92, 93, spring 103, shoulder 99 and pawl 100 having a pawl spring 102, cam 17 and connecting mechanism by which said jaws are actuated, substantially as described.

35. The combination of a reciprocating needle by which the strand of rattan is bent into a loop, a rotating crank and connecting mechanism by which said needle is actuated a ring carrying a series of loop-holders arranged radially upon the side of said ring, said ring being provided with a "T" shaped slot, a ring supporting stand having roll supporting brackets and rolls held by said brackets and rolls 29 supporting said ring, a reciprocating rack-bar engaging said ring and an actuating cam by which said rack-bar is moved and said ring and said reciprocating needle moving alternately pivoted lever 8 and means by which said rack bar is carried into and out of engagement with said ring substantially as described.

36. The combination of a ring having a series of loop-holders radially attached to its side and provided with circumferential teeth, a reciprocating rack engaging said teeth, an actuating cam by which said rack is moved, a pivoted lever connecting said rack and said actuating cam a sliding plate having a reciprocating motion radially to said ring and provided with ways in which said reciprocating rack is held, an actuating cam and connecting mechanism by which said sliding plate is moved, whereby said rack-bar is made to engage the teeth on said ring alternately and impart an intermittent rotating motion to said ring, substantially as described.

37. The combination with a ring provided with teeth and carrying a series of loop-holders, of a plate having a reciprocating motion radially to said ring, a rack sliding in ways on said reciprocating plate, and alternately engaging the teeth on said ring an oscillating lever actuated by said reciprocating plate, a sliding locking bar provided with teeth and operated in correspondence with the motion of said reciprocating plate and said sliding rack to lock said ring and hold it from rotation when said rack is disengaged from the ring, an actuating cam and connecting mechanism for moving said sliding plate and an actuating cam and connecting mechanism for moving said sliding rack substantially as described.

38. The combination of ring 30 carrying a series of radial loop-holders and provided with circumferential teeth, a sliding plate 15, rock shaft 13, arms 12 and 14 cam 11 sliding rack 10 and cam 7 with lever 8, substantially as described.

39. The combination of ring 30, provided with circumferential teeth and carrying a series of radial loop-holders, a sliding plate 15 having ways for a sliding rack, a sliding rack 10, lever 8, actuating cam 7, cam 11 rock shaft 13, arms 12 and 14 actuating said plate 15, lever 37, and sliding locking bar having teeth adapted to engage the teeth on said ring substantially as described.

40. The combination of ring 30 provided with circumferential teeth and carrying a series of loop-holders attached radially to the side of said ring, a sliding plate 15 having a sliding motion in ways radially to said ring and being provided with ways for a sliding rack, a sliding rack 10, lever 8 operating said rack, actuating cam 7, lever 61 pivoted concentrically with said ring a loop former 65 carrying strand holding jaws, and link 62, connecting said lever with the slid-

ing rack, whereby the lever 61 is moved simultaneously with the intermittent motion of the ring in one direction, rock shaft 13 with its radial arms 12 and 14 and actuating cam 11 by which an intermittent sliding motion is imparted to the plate 15, substantially as described.

41. The combination of ring 30 carrying a series of loop-holders, and being provided with circumferential teeth, actuating cams 7 and 11, oscillating lever 8, sliding rack 10 having teeth adapted to engage the teeth on said ring, lever 61 a loop former 65 carrying strand holding jaws, link 62 by which said lever is connected with said sliding rack, rocking shaft 13, having radial arms 12 and 14, sliding plate 15 provided with ways in which the sliding rack 10 slides, a reciprocating needle by which the strand of rattan is bent into loops, and connected means for actuating said needle substantially as described.

42. The combination of ring 30 carrying a series of loop-holders and being provided with circumferential teeth, actuating cams 7 and 11, oscillating lever 8, sliding rack 10 having teeth adapted to engage the teeth on said ring, lever 61 a loop former 65 carrying strand holding jaws, link 62 by which said lever is connected with said sliding rack, rocking shaft 13, having radial arms 12 and 14, sliding plate 15 provided with ways for said sliding rack, oscillating lever 37 actuated by said sliding plate 15, and sliding locking bar 39 having teeth adapted to engage the teeth in said ring and operated by said oscillating lever 37, substantially as described.

43. The combination of ring 30 carrying a series of loop-holders and being provided with circumferential teeth, actuating cams 7 and 11, oscillating lever 8, sliding rack 10 having teeth adapted to engage the teeth on said ring, lever 61 a loop former carrying strand holding jaws, link 62 by which said lever is connected with said sliding rack, rocking shaft 13 having radial arms 12 and 14, sliding plate 15 provided with ways for said sliding rack, oscillating lever 37 actuated by said sliding plate 15, locking bar 39 operated by said sliding plate and oscillating lever and a reciprocating needle by which the strand of rattan is bent into loops, and connected means by which said needle is actuated substantially as described.

44. The combination with a ring carrying a series of loop-holders and provided with circumferential teeth, of a lever 61 pivoted upon an axis concentric with the axis of the loop-holder carrying ring, a loop former 65 carrying strand holding jaws pivoted on said lever, by arms 66, 67, strand holding jaws pivoted upon the arm 84, arm 84, pivoted upon a bracket attached to the rigid portion of the machine and upon an axis between the arms 66, 67 and coincident with the axis of said arms, actuating cam 7, pivoted lever 8 reciprocating rack 10, engaging the teeth upon said ring and operatively connected with said lever 61, by which said ring and lever are actuated simultaneously, actuating cam 17, and connecting mechanism by which said strand holding jaws are rocked upon their coincident axis substantially as described.

45. The combination with a ring carrying a series of loop-holders and provided with circumferential teeth, of a lever 61 pivoted upon an axis concentric with the axis of the loop holder carrying ring, a loop former 65 carrying strand holding jaws pivoted upon said lever by arms 66, 67, strand holding jaws pivoted upon the arm 84, arm 84, pivoted upon a bracket attached to the rigid portion of the machine between the arms 66, 67 and upon an axis coincident with the axis of said arms, a reciprocating rack-bar operatively connected with said lever 61, and an actuating cam by which said reciprocating rack-bar is moved, pivoted lever 8 and means, as described, whereby said rack bar is carried into and out of engagement with said ring an actuating cam and connecting operating mechanism by which said strand holding jaws are simultaneously rocked, and a reciprocating needle by which the strand of rattan is bent into loops, and a rotating crank and connecting mechanism by which said needle is actuated substantially as described.

46. The combination of a ring carrying a series of loop-holders and provided with circumferential teeth, actuating cam 7, oscillating lever 8 and sliding rack 10, cam 11, rocking shaft 13 with arms 12 and 14 sliding plate 15 carrying said sliding rack, lever 61 a loop former 65 carrying strand holding jaws, link 62 connecting said lever with said sliding rack, an arm 84 carrying pivoted strand holding jaws and having a simultaneous rocking motion about a coincident axis, actuating cam 17, oscillating lever 18, links 77, 87, an intermediate connecting mechanism between said links and said jaws, substantially as described.

47. The combination of ring 30, loop holders carried by said ring, actuating cam 7, oscillating lever 8, sliding rack 10 having teeth engaging the teeth of the ring 30 at stated intervals, cam 11, rocking shaft 13, radial arms 12 and 14, plate 15 carrying the sliding rack 10, lever 37, sliding locking bar 39, lever 61 operatively connected with said sliding rack 10, a loop former 65 carrying strand holding jaws pivoted on said lever 61, strand holding jaws pivoted upon an arm 84, and an arm 84, pivoted upon a bracket attached to the stationary portion of the machine, actuating cam 17, oscillating lever 18, links 77 and 87, and levers 73 and 86, substantially as described.

48. The combination of ring 30 carrying a series of loop-holders, actuating cam 7, oscillating lever 8, sliding rack 10, actuating cam 11, rocking shaft 13, radial arms 12 and 13, plate 15, oscillating lever 37, sliding locking bar 39, lever 61, operatively connected with said sliding rack 10, a loop former 65 carrying strand holding jaws pivoted on said lever 61 strand holding jaws pivoted on an arm 84, and an arm 84, pivoted on a bracket attached to the stationary portion of the machine, actuating cam 17, oscillating lever 18, links 77 and 87, levers 73 and 86, a reciprocating needle by which the strand of rattan is bent into loops, and a rotating crank and connecting mechanism by which said needle is actuated substantially as described.

49. The combination of ring 30 carrying a series of loop-holders actuating cam 7, oscillating lever 8, sliding rack 10, actuating cam 11 rocking shaft 13, radial arms 12 and 14, plate 15, oscillating lever 37, sliding locking bar 39, lever 61 pivoted upon an axis concentric with the ring 30, and operatively connected with said sliding rack 10, a loop former 65 carrying strand holding jaws and pivoted upon said lever 61, strand holding jaws pivoted upon an arm 84, and an arm 84, pivoted upon a bracket attached to the rigid portion of the machine, actuating cam 17, oscillating lever 18, arm 73, links 77, 87 arm 86, and a pair of parallel walls 110, 110, inclosing the strand of rattan and holding it from lateral displacement, substantially as described.

50. The combination of ring 30 carrying a series of loop-holders actuating cam 7, oscillating lever 8, sliding rack 10, actuating cam 11, rocking shaft 13 radial arms 12 and 14, sliding plate 15, oscillating lever 37, sliding locking bar 39, lever 61 pivoted upon a stud concentric with the ring 30, and operatively connected with said sliding rack 10, a loop former 65 carrying strand holding jaws and pivoted upon said lever 61, strand holding jaws pivoted upon an arm 84, and an arm 84, pivoted upon a bracket attached to the stationary portion of the machine, actuating cam 17, oscillating lever 18, arm 73 links 77, 87, arm 86, parallel walls 110, 110, for holding the strand of rattan from lateral displacement a reciprocating needle by which the strand of rattan is bent into loops, and a rotating crank and connecting mechanism by which said needle is actuated, substantially as described.

51. The combination of ring 30 carrying loop-holding mechanism, actuating cam 7, oscillating lever 8, sliding rack 10, actuating cam 11, rocking shaft 13, radial arms 12 and 14, sliding plate 15, oscillating lever 37, sliding locking bar 39, lever 61 pivoted upon a stud concentric with the ring 30, a link 62 connecting said lever 61 and said sliding rack, a loop former 65 carrying strand holding jaws having a rocking motion connected operating mechanism therefor, substantially as described, parallel walls for holding the strand of rattan from lateral displacement, a reciprocating needle by which the strand of rattan is bent into loops a toothed wheel pivoted upon said needle by which the surface of the strand is slightly indented, and connecting operating mechanism by which said needle is operated, substantially as described.

52. The combination with a ring 30 provided with projecting shoulders 112, of loop-holders comprising a post 46, sliding block 50, tongue 51, pawl 53 pivoted on said block, pawl spring 53ª and a stationary cam plate by which the posts of said loop-holders are raised, releasing the pawls from the projecting shoulders on said ring, substantially as described.

53. The combination of ring 30 posts 46 hinged to said ring, sliding blocks sliding on said posts, shoulders 112 on said ring, pawls 53 on said sliding blocks, tongues 51, and a stationary cam plate 117 by which the posts 46 are raised and the pawls 53 released from the shoulders 112, substantially as described.

54. The combination of ring 30, means for imparting an intermittent rotary motion to said ring posts 46 hinged upon said ring sliding blocks 50, pawls 53, shoulders 112 on said ring, stationary cam plate 117, and band 114, substantially as described.

55. The combination with a ring provided with projecting shoulders, of a series of loop-holders, substantially as described, upon which the successive loops of the knitted fabric are held pawls 53 engaging said projecting shoulders a cam plate 117 for raising said loop-holders at an oblique angle with said ring and a series of withdrawing hooks, arranged to engage the loops of the knitted fabric, and connected actuated mechanism substantially as described.

56. The combination of a ring means for imparting an intermittent rotary motion to said ring the ring carrying a series of loop-holders, substantially as described, of a disk turning upon a stud held in the stationary portion of the machine concentrically with said rotating ring, connected actuating mechanism by which an intermittent rotary motion is imparted to said disk simultaneously with the motion of said ring a series of radial arms pivoted on said disk and a series of hooked links pivoted to said radial arms for engaging the loops of the knit fabric, substantially as described.

57. The combination of a ring means for imparting an intermittent rotary motion to said ring the ring carrying a series of loop-holders, a disk turning upon a stud held in the stationary portion of the machine and concentrically with said rotary ring, and means for imparting an intermittent rotary motion to said disk a series of radial arms pivoted upon said disk, a series of hooked links pivoted to said radial arms for engaging the loops of the knit fabric, a cam plate placed concentrically with the axis of the rotating disk and presenting an inclined edge to said radial arms to force them toward the ring carrying the loop holders, and connected actuating mechanism by which the motion of said radial arms is reversed substantially as described.

58. The combination of a ring means for imparting an intermittent rotary motion to said ring the ring carrying a series of loop-holders, a disk turning about an axis concentric with the axis of said ring, means for imparting an intermittent rotary motion to said disk, a series of radial arms pivoted on said disk, connected actuating mechanism by which said arms are carried toward said ring, a series of hooked links pivoted to the ends of said arms and a cam plate presenting an inclined surface to said arms to force them away from the ring carrying the loop holders for the purpose of drawing the hooked links into the loops of the knit fabric, substantially as described.

59. The combination with a ring means for imparting an intermittent rotary motion to said ring, the ring carrying a series of loop-holders, a disk turning about an axis concentric with the axis of said ring, means for imparting an intermittent rotary motion to said disk a series of radial arms pivoted on said disk connected actuating mechanism by which said radial arms are moved toward and away from said ring, a series of hooked links pivoted to the free ends of said radial arms, and a cam plate arranged to lift said hooked links and carry them radially outward so their hooked ends will be held in the loops of the knit fabric, substantially as described.

60. The combination with a ring means for imparting an intermittent rotary motion to said ring, the ring carrying a series of loop-holders, a stationary cam plate held in the path of said loop holders, whereby they are raised at an oblique angle with said ring, a series of radial arms pivoted in a disk having an intermittent rotary motion about an axis concentric with the axis of said ring, means for imparting an intermittent rotary motion to said disk, a series of hooked links pivoted upon said arms and arranged to engage the loops of the knit fabric, together with connected operating mechanism, substantially as described, whereby the radial arms and connected hooked links are pushed back for the purpose of drawing the loops held upon the loop-holders from a plane at right angles with the axis of the rotating ring into a plane parallel thereto, substantially as described.

61. The combination of a ring means for imparting an intermittent rotary motion to said ring, a series of loop-holders arranged radially on said ring and hinged thereto, a stationary cam plate arranged in the path of said loop-holders by which they are raised into an oblique position to said ring, a series of radial arms pivoted to a disk having an intermittent rotary motion corresponding with the intermittent motion of said ring, means for imparting an intermittent rotary motion to said disk hooked links pivoted to the free ends of said radial arms and arranged to engage the loops of the knit fabric, and a cam plate placed in the path of said radial arms to force them back and draw the engaged loops taut, substantially as described.

62. The combination of a ring, means for imparting an intermittent rotary motion to said ring, and a series of loop holders hinged thereto, a cam placed in the path of said loop-holders by which they are raised from the ring and brought into an oblique position to the ring, a series of radial arms pivoted on a disk having an intermittent rotary motion corresponding with the motion of said ring, means for imparting an intermittent rotary motion to said disk, hooked links carried by said radial arms, a sliding plunger which is brought into contact with each of said radial arms successively, and connected operating mechanism for said plungers, substantially as described.

63. The combination with a ring having an intermittent rotary motion and a series of loop-holders arranged radially on said ring and hinged thereto, a stationary cam plate placed in the path of said loop-holders, a disk having an intermittent rotary motion corresponding with the motion of said ring, connected actuating mechanism by which said ring and said disk, are moved simultaneously, a series of radial arms pivoted on said disk, a series of hooked links pivoted to said radial arms and engaging the knit fabric, a sliding plunger successively brought into contact with each of said radial arms, a bell-crank lever pivoted on the stationary portion of the machine and actuating said sliding plunger as described, and a projecting pin carried upon a sliding crank plate and an actuating crank, substantially as described.

64. The combination with a rotating ring having an intermittent rotary motion and carrying a series of loop-holders, loop forming mechanism, substantially as described, whereby the strand of rattan is bent into loops and placed successively upon said loop-holders, a cam-plate held in the path of said loop-holders, whereby each of said loop-holders is raised into an oblique position relatively to said ring, and a withdrawing hook engaging the loops of the knit fabric and having a motion away from said loop-holders in a line parallel with the axis of the ring, and actuating mechanism by which said hook is pushed back, substantially as described.

65. The combination of ring 30 having an intermittent rotary motion and having a projecting shoulder 112, a post 46 hinged to said ring, block 50 sliding on said post, pawl 53, pawl spring 53ª, tongue 51 provided with a groove 58, cam 117 held in the path of the post 46, a withdrawing hook moving in a line parallel with the axis of the ring 30, whereby the block 50 is moved down the post and the tongue 51 brought at right angles to said post, and connected actuating mechanism by which said withdrawing hook is operated, substantially as described.

66. The combination of ring 30 having an intermittent rotary motion and having a projecting shoulder 112, a post 46 hinged on said ring, sliding block 50, pawl 53, pawl spring 53ª, tongue 51 provided with a groove 58 holding the loop, stud 54, blade spring 49 provided with a hole by which it is engaged by the stud 54, a cam plate 117, and withdrawing mechanism by which the sliding blocks are moved down their posts and the tongue brought at right angles to the post, substantially as described.

67. The combination of ring 30, post 46 hinged to said ring, sliding block 50, tongue 51, pawl 53, spring 53ª, shoulder 112, blade spring 49 provided with a hole to receive the pin 55, stud 54, cam plate 117, and withdrawing mechanism engaging the loops of the knit fabric, whereby the sliding block 50 is moved down the post and the tongue 51 brought at right angles to the post, substantially as described.

68. The combination of ring 30, post 46 hinged to said ring, sliding block 50, tongue 51, pawl 53, shoulder 112, spring 49, stud 54, cam 117, hooked link 124, radial arm 123, pivoted on a disk 121, and cam 126, as and for the purpose set forth.

69. The combination of ring 30, post 46 hinged to said ring, sliding block 50, tongue 51, pawl 53, stud 54, spring 49, cam 117, hooked link 124, radial arm 123, cam 126, cam 131, cam 134, a sliding plunger by which the radial arm is pushed back, and connected actuating mechanism by which said sliding plunger is moved, substantially as described.

70. The combination of ring 30, post 46 hinged to said ring, sliding block 50, tongue 51, pawl 53, stud 54, spring 49, cam 117, hooked link 124, radial arm 123, cam 126, cam 134, cam 131, a sliding plunger by which said radial arm is pushed back, and means for actuating said plunger, substantially as described.

71. The combination of a ring having an intermittent motion and carrying a series of loop-holders, a disk whose axis is coincident with the axis of said ring, a series of radial arms pivoted on said disk, hooks carried by the free ends of said radial arms and arranged to engage the knit fabric and actuating mechanism connected with said ring and said disk, whereby said ring and said disk are moved simultaneously, substantially as described.

72. The combination with a rotating disk and the loop withdrawing mechanism, substantially as described, of a gear wheel, attached to said disk, a rack having a reciprocating motion and a rocking bell-crank lever connected with said rack, whereby the rack is alternately carried into engagement with said gear wheel and removed therefrom, by which an intermittent rotary motion in one direction is imparted to said gear wheel, an actuating cam by which said reciprocating rack is moved, an intermediate connecting mechanism and an actuating cam by which said rocking bell crank lever is moved and intermediate connecting mechanism, substantially as described.

73. The combination with a disk and the withdrawing mechanism, substantially as described of the disk feeding mechanism, comprising the gear wheel 136, reciprocating rack 145, oscillating bell-crank having arms 137 and 139, oscillating lever 146, links 137ª and 148, oscillating lever 8, and radial arm 12 and actuating cams 7 and 11, substantially as described.

74. The combination with a disk and the withdrawing mechanism, substantially as described, of the gear wheel 136, reciprocating rack 145, oscillating bell-crank lever having arms 137, 138 and 139, lever 141, having a locking tooth 143, and connected actuating mechanism by which said parts are operated, substantially as described.

75. The combination of a ring, a series of loop-holders, a disk carrying loop withdrawing mechanism, and an oscillating lever carrying loop-forming mechanism, all having concentric axes, actuating cams 7 and 11 and intermediate connecting mechanism by which said ring and disk and lever are simultaneously and synchronously operated by said actuating cams, substantially as described.

76. The combination in a machine for knitting rattan, of a ring carrying a series of loop-holding devices and mechanism for withdrawing the loops, substantially as described, said withdrawing mechanism and said ring having a simultaneous intermittent rotary motion in one direction, a reciprocating needle by which the strand of rattan is bent into loops and strand holding devices for retaining the strand of rattan from displacement while the loop is being formed, and connected operating mechanism by which said parts are actuated, substantially as described.

77. In a machine for knitting rattan, the combination of a ring carrying a series of loop-holding devices and mechanism, substantially

as described, for withdrawing the loops consisting of a disk carrying a series of pivoted levers provided with withdrawing hooks upon their free ends, said withdrawing mechanism and said ring having a simultaneous intermittent rotary motion in one direction, a reciprocating needle by which the strand of rattan is bent into loops, a rotating crank and connected mechanism by which said needle is reciprocated, strand-holding jaws having a rocking motion in a plane at right angles to said ring, connected means for actuating said strand-holding jaws, parallel walls inclosing the strand of rattan and holding the same from lateral displacement, said strand-holding jaws being capable of a lateral movement corresponding with the angular movement of said ring and connected mechanism by which said lateral movement of the strand-holding jaws is effected, substantially as described.

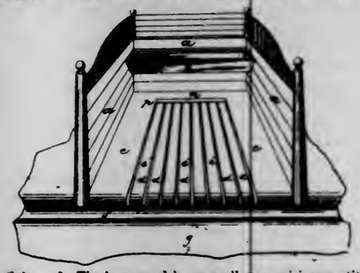
78. The combination with radial arm 123 and hooked link 124, of a sliding plunger comprising the tube 152, inclosed rod 162 provided with a shoulder 163, and interposed spring 164, with mechanism for actuating said plunger, substantially as described.

79. The combination with the radial arm 123 and hooked link 124, of tube 152, inclosed rod 162 spring 164, bell-crank having arms 154, 155, pin 157, crank plate 23 and crank pin 21, and retractile spring 159, substantially as described.

80. In a machine for knitting rattan, the combination with a reciprocating needle for bending the strand of rattan into loops, of a prong or jaw serving as a fulcrum around which said strand is bent, said prong or jaw being fluted so as to slightly indent the surface of the rattan, substantially as described.

81. In a machine for knitting rattan, the strand conducting device comprising a strand tube having an internal diameter corresponding to the size of the strand, said tube being placed parallel with a reciprocating needle, and having a funnel shaped opening at its lower end, a tube entering said funnel shaped opening and having a diameter larger than the strand, and a reciprocating needle by which said strand is drawn through said strand tube, all combined, substantially as described.

544,444. STALL FOR HORSES. WILLIAM W. SCHOULER, Bloomfield, N. J. Filed Nov. 22, 1893. Serial No. 491,637. (No model.)



Claim.—1. The improved horse stall, comprising partitions forming the sides of the stall, a homogeneous non-absorbent foundation extending from partition to partition and providing the main portion of the standing surface, a shallow recess being formed in the central part of said foundation toward the foot of the stall, hooks embedded in said foundation and extending into said recess, and flooring slats removably secured upon said hooks, within said recess, the upper surfaces of which slats lie substantially flush with the standing surface of the foundation, substantially as set forth.

2. The improved horse stall, in which is combined with partitions, a foundation providing standing surfaces for the horse and a central slat receiving depression, series of hooks arranged in said depression, one series lying near the head and the other near the foot thereof, and flooring slats providing surfaces which complete the standing surfaces of the stall, and removably held, at or toward their opposite ends, upon said hooks, and a key strip engaging the ends of the flooring strips and holding them fast within the recess, substantially as set forth.

3. The improved horse stall consisting of side partitions and a foundation recessed at the center and provided with a series of slat holders, one series stationed at or toward one end of the recess and the other toward the opposite end and fastening the slats toward the head and foot of the stall respectively, the main or intermediate portion of the bottom of the recess being devoid of fastening means and thus free and open to admit of brooming, said parts being arranged and combined substantially as set forth.

4. The improved stall for horses herein described, in which is combined a homogenous foundation providing a partial flooring or standing surface having a depression for slats and raised sides, vertical partitions stationed back from said recess, slat holders consisting of castings having hooks on their upper sides embedded in said foundation, the upper faces lying flush with the face of said foundation and the hooks thereon extending above said face, and slats having on the under sides means to receive said hooks, and a key strip also arranged within said depression and holding said slats into said hooks, substantially as set forth.

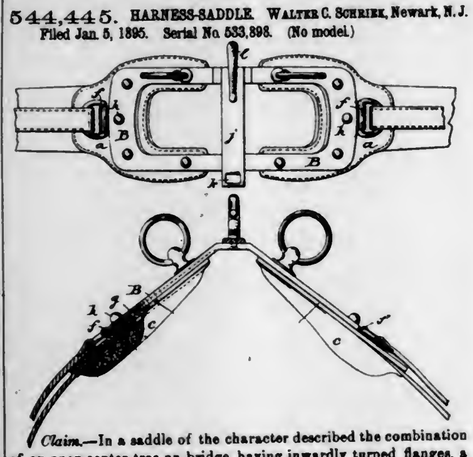
5. In a stall for horses, the slat-holders having beveled lateral edges adapted to fasten the said holders into the foundation when embedded into the concrete, and having, on the upper side thereof, a series of hooks adapted to enter recesses on the under side of the flooring stripe, substantially as set forth.

6. The improved stall for horses, herein described, in which is combined with the vertical partitions, a concrete foundation covering, in one homogeneous body, the floor of the stall, the said foundation having formed in its upper face a transverse trough at the foot of the stall and, between said partitions, opening into said trough, a shallow slat-receiving depression, a shoulder being formed in the foundation at the sides of the said depression, slat holders embedded in said foundation within said depression and extending up therefrom into holding engagement with the under sides of the slats, a series of said slats seated on the floor of said recess, and a key strip seated in said depression one longitudinal side engaging one of said shoulders and the opposite side the ends of the series of flooring slats, substantially as set forth.

7. A stall for horses in which is combined with partitions and a flooring having a shallow slat recess, a shoulder being formed at the end of said recess, the bottom of the recess having hooks, a series of slats held in said recess by said hooks and separable therefrom by a longitudinal movement and a key strip seated in said recess, and serving as a part of the flooring, at one side bearing against said shoulder and on the opposite side engaging the ends of the series of slats, substantially as set forth.

8. A horse stall comprising side partitions and a series of flooring slats fastened removably upon a foundation, said foundation and slats having hooks and slotted plates, and a key strip engaging the slats of the series and holding said hooks and slotted plates in engagement and the flooring slats down upon said foundation, said parts being arranged and combined substantially as set forth.

544,445. HARNESS-SADDLE. WALTER C. SCHRIEK, Newark, N. J. Filed Jan. 5, 1895. Serial No. 533,898. (No model.)

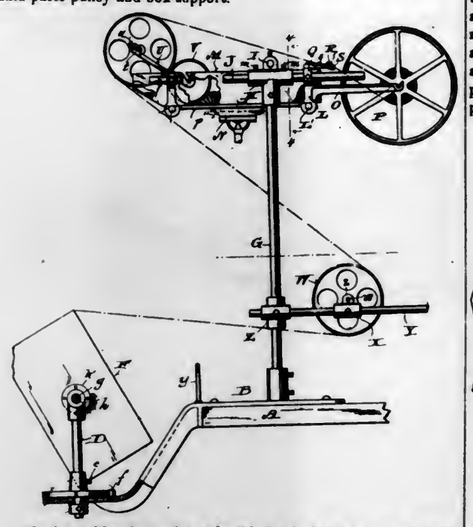


Claim.—In a saddle of the character described the combination of an open-center tree or bridge having inwardly turned flanges, a bifurcated pad immovably secured to said bridge or tree at each side, a bifurcated plate secured in said pad and a tug loop inserted between said pad and bridge and having a flange engaging with said plate, as described and for the purposes set forth.

544,446. BOX-BORDERING MACHINE. JOHN F. SMALL, Oak Park, Ill., assignor to Henry Gugler, Milwaukee, Wis., and Theodore Pohlmann, Chicago, Ill. Filed Feb. 11, 1895. Serial No. 537,868. (No model.)

Claim.—1. A machine for applying flexible bordering to boxes, the same having a box-support capable of continuous rotation on one axis and a rotary adjustment on another axis at right angles to the one aforesaid, said machine being organized to include a paste-applying mechanism, a tension-device for the flexible material as the latter comes from a reel, and a supporting pulley for said material intermediate of the paste-applying mechanism and the box-support.

2. A machine for applying flexible bordering to boxes, the same comprising a rotatable box support in swivel-connection with the machine-base, standards on the base, cross-heads on the standards, rods adjustable in the cross-heads, hangers depending from the rods, tie-rods connecting the hangers in pairs, a paste-pan supported on the tie-rods, reel-supports and a tension-device carried by the rear hangers, a distributing-roller journaled in the paste pan, a paste-pulley opposing the distributing-roller, and another pulley intermediate of said paste pulley and box-support.



3. A machine for applying flexible bordering to boxes, the same comprising a rotatable box-support in swivel-connection with the machine-base, standards on the base, guides adjustable on the standards, rods adjustable in the guides, sleeves adjustable on the rods, a pulley having a spindle carried by the sleeve, a paste-pan supported from the upper ends of said standards, a distributing-roller journaled in the pan, another pulley opposing the distributing-roller, a tension-device in rear of the paste-distributing mechanism and suitable reel-supports in rear of the tension-device.

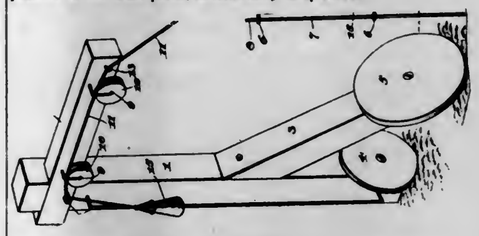
4. A machine for applying flexible bordering to boxes, the same comprising a box-support consisting of a post having its bearings in the machine-base and provided with a cross-head, a disk fast to the post and provided with a quarter circle groove or notch engaging a stop on said base, a plate provided with a spindle having its bearing in the cross-head, and a box-fitting block made fast to the plate; a paste-pan supported above the aforesaid base, suitable reel-supports, a tension-device, a paste-distributing roller, a paste-pulley opposing the roller, and another pulley intermediate of the box-support and paste-pulley.

5. A machine for applying flexible bordering to boxes having its base provided with a depending extension terminating in a horizontal table, and a box-support that is rotatably adjustable on the table and capable of continuous rotation on an axis at a right angle to the axis of adjustment; the machine being organized to include a paste-applying mechanism, suitable reel-supports, a tension-device, for the flexible material as it comes from a reel, and a supporting pulley intermediate of the paste-applying mechanism and box-support.

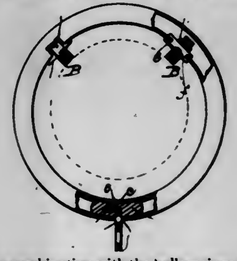
6. A machine for applying flexible bordering to boxes having its base provided with a vertical bracket, a depending extension adjacent to the bracket terminating in a horizontal table, and a box-support that is rotatably adjustable on the table and capable of continuous rotation on an axis at a right angle to the axis of its adjustment, the machine being organized to include a paste-applying mechanism, suitable reel-supports, a tension-device for the flexible material as it comes from a reel, and a supporting pulley intermediate of the paste-applying mechanism and box-support.

544,447. TETHER. WILLIAM A. SWIFT, Russellville, assignor to Samuel R. Cummings and Thomas P. Cahill, Philadelphia, Pa. Filed May 1, 1894. Serial No. 509,712. (No model.)

Claim.—The herein described tethering device comprising a stake or tether pin 7, a vertical standard 1 provided with eyes 6 for engagement with the stake or tether pin and having at its lower end a supporting-wheel or disk 4 arranged in a plane parallel with that side of the standard to which said eyes are attached, a horizontal arm 2 extending laterally from the standard at its upper end and arranged parallel with the axis of said supporting-wheel or disk 4, an inclined brace 3 secured to the standard at an intermediate point and extending laterally and downwardly beneath said arm, whereby the brace is arranged in the same vertical plane with, and upon the same side of the standard as, the arm, an auxiliary supporting wheel or disk 5 mounted upon the lower extremity of the brace with the lowest point of its periphery in the same horizontal plane with that of the first mentioned supporting-wheel or disk 4, a tether rope 11 extending through guides at the outer and inner ends of said lateral arm, and a weight 15 attached to the inner end of said rope and guided by means carried by the standard, whereby as the tethered animal moves around the stake or tether pin as a center the lateral arm is turned about the same center and at all times occupies a position in a plane parallel with the strain upon the tether rope, said brace occupying a position in the same plane, substantially as specified.

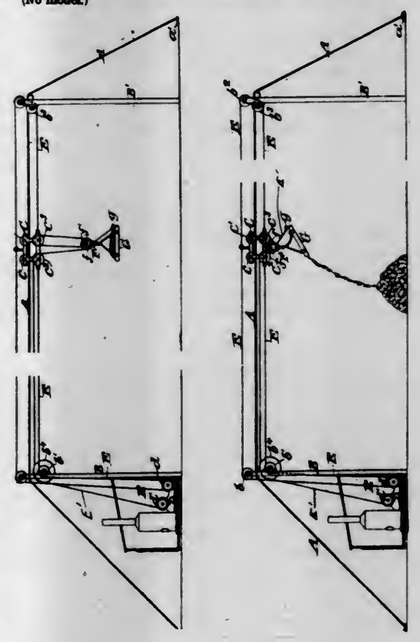


544,448. RING FOR CURTAINS. HERBERT TAYLOR, Newark, N. J. Filed May 21, 1895. Serial No. 550,123. (No model.)



Claim.—The combination with the hollow rings, having the transverse slots and off set slots at right angles thereto, of the axle provided with the kerfs or notches at the ends thereof and the rollers mounted on said axles, all substantially as shown and described.

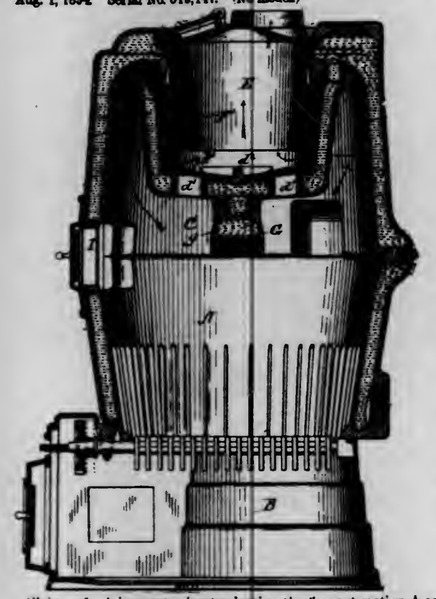
544,449. HOISTING AND DUMPING APPARATUS. JOHN J. TRAINOR, New York, N. Y. Filed Nov. 30, 1894. Serial No. 530,313. (No model.)



Claim.—1. A tub suspended in position to be tilted, a hoisting rope for elevating the tub and means for actuating the hoisting-rope, the said hoisting rope being attached directly to the tub at one side of its center of gravity whereby the hoisting strain may be imparted to the side of the tub to tilt it at a predetermined point of elevation, substantially as set forth.

2. The combination with a cable suitably supported a carriage mounted to travel along the cable and means for operating the carriage, of a hoisting rope suspended from the carriage, a movable block suspended from the hoisting rope, a tub suspended from the movable block and means for actuating the hoisting rope, the end of the hoisting rope being extended through the movable block and attached to the tub at one side of its center of gravity, substantially as set forth

544,450. HOT-WATER HEATER. EDWIN D. VAN STONE, Albion, N. Y., assignor to the Magee Furnace Company, Boston, Mass. Filed Aug. 1, 1894. Serial No. 519,147. (No model.)



Claim.—1. A hot water heater having the fire pot section A containing the water chamber *a*, the upper section C containing the water section *c*, and the interior section D having the water chamber *d*, as and for the purposes described.

2. In a hot water heater the combination of the upper section C having the water chamber *c*, the interior section D having the water chamber *d*, and the flue plate E, the whole forming the up flue F, circular in form and tapering toward the top, and the down flue F', circular in form and tapering toward the bottom, as and for the purposes described.

3. In a hot water heater the interior section D, circular in form and having the flues *d'* connecting the combustion chamber with the escape port, and a damper for closing said flues, as and for the purposes described.

4. The combination in a hot water heater of the section D having a wall and a bottom, the holes or passages *d'*, the pivot d^3, the damper plate D', the rod d^3 having a handle d^4 and supported by the connection d^5, as and for the purposes described.

5. The combination of the dome or top section C having the opening *e* in its top, the downward extending flue plate E and a cover plate *e'* having a collar e^3 and a smoke escape port e^4, as and for the purposes described.

6. The combination of the sections A', C' and D with the cross support G supporting the section D and connecting the water chamber of the section A' with the water chamber of the section D, as and for the purposes described.

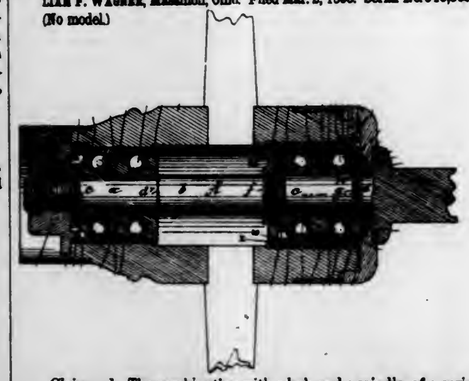
7. The combination of the upper section C' having the hole *e*, the circular flue plate E extending downward through said hole, the cover plate *e'* having the cold air inlet e^3, as and for the purposes described.

8. The combination in a water heater of the section D having the cavity *d* and the cross support G which rests in the enlargements G', G^2, as and for the purposes described.

9. The combination of the sections A', C', D and the cross support G united by drive nipples, as and for the purposes described.

10. The combination of the sections A', C', D with the water chamber *a*, and means for connecting the latter with the water chamber *d*, as and for the purposes described.

544,451. ROLLER-BEARING FOR CARRIAGE-SPINDLES. WILLIAM F. WAGNER, Massillon, Ohio. Filed Mar. 2, 1895. Serial No. 540,383 (No model.)

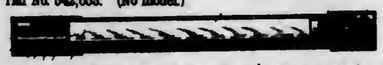


Claim.—1. The combination with a hub and a spindle, of a series of movable collars having annular recesses therein which are semicircular in cross section to form annular grooves about the spindle, series of anti-friction balls placed loosely in said grooves, a sleeve inclosing said collars and balls, a metal box provided with a wing for connection with said hub, said sleeve being adapted to connect with said box, and devices for the adjustment of said movable collars whereby said balls may be adjusted to said sleeve, substantially as and for the purposes described.

2. The combination with a spindle, A, of a collar, L', having a semicircular, annular recess, movable collars, E' and F', having annular recesses corresponding with the recess in collar, L', and forming annular grooves about said spindle, balls placed loosely in said grooves, a sleeve, H', inclosing said collars and balls, a nut, G', on said spindle, adapted for the adjustment of said collars, and a retaining nut, J', having an inward projection, *d'*, to support the outer end of said sleeve, and a flange, d^2, to secure said sleeve from longitudinal movement, substantially as and for the purposes described.

3. The combination with a spindle and a hub, of the adjustable collars, having retaining grooves, balls in said grooves, the sleeve, H, having a wing, d^2, and the box, L, provided with a grooved wing to receive the wing, d^6, substantially as set forth and described.

544,452. FOUNTAIN MUCILAGE-HOLDER. SAMUEL L. YOUNG and JAMES A. NORRIS, East Liverpool, Ohio. Filed Mar. 16, 1895. Serial No. 542,053. (No model.)

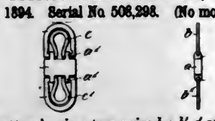


Claim.—1. In a fountain mucilage holder, a tubular barrel or reservoir, and a dauber or spreader located at one end thereof, in combination with a centrally perforated cork inserted in the opposite or rear end of said barrel, a ferrule partially surrounding and inclosing said cork and left open at both ends and also extended in rear of said cork, a plunger movable through said perforated cork, a disk on the inner end of said plunger, a push button on the outer end thereof sliding within said ferrule, and a spring for holding the plunger disk normally in contact with said cork, substantially as described.

2. A fountain mucilage holder comprising a tubular barrel, a spreader or dauber at one end thereof and a covering or protecting cap therefor, in combination with a centrally perforated cork inserted in the opposite end of the barrel, a ferrule or collar surrounding said cork and partially inclosing the same, the integrally formed points or spurs on said ferrule engaging said cork for holding the latter in place, a plunger movable through the perforation in said cork, the disk on the inner end of the plunger, the push button on the outer end of the plunger, the spiral spring disposed around said plunger and interposed between the push button and the cork, and the protecting cap or cover therefor, all arranged substantially as described.

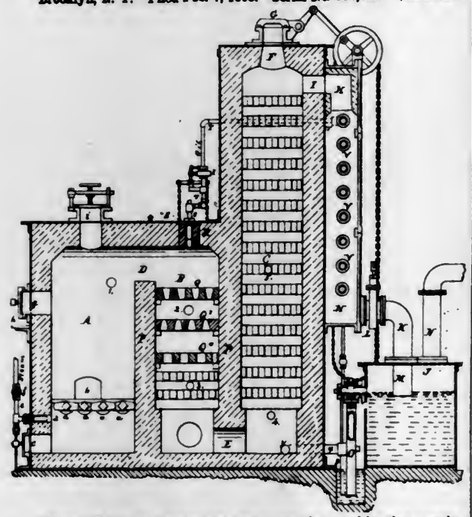
3. A fountain mucilage holder comprising a hollow barrel or reservoir, and a spreader or dauber at one end thereof, in combination with a centrally perforated cork inserted in the opposite end of the barrel, a ferrule surrounding said cork and partially inclosing the same, a plunger operating through the central perforation in the cork, and provided with a disk at its inner end, a push button provided with a hollow shank surrounding and engaging the shank of the plunger and also working through the centrally perforated cork, and a spiral spring disposed around the shank of the push button and interposed between said button and the cork, substantially as specified.

544,458. BUTTON. JOSEPH BASSFREUND, Hildesheim, Germany. Filed Apr. 20, 1894. Serial No. 508,298. (No model.)



Claim.—A button having two pairs *b c b' c'* of movable links connected by one shank; one pair of said links being adapted to form the head, the other the base of the button; said shank being formed by a piece *a* lying in a plane with the links, when the latter are in their position of rest, substantially as shown and described.

544,454. WATER-GAS GENERATOR. REINHOLD C. BORELEN, Brooklyn, N. Y. Filed Feb. 7, 1895. Serial No. 537,633. (No model.)



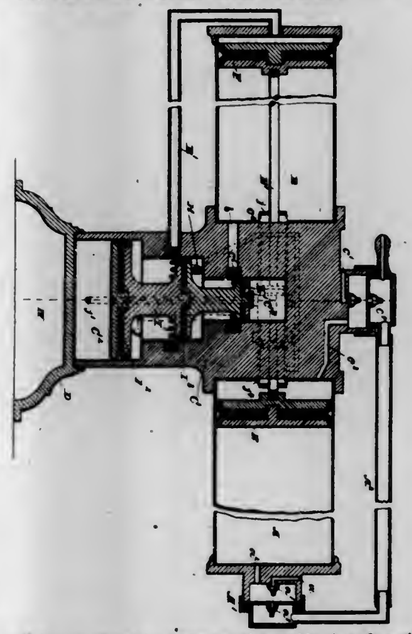
Claim.—In a gas generating apparatus the combination consisting in a cupola of oblong flat-sided cross-section with one high fixing chamber, and two lower chambers consisting of a fuel and carbureting chamber and all inclosed at top, bottom and sides with one shell lined with fire-brick, and said chambers separated by two vertical cross walls, and having to said fixing chamber a vertical flat three-sided oil heating chamber attached which connects at its upper end, and through the rear side of and with the fixing chamber, and having through it and its narrow sides a vertical row of horizontal oil heating pipes connected alternately, one pair with the following pair above, to pass the oil through them, in an upward zig-zag course, and the lower end of said pipes connected to an oil pump, and the top end to the oil nozzles of the carbureting chamber, and the bottom end of said oil heating chamber connected with the wash-box of the apparatus, said fuel chamber and carbureting chamber connected by a flue above their dividing wall, and the carbureting and fixing chambers by a flue through the base of their division wall, and said fuel chamber having a grate with an ash-pit below it, with a steam and blast inlet, and an ash-pit seal-door, and above the grate a space for a large fuel bed with two opposite small side seal doors for drawing clinkers, and with one larger clinker seal door centrally at the top of said chamber, and a fuel seal door at the front side above the fuel bed space; and said carbureting chamber furnished with oil nozzles through its top, and built with checker brick and carbureting tiles; and said fixing chamber furnished with checker brick work for fixing the gases, and with a purge valve for the escape of the products of combustion, and a gas out-let from its side into said oil heating chamber, and with branch blast connections for the several chambers to be heated, and with stop valves and sight cocks for each, to promote ignition of the products of combustion simultaneously and rapid heating, substantially as and for the purposes herein specified.

544,455. PRESERVATION OF CELERY. CHANDLER G. BULLARD, Kalamazoo, Mich. Filed Jan. 16, 1895. Serial No. 535,109. (No model.)

Claim.—The process of preserving celery in a ventilated receptacle by suitably suspending the celery with the roots upward and protecting the roots with an earth or other suitable covering.



544,456. HYDRAULIC AIR-COMPRESSOR. JOSEPH H. CHAMP, Cleveland, Ohio, assignor to the Bishop & Babcock Company, same place. Filed Feb. 20, 1893. Serial No. 463,006. (No model.)



Claim.—1. In an air compressor, the combination of an air cylinder and a water cylinder, pistons respectively in said cylinders and connected together, a main controlling casing between the ends of said cylinders, a main valve in said casing operated by and controlling the piston actuating fluid, and primary valve mechanism constructed to be operated by the movement of the pistons and to control the actuating fluid for the main controlling valve, substantially as set forth.

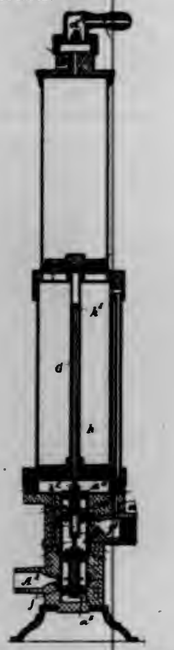
2. In an air compressor the combination of a main casing provided with a base which supports the entire structure, an air cylinder secured to project from one side of the casing and having air channels from both ends connected to the main casing, a water cylinder secured to project from the opposite side of the casing and having water channels at both ends connected into the main casing, pistons respectively in said air cylinder and water cylinder and connected together, a main controlling valve controlling the water for the water cylinder and actuated by the inlet water, and a primary valve constructed to be actuated by the pistons and to control the water for actuating the main controlling valve, substantially as set forth.

3. In an air compressor, the combination of a main casing provided with a base at its lower end and at its upper end with an air valve chamber having a nipple, an air cylinder projecting from one side of said main casing and having both ends connected to the air valve chamber, a water cylinder projecting from the opposite side of the main casing and having water connections at both ends with said casing and pistons in said cylinders and connected together, substantially as set forth.

544,457. HYDRAULIC AIR-COMPRESSOR. JOSEPH H. CHAMP, Cleveland, Ohio, assignor to the Bishop & Babcock Company, same place. Filed Dec. 4, 1893. Serial No. 492,655. (No model.)

Claim.—1. In an air compressor, the combination of a cylinder provided at one end with an inlet and outlet for the actuating fluid,

a cylinder of smaller diameter having an air inlet and outlet at one end and connected and communicating at its other end with the former cylinder, an inlet and outlet for the actuating fluid at the connected ends of the cylinders, pistons respectively in the cylinders and connected together, and valve mechanism controlling the actuating fluid, substantially as set forth.



2. In an air compressor, the combination of a cylinder provided at one end with an inlet and outlet for the actuating fluid, a cylinder of smaller diameter connected and communicating at one end with the other end of the former cylinder and provided at its other end with an air inlet and outlet, a permanent connection with the actuating fluid supply at the connected ends of the cylinders, pistons respectively in the cylinders and connected together, and valve mechanism controlling the inlet and outlet of the actuating fluid at the end of the larger cylinder, substantially as set forth.

3. In an air compressor, the combination with a valve chamber provided with inlet, outlet and distributing ports for the actuating fluid, of a main controlling valve in said chamber and operated by the actuating fluid, and a primary valve arranged in said chamber tandem with said controlling valve and controlling the actuating fluid for said latter valve, substantially as set forth.

4. In an air compressor, the combination of a valve chamber having an inlet port, an outlet port, and a distributing port about midway between said ports, and having at one end another outlet port and a port a distance from said latter port and communicating with the opposite end of the valve chamber; a primary valve having play at both sides of said last mentioned port; and a main controlling valve provided with two pistons, one of said pistons playing permanently between the first mentioned outlet port and one end of the valve chamber, and the other of said pistons playing at both sides of the distributing port, substantially as set forth.

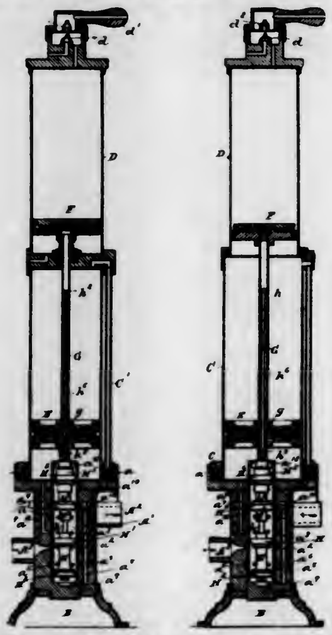
5. In an air compressor, the combination with a cylindrical valve chamber provided with a distributing port at about its middle, an inlet port above said port, and an outlet port below the latter, with a port at one end connected to the outlet, and with a port between the inlet port and said latter port and communicating with the opposite end of the valve chamber; of a primary valve sliding at both sides of said last mentioned port and provided with a bore having a contracted end, and a main valve having two pistons and a headed stem sliding in said bore, substantially as set forth.

6. In an air compressor, the combination of a reciprocating piston, a valve chamber having inlet, outlet and distributing ports, a primary valve in said chamber and connected to be shifted by the piston, and a main controlling valve in the valve chamber and connected to the primary valve to be drawn in one direction by the same, substantially as set forth.

7. In an air compressor, the combination with a valve chamber having inlet, outlet and distributing ports for the actuating fluid, of a valve composed of a main controlling valve portion and a primary valve portion controlling the actuating fluid for the main controlling valve,—said portions being connected by a slip joint, substantially as set forth.

8. In an air compressor, the combination with a cylinder and a piston therein, of a valve chamber having inlet and outlet ports for the actuating fluid and distributing ports communicating with the ends of the water cylinder, and having communicating ports at its ends, and a valve composed of a main controlling valve portion and a primary valve portion,—said portions being connected to each other by a slip joint, and having an extensible connection with the piston of the cylinder, and respectively controlling the actuating fluid for the cylinder and for the controlling valve portions, substantially as set forth.

544,458. HYDRAULIC AIR-COMPRESSOR. JOSEPH H. CHAMP, Cleveland, Ohio, assignor to the Bishop & Babcock Company, same place. Filed Dec. 4, 1893. Serial No. 492,656. (No model.)

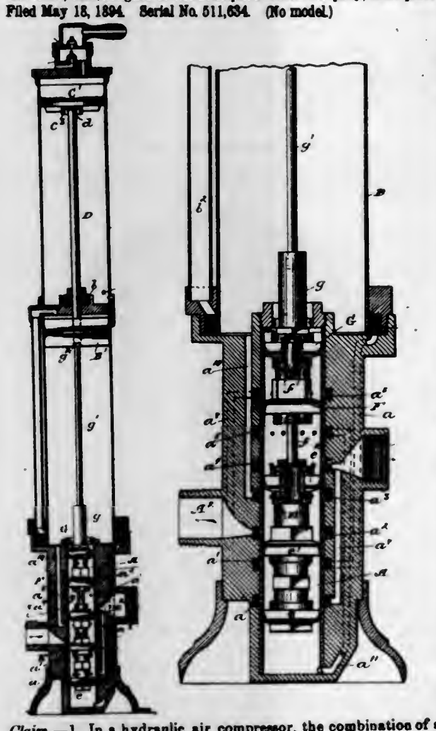


Claim.—1. In an air compressor, the combination with a cylinder and a piston therein; of a valve chamber having an inlet port, an outlet port below the latter, a distributing port between said ports and communicating with one end of the cylinder, a distributing port below the outlet port and communicating with the other end of the cylinder, a distributing port above the inlet port and communicating with the lower end of the valve chamber, and an outlet port above said latter distributing port; a main controlling valve portion having play below the inlet port and provided with two pistons at such relative distance that it may connect the outlet port with either distributing port for the cylinder; and a primary valve portion connected with said main controlling portion by a slip joint and with the piston in the cylinder to be shifted by the same and having play above and below the distributing port for the lower end of the valve chamber, substantially as set forth.

2. In an air compressor, the combination with a cylinder and a piston therein; of a valve chamber open at one end into the cylinder, having an inlet port, an outlet port below the latter, a distributing port for one end of the cylinder and between said ports, a distributing port below the outlet port and communicating with the other end of the cylinder, a distributing port above the inlet and communicating with the lower end of the valve chamber, and an outlet port above said distributing port; and a valve consisting of a main controlling portion having two pistons at such relative distance that it may connect the outlet and either distributing port for the cylinder, a primary portion having play at both sides of the distributing port for the lower end of the valve chamber, and a packing portion permanently above the ports,—said portions connected together by slip joints and connected to the piston in the cylinder to be shifted by the same, substantially as set forth.

3. In an air compressor, the combination with a cylinder and a piston therein; of a valve chamber having a distributing port a^8 for the lower end of the cylinder, a distributing port a^6 for the upper end of the cylinder, an outlet port between said ports, an inlet port above said ports, a port a^7 having a channel connection to the lower end of the valve chamber, an outlet port a^{10}, and an auxiliary port a^{12} connected to the inlet supply and a short distance from port a^7; a main controlling valve portion controlling the inlet and outlet of water for the cylinder; and a primary valve portion having play at both sides of the ports a^7 and a^{12} and connected to be shifted by the piston in the cylinder, substantially as set forth.

544,459. HYDRAULIC AIR-COMPRESSOR. JOSEPH H. CHAMP, Cleveland, Ohio, assignor to the Bishop & Babcock Company, same place. Filed May 18, 1894. Serial No. 511,634. (No model.)

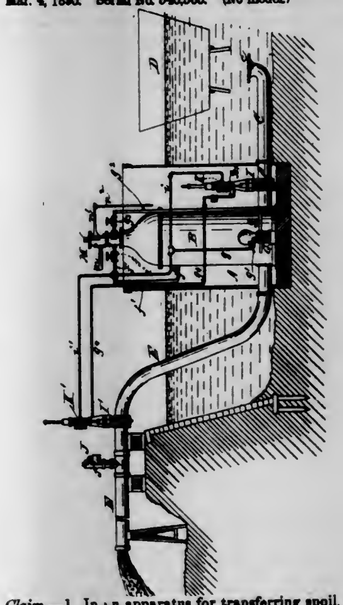


Claim.—1. In a hydraulic air compressor, the combination of a water cylinder having water inlet and outlet at each end; a valve chamber of the same diameter throughout its length and having ports connected to said water inlets and outlets, two ports for the inlet of the actuating water, two ports for the outlet of the actuating water, and a port near one end and communicating with the opposite end of the chamber; a three-piston valve the lower piston of which is the actuating piston for the valve; a one-piston valve connected by a slip joint to said three-piston valve, and a movable packing at the end of the valve chamber and connected by a slip joint to said one-piston valve and provided with means for shifting it, substantially as set forth.

2. In a hydraulic air compressor, the combination of a water cylinder having water inlet and outlet at each end; a valve chamber having an inlet port for the actuating water, a port communicating with one end of the water cylinder, a port communicating with the waste, a port communicating with the other end of the water cylinder, a port communicating with the inlet of the actuating water, a port communicating with the end of the valve chamber, and a port communicating with the waste,—said ports being arranged in the order recited; a three-piston valve having one end-piston permanently below the lower actuating water inlet and having the other end-piston permanently below the other actuating water inlet and having the third piston playing at both sides of the inlet and outlet port for one end of the water cylinder; a one-piston valve playing at both sides of the port communicating with the end of the valve chamber and connected to the three-piston valve by a slip joint, and a movable packing connected to said one-piston valve by a slip joint and permanently above the upper waste port and having means for longitudinally shifting it in the valve chamber, substantially as set forth.

3. In a hydraulic air compressor, the combination of a water cylinder having water inlet and outlet at each end, a piston in said cylinder; a valve chamber having an inlet port for the actuating water, a port communicating with one end of the water cylinder, a port communicating with the waste, a port communicating with the other end of the water cylinder, a port communicating with the inlet of the actuating water, a port communicating with the end of the valve chamber, and a port communicating with the waste,—said ports being arranged in the order recited; a three-piston valve having one end-piston permanently below the lower actuating water inlet and having the other end-piston permanently below the other actuating water inlet and having the third piston playing at both sides of the inlet and outlet port for one end of the water cylinder; a one-piston valve playing at both sides of the port communicating with the end of the valve chamber and connected to the three-piston valve by a slip joint, and a movable packing connected to said one-piston valve by a slip joint and permanently above the upper waste port and having an extensible and contractible connection to the water piston whereby it may be longitudinally shifted by the latter at the opposite ends of the stroke of said piston, substantially as set forth.

544,460. DREDGING APPARATUS. CALEB G. COLLINS, Woodbury, ALBURTIS C. HILSINGER, Killawog, and CALVIN A. STEVENS, New York, N. Y.; said Collins and Hilsinger assignors to said Stevens. Filed Mar. 4, 1895. Serial No. 540,565. (No model.)



Claim.—1. In an apparatus for transferring spoil, &c., the combination with a vacuum chamber, of a spoil-receiving suction pipe connected to the chamber, and a valve for releasing a portion of the charge of spoil admitted through said receiving pipe, thereby avoiding the effect of impact due to the momentum of the charge, substantially as described.

2. In apparatus for transferring spoil, &c., the combination with a vacuum chamber, of a spoil-receiving suction pipe connected therewith, a valve for releasing a portion of the charge of spoil and thereby relieving the apparatus from dangerous impact due to the momentum of the charge, and means for holding said valve in position during the discharge of the spoil, substantially as described.

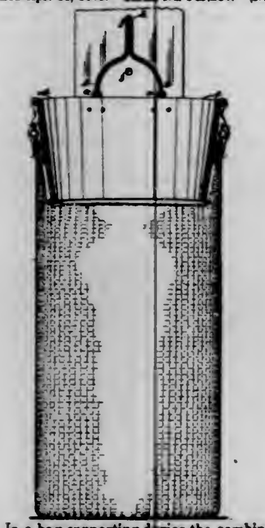
3. In an apparatus for transferring spoil &c., the combination with a vacuum chamber, of a spoil-receiving suction pipe connected to the chamber, a valve for releasing a portion of the charge, and a disk or cover adapted to float upon the charge and to allow portions thereof to escape above the cover, substantially as described.

4. In apparatus for transferring spoil, &c., the combination with a vacuum chamber, of a discharge pipe connected with a vacuum chamber, and a vacuum relieving device connecting with the discharge pipe, whereby the vacuum caused by the rapid discharge of the spoil is automatically relieved, substantially as described.

5. In an apparatus for transferring spoil, &c., the combination with a vacuum chamber, of a spoil-receiving suction pipe connected to the chamber, a discharge pipe also connected to the chamber, a valve for releasing a portion of the charge of spoil from the vacuum chamber to avoid the effect of the impact due to the momentum of the charge on entering the chamber, and a vacuum relief device arranged in the

discharge pipe for the purpose of relieving the vacuum caused by the rapid discharge of the charge of spoil, substantially as described.

544,461. BAG-SUPPORTING DEVICE. HUGH COTTER, Burlington, Canada. Filed Apr. 11, 1895. Serial No. 545,287. (No model.)

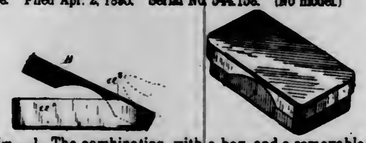


Claim.—1. In a bag supporting device the combination of a metallic oval hopper, provided with, and having secured thereto, the bag clamps F, having upper lips 4, to hook over the upper edge of said hopper, and circular taper openings 5, the inner halves of which have corrugations 6, the upper and lower continuous openings 7, and 8, the said openings 8, wider at the lower end to admit the edges of the bag freely, and the taper pins H, to hold edges of the bag in said openings of clamp, substantially as described and set forth.

2. In a bag supporting device, the combination of the hopper provided with the rigid clamps F, having lip 4, and circular taper openings 5, the inner parts of which are corrugated as at 6, and the continuous openings 7 and 8 to admit the upper edges of bag freely, the bag holding taper pins H, the two ears C, secured a certain distance apart to the upper rear part of said hopper, for the insertion of lower end of hanging hook D, the upper end of which is hooked in one of the series of apertures 3, in vertical board B, to adjust said hopper with bag E, to different heights from the floor, substantially as described and set forth.

3. The bifurcated clamp F, having the jaws therefor formed to present the taper opening comprising the corrugated concave recess 6, and the concave recess 5, and the hooked upper end 4, in combination with the tapering pin, and the oval hopper A, substantially as described.

544,462. BOX. ESMERALDA CROCKER, New York, N. Y., administratrix of John Crocker, deceased, assignor to Frederick Leach, same place. Filed Apr. 2, 1895. Serial No. 544,158. (No model.)



Claim.—1. The combination, with a box, and a removable cover provided with a depending flange for closing down and around the side walls of such box, of a fulcrum, over and upon which the cover may be tilted when it is desired to remove it from the box, interposed between such cover and box, substantially as described.

2. The combination, with a box provided with a fulcrum on its upper edge, of a removable cover having a depending flange for closing down and around the side walls of such box, and capable of being tilted over such fulcrum when it is desired to remove it from the box, substantially as described.

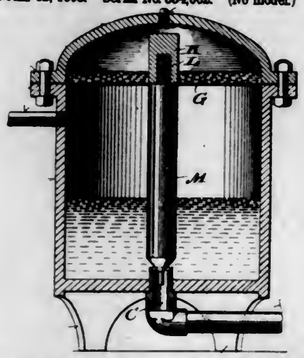
3. The combination, with a box provided with a fulcrum, a^2, formed on the upper edge of its side walls, of a removable cover provided with a depending flange extending down around the side walls of such box, and resting upon such fulcrum, whereby to be capable of being tilted thereover when it is desired to remove the cover from the box, substantially as described.

544,468. CORK-EXTRACTOR. JOHN O. DEVRIES, Baltimore, Md., assignor to George H. Miller, same place. Filed Jan. 24, 1895. Serial No. 536,077. (No model.)



Claim.—An improved cork extractor formed of a flexible metal rod, bent to form a central coil, the ends of which terminate in oppositely projecting horizontal portions, such portions being bent at an angle to form prongs, said tongs being tapered toward their points and beveled at their front faces to form knife edges, all arranged substantially in the manner shown and for the purpose described.

544,464. STEAM-TRAP. WILLIAM J. EGAN, Milwaukee, Wis. Filed Jan. 12, 1895. Serial No. 534,662. (No model.)

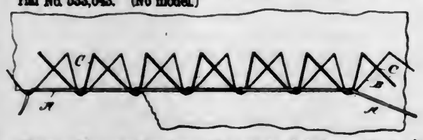


Claim.—1. A steam trap comprising a closed hollow structure, a horizontal partition in the form of an expansible diaphragm arranged to divide said structure into two compartments one of which is provided with a bottom outlet as well as an inlet at a suitable elevation, the other being a receptacle for suitable fluid, and a valve depending from said diaphragm to control the aforesaid outlet.

2. A steam-trap comprising a cup-like shell having a bottom outlet and provided with an inlet at a suitable elevation, a dome rigidly secured on the shell, an expansible diaphragm arranged to form a partition between the dome and shell, as well as a support for fluid within said dome; and a valve depending from the diaphragm in register with the shell-outlet.

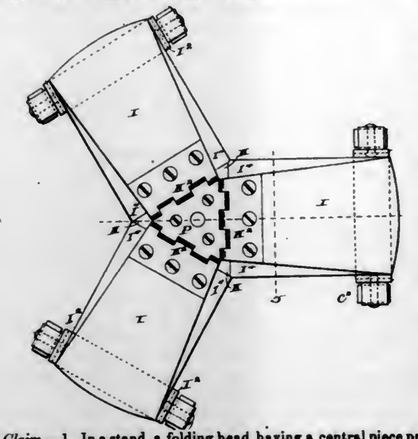
3. A steam-trap comprising a cup-like shell having a bottom outlet, an inlet at a suitable elevation and an outturned flange at its upper end; an expansible diaphragm on the flange, a flanged dome above the diaphragm in bolt-connection with the shell-flange and provided with an inlet having a steam-tight closure, a plug-valve for the shell-outlet having a reduced screw-threaded upper end extended through said diaphragm and a clamping-nut run on said upper end of the plug-valve.

544,465. COMBINED FABRIC AND THREADS IN OVERSEAM WORK. HENRY H. PEPEL, New York, N. Y. Filed Dec. 27, 1894. Serial No. 533,043. (No model.)



Claim.—The combination with a piece of cloth or other suitable material of a thread lying along one side of said material and passing over the edge thereof in the form of a loop, which passes through a previously formed loop of said thread and also through loops of two other threads; and two other threads, which pass alternately down through said cloth to the under side thereof, where they are looped with said first thread, and which are thrown around said first thread on the upper side of the cloth, before again descending in the form of a loop, all arranged substantially as shown and for the purposes specified.

544,466. TRIPOD. WILLIAM H. FISHER, Cincinnati, Ohio. Filed May 1, 1894. Serial No. 509,639. (No model.)



Claim.—1. In a stand, a folding head, having a central piece provided with abutments I^3, and outlying pieces hinged at the upper part to said folding head, at its upper surface, and also having abutments K^3, on their inner ends for contact with the adjacent abutment of the central piece, the outlying pieces being disposed in a circle around the central piece, and respectively moving in planes, each lying in a radius of the circle, of which the axis of the central piece is the center, substantially as and for the purposes specified.

2. In a stand, consisting of a head or top supported, when in working position, by legs, the head adapted to fold upon itself, and a lower brace plate as N, for bracing the parts of the head when in use, and separable from the parts of the head and adjustable to and from the same, substantially as and for the purposes specified.

3. In a stand, consisting of a head or top supported, when in working position, by legs, the head constructed in sections, there being a central portion, and outlying portions hinged to the central portion, and adapted to allow the central portion when not in use to be moved out of the working plane of the head and the outer ends of the outlying portions to approach one another, and thus produce a folded head, and a brace plate as N for bracing the said sections, when the head is in use, and independent of the central piece and sections, and adjustable to and from them, substantially as and for the purposes specified.

4. In a stand consisting of a head or top supported, when in working position, by legs, the head constructed in sections, there being a central portion, and outlying portions hinged to the central portions, and adapted to allow the central portion when not in use to be moved out of the working plane of the head and the outer ends of the outlying portions to approach one another, and thus produce a folded head, and a central securing screw located in the central portion of the head, and the brace plate, located on the screw, substantially as and for the purposes specified.

5. In a stand, the head, having a central portion, and the radial pieces hinged to said central portion, and having the beveled edges I^4 for enabling the radial pieces I to be wide at the outer ends and yet be capable of folding together in planes at right angles to the plane of the central portion, substantially as and for the purposes specified.

6. In a stand, the combination of a central piece, a folding head having a central piece and radiating pieces, the central piece hinged to the inner ends of the radiating pieces so as to fold downward, and the outer ends of the latter hinged to the legs of the stand, so as to fold downward, the entire head when folded lying between and behind the legs, substantially as and for the purposes specified.

7. In a stand, the combination of a central piece, a folding head having a central piece and radiating pieces, the central piece hinged to the inner ends of the radiating pieces so as to fold downward, and the outer ends of the latter hinged to the legs of the stand, so as to fold downward, the entire head when folded lying between and behind the legs, the legs lying in conjunction with each other and forming, when the stand is a tripod, a triangular bundle whose edges touch and contain the folded head between them, substantially as and for the purposes specified.

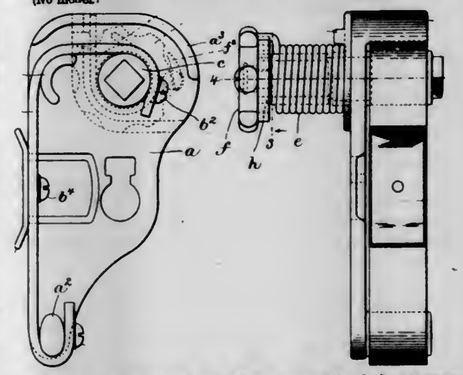
8. In a tripod, the radial members I, and the central member K, hinged thereto and legs respectively hinged to the radial members, enabling the radial members with central member K to fold down between the legs, the central member containing the head, and the enlarged plate N underlying all of the joints between the central member and the radial members and extending from the central member out under the radial members, when the head is expanded for use, substantially as and for the purposes specified.

9. In a tripod, the radial members I, and the central member K, hinged thereto and legs respectively hinged to the radial members, enabling the radial members with central member K to fold down between the legs, the central member containing the head, and the enlarged plate N underlying all of the joints between the central member and the radial members and extending from the central member out under the radial members, when the head is extended for use, and the central binding screw T^4, having shoulder R, engaging the under side of plate N, the screw serving to bind the plate N against the head, and to draw the camera from above against the head, and to compactly hold the head between the camera and binding plate, substantially as and for the purposes specified.

10. The combination of skeleton knockdown legs, the upper section having the bars C^3, C^4, separated substantially as shown, and the folding head having the center portion, and radial pieces I hinged to said center portion, and hinged to the bars C^3, C^4, of the adjacent legs, the bars being respectively hinged to the side edges of their respective adjacent divisions or pieces I of the head, so that the outer end of said radial piece lies within the legs, substantially as and for the purposes specified.

11 The combination of skeleton knockdown legs, the upper section having the bars C^3, C^4, separated substantially as shown, and the folding head having the center portion, and radial pieces I hinged to said center portion, and hinged to the bars C^3, C^4, of the adjacent legs, the bars being respectively hinged to the side edges of their respective adjacent divisions or pieces I of the head, so that the outer end of said radial piece lies within the legs, the center K folding within the radial pieces, and the latter folding between and within the legs, substantially as and for the purposes specified.

544,467. PICKER-CHECK FOR LOOMS. FRANK B. KILBORN and ALDEN R. TAPLIN, Lawrence, Mass. Filed Apr. 1, 1895. Serial No. 543,995. (No model.)



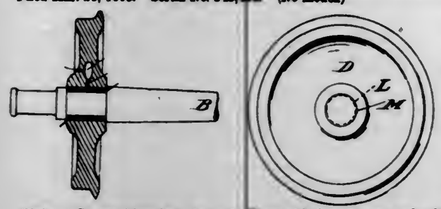
Claim.—1. A picker check for looms comprising in its construction a suitable framework or support, a strap fixed at one end to said support, a pivoted member to which the other end of said strap is attached, and a spring arranged to actuate said member in the direction to hold said strap taut, substantially as and for the purpose set forth.

2. A picker check for looms comprising in its construction a strap fixed at one end and having a bearing-piece to receive the impact of the picker, and a pivoted spring-actuated member supporting the other end of said strap, substantially as and for the purpose set forth.

3. A picker check for looms comprising in its construction a suitable framework or support, a member pivotally mounted in said framework, a strap fixed at one end to said framework and at its other end to said member, and a shoe over which said strap passes, a spring arranged to actuate said member in a direction to hold the strap taut, and means for adjusting said spring, substantially as and for the purpose set forth.

4. A picker check for looms comprising in its construction a suitable framework, a member rotatively mounted in said framework provided with a squared portion (c^6) and a circular portion (c^5), a sleeve and a ratchet-wheel mounted upon said squared portion, a head loosely mounted on a circular portion of said member, adjacent to said ratchet-wheel a spiral spring mounted upon said sleeve, one end of said spring engaging a lug on said framework, the other end of said spring being secured to said head, a pawl on said head arranged to engage said ratchet-wheel a strap fixed at one end to said framework and secured at its other end to said member, and a shoe over which said strap passes, substantially as and for the purpose set forth.

544,468. CAR WHEEL AND AXLE. ALBERT PORTER, Chicago, Ill. Filed Mar. 28, 1895. Serial No. 543,496. (No model.)



Claim.—In combination, the axle B provided near one end with a seat *r* for the tight-wheel and having formed upon it, near its opposite end, the shoulder A', toward which the axle is enlarged in diameter from near its transverse center, and the flange A, affording between them the seat C slightly less in diameter than the seat *r*, a box J on said seat, of lesser diameter than the shoulder and of greater external diameter than the flange, and formed in cylinder-sections abutting at their edges and confined endwise between said shoulder and flange, and a wheel D, having its hub corresponding in length substantially with that of said box and provided with an opening M of greater diameter than said flange and of lesser diameter than that of the shoulder and than the external diameter of the box, and surrounding and practically covering completely said box and tightened thereon to rotate with it independently of the axle, the tight and loose wheel ends of said axle approximately corresponding in weight, substantially as described.

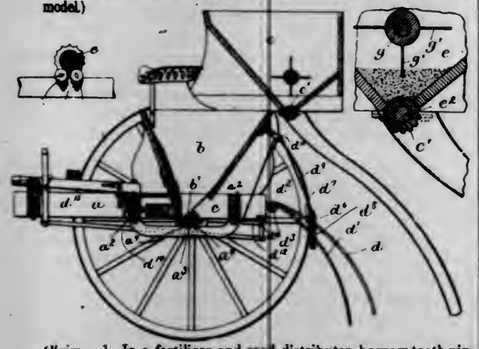
544,469. HOSE-COUPLING. EDWIN W. SHEPHERD, Chicago, Ill. Filed Sept. 4, 1894. Serial No. 522,073. (No model.)



Claim.—1. The combination in a hose or pipe coupling, of two members provided with means for engagement whereby they may be interlocked against separation, and a pliable washer tightly secured in one of the members by means of an annular flange and having a tubular extension integral with said flange and adapted to extend into and fit closely within the other member.

2. The combination with the head, A, of the collar, *a'*, secured to the same and having the groove, *a*⁴, the plate *a*⁴, mounted in the groove and having the notches, *a*⁴, the member, B, having the lug, *b*, fitted to said notches and the washer, C, having the annular portion, *c*, clamped between the member, A, and the collar and the cylindrical portion, *d'*, extending into the member, B, substantially as described.

544,470. FERTILIZER AND SEED DISTRIBUTER. ELEAZER THOMAS, Rock, Mass. Filed Apr. 24, 1895. Serial No. 546,981. (No model.)



Claim.—1. In a fertilizer and seed distributer, harrow teeth pivoted to the frame of the machine and depending for contact with the ground between the points of discharge of fertilizer and seed; a bar fastened to one set of harrow-teeth and having holes which receive another set of said teeth out of transverse alignment with the first-named set; and means applied to said bar for elevating the harrow-teeth.

2. The combination of the supporting frame having an axle and driving wheels thereon, the fertilizer receptacle mounted on said frame, and having a feed roll affixed to the said axle, the seed receptacle located behind and above the fertilizer receptacle and having a feed roll and an elongated feed discharge tube, and gearing connecting the feed roll of the seed receptacle with the axle, substantially as and for the purpose specified.

3. The combination of the supporting frame having an axle and driving wheels thereon, the fertilizer receptacle mounted on said frame, and having a feed roll affixed to the said axle, the seed receptacle located behind and above the fertilizer receptacle and having a feed roll and an elongated feed discharge tube, a rotary stirring device in the seed receptacle, and gearing connecting said stirring device and the accompanying feed roll with the axle, substantially as and for the purpose specified.

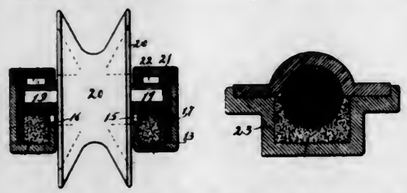
4. A fertilizer and seed distributer comprising a supporting frame, having an axle and wheels thereon, a fertilizer receptacle having a feed roll affixed to said axle, a seed receptacle having a feed roll geared to the axle, an elongated seed discharge tube, extending from the seed receptacle nearly to the ground behind the fertilizer receptacle, harrow teeth located between the fertilizer receptacle and discharge spout, and means for raising said teeth, substantially as and for the purpose specified.

5. In a seed-distributer, the combination with the seed-receptacle having an elongated discharge opening, of a correspondingly laterally-elongated seed-conduit composed of a number of rigid parallel bars attached to the receptacle and extending downwardly therefrom; and a flexible covering stretched across and attached to the front and rear edges of said bars.

6. The combination with the supporting frame, the fertilizer receptacle mounted thereon, the axle journaled in said frame and extending along the outlet of the said receptacle, said axle having a fertilizer feed roll affixed to it, and the stay bars secured to the supporting frame at opposite sides of the feed roll, and extending across and under the central portions of the feed roll, said stay bar having rollers which support the feed roll, substantially as and for the purpose specified.

7. The combination of the supporting frame, the axle journaled in said frame, the seed receptacle supported by the frame and provided with an elongated discharge tube extending downwardly to a point near the surface of the ground, the feed roll located in the outlet of the seed receptacle, the agitator journaled in the seed receptacle above the feed roll, and connections between the driving axle and the said roll and agitator, as set forth.

544,471. TROLLEY WHEEL AND BEARING. EDMOND VERSTRAETE, St. Louis, Mo., assignor of one-third to Ernest G. Bruckman and Samuel E. Bruckman, same place. Filed Nov. 22, 1894. Serial No. 529,633. (No model.)



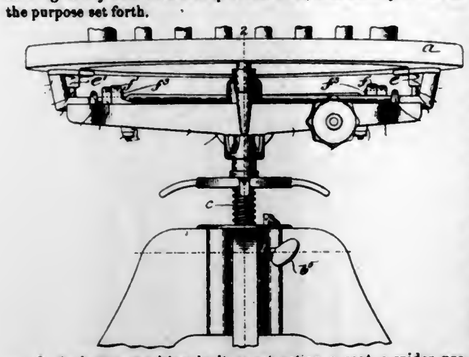
Claim.—1. In a device of the class described a journal box, a carbon journal bearing mounted in said box, a vulcanized fiber plate mounted in said box, a shaft mounted in said box resting on said carbon and abutting against said vulcanized fiber plate, whereby flow of current through the ends of said shaft is prevented, and a cap confining said shaft within said box.

2. In a device of the class described the combination of the pole 10, the arms 11, 12 on said pole, boxes 13, 14 fixed to said arms, vulcanized fiber plates 17 vertically positioned in said boxes, carbon bearings 18 mounted in said boxes and having open-topped bearing seats therein, a shaft 19 mounted for rotation in the seats of said carbon bearings and abutting against said plates 17, a trolley wheel 20 mounted on said shaft 19, and cap plates 21, mounted on said boxes 13, 14, which cap plates 21 have notches 22 in their lower faces so shaped that said cap plates are out of engagement with said shaft, as set forth.

544,472. ADJUSTABLE CHAIR-SUPPORT. EDWARD G. WATKINS, Gardner, Mass., assignor to Heywood Bros. & Co., same place. Filed Jan. 3, 1895. Serial No. 533,755. (No model.)

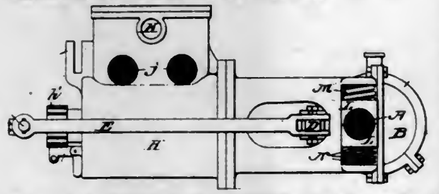
Claim.—1. A chair comprising in its construction a seat, a spider, radial arms upon said spider, a bar loosely connected at its ends to said arms, rods having one of their ends connected to said bar and their other ends pivotally connecting said spider and seat, and means for turning said bar, substantially as and for the purpose set forth.

2. A chair comprising in its construction a seat, a spider, radial arms upon said spider, a bar loosely connected at its ends to said arms, rods having one of their ends connected to said bar and their other ends pivotally connecting said spider and seat, a lug upon said bar, a set-screw mounted in one of said arms and arranged to engage said lug to adjust the tension upon said rods, substantially as and for the purpose set forth.



3. A chair comprising in its construction a seat, a spider provided with radial arms having depressions in their ends, corresponding lugs (d^8) (d^7) upon two of said arms, a bar loosely connected at its ends to said lug (d^7), lugs upon said seat having arms arranged in said depressions, rods having one of their ends connected with said bar and their other ends passed through the lugs (d^8), the extremity of said last-mentioned ends of said rods being bent and arranged in a depression in the lugs on said seat, substantially as and for the purpose set forth.

544,473. AIR-PUMP. WILLIAM C. WHITACRE, St. Louis, Mo. Filed Oct. 18, 1894. Serial No. 526,240. (No model.)

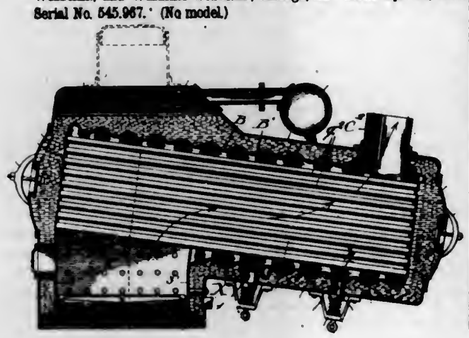


Claim.—1. In an air-pump the combination with a car-axle, of an eccentric mounted thereon, a cross-head D which is pivoted to the eccentric links E which are pivotally connected to the ends of the cross-head, the cross-head F pivoted in the opposite end of links E, a piston rod having a piston, which rod is mounted in the cross-head F, and a cylinder in which the piston operates, said cylinder having bracket-extensions which are yieldingly and pivotally mounted on the car-axle, substantially as described.

2. In an air pump for railway cars, the combination with the pump cylinder, of bracket extensions thereon, a truck axle which is embraced by said extensions, and springs interposed between the extensions and axle, substantially as described.

3. In an air pump for railway cars, the combination with the pump cylinder, of bracket extensions thereon, which extensions are formed with ways in their ends, a truck axle, boxes on said axle which move in said ways, and springs M and N interposed between the bracket extensions and boxes, substantially as described.

544,474. WATER-TUBE BOILER. ANDREW WILDMAN, HENRY WILDMAN, and WILLIAM WILDMAN, Chicago, Ill. Filed Apr. 16, 1895. Serial No. 545,967. (No model.)



Claim.—1. In a water-tube boiler, the combination with the fire-chamber of inner and outer shells inclined downward in the backward direction and forming between them an inclined water-jacket, end circulating-chambers, and an upper steam chamber, the inner-shell forming the casing of a longitudinally extending flue chamber, inclined downward in the backward direction, which is in open communication at its lower forward end portion with the fire chamber, closed at opposite ends with tube sheets and having an outlet at its upper rear-end portion extending through the water-jacket, and tubes in the flue-chamber inclined downward in the backward direction and fastened at opposite ends in the tube-sheets to extend at their higher end-portions over the fire-chamber, substantially as and for the purpose set forth.

2. In a water-tube boiler, the combination with the fire chamber of inner and outer shells forming between them a water-leg about the fire-chamber, an inclined water-jacket and end circulating chambers, the inner-shell forming the casing of a longitudinally inclined flue chamber which is in open communication at its lower forward end-portion with the fire chamber, closed at opposite ends with tube-sheets and having an outlet at its upper rear-end portion extending through the water-jacket, and inclined tubes in the flue-chamber fastened at opposite ends in the tube-sheets to extend at their higher end-portions over the fire-chamber, substantially as and for the purpose set forth.

3. In a water-tube boiler, the combination with the fire chamber of inner and outer shells forming between them an inclined water-jacket and end circulating chambers, the inner-shell being cylindrical and provided with annular corrugations and forming the casing of a longitudinally inclined flue chamber which is in open communication at its lower forward end-portion with the fire chamber, closed at opposite ends with tube-sheets and having an outlet at its upper rear-end portion extending through the water-jacket. and inclined tubes in the flue-chamber fastened at opposite ends in the tube-sheets to extend at their higher end-portions over the fire-chamber, substantially as and for the purpose set forth.

4. In a water-tube boiler, the combination with the fire chamber of inner and outer shells forming between them an inclined water-jacket and end circulating-chambers, the inner-shell forming the casing of a longitudinally inclined flue chamber which is in open communication at its lower forward end-portion with the fire chamber, closed at opposite ends with tube-sheets and having an outlet at its upper rear-end portion extending through the water-jacket, and the heads of the outer shell being dished to present concave inner sides, and inclined tubes in the flue-chamber fastened at opposite ends in the tube-sheets to extend at their higher end-portions over the fire-chamber, substantially as and for the purpose set forth.

5. In a water-tube boiler, the combination of the outer shell having the enlarged forward portion and reduced and cylindrical downward inclined rear portion and provided at opposite ends with heads having concave inner faces, an inner shell forming a flue-chamber closed at opposite ends with tube-sheets and having the enlarged forward portion corrugated at its upper side and shaped at its lower part to afford a fire-chamber and reduced and cylindrical downward inclined and circumferentially corrugated rear-portion, within and concentric with the outer shell, and having an outlet flue, the shells forming between them a water-leg about the fire-chamber, a water-jacket, enlarged end-chambers, and a steam-chamber in the enlarged forward portion, and tubes in the flue-chamber inclined downward in the backward direction and fastened at opposite ends in the tube-sheets to extend at their higher end-portions over the fire-chamber, all constructed and arranged to operate substantially as and for the purpose set forth.

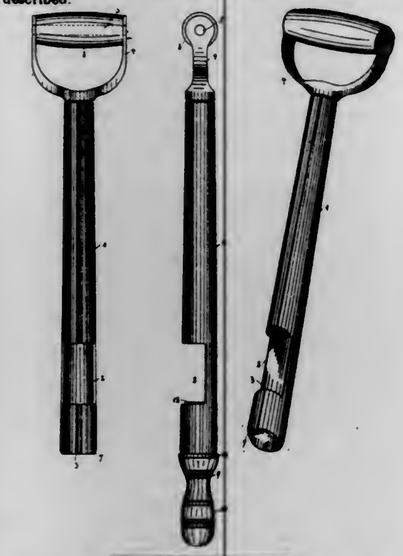
6. In a water-tube boiler, the combination with the flue-chamber, for the passage of hot products of combustion, and water tubes therein, and water jacket about the said chamber of an air inlet passage extending through the water jacket to the lower part of the flue-chamber, a valve normally closing said passage and operative to open and admit air through said passage to the flue-chamber, substantially as and for the purpose set forth.

7. In a water tube boiler, the combination with the flue-chamber, for the passage of hot products of combustion, and water tubes therein, of an air inlet passage through the shell of the flue-chamber, a spring seated valve normally closing said passage, and a stem on the valve forming a handle by means of which the valve may be opened against the resistance of the spring to admit air to the flue-chamber, substantially as and for the purpose set forth.

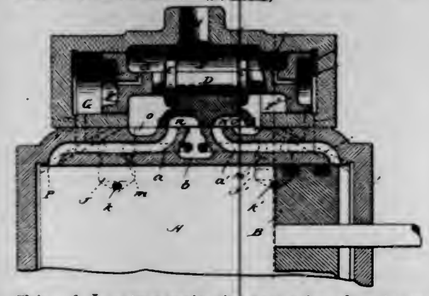
544,475. MEASURING-TOOL. JAMES J. BOOTH and WILLIAM FLINN, Pittsburg, Pa. Filed Apr. 22, 1895. Serial No. 546,796. (No model.)

Claim.—1. A measuring instrument consisting of a cylindrical body having a lower cutting edge and a longitudinal slot, with a portion of the wall cut away on either side of the slot, as and for the purpose described.

2. A measuring instrument consisting of a cylindrical body having a lower cutting edge, a longitudinal slot and an aperture with a scale extending along the edge of the aperture, as and for the purpose described.



544,476. STEAM-ENGINE. FRANK A. BURNHAM, Battle Creek, Mich., assignor of one-half to Dorr B. Burnham, same place. Filed Oct. 30, 1894. Serial No. 527,438. (No model.)



Claim.—1. In a steam engine the combination of a valve operating piston, having recessed heads and constricted ports, a steam chest having independent exhaust passages leading from end chambers thereof to main exhaust and steam actuated gates or valves arranged across the passages substantially as described.

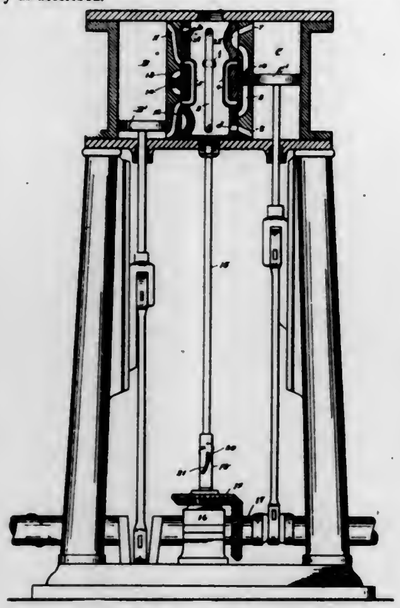
2. In a steam engine the combination of a steam chest having independent passages from end chambers of said chest to main exhaust, gates or valves in said passages and passages from the main cylinder leading to opposite ends of the valves substantially as described.

3. In a steam engine the combination of a steam cylinder having valve or gate pockets arranged at one side of the main piston opening, and having ports leading to one end of the pockets and ports leading from the extremities of the cylinder to the other end of the pockets, a valve chest having independent exhaust ports leading from end pockets to main exhaust a valve operating piston having recessed heads for separating the valve chamber into compartments and having constricted ports and piston valves or gates for opening and closing the exhaust ports.

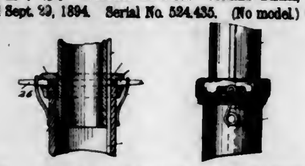
544,477. STEAM-ENGINE. DOCTOR THEODORE BURR, Detroit, Mich. Filed Nov. 30, 1894. Serial No. 530,369. (No model.)

Claim.—1. In a steam engine provided with a rotary valve and with suitable ports and passage-ways for the admission and exhaust of steam, a by-pass passage-way adapted to transmit steam that has been used to actuate the piston in one direction to the opposite face of the piston, and utilize it at the commencement of the return stroke, substantially as described.

2. In a steam engine provided with a rotary valve and with suitable ports and passage-ways for the admission and exhaust of steam, a by-pass passage-way adapted to transmit steam that has been used to actuate the piston in one direction to the opposite face of the piston, and utilize it at the commencement of the return stroke, and equalize the force of the same on the two faces of the piston, substantially as described.



544,478. WATER-TOWER. CONRAD DAMM, Cleveland, Ohio. Filed Sept. 29, 1894. Serial No. 524,435. (No model.)



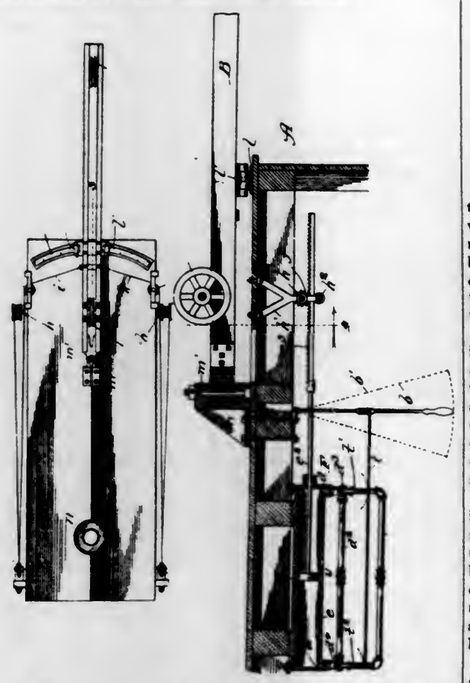
Claim.—1. In a hydraulic tower, a suitable support, and a series of sections mounted thereon and provided with splines and adapted to telescope one within the other; and the slotted caps, combined with locking rings provided with vertical grooves in their inner edges, and with arms on their outer edges to project through the slots in the caps; springs applied to the arms to cause the locking rings to rotate, and a lever for operating the locking rings, substantially as described.

2. In a hydraulic tower, the combination of a truck, a fork swiveled upon said truck, a telescopic mast constructed in sections pivoted within said fork, splines extending the full length of each section, bearing in slots in the next lower sections, locking rings secured at the upper ends of each section adapted automatically to enter slots on the splines, and means for unlocking the rings, substantially as set forth.

544,479. MEANS FOR OPERATING SWINGING BEAMS OF EXCAVATING-MACHINES. WILLIAM DAVY, Kenosha, Wis., and ERNEST J. DAVY, Chicago, Ill. Filed June 22, 1895. Serial No. 553,715. (No model.)

Claim.—1. In an apparatus of the character set forth, the combination with a support for the operating mechanism, and the pivotal boom thereon, of means for turning the boom comprising fluid-pressure actuated piston-mechanism fastened on said support and comprising a single cylinder and its contained piston, connections between the piston and opposite sides of the boom, whereby movement of the piston in opposite directions turns the boom back and forth, and means for controlling the supply of fluid-pressure to and its exhaust from the cylinder, substantially as described.

2. In an apparatus of the character set forth, the combination with a support for the operating mechanism and the pivotal boom thereon, of means for turning the boom comprising a rotary shaft journaled on said support and carrying winding drums at its opposite ends, cable-connections between said drums and the boom arranged to wind in contrary directions on said drums, a single cylinder fastened on said support and a piston therein geared to said shaft to turn it in opposite directions by the back and forth movements of the piston, and means for controlling the supply of fluid-pressure to and its exhaust from the cylinder, substantially as described.

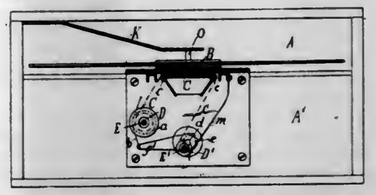


3. In an apparatus of the character set forth, the combination with a support for the operating mechanism and the pivotal boom thereon, of means for turning the boom comprising a rotary shaft journaled on said support and carrying a pinion and, at its opposite ends, winding-drums, cable-connections between said drums and the boom arranged to wind in contrary directions on said drums, a single cylinder fastened on said support and a piston therein having a piston-rod provided with a rack engaging said pinion to turn the shaft in opposite directions by the back and forth movements of the piston, and means for controlling the supply of fluid-pressure to and its exhaust from the cylinder, substantially as described.

4. In an apparatus of the character set forth, the combination with a support for the operating mechanism and the pivotal boom thereon, of means for turning the boom comprising a rotary shaft journaled on said support and carrying winding drums at its opposite ends, cable-connections between said drums and the boom arranged to wind in contrary directions on said drums, a single cylinder fastened on said support and a piston therein geared to said shaft to turn it in opposite directions by the back and forth movements of the piston, openings in said cylinder near its opposite ends for the supply and exhaust of fluid-pressure, oppositely working three-way valves controlling said openings to the fluid-supply and exhaust, a rod connecting said valves, and a lever engaging the rod to operate it to turn the valves simultaneously, substantially as and for the purpose set forth.

5. In an apparatus of the character set forth, the combination with the car A for supporting the operating mechanism and the pivotal boom B thereon, of means for turning the boom comprising a rotary shaft *h* journaled on the car and carrying a pinion *f* and, at its opposite ends winding-drums E and E', a cable *k* connecting the boom from one side with the drum E and passing over guide-pulleys *k'* and *k²* at opposite sides of said drum, a cable *i* connecting the boom from the opposite side with the drum E' and passing over guide-pulleys *i'* and *i²* at opposite sides of said drum, a single cylinder *c* supported in said car and containing a piston *c'* having a rod *c³* provided with a rack *c⁴* engaging said pinion, said cylinder having near its opposite ends exhaust and supply openings *d* and *d'* for the fluid-pressure, oppositely working three-way valves *d²* and *d³* controlling said openings to the supply and exhaust, and provided with handles *f* and *f'* on their stems, a rod *l* connecting said handles and a lever *b* connected with the rod, the whole being constructed and arranged to operate substantially as described.

544,480. SERIES PHOTOGRAPHIC CAMERA. GEORGE DEMENY, Levallois-Perret, France. Filed Feb. 20, 1894. Serial No. 500,882. (No model.)



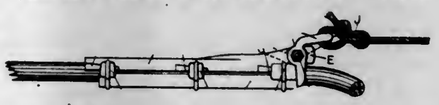
Claim.—1. A photographic apparatus for taking a series of photographic images on a continuous film at equal and very close intervals consisting of a continuously revolving shutter, of a continuously revolving bobbin, of gearing positively connecting the shutter and bobbin, of a sensitized band traversed intermittently by being wound on said bobbin and of a means for varying the length of the path of the film between the shutter orifice and the line where the film touches the bobbin, substantially as set forth.

2. In a photographic apparatus in which a series of photographic images are adapted to be taken at equal and very close intervals on a continuous band or film the mechanism for giving the band an intermittent motion from a continuously rotated part consisting of a shaft geared to the continuously rotating part and of an eccentric or cam surface on which the sensitized band is to be wound so that at one or more parts the eccentric or cam is compensated by the decreased length of path of the band so that the band is stationary, substantially as described.

3. In a photographic apparatus in which a series of photographic images are adapted to be taken at equal and very close intervals on a continuous band or film, the mechanism for giving the band an intermittent motion from a continuously rotated part consisting of a bobbin on which the film is to be wound and geared to the continuously rotating part and of an eccentric or cam surface continuously rotated and on which the band bears so that at a certain part the amount of band wound on the bobbin is compensated by the decreased length of path of the band, substantially as set forth.

4. In a photographic apparatus for taking a series of photographic images on a continuous film at equal and very close intervals the combination with the continuously revolving shutter and the sensitized band traversed intermittently by being wound on a bobbin geared to the shutter shaft, of a clutch gear adapted to connect the revolving shutter and revolving bobbin always in the same phase, of a movable shutter and of a means for simultaneously operating the clutch mechanism and the shutter, substantially as set forth.

544,481. CABLE-CLAMP. GEORGE W. DENNIS, Chicago, Ill., assignor to Thomas A. Hagerty, Henry L. Waterbury, and Albert C. Hawes, same place. Filed Nov. 22, 1894. Serial No. 529,591. (No model.)



Claim.—The combination in a cable clamp having two opposite portions, each having a concave face in contact with the cable, a series of wedges on one portion and a series of lugs adapted to receive the wedges of the other, a lever pivotally attached to one of the portions and adapted to contact the other, whereby the action of the lever in one direction draws the wedges in under the lugs and causes the contacting surface of one of said portions to approach the other and thereby clamp the cable, substantially as described.

544,482. JOURNAL-BEARING. WILLIAM W. DINGER, Racine, Wis., assignor to the J. I. Case Threshing Machine Company, same place. Filed June 18, 1895. Serial No. 553,222. (No model.)



Claim.—1. A journal bearing provided with a fluid lubricant supply, a separate hard grease receptacle and a movable device in said hard grease receptacle for forcing the grease into the bearing, substantially as described.

2. A journal bearing provided with a fluid lubricant supply communicating with the interior of the bearing, a separate hard grease receptacle communicating with the interior of the bearing, and a screw plug engaging said receptacle for forcing the grease into the bearing, substantially as described.

3. A journal bearing comprising among its members a lower section provided with recesses for holding a fluid lubricant, an upper section, a receptacle for hard grease on the upper section, and a movable device in said receptacle for forcing the grease into the bearing, substantially as described.

4. A journal bearing comprising among its members an upper section, a receptacle for hard grease on said upper section provided with a movable device for forcing the grease into the bearing, a lower section having projections extending laterally beyond said upper section, the lower section being recessed to receive a fluid lubricant, said recesses extending into said projections, substantially as described.

5. A journal bearing including among its members an upper section, a receptacle for hard grease formed integrally therewith, a movable device in said receptacle to force the grease into the bearing, the lower section, having oil holding recesses, portions of said recessed lower section extending beyond the upper section forming oil inlets, substantially as described.

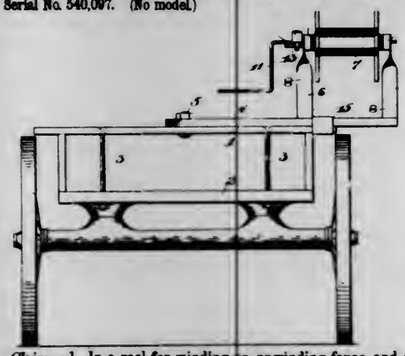
6. A journal bearing comprising among its members an upper section, a lower section having laterally extending flanges above the plane of the bottom of the interior of the bearing, and oil grooves connecting one of said recesses with the interior of the bearing and an oil groove intermediate said grooves for connecting the other recess with the interior of the bearing, substantially as described.

544,483. SNAP-HOOK. WESLEY ECKERT, Elk Point, S. D., assignor of one-half to Charles H. Freeman, same place. Filed Oct. 8, 1894. Serial No. 525,261. (No model.)



Claim.—A snap-hook comprising, in combination, the loop *t*, shank portion *s*, bifurcated hook portion *r* having the slot *r'* and stop r^3, C-shaped latch pivoted between its ends in the slot and presenting a bearing surface *p* and concave bearing surface *p'* at opposite sides of the pivot, and stops q^3, q^4 on the latch, to engage the stop r^3, the forks of the hook portion bearing yieldingly against opposite sides of the latch, and the parts being constructed and combined to operate substantially as and for the purpose set forth.

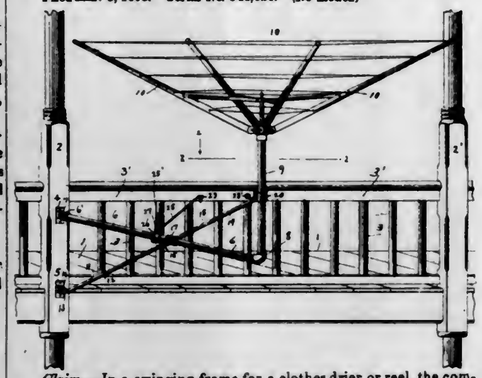
544,484. WIRE-REEL. CHARLES L. CANDY, Mount Auburn, assignor of one-half to N. Candy, Taylorville, Ill. Filed Feb. 28, 1895. Serial No. 540,097. (No model.)



Claim.—1. In a reel for winding or unwinding fence and other wire, the combination with a base board mounted upon a wagon bed, and having projecting end portions, and a similar base pivoted at one end to the fixed base, and adapted to swing horizontally from one side to the other of the wagon bed and provided with the reeling devices, of a band carried by, and movable with, the said pivoted base, and adapted to slide thereon to engage with either of the projecting ends of the fixed base and secure the reeling devices in either of their two operative positions, substantially as set forth.

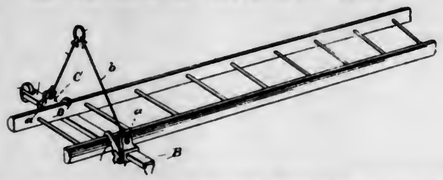
2. The herein-specified device for winding or unwinding wire, comprising a relatively fixed and movable base, the latter being pivoted at one end and adapted to swing in a horizontal direction from one end to the other of the said fixed base, a slide, or band, mounted upon and movable with the pivoted base, and adapted to encircle the two bases and hold the movable base in the required position, standards attached to the said movable base, and comprising bars of iron which have their end portions bent vertically and twisted, beams attached to the twisted extremities of the said bent ends of the bars, and having their inner faces oppositely inclined from a middle point, a reel, a rod detachably connecting the reel with the said beams, and provided at one end with an operating crank, and a lever having an eye at one end, by means of which it is detachably connected with a lateral extension of a standard and adapted to be brought in forcible contact with the said rod, substantially as and for the purpose set forth.

544,485. CLOTHES-DRIER. JOSEPH P. HILL, Worcester, Mass. Filed Mar. 8, 1895. Serial No. 541,028. (No model.)



Claim.—In a swinging frame for a clothes drier or reel, the combination with a horizontal swinging arm, and an upright post carrying the reel or drier, and secured at its lower end to the outer end of said arm, of brace rods for raising and lowering the outer end of the horizontal arm, and for adjusting the upper end of the upright post, said brace rods adapted to be lengthened or shortened, by means of right and left hand screw threads on their ends adapted to be screwed into or out of screw threaded nipples, and a rod attached at one end to the horizontal arm, and provided with a hook at its other end adapted to engage an eye bolt, to hold the swinging frame in position, substantially as set forth.

544,486. SWINGING SCAFFOLD. MICHAEL KEELEY, Waterbury, Conn. Filed June 12, 1895. Serial No. 552,511. (No model.)



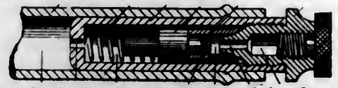
Claim.—1. In a device of the class described the combination of a support a pair of slides fitted thereon each having an eye by means of which they are suspended, hooks secured to the said blocks and adapted to engage and retain a platform thereto.

2. In a swinging scaffold of the class specified the combination with a pair of suspended slide blocks, of a support fitted therein, a wheel upon the end of said support, a platform arranged upon the support, hooks secured to the block and adapted to engage the platform aforesaid, and means for holding the hooks in such engagement.

3. In a scaffold of the class specified the combination of a support having a corrugated base, sliding block fitted thereon and provided with means for supporting connections, a rib upon the block to engage the before mentioned corrugations whereby the said blocks are retained in their respective places, and mechanism for retaining the platform upon the support and to the said blocks.

544,487. VALVE FOR PNEUMATIC CYCLE-TIRES. RALPH MCCORD, Springfield, Ill. Filed Dec. 15, 1894. Serial No. 531,933. (No model.)

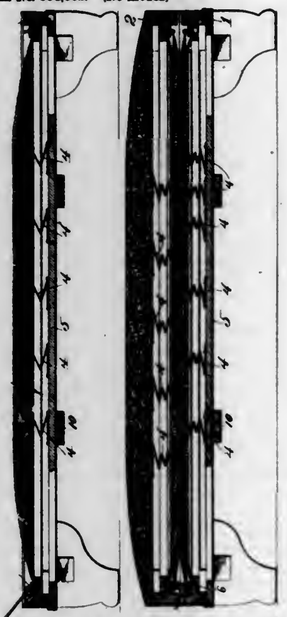
Claim.—1. In a valve for the purpose specified, the combination of a coneshaped or convex valve seat and a soft pliable non-compressed, tube which is detached from its seat substantially as shown.



2. In a valve for the purpose specified, a cylinder of metal or other suitable material having a plug secured to its outer end the inner end of the said plug forming a valve seat in combination with a soft pliable tube forming a valve, the said tube having a limited amount of longitudinal movement within the cylinder substantially as shown.

3. In a valve for the purpose specified, the combination of a cylinder B, a plug C secured in one end of the cylinder, a tube E within the cylinder, and embracing one end of the plug; and a spring G adapted to press the tube against the plug, substantially as shown.

544,488. BED. HARRY PRUFROCK, St. Louis, Mo. Filed Dec. 15, 1894. Serial No. 531,882. (No model.)



Claim.—1. A bed consisting of a hinged sectional frame, whose meeting rails are lower than the side and end rails, a bed bottom fastened to the outer and end rails slightly below the tops thereof, and a mattress removably fastened to the side and end rails, substantially as described.

2. A bed consisting of a hinged sectional frame, whose meeting rails are lower than the side and end rails, a wire bed bottom fastened to the outer and end rails slightly below the tops thereof, one of said sections being upholstered and a mattress removably fastened to said side and end rails, substantially as described.

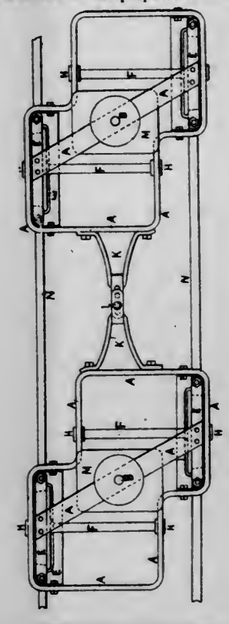
3. A bed consisting of a hinged sectional frame, whose meeting rails are lower than the side and end rails, a wire bed bottom fastened to the outer and end rails slightly below the tops thereof, buttons on the side and end rails above the said bed bottom, and a mattress provided in its edges with eyelets adapted to fit over said buttons, substantially as described.

4. A bed consisting of a hinged sectional frame, whose meeting rails are lower than the side and end rails, a wire bed bottom fastened to the outer and end rails slightly below the tops thereof, buttons on the side and end rails above the said bed bottom, a mattress provided with eyelets in its edge adapted to fit over said buttons, said buttons and eyelets being arranged symmetrically, all substantially as and for the purpose set forth.

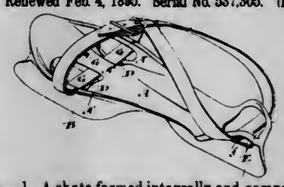
5. As an article of manufacture, a mattress provided near its edges with eyelets, and having a pocket extending from its end adapted to fit over a pillow frame, substantially as and for the purpose specified.

544,489. TRUCK FOR STREET-CARS. GEORGE F. SHAW, Dedham, Mass. Filed Nov. 1, 1894. Serial No. 527,688. (No model.)

Claim.—Trucks for street cars consisting of two frames connected together by bars having a sliding pivotal joint, each of said frames pivoted centrally to the car body and provided with two independent axles, each axle having one wheel only and provided with boxes at each end, one wheel being forward of the pivot to the car body and the other at the rearward of the said pivot in each of said truck frames, as described and for the purposes set forth.



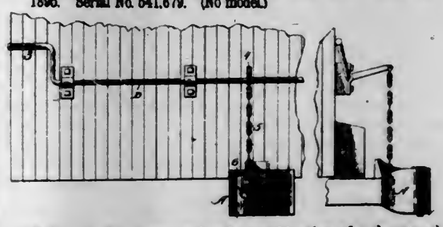
544,490. CHILD'S SAFETY-SKATE. CHARLES H. SMITH, Toronto, Canada, assignor of one-half to Asa Mathews, same place. Filed Dec. 21, 1892. Renewed Feb. 4, 1895. Serial No. 537,305. (No model.)



Claim.—1. A skate formed integrally and comprised of the front runners, B, and holes, D, situated above and to each side of the front runners, a rear runner, C, and holes, E, situated above and to, each side of it, the top of the holes being bounded by upwardly extending ridges, *f*, as and for the purpose specified.

2. A skate formed integrally and comprised of the front runners, B, and holes, D, situated above and to each side of the front runners, a rear runner, C, and holes, E, situated above and to each side of it, the top of the holes being bounded by upwardly extending ridges, *f*, and teats, G, situated on the side edges, A', and central bridge, A", of the skate, as and for the purpose specified.

544,491. CAR-COUPLING. WILLIAM H. SQUIRES, The Plains, Va., assignor of one-third to Lucien T. Smith, same place. Filed Mar. 14, 1895. Serial No. 541,679. (No model.)



Claim.—1. In a car coupler the combination of a drawhead, a coupling knuckle having a swinging arm, a locking pin and a lever

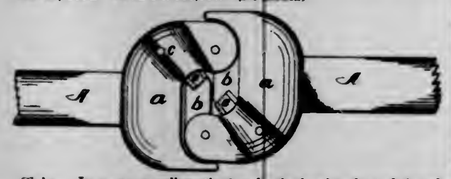
operated by the lever arm for forcing the locking pin entirely home to locked position substantially as described.

2. In a car coupler the combination of a drawhead, a coupling knuckle having a lever arm, a locking pin, a counterbalance for holding the locking pin out of locking position and a vibratory crank arm operated through the lever arm of the knuckle for overcoming the counterbalance and for forcing the pin into locking position substantially as described.

3. In a car-coupler of the character described, the combination of a car, a drawhead having recessed or socketed upper faces and knuckles having flanges extending from their upper forward edges to fit flush with the sockets in the engaging drawheads, substantially as described.

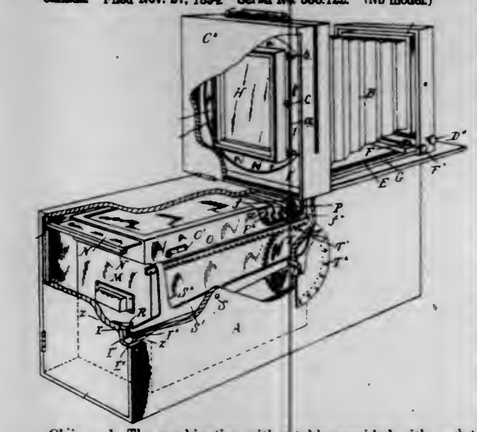
4. In a car coupler of the character described, the combination of a knuckle and a flat spring brake to hold the knuckle firmly in any set position substantially as described.

544,492. CAR-COUPLING. SAMUEL WALTERS, Warren, Pa. Filed Jan. 23, 1894. Serial No. 535,917. (No model.)



Claim.—In a car coupling, the heads, the hooks pivoted therein, and provided with the recesses *d;* and the pins for engaging the hooks; combined with spring actuated bolts placed in sockets in the lower sides of the heads and extending diagonally to the openings in the front ends of the heads; the projecting end of each bolt being beveled away and adapted to catch in the recess of the opposing head, substantially as described.

544,493. MAGAZINE-CAMERA. JEDUTHUN N. WIGLE, Ruthven, Canada. Filed Nov. 27, 1894. Serial No. 530,122. (No model.)



Claim.—1. The combination with a table provided with a slot, a plate holding box slidingly mounted below the slot in the table, plate holding frames contained in vertical guides in said box, means for sliding the box to register the plate holding frames with the slot in the table, the camera mounted upon the table with the rear end of its exposure chamber in fixed relation thereto and provided with a slot, communicating with a slot in the table, plate holders in the box having notches in their sides and a vertically movable carrier in the rear end of the exposure chamber comprising two united parallel bars having inwardly extending projections at their lower ends arranged to engage in the notches of the holders and adapted to be projected below the table into the magazine, substantially as described.

2. The combination of a table provided with a slot, the camera mounted thereon with the rear end of its exposure chamber in fixed relation to and communicating with the slot in the table, vertical guides in the rear ends of the exposure chamber, plate holding devices adapted for insertion through the slot in the table and to engage between said vertical guides, each having side notches therein a magazine containing said plate holding frames and movably mounted below the slot in the table to register the plate holding devices with the slot and a vertically movable carrier operating in the plane of the guides and adapted to be projected below the table into the magazine, and means for engaging the carrier and plate holding frame, comprising two vertical bars having inwardly extending projections on their lower ends arranged to enter the notches of the frames, substantially as described.

3. The combination of the table provided with a slot, a plate holding box slidingly mounted below the slot in the table, plate holders in vertical guides in the box means for sliding the box to register the plate holding frames with the slot in the table, a camera mounted upon the table with the rear end of its exposure chamber in fixed relation to the slot in the table a rotary disk in the rear wall of the exposure chamber and provided with an aperture vertically coinciding with the slot in the table, a focusing screen yieldingly supported in said aperture and a carrier vertically slidingly secured in the rotary disk and capable of rotary movement with the disk, substantially as and for the purpose described.

4. The combination with the table, the slot in the table and the camera having the rear end of its exposure chamber in fixed relation with the slot and provided with a vertically sliding carrier arranged and adapted for the introduction of a plate holder through the slot from below the table, of a dark box below the table provided at one end with a door, a plate holding box adapted for being introduced and moved within the dark box, a sliding cover on said plate holding box, a rack bar on one side of the plate holding box, a vertically movable gear wheel in the dark box to engage therewith, means for throwing said gear wheel into mesh with the rack bar by the closing of the door in the dark box, a crank handle on the outside of the dark box for actuating the gear wheel, an index in connection therewith and means for arresting the sliding cover of the plate holding box while being moved within the dark box, substantially as described.

5. In a camera, the combination with a receptacle constituting a table having an opening therein and a camera on the receptacle communicating with the same through the opening, of a reciprocating plate holding rack in the receptacle, means for moving the rack, normally out of engagement therewith, a door for the receptacle, and means for moving the rack-moving means into operative position upon the closing of the door, substantially as described.

6. In a camera, the combination with a reciprocating plate holding rack, a camera above the same, a support for the rack and camera, and a reciprocating plate elevating device pivotally supported in the camera, substantially as described.

7. In a camera, a rotary plate holding disk and a reciprocating means for removing the plate and rotating the disk, substantially as described.

8. In a camera, the combination with the exposing compartment, of a rotary plate holding disk therein having an oblong plate opening, a plate storage compartment below the camera, and means for transferring the plates and rotating the disk, substantially as described.

544,494. NUT-TAPPING MACHINE. NORMAN R. WOOD, Cleveland, Ohio, assignor to the Lamson & Sessions Company, same place. Filed Feb. 13, 1895. Serial No. 538,306. (No model.)

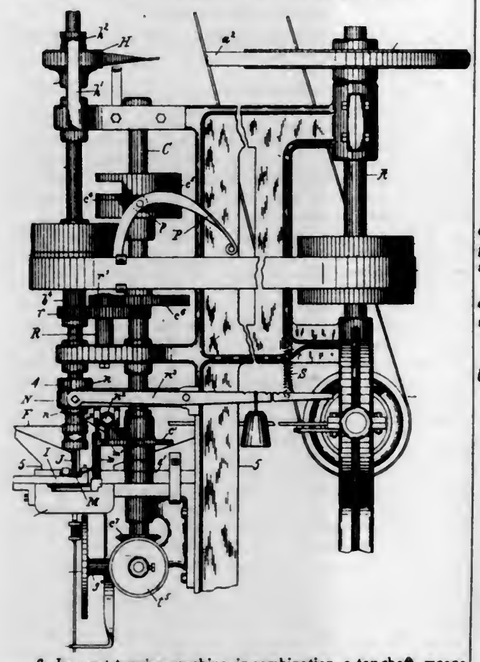
Claim.—1. In a nut tapping machine, in combination, a longitudinally movable tap shaft adapted to be revolved alternately in opposite directions, fast and loose pulleys on said shaft, a driving belt, a belt shifter, means for operating the latter, and means for reversing the motion of the shaft, a device for feeding the nuts one by one beneath said shaft, and a fixed wrench, a cam shaft receiving motion from the tap shaft, a cam thereon, and a pivoted lever operated by the said cam and engaging with and moving said tap shaft longitudinally, substantially as and for the purpose specified.

2. The combination of a shaft B, fast and loose pulleys thereon, a belt for driving them, and a belt shifter adapted to move the belt substantially as described so that it will drive the loose pulley alone or both pulleys together, a shaft C, and intermediate connections between the loose pulley and said shaft, whereby the latter is constantly driven, substantially as and for the purpose specified.

3. In a nut tapping machine, in combination, a longitudinally movable tap shaft, a fast and loose pulley thereon, a belt for driving them, a loose pulley constantly driven in a fixed plane in the opposite direction, a clutching device for connecting said pulley with the shaft, a belt shifter, means for operating it, and mechanism for moving the tap shaft longitudinally, substantially as and for the purpose specified.

4. In a nut tapping machine, in combination, a longitudinally movable tap shaft, fast and loose pulleys thereon, a pinion rigid with the loose pulley, a cam shaft, gears connecting said pinion and cam shaft, a driving belt, a belt shifter adapted to move said belt off of the fast pulley and onto it again without moving it off of the loose pulley, a cam on the cam shaft for operating the belt shifter, mechanism for moving the tap shaft, and a cam on the cam shaft for operating said mechanism, substantially as and for the purpose specified.

5. In a nut tapping machine, in combination, a longitudinally movable tap shaft, fast and loose pulleys thereon, a belt for driving them, a belt shifter, a pulley concentric with said shaft and constantly driven in one direction, a friction clutching device on said pulley and shaft, a constantly driven cam shaft, a cam thereon operating said belt shifter, a cam and intermediate mechanism for moving said top shaft longitudinally and causing the engagement of said friction clutching device, substantially as and for the purpose specified.



6. In a nut tapping machine, in combination, a tap shaft, means for alternately revolving the same in opposite directions, a reciprocating feed slide having in its top side a recess to receive a nut, a feed spout adapted to discharge into said recess, a pressure finger entering said spout, and means for actuating said finger so as to release one nut at a time, substantially as and for the purpose specified.

7. In a nut tapping machine, in combination, a tap shaft, means for alternately revolving the same in opposite directions, a reciprocating feed plate, a feed spout, a pressure finger entering said spout, and a revolving cam for operating said finger, substantially as and for the purpose specified.

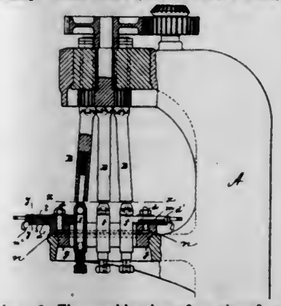
8. In a nut tapping machine, in combination, a longitudinally movable vertical tap shaft, means for alternately revolving said shaft in opposite directions, mechanism for raising said tap shaft, a feed spout adapted to discharge the nuts singly into the feed slide, a reciprocating feed slide having a recess into which the nuts drop from the feed spout, mechanism for moving said slide back and forth between the feed spout and tap shaft, and a wrench adapted to engage with the nut on the tap, when said tap shaft is raised, substantially as and for the purpose specified.

9. In a nut tapping machine, in combination, a tap shaft, means for alternately revolving the same in opposite directions, a hopper, a vertically reciprocating feed plate therein having an inclined groove in its top edge, a reciprocating feed slide having in its top side a recess to receive a nut, and a feed spout adapted to receive the nuts from the feed plate and to discharge them one by one into said recess in the feed slide, substantially as and for the purpose specified.

10. In a nut tapping machine, in combination, a hopper, a feed plate vertically movable through the bottom of said hopper, a crank shaft for actuating said plate, a driving shaft, a bevel gear fixed to one of said shafts, a shell f^2 secured to the other shaft, a bevel gear mounted on said shaft having a hub which projects into said shell, a friction band surrounding said hub, and set screws passing through said shell and engaging with said band, substantially as and for the purpose specified.

11. In a nut tapping machine, a longitudinally movable vertical tap shaft and mechanism for alternately revolving the same in opposite directions, mechanism for periodically raising said shaft, a sleeve loose upon said shaft, a fixed collar above said sleeve, and a counterbalanced lever engaging with said sleeve, substantially as and for the purpose specified.

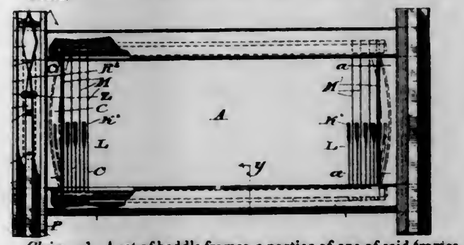
544,495. DRILLING-MACHINE. FRIEDRICH ZIMMER, Düsseldorf, Germany. Filed June 30, 1894. Serial No. 516,198. (No model.)



Claim.—1. The combination of a series of angular grooved spindle carriers with a ring having a circular groove and a set of radial grooves and with screws *d* engaging the circular groove, and feathers *s*, engaging the radial grooves, substantially as specified.

2. The combination of ring *g* having circular groove *n*, and radial grooves *n'*, with angular spindle carriers *f*, connecting screws *d*, set screws *d'*, and feathers *s*, substantially as specified.

544,496. DOUP-HARNESS FOR CROSS-WEAVING. CHARLES ASHOFF, Philadelphia, Pa. Filed Apr. 6, 1895. Serial No. 544,760. (No model.)



Claim.—1. A set of heddle frames, a portion of one of said frames having tracks thereon, while the other of said frames is provided with a projection adapted to work in said tracks, in combination with mechanism adjacent to said tracks and adapted to be engaged and operated by said projection, whereby the lateral relative position of said frames may be automatically changed, substantially as described.

2. A set of heddle frames, one of said frames having thereon, tracks arranged adjacent to each other, the other of said frames having a projection thereon adapted to work in said tracks, in combination with movable devices for directing said projection alternately from one to the other of said tracks, substantially as described.

3. A set of heddle frames, one of which is provided with tracks, a pointed tongue, and a substantially diamond shaped lever, pivotally mounted above said tracks, and means for causing said tongue and lever to move in unison, in combination with a projection attached to the other of said frames and adapted to travel in said tracks, substantially as described.

4. A set of heddle frames, one of the same being provided with tracks, a tongue, and a substantially diamond shaped lever, pivotally mounted above said tracks, and means for causing said tongue and lever to move in unison, the other of said frames having attached thereto a pin adapted to travel in said tracks, substantially as described.

5. A set of heddle frames, one of the same having tracks therein, a tongue and a lever of substantially diamond shape mounted above said tracks, a bar on the opposite side of said frame, and connections from said bar to said tongue and lever, whereby the same are caused to be moved in unison, the other of said frames having a projection thereon adapted to work in said tracks, substantially as described.

6. A set of heddle frames, one of the same being provided with tracks, a tongue pivotally mounted on said frame, adjacent to said tracks, a pointed lever pivotally mounted adjacent to said tongue and means for causing said tongue and lever to move in unison, the other of said frames having a projection adapted to work in said tracks, substantially as described.

7. A set of heddle frames, one of the same having thereon tracks, arranged adjacent to each other, the other of said frames having a projection thereon, adapted to work in said tracks, in combination with a tongue and lever pivotally mounted on one of said frames, adjacent said tracks and means for causing said tongue and lever to operate in unison, substantially as described.

8. A set of heddle frames, one of said frames having the raised portion A', the tracks C' and D', the pivotally mounted tongue R', the substantially diamond shaped lever T, pivotally mounted, in combination with means for causing said tongue and lever to move in unison, the other of said frames having a projection thereupon, adapted to work in said tracks, substantially as described.

9. A set of heddle frames, one of the latter having tracks therein, a tongue pivoted above said tracks, a substantially diamond shaped lever pivoted above said tongue, a lever V pivoted to the opposite side of said frame, slots in the latter, and suitable connections passing through said slots and common to said levers and tongue, whereby the same may be moved in unison, the other of said frames having a projection thereon adapted to work in said tracks, substantially as described.

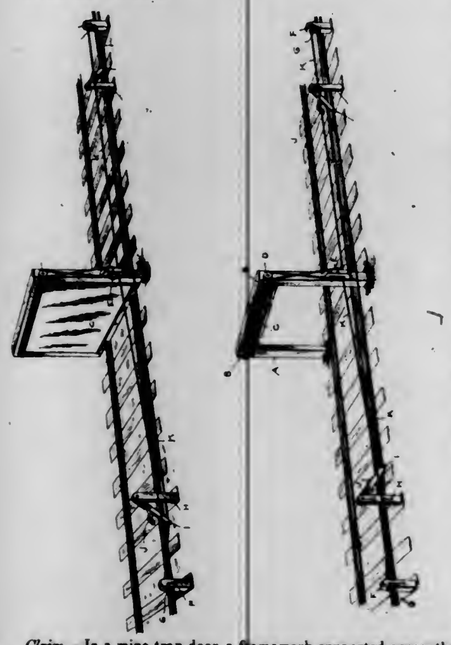
10. A set of heddle frames, having heddles therein, the heddles of one frame pointing in a direction opposite to the heddles of the other frame, springs attached to each frame and interposed between said heddles, one of said frames having thereon tracks arranged adjacent to each other, and the other of said frames having a projection thereon adapted to work in said tracks in combination with a tongue pivotally mounted on one of said frames, adjacent to said tracks, a pointed lever pivotally mounted adjacent to said tongue, and means for causing said tongue and lever to move in unison, substantially as described.

11. A set of heddle frames, guiding devices common to each frame, in combination with mechanism mounted on one of said frames and adapted to be actuated by a suitable portion of said guiding devices, whereby the lateral relative position of said frames may be automatically changed, substantially as described.

544,497. **HEDDLE FOR CROSS-WEAVING.** CHARLES ASHOFF. Philadelphia, Pa. Filed Apr. 10, 1895. Serial No. 545,179. (No model.)

Claim.—The herein described heddle, consisting of a flat strip of material A bent into the shape of a loop, and a spacing block brazed or otherwise secured within the said loop, near the bend, the limbs B converging from said block and being brought for a great portion of their length into substantial contact with each other whereby, a heddle of great resiliency and reduced width at the bottom is obtained, the same having an eye of large area in proportion to the amount of metal employed, substantially as described.

544,498. **MINE TRAP-DOOR.** GEORGE BONENBERGER, Evansville, assignor to Jay H. Keyes, Terre Haute, Ind. Filed May 4, 1895. Serial No. 548,185. (No model.)



Claim.—In a mine trap door, a framework supported across the track in the entry of a mine, a roller mounted on the top thereof, a flexible curtain connected to such roller, a pulley device at each side of the door at a suitable distance, a pulley on the door frame and on the end of the roller, and a pivoted lever at each side of the door connected to a wire or cord which passes around the said pulleys, each of such levers lying in the path of passing cars whereby the door curtain will be raised and lowered on the passage of a car through the entry, substantially as set forth.

544,499. **PROCESS OF UTILIZING WASTE LYE.** HUGO BREWER, Duisburg, Germany. Filed Mar. 21, 1895. Serial No. 542,695. (No specimens.)

Claim.—1. The herein described process of treating zinciferous or cupriferous lyes resulting from the lixiviation of chlorinated roasted ores, which consists in chemically extracting the metals in the lye, except the zinc, removing the sodium chlorid by concentration of the lye, extracting the zinc and chlorine from the remaining lye electrolytically, and effecting the chemical extraction in such manner that the final lye will consist essentially of a solution of calcium chlorid, for the purpose set forth.

2. The herein described process of treating zinciferous or cupriferous lyes resulting from the lixiviation of chlorinated roasted ores, which consists in converting the sulphates in the lye into chlorides by means of calcium chlorid, separating the resulting calcium sulphate from the lye, extracting the silver, if any be present, next the copper by electrolysis under evolution of chlorine, then chemically such other metals as may be present in the lye, concentrating the same by evaporation, removing the sodium chlorid therefrom, and subjecting the remaining lye to electrolysis and conducting the operations in such manner that a final lye consisting essentially of a solution of calcium chlorid is obtained, for the purpose set forth.

3. The process of treating zinciferous and cupriferous lyes, resulting from the lixiviation of chlorinated roasted ores, which consists in converting the sulphates in the lyes into chlorides by means of calcium chlorid, separating the resulting calcium sulphate, extracting the copper, iron, and other metals successively from the lye, then concentrating the latter by evaporation, removing the solid sodium chlorid obtained and extracting the zinc electrolytically under evolution of chlorine from the remaining lye, substantially as and for the purpose set forth.

4. The herein described process of treating zinciferous lyes resulting from the lixiviation of chlorinated roasted ores, which consists in converting the sulphates in the lye into chlorides by means of calcium chlorid, separating the calcium sulphate from the lye, extracting the silver, if any be present, converting the iron into a hydroxid by means of a suitable agent as carbonate of calcium, converting the nickel, cobalt &c. into oxids by means of chlorine, preferably in the form of hypochlorite of lime, whereby a equivalent quantity of calcium chlorid is formed, and concentrating the lye by evaporation, whereby the sodium chlorid is obtained in solid form and the remaining lye placed in condition for the extraction of the zinc.

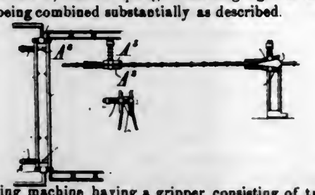
5. The herein described process of treating zinciferous lyes resulting from the lixiviation of chlorinated roasted ores, which consists in converting the sulphates in the lye into chlorides by means of calcium chlorid, separating the calcium sulphate from the lye, extracting the silver, if any be present, converting the iron into a hydroxid by means of carbonate of calcium, converting the nickel, cobalt &c. into oxids by means of chlorine, preferably in the form of hypochlorite of lime, whereby an equivalent quantity of calcium chlorid is formed, and concentrating the lye by evaporation, whereby the sodium chlorid is obtained in solid form, and extracting the zinc and chlorine electrolytically from the remaining solution, whereby a final lye available in the process is obtained, substantially as set forth.

6. The herein described process of treating cupriferous lyes resulting from the lixiviation of chlorinated roasted ores, which consists in converting the sulphates in the lye into chlorides by means of calcium chlorid, separating the resulting calcium sulphate from the lye, extracting the silver, if any be present, in a well known manner, then the copper by means of metallic iron, concentrating the solution by evaporation after removal of other metals if any be present in the lye, removing the sodium chlorid from the lye and extracting the remaining copper electrolytically under formation of chlorine, whereby a final lye consisting essentially of a solution of calcium chlorid is obtained after removal of the iron therefrom, for the purpose set forth.

544,500. **MACHINE FOR TINNING OR COATING SHEET-METAL PLATES.** SAMUEL Y. BUCKMAN, Philadelphia, Pa. Filed Sept. 5, 1893. Serial No. 484,819. (No model.)

Claim.—1. A coating or tinning machine having feed rollers and a serpentine guide on its frame, an endless apron adjacent to the feed end of said frame, an angular carrier on said feed apron, mechanism for rotating said rollers, and mechanism for operating said feed apron at a less rate of speed than said feed rollers are rotated, said parts being combined substantially as described

2. In a tinning or coating machine, the finishing rollers M, M', with sliding bearings for the rollers M, the pivotal rod U connected with said bearings, the arm V connected with said rod U, the rod W pivoted to said rod V, and the springs Y bearing against said rods W, said parts being combined substantially as described.



3. A tinning machine having a gripper consisting of two cross bars, one of which is provided with rods on which the other bar moves, and springs bearing against said movable bar, pressing it toward the other bar, and a shoe bearing against said bars, said parts being combined substantially as described.

4. In a coating or tinning machine, a conveyer having the cross bar A^3 with the rods A^4 thereon, the cross bar A^2 movable on said rods, the springs A^5 bearing against said bar A^2, and shoes secured to the frame of the machine and in position to actuate said cross bar A^2, said parts being combined substantially as described.

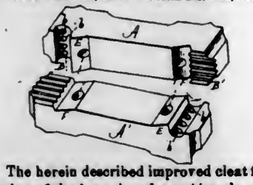
5. A tinning machine having finishing rollers in the exit end thereof, a conveyer with grippers adapted to receive the tinned sheet above said finishing rollers, and a stop thereon to limit the position of said sheet, shoes for operating said grippers, and an arm to sustain said sheets, said parts being combined substantially as described.

6. In a tinning or coating machine, a conveyer extending from the finishing rollers, and a gripper thereon, in combination with a table at the discharge portion of said conveyer, a shoe for opening said gripper above said table, and a supporting arm at one end of said table, substantially as described.

7. In a tinning or coating machine, a conveyer leading from the finishing rollers, and a gripper on said conveyer in combination with means for imparting intermitting motion to said conveyer, the same consisting of a wheel around which said conveyer passes, a pinion on the shaft of said wheel, a mutilated pinion on said shaft, and gearing for said pinion, substantially as described.

8. A tinning pot with an oil tank therein, said tank having a wall which is adjacent to the end walls of the tank, separated therefrom but extending to the bottom thereof, and forming a tight joint therewith, there being an air space between said walls which is open at top, substantially as described.

544,501. **CLEAT FOR HOLDING ELECTRIC WIRES.** ELISHA W. BUFFINGTON, Fall River, Mass., assignor of one-half to Albert F. Dow, same place. Filed Mar. 15, 1895. Serial No. 541,841. (No model.)

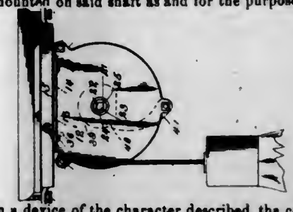


Claim.—1. The herein described improved cleat for holding electric wires, consisting of the base A and cap A' made exactly alike and adapted to be put together reversely, that is to say, with one end of the base next the opposite end of the cap, each of said parts being provided with the transverse groove B on its face at one end and the serrations B' on its face at the other end, and each of said parts being provided with a narrow wall E extending transversely across the cleat and above the highest point on the surface thereof and between the screw holes and the points at which the wires cross, and the transverse groove F corresponding in shape with said wall E, said groove and wall being placed near opposite ends of the two parts constituting the cleat, substantially as set forth.

2. In a cleat of the character described for holding electric wires, the combination of the two parts A and A', each part having its face at one end formed into the longitudinally serrated surface B' and at the other end into the transverse groove B provided centrally at its bottom with the line of independent depressions or recesses b each smaller in diameter than the groove contained therein, substantially as described.

544,502. **SUPPORT FOR INCANDESCENT LIGHTS.** CHARLES A. CARMANY, Middletown, Pa. Filed Sept. 8, 1894. Serial No. 522,454. (No model.)

Claim.—1. In a device of the character described, the combination with a block, of supports carried thereby and having slots therein, clamping plates having slots, securing screws passing through said slots and into the block, and projections on said plates adapted to enter said slots in the supports, a shaft mounted on said supports, and a drum rotatably mounted on said shaft as and for the purpose specified.



2. In a device of the character described, the combination with a block, of supports carried thereby, spring arms carried by the block, contact pins or lugs carried by the said arms and projecting through the block, a shaft mounted on the supports and a drum rotatably mounted on the shaft and in contact with said pins or studs, as and for the purpose specified.

3. In a device of the character described, the combination with a block, supports carried thereby, a shaft mounted on said supports, a drum rotatably mounted on the shaft and having a hub provided with a notch or recess, a pivoted pawl adapted to engage with said recess, and conducting wires secured to flanges on the drum and upon which wires said pawl is adapted to bear until the said wires have been unwound from the hub, as and for the purpose specified.

4. In a device of the character described, the combination with a block, supports carried thereby, a disk secured to one of said supports, a convolute spring secured at one end to said disk, a shaft to which the opposite end of the spring is secured, a drum rotatably mounted upon the shaft, a leaf spring secured at one end to the disk and bearing at its opposite end upon the convolute spring, a pivoted pawl or lever engaged by said leaf spring, and adapted to be tilted thereby as described, and a drum rotatably mounted upon the shaft and having a pin lying normally out of contact with the said lever and adapted to be struck by the latter when tilted as described.

5. In a device of the character described, the combination with a block, of supports carried thereby, a shaft, a collar loosely mounted upon said shaft, a disk loosely mounted on said collar, an internally toothed gear wheel secured to one of the supports, a drum rotatably mounted upon the shaft, a pinion carried thereby, an intermediate gear wheel loosely carried by the said disk and meshing with the said pinion and internal gear wheel, and a spring operating upon the parts, for the purpose specified.

6. In a device of the character described, the combination with a block, of supports carried thereby, a shaft, a collar loosely mounted upon said shaft, a disk loosely mounted on said collar, an internally toothed gear wheel secured to one of the supports, a drum rotatably mounted upon the shaft, a pinion carried thereby, an intermediate gear wheel loosely carried by the said disk, and meshing with the said pinion, and internal gear wheel, a spring operating upon said parts as described, a ratchet wheel on the collar, and a pawl carried by the disk and engaging said ratchet, as and for the purpose specified.

7. In a device of the character described, the combination with a block, of supports carried thereby, a shaft rotatably mounted at one end in one of said supports, a collar at the opposite end of the shaft rotatably carried by the other support, said collar having a square opening into which a squared end on the shaft fits, a disk secured to one of the supports, a convolute spring secured at one end to said disk and at the opposite end to the shaft, an internally toothed gear wheel secured to the other support, a disk rotatably mounted on said collar, a drum rotatably mounted on the shaft, a pinion carried by said drum, an intermediate gear wheel loosely carried by the said disk and meshing with the said pinion and internal gear wheel, a ratchet wheel on the collar, and a pawl pivoted to the disk carrying the intermediate gear wheel and engaging said ratchet.

544,503. **BRACE FOR WIRE FENCES.** JOSHUA COLLINSON, East Orange, N. J. Filed Dec. 5, 1894. Serial No. 530,842. (No model.)

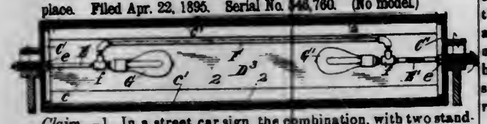


Claim.—1. In a wire fence having T-shaped posts provided with horizontally arranged holes or openings, a horizontally arranged brace having its ends tapered or pointed, penetrating the intermediate posts and resting with its tapering or pointed ends in the holes of the end posts, substantially as and for the purposes described.

2. In a wire fence, the combination with the end and intermediate posts provided with horizontally arranged holes or openings, and with the horizontally arranged wires, of a rod having its outer ends tapering or pointed, said rod being arranged parallel with the wires and passing through the holes of the intermediate posts and resting

with its pointed ends in the holes or sockets of the end posts, substantially as shown and for the purposes described.

544,504. STREET-CAR SIGN. JEROME H. DEYERS and CHARLES KIECHLER, Cincinnati, Ohio; said Kiechler assignor to Amos Dye, same place. Filed Apr. 22, 1895. Serial No. 546,760. (No model.)



Claim.—1. In a street car sign, the combination, with two standards, one of which is provided with a square socket, of a frame journaled therein, provided with a shaft at each end, a hollow trunnion upon each shaft, one of which is square and the end of the other one is square, removable slides in the sides of the frame, a scalloped baffle plate at each end of the frame having a square hole and fitting between the ends of the frame and the standards, and a nut upon the outer end of each shaft for holding the trunnions against the end of the frame, substantially as set forth.

2. In a revoluble or changeable route sign or indicator for street-cars, the combination of an open skeleton-frame having guide-ways therein and suitably trunnioned end-heads; one or more sign-slides composed of stenciled metallic front-faces and fillings of colored glass or other similar, suitable transparent material, and adapted to engage said guide-ways; an elbowed central-shaft made of tubing and on which said frame and its sign slide or slides are mounted; one or more incandescent electric-lamps mounted on said shaft and adapted to diffuse light through the colored glass and stenciled letters of said sign slide or slides; barrier-plates or catches adjacent the outer ends of said sign slide or slides; and suitable bearing-standards for the resting of the trunnions of said frame, substantially as herein set forth.

544,505. SUSPENDING DEVICE FOR LAMPS. FRANK G. BOHOLA, Waterbury, Conn., assignor to the Plume & Atwood Manufacturing Company, same place. Filed Oct. 8, 1894. Serial No. 525,200. (No model.)



Claim.—1. The combination with a spring barrel having a vertical axis, of a nearly level surface, a ball adapted to roll upon that surface, a stationary angular stop and a tooth or angular stop moving with the spring barrel and adapted to clear the stationary stop when the spring barrel is rotated, the ball acting to arrest the movement of the spring barrel when rolled in between the stationary and moving stop, substantially as set forth.

2. The combination with a yoke frame having a central pin and a suspending device at the upper end, of a spring surrounding the pin, a barrel with which the outer end of the spring is connected, and chains or cords extending to the article to be suspended and connected to and wound upon the spring barrel, a nearly flat head for the upper end of the spring barrel, and a surrounding rim provided with internal ratchet teeth, a stop connected with the yoke frame and extending down within the rim of the head but out of contact with the ratchet teeth, and a ball upon the head adapted to intervene between the ratchet teeth and the stationary stop for arresting the movement of the spring barrel, substantially as set forth.

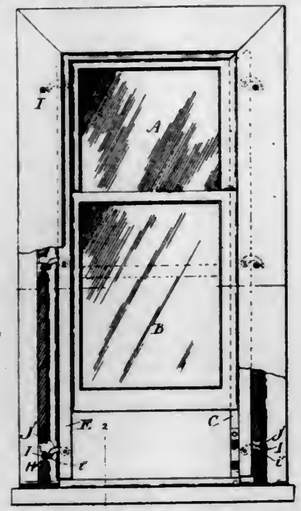
3. The combination with a suspending device and a spring barrel, of a nearly flat head to the spring barrel, a ball upon such head, a stationary stop connected with the suspending device, teeth that are rotated with the spring barrel but out of contact with the stationary stop, the rotation of the parts being arrested when the ball intervenes between the stationary and moving parts, substantially as set forth.

4. The combination with a spring barrel and suspending devices, of a stationary stop upon the suspending devices, a nearly level plate or head connected with the spring barrel and having a surrounding rim with inwardly projecting ratchet teeth that are free to be moved without coming in contact with the stationary stop, a ball upon the head adapted to roll in between the stop and the ratchet teeth for arresting the movement of the spring barrel, and flanges for retaining the ball in its proper position, substantially as set forth.

5. The combination with the yoke frame having a central pin and a suspending device, of a volute spring the inner end of which is engaged by the central pin, a spring barrel surrounding and rotating upon the central pin and connected with the outer end of the spring, cords or chains to the article to be suspended and pulleys over which they pass, a nearly level top head to the spring barrel having a rim around its edge with inwardly projecting ratchet teeth, a ball resting upon this top head, and a stationary stop connected with the cross bar of the yoke and extending down within the rim and with which stop the ball comes into contact when arresting the movement of the ratchet teeth and spring barrel, substantially as set forth.

6. The combination with the spring barrel, circular ratchet, stationary stop and suspending devices, of a ball to engage the ratchet teeth and stop, and a guide finger moved by the spring barrel, substantially as specified.

544,506. WINDOW. JOHN FREDRICKSON, Chicago, Ill. Filed Apr. 15, 1895. Serial No. 545,755. (No model.)

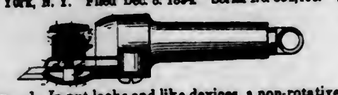


Claim.—1. In a window the combination with a suitable frame, a sash, and a movable guided strip, the frame being provided with a suitable recess into which said strip may be withdrawn, of a shaft journaled in the frame and having an arm projecting therefrom, and a link pivotally connected at one end to said arm and at the other end to the guiding strip, the arm and link being arranged to operate after the manner of a toggle for moving the guiding strip, substantially as set forth.

2. In a window the combination with a suitable frame, a sash, a movable parting strip and a movable front stop, the frame being provided with suitable recesses into which the said parting strip and front stop may be withdrawn, of a shaft journaled to the frame and having arms projecting therefrom, a link pivotally connected at one end to one of said arms and at the other end to the parting strip, and a link pivotally connected at one end to the other of said arms and at the other end to the front stop, said arms and links being adapted to operate as toggles, substantially as set forth.

3. In a window the combination of a suitable frame having pulley stiles, a sash, a movable parting strip, a movable front stop, the pulley stile being provided with recesses into which said parting strip and front stop may be withdrawn, a shaft journaled to the back of the pulley stile and having arms projecting therefrom, a link pivotally connected at one end to one of said arms and at the other end to the parting strip, and a link pivotally connected at one end to the other of said arms and at the other end to the front stop, substantially as set forth.

544,507. LOCK OR WASHER FOR NUTS. GEORGE W. GILLETTE, New York, N. Y. Filed Dec. 8, 1894. Serial No. 531,190. (No model.)



Claim.—1. In nut locks and like devices, a non-rotative bolt, and a nut screwing thereon and having a projecting cylindrical shank on its inner side, in combination with a cup-shaped casing surrounding

said bolt, having a wall at its inner end, a hollow body, and an inwardly projecting flange at its outer end surrounding the shank of said nut, and a spring inclosed in the hollow body of said casing and acting against the shank of said nut, substantially as and for the purpose set forth.

2. In nut locks and like devices, a non-rotative bolt, and a nut screwing thereon and having a cylindrical shank on its inner side, and projecting faces at the inner end of said shank in combination with a non-rotative washer having reciprocal faces engaging those of the nut, an elastic material forcing said washer toward said nut, and a tubular casing inclosing said material and washer, and the shank of said nut and having an internal flange surrounding the said shank at the outer side of said washer, substantially as and for the purpose set forth.

3. In nut locks and like devices, a bolt E having a face *m*, and a nut F screwing on said bolt and having projecting faces *i* on its inner side, in combination with a washer *k* having faces engaging those of the nut, a hole *n* embracing the bolt, and a face *o* engaging the face *m* thereof, a spring forcing said washer toward said nut, and a casing inclosing said spring, substantially as and for the purpose set forth.

4. In nut locks and like devices, a bolt E having a face *m*, in combination with a nut screwing on said bolt and having projecting faces *i* on its inner side, a spring acting against the faces of said nut, and a casing *p* inclosing said spring having a central hole fitting over said bolt, and a face *r* engaging the face *m* thereof and preventing rotation of the casing, said casing having a flange *s* surrounding the shank of the nut, substantially as and for the purpose set forth.

544,508. CHEESE HOOP AND FOLLOWER. FRANK L. JONES, Utica, N. Y. Filed Nov. 22, 1894. Serial No. 529,570. (No model.)

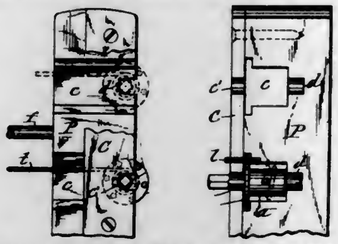


Claim.—1. The combination of two or more hoops each having a removable bottom, an inwardly turned flange on its lower edge adapted to support the bottom, the lower portion of each hoop being reduced in diameter for some distance above the bottom to enter the upper end of the next adjacent hoop when placed in a gang, and a follower between the hoops, substantially as set forth.

2. The combination of two or more cheese hoops each having an inwardly turned flange on its bottom and reduced for some distance above the bottom to enter each other, a removable bottom for each hoop supported on the flange, and a follower having a projecting portion on its back adapted to support the central portion of the removable bottom, substantially as set forth.

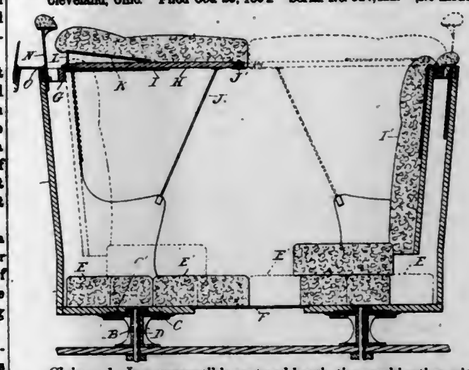
3. The combination of a cheese hoop having an inwardly turned flange on its bottom, of a removable bottom supported thereon, a follower having a projecting portion on its back adapted to support the removable bottom, and a second hoop in which the follower operates substantially as set forth.

544,509. WIRE FENCE. ORVILLE M. KNOX, Oneida, N. Y. Filed Dec. 17, 1894. Serial No. 532,019. (No model.)



Claim.—In a wire-fence, the combination of the post —P— having mortises —c—c— extending across the side thereof and provided in the vertical face of each mortise with a socket —d— extending through one end of the mortise, the plate —O— secured to the mortised side of the post and provided in its edge with the journal-seats —d'—d'— axially in line with the aforesaid sockets, the winches —a—a— disposed in the mortises —c—c— and having their journals mounted in the aforesaid sockets and seats, the wires —l—l— secured to said winches, the disks —e—e— integral with the winches and perforated near their outer edges, and locking-pins —l'—l'— inserted removably in the perforations of the disks as set forth.

544,510. CONVERTIBLE SEAT AND BERTH. JOHN KRENDEL, Cleveland, Ohio. Filed Oct. 29, 1894. Serial No. 527,122. (No model.)



Claim.—1. In a convertible seat and berth, the combination with the seat frame, of a seat back hinged at its upper end to the frame adapted to form a section of an upper berth, and a head rest carried by the frame independent of the back adapted to form an extension of the upper berth, substantially as described.

2. In a convertible seat and berth, the combination of the seat frame, the seat back hinged thereto and adapted to be turned in horizontal position to form a section of an upper berth, the removable section of the top of the seat frame independent of the seat back, and the extensible support therefor to permit of such top being raised to form an end extension of the upper berth, substantially as described.

3. In a convertible car seat, the combination with the seat frame, of a vertically adjustable head rest carried thereby, a seat back, means for securing the same in a horizontal position, and means for adjusting the upper end of the seat back to vary the inclination thereof, substantially as described.

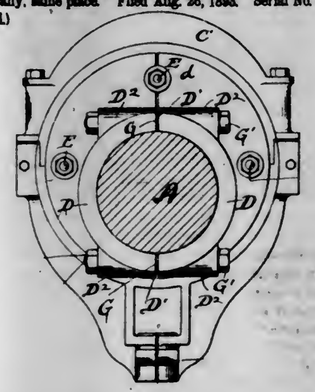
4. In a convertible seat and berth, the combination of the seat frame, the seat back hinged thereto at the top and adapted to be supported in a horizontal position to form an end section of an upper berth, of the hinged frame K on the upper face of said seat back frame, the end of the cushion supported on the end of said frame K, and a support for the outer end of said frame, such as the links L, substantially as described.

5. In a sleeping car, the combination with swiveled seat frames adapted to be arranged in pairs, each pair adapted to be converted into sleeping berths, of hinged connections between the tops of the adjoining frames of each pair, substantially as described.

6. In a sleeping car, the combination with the swiveled seat frames adapted to be converted into sleeping berths in pairs, of the bedding plates O on the tops of the seat frames adapted to form a brace for the adjoining frames of each pair, substantially as described.

7. In a convertible seat for sleeping cars, the combination with a seat frame, of a seat back, means for supporting the back in a horizontal position, and an independently adjustable section on the frame adapted to constitute an extension of the berth section formed by the back, substantially as described.

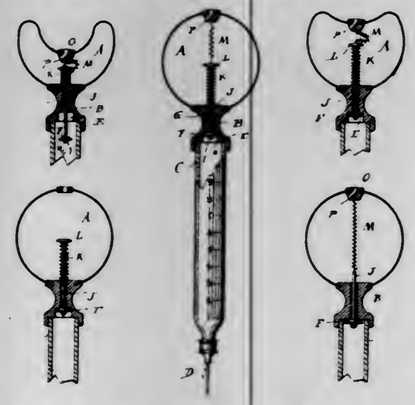
544,511. MEANS FOR HOLDING ECCENTRICS. ALBERT K MANSFIELD, Salem, Ohio, assignor of one-half to the Buckeye Engine Company, same place. Filed Aug. 26, 1893. Serial No. 484,138. (No model.)



Claim.—1. The combination with the engine-shaft, main bearing and eccentric for operating the valve-gear of the engine, said eccentric being mounted upon the shaft contiguous to said bearing, of a split-collar flanged laterally, as at *d*, bolts or studs E extending through said flange into the eccentric, and suitable means for clamping the collar upon the shaft, substantially as set forth.

2. A split collar D, flanged laterally, as at *d*, and provided with perforated lugs or ears D^3, and means for securing together the sections of the collar, all arranged substantially as shown, for the purpose specified.

544,512. SYRINGE. ANTON MOLINARI, Wood Ridge, N. J. Filed Mar. 12, 1895. Serial No. 541,437. (No model.)

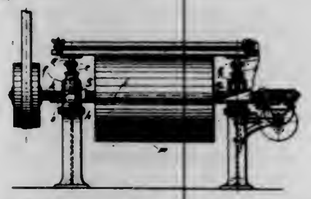


Claim.—1. In a hypodermic bulb syringe, the combination with a compressible bulb, of a neck secured on the same, which neck is provided with a longitudinal bore, a barrel having one end fastened in said neck, a spring controlled valve having a seat in said neck, and opening in the direction from the bulb and a hypodermic needle on that end of the barrel opposite the one connected with said neck, substantially as herein shown and described.

2. In a hypodermic bulb syringe the combination with a compressible bulb, of a neck on the same, a barrel having one end secured on said neck, a valve for closing a bore in said neck, and opening in the direction from the bottom of the neck, a spring within the bulb for holding said valve on its seat, and a hypodermic needle on the opposite end of the bulb, substantially as herein shown and described.

3. In a bulb syringe, the combination with a compressible bulb, of a neck on the same, a barrel having its end secured on said neck, a valve seating in said neck and closing in the direction toward the bulb, a spring within the bulb for holding said valve against its seat and a plug in said bulb, which plug is provided with an air channel, substantially as herein shown and described.

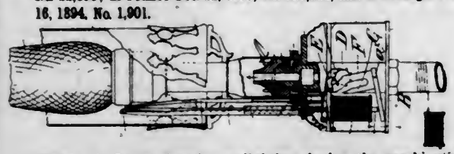
544,513. MACHINE FOR GRINDING FLAT FACETS. MAX OFFENBACHER, Fürth, Germany. Filed July 24, 1894. Serial No. 518,438. (No model.)



Claim.—1. The combination with a rotating grinding roller, of a plate supporting table, mechanism for raising and lowering said table, and connecting mechanism between the grinding roller and the table elevating mechanism, whereby the table is raised and lowered in unison with the rotation of the grinding roller.

2. The combination, with a grinding roller of a table *a* with means for securely holding the glass thereon and vertical supports *e* and *e'* pivotally supporting said table and resting on inclined surfaces *a* and *f* secured to a bar *i*, which latter receives a reciprocating motion from the shaft *k* of the grinding roller, and mechanism for giving the bar *i* such reciprocating motion whereby the supports *e* and *e'*, and with them the table, are periodically raised and lowered, substantially as and for the purpose described and shown.

544,514. ELECTRIC GAS-LIGHTER. ERIK ORLING, Stockholm, Sweden, assignor to the Aktiebolaget Inventor, same place. Filed Feb. 5, 1895. Serial No. 537,325. (No model.) Patented in Sweden Feb. 23, 1893, No. 4,542; in Germany Mar. 28, 1893, No. 72,775; in Belgium June 3, 1893, No. 104,923; in Switzerland Aug. 25, 1893, No. 7,449; in Italy Sept. 30, 1893, XXVIII, 34,792, LXVIII, 214; in England Nov. 28, 1893, No. 22,858; in France Dec. 22, 1893, No. 224,311, and in Portugal Aug. 16, 1894, No. 1,901.



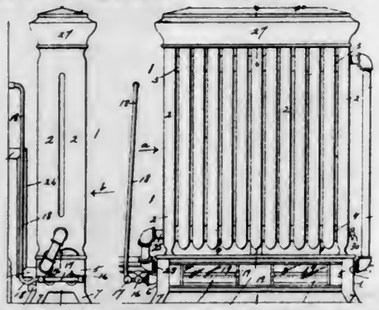
Claim.—1. In an electric gas-lighting device, the combination with the gas-cock, of the wheel D thereon, provided with long teeth having curved backs, the electro-magnet, its armature B, pivoted at a^x, a pawl-arm rigidly fixed to the armature and bearing a pawl which engages the teeth of the wheel D, the said pawl, adapted to rotate the wheel by impulses when the armature vibrates, an arm G, rigidly fixed to the armature and bearing a pin which engages the curved back of a tooth of the wheel D when the armature is attracted and limits the rotation of said wheel, the curve of the back of the teeth in said wheel D being of such form that at the locking point the curve of the tooth coincides substantially with the path of the locking pin, substantially as set forth.

2. The combination with an incandescent gas-burner, having a mixing chamber with inlets for gas and air thereto, of an auxiliary gas jet tube S, connected at its receiving end with the gas-inlet pipe of the burner, whereby it receives pure gas unmixed with air, and an automatic, electric spark-producing device, substantially as described for igniting the gas of said auxiliary jet, as set forth.

3. The combination with the apertured mixing chamber *g*, of the nipple *h*, secured therein, the chambered plug *b*, screwed into the nipple *h* at its outer end and adapted to be secured to the gas supply pipe at its other end, said plug having radial gas-passages *d*, the chambered ring *a*, embracing the plug *b* and adapted to receive gas therefrom, the auxiliary jet-tube S, communicating with the gas-chamber within the ring *a*, and adapted to receive gas therefrom, and a spark-producing electrical device adapted to ignite the gas issuing from the tube S, substantially as set forth.

4. The combination with the gas-supply pipe, and the casing *n*, mounted thereon and having top and bottom plates c and *p* and an inner plate I, of the electro-magnet mounted on the said plate I, within the casing, its armature B, the tracker-pin M, resting on the armature, the electrode N, mounted on the plate c, the sliding rod L, mounted in a guide on the plate *c*, and adapted to be lifted by the tracker-pin when the armature is attracted, the electro-magnet, the electrode N, and the rod L being in the same circuit, and a gas-jet arranged adjacent to the point where the tip of the rod L is in contact with the electrode N, substantially as and for the purposes set forth.

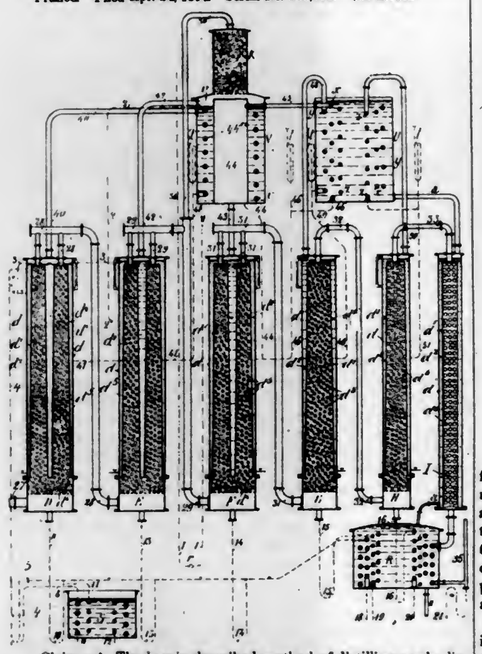
544,515. HEATING APPARATUS. GEORGE PRIEST, Worcester, Mass., assignor of one-half to Frederick W. Codding, same place. Filed Apr. 10, 1895. Serial No. 545,142. (No model.)



Claim.—1. In a heating apparatus, the combination, with a casing, of burners located therein, a boiler above and a chamber below the burners, the chamber having its top and bottom perforated, and being provided with an inlet opening, whereby air may be conveyed thereto from the exterior, and a radiator upon the casing communicating with the boiler, substantially as set forth.

2. In a heating apparatus, the combination, with a casing, the interior of which is provided with inwardly projecting lugs, one wall is provided with doors and the opposite wall is provided with two openings, a boiler within the casing, upon a portion of the lugs, a chamber upon the other lugs, said chamber having its top and bottom perforated and communicating with one of the openings in the wall, and burners between the boiler and the chamber, the other opening in the wall of the casing forming an outlet for the products of combustion, substantially as set forth.

544,516. METHOD OF AND APPARATUS FOR CONTINUOUS DISTILLATION OF CRUDE HYDROCARBONS, &c. ODILON PERRIER, Paris, France. Filed Apr. 24, 1894. Serial No. 508,790. (No model.)



Claim.—1. The herein described method of distilling crude, liquid hydrocarbons in a continuous manner, for the purpose of facilitating the disengagement of the more volatile products at a comparatively low temperature, which consists in subjecting an inclosed current of the liquid, at one point in its flow, to agitation at a comparatively low temperature, in such a manner as to expose the liquid in thin films, then exposing the liquid, at a farther point in its flow to heat sufficient to vaporize it, and finally leading the hot vapors so generated back to the point where the agitation is proceeding, substantially as set forth.

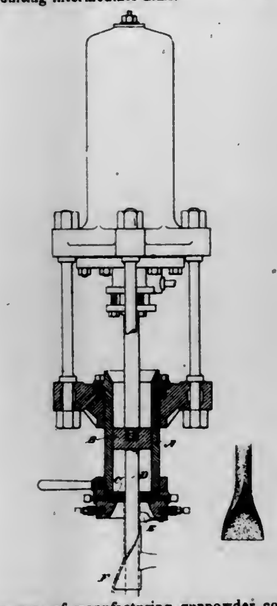
2. In an apparatus for the continuous distillation of crude hydrocarbons, the combination with a boiler C, through which the liquid hydrocarbon flows, and with a rotating agitator, contained in said boiler C, said agitator consisting of a shaft with a series of spirally arranged, perforated blades, of the boilers A and B, connected together and with the boiler C, and means for heating said boilers A and B, whereby the hot hydrocarbon vapors from the boilers A and B, are caused to act on the vapors generated at a lower temperature in the boiler C and on the thin film of liquid on the blades of the agitator therein.

3. In an apparatus for the fractional distillation of crude hydrocarbons, the combination with the boiler A, provided with a perforated pipe 23 adapted to receive superheated gases, the boiler B, arranged at a higher level than boiler A and provided with a perforated pipe 24, the pipe 25 connecting the boiler A with the pipe 24, the boiler C, arranged at a higher level than boiler B, and provided with a rotating agitator and an outlet for vapors, the pipe 26, connecting the upper parts of the boilers B and C, and the connecting pipes 5, 6 and 7, substantially as set forth

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544,517. PROCESS OF AND APPARATUS FOR MAKING GUNPOWDER. WILLIAM C. PEYTON, Santa Cruz, assignor to the California Powder Works, San Francisco, Cal. Filed May 28, 1894. Serial No. 512,783. (No model.)

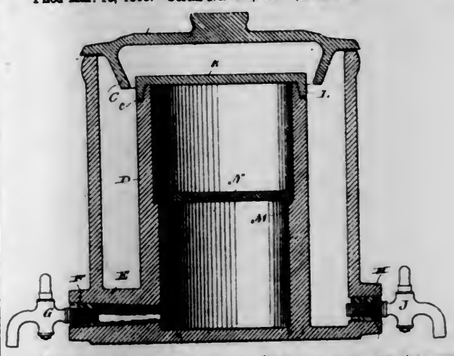
Claim.—1. In the manufacture of gunpowder which is plastic at a certain stage, the process of forming the plastic mass into a tube, cutting this through one side parallel with the axis, opening the tube into a flat sheet and passing it between grooved rollers whereby the sheet is formed into numerous parallel strips having a geometrical cross section, with uniting intermediate films.



2. The process of manufacturing gunpowder consisting in first forcing the plastic material through a central hole around a rod or mandrel whereby it is formed into a tube, then cutting the tube open along one side parallel with the axis, and separating the edges to form the cylinder into a flat sheet, then passing the sheet thus formed between grooved rollers, whereby the sheet is formed into parallel strips of geometrical cross section with intermediate uniting films, and finally passing it beneath a vertically reciprocating cutter whereby the strips are cut into grains.

3. An apparatus for forming plastic material into sheets, consisting of a cylinder adapted to receive the material which is forced through it by pressure, a die at the opposite end of the cylinder with a central hole, a mandrel passing through the center of said hole leaving an annular channel around it through which the material is forced so as to form a tube or pipe, and a fixed cutter adapted to cut through one side of said tube after it leaves the dies, and diverging guides by which the cut edges are separated and the tube formed into a flattened sheet.

544,518. WATER-COOLER. LOUIS M. PIERRON, Milwaukee, Wis. Filed Mar. 18, 1893. Serial No. 466,668. (No model.)



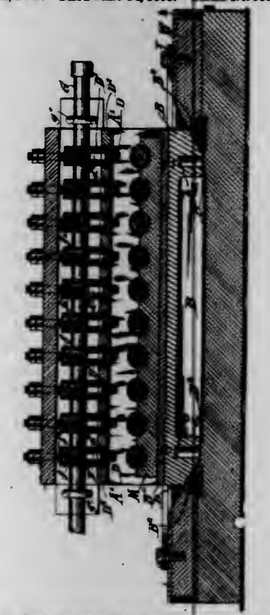
Claim.—1. A water-cooler comprising a non-porous stoneware chamber having an interior continuous shoulder, a porous tile seated on the shoulder to divide the chamber into two compartments, a non-porous stoneware vessel inclosing said chamber and having a base in common therewith provided with a delivery-conduit leading from the same, and separate covers for the chamber and vessel.

2. A water-cooler comprising a non-porous stoneware chamber having an interior continuous shoulder, a porous tile seated on the shoulder to divide the chamber into two compartments, a non-porous

stoneware vessel inclosing said chamber and having a base in common therewith provided with a delivery-conduit leading from the same, a faucet-receiving boss at the bottom of the vessel, and separate covers for the chamber and vessel.

3. A non-porous stoneware water-cooler comprising a chamber and inclosing vessel having a common base provided with a delivery-conduit leading from the chamber through the vessel, a cover having a depending flange that encompasses a reduction at the upper end of the chamber and comes flush with the wall thereof, and a cover for the vessel having an inwardly tapered flange that extends below the top of the chamber-cover.

544,519. MACHINE FOR BRANDING CIGARS. EMANUEL PINKO, New York, N. Y. Filed June 14, 1895. Serial No. 552,833. (No model.)



Claim.—1. In a machine for branding cigars, the combination of a vertically-reciprocating platen for the cigar mold, means for reciprocating the platen, a series of spring-cushioned dies arranged in a series parallel with the platen, and means for heating the dies, substantially as set forth.

2. In a machine for branding cigars, the combination of a bed-plate, a vertically-guided platen on the bed-plate for holding the mold, means for reciprocating said platen, branding-dies above the platen, vertically-guided and spring-actuated holders for supporting said branding-dies, and means for heating the branding-dies, substantially as set forth.

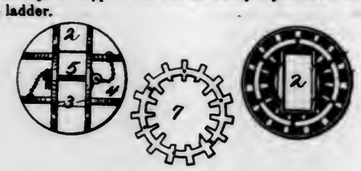
3. In a machine for branding cigars, the combination of a bed-plate, a vertically-reciprocating platen supported on said bed-plate, wedges guided in ways of said bed-plate and adapted to engage the correspondingly inclined lower ends of the platen, means for operating said wedge-blocks, and a series of vertically-guided and spring-cushioned branding-dies located above the mold placed on said platen, substantially as set forth.

4. In a machine for branding cigars, the combination of a horizontal guide-plate, die-holders guided in openings of said guide-plate, branding-dies secured to the lower ends of said holders, said holders being provided with longitudinal channels, and means for heating said branding-dies, with means for supporting a mold below the dies, substantially as set forth.

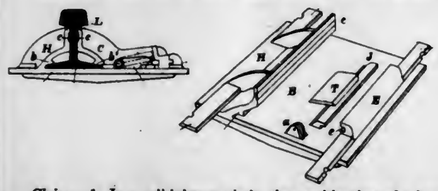
5. In a machine for branding cigars, the combination of a vertically-reciprocating platen, a mold for containing cigars to be branded, supported on said platen, gage-screws for the mold, vertically-guided and spring-actuated branding-dies located vertically above the mold, means for heating said dies, and means for supplying the air to the heating-devices, substantially as set forth.

544,520. LADDER-SUPPORT. HENRY REIFFENSTEIN, Syracuse, N. Y. Filed May 23, 1895. Serial No. 550,393. (No model.)

Claim.—The combination with a ladder of supports each comprising a body, a pad provided with a broken face, a ring provided with transverse cross-bars and means to secure it to said body to retain said pad, and a pivot-bolt connecting said body to the ladder rail, whereby the support will automatically adjust itself to the angle of the ladder.



544,521. RAIL JOINT OR CHAIR FOR RAILWAYS. CHRISTIAN RIEFFINGER, Philadelphia, Pa., assignor of one-half to Robert L. Keely, same place. Filed Feb. 23, 1895. Serial No. 539,974. (No model.)

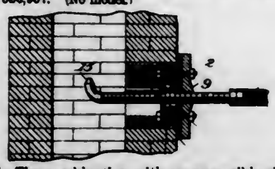


Claim.—1. In a rail-joint or chair, the combination of a base, a fixed jaw secured to the base, a movable jaw to slide parallel with the fixed jaw against the rail, a dovetail tongue upon which the movable jaw may slide secured to the base and inclined to the plane thereof, a lug secured to said base, and a wedge adapted to slide between said lug and said movable jaw to force the latter against the rail, substantially as shown and described.

2. In a rail-joint or chair, the combination of a base, a fixed jaw secured to the base, a dovetail tongue secured to the base, a lug secured to the base, a movable jaw to slide on said dovetail tongue parallel with the fixed jaw and a wedge to slide between the back of the movable jaw and the lug to force the former against the rail, substantially as shown and described.

3. In a rail-joint or chair the combination of the base B, the fixed jaw H, lugs E and J and dovetail tongue T secured to said base, the latter inclined to the plane of the base, the movable jaw C, adapted to slide on the tongue T, the wedge D to slide between the lugs E and J and force the jaw C against the rail and provided with notches *n*, the supports *a*, the key F, split pin *i* and pivot *d*, all arranged and adjusted substantially as shown and described.

544,522. CHIMNEY-CLEANING APPARATUS. NOAH P. SMITH, Ransom, and PATRICK F. LAWLER, Pittston, Pa. Filed Oct. 25, 1894. Serial No. 526,937. (No model.)



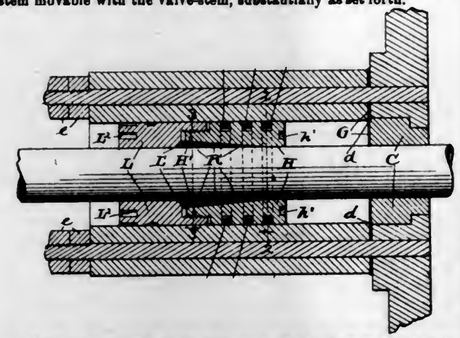
Claim.—1. The combination with an expansible ring or support adapted to be expanded and secured within the pipe hole of a chimney, of a cover plate and means for connecting said plate rigidly to the expansible ring or support, and a pipe passing through the cover plate and having a nozzle on its inner end adapted to direct the steam or other fluid from the pipe into the flue of the chimney, substantially as described.

2. The combination with an expansible ring adjustable to fit pipe holes of different sizes, and provided with set screws, of a cover plate and means for attaching the cover plate to the expansible ring, substantially as described.

544,523. PACKING FOR RECIPROCATING VALVE-STEMS. DANIEL R. SULLIVAN, Green River, Wyo. Filed Apr. 13, 1895. Serial No. 545,653. (No model.)

Claim.—1. The combination with the valve-chest and stem of valve operating within said chest, bushing embracing the stem where the latter extends into the chest and the latter being bored to receive the bushing, of a cylindrical shell or case surrounding the stem at the outer end of said bushing, said shell or case being rigid with the chest and overlapping the end of the aforesaid bushing, and packing interposed between the valve-stem, and the aforesaid shell or case and movable with the valve-stem, substantially as set forth.

2. The combination with the valve-chest and stem of valve that operates within said chest, bushing embracing the stem where the latter extends into the chest, and the chest being bored to receive said bushing, of a cylindrical case or shell surrounding the stem at the outer end of said bushing, a gasket interposed between the inner end of said shell or case and the chest, said shell or case being rigid with the chest and overlapping the outer end of the aforesaid bushing, and packing interposed between said shell or case and the valve-stem movable with the valve-stem, substantially as set forth.



3. The combination with the valve-chest and stem of the valve operating within said chest, of a cylindrical case or shell surrounding the stem and rigid with the chest, and packing interposed between said shell or case and the stem and movable with the stem, said packing comprising a bull-ring mounted upon the valve-stem and having a bore therethrough gradually enlarged toward the outer end of the ring and provided with any suitable number of external annular grooves or recesses, snap-rings engaging said grooves or recesses and engaging the aforesaid shell or case internally, retaining-rings or wedges interposed between the valve-stem and surrounding wall of the tapering-bore through the bull-ring, said retaining-rings or wedges being cut or split substantially as indicated, and suitable means for effecting frictional engagement between the retaining rings or wedges and valve-stem and between said rings or wedges and the embracing bull-ring, substantially as set forth.

4. The combination with the valve-chest and stem of the valve operating within said chest, of a cylindrical case or shell surrounding the stem and rigid with the chest, packing interposed between said shell or case and the stem and movable with the stem, said packing comprising a bull-ring H mounted upon the valve-stem and having a bore therethrough gradually enlarged toward the outer end of the ring and provided with any suitable number of external annular grooves or recesses *h*, the outer portion of said ring being reduced in diameter and screw-threaded externally, snap-rings I engaging said grooves or recesses and engaging the aforesaid shell or case internally, retaining-rings or annular wedges K split or cut, as at K′, and the nut L, all arranged and operating substantially as shown, for the purpose specified.

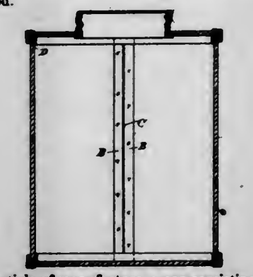
544,524. BICYCLE NAME-PLATE. CHARLES W. VOEMER, Oakland, Cal. Filed June 3, 1895. Serial No. 551,522. (No model.)



Claim.—A name-plate for bicycles consisting of a sheet of metal made longest in the direction *a* and narrowed to the edges *b*, said edges being integral with the plate and folded inwardly, in combination with a tapering key having its edges turned outwardly and adapted to interlock with those of the plate, said key being within the inner circle of the plate and having its inner face made concave so as to correspond with the inner curvature of the plate and the exterior curvature of the tubular frame, and adapted to clamp the plate upon the frame when moved from the larger toward the small end.

544,525. PAPER CAN. GEORGE H. BARTLETT, San Francisco, Cal. Filed Oct. 22, 1894. Serial No. 526,631. (No model.)

Claim.—1. An improved can composed of paper or paste board and consisting of a body formed of one piece with its edges joined together along one side by means of U-shaped channel strips whose bases abut whereby the strips are approximately flush with and form continuations of the said edges, and means for uniting the top and bottom of the can to the body consisting of thin strips of bendable metal rolled in an S-form in transverse section to form oppositely facing channels for the end of the can body, while the outer periphery of the metal strip projects upwardly around the outside of the opposite channel to receive the head, which rests upon the metal between the two channels, said projecting edge being bent or crimped over said end to securely lock the same to the body, substantially as herein described.



2. As an article of manufacture, a can consisting of a cylindrical paste board or paper body, paper or paste board heads therefor, U-shaped strips of thin metal united together and each receiving one edge of the can body, narrow metal strips of bendable metal rolled into approximately S-form in cross section with one portion forming a channel to receive the end of the body while the outer edge of the strip is bent over the head to lock the same to the body, an opening formed in one of said heads, a channeled strip surrounding the opening and a paper disk for closing said opening and having its edges confined by the surrounding strip, substantially as described.

544,526. TOY. ABE BRITTON and JOHN H. PETERSON, Philadelphia, Pa. Filed Oct. 17, 1894. Serial No. 526,153. (No model.)



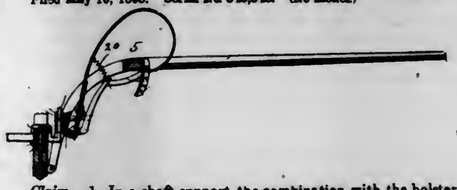
Claim.—1. A body having a receiving chamber therein, and jaws of pliable material freely closing the bottom opening of said chamber, and attached to the body about said opening, substantially as described.

2. A toy formed of a body with a receiving chamber, and a discharge opening therein, jaws freely closing the bottom opening of said chamber, and a suspension cord, said jaws being formed of pliable material with an attaching rim, substantially as described.

3. The body A, having the receiving chamber B, and discharge opening C therein, in combination with the jaws D, which extend across the bottom of said chamber, and are formed of pliable material secured to said body, substantially as described.

4. A body having a receiving chamber, jaws with a rim attached to said body, a suspension cord and a loaded ball, said jaws freely closing the bottom opening of said chamber, and being formed of pliable material, and the parts combined substantially as described.

544,527. SHAFT-SUPPORT FOR VEHICLES. JOHN R. CARFIELD, Indianapolis, Ind., assignor of one-half to Arthur N. Wilson, same place. Filed May 16, 1895. Serial No. 549,540. (No model.)



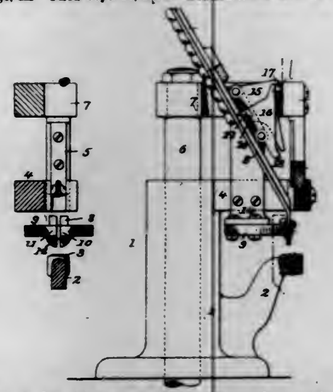
Claim.—1. In a shaft support, the combination with the bolster, the shafts and cross bar, the bracket and the pin, of the vertically adjustable socket journaled on said pin, the lugs, the clamp, the curved spring, the apertured plates and bracket secured to the cross bar of the shafts and the pin; substantially as described.

2. In a shaft support, the combination with the bolster, the shafts and the cross bar, the bracket and pin, the adjustable socket provided with lugs, the pivoted clamp, the curved spring connected therewith, the bracket secured to the cross bar provided with apertured plates and the pin for connecting the spring thereto, of the bent arm pivoted to said lugs, the trigger pivoted thereto and having a notch at its lower end, the coiled spring and the strap; substantially as described.

3. In a shaft support, the combination with the shafts and cross bar, the bolster, the bracket having a pin, the socket provided with

lugs, the clamp pivoted thereto, the spring engaging with said clamp, the bracket secured to the cross bar and provided with apertured plates, and the pin connecting said plates and spring, of the bent arm, the trigger formed with a notch pivoted thereto, the coiled spring connecting said spring and trigger, the strap connecting the said pin and trigger, and the set-screw at the lower end of the angle-plate; substantially as described.

544,528. BUTTON-ATTACHING MACHINE. CLYDE J. COLEMAN, Chicago, Ill. Filed Sept. 17, 1894. Serial No. 523,298. (No model.)



Claim.—1. In a button attaching machine, the combination of a driving plunger, a clinching anvil, an intermediate magnetic holder and a feeding chute, the lower or delivery end of which is arranged in a vertical plane, the holding face of such magnetic holder, being arranged in line with and directly beneath the delivery end of the feeding chute, to arrest and hold magnetically the descending button staple in the path of the driving plunger, and provided with a vertical passageway for the movement of the button shank during the operation of forcing the magnetically held button staple down upon the anvil, substantially as set forth.

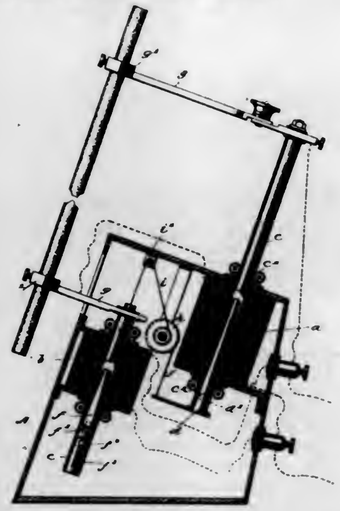
2. In a button attaching machine, the combination of a driving plunger, a clinching anvil, an intermediate magnetic holder, a feeding chute, the lower or delivery end of which is arranged in a vertical plane, and means for feeding the staples with their attached buttons singly to the magnetic holder, the holding face of such magnetic holder being arranged in line with and directly beneath the delivery end of the feeding chute to arrest and hold magnetically the descending button staple in the path of the driving plunger, and provided with a vertical passageway for the movement of the button shank, during the operation of forcing the magnetically held button staple down upon the anvil, substantially as set forth.

3. In a button attaching machine, the combination of a driving plunger, a clinching anvil, an intermediate magnetic holder, and a feeding chute, the lower or delivery end of which is arranged in a vertical plane, the holding face of such magnetic holder being arranged in line with and directly beneath the delivery end of the feeding chute, to arrest and hold magnetically the descending button staple in the path of the driving plunger, such magnetic holder, being formed by a magnet, the polar ends of which are arranged in a separated proximity and in a plane at right angles to the path of the driving plunger, to afford a passageway for the movement of the button shank, during the operation of forcing the magnetically held button staple down upon the anvil, substantially as set forth.

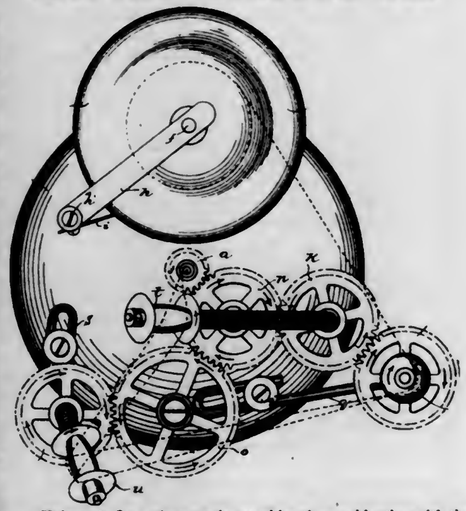
4. In a button attaching machine, the combination of a driving plunger, a clinching anvil, an intermediate magnetic holder, a feeding chute, the lower or delivery end of which is arranged in a vertical plane, and means for feeding the staples with their attached buttons singly to the magnetic holder, the holding face of such magnetic holder being arranged in line with and directly beneath the delivery end of the feeding chute, to arrest and hold magnetically the descending button staple in the path of the driving plunger, such magnetic holder being formed by a magnet, the polar ends of which are arranged in a separated proximity and in a plane at right angles to the path of the driving plunger, to afford a passageway for the movement of the button shank, during the operation of forcing the magnetically held button staple down upon the anvil, substantially as set forth.

544,529. ELECTRIC-ARC LAMP. RICHARD H. CUNNINGHAM, Richmond, Va. Filed Sept. 8, 1894. Serial No. 522,448. (No model.)

Claim.—In an arc lamp, a main solenoid and a positive carbon holder, the core of the solenoid being positively attached to the holder, in combination with a shunt solenoid and negative carbon holder, the core of the solenoid being positively attached to the holder, and a winding drum having two different sized spools over which two cords respectively pass, one cord being connected with the core of one solenoid while the other is connected with the core of the other solenoid, the cores of both solenoids being acted upon constantly by a force such as gravity and the arrangement being such that the forces thus acting balance each other, substantially as described.



544,530. APPARATUS FOR INSULATING WIRE. TOBIAS N. HALLANGER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Nov. 14, 1891. Serial No. 411,848. (No model.)



Claim.—1. In a wire covering machine the combination with the plate *c* adapted to be rotated about the center *a* through which the wire to be covered is passed, of a support adapted to carry a spool from which the insulating material is drawn, and rollers mounted upon spindles rotating with said plate *c* about the center *a* and being inclined with reference to each other, whereby they are adapted to guide the insulating material helically about said wire and to be positively rotated in a forward direction, substantially as described.

2. The combination with the rotating plate *c* of the fixed spindle *a*, the rotating guides *p*, *u*, *t*, carried upon said plate *c* by spindles which are relatively inclined to each other, said rollers being adapted to rotate about the fixed spindle *a* and to direct the insulating material helically about a wire, the pinion *j* upon said fixed spindle *a* and the gears *k*, *l*, *m*, *n*, *o*, meshing with said pinion *j* and adapted to give guides *p*, *u*, *t*, a forward rotary motion, substantially as described.

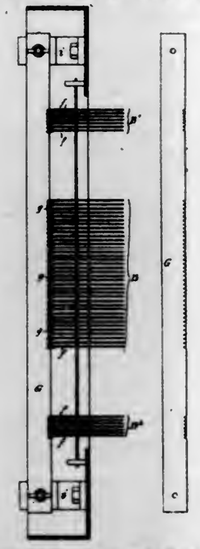
3. The combination with a spool support of the plate *c* carrying said spool support, plate *c* being journaled at *a* and provided with suitable means whereby it may be rotated, rotating guides *p*, *t*, *u* journaled upon bearings secured to said plate inclined relatively to each other and adapted to direct the insulating material upon the wire as they revolve about the center *a*, and mechanism adapted to rotate said guides in a forward direction whereby the insulating material is wound loosely upon the wire, substantially as described.

544,531. INSULATED ELECTRIC CONDUCTOR. TOBIAS N. HALLANGER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Feb. 18, 1893. Serial No. 462,813. (No model.)



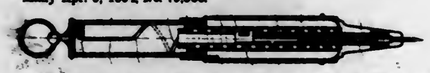
Claim.—As a new article of manufacture, a cable composed of conductors twisted or bunched together, each of said conductors being surrounded by a tube of insulating material having an inside diameter considerably greater than the diameter of the conductor to thereby leave an air space about the conductor, said tubes being formed of tape wound spirally about the conductors with the edges abutting or overlapping to form a tube surrounding the conductor, air spaces being thus provided between the several conductors formed into a cable to decrease the inductive capacity, substantially as described.

544,532. JACQUARD MACHINE FOR LOOMS. THOMAS HALTON, Philadelphia, Pa. Filed May 9, 1895. Serial No. 548,688. (No model.)



Claim.—The combination of the needles of a Jacquard machine, the vertical guide bars at the rear ends of said needles, and a transverse retainer bar having its forward edge notched for the reception of said vertical guide bars whereby lateral deflection of the latter is prevented, substantially as specified.

544,533. PENCIL-CASE. OSKAR HARPTER, Nuremberg, Germany. Filed May 15, 1895. Serial No. 549,786. (No model.) Patented in Germany Apr. 5, 1894, No. 79,386.

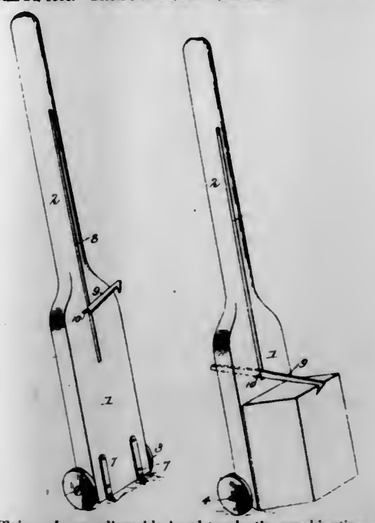


Claim.—1. In a pencil case, the combination with an "ever point" guide device, of a pull-out case having a slot partly straight and partly spiral in which slot engages a stud or pin fixed to the revoluble case of the "ever point" device, whereby on the pull-out case being moved in or out, the pencil case is shortened or lengthened and on the movement being continued, the lead is drawn in or protruded from the hollow point substantially as set forth.

2. A pencil case comprising an "ever point" guide device having a stud or pin at the rear end of its operating case, a pull-out case having a slot partly straight and partly spiral, the said case being adapted to slide over the "ever point" device with its slot engaging with the pin on its rear end, a casing surrounding the "ever point" device and adapted to receive the pull-out case in its interior, the said casing having a longitudinal guide slot to receive a projection on the pull-out case in order to hold the latter against rotation relatively to the casing and to prevent it falling or being withdrawn entirely out of the casing and a holder having a hollow point, in combination, substantially as set forth.

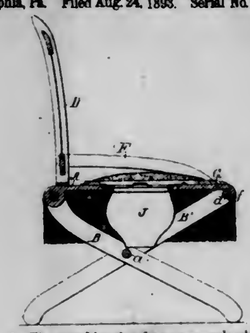
3. A pencil case comprising an "ever point" guide device having a stud or pin at the rear end of its operating case, a pull-out case having a slot partly straight and partly spiral, the said case being adapted to slide over the "ever point" device with its slot engaging with the pin on its rear end, a casing surrounding the "ever point" device and adapted to receive the pull-out case in its interior, the said casing having a longitudinal guide slot to receive a projection on the pull-out case and being revolnble relatively to the holder and a holder having a hollow point, in combination, substantially as set forth.

544,534. HAND-TRUCK. JOHN P. HASKITT, Kinston, N. C. Filed Jan. 24, 1895. Serial No. 536,090. (No model.)



Claim.—In an adjustable hand truck, the combination with the platform and handle formed with a long slot, of the hooked lever located in said slot, the lateral pins passing through said lever on opposite sides of the slot and engaging respectively, with the upper and lower sides of the handle and platform, the wheels, and the hooks at the lower end of the platform, substantially as described.

544,535. FOLDING CHAIR-COMMODE. CHARLES O. HENNIG, Philadelphia, Pa. Filed Aug. 24, 1893. Serial No. 483,955. (No model.)

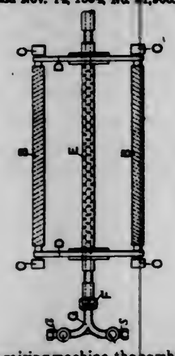


Claim.—1. The combination in a commode chair, of the seat having a receiving vessel and a hooked front end, the supporting structure consisting of pivoted legs hung to the seat at the rear end of the same and having a locking bar engaging with the front hooked end, a back pivoted to the seat so as to fold forwardly onto the same, and

arms connecting the lower portion of the back to the legs of the supporting structure, whereby, when the hooked front end of the seat is lifted out of engagement with the front bar of the legs, all parts of the chair can be simultaneously folded, substantially as specified.

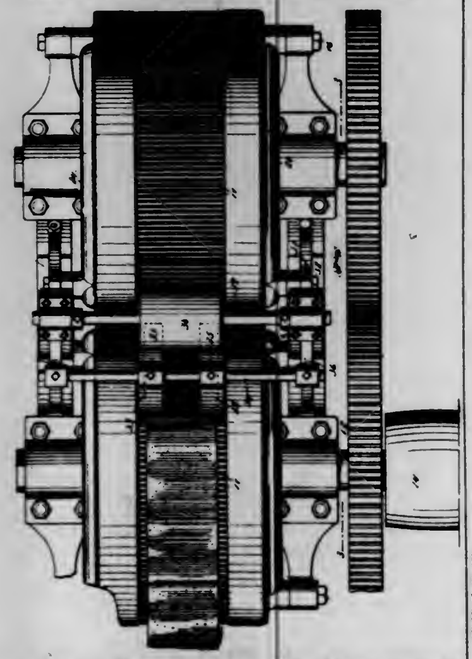
2. The combination of the seat having an opening therein, the receiving vessel of flexible material, and the rim or flange consisting of a folded strip of metal between the opposite folds of which the upper portion of the vessel is confined, the portion of the folded strip beyond the vessel being bent outwardly and forming a flange whereby the vessel is supported upon the seat, substantialy as specified.

544,536. NAP-RAISING MACHINE. WILLIAM HOLLAND, Manchester, England. Filed Apr. 10, 1895. Serial No. 545,124. (No model.) Patented in England Nov. 14, 1894, No. 21,960.



Claim.—In a nap raising machine, the combination with the frame, the raising rollers, and the carriers upon which said rollers are borne, of a hollow perforated rotatable shaft having said carriers mounted upon it and suitably journaled in the frame, a fluid supply pipe, and a swivel joint connecting said pipe with said shaft, substantially as described.

544,537. MATCH-SPLINT MACHINE. WILLIAM F. HUTCHINSON, Passaic, N. J., assignor to the Continental Match Company, of New Jersey. Filed Feb. 13, 1895. Serial No. 538,304. (No model.)



Claim.—1. In a machine of the kind described the combination with the cutting drum, of the ejectors arranged between the cutting portions of the drum, the wedges behind the ejectors to move the latter radially, each ejector having its individual wedge arrangement and devices opposite the drum ends to actuate the wedges, substantially as described.

2. A machine of the kind described, comprising oppositely arranged cutting drums having meshing teeth, and ejectors arranged between the teeth to force outward the materials cut thereby, substantially as described.

3. The combination with a cutting drum having peripheral teeth which serve as knives of the ejectors, held between the teeth of the drum, and reciprocating wedges arranged to move behind the ejectors, substantially as described.

4. The combination with the revoluble cutting drum having peripheral teeth which serve as knives, of the ejectors between the teeth, the reciprocating wedges movable behind the ejectors, and the stationary cam rings at the ends of the drums and in engagement with the wedges, substantially as described.

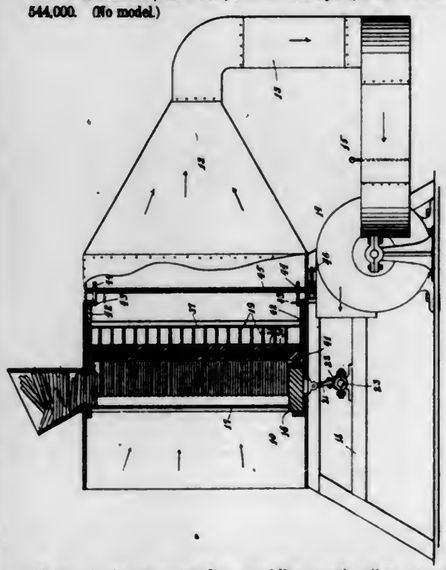
5. The combination with the cutting drum having peripheral teeth which serve as knives, of the ejectors between the teeth, the wedges reciprocating behind the ejectors, and a double set of cam rings arranged to engage alternate wedges and move them inward at different points during the rotation of the cutting drum, substantially as described.

6. The combination with the cutting drum having peripheral teeth which serve as knives, of the ejectors held between the teeth and provided with inclined ends, the wedges inclined to fit against the inclined ends of the ejectors, and the stationary cams for actuating the wedges, substantially as described.

7. The combination with the revoluble cutting drum having peripheral teeth which serve as knives, of the ejectors arranged between the teeth, the reciprocating wedges behind the ejectors, the stationary end rings having flanges overlapping the ends of the ejectors, and the cam rings carried by the stationary rings and arranged to engage and actuate the wedges, substantially as described.

8. The combination with revoluble cutting drums having peripheral teeth which serve as knives, and the ejectors arranged between the teeth, of the reciprocating wedges behind the ejectors, the alternating wedges being provided respectively with grooves on their outer and inner sides, and a double set of cam rings held stationary at the ends of the drum and adapted to engage the grooves of the wedges, substantially as described.

544,538. MACHINE FOR ASSEMBLING MATCH-SPLINTS. WILLIAM F. HUTCHINSON, New York, N. Y. Filed Apr. 1, 1895. Serial No. 544,000. (No model.)



Claim.—1. An apparatus for assembling match splints, comprising, a receptacle adapted to hold the splints in mass and in parallel relation, a gripping device opposite the receptacle and at one end of the match splints to receive the individual splints, and means for forcing an air current through the apparatus to carry the splints endwise into the gripping device, substantially as described.

2. An apparatus for assembling match splints, comprising, a receptacle adapted to hold the splints in mass and in parallel relation, a gripping device opposite the receptacle and at one end of the match splints to receive the individual splints, means for forcing an air current through the apparatus to carry the splints endwise into the gripping device, and mechanism for vibrating the receptacle or gripping device during the assembling process substantially as described.

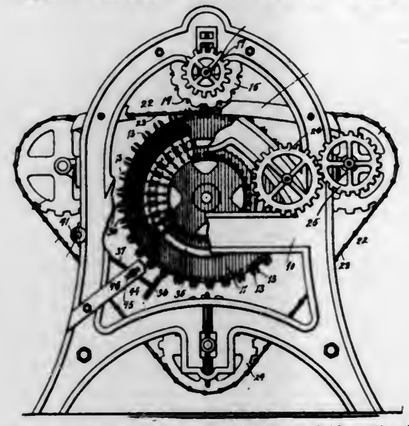
3. An apparatus of the kind described, comprising a splint holding receptacle, a gripping device placed opposite the receptacle and provided with perforations or recesses to receive the individual splints, a perforated abutment opposite the gripping device to limit the protrusion of the splints from the gripping device, and means for forcing an air current through the receptacle and gripping device, the said perforated abutment being in the course of the said air current, substantially as described.

4. An apparatus of the kind described, comprising a splint holding receptacle having one side open and the other side provided with a perforated wall, a gripping device opposite the open side of the splint receptacle, the said gripping device having perforations or recesses to receive the individual splints, a perforated abutment opposite the gripping device, and means for forcing an air current through the splint receptacle and gripping device, the said perforated abutment being in the course of the said air current, substantially as described.

5. An apparatus of the kind described, comprising a splint holding receptacle having one side open and the opposite side perforated, a gripping device having perforations or recesses to receive the individual splints, a perforated abutment opposite the gripping device, means for vibrating the gripping device and splint receptacle, and means for forcing an air current through the splint receptacle and gripping device, the said perforated abutment being in the course of the said air current, substantially as described.

6. The combination with the casing and means for forcing an air current through it, of the splint holding receptacle having one side open and the opposite side perforated, the gripping device having recesses or perforations to receive the individual splints, and mechanism for moving the gripping device in and out in endwise relation to the splints, substantially as described.

544,539. STAVE-MACHINE. WILLIAM F. HUTCHINSON, New York, N. Y. Filed Apr. 6, 1895. Serial No. 544,704. (No model.)



Claim.—1. A stave machine, comprising a revoluble cutting drum having circumferential knives, a bearing for the knives, and a flexible belt-like carrier moving tangentially across the face of the drum, the said carrier having cross bars to fit between the knives and serve as ejectors, substantially as described.

2. In a stave machine the combination with the revoluble cutting drum and its peripheral knives, of the flexible belt-like carrier traveling across the face of the drum and provided with cross bars entering between the knives of the drum, the rollers journaled on the carrier, and the guides at the drum ends to support the rollers, substantially as described.

3. In a stave machine the combination of the cutting drum, the peripheral knives, the flexible belt-like carrier traveling across the face of the drum and provided with cross bars entering between the knives, and means as the chains 23^a, for preventing the tipping of the cross bars, substantially as described.

4. A stave machine, comprising a revoluble cutting drum having peripheral knives arranged in pairs, a carrier traveling across the face of the drum and provided with cross bars extending between alternate pairs of knives to serve as ejectors, and a second series of supplemental ejectors arranged between the end portions of alternate pairs of knives to eject material from between the said knives, substantially as described.

5. In a machine of the kind described, the combination with the revoluble cutting drum and its peripheral knives, of the moving ejectors between the knives, pivoted arms supported on the drum and carrying the ejectors, and a cam mechanism to move the arms and ejectors, substantially as described.

6. The combination with the revoluble cutting drum having peripheral knives, and the radially movable ejectors between the knives, of the swinging arms pivoted to the drum and to the ejectors, the longitudinally movable rods connected to the arms, and a cam mechanism for moving the rods in and out, substantially as described.

7. The combination with the cutting drum having peripheral knives, of the radially movable ejectors between the knives, the arms pivoted to the drum and to the ejectors, the rods secured to the arms and projecting from the ends of the drum, and means, as the circular cam tracks and the trucks on the rods, for actuating the arms and ejectors by the turning of the drum, substantially as described.

544,540. FOOT-HOOK FOR HORSES. DANIEL A. JONES, Oshkosh, Wis. Filed May 15, 1895. Serial No. 549,413. (No model.)

Brief.—The small hoe is for cleaning the dirt from the outside and bottom of the hoof, the hook for picking out the dirt about the frog and the cracks of the hoof, the knife for veterinary use, and the screwdriver edge for farriers' and general use.

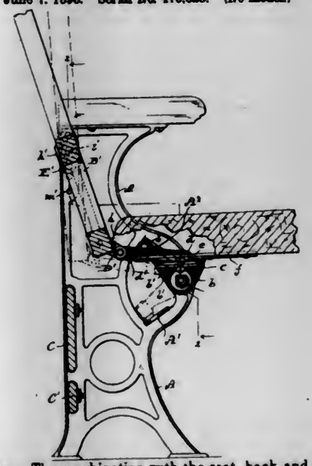


Claim.—1. A combined tool for cleaning horses' feet consisting of a handle, a hook pivotally mounted in said handle at one end, a back spring in said handle to retain the hook open or closed, and a hoe at the free end of the handle, substantially as described.

2. A combined tool consisting of a handle, a hook pivotally connected with said handle at one end, a back spring to retain the hook open or closed, a hoe at the free end of the handle, and a projection upon the outer periphery of the hook to form a screw-driver for use when the tool is closed, substantially as described.

3. A combined tool consisting of a handle, a cutting blade and a hook pivotally connected to said handle at one end, a back spring holding both the hook and the blade in position, and a hoe at the free end of the handle, substantially as described.

544,541. OPERA-CHAIR. THOMAS M. MILLER, Manitowoc, Wis. Filed June 7, 1893. Serial No. 476,825. (No model.)

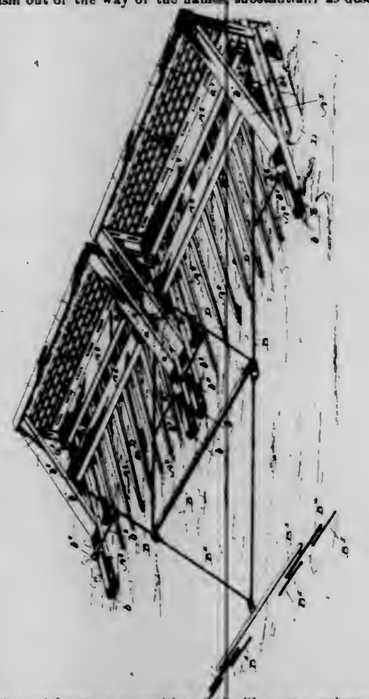


Claim.—The combination with the seat, back and uprights, of a bracket pivoted to each upright, and having a slotted shelf for the seat, an apertured plate interposed between the seat and shelf and securing bolts, as set forth.

544,542. APPARATUS FOR DESTROYING WEEDS. JAMES J. L. MCPHERSON, Silver Leaf, N. D. Filed May 17, 1895. Serial No. 549,656. (No model.)

Claim.—1. A weed destroying apparatus consisting in a horizontal burner or fire-grate of refractory material and having forwardly projecting rake-teeth at its front side to gather the weeds upon the

burner or grate where they are consumed as gathered; said burner having a back to hold the burning weeds thereon and bottom openings to permit the ashes to fall through and be distributed along the ground as the apparatus is drawn thereover, and a draft or propelling mechanism out of the way of the flames, substantially as described.



2. A weed destroyer comprising a rake-like grate or burner having a series of lower horizontal bottom bars and an upwardly extending grated or netted back, the whole formed of refractory material, and a draft mechanism, the said rake-like burner being adapted to gather the weeds with its forwardly projecting teeth, into or upon the burner where they will be consumed, as the apparatus is drawn along, and the ashes fall through and be distributed on the surface of the ground, substantially as set forth.

3. A weed destroyer comprising a rake-like grate or burner, having a series of lower horizontal bottom bars, an upwardly extending grated or netted back, the whole formed of refractory material, and adjustable runners or shoes for adjusting the height of the burner, substantially as set forth.

4. A weed destroying apparatus comprising a pair of rake-like grates or burners formed of refractory material, coupled at their adjacent ends, and each provided with an A-shaped draft rod, the forward ends of which are connected to a third similar draft bar, and a spacing bar between the forward ends of the first two draft bars, the said rake-like burner being adapted to gather the weeds with its forwardly projecting teeth, into or upon the burner where they will be consumed, as the apparatus is drawn along, and the ashes fall through and be distributed on the surface of the ground, substantially as set forth.

5. A weed destroying apparatus comprising a refractory rake-like grate or burner, the end bars of which have a plurality of clips or hooks, an A-shaped draft-bar connected at its rear ends to any two corresponding clips or hooks, and chains or rods for connecting the forward ends of the end grate bars with the sides of the draft-bar, the said rake-like burner being adapted to gather the weeds with its forwardly projecting teeth, into or upon the burner where they will be consumed, as the apparatus is drawn along, and the ashes fall through and be distributed on the surface of the ground, substantially as set forth.

6. A refractory rake-like weed gatherer and burner having a horizontal bottom section and an upwardly extending grate or netted back; the top end bars of which are formed of angle-iron, one flange of each iron projecting toward the front, substantially as set forth.

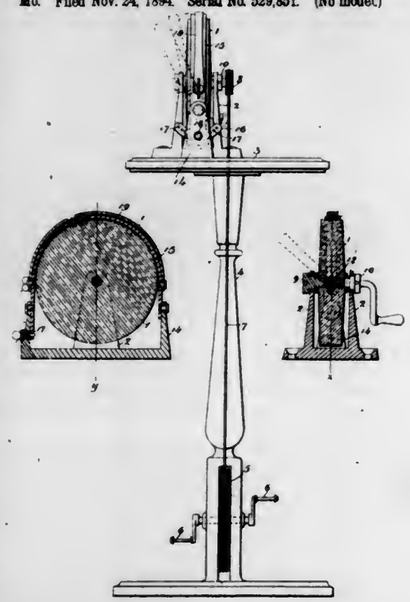
544,543. DEVICE FOR LOADING WAGONS. CHARLES R. MCLEAN, Powersville, Mo. Filed Sept. 20, 1894. Serial No. 523,631. (No model.)

Claim.—1. The combination, with a wagon A, of the triangular frame G, the hooked rods pivotally connected therewith, the casters at the inner end thereof, the inclined platform supported by said frame provided at its lower end with an apertured anchor plate and anchor pin, the loading shovel provided with handles, and the double-tree connected with said shovel and projecting laterally beyond the sides of the platform and wagon, substantially as described.



2. In combination with the wagon A the inclined platforms E and B, connected removably to the wagon at opposite ends thereof, the loading-shovel L, provided with the handles *l l*, and doubletree M of such a length that it will straddle both the inclined platform and the intermediate wagon-box; substantially as and for the purpose shown and set forth.

544,544. TOOL-SHARPENER. ALVORD M. MCLERAN, St. Louis, Mo. Filed Nov. 24, 1894. Serial No. 529,851. (No model.)



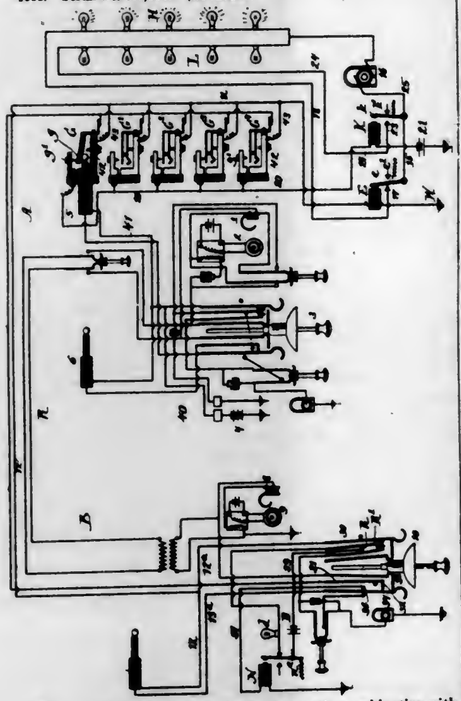
Claim.—1. In a tool sharpener, a suitable sharpening disk, and a tilting support for the tool embracing said disk and adapted to bring the latter to any angle along the side of the disk, and at the same time supporting and guiding said tool, substantially as set forth.

2. In a tool sharpener, a suitable disk, bands embracing the disk and adapted to be tilted to any angle with the plane of the disk, and means for rotating the disk, substantially as set forth.

3. In a tool sharpener, a suitable disk, a series of superposed bands pivotally secured to one another and embracing the disk, means for tilting said bands independently of one another to any suitable angle with the general plane of the disk, and suitable driving mechanism for the disk, substantially as set forth.

4. In a tool sharpener, a suitable rotating disk, suitable bearings for said disk, suitable posts on opposite sides of the periphery of the disk, a band pivoted to said posts and embracing said disk, an extension at one end of the band, a perforated arc at the end of said extension, a spring-operated pin mounted in one of the posts and adapted to co-operate with the series of openings of said arc and thus hold the band in any tilted position, a second band pivoted exteriorly to the first band and adapted to be tilted independently thereof, and suitable driving mechanism for the disk, substantially as set forth.

544,545. SIGNAL APPARATUS FOR TELEPHONE-EXCHANGES. JOSEPH J. O'CONNELL, Chicago, Ill., assignor, by mesne assignments, to the American Bell Telephone Company, Boston, Mass. Filed Apr. 17, 1893. Serial No. 470,597. (No model.)



Claim.—1. In a telephone exchange system the combination with a multiple switch board and with a trunk line leading to the several sections thereof of a series of visible signals corresponding with the trunk line connections of said switch board, a circuit for operating said signals connected to the spring jacks and normally open at such points, a cord plug for insertion in said spring jacks adapted when inserted in any one of said jacks to close said signal circuit at such point and a source of current (such as a battery) for controlling said signal circuit, said source of current being in circuit with the plug cord, whereby when said plug is inserted in a spring jack of the multiple board, current will be caused to pass over said signal operating circuit.

2. In a telephone exchange system, the combination with a multiple switch board of a series of visible signals corresponding with the spring jacks of said switch board, a circuit for operating said signals having branch connections leading to each of the corresponding spring jacks of the multiple board, said circuit being normally open at said jacks, a cord plug for insertion in said spring jacks and adapted when inserted in any one of said jacks to close said signal circuit at such point, and a source of current (such as a battery) for controlling said signal circuit, said source of current being in circuit with the cord of said plug, whereby when said plug is inserted in any spring jack of the multiple board current will be caused to pass over said signal operating circuit.

3. In a telephone exchange system, the combination with a multiple switch board and with a trunk line leading to the several sections thereof, of a series of visible signals corresponding to the several sections of said multiple switch board, a circuit for operating said visible signals connected to the several switch board terminals of the trunk line at one office, and a source of current (such as a battery) for said circuit, said source of current being in circuit with the conversation wire of the trunk line whereby said source of current serves not only as a signal actuating battery but also as a test battery for the various terminals of the multiple switch board.

4. In a telephone exchange system, the combination with a multiple switch board of a series of visible signals corresponding with the trunk line connections of said switch board, said visible signals being arranged in a local circuit, means for closing said local circuit in order to bring said signals into action when the trunk line is in service, a relay for controlling said local circuit, said relay being in circuit with the several spring jacks of the multiple board, and a source of current (such as a battery) for operating said relay, substantially as described.

5. In a telephone exchange system, the combination with a multiple switch-board of a series of lamps corresponding with the trunk line connections of said switch-board, said lamps being arranged in a local circuit, a relay for closing said local circuit to bring said lamps into action when the corresponding trunk line is in service, said local circuit being controlled by the armature of said relay, a generator also interposed in said local circuit, and a source of current in circuit with said relay and with the trunk line terminals of the switch board, whereby the passage of current through said relay is controlled at said switch board terminal, substantially as described.

6. In a telephone exchange system, the combination with a trunk line extending between two stations and provided at each with suitable switch terminals, of a visible signal and a circuit for operating said visible signal leading to the switch terminal of the trunk line at one station but normally disconnected from said trunk line at said terminal, means (such as a cord-plug) for closing said signal operating circuit at said terminal, a battery for said circuit connected to the conversation wire of the trunk line but normally out of the circuit of said line, and means at the other station for establishing flow of current from said battery over the signal operating circuit and over the conversation wire of the trunk line when the trunk line terminal of said other station is put into use.

7. In a telephone exchange system, the combination with a trunk line connecting offices and a multiple switch board at one of said offices, of a series of visible "busy" signals corresponding with the trunk line connections of said multiple switch board, and a series of visible signals for indicating at one office that the desired connection has been made at the other office, circuits wherein said visible signals are placed, said circuits being connected with the multiple switch board terminals at the office at which said signals are located, but being normally disconnected from the trunk line at said terminals.

8. In a telephone exchange system, the combination with a trunk line connecting offices and a multiple switch board at one of said offices, of a series of "busy" signals located at the calling office and corresponding with the trunk line connections of said switch board, a second series of visible signals for indicating at said office that the desired connection has been made at the receiving office, individual signal controlling circuits for each of said series of visible signals, said individual circuits being connected with the trunk line terminals of the multiple switch board, means (such as a cord plug) for connecting said individual circuits with the trunk line when said line is brought into use, a source of current located at the calling office and interposed in one of said individual circuits, a second source of current adapted to be connected through the medium of the trunk line with said other individual circuit, and means at the receiving office for bringing said second source of current into the trunk line circuit to cause said second series of signals to indicate that the desired trunk line connection has been completed.

9. In a telephone exchange system, the combination with a trunk line connecting offices and a multiple switch-board at one of said offices, of a series of visible "busy" signals corresponding with the trunk line connections of said switch-board, and a series of visible signals for indicating at one office that the desired connection has been made at the other office, local circuits wherein said visible signals are placed, relays for controlling said local circuits and a battery suitably connected with both of said relays for operating the same at proper times.

10. In a telephone exchange system, the combination with a trunk line connecting offices and a multiple switch-board at one of said offices, of a series of visible "busy" signals corresponding with the

trunk line connections of said switch-board, and a series of visible signals for indicating at one office that the desired connection has been made at the other office, local circuits wherein said visible signals are placed and a generator located in both of said local circuits and suitable means for controlling said local circuits, substantially as described.

11. In a telephone exchange system, the combination with a line connecting the offices and having suitable switch board terminals and suitable switch boards for said line, of a visible disconnect signal at one office adapted to be controlled by passage of current over said line, a visible signal (one or more) at the other of said offices and connected with the switch board of said office, and a source of current (preferably a battery) for causing the operation of both of said signals and arranged normally out of the circuit of the line connecting the offices, a relay for controlling said disconnect signal at one office and a relay for controlling the signal at the other office, and suitable connections whereby the operation of the terminals of the line connecting the offices shall effect the operation of said relays to control said signals, substantially as described.

12. In a telephone exchange system, the combination with a line connecting two offices and having suitable switch board terminals, of a visible dis-connect signal located at the receiving office, a circuit for controlling said signal adapted to be actuated by current passing over the line between the offices, an operator's key at the receiving office for making and breaking the connection between said signal controlling circuit and said line extending between the offices, a source of current (such as a battery) for said signal controlling circuit, said source of current being normally dis-connected at the calling office from the line between the offices, and suitable means (such as a cord plug) at said calling office whereby said source of current is thrown into and out of circuit with the line between the offices.

13. In a telephone exchange system, the combination with a line connecting two offices and having suitable switch board terminals, of a visible dis-connect signal located at the receiving office, a relay at said office for controlling said signal adapted to be actuated by current passing over the line between the offices, suitable means (such as an operator's listening key) at the receiving office for making and breaking the connection of said relay with the line between the offices, said line being normally broken at said key, and a source of current (such as a battery) for operating said relay normally dis-connected at the calling office from the line between the offices but arranged to be thrown into circuit with said line, when the terminal of said line at the calling office is connected with the switch board at said office for the passage of current.

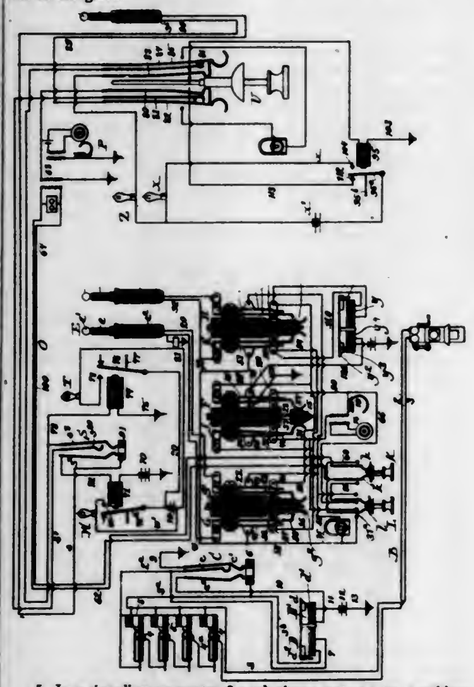
544,546. APPARATUS FOR TELEPHONE-EXCHANGES. JOSEPH J. O'CONNELL, Chicago, Ill., assignor, by mesne assignments, to the American Bell Telephone Company, Boston, Mass. Filed Apr. 17, 1893. Serial No. 470,598. (No model.)

Claim.—1. In a telephone exchange system, the combination with a trunk line connecting two offices, of a spring jack wherein said trunk line terminates at one of said offices, a supplemental signal wire extending between the offices and connected to said spring jack but normally broken at such point, a battery from which current may be caused to pass over said signal wire, said battery being normally disconnected therefrom, an operator's key at the other office to which said signal wire leads, said signal wire being broken adjacent said key and being adapted to be closed at such point by said key for passage of current, whereby the passage of current between the offices over said signal wire is not effected until the trunk line terminal at one office is inserted in said spring jack, and the operator's key at the other office is shifted.

2. In a telephone exchange system, the combination of a trunk line connecting two offices, a spring jack wherein said trunk line terminates, a separate signal wire extending between the offices and connected to said spring-jack, and a signal operating battery also connected to said spring-jack, a relay interposed between said signal operating battery and said spring-jack, and a local signal circuit controlled by said relay, whereby when the trunk line is closed at said spring-jack current will pass from said battery through said relay to close said local signal circuit.

3. In a telephone exchange system, the combination with a trunk line connecting two offices and with a separate signal wire connecting said offices, of a spring jack wherein said trunk line terminates and to which said signal wire connects, said spring jack comprising a sleeve to which one of the trunk line wires is united, a contact plate to which the other of said trunk line wires is united and comprising also separate contact plates or terminals to which the signal wire is connected and by which said wire is normally broken at said spring jack, substantially as described.

4. In a signaling apparatus for telephone systems, the combination of two signals arranged in local circuits, two electromagnets of differing resistances for controlling said signal circuits, a source of current arranged to energize both of said magnets and two outlets for current leading from the circuits in which said magnets are placed, whereby when current is caused to flow through one of said outlets, one of said magnets will be energized and when current is passed through the other of said outlets, the other of said magnets will be energized.



5. In a signaling apparatus for telephone systems, the combination with a trunk line connecting two exchanges and with a terminal of said trunk line of two signals arranged in circuits, two electro magnets of differing resistances for controlling said signals, said magnets being connected to said trunk line terminal, a source of current arranged to energize both of said magnets and two outlets for current leading from the circuits in which said magnets are placed, whereby when current is caused to flow through one of said outlets one of said magnets will be energized and when current is passed through the other of said outlets, the other of said magnets will be energized.

6. In a signaling apparatus for telephone systems, the combination of two signals, two electro magnets of differing resistances for controlling said signals, a source of current arranged to energize both of said magnets, two outlets for current, a third signal and a magnet for controlling said third signal, said magnet being placed in one of the outlets leading from the source of current by which the magnets are energized.

7. In a telephone exchange system, the combination with two offices provided with suitable switchboards and a trunk line connecting said offices and having a suitable switch terminal at each of said offices whereby telephonic communication may be established, of a signal controlling circuit extending between the offices, two signals, one located at each of said offices, a source of current for said signal controlling circuit, said signal controlling circuit being broken at both of said offices, a trunk line terminal at one of said offices to which terminal said signal controlling circuit leads and at which it is normally broken, said terminal being provided with means whereby when the desired connection is made thereat with the trunk line said signal controlling circuit will be thereby closed at such point, and circuit closing mechanism at the other office adapted to there complete said signal controlling circuit; whereby said signal controlling circuit will remain open until the operator at one office has closed the trunk line circuit and the signal controlling circuit at said office and until the operator at the other office has also completed said signal controlling circuit, the completion of the signal controlling circuit at the last named office serving to bring both signals into operation.

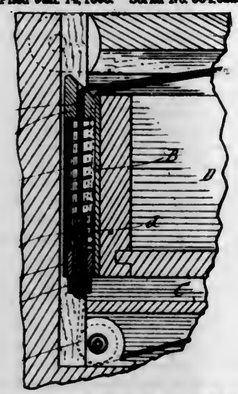
8. In a telephone exchange system, the combination with two offices and a line connecting said offices, said line being provided with suitable terminals whereby telephonic connections may be made, of a signal at one of said offices whereby the operator at said office can be notified that the operator at the other office has made a required connection, a signal at said other office whereby the operator at said office can be notified that the signal at the office first mentioned has been caused to operate: and a signal controlling circuit extending between said offices and provided at each office with a relay interposed in said circuit for controlling the signal at the corresponding office, said signal controlling circuit being normally broken at one of said offices and means at the other of said offices whereby the operator can close said signal controlling circuit and thereby permit passage of current over said circuit to energize the relays and cause both signals to indicate.

9. In a telephone exchange system, the combination with a calling office and a receiving office, of a conversation line extending between said offices, said line being provided with a spring jack at one office and a switch plug at the other office, whereby telephonic communication can be established, of a signal at said calling office to indicate to the operator there that the operator at the receiving office has made a required connection; a signal at the receiving office to indicate to the receiving operator that the signal at the calling office has been caused to indicate, a signal controlling circuit provided at each office with means for controlling the signal at such point, said signal controlling circuit being connected with the conversation line terminal at the calling office and normally open at such point, and being normally open at the receiving office, and means at said receiving office for closing said signal controlling circuit at such point whereby when the calling operator has closed the signal controlling circuit at the calling office by the insertion of a plug, the operator at the receiving office having made the required connection can close the signal controlling circuit at such point and thereby cause passage of current over said signal controlling circuit in order to bring said signals into operation.

10. In a telephone exchange system, the combination with two offices and a trunk line connecting the same and having a suitable switch-terminal at each of said offices, of two signals, one signal being located at each of said offices, a relay at each of said offices for controlling the signal at said office, suitable circuit connections between said relays and the switch-terminal at one office, said terminal being so connected with the circuit in which the relays are interposed that when a trunk line connection is made at such office both of said signals will be brought into action, and a source of current for causing the operation of the relays.

11. In a telephone exchange system, the combination with two offices and a trunk line connecting the same and having a suitable switch-terminal at each of said offices of two signals, one signal being arranged in a local circuit at each of said offices, a relay at each of said offices for controlling the local signal circuit at said office, suitable circuit connections between said relays and the switch-terminal at one office, said terminal being so connected with the circuit in which the relays are interposed, that when a trunk line connection is made at such office, both of said signals will be brought into action, and a source of current for causing the operation of the relays.

544,547. RAILWAY SLEEPING-CAR. HENRY PEARSON, Springfield, Mass. Filed Jan. 14, 1893. Serial No. 534,822. (No model.)

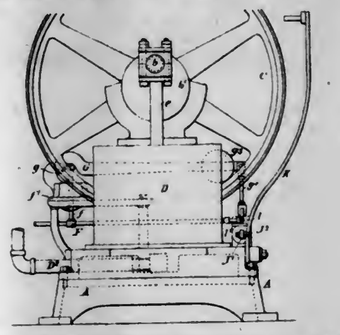


Claim.—1. In a railway sleeping-car in combination, the berth having at its end a vertically applied casing or tubular guide, a part movably guided therein, the hoisting cable having its end entered through an opening therefor in the top of said tubular guide and connected to the said movable inclosed part, and the spring for forcing the movable part downwardly in said tubular guide, in combination with the trap-door which has one end in pivotal engagement with the bottom of the car whereby it is convertible into an upright and

which is provided with a sheave over which the said cable has a guiding and supporting engagement, said sheave rotating in a plane which is offset from the axis of swinging movement of the trap-door, all substantially as set forth.

2. In a railway sleeping-car, the combination with the berth having the casing secured thereto, of a tube having a nut secured to its lower end, the cable passed through an opening in the top of the casing and through and connected with said tube, the spiral spring within the casing, surrounding said tube and cable, supported by the nut, and having an upper end bearing against a stop therefor within the casing, substantially as described.

544,548. AIR-COMPRESSOR. HOWARD A. PEDRICK, Philadelphia, Pa., assignor of one-half to Weston J. Hibbs, same place. Filed Feb. 17, 1894. Serial No. 500,517. (No model.)



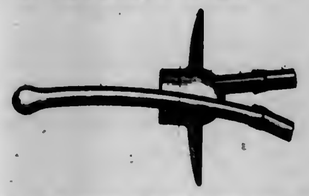
Claim.—1. The combination of an air pump, a shaft for driving the same, devices for operatively connecting said shaft to or releasing it from a primary driving shaft, a main cylinder and piston for operating said devices in either direction, and an automatically controlled valve actuated by variations in the air pressure for admitting pressure to either end of the main cylinder, substantially as specified.

2. The combination of an air pump, a shaft for driving the same, devices for operatively connecting said shaft to or releasing it from a primary driving shaft, a main cylinder and piston for actuating said devices in either direction, and a valve for admitting pressure to either end of the main cylinder, said valve being adapted to be moved in one direction by the air pressure, and in the opposite direction by a weight, substantially as specified.

3. The combination of an air pump, a shaft for driving the same, devices for operatively connecting said shaft to or releasing it from a primary driving shaft, a main cylinder and piston for operating said devices in either direction, a valve for admitting pressure to either end of said cylinder, a flexible diaphragm actuated by pressure from the air pump, and connections whereby said diaphragm is caused to operate the valve for admitting pressure to said main cylinder, substantially as specified.

4. The combination of the compression cylinder and the power driven shaft connected to the piston of said compression cylinder, stopping and starting mechanism for said shaft, a plunger acted upon by the air pressure, a weighted lever acted upon by said plunger, a fluid actuated piston connected to the stopping and starting devices of the driving shaft, a valve serving to govern the flow of motive fluid which acts upon said piston, and an angular lever, one arm of which is connected to the valve stem, and the other arm to the weighted lever, substantially as specified.

544,549. SYRINGE. ORIN J. TAYLOR, Washington, D. C. Filed Dec. 17, 1894. Serial No. 532,118. (No model.)



Claim.—1. The integrally formed syringe comprising cup A having rigid lip E, extending therefrom, a perforated nozzle, shield B, and induction and eduction pipes F and G leading to and from cup A, and adapted to receive tubing, substantially as described.

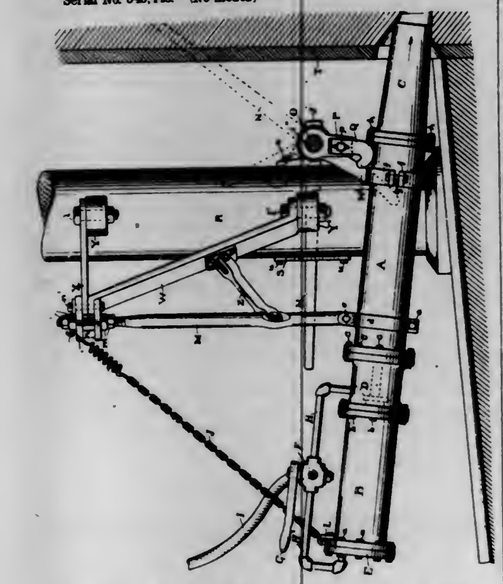
2. The improved syringe, consisting of the cup A, having eduction pipe C, the curved induction pipe C, extended from its bottom, near the center thereof, rigid lip E, concave convex flange or shield B, all the parts being made integral, substantially as herein shown and described.

544,550. WASHING-MACHINE. JOHN R. UNDERWOOD, Columbus, assignor of one-half to Jacob G. Zellers, Camp Chase, Ohio. Filed Dec. 21, 1894. Serial No. 532,522. (No model.)



Claim.—A washing machine consisting of a tank, an open rotary cylinder mounted therein, rollers yieldingly journaled in said cylinder, parallel plates 13 supported in the tank beneath the ends of the cylinders, curved metallic bearing plates 14 secured to said plates 13, a series of rollers journaled in said metallic plates, a feed board journaled between the forward ends of the plates 13 adjacent to the first of the series of rollers, a curved washing board segment hinged at its lower edge between the plates 13 adjacent to the last of the series of rollers, a spring rod secured at one end to a fixed support in the tank and at its other end to the back of the hinged segment, said spring rod being partially coiled, and stops within the tank to limit the inward movement of the segment toward the rotary cylinder, substantially as described.

544,551. APPARATUS FOR STOPPING TAPPING-HOLES OF FURNACES. SAMUEL W. VAUGHEN, Coopersdale, Pa. Filed Apr. 12, 1895. Serial No. 545,443. (No model.)



Claim.—1. In apparatus for stopping the tapping hole of furnaces, a tube adapted to receive clay or other refractory material, a piston or plug fitted therein; means for moving said piston within said tube, in combination with a removable abutment adapted to engage with the aforesaid apparatus, to resist the reaction of the same in operation, substantially as set forth.

2. In apparatus for stopping the tapping hole of furnaces, a tube adapted to receive clay or other refractory material, a piston or plug fitted therein, means for moving said piston within said tube, in combination with an abutment adapted to engage with the aforesaid apparatus, to resist the reaction of the same in operation, and a gage bar adapted to bear on the upper portion of said tube, substantially as set forth.

3. In apparatus for stopping the tapping hole of furnaces, a tube adapted to contain clay or other refractory material, a piston or plug fitted within said tube, means for moving said piston, in combination with a removable abutment, consisting of one or more arms secured to a revoluble shaft, said arms being adapted to bear against the aforesaid tube, said shaft being carried in suitable fixed bearings and provided with an operating lever and locking device, substantially as set forth.

4. In apparatus for stopping the tapping hole of furnaces, a tube adapted to contain clay or other refractory material, said tube being provided with one or more projections or lugs, a piston or plug, fitted within said tube, means for moving said piston, in combination with a removable abutment, consisting of one or more arms secured to a revoluble shaft; said arms being adapted to bear against said projections, said shaft being carried in suitable fixed bearings and provided with an operating lever, substantially as set forth.

5. In apparatus for stopping the tapping hole of furnaces, a tube adapted to contain clay or other refractory material, a piston or plug fitted within said tube, means for moving said piston; in combination with a removable gage bar curved at its lower end and adapted to bear upon the upper surface of said tube; said gage being mounted upon a revoluble shaft and provided with means for adjusting its radial length, substantially as set forth.

544,552. ELECTROTHERAPEUTIC APPLIANCE. JOHN R. WILES, Milwaukee, Wis. Filed Jan. 14, 1895. Serial No. 534,784. (No model.)



Claim.—1. An electro-therapeutic appliance comprising a tubular metallic handle or casing, a series of galvanic cells located therein, but insulated therefrom, contact disks or electrodes secured to opposite ends of said handle or casing but normally isulated therefrom, and having electrical connections with opposite terminals of the series of cells, and a suitable connecting device for electrically connecting either terminal of said series of cells with said handle or casing, substantially as described.

2. An electro-therapeutic appliance comprising a metallic tubular handle or casing, a series of galvanic cells contained therein, but insulated therefrom, suitable contact disks or electrodes secured to opposite ends of said handle or casing, but normally insulated therefrom, and in electric connection with opposite terminals of said series of cells, and a suitable connecting device for establishing electrical connection between said handle or casing and an electrode of a desired one of the cells in the series, substantially as described.

3. An electro-therapeutic appliance comprising a tubular metallic handle or casing, a series of galvanic cells contained therein, but insulated therefrom, suitable contact disks or electrodes secured to opposite ends of said handle or casing, but insulated therefrom, and an electrical connection with opposite terminals of said series of cells, and a suitable device for electrically connecting said handle or casing with either terminal of said series of cells, or with an electrode of any desired cell of said series, substantially as described.

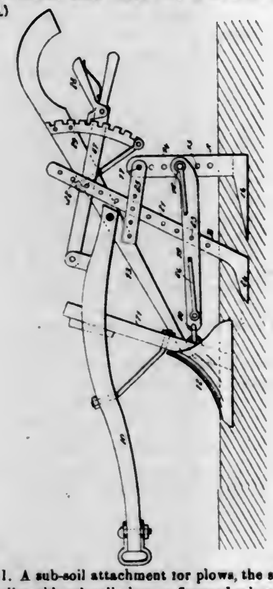
4. An electro-therapeutic appliance comprising a tubular metallic handle or casing, a series of galvanic cells contained therein but insulated therefrom, one or more metallic plates interposed between adjacent cells of the series, suitable contact disks or electrodes secured to opposite ends of said handle or casing, but insulated therefrom, and in electrical connection with opposite terminals of said series of cells, said handle or casing, said intermediate plates or disks, and said contact electrodes being provided with apertures or passages and a contact screw or plug adapted for removable engagement with a desired one of said apertures or passages, substantially as described.

5. An electro-therapeutic appliance comprising a tubular handle or casing A, the insulating buttons B B', the disks or electrodes C C', having extensions passing through said insulating buttons and terminating in metallic contact pieces H and H' upon the inner ends of said insulating buttons, said electrodes being further provided with apertures for detachable engagement with the shanks of removable electrodes K, a series of galvanic cells located within said handle or casing but insulated therefrom, and a suitable device for establishing electrical connection between said handle or casing and a desired one of said electrodes or terminals, substantially as described.

6. An electro-therapeutic appliance comprising a tubular handle or casing A, the insulating buttons B', the disks or electrodes C C', having extensions passing through said insulating buttons and terminating in metallic contact pieces H and H' upon the inner ends of said insulating buttons, said electrodes being further provided with apertures for detachable engagement with the shanks of removable electrodes K, a series of galvanic cells located within said handle or casing but insulated therefrom, disks or plates J J interposed between certain of said cells, and provided with screw-threaded apertures arranged to register with corresponding apertures in said handle or casing, said insulating buttons B B' and contact pieces H H' being similarly provided with screw-threaded apertures or passages registering with apertures in the ends of said handle or casing, and a connecting screw adapted for removable engagement with a desired one of said screw-threaded apertures, whereby either terminal of the series of cells or a desired one of the disks or plates J J may be electrically connected with said handle or casing, substantially as described.

7. An electro-therapeutic appliance comprising a tubular metallic handle or casing, a series of galvanic cells located therein but insulated therefrom, a contact electrode secured to one end of said handle or casing but insulated therefrom, and in electrical connection with one terminal of said series of cells, and a suitable connecting device for establishing an electrical connection between said handle or casing and an electrode of any desired one of the cells in said series, substantially as described.

544,553. SUBSOIL ATTACHMENT FOR PLOWS. THEODORE WOODARD, Garland, Kans. Filed May 6, 1895. Serial No. 548,324. (No model.)



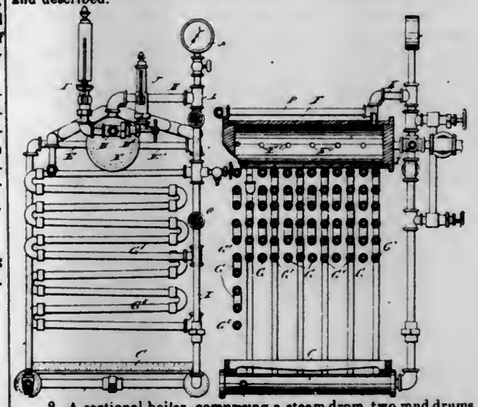
Claim.—1. A sub-soil attachment for plows, the same consisting of vertically adjustable sub-soil plows, a forward sub-soil plow located between the rear ones and in advance thereof, a draft beam adjustably connected with both the forward and the rear sub-soil plows, and a lifting lever connected with one of the said plows, as and for the purpose set forth.

2. In a sub-soil attachment for plows, the combination, with vertically arranged apertured shanks, of shares attached to the said shanks and adapted for sub-soil purposes, a forward sub-soil plow adapted to track the main share when attached to the ordinary plow, the said forward sub-soil plow having an apertured shank extending in an upwardly direction, an adjustable link connection between the rear sub-soil plows and the forward one, a draft beam adjustably connected with both the forward and rear sub-soil plows at their shanks, and a lever for adjusting said plows, connected with one of them, as and for the purpose specified.

3. In a plow, the combination, with the beam, stock, share and handles thereof, of a sub-soil attachment, the same consisting of two rear sub-soil plows provided with apertured shanks, a forward sub-soil plow located intermediate of the rear ones and likewise provided with an apertured shank, an adjustable link connection between the shanks of the forward and rear plows, a draft beam adapted for engagement with the stock of the main plow and having adjustable connection with the shanks of the forward and rear plows, an adjusting lever fulcrumed upon the main beam of the plow, adjustably connected with one of the sub-soil shanks, and a locking mechanism connected with the said lever, as and for the purpose specified.

544,554. SECTIONAL BOILER. THEODORE H. WYMAN, Bebee, Mo. Filed May 22, 1895. Serial No. 550,217. (No model.)

Claim.—1. A sectional boiler, comprising a mud drum, a series of side pipes rising from the said mud drum, and forming the sides of the fire box a steam drum connected with the upper ends of the said side pipes, and circulating coils disposed vertically and connected at their ends with a corresponding side pipe, the coils being arranged alternately and forming the top of the fire box substantially as shown and described.

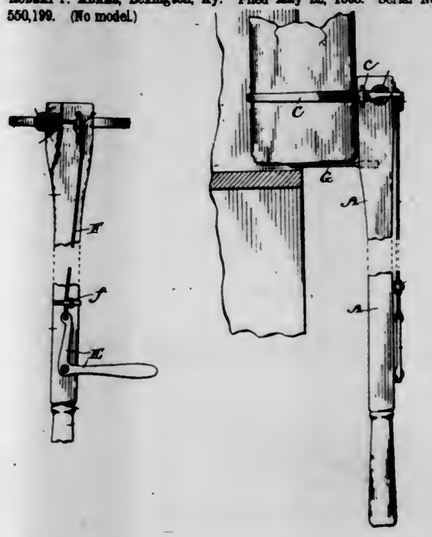


2. A sectional boiler, comprising a steam drum, two mud drums, side pipes rising from the said mud drums and connected at their upper ends with the said steam drum, and forming the sides of the fire box and a circulating coil for each side pipe, forming top and back of fire box the said coils being arranged alternately and disposed vertically, reaching from one side to the other, each coil being connected with the corresponding side pipe, the rearmost coil of end pipe being extended below the other coils substantially as shown and described.

3. A sectional boiler, comprising a mud drum, a series of side pipes rising from the said mud drum, a steam drum connected with the upper ends of the said side pipes, a circulating coil disposed vertically and connected at its ends with a corresponding side pipe, and a valve in each side pipe, and located between the entrance ends of the corresponding circulating coil into the side pipe, to permit of changing the boiler from a steam generator to a hot water heater, and vice versa, substantially as shown and described.

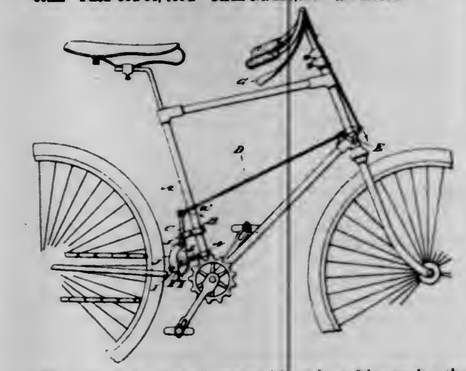
4. A sectional boiler, comprising a steam drum, two mud drums, side pipes rising from the said mud drums and connected at their upper ends with the said steam drum, a circulating coil for each side pipe, the said coil being arranged alternately and disposed vertically, reaching from one side to the other, each coil being connected with the corresponding side pipe, and drain pipes leading from the bottom of the said steam drum, to connect with corresponding side pipes, substantially as shown and described.

544,555. DEVICE FOR HANDLING PACKAGES IN STORES. ROBERT P. ADAMS, Lexington, Ky. Filed May 22, 1895. Serial No. 550,199. (No model.)



Claim.—1. A portable hand operated device for removing a package from a shelf comprising in its construction an operating rod of suitable length and shape, an approximately semicircular jaw rigidly secured to the upper end of the rod at right angles thereto, another approximately semi circular jaw pivotally secured to the upper end of the rod at right angles thereto and having a rear extension, a horizontally arranged coiled spring connected by its respective ends to the rod and to the pivoted jaw at a point in rear of its pivot, an angular lever pivoted on the rod, a cord passed through guiding eyes on the rod and secured to the lever and to the extension of the pivoted jaw, and a flat horizontal immovable bottom plate secured to the rod at a suitable point below the jaws, substantially as described.

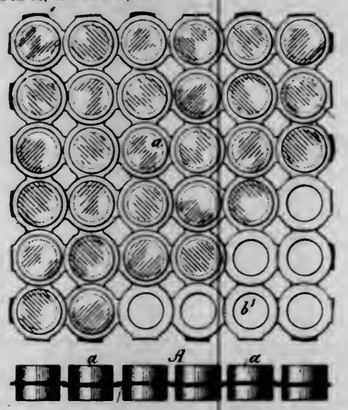
544,556. BICYCLE-BRAKE. RICHARD T. ADDY, Wallingford, Conn. Filed Oct. 31, 1894. Serial No. 527,529. (No model.)



Claim.—1. A bicycle brake, comprising a lever fulcrumed on the bicycle frame, a roller mounted in the lower end of the lever, a spring pressed frame fulcrumed on the lever and extending down in rear of and below the lever, and a roller mounted in the lower end of the frame and adapted to engage the tire of the bicycle wheel and the roller of the lever, substantially as described.

2. A bicycle brake, comprising a lever fulcrumed on the bicycle frame, a spring for holding the lever in a normal position, a roller mounted in the lower end of the lever, a frame pivoted to the lever and extending down in rear of and below the lever, a spring connected with the lever and frame, and a roller mounted in the lower end of the frame and adapted to engage the tire of the bicycle wheel and the roller of the lever, substantially as described.

544,557. FLOOR-MAT. WILLIAM J. ARMITAGE, London, England. Filed May 23, 1895. Serial No. 550,429. (No model.) Patented in England Dec. 31, 1892. No. 24,139.

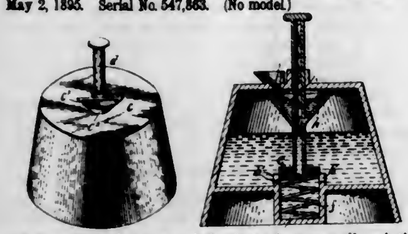


Claim.—1. As a new article of manufacture, a floor-mat composed of a series of perforated interwoven slats, and plugs seated within the perforations of the slats, substantially as described.

2. As a new article of manufacture, a floor-mat composed of a series of interwoven metallic slats having perforations therethrough, the perforations of one slat registering with those of the overlapping slats, and rubber plugs seated within said perforations and projecting from each side of the slats, substantially as described.

3. As a new article of manufacture, a floor-mat consisting of a plurality of interwoven slats having perforations therethrough, the outer edges or peripheries of said slats being made irregular so as to form a plurality of dirt openings in the mat when the slats are placed in position, and rubber plugs seated within the perforations of the slats, substantially as described.

544,558. INK-WELL. STEPHEN G. BALDWIN, Marion, Ind. Filed May 2, 1895. Serial No. 547,863. (No model.)



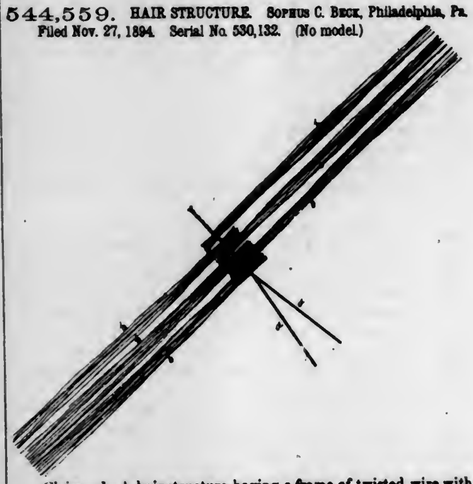
Claim.—1. An ink reservoir having a bottom well and the top pen opening, a spring actuated piston rod provided with the piston in said well, and an ink cup beneath the pen opening, said piston rod being hollow and provided with the outlet opening above the ink cup, substantially as described.

2. An ink reservoir having a spring actuated ink pump comprising a piston having a hollow piston rod extending up through the top of the reservoir, an ink cup on and surrounding the piston rod and yieldingly held up against the top of the reservoir, said piston rod having a side opening above the ink cup and said reservoir provided with the pen opening above the cup, substantially as described.

3. An ink reservoir provided with the bottom well and spring held piston rod passing out through the top of the reservoir and provided with the piston in the well, said piston rod being hollow and opening through the bottom of the piston and provided with a lateral discharge opening and the ink cup beneath the discharge opening and supplied therefrom.

4. An ink reservoir having the bottom well with upwardly extended flanges in the reservoir having ink openings and a coiled spring in the well a piston on the coil spring normally held above the said opening and provided with the hollow piston rod extending to the exterior of the reservoir and carrying the cup supply through its interior and the pen opening above the cup, substantially as described.

544,559. HAIR STRUCTURE. SOPHUS C. BECK, Philadelphia, Pa. Filed Nov. 27, 1894. Serial No. 530,132. (No model.)

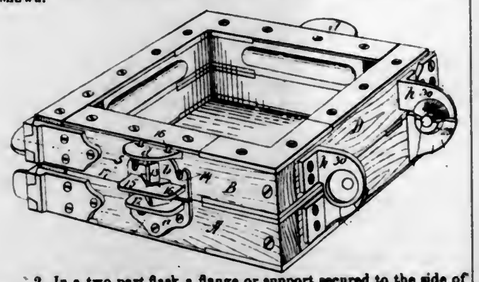


Claim.—1. A hair structure having a frame of twisted wire with strands of hair confined at their root ends in the twist and having their free ends projecting alternately from the opposite sides of the twisted wire, substantially as described.

2. A hair structure having a frame of twisted wire, with strands of hair confined at their root ends between the twists, and having a twisted end forming a pin by which the structure is attached to the hair of the head.

544,560. MOLDER'S FLASK. LLEWELLYN W. BOUTELLE, Orange Mass. Filed Jan. 18, 1895. Serial No. 535,304. (No model.)

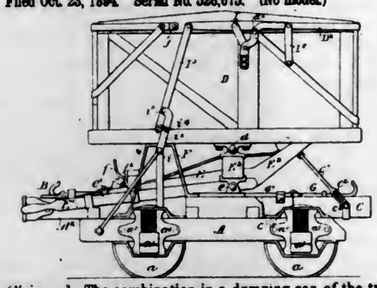
Claim.—1. In a two part flask, a support secured to the side of the drag, and an upright 13 rising from the support, combined with a guide 15 secured to the cope, and a lever *b* attached to the cope and adapted to bear upon the top of the upright, substantially as shown.



2. In a two part flask a flange or support secured to the side of the drag, and an upright 13 projecting therefrom, combined with a perforated guide which projects from the side of the cope and fits down over the upright, and a lever separately secured to the cope, and having a wedge shaped projection upon its under side, substantially as described.

3. In a two part flask, uprights 13 secured to the drag, guides 15 secured to the cope and fitting down over the uprights, and levers *b* separately pivoted to the cope and bearing against the top of the upright; the levers being adapted to receive downward pressure from the palms of the hands, and the guides to receive upward pressure from the fingers, substantially as set forth.

544,561. DUMPING-CAR. CYRUS W. BRIDGMAN, Hainsport, N. J. Filed Oct. 23, 1894. Serial No. 526,675. (No model.)



Claim.—1. The combination in a dumping car, of the truck, the car body pivoted thereto and having a movable section with arms pivoted to the car body, a lever I, a link pivoted to the car body and carrying the lever, one end of said lever being connected to the movable section, and an arm secured to the opposite end of the lever and to the truck, substantially as described.

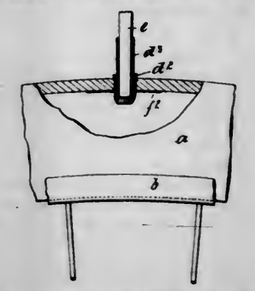
2. The combination in a dumping car, of the truck, a pivoted tilting frame, means for locking the frame in position, a car body pivoted to the tilting frame and having a movable section with arms pivoted to the car body, an extension E^3 of the frame supporting one end of the car body, a bracket F on the truck supporting the other end of the car body, a link pivoted to the car body, a lever carried by said link, one arm of the said lever being connected to the pivoted section of the car body, and the other arm being connected to the bracket on the truck so that as the car body is tilted by the frame the pivoted section of the same will be elevated, substantially as described.

3. The combination of the truck, the car body pivoted thereto, and having a movable section pivoted to the car body, a pivoted lever attached at one end to the pivoted section of the car body, a bar i' attached to the other arm of the lever, a bar i^3 pivoted to the bar i and to an extension on the truck, and a latch i^4 on one bar adapted to engage with the other bar to lock the two together and form a single connection so that the pivoted section of the car body may be automatically raised on the dumping of the car, substantially as described.

4. The combination of the truck, the tilting frame E, the tilting car body pivoted to the frame, with a pivoted bumper so connected that when the body is dumped the bumper will be lowered, substantially as described.

5. The combination of the truck, the tilting frame pivoted to said truck, a catch for securing said frame to the truck, the tilting car body, and a pivoted bumper, with a pivoted end for the car body connected to the truck, substantially as described.

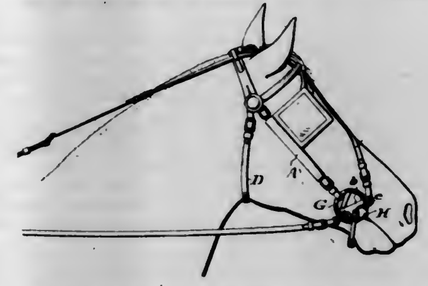
544,562. PNEUMATIC-TIRE-REPAIRING PATCH. AARON S. CARTWRIGHT, Birmingham, England. Filed Dec. 23, 1892. Serial No. 456,175. (No model.) Patented in England July 6, 1892, No. 12,469.



Claim.—1. In combination with a pneumatic cycle tire having the aperture a^2, a repairing patch, consisting of the flexible interior disk b^3, having the tubular stem d^3, passing through said aperture, the plug *g*, inserted in the cavity of said stem and the external disk *h*, secured to the outside of the tire and covering the top of the stem and plug, substantially as described.

2. A repairing patch for pneumatic tires consisting of a flexible disk adapted to fit against the inner surface of a cycle tire, a stalk or stem on said disk adapted to fill the aperture in the tire and having a tubular socket with a thickened bottom part, a plug fitting said socket and an exterior disk covering said plug and the end of said stalk, substantially as described.

544,563. BIT FOR HORSES. JOSEPH CLAMER, Trenton, N. J., assignor to the Clamer Lever Bit Company, of New Jersey. Filed May 16 1895. Serial No. 549,505. (No model.)



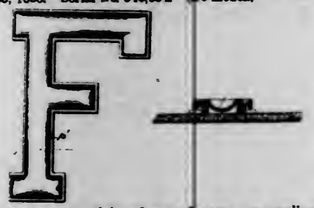
Claim.—1. In a bit, the combination of a mouth piece, two rings attached respectively to the ends of the mouth piece, and a lever connected with each of said rings, and adapted to swing relatively to the mouth piece, said levers having means at their free ends for attaching the overdraw thereto, and means on their middle portions for attaching thereto the ends of a chin strap; substantially as shown and described.

2. In a bit, the combination of a mouth piece, two rings attached respectively to the ends of said mouth piece, a lever connected with each of said rings to swing relatively to the mouth piece, each of said levers having means at its free end for attaching thereto the overdraw, and means on its middle portion for attaching the chin strap thereto, and a guide on each ring for the lever connected with said ring, and a guide on said ring for the chin strap; substantially as shown and described.

3. In a bit, the combination of a mouth piece, two rings attached respectively to the ends of said mouth piece, a fulcrum bar attached to each of said rings, a lever fulcrumed on each of said fulcrum bars to swing relatively to the mouth piece, each of said levers having means at its free end for attaching thereto the overdraw, and means on its middle portion for attaching thereto a chin strap, and a guide on each ring for the lever connected with said ring, and a guide for the chin strap; substantially as shown and described.

4. The combination of the mouth piece of a bit, two rings attached respectively to the ends of said mouth piece, a lever connected with each of said rings to swing relatively to said mouth piece, said levers having at their free ends means for attaching the overdraw thereto and means on their middle portions for attaching the chin strap thereto, a chin strap connected at its ends with said levers, an overdraw connected with the free ends of said levers and the lines attached to said rings; substantially as shown and described.

544,564. SIGN-LETTER. FREDERICK H. COLBURN, Chicago, Ill. Filed Apr. 23, 1895. Serial No. 546,854. (No model.)

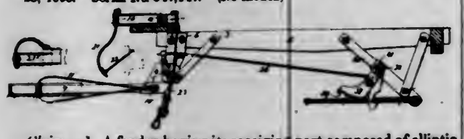


Claim.—1. As a new article of manufacture, an applique sign character of thin sheet material, formed convex on its front or obverse side and there provided with a marginal forward projecting flange having an attaching edge, substantially as described.

2. As a new article of manufacture, an applique sign character of thin and transparent sheet material, formed convex on its front or obverse side and there provided with a marginal forward-projecting flange having an attaching edge, and coated on its rear side with a coloring substance, substantially as described.

3. As a new article of manufacture, an applique sign character of thin and transparent celluloid, formed convex on its front or obverse side and there provided with a marginal forward-projecting flange having an attaching edge, and coated on its rear side with a coloring substance, substantially as described.

544,565. CAR-FENDER. SAMUEL A. DARRACH, Newark, N. J., assignor to the Darrach Car Fender Company, same place. Filed Apr. 25, 1895. Serial No. 547,147. (No model.)



Claim.—1. A fender having its receiving part composed of elliptic springs said springs being each formed of a single spring strip looped at about its center and having said looped part secured at the front or striking part of the fender and having its free ends secured at the rear of the fender substantially as described.

2. A fender having its pivot portion provided with a bearing plate, and an adjustable stop for the bearing plate, said plate being placed edgewise to the stop substantially as described.

3. A fender having its pivot portion provided with a bearing plate, said bearing plate having a rearwardly and downwardly extending slot or opening for connecting or hooking the pivot portion to its support substantially as described.

4. A bumper protector for a car platform comprising a flexible or spring band secured to the platform, and brace springs secured to the platform and made to engage intermediate portions of the spring band substantially as described.

5. A bumper protector for a car platform comprising a flexible or spring band secured to the platform, and brace springs secured to the platform and made to engage intermediate portions of the spring band, said bumper protector being provided with a pad or cover for the traction bar substantially as described.

6. A drop guard combined with a catch for holding the drop guard elevated, a lock for holding the drop guard depressed, a fixed pivot on which the catch and lock are independently mounted, and a spring coiled about said pivot and having its intermediate portion fixed to said pivot and its free end or outer portions engaged respectively to the catch and lock substantially as described.

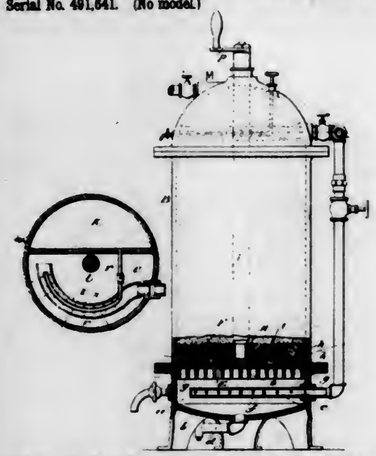
7. A car platform provided with hanger pairs, one hanger of each pair being provided with a reinforcement, said reinforced hanger and reinforcement being both engaged by the other hanger, a pivot passed through said reinforced hanger and reinforcement, a drop guard mounted on said pivot, a second pivot carried by said reinforcements and made to terminate clear of the hangers, and a catch and lock for the drop guard mounted on said second pivot substantially as described.

8. A fender comprising a number of frame pieces made to extend back from the forward part of the fender, said frame pieces having their end portions clamped or joined to one another at opposite sides at the rear of the fender substantially as described.

9. A drop guard and a catch and lock for the drop guard, combined with a common pivot for the catch and lock and a spring secured intermediate its ends to said pivot and having its opposite portions oppositely coiled about the pivot and respectively engaged to the catch and lock substantially as described.

10. As a new article of manufacture a soft or elastic traction bar cover fixed to said bar so as to be carried by and to move with said bar, substantially as described.

544,566. FILTER. JOHN M. DAVIDSON, Allegheny, Pa., assignor of one-half to Joseph McNaugher, Jr., same place. Filed Nov. 22, 1893. Serial No. 491,641. (No model.)



Claim.—1. In a filter, the combination of a strainer, a support for said strainer, a grated pebble receptacle above the strainer and provided with a series of separate open chambers containing pebbles, and a filter-bed above and resting upon said pebbles.

2. In a filter, a grated pebble receptacle having a peripheral rim and provided with a series of separate chambers of uniform depth and open at both ends, whereby the pebbles are prevented being displaced in cleansing the filter-bed.

3. In a filter, a grated or reticulated pebble receptacle having a peripheral rim and a series of separate chambers in the same plane and open at both ends and a strainer below said receptacle, in combination with a grated support upon which the strainer and the pebble receptacle rest.

4. In a filter provided with a granular bed, a revoluble spiral blade connected to a central shaft and constructed and arranged to loosen the filtering material from the wall of the filtering-chamber.

5. In a filter, the combination of a supply pipe, a chemical chamber, a pipe leading from the supply pipe to the chemical chamber and a pipe leading from the chemical chamber into the supply pipe and provided with perforations, and projecting surfaces.

544,567. ELECTRICAL SIGNALING APPARATUS. WILLIAM W. DEAN, St. Louis, Mo., assignor to the Bell Telephone Company of Missouri, same place. Filed Sept. 24, 1894. Serial No. 523,967. (No model.)

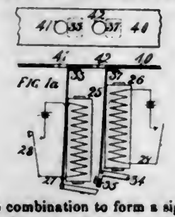


FIG 1a

Claim.—1. The combination to form a signaling apparatus, of a plate having two perforations therein, two signaling plates arranged adjacent to the perforations, electro-magnets for operating the signaling plates, having their armatures connected directly to the respective signaling plates, and an interlocking extension from the armature of one of said magnets and adapted to be placed within the path of the travel of the armature of the other magnet.

2. The combination in a telephone system, of line wires leading from a central office to subscribers' stations, calling apparatus at subscribers' stations normally to line by way of telephone hooks and their front contact stops, conductors in electrical communication with a suitable battery and with the front contact stops of the telephone hooks, electro-magnetic devices at the central office adapted to be placed in the circuit of said line wires and conductors, and a ringing battery put to line by said electro-magnetic devices.

3. The combination in a telephone system, of line wires leading from a central office to subscribers' stations, calling apparatus at subscribers' stations normally to line by way of telephone hooks and their front contact stops, conductors in electrical communication with a suitable battery and with the front contact stops of the telephone hooks, a ringing battery, means at the central office for putting said ringing battery to line, and electro-magnetic devices at the central

office, adapted to be placed in the circuit of said line wires and conductors, controlling said means.

4. The combination in a telephone system, of line wires leading from a central office to subscribers' stations, calling apparatus at subscribers' stations, a ringing battery at the central office, means for putting said ringing battery to line, and electro-magnetic appliances between the subscriber wanted and the central office operating said means to remove the ringing battery from line.

5. The combination in a telephone system, of line wires leading from a central office to subscribers' stations, calling apparatus at subscribers' stations, electro-magnetic devices at the central office adapted to be placed in the circuit of said line wires, a ringing battery put to line by said electro-magnetic devices, and electro-magnetic appliances, between the subscriber wanted and the central office, controlling said electro-magnetic devices to remove the ringing battery from line.

6. The combination in a telephone system, of line wires leading from a central office to subscribers' stations, calling apparatus at subscribers' stations normally to line by way of telephone hooks and their front contact stops, conductors in electrical communication with a suitable battery and with the front contact stops of the telephone hooks, electro-magnetic devices at the central office adapted to be placed in the circuit of said line wires and conductors, a ringing battery put to line by said electro-magnetic devices, and electro-magnetic devices at the central office, also adapted to be placed in the circuit of said line wires and conductors, controlling the aforementioned electro-magnetic devices.

7. The combination in a telephone system, of a central office having talking line wires leading therefrom to subscribers, the circuits of which are normally broken by telephone hooks, an electro-magnetic-calling apparatus at subscribers' stations, the circuit of which calling apparatus is normally closed by way of telephone hooks, circuit-governing means and a battery at the central office placed by the central-office operator in electrical control of the circuit of the calling subscriber, and a battery and electrical connections controlled by said circuit-governing means and adapted to be placed in electrical communication with the electro-magnetic-calling apparatus of the subscriber wanted.

8. The combination in a telephone system, of line wires leading therefrom to the different subscribers, an electro-magnetic circuit-controlling means and battery at the central office adapted to be placed in communication with a calling subscriber and a subscriber wanted, the circuit of which electro-magnetic means is normally broken by telephone hooks, an electro-magnetic-calling apparatus at the subscribers' stations, the circuit of which apparatus is normally closed by telephone hooks, and a battery and suitable electrical connections adapted to be placed by said circuit-governing means in electrical communication with the calling apparatus of the subscriber wanted.

9. The combination in a telephone system, of a central office having line wires leading therefrom to subscribers, calling apparatus at subscribers' stations, electrical devices at the central office adapted to connect a calling subscriber with a subscriber wanted, and a subscriber-calling means at the central office in electrical communication with said electrical devices, said subscriber-calling means consisting of two electro-magnets adapted to be placed by said electrical devices, one within the control of the calling subscriber, and the other within the control of the subscriber wanted, a call battery governed by said magnets, and means preventing the operation of the calling apparatus of the subscriber wanted after such subscriber has responded.

10. The combination in a telephone system, of a central office having line wires leading therefrom to subscribers, calling apparatus at subscribers' stations, electrical devices at the central office adapted to connect a calling subscriber with a subscriber wanted, and a subscriber-calling means at the central office in electrical communication with said electrical devices, said subscriber-calling means consisting of two electro-magnets adapted to be placed by said electrical devices, one within the control of the calling subscriber, and the other within the control of the subscriber wanted, a call battery, the circuit of which is made and broken by the contact of the armatures of said magnets, and insulating material upon the armature of the first-mentioned magnet and upon that side thereof adjacent to the armature of the other magnet for the purpose set forth.

11. The combination in a telephone system, of an electrical signaling apparatus at the central office, controlled by the circuit of the calling subscriber and adapted to display signals to the central-office operator, and a calling battery at the central office and its circuit leading to the calling apparatus of the subscriber wanted, said battery and its circuit controlled by said electrical signaling apparatus.

12. The combination in a telephone system, of an electrical signaling apparatus at the central office, controlled by the circuit of the calling subscriber and adapted to display signals to the central-office operator, electro-magnetic-calling apparatus grounded at subscribers' stations, the circuit of which is closed by way of telephone hooks, and a grounded calling battery at the central office and its circuit leading to the calling apparatus of the subscriber wanted, controlled by said electrical signaling apparatus.

13. The combination in a telephone system of the character described, of an electrical signaling apparatus at the central office adapted to be placed in the circuit of line wires leading to subscribers, and to display signals to the central-office operator, said signaling apparatus consisting of two electro-magnets controlling signaling devices, one of said magnets being in the circuit of the line wire leading to the calling subscriber, and the other in the circuit of the line wire leading to the subscriber wanted, and an interlocking appliance between said magnets, whereby the said magnets may independently or conjointly operate the said signaling devices.

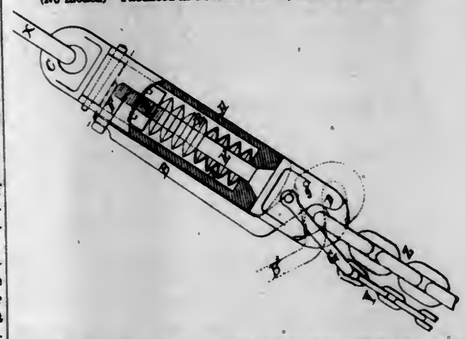
14. In a telephone system of the character described, an electrical signaling apparatus at the central office adapted to be placed in the circuit of the line wires leading to subscribers and to display signals to the central-office operator, said signaling apparatus consisting of two electro-magnets each controlling signaling devices, one of said magnets adapted to be placed by the central-office operator in the circuit of the line wire leading to the calling subscriber, and the other in the circuit of the line wire leading to the subscriber wanted, and an interlocking appliance between said magnets, in combination with grounded bell-magnets at subscribers' stations, the circuit of which magnets is normally closed by telephone hooks, and a grounded calling-battery at the central office, the circuit leading from which to the bell-magnet of the subscriber wanted is controlled by the aforesaid signaling apparatus.

15. The combination in a telephone system, of a signaling apparatus at the central office, adapted to be placed in communication with the line wires leading to subscribers and to display signals to the central-office operator, said electric signal apparatus consisting of two electro-magnets, one placed in the circuit of the calling subscriber and the other in the circuit leading to the subscriber wanted, a signaling device controlled by each magnet, an interlocking appliance carried by the armature of the magnet in the circuit of the subscriber wanted, insulating material upon said interlocking appliance at that side adjacent to the armature of the other magnet, and a calling battery and circuit leading therefrom to the calling apparatus of the subscriber wanted, said battery and its circuit controlled by the said signaling apparatus.

16. A combined signaling apparatus and calling device, consisting of two magnets, each of which controls a signaling device, electrical connections for governing said magnets, a downward interlocking extension from the armature of one of said magnets adapted to engage with the armature of the other magnet and a calling battery and its circuit also controlled by the armatures of said magnet.

17. A combined signaling apparatus and calling device, consisting of two magnets, each of which controls a signaling device, electrical connections for governing said magnets, a downward interlocking extension from the armature of one of said magnets adapted to engage with the armature of the other magnet, insulating material upon said interlocking extension on the side thereof opposite the other armature, and a battery and its circuit controlled by the armatures of said magnet.

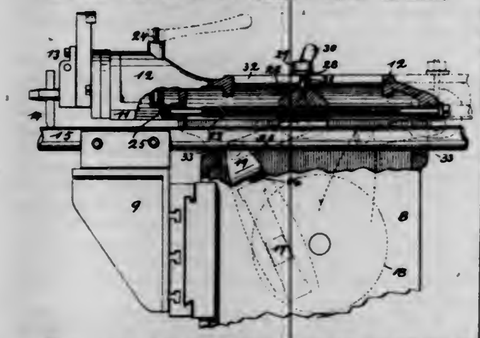
544,568. SAFETY-HOOK FOR STABLES. LOUIS J. DUBAILLY, Boulogne-sur-Seine, and JULES FRAIRE, Paris, assignors to Emile Arthur Thouar, Suives, France. Filed Apr. 22, 1895. Serial No. 546,708. (No model.) Patented in France Feb. 11, 1895, No. 232,167.



Claim.—1. The herein described safety hook, comprising a body portion and a bolt therein carrying a swinging hook with an arm, the bolt and body portion being capable of rotation with reference to each other, a catch on the body, open at one side, and a spring acting on the bolt to normally engage the said arm of the swinging hook with the catch, substantially as set forth.

2. The herein described safety hook, comprising a body portion and a bolt therein carrying a swinging hook with an arm, the bolt and body portion being capable of rotation with reference to each other, a hook-ended catch on the body, open at the hook end, and a spring acting on the body to normally engage the said arm of the swinging hook with the catch, substantially as set forth.

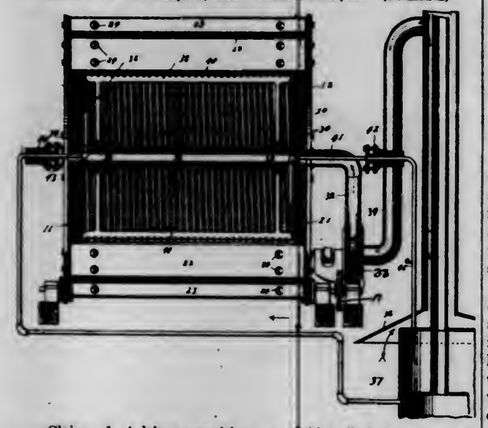
544,569. METAL-SHAPING MACHINE. HENRY DERRER, Cincinnati, Ohio. Filed Jan. 21, 1895. Serial No. 535,685. (No model.)



Claim.—1. In a shaper or similar machine-tool, the combination of the reciprocating tool-carrier, the vibrating arm 16, and the two links 20, to connect the vibrating arm to the tool-carrier, said vibrating arm spreading at its upper end in two branches or forks to the outside of each of which links 20, connect, to provide an open clear space for the purpose described.

2. In a shaper, or similar machine-tool, the combination of a tool-carrier or ram 12, a nut 22, adjustably supported within ram 12, flanges 21 depending therefrom on each side, a vibrating arm 16, having the two fork-branches 19 at its upper end, two links 20, each connecting one of the fork-branches 19 to one of the depending flanges 21 of nut 22, to connect it to arm 16 for the purpose of reciprocating it with ram 12, a frame 8, on which this latter is supported, having openings 33, in opposite ends in line with each other and in line with the open space between the forked end of arm 16, links 20 and flanges 21 depending from nut 22, thereby providing a continuously open and unobstructed passage clear through the machine.

544,570. DRIER. EMILIO CABRERO Y ECHEANDIA, Las Marias, Porto Rico. Filed Sept. 5, 1894. Serial No. 522,159. (No model.)



Claim.—1. A drier, comprising a revoluble cylinder having closed ends, a series of communicating circumferential compartments with perforated inner and outer walls, and a heater arranged within the cylinder, substantially as described.

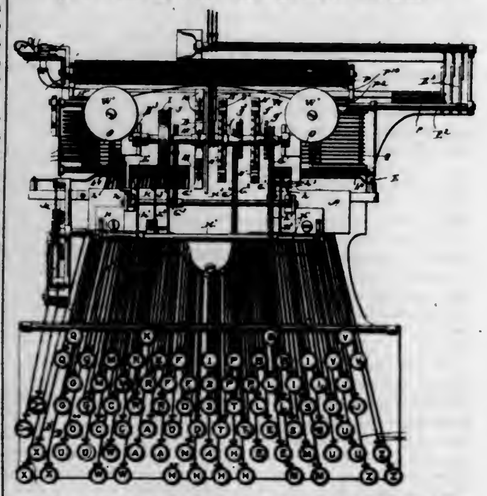
2. A drier, comprising a revoluble cylinder having closed ends, a series of communicating circumferential compartments with perforated inner and outer walls, openings for the admission and discharge of the material arranged in the outer wall of each compartment, a longitudinally sliding door for each compartment provided with openings adapted to register with the openings in the outer wall of the cylinder, and a steam coil arranged within the cylinder, substantially as described.

3. The combination with the cylinder having a series of communicating circumferential drying compartments with perforated inner and outer walls and a central chamber for the heating apparatus, of the perforated air pipe extending through the central chamber, means for supplying hot air to the pipe, the frame work supported on the hot air pipe, the steam coil on the frame work, a steam supply pipe connecting one end of the coil with a boiler, and a return pipe leading from the other end of the coil to the boiler, substantially as described.

4. The combination with the revoluble drying cylinder having a central chamber for the heating apparatus, of the perforated hot air pipe extending through the central chamber, the boiler, the deflector and funnel arranged above the boiler, and a blower connected with the said funnel and with the perforated hot air pipe and arranged to exhaust the hot air from the funnel and discharge it into the perforated pipe, substantially as described.

5. The combination with the drying cylinder having a central chamber for the heating apparatus, of a perforated hot air pipe extending centrally through the said chamber, a boiler, a deflector and funnel arranged above the boiler, a blower arranged to exhaust the hot air from the funnel and discharge it into the perforated hot air pipe, and a steam coil encircling the hot air pipe and connected at one end with a steam supply pipe leading from the boiler and at the other end with a return pipe leading to the boiler, substantially as described.

544,571. TYPE-WRITING MACHINE. GEORGE M. BOBBS, Chicago, Ill. Filed July 2, 1894. Serial No. 516,351. (No model.)



Claim.—1. In a type writing machine, the combination with a series of independently controlled impression mechanisms and a feeding mechanism, of groups of keys controlling like characters in the different impression mechanisms arranged with the keys controlling the first impression mechanism at the right hand side of the group, the key for the last impression mechanism at the left hand side of the group, and the key for the intermediate impression mechanism, at an intermediate point but out of alignment with the other keys of the group; substantially as described.

2. In a type writing machine, the combination with independently controlled impression mechanisms, of the first, second and third order and a variable feed for advancing the carriage a distance corresponding to the order of the impression made, of a series of keys, controlling each impression mechanism, keys for the same character in all the mechanisms being arranged in substantially triangular groups, with those of the first order at the right hand corner, those of the second order at the apices and those of the third order at the left hand corner of the groups respectively; substantially as described.

3. In a type writer, the combination with the key levers and carriage, of a printing mechanism embodying a reciprocatory type segment, a pin or projection controlling the movement of the segment, a pivoted cam lever having an inclined cam surface with a straight locking surface at the end, the incline cooperating with the pin to lock or shift the type segment and a connection between the cam lever and key levers; substantially as described.

4. In a type writer, the combination with the key levers and carriage, of a printing mechanism embodying a reciprocating type segment, a pin or projection controlling the movement of the segment, pivoted cam levers having oppositely inclined cam surfaces, and oppositely arranged straight locking surfaces cooperating with the pin to lock or shift the type segment in opposite directions, and connections between said cam levers and key levers; substantially as described.

5. In a type writer, the combination with the key levers and carriage, of a printing mechanism embodying a reciprocating type segment, a pin or projection controlling the movement of the segment, pivoted spring pressed cam levers having oppositely inclined cam slots terminating at the top in oppositely arranged straight locking surfaces, cooperating with the pin to lock or shift the type segment in opposite directions, and connections between the respective cam levers and different key levers; substantially as described.

6. In a printing mechanism for type writers, the combination with a plurality of sets of key levers, a plurality of independently movable type segments, a pin or projection controlling the movement of each of said segments, pairs of independent cams controlling each of said pins and connections between each of the pairs of cams and key levers of one of the sets, whereby the operation of key levers of different sets will operate different cams and type segments; substantially as described.

7. In a type writer, the combination with the key levers, the reciprocatory type segment the oppositely arranged cams for shifting the segment in opposite directions and connections between said cams and different key levers for moving the segment in opposite directions, of oppositely arranged stops moving in unison with the segment and a series of pins, adapted to be projected between said stops and connections between each of said pins and two key levers, substantially as described.

8. In a type writer, the combination with the key levers, the reciprocatory type segment oppositely arranged cams for moving said segment in opposite directions, operating levers for said cams, extending over one half of the key levers respectively, and oppositely arranged stops moving in unison with the type segment, of a series of pins adapted to project between said stops, an elevating bar for each of said pins and a connection between each of said bars and two of the key levers; substantially as described.

9. In a type writer, the combination with the key levers, the type segment moved thereby, and the stop pins, of the bars for elevating the pins mounted on pivoted links, whereby they preserve their parallelism when moved, and connections between the bars and key levers; substantially as described.

10. In a type writer, the combination with the key levers arranged in sets, the ends of each set being separated from the other sets, the series of type segments, one for each set of levers, and the series of sets of pins one set for each segment, of the series of sets of bars for elevating the pins, each of said bars being mounted on pivoted links, and connections between the bars of each set of bars and the key levers of one of the sets of key levers; substantially as described.

11. In a type writer, the combination with the key levers and type wheel composed of a plurality of segments with connections between said wheel and key levers for shifting the wheel to bring any character in a segment to the printing point, of a shifting gear for turning the wheel to present a new segment consisting of the pinion connected with the type wheel, the internally toothed member, the idler gear interposed between the internally toothed member and pinion, a pin controlling the internally toothed member, the oppositely arranged cams cooperating with the pin and the case keys for moving said cams; substantially as described.

12. In a printing mechanism for type writers, the combination with the type wheel composed of a plurality of segments and a pinion connected to move in unison therewith, of an idler wheel in mesh with the pinion on the type wheel mounted on an arm pivoted on a center coincident with the center of the pinion, an internally toothed member in mesh with the idler, independent pins or projections controlling the idler and internally toothed member respectively and independent sets of oppositely arranged cams having oppositely arranged locking faces cooperating with said pins for locking or moving the wheel in different directions; substantially as described.

13. The combination with the reciprocating segment or member and pin controlling the same, of the cam levers having the oppositely inclined cam slots and locking surfaces on each lever curved to conform to the path traversed by the pin when moved by the other cam, whereby but one cam can be moved at once; substantially as described.

14. In a printing mechanism for type writers, the combination with the reciprocating type segment and pin controlling the same, of the cam levers having the oppositely inclined cam slots terminating in oppositely arranged vertical pin locking surfaces and each cam lever having a lever locking surface curved to conform to the path of travel of the pin when moved by the opposite cam; substantially as described.

15. In a type writer, the combination with the key levers, type wheel and hammer, of the pins for arresting the type wheel, the bars mounted on links pivoted at each end to swing vertically and having the intermediate slot bearings in which the ends of the pins work, and connections between the bars and key levers; substantially as described.

16. In a type writer, the combination with a series of type segments, a corresponding series of independent hammers, cooperating respectively therewith, and a key board having an independent set of keys for each type wheel and hammer, a carriage and a feed mechanism therefor operated by each of the key levers; substantially as described.

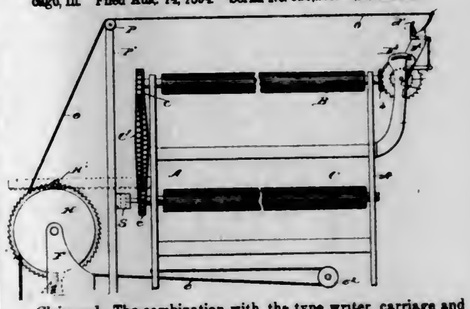
17. In a type writer, the combination with a series of type segments and an independent set of key levers for each type segment, of an independent hammer for each segment, an operating bar for each hammer crossing one of the sets of key levers and a carriage and feed mechanism operated by all the key levers; substantially as described.

18. In a type writer, the combination with the carriage, a series of type segments and an independent set of key levers for each type segment, of an independent hammer for each segment, shafts on which said hammers are mounted journaled in rear of the carriage, a corresponding series of shafts journaled in front of the carriage, operating bars connected with said last mentioned shafts, each crossing one of the sets of key levers, connections between said shafts in front and rear of the carriage and a variable feed for the carriage operated by all the key levers; substantially as described.

19. In a type writer, the combination with a carriage, a series of type segments and an independent set of key levers for each type segment, of an independent hammer for each segment, shafts on which said hammers are mounted journaled in rear of the carriage and extending beyond the end of the path of travel of the carriage, a corresponding set of shafts journaled in front of the carriage, arms connecting the ends of the shafts beyond the path of travel of the carriage, operating bars each crossing one of the sets of key levers and connected with one of the shafts in front of the carriage and a feed mechanism for the carriage operated by all the key levers; substantially as described.

20. In a type writer, the combination with the series of sets of key levers, a printing mechanism for each set and a carriage, of a feed mechanism for said carriage embodying a rack bar, a pawl and pawl frame movable transversely of said rack bar with connections between said pawl frame and all the key levers, a supplemental pawl mounted to slide in bearings on the pawl frame in a line substantially parallel with the rack bar, the rack bar, and a series of stops interposed in the path of the supplemental pawl for limiting the movement of the same, said stops being controlled by the sets of key levers respectively; substantially as described.

544,572. TYPE-WRITING MACHINE. GEORGE M. BOBBS, Chicago, Ill. Filed Aug. 14, 1894. Serial No. 520,275. (No model.)



Claim.—1. The combination with the type writer, carriage and spring drum, for advancing the same, of a rewinding drum containing a superior spring wound in the reverse direction with means for retaining the spring wound and means for coupling the same with the carriage advancing drum for rewinding the same; substantially as described.

2. The combination with the type writer carriage and spring drum for advancing the same, of a rewinding drum containing a superior spring wound in the reverse direction, a catch for holding the rewinding drum against reverse movement and a shifting mechanism for simultaneously coupling the drums together and releasing the rewinding drum; substantially as described.

3. The combination with the type writer carriage, the spring drum for advancing the same and a connection between said drum and the paper feeding lever for feeding the paper when the drum is given a reverse movement, of the rewinding drum and its superior actuating spring wound reversely, with a catch for holding the rewinding drum and means for coupling the drums and releasing the rewinding drum; substantially as described.

4. The combination with the type writer carriage and the spring

drum for advancing the same, of the rewinding drum mounted on the same axis and movable toward and from the same and containing a reversely wound superior spring cooperating projections for coupling said drums and means for winding the superior spring; substantially as described.

5. The combination with the type writer carriage and the spring drum for advancing the same, of the rewinding drum containing a superior spring mounted on the same axis and movable toward and from the spring drum for advancing the carriage, cooperating projections for coupling the drums, a catch for holding the rewinding drum when in normal position and a lever for moving said drum into engagement with the carriage advancing drum to rewind the latter; substantially as described.

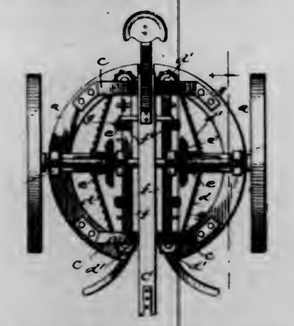
6. The combination with the paper carriage carrying the paper advancing rollers, the paper feed lever journaled to swing in the plane of movement of the carriage, and the cord connected to said lever, whereby when the cord is pulled the lever will be moved thereby to feed the paper and draw the carriage back of the spring actuated drum for winding the cord, feeding the paper and returning the carriage to first position; substantially as described.

7. The combination with the type writer carriage carrying the paper advancing roller, the lever for rotating said roller, the cord connected with said lever and the drum with which the cord is connected, of the rewinding drum, a catch for holding the same and means for couplings the drums whereby the cord is wound, the paper fed and the carriage returned to first position; substantially as described.

8. The combination with the type writer carriage carrying the paper advancing roller, the lever for rotating said roller, and the cord connected with said lever, of the spring drum connected with the carriage for advancing it, and connected with said cord, the rewinding drum containing a superior spring with means for coupling said drums to return the carriage, feed the paper and rewind the carriage advancing spring; substantially as described.

9. The combination with the vertically disposed type writer carriage and the paper-holding and feeding rollers arranged one above the other and geared together for simultaneous rotation in opposite directions and the paper holding bar in front of the paper holding roller, of the vertical paper holder for containing a package of paper located in rear of the feeding roller with means for preventing the advance of but a single sheet at a time; and a guide for directing the paper in front of the upper roller substantially as described.

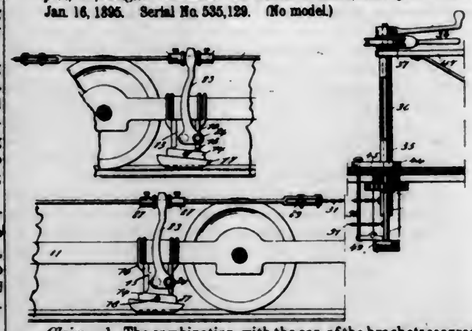
544,573. CORNSTALK-PULLER. ARTHUR EDWARDS, Willow Springs, Mo., assignor of one-half to Mat P. Smith and Sarah A. Dahl, same place. Filed May 13, 1895. Serial No. 549,043. (No model.)



Claim.—1. In a stalk puller, the combination of an axle and wheels, a frame depending therefrom, and having a longitudinal stalk-passage, an endless horizontal chain mounted on the frame on each side of said stalk passage and having its inner, rearwardly-moving portion over and parallel with said stalk passage, sprocket-wheels journaled on the frame and carrying said chains, mechanism driven from the axle for operating said sprocket-wheels, a supporting shoe and guide mounted on the frame on each side of the stalk passage and extending nearly the full length thereof, and means for normally pressing each shoe inwardly against the rearwardly-moving portion of the adjacent chain, substantially as described.

2. In a stalk puller, the combination of an axle and wheels, a frame depending from the axle and having a stalk passage centrally through it, a pair of horizontal chains mounted upon the frame and having their adjacent portions supported close together in the stalk passage, flanged shoes engaging the inner portions of the chains and pressing them toward each other, and mechanism for operating said chains, substantially as described.

544,574. SAFETY CAR-BRAKE. JEFFERSON U. ELWOOD, McKeesport, Pa., assignor to himself and Duane P. Smith, same place. Filed Jan. 16, 1895. Serial No. 535,129. (No model.)



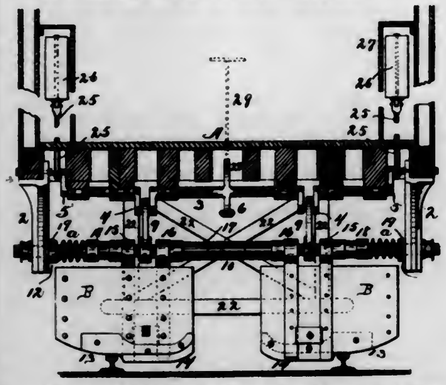
Claim.—1. The combination, with the car, of the brackets secured to the car truck, the vertically sliding transversely slotted brake shoe holders in the brackets, the brake shoes secured to the holders and adapted to engage the rails, the levers fulcrumed on the brackets and having projections engaging the transverse slots in the holders, the cross levers connecting the rods, and means for imparting a longitudinal movement to the rods, substantially as described.

2. The combination, with the brackets and the vertically movable brake shoe holders having their lower sides inclined to the track, of the wedge-shaped shoes secured to the inclined lower sides of the brake shoe holders, and means for longitudinally adjusting the shoes, substantially as described.

3. The combination, with the bracket and the brake shoe holder slidable therein and provided with a grooved bottom, of the wedge shaped shoe having a tongue to enter the groove of the brake shoe holder, and means, as the series of holes in the tongue and the bolt in the brake shoe holder, for adjusting the brake shoe, substantially as described.

4. The combination, with the brake shaft and the friction wheel thereon, of the recessed handle journaled on the shaft and turning opposite the friction wheel, the roller held in the recess of the handle and adapted to engage the friction wheel, and the block movably mounted in the recess of the handle to engage the roller, substantially as described.

544,575. FLANGER. TIMOTHY H. FENNELL, East Hartford, Conn. Filed Mar. 20, 1895. Serial No. 542,520. (No model.)

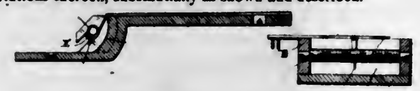


Claim.—1. The combination with a car, of a vertically movable shaft, brackets under the car having slots receiving said shaft, flangers mounted upon said shaft so as to swing thereon and provided with cutting edges, springs engaging with said brackets and said flangers and means to raise and lower said shaft.

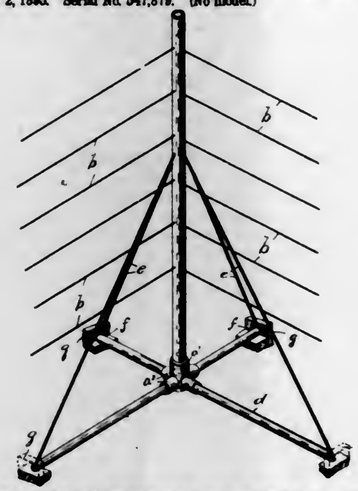
2. The combination with a car, of a crank shaft journaled under it, an air pressure cylinder under the car, a pitman rod connecting it to a crank-arm on said crank shaft, hangers secured beneath the car and provided with vertical slots, a shaft mounted therein, links connecting it to cranks upon the crank shaft, flangers mounted and adapted to swing upon said shaft, and weakened stay-chains connected to said flangers and to the car.

544,576. WATCH-REGULATOR. AGILE N. GAUTHIER, New Orleans, La. Filed Apr. 20, 1895. Serial No. 546,499. (No model.)

Claim.—The combination of the bridge B formed with depression B', the bearings D on the upright wall of the depression, the screw shaft confined in the bearings, the same extending transverse the bridge, and the regulating lever turned down at its free end beneath the said shaft where it is confined between and adjusted by the convolutions thereon, substantially as shown and described.



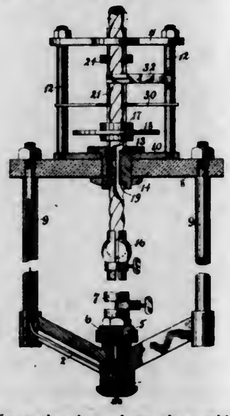
544,577. FENCE-POST. JOHN B. GREVE, Botkins, Ohio. Filed May 2, 1895. Serial No. 547,879. (No model.)



Claim.—1. An end or corner post composed of the vertical post proper formed of a length of pipe arranged to extend a distance beneath the surface of the ground, a T-coupling on the lower end of said pipe, the anchor pieces secured in the side sockets of said coupling and extending radially from the lower end of the post and in the line of strain on the post, and braces from the outer ends of said anchors upwardly to the post, substantially as described.

2. A post comprising the vertical post proper, a T-coupling on the lower end thereof, the radial oppositely extending anchor feet from said coupling, braces from the outer ends of the feet to the post, and the blocks *f*, *g*, beneath and at the ends of the feet, substantially as described.

544,578. ELECTRIC-ARC LAMP. JOHN H. J. HAINES, New York, N. Y., and ALEXANDER B. FERNALD, Jersey City, N. J. Filed Nov. 20, 1894. Serial No. 529,380. (No model.)



Claim.—1. In an electric arc lamp, the combination with a carbon carrier in the form of a reciprocating non-rotating screw, of a nut rotated by the reciprocation of the carrier and provided with an extended flange, a fixed support upon which said nut may rest during the free descent of the carrier, a reciprocating friction detent adapted to engage said flange near its periphery, and means for regulating the engagement between said detent and flange so as to effect a gradual decrease in the rotation of said nut as it is lifted from its fixed support and to effect a gradual increase in its rotation as it is lowered upon said support, as and for the purpose set forth.

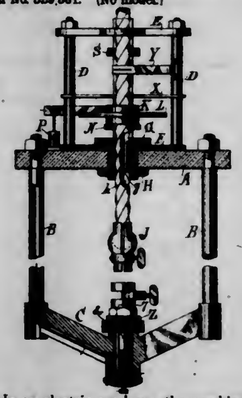
2. In an electric arc lamp, the combination with a carbon carrier in the form of a reciprocating non-rotating screw and a nut rotated by the reciprocation of said carrier and provided with a flange, of a reciprocating bar connected to and operated by the controlling magnet of the lamp, a projection upon said bar for engaging one surface of said flange for lifting the nut and carrier, and another projection on said bar for engaging the opposite surface of said flange to limit the rise of the nut on the carrier, as and for the purpose set forth.

3. In an electric arc lamp, the combination with a carbon carrier in the form of a reciprocating non-rotating screw and a nut rotated by the reciprocation of said carrier and provided with a friction surface, of a reciprocating bar provided with a projection for engaging said friction surface, and a lever pivoted to the frame of the lamp and connected to said bar and to the movable part of the controlling magnet of the lamp, substantially as and for the purpose set forth.

4. In an electric arc lamp, the combination with a carbon carrier in the form of a reciprocating non-rotating screw and a nut rotated by the reciprocation of said carrier and provided with a friction surface, of a reciprocating bar provided with a projection for engaging said friction surface, a counterbalanced lever pivoted to the frame of the lamp and connected to said bar and to the movable part of the controlling magnet, and a dash-pot connected to said lever, as and for the purpose set forth.

5. In an electric arc lamp, the combination with the base, of a frame for the feeding mechanism, a hollow bolt connecting said base and frame and provided with a spline on its inner surface, a carbon carrier in the form of a screw passing through said bolt and provided with a groove extending longitudinally thereof to receive said spline, a nut free to rotate upon said carrier, and means for regulating the rotation of said nut, substantially as set forth.

544,579. ELECTRIC-ARC LAMP. JOHN H. J. HAINES, New York, N. Y., and ALEXANDER B. FERNALD, Jersey City, N. J. Filed Nov. 20 1894. Serial No. 529,381. (No model.)



Claim.—1. In an electric arc lamp, the combination with a carbon carrier in the form of a screw of coarse pitch held against rotation while allowed to move longitudinally, of a nut free to rotate on said screw, means engaging said nut for lifting it and the carrier, and a detent or clamping device carried by said lifting means and also engaging the nut to regulate the rotation thereof.

2. In an electric arc lamp, the combination with a carbon carrier in the form of a reciprocating non-rotating screw, of a nut free to rotate on said screw, a movable support on which said nut rests, and a detent carried by said support and engaging said nut to hold it from rotation and adapted to release it when a feed of the carbon is required.

3. In an electric arc lamp, the combination with a carbon carrier in the form of a coarse pitch screw held against rotation while allowed to move longitudinally, of a nut free to rotate on said screw as the carrier descends, a movable support on which said nut rests, means for connecting the armature of the controlling magnet of the lamp to said support for imparting motion thereto, and a detent carried upon said movable support and engaging said nut, as and for the purpose set forth.

4. In an electric arc lamp, the combination with a carbon carrier in the form of a screw and a nut thereon freely rotated by the descent of the carrier, of a movable support for the nut reciprocated

by the controlling magnet of the lamp, and a detent device mounted upon said movable support for engaging said nut to regulate its rotation and thereby control the descent of the carbon carrier.

5. In an electric arc lamp, the combination with a carbon carrier in the form of a screw and a nut thereon freely rotated by the descent of the carrier, of a movable support for the nut reciprocated by the controlling magnet of the lamp, a detent device mounted upon said support for engaging said nut to regulate its rotation and thereby control the descent of the carbon carrier, and means controlled by the position of the movable support for regulating the action of the detent device upon said nut, substantially as set forth.

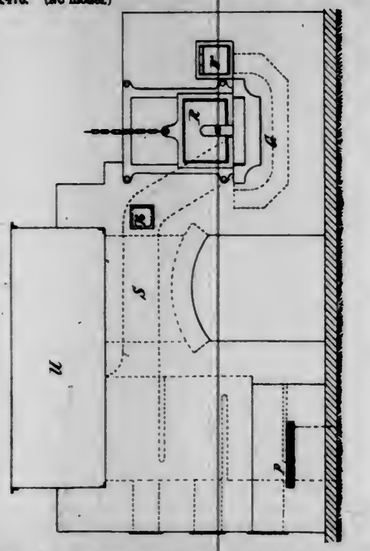
6. In an electric arc lamp, the combination with the carbon carrier in the form of a screw and a nut thereon rotated by the descent of the carrier and provided with a friction surface, of a reciprocating bar, a weighted lever pivoted thereto, and projections or pins on said lever engaging with the friction surface of said nut to regulate the rotation thereof and control the descent of the carrier.

7. In an electric arc lamp, the combination with the carbon carrier in the form of a screw and a nut thereon rotated by the descent of the carrier and provided with a friction surface, of a reciprocating bar connected to and operated by the controlling magnet of the lamp, a support connected to said bar for sustaining the weight of the nut and the carrier with its carbon to counterbalance the weight of the movable portion of the controlling magnet, and a friction device mounted upon said bar for regulating the rotation of said nut, substantially as set forth.

8. In an electric arc lamp, the combination, with a carbon carrying rod in the form of a reciprocating non-rotating screw, of a carbon clamp secured thereto, a nut free to rotate upon said rod and provided with an extended flange, a movable support for said nut connected to and reciprocated by the controlling magnet of the lamp, a detent device mounted upon said support and adapted to engage with said flange, and means for regulating the engagement between the detent device and flange as and for the purpose set forth.

9. In an electric arc lamp, the combination of a carbon carrier in the form of a screw, of a nut thereon rotated by the descent of the carrier and provided with an extended flange, a reciprocating bar connected to the regulating magnet of the lamp, a lever pivoted to said bar and provided with a detent device for engagement with said flange, and means for operating said lever for throwing said detent device into and out of engagement with said flange, as and for the purpose set forth.

544,580. FURNACE FOR MANUFACTURING YELLOW PRUSSIATE OF POTASH. SIGMUND HALLA, Vienna, Austria-Hungary, assignor to Anton Raudnitz, same place. Filed May 23, 1891. Serial No. 394,476. (No model.)



Claim.—1. In a furnace for making prussiate of potash the combination of a fire-place, a melting pan, a flue leading from the pan to the chimney and containing absorption chambers M with a fan O and a sliding door P in the flue to regulate the speed of the gases from the absorption chamber, substantially as set forth.

2. In a furnace for making prussiate of potash, the combination of the fire-place, melting pan, and flue leading from the melting pan to the chimney and provided with absorption chambers, with a tube Q leading from the outer air to the absorption chambers, as and for the purposes set forth.

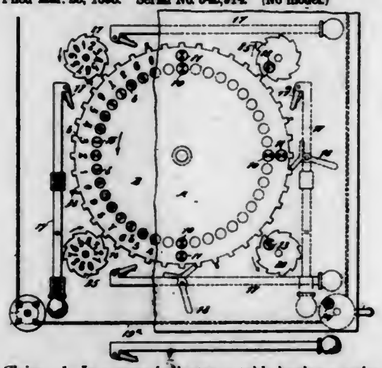
544,581. CORN-PLANTER. GEORGE B. HEATH, Curtis, Nebr. Filed Mar. 29, 1895. Serial No. 543,726. (No model.)



Claim.—1. In a check row corn planter, the combination with a frame, of the guide pulleys F, G, and H, a spring bolt G, for supporting the pulley F, a rod G^2 connected to said spring bolt, a lever K to which said rod is attached, the pitman L' for turning the pulleys H, and the link L^2, connecting said pitman with the lever K, substantially as shown and described.

2. The combination with a cross-beam of the frame, of the beam of a plow, the staple P', through which said plow beam passes, the slotted wedge shaped block R, interposed between the top of the plow beam and the bottom of the cross beam, and means for securing said block, to the cross beam, substantially as shown and described.

544,582. GAME-COUNTER. CHARLES H. LEMPER, Melrose, Mass. Filed Mar. 23, 1895. Serial No. 542,914. (No model.)



Claim.—1. In a game indicator, a table having a series of score and game openings therein, two score openings being opposite each player, dials held to rotate beneath the score openings, having figures thereon adapted to appear at said score openings, an independent operating device for each dial, game disks located adjacent to the dials beneath the game openings, projections carried by the dials, and teeth

produced on the game disks to be engaged by the said dial projections, the projections of the dial being placed opposite the termination of each series of figures on the dial, the series representing the number of scores necessary for a game, whereby when a game has been played and the score dial rotated to show the last score number, the game disk will be moved sufficiently to present an advance figure at the opening provided for it in the table, as set forth.

2. In a game indicator, a table having game openings and score openings made therein, dials having numbers thereon indicating scores, said numbers being arranged to pass across the score openings of the table, a game disk located at each side of each score dial, having numbers adapted to appear at the game openings in the table, the game disks being operated from the score dials, and slides provided with pawls, arranged one at each side of each score dial and adapted to rotate the same in one or the other direction, as and for the purpose specified.

3. In a game indicator, a table having game openings made therein, dials having numbers thereon indicating scores, the said numbers being arranged to pass across the score openings of the table, a game disk located at each side of each score dial, having numbers adapted to appear at the game openings in the table, the game disks being operated from the score dials, slides provided with pawls arranged one at each side of each score dial and adapted to rotate the same in one or the other direction, and trump disks held to revolve beneath trump openings in the table, and means, substantially as described, for moving all of the trump disks simultaneously and independently of the game disks or score dials, as and for the purpose specified.

4. A game indicator, comprising a board having openings therein, score dials arranged below the board, slides provided with pawls for engaging the score dials to operate them, game disks at the sides of the score dials and operated therefrom, trump disks at the corners of the board, pulleys on the disks, an endless belt passing around the pulleys, and means for operating one of the said disks, substantially as herein shown and described.

544,583. SHOE. JOHN A. KRAY, Lancaster, Pa. Filed Mar. 11, 1895. Serial No. 541,330. (No model.)



Claim.—A combined outside back stay and back quarters consisting of a narrow vertical portion, a cross portion at its lower end forming the back quarters, the intersecting points of the vertical portion and the quarters being formed on abrupt lines to prevent fullness and crimping, the under side of the quarters having a central downward dip and upward curves between said dip and their ends to form the heel without intermediate seams and without crimping, substantially as described.

544,584. PROCESS OF OBTAINING METALLIC LEAD AND WHITE-LEAD PIGMENTS FROM LEAD SULFIDES. ALEX MACDONALD, London, England. Filed Mar. 23, 1895. Serial No. 542,577. (No specimens.) Patented in England June 17, 1893, No. 11,973; in France Mar. 30, 1894, No. 237,431; in Belgium July 18, 1894, No. 111,049; in Italy Aug. 31, 1894, LXXII, 333; in New South Wales Aug. 26, 1894, No. 5,276; in Tasmania Aug. 27, 1894, No. 1,318; in Austria Sept. 15, 1894, No. 44/4,895, and in Hungary Dec. 4, 1894, No. 1,712.

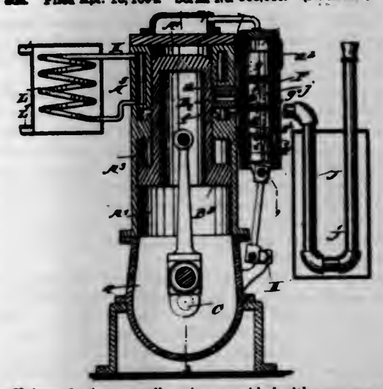
Claim.—The process described for the production of metallic lead and a white lead pigment from lead sulphide (PbS), said process consisting in the blowing air or oxygen over or through fused lead sulphide, it thereby producing a reaction expressed by the formula $2PbS+O_2=PbSO_4+Pb$, blowing additional air or oxygen into the volatile compound $PbSO_4$, and thereby converting it into a fume of nearly pure lead sulphate mixed with sulphur dioxide ($PbSO_4+O_2=PbSO_4+SO_2$), and finally heating lead sulphate, substantially as described.

544,585. SACK-HOLDER. ALEXANDER MAYO, Sheffield, Ill. Filed Mar. 21, 1895. Serial No. 542,647. (No model.)

Claim.—An improved article of manufacture, a sack-holder comprising a funnel-like body having at the lower outer edges hooks to support the sack, its ends being flared outward, the top of the front portion being disposed parallel with the bottom, the tops of the ends curving upward and rearward, the rear wall of the body being extended upward to form a shield or guide, the upper edges of which merge with the upper edges of the ends, said extension having apertures near the top, and a projecting handle member formed on the rear face of the body at a point beneath the aforesaid apertures, all arranged substantially as shown and for the purposes described.



544,586. GAS OR OIL ENGINE. FRANK S. MEAD, Montreal, Canada. Filed Apr. 18, 1894. Serial No. 508,018. (No model.)



Claim.—1. A gas or oil engine, provided with a vapor pump, having a plunger provided with cross passages arranged to regulate both the supply of vapor or gas and the exhaust from the main cylinder, substantially as shown and described.

2. A gas or oil engine provided with a vapor pump having a hollow piston arranged to regulate the supply of vapor at one end, and draw in a stated quantity of air at the other, and mix the same through the hollow piston with the vapor at the opposite end, substantially as shown and described.

3. A gas or oil engine provided with a vapor pump, having a hollow piston arranged with cross passages, whereby the operations of supplying vapor, controlling the exhaust and mixing a known quantity of air with the vapor, are performed simultaneously by the same plunger during a continuous reciprocating motion, substantially as shown and described.

4. In a gas or oil engine, the combination with the working cylinder and reciprocating piston therein, of an air pump, a gas or vapor inlet leading from said pump to the cylinder, and a port leading from the cylinder to the pump whereby air is taken into the pump from the outlet of the said working cylinder during admission of gas or vapor from the vapor port, said air being mixed with the next charge of gas or vapor entering the cylinder, substantially as shown and described.

5. In a gas or oil engine the combination with a working cylinder provided with a main exhaust port, of an air pump and a port connecting said cylinder with the air pump, after the main exhaust port is closed, and permitting air to be drawn from the said cylinder, as and for the purpose set forth.

6. In a gas or oil engine, the combination with a working cylinder and piston therein, of a vapor pump for forcing the gas or vapor to the working cylinder, and a vaporizing chamber on the outside of the cylinder head and arranged to communicate with the pump cylinder, substantially as shown and described.

7. In a gas or oil engine, the combination with a working cylinder and piston reciprocating therein, of a vaporizing chamber on the outside of the cylinder head, an oil supply tank connected with said vaporizing chamber and supplied with compressed air, and a vapor pump for drawing the vapor or gas from the vaporizing chamber, whereby the oil is supplied to the vaporizer, as the pressure in said vaporizer is reduced below that of the compressed air, substantially as shown and described.

8. In a gas or oil engine, having two power cylinders and two annular compression cylinders, a separate air chamber connected with each annular compression cylinder and arranged between the cylinders, the said air chambers being provided with inlet and exit valves, and having constant communication with their respective annular compression cylinders, substantially as shown and described.

9. A gas or oil engine having two power cylinders, two annular compression cylinders and two air chambers, each air chamber being provided with a port constantly open to the respective annular compression cylinder, and each air chamber having an inlet valve at its lower end and an outlet valve at its upper end, and an air passage leading from the outlet of each air chamber to the opposite power cylinder, substantially as shown and described.

10. A gas or oil engine having two power cylinders provided with exhaust ports, two compression cylinders, a separate air chamber for each compression cylinder, each of said air chambers being constantly open to its respective compression cylinder, and provided with an inlet valve through which air is drawn into said air chamber and the corresponding compression cylinder, and an exit valve for each air chamber held to its seat by the pressure in the opposite power cylinder whereby the air compressed in said air chamber passes to the said power cylinder when the pressure in the latter is removed by the opening of its exhaust port, substantially as and for the purpose set forth.

11. In a gas or oil engine, the combination with a reversing mechanism, comprising a hand wheel, a fixed disk, and a revoluble wheel, of the engine vapor pump, and suitable connecting gear for driving the said pump, substantially as shown and described.

12. In a gas or oil engine, the combination with a hand wheel held loosely on the main shaft and having a pinion, a disk provided with a pin and arranged next to the said hand wheel on the same shaft, the said disk being fixed to the shaft, a shaft journaled in the said disk and carrying on opposite faces of the latter pinions, of which one meshes with the pinion of the said hand wheel, and a transmitting wheel mounted on the same shaft and provided with an internal gear wheel in mesh with the other pinion on the disk, and also provided with a segmental slot engaged by the pin on the disk, substantially as shown and described.

13. In a gas or oil engine, the combination with the working cylinder and a gas or vapor pump having a reciprocating piston valve arranged to control both the duration of the exhaust from the cylinder and the supply of gas or vapor thereto, of a hand wheel, and a reversing mechanism controlled from the said hand wheel for changing the relative position of the pump or valve crank pin, substantially as shown and described.

14. In a gas or oil engine, the combination with a reversing mechanism, comprising a hand wheel having a pinion, a disk provided with a pin and arranged next to the said hand wheel on the same shaft, the said disk being fixed to the shaft, a shaft journaled in the said disk and carrying on opposite faces of the latter pinions, of which one meshes with the pinion of the said hand wheel, and a transmitting wheel mounted on the same shaft and provided with an internal gear wheel in mesh with the other pinion on the disk and also provided with a segmental slot engaged by the pin on the disk, of the engine vapor pump, and suitable connecting gear for driving the said pump, substantially as shown and described.

15. A gas engine having an air pump arranged to draw air from the working cylinder during the admission of gas or vapor therein, the plunger of which is provided with a cross passage for connecting the said working cylinder with the exhaust passage, substantially as shown and described.

16. A gas or oil engine provided with a vapor or gas pump, and having a reciprocating piston valve so arranged as to control both the exhaust from the main cylinder and the communication between the said vapor or gas pump and said working cylinder, substantially as shown and described.

17. In a gas or oil engine, having a vapor pump, the combination with a gas inlet port leading from the pump to the main cylinder, of the channel d^3 in the casting of said pump, opening into the pump cylinder, and a passage formed in the plunger of said pump for connecting the channel d^3 with the gas inlet port of the main cylinder, substantially as shown and described.

18. In a gas engine having a working cylinder, and an air compressing cylinder discharging into said working cylinder, a reciprocating piston valve controlling the duration of the exhaust from the main cylinder, and a suitable reversing arrangement for changing the position of the valve eccentric or crank pin relative to that of the main crank, for the purpose of reversing the engine, substantially as shown and described.

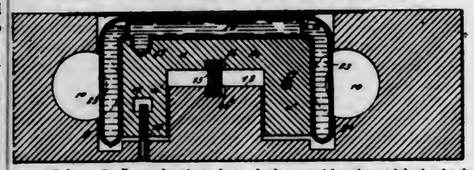
19. In a gas engine having a working cylinder and an air compressing cylinder discharging into said working cylinder, a reciprocating piston valve arranged to control both the duration of the exhaust from the main cylinder and the supply of gas or vaper, and a suitable reversing arrangement for changing the position of the valve crank pin or eccentric relative to that of the main crank, for the purpose of reversing the engine, substantially as shown and described.

20. A gas engine having an air pump arranged to draw air from the working cylinder during the admission of gas or vapor therein, and a suitable reversing arrangement for changing the position of the pump eccentric or crank pin relative to that of the main crank, substantially as shown and described.

21. A gas engine having an air pump arranged to draw air from the working cylinder during the admission of gas or vapor therein, the plunger of said pump being provided with a cross passage for connecting the said working cylinder with the exhaust, and a suitable reversing gear for changing the position of the pump crank pin or eccentric relative to that of the main crank, substantially as shown and described.

22. In a gas engine having a vapor pump arranged to draw in air at one end while forcing vapor at the other and adapted to mix said air with said vapor, the central passage j and check valve G', substantially as shown and described.

544,587. PLUMB AND LEVEL. WILLIAM MOORE, Long Island City, N. Y. Filed Feb. 19, 1895. Serial No. 538,923. (No model.)



Claim.—1. In a plumb and level, the combination with the body of the tool provided with a chamber formed therein and deepest at each side of its center, of a substantially inverted U-shaped block placed in the said chamber, a pivot passed through one leg of the block and into the body of the tool, an adjusting screw passed through the body of the tool at the bottom thereof and into the opposite leg of the block, and a combined plumb and level glass secured to the block, as and for the purpose specified.

2. In a plumb and level, the combination, with the body of the tool provided with a chamber formed therein deepest at its sides, of a substantially inverted U-shaped block placed in the said chamber, a spring intervening between the shallower wall of the chamber and the contiguous wall of the body of the block, a pivot passed through one leg of the block and into the body of the tool, an adjusting screw passed through the body of the tool and into the opposite leg of the block, and a combined plumb and level glass secured to the block, whereby through the adjustment of a single screw the drop in both the level and the plumb sections of the glass may be regulated, as and for the purpose specified.

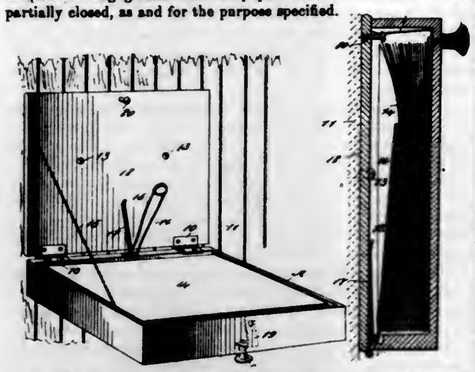
3. The combination, with the body of a plumb and level tool provided with a chamber formed therein and deepest at each side of its center and likewise provided with plumb openings connected with the said chamber, of a block shaped to correspond to the shape of the aforesaid chamber, a spring intervening the shallower portion of the chamber and the opposing portion of the block, being seated in recesses formed in the body of the tool and in the said block, a pivot-pin pivoting one of the legs of said block in the said chamber, an adjusting screw carried by the body of the tool and entering the opposing leg of the block, and a substantially U-shaped water glass secured to the marginal portion of the block and divided into three compartments, two plumb compartments and one level compartment, the plumb compartments being visible at the plumb openings of the tool, substantially as shown and described.

4. In a plumb and level, the combination with the body of the instrument having a chamber formed therein deepest at its sides, of a block fitted loosely in said chamber, and comprising a body and legs projected from the body and adapted to enter the deeper portions of the said chamber, the said block being pivoted at one side of its center and the leg at the opposite side of the center having an opening formed therein, a threaded aperture extending through the bottom portion of the leg into the said opening, an adjusting screw extending through the bottom of the instrument and engaging the said threaded aperture in the leg, a combined plumb and level glass carried by the block, and a spring located between the said block and the body of the instrument, as and for the purpose set forth.

544,588. TOILET-PAPER HOLDER. WILLIAM L. PATTIANI, Alameda, Cal. Filed Feb. 5, 1895. Serial No. 537,376. (No model.)

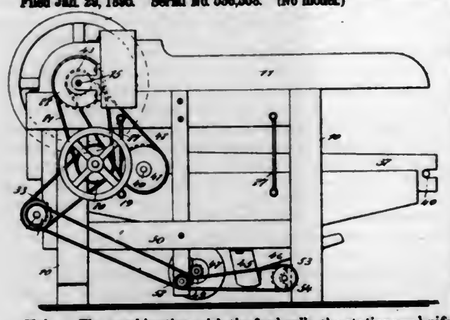
Claim.—1. In a toilet paper or other holder, a box or case adapted to receive sheets of paper, and provided with hinges for attachment to a support, and a tension device, located within the case and adapted for engagement with the sheets of paper within the case when said case is closed, and while it is being closed, as and for the purpose specified.

2. The combination, with a support, of a case adapted to hold sheets of paper, engravings, &c., and having a hinged connection with the support, whereby the said case may be carried to a horizontal or to a vertical position, and a spring tension device, consisting of a spring attached to the inner portion of the case, one member of the spring having guided movement upon the support, the other member being adapted for engagement with the paper when the case is closed or partially closed, as and for the purpose specified.



3. The combination, with a support, of a case adapted to contain sheets, and having a hinged connection with the support, and capable of being carried to a closed vertical position or a horizontal open position, a tension device consisting of a spring secured to the hinge portion of the case within the same, the said spring having one of its members in sliding engagement with the support and another member free for engagement with the paper, the two members being at angles to each other, the said spring being so located as to exert tension on the sheets of paper while the case is closed and while partially open, and a latch device, substantially as described, holding the said case in closed position, as and for the purpose set forth.

544,589. CORN-SHELLER. ALBERT PETERSON, Cambridge, Ill. Filed Jan. 29, 1895. Serial No. 536,568. (No model.)

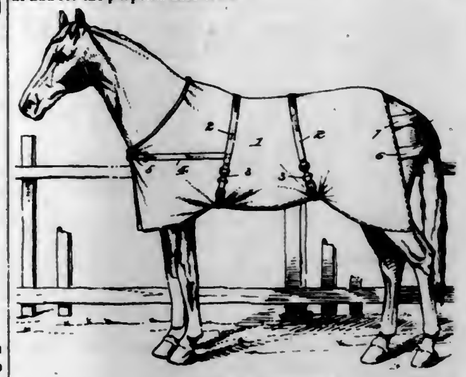


Claim.—The combination with the feed rolls, the stationary knife and the revolable cutter, moving upwardly thereto, of the curved casing partly inclosing the upper part of the revolable cutter and serving to deflect downward the cut corn and fodder passing over the cutter, the concaved support provided with teeth and forming a downward continuation of the curved casing and having a curved lower end serving to deflect the material outward, the toothed shelling cylinder revolving in the same direction as the revolable cutter, the shaking screen below the shelling cylinder upon which the shelled corn and the shredded material is deflected from the concaved support, and the endless chain rake located above the screen with its discharging end converging toward the screen, whereby the mechanism which cuts, shreds, shells and separates the material is caused to conduct the same continuously through the machine, the fodder being delivered at the same end as that at which the material is fed, substantially as described.

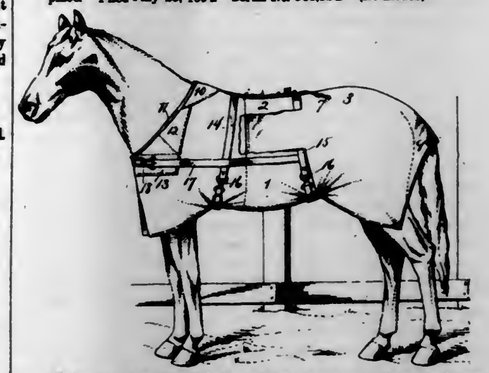
544,590. HORSE-BLANKET. ALBERT F. RAMSOM, Burlington, Wis., assignor to the Burlington Blanket Company, same place. Filed July 25, 1894. Serial No. 518,523. (No model.)

Claim.—1. A horse blanket or cover having at its rear an open hood covering the upper portion of the horse's tail and extending across the dock or vertebral part of the tail at a point below the root of the tail so as to hold the blanket to the rump of the horse and prevent it from working off, the rear portion of the blanket extending below said hood and its opposite edges being separated substantially as and for the purposes described.

2. A horse blanket or cover provided at its rear with an open hood formed of a transverse band or bands and a connecting band or strip, said bands forming a hood which fits over the dock or vertebral portions of the horse's tail and extends down the tail, the rear portion of the blanket extending below said hood and its opposite edges being separated some distance from the root of the tail, substantially as and for the purposes described.



544,591. EXTENSIBLE HORSE-BLANKET. ALBERT F. RAMSOM, Burlington, Wis., assignor to the Burlington Blanket Company, same place. Filed July 25, 1894. Serial No. 518,524. (No model.)



Claim.—1. An extensible horse blanket or cover formed of two parts transversely separable and lapping one over the other at or near the middle of the blanket so as to permit longitudinal adjustment to increase the length of the blanket without leaving an open space between the adjacent edges of the two sections, means for securing the two sections together, in various longitudinal adjustments thereof, and means for securing both sections to the horse's body, substantially as and for the purposes described.

2. An extensible horse blanket or cover formed of two parts or sections transversely separable and lapping one over the other to admit of lengthening the blanket without leaving an open space between the adjacent ends of the two sections, means for securing the two parts together in their various adjustments, a hood to the rear portion of the blanket adapted to fit down over the dock or vertebral portion of the horse's tail and be adjusted by movement of one section, and means for securing the blanket to the body of the horse, substantially as and for the purposes described.

3. An extensible horse blanket or cover formed of two parts or sections transversely separable, one part or section being provided with staples arranged longitudinally of the blanket to pass through slots or eyes in the other part or section, and a band or strap running longitudinally of the blanket and attached to one section and adapted to be threaded through said staples for the purpose of securing the two sections together, substantially as and for the purposes described.

4. A horse blanket or cover provided with breast straps and with lacing hooks, said hooks being arranged on opposite sides of the breast portion of the blanket with the ends of the hooks turned outwardly and in opposite directions to each other, one of the breast straps being extended and free beyond the hook on that side of the blanket for the purpose of forming a lacing cord with which to fasten the blanket at the breast, substantially as and for the purposes described.

5. A horse blanket or cover provided with breast straps and lacing hooks, one of the breast-straps being extended freely beyond the

lacing hook on the same side of the blanket and folded upon itself and stitched to form a lacing cord for fastening the blanket at the breast, substantially as and for the purposes described.

544,592. THILL-SUPPORT. EDWARD RODIER, New York, N. Y. Filed Nov. 2, 1894. Serial No. 527,763. (No model.)



Claim.—1. The combination of a thill, a support therefor, a cranked pivot connecting the thill and support, and a braced supporting spring connected at one end to said cranked pivot, and at its other end to the thill, substantially as described.

2. The combination of a thill, a support therefor, a cranked pivot connecting the thill and support, a braced supporting spring connected at one end to said cranked pivot and a pin or bolt secured to the thill and engaging the other end of the spring, said cranked pivot operating to throw the end of the spring out of alignment with the shaft, substantially as described.

3. The combination with a thill, of a supporting spring therefor suitably supported at its rear end and an adjustable arm or connection carried by the thill and engaging the forward end of the spring, and means for holding said arm or connection in its adjusted position to throw the end of the spring above or below the thill, substantially as described.

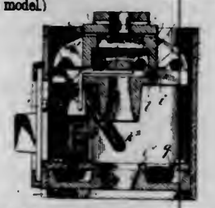
4. The combination with a thill, of a supporting spring therefor suitably supported at its rear end, an arm pivoted to the shaft and engaging the forward end of said spring and provided with a lateral extension, and means for adjustably securing said extension to the thill to throw the end of the spring above or below the thill, substantially as described.

5. A cross bar, a shaft, and a pivot connecting said bar and shaft, combined with a brace on the cross bar, and a supporting spring for the shaft mounted on said pivot and having a curved portion or elbow made to engage the brace substantially as described.

6. A cross bar, a shaft, and a pivot connecting said bar and shaft, combined with a brace on the cross bar, and a supporting spring for the shaft mounted on said pivot and having a curved portion or elbow made to engage the brace, said spring being provided with a strengthening layer substantially as described.

7. A cross bar, a shaft, and a pivot connecting said bar and shaft, combined with a brace on the cross bar, and a supporting spring for the shaft mounted on said pivot and having a curved portion or elbow made to engage the brace, said cross-bar having a strengthening brace at the portion provided with the spring engaging brace substantially as described.

544,593. HYDROCARBON-GAS-GENERATING HEATER. CASIMIR RUTKOSKIE, Benton Harbor, Mich., assignor to Robert Riley, same place, and George Herman, St. Joseph, Mich. Filed June 7, 1895. Serial No. 551,970. (No model.)



Claim.—1. In a heater of the character described, the combination with the shell having an air-inlet in its base, the mixing-chamber supported in the shell above said base and opening into the latter, and the feed-pipe for liquid hydrocarbon, of a kindling-pan in said base, into which said feed-pipe discharges, a slide-valve covering said air-inlet, and a door in an opening in the side of the shell connected with said slide-valve to move it by opening and closing the door, substantially as and for the purpose set forth.

2. In a heater of the character described, the combination with the shell having air-inlets *o* and *o'* in its base, the mixing-chamber supported in the shell above said base and opening into the latter, and the feed-pipe for liquid hydrocarbon, of a kindling pan in said base, into which said feed-pipe discharges, a slide-valve C having an opening o^3 and covering said air-inlets, a door *n'* supported to slide at an opening *n* in said shell, and a connection between said door and slide-valve, whereby opening and closing the door moves the slide-valve to close and open said air-inlets, substantially as and for the purpose set forth.

3. In a heater of the character described, the combination with the shell, of a mixing-chamber supported thereon and having side-openings near its base and an opening in its bottom, a slide-valve in said mixing chamber, means for adjusting said slide-valve at will, from without the shell, to open and close said bottom-opening, and a feed-pipe for liquid-hydrocarbon, extending about the mixing-chamber adjacent to said side-openings, and extended underneath the mixing-chamber, being provided in said extended portion with one or more discharge-apertures, substantially as and for the purpose set forth.

4. In a heater of the character described, the combination with the shell, of a mixing-chamber supported therein and having side-openings *l'* near its base and openings *k* and *k'* in its bottom, a slide-valve H in the mixing-chamber, a door *p'* supported at an opening *p* in the side of the shell, a connection between said slide-valve and door whereby opening and closing the door moves the slide-valve to close and open said openings *k* and *k'*, and a feed-pipe F for liquid hydrocarbon, extending about the mixing-chamber adjacent to said side-openings and extended underneath the mixing-chamber, being provided with apertures k^3 at said openings *k* and *k'*, substantially as and for the purpose set forth.

5. In a heater of the character described, the combination with the shell, of a mixing-chamber supported therein and having side-openings near its base and an opening in its bottom, a slide-valve in said mixing-chamber, means for adjusting said slide-valve at will, from without the shell, to open and close said bottom-opening, a feed-pipe for liquid hydrocarbon, extending about the mixing-chamber adjacent to said side-openings and extended underneath the mixing-chamber, being provided in said extended portion with one or more discharge apertures, a deflecting-plate having an opening and surmounting the mixing-chamber to afford side-openings leading therefrom, and a second deflecting-plate surmounting said first named deflecting-plate and forming intermediate side-openings therewith, substantially as and for the purpose set forth.

6. In a heater of the character described, the combination with the shell, of a mixing-chamber supported therein and having side-openings near its base and an opening in its bottom, a slide-valve in said mixing-chamber, means for adjusting said slide-valve at will, from without the shell, to open and close said bottom-opening, a feed-pipe for liquid hydrocarbon, extending about the mixing-chamber adjacent to said side-openings and extended underneath the mixing-chamber, being provided in said extended portion with one or more discharge apertures, a deflecting-plate having an opening and surmounting the mixing-chamber to afford side-openings leading therefrom, and a second deflecting-plate adjustably surmounting said first-named deflecting-plate and forming side-openings therewith and provided with an opening extending through it, substantially as and for the purpose set forth.

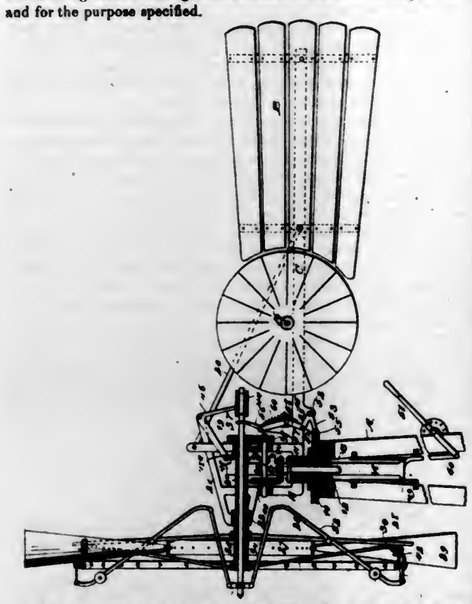
7. In a heater of the character described, the combination with the shell, of a mixing-chamber E supported therein and having side-openings *l'* near its base and openings *k* and *k'* in its bottom, a slide-valve H in said mixing-chamber, a door *p'* supported to slide at an opening *p* in the shell, a connection between said door and slide-valve to move the latter by opening and closing the door, a feed-pipe F extending about the mixing-chamber adjacent to said openings *l'* and extended underneath the mixing-chamber, being provided in said extended portion with apertures k^3, a plate E' having openings k^4 and k^5 and surmounting the mixing-chamber to afford side-openings l^3, and a plate E^3 formed of a section *g* containing an opening k^7 and a section *g'*, the plate E^3 being supported on the plate E' to afford side-openings l^3 and permit adjustment of the section *g* with relation to the section *g'*, substantially as and for the purpose set forth.

544,594. WINDMILL. SAUNDER SAUNDERSEN, Northwood, N. D. Filed July 11, 1894. Serial No. 517,189. (No model.)

Claim.—1. In a wind mill, a wind wheel, blades radially pivoted in the said wheel, connecting links pivotally connected with the blades, levers fulcrumed upon the wheel and connected with the links, shifting arms connected with the said levers, and a spring-controlled shifting bar connected with the said arms, as and for the purpose specified.

2. In a wind mill, the combination, with a wind wheel, blades radially pivoted therein, the outer pivot being at the rim of the wheel which passes through the blades, connected links pivotally connected with the blades, and shifting levers connected with the said links, of shifting arms weighted at their outer ends and extending through the wheel, one end of the said arms being connected with said shifting levers, a spring-controlled shifting bar connected with the shifting arms, and a means for rotating the wheel supporting frame, said

means being shifted through the medium of the said shifting bar, as and for the purpose specified.



3. In a wind mill, the combination with a frame mounted to revolve and provided with a worm wheel, a wind wheel mounted in said frame and provided with pivoted blades, and a shifting mechanism for said blades, of an auxiliary wheel, a worm engaging the worm wheel of the said frame, a rock shaft by which the worm is carried, a pivoted lever operated by the said shifting mechanism, a link connecting the said lever with the rock shaft, and means for operating the worm from the auxiliary wheel, substantially as described.

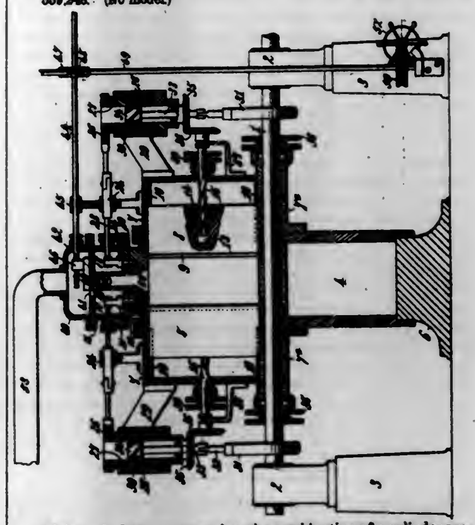
4. In a wind mill, the combination with a frame mounted to revolve and provided with a worm wheel, a wind wheel mounted in the frame and provided with pivoted blades, and a shifting mechanism for said blades, of an auxiliary wheel, a rock shaft provided with arms, a worm carried by one of the arms of the rock shaft, a pivoted lever operated by the shifting mechanism, a link pivoted to the said lever and to one arm of the rock shaft, a spring connected to said arm and link, and means for operating the worm from the auxiliary wheel, substantially as described.

5. In a wind mill, the combination, with the tower, a wind wheel provided with radially pivoted blades connected by a chain of links, shifting levers supported upon the wheel and connected with the links, shifting arms extending through the wheel, pivoted thereon and connected with the shifting levers, the tower being provided with an attached gear, and a shifting rod connected with the shifting arms, of a spring-controlled shifting mechanism connected with the said shifting bar, an auxiliary wind wheel journaled in the tail of the machine, a gear engaging with the tower wheel, a trip connection between the gear and the shifting bar, and a driving mechanism between the said gear meshing with the tower wheel and the auxiliary wind wheel, as and for the purpose specified.

6. In a wind mill, the combination, with the tower, a wind wheel provided with radially pivoted blades connected by a chain of links, shifting levers supported upon the wheel and connected with the links, shifting arms extending through the wheel, pivoted thereon and connected with the shifting levers, a tower provided with an attached gear, and a shifting rod connected with the shifting arms, of a spring-controlled shifting mechanism connected with the said shifting bar, an auxiliary wind wheel journaled in the tail of the machine, a gear engaging with the tower wheel, a trip connection between the gear and the shifting bar, a driving mechanism between the said gear meshing with the tower wheel and the auxiliary wind wheel, and shifting rods capable of being operated from the ground and having connection with the shifting bar operated from the main wheel, as and for the purpose set forth.

7. In a wind mill, the combination with a wind wheel provided with pivoted blades, a rod sliding in the hub of the wheel, and a connection between the said rod and blades for operating the blades from the said rod, of vertically sliding shifting bars, pivoted elbow levers, links connecting one arm of the levers with the sliding rod, springs connecting the other arms of the elbow levers with the shifting bars and means for operating said shifting bars, substantially as described.

544,595. ROTARY ENGINE. SALVATORE SCOGNAMILLO and CHRISTOPHER DOMINICI, Richmond, Va. Filed Feb. 21, 1895. Serial No. 539,248. (No model.)



Claim.—1. In a rotary engine, the combination of a cylinder provided with inlet and exhaust ports, the engine shaft having a rotary piston mounted thereon, a sliding gate or abutment, a cut-off slide-valve, a tubular oscillatory rocker having a spiral way therein, a reciprocating screw threaded rod adapted to engage said spiral way, means for actuating said rod from the engine shaft, eccentric mechanism connecting said rocker with the cut-off slide valve, and a screw shaft geared with the rocker and engaged in a fixed nut on the sliding gate or abutment, substantially as described.

2. In a rotary engine, the combination of an engine shaft having a rotary piston thereon, a cylinder provided with sliding gates or abutments and with steam inlet ports opening into the cylinder on opposite sides of the closed abutments, cut-off slide valves controlling the steam inlet ports and located in separate steam inlet chambers provided with ports a reversing valve for controlling the ports of said chambers, axially oscillatory rockers actuated from the engine shaft, and mechanism connecting said rockers with the cut-off slide valves and with the sliding abutments, substantially as described.

3. In a rotary engine, the combination of a cylinder having housings on opposite sides and provided with a rotary piston and with steam inlet and exhaust ports, sliding gates or abutments supported in said housings and adapted to be moved toward and from each other across the interior of the cylinder and in the path of the rotary piston, said sliding gates or abutments being also adapted to control the exhaust port, cut-off valves for the steam inlet ports, axially oscillatory sleeves or rockers of tubular form and having inclined ways therein, reciprocating rods having screw-threaded ends engaged with said inclined ways, eccentrics mounted on the engine shaft and connected to said reciprocating screw threaded rods, whereby an axial oscillation will be imparted to the said sleeves or rockers, eccentrics carried by said sleeves or rockers and connected with the cut-off valves, and screw shafts geared with the oscillatory sleeves or rockers and engaged in nuts secured to the sliding gates or abutments, substantially as described.

4. In a rotary engine, the combination of a cylinder having a rotary-piston and provided on opposite sides with housings that inclose sliding gates or abutments adapted to be moved simultaneously toward and from each other across the interior of the cylinder and in the path of the piston, steam ports opening into the cylinder on opposite sides of the closed sliding gates or abutments, an exhaust port controlled by said sliding gates, cut off slide valves controlling the steam inlet ports, tubular, oscillatory rockers having inclined ways of limited extent formed therein, reciprocating screw-threaded rods adapted to engage said inclined ways and actuated from eccentrics on the engine shaft, mechanism connecting said rockers with the cut-off slide valves, screw-shafts geared with said rockers and engaged in fixed nuts on the sliding gates or abutments, and a main steam chest or chamber provided with ports and a reversing valve, substantially as described.

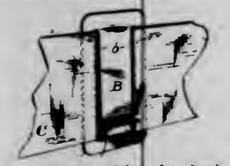
5. In a rotary engine, the combination with a cylinder provided with a rotary piston, sliding gates or abutments adapted to be moved simultaneously to and from each other across the interior of the cylinder, steam inlet ports opening into said cylinder on opposite sides of the closed abutments, and an exhaust port controlled by said sliding

gates or abutments, of cut-off slide valves controlling the steam inlet ports, mechanism actuated from the engine shaft to cause the sliding gates or abutments and the cut-off valves to operate in time movements, starting valves controlling ports that connect the cut-off valve chambers with the steam inlet ports of the cylinder, lever mechanism for actuating said starting valves, and a main steam chest provided with ports controlled by a reversing valve, substantially as described.

6. In a rotary engine, the combination of a cylinder provided with sliding abutments, and with inlet and exhaust ports, an engine shaft having a rotary piston thereon, slide valves provided with regulating ports, auxiliary slide valves for controlling said ports, axially oscillatory rockers actuated from the engine shaft, eccentric mechanism connecting said rockers with the slide valves and their auxiliary valves, and gearing connecting the oscillatory rockers with the sliding abutments, substantially as described.

7. In a rotary engine, the combination of a high pressure cylinder, a low pressure cylinder, a rotary piston and sliding gates or abutments for each cylinder, valve chambers having ports leading into said cylinders, cut-off slide valves located in said chambers, axially oscillatory rockers geared with the sliding abutments and with said cut-off slide valves, eccentrically actuated mechanism through which said rockers receive an axial oscillation from the rotation of the engine shaft, main steam chests connected by ports with the cut-off valve chambers of the respective cylinders, slide-valves located in said main steam chests and connected by a shaft, gearing for operating said shaft to reverse the engine, and steam passages leading from the exhaust of one cylinder to the steam chest of another cylinder, substantially as described.

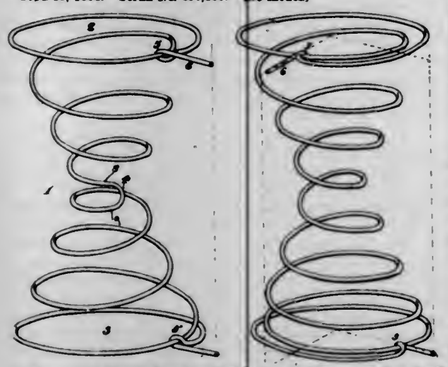
544,596. GARMENT-SUPPORTER. SAMUEL J. SIMMONS and WILLIAM O. SIMMONS, Boston, Mass. Filed Nov. 20, 1894. Serial No. 529,399. (No model.)



Claim.—1. The combination with a plate having a tongue connected therewith, said tongue having teeth thereon, of a belt connected with the plate and having sliding connection therewith and bearing against the back of the tongue whereby to exert a pressure thereon, to force the teeth into the garment, substantially as set forth.

2. The combination with a plate having a slot therein, a tongue connected with the plate at one end of the slot, said tongue narrower than the slot whereby a space is formed between the tongue and slot at each side of the tongue, and the tongue extending at an angle to the plate and gripping teeth extending from the tongue, of a belt passed through the space at the edges of the tongue and in contact with the tongue, said belt being adapted to force the tongue from its normal position at an angle to the plate, toward the plate, substantially as set forth.

544,597. SPIRAL SPRING. JOHN G. SMITH, St. Louis, Mo. Filed Sept. 19, 1891. Serial No. 406,193. (No model.)



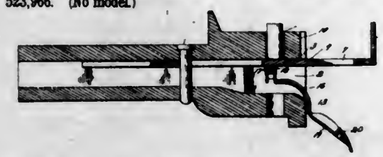
Claim.—1. A coiled bed spring having at its center, longitudinally, a loop 4 from which the strands 8 and 9 immediately extend peripherally in the same direction, and longitudinally in opposite directions to form a right hand spiral between the center and one end and a left hand spiral between the center and the other end, said spring being open at and through its center, longitudinally, whereby it is balanced and permits heating without disturbing the ends, substantially as set forth.

2. A bed spring having its end portions coiled in opposite directions, the middle part of the spring having a loop or return bend, 4, connecting the inner ends of the oppositely coiled parts of the spring, and situated entirely at one side of the center of the spring, substantially as set forth.

3. A bed spring formed of continuous wire having reversely coiled portions at its outer ends, the ends, 8 and 9, of the said coiled portions nearest the middle of the spring being approximately parallel to each other and connected directly by a part, 4, whereby the wire may expand longitudinally without distorting the spring, substantially as set forth.

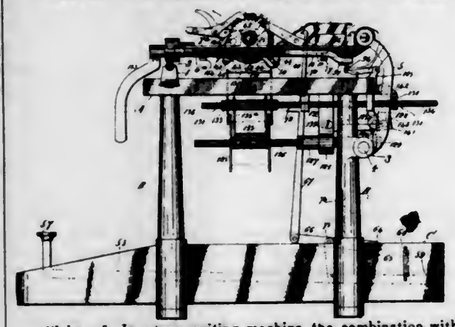
4. A coiled bed spring having the loop 4 at the center, longitudinally, and two spiral strands coiled in opposte directions extending from said loop in opposite directions toward the ends, and having the ends of the wire looped in or engaged with the end coils at points in substantially the same plane through the longitudinal axis of the spring, substantially as set forth.

544,598. CAR-COUPLING. WILLIAM A. SPARKS and JAMES E COLLINS, Mount Vernon, Wash., assignors of one-half to George M. Sinclair and Thomas Smith, same place. Filed Sept. 24, 1894. Serial No 523,966. (No model.)



Claim.—In a car coupling, the combination of a draw-head having a longitudinal link-opening and provided at its front face with a recess and having a longitudinal way, a slide mounted in the way and provided with a coupling-pin perforation and having at its outer end an upward extending portion conforming to the configuration of said recess and adapted to fit therein, and a link-guider hinged to the lower face of the slide and composed of a curved neck or shank, and a front portion conforming to the configuration of the bottom of the draw-head and having side flanges and provided with a coupling-pin perforation, and having in advance of the coupling-pin perforation a struck-up portion forming a catch, substantially as described.

544,599. TYPE-WRITING MACHINE. CHARLES SPIRO, New York, N. Y. Filed Aug. 11, 1894. Serial No. 520,060. (No model.)



Claim.—1. In a type writing machine, the combination with a laterally movable carriage and means actuated from the key board for giving it step by step movement, of a platen mounted on said carriage and adapted to have a limited rotary movement (independent of the line spacing movement) to expose the writing to view, a key on the key board, and operative connections between said key and the platen adapted to rotate the platen to expose the writing to view without interfering with the free step by step lateral movement of the carriage, substantially as set forth.

2. In a type writing machine a carriage capable of step by step lateral feed movement for printing purposes, and of being shifted from lower to upper case printing position and vice versa, and means for imparting said movements to the same, of a platen mounted on said carriage and capable of limited rotary movement (independent of the line spacing movement) to expose the printing to view, a key on the keyboard and operating connections between said key and platen adapted to rotate the platen to expose the writing to view without interfering with either the feed or the shifting movement of the carriage substantially as set forth.

3. In a typewriting machine a hinged carriage capable of being turned up and back, a platen mounted thereon and adapted to have a limited rotary movement (independent of the line spacing movement) to expose the writing to view, and means for producing such movement of the platen operated from the keyboard and so connected to the platen and key board respectively as to permit the carriage to turn on its hinge without impediment, substantially as set forth.

4. In a type writing machine a hinged carriage capable of being turned up, means for shifting said carriage from upper to lower case and vice versa, a platen mounted on said carriage and capable of limited rotary movement (independent of the line spacing movement) to expose the writing to view and means for producing such movement of the platen operated from the key board and so connected to the platen, keyboard, and carriage respectively, as to follow the said shifting movement of the carriage, but at the same time to permit the carriage to turn on its hinge without impediment.

5. In combination with the hinged carriage and platen mounted thereon and adapted to have limited rotary movement to expose the writing thereon, the tilting rod 19, the hooked "tilting arm" the cam on said arm, the stud 78 and a support therefor and the spring 79 by which the cam and stud are drawn together, substantially as set forth.

6. In combination with the hinged carriage the platen mounted thereon and adapted to have limited rotary movement to expose the writing thereon, and means for shifting said carriage from upper to lower case and vice versa, the "tilting rod" 19, the hooked "tilting arm," the cam on said arm, the stud 78 mounted on a reciprocable bar 75 connected to the carriage-shifting mechanism, and the spring 79, substantially as and for the purposes hereinbefore set forth.

7. In a type writing machine the combination with a carriage and a platen mounted thereon and capable of a movement of partial rotation (independent of the line spacing movement) to expose the printing to view, of a bail or "tilting rod" in operative connection with said carriage, a key on the key board, a hook rod connected to the key and adapted when the latter is depressed to pull down the bail or "tilting rod," and a lock for maintaining the platen normally in fixed position, substantially as hereinbefore set forth.

8. In a type-writing machine, the combination of a platen adapted to tilt or oscillate, means, consisting substantially of a key-lever operated by a key on the key-board, a tilting arm 70, operative connections between said key-lever and tilting arm, a tilting rod 19 supported upon the carriage frame and having an arm 14 provided with a projection adapted to travel in a cam-slot on the arm 41, for tilting the platen and means for returning said platen to its original position, substantially as described.

9. In a type-writing machine, the combination of a movable shift-rod, a carriage capable of being moved endwise, having its rear end supported on said shift-rod and its front end provided with a roller whose bearing lies at all times in the same plane as that of said carriage, a fixed support upon which said roller may either slide lengthwise or crosswise, and means for shifting said shift-rod back and forth for the printing of capitals, substantially as described.

10. In a type-writing machine, the combination of a forwardly and rearwardly movable shift rod, a carriage capable of being moved endwise, provided with a collar on its rear end adapted to slide along on said shift-rod and having its front end provided with a roller whose bearing lies at all times in the same plane as that of said carriage, a fixed support upon which said roller may either slide lengthwise or crosswise, and means for shifting said shift-rod back and forth for the printing of capitals, substantially as described.

11. In a type-writing machine, the combination of a movable shift rod, rocker arms on which said rod is mounted, a carriage, capable of being moved endwise, having its rear end supported on said shift-rod and its front end provided with a roller whose bearing lies at all times in the same plane as that of said carriage, a fixed support upon which said roller may slide either lengthwise or crosswise and means for rocking said arms back and forth, substantially as described and for the purposes set forth.

12. In a type-writing machine, the combination of a carriage, a tilting or oscillating platen mounted thereon, means for shifting said carriage for the printing of capitals, means for tilting or oscillating said platen and operative connections between the said shifting and tilting mechanism, substantially as described.

13. In a type-writing machine, the combination of a platen, cylinder ratchet, the arm 42, a spring pawl 145, arm 147, pawl 146, and means for limiting the downward movement of the arm 147, substantially as described.

14. In a type-writing machine, the combination of a platen, cylinder-ratchet, the arm 42 a spring pawl 145, a downwardly spring-pressed arm 147, an upwardly spring-pressed pawl 146, and means for limiting the downward movement of the arm 147, and a carriage lever 153, substantially as described.

15. In a type-writing machine, the combination, with the main frame, of a plate pivoted thereon carrying a shaft adapted to oscillate and provided with a ratchet-wheel and gears, means for rotating said ratchet-wheel, and means whereby the gears may be thrown into and out of mesh with suitable gearing for operating the spools, substantially as described.

16. In a type-writing machine, the combination, with the main frame, of an oscillating plate mounted thereon and carrying a shaft provided with a ratchet-wheel and with gears, means for rotating said ratchet-wheel, and mechanism for tilting or oscillating said shaft and plate by pressure exerted by the ribbon, substantially as described.

17. In a type-writing machine, the combination, with the main frame, of a plate pivoted thereon carrying a shaft adapted to oscillate and provided with a ratchet-wheel and gears, a pawl mounted on a rock-shaft, and means whereby the gears may be thrown into and out of mesh with suitable gearing for operating the spools, substantially as described.

18. In a type-writing machine, the combination, with the main frame, of a tilting or oscillating plate carrying a shaft provided with a ratchet-wheel and gears and a device operated by pressure of the ribbon, and connecting mechanism between said device and said shaft, substantially as and for the purposes set forth.

19. In a type-writing machine, the combination, with the main frame, of a tilting or oscillating plate carrying a shaft provided with a ratchet-wheel and gears and a device operated by the pressure of the ribbon, detent mechanism between said device and said shaft and means for tripping or releasing said detent mechanism, substantially as described.

544,600. PEN-GUARD FOR RULING PURPOSES. PAUL R. STEVENS, Portland, Me. Filed May 15, 1895. Serial No. 549,426. (No model.)



Claim.—1. A pen guard for ruling purposes comprising a spring-clip with lugs projecting therefrom, and a wire frame pivoted on said lugs and adapted to project on either side of the pen when said clip is secured on the pen holder, substantially as described.

2. A pen guard for ruling purposes comprising a spring-clip with lugs projecting therefrom on opposite sides thereof, and a wire frame pivoted on said lugs and provided with obversely disposed loops at the two ends of said frame, substantially as described.

3. A pen guard for ruling purposes comprising a spring-clip with lugs projecting therefrom on opposite sides thereof, and a wire frame pivoted on said lugs and provided with a loop at either end opposite said pivots and re-entrant arms adapted to bear on the pen when the said guard is in use, substantially as described.

4. A pen guard for ruling purposes comprising a spring-clip with lugs projecting therefrom on opposite sides thereof, and a wire frame pivoted on said lugs and having obversely disposed loops at the two ends of said frame, with sides adapted to press against the pen holder and re-entrant arms adapted to bear against the pen, substantially as described.

544,601. CLEANSING MATERIAL AND PROCESS OF PRODUCING SAME. DEMETRIUS M. STEWARD, Chattanooga, Tenn. Filed Apr. 6, 1895. Serial No. 544,809. (No specimens.)

Claim.—1. As an improved cleaning and polishing material, powdered steatite, talc, or soap stone, hardened by being treated with heat at a minimum temperature of 1,500° Fahrenheit, substantially as set forth.

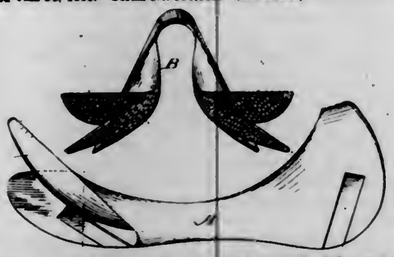
2. The herein described cleaning compound, consisting of steatite, talc, or soap stone, hardened by being treated with heat, in a finely comminuted state, at a minimum temperature of 1,500° Fahrenheit, and combined with saponaceous material in suitable proportions, substantially as set forth.

3. The process of producing a cleaning and polishing material, which consists in treating steatite, talc, or soap stone with heat at a minimum temperature of 1,500° Fahrenheit, substantially as set forth.

4. The process of producing a cleaning and polishing material, which consists in reducing steatite, talc, or soap stone to a finely comminuted state, and treating the powder with heat at a minimum temperature of 1,500° Fahrenheit, substantially as specified.

5. The process of producing a cleaning and polishing compound, which consists in reducing steatite, talc, or soapstone to a finely comminuted state, treating the powder with heat at a minimum temperature of 1,500° Fahrenheit, and combining the hardened powder with saponaceous material in suitable proportions, substantially as specified.

544,602. SADDLE. ALPHONSO DE THIERRY, Washington, D. C. Filed Jan. 31, 1895. Serial No. 536,813. (No model.)



Claim.—1. A saddle tree of varying thickness in its different parts whereby proper shape is given to the saddle, formed of a compound fabric or material of vulcanized rubber and sheets or pieces of woven or textile fabric, such compound material being homogeneous throughout, that is, the number of thicknesses of textile fabric increasing or diminishing according as the thickness of the saddle tree increases or diminishes, substantially as set forth.

2. A saddle tree formed of two side bars connected at their forward ends and of different thickness in their different parts, the said saddle tree being composed of a single piece of material, and being flexible and of homogeneous texture throughout, substantially as set forth.

3. In a saddle tree, the combination of the side bars of different thicknesses in their different parts and of homogeneous texture and uniform flexibility throughout, and a cantle secured to the side bars, the cantle being of homogeneous texture and uniform flexibility throughout, but the degree of flexibility of the cantle being less than that of the side bars, substantially as set forth.

4. A saddle tree composed of a fabric or material of varying thickness in its different parts, but at the same time having uniform flexibility and a homogeneous texture throughout, the said fabric being composed of pieces of textile fabric intimately united by vulcanized rubber, substantially as set forth.

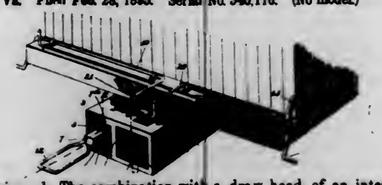
544,603. FOLDING TABLE. STEPHEN L. THOMPSON, Kingfield, Me. Filed June 6, 1895. Serial No. 551,869. (No model.)



Claim.—1. A folding table the top thereof having longitudinal strips having enlarged portions at one end, rack-bars attached to the other end of the longitudinal strips, legs B B connected to the enlarged ends of the longitudinal strips and having legs B' B' pivoted thereto, metal tips *b* secured to the upper ends of the legs B', and hooks *b*[2] carried by said legs for engagement with pins projecting from the longitudinal strips, substantially as shown and for the purpose set forth.

2. As an improved article of manufacture, a table the top thereof having longitudinal strips A' rigidly secured thereto, legs B and B' centrally pivoted to each other one pair of legs being bolted to one end of the longitudinal strips and the other pair having metal tips on their upper ends which engage with rack-plates secured to the longitudinal strips A', together with an adjustable leg C hinged to the table and adapted to be folded against the under side of the top, the parts being organized substantially as shown and for the purpose set forth.

544,604. CAR-COUPLING. WILLIAM E. WHITESIDE, Midway, W. Va. Filed Feb. 28, 1895. Serial No. 540,116. (No model.)



Claim.—1. The combination with a draw head, of an intermediately, horizontally and vertically pivoted bar, a longitudinally adjustable link secured to the forward extremity of the link bar, opposing springs secured within the draw head in operative proximity to the rear extremity of the link bar, substantially as specified.

2. In a car-coupler, the combination with a draw head, of a horizontally and vertically pivoted link bar therein, diametrically opposite noses upon the rear extremity of the link bar behind its pivot, and a plurality of parallel springs secured at one extremity to the draw head behind the link bar and having their free extremities in operative proximity to the noses, substantially as specified.

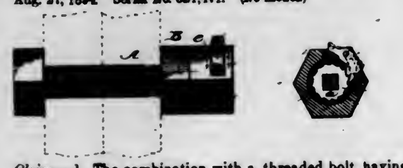
3. In a car coupler, the combination with a draw bar, of a pivoted spring actuated link bar provided with a slot and a series of apertures on both sides thereof, a link passing through the slot, and prong keys engaging the apertures to retain the link in its adjusted positions, substantially as specified.

4. In a car coupler, the combination with an apertured draw bar provided with a longitudinal guide bar, of a slotted pin guided by said guide bar, and means for raising and lowering the pin, substantially as specified.

5. In a car coupler, the combination with a draw head and pin, of a crank bar provided with a crank bent to form a depending support for the pin, a spring latch co-operating with the crank bar, mechanism at both sides of the car for actuating the crank bar and latch, substantially as specified.

6. The combination with a draw-head, provided with a medial wall defining two casings, of a vertically and horizontally movable link bar in one casing held in its normal position by opposing springs, a link adjustably secured to said link bar, a pin in the other casing provided with a slot co-operating with a guide bar to guide said pin, a crank shaft provided with a crank loosely pivoted to the upper extremity of the pin above the draw-bar, actuating cranks upon the opposite ends of the crank shaft located at opposite sides of the car, a spring actuated latch adapted to engage one of the actuating cranks, and a latch bar pivotally connected to the latch and extending to the opposite side of the car, and handles upon the latch and latch-bar, substantially as set forth.

544,605. NUT-LOCK. WILLIAM WOOLCOCK, Shamokin, Pa. Filed Aug. 27, 1894. Serial No. 521,471. (No model.)



Claim.—1. The combination with a threaded bolt having a reduced polygonal extension, and a nut having a threaded boss, of a cap nut adapted to screw on said boss, a ratchet applied to the bolt extension, and a pawl and spring arranged substantially as shown and described.

2. The combination with a threaded bolt having a reduced polygonal extension, and a nut having a threaded boss, of a cap nut which screws on said boss and means for locking it to the bolt, substantially as shown and described.

3. The combination with a threaded bolt, and nut, of a cap nut having a screw connection with the latter, of a pawl and ratchet mechanism for locking the cap nut against backward rotation, substantially as shown and described.

4. The combination with the bolt, nut and cap nut having an axial opening, of a ratchet having a reduced smooth cylindrical portion adapted to fit in said opening, while its lower toothed portion abuts the internal shoulder of the latter, a spring embracing the ratchet proper, and a pawl that engages the latter as shown and described.

5. The combination with the cap nut having a radial recess for a pawl and grooves formed in the opposite parallel sides of said recess and extending to the outer sides of the cap nut, of the pawl, having lateral projections or pivots which are adapted to enter said grooves as shown and described.

544,606. SCREW HOLDER AND DRIVER. JAMES R. BAILEY, Connellsville, Pa. Filed Mar. 14, 1895. Serial No. 541,782. (No model.)



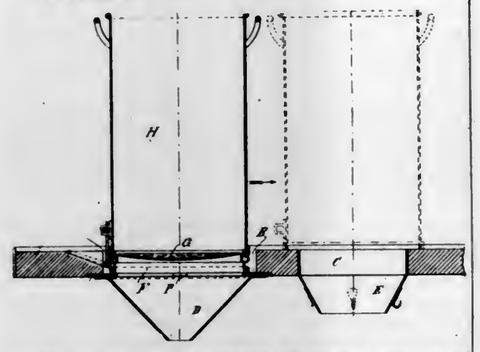
Claim.—1. A bifurcated screw driver having equally expansible directly opposite legs and nibs on the ends thereof adapted to engage upon their outside surfaces with the inner sides of a screw slot, and means for expanding the legs, substantially as set forth.

2. A bifurcated screw driver having equally expansible directly opposite legs, and nibs on the ends thereof whose outer surfaces are adapted to engage and hold the inner surfaces of a screw slot, means for expanding the legs, and means for limiting the degree of expansion, substantially as set forth.

3. A bifurcated screw driver having equally expansible directly opposite legs, and nibs on the ends thereof, whose outer surfaces are adapted to engage with the inner surfaces of a screw slot, and an expansive piece movable between the legs and adapted to expand them and press their nibs against the sides of a screw slot, substantially as set forth.

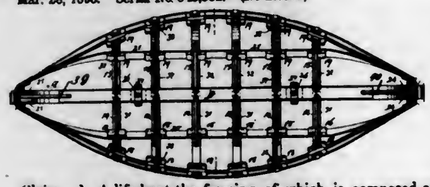
4. In a bifurcated screw driver having equally expansible directly opposite legs, and roughened nibs on the ends thereof, whose outer roughened surfaces are adapted to engage with the inner sides of a screw slot, and means for expanding the legs, substantially as set forth.

544,607. APPARATUS FOR WASHING AND SORTING GRANULAR MATERIALS. PETER BATSCHE, Dusseldorf, Germany. Filed May 9, 1895. Serial No. 548,862. (No model.) Patented in Germany July 3, 1894, No. 80,479.



Claim.—An apparatus for washing and sorting granular materials according to specific weight, comprising a sieve with sunken bottom G and removable rim H, and a table having several openings, and a rim P at one of said openings for supporting the sieve, said last named opening being of such depth that the upper edge of the sieve bottom G lies in the plane of the table top substantially as and for the purpose set forth.

544,608. LIFE-BOAT. GEORGE BLUENCKE, Brooklyn, N. Y. Filed Mar. 28, 1895. Serial No. 543,552. (No model.)

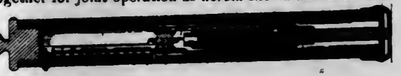


Claim.—1. A life-boat the framing of which is composed of a keel of practically rigid material, a stem and a stern post of practically rigid material firmly secured to the keel, a supplementary stem and stern post of elastic material firmly secured to the keel, a series of elastic ribs secured to the keel between the stem and the stern post, a series of longitudinal elastic side bars provided with eyes to engage the ribs and connected at their ends with the supplementary stem and stern post, two upright standards firmly secured to the keel, a seat guided by said standards and constructed to move up and down on the same and braces hinged at their inner ends to the seat and at their outer ends to the elastic ribs substantially as described.

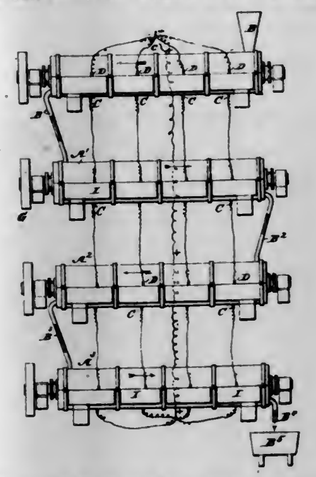
2. The combination with the keel A, the stem B and the stern post C of a supplementary stem 11 provided with guides 24 which engage the stem B and of a supplementary stern post 13 provided with guides 25 which engage the stern post C substantially as described.

544,609. PEN AND PENCIL CASE. CLARE W. BOMAN, New York, N. Y., assignor to the Eagle Pencil Company, same place. Filed Mar. 29, 1895. Serial No. 543,612. (No model.)

Claim.—The tubular central or main sheath A, in combination with the tube A' fitting within and secured to the said sheath, and provided at or near its rear end with pinion *a;* the front section B provided with a head fitting the interior of tube A', and a rearwardly extending sheet-metal rack *b* formed as described and engaging the pinion *a;* and the rear sliding tube C fitting the outer sheath A and having a forwardly projecting similar rack *c*, which also engages the pinion *a;* the two racks *b c* being formed and arranged to telescope each into the tube A' or C, and the parts being constructed and arranged together for joint operation as herein shown and described.



544,610. PROCESS OF AND APPARATUS FOR EXTRACTING ORES BY ELECTROLYSIS. EDWARD W. CLARK, Butte, Mont., assignor of two-thirds to Edwin M. Clark and the Western Iron Works, same place. Filed Nov. 5, 1894. Serial No. 527,953. (No model.)



Claim.—1. The herein described process of separating gold from its ores, which consists in mixing said ore with a solution of chloride of sodium and then passing said mixture into the presence of separated bodies of mercury in a regular succession, and at the same time subjecting it to the action of electricity, each body of mercury acting as a cathode.

2. The herein described process of separating gold from its ores, which consists in mixing the crushed ore with a solution of chloride of sodium, and then subjecting the mass to successive currents of electricity in the presence of a succession of separated bodies of mercury each body of mercury acting as a cathode, only the liquid portion of the mixture or pulp being permitted to come in contact with the mercury.

3. In an electric chlorinator for auriferous ores, the combination with a horizontally located hollow cylinder having closed ends and adapted to receive the ores and a sodium chloride solution; of an agitator within said cylinder; a series of amalgamating chambers arranged on the exterior sides of the cylinder and communicating with its interior by openings; porous screens or diaphragms within said openings; an anode within said cylinder, and a cathode within each of the amalgamating chambers, substantially as described.

4. In an electric chlorinator for gold ores, the combination of the stationary horizontal cylinder provided with an interior chamber to receive the ore and a sodium chloride solution; a stirrer-shaft provided with a series of spirally arranged stirrer arms and adapted to revolve in the cylinder chamber; a series of boxes arranged along the exterior sides of the cylinder and communicating with its interior by passages or openings; a porous diaphragm interposed within said openings; an anode within the cylinder chamber; and cathodes within the exterior chambers, substantially as described.

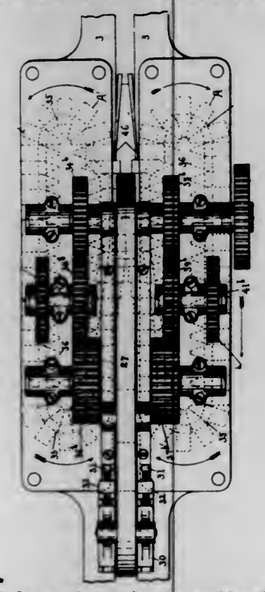
5. In an electric chlorinating device for gold ores, the combination of the hollow cylinder adapted to receive the ores and a sodium chloride solution; an agitator therein; a series of separate boxes arranged along the exterior sides of the cylinder and communicating with its interior by openings or passages, porous diaphragms interposed within said passages, a positive electrode within the chamber containing the chloride solution and ores, and negative electrodes within the amalgamating chambers, all arranged substantially as and for the purpose described.

6. In an electric chlorinator for gold ores, the combination with the chambered cylinder described, and the series of boxes arranged along its sides and communicating with its interior by openings or passages; of the screen or filter interposed within said openings or passages, an anode within the cylinder chamber, and cathodes within the amalgamating chambers, substantially as and for the purpose described.

7. In an electric chlorinating apparatus for gold ores, the combination with two or more horizontally arranged cylinders constructed as described, and provided with anodes, and the series of separate amalgamating compartments communicating with their interiors and provided with cathodes, of the connecting pipes whereby the ore pulp to be treated is conducted successively into and through the several cylinders, substantially as and for the purpose described.

8. In an electric chlorinator for gold ores, the combination of the hollow cylinder constructed in longitudinal sections united by bands, and having the series of separate boxes or chambers communicating with its interior; the electrical connections consisting of the anode in the cylinder chamber, and the cathodes in the boxes or amalgamating chambers, the agitator shaft provided with the spirally arranged series of stirrer arms and adapted to revolve in the cylinder chamber, and the stuffing boxes at the ends of the cylinder, all arranged substantially as and for the purpose described.

544,611. CONTINUOUS-CIGARETTE MACHINE. ROBERT W. COFFEE, Bedford City, Va., assignor to the Bohls Cigarette Machine Company, of Virginia. Filed Nov. 5, 1894. Serial No. 527,896. (No model.)



Claim.—1. In a continuous cigarette machine, the combination of an endless carrier belt, a top or presser endless belt above the carrier belt, two sets of disconnected toothed dies arranged between the said two belts, each set forming an endless toothed compressor, frames in which said endless toothed compressors are adapted to travel, and gearing for giving the said endless carrier belt, top presser belt, and endless toothed traveling compressors the desired motion, speed and uniformity of action, substantially as set forth.

2. In a continuous cigarette machine, a frame having slots, and two sets of disconnected toothed dies, each set being adapted to move in one of said slots (the two sets forming together a pair of endless traveling compressors), combined with gear wheels engaging and causing the travel of said toothed compressors, substantially as set forth.

3. In a continuous cigarette machine, a frame having slots, and two sets of disconnected toothed dies, each die having an inner tapered formation, as described, and a pin adapted to move in one of the slots of the frame (the said sets forming together a pair of endless traveling compressors), combined with gear wheels engaging and causing the travel of said toothed compressors, substantially as set forth.

4. In a continuous cigarette machine, a frame having slots, and two sets of disconnected toothed dies each die having an inner tapered formation, as described, and a pin adapted to move in one of said slots (said two sets forming together a pair of endless toothed traveling compressors), combined with gearing engaging and causing the travel of said toothed compressors, and with a lower endless carrier belt and a top or presser belt, said endless toothed compressors being arranged between said belts, substantially as set forth.

5. In a continuous cigarette machine, a filler rod forming mechanism consisting of two endless compressors composed of two sets of toothed independent and detached shaping dies, said sets being arranged to confront each other so as to form a shaping channel, combined with gear wheels for engaging with and giving movement to said endless compressors, a slotted frame in which said sets of shaping dies are adapted to run, and an endless carrier belt and a top or presser endless belt, the said endless compressors being arranged between said belts, substantially as set forth.

6. In a continuous cigarette machine, the combination of an endless carrier belt, a top or presser endless belt above the carrier belt, two sets of independent toothed dies arranged between said belts, each set forming an endless toothed compressor, wrapping, pasting, delivering and cutting devices, and gearing for engaging with said endless toothed compressors and for operating and imparting uniform movement to the said several mechanisms and timing the cutter in respect to the forward movement of the continuous cigarette, substantially as set forth.

7. A carrier or former consisting of a series of disconnected blocks, each with a groove in its face and supported to travel in a continuous path, and one or more driving wheels engaging one or more of the blocks, the blocks in advance of those directly engaged by said wheels being pushed forward by the succeeding blocks, substantially as described.

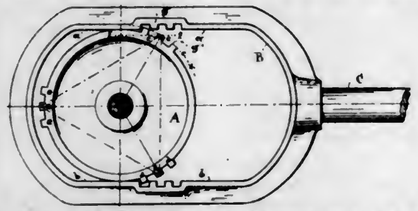
8. The combination of a series of disconnected blocks, each having a face groove and side pins, plates or frames having continuous guide faces for said pins, and one or more driving wheels engaging some of the blocks, the blocks not directly engaged by said wheels being in contact with and pushed forward by the succeeding blocks, substantially as described.

544,612. PROCESS OF MANUFACTURING ZINC. ATKINSON CROSSLEY, Talywain, England. Filed May 13, 1895. Serial No. 549,155. (No specimens.)

Claim.—1. The process for the manufacture of zinc oxide, which consists in adding sulphuric acid to the metallic ores or compounds, heating the mixture and converting the lead present to an insoluble salt, and depositing any silver or gold present, then diluting with water and converting the other metals present to soluble salts, filtering off the clear liquor, then treating the clear acid liquor filtered off with an alkaline sulphide, precipitating the copper as copper sulphide, then filtering the liquor from the precipitate, treating with an alkali until neutral, passing chlorine into it until all manganese and iron present form manganic and ferric oxides, which are thrown down by a slight excess of alkali, adding an excess of alkali to bring the zinc oxide into solution, and then precipitating the zinc oxide, and filtering off the liquor therefrom, substantially as set forth.

2. The process for the manufacture of zinc oxide from the metallic ores or compounds, which consists in adding sulphuric acid to the said ores or compounds, heating the mixture, and converting the lead present into insoluble sulphate and leaving as a deposit any gold, silver, or like metals not attacked by the acid, then diluting the solution with water and converting the other metals present into soluble salts, filtering off the clear liquor, and then removing the copper from the solution, then treating the acid solution with an alkali, passing chlorine into it until all the manganese and iron present form manganic and ferric oxides, and continuing the addition of the alkali until these are precipitated, adding an excess of alkali to bring the zinc oxide into solution, and then precipitating the zinc oxide, and filtering off the liquor therefrom, substantially as described.

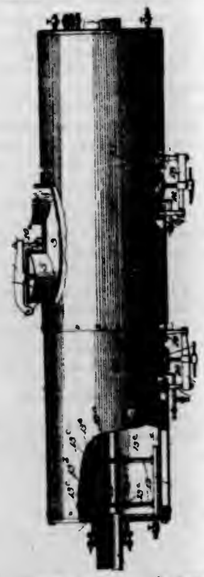
544,613. MECHANICAL MOVEMENT. WILLIAM H. DOLMETSCH, Elmira, N. Y. Filed Sept. 9, 1893. Serial No. 485,148. (No model.)



Claim.—In a mechanical movement for converting motion, a continuously revolving wheel provided with an uneven number of groups of teeth, each group consisting of one or more teeth, said groups being arranged symmetrically on the wheel and equi-distant from each other, combined with a yoke inside of which the wheel revolves, and which is provided with tooth recesses on each of its inner edges opposite each other, and corresponding in number and pitch to the number and pitch of the teeth in each of the aforesaid groups, said parts being so located with respect to each other that just as a tooth

on the wheel is entering a recess on one side of the rack, another tooth is leaving the recess on the opposite side, substantially as shown.

544,614. VACUUM EVAPORATING APPARATUS. HENRY S. FIRMAN, New Brunswick, N. J. Filed Dec. 28, 1894. Serial No. 533,188. (No model.)



Claim.—1. In a vacuum apparatus, the combination of the agitator shaft, the stirring knives, paired supporting rods 13 for each of said knives, suitably screw-threaded, and passing through said shaft, the screw-threaded portions projecting on both sides of said shaft and adjustably locked thereon by nuts 13^b and clamping nuts 13^c on each side of said shaft, substantially as set forth.

2. In a vacuum apparatus, the combination of a receiver provided with inlet supply and outlet discharge openings and adapted to receive material to be treated, mechanical means for treating and agitating the material in the receiver, and means for supplying steam or water around the discharge opening to facilitate the discharge of material from the receiver, substantially as set forth.

3. In a vacuum apparatus, the combination of a receiver provided with inlet supply and outlet discharge openings and adapted to receive material to be treated, mechanical means for treating and agitating the material in the receiver, a perforated pipe surrounding the outlet discharge opening for supplying steam or water and for draining, and means for supplying steam or water therethrough, substantially as set forth.

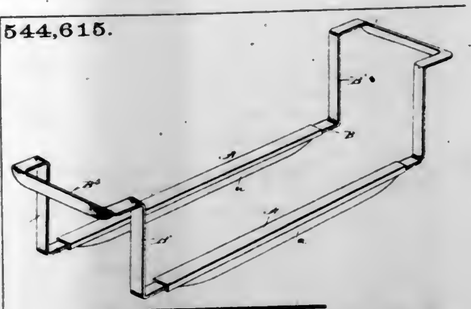
4. In a vacuum apparatus in combination with a suitable receiver having a discharge opening, a removable head 25 for closing the discharge opening, screws 31 on opposite sides of the discharge opening, a yoke 28 pivotally mounted at one end upon one of said screws 29 and formed with a jaw at its free end adapted to engage the other screw, and the screw 26 threaded in said yoke 28 and engaging the removable head, substantially as and for the purpose set forth.

544,615. SLAT FOR BEDSTEADS. PETER FRASER, East Whitman, assignor to the Atlas Tack Corporation, Boston, Mass. Filed Dec. 6, 1894. Serial No. 530,986. (No model.)

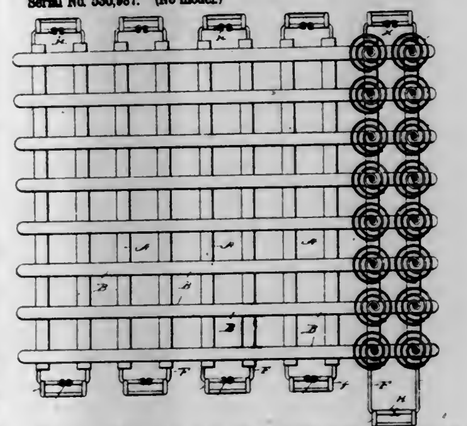
Claim.—1. A foundation cross piece or slat for spring bed bottoms composed of cross pieces or slats proper having tubular guides therein and upwardly extending hooks or hangers having the ends bent to enter said tubular guides, said hooks or hangers having upright portions at the ends of the slats or cross pieces terminating at the top in hooks with a connecting portion B^3 adapted to take over the side rails of a bedstead; substantially as described.

2. A foundation cross piece or slat for spring bed bottoms composed of the cross pieces or slats proper formed up from sheet metal into tubular form with the edges brought together in the form of a depending flange or web, and the hooks or hangers formed up from strip metal with the ends bent to enter the cross pieces or slats proper, the upright portion B' lying in the same planes as the cross pieces, the hook portions B^3 and the connecting pieces B^2; substantially as described.

544,615.



544,616. SPRING BED-BOTTOM. PETER FRASER, East Whitman, assignor to the Atlas Tack Corporation, Boston, Mass. Filed Dec. 6, 1894. Serial No. 530,987. (No model.)



Claim.—1. The combination with the longitudinal slats carrying the springs, of the transverse slats connected with the longitudinal slats at their points of crossing to form an integral structure, and the upwardly extending hooks or hangers adapted to take over the side rails of the bedstead and having the horizontal portions united to the transverse slats by a sliding connection; substantially as described.

2. A bottom for beds consisting of a series of slats or cross pieces and a series of hangers consisting of upwardly extending hooks adapted to take over the side rails of a bedstead, each of said hooks or hangers having two horizontal portions connected respectively with adjacent slats by sliding connections; substantially as described.

3. A foundation cross piece or slat for spring bed bottoms composed of strips of angle iron having the tubular sleeve guides at each end in the angles thereof and hangers having the parallel horizontal portions for entering the guides in adjacent slats, the upright proximate portions united by a metal clip and the hook portions adapted to take over the side rails of a bedstead; substantially as described.

4. A foundation cross piece or slat for spring bed bottoms composed of an angle iron having the tubular guides or sleeves at each end formed by bending portions or ears of the angle iron inward and the upwardly extending hooks or hangers having the horizontal straight portion adapted to enter the guides or sleeves and the upwardly extending hooks adapted to take over the side rails of a bedstead; substantially as described.

544,617. AUTOMATIC BOTTLE-STOPPER. WILLIAM J. GARDNER, Montgomery, Ala. Filed Apr. 17, 1895. Serial No. 546,069. (No model.)

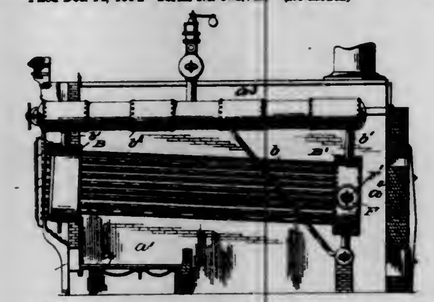


Claim.—A device for preventing the refilling of bottles, comprising a hollow cap or funnel having a sinuous passage or opening out

of line with the neck of the bottle, a perforated cork or stopper arranged within the neck of the bottle, a valve also arranged within the neck of the bottle and adapted to close the vertical perforation in said cork or stopper, an arm for operating said valve, and a spring interposed between the said arm and the cork or stopper for holding said valve to its seat, substantially as and for the purpose specified.

544,618. STEAM-BOILER. THOMAS GUNNING, Pittsburg, Pa.

Filed Dec. 14, 1894. Serial No. 531,745. (No model.)



Claim.—1. In a water-tube boiler, the shell having an end-header provided with an inwardly projecting portion, the series of water tubes opening into the inner end of said header, the plate corresponding to the outer end of said header and designed to fit against said inwardly projecting portion and provided with peripheral slots, and the series of nutted bolts corresponding to said slots, whereby said plate can be securely locked to said end-header and held against said inwardly projecting portion, substantially as set forth.

2. In a water-tube boiler, the shell having an end-header, the series of water-tubes opening into the inner end of said header, the end lining secured to the shell of said header, the plate pivoted to said end-lining and having a series of peripheral slots, and the series of nutted bolts also pivoted to said end-lining and designed to enter said slots, substantially as set forth.

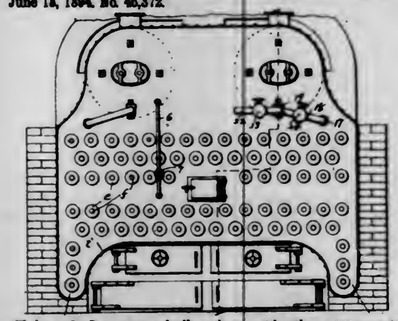
3. In a boiler of the class herein-described, an end-header having an inwardly projecting flange, a removable head-plate having an inner groove designed to receive a corresponding portion of said flange, and a series of pivoted nutted bolts for binding said head-plate to said end-header, substantially as set forth.

4. In a boiler of the class herein-described, an end-header having an inner end-lining provided with an inwardly projecting portion, a pivoted head-plate having a series of slots in its periphery, and a series of bolts pivoted to said end-lining and having nuts thereon, substantially as and for the purpose set forth.

5. The combination with the boiler having a forward end header, of a head-plate pivoted to said header and having an arm extending therefrom, and a series of pivoted nutted bolts engaging said head-plate for securing the latter to said header, substantially as set forth.

544,619. STEAM-BOILER. JOHN HASLETT, Kingston, Canada.

Filed June 8, 1895. Serial No. 552,142. (No model.) Patented in Canada June 18, 1894. No. 46,372.



Claim.—1. In a steam boiler, the combination of the casing, the smoke stack communicating with the interior of the casing, the drums arranged in the casing on opposite sides of the plane of the smoke stack so as to form a central and side flues communicating with said stack, and plates arranged upon the drums above the water line so as to protect the upper portions of the drums from the heat and particles of combustion passing up the central and side flues, substantially as specified.

2. In a steam boiler, the combination of the casing, the smoke stack communicating with the interior of the casing, the drums arranged in the casing on opposite sides of the plane of the smoke stack so as to form a central and side flues communicating with said stack, the inner and outer plates Q. and R, connected together and to the drums at a point above the water line and having a closed space between them, and the vertical plates V, connected to the plates Q, R, and the drums and serving in conjunction with the drums to form spaces *s*, all substantially as and for the purpose set forth.

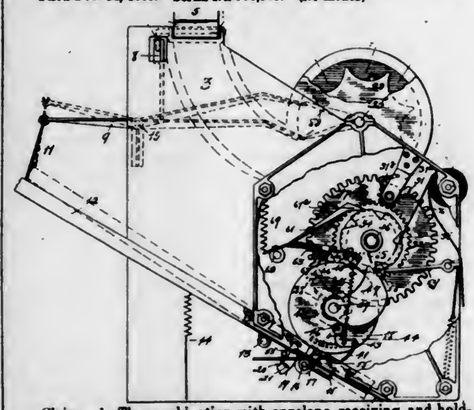
3. In a steam boiler, the combination with a drum or drums; of water legs communicating therewith, tubes connecting the legs, baffle plates arranged overlapping each other, the perforated steam boxes arranged transversely above the baffle plates, and valved pipes connecting said boxes with the steam drums, substantially as specified.

4. The combination with a steam boiler, having water legs; of the drums, the feed water pipes, the transverse pipe connecting the same, and having check valves, a connection for said transverse pipe with the lower portion of the rear water leg, pipes passing through the boiler and exterior to the steam drums, pipes connecting the feed pipes therewith, a discharge feed pipe entering the drums from said circulating pipes, substantially as specified.

5. In a steam boiler, the combination with the water legs and drums; of the feed water pipes, the pipe arranged in the drums and having the funnel discharge, the circulating pipes connecting said feed pipe with the discharge pipe, the pipe connecting said pipes with the lower portion of the rear water leg, suitable cocks or valves in said pipes, and the baffle pipes arranged in the drums, substantially as specified.

544,620. COIN-OPERATED MACHINE FOR SELLING AND AFFIXING POSTAGE-STAMPS. CHARLES M. HEURLEIN, Louisville, Ky.

Filed Feb. 14, 1895. Serial No. 538,373. (No model.)



Claim.—1. The combination with envelope receiving and holding devices, of stamp holding and feeding mechanism, means for detaching the stamps singly and for applying them to the envelope, and coin-operated gear for actuating such mechanism and means, substantially as specified.

2. A coin-operated stamp selling and applying machine, comprising an inclosing box or case, an envelope chute and envelope holding and discharging devices, stamp holding and feeding mechanisms, a rotary gripper for detaching the stamps, means for carrying the detached stamps to the envelope, means for applying the stamp to the envelope, and coin-operated gear for controlling the operation of the machine, substantially as specified.

3. The combination with the box, of a pivoted letter receiving chute, normally out of position to receive a letter, a coin chute, means for closing said coin chute, and means whereby when the coin chute is opened, the letter chute will be moved into position to receive a letter, substantially as specified.

4. In a coin-operated stamp selling and applying machine, the combination with a pivoted letter chute normally not in position to receive a letter, of a coin chute, a cover therefor, means operated by the opening of said cover to move said chute into receiving position, devices for stopping and holding the letter in said chute in proper position to receive the stamp, and means for retracting said devices when the stamp is applied, substantially as specified.

5. In a coin-operated stamp selling and applying machine, the combination with a coin chute and a cover therefor, said cover having its axis formed with a depressed arm, of an inclined, pivoted, letter chute, a lever connected with said chute, a spring attached to said chute, and a latch device arranged to normally hold said lever against the action of said spring, and operated by contact therewith of the said depressed arm of the coin-chute cover-axis when said cover is opened, substantially as specified.

6. In a coin-operated stamp selling and applying machine, the combination with the box having an opening in one end wall thereof, of a pivotal inclined letter chute whose upper end extends to said opening, a lever which normally holds said chute out of position to receive a letter, a spring attached to said chute, a latch-device which normally holds said lever, and a coin chute whose cover when opened is arranged to operate said latch device to release said lever, and thereby move the letter chute into receiving position, substantially as specified.

7. In a coin-operated stamp selling and applying machine, the pivoted letter chute, means for depressing the receiving portion of said chute to receive a letter, holding devices for retaining the letter in the proper position on the chute to receive a stamp or stamps, and means for releasing the letter when the stamp or stamps have been applied.

8. In a coin-operated stamp selling and applying machine, the combination with the pivoted chute 12, and devices for moving said chute into position to receive a letter, of the fingers or prongs 15, the rock shaft which carries said fingers or prongs, the friction wheel 17 fast to said shaft, and a stationary arm 19 with which said friction wheel makes contact, substantially as specified.

9. In a coin-operated stamp selling and applying machine, the combination with the pivoted chute 12, and means for moving said chute into position to receive a letter, of the fingers 15 which hold the letter in the proper position to receive a stamp, the rock shaft 16 which carries said fingers, the friction wheel 17 on said shaft, its rocker 18, the segment 19 with which said friction wheel makes contact, means for insuring proper contact of such wheel and segment, and means for operating said rocker to depress said fingers, substantially as specified.

10. In a coin-operated stamp selling and applying machine, the combination of the pivoted chute 12, means for moving said chute into position to receive a letter, the devices in connection with said chute which hold the letter in proper position to receive the first stamp, means for releasing said holding devices after the first stamp has been applied, a stop which holds the letter in position to receive a second stamp, and means for permitting the discharge of the letter from said chute after the second stamp has been applied, substantially as specified.

11. In a coin-operated stamp selling and applying machine, the combination with the pivoted chute 12, the lever 9 which normally holds said chute out of position to receive a letter, the coin chute cover, and means operated by the opening of said cover to release said lever and depress the chute, of the main operating shaft having an arm arranged to contact with an arm of said lever after the stamp or stamps have been applied and return the chute to its normal position and permit the discharge of the letter, substantially as specified.

12. In a coin-operated stamp selling and applying machine, the combination with a coin chute, a main operating shaft, and a wheel carried by said shaft and having a series of peripheral concavities, of a second and similar wheel below the first which actuates the stamp feeding, detaching, and applying mechanism, of a spring-actuated lever over which the coin is forced by the first wheel and which holds the coin in position to act on the second wheel and form a driving connection between the two, substantially as specified.

13. In a coin-operated stamp selling and applying machine, the combination with the coin-actuating, and coin-actuated wheels 22 and 23, of stamp feeding mechanism driven by a gear connection with the actuated wheel 23, a rotary stamp gripper also driven from said wheel 23, and which detaches the stamps singly from the sheet, and carries them to the point of application, means for actuating said gripper to open and close it at the proper time, and stamp applying devices also actuated by the wheel 23, substantially as specified.

14. In a coin-operated stamp selling and applying machine, the combination with the coin actuated wheel, of the rotary cylinder 40, which carries the stamp grip, and stamp applying devices, and gear connecting said cylinder with the coin-actuated wheel, the relative movements of said wheel and cylinder being such that the latter makes a complete or operative revolution only upon the successive action of two coins upon said wheel, substantially as specified.

15. In a coin-operated stamp selling and applying machine, the combination with the coin-actuated stamp feeding mechanism, of the coin-actuated cylinder 40, a stamp gripping device carried by said cylinder, and means for operating said gripper to cause it to take the stamp from the feeding mechanism, and also to release such stamp at the proper point, substantially as specified.

16. In a coin-operated stamp selling and applying machine, the coin-actuated cylinder 40, the gripper 41, the shaft carrying said gripper and fulcrumed in the end of the cylinder, the bell-crank connected to said shaft, the friction roller carried by said bell crank, a stationary cam engaged by said roller, the stop 46, and a spring attached to said bell-crank and to the cylinder, substantially as specified.

17. In a coin-operated stamp selling and applying machine, the combination with the coin-operated stamp feeding mechanism, and an intermittently operated comb device for engaging the perforations of the stamp sheet, of the rotary coin-actuated cylinder 40, its stamp gripper 41, and means for opening and closing said gripper at the proper time, substantially as specified.

18. In a coin-operated stamp selling and applying machine, the combination with the coin-actuated rotary cylinder 40, its stamp grip 41, the grip operating devices, and the intermittently operated stamp-applying or setting device, of the letter chute having means for holding the letter under said setting device, substantially as specified.

19. In a coin-operated stamp selling and applying machine, the combination with the coin-actuated rotary cylinder, having a cut-away segment, of the cam 49, affixed to the inside of said cylinder, a guide affixed to the stationary shaft of the cylinder, a cross head arranged to slide on said guide, a spring attached thereto, a roller carried thereby which engages said cam, and a presser foot attached to said cross-head, substantially as specified.

20. In a coin-operated stamp selling and applying device, the combination with the pivotal letter chute 12, fingers 15 which hold the letter in position in said chute to receive the first stamp, a rock-shaft which carries said fingers, and a rocker attached to said rock-shaft, of the coin actuated cylinder 40, its stamp grip arranged to take the stamp and carry it to the letter, the stamp applying or setting device carried by said cylinder, and an arm attached to said cylinder and arranged to contact with an arm of the said rocker after the first stamp has been applied, whereby said fingers 16 are depressed and the letter is permitted to move into position to receive the second stamp, or to be discharged, substantially as specified.

21. In a coin-operated stamp selling and applying machine, the combination with a stamp roll 56, and its carrying shaft 57, of the coin-actuated sleeve 37 having the stamp feeding wheels 39, the guiding wheels 38, and the feeding rollers 58 journaled adjacent to said wheels 39, substantially as specified.

22. In a coin-operated stamp selling and applying machine, a comb 63 having a series of teeth adapted to engage the perforations of the stamp sheet, while a stamp is being detached, said comb being normally out of position to engage such perforations, and coin-actuated means for depressing and elevating said comb at the proper intervals, together with means for causing a lateral vibration of said comb, substantially as specified.

23. In a coin-operated stamp selling and applying machine, the combination with the stamp holding comb 63, of coin-operated means for raising and lowering said comb at the proper times, and means for vibrating said comb when lowered, substantially as specified.

24. In a coin-operated stamp selling and applying machine, the combination with a comb 63, capable of a vibratory movement, and means for raising and lowering said comb at the proper intervals, of the rotary cylinder 40, its stamp gripper, arranged to detach the stamp while it is held by said comb, and means on said cylinder for intermittently vibrating said comb, substantially as specified.

25. In a coin-operated stamp selling and applying machine, the combination with the stamp holding comb 63, and the rock-shaft to which it is pivotally attached, of the lever 61 fixed to said shaft, and an intermittently rotated notched wheel with which the point of said lever engages, substantially as specified.

26. In a coin-operated stamp selling and applying machine, the combination with the stamp-holding comb 63, the rock-shaft to which it is pivotally attached, the lever fixed to said rock-shaft, and the spring 69, attached to said lever and to the frame of the notched wheel 34, its rotary sleeve, and gear wheel, and a mutilated gear wheel by means of which said sleeve and the wheel 34 are intermittently rotated, substantially as specified.

27. In a coin-operated stamp selling and applying machine, the combination with a stamp holding comb 63, a rock-shaft to which it is pivotally attached, and means for depressing and elevating said comb at the proper intervals, of the frame 68 also attached to said shaft and to which the comb is movably attached, and means for vibrating said comb when it is depressed upon the stamp, substantially as specified.

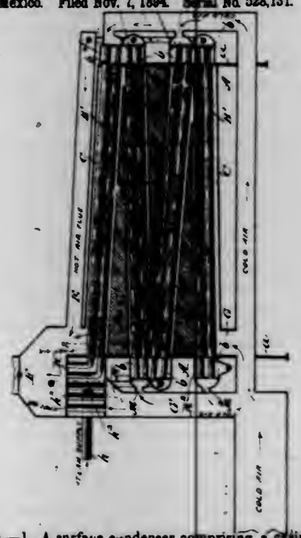
28. In a coin-operated stamp selling and applying device, the combination of the coin-actuated wheel 23, its shaft 26, gear wheel 30 keyed to said shaft, a sleeve 33 loose on said shaft, gear for intermittently rotating said sleeve from the gear wheel 30, a notched disk 34 fast with said sleeve, a sleeve 37 arranged to rotate on the sleeve 33, a ratchet wheel 36 on said sleeve 37, a pawl 35 carried by the gear of sleeve 33, and engaging said ratchet wheel, stamp-feeding wheels and guides carried by said sleeve 37, and a rising and falling stamp-holding comb actuated by means of said notched disk 34, substantially as specified.

29. In a coin operated stamp selling and applying machine, the combination of the coin-actuated wheel 23, the shaft 26 turned by said wheel, the spur wheel 27 also fast with said shaft, a stationary shaft 29, its loose pinion 28 meshing with wheel 27, the cylinder 40

fixed to said pinion 23, and stamp gripping and stamp setting mechanism carried by said cylinder, substantially as specified.

30. A coin operated stamp selling and stamp affixing machine, comprising essentially a box or case having therein a normally closed letter chute, a coin chute, a cover therefor means whereby when said cover is opened, said letter chute is moved into position to receive a letter, means for holding the letter on said chute in position to receive the first stamp, an operating shaft, a coin receiving wheel thereon, a second wheel actuated by the passage of a coin between it and the first or receiving wheel, and which is the actuating wheel of the machine, stamp feeding mechanism, a stamp holding device which holds the stamp while it is being detached from the sheet, a rotary gripper which detaches the stamp and carries it to the envelope, a stamp setting device which applies the stamp to the envelope, means whereby the envelope is released and permitted to move after the stamp has been applied, to receive a second stamp, or to be discharged, and means for automatically returning the letter chute to its normal position and for closing the coin chute after the stamped letter has been applied, substantially as specified.

544,621. SURFACE CONDENSER. ALBERT HOBERECHT, Ensenada, Mexico. Filed Nov. 7, 1894. Serial No. 528,131. (No model.)



Claim.—1. A surface condenser comprising a casing a series of steam or fluid conducting tubes arranged in tiers, air spaces surrounding each tier of tubes held independent of but communicating with each other, an air supply connected with such spaces, air tubes passed through the steam tubes and independent air supplying means connected with each tier of air tubes as specified.

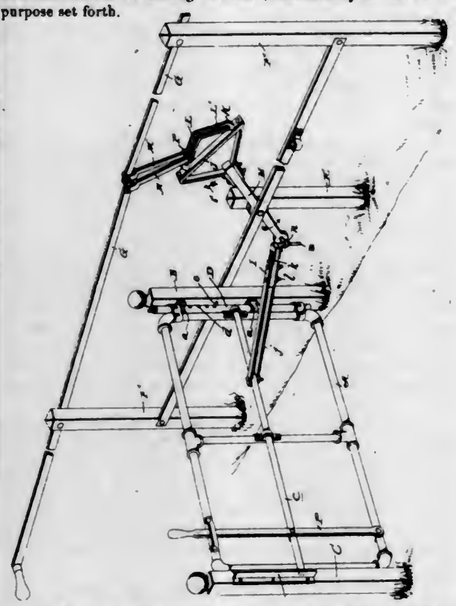
2. An improvement in surface condensers the combination with the casing A, a series of fluid conducting tubes B' arranged in tiers and having their ends projected through the end of the casing and held in communication with each other, air spaces C' surrounding the tubes B' arranged independent of but held to communicate with each other, air tubes B^3 passed through the tubes B', each tier having an independent air jacket at the ends, and air supplying means connected with such pockets and the spaces C' all arranged substantially as and for the purposes described.

3. An improved surface condenser comprising a casing, a series of steam tubes held therein, air spaces surrounding such tubes, steam spaces connected to the ends of such tubes and in turn having a steam supply, a series of air tubes held within the steam tubes, a cold air duct connected therewith and having laterals discharging into the said air tubes and the air spaces as specified.

4. In a surface condenser the combination with a casing, a series of steam tubes arranged in tiers, steam chambers or pockets connecting the ends of such tubes, a steam supply connected with one of such pockets, air spaces surrounding such tubes, a cold air duct, having an outlet opening into the said air spaces, said spaces having a discharge entering the stack, a series of air pipes passed centrally through the steam tubes, connected with the cold air duct at one end and with the stack at the other end, all arranged substantially as shown and described.

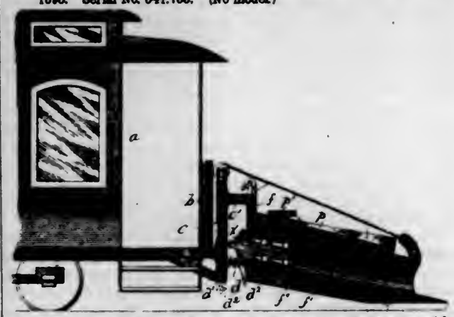
544,622. GATE. ISAAC R. HOLLINGER, Greenville, Ohio. Filed Mar. 6, 1895. Serial No. 540,766. (No model.)

Claim.—1. In a gate, the combination of a post provided with suitable bearings, a gate provided with a fixedly connected bar arranged and adapted to turn in the bearings of the post and having a plurality of apertures at intervals in its length, a pin adapted to be passed through the apertures of the bar above one of the bearings of the post, the lever fulcrumed on a post arranged adjacent to the gate and having the vertically disposed eye *n*, at one end, the link or pitman *j*, connected at one end to the gate and having the depending pin *m*, at its opposite end passed through the eye *n*, of the lever, and a suitable means for moving the lever, substantially as and for the purpose set forth.



2. In a gate, the combination of a post provided with suitable bearings, a gate provided with a fixedly connected bar arranged and adapted to turn in the bearings of the post, a device adapted to be arranged above one of the bearings of the post and adjustably hold the gate in a raised position, a lever having a vertically-disposed eye at its lower end, a guide connected with the upper end of said lever and having converging and communicating ways, a device arranged and adapted to move in the ways of the guide, a hand lever connected with said device, and a link or pitman connected at one end with the gate and having a depending pin at its opposite end adapted to engage the eye at the lower end of the lever carrying the guide, substantially as and for the purpose set forth.

544,623. SNOW-PLOW. JOSEPH LEIGHTHAM, Reading, Pa., assignor of one-half to William H. Slichter, same place. Filed Mar. 14, 1895. Serial No. 541,735. (No model.)



Claim.—1. The pivotally mounted snow plow having a top longitudinal way, and the movable weight therein, substantially as described.

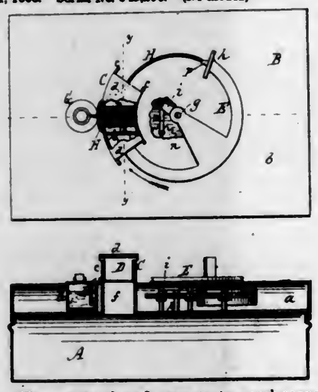
2. The snow plow having the front cutting edge and projecting sides, and flaring top provided with the inclined way, the movable weight therein provided with controlling means, and the front post, and raising connections thereto, substantially as described.

3. A car having a snow plow pivotally joined at the upper portion of its rear end to a car, and springs interposed between the car and the lower portion of the rear end, substantially as described.

4. A car having the front supports provided with the top perforated ears, and the swinging guide pins and springs around the same at the lower portions of the supports, and the snow plow having the upright rear frame having the rear perforated ears at its upper portion, the removable pivot bolts passing through the ears, substantially as described.

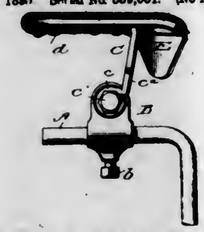
5. A snow plow having the rear upright frame and the bottom frame extending downwardly and forwardly therefrom with the front edge, the bottom rotary shaft extending completely across the bottom of the plow near the front thereof as described, and the upper wedge shaped portion having the concaved sides and a sliding wing *k*, in a concave side, said plow pivotally joined to a car front, and yieldingly held in its normal position by springs, substantially as described.

544,624. INSECT-TRAP. PERCY D. LEWIS, Rochester, N. Y. Filed Apr. 11, 1895. Serial No. 545,290. (No model.)



Claim.—The combination of a receptacle, a curb connected therewith, a slide provided with a head which lies in line with and enters the curb, means for operating the slide, a valve in the curb operated by the head at the extent of its inward movement, and a wick located in the line of travel of the head and leading to the curb, as and for the purpose specified.

544,625. VELOCIPEDE-SEAT. JOHN R. MONTAGUE, Syracuse, N. Y. Filed Feb. 20, 1895. Serial No. 539,061. (No model.)



Claim.—1. A velocipede skeleton saddle frame consisting of a single spring wire bent in a W-shape with the central loop in front and having its arms spread apart to leave an opening between them, and downwardly projecting, converging supporting arms united with the outer arms of the frame which form continuations of the arms of the loop, in combination with a cover resting on the central loop, substantially as and for the purpose specified.

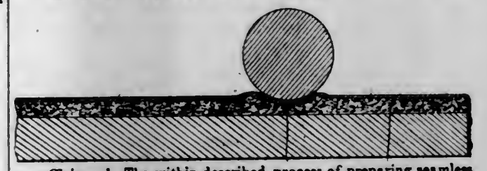
2. The combination of a W-shaped spring wire saddle frame, having the arms of the central loop spread apart to leave an opening between them, a central seat plate resting thereon, a cover, and fastenings connecting the cover and seat plate, substantially as described.

3. The combination with a flexible covering, of a spring wire saddle frame comprising the central arms spread apart and joined by a loop at their front ends, and diverging at their rear ends, outer arms joined to the rear ends of the central arms and extending forwardly therefrom in the same horizontal plane with the central arms, and downwardly extending, converging supporting arms joined to the front ends of the outer arms of the frame.

4. The combination with a flexible covering of a spring wire saddle frame comprising the central arms spread apart and joined by a loop at their front ends, and diverging at their rear ends, outer arms joined to the rear ends of the central arms and extending forwardly therefrom in the same horizontal plane with the central arms, downwardly extending, converging supporting arms joined to the front ends of the outer arms of the frame, and a plate interposed between the central arms of the frame and the cover.

5. The combination with a flexible covering, of a spring wire saddle frame comprising the central arms spread apart and joined by a loop at their front ends, and diverging at their rear ends, outer arms joined to the rear ends of the central arms and extending forwardly therefrom in the same horizontal plane with the central arms, downwardly extending, converging supporting arms joined to the front ends of the outer arms of the frame, a plate interposed between the central arms and the cover, and laces securing the opposite edges of the plate to the inturned edges of the cover.

544,626. PROCESS OF MANUFACTURING INFLATABLE AIR-TUBES FOR PNEUMATIC TIRES. FRED W. MORGAN, Chicago, Ill. Filed July 14, 1894. Serial No. 517,572. (No model.)



Claim.—1. The within described process of preparing seamless, inflatable inner air-tubes for pneumatic tires, consisting essentially in the following steps, to wit: forming substantially pure unvulcanized rubber into a thin film; placing upon a cushion table a sheet of said film of sufficient size to form the entire multiply air-tube which is to be produced; forming said sheet into a multiply tube having its plies in direct contact one with another and without air spaces between them, by rolling the film, while lying on the table, upon a mandrel and upon itself, and, during such operation, subjecting the film and plies of film to compression between the table and the mandrel; and vulcanizing the multiply tube thus formed so as to unite the plies of film and adapt the tube for service in a pneumatic tire sheath.

2. The within described process of preparing seamless, inflatable inner air-tubes for pneumatic tires, consisting essentially in the following steps, to wit:—forming substantially pure unvulcanized rubber into a thin film; placing upon a cushion table a sheet of said film of sufficient size to form the entire multiply air-tube which is to be produced; forming said sheet into a multiply tube having its plies in direct contact one with another and without air spaces between them, by manually rolling the film, while lying on the table, upon a mandrel and upon itself, and, during such operation, subjecting the film and plies of film to compression between the table and the mandrel; and vulcanizing the multiply tube thus formed so as to unite the plies of film and adapt the tube for service in a pneumatic tire sheath.

3. The within described process of manufacturing inflatable inner air-tubes for pneumatic tires consisting in forming unvulcanized rubber into a thin film, spreading a sheet of said film upon a cushion table, forming said sheet of film into a multiply tube having its plies in direct contact one with another by rolling it about a mandrel; subjecting the film while being thus rolled to compression between the mandrel and the yielding cushion table, removing wrinkles or gathers in the sheet of film during said operation by stretching the portion of the sheet in advance of the mandrel, and subsequently vulcanizing the multiply tube thus formed so as to unite the plies and adapt it for service in the pneumatic tire-sheath.

4. The within described process of preparing inflatable inner air-tubes for pneumatic tires consisting in spreading a sheet of thin unvulcanized rubber film upon a cushion table, forming said sheet of film into a multiply tube having its plies in direct contact with one another by manually rolling an independent mandrel over the film thus arranged, subjecting the film while being thus rolled to compression between the mandrel and the cushion table; during the formation of the tube upon the mandrel giving the latter a temporary and limited back movement for the purpose of stretching the film in advance of the mandrel, and subsequently vulcanizing the multiply tube thus formed so as to unite the plies and adapt it for service in a pneumatic tire-sheath.

5. The within described process of preparing seamless, inflatable inner air-tubes for pneumatic tires, consisting essentially in the following steps, to wit:—forming substantially pure unvulcanized rubber into a thin film; placing upon a cushion table a sheet of said film of sufficient size to form the entire multiply air-tube which is to be produced; forming said sheet into a multiply tube having its plies in direct contact one with another and without air spaces between them, by rolling the film, while lying on the table, upon a mandrel and upon itself, and, during such operation, subjecting the film and plies of film

to compression between the table and the mandrel; removing the multiply tube thus formed from the mandrel by forcing air carrying powdered soap-stone or the like in between the mandrel and tube so as to permit the mandrel to be drawn from the tube, and vulcanizing the multiply tube thus formed so as to unite the plies of film and adapt the tube for service in a pneumatic tire sheath.

6. An apparatus for preparing inner inflatable air-tubes for pneumatic tires from unvulcanized rubber film consisting in a cushion table adapted to receive a sheet of unvulcanized rubber film from which the said tube is to be made, and an independent flexible mandrel upon which the film can be rolled to form a multiply air-tube, substantially as and for the purpose described.

7. An apparatus for preparing inner inflatable air-tubes for pneumatic tires from unvulcanized rubber film consisting in a cushion table adapted to receive a sheet of unvulcanized rubber film from which the said tube is to be made and an independent flexible wooden mandrel upon which the film can be rolled to form a multiply air-tube, substantially as and for the purpose described.

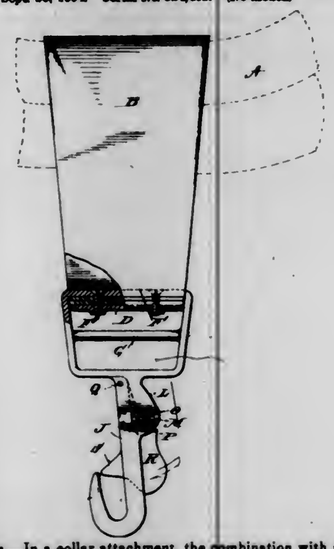
8. As an improved article of manufacture, a seamless, multi-ply elastic inner air-tube for pneumatic tires formed of a single sheet of thin rubber film rolled upon itself, having the plies united as a single sheet, substantially as described.

544,627. PROCESS OF MANUFACTURING INNER ELASTIC AIR-TUBES FOR PNEUMATIC TIRES. FRED W. MORGAN, Chicago, Ill. Filed May 9, 1895. Serial No. 548,672. (No model.)



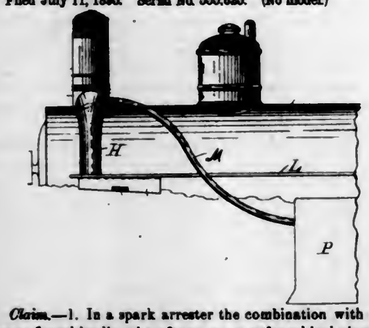
Claim.—The within described process of preparing elastic, inflatable inner air-tubes for pneumatic tires, consisting essentially in the following steps, to wit:—forming unvulcanized rubber stock into sheets of thin film; spreading a plurality of such sheets of film preparatory to rolling them into tubular form; successively rolling up a plurality of such sheets directly upon one another so as to form a multiply tube, composed of plies of unvulcanized rubber film in direct contact with one another, and during such operation subjecting the plies of film to compression; and vulcanizing the multiply tube thus formed so as to unite the plies as one piece and adapt the tube for service in a pneumatic tire sheath.

544,628. HORSE-COLLAR ATTACHMENT. CHARLES F. NEER, Mechanicsburg, assignor of one-half to Abram W. Neer, Catawba, Ohio. Filed Sept. 29, 1894. Serial No. 524,462. (No model.)



Claim.—In a collar attachment, the combination with a leather strap passed around the lower end of a collar, a frame, screws passing through the frame and the strap, and a bar beneath the strap into which the screws pass, a choke strap bar forming a part of the frame, a hooked bar depending from the frame and having a slot, a recess and a spring, and a tongue pivoted in the slot and closed by the spring.

544,629. SPARK-ARRESTER. WILLIAM H. PHILLIPS, Perry, Mo. Filed July 11, 1895. Serial No. 555,635. (No model.)



Claim.—1. In a spark arrester the combination with a furnace, an inner funnel leading therefrom, an outer funnel inclosing said inner funnel, ribs separating the two and extending above the top of the inner funnel, a screen secured a short distance above the top of the inner funnel, and between said ribs, a screen provided with a cylindrical base and dome-shaped cap, fitting over said ribs, and a sleeve inclosing the lower portion of said outer screen with an annular space between said sleeve and said screen, and means for carrying off the cinders caught between said inner funnel and said cylindrical screen, substantially as described.

2. In a spark arrester, the combination with a furnace, of an inner funnel leading therefrom, an outer funnel inclosing said inner funnel with a cylindrical screen between the two funnels, and separated from each by an annular space, ribs attached to the inner funnel and extending above the top thereof, a screen secured a short distance above the top of the inner funnel and between said ribs, a second screen placed above said lower screen and also between said ribs, a dome-shaped screen placed over said ribs and inclosing the two screens last mentioned, and means for carrying off the cinders caught between said inner funnel and said cylindrical screen, substantially as described.

3. In a spark arrester, the combination with a furnace, of an inner funnel leading therefrom, an outer funnel inclosing said inner funnel with a cylindrical screen between the two funnels and separated from each by an annular space, ribs attached to the inner funnel and extending above the top thereof, a coarse screen secured a short distance above the top of the inner funnel and between said ribs, a finer screen made convex downward and placed above said lower screen and also between said ribs, a dome-shaped screen placed above said ribs and on top of said cylindrical screen, and means for carrying off the cinders caught between said inner funnel and said cylindrical screen, substantially as described.

4. In a spark arrester, the combination with a furnace, of an inner funnel leading therefrom, an outer funnel inclosing said inner funnel, with a cylindrical screen between the two funnels and separated from each by an annular space, ribs attached to the inner funnel and extending above the top thereof, a screen secured a short distance above the top of the inner funnel, and between said ribs, a dome-shaped screen placed over the top of said ribs, and a pipe leading to the fire box from the base of the annular space between said inner funnel and said cylindrical screen, substantially as described.

5. In a spark arrester, the combination with a furnace, of an inner funnel leading therefrom, an outer funnel inclosing said inner funnel with a cylindrical screen between the two funnels, and separated from each by an annular space, ribs attached to the inner funnel and extending above the top thereof, a screen secured a short distance above the top of the inner funnel and between said ribs, a second screen placed above said lower screen and also between said ribs, a dome-shaped screen placed over said ribs and inclosing the two screens last mentioned, and a pipe leading to the fire box from the base of the annular space between said inner funnel and said cylindrical screen, substantially as described.

6. In a spark arrester, the combination with a furnace, of an inner funnel leading therefrom, an outer funnel inclosing said inner funnel, with a cylindrical screen between the two funnels and separated from each by an annular space, ribs attached to the inner funnel and extending above the top thereof, a screen secured a short distance above the top of the inner funnel, and between said ribs, a dome shaped screen placed over the top of said ribs, and a pipe leading to the fire box from the base of the annular space between said inner funnel and said cylindrical screen, cinder passages leading down to either side of the locomotive, dampers controlling said passages, and boxes with hinged bottoms connected to said passages, substantially as described.

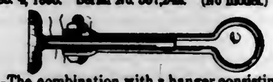
7. In a spark arrester the combination with a furnace, of an inner funnel leading therefrom, an outer funnel inclosing said inner funnel, with a cylindrical screen between the two funnels and separated from each by an annular space, ribs attached to the inner funnel, and extending above the top thereof, a screen secured a short distance above the top of the inner funnel, and between said ribs, a finer screen made convex downward and placed above said lower screen, and also between said ribs, a dome-shaped screen placed above said ribs and on top of said cylindrical screen, a pipe leading to the fire box from the base of the annular space between said inner funnel and said cylindrical screen, cinder passages leading from said annular space down to either side of the furnace, dampers controlling said passages, and boxes with hinged bottoms connected to said passages, substantially as described.

544,630. BEDSTEAD. MARIA C. SCHERER, New York, N. Y. Filed Aug. 20, 1894. Serial No. 520,783. (No model.)



Claim.—The combination in a bedstead, of a pair of transverse rails with a pair of movable bottoms, hangers secured thereto, and an upper and lower pair of rollers secured to the hangers and engaging opposite faces of the rails, to permanently maintain the bottoms in a horizontal position, substantially as specified.

544,631. PIPE-HANGER. CHARLES W. SIVER, Syracuse, N. Y., assignor to the Manufacturers' Automatic Sprinkler Company, same place. Filed Feb. 4, 1895. Serial No. 537,342. (No model.)



Claim.—The combination with a hanger consisting of a base and arms thereon having a slotway between them, of a sling consisting of a piece of metal bent to form a loop and having eyes in its ends, the arms slightly approaching each other below the eyes, and means for securing said sling to the arms of the base, as set forth.

544,632. BICYCLE-UMBRELLA. HARRY W. SWEETING, Auburn, N. Y., assignor of one-half to Harry A. Kerulska, same place. Filed Nov. 16, 1894. Serial No. 529,021. (No model.)

Claim.—1. In an umbrella attachment for bicycles, the combination with a frame having a section arranged to extend back over the seat of the machine to which the attachment is applied, and terminating in a depressed crook, of a casting having a grooved wheel arranged to run on said section and to be received in said crook, an umbrella detachably supported by said casting, and adapted to fold back underneath said arm, means for securing the umbrella in its folded position, and a socket or ferrule carried by said umbrella, and designed to receive said section as a handle when the section is detached from the other parts of the attachment substantially as specified.

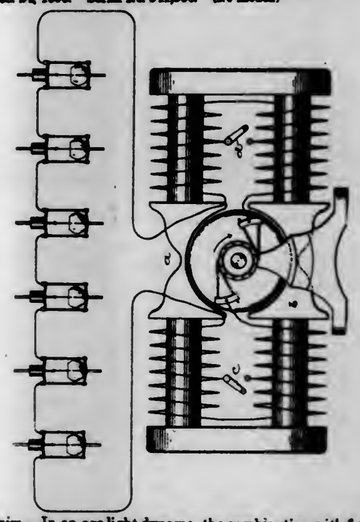
2. In an umbrella attachment for bicycles, the combination with the frame having the detachable overhanging section 4, terminating in a crook *b*, of the casting C having the socket *c*, and the grooved wheel D, an umbrella having its tip or ferrule arranged to be detachably secured in said socket, and a clamp carried by said section for securing the umbrella when folded, substantially as specified.

3. In an umbrella attachment for bicycles, the combination with the frame having the overhanging section 4, terminating in a depressed crook *b*, of the casting C having the umbrella holding socket *c*, and the grooved wheel D, which is arranged to run on said section 4, and means for securing said casting at the desired point on said section, substantially as specified.

544,632.



544,633. COMBINATION-DYNAMO. HENRY P. WARNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Feb. 24, 1890. Serial No. 341,506. (No model.)



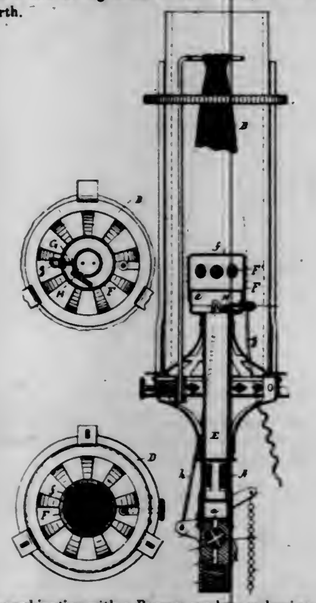
Claim.—In an arc light dynamo, the combination with field magnet coils included in series with the working circuit, of a switch adapted to short-circuit a portion of the field magnet coils to reduce the field strength, the coils being short-circuited instead of thrown on open circuit to thereby afford a counter electro motive force to prevent surges of the field at the lesser strength, and brushes adapted to be moved about the commutator to a position of no spark under the new field strength, whereby the dynamo may be readily converted from a full arc to a half arc machine, substantially as described.

544,634. ELECTRIC-LIGHTING ATTACHMENT FOR GAS-BURNERS. FRANK A. WEBB, Beverly, Mass., assignor of five-eighths to Rufus H. Woodbury and John R. Webb, same place. Filed Mar. 11, 1895. Serial No. 541,315. (No model.)

Claim.—1. In combination with a Bunsen burner F having air inlets F' and the incandescent mantle B suspended above it, a stationary insulated electrode G and a movable yielding electrode H arranged within the mixing chamber of said burner, the latter electrode being connected for operation to a gas cock on the gas supply pipe substantially as and for the purpose set forth.

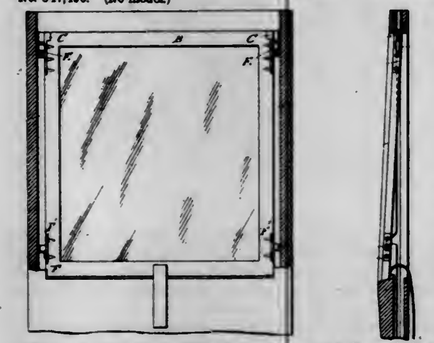
2. In combination with a Bunsen burner F having air inlets F' and the incandescent mantle B suspended above it, a stationary insulated electrode G and a movable yielding electrode H arranged within the mixing chamber of said burner and adapted to break and close the circuit for the purpose of igniting the gas within the said burner below its mantle, substantially as specified.

3. In combination with a Bunsen gas burner having gas and air supplies and a mixing chamber connected to such supplies, a stationary insulated electrode and a movable yielding electrode both arranged within said mixing chamber, substantially as and for the purpose set forth.



4. In combination with a Bunsen gas burner having gas and air supplies and a mixing chamber connected to such supplies, of a sparking device arranged within such mixing chamber, substantially as and for the purpose set forth.

544,635. SASH-HOLDER. CHARLES WEST, Englewood, N. J., assignor to West, Caldwell & Co., same place. Filed Apr. 29, 1895. Serial No. 547,496. (No model.)



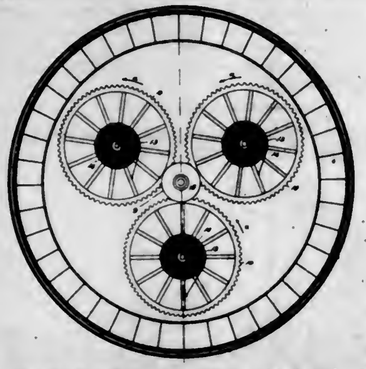
Claim.—1. As a new article of manufacture, a bolt consisting of a head and a shank, and opposing spring pressed leaves extending from the head, substantially as described.

2. A sash provided at the sides of its upper portion with opposing spring-pressed leaves swiveled thereto and arranged to move yieldingly in a direction substantially perpendicular to the plane of the sash, and guides secured at the sides of the lower portion of the sash in approximately the same plane with the said spring-pressed leaves, as set forth.

544,636. POWER-WHEEL. ALLEN M. BROWN, Goodland, Kans. Filed May 21, 1894. Serial No. 512,032. (No model.)

Claim.—1. In a power wheel, the combination with the axle and framework of the wheel, of the ratchet pinion located about the axle, means attached to the axle for locking the pinion against movement in one direction, a spring-actuated gear mounted on a spindle located in the framework of the wheel and a clutch for locking said pinion to the framework of the wheel and meshing with the pinion, whereby the power of the gear may be utilized to rotate the wheel, substantially as described.

2. In a power wheel, the combination with the axle and wheel framework, of the ratchet pinion engaging the axle, pawls attached to the axle and locking the pinion against movement in one direction, a plurality of spring-actuated gears mounted in the framework of the wheel and meshing with the ratchet pinion, and a sliding clutch for locking said pinion to the framework of the wheel, substantially as described.



3. In a power wheel, the combination with the axle and framework, of the ratchet pinion, the gravity pawls attached to the axle and engaging the interior ratchet face of the pinion, a plurality of spring-actuated gears mounted in the framework of the wheel and meshing with the pinion, and a sliding clutch for locking the pinion to the framework of the wheel, substantially as described.

4. In a power wheel, the combination with the axle and wheel framework, of the ratchet pinion, the gravity pawls attached to the axle and engaging the ratchet face of the pinion, the spring-actuated gears mounted on spindles journaled in the framework of the wheel, and a sliding clutch adapted to lock the pinion to the wheel, substantially as described.

5. In a power wheel, the combination with the axle and wheel framework, of the ratchet pinion, the gravity pawls engaging the interior ratchet face of the pinion, the collars attached to the axle on either side of the pinion and concealing the pawls, the spindles journaled in the framework of the wheel, the gears mounted on the spindles and meshing with the pinion, the springs attached to the spindles at one extremity, and to the wheel at the opposite extremity, ratchet disks attached to the spindles, locking dogs pivoted on the framework and adapted to engage said disks, and a locking clutch mounted on the axle and adapted to lock the pinion to the wheel, substantially as described.

6. In a power wheel, the combination with the axle and framework, of the pinion located about the axle and provided with an interior ratchet face surrounding the axle, gravity pawls attached to the axle and engaging the interior ratchet face of the pinion, whereby the latter is locked against movement in one direction, and a spring-actuated gear mounted on a spindle located in the framework of the wheel and meshing with the pinion, whereby the power of the gear may be utilized to rotate the wheel, substantially as described.

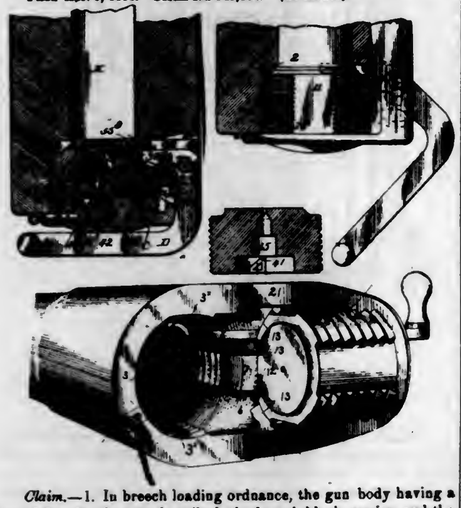
7. In a power wheel, the combination with the axle and framework, of the pinion located about the axle and provided with an interior ratchet face, gravity pawls attached to the axle and engaging said face of the pinion, whereby the latter is locked against movement in one direction, a spring-actuated gear mounted on a spindle located in the framework of the wheel and meshing with the pinion, whereby the power of the gear may be utilized to rotate the wheel, and means for locking the pinion to the framework of the wheel, substantially as described.

8. In a power wheel, the combination with the axle and framework, of the pinion located about the axle and provided with an interior ratchet face surrounding the axle, gravity pawls attached to the axle and engaging said ratchet face of the pinion whereby the latter is locked against movement in one direction, a spring-actuated gear mounted on a spindle located in the framework of the wheel and meshing with the pinion, and a sliding clutch for locking the pinion to the framework of the wheel, substantially as described.

9 In a power wheel, the combination with the axle and the framework, of the pinion located about the axle and provided with an interior ratchet face surrounding the axle, loose gravity pawls suitably separated and having hooked extremities engaging recesses formed in the axle, said pawls being adapted to engage the interior ratchet face of the pinion and lock the latter against movement in one direction, and a spring-actuated gear mounted on a spindle located in the framework of the wheel and meshing with the pinion, substantially as described.

10. In a power wheel, the combination with the axle and framework, of the pinion located about the axle and provided with an interior ratchet face surrounding the axle, loose gravity pawls suitably separated and having hooked extremities engaging recesses formed in the axle, said pawls being adapted to engage the interior ratchet face of the pinion and lock the latter against movement in one direction, two collars fast on the shaft, one being located on each side of the pinion and concealing the pawls, and a spring-actuated gear mounted on a spindle located in the framework of the wheel and meshing with the pinion, substantially as described.

544,637. BREECH-LOADING ORDNANCE. ROBERT R. DASHIELL, U. S. Navy, assignor to the Driggs Ordnance Company, Washington, D. C. Filed Apr. 9, 1895. Serial No. 545,102. (No model.)



Claim.—1. In breech loading ordnance, the gun body having a curved bearing face, as described, the breech block carrier, and the breech block swiveled to said carrier and in contact with the curved bearing face on the gun while swinging to open or closed position, all combined substantially as described.

2. In breech loading ordnance, the gun body having a curved guiding surface at its rear, the swinging breech block carrier connected to the gun, and the mutilated screw breech carried by said carrier, and having shoulders engaging said guiding surface to prevent the rotation of the breech while the carrier is swinging on its pintle, in combination substantially as described.

3. In a breech loading gun, the recessed body, the cylindrical breech block chamber having four cylindrical segments of screw-threads arranged respectively at the top and bottom and opposite sides of said chamber, the generally cylindrical breech plug swiveled to a carrier and having four segments of screw-threads complementary to those of the gun, and having an inclined or cam groove in one side of the body of the plug and extending nearly to the front of said plug, and the operating lever pivoted in the recess in the gun body and extending into the cam groove in the plug, all combined substantially as described.

4. The combination of the gun and the breech block, each having interrupted screw segments, of two segments on opposite sides cut away on curves struck from the pivotal center on which the block turns in opening and closing, the corresponding segments on the block and gun engaging on these curved faces as the block swings about said pivotal center, substantially as described.

5. The combination with the recessed gun and its mutilated screw breech plug having a cam groove near its front and extending along the side of the plug, of the carrier, on which carrier the breech-plug is swiveled the operating lever pivoted in the recess in the gun and having a toe extending from its forward end into the cam groove of the plug, all substantially as described.

6. In breech loading ordnance the combination with the mutilated screw breech block and the pivoted carrier to which said block is swiveled, of the operating lever pivoted to the gun and having direct engagement with the breech block to rotate the same, and a guide surface on the gun engaging the breech block substantially as described to prevent rotation of the breech block while swinging with its carrier, as set forth.

7. In breech loading ordnance, the gun, having a curved bearing surface facing generally toward the rear, the breech block carrier pivoted to the gun, and the breech block swiveled to the carrier and having a bearing against the said bearing surface on the gun during the swinging movement of the carrier, all combined substantially as described.

8. The gun having a curved bearing face at its rear, the breech block carrier pivoted to the gun, the breech block swiveled on said carrier, and the operating lever pivoted to the gun and engaging said breech block and carrier, all combined substantially as described.

9. In breech loading guns, the combination of the recessed gun body having thread segments therein cut away on arcs struck from the center of swinging movement of the plug, so as to have end bearing shoulders, the breech plug having a cam groove in one side, and the lever pivoted in the recess of the gun and having one end extending into the cam groove of the block, all substantially as described.

10. The gun having a slot in its side, the carrier and operating lever hung on a pivot, and the breech block swiveled to said carrier and having a cam groove in its side, and extending nearly to the front thereof so as to be within the walls of the gun when the breech plug is closed, the toe of the lever extending through the slot in the gun and engaging the said groove in the breech block, all combined substantially as described.

11. The breech block having a cam groove in its side said groove extending in a curve struck from the pivot of the operating lever, the lever pivoted to the gun and having its toe entering said groove, and the carrier pivoted to and all combined with the gun, substantially as described.

12. In breech loading ordnance, the gun, the extractor having a fulcrum on, and said extractor bearing directly against the body of said gun, and a bearing surface on the breech mechanism engaging said extractor to turn the same on its fulcrum as the breech opens.

13. In breech loading ordnance, the gun, breech block, and operating lever, the extractor pivoted in the breech and having a fulcrum on the gun proper, and the operating surfaces on the lever engaging the extractor to first rock it on its fulcrum and then turn it on its pivot, all combined substantially as described.

14. In breech loading ordnance, the combination with the gun, of the extractor loosely pivoted thereto and having a fulcrum thereon, and the breech operating mechanism engaging the extractor as described to first rock it on its fulcrum and then turn it on its pivot and away from the fulcrum, all substantially as described.

15. In breech loading ordnance, the combination of the gun and its breech block, the operating lever pivoted to the gun, the cartridge extractor loosely pivoted on same pintle as the lever, and having a fulcrum against the body of the gun and the cam and shoulder on the lever engaging the extractor (to first rock the extractor on its fulcrum and then turn it on its pivot) all substantially as described.

16. The gun having a mutilated screw breech seat, and a convex bearing surface at its rear on a curve struck from the center of the swinging movement of the breech in opening and closing, combined with the breech block having a corresponding bearing surface between its screw-segments, and a suitable carrier, all substantially as described.

17. The breech block for ordnance having segmental threads substantially as described, plane faces on opposite sides between the segments, and a curved face having an operating cam thereon said faces being at right angles to the plane faces, and between the segments, substantially as described.

18. The breech block for ordnance having segmental threads substantially as described, plane faces on opposite sides between the segments, a curved face between two of the segments, and means for moving said breech in the gun, in combination, substantially as described.

19. In breech loading ordnance, the combination with the gun and a breech block carrier pivoted thereto, of the mutilated screw breech block on said carrier having a side cut away longitudinally in a curve drawn from the pivotal support of the carrier.

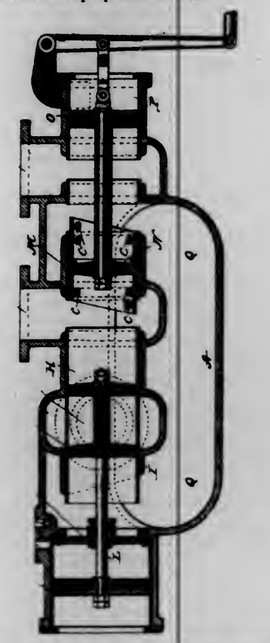
20. In breech loading ordnance, the gun, the breech block carrier pivotally connected thereto and having a closed rear face piece covering and projecting beyond the edges of the breech block, which block is swiveled thereto, all combined substantially as described.

21. In breech loading ordnance, the gun, the carrier having a central hub projecting therefrom, said hub having a slot therein, the firing pin and spring in said slot, the breech block swiveled on said hub and having a cam to engage the firing pin to cock the same, and a trigger or sear engaging said firing pin, substantially as described.

22. The combination with the gun and the carrier having a central hub and the breech block swiveled thereon, of the firing pin and spring in a recess in said hub, the cocking cam on the breech block, the trigger engaging a notch in the side of the firing pin, and the spring acting against said trigger, all combined substantially as described.

544,638. AUTOMATIC STOP-VALVE. HUGO W. FORSLUND, Chicago, Ill. Filed Sept. 16, 1891. Serial No. 405,863. (No model.)

Claim.—1. The combination of a hydraulic motor, of a single valve cylinder provided with inlet and exhaust ports and an opening to the main cylinder of the motor; a channel communicating with these several openings, a single main valve for opening and closing communication between the motor cylinder and the inlet and exhaust ports of the valve cylinder alternately; a stop valve arranged between such inlet and exhaust ports; devices extending from the stop valve adjacent to a moving part of the motor for alternately and positively actuating said stop valve through its projecting mechanism; substantially as and for the purpose set forth.



2. The combination with a hydraulic motor of a valve cylinder provided with inlet and exhaust passages and an opening to the main cylinder of the motor; of a main valve, mechanism for operating the same for opening and closing the opening to the motor; a stop valve arranged between the inlet and exhaust ports and in the same cylinder with the main valve; and devices connected with the stop valve and means upon a moving part of the motor for alternately operating the stop valve and its devices in opposite directions; substantially as and for the purpose set forth.

3. The combination in a fluid controlling valve of a casing having an inlet port an outlet and a cylinder port; with a main or change valve, and a double stop valve located between and in position to alternately close said inlet and outlet ports automatically; substantially as and for the purpose set forth.

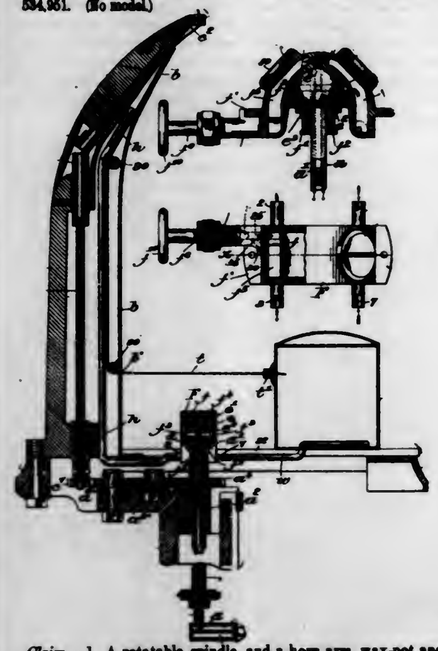
4. The combination in a fluid controlling valve having a cylinder port and separate inlet and outlet ports, of a main or change valve, and automatic stop valves located between and in position to alternately close said inlet and outlet ports; substantially as and for the purpose set forth.

5. The combination in a fluid controlling valve having inlet, outlet and cylinder ports, and a passage connecting such ports and a main valve for primarily controlling such ports; with a double stop valve arranged in a barrel outside of the passageway connecting the inlet and outlet ports but in position to alternately and automatically close either of them; substantially as and for the purpose set forth.

6. In a controlling valve for elevators the combination of the casing, having an inlet port an outlet or exhaust port, and a cylinder port; a passage connecting all such ports; and a main or change valve for primarily controlling such ports; with a double stop valve located in a barrel in such casing between the inlet and exhaust ports and in position to automatically close either while leaving the other open; substantially as and for the purpose set forth.

7. In a fluid controlling valve the combination of a casing having inlet, exhaust and cylinder ports and a fluid passage connecting such ports; of a main valve, and a double stop valve arranged in a barrel outside of the fluid passage and yet in a location between the inlet and exhaust ports; and a single stem projecting outwardly and connecting with the actuating devices of a moving part of the engine; substantially as and for the purpose set forth.

544,639. HEATING APPARATUS FOR WAX-THREAD SEWING-MACHINES. WILLIAM P. HOPKINS, Lawrence, assignor to Frank F. Stanley, trustee, Swampscott, Mass. Filed Jan. 15, 1895. Serial No. 534,951. (No model.)



Claim.—1. A rotatable spindle, and a horn arm, wax-pot and a chambered director for the heating medium mounted upon and to rotate with the spindle, combined with circulatory heating pipes for the horn and wax-pot respectively, each connected with the distributing and the return chambers of the director, and supply and exhaust pipes in continuous communication with the distributing and return chambers respectively, whereby live heating medium is supplied to the horn and wax-pot independently, substantially as described.

2. A horn arm, a wax-pot, rotatably movable in unison therewith, a separate circulatory heating pipe for each, each of said pipes being connected at its ends with the distributing and return chambers of a director for the heating medium, and a rotatable spindle for and upon which said arm and pot are supported, combined with a director mounted to rotate with said spindle, a stationary main supply and exhaust, and connecting pipes intermediate said supply and exhaust and the director, rigidly secured to one of said parts, and by a ball and socket joint with the other of said parts, whereby continuous circulation of the heating medium is established, substantially as described.

3. A horn arm, a wax-pot, rotatably movable in unison therewith, a separate circulatory heating pipe for each, each of said pipes being connected at its ends with the distributing and return chambers of a director for the heating medium, and a rotatable spindle for and upon which said arm and pot are supported, combined with a director mounted to rotate with said spindle, and a stationary main supply and exhaust, a socket in one of said parts co-operating with a ball fast on the adjacent ends of concentric pipes rigidly secured to and opening into the other of said parts, passages in the ball connecting the adjacent ends of the pipes with inlet and outlet ports respectively in the socket, whereby continuous circulation of the heating medium is established, substantially as described.

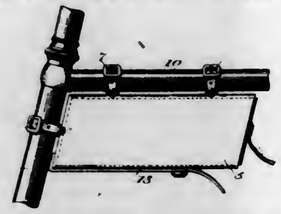
4. A horn arm, a wax-pot, rotatably movable in unison therewith, a separate circulatory heating pipe for each, each of said pipes being connected at its ends with the distributing and return chambers of a director for the heating medium, and a rotatable spindle for and upon which said arm and pot are supported, combined with a director mounted to rotate with said spindle, a stationary main supply and exhaust, connecting pipes intermediate said supply and exhaust and the director, rigidly secured to one of said parts, and by a ball and socket joint with the other of said parts, and a controlling valve for the wax-pot heating pipe, to regulate the supply of heat thereto, substantially as described.

5. A rotatable spindle, a horn arm and wax-pot carried thereby, and a chambered director for the heating medium rigidly mounted above the axis of the spindle, combined with circulatory heating pipes for the horn and wax-pot respectively, each connected with the distributing and the return chambers of said director, and concentric supply and exhaust pipes extended through the spindle, each in continuous communication with one of the chambers of the receiver, substantially as described.

6. A rotatable spindle, a horn arm and wax-pot carried thereby, and a chambered director for the heating medium rigidly mounted above the axis of the spindle, combined with circulatory heating pipes for the horn and wax-pot respectively, each connected with the distributing and the return chambers of said director, a stationary main supply and exhaust, and concentric supply and exhaust pipes extended through the spindle, a ball and socket joint and a fixed joint connecting the opposite ends of the pipes with the main supply and exhaust and with the director, whereby continuous circulation of the heating medium is established, substantially as described.

7. A rotatable spindle, a horn arm and wax-pot carried thereby, and a chambered director for the heating medium rigidly mounted above the axis of the spindle, combined with circulatory heating pipes for the horn and wax-pot respectively, each connected with the distributing and the return chambers of said director, a hollow horn shaft extended through the spindle, and concentric supply and exhaust pipes extended through said hollow shaft, each in continuous communication with one of the chambers of the receiver, substantially as described.

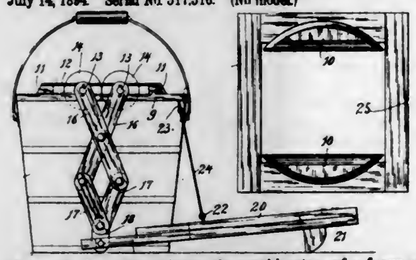
544,640. BICYCLE TOOL-BOX. SAMUEL B. LEONARD, Denver, Colo. Filed Jan. 19, 1895. Serial No. 535,577. (No model.)



Claim.—1. In a bicycle tool box, the combination with the outer case, of the inner tube having its ends closed, and being open at the top, the strap attached at the front end of the tube and passing through a slit formed in the adjacent end of the case, and suitable means for fastening the strap to the outside of the case, substantially as described.

2. In a bicycle tool box, the combination of the case having a slit formed in its closed end, the tube adapted to telescope in the case, said tube having its ends closed, and being open at the top, a strap attached to the front end of the tube and passing through the slit in the adjacent end of the case, and a two-part fastening device, one part being attached to the strap and the other to the case, the part attached to the strap forming a stop to prevent the tube from being detached from the case, substantially as described.

544,641. MOP-WRINGER. JOHN C. MERTEN and GEORGE W. FAGAN, Oshkosh, Wis.; said Fagan assignor to said Merten. Filed July 14, 1894. Serial No. 517,516. (No model.)



Claim.—1. In a mop wringer, the combination, of a frame provided with an opening, and having upon its inner side depending guards adapted to fit against the under sides of the bucket, whereby the frame is made to rest upon, and to be freely removable from, the upper edge of the bucket, and said frame provided upon its upper side with horizontal elongated guideways, wringer rolls having their journals mounted, respectively, in the guideways so as to be capable of travel therein, links having their upper ends connected to the journals of the rolls, a fulcrumed foot treadle having connection with the lower ends of the links, said foot treadle, when operated, adapted to move the rolls toward or away from each other, and to simultaneously cause a downward pressure of said rolls upon the removable frame, whereby the frame is held firmly to proper position to the top edge of the bucket, said foot treadle, the links, the rolls, and the frame all being removable together from the bucket, substantially as set forth.

2. In a mop wringer, the combination, of a frame having an opening therein and adapted to rest upon the top edge of a bucket, and provided upon its under side with depending guards, said guards having their outer sides conforming to and fitting against the inner sides of the buckets, and the upper side of said frame provided with opposite horizontal elongated ways, wringer rolls having their journals mounted, respectively, in the guideways so as to be capable of travel therein, and mechanism engaging the journals of the rolls, for moving said rolls toward and away from each other, substantially as set forth.

544,642. APPARATUS FOR SKETCHING. AIMÉE K. O. MOORE, London, England, and HIPPOLYTE BOURCEY, Paris, France; said Bourcey assignor to said Moore. Filed July 27, 1894. Serial No. 518,786. (No model.) Patented in England Apr. 18, 1891, No. 6,722; in Belgium Oct. 5, 1891, No. 96,668, and in France Oct. 9, 1891, No. 216,627.

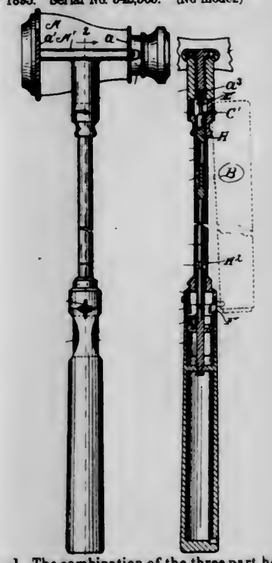


Claim.—1. The combination, with the frame C, of a plate of translucent material D secured therein, the plate H provided with a sight hole *h'* and secured behind the plate D, and a slide for adjusting the size and form of the said sight hole, substantially as set forth.

2. The combination, with the frame C, of the plate H provided with a sight hole *h'* and secured in the said frame, the guides K and the guide straps *k* and *k'*, and a slide for adjusting the form and size of the said sight hole and slidable horizontally or vertically in the said guides and guide straps, substantially as set forth.

3. The combination, with the frame J', of the slide J sliding in the said frame, and the diagonally-arranged elastic threads attached to the said frame and its slide, substantially as set forth.

544,643. OPERA-GLASS AND HANDLE THEREFOR. JEREMIAH MURPHY, OSCAR F. ENGWALL, and CHARLES A. TIDEN, Chicago, Ill. Filed Mar. 20, 1895. Serial No. 542,505. (No model.)



Claim.—1. The combination of the three part holder one of such parts rigidly secured to the opera glass frame, one of the parts removably secured to the first named part, and the remaining part forming the handle adjustably secured to the second named part, with mechanism rotatably mounted in the several parts whereby the opera glass can be focused by the thumb and forefinger of the hand grasping the handle part of the holder; substantially as described.

2. The combination of a three part holder, one of such parts rigidly secured to the opera glass, a second part removably secured to the first named part, and a third part, forming a handle to the holder, adjustably secured to the second named part, with a spindle rotatably

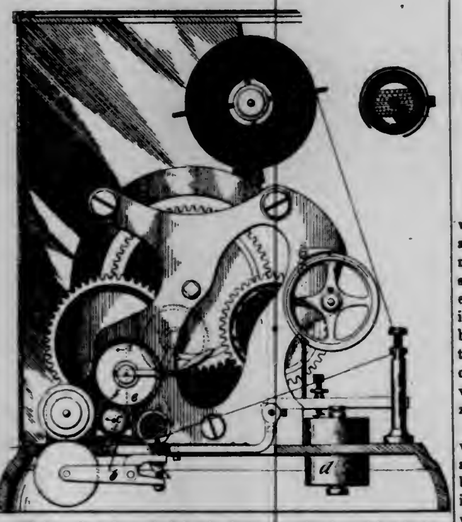
mounted in the first named part, a pinion on the spindle engaging with a corresponding rack of the focusing mechanism of the opera glass, a spindle rotatably mounted in the second named part, the ends of such spindle being respectively yieldingly held in an extended position, and a thumb wheel in the handle part of the holder, the intermediate spindle arranged to engage with the spindle of the thumb wheel and the spindle of the pinion, substantially as described.

3. The combination with an opera glass of a three part holder, one of such parts secured to the opera glass, the adjacent part adjustably secured to the first named part, and the remaining part adjustably secured to the second named part, with mechanism rotatably mounted in the several parts whereby the opera glass can be focused by turning a thumb wheel in the last named part and adjacent to the second named part by the thumb and forefinger of the hand grasping the third named part; substantially as described.

4. The combination with an opera glass of a holder consisting of a tube secured to the frame of the opera glass, a spindle rotatably mounted therein, a pinion on the spindle engaging with a rack, a rack secured to the bar connecting the tubes of the opera glass, a tube connecting with the first named tube, spindles rotatably mounted in the second named tube, such spindles engaging rotatably with each other and being independently longitudinally movable in the tube, means for yieldingly holding the spindles in an extended position relative to the tube, and a handle connecting with the second named tube, with a spindle having a thumb wheel thereon mounted in such handle, all of such spindles being rotatably connected when the several parts of the holder are in an operative position; substantially as described.

5. In a three part opera glass holder, the combination of a thumb wheel rotatably mounted in the handle part of the holder, a spindle rotatably mounted in the part of the holder adjacent to the handle part, such spindle consisting of two shafts connected together so as to rotate in unison and to move longitudinally independently of each other, a spring yieldingly holding both of such shafts in an extended position, and a spindle mounted in the remaining part of the holder; and all of such spindles coming in contact at the ends thereof when the holder is in position for use and engaging so as to rotate in unison; substantially as described.

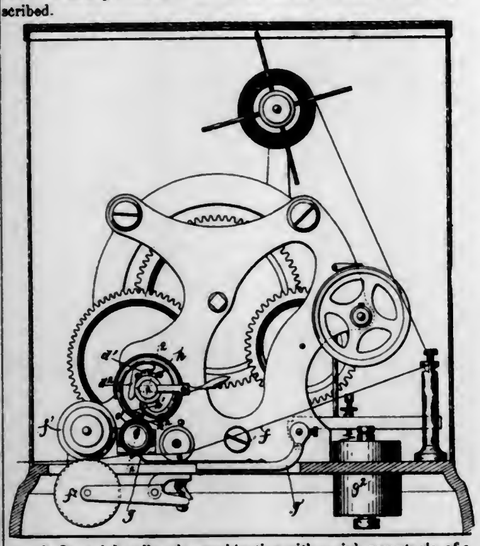
544,644. FOUNTAIN INK-ROLLER FOR TELEGRAPH-REGISTERS. CHARLES A. ROLFE, Chicago, Ill. Filed Oct. 13, 1894. Serial No. 525,767. (No model.)



Claim.—In a fountain ink wheel, the combination with a hollow wheel or cylinder provided around its periphery with apertures or openings, a layer of padding or absorbent material surrounding the periphery of said wheel, and a gravity valve within said hollow cylinder for sealing the apertures lowermost in any position of the wheel to prevent the passage of the ink therethrough; substantially as described.

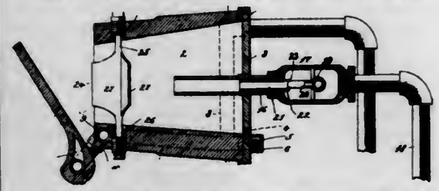
544,645. INK-ROLLER FOR TELEGRAPH-REGISTERS. CHARLES A. ROLFE, Chicago, Ill. Filed Apr. 18, 1895. Serial No. 546,256. (No model.)

Claim.—1. An ink roller mounted to rotate in a vertical plane, and carrying an interior ink receptacle, a layer of absorbent material provided at the periphery of the roller, and a wick or wicks extending into said receptacle and in contact with said layer of absorbent material, whereby the oversaturation of the absorbent material at the lowermost portion of the roller is prevented; substantially as described.



2. In an ink roller, the combination with an ink receptacle, of a spiral like tube A communicating with the receptacle at the inner end, said roller being adapted to be rotated in a direction to empty the liquid from the inner end of said tube into the ink receptacle; substantially as described.

544,646. FLUID-FUEL BURNER. RANSOM H. SARGENT, Titusville, Pa. Filed Jan. 17, 1894. Serial No. 497,162. (No model.)



Claim.—1. The combination of a mixing-chamber having cored walls, a tubular conductor communicating with the mixing-chamber and arranged in alignment with its axis, an induction-chamber communicating with the end of the conductor and attached to a fuel-supply pipe, a combining tube arranged concentrically in the outer end of the conductor and having a flared end arranged within the induction chamber, a nozzle arranged axially in the induction chamber and having a reduced outlet projecting into the flared mouth of the combining tube, a steam-supply pipe communicating with one end of the cored passage in the wall of the mixing-chamber, and a conveyer connecting the outlet end of the cored passage with said nozzle, substantially as specified.

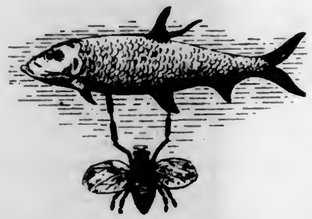
2. The combination of a pyramidal mixing chamber tapered toward its inner end and having cored passages in its walls, a winged atomizer having its axis arranged diametrically in the mixing chamber contiguous to the inner end thereof, a conductor arranged axially in the mixing-chamber, a combining-tube disposed within said conveyer, an induction-chamber in communication with the outer end of the combining tube and connected with a fuel-supply pipe, a nozzle disposed in the induction-chamber and projecting into the combining tube, a steam-supply pipe communicating with one end of the cored passage, and a conductor communicating with the other end of the cored passage and connected to the nozzle within the induction-chamber, substantially as specified.

3. The combination of a pyramidal mixing-chamber tapered toward its inner end and having cored passages in its walls, a cored deflector arranged contiguous to the inner end of the mixing-chamber, the cavity in said deflector being in communication with the cored passages in the walls of the chamber, a winged atomizer having its axis arranged diametrically in the mixing-chamber contiguous to the inner end thereof and adjacent to the deflector, a mixer arranged in communication with the rear end of the chamber and adapted to discharge an admixture of fuel and a combustion supporting agent against the atomizer to communicate rotary motion thereto, and means for supplying fuel and a combustion supporting agent to the mixer, the combustion supporting agent being conveyed through the cored passages of the mixing-chamber prior to its admission to the mixer, substantially as specified.

4. The combination of a combustion-chamber provided in its walls with a continuous super-heating passage for a combustion supporting agent, a deflector arranged adjacent to and in front of the outlet end of the combustion-chamber and provided with a bored cavity in communication with said super-heating passage, means for adjusting the deflector angularly with relation to the combustion-chamber, a supply-pipe for a combustion supporting agent connected with the inlet end of the continuous super-heating passage, a fuel supply-pipe terminating within the combustion chamber, and a pipe connecting the outlet end of the superheating passage with the interior of the fuel supply-pipe, substantially as specified.

DESIGNS.

24,532. BADGE. WILLIAM CECIL BOWER, Birmingham, Ala. Filed June 22, 1895. Serial No. 553,736. Term of patent 3½ years.



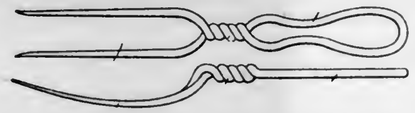
Claim.—The design for a campaign-badge, substantially as herein shown and described.

24,533. BADGE. GEORGE H. LYTTLE, Cleveland, Ohio. Filed May 31, 1895. Serial No. 551,331. Term of patent 3½ years.



Claim.—The design for a badge as herein shown and described.

24,534. FORK. ISAAC HIRSCH, Chicago, Ill. Filed May 1, 1895. Serial No. 547,806. Term of patent 3½ years.



Claim.—The design for a fork herein shown and described.

24,535. HANDLE FOR SPOONS. HENRY R. WASHBURN, Plymouth, Mass. Filed June 25, 1895. Serial No. 554,059. Term of patent 7 years.



Claim.—The design for a handle for spoons, forks and similar articles, substantially as herein shown and described.

24,536. HANDLE FOR SPOONS. CHARLES C. WIENTER, Providence, R. I., assignor to the Howard Sterling Company, same place. Filed June 26, 1895. Serial No. 554,140. Term of patent 7 years.

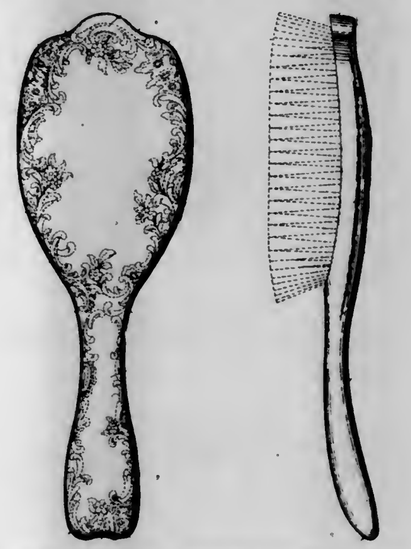


Claim.—1. In the design for the handle of a spoon or similar article, the obverse as herein shown and described.

2. In the design for the handle of a spoon or similar article, the reverse as herein shown and described.

3. The design for the handle of a spoon or similar article as herein shown and described.

24,537. BACK FOR BRUSHES. CHARLES C. WIENTER, Providence, R. I., assignor to the Howard Sterling Company, same place. Filed June 26, 1895. Serial No. 554,143. Term of patent 7 years.



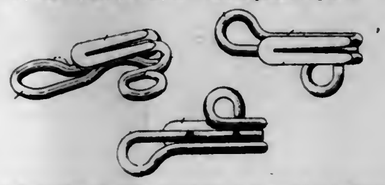
Claim.—The design for backs of brushes and similar articles as herein shown and described.

24,538. THERMOMETER. ADOLPH BAYER, Brooklyn, N. Y. Filed June 27, 1895. Serial No. 554,271. Term of patent 14 years.



Claim.—The design for a thermometer, substantially as shown and described.

24,539. HOOK. JULIUS BERKEY, Grand Rapids, Mich. Filed Mar. 25, 1895. Serial No. 543,158. Term of patent 14 years.



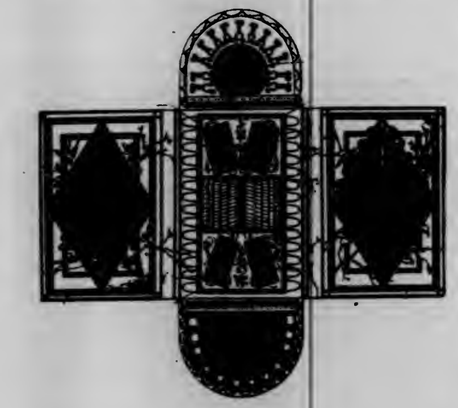
Claim.—The design for a hook, substantially as shown and described.

24,540. CURTAIN-HOOK. CHRISTIAN BICKEL, Springfield, Ohio. Filed Mar. 25, 1895. Serial No. 543,159. Term of patent 7 years.



Claim.—The design for a curtain hook herein shown and described.

4,541. NEEDLE-BOOK. AUGUSTUS F. BRABANT, New York, N. Y. Filed June 11, 1895. Serial No. 552,487. Term of patent 7 years.



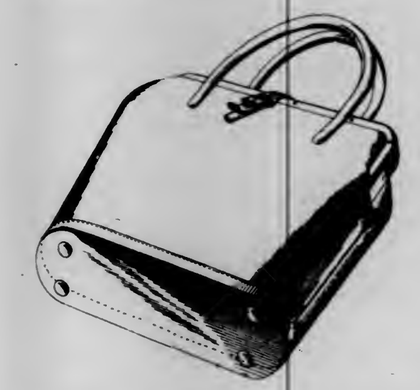
Claim.—The design for a needle book substantially as herein shown and described.

24,542. SAFETY-BAND FOR POCKET-BOOKS. ANDREW MCTERNEE, Andover, Mass. Filed June 27, 1895. Serial No. 554,270. Term of patent 14 years.



Claim.—The design for a safety-band, substantially as shown and described.

24,543. HAND-BAG. HENRY BRUNING, Brooklyn, assignor to Scheuer & Brother, New York, N. Y. Filed May 17, 1895. Serial No. 549,705. Term of patent 7 years.



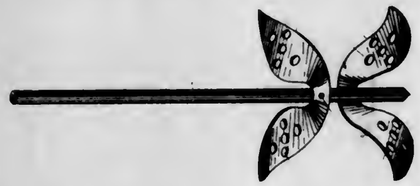
Claim.—The design for a hand bag as herein shown and described.

24,544. DISH. ALFRED A. LANTERNIER, Limoges, France. Filed May 14, 1895. Serial No. 549,324. Term of patent 7 years.



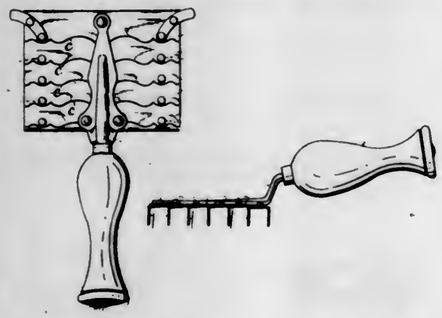
Claim.—The design for a dish, substantially as shown and described.

24,545. EGG-BEATER. OTTO A. HESSEL, Pittsburg, Pa. Filed May 28, 1895. Serial No. 551,020. Term of patent 3½ years.



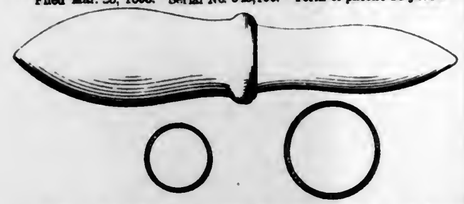
Claim.—The design for an egg beater or agitator substantially as shown and described.

24,546. CURRYCOMB. AUSTIN R. DICKINSON, Syracuse, N. Y., assignor to the Syracuse Specialty Manufacturing Company, same place. Filed June 19, 1895. Serial No. 553,367. Term of patent 7 years.



Claim.—The design for a carrycomb, consisting of an oblong plate made up of overlapping sections having a scalloped or serpentine configuration extending from end to end, substantially as herein shown and described.

24,547. RECTAL DILATOR. EUGENE HUBBELL, St. Paul, Minn. Filed Mar. 25, 1895. Serial No. 543,160. Term of patent 14 years.



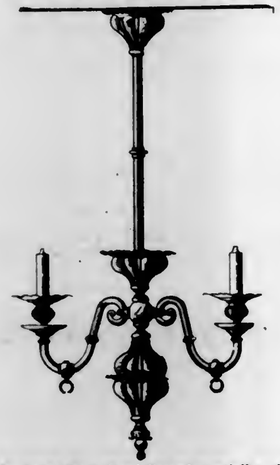
Claim.—The design for a rectal dilator, substantially as shown and described.

24,548. CANDLE-HOLDER AND PENDANT. CHARLES DOUGLAS WINFIELD, Brooklyn, N. Y. Filed June 22, 1895. Serial No. 553,717. Term of patent 7 years.



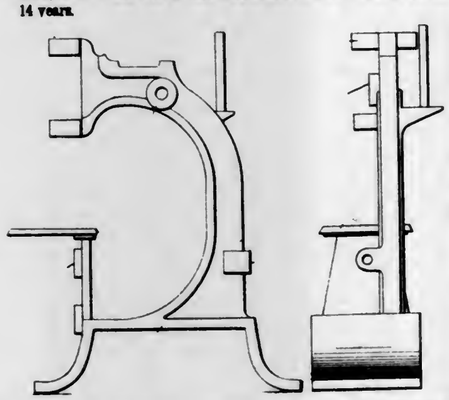
Claim.—The design for a candle holder and pendant substantially as shown and described.

24,549. CHANDELIER. EDWARD F. CALDWELL, Brooklyn, N. Y. Filed June 11, 1895. Serial No. 552,488. Term of patent 3½ years.



Claim.—The design for a chandelier substantially as herein shown and described.

24,550. SEWING-MACHINE FRAME. GEORGE W. LARUE, New York, N. Y. Filed Feb. 4, 1895. Serial No. 537,302. Term of patent 14 years.



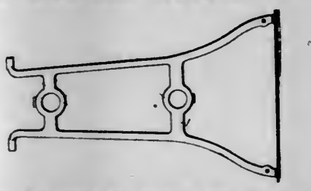
Claim.—The design for sewing-machine frames as described and shown in the accompanying illustrations.

24,551. BATTERY-ZINC. RALPH W. GORDON, Boston, Mass. Filed Jan. 31, 1895. Serial No. 536,885. Term of patent 7 years.



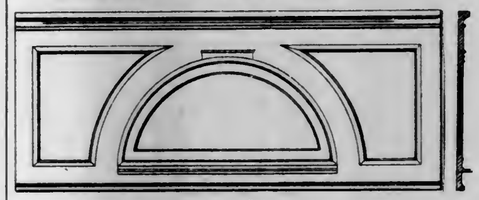
Claim.—The design for battery-zincs, substantially as shown and described.

24,552. SIDE FRAME FOR LATHES. CLARE A. SVENSSON, Buffalo, N. Y., assignor of one-half to William W. Oliver, same place. Filed Mar. 5, 1895. Serial No. 540,666. Term of patent 7 years.



Claim.—The design for the side frame of a lathe, substantially as herein shown and described.

24,553. UPPER FRAME FOR PIANOS. PAUL M. ZEIDLER, New York, N. Y., assignor to Strich & Zeidler, same place. Filed May 31, 1895. Serial No. 551,337. Term of patent 7 years.



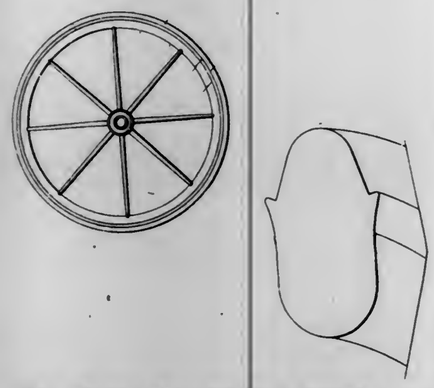
Claim.—The design for the upper frame for upright pianos herein shown and described.

24,554. CHAIR. GEORGE F. RICHARDSON, Martinsville, Ind., assignor to Edwin L. Brown, same place. Filed May 13, 1895. Serial No. 549,190. Term of patent 3½ years.



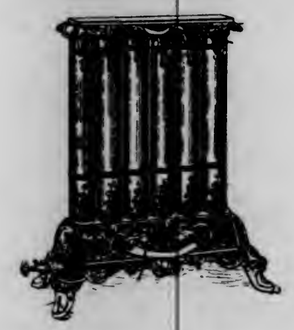
Claim.—The design for a chair, substantially as shown and described.

24,555. VEHICLE-WHEEL. ARTHUR W. GRANT, Springfield, Ohio. Filed Jan. 19, 1895. Serial No. 535,557. Term of patent 14 years.



Claim.—The design for a vehicle wheel substantially as shown and described.

24,556. GAS-RADIATOR. LEHARD KAHN, Hamilton, Ohio, and ADAM SPECK, Detroit, Mich., assignors to F. & L. Kahn & Bros., Hamilton, Ohio. Filed May 31, 1895. Serial No. 551,334. Term of patent 14 years.



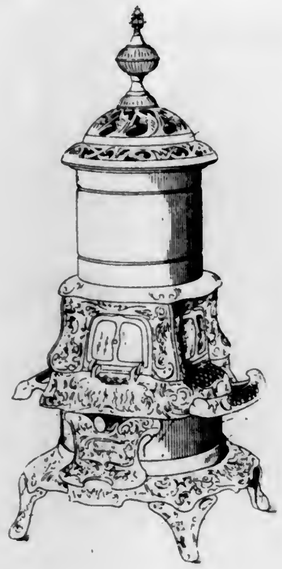
Claim.—The design for a gas radiator, substantially as described and shown.

24,557. GAS-RADIATOR. LEHARD KAHN, Hamilton, Ohio, and ADAM SPECK, Detroit, Mich., assignors to F. & L. Kahn & Bros., Hamilton, Ohio. Filed May 31, 1895. Serial No. 551,336. Term of patent 14 years.



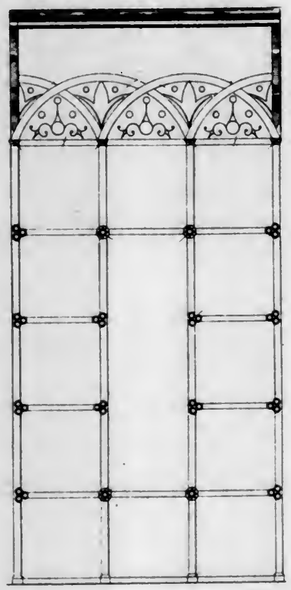
Claim.—The design for a gas-radiator, substantially as described and shown.

24,558. STOVE. THEODORE MILLER, Detroit, Mich., assignor to the Art Stove Company, same place. Filed Apr. 29, 1895. Serial No. 547,572. Term of patent 7 years.



Claim.—The design for a stove, substantially as herein shown and described.

24,559. BULLETIN-BOARD. DOUGLAS E. HAMILTON, Lawrence, Kans. Filed June 20, 1895. Serial No. 553,488. Term of patent 7 years.



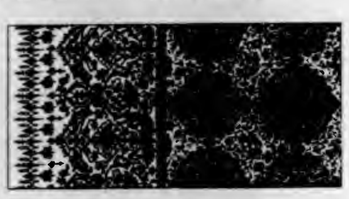
Claim.—The design for a bulletin-board, as herein shown and described.

24,560. ORNAMENTAL FABRIC. ABRAHAM G. JENNINGS, Brooklyn, N. Y. Filed June 26, 1895. Serial No. 554,138. Term of patent 14 years.



Claim.—The design for an ornamental fabric substantially as described and shown in the accompanying drawing.

24,561. CARPET. CHARLES FREDERICK GEDNEY, Brooklyn, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed June 26, 1895. Serial No. 554,142. Term of patent 3½ years.

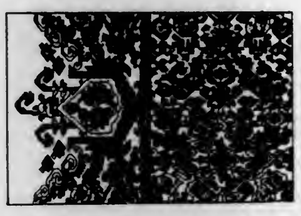


Claim.—1. In a design for a carpet, the body A, substantially as shown.

2. In a design for a carpet, the border B, substantially as shown.

3. The design for carpets, consisting of the body A, and the border B, substantially as shown.

24,562. CARPET. JOHN B. NEIL, New York, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed June 26, 1895. Serial No. 554,149. Term of patent 3½ years.

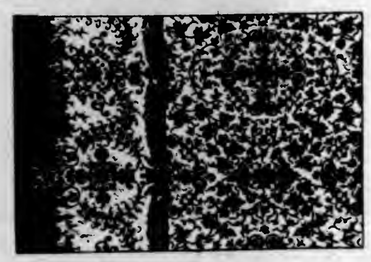


Claim.—1. In the design for a carpet, the body A, substantially as shown.

2. In the design for a carpet, the border B, substantially as shown.

3. The design for carpets, consisting of the body A, and the border B, substantially as shown.

24,563. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed June 26, 1895. Serial No. 554,159. Term of patent 3½ years.

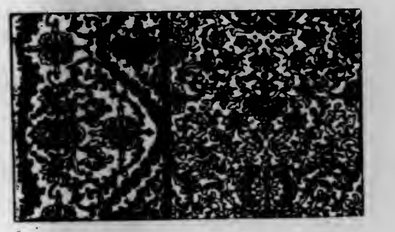


Claim.—1. In a design for a carpet, the body A, substantially as shown.

2. In a design for a carpet, the border B, substantially as shown.

3. The design for carpets, consisting of the body A, and the border B, substantially as shown.

24,564. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed June 26, 1895. Serial No. 554,160. Term of patent 3½ years.

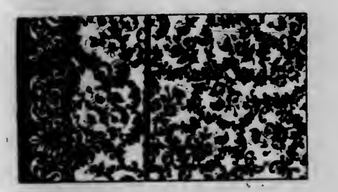


Claim.—1. In a design for a carpet, the body A, substantially as shown.

2. In a design for a capet, the border B, substantially as shown.

3. The design for carpets, consisting of the body A, and the border B, substantially as shown.

24,565. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed June 26, 1895. Serial No. 554,161. Term of patent 3½ years.



Claim.—1. In a design for a carpet, the body A, substantially as shown.

2. In a design for a carpet, the border B, substantially as shown.

3. The design for carpets, consisting of the body A, and the border B, substantially as shown.

24,566. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed June 3, 1895. Serial No. 552,179. Term of patent 3½ years.

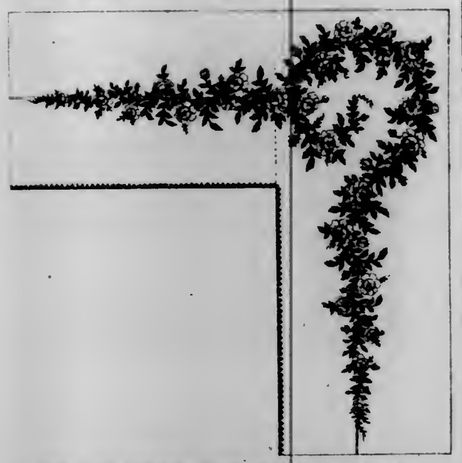


Claim.—1. In a design for a carpet, the body A, substantially as shown.

2. In a design for a carpet. the border B, substantially as shown.

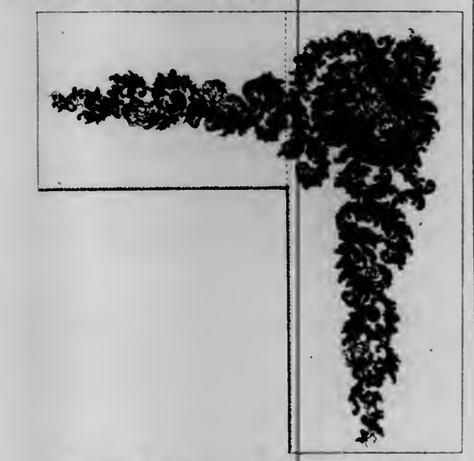
3. The design for carpets, consisting of the body A, and the border B, substantially as shown.

24,567. CARPET-BORDER. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed June 8, 1895. Serial No. 552,176. Term of patent 3½ years.



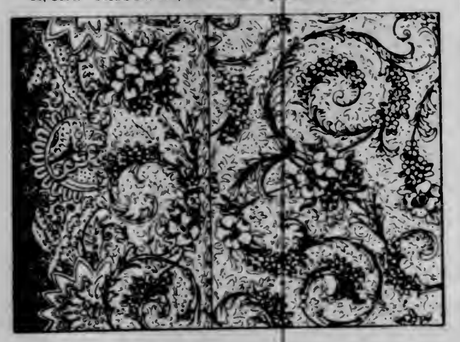
Claim.—The design for a carpet, substantially as shown.

24,568. CARPET-BORDER. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed June 8, 1895. Serial No. 552,180. Term of patent 3½ years.



Claim.—The design for a carpet, substantially as shown.

24,569. CARPET AND BORDER. WILLIAM F. BROWN, Newark, N. J., assignor to the Bigelow Carpet Company, of Massachusetts. Filed June 15, 1895. Serial No. 552,953. Term of patent 3½ years.

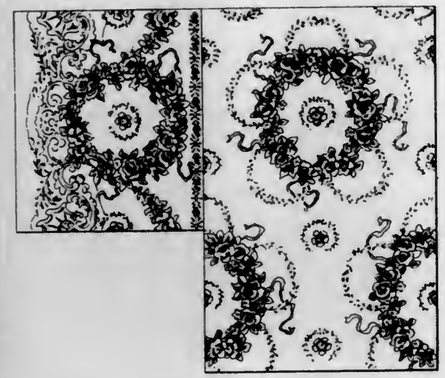


Claim.—1. In a design for a carpet, the body A substantially as shown.

2. In a design for a carpet, the border B substantially as shown.

3. The design for a carpet, comprising the body A and the border B substantially as shown.

24,570. CARPET AND BORDER. JOHN MERRY, New York, N. Y., assignor to the Bigelow Carpet Company, of Massachusetts. Filed June 15, 1895. Serial No. 552,956. Term of patent 3½ years.

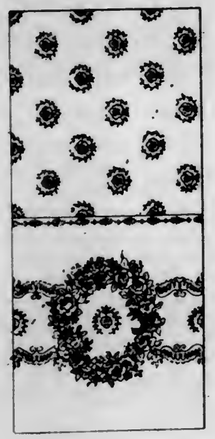


Claim.—1. In a design for a carpet, the body A substantially as shown.

2. In a design for a carpet, the border B substantially as shown.

3. The design for a carpet, the body A and the border B substantially as shown.

24,571. CARPET AND BORDER. JOHN MERRY, New York, N. Y., assignor to the Bigelow Carpet Company, of Massachusetts. Filed June 5, 1895. Serial No. 551,786. Term of patent 3½ years.



Claim.—1. In a design for a carpet, the body A substantially as shown.

2. In a design for a carpet, the border B substantially as shown

3. The design for a carpet, comprising the body A and the border B substantially as shown.

TRADE-MARKS

REGISTERED AUGUST 13, 1895.

26,914. WATCHES. ELGIN NATIONAL WATCH COMPANY, Chicago, Ill. Filed July 17, 1895.

STATE STREET

Essential feature.—The words "STATE STREET." Used since November 22, 1894.

26,915. LINK CUFF-BUTTONS. JAMES A. FLOMERFELT, New York, N. Y. Filed June 24, 1895.

DITTO

Essential feature.—The word "DITTO." Used since April 24, 1895.

26,916. HAIR-PINS. RICHARDSON & DE LONG BROS., Philadelphia, Pa. Filed July 18, 1895.

CUPID

Essential feature.—The word "CUPID." Used since November, 1894.

26,917. HAIR-PINS. RICHARDSON & DE LONG BROS., Philadelphia, Pa. Filed July 18, 1895.



Essential feature.—A pictorial representation of the terrestrial globe and the words "THE WORLD." Used since November, 1894.

26,918. HAIR-PINS. RICHARDSON & DE LONG BROS., Philadelphia, Pa. Filed July 18, 1895.

It's in the TWIST

Essential feature.—The words "IT'S IN THE TWIST." Used since November, 1894.

26,919. OPTICAL GOODS, INCLUDING SPECTACLES, LENSES, TEST-CASES, AND GAGES. AMERICAN OPTICAL COMPANY, Southbridge, Mass. Filed June 22, 1895.

A. O. CO.

Essential feature.—The letters and abbreviation "A. O. Co." Used since January, 1885.

26,920. DENTAL ADHESIVE PLATES. JOSEPH SPYER, New York, N. Y. Filed June 10, 1895.

SPYER'S ADHESIVE PLATES

Essential feature.—A representation in red color of upper and lower plates, showing the lower one resting upon or overlapping the upper one, associated with the words "SPYER'S ADHESIVE PLATES." Used since February 1, 1895.

26,921. DENTAL CHAIRS AND DENTAL-OFFICE FURNITURE AND ATTACHMENTS FOR SAME. RITTER DENTAL MANUFACTURING COMPANY, Rochester, N. Y. Filed July 10, 1895.

RDMCo

Essential feature.—A monogram of the letters "R D M Co." Used since January 1, 1895.

26,922. CUSHIONS FOR BILLIARD OR POOL TABLES. CHAS. PASSOW & SONS, Chicago, Ill. Filed Feb. 1, 1895.

CHAMPION

Essential feature.—The word "CHAMPION." Used since May 1, 1894.

26,923. INDIAN ART WARES OF METALLIC OR TEXTILE MATERIAL OR A COMBINATION OF METALLIC AND TEXTILE MATERIALS. SILARKO JOHN TELLERY, Delhi, Calcutta, Bombay, and Simla, India. Filed Mar. 14, 1894.



Essential feature.—A representation of a lofty circular tower having galleries built out from its wall at varying distances from each other and representing the Kutub in India. Used since January, 1888.

26,924. PAPER AND FABRIC PROVIDED WITH AN ABRADING OR POLISHING SURFACE. CROWELL MANUFACTURING COMPANY, Boston, Mass. Filed July 10, 1895.

DIAMOND

Essential feature.—The word "DIAMOND." Used since November 22, 1894.

26,925. PHOTOGRAPHIC PAPER. GOTTLIEB GENNERT, Greenville, N. J. Filed July 23, 1894.

Cigarette.

Essential feature.—The word "CIGARETTE," in script. Used since April 1, 1892.

26,926. ROOFING-PAPER. LOUISVILLE PAPER COMPANY, Louisville, Ky. Filed July 5, 1895.



Essential feature.—The words "NEVER WETT," and the representation of an ancient warrior standing on a partly-unwound roll of paper, serving as a boat, and being drawn over a body of water by a swan. Used since June 15, 1895.

26,927. BELTINGS OF ALL KINDS. HENRY A. COLE, Liverpool, England. Filed July 15, 1895.

CORONET

Essential feature.—The representation of a coronet and the word "CORONET." Used since December 2, 1893.

26,928. RIBBONS AND VELVETS. J. BANDERS & Co., New York, N. Y. Filed July 11, 1895.



Essential feature.—The representation of a head of a Bengal tiger and the words "BENGAL MILLS." Used since July 1, 1893.

26,929. KNIT UNDERWEAR. HIS, IMBODEN & Co., Murgenthal, Switzerland. Filed Oct. 14, 1893.

Retractum

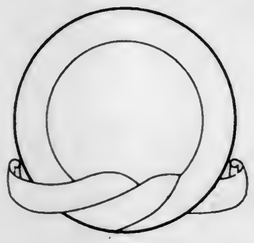
Essential feature.—The word "RETRACTUM." Used since July 1, 1888.

26,930. GLOVES AND HOSIERY. JNO. S. BRITTAIN D. G. COMPANY, St. Joseph, Mo. Filed June 29, 1895.

UTOPIA

Essential feature.—The word "UTOPIA." Used since July 1, 1894.

26,931. CORSETS. FERRIS BROS., New York, N. Y. Filed May 25, 1895.



Essential feature.—A circular figure having its ends entwined to form a scroll. Used since August, 1893.

26,932. RUBBER GARMENTS. J. MANDLEBERG & CO., LIMITED, Manchester and London, England, Paris, France, and New York, N. Y. Filed June 11, 1895.

A-A

Essential feature.—The letters "A-A" spaced by means of a hyphen. Used since January 1, 1895.

26,933. PREPARATIONS FOR THE TREATMENT OF THE FEET. ARCHIBALD H. SANDERS, Minneapolis, Minn. Filed June 3, 1895.

FOOTCURA

Essential feature.—The word "FOOTCURA." Used since March 15, 1895.

26,934. TONIC REMEDY FOR NERVOUS AFFECTIONS AND GENERAL DEBILITY. JOHN CURRAN, Minneapolis, Minn. Filed July 18, 1895.



Essential feature.—The words "CURRAN'S CELERY COMPOUND," with the three initial letters interlocked and the other letters of the respective words embraced by the respective initials of the words. Used since January 1, 1895.

26,935. STOMACH AND BOWEL MEDICINE. HARRIET E. BAILEY, Danielsonville, Conn. Filed May 1, 1895.



Essential feature.—The pictorial representation of a spray of flowering balsam having a number of flowers closely arranged and interspersed with leaves. Used since January 1, 1895.

26,936. REMEDY FOR COLIC, CHOLERA, DYSENTERY, DIARRHEA, CRAMPS, AND SIMILAR TROUBLES. HERMAN C. LEMKE, Chicago, Ill. Filed June 29, 1895.

ST. JOHANNIS DROPS

Essential feature.—The words "ST. JOHANNIS DROPS." Used since November, 1871.

26,937. REMEDIES FOR ASTHMA, BRONCHITIS, CATARRH, HAY-FEVER, AND SIMILAR AFFECTIONS. MARY J. WALRATH, Minneapolis, Minn. Filed May 20, 1895.



ASTHMA
CURE.

Essential feature.—The words "NANCY'S BRAZILIAN ASTHMA CURE" and the pictorial representation of a shield bearing a wheel and surmounted by an imperial crown and partially inclosed by palm-branches. Used since May 15, 1895.

26,938. TABLE-SALT, SPICES, AND MACCARONI. DELMONICO MANUFACTURING CO., Baltimore, Md. Filed July 2, 1895.

DELMONICO



Essential feature.—The word "DELMONICO" and the representation of a cruet. Used since June 24, 1895.

26,939. SALTED HERRING. JAMES MORE, Wick, Scotland. Filed Mar. 16, 1895.



Essential feature.—The outline of a diamond, with the word "JAMES" outside upon the upper left-hand line, and the word "MORE" upon the upper right-hand line, and the cipher of the letters "J. M. P." inside, with the word "TRADE" above the cipher and the word "MARK" below. Used since January 1, 1894.

26,940. SALMON PUT UP IN CANS, CASES, OR OTHER PACKAGES. PACIFIC STEAM WHALING COMPANY, San Francisco, Cal. Filed May 27, 1895.

ORCA



Essential feature.—The word "ORCA" and the representation of a vessel at sea. Used since July, 1889.

26,941. CANNED GOODS. WILLIAM STEINMEYER COMPANY, Milwaukee, Wis. Filed July 5, 1895.



Essential feature.—A red shield with the words "RED SHIELD" in white in two parallel lines across the face of the shield, each word forming a single line. Used since June 10, 1895.

26,942. BUTTER. FRED M. WILSON, Salem, Ohio. Filed June 7, 1895.



Essential feature.—The representation of a cow's head. Used since June 15, 1890.

26,943. BISCUIT-CRACKERS. THE FIRM OF JOHN HARTMAN, Philadelphia, Pa. Filed July 9, 1895.



DEFENDER.

Essential feature.—The representation of a sloop under full sail, with the word "DEFENDER" written or printed under it. Used since April 1, 1895.

26,944. MALT COFFEE. KATHREINER'S MALZKAFFEE-FABRIKEN MIT BESCHRÄNKTER HAFTUNG, Munich, Germany. Filed Dec. 28, 1894.



Essential feature.—A picture of Kneipp, the German priest, together with a fac-simile of his signature. Used since June 5, 1891.

26,945. CHOCOLATE, COCOA, BROMA, AND SIMILAR PRODUCTS FROM THE COCOA-BEAN. HENRY WEBB, Boston, Mass. Filed July 10, 1895.

O'CLOCK

Essential feature.—The word "O'CLOCK." Used since March 1, 1895.

26,946. CONFECTIONERY, ICE-CREAM, AND BEVERAGES. HERBERT L. HILDRETH, Boston, Mass., and Old Orchard, Me. Filed June 15, 1895.

Velvet

Essential feature.—The word "VELVET." Used since June, 1885.

26,947. CHEWING-GUM. FAULTLESS CHEMICAL COMPANY, Baltimore, Md. Filed July 20, 1895.

WOOZY

Essential feature.—The word "WOOZY." Used since January 2, 1894.

26,948. TOILET SOAP. THE OAKLEY SOAP AND PERFUMERY COMPANY, New York, N. Y. Filed July 5, 1895.



Essential feature.—The representation of a panel inclosed within an elliptical figure ornamented with scrolls and surmounted by a bow of ribbon. Used since September, 1883.

26,949. SOAP. TONAWANDA TRIPOLI COMPANY, Tonawanda, N. Y. Filed July 15, 1895.

ROETTA

Essential feature.—The word "ROETTA." Used since March 25, 1895.

26,950. FILLER OR DRESSING FOR COTTON FABRICS. THE ORIENTAL FLOUR COMPANY, Danville, Ill. Filed July 17, 1895.



Essential feature.—The words "PERFECTION FILLER FOR COTTON" and the representation of a sprig of cotton pods or bolls in full bearing. Used since April 1, 1895.

26,951. VARNISH. THE GLIDDEN VARNISH COMPANY, Cleveland, Ohio. Filed May 22, 1895.

M.P.
SPECIAL

Essential feature.—The letters and word "M. P. SPECIAL." Used since May 1, 1894.

26,952. ARTIFICIAL FERTILIZERS. CROCKER FERTILIZER AND CHEMICAL COMPANY, Buffalo, N. Y. Filed July 16, 1895.



Essential feature.—The representation of a wild boar's head. Used since November, 1894.

26,953. LATHES AND THEIR PARTS AND ATTACHMENTS. THE SENECA FALLS MANUFACTURING COMPANY, Seneca Falls, N. Y. Filed July 18, 1895.

STAR

Essential feature.—The word "STAR." Used since January 1, 1887.

REPORT OF THE COMMISSIONER OF PATENTS

FOR THE FISCAL YEAR 1894-1895.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., August 5, 1895.

SIR: I have the honor to submit the following report of the business of the United States Patent Office for the fiscal year ending June 30, 1895.

Applications and Caveats received.

Applications for letters patent	36,972
Applications for design patents	1,453
Applications for reissue patents	77
Applications for registration of trade-marks	2,183
Applications for registration of labels	318
Applications for registration of prints	11
Caveats	2,314
Total	43,328

Patents granted and Trade-Marks, Labels, and Prints registered.

Letters patent granted (including reissues and designs)	20,745
Trade-marks registered	1,804
Labels registered	
Prints registered	6
Total	22,555

Patents withheld and Patents expired.

Letters patent withheld for non-payment of final fee	3,208
Letters patent expired	12,906

Receipts and Expenditures.

Net receipts from all sources	$1,195,557 07
Net expenditures (including printing and binding, stationery, and contingent expenses)	1,038,166 08
Surplus	157,390 99

Balance in the Treasury of the United States on account of the Patent fund.

June 30, 1894	$4,409,366 74
June 30, 1895	157,390 99
Total	4,566,757 73

Applications awaiting action.

Number of applications awaiting action on the part of the Office on July 1, 1895	4,927

Comparative Statement.

	Receipts.	*Expenditures.*
June 30, 1890	$1,347,203 21	$1,081,173 56
June 30, 1891	1,302,794 59	1,145,502 90
June 30, 1892	1,268,727 35	1,114,134 23
June 30, 1893	1,288,809 07	1,111,444 22
June 30, 1894	1,181,523 18	1,053,962 38
June 30, 1895	1,195,557 07	1,038,166 08

Applications for Patents, including Reissues, Designs, Trade-Marks, Labels, and Prints.

June 30, 1890	43,810
June 30, 1891	43,616
June 30, 1892	43,544
June 30, 1893	43,589
June 30, 1894	39,206
June 30, 1895	41,014

Applications awaiting action on the part of the Office.

June 30, 1890	6,585
June 30, 1891	8,911
June 30, 1892	9,447
June 30, 1893	8,283
June 30, 1894	7,076
June 30, 1895	4,927

Summarizing these tables, there were received in the fiscal year ending June 30, 1895, 36,972 applications for patents; 1,453 applications for designs; 77 applications for reissues; 2,314 caveats; 2,183 applications for trade-marks, and 318 applications for labels. There were 20,745 patents granted, including reissues and designs; 1,804 trade-marks registered, and 6 prints registered. The number of patents which expired was 12,906. The number of allowed applications which were by operation of law forfeited for non-payment of the final fees was 3,208. The total expenditures were $1,195 557.07; the receipts over expenditures were $157,390.99, and the total receipts over expenditures to the credit of the Patent Office in the Treasury of the United States amounts to $4,566,757.73.

CURRENT WORK.

In the last week in June, 1895, all but one out of the thirty-four divisions had their work within one month of date, and the remaining division was between one and two months from date. At the close of the fiscal year there were 4,927 applications awaiting action on the part of the Office.

Very respectfully, your obedient servant,

JOHN S. SEYMOUR,
Commissioner.

The Secretary of the Interior.

DECISIONS OF THE U. S. COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court of Appeals—Second Circuit.

SCHWARZWALDER *et al. v.* NEW YORK FILTER COMPANY.

Decided January 9, 1895.

1. HYATT—METHOD OF PURIFYING WATER—VALID—INFRINGED.
Letters Patent No. 293,740, for a method of purifying water, granted to Isaiah S. Hyatt February 19, 1884, construed in reference to the prior art and *Held* to be valid and infringed.

2. DISCLAIMER—EFFECT OF ON QUESTION OF NOVELTY.
Where a disclaimer has been filed by a patentee as a result of litigation, the validity of the patent as regards the question of novelty is to be tested not by its original terms and scope but by what remains after the disclaimer, in the same manner as if the matter disclaimed had never been a part of the patent. (*Dunbar v. Myers*, 11 O. G., 35; 94 U. S., 194.)

3. SAME—ENLARGING SCOPE OF PATENT—OPERATION OF.
The disclaimer of matter which is not a part of the description, but is merely a recital designed to enlarge the scope of the patent, operates merely to expunge from the claim what otherwise would, by force of the recital, be incorporated into it constructively.

APPEAL from the Circuit Court of the United States for the Southern District of New York.

STATEMENT OF THE CASE.

This was a suit by the New York Filter Company against Henry Schwarzwalder, August Finck, and the O. H. Jewell Filter Company for infringement of Letters Patent No. 293,740, for an improvement in the art of filtering water. There was a decree for complainant directing an injunction and an accounting. (61 Fed. Rep., 840.) Thereafter a motion by defendants for leave to amend the answer and take new proofs was denied. (62 Fed. Rep., 582.) From the decree for complainant defendants appealed.

This is an appeal from a decree of the United States Circuit Court for the Southern District of New York adjudging the validity of Letters Patent No. 293,740, dated February 19, 1884, granted to Isaiah Smith Hyatt, and charging the defendants as infringers. The patent is for a "method of purifying water." The specification is as follows:

The invention relates to improvements in the art of filtration; and it consists in the method hereinafter described of arresting and removing the particles of foreign matter liable to pass through the filter-bed with the escaping water during an uninterrupted process of filtration, or one in which a stream of water is passed through a bed of filtering material contained in a filter, the filter being a receptacle containing a bed of filtering material, and having a supply-pipe for the introduction of the water and a pipe for its passage therefrom, the said supply-pipe having another pipe, through which I introduce into the water, simultaneously with its passage into the filter, a substance—such as perchloride or persulphate of iron—for the purpose of sufficiently coagulating the impurities in the water to admit of their arrest by the bed during the passage of the water through the filter.

In practicing the invention some form of mechanical apparatus must be employed; and, while I do not confine myself to any particular construction, I recommend the apparatus described and claimed in Letters Patent of the United States No. 273,542, granted to John W. Hyatt on the 6th day of March, 1883, which I have used with very satisfactory results.

In the accompanying drawing I have illustrated a sectional view of such an apparatus by means of which the invention sought to be protected hereby may be successfully practiced; but, as I have stated, other forms of filtering apparatus may be used with good results.

The apparatus shown in the drawing consists of the upper and lower compartments, A B, separated by a diaphragm, C, in which is provided the valve D. The upper compartment is provided with a waste-outlet, E, and the lower compartment with a supply-pipe, F, a delivery, G, and a waste-pipe, H. The delivery consists of a tube of perforated metal, I, connecting with the pipe J. A transfer washing-pipe, K, will extend from the lower part of the compartment B to a suitable point adjacent to the upper part of the compartment A. The bed of sand or other suitable filtering agent will be placed in the lower compartment. The passage of the liquid through the apparatus above described and the method of washing the filter-bed will be the same as that set forth in said Letters Patent. The supply-pipe F has connected with it a pipe, O, which will pass from any suitable supply of persulphate of iron or perchloride of iron or other coagulating agent, which, by preference, will be in solution. The filter-bed and the persulphate or perchloride of iron or other coagulating agent will meet at the juncture of the pipes F and O, and then pass into the filter together, with the result that the minute particles of foreign matter in the liquid will be sufficiently coagulated to permit their arrestation by the filtering agent.

As I have stated, the proportions or quantities of the coagulating agent cannot be accurately defined. It is only necessary that a sufficient quantity be used to effect that degree of coagulation which will admit of the fine impurities being arrested from the water on its passage through the filter-bed during a continuous process. It will be understood that in this process the coarse impurities present in the water may be arrested by the filter bed without coagulation. I may mention, as an illustration, that I have successfully purified the water of the Mississippi river at New Orleans by using about one-eighth of a pound of perchloride of iron of from 50° to 60° Baumé to a thousand gallons of water.

I do not confine myself to the employment of persulphate or perchloride of iron or permanganate of potassa, but make use of any other suitable agent which is capable of coagulating the impurities of the liquid and preventing their passage through the filter-bed. Neither do I limit myself to any particular proportions or quantities of the coagulating agent, as they may be varied according to circumstances and the character of the liquid to be treated. Nor do I confine myself to any particular liquid, although I contemplate chiefly the purification of water in large quantities.

It is obvious that by the use of the uninterrupted process hereinbefore described I entirely dispense with the employment of settling basins or reservoirs as now commonly employed.

The claim is as follows:

The method hereinbefore described of arresting and removing the impurities from water during an uninterrupted passage of same from a supply pipe into a filtering apparatus, thence through a filter-bed contained therein, and out through a delivery-pipe leading therefrom, which method consists in introducing into the water simultaneously with its passage to or into the filter a substance which will sufficiently coagulate or separate the impurities to facilitate their arrest and removal by the filter-bed, thus obviating the necessity of employing settling-basins.

After a litigation upon the patent in a suit in the United States Circuit Court for the Northern District of Illinois, in which, in February, 1889, the bill for infringement was dismissed, on July 27, 1889, the owner of the patent filed in the Patent Office a disclaimer of that part of the specification of the patent which is in the following words:

I do not confine myself to the employment of persulphate or perchloride of iron or permanganate of potassa, but make use of any other suitable agent which is capable of coagulating the impurities of the liquid and preventing their passage through the filter-bed. Neither do I limit myself to any particular proportions or quantities of the coagulating agent, as they may be varied according to circumstances and the character of the liquid to be treated. Nor do I confine myself to any particular liquid, although I contemplate chiefly the purification of water in large quantities.

Mr. Lysander Hill for the appellants.

Mr. M. H. Phelps and *Mr. M. B. Philipp* for the appellee.

Before WALLACE, LACOMBE, and COXE, Judges.

WALLACE, *J.*, (after stating the facts:)

In their assignment of errors the appellants insist that the decree of the court below proceeded upon a wrong construction of the patent and that, properly construed, it should have been adjudged void for want of novelty. They also insist that, if it be capable of a sufficiently-narrow construction to uphold its validity, they have not infringed it.

The patent relates to improvements in the art of filtration. These improvements, as disclosed by the description in the patent and an examination of the prior state of the art, lie within plain boundaries; but we regret to say that in finding them we have been much embarrassed by the many illusory theories of the expert witnesses for the complainant. According to the description, read in connection with the disclaimer, they consist in a method of arresting and removing the particles of foreign matter in water, during an uninterrupted process of filtration, by introducing into the water, simultaneously with its passage into the filtering apparatus, a sufficient quantity of a coagulant—such as perchloride or persulphate of iron (salts of iron)—to coagulate the fine impurities present and permit the filter-bed to arrest them, coarse impurities in the water being arrested by the filter-bed without coagulation. Any filtering apparatus which dispenses with settling-basins and in which there is a bed of filtering material may be used although the use of a particular form is recommended. As different waters vary in the extent of their impurities, it is manifest that the proportions or quantity of the coagulating agent must vary accordingly; and the description, being addressed to those skilled in the art, conveys sufficient information that the usual preliminary test is to be made to ascertain the amount requisite for the particular waters which are to be purified. The suggestion of the small quantity which has been successfully used to purify the waters of the Mississippi river is of some value in imparting the information; but the method is not confined to the use of small quantities. The method is not exclusively applicable to the purification of natural or potable waters; and, although the patentee undoubtedly contemplated its application to the purification of waters in large volume, the description does not contain any limitation to that effect. The description implies to those skilled in the art the use of a granular filter-bed, capable of being readily washed, where large volumes of water are to be treated. The method embraces the treatment of any waters, whether they are to be purified on a small scale for family use or on a large scale for the use of factories or municipalities.

In the prior state of the art it was not new to use the coagulants mentioned, as well as the salts of alumina, or alum, a well-known equivalent, for the purification of water. It was a well-known fact that either alum or the salts of iron would agglomerate with the coloring-matter and other finely-suspended impurities in water, and the united particles or masses would precipitate, leaving the water comparatively clear. An appreciable period of time, varying with different waters from a few minutes to several hours, was supposed to be necessary to thus clarify the water. These coagulants had been used with other chemicals in filtration processes in the course of the chemical treatment of the water to precipitate the impurities, the other chemicals being added in the subsequent treatment before filtration. They had also been used in sedimentation processes to precipitate the impurities in reservoirs or settling-basins, whence the water, if desired, could be subsequently filtered. Indeed, as appears by the file-wrapper of the patent in suit, the original application of Hyatt was rejected because, as his description and claims were then expressed, the subject-matter was covered and anticipated by the well-known and commonly-practiced method of clearing Mississippi-river water by the addition of alum, followed by settling and decantation or filtration, and his patent was not allowed until he amended his application so as to show that he dispensed with settling basins and purified the water by an uninterrupted process of filtration.

In considering the anticipatory references in prior patents and printed publications, of which a great number have been introduced, it will not be profitable to dwell upon those which treat of the use of chemicals in filtration processes for the purpose of softening water, inasmuch as the present patent relates to a different art, nor to consider in detail those which treat of their use in sedimentation processes for the purification of water, because it is the special object of the present patent to substitute the method of filtration. The sedimentation processes are only of value as they tend to throw light upon the inquiry whether the method of the patent in departing from them involves invention. The most valuable references are the English patent to Paget of October 20, 1874, and the English patent to Spence of November 28, 1881. The former describes the closest approximation in the prior art to the method in the patent in suit. The latter contains the most apposite description of the use of the coagulants of the patent in suit for purifying water by sedimentation.

Paget's patent is for improvements in the means of purifying and clarifying the refuse water of manufacturing works. It states that water containing organic or inorganic substances in an extremely minute state, and generally in suspension, cannot be clarified in large standing reservoirs, because the impurities fall very slowly or in most cases remain in suspension; that mere filtration is also incapable, because the greater portion of the matter in suspension passes through filtering material, and that, in order to separate these matters completely, rapidly, and with certainty and get rid of the greater portion, it is necessary to first prepare or treat the water chemically, and then subject it to filtration. The process described is a continuous one and is carried on in a self-acting apparatus. The water is first brought into a receiver and mingled with a definite proportion of sesquichloride of iron and chloride of aluminum, the proportions varying according to the nature and quality of the water, to be ascertained in each case by a previous trial on a small quantity of water. Here the first chemical reaction takes place, giving an insoluble precipitate. Thence the water flows into a mixer, where it takes up a determinate quantity of lime-milk or lime-water, and a new chemical reaction occurs, forming a voluminous precipitate, which carries down with it the most minute particles in suspension. Thence it flows through a filter-bed, which retains the precipitate, and from which the water issues clear and limpid.

Spence's patent is for the purification of water for domestic, manufacturing, and other purposes by the use of salts of alumina or alumina and iron. It recites that he had previously obtained a patent for a process for the purification of sewage by the use of salts of alumina, or alumina and iron, and that he has found that his process is also applicable to the purification of other impure waters. It states that his present invention consists in the application of salts of alumina, or alumina and iron, for the purification of water for domestic, manufacturing, and other purposes from all matters contained in such waters which are capable of being precipitated by salts of alumina or alumina and iron. The water to be purified is run into tanks or reservoirs and the salts added thereto in sufficient quantities to cause all the dissolved and other impurities which are capable of being acted upon by them to be separated from the water and fall to the bottom of the tanks or reservoirs. The reagent is preferably in a liquid form and may either flow into the stream of water on its passage to the tanks or reservoirs or may be added when the tanks or reservoirs are filled with water. The precipitated matter can then be removed by pumping or in any other convenient manner. The water, having been thus deprived of all the precipitated magma, is now pure and transparent and may be used for any desired purpose.

The patent in suit describes a departure from anything which appears to have been done or known in the prior art, so far as appears by the record. It describes a method for the purification of water by the simultaneous application of a specified coagulant and a process of filtration, the coagulant being applied to or mixed with the water to be filtered substantially at its introduction into the filtering apparatus and while it is flowing continuously to the filter-bed. By this method the coagulants perform their principal work within the filter-bed itself. By this change in previous processes the patentee not only dispensed with the use of settling-tanks, thus saving the time and expense required in sedimentation processes like that of Spence, but he also dispensed with the additional chemical treatment of the water and the use of the more complicated apparatus involved in processes like that of Paget. So far as appears no one had previously discovered that the agglomerating action of the coagulants could be obtained without waiting a considerable time for precipitation or during the passage of the water through the filtering-bed. As the celerity of operation would be of comparatively

little practical value in treating waters on a small scale, it is not so strange as it might otherwise seem that no instances of the mixing of alum with water in family filters at the time of filling the filter have been proved. It may be doubted, in view of what was necessarily disclaimed in order to restrict the patent within valid lines, whether Hyatt himself had any intelligent conception of the real nature of his improvements. However this may be, it is not open to fair doubt that what he described was an improvement upon prior methods and involved invention. The subject of the purification of waters on a large scale had engaged the attention of many thoughtful minds, as is evidenced by the number of earlier patents and publications; yet the practical superiority of Hyatt's process was manifest immediately after being tested, and has been decisively recognized by many of the business competitors of the complainant, who have preferred to use it, at the risk of accountability as infringers of his patent, rather than avail themselves of other processes.

It has been urged for the appellants that the patent, before the disclaimer, covered, broadly, any continuous process of filtration of any liquid in which the treatment with any coagulants or reagents is adopted and that the validity of the patent as regards the defense of want of novelty is to be tested by its original terms and scope. We are aware of no principle which will permit a patent to be defeated for want of novelty in respect to the subject-matter which has been eliminated from it by a disclaimer. The office of a disclaimer is to enable the patentee to save himself from the peril of such a defense. Matters which have been properly disclaimed cease to be a part of the invention, and, as was said by the Supreme Court in *Dunbar* v. *Myers*, (11 O. G., 35; 94 U. S., 194)—

it follows that the construction of the patent must be the same as it would be if such matters had never been included in the description of the invention or the claims of the specification.

It is also urged for the appellants that the effect of the disclaimer was to limit the method of the patent to one in which perchloride or persulphate of iron is used as a coagulant. If these coagulants only, instead of coagulants "such as perchloride or persulphate of iron," had been mentioned in the description of the invention, there would be much force in the argument and it might well be held that by disclaiming—

the use of any other suitable agent which is capable of coagulating the impurities—

all equivalents would be excluded. The literal effect of the disclaimer is to confine the claim to a method in which no other coagulants are employed except "such as salts of iron." It is to be observed, however, that the part disclaimed is not part of the descriptive matter, but a recital intended to enlarge the scope of the claim. The disclaimer consequently operates only to expunge from the claim what otherwise would by force of the recital be incorporated into it constructively. Obviously it was intended to obliterate the recital from the patent and to have no other effect. The patent, after the disclaimer, is to be read exactly as though the recital had never been inserted. Thus read it is clear that the claim covers the use of any coagulant having similar properties to the salts of iron, which was a recognized equivalent.

As thus construed the infringement of the claim by the defendants is established, although they use alum as the coagulant instead of the salts of iron. In some of the plants of the corporation defendant settling-tanks are used between the introduction of the coagulant and the filter-bed. In those plants the method of the patent is not appropriated and there is no infringement.

The decree of the circuit court is affirmed, with costs.

U. S. Circuit Court of Appeals—First Circuit.

WRIGHT & COLTON WIRE-CLOTH COMPANY *v.* CLINTON WIRE-CLOTH COMPANY.

Decided May 10, 1895.

1. WRIGHT—ART OF WEAVING WIRE-CLOTH—CONSTRUCTION.
   The claim of Letters Patent No 239,012, granted March 15, 1881, to G. F. Wright, for art of weaving wire-cloth, should not, if sustained, be construed so broadly as to give a monopoly of all the means for straightening or swaging wire in the wire-weaving industry.
2. SAME—SHUTTLE FOR WEAVING WIRE-CLOTH—CONSTRUCTION—NON-INFRINGEMENT.
   Letters Patent No. 239,011, granted March 15, 1881, to G. F. Wright, for a shuttle for weaving wire-cloth, if it presents a patentable device, does not cover all means of swaging turns of twist into wire, and the defendant's device, covered by Letters Patent No. 299,895, granted June 3, 1884, to G. F. Wright, for a shuttle for weaving wire-cloth, in which old and well-known means are employed, does not infringe.
3. NEW USES—RIGHTS OF THE PUBLIC.
   Under the doctrine that the patentee is entitled to all known and unknown uses to which his invention may be applied the public is entitled to all uses of devices covered in expired patents, and the discoverer that old means will do a new work is not entitled to a monopoly.
4. SAME—CHANGE OF STRUCTURE—PATENTABILITY.
   If patentable at all, a combination of old means with improvements adapting it to new and non-analogous material and use, a patent will be limited to the combination modified by the improvements.

APPEAL from the Circuit Court of the United States for the District of Massachusetts.

STATEMENT OF THE CASE.

This was a suit by the Clinton Wire-Cloth Company against the Wright & Colton Wire-Cloth Company for alleged infringement of two patents relating to the art of weaving wire-cloth. The circuit court sustained the patents, found infringement, and directed a decree for an injunction and accounting. (65 Fed. Rep., 425.) Defendant appeals.

Before COLT, NELSON, and ALDRICH, Judges.

Mr. Elmer P. Howe for the appellant.

Mr. Causten Browne and *Mr. Alexander P. Browne* for the appellee.

ALDRICH, *J.:*

This is a suit in equity in behalf of the Clinton Wire-Cloth Company, wherein it is alleged that the defendant has infringed two Letters Patent—one for an improvement in the art of weaving wire-cloth, and the other for an improved shuttle whereby the improvement in such art may be practiced. The complainant contends that prior to its inventions there was a practical difficulty in weaving wire-cloth by means of a shuttle carrying a cop of wire, and that the difficulty resulted from the fact that the wire, as it lay on the cop in coils substantially at right angles to the axial

line of the shuttle, necessarily at each turn, as the coil was paid out longitudinally from the cop, took into itself turns of twist, by reason of which the wire constantly tended to resume the spiral form in which it was while wound on the cop, instead of remaining in a straight line in the web, as was necessary in order to accomplish satisfactory work.

The complainant claims, under Patent No. 239,012, dated March 15, 1881, known as the "art patent," an invention which effectually removes this difficulty by swaging the twist into the body of the wire, which result, it is claimed, is accomplished by straining the wire around rollers as it passes from the cop to the loom and its place in the web. Under its other patent, No. 239,011, dated March 15, 1881, the complainant presents a combination-shuttle consisting of a shuttle-body for weaving wire, with a cop case or chamber to contain the wire, and swaging-rolls, around which the wire passes after leaving the cop and before leaving the shuttle, whereby the twists of the wire are swaged into its body and smooth weaving insured. So it will be seen that under the art patent, which is the first patent mentioned here, the complainant seeks to monopolize or control the means of swaging or straightening wire as it passes from the cop to the web, and that under the second patent named he seeks to control or monopolize the use of a combination-shuttle, which, it is said, effectually performs the work.

We are of opinion that the means of straightening or swaging wire, as a general proposition, are old and well known, and that it has been understood for a long time that wire having crooks or twists could be straightened either by a hammering process or by drawing the wire under tension around a rigid body or hard substance, like the horn of an anvil, for instance. It is probable that the boy is rare who has not in his play-days been confronted with the problem of straightening crooked or twisted wire, and it may be safely said that the problem was readily solved by holding one end of the wire in each hand and drawing it firmly around some hard substance, and it mattered not, except in degree, whether the substance was a fixed rounded or circulating surface. It is probably true that the molecular condition of crooked or twisted wire is in a measure changed when subjected under tension to any of the old and well-known processes of straightening, and it therefore follows that the complainant's first or "art patent," so called, should not, if sustained, be construed so broadly as to give a monopoly of all the means of straightening or swaging wire in the wire-weaving industry; and as we dispose of this case without passing upon the validity of the second patent, which is the patent covering the combination shuttle or device, we do not deem it necessary to pass upon the question whether such particular device accomplishes more or better results than the means involved in the older devices known and open to the art of weaving.

As has been said, the complainant's device covered by his shuttle-patent is the combination of a shuttle-body for weaving wire with a cop case or chamber to contain the wire and with swaging-rolls, around which the wire passes after leaving the cop and before leaving the shuttle. In this machine or combination-shuttle there are three rolls, which are designated as "swaging-rolls," and two other rolls, which are denominated as the usual "delivery-rolls." The wire, under the strain of weaving, passes around the three first named, and then around one or the other of the delivery-rolls to its place in the web. As the shuttle is passed from one side of the loom to the other the wire is drawn around the delivery-roll nearest to the point to which the shuttle is directed. The complainant does not claim that the two rolls called "delivery-rolls" are new or that they perform in this device any necessary swaging function, and, in fact, it is conceded that they were in use and known to the public as "delivery-rolls," both in wire and textile-fabric weaving, long before the complainant's alleged invention. The device known as the "Combe patent" was an English device invented in 1857, and was designed to be used in the textile-fabric industry. It possessed a semicircular friction block or post, which performed the double function of putting friction upon the weft-thread and of guiding the thread on its course to the loom. It also possessed a steel channel or groove on the side of the shuttle, through which the thread was drawn as it was delivered to its place in the web. While this device was limited in design and in use to weaving textile fabrics and had no reference whatever to the idea of swaging turns of twists from weft-wire threads in the wire-weaving industry, it unquestionably embodied the means of performing that function, perhaps not satisfactorily, but it possesses the means and will accomplish the work in a degree. It is urged by the learned counsel for the complainant that the problem of swaging turns of twists into wire thread was never presented in the textile-fabric industry during the life of the Combe patent. If this be so—

doubtless a patentee is entitled to every use of which his invention is susceptible, whether such use be known or unknown to him. (*Potts* v. *Creager*, 70 O. G., 494; 155 U. S., 597, 606; 15 Sup. Ct., 194;)

and if the Combe patent were in force the patentee would doubtless be entitled to control the use of his device in the wire-weaving as well as in the textile-fabric-weaving industry. Under the doctrine which gives to the patentee all the uses to which his invention is susceptible, whether known or unknown, it is difficult to see why the public should not be entitled to all the uses to which the means involved in devices covered by lapsed patents are susceptible or why a patentee who employs the old means, with improvements adapting the use to a new or non-analogous industry, should not be limited to a monopoly of the combination or improved machine. To say that one who discovers that old means will do a new work without any change may thereby monopolize the old means as applied to such new work, or, in other words, to say that because of such discovery others engaged in the wire-cloth industry shall not, in weaving, run a wire thread through the means used in the older industry would be carrying the discovery doctrine altogether too far.

On the view most favorable to the complainant all its alleged invention does is to adapt or apply old and

well-known means to a new use and new material, and if the question as to the validity of the patent were a question necessary to a decision of this case and if "the patent could be sustained at all," (*Brook* v. *Aston*, 27 Law J. Q. B., 145, 28 Law J. Q. B., 175, 176; *Potts* v. *Creager*, 70 O. G., 494, 155 U. S., 597, 606, 607, 15 Sup. Ct., 194; *Watson* v. *Stevens*, 60 O. G., 1884, 5 U. S. App., 101, 107, 2 C. C. A., 500, and 51 Fed. Rep., 757; *Pennsylvania R. R. Co.* v. *Locomotive Engine & Safety Truck Co.*, 27 O. G., 207, 110 U. S., 490, 494, 4 Sup. Ct., 220; *Brown* v. *Piper*, 10 O. G., 417, 91 U. S., 37; *Roberts* v. *Ryer*, 10 O. G., 204, 91 U. S., 150; *Atlantic Works* v. *Brady*, 23 O. G., 1330, 107 U. S., 192, 2 Sup. Ct., 225; *Tucker* v. *Spalding*, 1 O. G., 144, 13 Wall., 453, Rob. Pat., sec. 259 and note 1) "it would have to be restricted and confined to the specific combination described" in the specification and claims. (*Knapp* v. *Morss*, 65 O. G., 1593, 150 U. S., 221, 228, 14 Sup. Ct., 81; *Duff* v. *Pump Co.*, 23 O. G., 1622, 107 U. S., 636, 639, 2 Sup. Ct., 487; *Newton* v. *Furst & Bradley Co.*, 38 O. G., 104, 119 U. S., 373, 7 Sup. Ct., 369; *Bragg* v. *Fitch*, 39 O. G., 939, 121 U. S., 478, 484, 7 Sup. Ct., 978; *Dryfoos* v. *Wiese*, 42 O. G., 490, 124 U. S., 32, 37, 8 Sup. Ct., 354.) If, therefore, we were to assume in this case that the wire-weaving industry is non-analogous to the textile-fabric industry and that the complainant's combination was patentable as a combination of old means, with improvements adapting it to a new and non-analogous material and use, still the monopoly would be limited to the combination and would not extend to the old means employed in the new industry without invoking the aid of the improvements involved in the new combination or device, for which the complainant seeks protection.

The Tunstill patent of 1864 was a device for textile-weaving and employed a tubular gudgeon and a round roller as means for protecting weft-thread from becoming entangled as it passed from the cop, and the Bigelow patent of 1857 was designed as an improved device for use in weaving wire-cloth and employed a series of pins, which were designated as a "wire-straightener," through which the wire was drawn out from the bobbin between guide-rollers to the loom, and to the pins there was applied a spring to hold the pins—

in greater or less proximity, according as more or less pull is required to straighten the wire.

It is also claimed for the last-named device that—

two conforming friction-surfaces may be employed to straighten the wire, said surfaces being pressed together by a spring, and the wire drawn between them.

The Washburn patent of 1865 covers a wire-straightening machine with fixed points or rollers, whereby it is claimed that—

wire may be more readily and effectually straightened than by machines hitherto employed for this purpose,

and it sets forth that the wire is to be drawn between fixed points or rollers. Without pursuing the state of the art or older devices further, it may be observed that weavers of wire and textile cloths have variously employed friction posts or blocks, metal grooves, channels, and rollers in connection with the shuttle for the purpose of straightening textile and wire weft-thread. The defendant's alleged infringing shuttle is covered by Letters Patent No. 299,895. It possesses no swaging-rolls, but employs the delivery-rolls, which are old, combined with a metal friction post or block somewhat larger than that used in the Combe patent, around which the wire is paid out from the cop or spindle and passed through the delivery-rolls to the loom. As has been said, the delivery-rolls are old, and the friction post or block is old; and if there is, as claimed, peculiar virtue and novelty in the combination of the complainant's swaging-rolls with the delivery-rolls, which are old, then the defendant's device does not possess such virtue or novelty. It is sufficient for the purposes of this case to say that, if we were to assume that the complainant's combination presents a patentable device and a better shuttle than any other known in the art of wire-weaving, we should feel bound to construe the patent as not covering or controlling all means of swaging turns of twists into wire during the process of weaving. It follows, therefore, as the defendant's alleged patentable combination employs such means only for straightening or swaging wire as were old and well known, that the rights of the complainant are not infringed.

The decree of the circuit court is reversed and the case remanded to that court, with directions to dismiss the bill, with costs.

THE

OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 72.—No. 8. TUESDAY, AUGUST 20, 1895. PRICE—$5 per year.

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Names of Applicants.

When the full first name of the applicant does not appear either in his signature or in the preamble to the specification, the Examiner will, in his first official letter, require an amendment supplying the omission, and he will not pass the application to issue until the omission has been supplied, unless an affidavit shall have been filed setting forth that the full first name of the applicant is the one originally given by him.

Publishers' Catalogues.

This Office would be pleased to receive from manufacturers and publishers such catalogues, circulars, price-lists, or other advertisements relating to the sciences and mechanical arts as are published by them for gratuitous distribution; but notice is hereby given such manufacturers or dealers who feel disposed to send their publications that not less than three copies should be forwarded in order that the subjects may be properly indexed, classified, and subclassified in the Scientific Library for convenient and ready reference.

Oaths of Applicants in Foreign Countries.

It is hereby directed that oaths accompanying applications for patents made within the following-named foreign countries must be taken before a minister, chargé d'affaires, consul, or commercial agent holding commission under the Government of the United States:

Austria-Hungary.
Argentine Republic.
Belgium.
Brazil.
Costa Rica.
Denmark.
Haiti.
Honduras.
Italy.
Mexico.
Netherlands.
Norway.
Peru.
Portugal.
Russia.
San Salvador.
Servia.
Sweden.
Switzerland.

Applications filed in this Office presenting oaths not executed in compliance with this order will be treated as incomplete.

Withdrawal of Cases from Issue.

Hereafter all amendments proposed to allowed applications which involve a withdrawal from issue, and all petitions and requests relating thereto, shall be filed with the docket clerk, Mr. J. M. Emory, and transmitted by him to the Primary Examiner for report. If the Examiner shall report favorably to the admission of such amendment, the matter will be laid before the Commissioner for immediate determination. If the Examiner shall report unfavorably, the case will be docketed and will be heard and decided by the Commissioner in regular course, unless good reasons shall appear for immediate action.

The Official Gazette.

THE OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $10; single copies, 10 cents, if mailed to foreign countries 10 cents additional for postage; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Amendment to the Rules of Practice

The following regulations for the conduct of proceedings in the Patent Office are established:

65. An applicant will be considered to persist in his claim for a patent without altering his specification in case he fail to act in prosecution of the same for six months after the Office action thereon, and thereupon the Examiner will make a re-examination of the case.

134. In appealable cases in which no limit of appeal is fixed, no appeal will be entertained by any tribunal in the Office unless taken within six months from the action which puts the case in condition for appeal, unless it be shown to the satisfaction of the Commissioner that such delay was unavoidable.

68. In every case pending before the Office more than five years, in which the record raises the presumption that there have been intentional delays in prosecution, the Examiner may require the applicant to show cause why the case was not more rapidly prosecuted, and at the hearing thereon, or upon failure of the applicant to appear, the Examiner will determine, under all the circumstances of the case, whether there have been intentional and unreasonable delays in prosecution, and upon finding the fact to be so, he will reject the case for that reason. Present Rules 65, 69, and 134 are repealed, and present Rule 68 is renumbered 69.

The foregoing rules will be in effect on and after April 15, 1895, and will affect pending cases as though the last Office action were upon said date.

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below:

INDEX TO FRENCH PATENTS, 1791 to 1879, inclusive, (subject-matter,) one volume, 935 pages, bound in cloth $10 00
INDEX TO ITALIAN PATENTS, 1848 to May 1, 1882, (subject-matter,) one volume, 120 pages—
Bound half-turkey 2 50
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Paper covers 1 00

Issue of August 20, 1895.

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Trade-Marks	33—No. 26,954 to No. 26,985, inclusive.
Labels	None.
Prints	None.
Reissues	1—No. 11,505.
Total issue	485

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Italy	....	2	Total to citizens of foreign countries	50	4
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APPLICATIONS UNDER EXAMINATION.

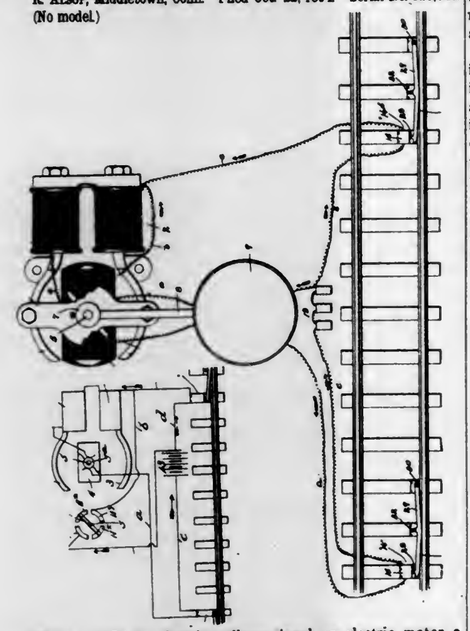
Condition at Close of Business August 13, 1895.

Division No.	Subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears.—Under one month.			
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9	Hydraulics, Fire-Extinguishers, etc.	July 1	July 9	351
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PATENTS

GRANTED AUGUST 20, 1895.

544,647. AUTOMATIC ELECTRICAL RAILWAY-SIGNAL. CHAS. R. ALSOP, Middletown, Conn. Filed Oct. 22, 1894. Serial No. 526,648. (No model.)



Claim.—1. In an electric railway signal, an electric motor, a swinging signal target attached to the armature shaft of said motor, suitably arranged track circuit closers, and a switch device included in the circuit of the motor windings and said circuit closers to provide for automatically closing the circuit through the motor when the target reaches an elevated position, substantially as set forth.

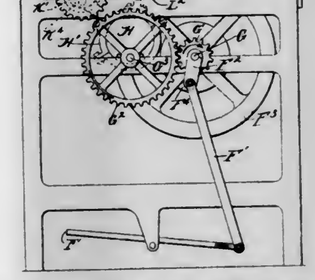
2. In an electric railway signal, an electric motor, a swinging target attached to the armature shaft of the motor, a series of contact plates fitted to one of the bearing plates for the armature shaft, one pair of said contact plates having circuit-wire connections therewith, suitably arranged track circuit closers included in circuits with the motor windings and with said contact plates having the wire connections therewith, and a revolving switch bar attached to the armature shaft of the motor and working against said contact plates, said switch bar being adapted to automatically close the circuit through the motor when the target reaches its elevated position, substantially as set forth.

3. In an electric railway signal, an electric motor, a swinging target attached to the armature shaft of the motor, separate pairs of circularly arranged switch contact plates fitted to one of the bearing plates of the armature shaft, certain of said switch plates being included directly in the circuit of the motor windings, a revolving switch bar attached to the motor shaft and working against said switch contact plates, suitably arranged normally open and normally closed track circuit closers, a battery or other source of electrical energy, and suitable circuit connections included in a circuit with the normally closed circuit closer and the motor windings, substantially as set forth.

4. In an electric railway signal, the track circuit closer consisting of a pair of normally separated contact plates or springs included in an electrical circuit, a suitably arranged pivoted contact arm adapted to work between said plates or springs, a closed cushion cylinder, a spring pressed valved cushion piston working within said cylinder and having a reciprocating piston stem connected with said pivoted contact arm, and a spring actuated pivoted track lever adapted to be arranged adjacent to the track rail and adapted to have its moving end work against the outer end of said piston stem, substantially as set forth.

5. In an electric railway signal, the track circuit closer consisting of a pair of normally separated contact plates or springs included in an electrical circuit, a suitably arranged pivoted contact arm adapted to work between said plates or springs, a closed cushion cylinder adapted to contain liquid or air, a piston working within the cylinder and provided with a series of vent openings or holes and a piston stem working outside of the cylinder and connected with said pivoted contact arm, a spring arranged at one side of said piston, a flexible valve plate supported to work at the opposite side of the piston and provided with a series of small vent holes or perforations, and a spring actuated pivoted track lever arranged to work against the outer end of said piston stem, substantially as set forth.

544,648. DUPLICATING-MACHINE. NELLIE P. ANDERSON, Chicago, Ill. Filed Apr. 6, 1895. Serial No. 544,724. (No model.)



Claim.—1. In a stencil duplicating machine, the combination with a plate upon which the sheet to be printed is laid, of a frame carrying the stencil sheet, means for raising and lowering said frame, an ink and presser roller carrying a pinion, a lever pivoted at one end and having teeth upon its upper and lower edges to be engaged by said pinion and spring pressed at the opposite end, and means for passing said pinion beneath said lever on its forward stroke to press the roller against the stencil sheet and for causing said roller to ride upon the lever on its backward stroke to prevent the blurring of the printed sheet; substantially as described.

2. In a stencil duplicating machine, the combination with the ink and presser roller carrying a pinion, of the lever pivoted at one end and spring-pressed at the opposite end and provided upon its upper edge with teeth for the engagement of said pinion on the return stroke; substantially as described.

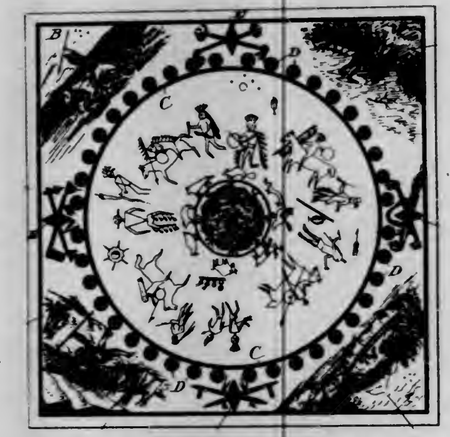
3. In a stencil duplicating machine, the combination with the ink and presser roller carrying a pinion, of the lever pivoted at one end and spring pressed at the opposite end, provided on its edges with teeth for the engagement of said pinion; substantially as described.

4. In a stencil duplicating machine, the combination with the ink and presser roller, of the arms L, one at each end of the roller and carrying slots with which pins on the roller are adapted to engage, the driven gear wheel K carrying the crank pin K^3, and the connecting rod K^4 connecting said crank pin with the ends of said levers L,

and means for periodically raising said gear wheel K out of engagement with the driving gear, substantially as described.

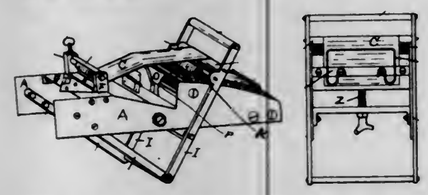
5. The combination with the ink roller of the pivoted lever L, the gear wheel K mounted upon shaft K' and connected with lever L by means of rod K^2, an arm O adapted to be periodically raised to move gear wheel K out of engagement with the driving gear, substantially as described.

544,649. GAME APPARATUS. ANTONIO APACHE, Chicago, Ill. Filed Feb. 20, 1894. Renewed Jan. 26, 1895. Serial No. 536,382. (No model.)



Claim.—A game apparatus comprising a board having a series of stations arranged in a circle in a step by step relation to each other, provided with one or more points of entry arranged outside of the series circle, lay figures for all of the stations on such series circle, lay figures for the point or points of entry for taking up or jumping the figures on a series station, and a set of primitive dice for governing the moves of the game, substantially as described.

544,650. CIGAR-BUNCHING MACHINE. FREDERICK H. APSEY and THOMAS E. BELL, Binghamton, N. Y. Filed Sept. 14, 1894. Serial No. 523,069. (No model.)



Claim.—1. In a cigar bunching machine, the automatic swiveled shaper composed of the base (D) and having two vertical standards (F) (F), the apron roller (E) journaled in the standards, the roller adjusting screw (N), the base being swiveled to the cross bar of the frame (A) at the center of the base so as to be movable to the right or left laterally by the movement of the apron, in combination with the frame (A), the braces (H), the pivoted handle standards (I), the rollers (L) and (M), the handle (J), the rolling table (B), the apron (C), and the spring catch (X); as described and for the purpose specified.

2. In a cigar bunching machine, the automatic bunch cup (O) secured at its lower edge by the spring hinge (S) to the rolling table (B), and the frame (P) carried by the cup and made to engage the roller (M) as it is pressed backward, in combination with the frame (A), the braces (H), the handle standards (I), the rollers (L) and (M), the handle (J), the table (B), the apron (C), and the spring catch (X): as described and for the purpose specified.

3. In a cigar bunching machine, the automatic swiveled shaper secured movably by its base (D) to the frame of the machine, and whose roller (E) journaled in the standards (F) of said base, holds the rear end of the apron (C); in combination with the automatic bunch cup (O) secured by the spring catch (S) to the rear of the rolling table (B), and having the frame (P) engaging the roller (M); the frame (A), the braces (H), the handle standards (I), the rollers (L) and (M), the handle (J), the rolling table (B), the apron (C), the thumb screw (Z), and the spring catch (X); as described and for the purpose specified.

544,651. MAIL-POUCH. WILLIAM H. ASH, Ashland, Ohio, assignor of one-half to Buckner F. Freeland, Middleburg, Ind. Filed Jan. 21, 1895. Serial No. 535,668. (No model.)



Claim.—1. In a mail pouch, the combination of the flap of the bag; the staples, E, thereon; the double chain composed of the sides, C; the staples, B, to retain the said chain in position on the bag; and staples, I, over each part, C, to retain them in position; the tongue, D, pivoted between the parts, C, of the chain; a point portion, D', hinged to the main part of the tongue, D, to be inserted through the staples, E; the hasp, F, and staple, F', to receive the lock to lock the hasp and secure the bag, as specified.

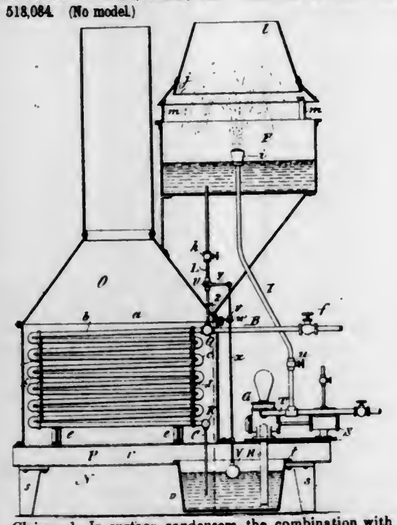
2. In a mail pouch, the combination of the flap of the bag; of the staples, E, thereon; the double chain composed of the sides, C; the staples, B, to retain said chain in position on the bag; and staples, I, over each part, C, to retain them in position; the tongue, D, pivoted between the part C, of the chain to be inserted through the staples, E; the hasp, F; and staple, F', to receive the lock to lock the hasp and secure the bag, as specified.

3. In a mail pouch, the combination of the flap of the bag; staples, E, thereon; a double chain composed of the sides, C; staples over said chain to retain it in position; tongues, D, pivoted between the sides, C, of said chain adapted to be inserted through the staples, E; a hasp and lock to lock the chain in position and secure the bag, as specified.

4. In a mail pouch, the combination of the flap of the bag; staples, E, thereon; a double chain composed of sides, C; suitable guides for said chain; tongues, D, pivoted between the sides of said chain and adapted to be inserted through the staples, E; and a suitable lock for securing the said chain in position to secure the bag, as specified.

5. In a mail pouch, the fastening composed of the staples, E, in combination with a chain bearing tongues corresponding to each of said staples, E, and adapted to be inserted therethrough; hinged point portions to the tongues on said chain; and suitable guides to guide the chain and tongues; and a lock to lock the same, as specified.

544,652. EXHAUST-STEAM CONDENSER. JOSEPH A. BACHMAN and ADOLF C. GOETH, Austin, Tex. Filed July 20, 1894. Serial No. 518,084. (No model.)



Claim.—1. In surface condensers, the combination with a condensing surface consisting of a tubular coil, having an inlet for exhaust steam at one end and an outlet for water of condensation at its other end, of a casing inclosing said coil and having an air inlet at its end adjacent to the outlet of said coil, and an air outlet at its end adjacent to the steam inlet to said coil, whereby a natural current of air is permitted through said casing about said coil, and the cool entering air first contacts with the coolest portion of said coil, and successively with hotter portions thereof, and finally near said outlet with the hottest portion of said coil, whereby an active circulation of air is maintained through said casing without the employment of air forcing devices, and the air current serves to cool the condensing surface a receptacle receiving the water of condensation from said surface, and a circulating system comprising said coil, said receptacle, and a connection between the latter and the inlet end of said coil taking such water from said receptacle and feeding it through said coil.

2. In a surface condenser, a condensing coil, an inlet for exhaust steam thereto, and a discharge for water of condensation therefrom, in combination with a water circulating system applying cool water to the top of said coil, and comprising a receptacle beneath said coil receiving the water thus applied thereto, a tank separate from said receptacle and receiving water therefrom, cooling apparatus between said receptacle and tank cooling the water in its passage from the former to the latter, and a discharge taking the cooled water from said tank and applying it to said coil, whereby as such water leaves the coil it is collected, cooled, again collected, and again applied to the coil.

3. In a surface condenser, a condensing coil, an inlet for exhaust steam thereto, and a discharge for water of condensation therefrom, in combination with a receptacle receiving the water of condensation, a circulating system communicating with said receptacle and with said coil, and taking water from said receptacle and supplying it to said coil, and cooling apparatus in said system between and separate from and externally of both said receptacle and coil cooling the water taken from said receptacle before it is supplied to said coil, said cooling apparatus consisting of a spraying device spraying the water in the air after it leaves said receptacle and before it is supplied to said coil, substantially as and for the purpose set forth.

4. In a surface condenser, a condensing coil having an inlet for exhaust steam and a discharge for water of condensation, and a tank receiving said discharge, in combination with a second tank above said coil, a pump taking water from said first mentioned tank and delivering it to said second tank and a boiler and a pipe leading from said second tank to the steam inlet of said coil and supplying a stream of water of condensation within the latter, substantially as and for the purpose set forth.

5. In a surface condenser, a condensing coil having an inlet for exhaust steam and a discharge for water of condensation, in combination with a pump receiving water of condensation from said discharge, a water cooling apparatus receiving water from said pump, a tank containing the water cooled by said apparatus, and a pipe leading from said tank to the steam inlet of said coil and supplying the cooled water of condensation to the latter, substantially as and for the purpose set forth.

6. In a surface condenser, a condensing coil having an inlet for exhaust steam and a discharge for water of condensation, in combination with a water circulating system for supplying cool water to said coil, said system comprising a collecting tank beneath the coil, a pump taking water from said tank and elevating it above the coil, a water cooling apparatus separate from said receptacle and above the latter and said coil, receiving and cooling the water fed by said pump, and a pipe receiving the cooled water from said apparatus and supplying it to said coil at the top of the latter.

7. In a surface condenser, a condensing coil having an inlet for exhaust steam and a discharge for water of condensation, in combination with a water circulating system for circulating water to cool said coil, said system comprising a pump having a discharge pipe, a spraying nozzle at the discharge end of said pipe externally of said coil spraying the discharge therefrom into the outer air, a tank receiving the discharged spray, and a pipe leading from said tank and taking the water therefrom to said coil.

8. In a surface condenser, a condensing coil having an inlet for exhaust steam and a discharge for water of condensation, in combination with a tank D beneath said coil receiving the discharge therefrom, a tank F above said coil, a pump G taking water from said tank D leading to said tank J and having a spraying nozzle i therein through which the discharge from the pump is delivered above said tank J in the form of spray, a shield K above said tank J, a pipe L leading from said tank J to the steam inlet of said coil, and a feed pipe E leading from said tank D to a steam boiler, substantially as and for the purpose set forth.

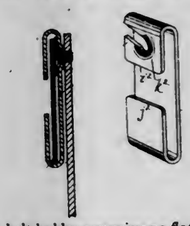
9. In a surface condenser, a sinuous condensing coil having an inlet for exhaust steam at top and a discharge for water of condensation at bottom, in combination with an inclosing casing M surrounding said coil, open at bottom beneath said coil, and having an elongated vertical chimney at top above said coil, said coil and casing disposed to admit ingress of air to the casing beneath the coil and egress of air from the casing above the coil, whereby a natural draft through the casing is induced by the heat radiated from the coil, and such draft serves to cool the latter and a tank D below and receiving the water from said coil, a tank J above said coil, a pump having a suction communicating with said tank D, and a discharge into said tank J, and a valved pipe L leading from said tank J into said coil, whereby a graduated stream of water may be circulated through said coil with the steam in opposite direction to said draft, substantially as and for the purpose set forth.

10. In a condenser, a condensing coil having an inlet for exhaust steam and a discharge for water of condensation, in combination with the water circulating system applying water to said coil and comprising a collecting tank beneath the coil, a discharge for the water above the coil, and a pump taking water from said tank to said discharge, and an adjustable controller in said system controlling the flow through said discharge.

11. In a condenser, a condensing coil, in combination with a water circulating system comprising a collecting tank beneath the coil, a discharge applying water at the top of the coil, and a pump taking water from said tank and supplying it to said discharge, and a regulator controlling the flow of water through said system and operating automatically in accordance with the accumulation of water in said tank, substantially as and for the purpose set forth.

12. In a surface condenser, a condensing coil having an inlet for exhaust steam and a discharge for water of condensation, in combination with a water or circulating system for circulating water to cool said coil, said system comprising a pump having two discharge pipes, one of said pipes leading to a boiler, a spraying nozzle at the discharge end of the other of said pipes spraying the discharge therefrom into the air, a tank receiving the discharged spray, and a pipe leading from said tank and taking the water therefrom to said coil.

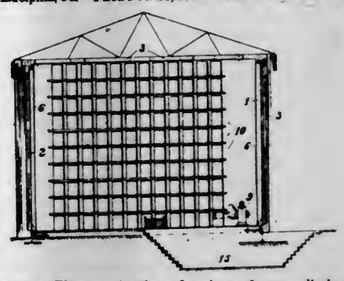
544,653. BICYCLE BELT-HOLDER. WILLIAM W. BATCHELDER, Boston, Mass., assignor of one-half to Ephraim B. Wood, same place. Filed Oct. 1, 1894. Serial No. 524,575. (No model.)



Claim.—1. A belt-holder comprising a flat band of metal having its ends bent toward each other over the body of said band leaving a space between, and provided with a slot opening through the edge of said band, said slot terminating in a countersunk opening at its inner end fitted to receive the under face of a button in such manner that the outer face of the button may be engaged by the belt when adjusted in the holder substantially as and for the purpose set forth.

2. As an improved article of manufacture the herein described belt-holder comprising the metal band having its ends, *i*, *j*, folded leaving the space, *l*, the body of said band having the upwardly inclined slot, *g*, disposed opposite one of said ends and terminating in the countersunk opening, *k*, substantially as specified.

544,654. PLANT FOR GENERATING ELECTRICITY. GEORGE R. BOWEN, San Antonio, Tex., assignor of one-half to William Warren Gibbs, Philadelphia, Pa. Filed Feb. 21, 1895. Serial No. 539,204. (No model.)



Claim.—1. The combination of, an imperforate cylinder rotatable around an upright axis and provided with vertical tangentially disposed blades, a series of upright tangentially disposed guides or vanes fixed in the ground or to a base and arranged around said blades or paddles, and a roof overlying said guides or vanes and blades or paddles, substantially as described.

2. The combination of, an imperforate cylinder rotatable around an upright axis and provided with vertical tangentially disposed blades, a series of upright tangentially disposed guides or vanes fixed in the ground or to a base and arranged around said blades or paddles, a roof overlying said guides or vanes and blades or paddles, electrical apparatus within said cylinder, and means for imparting motion from said cylinder to said electrical apparatus substantially as described.

544,655. COMBINED FEED RACK AND TROUGH. CHARLES J. BOWLES, Ada, Ohio. Filed Nov. 21, 1894. Serial No. 529,468.



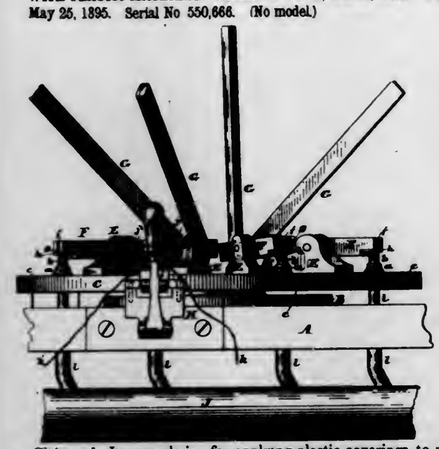
Claim.—1. The combination with a rack for long feed having upwardly flared or divergent sides, of vertically adjustable transverse bars arranged at the ends of the rack and of greater length than the width of the rack at its top, means for temporarily securing said bars at the desired adjustment, troughs arranged parallel with the longitudinal center of the rack upon opposite sides thereof and removably secured at their extremities to the laterally projecting portions of said transverse bars, and means for adjusting the troughs upon the transverse bars toward and from the longitudinal center of the rack, whereby the inner sides of the troughs may be arranged at the desired proximity to the inclined sides of the rack at any adjustment of the transverse bars, substantially as specified.

2. The combination with a rack for long feed, of transverse-bars arranged at opposite ends of the rack, means for adjusting said bars vertically, troughs for water or short feed arranged parallel with and upon opposite sides of the rack, and bolts or pins for securing the ends of said troughs to the transverse-bars, said bolts or pins being adapted to engage perforations in the bars and a series of said perforations being provided whereby the troughs may be adjusted horizontally toward and from the rack, substantially as specified.

3. The combination of connected end frames having base and top bars and connecting uprights, said uprights being secured to the outer surfaces of the base and top bars, X-standards secured to the inner surfaces of the base and top bars of the frames and supporting a rack for long feed, said X-standards being thereby spaced from the planes of the uprights of the frames, transverse bars arranged in the intervals between the X-standards and the uprights of the frames, bolts for securing said transverse bars to the uprights and each bolt being adapted to engage one of a plurality of perforations in each upright, whereby said transverse bars may be vertically adjusted, troughs for water or short feed arranged parallel with the rack and supported at their ends by the transverse bars whereby the troughs may be adjusted vertically with the transverse bars, and means for adjusting the troughs horizontally toward and from the rack upon the transverse bars, substantially as specified.

4. The combination in a rack, of X-standards, horizontal slats secured permanently to the outer sides of said standards above their points of intersection and arranged at intervals to form intervening parallel sided spaces, braces 12 secured to the inner surfaces of the said fixed slats, filling slats corresponding in width with the intervals between the fixed slats and adapted to be fitted therein with their inner surfaces in contact with the outer surfaces of said braces, whereby the braces form stops to limit the insertion of the filling slats, turn-buttons pivotally mounted upon the outer surfaces of the fixed slats and adapted to engage the filling slats to hold them in said positions, transverse bars arranged at the ends of the rack, means for adjusting said bars vertically, side troughs arranged parallel with and upon opposite sides of the rack and supported by said transverse bars, and means for adjusting said troughs horizontally upon the transverse bars to arrange them at the desired distances from the sides of the rack, whereby when the filling slats are removed the troughs may be arranged under the outwardly divergent sides of the rack to catch short feed dropping through the intervals, substantially as specified.

544,656. MACHINE FOR COVERING METALLIC ARTICLES WITH PLASTIC MATERIAL. MELLEN N. BRAY, Boston, Mass. Filed May 25, 1895. Serial No. 550,666. (No model.)



Claim.—1. In a machine for applying plastic coverings to metallic articles, the combination of an intermittently revoluble bed plate; a plurality of molding dies and pressing mechanisms carried by said bed plate; a pair of contact fingers insulated from each other and movable to and from a die to make and break a circuit; a source of electric energy; suitable conducting wires connecting the opposite poles of said source of electric energy with said spring fingers; and means of applying blasts of cold air to a plurality of said dies at the same time

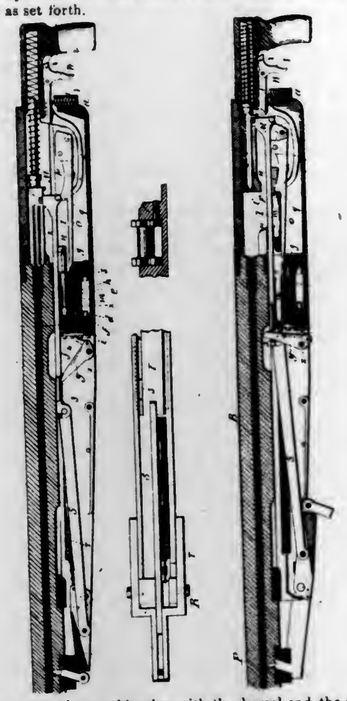
2. In a machine for applying plastic coverings to metallic articles, the combination of an intermittently revoluble bed plate provided with a plurality of notches in its periphery; a plurality of molding dies and pressing mechanisms carried by said bed plate; a spring stop to engage said notches successively; a pair of contact fingers insulated from each other and movable to and from a die to make or break a circuit, a source of electric energy; and suitable conducting wires connecting the opposite poles of said source of electric energy with said spring fingers.

3. In a machine for applying plastic coverings to metallic articles, the combination of an intermittently revoluble bed plate provided with a plurality of notches or teeth in its periphery; a spring stop constructed and arranged to engage said notches or teeth to register said bed plate in position; a plurality of dies and pressing mechanisms mounted upon said bed-plate at uniform intervals; the fixed stand H; the reciprocating block *j*; the lever I connected to said block; the spring fingers j^2 and j^3; and means for passing a current of electricity through said fingers and a die when the circuit is closed.

4. The combination of the bed-plate C; the die *a*, *b*; the bar E slotted at its front end and provided with the plate A secured to said bar below the slot *f* the cam lever G pivoted to the rear end of said bar E; the fixed stand H; the reciprocating block *j*; the spring fingers j^2 and j^3 secured to but insulated from said block and each other; means for moving said block and fingers toward and from said die; and means for passing a current of electricity through said fingers and the die when said fingers engage said die.

544,657. GAS-OPERATED MACHINE-GUN. JOHN M. BROWNING, Ogden, Utah. Filed Nov. 7, 1892. Serial No. 451,181. (No model.)

Claim.—1. In a gun, the combination with a barrel opening at the rear end into the receiver, of a breech-piece adapted for longitudinal movement backward and forward in said receiver and adapted to swing into locked position at the end of its forward movement, a locking device and a guide-way for said breech-piece, a reciprocating slide and a stud and groove connection between said slide and breech-piece, said groove having a longitudinal portion and a portion at an angle thereto, whereby said slide moves farther forward after swinging the breech-piece into fully locked position and moves a short distance rearward before it commences to swing the breech-piece out of fully locked position, a firing mechanism, and a firing finger arranged to be actuated by the slide for throwing the firing mechanism into and out of locked position, whereby said firing mechanism is in operative position only when the breech-piece is in fully locked position, substantially as set forth.



2. In a gun, the combination with the barrel and the receiver thereof, of a longitudinally and laterally movable breech-piece, located in the said receiver, which receiver is constructed with an abutment for engagement with the rear end of the said breech-piece when the same is in its closed position, and said breech-piece being adapted to be moved laterally in front of said abutment, a longitudinally movable slide connected at its rear end with said breech-piece, which it operates to move both longitudinally and laterally, a longitudinally movable hammer located in the rear of the breech-piece, a trigger located below the hammer and a sear pivotally attached to the trigger forward of the pivot thereof and adapted to engage with the hammer when the same is in its cocked position, and constructed with a firing finger which is engaged by the slide when the same is in its forward position, whereby the sear is operated, substantially as set forth.

3. In a gun having the barrel opening into the receiver at the rear, the combination therewith of a longitudinally reciprocating breech-piece, a longitudinally reciprocating slide below the barrel and extending rearward below the breech-piece, and adapted to impart the reciprocating movement to the breech-piece, a carrier hung upon a pivot in the receiver below said slide, and extending from its pivot forward, adapted to receive a cartridge from the source of supply, the carrier extending in rear of its pivot, and at its rear end provided with a spring-dog hung upon a pivot in the carrier so as to swing in a vertical plane, the carrier constructed with a stop to limit the forward movement of said dog, the said slide constructed with a projection adapted to engage said dog as the slide approaches its extreme rear movement, and to turn the dog so as to escape therefrom, the spring of the dog serving to return the said dog forward of the projection on the slide, substantially as described, and whereby as the slide commences its return or closing movement, the said projection will engage said dog from the rear and raise the carrier.

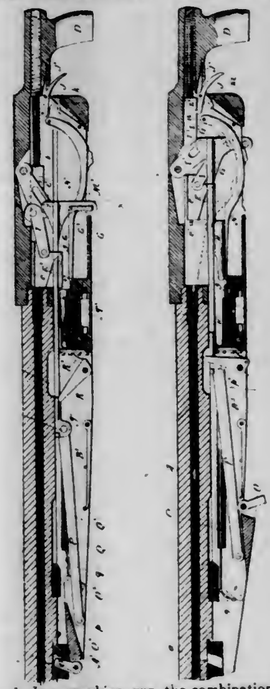
4. In a gun, the combination with the barrel and receiver thereof, of a longitudinally movable breech-piece, a longitudinally movable slide connected therewith for operating the same, a carrier located within the receiver below the breech-piece, a feed-wheel located forward of the carrier, a feed hook attached to the slide at a point to the rear of the said wheel, and in position to engage with the heads of the cartridges when the slide is moved to the limit of its forward movement, and devices located in front of the feed-wheel for operating the same, and constructed to be actuated by the slide, substantially as set forth.

5. In a gun, the combination with the barrel and the receiver thereof, of a longitudinally movable breech-piece, a longitudinally movable slide connected with the said breech-piece and operating the same, a carrier located below the breech-piece and adapted to have its forward end lifted into the path thereof, a feed-wheel located forward of the carrier, a feed hook attached to the slide at a point to the rear of the said feed-wheel and in position to engage the heads of cartridges carried thereby when the slide is at the limit of its forward movement, an operating lever located in front of the feed-wheel, and pivoted at its lower end to swing in a vertical plane, its upper end being adapted to be engaged by the forward end of the slide, and a pawl attached to the lower end of the said lever in the rear of the pivot thereof, and adapted to engage with the forward end of the feed-wheel which it operates to turn intermittently, substantially as set forth.

6. In a gun having the barrel opening at the rear into the receiver, the combination therewith of a longitudinally reciprocating breech-piece, the breech-piece provided with an extracting-hook, and an ejector-block arranged in the receiver opposite the extracting-hook of the breech-piece, the said ejector-block constructed on its face with a series of teeth, the said teeth standing in the path of the head of the shell while in the grasp of the extractor, substantially as and for the purpose described.

7. In a gun, the combination with the barrel thereof, of a receiver constructed with an interior vertical passage contracted at its forward end by inwardly projecting shoulders, having the upper portions of their rear ends beveled or inclined, a longitudinally movable breech-piece, a carrier pivoted by its rear end below the same so as to move in a vertical plane, and adapted at its forward end to pass between the said shoulders, and means for feeding cartridges to the said carrier and lifting the same, substantially as set forth, and whereby the said shoulders operate to lift the rear end of the cartridges into line with the bore of the gun as they are moved forward off the carrier by the forward movement of the breech-piece.

544,658. GAS-OPERATED MACHINE-GUN. JOHN M. BROWNING, Ogden, Utah. Filed Mar. 15, 1893. Serial No. 466,029. (No model.)



Claim.—1. In a machine gun, the combination with the barrel and the receiver thereof, of a hammer, means for cocking the same, a trigger having its forward end bifurcated and adapted to engage with the hammer, a sear located in the bifurcation of the trigger and having a downwardly projecting operating finger, a firing-lever engaging with the said finger of the sear to operate the same, and means for operating the said firing-lever, substantially as described.

2. In a machine gun, the combination with the barrel and the receiver thereof, of an operating-slide carrying a movable pin, a spring

for yieldingly holding the same in place, and a pivotal carrier provided with a lug constructed at its forward end with a bevel, and whereby the said pin is pushed aside by the lug when the slide is moved back, but compels the lug to ride over it and raise the carrier when the slide is moved forward substantially as and for the purpose set forth.

3. In a machine gun, the combination with the barrel and the receiver thereof, of a hammer, means for cocking the same, a trigger, a sear having a depending operating-finger, an operating-slide and a pivotal firing-lever having its rear arm adapted to engage with the said finger to disengage the sear from the hammer, and having its forward arm adapted to engage with the slide when the same is moved forward so as to be elevated thereby, substantially as set forth.

4. In a machine gun, the combination with the barrel and the receiver thereof, of a hammer, means for cocking the same, a trigger, a sear having a depending operating-finger, an operating-slide, and a pivotal firing-lever having its rear end adapted to engage with the said finger to depress the sear, and having its forward end turned down to be engaged by the slide, and elevated when the same is moved forward, substantially as described.

5. In a machine gun, the combination with the barrel and the receiver thereof, of a hammer, a trigger, a sear having a depending operating-finger, a breech-block, a pivotal carrier, a pivotal firing-lever engaging with the sear to disengage the same from the hammer, and an operating-slide constructed to operate both the firing-lever and the carrier when it is moved forward, substantially as described.

6. In a machine gun, the combination with the barrel and the receiver thereof, of a breech-block, a hammer, an operating-slide, connection between the said slide and the breech-block, a movable stud located in the slide, a spring for yieldingly holding the said stud in place, a trigger and a sear, both adapted to have corresponding engagement with the hammer, and the sear having a depending operating finger, a pivotal carrier adapted to be engaged and lifted by the said movable stud in the forward movement of the slide, and a firing-lever adapted at its rear end to engage with the operating finger of the sear, and to be engaged at its forward end by the said stud in the forward movement of the slide, substantially as described, and whereby the said stud in the forward movement of the slide, lifts the carrier and operates the firing-lever to disengage the sear from the hammer.

7. In a machine-gun, the combination with the barrel and the receiver thereof, of a breech-block, a longitudinally movable hammer located in the rear thereof, an operating slide, links connecting the said block and the rear end of the slide, and located between the hammer and the block and above the slide, and a carrier pivoted in the rear end of the receiver below the said slide and links, the said slide being constructed to permit the forward end of the carrier to be lifted up through it into range with the gun-barrel, substantially as set forth.

8. In a machine-gun, the combination with the barrel and receiver thereof, of a longitudinally movable hammer, a breech-block, an operating slide, a primary link pivoted at its forward end to the rear end of the block, a secondary link pivoted at its rear end in the receiver at a point above the hammer, pivotally connected at its forward end with the rear end of the primary link, and constructed with an elongated slot, and connection between the rear end of the slide and the said secondary link through the slot therein, substantially as described.

9. In a machine gun, the combination with the barrel and the receiver thereof, of a breech-block, an operating-slide, links connecting the said block and slide, whereby the former is reciprocated back and forth in the receiver, and a hammer constructed and arranged to be engaged by one of the said links as the operating slide is moved backward, and forced back into its cocked position, substantially as described.

10. In a machine gun, the combination with the barrel and the receiver thereof, of a breech-block, a firing-pin located therein and emerging from its rear end at one side of the center thereof, a hammer having its forward arm located to one side of its rear arm in position to engage with the said rear end of the firing-pin, and means for operating the breech-block, substantially as described.

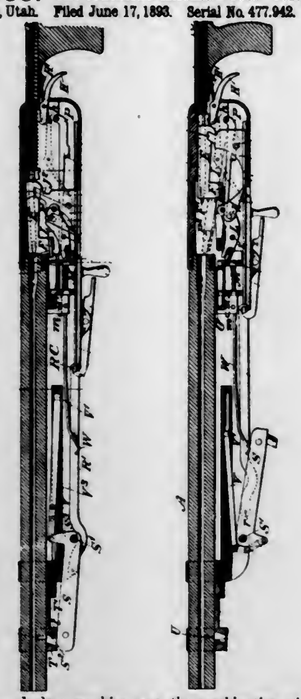
11. In a machine gun, the combination with the barrel and the receiver thereof, of a breech-block, means for operating the same, a hammer having a forward and a rear arm located out of line with each other, and a head between the said arms, a sear and a trigger constructed for direct engagement with the said head of the hammer, and a firing-pin located in the breech block in position to be engaged by the offsetting forward arm of the hammer, substantially as described.

12. In a machine-gun, the combination with the barrel and the receiver thereof, of a breech-block, a longitudinally movable hammer, a carrier pivoted at the rear end, an operating slide furnished at its upper end with two inwardly projecting studs located above the forward end of the carrier, and constructed to permit the same to be lifted up through it into range with the gun-barrel, a primary link pivoted at its forward end to the rear end of the breech block, a secondary link pivoted in the receiver at a point above the hammer, pivotally connected at its forward end with the rear end of the primary link, and constructed in its opposite faces with two corresponding elongated slots which receive the inwardly projecting studs of the slide, substantially as set forth.

13. In a machine gun, the combination with the barrel of a reciprocating breech-block, a slide actuating the breech block, a hammer, a trigger engaging said hammer when the hammer is in cocked position, a sear normally held in position to prevent the forward movement of the hammer, and a firing lever engaging with said sear and also engaging with the slide, whereby said slide in extreme forward position causes the firing lever to actuate the sear to release the hammer, substantially as set forth.

14. In a machine gun, the combination with the barrel and receiver, of a breech block, a slide actuating the breech block, a hammer, a trigger engaging said hammer when the hammer is in cocked position, a sear normally held in position to engage said hammer and prevent the forward movement thereof, a firing projection on the slide, and a firing lever medially pivoted at the side of the receiver, said lever at its rear end engaging said sear and at its forward end engaging with said firing projection of the slide, substantially as set forth.

544,659. GAS-OPERATED MACHINE-GUN. JOHN M. BROWNING, Ogden, Utah. Filed June 17, 1893. Serial No. 477,942. (No model.)



Claim.—1. In a machine gun, the combination with the barrel and the receiver thereof, of a longitudinally and vertically movable breech-block having an inclined slot formed in the rear end of its lower edge, a slide having an inclined finger adapted to enter the said notch for reciprocating the block and raising the rear end of the same into its locked position, and drawing it down out of such position, cartridge feeding mechanism, automatic operating mechanism constructed to be operated by the gases of explosion, and connections between the said operating mechanism and the breech-block and feeding mechanism, substantially as described.

2. In a machine gun, the combination with the barrel and receiver thereof, of a breech-block, cartridge feeding mechanism, a slide, a primary feed-lever pivoted in the frame, and carrying a spring-actuated dog which engages with the feeding mechanism, a secondary feed-lever connected with the primary lever and also pivoted in the frame and entering an opening in the slide for operation thereby, and automatic operating mechanism constructed to be operated by the gases of explosion, and connected with the slide which slide also operates the breech block, substantially as described.

3. In a machine gun, the combination with the barrel and frame, of a breech-block, cartridge feeding mechanism, a slide operating said block and mechanism, and a gas operated device, a rod extending from the gas operated device to the forward end of the slide, and a hand lever or latch connecting the slide and rod and adapted to be operated at will to connect or disconnect the breech mechanism and gas operated device, and guides for said rod whereby said rod when disconnected is held in the path of said slide, substantially as set forth.

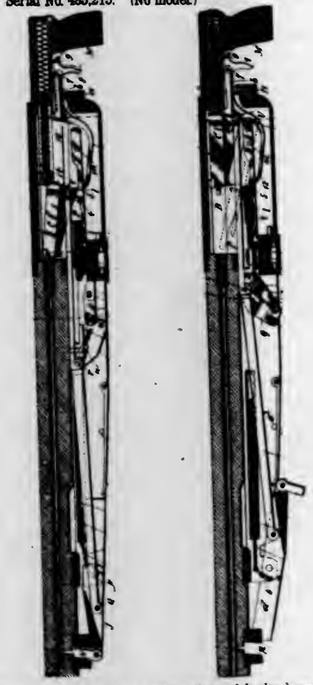
4. In a machine gun the combination with the barrel and the receiver thereof, of a breech-block, cartridge feeding mechanism, a slide connected with the said block and mechanism, automatic operating mechanism constructed to be actuated by the gases of explosion, and a hand lever or latch for connecting the slide and operating mechanism, whereby the said slide and mechanism may be readily disconnected, substantially as described.

5. In a machine gun, the combination with the barrel and frame, of a breech block, cartridge feeding mechanism, a longitudinally moving slide operating the said block and mechanism, a gas operated lever, a rod extending therefrom to the forward end of the slide, said slide having an open bearing at said forward end and said rod having a cross pin to enter said open bearing, and guides in the frame for said cross pin, and a spring latch pivoted upon said slide and having a hook fitting over said pin of the rod when said pin is within the open bearing of the slide, whereby said slide and rod may be connected or disconnected at will, substantially as set forth.

6. In a machine gun, the combination with a barrel provided with a radial gas opening, of a receiver, a frame connected with the receiver, a housing encircling the barrel and connected with the said frame, and provided with an opening aligned with the said gas opening, an operating lever pivotally attached to the frame, and provided with a pin which enters the opening in the housing, a spring connected with the said lever for restoring it to its normal position, a breech-block, cartridge feeding and firing mechanisms, and connection between the said operating lever and the said block and mechanisms, whereby the lengthening of the gun barrel as it heats does not change the position of the housing with reference to the operating lever, substantially as described.

7. In a machine gun, the combination with the operating lever thereof, of two spiral springs and slotted tubes inclosing the same, a cross bar for compressing said springs, said cross bar being located at the rear ends of springs and working in the slots of the tubes, and links connected to said cross bar between said springs and also connected to the operating lever, substantially as set forth.

544,660. GAS-OPERATED BREECH-LOADING GUN. JOHN M. BROWNING and MATTHEW S. BROWNING, Ogden, Utah. Filed Sept. 11, 1893. Serial No. 485,215. (No model.)



Claim.—1. In a gun the combination with the barrel having an opening in rear of the muzzle through which the gases of explosion escape, of a breech mechanism normally held locked, locking devices therefor a lever hung upon a fixed-pivot, means connecting said lever with the breech mechanism, the free end of said lever extending toward said opening and provided with a device movably attached thereto, said device substantially closing said opening in its closed position, and operated by the gases of explosion to be removed from said opening, and thereby operate said lever to unlock and open the breech mechanism, and automatically operating means to restore said device and lever to their closed positions and thereby close and lock the breech mechanism.

2. In a gun, the combination with the barrel constructed with an aperture opening therefrom at a point in rear of the muzzle, of a lever hung upon a fixed pivot and adapted to swing in substantially a longitudinal plane, the free end of the lever extending toward said aperture and provided with a finger hinged thereto, said finger substantially covering said aperture when in the closed position, and whereby the gases of explosion may escape through said aperture and operate upon the end of said finger thereby operating said lever and a breech mechanism connected with said lever, whereby the opening movement of said lever will impart the opening movement to said breech mechanism, and automatically operating means to restore said lever to its closed position and close and lock the breech mechanism.

3. In a gun the combination with the barrel constructed with an aperture opening outward from the bore of the barrel at a point in rear of the muzzle, of a lever hung upon a stationary pivot adapted to swing in a longitudinal plane, its free end extending to said aperture, a finger hung to the free end of said lever and adapted to cover said aperture, a housing around said aperture having an opening through which said finger may pass to said aperture, breech mechanism and connection from said lever to said breech mechanism, whereby the opening movement of said lever will impart the opening movement to said breech-piece, and a spring adapted to return said lever and bring said breech-mechanism to its closed position.

4. In a gun the combination with the barrel open at the rear and constructed with an aperture opening radially from the bore at a point in rear of the muzzle, of a lever hung upon a stationary pivot and extending to said aperture, whereby the free end of the said lever is adapted to receive the force of the gases of explosion escaping through said aperture to impart to said lever a swinging movement away from said aperture, mechanism connecting said lever with the breech mechanism of the gun, whereby the opening and closing movement of the lever will impart corresponding opening and closing movement to the breech mechanism, the said lever constructed with projections from its hub to form a counterbalance.

5. In a gun the combination with the barrel opening in the rear into the receiver to the forward end of which receiver the barrel is attached, of a breech-piece adapted for longitudinal movement backward and forward in said receiver, said receiver being constructed so as to form or having a groove on each side thereof, the rear end of the breech-piece being constructed so as to form or being provided with a lateral projection on each side thereof adapted to ride on or through the said grooves in the sides of the receiver in the backward and forward movement of the breech-piece, the sides of the receiver being also constructed with notches through which the said lateral projections on the breech-piece will drop and against the abutments formed by said notches the said projections will rest in its extreme forward position to resist recoil, substantially as set forth.

6. In a gun the combination with the barrel, of a longitudinally reciprocating slide provided with a rearwardly extending finger or projection, a feed-wheel adapted to carry cartridges into the pathway of said finger, a vertically vibrating carrier located at the rear of said feed-wheel and operated by the movements of said slide and mechanism for imparting longitudinal movement to said slide so that as the slide moves rearward, the projection or finger thereon will engage with the forward end of a cartridge in the feed-wheel and force it rearward onto the carrier.

7. In a gun the combination with the barrel, of a longitudinally reciprocating breech-piece, a slide arranged longitudinally beneath the barrel and connected to said breech-piece, said slide being provided with a rearwardly extending finger or projection, a feed-wheel adapted to carry cartridges into the pathway of said finger, a vertically vibrating carrier located at the rear of the feed-wheel, mechanism for imparting longitudinal movements to said slide and corresponding longitudinal movements to the breech-piece and means connecting the breech-piece and slide and engaging parts of the slide and carrier whereby as the slide moves rearward, the projection or finger thereon will engage with the forward end of a cartridge in the feed-wheel and force it rearward onto the carrier and the breech-piece will also be moved rearward and on the return movement of the slide, said slide will engage with the carrier to raise it to bring the forward end of the cartridge into position at the rear of the open end of the barrel and the breech-piece will also return and engage with the said cartridge and transfer it from the carrier into the barrel and the slide will engage with the carrier again and lower it to its down position.

8. In a gun the combination with the barrel, of a longitudinally reciprocating breech-piece, a slide arranged longitudinally beneath the barrel and connected to said breech-piece, said slide being provided with a rearwardly extending finger or projection, a feed-wheel adapted to carry cartridges into the pathway of said finger, a vertically vibrating carrier located at the rear of the feed-wheel, mechanism for imparting longitudinal movements to said slide and corresponding longitudinal movements to the breech-piece and means connecting the breech-piece and slide and engaging parts of the slide and carrier whereby as the slide moves rearward, the projection or finger thereon will engage with the forward end of a cartridge in the feed-wheel and force it rearward onto the carrier and the breech-piece will also be moved rearward and on the return movement of the slide, said slide will engage with the carrier to raise it to bring the forward end of the cartridge into position at the rear of the open end of the barrel and the breech-piece will also return and engage with the said cartridge and transfer it from the carrier into the barrel and the slide will engage with the carrier again and lower it to its down position, and means for rotating said feed-wheel step by step so as to bring in succession one cartridge after another into position for transfer onto the carrier.

9. In a gun the combination with the barrel, of a longitudinally reciprocating breech-piece, a slide arranged longitudinally beneath the barrel and connected to said breech-piece, said slide being provided with a rearwardly extending finger or projection, a feed-wheel adapted to carry cartridges into the pathway of said finger, a vertically vibrating carrier located at the rear of the feed-wheel, mechanism for imparting longitudinal movements to said slide and corresponding longitudinal movements to the breech-piece and means connecting the breech-piece and slide and engaging parts of the slide and carrier whereby as the slide moves rearward, the projection or finger thereon will engage with the forward end of a cartridge in the feed-wheel and force it rearward onto the carrier and the breech-piece will also be moved rearward and on the return movement of the slide, said slide will engage with the carrier to raise it to bring the forward end of the cartridge into position at the rear of the open end of the barrel and the breech-piece will also return and engage with the said cartridge and transfer it from the carrier into the barrel and the slide will engage with the carrier again and lower it to its down position, and automatically operating means for extracting the exploded shell from the barrel and ejecting it from the gun.

10. In a gun the combination with the barrel, of a longitudinally reciprocating breech-piece, a slide arranged longitudinally beneath the barrel and connected to said breech-piece, said slide being provided with a rearwardly extending finger or projection, a feed-wheel adapted to carry cartridges into the pathway of said finger, a vertically vibrating carrier located at the rear of said feed-wheel, and mechanism for imparting longitudinal movements to said slide and corresponding longitudinal movements to the breech-piece and means connecting the breech-piece and slide and engaging parts of the slide and carrier whereby as the slide moves rearward, the projection or finger thereon will engage with the forward end of a cartridge in the feed-wheel and force it rearward onto the carrier and the breech-piece will also be moved rearward and on the return movement of the slide, said slide will engage with the carrier to raise it to bring the forward end of the cartridge into position at the rear of the open end of the barrel and as the slide returns the breech-piece will also return and engage with the said cartridge and transfer it from the carrier into the barrel and the slide will engage with the carrier again and lower it to its down position and means for rotating said feed-wheel step by step adapted to be operated by said slide on its return or forward movement so as to bring in succession one cartridge after another into position for transfer onto the carrier.

11. In a gun, the combination with the barrel of a longitudinally reciprocating breech piece, a slide arranged longitudinally beneath the barrel and connected to said breech piece, said slide being provided with a rearwardly extending finger or projection, a feed wheel adapted to carry cartridges into the pathway of said finger, means connecting the breech piece and slide, a vertically vibrating carrier located at the rear of said feed wheel, mechanism for imparting longitudinal movements to said slide, and parts on said slide and carrier adapted to engage during the longitudinal movements of said slide said parts including a latch which yields during the rearward movement of said slide but is engaged during the forward movement thereof and thereby causes the forward end of the carrier to be raised so as to bring the cartridge into position at the rear of the open end of the barrel.

12. In a gun having the breech open into the receiver at the rear, the combination with a longitudinally reciprocating breech-piece, a longitudinal slide extending forward from the receiver and into the receiver rearward below and connected to the breech-piece and adapted to impart longitudinal reciprocating movement to said breech-piece, a hammer arranged to move longitudinally in rear of the said breech-piece and so as to receive a rear movement under the rear movement of the breech-piece, a spring adapted to be compressed by said hammer in its rear movement, a trigger hung upon a pivot adapted to swing in a longitudinal plane, a sear hung to said trigger forward of its pivot, the sear extending upward and its nose adapted to engage a corresponding shoulder on the hammer, and the sear constructed with a finger extending forward beneath the breech-piece, and upon which the breech-piece bears when in its closed position, and a spring adapted to force the sear into engagement with the hammer.

13. In a gun the combination with the barrel, of a longitudinally reciprocating breech-piece, a slide arranged longitudinally beneath the barrel and extending rearward into the receiver, mechanism for imparting longitudinal movement to said slide, the slide connected to and adapted to impart backward and forward movement to the breech-piece, a carrier located beneath the said slide and hung upon a pivot near its rear end adapted to swing in a vertical plane, the forward end of the carrier adapted to receive a cartridge, the carrier extending in rear of its pivot, and constructed with a spring-latch, the said slide constructed with a downward projection from its under side adapted to escape said latch in its rear movement, but to engage therewith as the slide moves forward to depress the rear end of said carrier and raise the forward end to present the cartridge on the carrier forward of the front face of the breech-piece.

14. In a gun having the barrel opening into the receiver at the rear, the combination therewith of a longitudinally reciprocating breech-piece, a longitudinal slide beneath the breech-piece, mechanism for imparting longitudinal reciprocating movement to said slide, the said slide being connected to and adapted to impart corresponding reciprocating movement to said breech-piece, a carrier hung below said slide, and adapted to swing in a vertical plane, a cartridge feed-wheel forward of said carrier and adapted under rotation to carry cartridges and successively present them to said carrier, the said slide constructed with a finger on its under side projecting rearward, and adapted to force a cartridge from said feed-wheel onto said carrier, and mechanism to impart rotation to said feed-wheel, substantially as and for the purpose described.

15. In a gun the combination with a barrel opening in the rear into the receiver, of a breech-piece adapted for longitudinal movement backward and forward in said receiver, the breech-piece being adapted to swing on its forward end vertically in said receiver and provided on its under side with a downwardly extending projection or rib having a cam-slot formed horizontal at its forward and upward end and then inclined downwardly and rearwardly, a firing mechanism, a slide located beneath the barrel provided with a pin adapted to work in the cam-slot in the rib of the breech-piece and mechanism actuated by the gases of explosion for imparting longitudinal reciprocating movement to said slide and breech-piece, whereby the said slide will have a slight rearward movement independent of the movement of the breech-piece, and on the continued rearward movement of the slide the breech-piece will be unlocked and opened and on the return movement of the slide the breech-piece will be fully closed and locked, before the slide has completed its return or forward movement and before the firing mechanism is released.

544,661. GAS-OPERATED FIREARM. JOHN M. BROWNING, Ogden, Utah. Filed Dec. 8, 1894. Serial No. 531,171. (No model.)

Claim.—1. In a fire-arm, the barrel constructed with an aperture from the inside outward, and in rear of the muzzle, combined with a moving part adapted to cover said aperture, the barrel around said aperture and the said moving part being constructed, the one with a projection and the other with a corresponding recess, whereby in the normal condition the said projection will be substantially inclosed by the said recess, but so that the said projection and recess will wholly separate as the said moving part is thrown from said aperture, under the action of the gases of explosion with mechanism between said moving part and the breech mechanism of the gun whereby the opening movement of the said moving part will produce the opening movement of the breech mechanism, and a spring adapted to be operated by such opening movement, and whereby the reaction of the said spring will return the parts to the normal position, substantially as set forth.

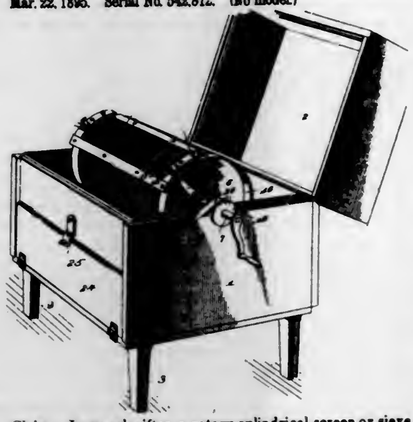
2. In an automatic fire-arm, the barrel constructed with an aperture from the inside outward and in rear of the muzzle, combined with a lever arranged to swing toward and from and adapted to cover the said aperture, the barrel around said aperture and the said moving part constructed, the one with a projection, and the other with a corresponding recess, adapted to stand one within the other when in the closed position, and the said projection or recess, as the case may be, made longitudinally adjustable on the said lever, with mechanism between the said lever and the breech mechanism of the gun, whereby the opening movement of the said lever under the action of the gases of explosion will produce the opening movement of the breech mechanism, and a spring adapted to be operated by such opening movement, and whereby the action of said spring will return the parts to the normal position, substantially as set forth.



3. In a fire-arm, the barrel constructed with an aperture in rear of the muzzle combined with a moving part adapted to cover said aperture, the barrel around said aperture and the said moving part constructed the one with a projection and the other with a corresponding recess, whereby in the normal condition the said projection will be substantially inclosed by said recess but so that said projection and recess will separate as the said moving part is thrown from said aperture, under the action of the gases of explosion with mechanism between said moving part and the breech mechanism of the gun whereby said moving part actuates the breech mechanism, substantially as set forth.

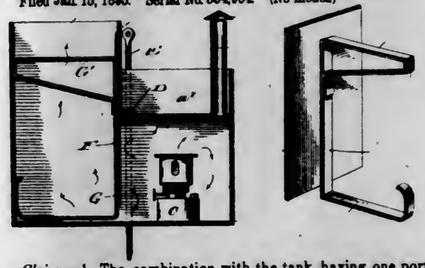
4. In an automatic fire-arm, the barrel constructed with an outwardly projecting tapering nipple and an aperture through said nipple, combined with a lever hung to the barrel and so as to swing toward and from said nipple, the lever constructed with a recess adapted to inclose said nipple when the parts are in closed position, said recess being longitudinally self adjusting on said lever under the effects of expansion and contraction of the barrel, with mechanism between said lever and the breech mechanism of the gun whereby the opening movement of said lever under the action of the gases of explosion will produce the opening movement of said breech mechanism, and a spring adapted to be operated by such opening movement and whereby the reaction of said spring will return the parts to the normal position, substantially as set forth.

544,662. ASH-SIFTER. THOMAS J. CLEPPER, Columbia, Pa. Filed Mar. 22, 1895. Serial No. 542,812. (No model.)



Claim.—In an ash sifter, a rotary cylindrical screen or sieve, the oppositely disposed pins or guides at either end thereof, and a pair of spring catches also arranged at either end of the cylinder and secured thereto, in combination with a removable section or door, the oppositely disposed perforations therein for engaging said pins or guides, and the end notches for the reception of said spring catches, all arranged substantially as and for the purpose specified.

544,663. WATER-HEATER. JOSIAH CREQUE, Jackson, Mich. Filed Jan. 15, 1895. Serial No. 534,984. (No model.)

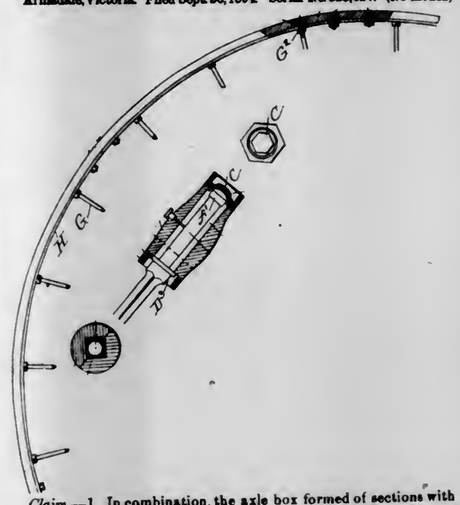


Claim.—1. The combination with the tank having one portion higher than the other, of a removable sliding partition provided with a combined handle and yielding stop and adapted to be inserted into the tank to divide the lower portion thereof into two compartments, and constructed to provide an air space beneath the lower end thereof, substantially as described.

2. A removable partition for tank heaters comprising a vertically disposed plate having a combined stop, handle and guide for holding the same frictionally in place, combined with a tank into which the same is adapted to be slidingly fitted, as set forth.

3. The combination with the tank and the partition, of a guide and stop secured thereto and extended at right angles therefrom and at one end formed with an angular brace arm and handle and its other end extended below the bottom edge of the partition and thence horizontally and terminating in a spring curved tongue, substantially as described.

544,664. WHEEL AND AXLE FOR CARRIAGES. ISAAC DAVIS, Armadale, Victoria. Filed Sept. 20, 1894. Serial No. 523,627. (No model.)



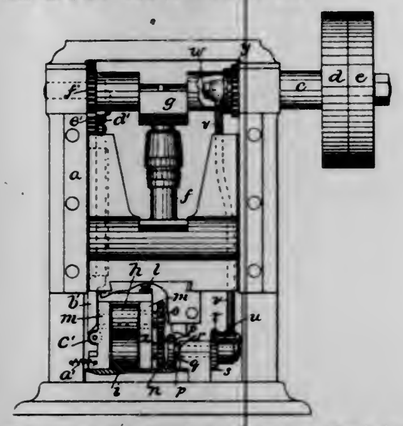
Claim.—1. In combination, the axle box formed of sections with projections on their outer sides, and the hub formed of sections with recesses in the interior thereof, to receive the projections, the said sections of the hub and box being arranged to break joints, and means for holding the sections of the box and hub together with their projections and recesses in engagement, substantially as described.

2. In combination, the wheel having a sectional hub with recesses in said sections, the axle, the divided axle box and the cap screwed onto the end of the axle box serving to hold the sections thereof together and forming an inclosed grease receptacle at the end of the axle, said axle box sections having projections to fit the recesses in the hub sections whereby the box with the cap will move with the hub substantially as described.

3. A wheel comprising a divided axle box and a divided hub with recesses and projections between the sections and means for holding

the sections of the hub and box together with the projections engaging the recesses, the rim made up of sections, the tire made up of sections and bolted to the rim and the spokes connecting the divided rim with the divided hub screwed into the latter and bolted to the former, substantially as described.

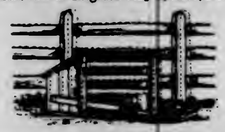
544,665. MECHANICAL FEEDING DEVICE. JOHN DRAHER, Waterbury, assignor of one-half to Gilbert H. Blakesley, Bristol, Conn. Filed Jan. 5, 1895. Serial No. 533,976. (No model.)



Claim.—1. A mechanical feeding device comprising in its construction feed rolls between which the material may be fed forward, a laterally reciprocatory frame in which the feed rolls are journaled, the intermittingly rotary shaft *r* provided with the clutch disk *q*, intermeshing gears on the feed rolls, and pins on one of said gears extending laterally through holes in the clutch-disk.

2. A mechanical feeding device comprising in its construction feed rolls between which the material may be fed forward, a laterally reciprocatory frame in which the feed rolls are journaled, the intermittingly rotary shaft *r* provided with the clutch disk *q*, intermeshing gears on the feed rolls, pins on one of said gears extending laterally through holes in the clutch-disk, the main shaft, a cam slide operatively connected with the main shaft and adapted to operate upon the reciprocatory frame to move it in one direction, and means for moving said frame in the opposite direction.

544,666. STEREOSCOPIC PRINT. LOUIS D. DUMAUROS, Algiers, Algeria, assignor to Eugène Demole, Geneva, Switzerland. Filed Sept. 19, 1894. Serial No. 523,502. (No model.) Patented in France Sept. 15, 1891. No. 216,465, and in Belgium July 3, 1894, No. 110,803.



Claim.—1. As a new article, a stereoscopic print consisting of two images or pictures, one corresponding to the perspective view of the right eye and the other to that of the left eye, superimposed one upon the other in such manner as to have a common point of view.

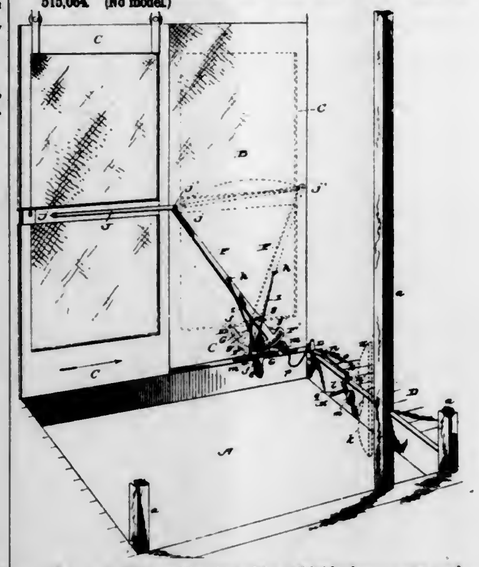
2. As a new article, a stereoscopic print consisting of two images or pictures in complementary colors, one corresponding to the perspective of the right eye and the other to that of the left eye, superimposed one upon the other in such manner as to have a common point of view.

3. As a new article, a stereoscopic print, consisting of two images or pictures in complementary colors, one corresponding to the perspective of the right eye and the other to that of the left eye, one or both of said colors being transparent, said pictures being superimposed, one upon the other in such manner as to have a common point of view.

4. A stereoscopic print consisting of two pictures, one of which is carried by a transparent film placed over the other, and movable over the surface of the first.

5. In combination with a stereoscopic print, consisting of two superimposed colored images or pictures, as described, of a pair of lenses or glasses, having each the color of one of the images, whereby one will permit the passage of one image and intercept the other, and conversely: as set forth.

544,667. AUTOMATIC HATCHWAY-DOOR-OPERATING DEVICE. JAMES M. ELDER, Indianapolis, Ind. Filed June 19, 1894. Serial No. 515,064. (No model.)



Claim.—1. The combination with a slidable door, a cam, and a lever having a link connection with said door, of a contact shoe connected with said lever and arranged in the path of the cam to impart to the lever its initial movement, and a tension device connected with said lever to complete the movement or throw thereof in either direction independently of the action of the cam upon said shoe and lever, substantially as and for the purposes described.

2. The combination with a slidable door, and a car cam, of a lever connected with said door and having means arranged to be acted on by said cam to impart to the lever its initial movement, and a spring connected to said lever to complete the throw of movement thereof in either direction independently of the influence of the cam on said lever, whereby the spring impels the lever to open or close the door to its fullest extent after the initial impulse has been given to the lever, as set forth.

3. The combination with a horizontally slidable door, of a lever F connected with said door, and a spring attached at one end to said lever and having its other end attached at a point in vertical line with the fulcrum of the lever, substantially as and for the purposes described.

4. The combination with a horizontally slidable door, of a fixed lever-support E, a lever F, fulcrumed to the support and linked to the door, and a spring attached at one end to the lever and at its other end to the support in the vertical line of and below the fulcrum of said lever, substantially as and for the purposes described.

5. The combination with a horizontally slidable door, of the stand or support E fixed at one side of the path of the door, a lever fulcrumed to the stand and provided with means to limit the throw or movement of the lever in either direction and a spring having its upper end attached to the lever and its lower end fastened to the stand below, and in vertical line with, the fulcrum of the lever, substantially as and for the purposes described.

6. The combination with a door, of a stand, provided with a stop, a slotted lever fulcrumed thereto, and having the stop fitted in the slot thereof and a spring connected to said stand and the lever, substantially as and for the purposes described.

7. The combination with a door, of a lever connected thereto, a stand on which the lever is fulcrumed and provided with means to limit the movement of the lever, and a spring connected to the lever at one side of its fulcrum, and arranged to be shifted with said lever for the purposes described, substantially as set forth.

8. The combination with a door, of a lever linked thereto and provided with an arc-shaped slot, a stand on which the lever is fulcrumed, a stop-pin on the stand fitted in the slot, and a spring connected to said stop-pin and the lever, substantially as described.

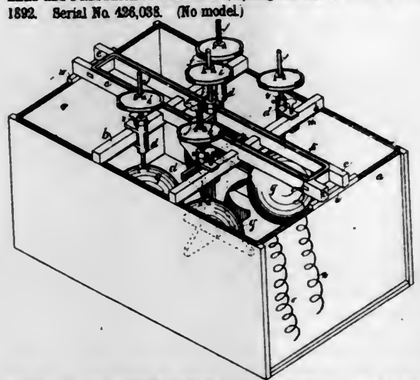
9. The combination with a door, and a car-cam, of a lever linked to the door and provided with the slotted segment, a stand to which the lever is fulcrumed, a stop fitted in the slot, a spring between the lever and stop, and a cam-contact shoe, substantially as described.

10. The combination with a door, of a car-cam provided with the swells and with the depressed seat between the swells, a spring-controlled lever connected to said door, and a contact shoe, substantially as described.

11. The combination with a door, and a car-cam, of a spring-controlled lever connected with said door, a shoe-carrying lever adapted to contact with said cam, and connections between said shoe-carrying lever and the door-operating lever, substantially as described.

12. The combination with a sliding door, of automatic means for opening and closing the same embodying a lever, a car-cam, a contact shoe connected with the lever and arranged in the path of the car cam, and a spring acting on the lever to impel the latter independently of the contact of the shoe with said cam, substantially as and for the purposes described.

544,668. APPARATUS FOR ELECTROPLATING. FRANK ENGELHARD and FREDERICK H. ENGELHARD, Springfield, Mass. Filed Mar. 23, 1892. Serial No. 426,038. (No model.)



Claim.—1. The combination of a tank, an electrolyte therein, a conducting strip mounted on the top edge thereof, a cross-tie provided with a metallic conductor directly contacting with the conductor on the tank, a movable conducting hanger mounted thereon arranged with a part in contact with the conductor on the cross-tie, an electrode supported from said hanger, a source of electric energy, and conductors therefrom to the conducting strip and to the electrolyte, substantially as described.

2. The combination of a tank, a conducting strip mounted on the top edge thereof, cross-ties provided with metallic conductors, one or more of said cross-ties having said conductors in contact with the conducting strip, conducting hangers movably mounted on the cross-ties arranged with a part in contact with the conductor on the cross-ties, a source of electric energy, and conductors therefrom to the conducting strip and to the hangers electrically separated from said strip, substantially as described.

3. The combination of a tank having a conducting portion, a source of electric energy, a permanent connection therefrom to the conducting portion of the tank, a support for an electrode, removable from said tank, said support having a conducting portion adapted to come in contact with the conductor on the tank when said support is placed in position, a support for the other electrode supported by said tank but electrically separated therefrom, and a permanent connection from the latter support to the source of electric energy, substantially as described.

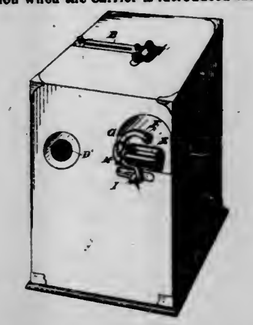
4. The combination with a tank, of hanger supports thereon, hangers mounted on said supports, having vertical shaft openings, electrode supports having shafts adapted to engage in said openings, and means for simultaneously rotating the electrode supports, substantially as described.

5. The combination with a tank, of hanger supports thereon, hangers, mounted on said supports, having vertical shaft openings, electrode supports having shafts adapted to engage in said openings, adjustable collars on said shafts above said hangers, and means for simultaneously rotating the electrode supports, substantially as described.

6. The combination, with a tank, of hanger supports thereon, hangers horizontally adjustable on said supports, shafts vertically adjustable on said hangers, electrodes carried by said shafts, and means for simultaneously rotating the electrode supports, substantially as described.

544,669. AUTOMATIC PHOTOGRAPHIC CAMERA. EUGENE J. GREGORY, Sacramento, Cal. Filed Nov. 1, 1894. Serial No. 527,669. (No model.)

Claim.—1. In an automatic photographic apparatus, a vertically moving slide, a carrier fitting within said slide adapted to contain a card or ticket, the lower end of which is sensitized, a slide in the carrier by which the sensitized end of the ticket is normally covered and protected, and a catch by which said slide is withdrawn from the sensitized portion when the carrier is introduced into the slide.



2. In an automatic photographic apparatus, a vertically moving slide and carrier within which the sensitized card or ticket is inclosed, a case within which the apparatus is inclosed, a slotted opening for the introduction of the carrier having flexible light tight flaps which normally close the opening, but which yield so that the carrier may be introduced into the slide while the flexible flaps prevent the entrance of light.

3. In an automatic photographic apparatus, a vertically moving slide, a carrier fitting said slide and adapted to contain a card or ticket, the lower end of which is sensitized, a sliding plate movable in the carrier, normally covering the sensitized portion of the card and a catch by which the plate is withdrawn to expose said portion when the carrier is introduced into the slide, a stop by which the slide is retained in the upper part of the apparatus until the carrier has been introduced, and mechanism by which it is released from the stop and allowed to drop out of line with the object lens fixed in the exterior casing.

4. In an automatic photographic apparatus, a slide and carrier adapted to contain a partially sensitized card or ticket, with a means for exposing the sensitized portion thereof, a casing within which the slide and carrier are vertically movable, an object lens fixed in the casing with its axis intersecting the line of travel of the sensitized card, a shutter by which the lens or camera tube is normally closed, a stop by which the slide and carrier are retained in the upper part of the casing, a transversely movable slide bar and connections by which it moves the shutter when pulled out, and a cam by which the holding stop of the carrier is disengaged whereby the slide and carrier are allowed to drop after exposure, and a second stop upon which the slide and carrier are arrested.

5. In an automatic photographic apparatus, a vertically moving slide and carrier adapted to receive a card or ticket, the lower end of which is sensitized, a camera with shutter mechanism whereby it is operated to momentarily expose the sensitized paper so that a picture may be taken thereon, a releasing mechanism whereby the slide and carrier are dropped, and an arresting stop by which they are retained, a developing bath consisting of an open-ended containing vessel, mechanism whereby said bath is first moved upwardly so as to inclose the end of the card upon which the picture has been imprinted, a tank containing a developing solution, a pipe leading therefrom and discharging into the developing bath as the latter incloses the card, and a valve, and mechanism whereby the valve is opened to discharge a portion of the contents of the tank into the developing bath.

6. In an automatic photographic apparatus, the slide and carrier adapted to carry a sensitized card or ticket, a lens, the axis of which intersects the line of travel of the slide and carrier, an intercepting shutter and mechanism whereby it is withdrawn to expose the sensitized card for the purpose of taking a picture thereon, mechanism whereby the carrier and card are dropped and a stop by which they are arrested, a developing bath movable so as to first submerge the lower exposed end of the card therein, and a fixing bath movable to afterward submerge the card therein, and mechanism whereby the developing bath is first moved into position to submerge the card and is then withdrawn, and the fixing bath is in like manner moved into position to submerge the card, and is afterward withdrawn.

7. In an automatic photographic apparatus, a vertically moving slide and carrier adapted to contain a card or ticket, the lower end of which is sensitized, mechanism by which the sensitized portion of the card is exposed in a camera whereby a picture is imprinted thereon, mechanism whereby the carrier is moved downward, arrested and submitted to the successive action of a developing and a fixing bath, and mechanism whereby the slide and carrier are released when the fixing bath has been retracted, so as to allow the carrier to descend

to the bottom of the case, and a washing bath into which the completed picture is thus plunged.

8. In an automatic photographic apparatus, a slide and carrier adapted to contain a card or ticket, the lower end of which is sensitized, a camera, a mechanism whereby the card is exposed so that a picture is taken thereon, vertically oscillating, developing and fixing baths, an interposed mechanism whereby the baths are moved alternately in opposite directions to submerge the end of the card containing the picture, a washing-bath into which the card is afterward plunged and washed, and a mechanism by which the slide and carrier are again elevated to the upper part of the inclosing casing so that the carrier with its finished picture may be removed therefrom.

9. In an automatic photographic apparatus, a slide and carrier adapted to contain a card or ticket, the lower end of which is sensitized, a camera and inclosing case within which the carrier moves vertically so as to intersect the axis of the camera lens, mechanism by which the card is exposed so that a picture is taken thereon, after which the carrier is dropped to an arresting stop, a developing bath supported from a rotary shaft so as to be partially revolved around the shaft whereby it is moved in an arc of a circle in a vertical plane so as to submerge the end of the card therein, and afterward withdrawn in the arc of a circle and become inverted so as to discharge itself and be out of line of travel of the card and ticket.

10. In an automatic photographic apparatus, a slide and carrier adapted to contain a card or ticket, the lower end of which has been sensitized, and a mechanism whereby the same is exposed within a closed case, mechanism whereby the carrier and card are dropped and arrested in proper position, a rotating shaft with a developing bath supported therefrom so as to oscillate in an arc of a circle whereby the card is first submerged in the bath, and the bath then retracted, a fixing bath mounted upon the opposite side of the line of travel of the card-carrier, and supported from a rotary shaft so as to oscillate in an arc of a circle, whereby it is brought into position to submerge the card after the developing bath has been retracted, and is then, itself, retracted out of the line of travel of the carrier.

11. In an automatic photographic apparatus, the vertically moving slide and carrier adapted to contain a card or ticket, the lower end of which has been sensitized, and mechanism whereby the card is exposed within a closed case, afterward alternately inclosed in developing and fixing baths, mechanism by which said baths are moved in arcs of circles alternately from opposite sides of the line of travel of the carrier whereby each bath is first brought into position to inclose the card, supply tanks and pipes with valves and mechanism to open said valves so that each bath is respectively filled after it has reached the position to inclose the card, said baths having spouts formed upon their corners whereby they are discharged when they again oscillate out of the line of travel of the card carrier, and a washing tank into which the card is afterward dropped, a receiver surrounding said tank into which the angular spouts of the developing and fixing baths discharge exterior to the washing bath.

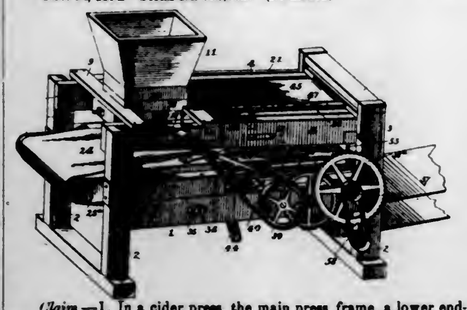
12. In an automatic photographic apparatus, a vertically moving slide and carrier adapted to contain a card or ticket, the lower end of which is sensitized, a camera and lens, the axis of which intersects the line of travel of the carrier, a shutter by which the camera is normally closed, a transversely moving sliding bar and intermediate mechanism by which the shutter is actuated so as to expose the card for the purpose of taking a picture thereon, a containing tray fixed to the exterior casing adjacent to the lens, adapted to hold a light producing substance, a spring-actuated hammer by which the cap is exploded to ignite the powder or substance, a trigger by which the hammer is held in position when withdrawn, and an arm projecting from the sliding bar adapted to engage the trigger and release the hammer at the instant when the sliding bar is withdrawn and the shutter opened.

13. In an automatic photographic apparatus, a vertically moving slide and carrier adapted to contain a card or ticket, the lower end of which is sensitized, a camera and an inclosing case within which the card and carrier are movable, and a movable shutter, mechanism whereby the shutter is opened to expose the card for the purpose of taking a picture thereon, and developing and fixing baths movable so as to alternately submerge the ticket therein while the latter remains in a stationary position.

14. In an automatic photographic apparatus, a vertically moving slide and carrier adapted to contain a card or ticket, the lower end of which is sensitized, an inclosing casing within which the card and carrier move vertically, a camera the shutter of which is movable to expose the card so that a picture may be taken thereon, developing and fixing baths movable with relation to the card so as to alternately submerge it in these baths, mechanism by which the baths are moved consisting of a train of gearing with actuating spring or weight, mutilated gears or cams whereby the developing and fixing baths are alternately moved to submerge the card and then caused to move out of line of travel of the card and empty themselves.

15. In an automatic photographic apparatus, a vertically moving carrier adapted to contain and expose a ticket or card having a portion of its surface sensitized, to the action of a camera lens, developing and fixing baths movable in arcs of circles whereby the card is successively submerged in them, supply tanks containing solutions to be supplied to the baths when in position, with conveying pipes and controlling valves, a cam or lever fixed upon a rotating shaft, and gearing whereby said cam is moved to open and close the valves.

544,670. CIDER-PRESS. MARION INGERSON, Mallory, N. Y. Filed Nov. 14, 1894. Serial No. 528,802. (No model.)



Claim.—1. In a cider press, the main press frame, a lower endless press platform traveling within the main frame, an upper press frame pivotally supported at one end above the main press frame and carrying milling devices, an upper endless press platform or apron traveling within the pivoted frame between the unpivoted end of the latter and said milling devices, said upper endless press platform or apron being shorter in length than the lower endless press platform and arranged at an angle with its outer portion in tight pressing contact with the upper outer portion of the lower platform and its inner portion slightly elevated above and out of contact with the said lower platform, an endless pervious belt arranged to pass between the two moving platforms or aprons, and means for yieldingly and detachably fastening the unpivoted ends of the upper press frame above the main press frame, substantially as set forth.

2. In a cider press, the main press frame, a lower endless press platform traveling within the main frame, a pervious belt traveling over said lower platform, an upper press frame pivotally supported at one end above the main press frame, milling devices mounted on the pivoted frame adjacent to the pivoted end thereof, an upper endless press platform or apron traveling within the pivoted frame between the unpivoted end of the latter and said milling devices, means for yieldingly and detachably fastening the unpivoted end of the upper press frame above the main press frame, and a separate adjusting device for the unpivoted end of the upper press frame, substantially as set forth.

3. In a cider press, the combination of the main press frame provided at its opposite ends with corner uprights, a lower endless press platform traveling within the main frame, a pervious belt traveling over said lower platform, an upper press frame pivotally mounted at one end between one pair of said corner uprights and working at its other free end between the opposite pair of corner uprights, a transverse retaining bar adapted to be arranged above the unpivoted end of said upper press frame and provided on its under side with a bowed spring resting on said end of the upper press frame, U-shaped latches pivoted to the corner uprights at one end of the frame and adapted to engage the ends of said retaining bar, a separate adjusting device for the unpivoted end of the upper press frame, the milling devices, and the upper endless press platform mounted within said upper press frame, substantially as set forth.

4. In a cider press, the main frame, fixed parallel guide rails secured horizontally on the frame and provided at opposite ends with curved end rail portions one pair of which is movable, means for adjusting the movable end rail portions, a lower endless press platform or apron consisting of a pair of parallel endless toothed chains of jointed links, and transverse closely arranged imperforate slats secured to the links and provided at their meeting edges with flexible packing strips, the ends of said slats projecting beyond said chains, chain rollers or travelers mounted on the chains at the joints thereof and riding on said rails, opposite juice pans supported under the upper projecting side edges of the lower platform or apron, a shorter duplicate upper press platform or apron adjustably supported above and in contact with the lower press platform or apron, an endless pervious cider belt passing between the two platforms or aprons, means for folding the edges of said belt beyond the inner portion of the upper platform or apron, a combined spreader and scraper plate arranged under the outer portion of the lower platform or apron, a pomace carrier extended at its inner end under said combined spreader and scraper plate, and gearing connected with said toothed chains and said carrier.

5. In a cider press, the main frame, a lower endless press platform or apron traveling within said frame, a pervious belt passing over said lower platform or apron, an upper press frame adjustably supported on the main frame, a pair of fixed parallel elliptical guide rails supported within the upper adjustable press frame and provided with inner movable end portions, means for adjusting the movable end rail portions and an upper endless press platform or apron comprising parallel endless chains having rollers or travelers riding on said rails, and closely arranged imperforate slats attached to the links of the chains, substantially as set forth.

544,671. PENCIL-HOLDER. WILLIAM E. KARNS, Parker's Landing, Pa. Filed Jan. 19, 1895. Serial No. 535,539. (No model.)

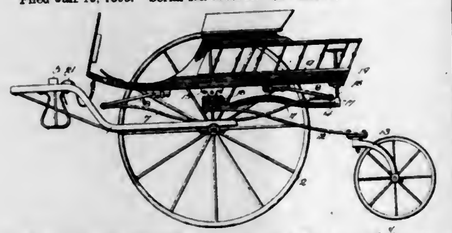


Claim.—1. In a pencil holder, a hard rubber case or mouthpiece provided with downwardly projecting soft rubber lips, and the spring-wire frame or loop extending downwardly from said case or mouth piece, for the purpose described.

2. In a safety device for pockets, a hard rubber case or mouth piece provided with the downwardly projecting soft rubber lips vulcanized thereto, the spring-wire frame or loop for holding the device in proper position, and the flaring points for engaging the pocket and preventing the escape of the holder, substantially as described.

3. In a safety attachment for use in connection with the pocket of a garment, a hard rubber case or mouth piece provided with downwardly converging, soft rubber lips, the wire loop or frame for holding the device in proper position, and the pointed ends of the wire loop or frame projecting through the hard rubber case or mouth piece for engaging the pocket and preventing the escape of the holder, substantially as specified.

544,672. VEHICLE. WILLIAM E. KARNS, Parker's Landing, Pa. Filed Jan. 19, 1895. Serial No. 535,541. (No model.)



Claim.—1. The combination of an axle, shafts secured thereto, a body, springs journaled on the axle and supporting the body, a spring pivotally connected at its front end with the body and extending rearward, a wheel connected with the rear end of the rearwardly extending spring, and means for adjustably conecting the body with the rearwardly extending spring, substantially as described.

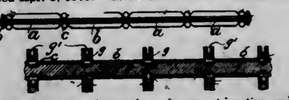
2. The combination of an axle, shafts secured thereto, a body, springs journaled on the axle and supporting the body, a lever fulcrumed on the bottom of the body, a spring secured to the lever and extending rearward, a wheel connected with the rearwardly extending spring, and means for adjustably connecting the lever with the body, substantially as described.

3. The combination of an axle, shafts secured to the same, a body, springs journaled on the axle and supporting the body, a lever fulcrumed at one end on the body, a spring extending rearward from the fulcrumed end of the lever, a swiveled wheel connected with the rearwardly extending spring, and an adjusting screw mounted on the body and connected with the other end of said lever, substantially as described.

4. The combination of an axle, shafts secured to the same, a body, springs journaled on the axle and supporting the body, a lever fulcrumed on the body and disposed longitudinally thereof, the spring 12 extending rearward from the lever, a caster wheel supporting the rear end of the spring 12, stops mounted on the axle and limiting the forward swing of the body, and means for adjustably connecting the lever with the body, substantially as described.

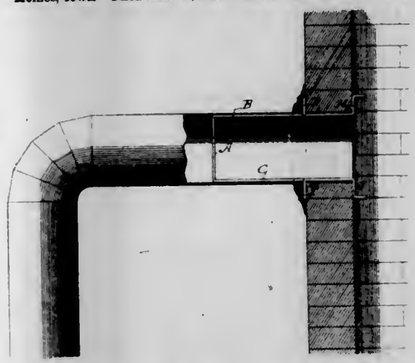
5. The combination of an axle, shafts secured thereto, a body, springs on the axle supporting the body, a spring pivotally connected at its front end with the body and extending rearward, and a wheel connected with the rear end of the rearwardly extending spring, substantially as described.

544,673. SECONDARY BATTERY. FRANK KING, London, England. Filed Apr. 5, 1895. Serial No. 544,554. (No model.)



Claim.—In secondary batteries, the combination with plates, or electrodes of each denomination, having protruding portions of the conducting support burned or soldered to a bar, said electrodes each comprising active material, a grid for said material having pins thereon and a porous diaphragm, sheet, covering or envelope through which said pins project, of insulating strips wedged between the said plates or electrodes and held in position by engagement with the pins projecting through the diaphragm, sheet or covering, so as to fix the distance apart of the plates or electrodes, and maintain them in position, and the active material in position thereon, substantially as described.

544,674. STOVEPIPE-FASTENER. CHARLES M. KRULL, Des Moines, Iowa. Filed Mar. 16, 1895. Serial No. 542,069. (No model.)



Claim.—A stove pipe fastener consisting of a single piece of spring wire bent into semicircular form at its center to engage the inside surface of a pipe in the manner set forth and the end portions of the wire extended at right angles and in parallel planes from said semicircular central part, lateral outward projections D and F formed on said end portions by doubling parts thereof, and elbow-shaped terminals of the wire projecting outward, substantially as shown and described.

544,675. BOTTLE FOR PREVENTING FRAUDULENT REFILLING. EDWIN L. LLOYD, Philadelphia, Pa. Filed Sept. 15, 1894. Serial No. 523,089. (No model.)

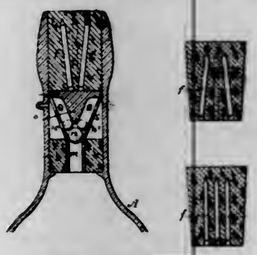
Claim.—1. The combination of a bottle having a portion adapted to be broken away to provide a special pouring opening, with a stopper for closing the filling mouth of the bottle, said stopper having embedded therein pins for engaging with a cork screw, substantially as specified.

2. The combination of a bottle having a portion adapted to be broken away to provide a special pouring opening, with a stopper for the filling mouth of the bottle, said stopper having embedded therein pins inclined so as to form a wedge-shaped obstruction for engaging with a cork screw, substantially as specified.

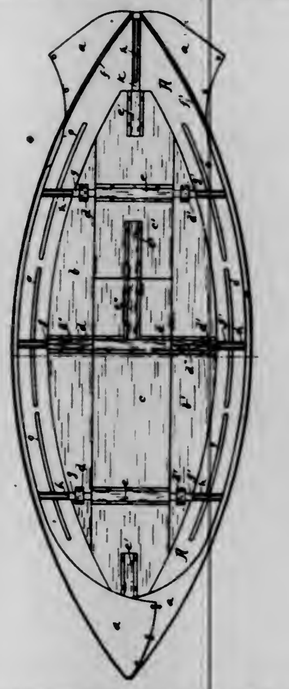
3. A bottle having a filling mouth, a portion adapted to be broken away to form a pouring opening when the filling mouth is closed, a non-removable stopper for said filling mouth and a valved stopper

within the bottle neck, access to said valved stopper being prevented when the non-removable stopper is inserted substantially as specified.

4. A bottle having its mouth closed by a non-removable stopper, and having at one side of the neck below the mouth a portion adapted to be broken away to form a pouring opening, and in the neck, below said pouring opening a supplementary valved stopper, substantially as specified.



544,676. FOLDING BOAT. MANFIELD U. LORER, Miamisburg, assignor of two-thirds to Eugene A. Ohmer and Wm. D. Huston, Dayton, Ohio. Filed Mar. 12, 1895. Serial No. 541,509. (No model.)

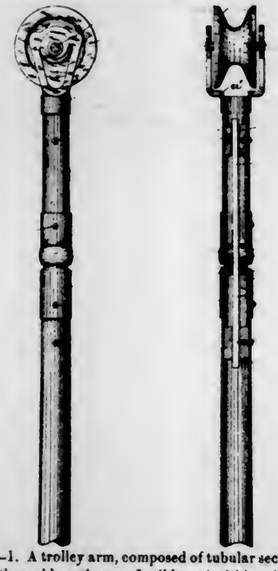


Claim.—1. In a folding boat, the combination with the canvas covering, and the gunwales, of a flooring composed of a plurality of panels, a plurality of detachable ribs extending across the upper sides of said panels over the abutting edges thereof, loops on the upper ends of said ribs, straps inclosed in said loops and adapted to bring the gunwales and ribs in rigid contact, a plurality of detachable stays (*o*) between the canvas and the ribs, substantially as described.

2. In a canvas boat, the combination with the covering, of a flooring consisting of a plurality of panels, metallic socket pieces attached transversely and longitudinally thereon, said socket pieces being square in cross section, a plurality of ribs adapted to be inserted in said sockets and to project beyond the abutting edges of the panels, and straps for attaching the gunwales to said ribs, substantially as described.

3. The combination with the canvas covering, and the gunwales to which said covering is permanently attached, of a flooring consisting of a series of panels, a series of panels transverse socket pieces rigidly attached to said panels, a series of curved ribs adapted to be inserted in said sockets and extending toward the center of the floor beyond the abutting edges of the panels, socket pieces (c^7) and (c^8) on the inner ends of the center panels, a bar (*j*) to interlock said ends, socket pieces on the outer ends of said center panels, stern and stem ribs (*k*) adapted to penetrate said sockets, and straps for securing the ribs and gunwales, substantially as described.

544,677. TROLLEY-ARM AND ATTACHMENT THEREFOR. GEORGE MAAG, Newark, N. J.; Joseph Ayers administrator of said Maag, deceased. Filed Dec. 12, 1894. Serial No. 531,550. (No model.)



Claim.—1. A trolley arm, composed of tubular sections, a flexible joint connecting said sections, a flexible rod within said sections, and means for securing said rod in position in said sections, substantially as and for the purposes set forth.

2. A trolley arm, composed of tubular sections, a ball and socket joint connecting said sections, a flexible rod within said sections, and means for securing said rod in position in said sections, substantially as and for the purposes set forth.

3. A trolley arm, composed of tubular sections, a flexible joint connecting said sections, a flexible rod within said sections, and means for securing said rod in position in said sections, consisting essentially, of collars or bushings d^7 and d^8, substantially as and for the purposes set forth.

4. A trolley arm, composed of tubular sections, a ball and socket joint connecting said sections, a flexible rod within said sections, and means for securing said rod in position in said sections, consisting essentially, of collars or bushings d^7 and d^8, substantially as and for the purposes set forth.

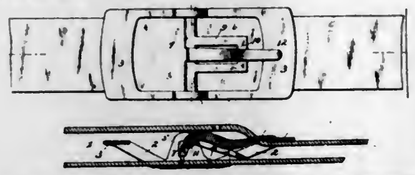
5. The herein described trolley arm, consisting essentially, of tubular sections, as *a*, a flexible joint connecting said sections, collars or bushings d^7 and d^8 in said sections, a flexible rod arranged in holes in said bushings, and a bushing, as *f*, all substantially as and for the purposes set forth.

6. The herein described trolley arm, consisting essentially, of tubular sections, as *a*, a ball and socket joint connecting said sections, comprising therein the sleeves *b* and b^3, a shoulder *b'* on said sleeve *b*, a bushing *f* arranged and held in position on the upper edge of one of said trolley pole sections and by the inner edge of said shoulder *b'*, a flexible rod *e*, and means for securing the same in position within said trolley-pole sections, substantially as and for the purposes set forth.

7. The herein described trolley arm, consisting essentially, of tubular sections, as *a*, a ball and socket joint connecting said sections, comprising therein the sleeves *b* and b^3, a shoulder *b'* on said sleeve *b*, a bushing *f* arranged and held in position on the upper edge of one of said trolley pole sections and by the inner edge of said shoulder *b'*, a flexible rod *e*, and means for securing the same in position within said trolley pole sections, consisting essentially, of collars or bushings d^7 and d^8, substantially as and for the purposes set forth.

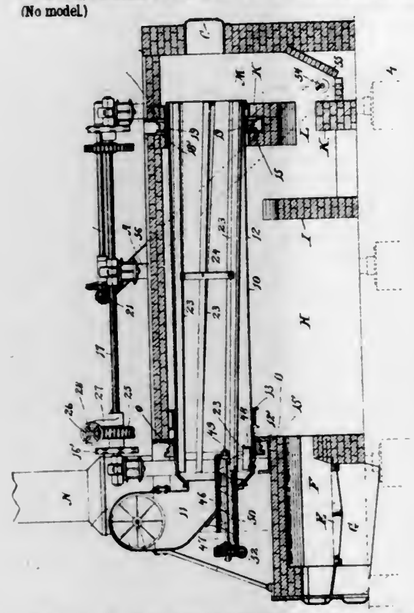
544,678. BUCKLE. EPHRAIM MANER, Sherman Heights, Tenn., assignor of two-thirds to Thomas J. Cochran, Inverness, Fla., and Albert W. Gaines, Chattanooga, Tenn. Filed Jan. 9, 1895. Serial No. 534,368. (No model.)

Claim.—1. In a fastening device of the class described, the combination of a buckle frame provided at an intermediate point with a cross bar and opposite bearing ears or lugs, a rotatable eccentric fastening bar mounted in said bearing ears or lugs, opposite said cross bar, and provided with an offstanding lever piece, and the buckle tongue pivotally connected at one end to said eccentric bar, substantially as set forth.



2. In a fastening device of the class described, the combination of a buckle frame provided at an intermediate point with a cross bar and opposite bearing ears or lugs, a rotatable eccentric fastening bar fitted at its ends in said bearing ears or lugs and provided with fastening teeth or spurs projected from one side thereof, a rectangular lever piece projected from one side thereof opposite the teeth or spurs and at an angle to the latter, and an integral eccentrically disposed pintle portion located at the inner end of said lever piece, and the buckle-tongue pivotally connected at one end to the pintle portion of said fastening bar, substantially as set forth.

544,679. DRYING APPARATUS. ALLAN G. MATHER and HENRY E. COLLINS, Milwaukee, Wis. Filed Nov. 24, 1894. Serial No. 529,840. (No model.)



Claim.—1. In a drying apparatus a cylindrical drum open at both extremities formed in two parts adjustable revolubly and telescopic longitudinally on each other, the enveloping part being contracted beyond the extremity of the included part to a diameter less than the diameter of the included part, substantially as described.

2. In a drying apparatus, a cylindrical drum open at its extremities and adapted to serve as a passage for material and a hot blast therethrough, said drum being in two parts, the principal part being substantially as long as the drum itself, and being provided with an encircling ring secured thereto at one extremity by which this extremity of the drum is supported and revolved, the lesser part of the drum being a sleeve in which the other extremity of the principal part of the drum is fitted revolubly, which lesser part is provided with an encircling ring secured thereto by which this extremity of the drum is supported and revolved, substantially as described.

3. In a drying apparatus, a cylindrical drum formed in two parts adjustable revolubly and telescopic longitudinally on each other, a circumferential band secured to one part in such manner as to form an annular recess between it and the part to which it is secured in which recess the extremity of the other part is received and is movable revolubly and longitudinally, substantially as described.

4. In a drying apparatus, a cylindrical drum in two parts revoluble on each other, a ring about and secured to each part, and wheels mounted on the frame on which wheels the rings and the drum therein are mounted and rotate, combined substantially as described

5. In a drying apparatus, a cylindrical drum in two parts revoluble on each other, a ring with sprocket teeth about and secured to each part, wheels mounted on the frame on which wheels the rings are mounted and rotate, sprocket chains running on the rings and on wheels on a driven shaft whereby the rings and the drum therein are rotated, substantially as described.

6. In a drying apparatus, a cylindrical drum in two parts revoluble on each other, a ring with sprocket teeth about and secured to each part, a chain running on one of said rings and on a wheel fixed on a driven shaft, another chain running on the other of said rings and on a wheel loose on said shaft, and a means substantially as described for adjusting said loose sprocket wheel revolubly on and clutching it to said shaft.

7. In a drying apparatus, a cylindrical drum in two parts adjustable revolubly on each other, and a bucket or buckets in the drum longitudinally thereof the ends of which are secured to the two parts of the drum respectively, whereby by the adjustment of the parts of the drum revolubly on each other, the buckets are put into spiral form with more or less pitch as desired, substantially as described

8. In a drying apparatus, the combination with a metal cylindrical drum liable to be subjected to great heat, of a revoluble metal ring of somewhat larger size than the drum, about the drum, springs interposed between the drum and the ring whereby the drum is supported and held to revolution with the ring while expansion of the drum in the ring is provided for, substantially as described.

9. In a drying apparatus, the combination with a metal cylindrical drum in two parts telescopic on each other, and rings one about each part of the drum in and with which the drum is supported and revolved, of supporting wheels located below and at opposite sides of the drum bearing against and holding the rings to registry movably therewith, and adjustable blocks in which the wheels are mounted, substantially as described.

10. In a drying apparatus, the combination with a cylindrical drum in two parts adjustably revoluble on each other, of sprocket rings about the drum one ring being secured to each part, a driven shaft parallel with the drum, sprocket wheels on the shaft one being fixed thereto and the other being loose thereon, sprocket chains running on the rings and on the corresponding wheels on the shaft, a worm revoluble in a bracket fixed on the shaft, and a worm wheel rigid to the sprocket wheel loose on the shaft, substantially as described.

11. In a drying apparatus, the combination with a revoluble horizontally-disposed cylindrical drum, and a furnace having a chamber at one end continuous with and a part of the combustion chamber and hot blast flue into which chamber solid material is discharged and through which it falls from the drum, said chamber being so constructed as to form a trough therein at its bottom, of a spiral conveyer revoluble in the trough and adapted to convey the material discharged therein from the drum, out of the furnace, substantially as described.

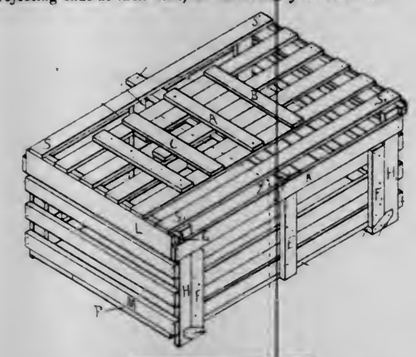
12. In a smoke-stack, of a drying apparatus, an exterior wall inclosing an exterior chamber closed at the top, an interior cylindrical wall at a distance from the exterior wall forming an interior chamber continuous with the flue of the smoke-stack upwardly, deflecting doors in this interior wall at a tangent to the wall, and a blast flue leading into the exterior chamber at a tangent to its walls above the doors into the interior chamber, substantially as described.

13. In a smoke-stack of a drying apparatus, an exterior wall inclosing an exterior chamber closed at the top, an interior cylindrical wall at a distance from the exterior wall forming an interior chamber continuous with the flue of the smoke-stack upwardly, deflecting doors in this interior wall at a tangent to the wall, a blast flue leading into the exterior chamber above the doors into the interior chamber, a conical bottom to the interior chamber having an opening or openings about its lower peripheral edge adapted to discharge dust therethrough, and a false bottom in the smoke-stack below the interior chamber, said false bottom being provided with a transverse aperture adapted to permit of the passage of dust therethrough, substantially as described.

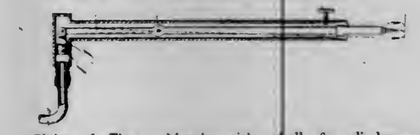
544,680. FOLDING POULTRY-COOP. ROBERT C. MEINDER, Pittsburg, Pa. Filed May 27, 1895. Serial No. 550,768. (No model.)

Claim.—In a folding poultry coop, the bottom R with the ends H M and H' M' rotating about a nail in the pin plate I and I', the pin plate being nailed to the cleat N; and the upper slats of the ends H M and H' M' having at their ends small projections G and G' to move in the slot S^2 S^2 K; and the sides E F F' and E' F^2 F^2 held in place by the pressure of S S' and S^2 S^2 and by the shoulder in the locking piece D D', the lateral slats having projecting ends beyond the up-

rights F, F', F² and F³ and the uprights E, E', F, F' F³ and F⁴ having projecting ends at their base, all substantially as set forth.



544,681. PHOTOGRAPHIC RETOUCHER. CHITTICK B. MORTLAND, St. Louis, Mo., assignor of one-half to Jason C. Somerville, same place. Filed Apr. 23, 1895. Serial No. 546,895. (No model.)



Claim.—1. The combination with a shell, of a cylinder arranged at one end thereof and at an angle to said shell, a pencil carrying rod pivoted in the shell and connected to the piston, and means for reciprocating the piston, which piston, in turn, oscillates the pencil carrying rod; substantially as described.

2. The combination with a shell, of a cylinder arranged at one end thereof and at an angle to said shell, a pencil carrying rod pivoted in the shell and connected to the piston, and an adjustable screw or bolt mounted in the shell for limiting the oscillations of the pencil carrying rod; substantially as described.

3. In a photographic retoucher, the combination with a suitable pump which creates an air pressure and suction, of a flexible tube leading from said pump, and a retouching pencil attached to the end of the flexible tube, said pencil comprising a shell, an oscillatory pencil-carrying rod pivotally mounted in the shell, a cylinder arranged at one end of the shell and at an angle thereto, to the end of which cylinder the tube is connected, and a piston reciprocally mounted in said cylinder and connected to the pencil-carrying rod; substantially as described.

4. The combination with a shell, of a cylinder arranged at one end thereof, a pencil-carrying rod pivoted in the shell and connected to the piston, and means for adjusting the oscillations of said rod; substantially as described.

5. The combination with a shell, which is formed with thickened side walls at one end, an oscillatory pencil-carrying rod mounted in the shell and protruding between said thickened walls, and means for oscillating said rod; substantially as described.

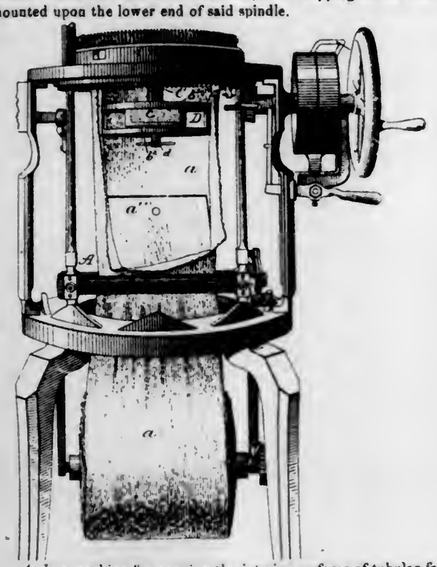
6. The combination with a shell, of a cylinder arranged at one end thereof and at an angle thereto, a nipple on one end of the cylinder, a piston in the cylinder, a pencil-carrying rod pivoted in the shell and operated by the piston, and means for adjusting the oscillations of the pencil-carrying rod; substantially as described.

544,682. DEVICE FOR NAPPING TEXTILE FABRICS. DAVID MCGENNISS, Amsterdam, assignor of one-half to George W. Potter, New York, N. Y. Filed Nov. 7, 1893. Serial No. 490,315. (No model.)

Claim.—1. The combination substantially as hereinbefore described, of "take-up" mechanism adapted to receive a tubular fabric; means for delivering tubular fabric to said "take-up;" a napping device located within the circular path of the tubular fabric on its way to the take-up, and means for securing a brushing contact between the interior surface of the fabric and napping device, the organization being such as to progressively develop an interior napped surface on the fabric during its progress toward the take-up mechanism.

2. The combination with a machine for producing a tubular fabric, provided with a suitable take-up, of a napping device supported centrally within the circular path progressively occupied by the produced tubular fabric on its way to the take-up, substantially as described.

3. In a machine for producing tubular fabrics, the combination substantially as hereinbefore described, of a vertical spindle centrally located within the head of the machine, and a napping device axially mounted upon the lower end of said spindle.

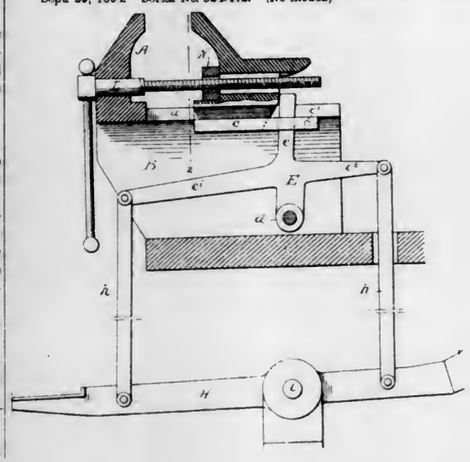


4. In a machine for napping the interior surfaces of tubular fabrics, the combination substantially as hereinbefore described, of means for delivering and for taking up said fabric, an annular spreading or distending rim, adapted to operate within the fabric, and napping teeth adjacent to said rim, and adapted to operate within said fabric and upon its inner surface, the said rim affording gaging surfaces for the fabric in the line of napping action, for controlling the path of the fabric over the teeth, on its way to the take up.

5. In a napping device, the combination substantially as hereinbefore described, of gaging surfaces, and a mass or group of napping teeth gradually varied as to their projection beyond said gaging surfaces from one end of the mass to the other, and affording a brushing face which will engage in gradually varied contact with the surface of fabric to be napped.

6. In a napping device, the combination substantially as hereinbefore described, of a circular brush carrier having at its rim open spaces surrounded by gaging surfaces for contact with the fabric to be napped, and a segmental brush consisting of a group or mass of napping teeth and a holder therefor which is adjustably mounted on said carrier for locating the group of napping teeth within the open spaces, and enabling a varied adjustment of said teeth with relation to said gaging surfaces.

544,683. VISE. JOHN W. MCINTYRE, Philadelphia, Pa., assignor of one-half to Charles E. Taylor and John Echternoch, same place. Filed Sept. 29, 1894. Serial No. 524,472. (No model.)



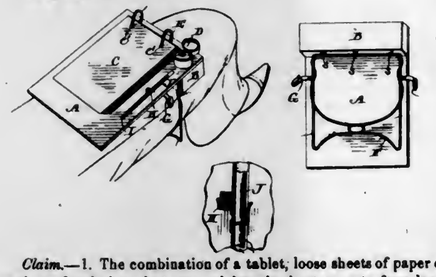
Claim.—1. The combination in a vise, of a fixed jaw, a frame carrying the same, a movable jaw, a flattened screw, a recessed nut carried by said movable jaw and engaging said screw, and means independent of said screw for moving said jaw substantially as specified.

2. The combination in a vise of a fixed jaw, a frame carrying the same, a movable jaw, a flattened screw, a recessed nut removably secured to said movable jaw and engaging said screw, and means independent of said screw for moving said jaw substantially as specified.

3. The combination of the fixed jaw, a frame carrying the same, a movable jaw, a flattened screw, a recessed nut carried by the movable jaw for said screw, and means for moving said movable jaw independent of the screw, comprising a pivoted treadle and a lever pivoted to the fixed frame and having one arm engaging with said movable jaw and another arm connected to the treadle, substantially as specified.

4. The combination in a vise of the fixed jaw, a frame carrying the same, a movable jaw, a flattened screw having right and left hand threaded portions, a nut carried by the fixed jaw and engaging the cylindrical portion of the screw, and a recessed nut carried by the movable jaw and engaging the flattened portion of the screw, substantially as specified.

544,684. TABLET AND NOTE-BOOK FOR STENOGRAPHERS' USE. ALFRED W. PARKER, Washington, D. C. Filed June 5, 1895. Serial No. 551,805. (No model.)



Claim.—1. The combination of a tablet, loose sheets of paper on top thereof and pierced at one end by wire bent so as to form loops or hooks and arranged by means of a spring, to open and shut, a block secured to the under side of said tablet at the end containing said wire, and having attached thereto at its side near the line of contact with the tablet, a heavy wire arranged so as to form a spring which can be clasped around the knee of the person using the tablet.

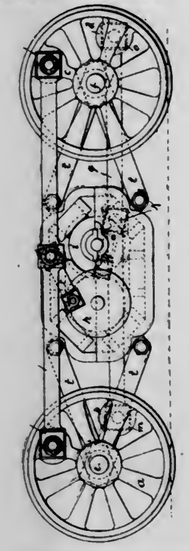
2. The combination of a tablet, loose sheets of paper on top thereof and pierced at one end by wire bent so as to form loops or hooks and arranged by means of a spring, to open and shut, a block secured to the under side of said tablet at the end containing said wire, and having attached thereto at its side near the line of contact with the tablet, a heavy wire arranged so as to form a spring which can be clasped around the knee of the person using the tablet; together with two or more ordinary spring clasps also attached to the under surface of said tablet by means of strips of cloth or other suitable material tacked to said tablet.

3. The combination of a tablet, loose sheets of paper on top thereof and pierced at one end by wire bent so as to form loops or hooks and arranged by means of a spring, to open and shut, a block secured to the under side of said tablet at the end containing said wire, and having attached thereto at its side near the line of contact with the tablet, a heavy wire arranged so as to form a spring which can be clasped around the knee of the person using the tablet; together with an inkstand fitted upon said tablet, and an ordinary spring device for holding the pen in position upon said tablet.

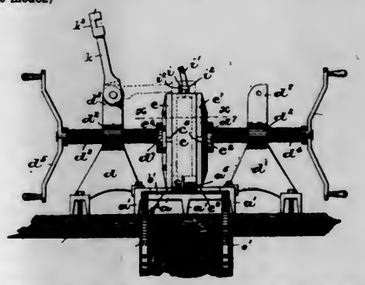
544,685. ELECTRIC LOCOMOTIVE. EDWIN H. PORTER, Radford, Va. Filed June 22, 1894. Serial No. 515,371. (No model.)

Claim.—1. The combination, in an electric locomotive, with the driving axles of the locomotive, of cranks of a given radius carried thereby, main connecting rods joining those cranks which are on different axles, a pair of armatures of an electric motor having cranks of half the length of the former, and connecting rods joining the armature cranks to the main connecting rods and having the same radius as the cranks of the driving wheels of the locomotive, the centers of the said driving axles and of the armature axles being in a straight line parallel to the said main connecting rods.

2. In an electric locomotive the combination with driving axles of the locomotive, of cranks of a given radius carried thereby, main connecting rods joining those cranks which are on different axles, a pair of armatures of an electric motor, having cranks of half the length of the former and connecting rods joining the armature cranks to the main connecting rods and having the same radius as the cranks of the driving wheels of the locomotive.



544,686. MOLD AND OPERATING MECHANISM THEREFOR. GEORGE E. POST, Newark, N. J. Filed Dec. 18, 1894. Serial No. 532,141. (No model.)



Claim.—1. In a device for casting molten metal, the combination of a mold, comprising therein, a base, having ears a^3 on its opposite ends end plates pivoted to said ears, side plates, as e and e', all of said parts being separable, and mechanism co-operating with said sides to form a mold-casing, substantially as and for the purposes set forth.

2. In a device for casting molten metal, the combination, of a mold, comprising therein, a base, as a, an anchor plate a^2 thereon, end plates c and c' hinged thereto, side plates, as e and e', core plates e^4 connected with said plates e and e', all of said parts being separable, mechanism co-operating with said sides to form a mold-casing, and core or depression bars f removably arranged between said plates, substantially as and for the purposes set forth.

3. In a device for casting molten metal, the combination of a mold, comprising therein, a base, as a, an anchor plate a^2 thereon, end plates c and c' hinged thereto, side plates, as e and e', core plates e^4 connected with said plates e and e', all of said parts being separable, mechanism co-operating with said sides to form a mold-casing, a bar i, and core or depression bars pivotally connected with said bar i, said bar i and said core bars being removably arranged on and in said mold, substantially as and for the purposes set forth.

4. In a device for casting molten metal, the combination of a mold, comprising therein, a base, as a, an anchor plate a^2 thereon, end plates c and c' hinged thereto, side plates e and e', all of said parts being separable, and mechanism co-operating with said sides to form a mold, consisting essentially, of bearings d and d', screws d^3 and d^4 working in said bearings, and means for forcing the ends of said screws against the side plates e and e', substantially as and for the purposes set forth.

5. In a device for casting molten metal, the combination of a mold, comprising therein, a base, as a, an anchor plate a^2 thereon, end plates c and c' hinged thereto, side plates e and e', core plates e^4 connected with said plates e and e', all of said parts being separable, and

mechanism co-operating with said sides to form a mold, consisting essentially, of bearings d and d', screws d^3 and d^4 working in said bearings, and means for forcing the ends of said screws against the side plates c and c', substantially as and for the purposes set forth.

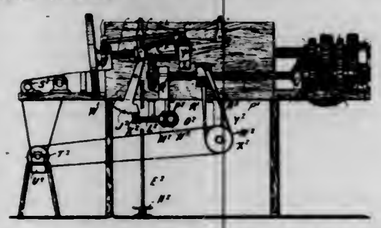
6. In a device for casting molten metal, the combination of a mold, comprising therein, a base, as a, an anchor plate a^3 thereon, end plates c and c' hinged thereto, side plates e and e', core plates c^4 connected with said plates c and c', all of said parts being separable, mechanism co-operating with said sides to form a mold, consisting essentially, of bearings d and d', screws d^3 and d^4 working in said bearings, and means for forcing the ends of said screws against the side plates c and c', a bar i, core or depression bars f pivotally connected with said bar i, said bar i and said core bars being removably arranged on and in said mold, an arm k pivotally connected with one of said bearings, having a slotted part, as k', adapted to be brought down and over said bar i, to hold the same in position, substantially as and for the purposes set forth.

7. The herein described device for casting molten metal, consisting essentially, of a base a, an anchor plate a^3 thereon, provided with perforated ears a^5 and a^6, end plates c and c' having perforated ears c^5 for pivotally connecting said end plates at the opposite ends of said anchor plate, side plates e and e', and core plates c^4 on said side plates, all of said parts forming separable sides of a mold, screw-threaded bearings d and d', screws d^3 and d^4 in said bearings, provided with handles for forcing the ends of said screws against said side plates e and e' and closing said plates against the end plates c and c', a bar i having a handle i', core or depression bars f pivotally connected with said bar i and said core bars being removably arranged on and in said mold, an arm k pivotally connected with one of said bearings, as d, said arm having a plate-like portion k', a groove k^3, in said portion k', and an opening k^4 in said groove, all of said parts being arranged substantially as and for the purposes set forth.

8. A mold having separable sides, comprising therein, a base plate, end plates c and c' pivotally connected therewith, side core plates e and e' having raised portions, as e^7, and V-shaped portions, as e^8, means for securing said parts together, and core or depression plates f, having guide portions, as f^3, whereby said core plates can be made to slide on said V-shaped portions e^8, substantially as and for the purposes set forth.

9. In a device for casting molten metal, the combination, of a mold, comprising therein, a base, end plates pivoted thereto, side plates, as e and e', all of said parts being separable, core plates, as e^4, connected with said side plates e and e', and thin sheets of metal, as g, between said plates e and e' and the core-plates e^4 forming a perfect seal, and means for securing said parts together, substantially as and for the purposes set forth.

544,687. PRESS FOR MOLDING PLASTIC MATERIALS. CHAS. PRATTEN, Sydney, New South Wales. Filed Apr. 19, 1895. Serial No. 546,382. (No model.)



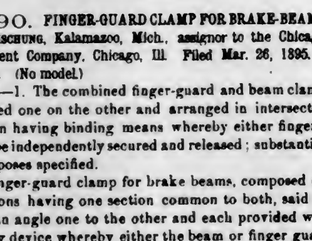
Claim.—1. In combination, the chambers, the pressure pistons therein, the screw connecting the pistons, the driving mechanism therefor including the shaft C, the worm wheel W, the shaft U carrying the same and the gears T and S, the shafts P' extending to the discharge ends of the two chambers, the cutters thereon and the pawl and ratchet connections between the shaft U and the shafts P' arranged to operate the same alternately, substantially as described.

2. In combination the two chambers, the two pistons, the screw connecting the pistons, the shaft C, the connections therefrom for operating the screw, the cutters, the shafts carrying the same, the reversely arranged clutch connections between the shaft C and the cutter shafts, and reversing mechanism for the shaft C including the reversing clutch and the impulse rod for operating the same arranged to be operated by the plungers, substantially as described.

3. In combination, the chambers, the presser pistons, the cutters, driving mechanism for the pistons and driving mechanism for the cutters comprising the shaft T', the cone adjustable thereon, the shaft P', the friction disk on the same engaging the cone, means for shifting the cone, the adjustable bearings for the shaft T' for pressing thereon, the tie rods D^3 and the treadle and rod E^2 connected thereto, substantially as described.

4. In combination, the chambers, the presser pistons therein, the screw with mechanism for operating the same including a clutch and an impulse rod for reversing the same, said rod being operated by the presser pistons, the cutters, the cutter shafts P' carrying the same, the alternately acting clutch mechanism for operating the shafts P' with the cutters, and the delivery bands with operating connections thereto, said connections being operated from the shafts P' whereby said delivery mechanism will act with the cutters or remain inactive therewith, substantially as described.

544,688. FRICTIONAL SURFACE FOR CYCLE-WHEELS, &c. ANTHONY PULBROOK, London, England. Filed June 19, 1894. Serial No. 515,081. (No model.)

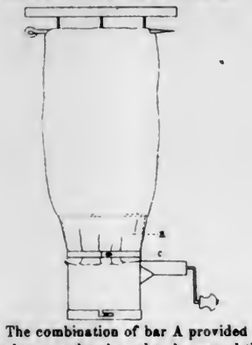


Claim.—1. In combination with a friction surface, a fish skin covering applied to such surface, with the scales outward for the purpose of preventing slipping, substantially as described.

2. In combination with a driving surface, a fish skin covering applied thereto, with the scales outward, said scales having a strengthening or protecting covering, substantially as described.

3. The process of coating the scaly side of fish skins for friction purposes, consisting in first soaking the skin in a solution of borax, then cleansing and drying the same, and finally coating it with a solution of gutta percha or the like substantially as described.

544,689. ROTARY FLOUR-SIFTER. BROUGH P. QUAINTANCE, Golden, Colo. Filed Apr. 17, 1895. Serial No. 546,063. (No model.)



Claim.—1. The combination of bar A provided with hooks and the pin D adapted to rest therein and to be passed through and sustain the bottom of a sack suspended therefrom.

2. The combination of the bar, the hooks and the pin adapted to sustain a flour sack with the sifting receptacle having a flaring upper portion adapted to enter the mouth of the sack and the band C for fastening and sustaining such sifter in a suspended position, all substantially as described.

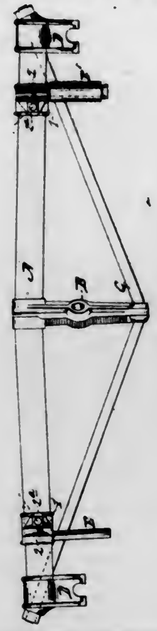
544,690. FINGER-GUARD CLAMP FOR BRAKE-BEAMS. HENRY R. ROBISCHUNG, Kalamazoo, Mich., assignor to the Chicago Railway Equipment Company, Chicago, Ill. Filed Mar. 26, 1895. Serial No. 543,241. (No model.)

Claim.—1. The combined finger-guard and beam clamp-sections superimposed one on the other and arranged in intersecting planes, each section having binding means whereby either finger guard or beam may be independently secured and released; substantially as and for the purposes specified.

2. A finger-guard clamp for brake beams, composed of conjoint clamp sections having one section common to both, said clamps arranged at an angle one to the other and each provided with a separate binding device whereby either the beam or finger guard may be separately secured and released; substantially as and for the purposes specified.

3. A finger-guard clamp for brake-beams composed of the slotted annular beam clamp-section having a perforated pocket in its interior, and the superimposed finger-guard section having a perforated ear or lug arranged in line with the perforated pocket of the annular section; substantially as and for the purposes specified.

4. The combination in a finger-guard clamp, of a beam section 1 having the perforate ears 1^a and perforate pocket 1^4; and a finger-guard section 2 arranged thereon and at an angle thereto, and provided with the perforate ear 2^a; substantially as and for the purposes specified.



544,691. MATCH-BOX APPLIANCE. RICHARD R. RUPPRECHT, Tacony, Pa. Filed June 4, 1895. Serial No. 551,680. (No model.)

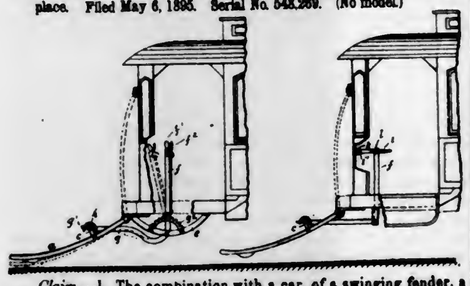


Claim.—1. An improved match box attachment, consisting of a pick, pivotally and slidably connected to the outside of said box, and pointed at one end, and having a button or disk hinged to the opposite end, substantially as shown and described.

2. A match box attachment, consisting of a pick slotted longitudinally, pointed at one end, and provided with a hinged button at the opposite end, said pick being connected to the outside of the box by means of a rivet passing through the slot, substantially as shown and described.

3. In a match box attachment, the combination, with a box having an opening in its beaded edge, and a recess in its cap, of a pick slotted longitudinally, pointed at one end and carrying a hinged button or disk at the opposite end, and a rivet for connecting said pick to the outside of the box, substantially as shown and described.

544,692. CAR-FENDER. JOHN F. SAITZ and FREDERICK W. MCKEE, Pittsburg, Pa., assignors to Frederick W. McKee and Samuel Kelly, same place. Filed May 6, 1895. Serial No. 548,269. (No model.)

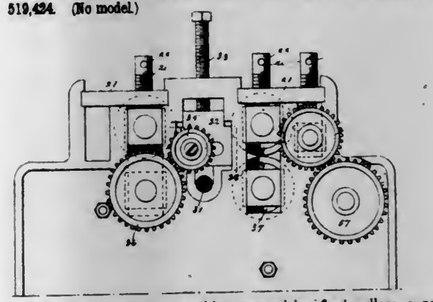


Claim.—1. The combination with a car, of a swinging fender, a continuous rocking lever having a vertical arm extending up within the car and a horizontal arm extending forwardly under the fender and normally supporting said fender in its raised position, said rocking lever being pivoted at the point of divergence of said arms, substantially as and for the purposes set forth.

2. The combination with a car, of a swinging fender having a cross-bar intermediate of its ends, a continuous rocking lever having a vertical arm extending up within the car and a horizontal arm extending forwardly beneath said cross-bar and on which said cross-bar rests, and a releasable connection between said cross-bar and said horizontal arm, substantially as and for the purposes set forth.

3. The combination with a car, of a swinging fender, said fender having a cross-bar with a loop formed therein, a rocking lever, one arm of which extends up within said car, and the other projects forwardly and engages said loop and a latch on said last mentioned arm adapted to swing over said cross-bar and engage the outer end of said arm, substantially as set forth.

544,693. CARROTING-MACHINE. JOHN H. SANDERS, New York, JAMES E. CARLIN, Brooklyn, N. Y., and HUGH FITZPATRICK, Easton, Pa., assignors to said Sanders and Carlin. Filed Aug. 3, 1894. Serial No. 519,434. (No model.)



Claim.—1. A carroting machine, comprising feed rollers, a rotary brush arranged behind the feed rollers, a pelt bearing opposite the brush, wringing rollers arranged behind the brush, and an acid pan beneath the brush and rollers, substantially as described.

2. A carroting machine, comprising feed rollers, a rotary brush arranged behind the feed rollers, a pelt bearing opposite the brush, wringing rollers behind the brush, and a polishing device arranged behind the wringing rollers, substantially as described.

3. A carroting machine, comprising feed rollers, a rotary brush arranged behind the feed rollers, a pelt bearing opposite the brush, wringing rollers arranged behind the brush and its bearing, a polishing device behind the wringing rollers, and a movable discharge belt behind the polishing device, substantially as described.

4. In a carroting machine, the combination, with the feed rollers and the acid applying mechanism behind the rollers, of the separable aprons arranged in front of the rollers, substantially as described.

5. In a carroting machine, the combination, with the feed rollers and the acid applying mechanism behind the rollers, of the aprons arranged edge to edge in front of the rollers, one apron being stationary and the other spring-pressed, substantially as described.

6. The combination, with the acid applying mechanism and the wringing rollers, of the polishing table arranged behind the rollers, and the polishing roller turning on the table, substantially as described.

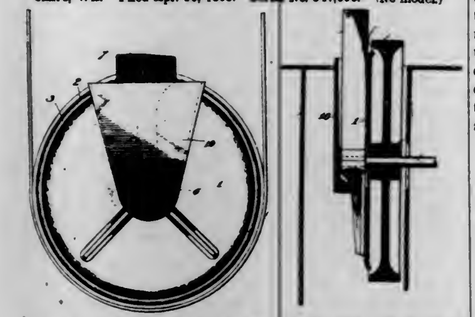
7. The combination, with the acid applying mechanism and the wringing rollers, of the polishing table and the polishing roller turning on the table, the roller being longitudinally corrugated, substantially as described.

8. In a carroting machine, the combination, with the feed rollers, the revoluble brush and the pelt bearing for the brush, of a jet pipe arranged to deliver near the brush, an acid pan arranged beneath the brush, and a system of tanks and pipes whereby the acid may be delivered, under pressure to the jet pipes and discharged from the acid pan, substantially as described.

9. In a carroting machine, the combination, with the acid applying mechanism, the acid pan and the jet pipe arranged to deliver to the acid applying mechanism, of the connected tanks having a common pipe leading to the jet pipe, valve-controlled pipes leading from the acid pan to the tanks, and an air supply pipe having valve controlled branches connected with the upper parts of the tanks, substantially as described.

10. A carroting machine, comprising a pair of separable aprons placed edge to edge, a pair of feed rollers behind the aprons, a revoluble brush and a movable bearing opposite it, the brush and its bearing being placed behind the feed rollers, a transverse jet pipe delivering in front of the brush, a pair of wringing rollers behind the brush, a polishing device behind the wringing rollers, and a discharge plate behind the polishing device, all substantially as described.

544,694. BAND-SAW-MILL ATTACHMENT. NOAH SHAW, Eau Claire, Wis. Filed Apr. 30, 1895. Serial No. 547,690. (No model.)

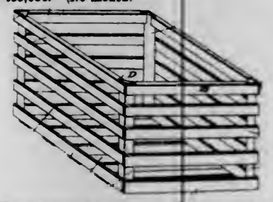


Claim.—1. In a band saw mill, the combination with the band wheel thereof, of a disk disposed at one side of said wheel and having a diameter which is slightly less than the internal diameter of the wheel rim and having its edge or periphery deflected inward, substantially in the manner and for the purpose described.

2. In a band saw mill, the combination with the lower band wheel thereof, and the usual pit or housing in which the same is mounted, of a disk arranged at one side of the wheel and of smaller diameter than the internal diameter of the wheel rim, said disk also having a central aperture adjacent to and surrounding the wheel shaft, and an air spout arranged outside of said disk and communicating with the central aperture therein, substantially as and for the purpose specified.

3. In a band saw mill, the combination with the band wheel thereof, of a circular plate or disk having a diameter less than the internal diameter of the wheel rim and fitted on one side of the wheel in such manner as to leave an annular space between the periphery of said plate or disk and the wheel rim, for the purpose described.

544,695. LOCK-JOINT CRATE. ADA S. SHERMAN, Canastota, N. Y., assignor of one-half to A. J. Warner, same place. Filed Aug. 12, 1893. Serial No. 483,030. (No model.)



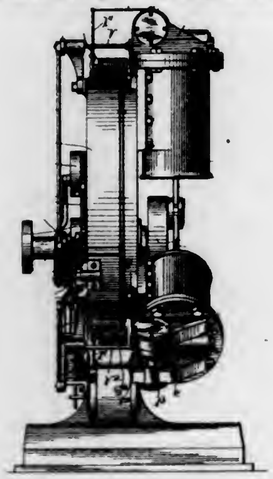
Claim.—The improved crate described comprising the upright corner posts solid and of triangular form in cross-section throughout their length, the comparatively thick upper and lower end and side rails having the undercut recesses D, in their inner sides at their opposite ends receiving the corners of the corner posts, fastening devices permanently connecting the said rails to the outer sides of the corner posts, the intermediate end and side slats permanently connected by fastening devices to the outer sides of the corner posts; said slats being of a less thickness than the upper and lower side and end rails so that their outer sides will rest in the same vertical planes as the outer sides of said rails, and a suitable bottom, all substantially as specified.

544,696. DYNAMOMETRIC GOVERNOR. WILLIAM N. SMITH, Chicago, Ill. Filed Aug. 16, 1894. Serial No. 520,466. (No model.)

Claim.—1. The combination with a prime motor and a dynamo operated thereby and supplying an electric circuit, of air-compressing mechanism connected with and operated by the prime motor and an electrical dynamometer lying in said circuit and connected with and controlling the operation of said air-compressing mechanism, whereby the rate of compression of air thereby may vary with the current passing through the dynamometer.

2. The combination with an electrical supply and a circuit connected therewith and adapted to supply current to electrically operated machinery, of convertible mechanism adapted to compress air or to operate as a compressed air engine, and an electrical dynamometer lying in the circuit and connected with and controlling the operation of said mechanism whereby the function of said mechanism and the work performed thereby may change with the variation of the current passing through the dynamometer.

3. The combination with a source of electrical supply and a circuit connected therewith and adapted to supply current to electrically operated machinery, of an air-compressor and a suitable reservoir for storing the air compressed thereby, valves interposed between the compressor and reservoir and adapted by their reversal to convert the compressor into a motor operated by the compressed air in the reservoir, suitable valve gear connected with the valves and adapted to reverse them and to vary their vibration in either position and an electrical dynamometer lying in the circuit and connected with and controlling said valve-gear whereby the operation of the valves and the function and work of the mechanism may change with the variation of the current passing through the dynamometer.



4. The combination with a suitably operated dynamo and a circuit connected therewith and adapted to supply current to electrically operated machinery, of an air compressor coupled to the dynamo shaft and running continuously in the same direction, a suitable reservoir connected with the compressor and receiving the air compressed thereby, valves interposed between the compressor and reservoir and adapted by their reversal to convert the compressor into a motor operated by the compressed air in the reservoir, suitable valve-gear connected with the valves and adapted to reverse them and to vary their vibration in either position and an electrical dynamometer lying in the circuit and connected with and controlling said valve-gear, whereby the function and work of the compressor may change with the variation of the current passing through the dynamometer.

5. The combination with a source of electrical supply and a circuit connected therewith and adapted to supply current to electrically operated machinery, of suitable mechanism adapted to either store or give off energy and an electrical dynamometer lying in the circuit and connected with and governing the operation of said mechanism, the dynamometer being adapted when actuated by a predetermined current of electricity to hold the mechanism in its neutral position and to convert it into an accumulator, or a motor as the current falls below or rises above said predetermined limit.

6. The combination with a source of electrical supply and a circuit connected therewith and adapted to supply current to electrically operated machinery, of suitable mechanism adapted to either store or give off energy, an electrical dynamometer lying in said circuit and an adjustable connection between the dynamometer and said mechanism, the dynamometer when actuated by a predetermined current being adapted to hold said mechanism in its neutral position and when actuated by a greater or less current to convert it into a motor or accumulator, and the adjustment of the connection between the dynamometer and the mechanism being adapted to vary the current required by the dynamometer for holding the mechanism in its neutral position.

7. The combination with a suitably operated dynamo and a circuit connected with it and adapted to supply a current to electrically operated machinery, of an air-compressor coupled to the shaft of the dynamo and running continuously in one direction, a suitable reservoir connected with the compressor and receiving the air compressed thereby, valves interposed between the compressor and the reservoir and adapted by their reversal to convert the compressor into a motor operated by the air in the reservoir, suitable valve-gear adapted to reverse the valves and to vary their vibration in either position, a solenoid lying in the circuit, means connecting the plunger of the solenoid with the valve-gear and means connected with the valve-gear and tending to counterbalance the force exerted by the solenoid thereon, the solenoid when acted on by a given predetermined current being adapted to hold the valves in their neutral position and when actuated by a greater or less current to throw the valves in one direction, or the other, and thereby to convert the mechanism into a motor or an accumulator.

8. The combination with a suitably operated dynamo and a circuit connected therewith and adapted to supply current to electrically operated machinery, of an air-compressor coupled to the shaft of the dynamo and running continuously in one direction, an air reservoir connected with the compressor, valves interposed between the compressor and the reservoir and adapted by their reversal to convert the compressor into a motor operated by the air in the reservoir, suitable valve-gear adapted to reverse the valves and to vary their vibration in either position, a solenoid lying in the circuit, an adjustable connection between the plunger of the solenoid and the valve-gear and means connected with the valve-gear and tending to counterbalance the force of the solenoid, the solenoid when actuated by a predetermined current being adapted to hold the valves in their neutral position and when actuated by a greater or less current to throw them in one direction or the other, thereby converting the mechanism into a motor or an accumulator and the adjustment of the connection between the plunger and the valve-gear being adapted to vary the current required by the solenoid for holding the valves in their neutral position.

9. The combination with a suitably operated dynamo a circuit connected therewith and adapted to supply current to electrically operated machinery, and a shaft coupled with the dynamo shaft and rotating constantly in one direction, of an engine cylinder, a piston sliding in the cylinder and operated by said rotating shaft, an air reservoir connected with the cylinder, a valve interposed between the cylinder and the reservoir and adapted by its reversal to convert the cylinder and piston into an air compressor or motor, an eccentric rod mounted at its inner end on a suitable eccentric, an adjustable guide regulating the travel of the outer end of the eccentric rod, suitable connections between the eccentric rods and the valve, an electrical dynamometer lying in said circuit and a connection between the dynamometer and the means for regulating the travel of the outer end of the eccentric rod, whereby the variation of the current passing through the dynamometer may vary the travel of the eccentric rod and thereby reverse the valve, or change its vibration.

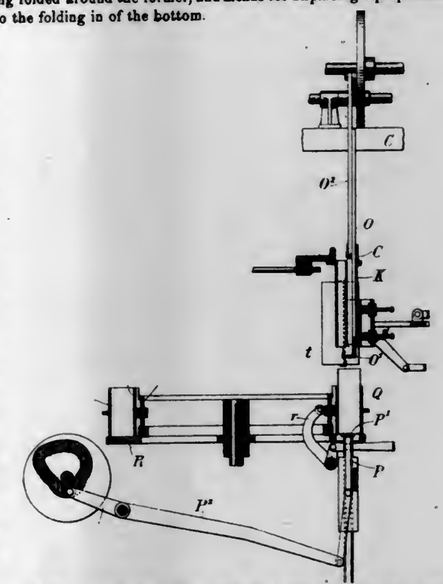
10. The combination with a suitably operated dynamo and a circuit connected therewith and adapted to supply current to electrically operated machinery, of a shaft coupled to the dynamo shaft and rotating constantly in one direction, a series of suitably arranged engine cylinders, pistons sliding in said cylinders and operated by said rotating shaft, an air reservoir connected with said cylinders, valves interposed between said reservoir and said cylinders and adapted by their reversal to convert the mechanism into a compressor or a motor, eccentric rods mounted at their inner ends on a suitable eccentric and provided at their outer ends with adjustable means for regulating their travel, means connecting said eccentric rods with said valves, respectively, a dynamometer lying in said circuit and means connecting the dynamometer with the devices for regulating the travel of the outer ends of the eccentric rods, whereby the variation of the current passing through the dynamometer may vary the movement of the eccentric rods and thereby reverse the valves or vary their vibration.

11. The combination with a suitably operated dynamo and a circuit connected therewith and adapted to supply current to electrically operated mechanism, of the shaft, B, rotating constantly in one direction, the cylinders, C, C′, C², the pistons sliding in the cylinders and operated by piston rods connected with the shaft, the reservoir A′, connected with the cylinders, the valves, V, interposed between the cylinders and the reservoir, the eccentric rods, R, R′, R², mounted at their inner ends on an eccentric on the shaft, the toothed and slotted disks, E, E′, E², regulating the travel of the outer ends of the eccentric rods, suitable connections between the eccentric rods and the valves, V, the spider, D, having arms, D′, D², D², provided with toothed segments engaging the disks, the solenoid lying in the circuit and a suitable connection between the plunger of the solenoid and one of the arms of the spider, D, whereby the variation of the current passing through the solenoid varies the position of the spider, thereby adjusting the disks, E, E′, E², and reversing, or varying the vibration of the valves; substantially as shown and described.

12. The combination with the shaft, B, the cylinders, C, C′, C², the pistons and piston rods operated by the shaft, the reservoir, A′, the valves, V, the eccentric rods, R, R′, R², and means substantially as shown and described for varying the travel of the outer ends of the eccentric rods and thus reversing or changing the vibration of said valves, of the by-pass valves, V′, V², and means substantially as shown and described for reversing said by-pass valves at the instant of reversal of the valves, V; substantially as shown and described.

544,697. PACKAGE MAKING AND FILLING MACHINERY. HENRY E. SMYER, Philadelphia, Pa., assignor to Arbuckle Brothers, New York, N. Y. Filed Sept. 3, 1893. Serial No. 485,109. (No model.)

Claim.—1. In a bag forming mechanism, a former, and a matrix for wrapping a sheet of paper around three sides of the former preparatory to its formation into a tube, the former being sufficiently shorter than the sheet of paper to leave sufficient of the paper tube projecting beneath it to be folded in to form the bottom of the bag, combined with a movable wall constituting a temporary downward continuation of the former during the instant that the paper is being folded around the former, and means for displacing it preparatory to the folding in of the bottom.



2. The combination with a former K and matrix G, of a vertically movable wall *t* adapted to slide up within the former, and mechanism for moving it adapted to hold it projected beneath the former during the time that the matrix is folding a sheet around the former, and subsequently to lift it within the former.

3. The combination with a former K and matrix G, and plunger O′ working within the former, of a wall *t* applied to said plunger, and a cam O⁴ for operating the plunger, formed with a dwell *t′* for causing the plunger to rest beneath the former during the instant that the paper is being folded by the matrix around the former.

4. In a packaging machine, the combination with one of a series of pockets having a movable wall *q′* guided by sliding pins *q²*, of a tension device consisting of a spring *u* applied to said pocket and pressing against such pin, and means for adjusting the tension of said spring.

5. In a packaging machine, the combination with a package-holding pocket having a movable wall, of a device for contracting the pocket consisting of a movable part moving to push in said wall, and a spring interposed between said parts and said movable wall and through which the thrust is communicated in order that the pocket in contracting upon the package shall embrace it yieldingly and thereby adapt itself to variations in the bulk of the packages.

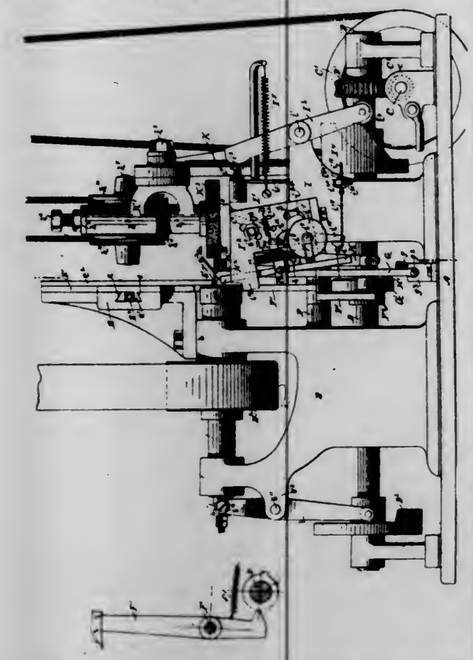
6. In a packaging machine, the combination with a pocket having a movable wall, of a device for contracting the pocket consisting of a lever *r′*, link R⁴, lever R³ and cam R′, and a spring *v* interposed between the lever R³ and lever *r′*, and through which spring the thrust is transmitted from the former to the latter, whereby the contractile thrust exerted by the latter lever against the pocket is rendered yielding.

544,698. MACHINE FOR TURNING ARTICLES OF PEARL, &c. JAMES F. SPRAGUE, Riverside, R. I., assignor to the Standard Pearl Button Company, Limited, Detroit, Mich. Filed Jan. 18, 1892. Renewed June 20, 1894. Serial No. 515,190. (No model.)

Claim.—1. In a button forming machine, the combination with a blank-holding chuck and a tool sharpening grinder having fixed positions, of a cutting tool movable immediately from the chuck to the grinder without change of direction, for successively engaging with a blank and said grinder at opposite ends of its movement, whereby the tool is resharpened after each operation upon a blank, and means for reciprocating said tool, substantially set forth.

2. In a button forming machine, the combination with a blank-holding chuck and a tool-sharpening grinder, of a cutting tool, means for moving said tool toward and away from said chuck whereby said tool is caused to engage with a blank and said grinder at opposite ends of its movement, and means for automatically feeding said tool forward in its holder, substantially as set forth.

3. In a button forming machine, the combination with a blank-holding chuck and a tool sharpening grinder having fixed positions, of a cutting tool movable immediately from the chuck to the grinder without change of direction, the surface of said tool to be ground being uppermost, and means for reciprocating said tool between said chuck and grinder, whereby the cutting edge of the tool will engage with the blanks, and the surface thereof to be ground will be brought into engagement with said grinder, substantially as set forth.



4. In a button forming machine, the combination with a blank-holding chuck and a tool-sharpening grinder having fixed positions, of a cutting-tool having an angular position with relation to the axis of the chuck, means for reciprocating said tool between said chuck and grinder and engaging the blanks and the grinder at opposite ends of its movement, and mechanism for automatically feeding the tool forward to maintain its cutting edge practically in line with the axis of the chuck and with the surface of said grinder, substantially as set forth.

5. In a button forming machine, the combination with a blank-holding chuck and a tool-sharpening grinder, having fixed positions, of a cutting tool, having an angular position with relation to the axis of the chuck, reciprocating between said chuck and grinder and engaging the blanks and the grinder at opposite ends of its movement without changing its position relative to the axis of the chuck, substantially as set forth.

6. In a button forming machine, the combination with a blank-holding chuck and a tool-sharpening grinder, having fixed positions, the grinding surface being located practically in line with the axis of the chuck, of a cutting tool having an angular position with relation to the axis of the chuck, reciprocating between said chuck and grinder and engaging the blanks and the grinder at opposite ends of its movement without changing its position relative to the axis of the chuck, substantially as set forth.

7. In a button forming machine, the combination with a blank-holding chuck having a fixed position, and a cutting tool having an angular position with relation to the axis of the chuck and reciprocating toward and away from such chuck without changing its position relative to the axis of the chuck, of a sharpening grinding wheel having a flat grinding surface rotating in a plane passing through the end of the cutting tool and engaging such cutting tool on its movement away from the chuck, substantially as set forth.

8. In a button forming machine, the combination with a blank-holding chuck, a tool-sharpening grinder and a cutting tool, relatively movable so that said cutting tool alternately engages the blanks and the grinder, of a feeding mechanism operated automatically by or in conjunction with such movement for feeding the tool forward so that its cutting end will automatically maintain a position practically in line with the axis of the chuck, substantially as set forth.

9. In a button forming machine, the combination with a blank-holding chuck and a tool-sharpening grinder, having fixed positions, of a cutting tool having an angular position with relation to the axis of the chuck, reciprocating between said chuck and grinder and engaging the blanks and the grinder at opposite ends of its movement without changing its position relative to the axis of the chuck, and a feeding mechanism operated automatically by or in conjunction with such movement for feeding the tool forward so that its cutting end will automatically maintain a position practically in line with the axis of the chuck, substantially as set forth.

10. The combination with the grinding-wheel, the chuck for holding the blanks, the cutting-tool, and automatic means for causing the movement of the cutting tool from working contact with the blank in the jaws of the chuck, to sharpening contact with the grinding-wheel, substantially as described.

11. The combination with the grinding wheel, the chuck for holding the blanks, the reciprocating carriage, the angularly adjustable tool-holder, the cutting tool held in the tool holder, and automatic means for causing the movement of the cutting-tool from working contact with the blank in the jaws of the chuck, to sharpening contact with the grinding wheel, and reversely to the chuck, substantially as described.

12. The combination with the chuck, and the cutting tool adapted for movement toward and from the chuck, of the grinding wheel for sharpening said tool, and means for adjustably holding said grinding wheel, whereby the tool may be ground at different angles, substantially as described.

13. The combination with the rotating chuck, and the guide-way, of the feed-lever, the centering-lever, and the setting-lever, and means for operating the said levers to feed the blanks from the guide-way and place the same in the chuck, substantially as described.

14. The combination with the rotating chuck, and the guide-way, of the feed-lever, the centering-lever, and the setting-lever, means for operating the said levers to feed the blanks from the guide-way and place the same in the chuck, and the spring actuated sleeve or plug adapted to bear against the rear of the blank, substantially as described.

15. The combination with the centering-lever, and the setting-lever pivoted to the centering-lever, of the chuck provided with the spring-actuated sleeve or plug adapted to bear against the rear of the blank, substantially as described.

16. In a button forming machine, the combination with a blank-holding chuck and a tool sharpening grinder having fixed positions, of a cutting tool movable immediately from the chuck to the grinder without change of direction, for successively engaging with a blank and said grinder at opposite ends of its movement, means for reciprocating said tool, a feeding device delivering the blanks to the chuck, and means for operating said feeding device when the cutting tool is withdrawn from the chuck, substantially as set forth.

17. In a button forming machine, the combination with a blank-holding chuck and a tool sharpening grinder having fixed positions, of a cutting tool movable immediately from the chuck to the grinder without change of direction for successively engaging with a blank and said grinder at opposite ends of its movement, means for reciprocating said tool, a feed for automatically advancing the tool as it is ground away, a feeding device delivering blanks to the chuck, and means for operating said feeding device when the cutting tool is withdrawn from the chuck, substantially as set forth.

544,699. BLUE DYE AND PROCESS OF MAKING SAME. MORITZ ULRICH and JOHANN BAMMANN, Elberfeld, Germany, assignors to the Farbenfabriken, vormals Fr. Bayer & Co., same place. Filed Dec. 18, 1891. Serial No. 415,515. (Specimens.) Patented in England Aug. 26, 1890, No. 13,443; in Austria-Hungary Nov. 28, 1890, No. 35,494 and No. 58,417; in France Dec. 6, 1890, No. 210,033, and in Italy Apr. 27, 1891, XXV, 29,631, LVIII, 100.

Claim.—1. The process for producing a blue direct dyeing coloring matter which consists in combining one molecular proportion of tetrazodiphenyl chloride with two molecular proportions of the 1 amidonaphthol disulpho acid hereinbefore described.

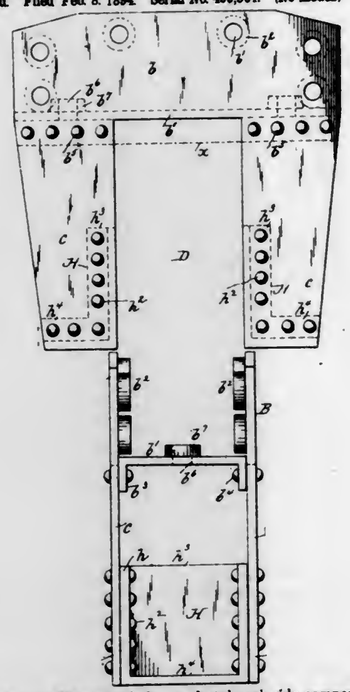
2. As a new product the dye stuff having the formula hereinbefore stated, and which when dried and finely powdered forms a grayish black powder forming a reddish blue in water from which dark blue flakes separate on adding common salt, in sodium carbonate and ammonia it dissolves with pure blue color, in soda lye with reddish-blue color and from these solutions mineral acids throw down a dark blue precipitate the supernatant fluid assuming a reddish color, by concentrated sulphuric acid it is dissolved with greenish blue color and on adding water to this solution a finely powdered blue precipitate is immediately separated which dissolves in an excess of water with the same color, and which dyes cotton in soap baths a pure blue fast to alkalies.

544,700. BLUE DYE AND PROCESS OF MAKING SAME. MORITZ ULRICH and JOHANN BAMMANN, Elberfeld, Germany, assignors to the Farbenfabriken, vormals Fr. Bayer & Co., same place. Filed Dec. 18, 1891. Serial No. 415,516. (Specimens.) Patented in England Aug. 26, 1890, No. 13,443; in Austria-Hungary Nov. 28, 1890, No. 35,494 and No. 58,417; in France Dec. 6, 1890, No. 210,033, and in Italy Apr. 27, 1891, XXV, 29,631, LVIII, 100.

Claim.—1. The manufacture of a direct dyeing coloring matter which consists in combining one molecular proportion of tetrazodito-lyl chloride with two molecular proportions of the 1.8-amidonaphthol-beta-disulpho acid which is obtained by melting with alkalies at a temperature from about 200° to 210° centigrade the alpha naphthylamine trisulpho acid as hereinbefore described.

2. The new dye, having the formula described, which when dry and finely powdered forms a bluish-gray powder which easily dissolves in water with a blue color, in sodium carbonate and ammonia liquid with the same color, in soda lye with a reddish blue color from which solutions it is separated by common salt as a dark blue flaky precipitate, its watery solutions mixed with strong mineral acids do not change their color and a precipitate is not separated therefrom, it is dissolved by concentrated sulphuric acid with a blue color and by the addition of water to this solution a finely powdered blue precipitate is separated which is dissolved by an excess of water with the same color, and which dyes unmordanted cotton in soap baths a blue with a slight greenish hue, and its shades are fast to alkali.

544,701. CAR-AXLE-BOX PEDESTAL. SAMUEL J. VAN STAVOREN, Philadelphia, Pa., assignor of one-half to Charles F. Van Horn, same place; Charles F. Van Horn executor of said Van Stavoren, deceased. Filed Feb. 8, 1894. Serial No. 499,561. (No model.)



Claim.—1. The car axle box pedestal each side composed of inverted integral U-shaped plates or guides, provided with thimbles, a transverse top plate uniting said U-shaped plates near the top thereof and transverse angle plates uniting the depending parts of said U-shaped plates, substantially as and for the purpose herein described.

2. The car axle box pedestal, composed of separately formed U-shaped plates having thimbles in the upper portion thereof, the top plate having downwardly turned flanges and thimbles, and uniting said plates or guides, the transverse angle plates provided with flanges and adapted to unite the lower ends of said plates or guides substantially as and for the purpose herein set forth and described.

544,702. SAFETY EXPRESS-CAR. HENRY W. WAIT, Iowa, La., assignor of one-third to Enello S. Willett, same place. Filed May 3, 1895. Serial No. 548,587. (No model.)

Claim.—1. The combination of a car, provided with a longitudinal partition forming a cell, and providing a safe compartment, the transverse front wall 13 of the safe compartment separated from the partition to form a side entrance to the safe compartment, and a sliding door located beyond the front wall of the safe compartment and adapted to fit between the partition and the side of the car to close the cell, and means for closing the sliding door, substantially as described.



2. The combination of a car, provided with a cell, and having a safe compartment located adjacent to the cell, and extended beyond the same, and provided with a side entrance, a transverse door located beyond the safe compartment and disposed opposite the cell and adapted to close the same, a cylinder, a piston arranged in the cylinder and connected with the door, and means for operating the cylinder to close the door, substantially as described.

3. The combination of a car, having a cell and provided at one side thereof with a safe compartment extended beyond the cell and provided with a side entrance, the wedge-shaped extension arranged at the top of the cell, the sliding door located opposite the cell and adapted to close the same, the supplemental door hinged to the sliding door and projecting above the same, and arranged to be engaged by the wedge-shaped extension, whereby the supplemental door is swung laterally to close the entrance of the safe compartment, and means for operating the sliding door, substantially as described.

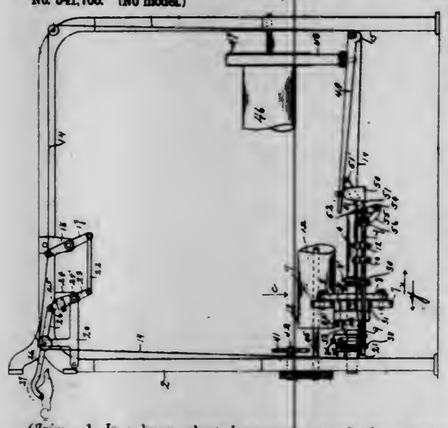
4. The combination of a car, having a cell and provided with a safe compartment, and provided at its top and bottom with longitudinal ways extending outward from the cell, stops mounted in the cell, the door 7 provided with slides mounted on said ways, and adapted to close the cell, automatic catches arranged to engage and lock the door when the latter is closed, means for sliding the door 7 substantially as described.

5. The combination of a car, provided with a cell and having a safe compartment at one side of the cell, a sliding door arranged to close the cell, a cylinder having a piston connected with the sliding door, a supply-pipe communicating with the piston and provided with a valve, an operating lever located in the safe compartment and secured to the valve and adapted to operate the same, and a branch pipe extending from the supply pipe to the cell and provided with a cock, substantially as described.

6. The combination of a car, provided with a cell and having a safe compartment, a sliding door arranged to close the cell, a cylinder having a piston connected with the sliding door, a chamber arranged at one end of the cylinder, and a supply pipe communicating with the cylinder, substantially as described.

7. The combination of a car, provided at one end with a cell, and having the longitudinal and transverse doors 12 and 13 forming a safe compartment, the sliding door 7 arranged to close the cell, the supplemental door hinged to and carried by the sliding door, and means for operating the sliding and supplemental doors, substantially as described.

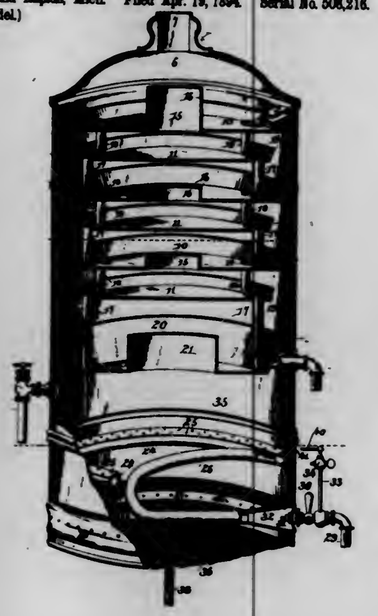
544,703. LOOM. WILLIAM WATTIE, Worcester, Mass., assignor to the Knowles Loom Works, same place. Filed Mar. 14, 1895. Serial No. 541,700. (No model.)



Claim.—1. In a loom adapted to weave towels, &c., a supplemental automatic take-up mechanism for operating the take-up roll faster when the fringe is added to the fabric, said mechanism consisting of a clutch mechanism on a driven shaft of the loom, and said shaft, and a sprocket chain and wheel mechanism connecting said clutch mechanism with a system of gears for driving the shaft of the take-up roll, and said take up roll, and connections, intermediate the pattern indicating mechanism and the clutch mechanism, to automatically operate the clutch mechanism and cause the take-up roll to rotate faster, when desired, substantially as set forth.

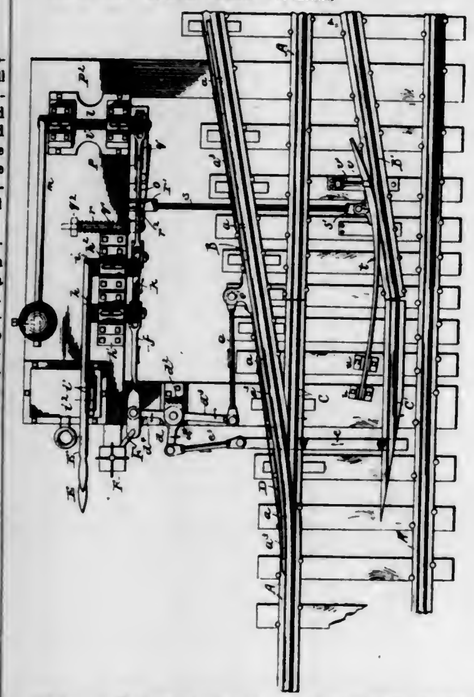
2. In a loom adapted to weave towels, &c., a supplemental automatic take-up mechanism for operating the take-up roll faster when the fringe is added to the fabric, said mechanism consisting of a clutch mechanism on a driven shaft of the loom, and said shaft, a sprocket chain and wheel mechanism connecting said clutch mechanism with a system of gears connected with the shaft of the take-up roll, and said take-up roll, and a sliding pick mechanism for controlling the operation of the clutch mechanism, and connections intermediate the pattern indicating mechanism and said sliding pick mechanism to automatically operate said sliding pick mechanism and clutch mechanism, to stop the picking of the shuttle, and cause the take-up roll to rotate faster, when desired, substantially as set forth.

544,704. BATH-WATER HEATER. CHARLES S. WEATHERLY, Grand Rapids, Mich. Filed Apr. 19, 1894. Serial No. 508,216. (No model.)



Claim.—In a bath-water heater, the combination of a casing having inner and outer concentric cylinders spaced apart to form an intervening annular chamber, a water supply-pipe connected therewith at its bottom, a series of annular open-topped pans arranged at intervals in the casing and having outer peripheries of equal diameters with the inner cylinder and resting upon beads upstruck upon the surface of said cylinder, intermediate pans of smaller diameter having their peripheries arranged out of contact with the walls of the inner cylinder, vertical tubes 17 secured at their upper ends in openings in the bottoms of the pans of smaller diameter with their extremities projecting slightly above the plane of the bottoms thereof and having their lower ends cut-away and resting upon the bottoms of the pans of the large diameter, whereby the small pans are supported by the large pans through the medium of the tubes, a plurality of the latter being employed for each pan, vertical tubes 18 fixed at their upper ends in openings in the bottoms of the large pans and extending to the bottoms of the small pans, and a burner arranged beneath and communicating with the bottom of the casing, substantially as specified.

544,705. RAILROAD-SWITCH. CLAUDE W. WENTZELL, Harper's Ferry, W. Va., assignor of one-half to Will O. Rau, same place. Filed Mar. 28, 1895. Serial No. 543,586. (No model.)



Claim.—1. The combination with a main track, siding, pivoted switch rails, and means for shifting these pivoted switch rails, of latch mechanism adapted to release this shifting mechanism to allow the pivoted switch rails to resume their normal position, a sliding bar connected with the latch mechanism, and in position to receive a wheel flange between it and one of the rails whereby to be operated by the passing car or train to release the latch mechanism, and a movable bar or rail in position to be controlled by the passing car and arranged to permit the pivoted switch rails to move when the car passes from it, substantially as set forth.

2. The combination with a main track, siding, pivoted switch rails, and operating mechanism for shifting these pivoted switch rails, of latch mechanism adapted to release the shifting mechanism to throw the pivoted switch rails back to their normal position, a spring bar having loose connection with the latch mechanism, said bar adapted to be operated by a passing car whereby to release the latch, and a movable bar or rail in position to be controlled by the passing car and arranged to permit the pivoted switch rails to move when the car passes from it, substantially as set forth.

3. The combination with the pivoted switch rails of a railroad switch, of an operating lever for shifting said switch rails to open the switch, devices for automatically closing the switch after a train shall have passed, an operating lever for setting said closing devices, said operating levers being so disposed that when in their normal positions with the switch closed, one lever will be over the other, and a lock for locking the top lever in its normal closed position, substantially as set forth.

4. The combination with the pivoted rails of a railroad switch and a movable bar adjacent to one of the track rails, of a lever connected with the switch rails and movable bar whereby to shift the same, devices for automatically closing the switch, a lock for retaining said devices set after the switch shall have been opened, a spring bar adjacent to one of the track rails adapted to be moved by the flange of a wheel, and a connection between said spring bar and lock whereby to primarily release the closing mechanism so as to permit it to operate to close the switch when the last wheel of the train shall have passed over the said movable bar, substantially as set forth.

5. The combination with the pivoted rails of a railroad switch and a movable bar located adjacent to one of the track rails, said movable bar having curved slots therein, a series of brackets for retaining said movable bar in proper position and pins passing through said brackets, slots in the track rail, of a lever connected with said movable bar and pivoted switch rails, means connected with said lever for automatically closing the switch, means for primarily locking said closing devices and a spring bar adjacent to one of the track rails and adapted to be operated by the flange of a wheel to primarily release the closing devices so as to permit the latter to operate to automatically close the switch when the last wheel of the train shall have passed over the said movable bar, substantially as set forth.

6. The combination with the pivoted rails of a railroad switch, of an operating lever connected with said pivoted rails, a shaft, a weighted arm at one end of said shaft, a depending arm at the other end of the shaft, a latch to engage the depending arm, a movable connection between said depending arm and said operating lever, a device to be operated by the train for operating said latch to release the depending arm and means controlled by the train for permitting said weighted arm to drop and close the switch, substantially as set forth.

7. The combination with the pivoted rails of a railroad switch and a movable bar adjacent to one of the track rails, of a pivoted lever having three arms, a connection between one of said arms and the pivoted switch rails, a connection between said lever and the movable bar, an operating lever, an arm adapted to move therewith, a connection between the last-mentioned arm and said pivoted lever, a slotted bar pivotally connected to the arm which moves with the operating lever, a setting lever, an arm adapted to move with the setting lever and connected with said slotted bar, a shaft, a weighted arm at one end of the shaft, a depending arm at the other end of the shaft, a connection between the depending arm and arm carried by the setting lever, a spring actuated latch bar to engage said depending arm, a spring bar located adjacent to one of the track rails and adapted to be moved by the flange of a wheel, and a connection between said spring bar and latch bar, substantially as set forth.

544,706. MANUFACTURE OF CEMENT. JASPER WHITING, Chicago, Ill. Filed Feb. 5, 1895. Serial No. 537,404. (No specimens.)

Claim.—1. The method of manufacturing cement from slags which consists in chilling molten slag in water, drying and grinding the product and adding thereto caustic soda or its equivalent in a dry state.

2. The method of manufacturing cement from slags which consists in chilling molten slag in water as it comes from the furnace, drying and grinding the slag and adding thereto slaked lime and caustic soda both in a dry state and in the proportions substantially as set forth.

3. A cement composed of blast furnace or other slag in a dry pulverized form and caustic soda in a dry state, in substantially the proportions set forth.

4. A cement composed of blast furnace or other slag in a dry pulverized form and caustic soda and slaked lime in a dry state and substantially in the proportions set forth.

544,707. FOUNTAIN-PEN. RUEL W. WHITNEY, Cleveland, Ohio. Filed May 3, 1895. Serial No. 548,073. (No model.)

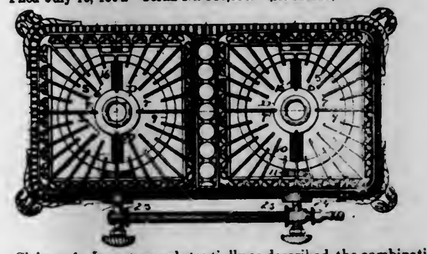


Claim.—1. A fountain pen, having an ink reservoir, a pen section removably attached thereto, in combination with an ink-feeding device formed by laying together two longitudinal sections of tubing, within the pen section, one part of which extends downward over the back of the pen, the other extending upward into the ink reservoir and being adjustable longitudinally, substantially as specified.

2. A fountain pen having an ink reservoir, a pen section attached thereto, a pen fitted into said pen section in combination with an ink-feeding device composed of two longitudinal sections of tubing which when placed within the pen section form a sectional tube, a portion of one section extending downward over the back of the pen to near its point, a portion of the other extending upward into the ink reservoir substantially as specified.

3. A fountain pen having the usual appliances for holding the ink and pen, in combination with a sectional tube placed within the pen section or nozzle, one end extending upward into the ink reservoir, the other extending downward over the back of the pen, the lower end being pointed and flattened to retain the ink substantially as specified.

544,708. GAS COOKING-STOVE. CHARLES WHITTINGHAM, Cleveland, Ohio, assignor to the Cleveland Foundry Company, same place. Filed July 16, 1894. Serial No. 517,636. (No model.)

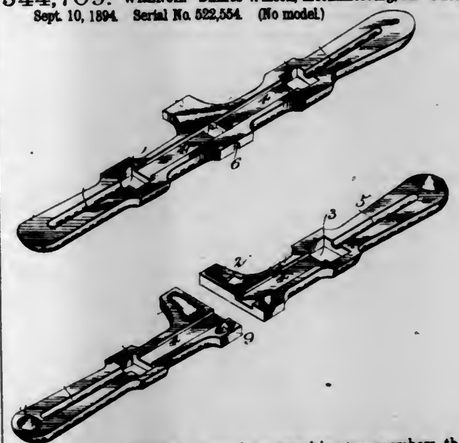


Claim.—1. In a stove substantially as described, the combination of the frame having a raised cross bar rigid therewith, and grate frames situated on each side of said cross bar and lying substantially flush therewith, as and for the purpose set forth.

2. In the construction of a gas stove as described, a plurality of burners, a gas supply tube and short valved pipes at the end of said tube and having valves therein, the rosettes threaded on said pipes and the burner frame to which the rosettes are secured, whereby the said tube and pipes may be reversed together and are held in place, substantially as set forth.

3. In a gas cooking stove, a burner chamber, a cap on said chamber free to be rotated thereon and having ribs on its under side resting on the edge of said chamber and spurs on its inside to confine the cap in place laterally, and grate bars overlapping the edge of said cap, thereby serving to confine the cap on the burner, substantially as set forth.

544,709. WRENCH. DARIUS WILCOX, Mechanicsburg, Pa. Filed Sept. 10, 1894. Serial No. 522,554. (No model.)



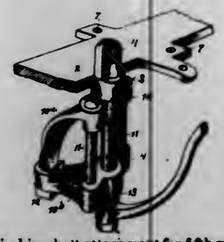
Claim.—1. A blank for wrenches comprising two members, the counterpart of each other, having the handle and the fixed jaw integral therewith; struck or swaged grooves or channels for the shank of the movable jaw, holes for the nut and elevations or projections on the inner faces of the members by means of which the two parts may be welded substantially as described.

2. A blank for wrenches comprising two members, the counterpart of each other having the handle and the fixed jaw integral; struck or swaged grooves or channels for the shank of the movable jaw holes for the nut and means whereby the parts may be secured together, substantially as described.

3. That improvement in the art of manufacturing the handle and fixed jaw of a wrench, comprising two members, which consists in forging or swaging grooves or channels on the inner faces thereof

and projections for welding removing the flash or fin formed by the swaging superimposing the two members upon each other with their channels facing each other—welding the jaw end, and riveting or brazing the end of the handle and completing the operation in finishing dies substantially as described.

544,710. CLIP KING-BOLT FOR VEHICLES. DARIUS WILCOX, Mechanicsburg, Pa. Filed Mar. 29, 1895. Serial No. 543,636. (No model.)



Claim.—1. A clip king bolt attachment for fifth wheels, comprising a clip adapted to extend on one side of the axle, an enlarged head adjacent to the opposite side of the axle with a hole for a king bolt, and with depending legs or rods, and the bottom yoke with holes or apertures for the legs of the clip, and nuts for securing the parts, substantially as described.

2. A clip king bolt attachment for fifth wheels, comprising a clip adapted to extend on one side of the axle, an enlarged head adjacent to the opposite side of the axle with a hole for a king bolt and with depending legs or bolts, and a bottom yoke with holes or apertures for the legs of the clip, and nuts for securing the parts, in combination with a king bolt secured to the head block plate, substantially as described.

3. A clip king bolt attachment for fifth wheels, comprising a clip adapted to extend on one side of the axle, an enlarged head adjacent to the opposite side of the axle with a hole for the king bolt and with depending legs or bolts, and a bottom yoke with holes or apertures for the legs or bolts and a recessed or depressed seat for the axle, and suitable nuts for securing the parts, in combination with a king bolt, substantially as described.

4. A clip king bolt attachment for fifth wheels, comprising a clip adapted to extend over one side of the axle, an enlarged head adjacent to the opposite side thereof with a hole for the king bolt and with depending legs or bolts, a bottom yoke with holes or apertures for the legs or bolts, and suitable nuts for securing the parts, in combination with a lug carried by the head block plate, a king bolt depending from said lug, and a transverse bolt for securing the king bolt against rattling, substantially as described.

5. A clip king bolt attachment for fifth wheels, comprising a clip adapted to extend over one side of the axle, an enlarged head adjacent to the opposite side thereof, with a hole for the king bolt, and with depending legs or bolts, a bottom yoke with holes or apertures for the legs or bolts, suitable nuts for securing the parts, in combination with a king bolt, a brace with a conical projection fitting in a conical bearing formed in the bottom of the yoke and extending to and secured to the wheel or reach, substantially as described.

544,711. TELEPHONE SWITCH AND SYSTEM. ERNEST C. WILCOX, Meriden, Conn. Filed May 13, 1895. Serial No. 549,052. (No model.)
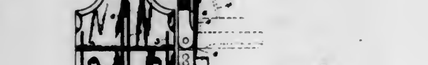


Claim.—1. A receiver support consisting of a fixed part and a part movable laterally with respect thereto, switch mechanism having a contact thereof connected to said movable part, and a device connected to said movable part for holding it in its normal position, until moved outwardly by the withdrawal of the receiver and for holding it in the outward position until manually returned to the normal position.

2. A combined receiver support and switch consisting of a hook mounted on the wall of the telephone case, another hook co-operating therewith and pivoted to a bracket on the case, a switch contact carried by the movable hook, circuit contact springs arranged in the path of movement of said contact, and a spring acting to hold said movable hook and its contact in either of their extreme positions, as and for the purpose set forth.

3. The combination with a suitable support having an aperture therein, of a hook mounted thereon at one side of the aperture, a bracket on the opposite side of the support near the aperture, a hook pivoted to said bracket and protruding through the aperture into co-operative relation to the other hook, a contact bar carried by the pivoted hook, a spring contact arranged to engage said bar as it is moved in one direction, a spring contact arranged to engage said bar as it is moved in the opposite direction, and a device for retaining said bar and its supporting hook in either of their extreme positions, substantially as and for the purpose specified.

4. In a telephone apparatus, the combination with a receiver support consisting of a fixed hook and a co-operating pivoted hook, of a switch contact carried by the pivoted hook, one line terminal and one local-circuit terminal electrically connected to said contact, a spring contact located at one side of the movable contact and connected to the main line, spring contacts located at the opposite side of said movable contact and connected respectively to the line and to the other terminal of the local circuit, and a device for retaining the pivoted hook and its contact in either of their extreme positions, as and for the purpose set forth.

544,712. PENCIL. PAUL R. WIRT, Bloomsburg, Pa. Filed Dec. 3, 1894. Serial No. 530,719. (No model.)



Claim.—1. In a pencil, the combination of the hollow stock, adapted to receive a number of points, the hollow point-section removably attached to the end of the stock, and a holding device projecting forward from the stock and beyond the same into the point-section to hold the point in place.

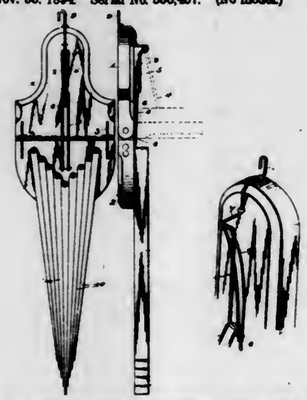
2. In a pencil, the combination of the hollow stock, adapted to receive a number of points, the hollow conical point-section removably attached to the end of the stock, the conical point in said point-section, and a holding or retaining device extending beyond the stock between the same and the points to hold the latter in place.

3. In a pencil, the combination of the hollow stock, adapted to receive a number of points, having the forwardly-projecting arm a^3, the conical hollow removable point-section attached to the end of the stock, and the conical point d seated in the point-section and held in place by the arm a^3.

4. In a pencil, the combination of the stock a, having the integral forwardly-projecting arm a^3, the conical hollow point-section attached to the stock and inclosing the arm a^3, and the conical point d seated in the end of the point-sections and held in place by the arm a^3.

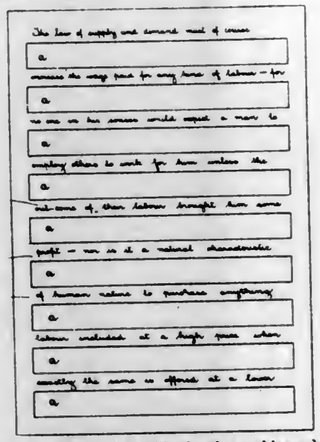
5. In a pencil the combination of the stock, adapted to receive a number of points, the hollow point section removably attached to the end of the stock, and a holding device projecting beyond the stock and into the point section to hold the points in place.

544,718. DISPLAY-RACK. JEHIEL F. WYCKOOP, Muscatine, Iowa. Filed Nov. 30, 1894. Serial No. 530,467. (No model.)



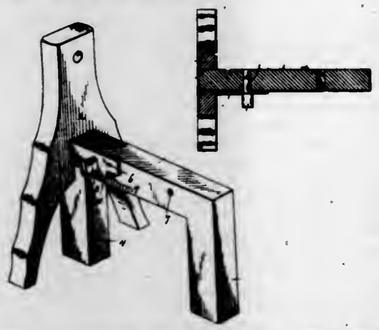
Claim.— A display rack, comprising a back, a leaf hingedly connected with the back, supporting arms mounted on the leaf, a keeper constructed of a single piece of wire and disposed vertically on the back, and offset therefrom and provided at its top with an outward extending horizontally disposed loop, a U-shaped link provided at its lower end with eyes and hinged to the leaf and having its upper end receiving the keeper and adapted, when moved upward, to engage the loop, and the resilient U-shaped tongue straddling the keeper and secured at its lower end to the back, and curved upward and outward, and having its upper end arranged in said loop, whereby the link is retained in the same, substantially as described.

544,714. EDUCATIONAL APPLIANCE. HARRY W. YORKE, Orcs Pulta, Isle of Jersey, England. Filed May 27, 1895. Serial No. 550,902. (No model.)



Claim.—An appliance for facilitating the teaching or learning and the correction of shorthand, foreign languages and the like, consisting of a sheet of paper or other suitable material having a series of transverse slots or openings, on the bars or strips between which—on one side of the sheet—is the matter to be transcribed, translated or construed and on the backs of the said bars or strips on the other side of the sheet the correct transcription, translation or construction, as set forth.

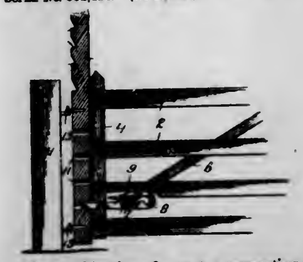
544,715. FIRE-DOG. EUGENE J. YOUNG, Monroe, Ky. Filed Jan. 23, 1895. Serial No. 535,940. (No model.)



Claim.—1. A fire-dog, comprising the front portion having opposite legs and provided in its crotch with a recess, and having a horizontal arm extending inward from one side of the recess, and provided with a perforation, a substantially rectangular body portion comprising a horizontal bar, and a pair of legs, said body portion being adapted to have either of its ends arranged in said recess and provided with a pair of perforations for registering with that of said arm, and a fastening device passing through the arm and the body portion, and detachably connecting the parts, substantially as described.

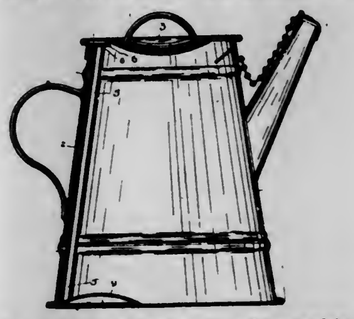
2. A fire-dog, comprising a front portion having opposite legs and provided in its crotch with a recess, an arm extending horizontally from the inner face of the front portion and located adjacent to the recess and provided with a notch, a body portion provided with a pair of legs and having one end fitting in the said recess and provided at opposite ends with perforations and having at opposite sides projections for engaging said notch, and a fastening device passing through one of the perforations of the body portion and through a perforation of said arm, substantially as described.

544,716. GATE. RALPH R. ALFRED, Weston, W. Va. Filed June 8, 1895. Serial No. 552,126. (No model.)



Claim.—The combination of a post, a supporting bar hinged to the post and provided at its upper portion with a series of shoulders, and having at its lower portion a corresponding series of sockets, a gate having its bars pivotally connected with one another and capable of adjustment, a rack-bar mounted on the gate at the back thereof, and provided at its front portion with a series of teeth, and having its rear portion projecting from the gate and arranged to engage the sockets of the supporting bar, and an inclined brace pivoted at its upper end to the gate and having its lower end engaging the rack-bar, substantially as described.

544,717. DOMESTIC COOKING VESSEL. RICHARD C. ANDERSEN, Lincoln, Nebr. Filed Feb. 14, 1895. Serial No. 538,408. (No model.)



Claim.—1. In a coffee pot or like vessel two conduits 4 and 5 formed by the piece of V-shape in cross section having a partition plate secured thereto and itself secured to the vessel, the plate 6 having an opening 7 and the conduit 5 an opening 8 beneath the plate, the chamber 12 formed by a raised portion 9 of the bottom, and a covering plate 10 situated in the plane of said bottom, substantially as set forth.

2. In a coffee pot or like vessel two conduits 4 and 5 formed by the piece of V-shape in cross section having a partition plate secured thereto and itself secured to the vessel, the plate 6 having an opening 7 and the conduit 5 an opening 8 beneath the plate, the chamber 12 formed by a raised portion 9 of the bottom, a covering plate 10 situated in the plane of said bottom and the downward extension 13 of the wall separating said conduits, substantially as set forth.

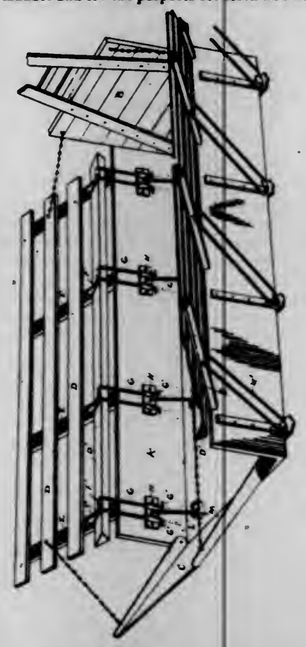
3. In a coffee pot or like vessel the conduit 4 for the descent of vapor, a re-heating chamber formed in the bottom of the vessel and a conduit 5 for the ascent of steam both conduits connecting with the re-heating chamber and with the upper part of the vessel, the former having a transverse area about three times that of the latter, substantially as set forth.

4. In a coffee pot or like vessel the conduit 4 for the descent of vapor, a re-heating chamber formed in the bottom of the vessel and a conduit 5 for the ascent of steam both conduits connecting with the re-heating chamber and with the upper part of the vessel, a plate such as 6 to obstruct entrance to the top of flue 5 and a guard such as 13 to direct the descending vapor below the ascending steam, substantially as set forth.

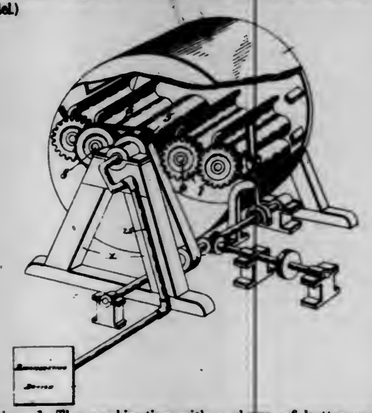
544,718. COMBINED HAY AND STOCK RACK. WILLIAM I. APPLEGATE, Little York, Ill. Filed Sept. 27, 1894. Serial No. 524,208. (No model.)

Claim.—In a hay and stock rack, the combination with a wagon body, of the side racks composed of the horizontal slats D, cross pieces E having the bails M' hung therefrom, the straps F bolted to the inner sides of said pieces E and projecting inwardly at an angle to the said racks, the bails G hung from the free ends of said straps, the bear-

ings H secured to the sides of the wagon body on the inner sides thereof and engaging the said bails G and the hooks G' formed on the lower ends of the said bails G to engage the bearings H substantially in the manner and for the purposes set forth and described.



544,719. COMBINED CHURN AND BUTTER-WORKER. AMAL M. BURGHAM, Jessup, Iowa. Filed Dec. 11, 1894. Serial No. 531,480. (No model.)

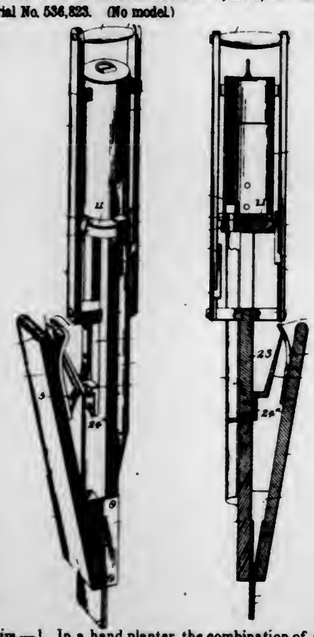


Claim.—1. The combination with a churn, of butter-working paddles located therein and extending from side to side thereof and adapted to form a partition dividing the said churn in separate compartments, and means to lock them in such position, substantially as described.

2. The combination with the supports or uprights having a circular rack secured thereto, of a churn mounted in bearings on said uprights, a pinion on the main shaft of said churn, rotating paddles located in said churn having pinions on the shafts upon which they rotate, the said pinions being adapted to be thrown into and out of gear with the said circular rack, whereby the said paddles are adapted to form partitions dividing the said churn into two compartments and to work the butter after the churning process has been completed, substantially as and for the purposes specified.

3. The combination with a churn adapted to rotate, of a valve therein consisting of a valve-rod, a spring for normally holding the same in its closed position, said valve rod having a cup on its outer end, an inclosing pocket for the outside of said valve rod and a ball loosely mounted in said socket whereby, upon the rotation of said churn, the ball is adapted to engage the cup on the upper edge of said rod and release the valve, substantially as and for the purposes described.

544,720. HAND-PLANTER. JOHN A. CHAMBERS, Newburg, assignor of one-half to Robert Meriwether, Rolla, Mo. Filed Jan. 31, 1895. Serial No. 536,823. (No model.)



Claim.—1. In a hand planter, the combination of a pair of hingedly connected legs, a hopper mounted on one of the legs, a rotating seed disk, and a reciprocating frame mounted on one of the legs and carrying the handle of the planter, and engaging the seed disk and the other leg, whereby the seed disk is rotated and the lower ends of the legs separated, substantially as and for the purpose described.

2. In a corn planter, the combination of a leg, a hopper mounted thereon, a rotating seed disk mounted at the bottom of the hopper and provided at intervals around its entire periphery with lugs or cogs, and a reciprocating frame having parallel sides and provided with oppositely disposed inclined shoulders arranged on the inner faces of the sides to engage alternately the lugs or cogs, whereby the seed disk is continuously rotated, substantially as described.

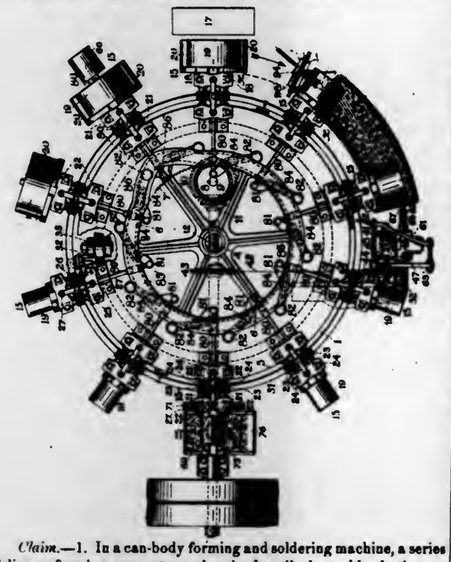
3. In a hand planter, the combination of a pair of legs hingedly connected, one of the legs being rigid, and the other being movable, a hopper provided at its bottom with a rotary seed disk, a reciprocating frame engaging and rotating the seed disk and having an inclined shoulder engaging the movable leg above the point of hinging and adapted to separate the lower ends of the legs, and a spring interposed between the upper portions of the legs to close the lower ends of the same, substantially as described.

4. In a hand planter, the combination of a pair of legs hingedly connected, one of the legs being movable and the other rigid, a hopper mounted on the rigid leg and having a rotary seed disk provided with peripheral lugs, and a reciprocating frame mounted on the rigid leg and provided with reversely arranged inclined shoulders for engaging the peripheral lugs and having an inclined shoulder for engaging the movable leg, substantially as described.

5. The combination of the rigid and movable legs hingedly connected, a hopper mounted on the rigid leg, a rotary seed disk provided with peripheral lugs, a reciprocating frame mounted on the rigid leg and provided with reversely arranged oppositely disposed inclined shoulders to engage the peripheral lugs and having an upwardly and outwardly inclined arm, and a projection arranged on the movable leg and arranged to be engaged by the inclined arm, substantially as described.

6. The combination in a planter, of a rigid leg provided with a longitudinal opening, the bottom disk mounted at the top of the rigid leg, a hopper arranged on the rigid leg and located above the bottom disk, braces supporting the hopper, a rotary seed disk provided with peripheral lugs, a movable leg hinged to the rigid leg and carrying a horizontal projection, a seed tube extending from the bottom plate to the space between the lower ends of the legs, a rectangular frame guided on the rigid leg and the hopper, and provided with a depending stem arranged in the longitudinal opening of the rigid leg, said rectangular frame being provided at its sides with reversely arranged inclined shoulders for engaging the lugs of the seed disk, a spring interposed between the legs for holding the lower ends of the latter closed, and an inclined arm mounted on the depending stem of the rectangular frame and provided at its base with a recess to form a passage for the projection of the movable leg, substantially as described.

544,721. MACHINERY FOR FORMING AND SOLDERING BODIES OF METALLIC PACKING-CANS. JOHN B. CLOT, San Francisco, Cal. Filed Dec. 18, 1893. Serial No. 493,964. (No model.)



Claim.—1. In a can-body forming and soldering machine, a series of dies or forming apparatus as herein described, a solder bath over which the sheets or plates to form the can-body are passed, when partially bent or formed, so the tips or edges of the sheets will stand at a right angle to the surface of the solder bath, and two faces to be joined will be forward and presented to the melted solder, in the manner substantially as described.

2. In a can-body forming and soldering machine, a main rotating table having a series of radial dies or formers around which the sheets forming the can body are bent; pivoted jaws embracing these dies or formers automatically and coincidently operated by means of the circular guideway the profile of which conforms to the movement and positions of the revolving main supporting table, so the sheets or plates will be bent downward around the dies or formers, so held and moved forward in definite or positive sequence, in the manner substantially as described.

3. In a can-body forming and soldering machine, a main rotating table having a series of formers or dies thereon at equidistant spaces, dies or formers, as herein shown, with closing jaws to embrace the formers or dies, and a flexible back strap attached to the jaws and covering the sheet from which the can body is formed, so it will be equally and uniformly curved and bent downward around the dies or formers, and subjected to a pressure outward from the center toward the edges, in the manner substantially and for the purposes specified.

4. In a can-body forming and soldering machine, a main rotating table provided with a series of dies or formers with pivoted jaws, and a flexible back strap to bend and curve the sheets downward around the dies or formers from the center to the edges; pinions, a double rack, and cylindrical guide or track beneath the revolving table, its profile formed to extend and close the forming jaws at and over certain distances of the main table's rotation, in the manner substantially as shown and described.

5. In a can-body forming and soldering machine, a rotary main table having a series of forming apparatus for receiving, holding and curving the plates for can bodies; a guide way or track beneath the main table with rollers, racks and pinions to control the forming apparatus, and, in combination therewith, a solder bath into which the edges of the sheet will be dipped during or before the completion of the forming operation, in the manner and for the purposes substantially as described.

6. In a can-body forming and soldering machine, a series of forming devices, as herein shown; dies or formers, around which sheets are bent from the top downward in positive sequence and stages; a soldering bath in such relation thereto that the sheets are dipped in the solder and the seams finally closed as they are carried over and from the solder bath, and while at their highest temperature, in the manner substantially as shown and described.

7. In a can-body forming and soldering machine, a rotating main table with can-forming and soldering apparatus set in series thereon; devices to form and close the sheets, as herein described, in combination with a pivoted wiping and cleaning lever, provided with a flexible tip and having a compound radial and lateral movement, so it will act parallel with the soldered seam and in definite relation to the movement of the main rotating table, in the manner substantially as described.

8. In a can-body forming and soldering machine, a main rotating table having an equidistance series of can-forming and soldering devices mounted thereon; a wiping or cleaning pad or tip operated positively by connection with the main table's rotary movement; a crank and compound levers, as herein described, to produce an approximately uniform radial movement of the wiping or cleansing pad or tip; a stationary diagonal guide to cause a lateral movement of the wiping tip or pad, so its angular velocity will conform to the main table's movement, in the manner substantially as described.

9. In a can-body forming and soldering machine, a main rotating table provided with automatic forming and soldering apparatus for the sheets, and wiping or cleansing devices to remove the surplus solder from the seams; cooling devices consisting of sponges or porous material mounted on a revolving frame or support positively geared in respect to the rotary movement of the main table, passing consecutively through a tank of cooling water coming in contact consecutively with the soldered seams of the can, in the manner substantially as shown and described.

10. In a can-body forming and soldering machine, a main rotating table provided with a series of dies or forms, around which the sheets are formed and the seams are soldered, these dies or forms grooved on their bottom side and provided with sliding ejecting bars, in combination with a continuous stationary cam groove or guide way that positively operates the sliding ejecting bars and removes the completed can bodies from the dies or formers at a predetermined point in the manner substantially and for the purposes specified.

11. In a can-body forming and soldering machine, a main rotating table provided with can-forming and soldering apparatus, as herein described; a series of ejecting bars sliding in grooves or channels formed in the dies on which the can bodies are formed and soldered, these ejecting bars attached to levers moved by a continuous cam groove or guide way, so the ejecting bars are driven outward and the finished can body removed from the dies with definite relation to the movement of a main table on which the die-forming apparatus is mounted, substantially as described.

12. In a can-body forming and soldering machine, a series of dies or formers arranged to pass over a solder bath placed beneath their path; bending or forming jaws and back straps to bend or curve the plates downward around the dies or formers, so their edges will dip into a solder bath beneath, fluxing, cleaning and cooling devices in combination therewith, so the operation will be automatic and continuous, in the manner and for the purposes substantially as specified and described.

13. In a can-body forming and soldering machine, a series of dies or formers arranged by proper mechanism to pass successively over a solder bath in which the edges of the partially-formed plates are immersed, the dies or formers consisting of open-sided cylinders, flexible and capable of expansion and contraction, so the completed can body can be loosened and removed after cooling, in the manner substantially as described.

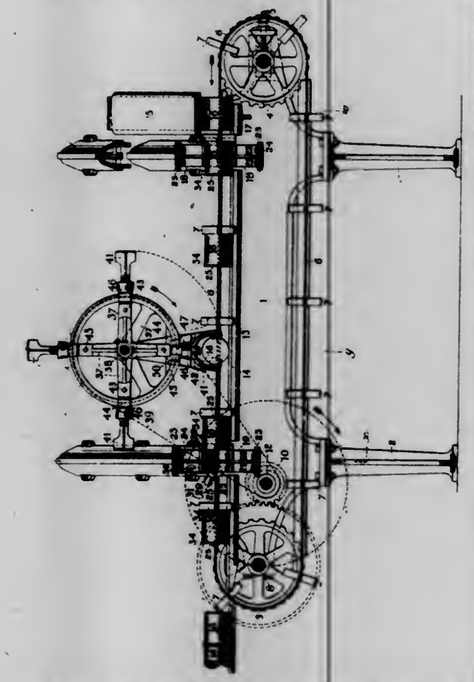
14. In a can-body forming and soldering machine, expansible dies or forms around which the sheets or plates are bent, consisting of open-ended cylinders flexibly supported by a nave or hub open or slit at one side, tapering wedges or keys moving outward and inward in the slit parallel to the axis of the cylinder or former so the latter will be expanded and caused to permit the removal of the completed can bodies, substantially as described.

15. In a can-body forming and soldering machine, expanding dies or formers around which the plates or sheets are bent; with pivoted automatic jaws and back straps, so arranged and operated as to pass over a solder bath and immerse the edges of the sheet when the latter are partially formed or bent in the melted solder; apparatus in combination therewith for cleansing and cooling the soldered joints, in the manner substantially as described.

16. In a can-body forming and soldering machine, a series of dies or forming apparatus as herein described, a solder bath over which the tips or edges of the sheets or plates are passed, so that the edges will be successively exposed to the solder and be coated therewith, wiping devices to remove the surplus solder from the seams, and cooling sponges or pads that are alternately immersed in water and applied to the seams, in the manner substantially as described.

17. In a can-body forming and soldering machine, a series of dies or forming apparatus as herein described, a solder bath over which the plates or sheets are passed when partially formed and their edges or tips successively exposed to the solder and coated therewith, wiping devices to remove the surplus solder from the seams, and cooling pads or sponges revolving on an axis and connected with the main table, in such relation that the cooling pads or sponges will be alternately dipped in a tank of water and applied to the seams of the cans, in the manner substantially as described.

544,722. CAN-HEADING MACHINE. JOHN R. CLOT, San Francisco, Cal. Filed Jan. 24, 1894. Serial No. 497,382. (No model.)



Claim.—1. In a can-preparing machine, the combination with a die of cruciform section, of mechanism for propelling the can-bodies through said die, consisting essentially of endless chains or bands provided with cross-bars, substantially as described.

2. In a can-preparing machine, the combination with dies through which the can-bodies are passed, of reversing mechanism operating upon the can-bodies between the dies.

3. In a can-preparing machine, the combination with dies through which the can-bodies are passed, of reversing mechanism for said bodies, and mechanism for applying heads on both ends of the cans, substantially as described.

4. In a can-preparing machine, the combination of the dies through which the can-bodies are passed, the reversing mechanism for the bodies, and the propelling mechanism having cross-bars that likewise pass through the dies, substantially as described.

5. In a can-preparing machine, the combination of the dies through which the can-bodies are passed, said dies being transversely divided to provide intermediate head-receiving spaces, the reversing mechanism, the propelling mechanism, and the head-applying devices, substantially as described.

6. In a can-preparing machine, the combination of the flexible dies through which the can-bodies are passed, chutes to supply the can-heads in line with the can bodies, and a detent to release them one at a time so as to properly meet the can body, substantially as described.

7. In a can-preparing machine, the dies through which the cans pass, the reversing mechanism for the cans, and the propelling mechanism therefor, said reversing mechanism operating more rapidly than the propelling mechanism, so that the can body in being turned will advance beyond and clear the latter, substantially as described.

8. In a can-preparing machine, dies through which the cans are forced successively, chutes to supply the can heads, and in combination therewith a gas jet or other means of heating or expanding the heads as they pass into the dies and before they are pressed on the can bodies, in the manner substantially and for the purposes specified.

9. In a can-preparing machine, a main frame provided with drums or wheels at each end; a propelling device carried thereby and fitted with horizontal and vertical bars to propel the can bodies, and flexible dies through which the propelling mechanism passes, wherein and whereby the heads are forced on the can bodies, in the manner substantially and for the purposes described.

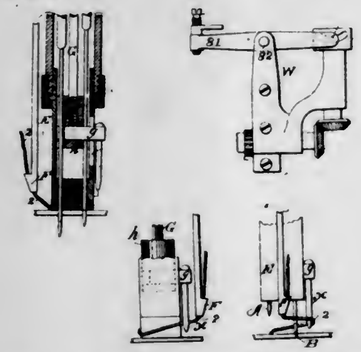
10. In a can-preparing machine, flexible dies through which the bodies pass successively, the first set of dies being provided with a forming nipple that by pressure converts the cylindrical section of the can body to a rectangular or other required section by flexure, in the manner substantially and for the purposes described

11. In a can-preparing machine, for placing and adjusting the heads on can bodies, a pervious flexible die in which the first head is applied, said die consisting of two parts with a space between to receive the can heads and adjust them concentric with the moving can body, the front part of the die being bell-mouthed, tapered, and so formed as to press the cylindrical can bodies into rectangular or other required form, substantially in the manner and for the purposes specified.

12. In a can-preparing machine, a pervious flexible die consisting of two parts with a space between them to receive the can heads and adjust them concentric with the moving can body, a chute to supply the can heads in line with the can bodies, and mechanism for propelling the can bodies through the die, substantially as described.

13. In a can preparing machine, pervious dies through which the can bodies are passed, said dies being flexible or expansive so as to yield for variations of the can's diameter.

544,723. EMBROIDERING-MACHINE. EMILE CORNELY and ROBERT CORNELY, Paris, France. Filed May 20, 1895. Serial No. 549,972. (No model.)



Claim.—1. In an edging machine, the combination with the nipple and two independently operating needles, of an auxiliary pin cooperating with said needles in the formation of the seam, and reciprocated independently thereof, substantially as described.

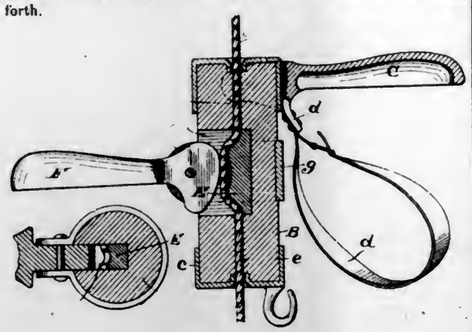
2. In an edging machine the combination with the hollow nipple and two independently operating needles, of a sliding block in said nipple, a transverse bar secured in said block and projecting through the side of the nipple, an auxiliary pin at the outer end of said bar cooperating with the needles in the formation of the seam, and means for reciprocating the block independently of the needle, substantially as described.

3. In a machine of the kind described the combination with the regulating screw stud, a lever in one end of which said stud is secured and a cam suitably operated from the crank handle of the machine, engaging the other end of said lever, substantially as described.

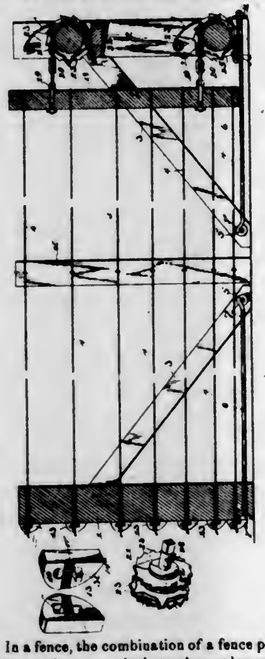
544,724. FIRE-ESCAPE. HATTIE COTTON and CHARLES M. MILLER, Evanston, Ill. Filed Nov. 13, 1893. Serial No. 490,756. (No model.)

Claim.—1. The combination with a suitable wire or rope of a block B having the longitudinal passages *e*, *e*, therein and having a lateral recess as described, the ferrules or thimbles *b* and *c* on the ends of said block, the handle C projecting laterally from the uppermost ferrule, the friction-block having its outer surface curved outward and inserted in said recess, a dog pivoted to said block and engaging said rope as it passes over said friction-block, and a loop for securing the body to block B, as set forth.

2. The combination with a suitable wire or rope, of a block B having the longitudinal passages *e*, *e*, and having a lateral recess therein, as described, the ferrules or thimbles *b* and *c*, on the ends of the block B, the handle C, the wrist-loop, the friction-block E having its outer surface curved outward and inserted in said recess, a dog pivoted to said block and engaging said rope or wire as it passes over said friction-block and a loop for securing said body to said block B, as set forth.



544,725. WIRE-STRETCHER. JOHN E. DUSANG, Larue, Ohio. Filed Sept. 20, 1894. Serial No. 523,619. (No model.)

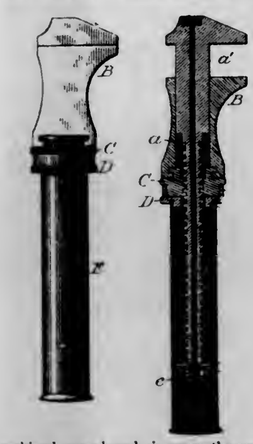


Claim.—1. In a fence, the combination of a fence post, composed of vertical bars, fence wires, a vertical attachment bar connected with the fence wires, upper and lower chains secured at their inner ends to the attachment bar, the upper and lower ratchet wheels journaled between the bars of the post, and provided with a peripheral groove forming opposite flanges, each flange being provided with ratchet teeth, said ratchet wheels being provided at opposite sides of the groove at intervals with recesses to receive the laterally projecting links of said chains, and the upper and lower pawls journaled between the posts and located above the ratchet wheels and engaging both sets of ratchet teeth, substantially as described.

2. In a fence, the combination with a post having a perforation and a wire passing through the perforation, of a clamp composed of two sections rigidly connected and having inner serrated wire engaging faces and provided with straight edges bearing against said post, one of the sections being provided with a socket, and the other having a lug fitting in the socket, and a fastening device passing through the sections and securing them detachably in their engagement with the fence wire, substantially as described.

544,726. BICYCLER'S TOOL. ROBERT C. FAWCETT, Carrollton, Ohio. Filed Apr. 9, 1895. Serial No. 545,050. (No model.)

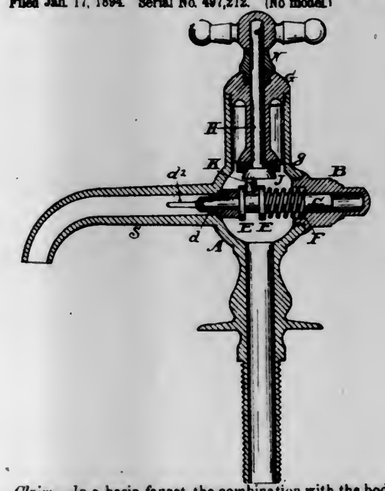
Claim.—1. A bicycle tool adapted for use as a wrench and as an air pump, embodying in combination substantially as described, a wrench provided with a tubular shank, and with a suitable pipe connection at the head of the wrench; a piston on said shank; a cylinder inclosing the shank, and radially supported thereon by a suitable guide bearing and said piston; a wrench nut, and a screw coupling for detachably uniting the cylinder to the wrench head, and enabling said cylinder to be used either as a wrench handle, or as an air pump cylinder.



2. In a combined wrench and air pump, the combination substantially as described, of a tubular shank serving as a tail piece for the jaws of the wrench, also as a piston rod, and also as an air duct; a suitable piston on said shank, and a cylinder detachably secured to the wrench head, and serving as a pump barrel when detached, and as a handle to the wrench when secured.

3. In a combined wrench and air pump, the combination with a wrench head, and a cylinder serving as a handle and as a pump barrel, of a wrench nut, and a sleeve rotatively mounted at one end of the cylinder, and screw coupled to the wrench nut, substantially as described.

544,727. BASIN-FAUCET. HENRY J. GILCHER, Cleveland, Ohio. Filed Jan. 17, 1894. Serial No. 497,212. (No model.)



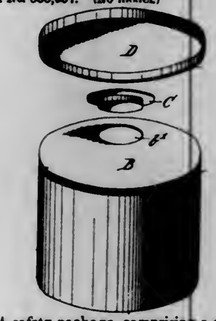
Claim.—In a basin faucet, the combination with the body A having a discharge spout integral therewith, a valve seat located in the junction of the spout with the body, a valve and valve stem substantially as that described, of the cap G having the downward extension, vertical stem H supported in the bore of said extension and cap, head J on lower end of said stem, having eccentric pin K engaging with the disks E on the valve stem C, a handle I on upper end of stem H, adapted, when turned to move said valve stem substantially as described.

544,728. CUTTER-BAR. DANIEL A. GILLIOM, Berne, Ind. Filed Oct. 30, 1894. Serial No. 527,443. (No model.)

Claim.—The combination with a finger-bar, of guard-fingers having transverse shoulders notched, as at 17, and spaced from the front edge of the bar, a guide-bar arranged between said shoulders and the front edge of the finger-bar and provided in its upper side with a continuous groove, projections carried by the guide-bar engaging said notches in the shoulders of the guard-fingers, guard-plates attached to the guide-bar and provided at their front ends with notches to engage shoulders on the guard-fingers, a cutter bar seated to slide in the groove of the guide-bar, and clips for temporarily securing the cutter bar in the groove, substantially as specified.



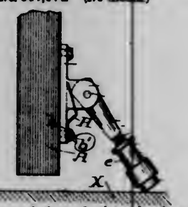
544,729. SAFETY PACKAGE. FRANK P. HARNED, Philadelphia, Pa., assignor to the Penn Chemical Works, same place. Filed June 22, 1895. Serial No. 553,857. (No model.)



Claim.—1. A safety package, comprising a can or the like, provided with a perforated cover sprung onto or secured to the can, a countersunk and flanged stopple detachably fitting the opening of said cover and a flanged sealing cap for said can and adapted to hold said stopple in operative position in said cover, substantially as and for the purposes described.

2. A safety package, comprising a can provided with a recessed upper portion, a perforated cover with a recessed rim fitted to the recessed portion of said can, a countersunk and flanged stopple detachably fitting the opening of said cover and a flanged sealing cap fitting down onto said stopple and recessed rim of said cover and onto said can, substantially as and for the purposes described.

544,730. DOOR-CHECK. MOSES R. KENNEDY, Chicago, Ill. Filed July 16, 1894. Serial No. 517,674. (No model.)



Claim.—A door-stop consisting of a base having ears thereon, a lever fulcrumed between the ears on a pin extending through such lever and ears, a spring, one end whereof yieldingly presses against the lever and the other end whereof is against the base, an adjustable sleeve on the free end of the fulcrumed lever, forming a part of the lever, rubber secured to one end of the sleeve, and means for securing the adjustable sleeve rigidly in place on the lever after adjustment, thereby maintaining the desired length to the lever between the fulcrum thereof and the point in contact with the floor; substantially as described.

544,731. ROPE-COUPLING. BERNHARD KIRSCH, Vienna, Austria-Hungary. Filed Nov. 26, 1894. Serial No. 529,958. (No model.) Patented in France Apr. 24, 1894, No. 233,023; in Belgium Apr. 24, 1894, No. 109,644; in Austria May 3, 1894, No. 44/1,335; in Hungary May 3, 1894, No. 347, and in Italy June 30, 1894, XXVIII, 36,228, LXXI, 96.

Claim.—1. A rope coupling provided with one or more passages for the rope or its strands and with grooves having a spiral trend or direction merging into said passage or passages, for the purpose set forth.



2. A rope coupling comprising two sections adapted to revolve on or within each other, each of said sections provided with one or more passages and with a plurality of spirally formed grooves merging into said passages, for the purpose set forth.

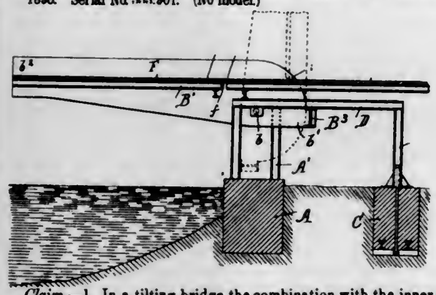
544,732. AUDIPHONE. JAMES A. LAKIN, Westfield, Mass. Filed Oct. 25, 1894. Serial No. 526,921. (No model.)



Claim.—1. An audiphone comprising a case, the head or forward end of which is composed of a vibratory diaphragm, and the rear end of which is of a contracted tubular form, endwise open, and adapted for insertion into the passage of the ear, a second diaphragm located within an intermediate portion of, and as a partition across the casing, and a ligament which engages and extends from one to the other of said diaphragms, substantially as described.

2. An audiphone comprising a case, the head or forward end of which is composed of a vibratory diaphragm, and the rear end of which is of a contracted tubular form, endwise open, and adapted for insertion into the passage of the ear, a second diaphragm located within an intermediate portion of, and as a partition across the case which is of less diameter than the forward diaphragm, and a ligament which engages and extends from one to the other of said diaphragms, substantially as described.

544,733. BRIDGE. ROBERT P. LAMONT, Chicago, Ill. Filed Jan. 5, 1895. Serial No. 533,901. (No model.)

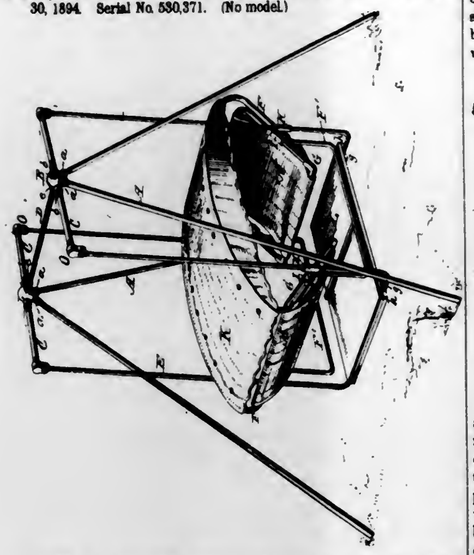


Claim.—1. In a tilting bridge the combination with the inner or depressible end, of the anchorage for the same located out of the same vertical plane with said end, and one or more beams or levers engaged to the anchorage against which the said bridge end may bear, substantially as described.

2. In a tilting bridge the combination with the bridge abutment on which the bridge is pivoted, and the inner or depressible end of the bridge, of the anchorage located out of the vertical plane of the said end, and levers or beams engaged to the anchorage and to the abutment, and stops on the said bridge adapted to engage said beams, substantially as described.

3. In a tilting bridge the combination with the bridge section and its flooring, of the approach and its flooring the latter extending above and beyond the pivot on which the bridge tilts, substantially as described.

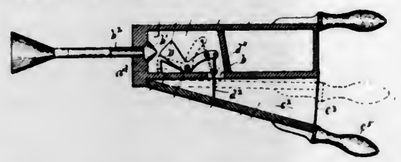
544,734. SWING. JOHN S LEACH, Hartford City, Ind. Filed Nov. 30, 1894. Serial No. 530,371. (No model.)



Claim.—1. In a swing, a supporting frame consisting of couplings having a plurality of screw-threaded tubular nipples, a transverse brace detachably connecting the couplings together, supports and standards detachably connected to the couplings, sectional seat-frames, sectional canopy-frames, and sectional pendulum-frames, and couplings for detachably connecting the frame sections together, substantially as and for the purpose set forth.

2. A swing, consisting of a suitable supporting frame, pendulum frames, seat frames, and canopy frames, the several frames being constructed in sections and detachably connected together by couplings, suitable coverings loosely extending around the seat frames, and a flexible covering for the canopy frame having transverse slats secured thereto and curved plates upon the ends of the slats to engage with the canopy frame, substantially as and for the purpose described.

544,735. POWDER-DUSTER. CHARLES LEROY, Dayaville, N. Y., assignor of one-half to Grant J. Calkins, same place. Filed Mar. 19, 1895. Serial No. 542,355. (No model.)

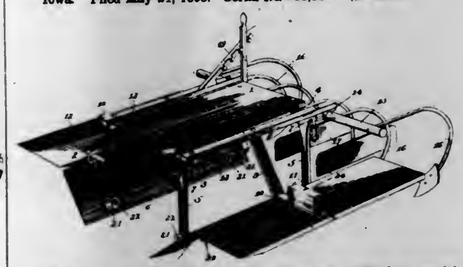


Claim.—1. In a duster, the combination of a supply chamber, a receiving chamber connected to the supply chamber, a cutoff for regulating the passage of the dusting material to the receiving chamber, and a blower for ejecting the dusting material from the receiving chamber having a movable side wall connected to the cutoff, substantially as and for the purpose described.

2. In a duster, the combination of a supply chamber, a receiving chamber connected to the supply chamber, a cutoff for regulating the passage of the dusting material to the receiving chamber, a blower for ejecting the dusting material from the receiving chamber provided with a movable side wall, and an adjustable connection between the cutoff and the movable side wall, substantially as and for the purpose set forth.

3. In a duster, the combination of a supply chamber provided with a discharge opening in the front end of its lower wall, a receiving chamber arranged beneath the front extremity of the supply chamber and provided with a removable bottom wall, said receiving chamber being formed of less length and size than the supply chamber and provided with a discharge opening in its front end and an inlet opening in the rear end of its side wall, a pivoted cutoff supported in the receiving chamber and having one extremity arranged normally beneath the opening in the lower wall of the supply chamber for closing the same, a blower arranged at one side of the former chambers for forcing a discharge current of air through the inlet opening of the receiving chamber, and formed with a movable outer side wall and flexible top, bottom and rear walls, and a connection between the opposite extremity of the cutoff and the movable side wall, substantially as and for the purpose described.

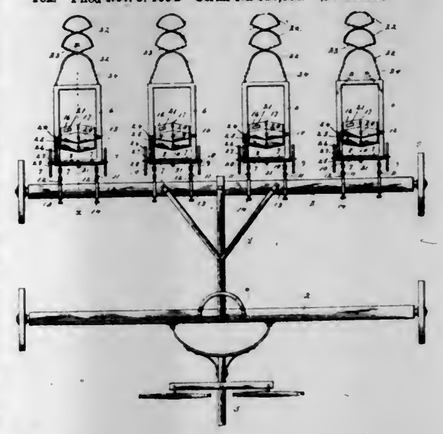
544,736. CORN-CULTIVATOR. ROBERT LYONS, Lucky Valley, Iowa. Filed May 21, 1895. Serial No. 550,116. (No model.)



Claim.—1. A cultivator for the purposes described, comprising a platform having pendent supports at its sides, inner and outer harrow wings hinged together at their opposing edges and to the lower ends of the said side supports, an arch secured to the platform between its ends and having its outer portions occurring in a horizontal plane, vertical bolts connecting the outer, or horizontal, harrow wings with the horizontal portions of the arch, and a series of adjusting blocks supported in a pile upon the vertical bolts and having notches extending inward from one edge, whereby the said adjusting blocks can be detached from the bolts and moved from one to the other side of the horizontal portions of the arch to effect an adjustment of the harrow wings without the necessity of removing the said vertical bolts, substantially as described for the purpose set forth.

2. The herein shown and described cultivator, comprising a platform having front and rear cross beams bracingly connected at their outer ends by longitudinal side beams, knees having their upper ends flanged and firmly secured to the end portions of the cross beams, inner and outer harrow wings hinged together and to the lower ends of the said knees, an arch located intermediate of the ends of the platform and secured to the latter and to the side beams, and having its outer end portions occurring in a horizontal plane and secured to the outer, or horizontal, harrow wings by vertical bolts, a series of adjusting blocks disposed in a pile and mounted upon the said vertical bolts, and adapted to be moved from one to the other position relative to the horizontal portions of the arch, whereby the harrow wings are relatively adjusted, and a transverse shaft journaled in bearings provided on the side beams and carrying cultivators and fenders, and provided with an operating lever which is adapted for engagement with a notched bar to hold the said shaft in the located position, substantially as set forth.

544,737. COTTON-PLANTER. MAXIMILIAN MANNEWITZ, Abilene, Tex. Filed Nov. 5, 1894. Serial No. 527,898. (No model.)



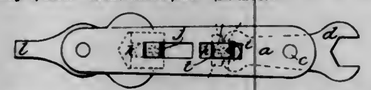
Claim.—1. In a cotton planter, a wheeled truck, a transverse series of wheeled hopper frames carrying openers and coverers said wheeled hopper frames being flexibly and adjustably connected with the rear axle of said truck, hopper axles journaled on said hopper frames and carrying stirrers, means for imparting a positive rotation to said hopper axles, and rolling seed hoppers loosely mounted on said revolving axles, substantially as set forth.

2. In a cotton planter, the combination of a wheeled truck, a transverse series of wheeled hopper frames carrying openers and coverers and arranged in rear of the rear axle of the truck, said hopper frames being provided at their front ends with attaching hooks, rectangular clamp loops adjustably clamped on the rear axle of the truck, drag chains connected at one end to said clamp loops and adjustably at their other ends to the hooks of said hopper frames, and rolling seed hoppers mounted within said hopper frames, substantially as set forth.

3. In a cotton planter, the combination of a wheeled truck, a transverse series of wheeled hopper frames connected with the rear axle of the truck and carrying opening shovels at their front ends, rolling seed hoppers mounted within said hopper frames, an aligned series of segmental covering drag-shoes located at the rear end of the hopper frames and being arranged with one directly in advance of the other, and flexible connections between said shoes and also with said hopper frames, substantially as set forth.

4. In a cotton planter, the combination of a rectangular frame, a revolving shaft journaled on the front end of said frame and carrying ground wheels at its opposite ends, a revolving hopper axle journaled on the frame and geared with said front shaft, a rolling hopper box loosely mounted on said axle and contracted toward both ends to provide an enlarged central ridge portion, said rolling hopper being further provided with a central circular series of dropping openings, a stirrer mounted on the hopper axle within the hopper, an opening shovel attached to the front end of the frame, and coverers connected with the rear end of said frame, substantially as set forth.

544,738. WRENCH. HENRY J. MARTIN, Chicago, Ill., assignor to the Whitman & Barnes Manufacturing Company, Akron, Ohio. Filed May 7, 1895. Serial No. 548,417. (No model.)



Claim.—1. In a wrench, in combination, a handle, a bar pivoted intermediate of its ends to the same, a pair of wrench jaws formed on this bar on one side of the pivot, a suitable tool formed on the bar on the other side of the pivot, and a block connected with the handle and adapted to occupy the space between the wrench jaws and also adapted to hold the tool, whereby the bar may be locked to the handle in alternate positions to present either working face, substantially as described.

2. In a wrench, in combination, a handle, a revoluble bar pivoted intermediate of its ends to the same, a pair of wrench jaws formed at one end of this bar and a pair of wrench jaws of less capacity formed at the other end, a block slidably connected to the handle, a portion of said block being of the proper width to occupy the space between one pair of said jaws and a portion of the proper width to occupy the space between the other pair of said jaws, and means whereby said block may be slid into the space between the pair of jaws presented to it, substantially as described.

3. In a wrench, in combination, the plates *a* and *b*, the revoluble bar *d* pivoted between them, said bar having each of its ends formed into a pair of wrench jaws, the block *t* slidable between said plates and having a portion *f* adapted to fit between one pair of said jaws and a portion *g* adapted to fit between the other pair, said block having a lug projecting through a hole in the plate *a*, and the spring *i* forcing the block against one of the plates, substantially as described.

544,739. WRENCH. HENRY J. MARTIN, Chicago, Ill., assignor to the Whitman & Barnes Manufacturing Company, Akron, Ohio. Filed May 7, 1895. Serial No. 548,418. (No model.)



Claim.—In a wrench, in combination, a stationary jaw, a bar extending therefrom, a series of teeth formed on the side of said bar, a movable jaw having a sleeve surrounding said bar, there being a hole in the side of said sleeve and a raised cross-bar formed integral with the sleeve at the rear of said hole, a spring secured to said sleeve at the front of said hole and pressing inward, a dog adapted to lie in said hole and having an inner face arranged to lie substantially parallel with the bar, having an outer end forming a thumb-lever and having, intermediate of its length, on its under side, a lug adapted to hook under the said cross-bar, all constructed and arranged substantially as described and operating in the manner set forth, whereby the dog may be slipped into position without other separation of the parts than removing the movable jaw from the bar and may be securely held when the movable jaw is on the bar.

544,740. WIRE-FENCE MACHINE. ANDREW J. MUNGER, Antwerp, Ohio. Filed Apr. 5, 1895. Serial No. 544,660. (No model.)



Claim.—1. In a fence machine, a gage comprising a bar 2 having wire receiving notches and provided near its upper end with an arm, the bar 3 having oppositely disposed wire receiving notches and slidingly mounted on the other bar, an operating lever fulcrumed on one of the bars and engaging the other, and a tension device mounted on said arm and consisting of an elastic block having a wire receiving slit, substantially as described.

2. In a fence machine, a twisting device comprising a wheel having a radial slot, and provided on one face with means for engaging a stay, and having on its other face an annular series of ratchet recesses or teeth, and a lever fulcrumed on the wheel and provided with a pawl or tooth for engaging the recesses or teeth, substantially as described.

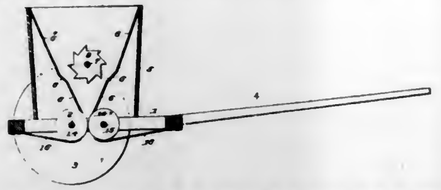
3. In a fence machine, a twisting device comprising a wheel provided with a hub extension having a flange said wheel being provided at one side with a projection, and having a radial wire receiving slot, and provided at its opposite side with an annular series of ratchet teeth, a lever fulcrumed on the hub extension and having a wire receiving opening, and a resilient pawl or tooth carried by the lever and engaging the ratchet teeth, substantially as described.

4. In a fence machine, a gage comprising a bar 2 having wire receiving notches, the bar 3 having oppositely disposed wire receiving notches, and slidingly mounted on the other bar, an operating lever fulcrumed on one of the bars and engaging the other, and provided at its upper edge with shouldered notches, and a pawl pivoted at its upper end to the bar 2 and extending downward and outward, and arranged to engage the notches of the lever, substantially as described.

5. In a fence machine, a tension device consisting of an elastic block having a wire receiving slit forming a pair of resilient clamping arms, substantially as described.

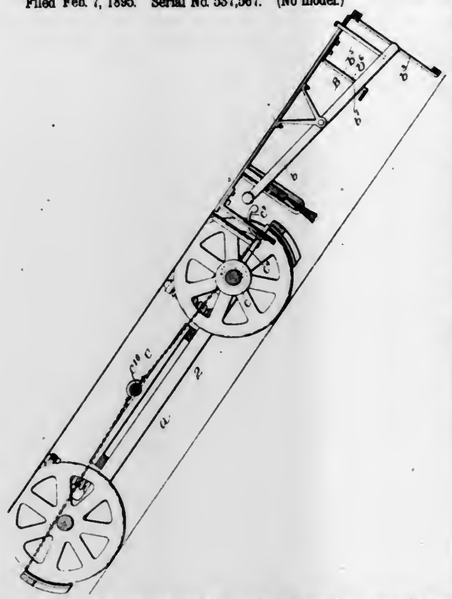
544,741. COTTON-SEED CRUSHER, PLANTER, AND DISTRIBUTER. NORMON J. MCALISTER, Pelzer, S. C. Filed Apr. 10, 1895. Serial No. 545,127. (No model.)

Claim.—1. The combination of the frame, the axle mounted therein, and carrying the supporting wheels, the hopper supported on the axle, the gear wheel, crushing wheel and pulley secured on the axle, the shaft carrying the gear wheel and crushing wheel, the scrapers secured to the under side of the frame and having their free ends bearing against the under face of the crushing wheels, the shaft carrying the saw and the pulley and the belt connecting the pulley on the shaft and on the axle.



2. The combination of the frame, the axle and shaft mounted therein, the hopper supported on the frame, the crushing wheels on the axle and shaft, the scrapers secured to the under side of the frame and having their curved free ends bearing upon the under face of the rollers, the meshing gear wheels on the axle and shaft, the shaft journaled in the upper portion of the hopper and carrying the saw and pulley, the pulley on the axle, the belt passing over said pulleys, and the belt tightening device pivoted to the hopper and having one end bearing upon the belt.

544,742. CAR-FENDER. FRANCIS MCDOWELL, Philadelphia, Pa. Filed Feb. 7, 1895. Serial No. 537,567. (No model.)

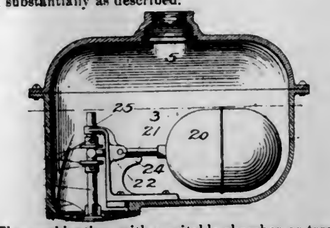


Claim.—The combination with a car, of a fender vertically movable in guides, a tripping-bar pivotally attached to the bottom of the car and connected at its rear end with the fender, a spring adapted to yieldingly retain the fender in a lowered position, a device for normally retaining the forward end of the tripping-bar depressed, means for releasing the bar, and brake mechanism adapted to be actuated by the release of the bar, for the purpose described.

544,743. TRAP. NILS NILSON, Minneapolis, Minn. Filed Feb. 6, 1895. Serial No. 537,454. (No model.)

Claim.—1. The combination, of the valve disk, a seat carrying diaphragm adapted to be closed upon said valve disk by pressure, means for limiting the outward or closing movement of said diaphragm, and a spring interposed between the limiting device and the diaphragm, whereby the diaphragm and valve seat are returned when pressure is relieved, thereby opening the valve, substantially as described.

2. The combination, with a suitable trap or chamber, of an opening in the wall thereof, a diaphragm provided in said opening, said diaphragm itself having a central opening and carrying a valve seat, a valve stem, a valve disk thereon upon which said diaphragm valve seat is adapted to be closed by pressures, and a counterweight or balance connected with said stem, whereby said valve disk is held stationary under all ordinary pressures, but is adapted to move outwardly upon the accumulation of excessive pressure in said chamber or trap, substantially as described.



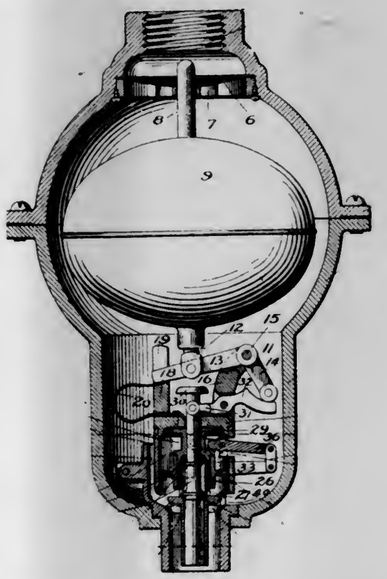
3. The combination, with a suitable chamber or trap, of a valve seat carrying diaphragm arranged in connection therewith to be operated by pressure within said trap, a valve disk whereon said diaphragm valve seat is adapted to close, and a float provided in said trap and connected with said valve disk, whereby upon the accumulation of either excessive pressure in said trap or the accumulation of water therein said valve disk will be moved outwardly, substantially as described.

4. The combination, with a suitable trap or chamber, of a valve seat carrying diaphragm adapted to be influenced by pressure within said trap, means for limiting the outward movement of said diaphragm, a return spring provided in connection with said diaphragm, a valve disk having a stem extending through the opening in the diaphragm, the float and float lever provided within the trap, said lever engaging said valve stem, and means for limiting the movement in one direction of said lever and stem, substantially as described.

5. In a steam trap, the combination, with the trap proper, the valve, a diaphragm adapted to be distended by pressure of steam within the trap and whereby said valve is opened and closed, and a float provided within the trap and connected with the stem of said valve and adapted to actuate said valve upon the accumulation of water in the trap, substantially as described.

6. The combination, in a steam trap, of the trap or chamber proper provided with an opening in its bottom, a diaphragm provided in said opening and having a central opening about which a valve seat is provided, a valve disk to be engaged by said valve seat when the diaphragm is distended by pressure, the stem of said disk, guides therefor within the trap, limiting stops in connection therewith, a float provided within the trap proper and adapted to engage the said valve stem to normally hold the same in its raised position, but to depress or lower the same when the float is raised by water in the trap, substantially as described.

544,744. STEAM-TRAP. NILS NILSON, Minneapolis, Minn. Filed Feb. 6, 1895. Serial No. 537,456. (No model.)



Claim.—1. The combination, in a steam trap, of the trap proper

or casing, having an opening in its lower part, a duplex valve provided in said opening and adapted to be closed by steam pressure within the trap, means in connection with the larger part of said valve to open and support the same when relieved from pressure, a float provided in said trap, and independent means in connection therewith for opening the smaller part of said valve against pressure, substantially as described.

2. The combination, in a steam trap, of the trap proper or casing, having an opening in its lower part, a duplex valve provided in said opening and adapted to be closed by steam pressure within the trap, a weighted lever connected with the larger part of said valve to open the valve when relieved from pressure, a float provided in said trap, and independent means in connection therewith for opening the smaller part of said valve against pressure, substantially as described.

3. In a steam trap, the combination, with the trap or casing proper, of a duplex valve provided therein, balancing means in connection with said valve for opening the same when relieved from pressure, the valve casing, a pressure disk provided within said casing and in connection with said valve, whereby the valve will be closed by steam pressure within the trap, means within the trap or casing adapted to be actuated by accumulated water therein, and connections therewith for opening one part of said valve against pressure, substantially as described.

4. In a steam trap, the combination, with the trap or casing proper, of a duplex valve provided therein, balancing means in connection with said valve for opening the same when relieved from pressure, the valve casing, a pressure disk provided within said casing and in connection with said valve, whereby the valve will be closed by steam pressure within the trap, means within the trap or casing adapted to be actuated by accumulated water therein, connections therewith for opening one part of said valve against pressure, said part of the valve adapted when open to momentarily unseat the disk of the other part, substantially as described.

5. The combination, with the trap proper or casing having an opening in its lower part, of a duplex valve composed of concentric valves, one larger than the other and adapted to close said opening when pressure is exerted upon the valve from within the trap, means within the trap for raising the larger part of the valve and therewith the smaller part when pressure is relieved, a float provided in the trap, and a quick acting lever mechanism interposed between the same and the smaller part of the duplex valve whereby said smaller part will be raised against pressure by the lifting of the float, substantially as described.

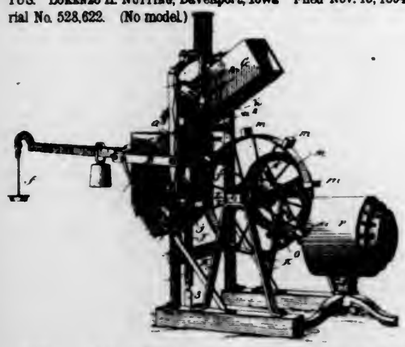
6. The combination, with the trap proper or casing having an opening in its lower part, of a duplex valve composed of concentric valves, one larger than the other and adapted to close said opening when pressure is exerted upon the valve from within the trap, means within the trap for raising the larger part of the valve and therewith the smaller part, when pressure is relieved, a float provided in the trap, a quick acting lever mechanism interposed between the same and the smaller part of the duplex valve, whereby said smaller part will be raised against pressure by the lifting of the float, means in connection with the two parts of the valve whereby upon the lifting of the smaller part the larger part will be momentarily unseated, substantially as described.

7. The combination, with the outer casing, of a duplex valve provided in the lower part thereof, means for opening said valve when relieved from pressure, said valve adapted to close with pressure, a float, independent gravity means for partially balancing the weight of said float, and a quick acting mechanism in connection with said float for opening one part of said valve against pressure when said float is raised by accumulated water within said outer casing or trap proper, substantially as described.

8. The combination, with the outer casing, of the inner casing, the duplex valve arranged within said inner casing, means whereby pressure within said inner casing will close said valve, balancing means in connection with said valve to open the same when relieved from pressure, the lower part of said inner casing being provided with outlet openings, one of said openings being extended in a vertical duct 41, and a float or like mechanism to be influenced by accumulated water in the trap and adapted to open the inner part of said duplex valve against pressure, substantially as described.

9. The combination, in a steam trap, of the trap proper or casing having an opening in its bottom, the valve casing provided therein and having a valve seat level with or below the bottom of said trap, whereby the trap may be completely drawn, a duplex valve provided in said casing, one of the parts of said valve adapted to be closed upon said seat by pressure from within the trap, gravity means for raising the duplex valve when relieved from pressure, a float provided in the upper part of the trap, a bell crank having one arm pivotally connected with the lower part of said float, and a lever to be engaged by the other arm of said bell crank and in turn adapted to engage and lift the smaller part of said duplex valve when said float is raised, substantially as described.

544,745. ELECTRICALLY-CONTROLLED WEIGHING APPARATUS. LORENZO H. NUTTING, Davenport, Iowa. Filed Nov. 13, 1894. Serial No. 528,622. (No model.)

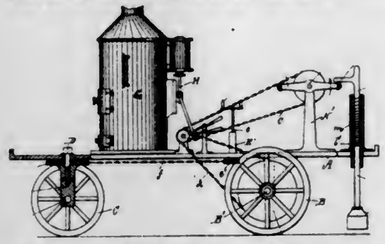


Claim.—1. In a weighing apparatus, the combination of a balanced hopper adapted to receive the material to be weighed having angularly disposed outlet doors therein, a pair of pivoted levers connected respectively at their free ends to said doors and connected at their pivot point with a lever fulcrumed in said hopper and having its outer end engaging a rod, a chute located above said hopper having a pivoted outlet gate and a crank for opening and closing said gate, and electrically controlled mechanism for elevating said rod to open the doors of the hopper and for turning said crank to alternately close and open the gate of the feed chute, substantially as and for the purpose set forth.

2. In a weighing apparatus, the combination with a hopper having outlet doors therein and a feed chute for said hopper having an outlet gate therein, of electrically-controlled mechanism for alternately opening and closing the doors of the hopper and the gate of the chute, the same consisting of a solenoid or electro-magnet, for operating the gate of the chute, an electric motor, a rod for operating the doors of the hopper and also for closing the circuit through said solenoid and said motor, and connections between said motor and said rod whereby the latter is elevated to open the doors of the hopper and afterward break the electric circuit, substantially as and for the purpose described.

3. In combination the hopper C having angularly disposed doors *c c* connected by the pivoted levers *c' c'*, lever I, rod J having lug *J'*, chute G having gate *g* and slotted lever *g'*, solenoid H having core *h* and extension *h'*, motor P, having main shaft O engaging pinion or gear wheel N on shaft L, wheel M on said shaft provided with lugs *m* thereon, and electrical connections from a source of electrical supply between the solenoid H, rod J, wheel M and motor P, substantially as and for the purpose described.

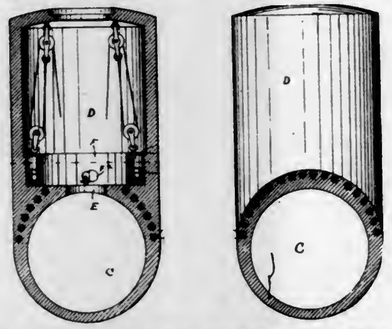
544,746. PAVING-MACHINE. WILLIAM Y. OBER, Lynn, Mass. Filed Mar. 29, 1893. Serial No. 468,208. (No model.)



Claim.—1. The herein described paving machine, comprising a wheeled vehicle, a steam engine and boiler mounted on said vehicle, a horizontally rotating shaft and means connecting the engine and shaft for rotating the latter, a sprocket-wheel near each end of said shaft, a second horizontally rotating shaft mounted near the rear end of the vehicle, a sprocket-wheel mounted on one end of said latter named shaft, a sprocket chain connecting said horizontally rotating shafts, a sprocket-chain connecting said first named shaft and a sprocket-wheel on the drive axle of the vehicle, rotating lifter arms carried by the rear horizontal shaft, a hollow post mounted on the vehicle in rear of said latter named shaft, a spring inclosed within said post, a vertically moving rammer guided by the post and acting under the tension of said spring, and a rearwardly projecting arm on the upper part of the rammer-rod, said arm being acted upon by the rotating lifter-arms whereby the rammer is raised, substantially as described.

2. The herein described paving machine comprising a carriage mounted on wheels, a steam boiler and engine supported on said carriage, a horizontal driving shaft A operated by said engine two sprocket wheels I and P carried by said driving shaft, a sprocket wheel K secured to the shaft of the drive wheel of the carriage, a chain connecting the sprocket wheels I and K, for propelling the carriage, a spring-pressed vertically reciprocating rammer L, a rotary shaft having lifter arms to lift said rammer, a chain connecting the rotary shaft to the sprocket wheel P on the driving shaft A, for operating the former, and clutch mechanism for engaging and disengaging the sprocket wheels with and from the drive shaft, substantially as described.

544,747. MANHOLE FOR ELECTRIC-CABLE OR OTHER SUBWAYS. ERNEST L. RANSOME, Chicago, Ill. Filed Jan. 11, 1895. Serial No. 534,558. (No model.)

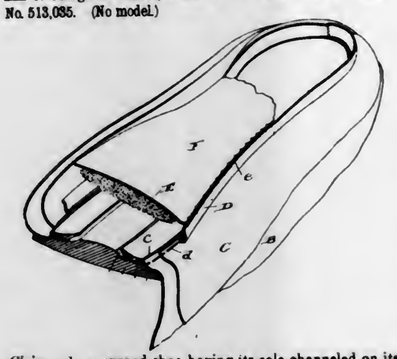


Claim.—1. A manhole chamber having electric conductors passing around the wall thereof; a circular shield for protecting said conductors and devices for raising said shield so as to permit of access to said conductors.

2. A water conduit and manhole chamber therefor; electric conductors entering said chamber and passing along the wall thereof and a movable shield for protecting said conductors.

3. A shell serving as a conduit for water or sewerage and having a series of smaller conduits in the body of said shell; a manhole-chamber serving as a means of entering said main conduit, electric wires passing through the auxiliary conduits and around the wall of said manhole chamber and a shield for protecting all wires within said chamber.

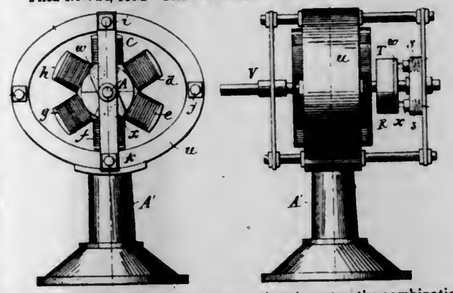
544,748. SHOE. ADAM REED, St. Joseph, Mo., assignor of one-half to George J. Winter, Buffalo, N. Y. Filed May 31, 1894. Serial No. 513,035. (No model.)



Claim.—1. A turned shoe having its sole channeled on its inner marginal edge, the vamp or upper secured in said channel by stitches, and a tape secured to the upper and channeled edge of the sole and also having the soft felt or cushion covering the inner side of the sole and the covering for the felt having its edge secured to the tape, substantially as specified.

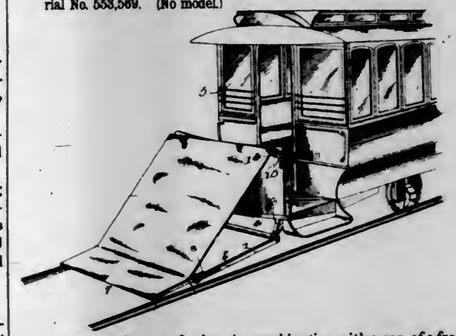
2. The improved turned shoe described consisting of the leather sole A, having the marginal ridge or channel on its inner side and also having the slit or undercut adjacent to the channel or ridge, the upper having its turned edge placed in the ridge, the vamp lining placed in a similar manner upon the upper, and the tape also placed in the ridge against the lining, and the whole secured by stitches to the channeled wall of the sole and through the slitted portion, the felt cushion E, of lamb's wool covering the sole on the inner side, and the leather F, covering the felt and secured to one edge of the tape by stitches, substantially as shown and described.

544,749. ELECTRIC MOTOR. BENJAMIN P. REMY, Peru, Ind. Filed Nov. 24, 1894. Serial No. 529,883. (No model.)



Claim.—In an alternating current electric motor, the combination of radial electro-magnets adapted to rotate together, a commutator suitably connected to said electro-magnets, and a stationary iron part of an elliptical oval or similar shape, said stationary iron part generating no magnetism, but obtaining its magnetism wholly by induction from the revolving part.

544,750. CAR-FENDER. JOHN A. SHANK, Lancaster, Pa., assignor of one-half to Henry R. Wolpert, same place. Filed June 21, 1895. Serial No. 553,569. (No model.)



Claim.—1. In a car fender, the combination with a car, of a frame hinged to the same at the bottom thereof, and extending in advance of the same, and adapted to fold upward against the front of the car, an extension frame or section connected to the hinged frame and forming a continuation thereof and arranged to fold on the same, a transverse roller mounted on the car and located adjacent to the top of the dash, and an apron connected with the front of the supplemental frame or extension, and with the roller, and arranged to be wound aroound the latter when the car fender is folded, substantially as, and for the purpose described

2. In a car fender, the combination with a car, of a main frame hinged to the car at the bottom thereof and extending outward therefrom and adapted to fold upward against the front of the car, a spring connected with the main frame and the car and adapted to swing the former downward and to hold the same in operative position, a spring actuated and supported extension hinged to the front of the main frame and arranged to fold thereon, a transverse roller mounted on the car and located above said frames, and an apron or covering connected with the supplemental frame and with said roller and adapted to be wound thereon when the car fender is folded, substantially as described.

3. In a car fender, the combination with a car, of a hinged frame connected with the car and extending outward therefrom, a supplemental frame or extension hinged to said frame, a spring-actuated roller mounted on the car and arranged transversely thereof, an apron or covering connected with the supplemental frame or extension and with the roller and adapted to be wound thereon, and springs connected with said frames for holding them in operative position, substantially as described.

4. In a car fender, the combination with a car, of a main frame hinged to the car and extending forward therefrom, and adapted to swing upward against the car, an auxiliary frame or extension hinged to the main frame, springs for holding said frames normally in position, an apron connected with the front of the auxiliary frame or ex-

tension and with the car, a catch mounted on the car and arranged to engage the front of the auxiliary frame or extension when the parts are folded, and means for operating the catch, substantially as described.

5. In a car fender, the combination with a car, of a hinged main frame carried by the car, an extension hinged to the main frame, an apron connected with the car and the front of the extension, a spring-actuated catch mounted on the front of the car and having a hook-shaped portion for engaging said extension and provided with an inclined lip to enable the catch to be automatically engaged, and means for operating the catch to release the fender, substantially as described.

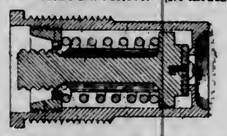
6. In a car fender, the combination with a car, of a main frame hinged to the car, and provided at opposite sides with stops, an extension hinged to the front of the main frame, and provided with rearwardly disposed lugs engaging the main frame and limiting the swing of the extension, springs connected with the main frame and the extension for holding them in operative position, and an apron connected with the extension and with the car, substantially as described.

544,751. HEMMING-GAGE FOR SEWING-MACHINES. JOSEPH W. SIMONS, Port Chester, N. Y. Filed Mar. 25, 1895. Serial No. 543,101. (No model.)



Claim.—In hemming gages, a bearing block having means by which it is adapted to be secured upon a sewing machine plate; an arm journaled in the bearing of the said block and having a longitudinal bore and a binding screw; and a gage having a body fitted to slide in the bore of the arm and provided with a downward return bend terminating in a hem spreader; the said return bend being normally located over the end of the presser foot but free therefrom, while the body portion is beyond the presser foot substantially as described, whereby hems of great width may be automatically spread, and whereby the hemmer will be raised when the presser foot is raised and yet the hemmer left free to be raised independently.

544,752. BARREL-VALVE. HERMAN STRATER, Boston, Mass. Filed May 13, 1896. Serial No. 549,079. (No model.)



Claim.—1. A liquid controlling device, as a duct for fluid discharge, comprising a tubular valve casing provided with a valve seat at one end and interiorly screw threaded at the opposite end, a non-revoluble valve having a threaded shank, an annular retaining nut, and passages for the flow of liquid through the valve casing, combined with a discharge pipe and a separable valve stem in said discharge pipe to engage the valve shank, said valve stem being adapted to revolve but having no endwise movement, substantially as explained.

2. A liquid controlling device which acts as a duct for fluid discharge, consisting of a valve casing interiorly screw threaded in part, a spring-actuated valve for rise and fall therein, an annular nut to adjust the spring tension, and a valve shank having an attenuated portion, said portion adapted to slide through the nut to permit fluid discharge when the valve is open, substantially as stated and set forth.

3. The combination with a valve casing, a non-revoluble spring-actuated valve, and a nut for adjusting the spring tension, of a tubular coupling adapted to form a sealed joint with the valve casing, and a valve stem secured to the coupling and separably united with the valve shank, substantially as described and stated.

4. In combination with a tubular valve casing interiorly and exteriorly screw-threaded in part, a valve within said casing, and a nut to limit the open movement of the valve, a revoluble coupling, and a valve stem secured to the coupling and adapted to engage the valve and transfer the spring tension from the valve to the flange of the coupling, substantially as specified.

5. A device for controlling the flow of liquid, comprising a valve casing as a fixture in the liquid containing vessel, a non-revoluble valve having a screw-threaded shank end, an annular nut in the bore of the casing, a spring to hold the valve closed, combined with a tubular coupling or Y, a valve stem separably united with the valve shank and revoluble in coupling, and passages for the flow of liquid from the vessel to the coupling when the valve is opened, substantially as described.

6. The combination with a valve casing, a spring actuated normally closed valve, an annular nut interiorly of the casing to control the spring tension, of a valve shank longitudinally grooved in part and to extend through the bore of the nut, a detachable discharge pipe to engage with the valve casing, and a revoluble valve stem mounted in said pipe to engage the valve shank and cause said shank to reciprocate through the nut, as set forth.

7. In a liquid controlling device adapted to serve as a duct from a source of supply to a discharge pipe system, a valve casing for attachment to the source of supply, a valve to close an aperture in the inner end of said casing, combined with an annular nut interiorly in the outer end of said casing, and a valve stem having a screw-threaded end adapted to slide through the nut and to seal the outer end of the valve chamber against the entrance of substances from without, substantially as stated.

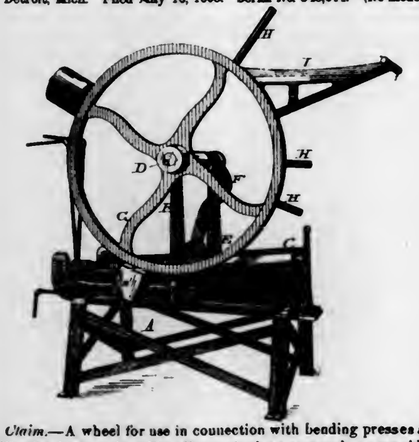
8. A liquid controlling device consisting of a valve casing interiorly screw-threaded in part, a spring actuated valve for movements therein, a grooved valve head furnished with lugs, grooves longitudinally on the inner surface of the valve casing and adapted to co-operate with the grooves and the lugs on the valve head, together with means for uniting said device with a distributing pipe system, substantially as described.

9. A liquid controlling device comprising a tubular valve casing provided with a valve seat at one end, an annular nut interiorly near the opposite end, a non-revoluble valve, a valve shank to contact against the nut and limit the rise of the valve, a revoluble coupling, and a valve stem detachably united with the valve shank and adapted to force the coupling and valve casing together without rotary movement of the valve, as explained.

544,753. PROCESS OF MANUFACTURING ALLOY. WILLIAM SUNDERLAND, Lehi City, Utah. Filed Feb. 28, 1894. Serial No. 501,879. (Specimens.)

Claim.—The process of manufacturing the described alloy, consisting in melting in a furnace one half ton of lead and one ton of zinc, and gradually mixing through the molten metal a pulverized mixture of six tons of clay or alumina bearing earth, and five hundred pounds of chloride of sodium as set forth.

544,754. MACHINE FOR BENDING WOOD. SAMUEL SWARTZ, Detroit, Mich. Filed May 10, 1895. Serial No. 548,811. (No model.)

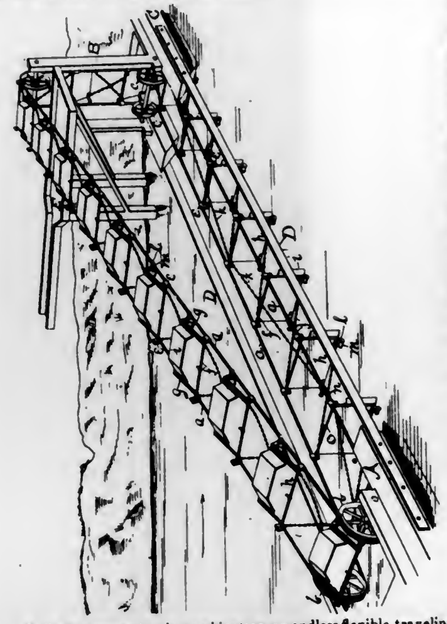


Claim.—A wheel for use in connection with bending presses and the like, having a series of handles, and a long arm or lever provided with a foot rest, said handles and lever being arranged around the periphery of the wheel.

544,755. WATER ELEVATOR AND MOTOR. JOSIAH E. SIMONS, Boise City, Idaho. Filed Feb. 1, 1895. Serial No. 537,015. (No model.)

Claim.—1. In a water motor, in combination, an endless flexible traveling carrier, supported partly in a stream and partly above the stream and at an angle less than a right angle to the direction of the current thereof and having each point thereof adapted to move throughout in one substantially vertical plane, a series of blades having substantially plane surfaces and connected to said carrier at substantially right angles to the direction of travel thereof, whereby the

blades are adapted to move down stream in the water and up-stream out of the water, for the purpose specified.



2. In a water motor, in combination, an endless flexible traveling carrier supported partly in a stream and partly above the stream and at an angle less than a right angle to the direction of the current thereof and having each point thereof adapted to move throughout in one substantially vertical plane, a series of blades having substantially plane surfaces and pivotally connected to said carrier at substantially right angles to the direction of travel thereof and adapted to depend therefrom in the water when they are traveling down-stream, all operating substantially in the manner described, whereby the blades are adapted, after having moved down-stream in the water, to move up-stream out of the water and whereby free egress is allowed for the water after it has acted upon any blade, for the purpose specified.

3. In a water elevator, the combination with two supports located obliquely opposite, one on each side of a suitable portion of the width of a stream of water, of carrier-wheels carried by said supports and adapted to revolve in substantially vertical planes, an endless flexible traveling carrier mounted upon said wheels and adapted to move up-stream-ward out of the water, propeller-blades pivotally connected to said carrier at substantially right angles to the direction of travel thereof, and buckets attached to the propeller blades, for the purpose specified.

4. In a water elevator, in combination, supports located obliquely with reference to the current of a stream between them, carrier-wheels mounted in said supports, an endless flexible carrier adapted to travel around said wheels in substantially first a horizontal plane, then a vertical plane and then a diagonal plane back to the starting point, propeller-blades pivotally connected to said carrier at substantially right angles across the same, said propeller-blades depending vertically in the water while said carrier is traveling in said horizontal plane whereby free egress is allowed the water after it has acted upon any blade, said propeller-blades assuming positions approximately parallel to said carrier while traveling in the said vertical and diagonal planes, and buckets secured to said blades, for the purpose specified.

5. In a water elevator, in combination, a pair of carrier-wheels on a substantially horizontal axis suitably mounted in a support, two pairs of carrier-wheels on substantially horizontal axes one higher than the other mounted in a second support, said supports being placed obliquely with reference to the direction of the current of a stream between them, two endless cables parallel to each other and each traveling around three of said wheels, propeller-blades pivotally connected to said cables at substantially right angles thereto, buckets secured to said propeller-blades, means for maintaining said propeller-blades perpendicular to the plane of the cables during a portion of their travel, for the purpose specified.

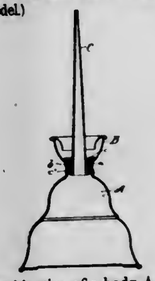
6. In a water motor, in combination, carrier-wheels, an endless carrier mounted upon said wheels and having parallel members, cross-rods connecting said members, propeller-blades supported by said cross-rods, means for limiting the movements of the propeller-blades, and flexible braces arranged diagonally between the members of the carrier, substantially as specified.

7. In a water motor, the combination with carrier-wheels, and an endless carrier mounted upon said wheels, of propeller-blades connected to the carrier and adapted to be folded parallel with or extended perpendicular to the plane of the same, limiting or guy chains connected to the free edges of the propeller-blades and attached at the other end to the carrier, said chains being arranged in pairs with their members intersecting, rings arranged at the intersection of said chains, and hooks for engaging the said rings to secure the blades in their folded positions, substantially as specified.

8. In a water elevator, the combination with carrier-wheels, and an endless carrier mounted thereon, of propeller-blades swiveled in the carrier, means for holding said blades in their operative positions, and buckets carried by said blades and having downwardly and forwardly inclined bottoms, substantially as specified.

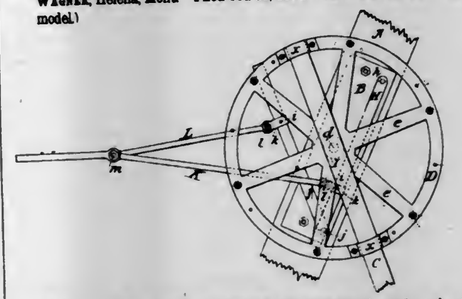
9. In a water elevator, the combination with carrier-wheels, and an endless carrier mounted thereon, of propeller-blades pivotally connected to said carrier, means for holding said blades in their operative positions, and buckets formed upon the down-stream side of said blades, said buckets having their down-stream sides narrower than said propeller-blades whereby the up-stream edges of said buckets present no obstruction to the current when the carrier travels at an appropriate angle to the direction of the current, substantially as specified.

544,756. OIL-CAN. HENRY J. VOGEL, Brooklyn, N. Y., assignor to William Vogel & Bros., same place. Filed Apr. 13, 1895. Serial No. 545,575. (No model.)



Claim.—The combination of a body A having a thin sheet metal neck *a* spun into the form of a threaded collar and having an external and an internal screw-thread thereon formed by bending the metal so that the internal and external screw-threads are counterparts of each other, a drip-cup B having a screw-threaded portion *b* screwed upon the external screw thread of the neck, and a spout or nozzle provided with a screw-threaded sleeve *c* screwed directly into the internal screw thread of the neck *a*, substantially as described.

544,757. POWER MECHANISM. NICKOLAUS WAGNER and JACOB WAGNER, Helena, Mont. Filed Oct. 18, 1894. Serial No. 526,259. (No model.)

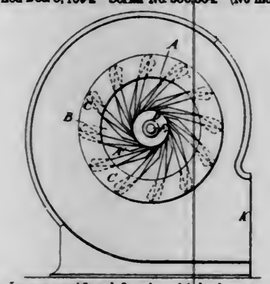


Claim.—1. In a power mechanism, the combination of a wheel, having pins on its circumference, set in one and the same plane, with two levers of equal length, separately fulcrumed, adapted to be acted upon alternately by said pins, and two operating rods, attached respectively, one to each of the levers at one end, and jointly pivoted to a reciprocating rod at the other end, and the reciprocating rod, substantially as shown and described.

2. In a power mechanism, the combination of a wheel, having pins on its circumference, set in one and the same plane, and means for revolving said wheel, with two levers, separately fulcrumed and of equal length, adapted to be acted upon alternately by said pins, and two operating rods, adjustably attached, one to each of said levers,

respectively at one end, and jointly pivoted to a reciprocating rod, at the other end and the reciprocating lever, substantially as shown and described.

544,758. CENTRIFUGAL FAN. SAMUEL C. DAVIDSON, Belfast, Ireland. Filed Dec. 5, 1894. Serial No. 530,884. (No model.)



Claim.—1. In a centrifugal fan in which the vanes are secured at one edge to a disk fixed to a center piece on the fan shaft and at the other edge to an annulus or ring as set forth, the disk and annulus being both concentric with the fan shaft, vanes having two planes at a slight angle to one another the one plane of triangular form and acting like the blade of a screw propeller to draw the air into the eye of the fan and the other plane acting to discharge the air centrifugally through the space between the said disk and the said annulus, said planes intersecting at an angle on a line common to both extending longitudinally of the vane, substantially as set forth and shown.

2. In a vane for a centrifugal fan, an under plane with a flange at right angles at its inner edge for attaching to a disk in combination with an upper plane forming a continuation of said under plane at a slight angle or inclination thereto in the direction that the fan should revolve the said upper plane of triangular form and having a flange at its outer edge for attaching to an annulus and said planes having an angular intersection on a line common to both, substantially as and for the purpose set forth and shown.

3. In a centrifugal fan the combination with the fan shaft and fan casing having an air inlet and a blast outlet, of the disk B rotating with said shaft, vanes A secured at their inner edge to said disk and each of said vanes having two planes of triangular form and at a slight angle to one another, extending longitudinally of the vanes and meeting each other with an angular intersection, and the annulus C to which said vanes are secured at their outer edge, all substantially as and for the purpose set forth and shown.

544,759. LINK FOR CHAINS. WILLIAM H. EISENHART, York, Pa., assignor to John C. Schmidt, same place. Filed May 25, 1895. Serial No. 550,711. (No model.)



Claim.—1. A chain link formed of a rod or bar of metal having the ends reflexed and one end formed into an eye or loop embracing the central portion and opposite end of the bar; substantially as described.

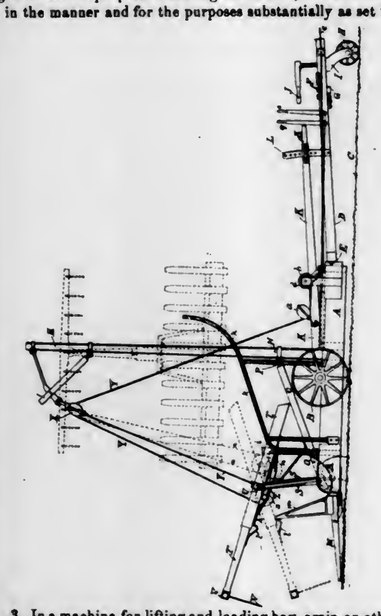
2. A chain link formed of a rod or bar of metal having the ends reflexed in opposite directions, and one end formed into an eye or loop embracing the central portion and opposite end of the bar; substantially as described.

3. A chain link formed of a rod or bar of metal having the ends reflexed, one end formed into a hook and the opposite end formed into an eye embracing the hook and central portion of the bar; substantially as described.

544,760. MACHINE FOR LIFTING AND LOADING HAY, GRAIN, &c. CHARLES FREEMAN, Inglewood, Cal. Filed Apr. 18, 1894. Serial No. 507,983. (No model.)

Claim.—1. The combination in a machine for lifting and loading hay, grain, or other crops, of the rake M, its check chain *j*, the fork V, the swinging lever T, carrying the fork V, the roller pulley Z, the roller paths *h*, the stops *s*, the tail piece *t*, the bar *g*, the block and rope tackle, the frame *m*, the catch *l*, the post S, the arm Q, connected by a universal joint to the mast N, and all of these parts operating together in the manner and for the purposes substantially as set forth.

2. In a machine for lifting and loading hay, grain or other crops, the combination consisting of the rake M, pivotally supported upon the rake arm O, the lever T, pivoted to the standard or post S, of the rake arm O, the parallel paths *h*, carried upon the lever T, the roller pulley Z, moving in the roller paths *h*, the catch *l*, on the lever T, cooperating with the rake M, the rope tackle for catching the roller pulley Z, the fork V, carried upon the end of the lever T, all operating together for the purpose of moving the fork V, to and from the rake M, in the manner and for the purposes substantially as set forth.



3. In a machine for lifting and loading hay, grain or other crops, the combination consisting of the automatic stops *s*, the tail piece connected to said stops *s*, the bar *g*, for actuating the stops *s*, by contact therewith for the purpose of retaining and releasing the roller pulley Z, to enable it to move in the parallel paths *h*, at the proper times, in order to operate the fork V, relatively with the rake M, the said parts being mounted upon the post S, carried upon the rake arm O, all operating together in the manner and for the purposes substantially as set forth.

544,761. ORE-ROASTING FURNACE. HENRY P. HOLLAND, San Francisco, Cal. Filed Nov. 13, 1893. Serial No. 490,854. (No model.)



Claim.—1. An upright blasting ore roasting furnace consisting of the fire box L., the fuel charger *d*. and *u*. the latter for feeding oil as fuel to the fire box, the stopper or plug *e*. for closing the mouth of the charger, (having lift or handle *f*.) the worm C, in which the ore is roasted while being carried in suspension through it by means of compressed hot air and flame forced therein; the ore aperture *c*., the ore feeder *a*., the revolving screw *b*., regulating the ore feed as it passes from the feeder to the ore aperture of the worm, the pipe *g*. conducting compressed air to the air chamber *k*. between the walls and extending under the furnace from whence the air is forced through the tuyeres in the bottom of fire box; the pipe *h*. conducting hot compressed air to the ore aperture of the worm *c*, for carrying the ore in suspension and forcing it through the worm to the receiver, the flues *s. s. s.* through which hot compressed air and flame are forced into the sides of the worm for conveying and roasting the ore in suspension in its passage to the receiver, the worm discharge *i*., the pipe *m*., conveying the roasted ore from the worm discharge into the receiver, the ore receiver H., the door *n*. through which the roasted ore may be discharged from the receiver, the pipe *p*. connecting the ore receiver with water tank conveying the smoke and the fumes coming from the furnace fires and the roasting ore, into the water tank, the water tank I. by means of which the furnace gases are washed or purified, the gas escape pipe *o*., conveying the gases from the water tank into the open air; and the tuyeres *t. t.* in the floor of the fire box, substantially as herein described and set forth.

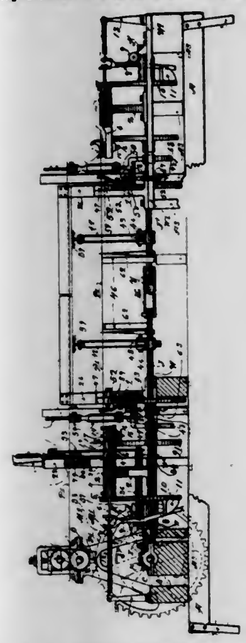
2. In an upright blasting roasting furnace, the combination of the worm, C; the ore aperture of said worm, *c;* the fire and flame flues, *s s s*, entering the lower portions of the worm, for conveying into it flame and compressed hot air, for moving and roasting the ore which is carried in suspension by the compressed hot air; the ore feeder, *a*, for conveying ore to the ore aperture of the worm *c;* the revolving screw, *b*, for regulating the ore feed in its passage from the ore feeder to the ore aperture of the worm; and the oil feeding fuel pipe, *u*, for carrying oil to the fire-box; with the pipe, *g*, for conveying compressed air to the air chamber about the fire box; the tuyeres, *t t*, in the bottom of the firebox through which compressed air is forced into the fire box; the firebox, L; the fuel charger, *d*, in the top of the furnace; the plug or stopper, *e*, for fuel charger, *d*, having handle, *f;* the pipe, *h*, for conveying hot compressed air into the mouth of the worm; the air chamber, *k*, arranged between the walls of the furnace and under the fire box; the pipe, *m*, at the end of the worm for delivering the roasted ore into the receiver; the receiver, H, into which the roasted ore is discharged as it comes from the worm; the discharge, *n*, in the ore receiver; the connecting pipe, *p*, for conveying the fumes and smoke into the water tank for purifying the same; the water tank, I; and the gas escape, *o*, in said tank for conducting the gases therefrom, substantially as herein described and set forth.

3. In an upright blasting ore roasting furnace, the combination of the pipe, *g*, for conducting compressed air from the air compressor to the air chamber; the air chamber, *k*, between the walls of the furnace about the firebox; the tuyeres, *t t*, beneath the firebox, through which compressed air from the air chamber is forced into the firebox; the firebox, L; the fuel charger, *d*, in the top of the furnace; and the oil feeding fuel pipe, *u;* the plug or stopper, *e*, for fuel charger, *d*, having handle, *f;* with the ore feeder, *a*, for conveying ore to the ore aperture of the worm; the revolving screw, *b*, for regulating the ore feed in its passage from the ore feeder to the ore aperture of the worm; the worm, C, through which the ore is carried in suspension by the hot compressed air forced into it; the mouth of the worm, *c*, at the entrance to the worm; the pipe, *h*, conducting hot compressed air into the mouth of the worm; the fire and flame flues, *s s s*, entering the lower part of the worm for conveying into it flame and compressed hot air for moving and roasting the ore which is carried in suspension by the compressed air to the receiver; the worm discharge, *i;* the pipe, *m*, conducting the roasted ore from the worm to the receiver; the ore receiver, H, for receiving the roasted ore; the discharge, *n;* the pipe, *p*, for conveying the fumes and smoke into the water tank for purifying the same; the water tank, I, and the gas escape, *o*, in said tank, for conducting the gases therefrom,—substantially as herein described and set forth.

4. In an upright blasting ore roasting furnace, the combination of the worm, C, having ore aperture, *c;* the discharge, *i;* the pipe, *m*, for conducting the roasted ore from the worm to the receiver; the fuel charger, *d;* the oil feeding fuel pipe, *u;* the plug or stopper, *e*, for fuel charger, *d*, having handle, *f;* the pipe, *h*, for conveying hot compressed air into the mouth of the worm, *c;* the ore feeder, *a;* and revolving screw, *b*, for conducting and regulating ore feed in its passage to the worm; the compressed air pipe, *g*, for conducting compressed air from the air compressor to air chamber; the tuyeres, *t t*, in the bottom of the fire box through which compressed air is forced into the fire box; the fire box, L; the air and flame flues, *s s s*, entering the lower portions of the worm for conveying into it flame and compressed hot air; the air chamber, *k*, arranged between the walls of the furnace and the fire-box; the ore receiver, H; the discharge, *n;* the pipe, *p*, for conveying the fumes and gases into the water tank; the water tank, I, in which the gases and smoke are purified; and the gas escape, *o*, in said tank for conducting the gases therefrom,—substantially as herein described and set forth.

5. In an upright blasting ore roasting furnace, the combination of the fire box, L, having fuel charger, *d;* and the oil feeding fuel pipe, *u;* the plug or stopper, *e;* having handle, *f;* with the compressed air pipe, *g*, for conducting compressed air from air compressor to the air chamber; the tuyeres, *t t*, in the bottom of the fire box through which compressed air is forced into the firebox; the air chamber, *k*, arranged between the walls of the furnace and under the fire box; the air and flame flues, *s s s*, entering the lower portions of the worm for conveying into it flame and compressed hot air; the worm, C, through which the ore is carried in suspension by the hot compressed air forced into it; the discharge, *i;* the pipe, *m*, at the end of the worm for delivering the roasted ore into the receiver; the ore receiver, H, into which the roasted ore is discharged; the discharge, *n*, in the ore receiver; the pipe, *p*, for conveying the fumes and smoke into the water tank; the water tank, I, and the gas escape, *o*, in said tank, for conducting the gases therefrom,—substantially as herein described and set forth.

544,762. BALE-TIE MACHINE. GUSTAF JOHNSON, Denver, Colo. Filed May 17, 1895. Serial No. 549,647. (No model.)



Claim.—1. In a bale-tie making machine, the combination of means for feeding a predetermined length of wire intermittently into the machine, a conduit to receive the wire having a door adapted to open intermittently and discharge said wire, and a cutting device arranged substantially as shown for cutting the in-feeding wire into predetermined lengths suitable for bale ties.

2. In a bale tie making machine, the combination with the driving shaft, of a friction feed roll mechanism comprising a driving gear secured to said shaft and having a mutilated portion, a sliding way projection on the side of said gear registering with said mutilated portion, a pinion journaled to mesh with said gear, a shaft supporting said pinion, a pawl block secured to said shaft adjacent to said pinion and arranged to engage said slide way, a second pinion secured to the opposite side of the journal of the first named pinion, a roller secured to said shaft adjacent to said second named pinion, a second shaft journaled in adjustable bearings above the first named shaft, a pinion secured thereto meshing with the second named pinion, a roller secured to the end of the last named shaft in engagement with the first named roller, and means for interchanging said pinions and rollers for pinions and rollers of larger or smaller diameter, whereby the wire is fed intermittently into the machine in different predetermined lengths, as set forth.

3. In a bale tie making machine, the combination with the frame and driving shafts, of means substantially as shown for intermittently feeding from a source of supply a wire into the machine and for cutting the same into predetermined lengths, a conduit adapted to receive said wire, a door hinged to its bottom upon which said wire rests, means for intermittently opening said door and discharging said cut lengths of wire, means for guiding the wire to suitable supports, and a duplicate looping mechanism comprising a guide block, a sleeve hub thereon, a bearing support for said sleeve, a pinion secured to the end of said sleeve, a mutilated gear secured to said driving shaft and in engagement with said pinion, a rack seated to reciprocate in said guide block and having a stem extending through said sleeve and pinion, a rocking lever having a yoke end, pivoted at one side of said yoke to said stem, a cam projection on said mutilated gear adapted to engage the lower end of said lever and reciprocate said rack in said guide block, a spring connected to said lever for retracting said rack, a pinion journaled in said block in

mesh with said rack, fingers projecting from said pinion at right angles to one another and adapted to receive the ends of said wire at their junction with one another, a crotch stud secured to said block adapted to receive said wire from said conduit and guides, a lever adapted to periodically hold said wire in said crotch, and a cam secured on said driving shaft adapted to periodically hold said guide block against rotation while said rack and finger pinion is reciprocated, the combination operating to feed the wire to cut it into suitable lengths and to form a loop at each end, substantially as described.

4. In a bale tie making machine, the combination of the frame and driving shafts and the means substantially as shown for feeding periodically from a source of supply different lengths of wire into the machine, means for cutting said wire into specified lengths, means for confining the lengths in the longitudinal center of the machine and for periodically discharging the same, means substantially as shown for forming a loop on each end of said separated lengths of wire, and a gripping, twisting and discharging mechanism comprising a stationary jaw, a pivotal jaw adapted to swing against said stationary jaw, a cam on said driving shaft adapted to engage said pivotal jaw and move it against said stationary jaw, a yielding cushion between said cam and block, means for guiding said predetermined lengths of wire between said jaws, an arm on said driving shaft, a system of rock arms adapted to be engaged by said shaft arm and arranged to discharge said bale ties from said jaws and machine, substantially as described.

5. In a bale tie making machine, the combination with the frame, of a driving shaft transversely arranged in said frame, an extensible main shaft longitudinally arranged in said frame and adapted to be driven by said transverse shaft, and the auxiliary frames having the cross yokes adapted to support the looping, twisting and discharging mechanism, one of which is adjustable longitudinally in respect to the other, substantially as described.

6. In a bale tie making machine the combination with the frame and driving shafts, of the clutch controlled driving pulley, the mutilated gear, the pinion meshing therewith, the slide-way projection thereon, the raised journal bearing for said pinion shaft, the pawl block adapted to engage said slide-way, the feeding rolls, the additional shaft and pinions for supporting and rotating said rolls to frictionally contact with the supply wire and feed the same to the machine, the adjustable bearings for the upper shaft and roll, whereby rolls and pinions of varying diameters are interchangeable on said shafts, the combination operating to intermittently feed from a source of supply lengths of wire to the machine, which lengths are predetermined by the respective diameters of said rolls and pinions in respect to the diameter of said mutilated gear, as specified.

7. In a bale tie making machine, the combination of the knife block, the rock-arms, the engaging projections, the driving gear, the lever connecting said rock-arms to said knife, and the spring for returning said knife to its normal position.

8. In a bale tie making machine, the combination of the duplicate auxiliary frames, one of which is adjustable in relation to the other, having the cross-yokes, the guide-block having a sleeve journaled in one of said cross-yokes, the rack having a stem journaled in said sleeve, the pinion on said sleeve, the mutilated gear in engagement therewith, the lever connected to said rack stem, the cam on said mutilated gear adapted to engage said lever and reciprocate said rack, the finger pinion in engagement with said rack, the crotch stud secured to said guide block, and the semicircular cam adapted to periodically engage said guide block, substantially as described.

9. In a bale tie making machine, the combination of the driving shafts, the wire receiving trough or conduit, the door, the levers pivoted thereto, the rock-arm pivoted to said levers, the arm secured to one of said driving shafts and adapted to engage said rock-arm and periodically open said door and discharge said wires, the supports and cross yokes for sustaining the conduit above, and the guides for leading the wires from said conduit to the looping and twisting devices, as set forth.

10. In a bale tie making machine, the combination of the duplicate weight-holding levers having a notch therein adapted to register over the bale tie wire, the levers adjustably connected thereto, the rock-arm pivoted to said lever, and the quadrant cam secured to the main driving shaft and adapted to engage one end of said rock-arm, whereby said lever is moved by said shaft arm to periodically engage said tie wires and hold them against displacement and by its weighted end to return it to its normal position, as set forth.

11. In a bale tie making machine, the combination of the driving shafts and the main and auxiliary frames, of the duplicate tie discharging levers pivoted to said auxiliary frames, the spring controlled rock-arms, and the shaft arm for periodically engaging one end of said rock-arm to operate said discharging levers, as set forth.

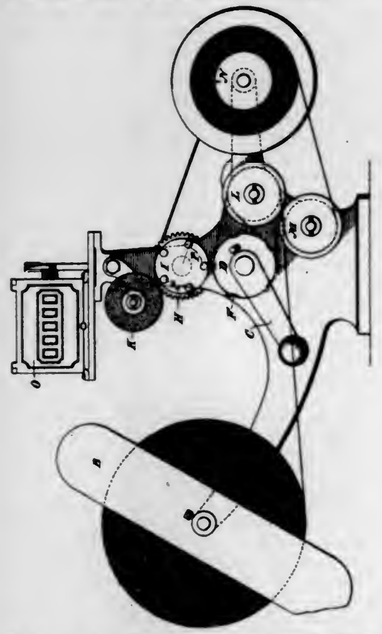
12. In a bale tie making machine, the combination with the main and auxiliary frame and the driving shafts, of the cross yokes of said frames, one of each of which has a rigid block, a gripping block pivoted to said cross yokes to engage in opposition the said rigid jaw, the steel face blocks secured to said blocks, the yielding cushion and contact plate secured to said pivotal block, and a cam secured to one of said driving shafts adapted to engage said pivotal block, as set forth.

13. In a bale tie making machine, the main and duplicate auxiliary frame, one of which is adjustable on said frame and the transverse and main driving shafts, of the cross yokes having a block, a gripping block pivoted in opposition to said block and having a rubber cushion and a cam contact plate secured thereto, a semicircular cam adapted to periodically engage said pivotal gripping block, and renewable steel face plates on the contacting surfaces of said blocks, substantially as described.

14. In a bale tie making machine, a loop forming device consisting of a periodically reciprocated rack and a pinion meshing therewith having a flanged top, a vertical finger arranged laterally to one side of the said pinion, but forming a part thereof, a second finger arranged at right angles to the first to form at the junction of the two an inwardly projecting crotch, means for reciprocating said rack to rotate said pinion a semicircular distance on its axis, and a crotch stud adapted to receive the tie wires and around which the end of the wire is carried by said pinion fingers, substantially as described.

15. In a bale tie making machine, the combination of the main frame, the transversely arranged driving shaft, the main driving shaft having power connection therewith by means of bevel gears, and having said main shaft divided into two parts at the center of the machine and having the rear part extensibly feathered to the other part, and the auxiliary frames, one of which is adjustable on the said main frame, as set forth.

544,763. PRINTING-MACHINE. JOHN KELLER, Brooklyn, N. Y.
Filed Dec. 21, 1892. Serial No. 455,930. (No model.)

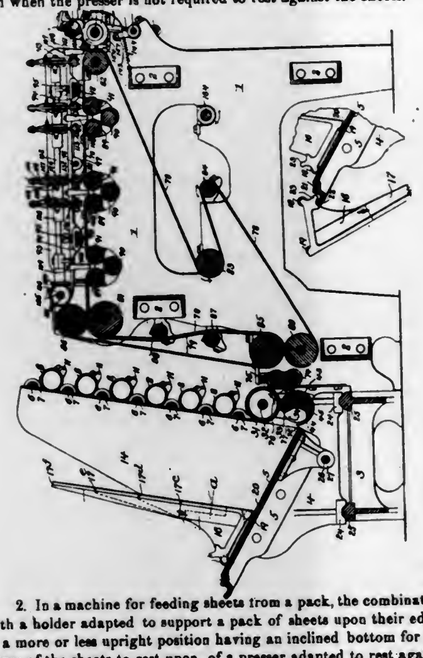


Claim.—1. In a printing machine the combination of a crank shaft, a feed disk operated thereby, said disk being provided with two peripheral rows of laterally adjustable lugs adapted to engage a notched ribbon at a plurality of points and rotary printing disk.

2. A ticket printing machine, comprising a driving shaft, printing wheels or rolls in gear therewith, guide rolls adjacent thereto, and frictionally operated supply and take-up reels so related to the printing and guide rolls that the material to be printed may be fed to and from the printing rolls over the periphery of the same guide roll, for the purpose set forth.

544,764. PAPER-FEEDING MACHINE. JOHN H. KNOWLES, Philadelphia, Pa. Filed Mar. 9, 1895. Serial No. 541,136. (No model.)

Claim.—1. In a machine for feeding sheets from a pack, the combination with a holder adapted to support a pack of sheets upon their edges in a more or less upright position having an inclined bottom for the edges of the sheets to rest upon, of a presser adapted to rest against the rear or back of the pack of sheets and press the sheets forward over the inclined bottom, antifriction rollers attached to said presser and adapted to move over the said bottom and support the presser when the presser is acting upon the sheets, and a depression or gutter along the rear edge of said bottom adapted to receive one or more of the rollers when the presser is drawn back to the rear of the bottom and thereby retain the presser permanently upon the rear of the bottom when the presser is not required to rest against the sheets.



2. In a machine for feeding sheets from a pack, the combination with a holder adapted to support a pack of sheets upon their edges in a more or less upright position having an inclined bottom for the edges of the sheets to rest upon, of a presser adapted to rest against the rear or back of the pack of sheets to press the sheets forward over the inclined bottom and provided with a hook or hooks, antifriction rollers attached to said presser and adapted to move over the said bottom and to support the presser when it is acting upon the sheets, a depression or gutter along the rear edge of said bottom adapted to receive one or more of the rollers upon the presser when it is being turned over the edge of the bottom, and a ledge formed along the said bottom adapted to receive the hook or hooks upon the presser and thereby support the presser in a hanging position when it is turned over away from the bottom.

3. In a machine for feeding sheets from a pack, the combination of a sheet holder adapted to support a pack of sheets, a withdrawing device carried by said holder and adapted to withdraw the sheets from the pack, a supporting frame independent from said sheet holder, conveying devices carried by said supporting frame adapted to receive the sheets from the withdrawing device and convey them therefrom, a registering device carried by said supporting frame for registering the sheets while they are supported by the conveying devices, means to move the said sheet holder and parts carried thereby laterally without moving the said supporting frame and the parts carried thereby so as to adjust the sheets in the holder relatively to the medial line of the machine to be supplied with sheets, power devices carried by the sheet holder for operating said withdrawing device, power devices carried by said supporting frame for operating said conveying and registering devices, and an adjustable power connection between the power devices which operate the withdrawing device and the power devices which operate the conveying and registering devices arranged so that the said withdrawing, conveying and registering devices may be operated and the movements of the said devices relatively to each other maintained the same in whatever position the sheet holder and parts carried thereby may be adjusted.

4. In a machine for feeding sheets from a pack, the combination of a sheet holder adapted to support a pack of sheets, a withdrawing device carried by said holder and adapted to withdraw the sheets from the pack, a supporting frame independent from said sheet holder, conveying devices carried by said supporting frame adapted to receive the sheets from the withdrawing device and convey them therefrom, ways arranged transversely across the machine on which said sheet holder may be moved, a hand operated device to act on said sheet holder to move it and the parts carried thereby along said ways without moving the said supporting frame and the parts carried thereby, power devices carried by the sheet holder adapted to operate said withdrawing device, power devices carried by said supporting frame adapted to operate said conveying devices, and an adjustable power connection between the power devices which operate the withdrawing device and the power devices which operate the conveying devices arranged so that the said withdrawing and conveying devices may be operated and the movements of the said devices relatively to each other maintained the same in whatever position the sheet holder and parts carried thereby may be adjusted.

5. In a machine for feeding sheets from a pack, the combination of a sheet holder adapted to support a pack of sheets, a withdrawing device carried by said holder and adapted to withdraw the sheets from the pack, frame sides independent from said sheet holder, devices carried by said frame sides adapted to receive the sheets from the withdrawing device and convey them therefrom, means to move the said sheet holder and the parts carried thereby laterally without moving the said frame sides and the parts carried thereby so as to adjust the position of the sheets in the holder relatively to the medial line of the machine to be supplied with sheets, power devices carried by the sheet holder adapted to operate said withdrawing device, power distributing devices carried by said frame sides, and a power connection between the power devices carried by the frame sides and the power devices carried by the sheet holder having capacity of adjustment by the act of moving the sheet holder, whereby the said power devices carried by the sheet holder and the parts operated thereby will be driven in whatever position the sheet holder may be adjusted in relation to said frame sides.

6. In a machine for feeding sheets from a pack, the combination of a laterally adjustable sheet holder adapted to support a pack of sheets upon edge in a more or less upright position, mechanism carried by the laterally adjustable holder adapted to operate successively upon the sheets and partially withdraw them from the pack, a pair of rollers independent of the sheet holder carried by the feeding machine adapted to receive the advanced edges of the partially withdrawn sheets and to assist in the withdrawal of them from the pack, power devices carried by the sheet holder for operating the withdrawing mechanism thereon, power devices carried by the feeding machine independent of the sheet holder connected with the power devices of the sheet holder so that the sheet holder may be adjusted laterally to vary the position of the sheets with reference to the medial line of the feeding machine without breaking the power transmitting connections to the withdrawing devices of the holder.

7. In a machine for feeding sheets from a pack, the combination of a buckling finger having a tubular body, a frictional pad in one end of said tubular body adapted to act upon the surface of the sheets in the pack, a plug threaded into said tubular body bearing against the inner end of said pad adapted to be adjusted in the tubular body and when it is adjusted to adjust the frictional pad correspondingly, and means to operate said buckling finger to cause it to buckle an edge of the outermost sheet in the pack.

8. In a machine for feeding sheets from a pack, the combination of a buckling finger having a tubular body, a frictional pad in one end of said tubular body adapted to act upon the surface of the sheets in the pack, a plug threaded into said tubular body bearing against the inner end of said pad adapted to be adjusted in the tubular body and when it is adjusted to adjust the frictional pad correspondingly, and a rotary holder arranged adjacent to an edge of the pack of sheets, and adapted to support and rotate said buckling finger to cause it to act upon and form a buckle in the outermost sheet in the pack with each revolution of the holder.

9. In a machine for feeding sheets from a pack, the combination of a buckling finger, a rotating holder arranged adjacent to an edge of the pack of sheets to support and rotate said buckling finger in such manner that that end of the finger which acts upon the sheets shall rotate in a plane substantially at right angles to the face of the pack and thereby cause the finger to act upon and form a buckle in an edge of the outermost sheet in the pack with each rotation of the holder means for securing said finger to said holder so as to permit to the operative end of the finger, as it rotates, freedom of movement transverse to its axis of revolution, and a spring arranged to act on said finger to give to the operative end of the finger a yielding pressure against the sheets when it acts upon them, for the purpose described.

10. In a machine for feeding sheets from a pack, the combination of a rotating finger holder arranged adjacent to an edge of the pack, a buckling finger carried by and rotating with said holder, and devices acting on the buckling finger to alternately project and retract its operative end embracing a spring arranged to give to the operative end of the finger a yielding pressure against the sheets when it acts upon them for the purpose described.

11. In a machine for feeding sheets from a pack, the combination of a rotating finger holder arranged adjacent to an edge of the pack

and provided with a hole transversely through the body of the holder, a buckling finger located in said hole so as to rotate with the holder and devices acting on the buckling finger to alternately project and retract the operative end of the finger from its supporting hole embracing a spring arranged to give to the operative end of the finger a yielding pressure against the sheets when it acts upon them for the purpose described.

12. In a machine for feeding sheets from a pack, the combination of a rotating finger holder arranged adjacent to an edge of the pack, a buckling finger carried by and rotating with said holder, a frictional pad secured to the buckling finger and constituting its operative end, means to adjust the frictional pad in respect to the buckling finger; and a device for reciprocating said buckling finger to project the operative end of the finger when it is to act upon a sheet and to retract the finger when its end is out of contact with the sheet embracing a spring arranged to give to the operative end of the finger a yielding pressure against the sheets when it acts upon them for the purpose described.

13. In a machine for feeding sheets from a pack, the combination of a rotating finger holder arranged adjacent to an edge of the pack and provided with a hole transversely through the body of the holder a buckling finger located in said hole so as to rotate with the holder, a frictional pad secured to the buckling finger and constituting its operative end, means to adjust the frictional pad in respect to the buckling finger; and a device to move the buckling finger in the hole to project the operative end of the finger from the holder when it is to act upon a sheet and to retract the finger when its end moves out of operative contact with the sheet embracing a spring for projecting the finger outward from the holder and a stationary cam to cause the retraction of the finger for the purpose described.

14. In a machine for feeding sheets from a pack, the combination of a support for a pack of sheets, a guard or lip adapted to overlie and press against the surface of the pack near an edge thereof, a rotating finger holder arranged adjacent to the said guard or lip, a buckling finger carried by and rotating with said holder a frictional pad secured to the buckling finger and constituting its operative end, means to adjust the frictional pad in respect to the buckling finger; and a device for reciprocating said buckling finger to project the operative end of the finger when it is to operate upon a sheet and to retract the finger when its end moves out of contact with the sheet, embracing a spring arranged to give to the operative end of the finger a yielding pressure against the sheets when it acts upon them for the purpose described.

15. In a machine for feeding sheets from a pack, the combination of a support for a pack of sheets, a guard or lip adapted to overlie and press against the surface of the pack near an edge thereof, a rotating finger holder arranged adjacent to the said guard or lip and provided with a hole passing transversely through its body, a buckling finger located in said hole so as to rotate with the holder, and a device for moving the buckling finger in said hole to project the operative end of the finger from the hole when it is to act upon a sheet and to retract the finger when its end moves out of operative contact with the sheet, embracing a spring for projecting the finger outward from the holder and a stationary cam to cause the retraction of the finger all combined and operating so that the buckling finger will act upon the surface of the pack and draw the sheets successively from under the said guard or lip and thereby individualize them from the pack.

16. In a machine for feeding sheets from a pack, the combination of a support for a pack of sheets, a guard composed of two adjacent lips adapted to overlie and press against an edge of the pack near one corner thereof, a buckling finger, and a rotating holder arranged adjacent to said guard, having its axis of rotation in a line substantially parallel to that edge of the pack covered by said guard, and carrying and rotating said buckling finger in such manner that an end of the finger shall act successively upon the edges of the sheets at a point between the adjacent lips of said guard to draw the sheets from under the lips and thereby individualize successive sheets from the pack.

17. In a machine for feeding sheets from a pack, the combination of a support for a pack of sheets, a guard or lip adapted to overlie and press against the surface of the pack near an edge thereof, a rotating finger holder arranged adjacent to the said guard or lip and provided with a hole passing transversely through its body, with a slot extending longitudinally in the body of the holder from said hole outward through the outer face of the holder, a buckling finger located in said hole so as to rotate with the holder, a shank fixed to said buckling finger and extending outward from said finger through said slot with its end outside of the face of the holder, and devices, embracing a cam acting on said shank, to move the buckling finger in its supporting hole and thereby project its operative end from the said hole when it is to act upon a sheet and to retract the finger when its end moves out of operative contact with the sheet.

18. In a machine for feeding sheets from a pack, the combination of a support for a pack of sheets, a guard or lip adapted to overlie and press against the surface of the pack near an edge thereof, a rotating finger holder arranged adjacent to the said guard or lip and provided with a hole passing transversely through its body, a tube forming the body part of a buckling finger located in said hole and carried by and rotating with the holder, a frictional pad in one end of said tube adapted to act upon the surfaces of the sheets in the pack, a device carried by said tube adapted to adjust the said frictional pad in the tube and to secure it therein when it is adjusted, and means to move the tube longitudinally in said hole to project and retract the frictional pad for the purpose described.

19. In a machine for feeding sheets from a pack, the combination of a support for a pack of sheets, a guard or lip adapted to overlie and press against the surface of the pack near an edge thereof, a rotating finger holder arranged adjacent to the said guard or lip and provided with a hole passing transversely through its body with a longitudinal slot extending therefrom, a tube forming the body part of a buckling finger located in said hole and carried by and rotating with the holder, a frictional pad in one end of the said tube adapted to act upon the surface of the sheets in the pack, a device carried by said tube adapted to adjust the said frictional pad in the tube and to secure it therein when it is adjusted, a shank carried by the tube and extending through said slot, and devices, embracing a cam acting on said shank, to reciprocate the tube in the holder and project and retract its end which carries the frictional pad.

20. In a machine for feeding sheets from a pack, the combination of a support for a pack of sheets, an individualizing device adapted to raise a portion of the outermost sheet at its edge from the other sheets in the pack, and a rotary separator blade having its separating edge extended spirally in the direction of its axis of rotation and arranged with its axis of rotation substantially parallel to that edge of the sheet which is raised by the individualizing device adapted to enter first under the raised portion of the sheet and thence pass under and separate the entire edge of the sheet from the pack and bend it outward therefrom.

21. In a machine for feeding sheets from a pack, the combination of a support for a pack of sheets, an individualizing device adapted to operate upon the surface of the outermost sheet in the pack at a point on that edge of the sheet which lies most advanced in the direction in which the sheet is to be moved and to bend a portion of that edge outward without bending the entire edge of the sheet, a rotary separator blade having its separating edge extended spirally in the direction of its axis of rotation and arranged with its axis of rotation substantially parallel to the said most advanced edge of the sheet adapted to enter first under said bent out portion of the edge of the sheet and thence to pass under and separate the entire edge of the sheet from the pack and to bend it outward therefrom, and devices for seizing upon the edge of the sheet after it is bent out and withdrawing the sheet from the pack.

22. In a machine for feeding sheets from a pack, the combination with a support for a pack of sheets, and an individualizing device adapted to operate upon the surface of the outermost sheet in the pack near one corner and to bend outward a portion of an edge thereof, of a rotating blade having its forward edge inclined with reference to the axis about which the blade rotates and having every point along that edge equally distant from said axis whereby as the blade rotates its edge will move in a cylindrical pathway, mounted in such manner that a portion of space will be left unoccupied within the inclosure of the said cylindrical pathway with a free opening from said space outward through said pathway adjacent to the inclined forward edge of the blade, arranged with its axis parallel to the face of the pack and in a position such that the said cylindrical pathway will partly overlie that edge of the outermost sheet in the pack which is bent outward by the individualizing device, rotating in a direction inward from the edge toward the body of the pack and adapted to enter first under said bent out portion of the edge of the sheet and thence pass under and separate the entire edge of the sheet from the pack and bend it outward therefrom causing the edge of the sheet as it is bent outward to pass through the said unoccupied space, and devices for seizing upon the edge of the sheet after it is bent outward and withdrawing the sheet from the pack.

23. In a machine for feeding sheets from a pack, the combination with an individualizing device to raise a portion of an edge of the outermost sheet, of a rotating longitudinally recessed roller 33 carrying the separating blade 44 adapted to enter under the raised portion of the outermost sheet and separate an edge of the sheet from other sheets in the pack as the roller rotates.

24. In a machine for feeding sheets from a pack, the combination with a support for a pack of sheets, and an individualizing device adapted to operate upon the surface of the outermost sheet in the pack near one corner thereof and to bend outward a portion of that edge of the sheet which lies most advanced in the direction in which the sheet is to be moved, of a rotating roller arranged adjacent to and parallel with the edge of the pack so as to intercept the curved path traversed by the edge of a sheet when it is bent outward, and having a portion of its body cut away on one side to form a recess through which the edge of the sheet when it is bent outward may freely pass, a blade carried by the body of the roller and projecting over a portion of said recess and having its forward edge inclined with reference to the axis of the roller and adapted as it rotates with the roller to enter first under said bent out portion of the edge of the sheet and thence pass under and separate the entire edge of the sheet from the pack and bend it outward therefrom, and withdrawing devices acting on the outwardly bent edge to withdraw the sheet from the pack.

25. In a machine for feeding sheets from a pack, the combination with a support for a pack of sheets, of a rotating roller arranged adjacent to and partly overlying an edge of the pack and having a portion of its body cut away to form a longitudinal recess, an individualizing device carried in part by said roller and adapted to act upon the outermost sheet in the pack and to bend a portion of an edge of that sheet outward, and a blade carried by the body of the roller and projecting over a portion of said longitudinal recess, adapted as it rotates with the roller to enter first under said bent out portion of the edge of the sheet and thence to pass under and separate the entire edge of the sheet from the pack and bend it outward therefrom, the edge of the sheet as it is bent out passing through the longitudinal recess in the roller.

26. In a machine for feeding sheets from a pack, the combination with a support for a pack of sheets, of a guard or lip adapted to overlie and press against an edge of the pack near one corner thereof, a rotating roller arranged adjacent to and partly overlying that edge of the pack covered by said guard or lip, and having a portion of its body cut away on one side to form a longitudinal recess, a buckling finger carried by and rotating with said roller adapted to act upon the outermost sheet in the pack at a point adjacent to the said guard or lip to draw the sheet from under the guard or lip and then to release its action upon the sheet to allow the sheet to extend itself over the guard or lip whereby a space shall intervene between that portion of the edge of the said sheet adjacent to the guard or lip and the subjacent sheets of the pack, a blade carried by the body of the roller and projecting over a portion of said longitudinal recess and having its forward edge inclined with reference to the axis of the roller and adapted as it rotates with the roller to enter first into said space under the sheet and thence pass under and separate the entire edge of the sheet from the pack and bend it outward therefrom, the edge of the sheet as it is bent out passing through the longitudinal recess in the roller.

27. In a machine for feeding sheets from a pack, the combination of a support for a pack of sheets, an individualizing device adapted to raise a portion of the outermost sheet at its edge from the other sheets in the pack, a longitudinally recessed roller provided with a frictional surface, mounted adjacent to and partly overlying that edge of the outermost sheet in the pack which is raised by the individualizing device and rotating in a direction inward from the edge toward the body of the pack, a blade carried by said roller adapted as it rotates with the roller to enter first under the raised portion of the sheet and thence to pass under and individualize the entire edge of the sheet from the pack and bend it outward therefrom through the longitudinal recess in the roller, and a cylinder or drum adapted to act in conjunction with the frictional surface of the roller to withdraw the individualized sheet to a greater or less extent from the pack.

28. In a machine for feeding sheets from a pack, the combination of a support for a pack of sheets, an individualizing device adapted to raise a portion of the outermost sheet at its edge from the other sheets in the pack, a longitudinally recessed roller provided with a frictional surface, mounted adjacent to and partly overlying that edge of the outermost sheet in the pack which is raised by the individualizing device and rotating in a direction inward from the edge toward the body of the pack, a blade carried by said roller adapted as it rotates with the roller to enter first under the raised portion of the sheet and thence to pass under and individualize the entire edge of the sheet from the pack and bend it outward therefrom through the longitudinal recess in the roller, and a cylinder or drum adapted to act in conjunction with the frictional surface of the roller to withdraw the individualized sheet partially from the pack, and an auxiliary withdrawing device to receive the advanced edge of the partially withdrawn sheet and to assist in withdrawing the sheet from the pack.

29. In a machine for feeding sheets from a pack, the combination of a support for a pack of sheets, a withdrawing drum mounted adjacent to the pack of sheets adapted by frictional contact to seize upon the surface of a sheet when the sheet is pressed against it, a rotating roller mounted adjacent to, parallel with and partly overlying an edge of the pack of sheets, and having a longitudinal recess to permit the passage of the edge of a sheet when it is bent outward, an individualizing device carried in part by said roller and adapted to act upon the outermost sheet in the pack and to bend a portion of an edge of that sheet outward, a blade carried by said roller having its forward edge directed in a slanting longitudinal course in respect to the axis of the cylinder and adapted as it rotates with the cylinder to enter first under said bent out portion of the edge of the sheet and thence pass under and separate the entire edge of the sheet from the pack and bend it outward therefrom, and a frictional pad carried by said roller adapted to press the bent edge of the sheet against the surface of the drum and thereby cause the sheet to be withdrawn to a greater or less extent from the pack.

30. In a machine for feeding sheets from a pack, the combination of a support for a pack of sheets, a withdrawing drum mounted adjacent to the pack of sheets adapted by frictional contact to seize upon the surface of a sheet when the sheet is pressed against it, a rotating roller mounted adjacent to, parallel with and partly overlying an edge of the pack of sheets, and having a longitudinal recess to permit the passage of the edge of a sheet when it is bent outward, an individualizing device carried in part by said roller and adapted to act upon the outermost sheet in the pack and to bend a portion of an edge of that sheet outward, a blade carried by said roller having its forward edge directed in a slanting longitudinal course in respect to the axis of the cylinder and adapted as it rotates with the cylinder to enter first under said bent out portion of the edge of the sheet and thence pass under and separate the entire edge of the sheet from the pack and bend it outward therefrom, and a frictional pad carried by said roller adapted to press the bent edge of the sheet against the surface of the drum and thereby cause the sheet to be partially withdrawn from the pack, and an auxiliary withdrawing device to receive the advanced edge of the partially withdrawn sheet and to assist in withdrawing the sheet from the pack.

31. In a machine for feeding sheets from a pack, the combination with a support for a pack of sheets, of a guard or lip adapted to overlie and press against an edge of the pack near one corner thereof, a withdrawing drum mounted adjacent to the pack of sheets adapted by frictional contact to seize upon the surface of a sheet when the sheet is pressed against it, a rotating roller mounted adjacent to parallel with and partly overlying that edge of the pack of sheets covered by said guard or lip and having a longitudinal recess to permit the passage of the edge of a sheet when it is bent outward, a buckling finger carried by and rotating with said roller adapted to act upon the outermost sheet in the pack at a point adjacent to the said guard or lip to draw the sheet from under the guard or lip and then to release its action upon the sheet to allow the sheet to extend itself over the guard or lip whereby a space shall intervene between that portion of the edge of the said sheet adjacent to the guard or lip and the subjacent sheets of the pack, a blade carried by said roller having its forward edge directed in a slanting longitudinal course in respect to the axis of the cylinder and adapted as it rotates with the cylinder to enter first into said space under the edge of the sheet and thence pass under and separate the entire edge of the sheet from the pack and bend it outward therefrom, and a frictional pad carried by said roller adapted to press the bent edge of the sheet against the surface of the drum and thereby cause the sheet to be withdrawn to a greater or less extent from the pack.

32. In a machine for feeding sheets from a pack, the combination with a support for a pack of sheets, of a guard or lip adapted to overlie and press against an edge of the pack near one corner thereof, a withdrawing drum mounted adjacent to the pack of sheets adapted by frictional contact to seize upon the surface of a sheet when the sheet is pressed against it, a rotating roller mounted adjacent to parallel with and partly overlying that edge of the pack of sheets covered by said guard or lip and having a longitudinal recess to permit the passage of the edge of a sheet when it is bent outward, a buckling finger carried by and rotating with said roller adapted to act upon the outermost sheet in the pack at a point adjacent to the said guard or lip to draw the sheet from under the guard or lip and then to release its action upon the sheet to allow the sheet to extend itself over the guard or lip whereby a space shall intervene between that portion of the edge of the said sheet adjacent to the guard or lip and the subjacent sheets of the pack, a blade carried by said roller having its forward edge directed in a slanting longitudinal course in respect to the axis of the cylinder and adapted as it rotates with the cylinder to enter first into said space under the edge of the sheet and thence pass under and separate the entire edge of the sheet from the pack and bend it outward therefrom, and a frictional pad carried by said roller adapted to press the bent edge of the sheet against the surface of the drum and thereby cause the sheet to be partially withdrawn from the pack, and a pair of rollers adapted to seize the advanced edge of the partially withdrawn sheet and to assist in the withdrawal of it from the pack.

33. In a machine for feeding sheets from a pack, the combination of a support for a pack of sheets, an individualizing device adapted to raise a portion of the outermost sheet at its edge from the other sheets in the pack, a longitudinally recessed roller provided with a frictional surface, mounted adjacent to and partly overlying that edge

of the outermost sheet in the pack which is raised by the individualizing device and rotating in a direction inward from the edge toward the body of the pack, a blade carried by said roller adapted as it rotates with the roller to enter first under the raised portion of the sheet and thence to pass under and individualize the entire edge of the sheet from the pack and bend it outward therefrom through the longitudinal recess in the roller, and a cylinder or drum adapted to act in conjunction with the frictional surface of the roller to withdraw the individualized sheet to a greater or less extent from the pack, and means to drive the said roller with a variable speed of rotation whereby the roller will move slowly when its frictional surface is turned toward the said withdrawing drum and faster when its frictional surface is turned away from the drum.

34. In a machine for feeding sheets from a pack, the combination with a support for a pack of sheets, of a guard or lip adapted to overlie and press against an edge of the pack near one corner thereof, a withdrawing drum mounted adjacent to the pack of sheets adapted by frictional contact to seize upon the surface of a sheet when the sheet is pressed against it, a rotating roller mounted adjacent to, parallel with and partly overlying that edge of the pack of sheets covered by said guard or lip and having a longitudinal recess to permit the passage of the edge of a sheet when it is bent outward, a buckling finger carried by and rotating with said roller adapted to act upon the outermost sheet in the pack at a point adjacent to the said guard or lip to draw the sheet from under the guard or lip and then to release its action upon the sheet to allow the sheet to extend itself over the guard or lip whereby a space shall intervene between that portion of the edge of the said sheet adjacent to the guard or lip and the subjacent sheets of the pack, a blade carried by said roller having its forward edge directed in a slanting longitudinal course in respect to the axis of the cylinder and adapted as it rotates with the cylinder to enter first into said space under the edge of the sheet and thence pass under and separate the entire edge of the sheet from the pack and bend it outward therefrom, and a frictional pad carried by said roller adapted to press the bent edge of the sheet against the surface of the drum and thereby cause the sheet to be withdrawn to a greater or less extent from the pack, and means to drive the said roller with a variable speed of rotation whereby the roller will move slowly when its frictional pad is turned toward the said withdrawing drum and faster when its frictional pad is turned away from the drum.

35. In a machine for feeding sheets from a pack, the combination of a support for a pack of sheets, an individualizing device adapted to operate upon the outermost sheet in the pack and to bend a portion of an edge of that sheet outward, a longitudinally recessed roller provided with a frictional surface and mounted adjacent to and partly overlying that edge of the outermost sheet in the pack which is bent outward by the individualizing device, a blade carried by said roller, a withdrawing drum mounted adjacent to said roller, bearings for said roller and for said drum, springs adapted to act upon said bearings to force the said roller and drum toward one another, and adjustable stops to limit the movement of the bearings, for the purpose described.

36. In a machine for feeding sheets from a pack, the combination of a support for a pack of sheets, an individualizing device adapted to operate upon the outermost sheet in the pack and to bend a portion of an edge of that sheet outward, a longitudinally recessed roller provided with a frictional surface and mounted adjacent to and partly overlying that edge of the outermost sheet in the pack which is bent outward by the individualizing device, a blade carried by said roller, a withdrawing drum mounted adjacent to said roller, bearings for said roller and for said drum, adjustable frames to support said bearings, springs carried by said frames adapted to act on said bearings to press the said roller and drum toward one another, adjustable stops carried by said frames to limit the movement of said bearings, means to adjust said frames so that the said roller and drum may be adjusted relatively to the face of the pack of sheets without affecting the relative positions of the roller and drum, for the purpose described.

37. In a machine for feeding sheets from a pack, the combination of a support for a pack of sheets an individualizing device adapted to raise a portion of the outermost sheet at its edge from other sheets in the pack, and a separating blade arranged to rotate with its axis of rotation adjacent to and substantially parallel to that edge of the sheet which is raised by the individualizing device and adapted to enter under the raised portion of the sheet and to pass under and separate the entire edge of the sheet from the pack and bend it outward therefrom.

38. In a machine for feeding sheets from a pack, the combination with a support for a pack of sheets of a guard or lip adapted to overlie and press against an edge of the pack near one corner thereof, a buckling finger arranged to act upon the outermost sheet in the pack at a point adjacent to the said guard or lip means to move said buckling finger to cause its operative end to make contact with the sheet and draw the sheet from under the guard or lip and then to cause the operative end of the finger to move away from the sheet thereby releasing its action upon the sheet to allow the sheet to extend itself over the guard or lip whereby a space shall intervene between that portion of the edge of the said sheet adjacent to the guard or lip and the subjacent sheets of the pack, and a separator blade adapted to enter first into said space under the sheet and thence pass under and individualize the entire edge of the sheet from the pack.

39. In a sheet feeding machine, the combination of a support for a pack of sheets, an individualizing device adapted to raise a portion of the outermost sheet at its edge from the other sheets in the pack, a rotary separator blade having a continuous separating edge extended spirally in the direction of its axis of rotation and adapted to enter first under the raised portion of the sheet and thence pass under and separate an entire edge of the sheet from the pack and bend it outward therefrom, withdrawing devices to seize upon the outwardly bent portion of the sheet and withdraw the sheet from the pack, a conveyer to receive the sheets as they pass from the withdrawing devices, power devices to operate the said individualizing device and the said rotary separator blade to cause the individualizing device to act upon and individualize a series of sheets and to cause the separator blade to bend outward each sheet after it is individualized while sheets previously individualized and bent outward are in process of withdrawal from the pack, and power devices to operate the said withdrawing devices so that the withdrawing devices can act upon the series of sheets without interfering with the action of the individualizing device and separator blade, all combined and operated so that the sheets will be withdrawn from the pack and placed upon the conveyer in a series lying one upon another with the forward edge of each sheet somewhat advanced beyond the forward edge of the next following sheet.

40. In a sheet feeding machine, the combination of an endless traveling apron adapted to receive sheets and to convey them over its surface, rollers for supporting and driving said apron, means to depress the surface of the apron so as to produce a transverse pocket extending below the general surface of the apron, cross bars extending transversely over said apron, a frame adapted to move over said cross bars, a side gage finger carried by said frame and extending into said pocket and a hand operated device to act on said frame to adjust it upon said cross bars.

41. In a sheet feeding machine, the combination of an endless traveling apron adapted to receive sheets and to convey them over its surface, rollers for supporting and driving said apron, means to depress the surface of the apron at intervals so as to produce a series of transverse pockets extending below the general surface of the apron, a stop adapted to engage the front edges of the sheets successively as they pass upon said apron to arrest the sheets in their forward movement, cross bars extending transversely over said apron, a side gage adapted to move over said cross bars having a series of fingers or projections adapted to extend into said pockets, and a device to engage the surface of a sheet which has been arrested by the front stop and to draw the sheets laterally against said fingers in whatever position the fingers may happen to be adjusted.

42. In a sheet feeding machine, the combination of an endless traveling apron adapted to receive and convey the sheets over its surface, transverse rollers or guides 89, 90 and 91, about which the apron passes to form a series of transverse depressions or pockets in its surface, side gage fingers having their lower ends projecting into said depressions or pockets, cross bars extending transversely over said apron, a frame carrying said side gage fingers adapted to move over said cross bars, and a device to engage the surface of a sheet and to move the sheet laterally against the side gage fingers in whatever position said fingers may happen to be adjusted.

43. In a sheet feeding machine, the combination of an endless traveling apron adapted to receive sheets and to convey them over its surface, rollers for supporting and driving said apron, a group of rollers arranged to depress the plane of said apron so as to form a transverse pocket or depression in its face, a stop adjacent to the end of the apron adapted to engage the front edges of the sheets as they pass upon said apron to arrest the sheets in their forward movement, cross bars extending transversely over said apron, a side gage adapted to move over said cross bars having a finger or projection extending into said pocket or depression and also a finger or projection extending into the space beyond the end of the apron adjacent to the front stop, and a device to engage the surface of a sheet which has been arrested by the front stop and to draw the sheet laterally against said fingers in whatever position the fingers may happen to be adjusted.

44. In a sheet feeding machine, the combination of an endless traveling apron adapted to receive sheets and to convey them over its surface, rollers for supporting and driving said apron, a series of independent groups of rollers the rollers of each group being arranged to depress the plane of said apron so as to form a transverse pocket or depression in its face and the combined action of the several groups of rollers being to form a series of similar pockets or depressions, a stop to engage the front edges of the sheets successively as they pass upon said apron to arrest the sheets in their forward movement, side gage fingers having their lower ends projecting into said pockets or depressions, cross bars extending transversely over said apron, a frame carrying said side gage fingers adapted to move over said cross bars, a hand operated device adapted to act on said frame to adjust it upon said cross bars, means to clamp said frame to secure it in any adjusted position, and a device to engage the surface of a sheet which has been arrested by the front stop and to draw the sheet laterally against the side gage fingers in whatever position the said fingers may happen to be adjusted.

45. In a machine for feeding sheets from a pack, the combination of a sheet carrier constructed with a moving carrying surface having a transverse pocket or depression across its said surface, a stop adapted to engage the front edges of the sheets successively as they pass upon the carrier to arrest the sheets in their forward movement, a side gage finger having its lower end projecting into said pocket or depression, adapted to engage the side edges of the sheets, a sheet moving device adapted to act upon the surface of a sheet which has been arrested by the front stop to draw the sheet laterally against the side gage finger, a frame carrying said side gage finger and sheet moving device, and means to adjust said frame transversely across the machine whereby the said side gage finger and sheet moving device may be adjusted to suit the width or position of the sheets upon the carrier without affecting the relation of the side gage fingers to the sheet moving device.

46. In a sheet feeding machine, the combination of an endless traveling apron adapted to receive sheets and to convey them over its surface, rollers for supporting and driving said apron, a group of rollers arranged to depress the plane of said apron so as to form a transverse pocket or depression in its face, a stop adjacent to the end of the apron adapted to engage the front edges of the sheets as they pass upon said apron to arrest the sheets in their forward movement, cross bars extending transversely over said apron, a frame adapted to move over said cross bars, side gage fingers carried by said frame one of which extends into said pocket or depression and another of which extends into the space beyond the end of the apron adjacent to the front stop, a sheet moving device carried by said frame adapted to engage the surface of a sheet which has been arrested by the front stop and to draw the sheet laterally against the side gage fingers, and a hand operated device to act on said frame to move it along said cross bars whereby the said side gage fingers and sheet moving device may be adjusted to suit the width or position of the sheets upon the carrier without affecting the relation of said side gage fingers to said sheet moving device.

47. In a sheet feeding machine, the combination of an endless traveling apron adapted to receive sheets and to convey them over its surface, rollers for supporting and driving said apron, a series of independent groups of rollers, the rollers of each group being arranged to depress the plane of said apron so as to form a transverse pocket or depression in its face and the combined action of the several groups of rollers being to form a series of similar pockets or depressions, a stop adapted to engage the front edges of the sheets successively as they pass upon said apron to arrest the sheets in their forward movement, side gage fingers having their lower ends projecting into said pockets or depressions, a sheet moving device adapted to act upon the surface of a sheet which has been arrested by the front stop to draw the sheet laterally against the side gage fingers, cross bars extending transversely above said apron, a frame carrying the side gage fingers and sheet moving device adapted to move over said cross bars, a hand operated device adapted to act on said frame to adjust it upon said cross bars whereby the said side gage fingers and sheet moving device may be adjusted to suit the width or position of the sheets upon the carrier without affecting the relation of said side gage fingers to said sheet moving device, and means to clamp said frame to secure it in any adjusted position.

48. In a machine for feeding sheets from a pack, the combination of a sheet carrier, a stop adapted to engage the front edges of the sheets successively as they are moved forward by the carrier to arrest the sheets in their forward movement, a side gage finger adapted to engage the side edges of the sheets, a frictional pad adapted to engage the surface of a sheet which has been arrested by the front stop, an operating device adapted to move said frictional pad to cause it to act upon a sheet and draw it laterally against the side gage finger, a frame carrying said side gage finger and pad operating device, means to adjust the side gage finger on the supporting frame relatively to the frictional pad, and means to adjust said frame transversely across the machine whereby the gage finger, frictional pad and operating device may be adjusted to suit the width or position of sheets upon the carrier without affecting any adjustment which may have been made between the gage finger and the frictional pad.

49. In a sheet feeding machine, the combination of an endless traveling apron adapted to receive sheets and to convey them over its surface, rollers for supporting and driving said apron, means to depress the surface of the apron at intervals so as to produce transverse pockets extending below the general surface of the apron, a stop adapted to engage the front edges of the sheets successively as they pass upon said apron to arrest the sheets in their forward movement, side gage fingers having their lower ends projecting into said pockets, a frictional pad adapted to engage the surface of a sheet which has been arrested by the front stop, an operating device adapted to move said frictional pad to cause it to act upon a sheet and draw it laterally against the side gage fingers, cross bars extending transversely over said apron, a frame movable on said cross bars and carrying said side gage fingers and pad operating device, means to adjust the side gage fingers on the supporting frame relatively to the frictional pad, and a hand operated device acting on the frame to move it along the cross bars and adjust it to any desired position, whereby the gage fingers, frictional pad and operating device may be adjusted to suit the width or position of the sheets upon the carrier without affecting any adjustment which may have been made between the side gage fingers and the frictional pad.

50. In a sheet feeding machine, the combination with a moving sheet carrier and means to momentarily arrest the sheets in their forward movement of a side gage stop, a movable bar 112, a frictional pad 111 carried thereby, the levers 118 and 119 connected with the bar 112, the link 117, and spring 122 between the levers 118 and 119 and a stationary part respectively, and cams 124 and 125 arranged substantially as described and operating to move the pad 111 to cause it to engage the surface of a sheet which has been arrested and to move it laterally against the side stop.

51. In a sheet feeding machine, the combination with a moving sheet carrier and means to momentarily arrest the sheets in their forward movement of a side gage stop, a movable bar 112, a frictional pad 111 carried thereby, the levers 118 and 119 connected with the bar 112, the link 117, and spring 122 between the levers 118 and 119 and a stationary part respectively, cams 124 and 125 arranged substantially as described and operating to move the pad 111 to cause it to engage the surface of a sheet which has been arrested and to move it laterally against the side stop, and means to retain the finger bar 112 in a permanently raised position with the lever 118 away from contact with the said cams whereby when required the frictional pad 111 may be prevented from acting on the sheets.

52. In a machine for feeding sheets from a pack, the combination of a sheet carrier, a stop adapted to engage the front edges of the sheets successively as they are moved forward by the carrier to arrest the sheets in their forward movement, a side gage adapted to engage the side edges of the sheets, a frictional pad, a cam device to operate said frictional pad to cause it to engage the surface of a sheet which has been arrested by the front stop and to move the sheet laterally against the side gage, an adjustable frame carrying said side gage, frictional pad and cam device, means to adjust said frame transversely across the machine, whereby the said side gage, friction pad and cam device may be adjusted to suit the width or position of the sheets upon the carrier without affecting the relation of the side gage to the frictional pad, a cam shaft carried by said frame to drive said cam device, power distributing devices carried by the machine, adjustable driving devices for operating said cam shaft, a power connection between the said power distributing devices and adjustable driving devices, and a connection between the adjustable frame and the adjustable driving devices whereby they will be moved together and the power connection to the cam shaft will not be broken by the adjusting of the frame which carries it.

53. In a sheet feeding machine, the combination of an endless traveling apron adapted to receive sheets and to convey them over its surface, rollers for supporting and driving said apron, means to depress the surface of the apron at intervals so as to produce transverse pockets extending below the general surface of the apron, a stop adapted to engage the front edges of the sheets successively as they pass upon said apron to arrest the sheets in their forward movement, side gage fingers having their lower ends projecting into said pockets, a frictional pad, a cam device to operate said pad to cause it to engage the surface of a sheet which has been arrested by the front stop and to move the sheet laterally against the side gage fingers, cross bars extending transversely above the apron, an adjustable frame adapted to move over said cross bars and to support said gage fingers, frictional pad, and cam device, a hand operated device adapted to act on said frame to adjust it upon said cross bars whereby the said side gage, frictional pad and cam device may be adjusted to suit the width or position of the sheets upon the carrier without affecting the relation of the side gage to the frictional pad, a cam shaft carried by said frame to drive said cam device, power distributing devices carried by the machine, adjustable driving devices for operating said cam shaft, a power connection between the said power distributing devices and adjustable driving devices, and a connection between the adjustable frame and the adjustable driving devices whereby they will be moved together and the power connection to the cam shaft will not be broken by the adjusting of the frame which carries it.

54. In a sheet feeding machine, the combination of a sheet carrier, lower and upper feeding disks adapted to receive the sheets that are brought forward by the carrier and to deliver them to such devices as are to further act upon them, shoulders formed between the upper feeding disks of a less diameter than the diameter of the disks, vertically vibrating stop fingers adapted to engage the front edges of the sheets successively to arrest them in their forward movement, located below the plane occupied by the moving sheets and arranged to ascend on that side of the intaking line between the lower and upper feeding disks on which the sheets approach the disks and to rest against the said shoulders, all combined and operating to regulate the delivery of the sheets from the carrier to the disks.

55. In a sheet feeding machine, the combination of a sheet carrier, lower and upper feeding rollers adapted to receive the sheets that are brought forward by the carrier and to deliver them to such devices as are to further act upon them, a stop adapted to arrest the sheets successively as they are fed by the carrier to the feeding rollers with the advanced edges of the arrested sheets near the intaking line between the lower and upper feeding rollers, and means to reciprocate the upper feeding roller over a portion of the surface of the lower feeding roller so as to bring the intaking line between the rollers over the edge of a sheet which has been arrested by the said stop without requiring that sheet to be moved from its arrested position, all combined and operating to regulate the delivery of the sheets from the carrier to the feeding rollers.

56. In a sheet feeding machine, the combination of a sheet carrier, lower and upper feeding disks adapted to receive the sheets that are brought forward by the carrier and to deliver them to such devices as are to further act upon them, vertically vibrating stop fingers adapted to engage the front edges of the sheets successively to arrest them in their forward movement and arranged to engage the sheets on that side of the intaking line between the lower and upper feeding disks on which the sheets approach the disks, means to reciprocate the upper feeding disks over a portion of the surface of the lower feeding disks to bring the intaking line between the lower and upper disks over the edge of a sheet which has been arrested by the said stop fingers without requiring that sheet to be moved from its arrested position, and means to vibrate the stop fingers to cause them to move out of the pathway of the sheets as the upper feeding disks reciprocate toward the arrested sheet, all combined and operating to regulate the delivery of the sheets from the carrier to the feeding disks.

57. In a sheet feeding machine, the combination of a sheet carrier, lower and upper feeding rollers adapted to receive the sheets that are brought forward by the carrier and to deliver them to such devices as are to further act upon them, a stop adapted to arrest the sheets successively as they are fed by the carrier to the feeding rollers with the advanced edges of the arrested sheets near the intaking line between the lower and upper feeding rollers, an oscillating frame at each end of the rollers carrying the upper roller, and means to oscillate said frames, consisting of arms 140 carried by said frames, the shaft 141, arms 142, springs 144 and a cam device to rock the shaft 141 all combined and operating substantially as described to regulate the delivery of the sheets from the carrier to the feeding rollers.

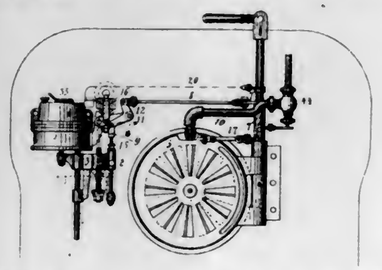
58. In a sheet feeding machine, the combination of a sheet carrier, lower and upper feeding disks adapted to receive the sheets from the carrier and to deliver them to such devices as are to further act upon them, vertically vibrating stop fingers located below the horizontal plane occupied by the moving sheets arranged to operate on that side of the intaking line between the lower and upper feeding disks on which the sheets approach the disks and adapted to engage the front edges of the sheets successively to arrest them in their forward movement with the front edges of the sheets near to said intaking line, a shaft to carry the lower feeding disks, a shaft to carry the upper feeding disks, bearings for each of said shafts, oscillating frames carrying the bearings of the shaft of the upper feeding disks, the rocker bar 150 carrying the stop fingers, means to oscillate said frames and to rock the bar 150 consisting of arms 140 carried by said frames, the shaft 141, arms 142, springs 144, a cam device to rock the shaft 141, the arms 154 carried by the said rocker bar, cams 155 carried by said frames and the springs 157, all combined and operating substantially as described to regulate the delivery of the sheets from the carrier to the feeding disks.

59. In a sheet feeding machine, the combination of a sheet carrier, the lower feeding roller having disks 134, the upper feeding roller having disks 136, oscillating frames 138 carrying the upper roller, arms 140, rocking shaft 141, arms 142, springs 144, arm 145, rod 146, lever 147, cam 148, rocker bar 150, stop fingers 151, lips 152, arms 154, cams 155, and springs 157, operating substantially as and for the purpose described.

60. In a sheet feeding machine, the combination of a sheet carrier, lower and upper feeding rollers adapted to receive the sheets that are brought forward by the carrier and to deliver them to such devices as are to further act upon them, a stop adapted to arrest the sheets successively as they are fed by the carrier to the feeding rollers with the advanced edges of the arrested sheets near the intaking line between the lower and upper feeding rollers, means to reciprocate the upper feeding roller over a portion of the surface of the lower feeding roller so as to bring the intaking line between the rollers over the edge of a sheet which has been arrested by the said stop without requiring that sheet to be moved from its arrested position, all combined and operated to regulate the delivery of sheets from the carrier to the feeding rollers, and a sheet guide arranged across the machine forward of the lower feeding roller to direct the sheets as they pass from between the feeding rollers.

61. In a sheet feeding machine, the combination of a sheet carrier, lower and upper feeding rollers adapted to receive the sheets that are brought forward by the carrier and to deliver them to such devices as are to further act upon them, a stop adapted to arrest the sheets successively as they are fed by the carrier to the feeding rollers with the advanced edges of the arrested sheets near the intaking line between the lower and upper feeding rollers, means to reciprocate the upper feeding roller over a portion of the surface of the lower feeding roller so as to bring the intaking line between the rollers over the edge of a sheet which has been arrested by the said stop without requiring that sheet to be moved from its arrested position, all combined and operating to regulate the delivery of the sheets from the carrier to the feeding rollers, a rocker bar arranged across the machine forward of said lower feeding roller, a sheet guide plate attached to said bar and adapted to rock with it, and means to rock said bar to adjust the guide plate to different angles relatively to the direction in which the sheets are moving and to secure the plate in any adjusted position.

544,765. SMOKE-CONSUMING APPARATUS FOR FURNACES. THEODOR LANGER, Vienna, Austria-Hungary. Filed Jan. 19, 1893. Serial No. 458,989. (No model.) Patented in Germany Aug. 30, 1892, No. 71,876; in Switzerland Aug. 30, 1892, No. 5,906; in France Aug. 30, 1892, No. 224,044; in Belgium Aug. 30, 1892, No. 101,186; in England Aug. 30, 1892, No. 15,542; in Italy Aug. 30, 1892, No. 32,576; in Spain Aug. 30, 1892, No. 13,726; in Denmark Aug. 30, 1892, No. 7; in Norway Aug. 30, 1892, No. 3,853, and in Austria-Hungary Sept. 25, 1893, XLIII, 3,693, XXVII, 3,629.



Claim.—1. In a smoke consuming apparatus, an air regulating device of the character described, adapted to control the admission of air into a furnace above its grate surface, in combination with a slide register in the furnace-door, an arm secured to said slide and to a loose sleeve on the axis of said door, and with a similar sleeve connected with the air regulator and operated thereby and adapted to operate the other loose sleeve and through its connections the slide in the furnace door, substantially as and for the purposes set forth.

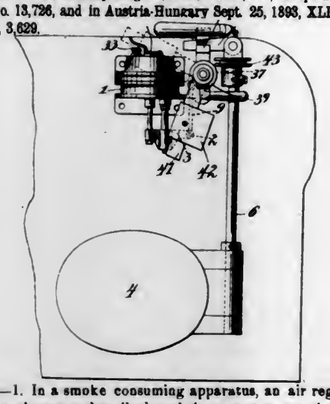
2. In a smoke consuming apparatus, an air regulating device of the character described adapted to control the admission of air into a furnace above its grate, a furnace door provided with openings controlled by slides, and with superposed plates for protecting said slides from the heat of the furnace, in combination with an arm secured to said slides and to a loose sleeve on the axis of said door and with a similar sleeve connected with the air regulator and operated thereby and adapted to operate the other loose sleeve and through its connections the slides in the furnace door, substantially as and for the purposes set forth.

3. The combination of the air regulator, its operating arm, sliding rod, bell crank lever and connecting-rod, with a furnace-door, its slides and shaft, a wedge and collar movable on said shaft and connected with said slides, means for moving said collar on said shaft to secure the same to or release it from said shaft, all arranged so that said operating arm through said sliding rod, bell crank and connecting-rod is adapted to rotate said shaft to open or close said door and said shaft when said wedge is moved thereon, to lock said collar to said shaft adapted to operate said slides, substantially as and for the purposes set forth.

4. The combination of the air regulator, its operator-arm, sliding-rod, bell-crank lever and connecting-rod, with a furnace door, its slides and shaft, a wedge and collar movable on said shaft and connected with said slides, and a lug engaging said collar and carried by a screw-shaft adapted to be operated by a hand-wheel, said lug adapted to move said collar and wedge on the door shaft to secure the same to or release it from said shaft, all arranged so that said operator-arm, through said sliding-rod, bell-crank and connecting-rod is adapted to rotate said shaft to open or close said door, and said shaft when the wedge is moved thereon to lock said collar to said shaft adapted to operate said slides, substantially as and for the purposes set forth.

5. The combination, in a smoke consuming apparatus, of the air regulator and its operator-arm, the furnace door and its slides controlled thereby and adjusting mechanism for transmitting the motion of said regulator operator-arm to said slides, with a brake-mechanism interposed between said adjusting-mechanism and said air-regulator to retard the regulating movement of said operator-arm when the adjusting mechanism is set for reduced draft, substantially as and for the purposes set forth.

544,766. SMOKE-CONSUMING APPARATUS. THEODOR LANGER, Vienna, Austria-Hungary. Original application filed Jan. 19, 1893, Serial No. 458,989. Divided and this application filed May 18, 1895. Serial No. 549,760. (No model.) Patented in Germany Aug. 30, 1892, No. 71,876; in Switzerland Aug. 30, 1892, No. 5,906; in France Aug. 30, 1892, No. 224,044; in Belgium Aug. 30, 1892, No. 101,186; in England Aug. 30, 1892, No. 15,542; in Italy Aug. 30, 1892, No. 32,576; in Spain Aug. 30, 1892, No. 13,726, and in Austria-Hungary Sept. 25, 1893, XLIII, 3,693, XXVII, 3,629.

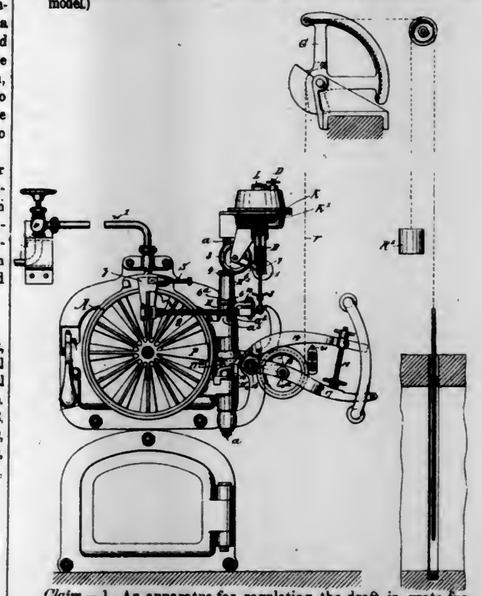


Claim.—1. In a smoke consuming apparatus, an air regulating device of the character described, and the operator arm thereof, in combination with a laterally adjustable catch adapted to be vertically moved by said operator-arm and with the furnace-door, a shaft adapted to open and close the same and mechanism connecting said shaft with said operator arm of said air regulator, all arranged so that when said furnace door is opened, the air regulator is set into operation through the operator arm and the catch adapted to be raised to lock the shaft of the door in open position, and said catch thereafter withdrawn gradually from said shaft by said operator-arm to allow said door to gradually close, substantially as set forth.

2. The combination in a smoke consuming apparatus, of the air regulator and its operator arm, a vertically adjustable catch secured to said arm and a screw adjustment for laterally moving said catch with the furnace-door and its shaft and connections between said operator-arm, the lateral adjusting device and said shaft for operating said lateral adjusting device and said operator arm, whereby when said door is opened said catch is elevated to retain the shaft by said operator-arm, said operator-arm controlled by said regulator to gradually withdraw said catch from said shaft and said catch gradually moved in a lateral direction to permit of the gradual closing of said furnace-door through its shaft, substantially as and for the purposes set forth.

3. In a smoke consuming apparatus, the combination of an air regulator of the character described, its operator-arm and a catch adapted to be vertically moved thereby, with a furnace-door and its rotating shaft, means for operating said shaft by said operator-arm, means, substantially as described, controlled by said operator-arm for laterally moving said catch and means controlled by said operator-arm for partially or entirely transmitting the movement of said operator-arm to the shaft of said door to control the extent of opening thereof, all arranged so that when said door is opened said operator-arm is adapted to control the vertical and lateral movement of said catch and of the closing of said door, and said door adapted to be controlled by said arm as to the extent of its opening movement, substantially as and for the purposes set forth.

544,767. SMOKE-CONSUMING APPARATUS. THEODOR LANGER, Vienna, Austria-Hungary. Filed May 22, 1895. Serial No. 550,180. (No model.)



Claim.—1. An apparatus for regulating the draft in grate furnaces, which consists of a fire door provided with openings, and a slide having a projection and adapted to be afforded a range of movement between stops, whereof one has an adjusting device connected therewith, a cataract provided with a piston, operative mechanism actuated by said cataract and controlling the openings in said fire door, a smoke slide and operative mechanism therefor controlled by said cataract and piston, substantially as and for the purposes described.

2. An apparatus for regulating the draft in grate furnaces, comprising a fire door provided with a controllable slide, a cataract provided with a chamber having a throttle valve and a membrane piston and rod, with an adjustable stop thereon, a link connecting said piston-rod with said slide, a smoke slide and actuating mechanism therefor connected with the mechanism for controlling said fire door slide and with the rod of said cataract, substantially as and for the purposes described.

3. An apparatus for regulating the draft in grate furnaces, comprising a furnace provided with a fire door having a slide, a smoke slide connected to said door by suitable intermediate mechanism and actuated by the closing of said door, a cataract operated by one movement of said fire door and released by the opposite movement thereof and adapted to control the slide in the fire door and thereby the upper draft of the furnace, and to control the smoke slide during the charging of the furnace and the gas evolution, substantially as and for the purposes described.

4. An apparatus for controlling the draft of grate furnaces, comprising a smoke slide, a cataract provided with a piston and rod and having a throttle-valve connected therewith, a fire door provided with a circular adjustable slide, said smoke slide counterweighted and provided with a sector, and actuating mechanism interposed between said fire door slide and cataract, substantially as and for the purposes described.

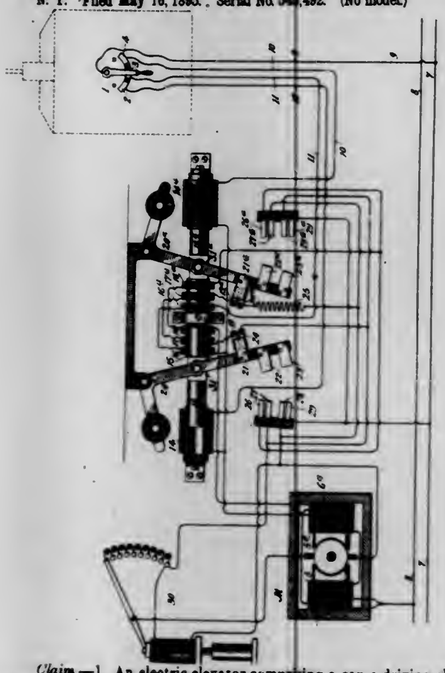
5. An apparatus for controlling the draft of grate furnaces, comprising a driving mechanism, a fire door and a smoke slide, the construction of said driving mechanism being such, that one member thereof is operated by the lower door hinge, the other member by the upper door hinge and the third by interposed sleeves, and a cataract provided with a piston and rod, substantially as and for the purposes described.

6. In an apparatus of the character described, a smoke slide, a roll 13, a cataract provided with a membrane piston and rod and an adjustable throttle valve, arms 14 and 17 controlled by an adjusting screw 18, a fire door provided with a slide having a projection and afforded a range of movement between stops, whereof one of them is provided with an adjusting screw, substantially as and for the purposes described.

7. In an apparatus of the character described provided with a fire door having a circular slide with radial openings therein, a lever connected therewith and pivotally connected with mechanism inter-

posed between a cataract provided with a membrane piston and rod and with lugs adjustable thereon, lever mechanism connected with the frame-work of the furnace and adjustable with respect to each other, a weighted smoke slide and suitable mechanism for raising and lowering the same, substantially as and for the purposes described.

544,768. ELECTRIC ELEVATOR. NILS O. LINDSTROM, Union Course, assignor to the A. B. See Manufacturing Company, Brooklyn, N. Y. Filed May 16, 1895. Serial No. 549,492. (No model.)



Claim.—1. An electric elevator comprising a car, a driving electric motor, a switch on the car for controlling its direction of travel, and means for placing the motor on closed circuit and maintaining its field-magnet charged after the switch has been operated to cut it out of circuit.

2. An electric elevator comprising a car, a driving electric motor, a circuit-controller for reversing the motor circuits, and a switch on the car and connections for normally maintaining the motor field-magnet charged.

3. An electric elevator comprising a car, a driving electric motor, a magnetically operated circuit-controller for reversing the armature circuit, a switch on the car, connections for maintaining the motor field-magnet constantly charged, and a switch operated by the controller for placing the motor armature on closed circuit when the motor is cut out.

4. An electric elevator comprising a car, a driving electric motor, a magnetically operated circuit-controller for reversing the motor, a switch on the car for operating the controller, and means for magnetically locking the controller against a sudden reversing movement.

5. An electric elevator comprising a car, a driving electric motor, two independently actuated circuit-controlling switches, a switch on the car for operating either circuit-controlling device, and means for magnetically locking one circuit-controlling device while the other connects the motor in circuit.

6. An electric elevator comprising a car, a driving electric motor, a circuit-controller for reversing the armature circuit, independent coils for shifting the circuit-controller, each coil being in series with the field-magnet, and a car-switch normally completing the field-magnet circuit and adapted to cut in either controller-coil.

7. An electric elevator comprising a car, a driving electric motor, a circuit-controller at or near the motor, solenoids 14, 14^a, a car-switch for cutting in either solenoid, and locking coils 18, 18^a in circuit when the motor is operating, cooperating with the solenoid cores when in their normal position.

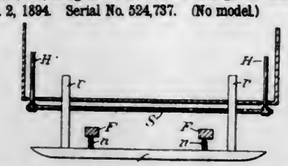
8. An electric elevator comprising a car, a driving electric motor, a circuit-controller at or near the motor, solenoids 14, 14^a, a car-switch for cutting in either solenoid, locking coils 17, 17^a in circuit when the motor is cut out and cooperating with the solenoid cores when in their normal position.

9. An electric elevator comprising a car, a driving electric motor, a normally charged field-magnet coil and an auxiliary field-magnet coil wound to assist the main coil, said auxiliary coil being cut into circuit when the motor starts into operation.

10. An electric elevator comprising a car, a driving electric motor, a circuit-controller at or near the motor, solenoids 14, 14^a, controller-switches operated by the cores of the solenoids, a retractile agency to normally hold the switches open, and auxiliary coils for magnetically locking either of the solenoid cores.

11. A controller comprising two compound cores 13, 13^a having their members magnetically insulated from each other, solenoid coils 14, 14^a cooperating with one member, and auxiliary solenoids cooperating with the other member.

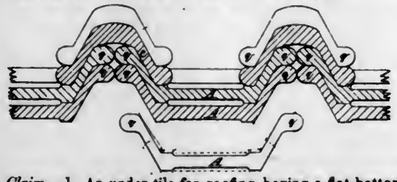
544,769. AUTOMATIC RAILWAY-SWITCH. JAMES G. MILLER, Philadelphia, Pa., assignor of one-half to George L. James, same place. Filed Oct. 2, 1894. Serial No. 524,737. (No model.)



Claim.—1. In automatic railway switches, a longitudinal shaft, S, mounted upon the car, in combination with means for rotating the same from the platform of the car, two or more toothed sectors, *p*, mounted upon said shaft, vertical racks, *r*, *r*, meshing with said sectors, a longitudinal contact rod or shoe O, carried by said racks, and one or more springs *n*, for elevating the shoe after depression, combined substantially as shown and described.

2. In automatic railway switches, a shoe O, running the length of the car and means for depressing the same by the motor man, in combination with a rounded projection A, projecting above the ground, vertical and horizontal bell crank levers B, and D, and connecting rod C, pin, *l*, and switch tongue, T, all combined and operated substantially as shown and described.

544,770. ROOFING-TILE. LUCIAN F. PLYMPTON, North Bend, Ohio. Filed Feb. 26, 1895. Serial No. 539,821. (No model.)



Claim.—1. An under tile for roofing having a flat bottom, and parallel sides inclined outward and upward, and thinner than the bottom, but thickened and rounded at their edges, presenting the same cross section at any part in its length and the under suface and upper surface of which extend in the same direction, substantially as described, and for the uses and purposes set forth.

2. An under tile for roofing, having a flat central web, with parallel sides and thickened edges, and provided with inclined sides thickened and rounded at their edges, substantially as described and for the uses and purposes set forth.

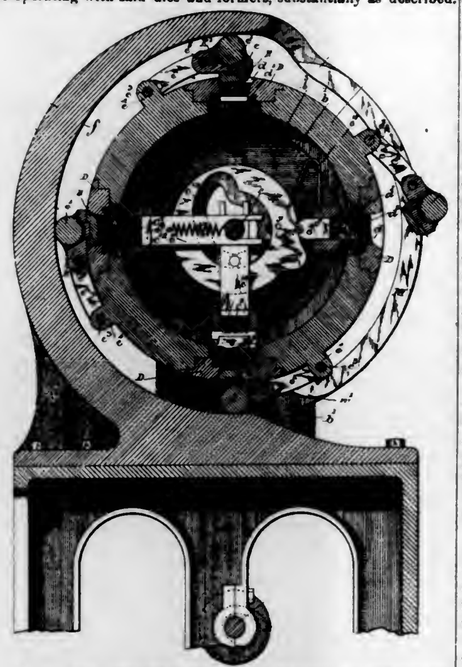
3. In a tile roofing, the combination with guttered adjacent tiles, of a covering tile for the joints of a substantially inverted U shape in cross section, said covering tile having a rounded top, with parallel sides thinner than the top and thickened at the bottom and edges, and rounded at the edges substantially as shown and for the uses and purposes described.

544,771. HEEL COMPRESSING AND LOADING MACHINE. FREEBORN F. RAYMOND, 2d, Newton, Mass. Filed July 27, 1889. Serial No. 318,944. (No model.)

Claim.—1. In a heel compressing machine, the combination with a movable die support, of one or more die blocks carried thereby, a former for each die pivoted to said movable support and adapted to compress the heel blanks in said dies, and a cam in proximity to said movable die support against which the said formers bear during a portion of their travel and are thereby forced into said dies, substantially as described.

2. In a heel compressing machine, the combination with a rotary cylinder, of one or more dies mounted thereon, a former for each die carried by said cylinder and arranged in proximity to said die, a cam arranged eccentrically to the said cylinder against which the formers

are moved as the cylinder rotates, and a reciprocating gang of awls co-operating with said dies and formers, substantially as described.



3. In a heel compressing and loading machine, the combination with a rotary cylinder, of one or more dies mounted thereon, formers for said dies carried by said cylinder and arranged in proximity to said dies, a cam placed eccentrically to the path of movement of the cylinder, against which the formers are moved as the cylinder rotates, and a reciprocating gang of awls and a reciprocating gang of drivers co-operating with said dies and formers, substantially as described.

4. In a heel compressing and loading machine, the combination with a rotary cylinder, of one or more dies mounted thereon, a former for each die carried by said cylinder, a cam arranged in proximity to said cylinder against which the formers are moved as the cylinder rotates, and a reciprocating gang of drivers co-operating with said dies and formers, substantially as described.

5. In a heel compressing and loading machine, the combination with a rotary cylinder, of one or more dies mounted thereon, a former for each die carried by said cylinder a cam arranged in proximity to said cylinder against which the formers are moved as the cylinder rotates and a reciprocating gang of awls, an automatic nail supplying apparatus, and a reciprocating gang of drivers, all co-operating with said dies and formers, substantially as described.

6. In a heel blank forming machine, the combination with a rotary cylinder, of one or more dies mounted thereon, a former for each die pivotally mounted on said cylinder in proximity to said dies, a cam eccentrically placed relatively to said cylinder, against which the pivoted formers move as the cylinder rotates, a reciprocating gang of awls and a reciprocating gang of drivers co-operating with said dies and formers to form a heel blank, a heel blank ejector, and means for actuating said awls, drivers and ejector, substantially as described.

7. In a heel compressing and loading machine, the combination with a vertically rotating cylinder having one or more dies mounted in its periphery, of formers co-operating with said dies, carriages for said formers, connected with said cylinder, rollers mounted in said carriages, and a cam arranged in proximity to said cylinder against which said rollers bear as the die cylinder rotates, and causes the said formers to be forced into the dies.

8. In a heel compressing and loading machine, the combination with a moving die support, of a series of dies mounted thereon, a former in proximity to each die, a carriage for each of said formers and a link connecting said carriages, with the die support, substantially as described.

9. In a heel compressing and loading machine, the combination with a rotary die carrying cylinder, of a movable former mounted on said cylinder, a cam arranged in proximity to said cylinder so as to force the movable former into the die, and a guide to engage a projection on the said former and lift it from the die during a portion of the travel of the cylinder, substantially as described.

10. The combination of the rotary die cylinder having one or more die blocks mounted thereon, the formers movable in relation to the die block and adapted to hold the heel blank in the die cavity during the pricking and loading thereof, and a reciprocating gang of awls, and a reciprocating gang of drivers and their actuating devices contained in the cavity of the cylinder and adapted to be moved outward from its center to operate to prick the heel blank, and to drive the attaching nails therein, substantially as described.

11. The combination of the rotary cylinder having one or more die blocks mounted thereon, a former for holding the heel blank in the die during the operation of the nail driving devices, and a reciprocating gang of drivers contained in the cavity of the cylinder, and a nail carrier for presenting nails to the nail driving devices, as and for the purposes described.

12. In a heel compressing, pricking and loading machine, the combination with a rotary carrier supporting one or more dies and means for automatically turning it to present the dies with their contained heel blanks successively to the pricking and loading devices, of formers mounted on said rotary carrier adjacent to said dies, means for moving said formers toward the die cavities, a gang of awls and a gang of drivers and means for automatically reciprocating said awls and drivers in relation to said die or dies.

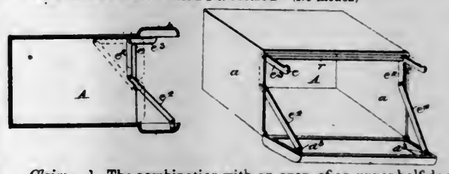
13. In a heel compressing and loading machine, the combination with the block carrying cylinder, of the die blocks mounted thereon, the formers for compressing the heel blank arranged adjacent to said die blocks, the gang of awls c^4, the gang of drivers c^5 and their supporting blocks arranged to move toward and from said die blocks, the cam c^8 having the cam groove c^{13} and the cam pins connecting the supporting blocks c^{10}, c^{14} with said cam groove, substantially as described.

14. In a heel compressing and loading machine, the combination with the vertically rotating die block carrier, of a reciprocating gang of drivers c^5, a cam c^8 for automatically moving said drivers toward and from the die-blocks, an automatic nail carrier G to carry nails from a nail supplying apparatus to the said gang of drivers, and the nail supplying apparatus adjacent to said nail carrier.

15. In a heel compressing and loading machine, the combination with a nail carrier G arranged in proximity to the nail drivers, of the cam g' having a cam groove g^3, and means for driving said cam, the slide g^2 connected with said nail carrier G, and the lever g^4 connected with said slide g^2 and operated by the said cam g' to reciprocate the nail carrier G, substantially as described.

16. In a heel compressing and loading machine, the combination with a cylinder or carrier provided with notches n^3 and having die blocks mounted thereon, of the former carriage E' carried thereby, the formers E mounted on said carriage, the cam or spiral wedge *f* arranged adjacent to said carrier so as to act on said formers E, the pawl N adapted to engage the notches n^3, and the pawl lever *n*, crank *n'* and link n^3, for actuating said pawl, N, substantially as described.

544,772. DOOR FOR STOVES. JOSEPH SCHILL, Crestline, Ohio. Filed June 19, 1895. Serial No. 553,264. (No model.)



Claim.—1. The combination with an oven, of an upper half-door and a lower half-door which are adapted in opening or in closing, to move in a vertical plane; and elbow-levers,—one, or two connected together,—which are pivotally-secured upon an inner portion of the oven, one arm of each lever being operatively-connected to the lower half-door, and the other arm of the lever or levers being adapted to support the upper half-door without positive mechanical connection therewith.

2. The combination with an oven, of an upper half-door which by its upper edge is hinged at the upper extremity of the oven-opening; a lower half-door which is provided with an inner lug or eye, and which by its lower edge is hinged at the lower extremity of the oven-opening; an elbow-lever which at its angle is pivoted upon an upper, front, interior portion of the oven, and which by one arm rests in contact with the upper half-door of the oven; and a supporting-connection between the other arm of the lever, and the lower half-door.

3. In an oven, an upper half-door and a lower half-door which are adapted to be moved oppositely, to close or to unclose the oven; an elbow-lever which is pivotally-secured to an upper portion of the oven, which by one arm bears against the inner face of the upper half-door, to open the same or to permit it to close, and which by its

other arm is supportingly-connected to the lower half-door;—in combination.

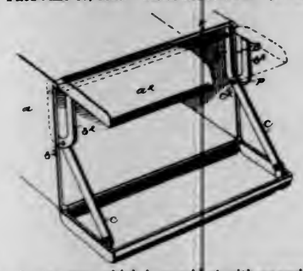
4. An oven which is provided with upper and lower oppositely-moving half-doors which meet at their free edges to close the doorway, and with an elbow-lever which is pivotally-mounted in the inner upper portion of the oven;—which by one arm loosely supports the upper half-door, and by its opposite arm and an intermediate connection, supports the lower half-door;—whereby when the half-doors are closed the upper half-door serves to maintain the lower half-door in its closed position,—and whereby when the half-doors are open, the lower half-door serves to maintain the upper half-door in its open position.

5. In an oven, the combination of two oppositely-moving half-doors which meet in a horizontal plane to close the oven; elbow-levers,—one, or two,—rigidly connected for operation as one,—which at their angle are pivoted to an upper, front, interior portion of the oven, one arm of which is in supporting contact with the upper half-door, and the opposite arm of which is provided with a supporting-connection with the lower half-door.

6. The combination with an oven, of an elbow-lever which is mounted within the oven; and upper and lower half-doors which move oppositely, and which are connected to the lever, substantially as described, so that one of the half-doors shall counterweight the other, in whichever position they may be adjusted.

7. An oven which is provided with oppositely-moving half-doors which unite to close the opening of the oven; and which is provided also with a lever which is pivotally-mounted within the oven, and which when either of the half-doors is moved to close the oven, operates to cause or to permit the closure of the other half-door also.

544,773. DOOR FOR STOVE-OVENS. JOSEPH SCHILL, Crestline, Ohio. Filed June 19, 1895. Serial No. 553,265. (No model.)



Claim.—1. An oven which is provided with oppositely-movable half-doors or door-sections which in closing meet edge-to-edge in a horizontal plane, and which is provided also with a U-shaped or horse-shoe lever which by one extremity is pivotally-mounted in an upper front corner of the oven,—which by its opposite extremity rests in unattached contact with the upper half-door or section,—and which in the middle portion of the U is pivoted to a connection the opposite extremity of which is freely connected to the lower door.

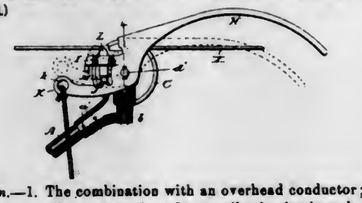
2. The combination with an oven the front of which is provided with horizontally-hinged oppositely-moving half-doors or door-sections; of a U-shaped or horse-shoe lever which by the extremity of one arm is pivoted in an upper front corner of a side wall of the oven —which by the outer extremity of the opposite arm of the U or horse-shoe, engages in supporting and elevating contact the inner surface of the upper half-door or section,—and which by its bend or middle portion, is provided with a connection which extends to and supports the lower half-door or section.

3. An oven which is provided with oppositely-movable half-doors or door-sections which in closing meet edge-to-edge in a horizontal plane; and which is provided also with duplicate interconnected U-shaped or horse-shoe levers which by one extremity are pivotally mounted, each in an upper front corner of the oven,—which by their opposite extremity rest in unattached contact with the inner face of the upper half-door or section,—and which in the middle portion of the U or horse-shoe, receive a connection the opposite extremity of which is freely connected to the lower door of the oven.

4. The combination with an oven which has an upper half-door and a lower half-door which move in opposite directions, and which in closing meet in a horizontal line; of duplicate horse-shoe or U-shaped levers which by one arm of the levers are pivoted within the oven, which by the opposite arm of the levers engage the upper half-door,—to open the same or to permit it to close,—and which at their intermediate, curved portion receive a connection the opposite extremity of which is supportingly connected to the lower door of the oven.

5. The combination with the oven *a*, of the half-doors a^2 and a^3 hinged respectively at the upper and at the lower extremity of the oven front; the rod *r* having bearings in the side-walls of the oven, as described; the levers *b*, *b*, rigidly mounted upon the body of the rod, and resting in contact with the upper half-door; and the connection *c*, between the mid-portion of the lever and the lower half-door.

544,774. AUTOMATIC SAFETY TROLLEY. JAMES R. SCRANTON, New Haven, Conn. Filed Mar. 30, 1895. Serial No. 543,843. (No model.)



Claim.—1. The combination with an overhead conductor; of a car; a forked trolley arm on the car; a trolley having its axle bearing in said arm and capable of a limited vertical movement therein; springs in said trolley arm adapted to force said axle upward when the trolley wheel is not in contact with the overhead conductor; and a finder pivoted on said axle, one end of which is so connected with said trolley arm that the free ends will be raised, when the trolley wheel is forced upward by said springs, substantially as described.

2. A trolley wire finder consisting of a forked trolley arm having blocks therein capable of a limited vertical movement, and springs tending to force said blocks upward; a trolley wheel, the axle of which bears in said blocks; and diverging fingers pivoted on said axle and having one end so connected with said trolley arm, that the free ends of said fingers will be raised and depressed as said blocks are forced upward or downward in said trolley arm, substantially as described.

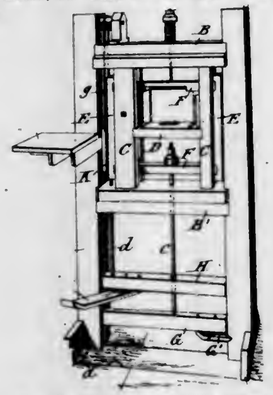
3. A trolley wire finder consisting of a trolley arm; a trolley wheel, the axle of which bears in the head of said arm, and is capable of a limited vertical movement therein; springs in said head tending to force said axle upward; diverging fingers pivoted on said axle, and a spring in said trolley arm bearing against one end of said fingers, substantially as described.

4. The combination with a forked trolley arm having blocks capable of a limited vertical movement therein and springs tending to force said blocks upward; of a trolley wheel, the axle of which bears in said blocks; a finder pivoted on said axle; and vertical screws in said arms adapted to adjust the tension of said spring, substantially as described.

5. The combination with an overhead conductor; of a trolley arm; diverging fingers pivotally attached to the head of said trolley arm; a socket in said head having a spring therein against which one end of said fingers is adapted to bear to hold the free ends thereof normally above the conductors, substantially as described.

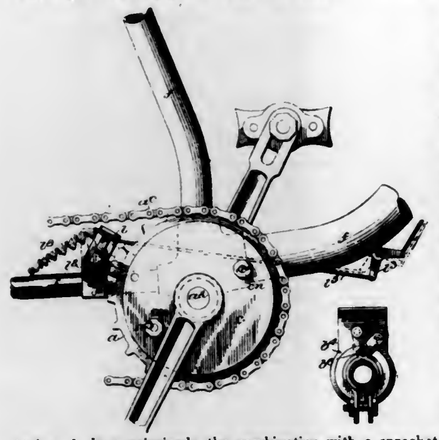
6. The combination with a trolley arm; of a finder pivotally attached to the head of said trolley arm, and held in position by yielding connections with said head above and below said finder, substantially as described.

544,775. MACHINE FOR MAKING BUTTER-BOXES. FRED E. SMITH, Moscow, Vt. Filed Nov. 27, 1894. Serial No. 530,156. (No model.)



Claim.—The combination of the main frame, the vertically-movable frame, an operating treadle and a lifting spring therefor, a fixed bed, a pivoted cam for exerting a lateral pressure, an operating pedal for said cam, and a weighted rope attached to the cam and passing over a pulley.

544,776. VELOCIPEDE. HOWELL W. SOUDER, Tamaqua, Pa. Filed Aug. 3, 1894. Serial No. 519,344. (No model.)



Claim.—1. In a velocipede, the combination with a sprocket-wheel which is provided with a pivoted peripheral engaging arm or latch, and which is provided also with a series of interconnected wheels; of a means, embracing a lock which is mounted upon the frame of the velocipede, which is movable as a whole toward or from the periphery of the sprocket-wheel, and which is movable as to its latch-engaging member at a right angle to the plane of its movement as a whole; and a connection, substantially as set forth, between such lock and the brake-arm or lever, whereby the interconnected wheels are caused to operate either in connection with the frame of the vehicle, or in connection with the sprocket-wheel thereof.

2. In a velocipede, a sprocket-wheel upon which is provided a series of interconnected wheels which are connected for actuation, to the power-shaft, and which are adapted to vary the leverage exerted upon the propelling-wheel; a lock, which is operatively mounted upon the frame of the vehicle; and which is movable, in plane with the sprocket-wheel, toward or from the periphery of such wheel, an arm or latch, upon the sprocket-wheel and projecting peripherally therefrom; and a connection between the brake-arm or lever and the lock upon the frame, whereby at the will of the rider, the lock may be operated in conjunction with the arm or latch, to change the relation of the interconnected wheels to the frame, and to the sprocket-wheel of the machine; combined for operation, substantially as described.

3. A velocipede which is provided, in connection with the sprocket-wheel and power-shaft thereof, with a primary central gear-wheel which is received upon the power-shaft, and is secured to the sprocket-wheel; an intermediate plate which is received between the body of the sprocket-wheel and the primary central gear-wheel, and which has a central opening the periphery of which extends beyond or encircles the connections of the primary central gear-wheel with the sprocket-wheel; a secondary central gear-wheel which overlies the primary gear-wheel and is secured to the power-shaft; a double gear-wheel, exterior to the plane of the central gear-wheels, loosely mounted upon a journal or spindle which projects from the intermediate plate; an arm or latch which carries a pin or detent which engages both the intermediate plate and the body of the sprocket-wheel, and which is operatively mounted upon the intermediate plate; a lock, mounted upon the frame of the machine; and a means, operative from the saddle, whereby, at will, the lock is caused either to engage with or to be disengaged from the arm or latch upon the intermediate plate.

4. In a velocipede, a power-shaft; a sprocket-wheel which is loosely-mounted upon the power-shaft; a circular plate or disk which is received upon the power-shaft, alongside the sprocket-wheel; a primary central gear-wheel which is loosely-received upon the power-shaft, which overlies the circular plate or disk, and which is rigidly connected to the sprocket-wheel,—the disk being loosely embraced between the two wheels;—a secondary gear-wheel which overlies the primary gear-wheel, and which is fixed upon the power-shaft; a double gear-wheel which is revoluble upon a journal or spindle which projects from the circular plate or disk, and which is in engagement with both the primary and the secondary gear-wheel, upon the power-shaft; and a locking-appliance or engaging-pin which is mounted upon the plate or disk, and which is adapted to be simultaneously engaged with, or disengaged from an opening in the plate or disk, and an opening in the sprocket-wheel; in combination, substantially as set forth.

5. In a velocipede, a power or pedal-shaft; a sprocket-wheel which is loosely mounted upon the power-shaft; a primary central gear-wheel which is loosely mounted upon the power-shaft, and which is rigidly connected to the sprocket-wheel; an intermediate plate or disk which encircles the power-shaft, and the interconnections of the primary gear-wheel and the sprocket-wheel,—in the space between the sprocket-wheel and the primary central gear-wheel;—a secondary central gear-wheel, overlying the primary gear-wheel, and rigidly secured to the power-shaft; a double gear-wheel, exterior to the central gear-wheels, and in engagement with both of such wheels; and a locking-device, actuated by mechanism which is operated from the brake-arm or lever of the vehicle; whereby the sprocket-wheel and the intermediate plate or disk, are connected together for revolution as a whole, or are disconnected to permit independent revolution of the sprocket-wheel.

6. In a velocipede, the combination with the guide and brake-standard, and with the brake-rod thereof, of a vertically and axially movable supplemental or auxiliary rod, mounted in bearings of the standard, above the brake-rod, provided with lateral adjusting and engaging projections as described, operated for downward movement, by the brake-arm or lever, and adapted to engage either the brake-rod proper of the vehicle, or a connecting-mechanism which serves to shift the gearing of the propelling-mechanism;—substantially as specified.

7. In a velocipede, a gear-shifting mechanism, applied upon and operated in connection with the sprocket-wheel; a brake carrying rod, extending along the lower portion of the brake and guide standard; a connecting-rod, mounted alongside the brake-rod, and connected to actuate the gear-shifting mechanism upon the sprocket-wheel; and a vertically and axially movable auxiliary or supplementary rod, mounted in bearings of the standard, above the brake-rod, operated by the brake-arm or lever, and provided at its lower extremity with an engaging projection by which it is adapted to engage either the brake-rod, or the connecting-rod which operates to adjust the gear-shifting mechanism; in combination, substantially as shown and described.

8. A velocipede in which are combined a main sprocket-wheel which is loose upon the power-shaft, and is normally revoluble independently of such shaft; an independently revoluble annular plate or disk which is received in the body of the sprocket-wheel, and which has a central annular opening which encircles the power-shaft, at a considerable distance therefrom; a primary central gear-wheel which is received upon the power-shaft, which overlies the annular plate or disk, and which is secured to the body of the sprocket-wheel by connections which extend through the central annular shaft-encircling opening in the independently revoluble plate or disk; a secondary central gear-wheel which overlies the primary gear-wheel, and which is revolubly connected to the power-shaft; a journal or spindle,—one or more,—which is secured to the face of the independently revoluble plate or disk; a double gear-wheel which is mounted upon one of the journals or spindles of the independently revoluble plate, which in one part is in engagement with the primary central gear-wheel, and which in its other part is in engagement with the secondary central gear-wheel; an arm or latch which is pivotally mounted upon the independently revoluble plate or disk, which normally is held in engagement with the body of the plate or disk, and with the body of the sprocket-wheel, and which extends radially outward beyond the path of movement of the sprocket-wheel; and a lock which is mounted upon the frame of the velocipede, and which is movable toward or from the arm or latch upon the sprocket-wheel; so that at the will of the wheelman, the sprocket-wheel proper, and the independently revoluble disk or plate, may be united, for revolution as one, or disconnected, for independent revolution of the sprocket-wheel; substantially as described and shown.

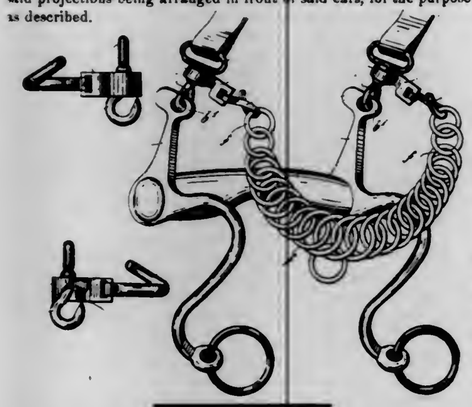
544,777. BRIDLE-BIT. PETER SPOHR, Giessen, Germany. Filed Sept. 11, 1894. Serial No. 522,689. (No model.)

Claim.—1. In a jointed bridle-bit, the combination with the side-arms of the bit-rod, and with the head-gear, of a joint consisting of two ears connected by a shank, and inserted between said side-arms and said head-gear; said shank being embraced by a ring connected to the curb-chain, for the purpose as described.

2. In a jointed bridle-bit, the combination with the side-arms of the bit-rod, and with the head-gear, of a joint consisting of two ears and a hook connected by a shank, and inserted between said side-arms and said head-gear; said shank being embraced by a movable ring connected to the curb-chain, and adapted to close the hook of the joint; said ring having a recess adapted to free the entrance to said hook, for the purpose as described.

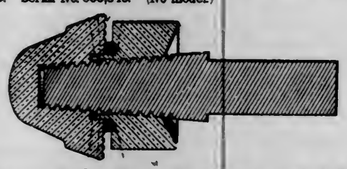
3. In a jointed bridle bit, the combination with the side-arms of the bit-rod, and with the head-gear, of a double-eared joint inserted

between said head-gear and said side-arms, and carrying the curb-chain by the mediation of movable rings embracing the shank of said joint; said side-arms being at their tops provided with projections of a size larger than the opening of the respective ear of said joint; said projections being arranged in front of said ears, for the purpose as described.



544,778. INSULATOR FOR ELECTRIC OR OTHER WIRES.

CLINTON SPROAT and EDWARD N. TARR, Taunton, Mass. Filed Jan. 2, 1895. Serial No. 533,548. (No model.)

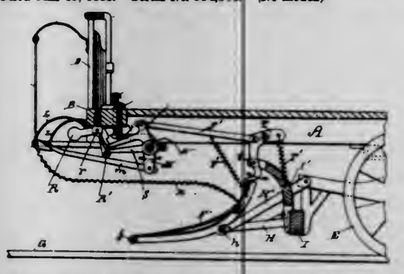


Claim.—1. In an insulator, the combination with the base B, of the cup or head D provided with a series of annular concentric corrugations E, and means whereby said head or cup may be pressed down upon a wire lying on said base, substantially as set forth.

2. In an insulator, the base B provided with the straight grooves C, and the head or cup D provided with the concentric corrugations E, said straight grooves being adapted to receive the wires and extending across the concentric corrugations in the line or direction of a chord, substantially as described.

3. The herein described improved insulator, consisting essentially of the externally screw-threaded pin A A', the base B internally screw-threaded and provided on its upper side with the grooves C, and the head or cup D internally screw-threaded and provided with the concentric corrugations E on its under side, substantially as described.

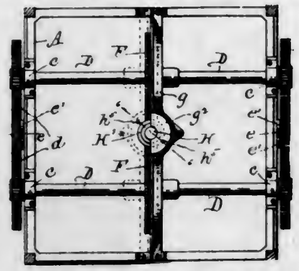
544,779. CAR-FENDER. JOSEPH N. WIECHOREK, Boston, Mass. Filed Jan. 15, 1895. Serial No. 534,970. (No model.)



Claim.—1. In combination a pivoted car fender a spring pressed pivoted locking lever for holding it normally raised above the track and connected to a loosely hung pawl, a pivoted locking lever engaging said pawl and a yielding frame or buffer connected to a rock shaft and a tripper lever for releasing the lock lever from said pawl when an object is struck substantially as and for the purpose set forth.

2. In combination a pivoted car fender a spring pressed pivoted locking lever for holding it normally raised above the track and connected to a loosely hung pawl a pivoted locking lever engaging said pawl and a pedal bolt adapted to impart movement to a rock shaft and release the pawl from its locking lever substantially as and for the purpose set forth.

544,780. ELECTRIC ELEVATOR. JOHN C. WINTERS, Mount Morris, N. Y. Filed Dec. 3, 1894. Serial No. 530,730. (No model.)



Claim.—1. In an elevator, the combination with the car B, of a frame attached to said car, an electric motor mounted in said frame, the worm-shaft H coupled to the driving shaft of said motor, the worm H', the horizontal parallel shafts D each provided at its outer end with gear wheels *d*, and two vertical double racks E with which the said gear wheels mesh, said shafts being provided about midway of their lengths with worm-wheels F meshing with the said worm, and said frame being provided with central bearings for the said shafts D as well as bearings for the outer ends of said shafts.

2. In an elevator, the combination with the car B, of a frame C attached to said car, an electric motor mounted in said frame, the worm-shaft H coupled to the driving shaft of said motor, the worm H', the horizontal parallel shafts D each provided at its outer end with gear wheels *d*, two vertical double racks E with which the said gear wheels mesh, said shafts being provided about midway of their lengths with worm-wheels F meshing with the said worm, and a casing inclosing the said worm-wheels F and the said worm-shaft and worm, and in which casing the said worm shaft has its bearings, said casing serving also as central bearings for the said shafts D to steady the middle portions of the latter against the thrust of the said worm.

3. In an elevator, the combination with the car, of a rectangular frame attached to said car, an electric motor mounted on said frame, two horizontally placed parallel shafts mounted in bearings on said frame, and provided between their ends with worm-wheels and at their outer ends with gear wheels meshing with double track at the sides of the elevator well, a worm shaft meshing with said worm wheels and coupled to the armature shaft of said motor, and a liquid tight inclosing case for said worm wheels and worm shaft, which case also forms a central bearing for said horizontally placed shafts.

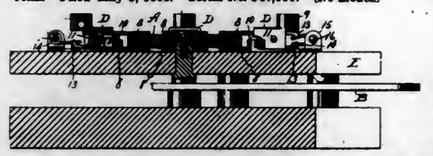
4. In an elevator, the combination with a car, of the frame A attached thereto, an electric motor I mounted in said frame, a worm carrying shaft H, to which the shaft of said motor is coupled, the horizontal shafts D suitably mounted in said frame and provided about midway of their lengths with the worm-wheels F meshing with said worm, said shafts being provided at their outer ends with the gear wheels *d* meshing with the racks E at the sides of the elevator well, and a two-part oil-tight casing in which the said worm shaft with its worm and said worm wheels are inclosed, said casing being suitably supported by said frame A and providing central bearings for the said shafts D.

5. In an elevator, the combination with a car, of an electric motor movable therewith, a worm shaft coupled to the driving shaft of said motor, and provided with ball bearings and means for taking up the wear of same, two parallel shafts having worm wheels engaged by the said worm and provided at their outer ends with gear wheels which mesh with double racks at the sides of the elevator well.

6. In an elevator, the combination with the car B, of the frame A attached to said car, an electric motor mounted in said frame, the skeleton frame C having bearings *c*, two parallel shafts D provided at their outer ends with gear wheels *d* and near their middle portions with worm-wheels F, the worm-shaft H coupled to the driving shaft of said motor and provided with the worm H' meshing with said worm-wheels, the double racks E with which the said gear wheels *d* mesh, said racks being provided with ribs *e*, and the said frame A being provided at its sides with guides *e'* whereby the said frame and car are steadied in their vertical movements, and central bearings for the said shafts D supported by the said skeleton frame C.

7. In an elevator, the combination with a car, of an electric motor movable therewith, a worm shaft coupled to the driving shaft of the said motor and provided with a worm, two double vertically placed racks E, two parallel horizontal shafts D provided at their outer ends with gear wheels *d*, meshing with said racks, and near their middle portions with worm wheels F meshing with said worm, a casing inclosing said worm wheels, worm-shaft and worm, collars *h* on said worm-shaft at the opposite ends of the said worm, anti-friction balls interposed between said collars and the ends of said worm, and adjusting screws tapped in said casing and serving to take up wear in the thrust bearings for said worm afforded by said anti-friction balls.

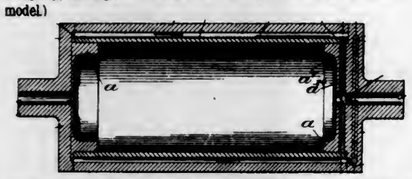
544,781. ELECTRIC SWITCH. THOMAS H. BRADY, New Britain, Conn. Filed May 3, 1895. Serial No. 547,999. (No model.)



Claim.—1. An electric switch having contact jaws of a rigid character, one of said rigid jaws in each pair being pivoted to its frame, and having also a separate spring frame and spring adjacent to the frame of said jaws with its spring bearing upon the pivoted jaw for forcing it to its work, substantially as described and for the purpose specified.

2. An electric switch having a contact jaw frame, provided with devices for attaching a wire and for securing said frame in place, a pair of rigid contact jaws pivoted to said frame on a common pintle, and a separate spring with its ends pressing in opposite directions upon the two members of said pair of jaws to move them separately on their frame, substantially as described and for the purpose specified.

544,782. ROLL FOR RUBBER-MIXING OR OTHER MILLS. EDWARD F. BRAGG, Boston, Mass., assignor to the Automatic Rubber-Mixer Company, same place. Filed Dec. 10, 1894. Serial No. 531,342. (No model.)

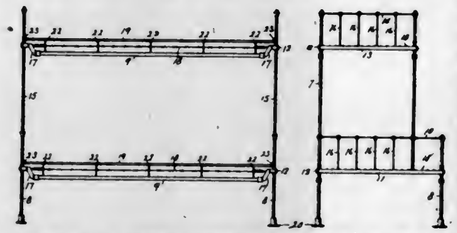


Claim.—1. The herein described composite roll, for rubber mixing and other machines, the same consisting of a body portion, and an outer imperforate sleeve, fitting the same tightly, to relieve the said body portion from stresses resulting from great pressure and changes in temperature, water circulating passages incorporated in the said roll under the periphery, an inlet and an outlet located at or near the axis of said roll, and connecting passages joining said peripheral circulating passages with said inlet and outlet, substantially as described.

2. The herein described roll for rubber mixing and other machines, the same consisting of a body portion, journals upon which the same is mounted, an inlet and an outlet at or near the axis of said journals, an enveloping outer sleeve fitting the said body portion tightly, circulating grooves or passages between the said body portion and outer sleeve and formed wholly in one of the same, and connecting passages joining said circulating passages with said inlet and outlet, substantially as described.

3. The herein described roll for rubber mixing and other machines, the same consisting of two headers, provided respectively with journals and inlet and outlet passages within the same, a body portion held by said headers, an outer sleeve fitting the said body tightly, circulating passages formed under the periphery of said roll, and radial passages connecting the same, with the inlet and outlet passages referred to, substantially as described.

544,783. STEAMER-BEDSTEAD. WILLIAM I. FIELDING, New Britain, Conn. Filed May 16, 1895. Serial No. 549,491. (No model.)



Claim.—1. A bedstead consisting of end frames, two sets of attachable and detachable drop side rails, upper and lower guard rods supported on the side rails, stops on the ends of said guard rods and two bed bottoms each secured to said end frames at points a little above the main portion of their respective side rails and strained longitudinally for holding the end frames firmly against the stops of said upper and lower guard rods substantially as described.

2. A bedstead having rear posts extending from top to bottom, upper and lower end rails, lower front posts secured to the front end of the lower end rails, upper front posts secured near their upper end to the front ends of the upper end rails with the lower ends of said front posts secured to the lower end rails back of the lower front posts, and upper and lower bed bottoms connected with the respective end rails, substantially as described.

3. A bedstead having end frames, attachable and detachable side rails, the guard rod supported in position on the side rail and having stops at its ends for bearing against the end frames without being fastened thereto, and a bed bottom strained longitudinally to draw and hold the end frames in contact with said stops substantially as described.

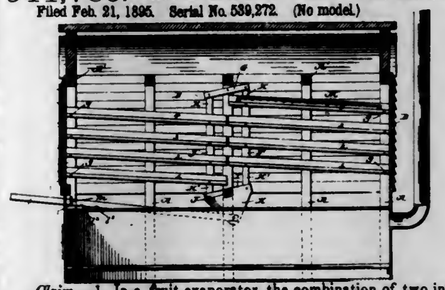
4. A bedstead having end frames, attachable and detachable side rails, a bed bottom strained longitudinally between said end frames, and stops supported by the side rails for bearing on the inner side only the end frame at points above the line of strain on the bed bottom substantially as described.

544,784. DECORATED HARD PORCELAIN AND PROCESS OF MAKING SAME. EMILE GÉRARD, Limoges, France. Filed Apr. 25, 1894. Serial No. 509,018. (Specimens.)

Claim.—1. The process of decorating hard porcelain, which consists in applying the colors upon manufactured porcelain either by painting or by chromo-lithography and then firing the porcelain a second time at the same high temperature and under the same conditions as for the first firing.

2. As a new article of manufacture, a fired glazed decorated porcelain article, said fired glaze having absorbed within it and as a part of it a decorative colored design.

544,785. FRUIT-EVAPORATOR. JOHN H. GORE, Linder, Ark. Filed Feb. 21, 1895. Serial No. 539,272. (No model.)



Claim.—1. In a fruit evaporator, the combination of two independent series of slides, ways or tracks for the reception of the fruit trays, arranged in such relation, one to the other, that each is adapted to form an extension of the other, and means for adjusting the adjacent ends of both series for changing the angle of their relation, substantially as described.

2. In a fruit evaporator, the combination with two independent series of slides, ways or tracks, arranged in the same horizontal plane and pivoted substantially as shown and described, of a rock-shaft, connected with the swinging ends of the slides, for adjusting the height of the latter and varying the angle of the slides, and means for operating said rock-shaft, substantially as described.

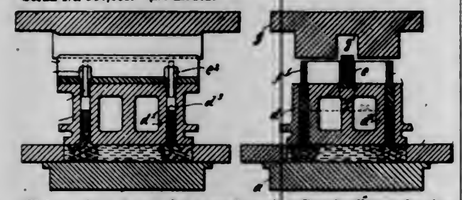
3. In a fruit evaporator, two series of pivoted, independent slides, ways or tracks, arranged substantially in the same horizontal line, and hinged at their outer ends to the framework of the evaporator, in combination with suitable cross-heads or levers, connected with the inner swinging ends of said slides for lifting and lowering the latter and varying the angle thereof, and to cause the slides of one series to align with the slides of the other series, substantially as and for the purpose described.

4. In a fruit evaporator, two series of independently pivoted slides, ways or tracks, arranged so as to form, one an extension of the other, and hinged at their outer ends, in combination with vertical bars or posts, connecting the inner adjacent ends of the slides of each series, a rock-shaft provided with cross-heads or crank-arms, links interposed between said cross-heads or crank-arms, and connecting posts or bars, and means for operating said rock-shaft, substantially as described.

5. In a fruit evaporator, two series of pivoted, independent slides, ways or tracks, arranged substantially in the same horizontal line,

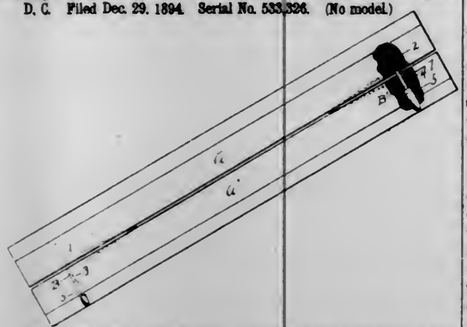
and hinged, at their outer ends, to the framework of the evaporator, in combination with a centrally pivoted bar G, a similar bar or cross-head, I, two sets of pivoted links H, and H', the posts g', to which the slides are pivoted, the rock shaft J, for operating the post g', and the adjusting rod L, for operating the rock-shaft J, substantially as described.

544,786. PRESS-MOLD FOR MANUFACTURING DUTCH TILES, &c. MAXIMILIAN HARENYK, Warschau, Russia. Filed July 14, 1894. Serial No. 517,605. (No model.)



Claim.—As a means for manufacturing Dutch tiles and other flanged stove-parts, the combination with a press-mold adapted to produce the body or tile proper of the article, of a double stamp consisting of an outer stamp and an inner one, said double-stamp being adapted to form the mold for the flange or flanges of the article, and to receive a bipartite stamp adapted to be pressed down into the main-stamp independent of the latter, for the purpose as described.

544,787. PARALLEL-RULER. WILLIAM S. HEATH, Washington, D. C. Filed Dec. 29, 1894. Serial No. 533,326. (No model.)



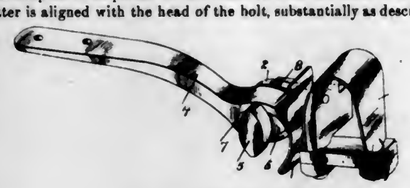
Claim.—1. The parallel ruler, composed of two parts having parallel edges, one of the parts having threaded sockets therein and the other part having unthreaded shouldered holes through it registering with the threaded-sockets of the other part, and adjusting-screws having their heads and shanks arranged in the unthreaded holes of the one part and their threaded portions taking in the threaded sockets of the other part, whereby the one part may be adjusted and moved to and from the other, substantially as and for the purpose specified.

2. The parallel ruler composed of two parts having parallel edges, one of the parts having threaded sockets therein, and the other part having unthreaded shouldered holes through it registering with the threaded sockets of the other part, adjusting screws having their heads and shanks arranged in the unthreaded holes of the one part and their threaded portions taking in the threaded sockets of the other part, and V-shaped springs seated between the parts to press them away from each other, substantially as and for the purpose specified.

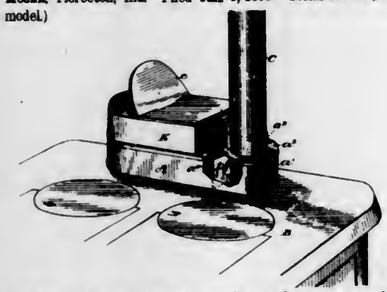
3. A parallel ruler composed of two parts, adjusting-screws loosely projected through one part into the other, nuts on the screws formed with beveled gear, a bar journaled in one of the parts having a thumb piece, and carrying bevel gears on each end to mesh with the beveled gear-nuts on the screws, substantially as and for the purpose specified.

544,788. THILL-COUPLING. LUCIEN R. HERTERT, Pierce, Nebr. Filed June 8, 1895. Serial No. 552,145. (No model.)

Claim.—A thill coupling, comprising an axle clip provided with a forwardly extending ear, a transverse pivot bolt mounted on the ear and provided with an elongated head disposed vertically, the elongated bearing block mounted on the bolt and located between the head thereof and the ear and being of the same size and shape as the head of the bolt, and adapted to be turned into a vertical position to align with the said head, and an iron designed to be secured to a thill or the like and provided with an elongated eye conforming to the configuration of the head of the bolt and the bearing block, and adapted to be placed on and removed from the block when the latter is aligned with the head of the bolt, substantially as described.



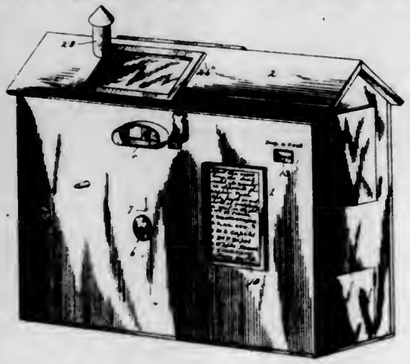
544,789. HEATING ATTACHMENT FOR STOVES. GABRIEL MOSER, Pierceton, Ind. Filed Jan. 3, 1895. Serial No. 534,201. (No model.)



Claim.—1. A water heating attachment for stoves, consisting of a drum having semi-circular ends, a middle partition terminating at the centers with which said ends are concentric, a damper hinged at one end of said partition, and in width the same as the space or flue between the partition and the walls of said drum, a smoke inlet between said partition and the side of the drum, a smoke exit in the top of the drum above said damper, and a water tank above said drum, substantially as described.

2. In a water heating attachment, for stoves, the combination with the drum A having a flat bottom and top and semicircular ends, of a middle partition a^4 whose ends terminate at the centers of said ends, a damper D hinged on a vertical axis at one end of said partition, having a bent handle d extending through the top of the drum, a smoke inlet in the bottom between the partition and one side of the drum, a smoke exit in the top between the end of the partition and the end of the drum above the damper, and a removable water tank covering the top of the drum from one end to the damper handle, substantially as described.

544,790. COIN-OPERATED PICTURE-EXHIBITOR. CORNELIUS M. MCCARTY, Romney, W. Va., assignor of one-half to Bion L. Harmison, same place. Filed May 21, 1895. Serial No. 550,123. (No model.)



Claim.—1. In a coin operated picture exhibitor, the combination of a casing, a movable picture carrier, a coin operated shutter carrying lever provided with a coin recess or receptacle, a locking lever arranged to engage and lock the movable carrier, and adapted to support the coin operated lever, and means for operating the locking lever and for actuating the movable picture carrier, substantially as described.

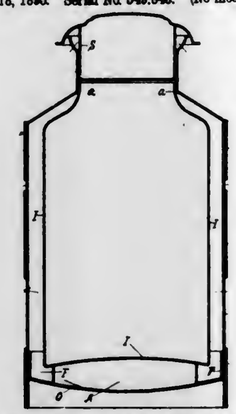
2. In a coin operated picture exhibitor, the combination of a casing, provided with an exhibiting opening and having a coin slot, a coin operated lever provided with a coin recess or pocket arranged adjacent to the coin slot and adapted to receive a coin, a shutter located at the other end of the lever and normally covering the exhibiting opening and carried by the lever, a movable picture carrier, a locking lever having one end arranged to engage the movable carrier, and its other end arranged to support the coin operated lever, and a push-bar connected with the locking lever and adapted to operate the same, substantially as described.

3. In a coin operated picture exhibitor, the combination of a casing having an exhibiting opening and provided with a coin slot, a vertically swinging coin operated lever fulcrumed intermediate of its ends and provided at one end with a coin recess or pocket, and having at its other end a shutter normally arranged over the exhibiting opening, a coin support arranged adjacent to the coin recess or pocket of the lever, and provided at its bottom with an opening, a movable picture carrier, and a horizontally pivoted locking lever having one end arranged to engage the picture carrier, and its other end arranged to support the coin operated lever above the coin support, substantially as described.

4. In a coin operated picture exhibitor, the combination with a casing, a rotary picture carrier provided with an annular series of recesses or openings, a horizontally disposed locking lever, provided at one end with a dog for engaging the openings or recesses of the picture carrier, a coin operated lever located above the locking lever and adapted to be supported by the other end of the same, and a push-bar connected with and operating the locking lever, substantially as described.

5. In a coin operated picture exhibitor, the combination of a casing having an exhibiting opening, and provided with a coin slot, a movable picture carrier, a shutter for closing the exhibiting opening, a vertically swinging coin operated lever connected with and operating the shutter, and a horizontally swinging locking lever having one end arranged to engage and lock the movable picture carrier, and having its other end arranged to support the coin operated lever, substantially as described.

544,791. VACUUM-CAN. JOSEPH NICHOLSON and WILLIAM H. FERGUSON, London, Canada, assignors to Charles Ferguson, same place. Filed May 18, 1895. Serial No. 549,843. (No model.)



Claim.—1. A case, I, for holding merchandise, formed with an opening for the insertion or removal of the contents, and with a portion, a, surrounding said opening, said portion, a, being secured to and in combination with a jacket, O, the latter being formed larger in cross section than said case, and provided with the valve, e, a vacuum chamber, A, between said case and said jacket, feet, F, for supporting said case centrally in said jacket and a stopper, S, substantially as and for the purpose set forth.

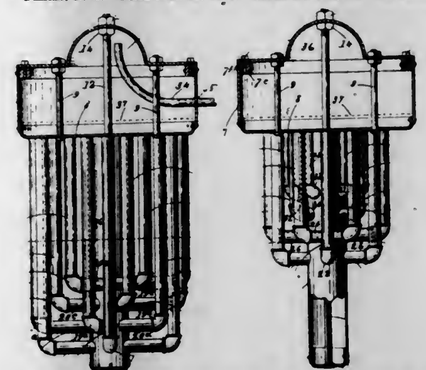
2. A case, I, for holding merchandise, formed with an opening for the insertion or removal of the contents, and with a portion, a, surrounding said opening, said portion, a, being secured to and in combination with a jacket, O, the latter being formed larger in cross section than said case, and provided with a neck, N, and valve, e; a vacuum chamber, A, between said case and said jacket, feet, F, for supporting the case centrally in said jacket, and a hollow stopper, S, substantially as and for the purpose set forth.

3. A case, I, for holding merchandise, formed with an opening for the insertion or removal of the contents and with a portion, a, surrounding said opening, said portion, a, being secured to and in combination with a jacket, O, the latter being formed larger in cross section than said case, and provided with a neck, N, and valve, e, a vacuum chamber, A, between said case and said jacket, feet, F, for supporting said case centrally in said jacket, and a hollow stopper, S, provided with a hood, C, substantially as and for the purpose set forth.

4. A case, I, for holding merchandise, formed with an opening for the insertion or removal of the contents, and with a portion, a, surrounding said opening, said portion, a, being secured to and in combination with a jacket, O, the latter being formed larger in cross section than said case, and provided with a neck, N, funnel, B, and valve, e, a vacuum chamber, A, between said case and said jacket, feet, F, for supporting said case centrally in said jacket, and a hollow stopper, S, provided with a hood, C, substantially as and for the purpose set forth.

5. A case, I, for holding merchandise, formed with an opening for the insertion or removal of the contents, a jacket, O, provided with a neck, N, to which a staple, E, is secured, a valve, e, secured to said jacket and provided with a cover, r, and an eye, L, secured to said cover by a chain, G, in combination with a hollow stopper, S, provided with a hood, C, a hasp, D, secured to said hood, and means for locking said eye, L, and hasp, D, to the staple, E, to prevent the wrongful or accidental displacement of said stopper or valve, substantially as and for the purpose set forth.

544,792. UPRIGHT MARINE BOILER. WILLIAM N. OLDMAN, Buffalo, N. Y. Filed Mar. 23, 1895. Serial No. 542,889. (No model.)



Claim.—1. In a steam boiler, the combination of a substantially vertical central flue tube extending up nearly to the steam chamber and secured to the tube sheet, and extending downward to the fire chamber, a strengthening bolt extending from the top of the boiler down through the central tube to the bottom of the same, means for rigidly securing it to the top of the boiler and bottom of said tube, several circular series of vertical tubes having their upper ends connected to the tube sheet, each circular series being divided into several sub-series, each sub-series of tubes being connected at their lower ends to the vertical central tube by means of elbows and horizontal tubes in the same horizontal plane around said central tube, each complete sub-series being thus connected in its own horizontal plane one sub-series above the other, and a series of stay bolts connecting the top of the boiler with the tube sheet, substantially as and for the purposes described.

2 A steam boiler, provided with a strengthening rim near its top, a removable top secured thereto, a tube sheet forming the lower horizontal portion of the steam and water chamber, several series of water tubes having their upper ends connected to the tube sheet and extending downward, in combination with a vertical central tube to which the lower ends of the water tubes are connected by elbows extending thereto, stay bolts connecting the upper part of the boiler with the tube sheet, and a substantially central strengthening bolt secured at the top of the boiler and extending down through and connected to the bottom of the central tube, substantially as described.

544,793. COMBINED CORN-HUSKER AND FODDER-SHREDDER. GEORGE W. PACKER, Rock Falls, assignor to the Keystone Manufacturing Company, Sterling, Ill. Filed Apr. 22, 1895. Serial No. 546,696. (No model.)

Claim.—1. In a fodder shredding cylinder, the combination, of a series of circular, or semi-circular spiral blades, provided peripherally with teeth, and collars interposed between each circular blade and clamped against each side of the latter, the whole so arranged on the shaft of the cylinder as to form a continuous spiral periphery, supported on each side by said interposed collars, substantially as shown and for the purpose described.

2. In a fodder shredder, the combination, with the shaft D, of collars H thereon, each of said collars comprising a cylindrical hub

and two transversely perforated cylindrical spiral rims, each rim being of substantially the same thickness as the length of the hub, and the pitch of the spiral being such that one side of each end of one of the spirals will be substantially even with the opposite side of the adjacent end of the other spiral, shredding blades between the rims of the different collars, and pins through the blades and into the rims, substantially as set forth.



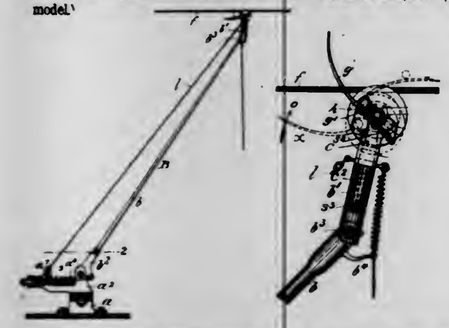
3. In a fodder shredder, the combination, of a shaft G, shredder blades F arranged spirally upon said shaft, and collars H, consisting of a tubular center adapted to be seated on said shaft, and segmental blade rests, formed obliquely in opposite directions on the periphery of said tubular center, and adapted to receive the aforesaid blades, substantially as set forth.

4. In a fodder shredder, the combination, with a frame, of a bracket secured thereto, the upper portion of which is provided with a set screw, a shaft journaled in one leg of the bracket, a sprocket wheel, a gear wheel, and a yoke upon the shaft, a roller journaled in the free end of the yoke, a second roller journaled in the frame adjacent the first mentioned roller, one end of which is provided with a sprocket wheel, an idle wheel, a sprocket chain over the two sprocket wheels and the idle wheel, and a spring between the free end of the yoke and the upper end of the bracket, substantially as set forth.

5. In a corn husking machine, the snapping rollers, A, B, formed oblong in cross-section and provided with fluted and ridged sides adapted to mutually engage, substantially as set forth.

6. In combination with husking rollers D, regulators 23 provided with sloping bases 25 and suspended over the interval between said rollers and adapted to have a longitudinal, orbital movement in the line of said roller, substantially as shown and for the purpose described.

544,794. TROLLEY-ARM AND WIRE-FINDER. FREDERICK W. RIESS, Philadelphia, Pa. Filed June 10, 1895. Serial No. 552,240. (No model.)



Claim.—1. A trolley-arm comprising two parts hinged together, the lower part fulcrumed to a swivel-shoe containing springs for the elevation of the free or upper extremity of the two-part arm, a trolley and guards operatively mounted in the upper part of the trolley arm, a chain fastened with one end to the swivel shoe and with the other to the upper extremity of the upper part of the trolley-arm, and a spring between the two parts forming the trolley-arm, substantially as and for the purposes set forth.

2. A trolley-arm composed of two parts hinged together, the lower part fulcrumed to a swivel shoe having devices for elevating the free end of the trolley-arm the upper hinged part of said arm adapted to support a trolley-wheel, a spring between said parts constituting the trolley-arm and a cord or chain attached to the upper part of the trolley-arm and the said shoe, substantially as and for the purposes set forth.

3. In a trolley-arm the combination with a two-part arm, of a hollow forked guide-way formed on the upper of said parts, a sliding-fork mounted in said hollow guide-way, a trolley-wheel journaled on an arbor of said sliding-fork, a spring for forcing the sliding-fork and trolley-wheel outwardly, a lever hinged to each side of the guide-way by a slotted connection and pivoted to extensions of the said arbor, a wire guard pivoted to the free end of the said lever, a pin or projection on said guard to contact with the said lever to form a back-stop for the guard, and a spring interposed between the said back-stop and the hinged end of the said lever, substantially as and for the purposes set forth.

4. In a trolley-support the combination with a two-part arm, of a guide-way formed in the upper part of said arm, a trolley-wheel journaled to an arbor carrying levers pivoted to opposite sides of the said guide-way, said arbor journaled in bearings slidingly mounted in said guide-way, a guard pivoted to each of said levers and having back-stops contacting with the said levers, and a spring to keep the guard in about axial line with the said levers, substantially as and for the purposes set forth.

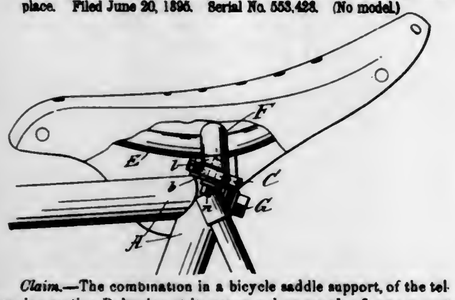
5. In a trolley-support, the combination with a two-part arm, of a guide-way formed in the upper part of said arm, a trolley-wheel journaled to an arbor slidingly mounted in said guide-way a lever pivoted to each end of said arbor and hinged by a slotted connection to opposite sides of the guide-way, and a resilient wire-guard or wire-finder pivoted to the free end of said lever, substantially as and for the purposes set forth.

6. In a trolley-support the combination of an arm fulcrumed to a swivel bed, means for holding the free end thereof in an elevated position, an extension or upper portion hinged to the free and upper extremity of the said arm and provided with a guide-way, a chain or cord secured to the swivel bed and the upper end of the said extension, a spring between said arm and extension tending to keep both in axial line, a sliding fork mounted in said guide-way, means for forcing the said fork out of the guide-way, a trolley-wheel journaled on an arbor of the said fork, a lever pivoted to each end on the said arbor and hinged by a slotted connection to opposite sides of the guide-way, a curved wire-guard pivoted to each of the said levers, a back-stop for each of said guards and a spring between each guard and lever, substantially as and for the purposes set forth.

7. In a trolley-support the combination of an arm fulcrumed to a bed, means for holding the free end thereof in an elevated position, an extension hinged to the upper end of said arm and having a guide-way, a chain or cord secured to the said bed and the upper end of said extension, means attached to the said arm and said extension tending to force the same into axial line, a trolley-wheel journaled on an arbor slidingly mounted in said guide-way, a lever pivoted to each end of said arbor and hinged to opposite sides of the guide-way, a curved guard, having a back-stop pivoted to the said lever and a spring for normally holding the guard in axial line with the said lever, substantially as and for the purposes set forth.

8. In a trolley-support, the combination of a trolley wheel journaled on an arbor slidingly mounted in a guide-way formed in an extension pivoted to a trolley-arm, levers pivoted to said arbor and hinged to opposite sides of the said guide-way, guards having back-stops pivotally secured to said levers and adapted to be brought into operative position when the arbor and wheel are forced outwardly, and springs to keep the said guards in normal position with the said levers, substantially as and for the purposes set forth.

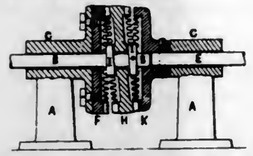
544,795. BICYCLE-SADDLE SUPPORT. BENJAMIN S. SEAMAN, Canton, Ohio, assignor to the Gilliam Manufacturing Company, same place. Filed June 20, 1895. Serial No. 553,428. (No model.)



Claim.—The combination in a bicycle saddle support, of the telescoping section B, having at its upper end an annular flange *a*, a set screw G, clamping yoke C, a saddle piece D, having a neck portion *d*, a rib *e*, and inclined flanges *f*, a tubular saddle frame E, having at its under side, a groove *h* adapted to receive the rib on the saddle piece, D, the clamp F and tightening bolts *n*, substantially as described and for the purpose set forth.

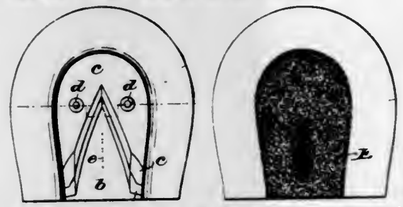
544,796. GEARING. HENRY F. SHAW, Boston, Mass., assignor of one-half to Charles M. Martin, same place, and William G. Nixon, Braintree, Mass. Filed June 3, 1895. Serial No. 552,121. (No model.)

Claim.—1. The combination of the shafts, B and E, journaled in the frame A, the stationary crown gear F, the double crown wabbling gear H, the rotary crown gear K, and the cams I secured upon the said shaft B, for the purposes set forth.



2. The combination with the frame A of the shafts B and E, journaled therein, the stationary crown gear F, the double crown rotary wabbling gear H, the cams I secured upon the said shaft B, and the rotary crown gear K secured upon the said shaft E, substantially as described.

544,797. HOOF-PAD. SILAS H. SHERMAN, Weymouth, Mass. Filed Aug. 27, 1894. Serial No. 521,385. (No model.)



Claim.—1. The herein described hoof pad, the same consisting of a substantially unyielding rim of a size and shape to fit the hoof, and adapted to be interposed between the latter and the shoe and secured by the fastenings for the shoe, a central sunken flat-bottom body portion filling the shoe and containing a depression, the edges of said flat-bottom body portion lying close to the curved inner edge of the shoe to thereby fill the latter, a hoof supporting cushion in and filling said depression, to at or above the level of the top of said rim and a flat stiffening piece covering the entire flat bottom of the body portion to prevent buckling, substantially as described.

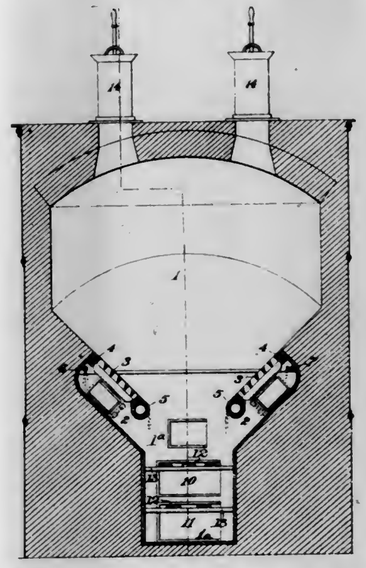
2. The herein described hoof pad, the same consisting of a substantially unyielding rim of a size and shape to fit the hoof, and adapted to be interposed between the latter and the shoe and secured by the fastenings of the shoe, a central sunken flat-bottom body portion filling the shoe and containing a depression; one or more rands arranged in the bottom of and around the curved edge of said depression, and a cushion in said depression and resting at its center upon the body bottom and around its edge upon the said rand or rands to thereby raise the edges of said cushion without rounding or curving the edges of the body bottom, substantially as described.

3. The herein described hoof pad, the same consisting of a substantially unyielding rim of a size and shape to fit the hoof, and adapted to be interposed between the latter and the shoe and secured by the fastenings for the latter, a body portion sunk below the said rim to leave a depression, one or more rands around the edge of said depression, a cushion arranged in said depression and upon said rands, and a fastener to draw said cushion down into the depression within said rands to form a depression in the upper surface of the cushion for the hoof frog, substantially as described.

4. The herein described hoof pad, the same consisting of a rim of a size and a shape substantially that of the hoof and adapted to be interposed between the latter and the shoe and secured by the fastenings for the latter, an integral body portion sunk below said rim to form a depression, said body portion substantially filling the said shoe to at or near the face of the latter and having a substantially flat bottom, a reinforcing and stiffening sheet in the said depression and upon the bottom of said body portion, one or more rands arranged around the curved side of said depression, a felt cushion arranged upon the said rands, and a fastener drawing the said cushion into the depression within said rands, substantially as described.

5. The herein described hoof pad, the same consisting of a rim of a size and shape substantially that of the hoof and adapted to be interposed between the latter and the shoe and secured by the fastenings for the latter, an integral body portion sunk below said rim to form a depression, said body portion substantially filling the said shoe to at or near the face of the latter and having a substantially flat bottom, a reinforcing and stiffening sheet in the said depression and upon the bottom of said body portion, one or more rands arranged around the curved side of said depression, metallic fastening devices uniting the said rands and stiffener to the said body bottom, a felt cushion arranged upon the said rands, and fastening stitches drawing the said cushion into the depression within said rands, substantially as described.

544,798. GAS-PRODUCER. WILLIAM SWINDELL and JOHN C. SWINDELL, Allegheny, Pa. Filed Oct. 1, 1894. Serial No. 524,602. (No model.)



Claim.—1. In a gas producer, the combination, substantially as set forth, of a generating chamber, an ash pit open at top thereto, a blast chamber at or near the junction of the generating chamber and ash pit, and communicating therewith at its lower end, a grate dividing the blast chamber from the generating chamber, and a blast pipe located at or near the lower end of the blast chamber, in position to be heated by the charge, and having a series of perforations for discharge into the ash pit, and an opposite series of perforations for discharge into the blast chamber.

2. In a gas producer, the combination, substantially as set forth, of a generating chamber, an ash pit open at top thereto, a blast chamber at or near the junction of the generating chamber and ash pit, and communicating therewith at its lower end, a grate dividing the blast chamber from the generating chamber, a blast pipe located at or near the lower end of the blast chamber, in position to be heated by the charge, and having a series of perforations for discharge into the ash pit, and an opposite series of perforations for discharge into the blast chamber, and a water supply pipe leading into the blast pipe.

3. In a gas producer, the combination, substantially as set forth, of a generating chamber, an ash pit open at top thereto, a blast chamber at or near the junction of the generating chamber and ash pit, and communicating therewith at its lower end, a grate dividing the blast chamber from the generating chamber, a blast pipe located at or near the lower end of the blast chamber, in position to be heated by the charge, and having a series of perforations for discharge into the ash pit and an opposite series of perforations for discharge into the blast chamber, and a water supply pipe leading into the blast chamber for generation of steam from the heat of the ashes.

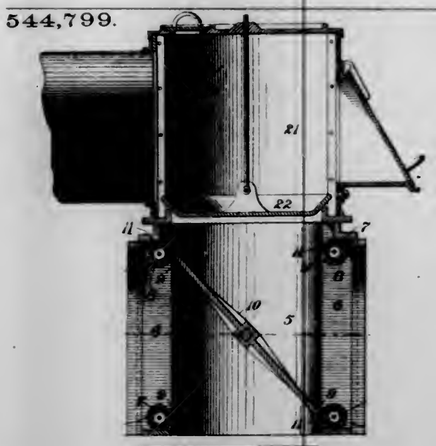
544,799. VALVE FOR FURNACES. WILLIAM SWINDELL, Allegheny, Pa. Filed Dec. 20, 1894. Serial No. 532,416. (No model.)

Claim.—1. In a furnace valve mechanism, the combination of a valve, and two or more seats for said valve, adjustable in the arc of a circle in the direction of movement of the valve, substantially as set forth.

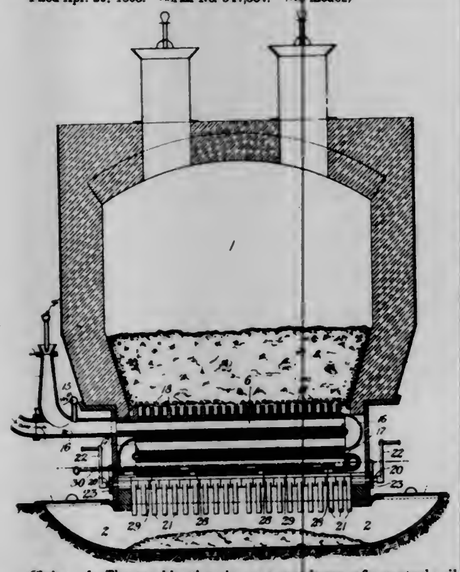
2. In a furnace valve mechanism, the combination of a valve, tubes provided with seats for said valve, said tubes being capable of rotary adjustment, and means for introducing a cooling medium into the tubes, substantially as set forth.

3. In a furnace valve mechanism, the combination of a valve casing, pipes clamped between the sides of the valve casing, tubes provided with valve seats adjustably mounted on the pipes, a valve, and means for introducing a cooling medium into the tubes, substantially as set forth.

544,799.



544,800. GAS-PRODUCER. WILLIAM SWINDELL, Allegheny, Pa. Filed Apr. 29, 1895. Serial No. 547,537. (No model.)



Claim.—1. The combination, in a gas producer, of a central coil of pipe having one end connected to a suitable fluid supply, and blast chambers at the sides of the producer communicating with the opposite end of the coil, substantially as set forth.

2. The combination, in a gas producer, of a central coil of pipe having one end connected to a suitable fluid supply, blast chambers at the sides of the producer communicating with the opposite end of the coil and valves controlling communication between the central coil and the blast chambers, substantially as set forth.

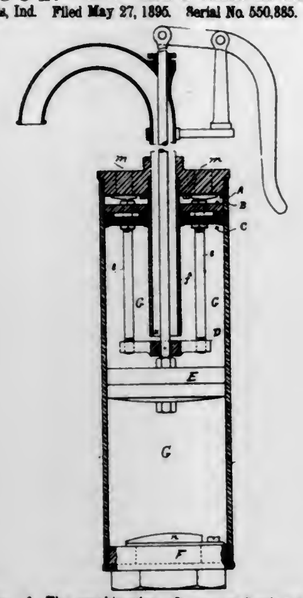
3. The combination, in a gas producer, of a central coil of pipe having one end connected to a suitable fluid supply, one section of the coil having valved openings into the producer, and blast chambers at the sides of the producer communicating with the opposite end of the coil, substantially as set forth.

4. The combination of a producer having its lower end projecting down into a liquid containing pit, a central coil of pipe having one end connected to a suitable fluid supply and blast chambers at the sides of the producer communicating with the opposite end of the coil, substantially as set forth.

5. The combination, in a producer, of a central coil of pipe having one end connected to a suitable water supply, detaining dams or abutments in the sections of the coil, and blast chambers at the sides of the producer communicating with the opposite end of the coil, substantially as set forth.

6. The combination of a producer having an ash pit open at the ends of the producer, plates for closing the open ends of the pit, a central coil having one end connected to a fluid supply, and blast chambers at the side of the producer communicating with the opposite end of the coil, substantially as set forth.

544,801. PUMP. MOSES R. TURNER and ROBERT G. KIRBY, Adams, Ind. Filed May 27, 1895. Serial No. 550,885. (No model.)



Claim.—1. The combination of a pump, having a cylinder, two pistons connected, with valves in same so arranged as to prevent the escape of a fluid from between said pistons toward either end of cylinder; a projecting tube or inner chamber of cylinder permanently fixed and suspended from one head of cylinder; a packed piston having openings in its center to receive said tube, the whole being so constructed and arranged as to permit of same being submerged into the liquid to be pumped, substantially as shown.

2. In a pump having a vertical cylinder for drawing and discharging fluid, the combination of the receiving valves at each end of cylinder connected to the inside of heads thereof; the piston E, having suitable check valve upon its upper side, attached to an actuating piston rod; the annular piston B encircling tube *f* and having suitable check valves upon its lower side, connected to piston E by suitable means; the yoke D centrally attached to the actuating piston-rod near piston E and connected to tie-rods *e e;* the tie-rods *e e* connected at their lower ends to the yoke D and at their upper ends to the piston B; the follower C attached to piston B; and the discharge tube *f*, attached to and suspended from the inner side of the upper cylinder head A, said tube being finished smooth on its outer surface, permitting the packed annular piston B surrounding it to move along its length while being water tight; and an actuating piston-rod connected at its lower end with piston E and passing through tube *f* to a connection at top of well for the purpose of receiving a reciprocating motion and power from a lever or motor, substantially as and for the purpose shown and described.

3. The combination, in a pump, of the cylinder L L having inlet valves at each end; the projecting inner tube *f* secured to the inner side of upper cylinder head, and an annular packed valve piston surrounding and working over and around said tube; the pistons E and B, connected at a suitable distance apart by means of the yoke D and tie-rods *e* and the whole to an actuating piston-rod passing through the said suspended inner tube, so that both of said pistons have a simultaneous motion, substantially as and for the purpose shown and described.

544,802. RAILWAY-SIGNAL. WILLIAM B. VANSIZE, New York, N. Y. Filed July 18, 1895. Serial No. 556,378. (No model.)

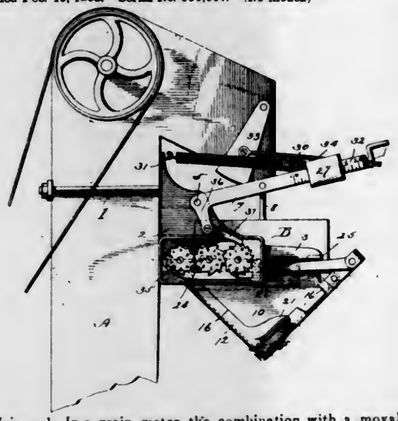
Claim.—1. In a railway signal the combination of a signal circuit and a rail circuit substantially coextensive and parallel, a main battery at one end of the signal section included in both circuits, a signal controlling magnet in the signal circuit at one end of the section, a circuit breaker in said circuit at the opposite end of the section, a relay magnet controlling said circuit breaker included in the rail circuit and insulated rail sections connected in said rail circuit in series upon opposite sides of said battery, substantially as described.

2. In a railway signal the combination of a battery common to the rail circuit and the signal circuit, said rail circuit including the coils of a relay magnet located at the end of the track section remote from the battery, two insulated parallel rail sections connected to said circuit upon opposite sides of said battery, said signal circuit being parallel to said track circuit and including a circuit breaker operated by said relay magnet and a signal controlling magnet located at the end of the track section remote from the relay magnet whereby the passage of a car upon the rail section opens the signal circuit and short circuits the battery in both circuits, substantially as described.



3. In a railway signal the combination of a signal circuit and a rail circuit, a single main battery included in both circuits, a signal controlling magnet in the signal circuit at one end of the section, a circuit breaker in said circuit at the opposite end of the section, a relay magnet controlling said circuit breaker included in the rail circuit and insulated rail sections connected upon opposite sides of said battery, substantially as described.

544,803. GRAIN-METER. DANIEL WILDE, Washington, Iowa. Filed Feb. 19, 1895. Serial No. 539,007. (No model.)



Claim.—1. In a grain meter, the combination with a movable grain hopper, of a hopper retracting spring so disposed that when the hopper moves against the retractive action of the said spring to discharge its load of grain, the superior retractive power thus gained by the spring over the opposing weight of the hopper and its contents, and which is due to the said spring being put under varying stress, will be neutralized.

2. In a grain meter, the combination with a grain hopper, and a hopper-frame movable therewith, of a spring hopper-retracting device so disposed that when the hopper moves against the retractive action of the said spring device to discharge its load of grain, the superior retractive power thus gained by the spring over the opposing weight of the hopper and its contents and which is due to the said spring device being put under varying stress, will be neutralized.

3. In a grain meter, the combination with a grain hopper, and a pivoted hopper-frame movable therewith, of spring hopper-weighing and retracting devices connected to the free end of the hopper-frame and so disposed as to lie in substantially parallel relation to the plane of the said hopper-frame when the hopper assumes its discharging position, whereby the superior retractive power thus gained by the said spring hopper-weighing and retracting devices, over the opposing weight of the hopper and its contents and which is due to the said spring hopper-weighing and retracting devices being put under varying stress, is neutralized.

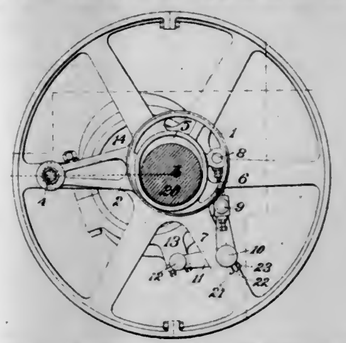
4. In a grain meter, the combination with a pivoted hopper-frame, and hopper pivoted thereto and movable therewith, of weighing and retracting spring devices, and adjusters connecting the spring devices to the free extremity of the hopper-frame whereby the weighing and retractive force exerted thereon may be regulated.

5. In a grain meter, a grain hopper comprising the combination of a receptacle open at top and bottom, valves pivoted to the receptacle and adapted to normally close to form a substantially V-shaped bottom, and a lip hinged to one of the valves, and adapted to normally cover the juncture of the valves.

6. In a grain meter, the combination of valves forming a V-shaped bottom of a grain hopper, a lip hinged to one of the valves, fingers, respectively, on the lip, and on the other valve, whereby the apex formed by the juncture of the valves when the hopper is in normal position is covered, and a stop to limit the backward movement of the lip.

7. In a grain meter the combination of a spring-retracted pivoted frame, a grain hopper carried by the frame, a trap-bottom formed of valves hinged to the grain hopper; a lip hinged to one of the said valves and adapted to cover the juncture of the valves when the hopper is in normal position, toggle-levers connecting the valves, lugs adapted to engage with the toggle-levers to keep the valves closed when the hopper is being filled, and open when in discharging position.

544,804. FLUID-PRESSURE MOTOR. EDWIN F. WILLIAMS, New York, N. Y. Filed Apr. 22, 1895. Serial No. 546,687. (No model.)



Claim.—1. The combination of a shifting eccentric, a stationary eccentric, an intermediate mechanism between the eccentrics, whereby the position of the shifting eccentric is controlled by the stationary eccentric, substantially as set forth.

2. The combination of a rotary shifting eccentric, a stationary eccentric, a strap on the stationary eccentric, and connections from the strap to the shifting eccentric, whereby the position of the shifting eccentric is controlled by the stationary eccentric, substantially as set forth.

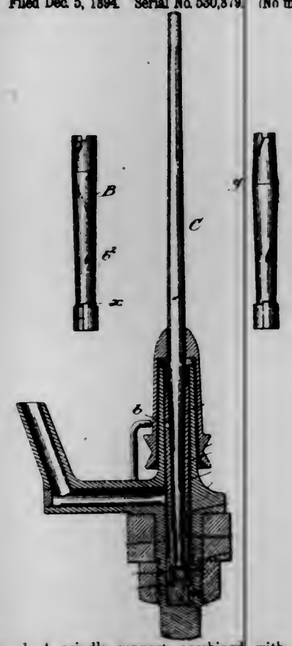
3. The combination of a rotary carrier, a shifting eccentric carried thereby, a stationary eccentric, and connections from the stationary eccentric to the shifting eccentric, substantially as set forth.

4. The combination, with a rotary carrier, of a shifting eccentric mounted thereon, a stationary eccentric, and means for connecting the eccentrics which is mounted on and carried by the rotary carrier, substantially as set forth.

5. The combination, with a rotary carrier, of a shifting eccentric, a stationary eccentric, a lever, or bell crank, mounted on the rotary carrier and connected to the strap of the stationary eccentric and a link connecting the lever, or bell crank, with the shifting eccentric, substantially as set forth.

6. The combination, with a rotary carrier, of a shifting eccentric, a toggle connection between the carrier and the shifting eccentric and means for shifting the toggle connection and thereby changing the adjustment of the shifting eccentric, substantially as set forth.

544,805. SPINDLE-BEARING. WILLIAM T. CARROLL, Worcester, Mass. Filed Dec. 5, 1894. Serial No. 530,879. (No model.)



Claim.—1. A spindle support, combined with a bolster held loosely therein with its upper end below the top of the support, and having a spiral slot cut through the same, the slot extending from its upper toward its lower end and in the direction of rotation of the spindle, substantially as described.

2. A bolster case, a spindle having a pintle, and a step, combined with a lateral bolster interposed loosely between the said bolster case and the pintle of the spindle, the upper end of said bolster being below the top of the bolster case, the said bolster being provided with an open-sided spiral slot extending from its upper toward its lower end in the direction of rotation of the spindle, and having its external diameter reduced for a part of its length to thus constitute an oil chamber between the exterior of the bolster and the interior of the case when the bolster is within the case, the bolster having at its interior near its lower end an oil chamber *c*, the said slot affording the oil a free circulation through the walls of the bolster from one to the other of said oil chambers, substantially as described.

544,806. STEAM-ENGINE. JOHN W. DEARDORFF, Waynesborough, Pa. Filed Feb. 1, 1895. Serial No. 537,033. (No model.)

Claim.—1. The combination with a main steam cylinder, of a compensating cylinder, a piston in said compensating cylinder arranged to compress the steam therein, and an automatically operated valve for admitting said steam to the main cylinder, substantially as described.

2. The combination with a main steam cylinder, of a compensating cylinder, a valve for admitting steam from the main cylinder into the compensating cylinder, a piston in said compensating cylinder arranged to compress the steam therein, and an automatically operated valve for admitting said steam to said main cylinder, substantially as described.

3. The combination with a main cylinder, of a compensating cylinder, a valve to govern the admission of steam from the main cylinder to the compensating cylinder, a piston in said compensating cylinder arranged to compress the steam therein, valves for admitting steam from the compensating cylinder to the main cylinder, and means for automatically operating said valves at each stroke of the piston substantially as described.

4. The combination with main and compensating cylinders, of a valve at each end of the main cylinder, each of said end valves having a port for the admission of steam from the boiler to the main cylinder, and another port for the admission of steam from the compensating cylinder into said main cylinder, substantially as described.



5. The combination with main and compensating cylinders, of a central valve to allow of the passage of steam from the main cylinder into the compensating cylinder, and a valve at each end of the main cylinder, each of said end valves being provided with ports to admit steam from the boiler to the main cylinder and also from the compensating cylinder to said main cylinder, substantially as described.

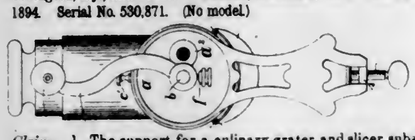
6. The combination with the main cylinder of a steam engine, of a compensating cylinder, a valve for admitting steam from the main to the compensating cylinder, and valves having passages on the outside for the admission of live steam to the cylinder, and through their center for the admission of steam from the compensating cylinder, substantially as described.

7. The combination with a cylinder, piston, and main shaft of an engine, of the lever-arm *i* connected therewith, a rocker-shaft *j* carrying said lever-arm, pinions H, racks *s*, and toothed piston-rod L, substantially as described.

8. In an engine, and in combination with a cylinder, piston and a valve thereof, a rock-shaft, a pinion thereon, a fixed rack on which said pinion rocks, and intermediate connections between the valve and the pinion for giving motion to the valve, substantially as described.

9. In an engine and in combination with a cylinder, piston, and valve thereof, a rock-shaft *j*, rocking pinions H on the ends thereof, an arm *m* attached to said rock-shaft, an arm *n* connected with the shaft, and a connecting rod *o* between the arms *m n*, substantially as described.

544,807. CULINARY GRATER AND SLICER. JOSEPH C. GROTE, Covington, Ky., and PHILIP A. DOBERT, Cincinnati, Ohio. Filed Dec. 5, 1894. Serial No. 530,871. (No model.)



Claim.—1. The support for a culinary grater and slicer substantially as herein before set forth, which consists of the standard, A, having at one end a clamping attachment to be fixed to a rigid support, and at the opposite end a flanged disk having projecting from it two perforated bosses, one to receive the axis of the grating cylinder and the support for the cutting attachment, and the other one to receive the journal of the slicing attachment.

2. The combination of the standard, A, adapted to be secured to the support and having a flanged disk, *a*, and protruding bosses, *a'* and a^2, the slicing attachment consisting of the slicing cylinder, G, and grooved cylinder, H, the plate, J, having rearwardly projecting shaft, *j*, to enter the boss, *a'* of the support, to furnish journals for the slicing and grooved cylinders, the plates, I, journaling the slicing and grating cylinders, stay bolts for holding the plates, I and J, together, the set screw for holding the slicing attachment in position, and the crank shaft for revolving the slicing cylinder, substantially as shown and described.

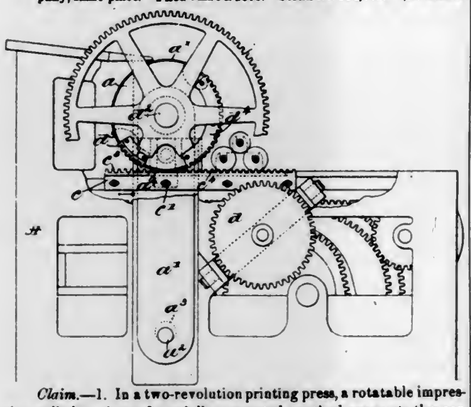
3. The supporting standard for the slicing and grating attachment, having perforated bosses to receive the driving shafts of the slicing and grating cylinders, in combination with the grating and slicing cylinders, adapted to be detachably connected to said standard and interchangeably used with the same, substantially as shown and described.

544,808. TOBACCO-PIPE. JULIUS HACKENBERG, Passaic, N. J. Filed Apr. 18, 1895. Serial No. 546,218. (No model.)



Claim.—An interconvertible straight or inclined tobacco pipe, consisting of a bowl, provided at its base with screw sockets having connection with the interior of the bowl through passages in the base thereof, one of said sockets being located at right angles to the bowl and the other at an inclination to the same, a stem provided with a screw-threaded nipple for screwing into either of said sockets, and a screw-plug for closing the other socket, substantially as described.

544,809. PRINTING-PRESS. BERTHOLD HUBER and WILLIS K. HODGMAN, Taunton, Mass., assignors to the Huber Printing Press Company, same place. Filed Jan. 14, 1895. Serial No. 534,772. (No model.)

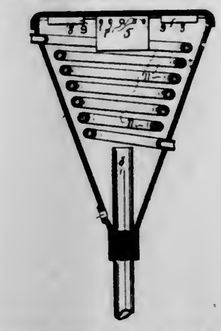


Claim.—1. In a two-revolution printing press, a rotatable impression cylinder, circumferentially separated toothed segments thereon laterally offset one from the other, a reciprocating form-carrier, longitudinally separated racks thereon adjacent the head and tail of the form and respectively located in the paths of the said segments, the racks and their co-operating segments being so located relatively to the center of the stroke that either segment will, in the back stroke of the form-carrier, move through a toothless space transversely adjacent to the rack lying in the path of the other segment, substantially as described.

2. In a two-revolution printing-press, a rotatable impression cylinder, a co-operating reciprocating form-carrier, separated racks on said carrier located in different parallel vertical planes adjacent the head and tail of the former and extended therefrom toward the center of the stroke to the clearance point, and circumferentially separated segments on the cylinder and respectively located in the paths of movement of said racks, to co-operate therewith singly in the forward stroke at the beginning and ending of the printing, the inner end of a rack moving away from the clearance point as the co-operating end of its segment reaches it, or vice versa, in the back stroke of the form-carrier, substantially as described.

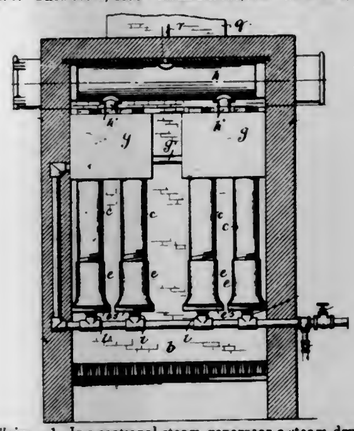
544,810. STEAM-EXHAUST HEAD. JOHN E. KELLY, Johnsonburg, Pa. Filed Jan. 5, 1895. Serial No. 533,989. (No model.)

Claim.—1. An exhaust head consisting of a funnel in axial line with the steam pipe, a pipe extension leading up centrally in said funnel in combination with a closed cover fitted thereon having a central inverted perforated cup attached thereto and a series of deflecting rims surrounding apertures formed in said cover, and all arranged to operate substantially as and for the purpose set forth.



2. In an exhaust head a funnel having a closed top, and pipe extension leading upwardly through part of the length of said funnel, from the exhaust inlet, a draining outlet, and a central inverted perforated cup and a series of deflecting rims, surrounding apertures located in outer portion of the cover, in combination with a conical coil of pipe arranged to absorb heat and condense steam within the exhaust head, substantially as and for the purpose set forth.

544,811. STEAM-GENERATOR. ORLANDO KELSEY, Blackwood, N. J. Filed Oct. 9, 1894. Serial No. 525,426. (No model.)



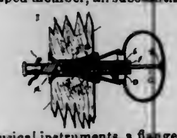
Claim.—1. In a sectional steam generator a steam drum and the water and steam head *g* in combination with the exterior tube c rigidly attached to the bottom wall of head *g*; the interior flue *d* passing through an expansion joint in the top wall of head *g*; the expansion joint consisting of the exteriorly threaded thimble d^2, the nut d^3 and the interposed packing d^4; the compound cap *e* consisting of the annular base *e'*, the threaded exterior shell e^2, the threaded interior shell e^3, and the hollow bar e^4 provided with apertures e^5, e^7 and e^6; and the flues *m* substantially as set forth.

2. In a sectional steam generator the steam drum *h* provided with the interior flue h^2 and with the chambers h^3, and h^4 and the water and steam head *g* in combination with the exterior tube c rigidly attached to the bottom wall of head *g*; the interior flue *d* passing through an expansion joint in the top wall of head *g*; the expansion joint consisting of the exteriorly threaded thimble d^2, the nut d^3 and the interposed packing d^4; the compound cap *e* consisting of the annular base *e'*, the threaded exterior shell e^2, the threaded interior shell e^3 and the hollow bar e^4 provided with apertures e^5, e^7 and e^6 and the flues *m*, substantially as set forth.

544,812. TUNING-PEG FOR STRINGED INSTRUMENTS. GEORGE A. KNOWLES, South Attleborough, Mass. Filed Mar. 25, 1895. Serial No. 543,005. (No model.)

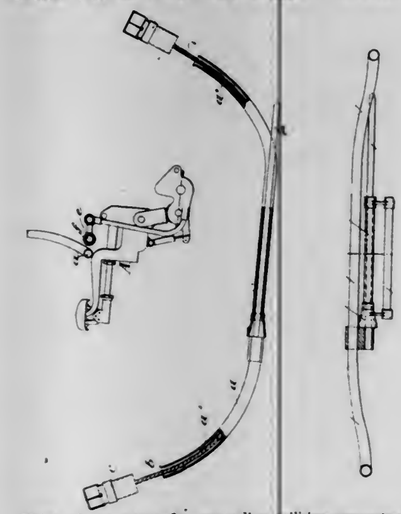
Claim.—1. In a key for musical instruments, an interiorly threaded, flanged, string holder, having the slots K; a perforated cone-shaped member, hollow within, and having an interior polygonal cross section, and projecting prongs fitting the slots K; a screw passing through said cone shaped member and engaging with the threaded string holder, said screw terminating in a tube having a cross section of the same

shape as the interior of said cone shaped member but enough smaller to rotate freely therein; and a hollow thumb-piece having a neck B of the same shape in cross section as said tube, and of such size that it will slide upon and engage said tube and at the same time slide into and be engaged by said cone shaped member, all substantially as described.



2. In a key for musical instruments, a flanged, interiorly threaded and slotted string holder; a cone shaped member having prongs fitting said slots; a connecting screw terminating in a tube of polygonal cross section; a hollow thumb piece adapted to slide into said cone shaped member, and upon said tube so as to engage both at the same time; and capable also of becoming disengaged from said cone shaped member without becoming disengaged from said tube; a spiral spring within said tube securing the normal engagement of said tube with said thumb-piece and said cone shaped member; and a slotted guide spindle surrounded by said spring, and limiting the movement of the thumb piece upon the tube aforesaid, all for the purpose specified.

544,813. DEVICE FOR SUSPENDING MECHANICAL MILKING APPARATUS UPON COWS. CARL GUSTAF PATRIK DE LAVAL, Stockholm, Sweden. Filed Jan. 30, 1895. Serial No. 536,697. (No model.)



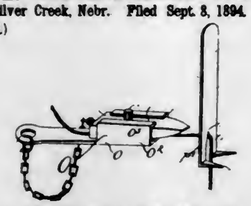
Claim.—1. In means for suspending milking-apparatus on the cow, the combination of a girth, a suspensory attachment adapted to be applied below the body of the cow to the girth around the body of the cow, a horizontal guide or path, attached to said suspensory attachment and extending substantially parallel therewith, and a sliding part attached on the frame of the milking-apparatus and received by said guide, substantially as set forth.

2. In means for suspending milking-apparatus on the cow, the combination of a girth, a suspensory attachment adapted to be applied below the body of the cow to the girth around the body of the cow, a horizontal rod forming a guide attached to and extending substantially parallel with said suspensory attachment, and a sleeve attached on the frame of the milking-apparatus and received by said guide-rod, substantially as set forth.

3. In means for suspending milking-apparatus on the cow, the combination of a girth, a suspensory attachment to be applied to the girth around the body of the cow and consisting of a tube, and a cord passing through the tube, a rod fixed to and extending parallel with said tube and with its free end reaching forward beyond the middle part of said tube, and a sleeve attached on the frame of the milking-apparatus and received by said guide-rod, substantially as set forth.

4. In means for suspending milking-apparatus on the cow, the combination of a girth, a tube, the end parts of which are bent according to the belly of the cow, a cord passing through the tube and adapted to be attached to the girth applied around the body of the cow, and a horizontal rod, extending laterally from said tube and running parallel with it, the ends of the said tube being bent forward so that their center-line falls in a vertical plane through the center line of the rod, substantially as set forth.

544,814. WIRE-FENCE MACHINE. THOMAS E. LEE and CYRUS H. LEE, Silver Creek, Nebr. Filed Sept. 3, 1894. Serial No. 522,519. (No model.)



Claim.—1. A machine for handling fence wire, comprising a wheel supported axle, vertical standards secured on said axle, an upper cross-member connecting said standards and forming in conjunction therewith a vertical frame, guide rollers extending between said axle and upper cross-member, a handle frame, comprising side members rigidly connected at one end with said vertical frame and a transverse member connecting the other ends of the side members; said several handle members forming, in conjunction with the cross-member of the vertical frame, an open rectangular frame extending at right angles to said vertical frame and adapted to rest at its forward end directly upon the ground when unsupported, and a winding-shaft mounted upon the handle frame, substantially as set forth.

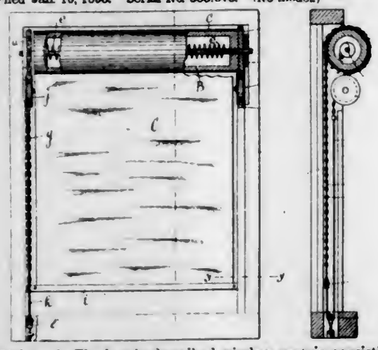
2. A machine for handling fence wire, comprising a wheel supported axle, vertical standards secured on said axle, an upper cross-member connecting said standards and forming in conjunction therewith a vertical frame, vertically arranged rollers forming guide extending between said axle and the upper cross-member, a handle frame comprising side members rigidly connected at one end with said vertical frame, and a transverse member connecting the other ends of the side members; said several handle members forming in conjunction with the cross-member of the vertical frame, an open rectangular frame attached to and extending at right angles to said vertical frame, brace members extending from the lower part of the vertical frame diagonally upward one to each side handle member, and a windlass transversely mounted upon the handle frame between the ends thereof, substantially as set forth.

3. A device for use with a wire stretching machine, comprising a wire clamp having a tapered conical shank, a hook at the larger end of said shank, a ring adapted to fit upon said tapered shank, said ring being cut or provided with an opening at one side, and an eye for attaching the smaller end of the shank to a rope or the like, substantially as set forth.

4. A device for use with a wire handling machine, comprising a wire clamp having a body portion provided with an eye at one end and with an open-ended rectangular socket extending longitudinally of said body, and a wedge adapted to fit within said socket; a second wire clamp comprising a hook provided with a tapered shank and an eye, said shank being tapered toward the eye thereof, and a ring provided with an opening in one side adapted to fit upon said shank, and a flexible strand connecting said clamps, substantially as set forth.

5. A staple puller, comprising an elongated body portion forming a handle, bifurcated at one end by means of a central opening terminating at its inner end in V-form, the arms formed by said bifurcation being bent midway of their lengths to stand at right angles with the body portion and substantially parallel with each other, and terminating in sharp points, substantially as set forth.

544,815. WINDOW-CURTAIN. JOHN A. LIDBACK, Portland, Me. Filed Jan. 16, 1895. Serial No. 535,078. (No model.)



Claim.—1. The herein described window curtain consisting of a curtain roller, a curtain wound thereon, a shaft on which said roller turns bearings for said shaft, a torsion spring connecting said shaft with said roller, a sprocket wheel secured to said shaft at each end of said roller, an endless sprocket chain engaging each of said sprocket wheels, a guide pulley at the lower end of the window casing over which said chain passes, the lower edge of said curtain being secured to said sprocket chain.

2. The herein described window curtain consisting of a curtain roller, a curtain wound thereon, a shaft on which said roller turns, bearings for said shaft, a torsion spring connecting said shaft with said roller, a sprocket wheel secured to said shaft at each end of said roller, an endless sprocket chain engaging each of said sprocket wheels, a vertically adjustable guide pulley at the lower end of the window casing over which said chain passes, the lower edge of said curtain being secured to said sprocket chain.

3. The herein described curtain consisting of a curtain roller, a curtain wound thereon, a shaft on which said roller is mounted, bearings for said shaft, a sprocket wheel secured to said shaft at each end of said roller, an endless sprocket chain engaging each of said sprocket wheels, a guide at the lower end of the window casing over which said chain passes, the lower end of said curtain being secured to said chain and means for taking up any slack which may form in said curtain between its upper and its lower ends.

544,816. FLYING-MACHINE. OTTO LILIENTHAL, Berlin, Germany. Filed Feb. 28, 1894. Serial No. 501,880. (No model.)



Claim.—1. In a flying machine, the combination of two crossed carrying rods *a*, two wings vaulted upward, and strings or wires *i* extending from the ends of the carrying rods toward the peripheries of the wings substantially as set forth.

2. In a flying machine, the combination of two crossed carrying rods *a*, two wings vaulted upward, strings or wires *i* connecting the two carrying rods with the wings, and a vertical fixed rudder substantially as set forth.

3. In a flying machine, the combination of a crossed frame, two wings connected therewith, strings or wires *i*, a vertical fixed rudder *r* and a horizontal tail *q*, adapted to turn upward automatically, substantially as set forth.

4. In a flying machine, the combination with a supporting frame, of a wing adapted to be folded together and having its ribs diverging from a common support, and suitably hinged thereto a string connecting the outer points of the ribs, and continuous fabric attached to a series of ribs, substantially as set forth.

5. In a flying machine, the combination with a supporting frame comprising a hoop, of a wing having its ribs diverging from a common support, a string connecting the outer points of the ribs, a wire, as g_1, fastened to the first rib of the wing and attached to the hoop and fabric stretched over the ribs and such wire, substantially as set forth.

6. In a flying machine, the combination with a supporting frame, of a wing having its ribs diverging from a common support, fabric stretched over the ribs and wires, as *i*, exteoding from the ribs downward to the supporting frame for the purpose of adjusting thereby the tension of the ribs, substantially as set forth.

7. In a flying machine, the combination with a frame comprising a hoop and crossed bars connected therewith, of wings supported by said frame, substantially as set forth.

8. In a flying machine, a supporting frame for the wings comprising a hoop *h*, rods extending from it for supporting the operator and a tail and a rudder, and pockets as *d* for receiving the ends of the ribs of the wings, substantially as set forth.

9. In a flying machine the combination with a supporting frame, of wings with suitable ribs connected therewith, front tension wires *g*, and pockets *d* for receiving the inner ends of the ribs, the ribs being made capable of turning around their centers in such pockets for the purpose of folding up such wings, substantially as set forth.

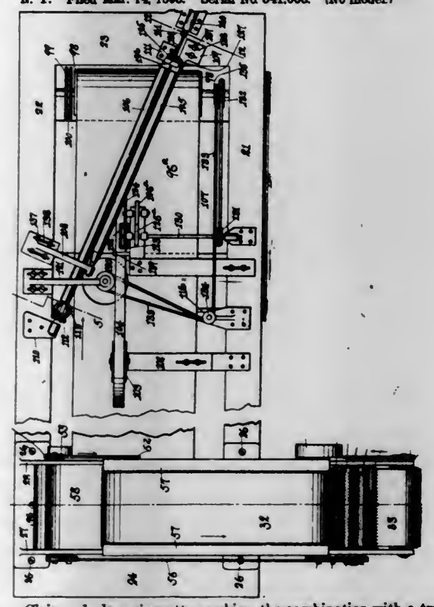
10. In a flying machine, the combination with a supporting frame of wings, a fixed rudder and a pivoted tail adjusted to come to rest upon the rudder when swinging downward, substantially as set forth.

544,817. BIN OR SAMPLE-CASE. JOHN LUIGART, Lexington, Ky. Filed Jan. 15, 1894. Serial No. 496,858. (No model.)

Claim.—The combination of the chambered casing or frame, the quadrant shaped receptacle B adapted to turn therein, the bearings C secured to the casing, the hinged segmental plates D secured to the receptacle and having pivot pins *d* projecting from them to enter the bearings in the plate C, the shaft *c'* journaled in the bearing C and having detent c^3 projecting from said shaft and adapted to pass through a slot in the bearing plate and engage notches d^3 in the plate D for the purpose of stopping the receptacle in the partially open position, substantially as shown and described.



544,818. CIGARETTE-MACHINE. WILLIAM MAXFIELD, Brooklyn, N. Y. Filed Mar. 14, 1895. Serial No. 541,668. (No model.)



Claim.—1. In a cigarette machine, the combination with a traveling apron upon which the tobacco is deposited, of two parallel rollers on said apron in close proximity to each other and means for conducting a wrapper underneath one of the rollers at an oblique angle to the direction of said roller, substantially as set forth.

2. In a cigarette machine, the combination with a traveling apron upon which the tobacco is deposited, of two parallel rollers placed at an oblique angle to the direction under which the apron travels and means for guiding the tobacco into the space between said rollers and said apron, the paper being fed in at an angle oblique to the rollers, substantially as set forth.

3. In a cigarette machine, the combination with a traveling apron, of two parallel rollers adjusted to revolve close to said apron, means for guiding the tobacco toward the head of one of said rollers, and into and along the space between said rollers, and adjusting devices for varying the relative positions of said rollers laterally, substantially as set forth.

4. In a cigarette machine, the combination with a traveling apron, of two parallel rollers adjusted to revolve close to said apron, one of said rollers having a conical end which extends along the body of the other roller, and means for guiding the tobacco into the space between said conical end and the opposite roller, substantially as set forth.

5. In a cigarette machine, the combination with a traveling apron, of two parallel rollers adjusted to revolve close to said apron, one of said rollers having a conical end which extends along the body of the other roller, and a disk adjusted to revolve above the apron for guiding the tobacco into the space between the rollers, substantially as set forth.

6. In a cigarette machine, the combination with a traveling apron, of two parallel rollers adjusted to revolve close thereto, one of

said rollers being provided with a conical forward end, and a guide disk inclined with reference to the operative face of the apron, substantially as set forth.

7. In a cigarette machine, the combination with a traveling apron, of a roller adjusted to revolve in contact therewith and a second roller adjusted to revolve in the same direction with aforesaid roller and slightly elevated above said traveling apron, appliances for introducing the tobacco between said rollers, and means for applying the wrapper to the filler between said rollers, substantially as set forth.

8. In a cigarette machine, the combination with a traveling apron, of two rollers adjusted to revolve close thereto and parallel to each other, mechanism interposed between said rollers for imparting revolving motion of one to the other appliances for conducting the tobacco into the space between apron and rollers, and means for applying the wrapper to the filler between said rollers, substantially as set forth.

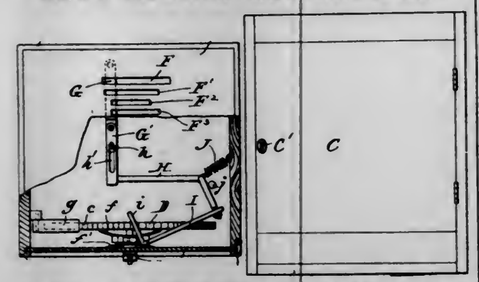
9. In the feeding and disintegrating mechanism of a cigarette machine, the combination with a picking device for disintegrating the tobacco and adapted to be operated intermittingly, an endless traveling belt upon which the tobacco is discharged by the picking device, a wall placed along said belt and comprising a movable portion, and means for causing stoppage of the feed belt by the movement of said movable portion, substantially as set forth.

10. In a feeding and disintegrating mechanism of a cigarette machine, the combination with the feed belt, of a picking device for disintegrating the tobacco, an electro-magnet mechanism interposed between its armature and the feed belt, adapted to produce stoppage of said belt, an endless traveling belt upon which the tobacco is discharged by the picking device, a wall placed along said belt and comprising a movable portion, and electrical connections between said portion and the electro-magnet, substantially as set forth.

11. In a feeding and disintegrating mechanism of a cigarette machine, the combination with a wheel 66 for actuating the endless feeding belt, of a picking device, wheel 67 mounted in a movable bearing and adapted to coact with wheel 66, slide 73, notched lever 77, spring and cam actuated bar 76, levers 78 in varying contact therewith, armature 65 attached to said lever, electro-magnet 64, traveling apron 33, hood 58 extending along the same, movable portion 60 and electrical connections between the same and electro-magnet, substantially as set forth.

12. In a cigarette machine, the combination with mechanism for forming the filler and applying the wrapper, of stationary tube 141, sliding tube 142 mounted thereon and provided with hangers 144, rocking shaft 145 carrying tappet arms 146 and 147, cam 148 with projection 153, spring 143, idler 152 and endless knife 150 passing over suitable pulleys and said idler, substantially as set forth.

544,819. REGISTERING SAVINGS-BANK. JOHN E. MELLOR, New York, N. Y. Filed Dec. 6, 1894. Serial No. 530,955. (No model.)

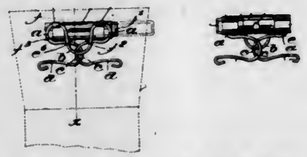


Claim.—1. A registering savings bank comprising a box, having a dial marked upon its face, suitably divided to designate units corresponding to the lowest denomination of coin for which the bank is adapted, a gear-wheel journaled in said front within the box, and having peripheral teeth thereon corresponding in number to the units of the dial, a plurality of slots of varying widths formed in the top of the box to accommodate coins of varying denominations, a lever pivoted beneath said top, an angular arm projecting therefrom, a flanged gravity pawl pivoted upon the end of said arm forwardly movable, and adapted to engage the gear-wheel when retracted and rotate the same according to the distance of movement of the lever, a coiled spring secured to the arm and to the side of the box to normally retract said pawl, a pin adapted to limit the movement of said pawl, and a gravity pawl bearing upon the gear-wheel to prevent its reverse rotation, substantially as shown and described.

2. A registering savings bank comprising a box having a dial marked upon its face, suitably divided to designate units corresponding to the lowest denomination of coin for which the bank is adapted, a gear-wheel journaled in said front within the box and having peripheral teeth thereon corresponding in number to the units of the dial, a plurality of slots of varying widths formed in the top of the box to accommodate coins of varying denominations, a lever pivoted beneath said top, a similar lever independently pivoted in front of the same and having a longitudinal slot therein, a pin upon the main lever working in said slot, an angular arm projecting therefrom, a flanged pawl pivoted to said arm, forwardly movable, and adapted to engage the gear-wheel when retracted, and rotate the same according to the distance of movement of the levers, a spring normally retracting said pawl, a pin to limit the movement thereof, and means for restricting the rotation of the gear-wheel, substantially as shown and described.

3. A registering savings bank comprising a box open at the top and at the front and provided with a door at the rear, an angular plate closing said top and front and having a dial marked upon the face thereof divided into units indicating the lowest denomination of coin for which the bank is adapted, a smaller dial within the periphery of the same, a gear-wheel journaled in said front upon an axle which projects therethrough, and provided with peripheral teeth corresponding in number to the units of the main dial, a pinion journaled above said gear-wheel having a pointer upon its axle which registers upon the smaller dial, a pin upon said gear-wheel adapted to engage the pinion and partially rotate the same at each rotation of the gear-wheel, plate springs between said gear-wheel and pinion, and the pinion and the box respectively, to limit the movement thereof, and a pawl bearing upon said gear-wheel to prevent its reverse rotation, a plurality of slots of varying widths formed in the top of the box, a lever pivoted beneath said top and adapted to be moved horizontally by the insertion of coins through said slots, a similar lever independently pivoted in front of the same, having a longitudinal slot therein, a pin upon the main lever working in said slot, an angular arm secured to the end of the slotted lever, a flanged gravity pawl pivoted upon the end of said arm, forwardly movable and adapted to engage the gear-wheel when retracted, a coiled spring secured to the arm and to the side of the box to normally retract said pawl, and a pin to limit the movement of said pawl, substantially as shown and described.

544,820. NECKTIE-FASTENER. CHARLES MOLZ, Boston, Mass. Filed May 23, 1895. Serial No. 550,361. (No model.)



Claim.—1. An attaching device for neck-tie fasteners, consisting of a plate having a bearing and a keeper, a pin bent to form a shank longitudinally movable in said bearings, and retaining loops for the fastener, the keeper receiving the point of the pin after its passage through the material of the neck-tie, substantially as described.

2. An attaching device for neck-tie fasteners, consisting of a plate having a longitudinally slotted bearing, a keeper, a pin bent to form a shank adapted to slide in said bearing, a projection on the shank to enter the slot of the bearing and retain the shank therein, and a positioning prong to enter the material of the neck-tie, the keeper receiving the point of the pin when in operative position, substantially as described.

3. An attaching device for neck-tie fasteners, consisting of a plate having a long bearing, a short bearing and a keeper parallel thereto, a pin bent to form a handle and a shank, the latter entering the long bearing and the portion adjacent the point entering the short bearing, a prong to position the attaching device, and a button engaging portion connected to said device, the pin entering the material of the neck-tie between the short bearing of the keeper, substantially as described.

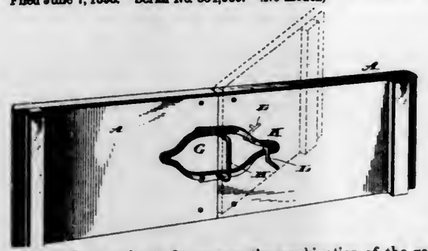
544,821. ARM-REST. JACOB W. MORRISON, Adairville, Ky. Filed Apr. 20, 1895. Serial No. 546,516. (No model.)



Claim.—1. An arm rest comprising a base and a purchase plate of similar construction, the purchase plate having its inner edge portion extended to project over the binding of a book and touch the end of the page to be written upon, whereby an unbroken surface is obtained between the said page and the purchase plate, the said extended edge portion having its ends cut away and the purchase plate having a longitudinal groove on its under side corresponding in position with a line joining the said cut-away portions on their inner walls, links having pivotal connection at their ends with the edges of the base and purchase plate, one of the links adapted to have its edge portion enter the said longitudinal groove, and means for supporting the purchase plate in the elevated position, substantially as set forth.

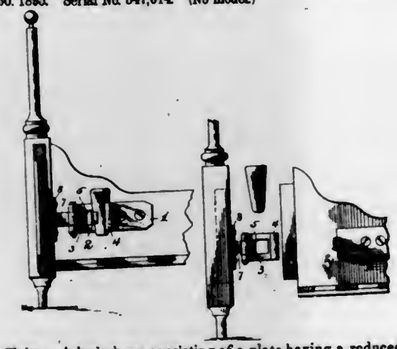
2. The herein-specified arm rest, comprising a base, a similarly-constructed purchase plate having its inner edge portion extended to come close against the end of the sheet to be written upon, and having its end portions cut away, said purchase plate having a longitudinal groove on its under side formed on a line corresponding with the prolongation of the inner walls of the said cut-away end portions of the extended part of the purchase plate, links having pivotal connection at their ends with the edges of the base and the purchase plate, one of the links adapted to have an edge portion enter the said longitudinal groove, a rack bar fastened to the edge of the base and having one end in proximate relation to a link to engage therewith and limit the vertical movement of the purchase plate and prevent the links from passing beyond the perpendicular, and a brace pivoted at its upper end to the edge of the purchase plate and having its lower end formed with a series of teeth extending on a curved line, whereby a number of the said teeth will engage with a corresponding number of teeth on the rack bar at all positions of the brace to provide a firm support for the purchase plate, and the latter having a notch at one end to form a finger catch, substantially as described for the purpose specified.

544,822. END-GATE FOR WAGONS. IRA NAPPIN, Farmington, Ill. Filed June 7, 1895. Serial No. 551,989. (No model.)



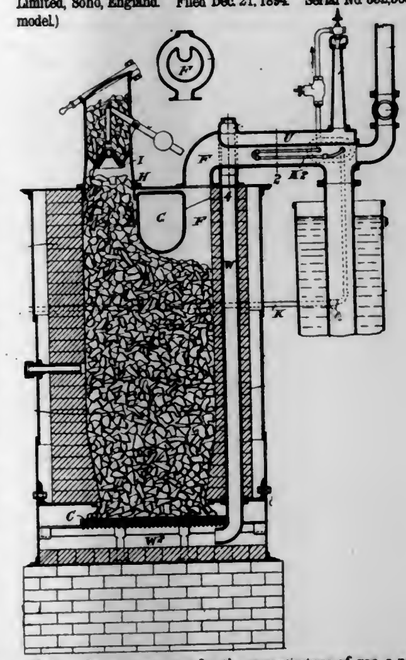
Claim.—In an end gate for wagons the combination of the gate sections A, A, the hinges B and C each provided with the cleat portions D, D, substantially as wide as the said gate sections and pivoted together at their ends and at their middle portions, of the lever L having its head securing one of the said hinged portions to a gate section, the free end of said lever bent into a crank which is adapted to be locked into the hook K of the handle carrying member when the gate sections are closed, substantially as shown and described.

544,823. BED-CLAMP. HENRY J. NEY, Pottsville, Pa. Filed Apr. 30, 1895. Serial No. 547,614. (No model.)



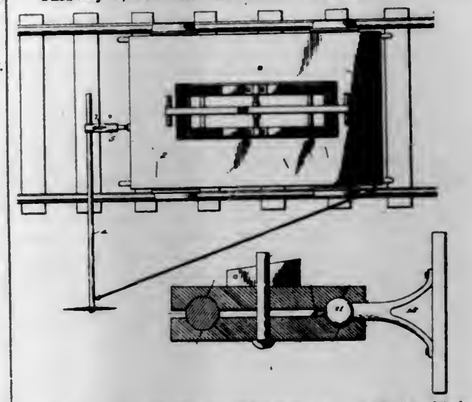
Claim.—A bed clamp consisting of a plate having a reduced end hooked as described, in combination with a hinged section having a central aperture to receive the hooked end of the plate, and further provided with an upturned end, and a wedge engaging the hooked extensions of the plate and hinged section, as and for the purpose described.

544,824. APPARATUS FOR THE MANUFACTURE OF GAS. CHARLES W. PINKNEY, Smethwick, assignor of one-half to Tangyes, Limited, Soho, England. Filed Dec. 21, 1894. Serial No. 532,583. (No model.)



Claim.—In an apparatus for the manufacture of gas, a producer having an inlet for the fuel at one side thereof and an outlet for the produced gas at the other side and provided with a depending partition or separator across the interior of the producer between the inlet for the fuel and the outlet for the produced gas, in combination with a steam pipe from the generator situated or in part situated in the outlet for the produced gas and communicating with a steam jet, an automatic valve in said pipe operated by variation in the pressure of the steam to regulate the supply thereof to said steam jet, an inlet for air in proximity to said steam jet, and a pipe or passage for the mixed steam and air, the said pipe or passage passing through the producer or its lining to the inlet for the mixed steam and air, to the producer, all substantially as and for the purposes hereinbefore described.

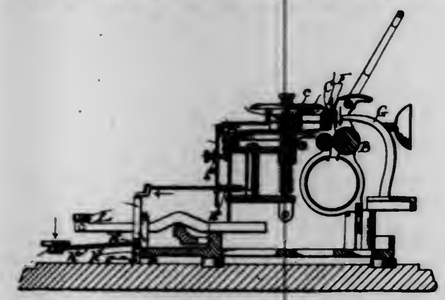
544,825. LAND-MARKER. WILLIAM T. POWERS, Udall, Kans. Filed May 21, 1895. Serial No. 550,132. (No model.)



Claim.—1. A land marker, comprising a bracket, designed to be mounted on a hand car, and provided with a ball, a bearing or clamp composed of sections having opposite concavities to form a socket to receive the ball, and provided with a transverse opening, a rod arranged in the transverse opening and provided at the outer end with a marking device, and a fastening device connecting the sections and adjustably engaging the rod, substantially as described.

2. A hand marker, comprising a bracket, designed to be mounted on a hand car, and provided with a ball, a clamp or bearing composed of two sections provided at their front ends with notches or recesses to form a transverse opening, and having at their rear ends concavities forming a socket and receiving the ball, said sections being provided at their rear ends with ribs interposed between them, a rod provided at its outer end with a marking device and arranged in the transverse opening of the clamp or bearing, a fastening device passing through the sections and engaging one of them and provided adjacent to the other with a slot, and a wedge-shaped key arranged in the slot and engaging the adjacent section of the clamp or bearing, substantially as and for the purpose described.

544,826. TYPE-WRITING MACHINE. ALBERT E. RAWSON, Chicago, Ill. Filed Feb. 26, 1894. Serial No. 501,553. (No model.)



Claim.—1. The combination in a type-writer of the class described, and with the ordinary framework and operating devices, of the pivoted annular disk, H, a key located convenient to the hand of the operator, connecting devices between said key and said disk, whereby the motion of the key depresses the disk upon its pivot, a spring applied to said connecting devices and tending to return the disk to its normal position and a stop adapted to check said motion when such position has been reached; substantially as described.

2. The combination in a type-writer of the class described and with the ordinary supporting and operating devices, of the pivoted annular disk, H, the key, A^7, suitable connecting devices between said key and said disk, a spring adapted to raise the disk and an adjustable stop adapted to limit the motion of the spring; substantially as described.

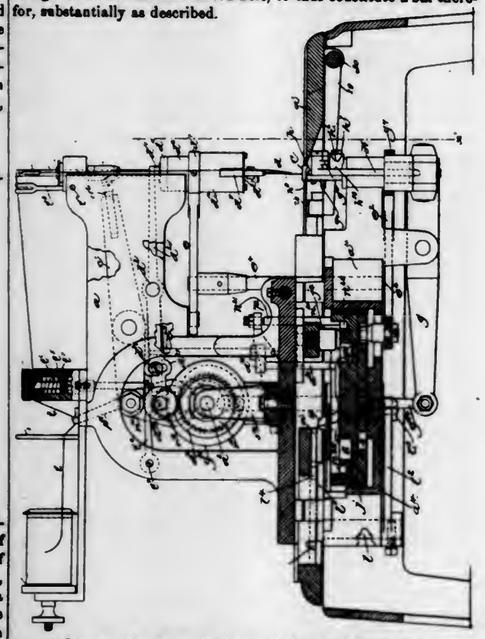
3. The combination in a type-writer of the class described, and with the ordinary supporting and operating devices, of the pivoted disk, H, the depending lever, A', the spring, A^9, the screw, A^3, the key, A^7, and suitable connecting devices between said key and said lever; substantially as described.

544,827. BUTTONHOLE STITCHING OR OVERSEAMING MACHINE. JOHN REECE, Boston, Mass. Filed Feb 11, 1887. Serial No. 227,269. (No model.)

Claim.—1. A button-hole sewing machine containing the following instrumentalities, viz:—a work-clamp; a throat-plate; stitch-forming mechanism, containing as one member thereof a vertically reciprocating and laterally movable needle bar and needle; and devices to automatically actuate said parts for the production of a series of overedge stitches along the two sides and about one end of a button-hole and to relatively change the positions of the stitch-forming mechanism, throat, and work-clamp, to effect the automatic production of a series of stitches across the small end of the button-hole exceeding in length the stitches along either side of said button-hole, and to constitute a bar therefor, substantially as described.

2. A button-hole sewing machine containing the following instrumentalities, viz:—a work-clamp; a throat-plate; stitch-forming mechanism containing as one member thereof a vertically reciprocating and laterally movable needle-bar and needle; devices to automatically actuate said parts for the production of a series of overedge stitches along the two sides and about one end of a button-hole and to relatively change the positions of the stitch-forming mechanism, throat, and work-clamp, to effect the automatic production of a series of stitches across the small end of the button-hole exceeding in length the stitches along either side of said button-hole, and to constitute a bar therefor; and devices to automatically stop the machine at the completion of the barring operation, substantially as described.

3. A button-hole sewing machine containing the following instrumentalities, viz:—a work-clamp; stitch-forming mechanism; means to rotate said stitch-forming mechanism while stitching about the curved end of a button-hole; and devices to automatically actuate said parts for the production of a series of overedge stitches along the two sides and about one end of a button-hole and to relatively change the positions of the stitch-forming mechanism, throat, and work-clamp, to effect the automatic production of a series of stitches across the small end of the button-hole which shall exceed in length the stitches along either side the said button-hole, to thus constitute a bar therefor, substantially as described.



4. In a machine for sewing button-holes, the following instrumentalities, viz:—a work-clamp; a stitch-forming mechanism; a throat-plate; devices to relatively actuate the work-clamp and stitch-forming mechanism and to rotate the stitch-forming mechanism and throat-plate to effect the production of a series of overedge stitches, those about the eye radiating; a clutch co-operating with the actuating shaft of the stitch-forming mechanism; a rotating cam; and devices intermediate said cam and clutch, and acted upon by said cam in its rotation to automatically effect the stopping of the stitch-forming mechanism at the completion of the stitching of the button-hole, substantially as described.

5. In a sewing machine, the following instrumentalities, viz:—an eye-pointed needle above the work-plate; complemental stitch-forming mechanism below the work-plate, both mounted in a frame containing mechanism for actuating the same to form stitches; a throat-plate; a bed-plate or frame; its attached work-clamp; devices to relatively move the said stitch-forming mechanism and work-clamp to stitch the straight sides and about the end of a button-hole; and devices to impart to the needle-bar and needle increased lateral throw and at the same time move the throat-plate laterally during the barring of a button-hole, substantially as described.

6. In a machine for sewing button-holes, stitch-forming devices including a laterally movable needle-bar and needle; a work-clamp and a throat-plate; combined with devices to change the relative positions of the said throat-plate, needle and clamp in the direction of the length of the button-hole, and to automatically move the said throat-plate transversely to the length of the button-hole when at the small end of the said hole and during the barring of the same, substantially as described.

7. In a machine for sewing button-holes, stitch-forming mechanism; a clutch co-operating with the shaft for actuating the stitch-forming mechanism; and a rotating cam surface and intermediate devices between said cam surface and clutch, said intermediate devices being directly actuated by said cam surface to automatically effect the operative engagement of the clutch and start the stitch-forming mechanism for the commencement of a button-hole; and a device to actuate said intermediate devices in the opposite direction at the completion of a button-hole, substantially as described.

8. A button-hole sewing machine, containing the following instrumentalities, viz:—a work-clamp; a throat; stitch-forming mechanism; means to rotate the said stitch-forming mechanism while stitching about the curved end of a button-hole; and devices to automatically actuate said parts for the production of a series of overedge stitches along the two sides and about one end of a button-hole, and to relatively change the positions of the stitch-forming mechanism, throat, and work-clamp, to effect the automatic production of a series of stitches across the small end of the button-hole exceeding in length the stitches along either side the said button-hole, and to constitute a bar therefor; and devices to automatically stop the machine at the completion of the barring operation, substantially as described.

9. In a machine for sewing button-holes, a work-clamp, a needle throat-plate; a needle-bar, a connected eye-pointed needle, complemental stitch-forming mechanism, devices to reciprocate said needle in the direction of its length, and to also move it laterally with relation to the needle throat whereby the needle at one descent enters the button-hole slit and at the next descent enters the material for the depth stitch, and to rotate the same to stitch radiating stitches about the eye, combined with devices to automatically increase the relative lateral change of position between the said throat-plate and needle as the barring stitches are being made at the small end of the button-hole, for the purposes set forth.

10. In a sewing machine, the following instrumentalities, viz:—an eye-pointed needle above the work-plate; and complemental stitch-forming mechanism below the work-plate both mounted in a frame containing mechanism for actuating the same to form stitches; a bed-plate or frame; its attached work clamp; devices to change the relative positions of the said stitch-forming mechanism and work-clamp to stitch the straight sides and about the end of a button-hole, devices to impart to the needle-bar and needle increased lateral throw, and at the same time move the throat-plate laterally during the barring of a button-hole; a clutch to determine the starting and stopping of the stitching action of the stitch-forming mechanism; a lever to control said clutch; a rotating cam, and devices between said cam and said lever to enable the latter to effect the stopping of the stitching action of the stitch-forming mechanism at the completion of the last end of a button-hole, substantially as described

11. In a button-hole sewing machine, a rotating case; a needle-bar therein having a needle; means to reciprocate the needle-bar longitudinally; and means co-operating with the said needle-bar and case to move the needle-bar laterally within the said case, substantially as described.

12. In a button-hole sewing machine, a bed-plate; a movable frame thereon; means to move it; the needle-bar carried by the said frame; means to move the needle-bar longitudinally and also laterally with relation to said frame during the overstitching along the straight sides of the button-hole and about its eye; a looper carried by the said frame, and means to move the looper, combined with a throat-plate and cloth clamp, to operate, substantially as described.

13. In a button-hole sewing or over-seaming machine, a throat-plate; a reciprocating needle-bar having an attached needle; and means to vibrate the needle-bar laterally, combined with a looper having a point A^4 and heel A^5; and with means to move the said looper, to operate, substantially as described.

14. The combination, in a single-thread button-hole sewing machine, of the following instrumentalities, viz:—a reciprocating needle-bar provided with an eye-pointed needle; a throat-plate; a non-thread carrying looper having a point A^4 and heel A^5; and a loop-spreader g^{10}, substantially as described, to act upon a loop of thread and spread it between the looper and the under side of the throat-plate for the entrance of the needle, substantially as described.

15. In a button-hole or over-seaming machine, a needle; a needle-bar; and means to reciprocate the said bar longitudinally and move it laterally as described; and feeding mechanism, combined with the herein described double-acting looper having a point A^4 at one end and a pointed heel A^5 at its opposite end, the said point and heel being directed away from each other; and means to actuate the said looper, whereby the point A^4 takes the loop of needle thread when the looper is moving forward, and the heel A^5 takes the second loop of needle thread when the looper makes the return stroke, the loop of needle thread taken by the said point being drawn through the last previous loop taken by the heel and held thereon until the point takes a second loop of thread from the needle, substantially as described.

16. In a button-hole stitching machine, a bed-plate; the frame a thereon having a throat-plate; means to move the said frame longitudinally; and a stitch-forming mechanism carried by the said frame, it including a needle-bar having not only a motion of reciprocation but also a lateral movement, which is automatically increased immediately after the last side of the button-hole has been stitched, combined with means whereby the said frame carrying the said stitch-forming mechanism is moved laterally in a direction opposite that in which the lateral throw of the needle-bar is increased, to thus enable the small end of the button-hole slit to be barred by stitches extending from the outer side to the outer side of the over-seaming stitch at both sides of the button-hole slit, substantially as described.

17. In a button-hole stitching machine, the shaft 71 having an arm 70; the frame *a*; base *a'*; stitch-forming mechanism and a cam wheel *j* provided with a cam-ring n^{30}, combined with a pin n^{31} under the control of the said cam-ring, whereby, by the descent and ascent of the said pin acted upon by the said cam ring, the said rock-shaft is permitted to turn to effect the stopping and starting of the stitch-forming mechanism at the proper times, substantially as described.

18. In a button-hole sewing machine, the rock-shaft 71 having two arms as described; the frame *a*; the base *a'*; the stitch-forming mechanism; and a cam-wheel *j* provided with a cam-ring n^{30} and a pin n^{31}, combined with a spring to hold one of the said arms against that end of the said pin most distant from the cam-ring, whereby the said cam-ring is enabled to operate the said rock-shaft at the proper time for the purpose set forth, substantially as described.

19. A needle-bar; means to operate it; the carriage d^{14}; means to rotate it; and a slide block or guide for the needle-bar made movable therein transversely to the direction of movement of the needle-bar, combined with means to automatically alter the length of the stroke of the said slide block, to thus vary the lateral throw of the slide block and of the needle-bar, substantially as described.

20. In a button-hole sewing machine, the stitch frame *a*; a needle-bar; a needle carried by it; the casing d^{14}; the slide d^{15}; and the slide block therein, in which the needle-bar reciprocates, combined with means, substantially as described, to operate the said casing and slide, for the purpose set forth.

21. In a button-hole sewing machine the following instrumentalities, viz:—a stitch-frame; a clamp-frame; stitch-forming mechanism consisting of an eye-pointed needle located at one side of the horizontal plane occupied by the clamp-frame; and a complemental mechanism co-operating with the said needle to form stitches and located at the opposite side of the horizontal plane occupied by the clamp frame; devices to rotate the stitch-forming devices and the throat-plate co-operating therewith with relation to the clamp frame, and to move the needle-bar laterally with relation to the length of the button-hole slit, while barring the small end thereof, and devices to change the relative positions of said stitch-frame and clamp-frame with relation not only to the length of the button-hole slit but to change the relative positions of the clamp-frame and throat of the stitch-forming mechanism laterally with relation to the longitudinal center of the button-hole to provide for stitching the enlarged eye end thereof, substantially as described.

22. In a button-hole stitching and barring machine, the combination of the following instrumentalities, viz:—a needle, and complemental stitch-forming mechanism; means for operating said stitch-forming mechanism; a work-clamp; actuating devices for changing the relative positions of the work-clamp and the stitch-forming mechanism, whereby the two straight sides and the eye of a button-hole are overstitched, the eye by radiating stitches, and automatic stitch-adjusting mechanism for increasing the length of the stitches upon the completion of the over-stitching, whereby the button-hole is overstitched and the end of the button-hole is barred by stitches of greater length than the over-edge stitches extending at right angles to the length of the button-hole, and by one continuous automatic operation, as set forth.

23. In a machine for sewing button-holes, a clamp-frame; a work-clamp; a stitch-frame; stitch-forming mechanism carried thereby; actuating mechanism for said stitch-forming mechanism; two cams to produce relative longitudinal and lateral, and combined longitudinal and lateral movement of said frame; one of said cams controlling said relative longitudinal movement according to the length of the button-hole, and the other of said cams the lateral movement according to the width of the eye end of the button-hole, both cams together controlling the curve of the eye, the longitudinal movement for the length of the button-hole being in one and then in a reverse direction; a clutch co-operating with said actuating mechanism; a third rotating cam, and devices intermediate said third cam and clutch and acted upon by said third cam in its rotation to automatically effect the stopping of the stitch-forming mechanism at a predetermined period, substantially as described.

24. In a machine for sewing button-holes, a clamp-frame; a work-clamp; a cutting mechanism to automatically cut the work held in said clamp; a stitch-frame; a stitch-forming mechanism supported therein; actuating mechanism for said stitch forming mechanism; two cams to produce relative longitudinal and lateral, and combined longitudinal and lateral movement between said frames, one of said cams controlling the said relative longitudinal movement according to the length of the button-hole, and the other the lateral movement according to the width of the eye end of the button-hole, both cams together controlling the curve of the eye, the longitudinal movement for the length of the button-hole being in one and then in a reverse direction; a clutch co-operating with the actuating mechanism for the said stitch-forming mechanism; a third rotating cam, and devices intermediate said third cam and clutch, and acted upon by said third cam in its rotation to automatically effect the stopping of the stitch-forming mechanism at a predetermined period, substantially as described.

25. In a button-hole sewing machine, the combination with a work-clamp and button-hole stitching mechanism, the latter being

adapted to work the sides and eye of a button-hole, the eye by radiating stitches; of automatic button-hole barring mechanism serving to form across the end of a button-hole just worked and while yet held in the clamp, barring stitches exceeding in length the stitches along either side of the worked button-hole, and automatic devices to stop the relative longitudinal movement between the work-clamp and stitch-forming mechanism prior to the barring operation, and automatic devices to thereafter stop the stitching at the completion of the barring operation, to operate, substantially as described.

26. An organized button-hole stitching machine containing the following instrumentalities, viz:—a stitch frame; stitch-forming mechanism carried thereby; a clamp-frame; a work-clamp; button-hole cutting mechanism, and devices under the control of the machine shaft to automatically actuate the said parts in the following order after closing the work-clamp, viz:—close the cutting mechanism to cut a slit in the material held in the work-clamp, spread the button hole slit, change the relative positions of the work clamp and stitch forming mechanism to enable the needle thereof to penetrate the material close to the cut edge of the button-hole; start into stitching operation the stitch-forming mechanism; change the relative positions of the stitch-forming mechanism and work-clamp to enable the stitch-forming mechanism to overstitch the sides and enlarged eye of the button-hole slit with radiating stitches, bar the small end of the button-hole slit while yet held in the work-clamp, and devices to effect the stopping of the stitching operation immediately after completion of the said bar, substantially as described.

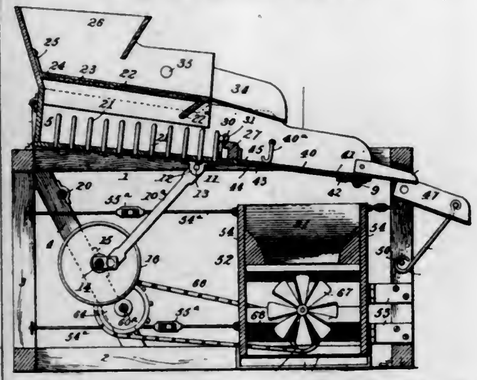
27. An organized button-hole stitching machine, containing the following instrumentalities, viz:—a stitch-frame; stitch-forming mechanism carried thereby; a clamp-frame; a work-clamp; button-hole cutting mechanism, and devices under the control of the machine shaft to automatically actuate the said parts in the following order after closing the work-clamp, viz:—close the cutting mechanism to cut a slit in the material held in the work-clamp; spread the button-hole slit, change the relative positions of the work-clamp and stitch-forming mechanism to enable the needle thereof to penetrate the material close to the cut edge of the button-hole; start into stitching operation the stitch-forming mechanism; change the relative positions of the stitch-forming mechanism and work-clamp to enable the stitch-forming mechanism to overstitch the sides and enlarged eye of the button-hole slit with radiating stitches, bar the small end of the button-hole slit while yet held in the work-clamp; devices to effect the stopping of the stitching operation immediately after completion of the said bar, and devices to automatically open the work-clamp after the completion of said bar, substantially as described.

28. In a machine for sewing button-holes, a work-clamp, cutting mechanism to automatically cut the work held in said clamp: automatic spreading mechanism to spread said cut button-hole; a stitch-forming mechanism, and actuating devices including two cams to effect a combined longitudinal and lateral movement between said work-clamp and stitch-forming mechanism for the production of a series of over-edge stitches along the sides and about the eyed end of the button-hole, a clutch co-operating with said actuating devices; a third rotating cam, and devices intermediate said third cam and clutch, and acted upon by said third cam in its rotation to automatically effect the stopping of the stitch-forming mechanism at a predetermined period, substantially as described.

29. In a button-hole stitching and barring machine the combination of the following instrumentalities, viz:—a needle, and complemental stitch-forming mechanism; means for operating said stitch-forming mechanism: a work-clamp; actuating devices for changing the relative positions of the work-clamp and the stitch-forming mechanism, whereby the two straight sides and the eye of the button-hole are over-stitched, the eye by radiating stitches; devices to suspend the relative longitudinal movements of said parts when the last side of the button-hole has been over-stitched, and automatic stitch adjusting mechanism for increasing the length of the stitches upon the completion of the over-stitching, whereby the button-hole is over-stitched and the end of the button-hole is barred by stitches of greater length than the over edge stitches extending at right angles to the length of the button-hole, and by one continuous automatic operation, as set forth.

30. In a machine for sewing button-holes, a clamp-frame; a work-clamp; a stitch-frame; stitch-forming mechanism carried thereby; actuating mechanism for said stitch-forming mechanism; two cams to produce relative longitudinal and lateral, and combined longitudinal and lateral movement of said frame, one of said cams controlling said relative longitudinal movement according to the length of the button-hole, and the other of said cams the lateral movement according to the width of the eye end of the button-hole, both cams together controlling the curve of the eye, the longitudinal movement for the length of the button-hole being in one and then in a reverse direction; a clutch co-operating with said actuating mechanism; a third rotating cam, and devices intermediate said third cam and clutch and acted upon by said third cam in its rotation to automatically effect the starting and stopping of the stitch forming mechanism at a predetermined period, substantially as described.

544,828. SEPARATOR OR CONCENTRATOR FOR ORES OR OTHER SIMILAR MATERIALS. GEORGE M. REED, Waltham, Mass. Filed July 28, 1894. Serial No. 518,893. (No model.)



Claim.—1. In a separator or concentrator, the combination of a reciprocating sluice-way, a shaking or vibrating fan case, means for altering the position of said fan case, a fan, and separate or independent means for operating each of the parts, substantially as described.

2. In a separator or concentrator, a reciprocating sluice-way provided at its forward end with a sieve in combination with a fan case pivotally suspended beneath said sieve, a fan within the case, and an inclined removable sieve located before the fan, and separate or independent means for operating the way, the case, and the fan, substantially as described.

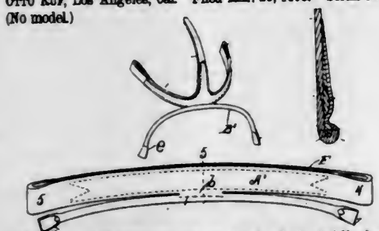
3. In a separator or concentrator, the combination with the sluice-way, and the pivotally suspended fan case together with means for adjusting said case, of the main shaft and connecting rod, and the counter-shaft, and pitman, the latter being eccentrically connected with the fan case, substantially as shown and for the purpose described.

4. In a separator or concentrator, the combination with a sluice-way, of a fan case having an inclined bottom opening into a receiving pan, a fan mounted in said case and means for operating the same, an inclined sieve located before the fan, and a pivoted or hinged riffle resting upon said inclined sieve, and a spring bail loosely attached to the riffle and adapted to be sprung beneath a projection of the case, substantially as described.

5. In a separator or concentrator, the fan case provided with a hopper and having its sides beveled or inclined at the front, in combination with the removable inclined sieve supported between said sides upon projections from the case, a riffle pivoted or hinged to the case, and a spring bail loosely attached to the lower end of the riffle and adapted to be sprung beneath a projection on the hopper, substantially as described.

6. In a separator or concentrator, the combination with the fan-case, having a hopper and fan, and means for operating the two, of the inclined sieve having side pieces and formed with the backing of wire gauze, and the riffle frame provided with riffles and projecting side wings, and a spring bail loosely attached to the riffle and adapted to be sprung beneath a projection on the hopper, substantially as described.

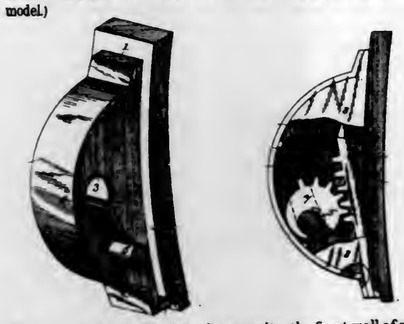
544,829. COMBINED BRIDLE-FRONT AND WINKER-BRACE. OTTO RUF, Los Angeles, Cal. Filed Mar. 29, 1895. Serial No. 543,639. (No model.)



Claim.—1. The combination set forth of the bridle front strap, the winker brace filling, the winker brace strap united to the bridle front strap at the middle by the bridge and bent around the filling and stitched from end to end substantially as described.

2. The combination set forth of the bridle front strap; the winker brace filling; the winker brace strap united to the bridle front strap at the middle and bent around the filling and stitched from end to end; the center front billet fastened to the bridle front strap, and the bridle front and billet top fastened to the billet and bridle front strap.

544,830. BRAKE-BLOCK. WILLIAM H. SAUVAGE and RICHARD J. FUQUA, Durango, Colo. Filed Jan. 12, 1895. Serial No. 534,707. (No model.)



Claim.—1. A brake-block having a cavity, the front wall of which is provided with a rack-bar arranged at an inclination to the face of the block, a rotatable brake-bar arranged in slots in the sides of the block, and a spur-gear fixed to the brake-bar and meshing with the teeth of the rack, substantially as specified.

2. The combination with a rotatable brake-bar, of a brake-block provided with a rack which is arranged at an inclination to the face of the block and diverges therefrom toward its upper end, and a spur-gear fixed to the brake-bar and meshing with the rack, substantially as specified.

3. The combination with a rotatable brake-bar, of a brake-block having a cavity closed at one side by the removable-plate, a spur-gear fixed to the brake-bar and engaging a rack on the front wall of the cavity of the block, the block and the removable plate thereof being provided adjacent to the face of the block with lateral beveled ribs, and a removable-shoe provided with a dove-tailed or under-cut channel to receive the face of the block, substantially as specified.

544,831. FLY-TRAP. GEORGE SCHMITTLE, Philipsburg, Pa. Filed June 22, 1895. Serial No. 553,724. (No model.)



Claim.—1. A fly trap, comprising a frame or casing open at one side, a revolving drum mounted in the frame or casing and exposed at the open side thereof, a removable cage arranged within the plane and located directly above the drum, and provided with a bottom having a raised central portion forming an intervening space between it and the drum and provided with entrance openings, means for rotating the drum, and stops located at opposite sides of the cage, the one at the open side of the frame or casing being separated from the drum a sufficient distance to permit the entrance of flies, substantially as described.

2. A fly trap, comprising a frame or casing open at one side and provided at its ends with similar slots, a brush located at the upper edge of the closed side of the casing and forming a seat, a revolving drum mounted in the frame or casing, and a removable cage located directly above the drum, and provided at its bottom with openings and having one edge supported by the said seat and provided at the opposite side with a depending flange forming projections and fitting in the slots of the frame or casing and supporting the adjacent side of the cage, substantially as described.

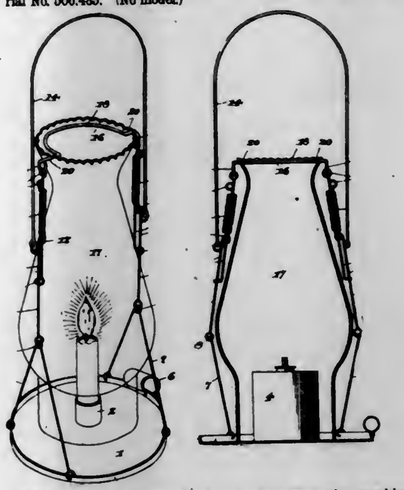
544,832. SMOKE-HELMET FOR FIREMEN. JOSEPH SENIOR, Millburn, N. J. Filed June 9, 1894. Renewed June 29, 1895. Serial No. 554,503. (No model.)



Claim.—1. The smoke helmet herein described, consisting of the hemispherical sections A, A', hinged at the top and formed with semi-circular recesses C at the lower edge to fit the neck, and spring catches E at opposite sides of the neck, the joint and recesses being provided with a yielding packing D and the helmet having an air pipe adapted to reach the floor, and a window in the front of each section, as herein set forth.

2. A helmet divided in two sections adapted for application to the opposite sides of the head, and formed to fit the neck with a yielding packing around the same, the sections being hinged together at the top and provided with an air inlet and suitable catches at the bottom, and having each a window in the front, substantially as herein set forth.

544,833. LANTERN. CORNELIUS D. SEYS, Corpus Christi, Tex., assignor of one-half to W. S. Gray, same place. Filed Apr. 5, 1894. Serial No. 506,435. (No model.)



Claim.—1. In a lantern of the class described, the combination of the imperforate sheet metal holder base, the chimney adapted to be removably supported on said base, a turning chimney securing yoke adapted to fit over the top end of the chimney, and a spring connection between said yoke and the base, said connection being pivotally joined to the yoke to admit of the turning thereof, substantially as set forth.

2. In a lantern of the class described, the combination of the holder base, the glass chimney adapted to rest at its lower end on said base, the wire bails loosely connected at their lower ends to said base, a chimney securing yoke wire adapted to embrace the upper end of the chimney, sectional side wires connected to the upper extremities of said wire bails and to the opposite extremities of said yoke wire, and springs connecting the members of said sectional side wires, substantially as set forth.

3. In a lantern of the class described, the combination of the imperforate sheet metal holder base, the glass chimney adapted to rest on said base, opposite sectional extensible side wires loosely connected with said base and comprising separate wire members having a sliding connection there-between, coil springs connecting the upper ends of the wire members of said sectional side wires, a lantern carrying bail loosely connected to the upper end of the lower member of the sectional side wires, and a chimney securing yoke wire having a handle portion and loosely connected at its opposite ends to the upper extremities of said sectional side wires, substantially as set forth.

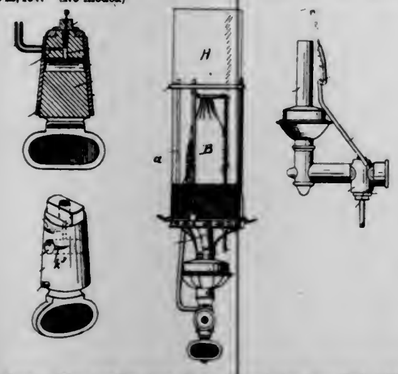
4. In a lantern of the class described, the combination of the holder base, a chimney adapted to rest on said base, a chimney securing yoke wire adapted to fit over the top end of said chimney and provided with a curved handle bail, and short arm portions at the bail extremities, the handle bail of said yoke wire being adapted to normally fit within the top end of the chimney, and sectional spring-retracted side wires arranged at opposite sides of the chimney and adapted to be loosely connected to the opposite arm portions of the yoke wire and to opposite portions of said holder base, substantially as set forth.

5. In a lantern, the combination of a holder base, the opposite side wires pivotally connected to the base, the handle bail connected with the side wires, a transverse securing or retaining wire having a sliding connection with said side wires and adapted to work on top of a chimney with a scalloped top edge, and suitably arranged springs for normally holding said securing or retaining wire in engagement with the depressions of the scalloped top edge of the chimney, substantially as set forth.

6. In a lantern, the combination of a holder base adapted to support a chimney thereon, a bail attached to said base and extending alongside of the chimney, and a spring actuated bar having a sliding connection with the opposite portions of the bail and extending transversely across the top of the chimney, serving to automatically clamp said chimney and leave its top open, substantially as described.

544,834. ATTACHMENT FOR INCANDESCENT GAS-BURNERS.

WILLIAM F. SIMONET, Massillon, Ohio. Filed Mar. 20, 1895. Serial No. 542,467. (No model.)



Claim.—The combination of a main feed pipe, provided with the casing D, the valve-cock E located in said casing and provided with the stop-pin *k*, the cross aperture *c*, the vertical aperture *h* leading from the cross-aperture, the aperture *h'*, the groove k^3 located upon the periphery of the valve cock, the groove *d'* connected with the aperture *h'*, and the sub-gas tube G provided with the aperture k^4, and the shoulders *k'* and k^5 located upon the valve casing, substantially as and for the purpose specified.

544,835. MAP OR CHART STAND.

WALTER L. SIFTON, Victoria, Canada, assignor to the Comparative Synoptical Chart Company, Limited Liability, same place. Filed Mar. 4, 1895. Serial No. 540,509. (No model.)

Claim.—1. In a map or chart stand, separable base pieces A A, notched at L and M respectively, the folding standard B having jaws K K' fitting over the notched pieces A A', and a hook directly connecting the lower separable piece to said standard, whereby all of said pieces are securely fastened together and may be easily taken to pieces, in combination with a spring actuated map holder secured to said standard B, a map held thereon, and a halyard and jamb-pulley for adjusting and holding said map in any desired place, substantially as described.

2. In a map or chart stand, the combination of the separable base pieces A A' having notches L and M, the folding standard B having jaws K K' fitting over said notched pieces A A', and provided with a hook directly connecting one of said base pieces with said standard, the said standard being scarf-jointed at *b*, and having the lock I and pivoted eye J for holding the same in an unfolded position, a map or chart holder C being secured to said standard, a map supported thereby, and a jamb-pulley and cord for holding the map in any desired position, substantially as described.

3. In a map or chart stand the combination of the separable base-pieces A A' notched at L and M respectively; the folding standard B notched at *c'*, and means for holding the standard erect when unfolded and in use; the transverse holder C; threaded hole *d'*; and thumb screw *d*; substantially as described and for the purpose specified.



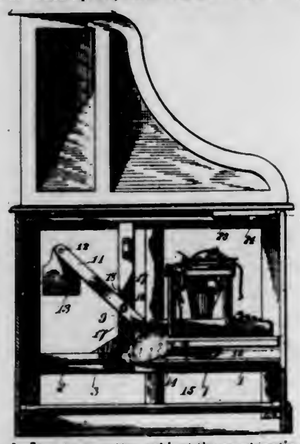
4. In a map or chart stand, the combination of the separable base pieces A A' notched at L and M respectively; the folding standard B notched at *c'*, and means for securing the standard to the separable base pieces and for holding it erect when unfolded and in use; the transverse holder C, located near the base of the standard, and means for detachably securing the same to the standard; the spring roller E, and bearings *e*, substantially as described and for the purpose specified.

5. In a map or chart stand, the combination of the separable base-pieces A A', notched at L and M respectively; the folding standard B, notched at *c'*; and means for securing the standard to the base-pieces and for holding it erect when unfolded and in use; the transverse holder C, and means for detachably securing the same to the standard near its base; and spring roller E, and bearings *e*; the mounted chart D; halyard G; and jamb pulley H, substantially as described and for the purpose specified.

6. In a map or chart stand, the combination of the separable base-pieces A A', notched at L and M respectively; the hook *a*; the folding standard B, notched at *c'*, and scarf jointed at *b*; the hinge *b'*; the hook I; the pivoted eye J; the jaws K K'; the transverse holder C, located near the base of the standard; the threaded hole *d'* and thumb screw *d*; the spring roller E, and bearings *e*; the chart D, and slat S, provided with ring *f*; the halyard G; hook *g*; and the jamb pulley H, substantially as described and for the purpose specified.

544,836. TYPE-WRITER CABINET.

FREDERICK VETTER, Rochester, N. Y. Filed Apr. 23, 1895. Serial No. 546,826. (No model.)



Claim.—1. In a type writer cabinet the combination of a receiving chamber, a supporting carriage mounted to slide horizontally back and forth in said chamber, and a horizontal machine supporting platform sustained by said carriage and movable in a horizontal position vertically with respect to the carriage, whereby the machine carried by the platform is maintained at all times in a true horizontal position.

2. In a type-writer cabinet the combination of a receiving chamber, a supporting carriage mounted to slide back and forth and formed with vertical guides and a machine-supporting platform mounted to slide in a horizontal position in said guides.

3. In a type-writer cabinet the combination of a receiving chamber, a supporting carriage mounted to slide back and forth therein, a machine-supporting platform sustained by and movable vertically with respect to, said carriage, said platform being maintained constantly in a horizontal position, an arm pivoted to the carriage and engaging at its front end the platform, and a weight applied to the rear end of the arm.

4. In a type-writer cabinet the combination of a receiving chamber, a supporting carriage movable back and forth therein, a machine-supporting platform sustained by and movable vertically with respect to, said carriage, said platform being maintained constantly in a horizontal position, arms pivoted to the opposite sides of the carriage, and engaging at their forward ends the platform, and a weight pivoted between the rear ends of said arms.

5. In a type-writer cabinet the combination of a receiving chamber, a supporting carriage movable back and forth therein and provided with vertical guides, a machine-supporting platform mounted in said guides, an arm pivoted to the carriage and having a sliding connection with the platform, and a weight applied to the arm.

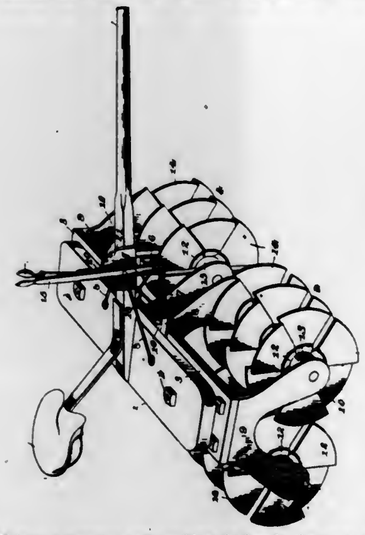
6. In a type-writer cabinet the combination with a receiving chamber of a horizontally movable carriage mounted therein, a vertically movable platform sustained by the carriage and means for maintaining said platform at different points in its vertical movement.

7. In a type-writer cabinet and in combination with the vertically movable machine-supporting platform, a pivoted arm having at its forward end a sliding connection with the platform, a weight applied to the rear end of the arm and means for clamping the arm at different points along the platform.

8. In a type-writer cabinet and in combination with a vertically movable machine supporting platform formed with horizontal slots, pivoted arms, a weight applied to the rear ends of the arms and clamping bolts applied to the forward end of the arms and extending through the slots in the platform.

544,837. HARROW.

JOHN ARCHER and NEREUS M. FRAZIER, Plainfield, Ind. Filed July 21, 1894. Serial No. 518,227. (No model.)



Claim.—A rotative soil working device for harrows, provided with sector-shaped blades, alternately laterally offset in opposite directions and forming two sets of blades arranged in vertical parallel planes, the blades of one set being disposed opposite the spaces between the blades of the other set, whereby alternately arranged soil working surfaces are provided, substantially as described.

544,838. UMBRELLA.

ROBERT C. BERRY, Indianapolis, Ind. Filed Nov. 2, 1894. Serial No. 527,756. (No model.)

Claim.—1. A ferrule for umbrellas composed of the usual tubular part, a rim surrounding said tubular part having an annular groove and slits therein, and springs attached to the tubular part with their free ends extending into the path leading from the annular groove, in combination with engaging members of an umbrella frame having cross-heads adapted to fit into said annular groove, said springs being thus normally adapted to prevent said cross-heads from being withdrawn.

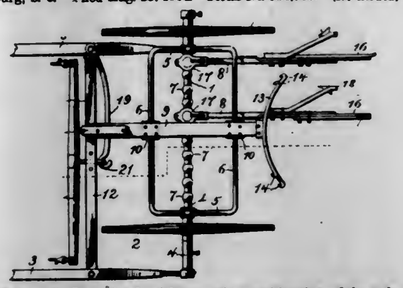


2. An umbrella ferrule having the usual tubular portion and a rim surrounding said tubular portion provided with an annular groove and radial slits with a lip extending down outside of said annular groove, and springs secured to the tubular portion and extending up within the lip and adapted to intercept the path leading from said annular groove, in combination with engaging members of an umbrella frame substantially as shown and described.

3. An umbrella comprising in combination the usual handle, a ferrule composed of the usual tubular portion and a rim surrounding the same provided with an annular groove and radial slits with a lip extending outside said annular groove and springs secured to the tubular portion and extending up within the lip and arranged to normally prevent the disengagement of the ribs therefrom, ribs having cross-heads on ther ends adapted to be forced into the slits in the adjacent portion of the grooves past the springs whereby they are removably connected thereto, a runner of a construction like that of the ferrule, and braces extending from the ribs thereto with their inner ends having cross-heads similar to the cross-heads on the inner ends of the ribs whereby they are removably connected to said runner, substantially as set forth.

544,839. WHEEL-CULTIVATOR.

WILLIAM M. BOMAR, Spartanburg, S. C. Filed Aug. 25, 1894. Serial No. 521,300. (No model.)



Claim.—1. In a wheel cultivator, the combination of the axle, the wheels, the shafts and the cultivator beams or sweeps adjustably connected with the axle, an elongated collar adapted to be placed on either end of the axle to permit attachment of either shaft to an end of the axle outside one of the wheels, and means for equalizing the draft, substantially as described.

2. In a wheel cultivator, the combination of the axle, the wheels and shafts adjustable on the axle to permit attachment of either shaft to the axle end outside one of the wheels, cultivators adjustably connected with the axle, and a draft-beam adjustably mounted on the axle between the wheels and movable to and from either wheel, substantially as described.

3. In a wheel cultivator, the combination with the axle and the adjustable wheels and shafts, of an elongated collar adapted to be detachably placed on either end of the axle to permit attachment of either shaft to an end of the axle outside one of the wheels, and a draft beam supported on the axle between the wheels and laterally adjustable to correspond with the adjustment of the wheels and shafts, substantially as described.

4. In a wheel-cultivator, the combination with the axle, the adjustable wheels and shafts, and the adjustable cultivator-beams or sweeps, of a frame adjustably mounted on the axle between the wheels, a draft-beam adjustably mounted on said frame and having its forward end adjustably clamped to the cross-bar of the shafts, and a draft-bar secured to either shaft and extended below the draft-beam and through the clip or clamp that connects the draft-beam and cross-bar of the shafts, substantially as described.

544,840. PLUG-STOPPER FOR CANS.

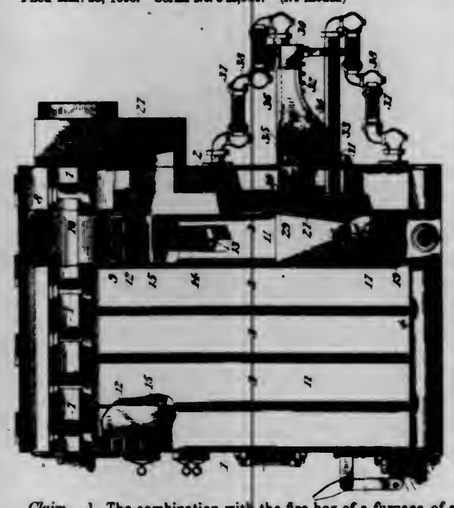
ABRAHAM T. H. BROWER, Chicago, Ill. Filed Oct. 9, 1894. Serial No. 525,361. (No model.)

Claim.—1. The combination with the can and its neck of the spring-seated plug-stopper to close the neck-vent and projecting beyond the same, the external stirrup united to the plug and the trip ring inclosing the neck and attached to said stirrup, substantially as described.



2. The combination with the can and its neck of the spring-seated plug-stopper to close the neck-vent and projecting beyond the same, the external stirrup united to the plug and having a hood thereon and the trip ring inclosing the neck and attached to said stirrup, substantially as described.

544,841. STEAM-BOILER. GEORGE H. BURLEY, Tyrone, Pa. Filed Mar. 23, 1895. Serial No. 542,969. (No model.)



Claim.—1. The combination with the fire box of a furnace, of a movable water-back to vary the capacity of the said fire box, and provisions for supplying water to the back to be heated, substantially as set forth.

2. The combination with a steam boiler furnace, of a movable water-back to reduce the capacity of the fire box, and connections between the said water-back and the boiler to admit of the free movement of the water-back and establish communication between it and the boiler, substantially as set forth.

3. The combination with a boiler furnace, of a water-back adapted to move over the grate bars and through an opening in the side of the boiler, and provided with a hollow rear extension to prevent the fire from getting in the rear of the water-back when the latter is advanced into the fire box, and connections between the boiler and the said hollow rear extension, substantially as described.

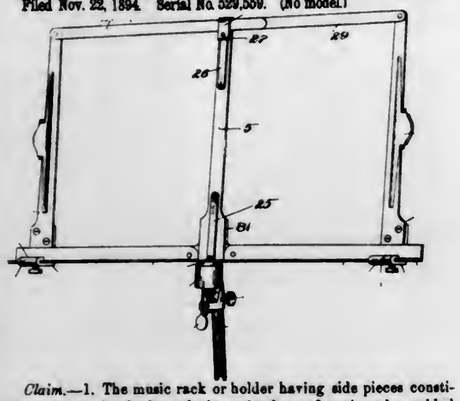
4. The combination with a boiler furnace, of a movable water-back to vary the capacity of the fire box, and swinging pipe connections connected by knuckle couplings, establishing communication between the water-back and the boiler, substantially as set forth.

5. In a boiler furnace, the combination of a water-back adapted to operate through an opening in the side of the boiler and travel over the grate bars to vary the capacity of the fire box, and having a rearwardly-projecting hollow extension, brackets having guide ways in their sides for the said rear extension to travel in, connections between the boiler and the water-back, and means for moving the water-back within the fire box, substantially as described for the purpose set forth.

6. In combination, a boiler furnace, a water-back having a rear hollow extension, brackets having guides in their inner sides for the said rear extension to work in, connections between the boiler and the water-back, a rack bar secured to the said rear extension, a transverse shaft journaled in the brackets, and provided with a pinion to mesh with the said rack bar, and a plate to close that portion of the opening through which the water-back operates immediately below the said rear extension, substantially as set forth.

7. The herein specified boiler, formed from a series of vertical sections placed side by side, a dome located above and water drums on each side of the sections, nipple connections between the water drums, the said dome and the individual sections, grate bars supported in lugs on the inner side of the upright portions of the sections, a water-back adapted to travel upon the said lugs and over the grate bars to reduce the capacity of the fire box, and having a rear hollow extension, connections between the water-back and the rear boiler section, and means for operating the water-back, as and for the purpose set forth.

544,842. MUSIC HOLDER AND TURNER. EDWIN G. BUTTERFIELD, Lowell, Mass., assignor of one-half to James F. Preston, same place. Filed Nov. 22, 1894. Serial No. 529,559. (No model.)



Claim.—1. The music rack or holder having side pieces constituting supports for the lateral edges of a sheet of music and provided with clips to engage with the said edges, and having between said side pieces a support on which it is rotatable, whereby an opened-out sheet of music having its edges held by said clips may have its reverse side presented to view, substantially as described.

2. The music rack or holder having side pieces provided with clips to engage with the edges of the opposite sides of a sheet of music, and having between said side pieces a support on which it is rotatable, whereby an opened-out sheet of music having its edges held by said clips may be reversed, a spring whereby to rotate the rack or holder, and a detent for holding it from rotation, substantially as described.

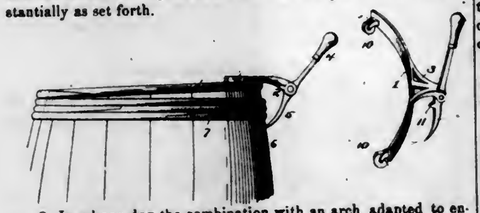
3. The music rack or holder having a supporting-piece base pieces provided with supports for the lower edge of a sheet of music, and pivoted to opposite sides of said supporting piece, side pieces removably applied to said base pieces and adjustable thereon and clips on said side pieces for engaging with the side edges of a sheet of music and holding it in a spread-out condition, substantially as described.

4. The music rack or holder having a supporting-piece, base pieces provided with supports for the lower edge of a sheet of music, and pivoted to opposite sides of said supporting piece, side pieces removably applied to said base pieces and adjustable thereon, clips on said side pieces for engaging with the side edges of a sheet of music and holding it in a spread-out condition, and a mounting between said side pieces on which said supporting piece is arranged to rotate, substantially as described.

544,843. COOPER'S HOOP-DOG. HENRY CAMPBELL and JOHN MARR, Baltimore, Md. Filed June 12, 1893. Serial No. 477,262. (No model.)

Claim.—1. In a hoop-dog the combination with the arch having means adapted to rest upon a barrel head, of a lever pivotally connected with said arch at the outer side thereof and adapted to engage the outer side of the barrel or equivalent fixed support for stretching and bringing the hoop into place, substantially as set forth.

2. In a hoop dog the combination with the arch 1 having feet provided with rollers, of the brackets 2 connected with said arch, and the lever 4 having the arm 5 and the shoulder or rest 11, substantially as set forth.

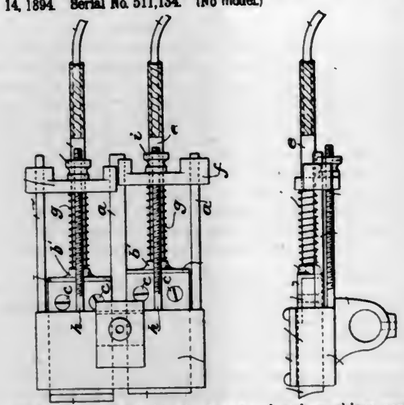


3. In a hoop dog the combination with an arch adapted to engage the hoop, a lever pivotally connected with said arch and situated at substantially right angles to the direction of movement thereof, and means for supporting the arch upon and above the barrel head to compel it to move in a direction parallel thereto, substantially as set forth.

4. In a hoop-dog the combination with the arch, and means for forcing the same outward, comprising a lever pivoted at the convex side of the arch and adapted to bear upon the side of the barrel, of the supports extending inwardly from and below the arch and having rollers 10, substantially as set forth.

5. In a hoop dog the combination with the arch provided with means for supporting it upon the barrel head, of the actuating lever connected with the arch and having the shoulder or rest 11, substantially as set forth.

544,844. CARBON-BRUSH HOLDER FOR DYNAMO-ELECTRIC MACHINES. ALEXANDER J. CHURCHWARD, Brooklyn, N. Y. Filed May 14, 1894. Serial No. 511,134. (No model.)



Claim.—1. A brush holder for dynamo-electric machines, comprising a frame in which the brushes are held, having guide-rods at the rear thereof, angular plates secured to each of the said brushes by screws passing therethrough, a conducting rod detachably secured to the said plate, a spring surrounding the same, a follower working upon the guide-rods, means for adjusting the brushes independently, and a conductor connected to the conducting rod, substantially as shown and described.

2. A brush holder for dynamo-electric machines comprising a frame adapted to receive a plurality of brushes therein, plates attached to each of the brushes, conducting rods secured to the said plates, springs surrounding the said conductors, means for adjusting the tension of each of the springs independently of the others, and a conductor connecting with the conductor rod, substantially as shown and described.

3. A brush holder for dynamo-electric machines, comprising a frame adapted to receive a plurality of brushes therein, plates attached to each of the brushes, conducting rods detachably secured to each of the plates, springs surrounding the conductor rods, guide-rods projecting from the holder, followers sliding thereon rearward of the springs, means for adjusting the tension of each spring independently of the others, whereby the brushes may have varying strengths of contact, and a conductor connecting with the conductor rod, substantially as shown and described.

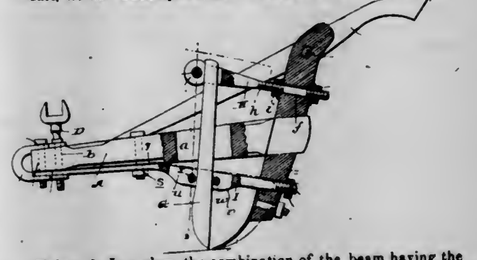
4. A brush holder for dynamo-electric machines, comprising a frame in which the brushes are held, angular plates secured to the said brushes by screws or bolts, conducting rods secured to the said plates in such manner as to be detachable therefrom, springs surrounding the rods, and a conductor connecting with the said conductor rod, substantially as shown and described.

5. A brush holder for dynamo-electric machines, comprising a frame divided by ribs for the reception of a plurality of brushes, guide-rods extending rearwardly therefrom, screw-threaded rods also extending rearwardly therefrom, plates attached to the brushes, conductor rods detachably secured thereto, springs surrounding the said conductor rods, followers thereon working on the guide-rods, nuts upon the screw-threaded rods to adjust the tension of the springs, and a conductor connecting with the conductor rods, substantially as shown and described.

6. A brush holder for dynamo-electric machines, comprising a frame divided by ribs for the reception of two brushes, guide-rods ranging rearwardly from the said frame, an angular plate secured to each of the brushes at the rear and having an apertured shoulder thereon, a rigid conducting rod secured in the said shoulder, having a flexible cable attached thereto, a follower through which the said conductor passes, working upon the guide-rods and on a screw-threaded rod, a spring surrounding the conductor, and a thumb-nut upon the screw-thresded rod adapted to adjust the follower, substantially as shown and described.

7. A brush holder for dynamo-electric machines, comprising a frame divided by ribs for the reception of two or more brushes, a plate upon the top of the said frame having springs thereon bearing upon the brushes, guide-rods ranging rearwardly from the said frame, an angular plate secured to each of the brushes and having an apertured screw-threaded shoulder at the rear thereof, a rigid conducting rod secured in the said aperture having a flexible cable attached thereto and passing through a follower, the said follower working upon the guide-rods and upon a screw-threaded rod secured to the frame, a spiral spring surrounding the conductor between the brush-plate and the follower, and a thumb-nut upon the screw-threaded rod adapted to adjust the said follower, substantially as shown and described.

544,845. PLOW. MARTIN M. COCHRAN and SAMUEL ADAMS, Toll Gate, W. Va. Filed Apr. 30, 1895. Serial No. 547,660. (No model.)



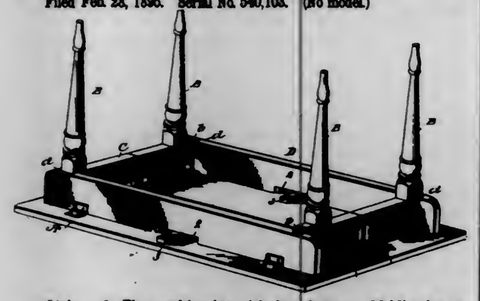
Claim.—1. In a plow, the combination of the beam having the longitudinal, vertical slot, the stock or standard connected to the beam and carrying a plow, a bar connected to and extending forwardly from the stock above the beam and having resilient clamping jaws at its forward end, a transverse bolt taking through the clamping jaws of the bar and provided with a nut, a bar connected to and extending forwardly from the stock below the beam and having resilient clamping jaws, a transverse bolt taking through said jaws and provided with a nut, and the root cutting blade arranged between the resilient clamping jaws of the upper and lower bars at the side of the bolts and extending through the longitudinal, vertical slot of the beam, substantially as specified.

2. The plow described comprising the beam having the longitudinal vertical slot, the stock or standard connected to the beam and carrying plow, a bar connected to and extending forwardly from the stock above the beam and having resilient clamping jaws and means for pressing said jaws inwardly, a clevis, the bar connected to and extending forwardly from the stock below the beam and having resilient clamping jaws at an intermediate point of its length and means for pressing said jaws inwardly a bolt taking through and connecting the forward end of said bar, the clevis and the beam, and the root cutting blade arranged between the clamping jaws of the upper and lower bars at the side of the means for pressing said jaws inwardly and extending through the longitudinal, vertical slot of the beam, substantially as specified.

3. In a plow, the combination of the beam having the longitudinal vertical slot, the stock or standard connected to the beam and carrying a plow, the bar H, extending through the stock and having threads at its rear end and at an intermediate point of its length and provided with nuts engaging said threads and resting on opposite sides of the stock; said bar also having resilient clamping jaws at its forward end, a transverse bolt taking through the resilient clamping jaws of the bar H, and provided with a nut, a bar connected to and extending forwardly from the stock below the beam and having resilient clamping jaws, a transverse bolt taking through said jaws and

provided with a nut, and the root cutting blade arranged between the clamping jaws of the upper and lower bars at the side of the transverse bolts and extending through the longitudinal vertical slot of the beam, substantially as specified.

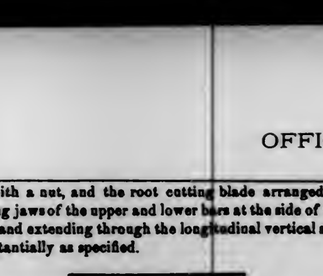
544,846. FOLDING TABLE. VAN CURTIS DODGE, Sacramento, Cal. Filed Feb. 28, 1895. Serial No. 540,103. (No model.)



Claim.—1. The combination with the table top, of folding leg sections, folding side rails notched in their inner sides to embrace the sides of the leg sections at their upper ends to prevent splitting or cracking, and braces pivoted in notches provided in the upper edges of the said side rails, and adapted to be turned crosswise thereof to brace them laterally in each direction, substantially as set forth.

2. The herein shown and described folding table comprising a table top divided longitudinally, leg sections having their rails centrally divided and hinged together, and themselves hinged to the table top so as to fold close upon the said table top, the said leg sections having lateral extensions, side rails hinged to the table top and having notches in their inner sides to receive and embrace the sides of the leg sections at their upper ends, and braces pivotally secured between their ends to notches provided in the upper edges of the said side rails, and adapted to be turned crosswise of the rails to brace them laterally in each direction, substantially as set forth.

544,847. APPARATUS FOR INSULATING ELECTRICAL CONDUCTORS. LOUIS W. DOWNES, Providence, R. I. Filed Apr. 6, 1895. Serial No. 544,815. (No model.)



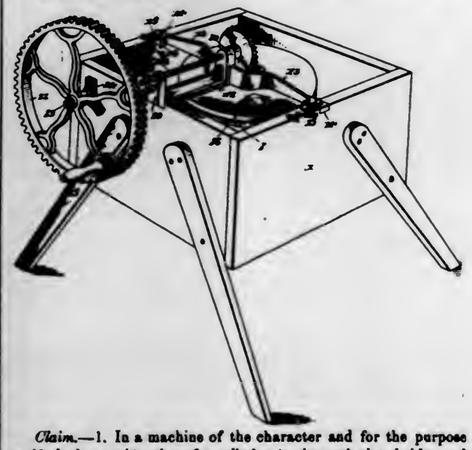
Claim.—1. In an apparatus for applying a fibrous covering to a central core, the combination of a rotatable disk or support perforated for the passage of said core, coiling fingers carried by said support for applying the covering strands to said core, a pair of pressure levers, separately fulcrumed on said disk to swing in opposite directions transversely to the axis of said core, and springs pressing the free ends of said levers toward each other to press the fibrous covering between them, substantially as described.

2. In an apparatus for applying a fibrous covering to a central core, the combination of a rotatable disk or support perforated for the passage of said core, coiling fingers carried by said support for applying the covering strands to said core, a pair of pressure levers, separately fulcrumed on said disk to swing in opposite directions transversely to the axis of said core, springs pressing the free ends of said levers toward each other to press the fibrous covering between them, and means for varying the pressure of said springs, substantially as described.

3. In an apparatus for applying a fibrous covering to a central core, the combination of a rotatable disk or support, perforated for the passage of said core, coiling fingers carried by said support for applying the covering strands to said core, a pair of pressure levers each fulcrumed on a rod perpendicular to said support, means for adjusting said levers lengthwise of said rods, and springs pressing the free ends of said levers toward each other to press the fibrous covering between them, substantially as described.

4. In an apparatus for the purpose specified the combination with means for wrapping or coiling the fiber upon the conductor, of spring actuated levers for compacting or flattening out the fiber, pressing upon the latter in diametrically opposite directions and means for preventing the movement of said levers past the axis of the conductor substantially as described.

544,848. CENTRIFUGAL BUTTER-WORKER. CHARLES O. GLASCOCK and JOHN W. GLASCOCK, Muncie, Ind. Filed July 10, 1894. Serial No. 517,130. (No model.)



Claim.—1. In a machine of the character and for the purpose specified, the combination of a cylinder, having reticulated sides, and provided at its upper edge with a series of spurs, a sack suspended within the cylinder, and having its upper portion extending over the upper edge of the cylinder, and engaged with the spurs thereof, a cover for closing the upper portion of the cylinder, and having an outer edge portion to rest upon the top edge of the cylinder, and bear upon the upper portion of the sack to retain the latter in working position, and having notches in its edges to correspond in number and position with the aforementioned spurs, whereby the cover and cylinder are held in locked relation, and driving mechanism applied to the said cover for operating and rotating the cylinder, substantially as set forth.

2. The herein specified centrifugal butter worker comprising a receptacle, a cylinder journaled therein, and having reticulated sides, and having spurs extending upwardly from its top edge, a sack suspended within the cylinder, and having its upper portion extending over the edge of the cylinder, and engaging with the spurs thereof, a cover for closing the upper end of the cylinder, and provided in its edges with notches to receive said spurs and hold the cover and cylinder in locked relation, said cover having an outer edge portion to extend over the upper end of the cylinder, a spider, or frame, removably supported upon the receptacle, and driving mechanism carried by the said spider or frame, and adapted to make connection with the cover for rotating it, and the cylinder, substantially as set forth.

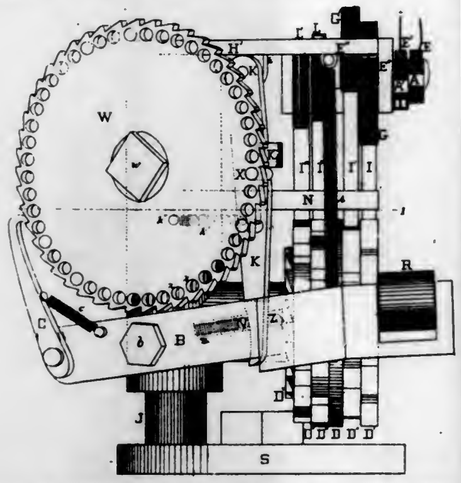
544,849. STRIPING ATTACHMENT FOR KNITTING-MACHINES. FRED R. GREENE, Amsterdam, N. Y. Filed Mar. 25, 1895. Serial No. 543,114. (No model.)

Claim.—1. In a striping device for knitting machines, two thread guides each provided with a feed wheel, two segments operating said feed wheels, reciprocating racks meshing with said segments, a cam wheel adapted to impart motion to said reciprocating racks, a pinion adapted to raise or lower each of said thread guides, reciprocating racks adapted to operate said pinions, said racks operated by said cam wheel, substantially as described and for the purpose set forth.

2. In a striping device for knitting machines, a standard mounted on a knitting frame, a pawl carrying lever, a notched wheel operated by said lever, a cam wheel rotated by said lever, a means for regulating the movement of said cam wheel actuated by said notched wheel, a series of vertical rods having their ends resting upon said cam wheel, racks at the upper ends of said rods, gears meshing with said racks, segments carrying said gears, pinions meshing with said segments, feed wheels operated by said pinions, a thread guide mounted at one side of each feed wheel, substantially as described and for the purpose set forth.

3. In a striping device for knitting machines, two or more thread guides centrally pivoted, a passageway in each of said guides for a thread or yarn, a wheel adapted to rotate in each of said guides in

contact with said thread or yarn, a means for actuating said guides, each of said thread guides adapted to be brought in contact with its respective feed wheel alternately, by the operation of which the yarn is held fast in one of said thread guides, and the end of the yarn is thus broken by the continued revolution of the knitting cylinder, while the yarn in the other thread guide is running freely into the fabric.



4. In a striping device for knitting machines, two or more thread guides centrally pivoted to the machine, racks, pinions and shafts operating said thread guides, a passageway in each of said thread guides under each feed wheel for the thread or yarn, a wheel operated within each thread guide in contact with said thread or yarn, said racks and pinions adapted to raise and lower said thread guides in such a manner as to bind or loosen the thread in connection with its respective wheel, each of said thread guides adapted to be brought in contact with its respective feed wheel alternately, by the operation of which the yarn is held fast in one of said thread guides, and the end of the yarn is thus broken by the continued revolution of the knitting cylinder, while the yarn in the other thread guide is running freely into the fabric.

544,850. CANAL OR DITCH DIGGING MACHINE. OTTO HOEFS, Alvin, Tex. Filed Apr. 22, 1895. Serial No. 546,724. (No model.)

Claim.—1. In a machine of the character described, the combination with a wheeled vehicle and a frame carried thereby, of a boring tool journaled in bearings rigidly attached to said frame, means operated by the motion of said wheels for rotating said tool, means for moving said frame vertically on said vehicle, and for tilting said frame, and means for slicing open the ground above said tool, substantially as described.

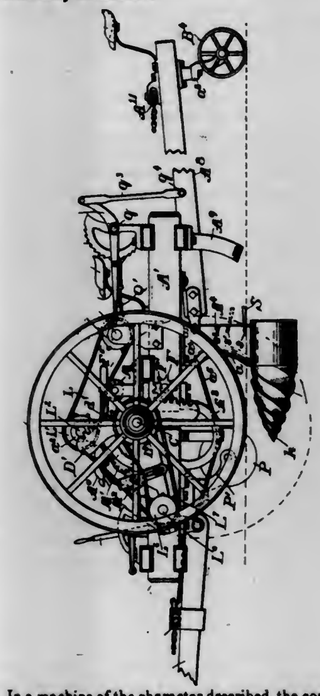
2. In a machine of the character described, the combination with a wheeled vehicle and a frame carried thereby, of a gimlet-headed boring tool journaled in bearings rigidly attached to said frame, means operated by the motion of said wheels for rotating said tool, means for moving said frame vertically on said vehicle, and for tilting said frame, and a compressing plate for smoothing the ground in rear of said tool, substantially as described.

3. In a machine of the character described, the combination with a wheeled vehicle and a frame carried thereby, of a cutting and boring device secured beneath said frame and comprising a metal frame or casting A^4 provided with a cutting edge a, and the boring tool journaled near the base of and projecting to the front of said casting, substantially as described.

4. In a machine of the character described, the combination with a wheeled vehicle and a frame carried thereby, of a cutting and boring device secured beneath said frame and comprising a metal frame or casting A^4 provided with a cutting edge a, and the boring tool journaled near the base of and projecting to the front of said casting, with gearing for revolving the said boring tool mounted on the said casting, substantially as described.

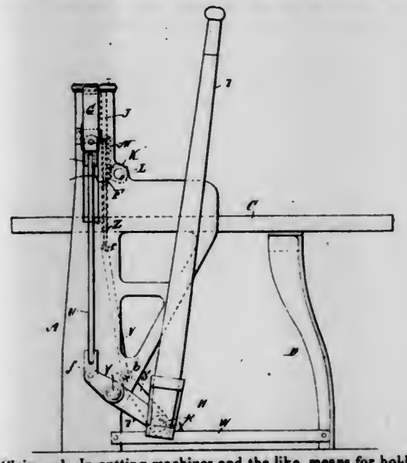
5. In a machine of the character described, the combination with a wheeled vehicle and a frame carried thereby, of a cutting and boring device secured beneath said frame and comprising a metal frame or casting A^4 provided with a cutting edge a, and the gimlet-headed boring tool H, journaled near the base of and projecting to the front of said casting, with guide grooves along the sides of said casting, with a detachable compressing plate adapted to fit in any one of said guide grooves and to project to the rear of said casting, substantially as described.

6. In a machine of the character described, the combination with a wheeled vehicle, and a frame carried thereby, of a cutting and boring device secured beneath said frame, and comprising a metal frame or casting A^4 provided with a cutting edge a, and the boring tool journaled near the base of and projecting to the front of said casting, with gearing for revolving the said boring tool mounted on said casting, substantially as described.



7. In a machine of the character described, the combination with a wheeled vehicle and a frame carried thereby, of a cutting and boring device secured beneath said frame and comprising a metal frame or casting A^4, provided with a cutting edge a, and the gimlet-headed boring tool H, journaled near the base of and projecting to the front of said casting, with guide grooves along the sides of said casting, with a detachable compressing plate adapted to fit in any one of said guide grooves and to project to the rear of said casting, substantially as described.

544,851. CUTTING-MACHINE. CHARLES M. HOLCOMB, Brooklyn, N. Y. Filed Apr. 19, 1895. Serial No. 546,300. (No model.)



Claim.—1. In cutting machines and the like, means for holding the work, and a clamp and a cutter both movable against the work,

in combination with a driving shaft for moving said clamp and cutter having a rotative and a swinging movement, an arm rigidly connected to and projecting from said shaft, a clamp-link connected at one end to said clamp, having a swinging movement at its other end and there connected to said arm and swinging therewith from the axis of said shaft, a cutter-link connected at one end to said cutter, swinging at its other end, a lever fulcrumed on a fixed axis relatively to the work, pivotally connected at one end to said cutter-link and swinging the latter about its fulcrum, and having a bearing sleeve at its other end surrounding and holding said shaft during the rotative movement thereof, and means for rotating said shaft, said shaft in rotating first swinging the end of said arm toward the axis of said lever, and through said clamp-link depressing said clamp until the latter is home on the work, said arm then arrested and swinging on its end as a fulcrum movably supported by said clamp-link, and during the further movement of said shaft swinging the latter on such fulcrum upwardly around the fulcrum of said lever, thereby tilting the latter and through said cutter-link depressing said cutter, substantially as and for the purpose set forth.

2. In cutters and the like, a work holder, frame, and clamp and cutter movable against the work, in combination with a clamp-link depending from the clamp, a shaft having a rotative and swinging movement, an arm rigidly connected to said shaft swinging about its axis with its rotative movement, and having a pivotal pin connected to said clamp-link and moving the latter with the movements of the arm, and swinging from an upward position downwardly until the clamp is home on the work, a lever fulcrumed to the frame on a fixed axis, having a pivotal pin at one end and a bearing sleeve at its other end, a cutter-link connected to the cutter at one end and pivotally connected to the pivotal pin of said lever at its other end, depressed by and swinging about the fulcrum of said lever, said shaft carried by and rotating in the bearing sleeve of said lever, and means for moving said shaft, said shaft when rotated swinging downwardly said arm until the clamp is home on the work, said pivotal pin on said arm then arrested and supported by said clamp-link from said clamp and serving as the fulcrum for said arm and lever during the further movement of said shaft, and said shaft during its further movement rising on said pivotal pin of said arm, swinging about the fulcrum of said lever, thereby tilting the latter and drawing down said cutter-link, substantially as and for the purpose set forth.

3. In cutting machines and the like, a table C, frame A, clamp and cutter, in combination with a shaft R having a rotary and swinging movement, an arm S swinging with said shaft and having a pivotal pin *b*, a link V connected to said clamp and connected to said arm by said pin, a lever T fulcrumed to the frame and having a bearing sleeve X at one end carrying said shaft, a link U connected to the other end of said lever and to said cutter, and means for rotating and swinging said shaft, said shaft rotating in said sleeve and then swinging said arm downwardly with its pivotal pin toward the fulcrum of said lever, and said clamp and link sustaining said arm when the clamp is on the work, and said pin *b* during the further movement of said shaft constituting a movable fulcrum for the arm S on which the shaft swings upwardly, and said shaft during its further movement swinging about the axis of said lever and guided by the sleeve thereof, substantially as and for the purpose set forth.

4. In cutting machines and the like, a table C, in combination with a frame A, clamp F, cutter G, link U connected to the cutter, link V connected to the clamp, lever T fulcrumed to the frame, having a bearing sleeve X at one end and connected to the link U at its other end, shaft R rotating in said sleeve, arm S fixed to said shaft and having pin *b* connected to said link V, and handle I connected to said shaft for moving it, said shaft when moved depressing said arm and swinging said pin *b* toward the fulcrum of said lever until the clamp is home on the work, and said arm then riding on said pin as a fulcrum and swinging said shaft upwardly around the fulcrum of said lever and tilting the latter, substantially as and for the purpose set forth.

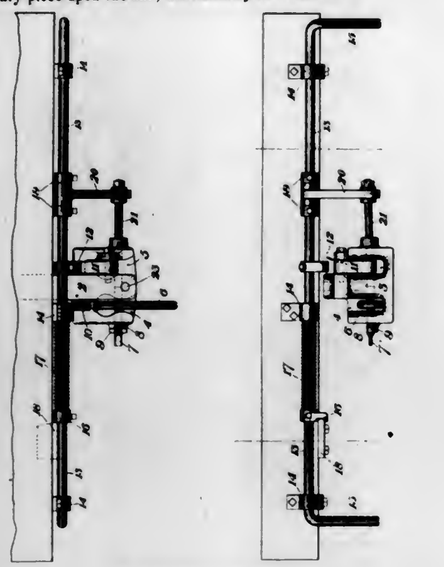
544,852. CAR-COUPLING. JOHN JARRETT, Pittsburg, JOHN R. DAVIES, Duquesne, and JOHN EDWARDS, Homestead, Pa. Filed Jan. 14, 1895. Serial No. 534,746. (No model.)

Claim.—1. A coupler-head having a locking projection, a recess having a lever projecting thereinto, a rod having a pin arranged to enter the recess, and a projection upon the rod arranged to be acted upon by the lever; substantially as described.

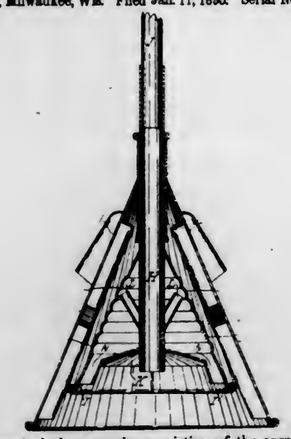
2. A coupler-head having a locking projection, a recess having a lever projecting thereinto, a rod having a pin arranged to enter the recess, a projection upon the rod arranged to be acted upon by the lever, and a spring held between a projection upon the rod and a stationary piece upon the car; substantially as described.

3. A coupler-head having two recesses, a link held in one of said recesses, a sliding rod having a pin arranged to enter the other recess, and a lever projecting into the recess and arranged to release the sliding rod; substantially as described.

4. A coupler-head having two recesses, a link held in one recess, a sliding rod having a pin arranged to enter the other recess, an arm upon the rod arranged to be engaged by a lever which projects into the second recess, and a catch upon the rod arranged to engage a stationary piece upon the car; substantially as described.



544,853. CLOTHES-POUNDER. GUSTAV KARASS and CHARLES KARASS, Milwaukee, Wis. Filed Jan. 11, 1895. Serial No. 534,526. (No model.)

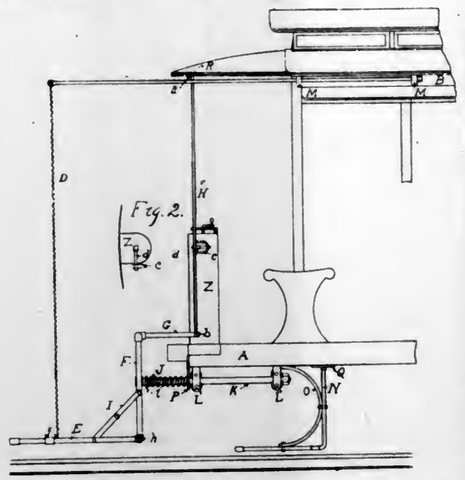


Claim.—A clothes pounder consisting of the corrugated conical shell I provided with the apertures M, the base K, concave on its under surface and having the ducts N leading to the interior of the shell, the tubular handle receiving stem and branches L adapted to convey the water from the base and permit its discharge through said apertures M, and an outer casing or shell covering said apertures, M, and adapted to turn the water escaping therethrough downward into the clothes, substantially as described.

544,854. CAR-FENDER. JOHN J. KIRNESS, Baltimore, Md. Filed Apr. 20, 1895. Serial No. 546,578. (No model.)

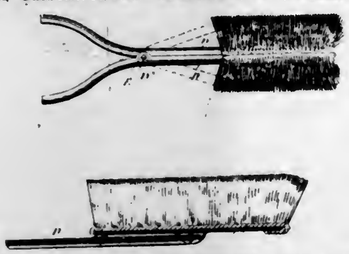
Claim.—1. In a fender for street cars, the combination of an upright back, F; a horizontal platform, E, adapted to be tilted up parallel therewith; jointed braces, I, connecting said back and platform; sliding rods, C, extending longitudinally at the top of the car; and a chain or cord, D, connecting between said sliding rods and the horizontal platform to assist in supporting the latter.

2. In a fender for street cars, the combination of an upright back, F; a horizontal platform, E, adapted to be tilted up parallel therewith; jointed braces, I, connecting said back and platform; a pendent hanger, P, and roller-brackets on the bottom of the car; horizontal rods, K, connected with said upright back and passing through the said pendent hanger and between the rollers on the brackets; and springs around the rods between the upright back and hanger, as and for the purpose described.



3. In a fender for street cars, the combination of a car; an electric controller thereon having a handle arm, *d*; a fender projecting in front of the car; rearwardly-moving horizontal cushion-rods, K, connected with the fender; springs, J, acting on the rods to keep said rods and fender normally projected forward; a vertical rod, H, above the car platform having its upper end pivoted; a rod, G, connecting between said vertical rod and the fender; and a loop on the rod connecting between said vertical rod and the handle-arm of the controller, whereby the rearward movement of the fender when it strikes an object will cause the reversal of the current, and then the forward projection of the fender by the springs will shut off the current.

544,855. TUMBLER-WASHER. CHARLES KLAUBERG, New Haven, Conn. Filed Mar. 14, 1895. Serial No. 541,748. (No model.)



Claim.—In a device for cleaning tumblers, chimneys and similar articles, the combination with two handles pivoted together, and each constructed with an arm, of two brush-carriers pivotally connected respectively with the said arms, and having their ends notched, and brushes constructed at their ends with retaining fingers which enter the notches in the ends of the carriers for removably connecting the brushes with the same, substantially as described.

544,856. BELT ATTACHMENT. ELIAS B. KOOPMAN, Brooklyn, N. Y. Filed Apr. 17, 1895. Serial No. 546,010. (No model.)



Claim.—1. The herein described belt attachment, consisting of a guard plate slotted longitudinally, and a tongue pivoted in said slot, said guard plate and tongue being arranged to permit the ribbon to pass through said slot and between the edges of said guard plate and tongue, on both sides of said tongue, substantially as described.

2. The herein described end piece of a belt clasp, consisting of a guard plate slotted longitudinally, and a tongue pivoted in such slot, said guard plate and tongue being arranged to permit the ribbon to pass through said slot and between the edges of said guard plate and tongue, on both sides of said tongue, and said guard plate being provided with means for attaching the same to the other end of the belt, substantially as described.

3. The herein described end piece of a belt clasp, consisting of a guard plate slotted longitudinally, and having a tongue pivoted through its central axis in the center of said slot, and revoluble therein, said guard plate being provided with means for attaching the same to the other end of the belt, substantially as described.

4. The herein described end piece of a belt clasp, consisting of a guard plate slotted longitudinally, and a tongue having roughened or serrated edges, and pivoted by its central axis in the center of said slot, said guard plate being provided with means for attaching the same to the other end of the belt, substantially as described.

544,857. FIREPLACE-THROAT. JOHN LALLY, Waltham, Mass. Filed Nov. 15, 1894. Serial No. 528,862. (No model.)

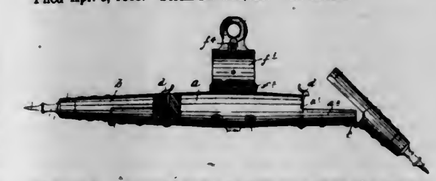


Claim.—1. The improved fire-place throat comprising the casing having an outlet at its top and an outwardly projecting horizontal flange surrounding its base, the end and rear portions of said flange being formed to be supported by the back and ends of a fire-place while the outwardly projecting front portion of said flange constitutes a support for the masonry above the fire-place; a damper pivoted to the casing in the outlet thereof; and a damper-operating rod or handle located below and projecting forward from the front portion of the flange.

2. The improved fire-place throat comprising the casing having an outlet at its top, an outwardly projecting horizontal flange surrounding its base, an upwardly projecting brick-retaining lip on the front portion of said flange, a damper pivoted in the outlet of the casing, and a damper-operating rod or handle located below and projecting forward from the front portion of said flange.

3. The improved fire-place throat comprising the outwardly projecting base or flange *a'* the rear end portions of which are arranged to be supported by the back and ends of a fire-place while its front portion is formed to support the masonry above the fire-place, the throat casing extending upwardly from the said flange, said throat and flange being formed as a single piece or casting, the damper *b* hung in the opening of the casing, the longitudinally movable rotatable rod *c* located below the flange *a'* and mounted in bearings projecting downwardly from said flange, the arm *c'* on the inner end of said rod, the connecting rod *d'* connecting said arm with the damper, and the fixed projections on the inner surface of the casing adapted to arrest said arm, the arm being adapted to be engaged with and disengaged from said projections by endwise movements of the rod, as set forth.

544,858. GAMBREL. CHARLES A. LARSON, Stillwater, Minn. Filed Apr. 6, 1895. Serial No. 544,725. (No model.)



Claim.—1. A gambrel made up of three sections, the outer or end members of which are pivotally united to the central section by connections constructed to permit the outer sections to be turned downward, with respect to the central section, while the central section is held stationary, and locking devices for locking the outer sections to the central section, when in line therewith, substantially as and for the purposes set forth.

2. A gambrel made up of two or more sections which unite with a lap joint and are pivotally connected by a hinge which cooperates with the lap joint to hold and brace the said sections rigidly together, when the gambrel is right side up, and which permits one section to turn or buckle on the other when the gambrel is turned bottom side up, substantially as described.

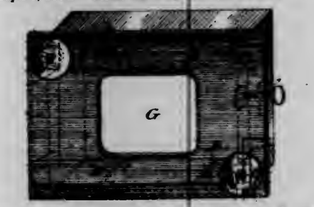
3. The combination with a gambrel, of a hanger for the same constructed to permit the gambrel to make a half turn or roll-over for turning the same bottom side up and a detent or locking device for locking the gambrel to the hanger top side up, substantially as described.

4. The combination with a three section gambrel, the center sections of which are connected to the central section by lap joints and hinges which render the sections rigid with each other when the gambrel is right side up and permit the same to buckle when the gambrel is turned bottom side up, of a hanger applied to the central section of said gambrel and constructed to permit the gambrel to make a half turn and a detent or catch for locking the gambrel to the hanger right side up, substantially as described.

5. The combination with a gambrel, of a roll over or sectional hinged hanger applied thereto and provided with a locking device, for securing the hanger sections in their closed or gambrel embracing positions, and releasing the same to permit the gambrel to make a half turn and effect a drop, substantially as described.

6. The combination with the gambrel, composed of the central section *a* and the end sections *b* connected thereto by the lap joints and strap hinges *c*, as described, of the hanger applied to the central section thereof and consisting of the half clasp *f*, fixed to the gambrel, the half clasp *f'* hinged to the section *f*, the spring-catch f^4 on the section *f'* engageable with the lug f^3 on the section *f*, and the eye-lug f^3 fixed to the section *f'*, all arranged and operating substantially as and for the purpose set forth.

544,859. VIGNETTER. FRANK MACHETTE, Philadelphia, Pa. Filed Sept. 6, 1894. Serial No. 522,347. (No model.)



Claim.—1. In a vignetting apparatus, the open frame A with the adjustable cover F having the central opening G therein, the vignetting slip N of opaque material and with the openings N' therein, smaller than said opening G, and the translucent piece P secured to said slip and covering said opening N', said parts being combined substantially as described.

2. In a vignetting apparatus, the open frame A having the cover F with the opening G therein, the vignetting slip N with the opening N' therein, the translucent piece P secured to said slip and covering the opening therein, the sliding plate R movable in ways on said piece F and having an opening Q', and the vignetting plate S having the opening S' therein, said parts being combined substantially as described.

3. In a vignetting apparatus, the open frame A with the cover F, the sliding plate R movable in ways Q on said piece and provided with the openings Q' therein and the vignetting plate S having the opening S' therein, said parts being combined substantially as described.

4. The frame A having grooves on the inner sides of its walls, in combination with the printing frame R having one limb of each of the elbows C connected therewith, the other limbs being movable in said grooves, and the screw E adjustable in said frame A and bearing against said frame A, substantially as described.

5. A vignetting apparatus consisting of the open frame A having the adjustable cover F with the central opening G therein, the sliding plate R with the opening O' therein, the vignetting plate S with an opening therein, and the translucent piece T on the under side of said cover around the opening therein, said parts being combined substantially as described.

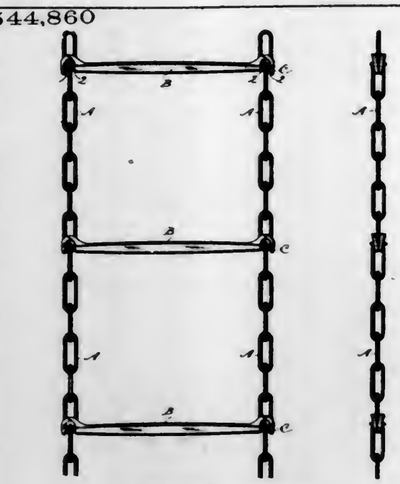
6. The open frame A, the covering piece F with the central opening G therein, the translucent piece P, secured to said covering piece around said opening G, the vignetting plate S having the openings S' therein and being seated in the opening G of the piece F, and means for retaining said plate S in said opening G, substantially as described.

7. In a vignetting apparatus the covering F having the openings H therein, the collars L resting on said cover over the said openings, the frame A with the threaded plates K secured thereto and the screws J entering said plates and having their shanks passed through said collars and provided with shoulders bearing against said collars, said parts being combined substantially as described.

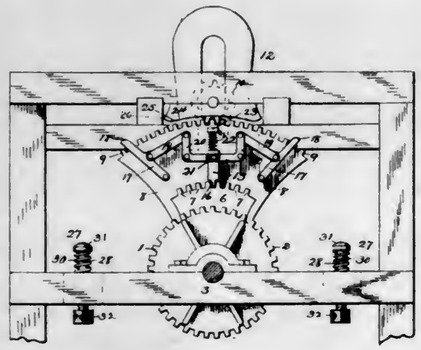
544,860. CHAIN LADDER. JOHN MAW, Hamilton, Canada. Filed Apr. 25, 1895. Serial No. 547,108. (No model.)

Claim.—In combination, a chain ladder, composed of side chains, and metallic rounds of a malleable nature, having end jaws to close against and fasten to the face sides of a chain link, and resting upon the upper turn or bend of the link, substantially as described.

544,860



544,861. APPLYING POWER AT A DISTANCE BY MEANS OF ELECTRICITY. JAMES F. MCLAUGHLIN, Philadelphia, Pa. Filed Oct. 8, 1891. Serial No. 408,145. (No model.)



Claim.—1. The combination with sets of machinery driven by a suitable power and a power controlling device one for each set, for applying and for cutting off the motive power from said machinery, of a number of reversible electric motors, one for each power controlling device, for actuating the same in two directions, a split battery for charging the motors, and a reversing switch for each motor, substantially as described.

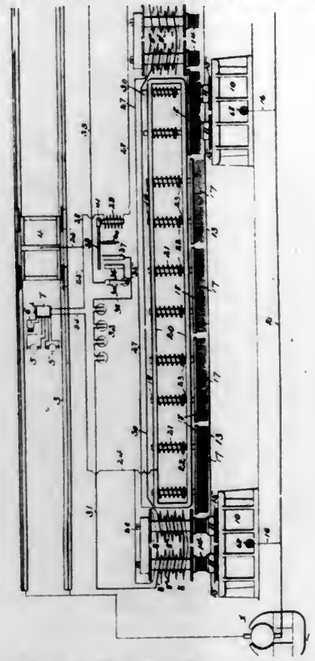
2. The combination of a mechanical power controlling device and an electric motor for actuating the same; with a coupling between the motor and power controlling device, automatically connecting and disconnecting the same, and timed to engage the latter after the former has started without load, substantially as described.

3. In a system for controlling the application of power from a distance, the combination of a mechanical power controlling device and a reversible electric motor for actuating said device in two directions, a coupling between the motor and the power controlling device, and a system of levers timed to uncouple the motor from the said devices after the latter has been actuated in either direction, substantially as described.

4. In a system for controlling the application of power from a distance, the combination with a clutch, of a reversible electric motor for actuating the said clutch in two directions, a coupling between the motor and clutch, and a system of levers timed to uncouple the motor and clutch after the latter has been actuated in either direction, substantially as described.

5. The combination with a clutch, of an electric motor for actuating the same, a toothed sector driven by the motor a system of levers carried by said sector, a coupling between the sector and clutch, actuated by the system of levers, and a curved block in the path of the lever system, for operating them to disconnect the sector and clutch after the clutch has been actuated in either direction, substantially as described.

544,862. ELECTRIC RAILWAY. JAMES F. MCLAUGHLIN, Philadelphia, Pa. Filed Apr. 17, 1895. Serial No. 546,094. (No model.)



Claim.—1. In an electric railway the combination with a main or supply conductor, exposed contact blocks arranged at intervals along the road bed, magnetically operated switches for coupling the main conductor to the contact blocks, traveling electro magnets for operating the switches, and a collector mounted independent of said magnets, bridging the contact blocks the circuit connections of which are controlled by two successive switches, and consisting of a rigid metallic frame carrying a series of independently spring actuated yielding contact brushes, substantially as described.

2. In an electric railway, the combination with a supply conductor, exposed contacts on the road bed, and magnetically operated switches for coupling the exposed contacts to the supply conductor, of traveling electro magnets each having two windings, one included in a branch of the line circuit and the other in a local circuit, and a switch controlled by the line circuit branch for closing the local circuit when the line circuit through the magnets is broken, substantially as described.

3. In an electric railway, having underground switches adapted to be operated by magnetic attraction from a motor car, switch operating magnets, on the motor-car, having two windings, one included in a branch of the main or line circuit and the other in a local circuit on the car, a switch for closing the local circuit controlled by the line circuit branch, and a signal controlled by the switch on closing the local circuit, substantially as described.

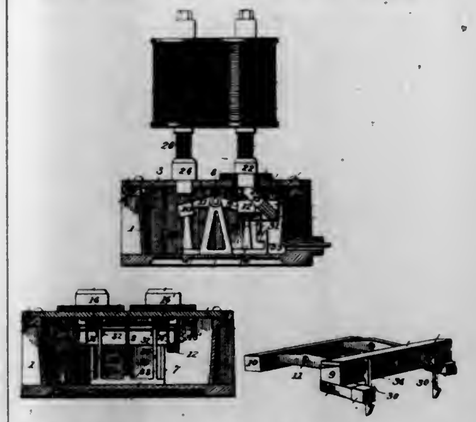
4. In an electric railway having underground switches adapted to be operated by magnetic attraction from a motor-car, switch operating magnets, on the motor car, having two windings, one included in a branch of the line circuit and the other in a local circuit upon the car, a switch for closing the local circuit controlled by the line circuit branch and a bell controlled by the switch, substantially as described.

5. In an electric railway, traveling electro-magnets, for operating circuit closing and opening devices in the road bed the coils of the magnets being charged by a branch of the line current, a normally open local circuit including other coils on the magnets, with a local source of current for the same and a switch for closing the local circuit controlled by the line circuit branch, substantially as described.

6. In an electric railway, the combination of a series of contact blocks spaced along the road, with a collector comprising a continuous and rigid metallic frame carried on the car and a series of independently spring controlled yielding brushes mounted in said frame, in electrical connection therewith, substantially as described.

7. A current collector for an electric railway, consisting of an elongated rigid metallic frame mounted on the car, a series of independently spring actuated guide rods mounted in the frame, and metallic wire brushes secured to the guide rods, substantially as described

544,863. ELECTRIC RAILWAY. JAMES F. MCLAUGHLIN, Philadelphia, Pa. Filed May 3, 1895. Serial No. 548,015. (No model.)



Claim.—1. In an electric railway, the combination with a main or supply conductor and feeding conductors or contacts, of switches for coupling the main and feeding conductors, each switch being provided with a rocking switch lever, extending transversely to the line of travel and having an armature on each side of its pivot and two traveling electro-magnets, one acting on one armature and the other on the other armature of the switch levers, substantially as described.

2. In an electric railway, the combination with a main or supply conductor and feeding conductors or contacts, of switches for coupling the main and feeding conductors, each switch being provided with a balanced switch lever extending transversely to the line of travel and having an armature on each side of its pivot, and two traveling electro-magnets, one acting on one armature and the other on the other armature of the switch levers, substantially as described.

3. In an electric railway, the combination with a main or supply conductor and feeding conductors or contacts, of switches for coupling the supply and feeding conductors, each switch being provided with a rocking switch lever and a gravity latch for locking the switch in the open position and traveling electro-magnets operating the switch to close and open the circuit and also operating the latch to unlock the switch, substantially as described.

4. In an electric railway, the combination with a main or supply conductor and feeding conductors or contacts, of switches for coupling the supply and feeding conductors, each switch being provided with a latch for locking it in the open position and traveling electro-magnets unlocking and operating the switch, substantially as described.

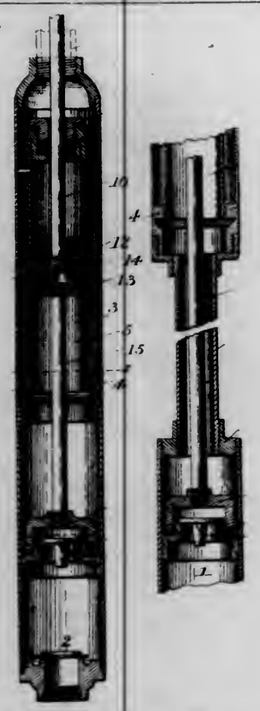
5. In an electric railway, the combination with a main or supply conductor and feeding conductors or contacts, of switches for coupling the supply and feeding conductors, each switch being provided with a switch lever having an armature on each side of its pivot and a lock composed of a latch carried by the switch lever with a supplemental armature covering one of the armatures of the switch lever and fixed catches in the path of the latch, and traveling electro-magnets operating the latch and switch lever by magnetic attraction, substantially as described.

544,864. DOUBLE-ACTING FORCE-PUMP. OLOF P. OLSON, Oshkosh, Wis. Filed Feb. 2, 1895. Serial No. 537,095. (No model.)

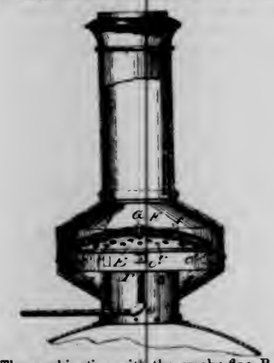
Claim.—1. In a double-acting pump the combination with the lower cylinder and the upper cylinder removably connected therewith having screw-threaded lugs at its lower end, of the cylinder located within and concentric with said upper cylinder, and screw-threaded at its lower end to engage with said lugs, the piston rod and piston located and working in said inner cylinder, the piston rod connected therewith, the piston secured thereto having an upwardly opening valve and the valve in the lower end of the lower cylinder, substantially as described.

2. In a double acting pump, the combination with the lower cylinder provided with an upwardly opening valve, and the upper cylinder rearwardly connected therewith having screw-threaded lugs near its lower end, of the cylinder located within said upper cylinder with its lower end engaging with said lugs, the air pipe extending through said upper inner and outer cylinders, the stuffing box at the upper end of said cylinder, the piston rod, the piston connected therewith working in said inner cylinder, and the piston-rod connected with said piston, having an upwardly opening valve, and working within the lower cylinder, substantially as described.

544,864.



544,865. SPARK-ARRESTER. ANDREW J. PETERSON, Stroudsburg, S. D. Filed Jan. 24, 1895. Serial No. 536,091. (No model.)

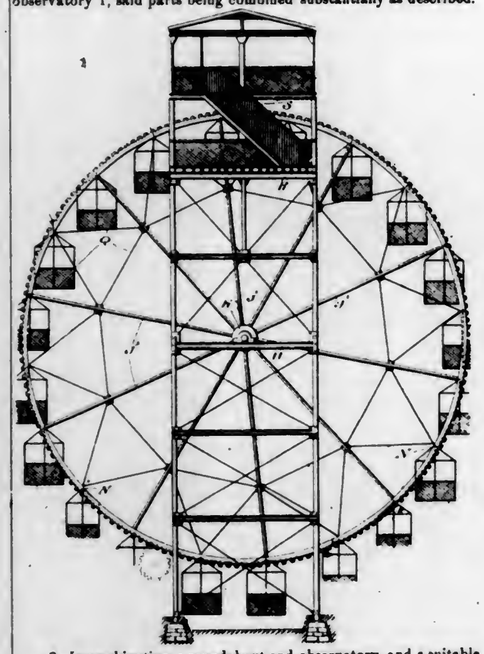


Claim.—The combination with the smoke-flue B *b* D and intersecting cinder-chamber C, of the exhaust-steam pipe I *i* I'; stationary concave-convex apertured plate E located within the circular cinder-box so as to leave an annular open space, C', between it and the inside wall of said box; and the centrally pivoted, rotatable, apertured concavo-convex plate F, provided with the hinged handle H *h*; substantially as and for the purpose shown and set forth

544,866. ROUNDABOUT AND OBSERVATORY. EARNEST SCHNITZLER, Asbury Park, N. J. Filed Apr. 26, 1895. Serial No. 547,236. (No model.)

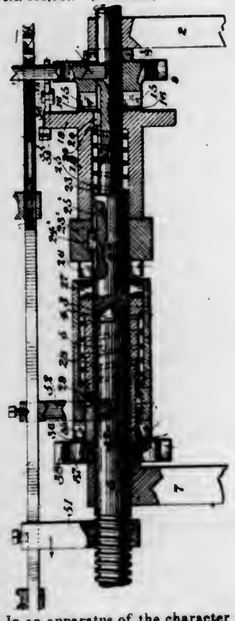
Claim.—1. A roundabout consisting of a ring or rings having cars supported therefrom, one of said rings being provided with teeth, a pinion adapted to engage said teeth, a platform whose floor is adapted to be in proximity to each car as it attains an elevated position, an observatory, and a staircase leading from the latter to said platform, substantially as described.

2. The frames A, B, C, and D, suitably braced and supported, the beams H adapted to support the bearings for the wheel or roundabout K', the teeth M on said wheel, a pinion M' adapted to engage said teeth, the shafts N having the boxes P adapted to receive the same, the platform R located substantially as shown, a staircase S and the observatory T, said parts being combined substantially as described.



3. In combination, a roundabout and observatory, and a suitable bridge intermediate the same, substantially as described.

544,867. OPERATING THROTTLE-VALVES OF ENGINES. CHAS. H. SILVERWOOD and JAMES FRASER, Philadelphia, Pa. Filed May 21, 1895. Serial No. 550,043. (No model.)



Claim.—1. In an apparatus of the character described, a main shaft, a secondary shaft suitably supported, a disk mounted on said main shaft and having projections thereon, an electric circuit having a magnet therein, an armature with a rod adapted to engage said projections, a valve having its stem actuated by a disk on said secondary shaft, and a clutch mechanism connected with said shafts for causing the same to rotate together on the stoppage of the rotation of the said disk on the main shaft, said parts being combined substantially as described.

2. In an apparatus of the character described, a main shaft having the disk 8, loosely mounted thereon and having a clutch connection therewith, an electric circuit having a magnet, an armature with a rod engaging a projection on said disk, a secondary shaft, a valve connected with a disk on said secondary shaft so as to be operated by the rotation of said shaft, clutch mechanism connected with said main and secondary shafts for uniting the same, on the stoppage of the rotation of the said disk on the main shaft, a sliding bar having a pawl connected therewith, and the collar 37 freely mounted on said secondary shaft and provided with the lugs 38 said collar having a clutch connection with said secondary shaft, said parts being combined substantially as described.

3. In an apparatus of the character described, a main rotatable shaft with a disk loosely mounted thereon and having a clutch connection so as to rotate therewith, mechanism for stopping the rotation of said disk independent of said shaft, a secondary shaft, a valve having mechanism connecting it with said secondary shaft so as to be operated by the rotation of the said shaft, and clutch mechanism on said shafts for connecting the same on the stoppage of the rotation of the said disk on the main shaft, said parts being combined substantially as described.

4. In a device of the character described, a throttle valve, a main shaft 1, having the enlarged portion 22 a counter sunk end, a shaft 5 engaging the same, having the threaded portion 6, means connected with said shaft for actuating the throttle valve, and means for stopping the rotation of said shaft 5 when said throttle valve is closed, substantially as described.

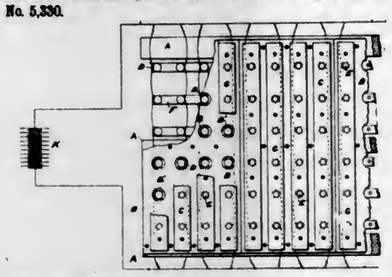
5. In a device of the character described, the main shaft 1 having the enlarged portion 22, the disk 8 flanged sleeve 18, and collar 23× mounted upon said shaft, a spring 25 common to said shaft and sleeve, means for causing the latter and the disk to rotate in unison, the shaft 5 having the under sleeve 28 attached thereto, means for causing said sleeve and collar to rotate in unison, an outer sleeve mounted upon said under sleeve, a spring common to both, means for causing said collar and inner sleeve to rotate in unison, a disk having lugs thereon, connections from said shaft 5 adapted to operate a throttle valve, in combination with means for throwing the device into or out of operation, substantially as described.

6. In a device of the character described, a throttle valve, the shafts 1 and 5, the disks 37 and 8 mounted thereon, clutch mechanism intermediate said disks, means for stopping the rotation of said disks, in combination with means for allowing one of said disks to rotate when said valve has been operated, substantially as described.

7. In a device of the character described, a throttle valve, the shafts 1 and 5, the disks 8 and 37 mounted thereon, electrically controlled devices for stopping the rotation of one of said disks, clutch mechanism intermediate the latter, a spring pressed bell crank for throwing said devices out of operation, in combination with means for preventing injury to said valve, substantially as described.

8. In a device of the character described, a throttle valve, a sprocket wheel mounted on the stem thereof, another internally threaded sprocket wheel mounted upon a threaded cylinder adjacent the former, a rotatable shaft having its bearing within said cylinder, a disk mounted on said shaft, and having pins engaging said sprocket wheel, in combination with clutch mechanism, a portion of which is mounted upon said shaft, electrically controlled devices for throwing said clutch mechanism into operation, and means for throwing said mechanism out of operation when said valve has been actuated, substantially as described.

544,868. APPARATUS FOR TRAINING HORSES OR OTHER ANIMALS. ALBERT H. SIMPSON, Leeds, England. Filed Apr. 11, 1895. Serial No. 545,301. (No model.) Patented in England Mar. 13, 1895, No. 5,330.

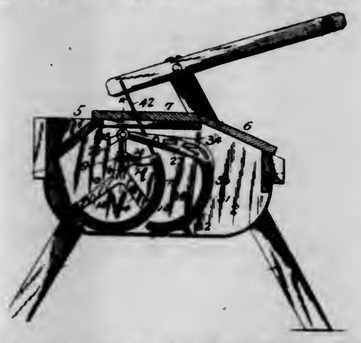


Claim.—1. An apparatus for training horses, comprising a metallic track and means for electrically exciting the same, substantially as and for the purposes set forth.

2. In an apparatus for training horses, the combination with the plates which are provided with magnetizing coils and which plates form a track, of means for electrically exciting the same, substantially as and for the purposes set forth.

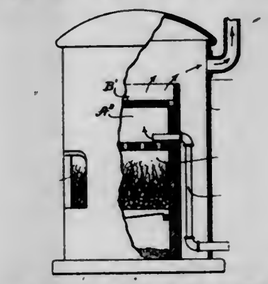
3. In an apparatus for training horses, the plates forming a track and carrying magnetizing coils which are connected in such a manner as to form alternately north and south magnetic poles, in combination with means for electrically exciting the track, substantially as and for the purposes set forth.

544,869. WASHING-MACHINE. FREDERICK STROBEL, Marion, Ohio. Filed Jan. 16, 1895. Serial No. 535,143. (No model.)



Claim.—In a washing machine, the combination with the suds-box, of the oscillating rub-board journaled therein comprising the segment plates and transverse rub-boards, the transverse bar secured to said plates, the clutch-levers journaled on said bar, the lower ends of which abut against lugs in said segment plates, the movable rub-boards pivotally connected with the upper ends of said levers, the levers journaled on said bar and having a clutch, the coiled springs connected at one end with said bar and the other end bearing against said last-mentioned levers, and means for actuating the rub boards, substantially as described.

544,870. COMBUSTION DEVICE FOR STOVES OR OTHER HEATERS. SAMUEL R. THOMPSON, Winchester, Mass., assignor to the Thompson Fuel Saving and Smoke Consuming Company, Berwick, Me. Filed Aug. 24, 1894. Serial No. 521,182. (No model.)

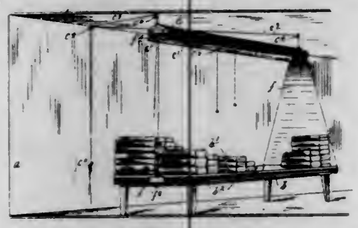


Claim.—A stove or furnace having above the fire-box a supplementary combustion chamber inclosed by fire-brick, asbestos or similar material and provided with a removable notched or perforated cover or top wall and a perforated base or bottom wall, the perforations in the base being smaller than those in the cover, and means for admitting air to said chamber, the products of combustion being made to pass through said chamber whereby the escaping heat will be retained and desirable downward radiation of heat will be secured in the fire-box, substantially as described.

544,871. PERMANENT SALVAGE DEVICE FOR PROTECTING GOODS ON DISPLAY-COUNTERS, &c. EDWARD H. TURNER, Minneapolis, Minn., assignor to John S. Kearney, same place. Filed June 24, 1895. Serial No. 553,816. (No model.)

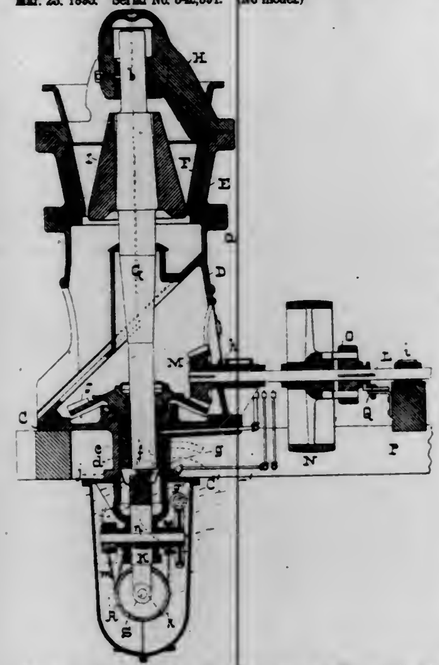
Claim.—1. The combination, for preventing water damage to goods on counters, shelving, &c., in case of fire, comprising waterproof flexible covers and permanent supports therefor normally holding said covers out of the way and adapted to sustain said covers over said goods in a water shedding position, when extended, substantially as described.

2. The combination for preventing water damage to goods, on counters and shelving in case of fire, comprising a support elevated above the counter or shelving and water-proof flexible covers, normally upheld by said support, out of the way, but extensible therefrom to cover and form a water shed over the goods, substantially as described.



3. The combination for preventing water damage to goods, on counters, shelving &c., of a support elevated above the counter or shelving and water-proof flexible covers mounted on rollers journaled in said elevated support, substantially as and for the purpose set forth.

544,872. CRUSHING-MILL. JOHN WALKER, Chicago, Ill. Filed Mar. 23, 1895. Serial No. 542,891. (No model.)



Claim.—1. In a crushing mill, the gyratory spindle carrying the crusher head, combined with a supporting shaft for the spindle, sheave mechanism attached to the lower end of the supporting shaft, a chain to sustain the sheave mechanism, and devices to wind and unwind the said chain so as to practically shorten and lengthen it and thereby raise and lower the crusher head, substantially as specified.

2. In a crushing mill, the gyratory spindle carrying the crusher head, combined with a supporting shaft, a pair of sheaves attached to the lower end of the supporting shaft, a looped chain to sustain the sheaves, and mechanism to wind and unwind the chain and thereby raise and lower the crusher head, substantially as specified.

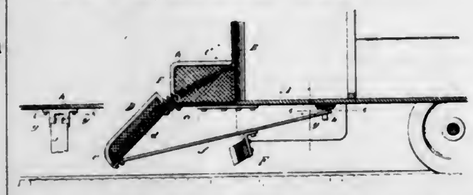
3. In a crushing mill, the gyratory spindle carrying the crusher head, combined with a non-revoluble shaft having a transverse slot therein, a shaft which passes loosely through the said slot having at one end a winding drum, and at the other a loose grooved sheave and a worm wheel, a shaft carrying a worm in gear with the worm wheel, a shaft at the lower end of the supporting shaft having grooved wheels, a chain attached at one end to the winding drum and at the other to some stationary part of the mill, with its intermediate portion or loop passed under the grooved wheels and over the grooved sheave, and means to revolve the said worm shaft, and thereby raise or lower the said gyratory spindle, substantially as specified.

4. In a crushing mill, the gyratory spindle carrying the crusher head, combined with a supporting shaft, a pair of sheaves attached to the lower end of the supporting shaft, a looped chain to sustain the sheaves, mechanism to wind and unwind the chain and thereby raise and lower the crusher head, and a hood which incloses the sheaves, chain and the winding mechanism, substantially as specified.

5. In a crushing mill, a supporting shaft for the gyratory spindle having a transverse slot and provided at its lower end with a pair of wheels, a suitably supported revoluble shaft extending through the transverse slot of the supporting shaft having at one end a winding drum and at the other a loose sheave, mechanism to revolve the said revoluble shaft, and a chain rove under the wheels and over the sheave and with one end attached to the said winding drum and the other to some fixed part of the mill, substantially as specified.

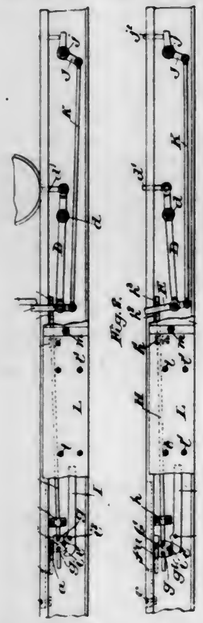
6. A sustaining shaft for the spindle of a crushing mill having a removable head piece, combined with an oil pan the bottom of which is confined between the sustaining shaft proper and the head piece, substantially as specified.

544,873. CAR-FENDER. AUGUST WEISMANTEL, Brooklyn, N. Y. Filed May 6, 1895. Serial No. 548,204. (No model.)



Claim.—In a car fender the combination with the platform C, of the fender D hinged to the forward end thereof, springs E connecting said fender with the dash board of the car, rod *f*, secured at one end to the car-fender and provided at its opposite end with the hook *h*, and the catch i secured to the under side of the car platform, and adapted to engage with the free end of said rod *f*, substantially as described.

544,874. RAILWAY-SWITCH. CHARLES F. WILSON, Brooklyn, N. Y. Filed Mar. 29, 1895. Serial No. 543,636. (No model.)



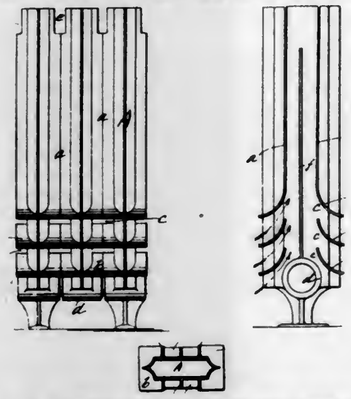
Claim.—1. In combination, a railway rail, a switch tongue, a vertically vibrating lever, a swinging switch operating lever pivoted to one arm of the vertically vibrating lever and connected with the switch tongue, a vertically swinging angle lever located in advance of the switch operating lever and connected thereto for swinging it positively in one direction and a projection on the car adapted to engage the switch operating lever when it is raised for swinging it positively in the opposite direction, substantially as set forth.

2. In combination, a railway rail, a switch tongue, a horizontally swinging angle lever for swinging the tongue, a vertically vibrating lever, a forward and backward swinging switch operating lever mounted upon one arm of the vibrating lever, a connection between the horizontally swinging angle lever and switch operating lever, a vertically swinging angle lever pivoted to the rail in advance of the switch operating lever and connected thereto to swing it in one direction to close the switch and a projection on the car for engaging the switch operating lever when it is raised for opening the switch, substantially as set forth.

3. In combination, a railway rail, a switch tongue, a vertically vibrating lever, a forward and backward swinging switch operating lever pivoted to one arm of the vibrating lever, an operating pin engaging the other arm and projecting through the top of the rail, a connection between the switch tongue and switch operating lever, a vertically swinging angle lever pivoted to the rail in advance of the switch operating lever and connected directly thereto and a pin carried by said angle lever and projected through the top of the rail, substantially as set forth.

4. In combination, a railway rail, a switch tongue, a horizontally swinging angle lever for swinging the switch tongue, a forward and backward swinging switch operating lever, a connecting rod engaging said operating lever, a clamp on the connecting rod engaging the horizontally swinging angle lever, a projection on the clamp and a weighted lever having recesses therein engaging the said projection for yieldingly holding the switch in its open and closed positions, substantially as set forth.

544,875. RADIATOR. DANIEL L. ADAMS, Reading, Pa. Filed Aug. 18, 1894. Renewed July 16, 1895. Serial No. 556,163. (No model.)

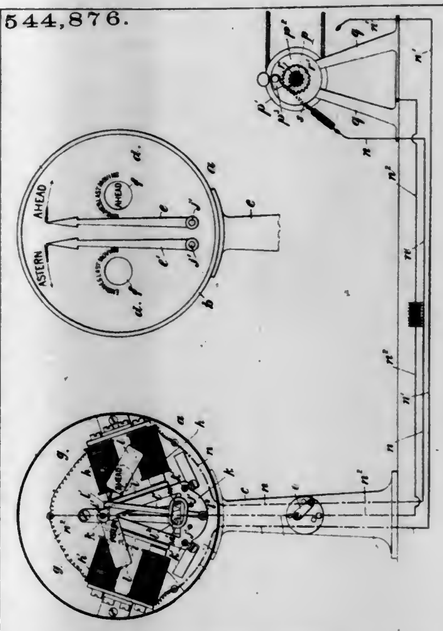


Claim.—1. A radiator composed of hollow sections which are connected by bosses or collars near the base thereof and provided with vertical ribs *a a* on the meeting faces to form air passages between the sections, the lower portions of said ribs being turned outward above the bosses substantially to the edges of the sections so as to leave free side inlets to said passages, substantially as and for the purpose set forth.

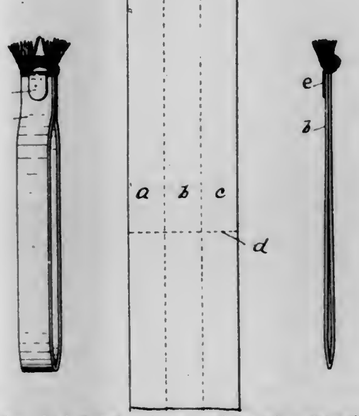
2. A radiator composed of hollow sections which are connected by bosses or collars near the base thereof and provided with ribs on the meeting faces to form air passages between the sections, said ribs being each divided into separate sections with openings between them, and the lower portion of each section being turned outward substantially to the side edges of the radiator so as to leave a series of free side inlets to said passages arranged one above another, substantially as set forth.

544,876. SHIP'S TELEGRAPHIC APPARATUS. JOHANNES K. ADELSBERG, Liverpool, England, assignor to the Walker's Engine Speed Indicator and Recorder Company, Limited, Durban, Natal. Filed Mar. 16, 1895. Serial No. 542,041. (No model.)

Claim.—The improvement described in connection with ships' direction indicators, consisting of the combination of electro magnets *h h'*; pivotally mounted and vibrating armatures *i*; toothed racks i^2 on said vibrating armatures; pinions *j* meshing with the said racks; shafts *j'* on which said pinions are mounted, pointers *e e'* mounted on said shaft *j'*, a dial plate *d* having on it the words "Ahead" and "Astern," and over which said pointers move; substantially as described.



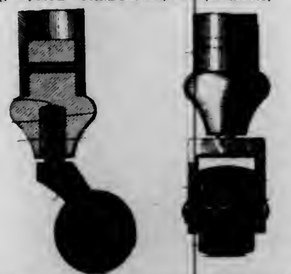
544,877. THREAD-PACKAGE. BENJAMIN L. ARMSTRONG, New London, Conn. Filed Dec. 18, 1894. Serial No. 532,258. (No model.)



Claim.—1. A thread package, consisting of a substantially flattened tube like envelope doubled upon itself substantially midway of its length, the outer side of one end of the tube being provided with a flap of a less width than the width of the tube and secured to the outer side of the other end of the envelope, whereby the envelope is completely inclosed except the short space between the edges of the flap and the respective edges of the ends of the envelope, substantially as set forth.

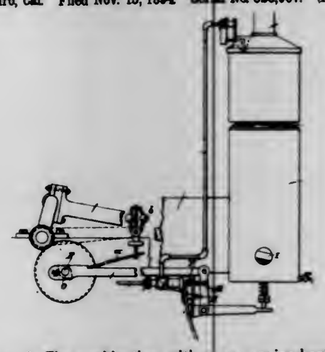
2. A thread package consisting of a substantially flattened tube like envelope doubled upon itself substantially midway of its length, the outer side of one end of the tube being provided with a flap of a less width than the width of the tube and secured to the outer side of the other end of the envelope, and a skein of material within the envelope, the doubled ends of which project from the ends of the envelope between the edges of the flap and the edges of the envelope, one of the doubled ends of the skein being cut and the other end being passed over the flap, whereby the threads may be drawn by pulling upon the uncut doubled end or on either one of the cut ends of the skein, substantially as set forth.

544,878. CASTER. WILLIAM F. BERNSTEIN, Philadelphia, Pa. Filed Aug. 11, 1894. Serial No. 520,020. (No model.)



Claim.—The metal plug A provided with means for attachment to an article of furniture, &c., and having a vertical opening therein, in combination with the headed rotatable spindle C, and the stationary bushing F both occupying said opening, said bushing freely embracing said spindle and the latter forcibly hugging the wall of said opening, substantially as described.

544,879. GAS ENGINE AND GENERATOR. DANIEL BEST, San Leandro, Cal. Filed Nov. 15, 1894. Serial No. 528,907. (No model.)



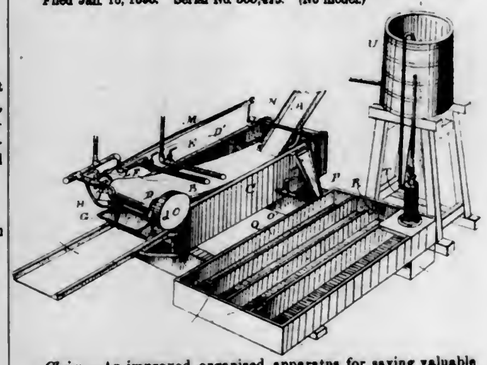
Claim.—1. The combination, with a gas engine having a horizontally reciprocating piston, inlet valves for an explosive mixture and an exhaust valve through which the products of combustion are discharged, and by the opening and closing of which the action of the inlet valve is controlled, a vertically disposed generator adapted to produce an explosive gas or vapor from a hydro-carbon liquid which is fed thereto, a bell crank lever having a horizontal arm to operate the exhaust valve and a vertical arm connected with the horizontal reciprocating rod, a pump connected with the bell crank lever at a point between its fulcrum and the outer end of its vertical arm, and operated by the movement of the reciprocating rod, and a pipe leading from a source of supply to the pump and from the latter to the upper portion of the generator.

2. The combination, with a gas engine having a horizontally reciprocating piston, inlet and exhaust valves and a governor, of a vertically disposed generator consisting of an exterior case, an interior series of superposed and connected cones extending throughout the casing, with a vertical passage centrally through the series of cones, communicating at one side of its lower end with the passage from the exhaust, and opening through the top of the exterior case, a bell-crank lever having horizontal and vertical arms the horizontal one of which actuates the exhaust valve while the other arm is actuated by the reciprocating rod, a pump having a stem connected with the lever at a point between its fulcrum and the outer end of its vertical arm, and a pipe for conveying the hydro-carbon from the pump to the exterior surface of the uppermost cone.

3. In combination with a gas engine and a pumping mechanism actuated thereby, a generator consisting of an exterior case, a series of cones formed and inclosed within the case, said cones being inverted with the smaller portion of one connected with the larger portion of another whereby flat tabular surfaces are formed at the junction of connected cones, each of said surfaces being surrounded by a raised rim or flange over which the liquid flows so as to be distributed down the outside of the cones, a pipe or passage connecting the interior of the cones with the exhaust from the engine, and a pipe or passage through the whole series of cones and leading out through the exterior casing.

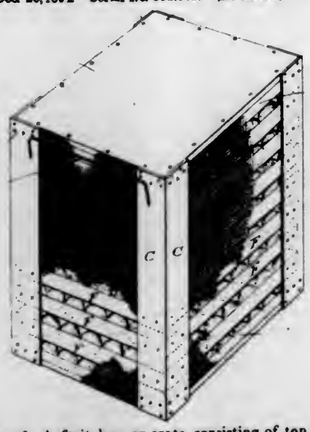
4. The combination, with a gas engine, of a generator consisting of an exterior casing, a series of cones therein with their smaller portions presented downwardly, and connected with the larger portions of contiguous cones, each of said larger portions serving as a flat tabular surface, with a raised surrounding flange, said cones being hollow to form a vertical passage-way through the entire series with the passage at one end connecting with the exhaust from the engine, and at the opposite end leading out through the exterior casing, and another passage with a closing door adapted to be opened for the introduction of a heating device for initially heating the generator.

544,880. DEVICE FOR SAVING VALUABLE AND PRECIOUS METALS. JAMES A. BOUK and CHARLES R. BUSHNELL, Santa Cruz, Cal. Filed Jan. 18, 1895. Serial No. 535,415. (No model.)



Claim.—An improved organized apparatus for saving valuable and precious metals consisting of a water containing tank, an endless traveling belt having one end submerged therein, with means for delivering the ore upon the submerged end of the belt, spray pipes delivering water upon the belt after it has emerged from the tank to cleanse the heavier portions and leave the slimes and soluble portions remaining within the tank, settling tanks, and connections whereby the solution and slimes are delivered directly and continuously from the main tank to the settlers, a filter whereby the insoluble portions are arrested within the settling tanks, and the solution allowed to pass therefrom, a pump, a tank into which the solution is elevated, and pipes whereby the solution is delivered both upon the endless traveling belt and also into the ore which is being delivered thereto whereby the solution is retained and circulated until sufficiently charged with soluble matter for further treatment.

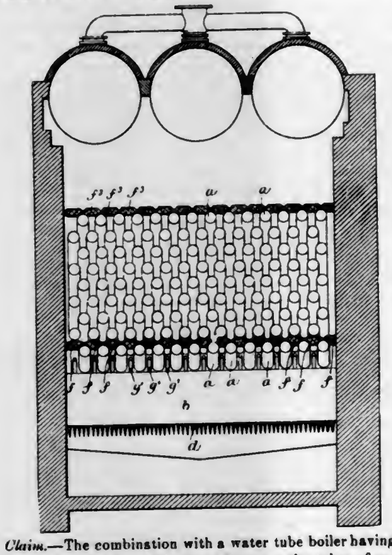
544,881. FRUIT-CRATE. CHARLES S. CHAMBERLAIN, Oakland, Cal. Filed Dec. 26, 1894. Serial No. 532,972. (No model.)



Claim.—1. A fruit box or crate consisting of top and bottom boards, sides composed of vertical strips having transverse triangular strips nailed across their ends to connect them together and at a distance from the ends sufficient to form a space to admit the top and bottom boards of the box which are nailed thereto, wire gauze screen material having its top and bottom nailed to the transverse triangular strips, and the sides extending beneath and nailed to the vertical side strips, and trays composed of side strips and bottom boards, said trays being nailed successively into the box in contact with each layer of fruit which has been placed in the tray below.

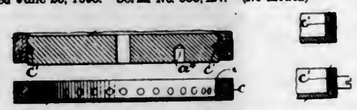
2. In fruit boxes having an exterior case, a series of trays each consisting of open center frames whose inner walls are beveled to present an inclined surface to the fruit, bottom boards secured at their ends to the end strips of the frames, and a transverse strip passing beneath the bottom boards and secured at its ends to the side strips of the open frames, said trays being nailed successively into the exterior case in contact with each layer of fruit which has been placed in the tray below, substantially as herein described.

544,882. WATER-TUBE BOILER. DAVID S. CHAPMAN, Boston, Mass., assignor, by mesne assignments, to the Thompson Fuel Saving and Smoke Consuming Company, Berwick, Me. Filed Nov. 15, 1894. Serial No. 528,877. (No model.)



Claim.—The combination with a water tube boiler having tubes arranged in parallel rows, the spaces between the tubes of each row alternating with the tubes of the next row above it, of a heat absorbing and radiating partition interposed between said rows and composed of a plurality of blocks of refractory material each having concave faces on its under side formed to bear on the upper portions of two adjacent tubes, and beveled faces on its upper side separated from the said concave faces by portions of the edges of the block, said beveled faces permitting the upward insertion of each block between the tubes of the row by which it is to be supported, and its adjustment to its operative position between said row and the next above it, the blocks having relatively thick edges resting on the supporting tubes.

544,883. WATCH-BALANCE. DUANE H. CHURCH, Newton, Mass. Filed June 20, 1895. Serial No. 553,427. (No model.)



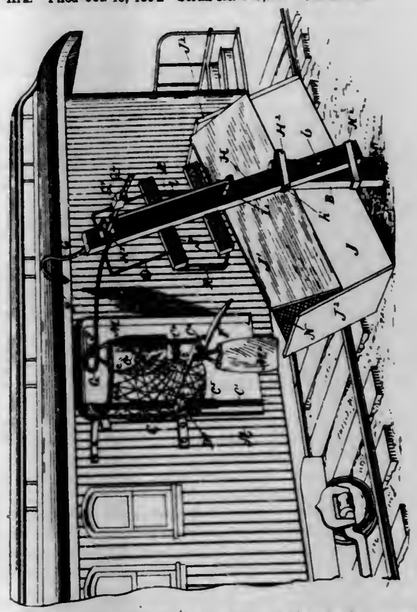
Claim.—An expansion-balance having enlarged orifices in its inner lamina and projections formed on its outer lamina extending into said orifices, said projections being drilled and tapped for the reception of the balance screws.

544,884. SHIRT-BOSOM STUD. CHARLES H. COOKE, Providence, R. I. Filed May 17, 1895. Serial No. 549,608. (No model.)



Claim.—The improved shirt bosom stud herein described, consisting of the ornamental head, the post centrally fastened thereto, the shoe, extending from the post to one side at a right angle therewith, and spring prongs fastened to the outer end of said shoe and extending therefrom at an acute angle, substantially as specified.

544,885. MAIL-BAG CATCHER AND DELIVERER. WILLIAM B. DEMING, SAMUEL W. HARMAN, and FREKLAND H. ROMANS, Bentonville, Ark. Filed Oct. 15, 1894. Serial No. 525,923. (No model.)



Claim.—1. The combination, with a postal car, of a receptacle hinged opposite an opening into said car, whereby the receptacle may be swung into a position approximately at right angles to the side of the car, a catch to hold the receptacle in this open position and a tripping lever or arm connected with the catch and adapted to strike an operating device alongside the track, substantially as set forth.

2. The combination, with a postal car, of a netting of woven fiber, a frame to support said netting and hinged opposite an opening into the car, whereby the frame and attached net may be swung into a position to intercept a mail bag suspended alongside the track, a catch to hold the frame in its open position, and a trip to liberate the catch by contact with a device alongside the track, all substantially as described and specified.

3. The combination, with a postal car, of a frame hinged opposite an opening into said car, whereby the frame may be swung into a position approximately at right angles to the side of the car to intercept a mail bag suspended alongside the track, means for locking the frame in an open position and automatically unlocking and closing it, a netting of any suitable material secured to the frame by means of elastic connections, whereby the yielding resistance of the netting in stopping the bag, will be increased, in the manner substantially as described and specified.

4. In a mail bag catcher, a spring actuated receptacle hinged to the car so as to be opened into a position approximately at right angles to the car, a spring catch to automatically lock the receptacle in its open position, a spring actuated tripping lever secured to the frame work of the receptacle and connected with the catch and adapted to open the catch and liberate the receptacle by the contact of the tripping lever with an operating device alongside the track, substantially as specified.

5. In a mail bag catching receptacle, a frame resiliently hinged to the car and a netting secured to said frame by means of elastic fasteners whereby the yielding resistance of the receptacle will be increased, substantially as and for the purposes set forth.

6. A mail bag catching receptacle having a flexible and resilient surface to contact with the bag, said receptacle being adapted to be set approximately at right angles to the side of the car when in position to receive the bag, a catch to hold the receptacle in a set position, an arm or lever pivotally secured to the frame of the receptacle and connected with the catch and adapted to contact with an operating device alongside the track and release the receptacle, and a plurality of springs variously arranged to move the receptacle forward and around toward the car, whereby the bag will be more securely caught and will be brought into a position easily accessible from within the car, substantially as described.

7. The conibination, with a postal car, of an arm pivotally secured thereto so as to have a horizontal lateral adjustment, a trip lever pivotally secured to the arm, a spring actuated bar secured to the trip

lever and adapted to support the mail bag which will be suspended therefrom, said bar being withdrawn so as to release the bag by the contact of the trip lever with an operating device located alongside the track.

8. In a mail pouch delivering apparatus, the combination with the postal car, of an arm pivoted thereto, so as to have a horizontal lateral movement, a spring to force the arm into a closed position parallel with the side of the car, and a catch to hold the arm in a set position approximately at right angles to the car, a reciprocating bar to hold the bag by suspension therefrom, a trip lever secured to the arm and secured to the bar from which the mail bag is suspended and also with the catch for locking the arm and adapted to simultaneously liberate the arm and release the bag by a suitable movement of the trip lever, in the manner substantially as described and specified.

9. The combination, with a spring actuated, horizontally reciprocating device for delivering and catching mail bags and having a spring actuated trip lever to liberate the mechanism of said device, of a striking bar located alongside the track within the path of said trip lever, said striking bar having spring connections with its support, whereby a yielding resistance of the striking bar will be secured, for the purposes specified.

10. The combination, with a spring actuated, horizontally reciprocating device for delivering and catching mail bags and having a spring actuated trip lever to liberate the mechanism of said device, of a striking bar located alongside the track within the path of said trip lever, said striking bar having a cover of elastic material and having spring connections with its support, whereby a yielding resistance of the striking bar will be secured, for the purposes specified.

11. The combination, with a device for delivering and catching mail bags, having its operative mechanism set in motion by a trip lever, of striking bars in duplicate attached to a hinged support adapted to be adjusted in a vertical plane parallel with the car, whereby either one of the striking bars can be successively brought into the path of the trip lever or removed, for the purpose substantially as described and specified.

12. The combination, with a device for delivering mail bags, of a longitudinal centrally pivoted receptacle underlying the bag when released, and having its forward end projected upwardly to intercept the path in which the suspended bag was moving prior to its release, as and for the purpose set forth.

13. In a mail bag deliverer, the combination with mechanism for suspending and liberating the bag, of a receptacle placed longitudinally of the track under the place where the bag is released, said receptacle having upwardly projected ends and said receptacle being centrally pivoted to a fixed support whereby it may be inclined toward the approaching bag thereby depressing the end of the receptacle nearest the approaching bag so the bag can pass over the end without conflict therewith and whereby the opposite end of the receptacle will be projected into the path in which the suspended bag was moving prior to its release, substantially as and for the purposes described.

14. The combination, with a device for delivering mail bags having its operative mechanism set in motion by a trip lever coming in contact with a striking bar located alongside the track, of a longitudinal centrally pivoted receptacle underlying the bag when released, and having its forward end projected upwardly to intercept the path in which the suspended bag was moving prior to the release of the bag, as and for the purposes set forth.

15. In a mail bag deliverer, a receptacle to receive the bag having an elastically yielding upwardly projected portion intercepting the path in which the bag was moving prior to its release from the delivering mechanism of the car, substantially as described and for the purposes set forth.

16. The combination, with a device for delivering mail bags, having its operating mechanism set in motion by a trip lever coming in contact with a striking bar located alongside the track, of striking bars in duplicate attached to a hinged support, a longitudinal receptacle also attached to said hinged support and underlying the bag when released, said receptacle being at an angle inclined toward the approaching bag whereby the bag will pass freely over the near end of the receptacle and will be intercepted by the opposite end of same, said striking bars and receptacle being secured to the hinged support whereby by shifting the support, the receptacle and striking bars will be adjusted to operate the mechanism when the car is moving in an opposite direction.

17. The combination, with a device for delivering mail bags of a receptacle to receive the bag, said receptacle having a hinged lid and a spring lock to secure the lid when closed and mechanism actuated by the passing car whereby the lid will be automatically closed, substantially as described.

18. The combination, with a postal car and mechanism for supporting a mail bag to be delivered and for liberating said bag of a receptacle located so as to receive the dropped bag, a hinge to said receptacle, a post contiguous to said receptacle and having an arm to support the ingoing bag, said arm being pivotally secured to said post and mechanism connecting the opposite end of said arm with the lid of the receptacle whereby, when the arm is released by the removal of the ingoing bag, the lid of the box will be released and will close by gravity in the manner substantially as shown and for the purposes specified.

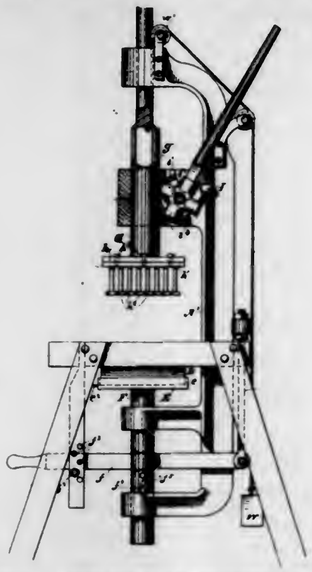
19. The combination, with a device for delivering and catching mail bags, having its operative mechanism set in motion by a trip lever, of striking bars in duplicate, attached to a hinged support, adapted to be adjusted in a vertical plane parallel with the car whereby either one of the striking bars can be successively brought into the path of the trip lever or removed to suit the direction of the movement of the car.

20. The combination with the receptacle C and the car A of the lever D, adjustably secured to the hinge post of the receptacle and having an under side lug *d* to engage a lug *d'* on the post, whereby in certain vertical adjustments of the lever a rotative movement may be transmitted to the receptacle by pressure upon the lever substantially as and for the purposes described.

21. The combination, with the stationary post B, of the post H pivotally secured to the post B and the guide bars H^3 secured to the post B and encircling the post H^2 and forming guides and stops whereby the direction and amount of movement of the post H will be regulated, said bars having slots and the post having keys registering with said slots and adapted to be inserted therethrough substantially as described and for the purposes set forth.

22. In a mail bag catcher, the combination with a receptacle to receive the bag, of a hinged plate adapted to close the receptacle, a flexible cord suspended across the mouth of the receptacle, and having its ends secured to the opposite sides of the plate whereby the plate will be closed over the mouth of the receptacle by the impact of the bag against the the cord, substantially as described.

544,886. PRESS FOR PACKING FRUIT. ANTONY C. DENOTOVICH and JAMES PORTEOUS, Fresno, Cal.; said Denotovich assignor to said Porteous. Filed Feb. 15, 1895. Serial No. 538,581. (No model.)



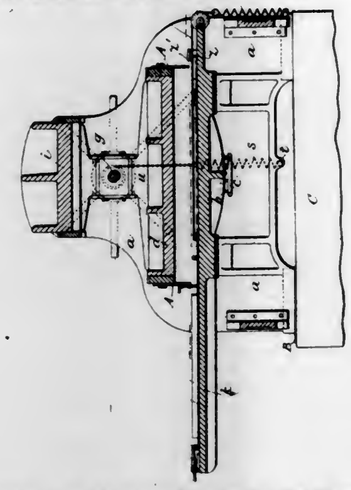
Claim.—1. A press for packing fruit consisting of a compartment mold to receive the fruit, an underlying platform to support and hold the box up to the mold, a means for regulating the height of the platform and holding it where regulated consisting of a lever connected with the platform and having adjustable stops, and a plunger adapted to enter the compartment mold and force the fruit therefrom into the underlying box.

2. A press for packing fruit consisting of a compartment mold to receive the fruit, an underlying platform to support and hold the box up to the mold, a means for regulating the height of the platform and holding it where regulated, consisting of a lever connected with the platform and having adjustable stops, an adjustable fulcrum for the lever, and a plunger adapted to enter the compartment mold and force the fruit therefrom into the underlying box.

3. In a press for packing fruit, the combination of the compartment mold, the reciprocating plunger, the adjustable box holding platform underneath having the encircling flange to protect the box, and the ejector strips in said platform for removing the box.

4. In a press for packing fruit, the combination of a reciprocating plunger, the compartment mold in which said plunger operates and the adjustable frame carrying said mold and separated from it, whereby it is caused to register with the plunger and space is provided to receive the box pressed up from below.

544,887. PLATEN PRESS. GEORGE EASTWOOD, London, England. Filed Mar. 20, 1895. Serial No. 542,438. (No model.)



Claim.—1. In a platen press for producing molds or matrices for stereotyping the combination with the type bed *b*, the platen *d*, and the feed table *k* of the form-holding plate *l* having a back flange and a front flange, connectors *q q* engaging at one end with said back flange and attached at the other end to springs *n n*, the said springs *n n* connected with a fixed part and catches *y y* engaging with said front flanges, substantially as and for the purpose set forth.

2. In a platen press, the combination with the platen, of toggle levers for raising and lowering the platen a right and left handed screw shaft for working said levers, hand levers on said shaft, chains attached at one end to said shaft so as to wind thereon and unwind therefrom as the shaft rotates in the one and the other direction respectively, springs attached at one end to said chains and at the other end to fixed parts and put in tension by the winding of the chains and the consequent rise of the platen, and a catch to retain the platen in the raised position and the springs in tension whereby when the said catch is released the springs cause the platen to descend rapidly, substantially as and for the purpose set forth.

3. In a platen press the combination with the platen of springs which are put in tension by the raising of the platen, a catch to retain the platen in its raised position and the springs in tension, and a sliding form carrier which releases the said catch when sliding with the form into position below the platen whereby when the form reaches the said position the springs cause the platen to descend rapidly, substantially as and for the purpose set forth.

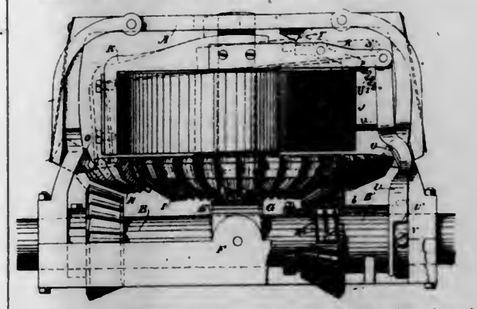
4. A form-carrying sliding plate for a platen press for producing molds for stereotyping, said plate having in the operative position a slight downward inclination from front to back, a flange at the lower back end of said plate, fastening provisions on said flange for the connection therewith of means for sliding said plate, and an opening through said flange for the passage of water from said plate, substantially as and for the purpose set forth.

5. A plate for a platen press having on one face a slight substantially circular convexity in the middle, said convexity being greatest in the center of the plate and gradually diminishing until it reaches a vanishing point toward the edges of the plate, substantially as and for the purpose set forth.

6. In a platen press, the combination with a rising and falling platen and means for moving it, of a carrier movable into and out of position opposite the platen, and means preventing movement of the platen toward the carrier when the latter is out of position, substantially as and for the purpose set forth.

7. In a platen press, the combination with a rising and falling platen and means for moving it, of a carrier movable into and out of position opposite the platen, and means holding the platen against movement toward the carrier when the latter is out of position, and automatically released and permitting movement of the platen toward the carrier when the latter is moved into position, substantially as and for the purpose set forth.

544,888. CAR BRAKE AND STARTER. HENRY ESCHWEILER, San Francisco, Cal., assignor of one-fourth to Eugene J. Keller, same place. Filed Dec. 4, 1894. Serial No. 530,810. (No model.)



Claim.—1. A car brake and starter consisting of a spring adapted to coil about the hub of a gear or gears which are fulcrumed to stand essentially at right angles with the car axle, a mechanism by which the gears may be tilted to one side or the other, pinions fixed upon the car axle so that one of said pinions is engaged when the gears are tilted to one side, and the spring will be coiled thereby, and the other pinion is engaged when the gear is tilted in the opposite direction so that the spring in the act of uncoiling will apply its power to rotate the axle and start the car.

2. A car brake and starting device consisting of a gear or gears mounted upon a shaft standing approximately at right angles with the car axle and adapted to tilt about a fulcrum in line with the center of said axle, a pinion fixed to the axle adapted to be engaged by the gear when tilted to one side so that the rotation of the axle will turn the gear, a coiled spring having one end fixed to the hub of the gear, and the other to a stationary point and adapted to be coiled by this engagement of the gear and pinion a second pinion fixed to the car axle upon the opposite side of the gear shaft adapted to be engaged by the gear when tilted to that side whereby the tension of the coiled spring will be applied to the pinion to start the car, and stops or pawls adapted to engage the gear and prevent its rotation while it is being tilted from one side to the other, and while it is out of engagement with either of the gears.

3. A car brake and starter consisting of pinions fixed to the car axle, a gear wheel having a shaft projecting approximately at right angles from the axle and adapted to tilt about fulcrum pins in line with the center of the axle whereby one side may be engaged with one of the pinions to rotate the gear in one direction, a coiled spring fixed upon the hub of the gear so as to be coiled up by the power applied through the pinion of the gear, and to apply its power to the second pinion by uncoiling when the gear is tilted in the opposite direction so as to turn the car axle after it has been stopped, swinging spring-actuated arms having pawls projecting from them adapted to engage the teeth of the gear when the shaft of the latter is essentially at right angles with the car axle, and the gear disengaged from both pinions whereby the gear is prevented from being turned while thus disengaged.

4. A car brake and starter consisting of a tilting gear having a coiled spring fixed to its hub, pinions upon the car axle, with one of which the gear is engaged by tilting in one direction so as to coil the spring, and with the other of which it is engaged when tilted in the opposite direction so that the power of the coiled spring is applied to turn the axle, a bell crank lever fulcrumed to the frame having one arm connecting with the tilting shaft of the gear and the other with an operating lever whereby the gear may be tilted to either side.

5. In a car brake and starter, a tilting gear having a coiled spring connected with its hub, pinions upon the car axle with one of which the gear engages when tilted to one side so as to coil the spring, and with the other of which it engages when tilted to the other side so that the uncoiling of the spring will apply power to rotate the axle, a mechanism to prevent the device from being tilted to engage the coiling pinion when the spring is already fully coiled, consisting of a lever R fulcrumed so that its outer end rests upon the periphery of the spring, and a stop T with which its inner end engages when the spring is coiled to prevent the tilting of the gears.

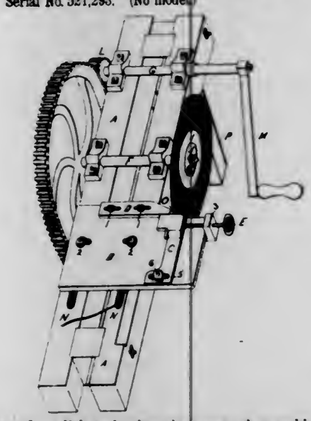
6. In a car brake and starter, a tilting gear or gears, a spring adapted to coil about the hub of the gear, pinions fixed upon the car axle, one of which is engaged by the gear when tilted in one direction to coil the spring, and the other is engaged when the gear is tilted

in the opposite direction so that the uncoiling of the spring will apply power to turn the axle, a means for preventing the uncoiling of the spring beyond the proper point, consisting of the depending swinging arm U having an offset U', and a lug V fixed upon the car axle so as to be engaged by the offset when the spring has uncoiled sufficiently to force the arm U outwardly to bring an offset into line with the lug.

7. In a car brake and starter, a tilting gear having a spring adapted to coil and uncoil about its hub, pinions upon the car axle, one of which is engaged by the gear when tilted to one side whereby the spring is coiled and the other is engaged by the gears when tilted to the opposite side whereby the power developed by the uncoiling of the spring is applied through said pinion to the axle, said pinion turning loosely upon the axle having a channel and stop whereby it may turn a short distance to allow the teeth of the gear and pinion to adjust and engage themselves, and a spiral spring connection with the pinion and the axle to hold the lug against the end of the slot or channel, in position to start, and adapted to yield to allow of the adjustment of the teeth of the gears to each other.

8. A car brake and starter consisting of a tilting gear having a coiled spring fixed to its hub, pinions upon the car axle, with one of which the gear is engaged by tilting in one direction so as to coil the spring, and with the other of which it is engaged when tilted in the opposite direction so that the power of the coiled spring is applied to turn the axle, a lever fulcrumed to the frame and connected with the tilting gears and with an operating lever, a catch by which the lever is locked in a central position, and a weight or spring by which the gear is retained in engagement with the starting pinion as described.

544,889. DISK-SHARPENER. JOSHUA H. EVANS, Callaway, Nebr., assignor of one-half to Joseph E. Saunders, same place. Filed Aug. 25, 1894. Serial No. 521,293. (No model.)



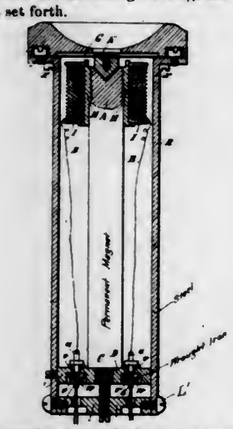
Claim.—In a disk and colter sharpener, the combination with a supporting standard, A, of the transverse operating shaft, F, the main driving gear, K, upon said shaft, the remaining end of said shaft being threaded and adapted to receive the retaining disks, I and J, secured by means of a suitable nut, 8, a shaft, G, provided with the crank, M, said shaft, G, being further provided with the pinion, L, a longitudinally and laterally adjustable plate, B, provided with an upwardly extending shoulder, 3, a set screw, E passing through said shoulder, a pivoted and laterally adjustable tool holder, C, and a laterally adjustable guide bar, D, all substantially as and for the purpose set forth.

544,890. MAGNETO-ELECTRICAL TELEPHONE. MAX FRANK, Munich, Germany. Filed June 30, 1894. Serial No. 516,161. (No model.)

Claim.—1. In combination in a telephone and for the purposes described, the magnetic core A C, magnetic shell or tube R, the magnetic plate D secured to or formed with the said magnetic core and making contact with the interior surface of the said tube, a screw or other adjustment for the said plate D and a set-screw E for fixing it in position, substantially as set forth.

2. In combination in a telephone and for the purposes described, the magnetic core A C, magnetic shell or tube R, and the magnetic plate D for the said magnetic core and sliding and adjustable within the said shell or tube, substantially as set forth.

3. In combination in a telephone, the magnetic core A C, magnetic shell or tube R, the magnetic plate D secured or formed with the said magnetic core and making contact with the interior surface of the said tube, a plate L in the end of the said tube and an adjusting screw extending through the said plate L for adjusting the said magnetic core and causing the said plate D to be adjusted within the said tube R but without disturbing its magnetic contact therewith, substantially as set forth.



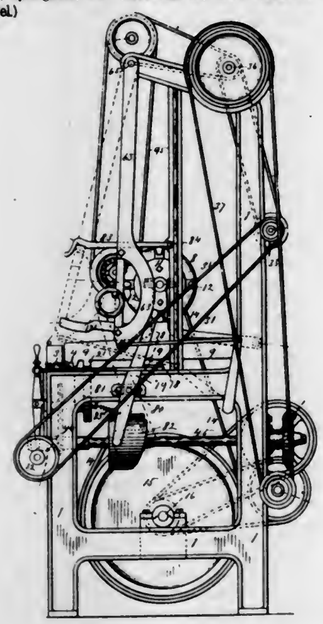
4. In combination in a telephone, the magnetic core, the surrounding magnetic tube or shell R, provided with the integral flange F, and the diaphragm G laid flat upon the said flange F and secured thereto, the said core being magnetically connected (as by plate D) with the said shell or tube R, substantially as set forth.

5. In combination in a telephone, the magnetic core and surrounding magnetic shell magnetically connected, the diaphragm G magnetically connected with the said shell and the diaphragm armature or core extending into a recess within the said magnetic core, substantially as set forth.

6. In combination in a telephone, the magnetic core and surrounding magnetic shell magnetically connected, the diaphragm G magnetically connected with the said shell and the diaphragm armature or core K, the opposing surfaces of the said magnetic core and said core K being parallel and having a very small interval or air space between, substantially as set forth.

7. In combination in a telephone, the magnetic core provided with the conducting disk or plate D, the bare electric conductors *u* extending through perforations in the said plate D but separated therefrom by insulating washers or sleeves, and the leading-in wires B and circuit wires N secured to the said bare conductors *u*, substantially as set forth.

544,891. LATHE FOR TURNING LASTS, &c. WILBERT F. GILMAN, Springfield, Vt. Filed Jan. 25, 1895. Serial No. 536,190. (No model.)



Claim.—1. In a machine of the character described, the combination with the train of gears 22, 26 and 40 engaging the carriages and actuated by a worm on a shaft supported by the frame and the sprocket wheel 42, of the intermediate gear 39 adapted to engage with the gear 22 and the pinion 40, the sprocket wheel and clutch 44, 46 on the shaft 45, the former being connected by a suitable chain with the sprocket wheel 42, the shaft 51 connected with said shaft 45 and driven by a belt connected with the driving shaft, and mechanism for swinging the worm out of and into engagement with the gear and the clutch into and out of engagement with the sprocket wheel, whereby the intermediate gear 39 is adapted to engage the gear wheel 22 and return the carriages, substantially as set forth.

2. In a machine of the character described, in combination, the shipper rod 58 provided with the projection 71 at its right end and sliding longitudinally in the frame, the key 73 sliding in a bracket secured to the frame and provided with an adjustment screw adapted to be engaged by said projection, the spring 75 having one end secured to said bracket and the other pressing against the key, the longitudinally sliding rod 76 held normally against the key by a bell crank pivoted to a bracket supported by the frame, a cam supported by the frame, a cam lever engaged by said cam and engaging the outer arm of the bell crank, the swinging frame 63 suspended from the frame of the machine and engaged by said cam lever, and a suitable spring connecting the cam lever with the frame, whereby just before or simultaneously with the stopping of the feeding of the carriages the said key releases the rod 76 and bell crank 78 leaving the cam lever free to be carried by the spring into engagement with said cam, substantially as described.

3. In a machine of the character described, the cam 82 provided with the working edge 82^a and 82^b and actuated by the shaft 45, the cam lever 79 engaged by said cam, the swinging frame 63 suspended from the frame of the machine and engaged by said cam lever, the bell crank 78, the shipper rod 58 provided with the projection 71, the sliding key 73 provided with the adjustment screw 72, and mechanism intermediate with said screw and bell crank whereby the cam lever is released and placed into engagement with said cam by a spring, substantially as set forth.

4. In a machine of the character described, the combination of the cam lever 79 provided with the projection 86, a cam actuating said lever, the longitudinally sliding bar 87 supported by the frame and engaged by said projection, the parallel sliding bar 89, the spring 88 connecting said bars in the manner described, the shipping lever 47 pivotally secured to the outer end of the bar 89, the clutch 46 engaged by said lever, the sprocket 44, and mechanism intermediate with said sprocket and the carriages whereby they are started on their return, substantially as described.

5. In a machine of the character described, the combination of the carriages, the longitudinally sliding bar 58 supported by the frame and provided with adjustable stops, as 60, the bell crank 90 pivoted to the frame and adapted to be engaged by the end of said sliding bar, the sliding bar 89 supported by the frame and sliding longitudinally at right angles with the direction of the movement of the bar 58 and provided with a shoulder 89^a whereby it is engaged by said bell crank and the clutch 46 adapted to be engaged by said sliding bar 89, substantially as set forth.

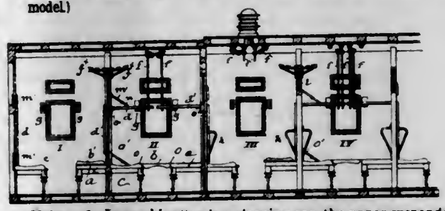
6. In a machine of the character described, the cam 82 provided with the bearing edge 82^a 82^b, the cam lever 79 pivoted to a hinge which is pivoted to the frame whereby said lever is capable of swinging longitudinally and transversely with the frame the swinging frame 63 suspended from the frame of the machine and engaged by said cam lever, the bell crank 78 pivoted to a bracket on the frame, the bar 76 sliding on the frame, the spring 92 holding the end of said bar 76 against one arm of the bell crank whereby the other arm bears normally against the cam lever, and the spring 83 connecting the cam lever with the frame at a suitable angle of inclination to hold the cam lever into engagement with the cam until it is thrown off and then pull it back into the position set forth, the movement of the cam lever describing substantially a rectangle, all arranged substantially as set forth.

7. In a machine of the character described, in combination, the shaft 97 having its bearings in the head stock 65 and 67 supported by the swinging frame and connected by suitable gears with the spindle which rotates the model or pattern, a clutch engaging a loose pulley on said shaft 97, a shipping lever engaging said clutch and pivotally supported by the swinging frame, the slide holder 109 sliding in the swinging frame and connected by a link with said shipping lever, a spring extending from the swinging frame and holding the clutch normally in engagement, the sliding head 112 moving longitudinally in said slide holder, the locking bar 119 pivoted to the frame and engaged by said sliding head, the rod 113 extending from said sliding head and connected with the slide-holder by a spring, the lever 114 pivotally secured to the head stock and having one end connected with the said rod 113, and the gear wheel 100 for transmitting motion to the spindle for turning the stock to be formed into a last, said gear wheel being provided on its side with a cam adapted to engage the lever 114 with each revolution, substantially as described.

8. In a machine of the character described, the combination of the cam gear wheel 100 transmitting motion to the spindle carrying the stock to be formed into a last, the slide-holder 109, slide 112, rod 113 and lever 114 engaged by the cam on the wheel 100 and connecting with the rod 113, said slide being provided with a notch 117 and said slide-holder with a coincident notch 118, a locking bar 119 pivotally secured to the frame and supported by a projection on the frame and adapted to enter into engagement with the slide and slide holder and lock them together by means of the notches aforesaid, and mechanism intermediate with the slide-holder and pulley 96 whereby the latter may be stopped with the cam on the cam-gear in engagement with the lever 114, substantially as set forth.

9. In a machine of the character described, the combination of the elbow lever 122 pivotally secured to the swinging frame and having the suitably thick upper end 124, a spring 125 holding the lever normally out of engagement, and the locking bar 119, the said lever being adapted when released by the spring to move its end 124 up between the locking bar and the swinging frame, thus preventing relative movement thereof, substantially as described.

544,892. RAILWAY PASSENGER-CAR. ISAAC BER GÜMBURG, St. Petersburg, Russia. Filed Nov. 8, 1892. Serial No. 451,340. (No model.)



Claim.—1. In combination in a sleeping car, the upper suspended boards *d d'* forming the upper couches or berths and the means for holding the same firmly consisting of the hanging rods *f f''*, said boards having the incisions or sockets and the iron plates *i* about said incisions, substantially as described.

2. In combination in a sleeping car, the upper and lower berths, said upper berth comprising the short suspended boards *d d'* forming two separate upper couches, said boards resting upon each other at their edges, substantially as described.

3. In combination in a sleeping car, the partition comprising the vertical beams and the step *x* having the ring B adapted to turn thereon, said ring having the notches d^x at the bottom adapted to engage the projections E on the beam when the step is turned around for use, said step being turned when not in use against the partitions, substantially as described.

4. In combination, in a sleeping car, the upper berths composed of boards *d d*, *d' d'* hinged to the section partitions the suspending bars *f f'* for the pairs of hinged boards *d d'* respectively, having hooked lower ends engaging the front or outer edges of the said boards, the pivoting rods *g* secured to the car sides for engaging and supporting the inner pair of boards, the slide bars *h* for supporting the inner edge of the outer pair of boards from the outer edge of the inner pair and the plates *i* for holding and guiding the slide bars, said plates serving also as wear plates for the lower hooked ends of the suspending rods, substantially as described.

544,893. LAMP. PHILIP J. HANDEL, Meriden, Conn. Filed Apr. 1 1895. Serial No. 544,004. (No model.)

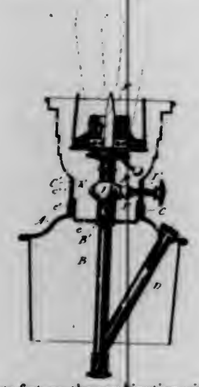
Claim.—1. In a lamp fixture, the combination with a dummy-fount, of a stationary, vertically arranged tube mounted therein and adapted to have a burner connected with its upper end, and provided at its lower end with a removable plug, substantially as set forth.

2. In a lamp fixture, the combination with a dummy-fount, of a stationary, vertically arranged tube mounted in the center thereof, and a diagonal tube extending between an opening in the top of the fount and the lower end of the fixed tube, which is furnished with a removable plug, substantially as set forth.

3. In a lamp fixture, the combination with a dummy-fount, of a stationary, centrally arranged tube mounted therein, and adapted to have a burner connected with its upper end, of a diagonally arranged tube intersecting at its lower end the lower end of the vertical tube, and extending at its upper end into the tube of the dummy-fount, and provided with a cap, and a removable plug applied to the lower end of the vertical tube, substantially as set forth.

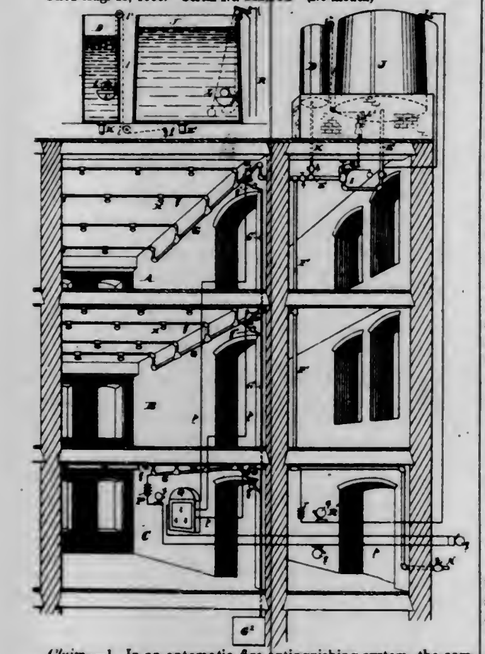
4. In a substitute fixture, the combination with a dummy fount, of a stationary, vertically arranged tube mounted therein, a cup mounted in the top of the fount and constructed at its upper end with a flange,

and a shade holder applied to the flange of the cap, substantially as set forth.



5. In a substitute fixture, the combination with a dummy fount, of a stationary, vertically arranged tube located therein, a cup located in the top of the dummy fount and adapted to receive a shade holder, a valve body connected with the upper end of the tube and adapted to have a burner applied to it, a diagonal tube intersecting the lower end of the vertical tube, and closed at its upper end with a cap, and a removable plug for the lower end of the vertical tube, substantially as set forth.

544,894. FIRE-EXTINGUISHER. WILLIAM HARKNESS, New York, N. Y., assignor to the General Fire Extinguisher Company, of New York. Filed Aug. 13, 1888. Serial No. 282,444. (No model.)



Claim.—1. In an automatic fire extinguishing system, the combination of a liquid supply pipe, branch pipes for conveying the liquid into different rooms of the building, said pipes having automatic fire extinguisher nozzles or sprinklers, a tank for containing a non-freezing liquid, a source of water supply, said tank and said water supply being connected with the supply pipe by independent connections, a movable gate or valve located in the branch pipe in one of the rooms, and arranged to normally obstruct the flow of liquid therethrough, an electric circuit closer actuated by said valve, an alarm bell or signal located in a different room, and an electric circuit including the alarm and circuit closer substantially as described.

2. In an automatic fire extinguishing system, the combination of a liquid supply pipe, branch pipes running into the several rooms, said pipes having automatic fire extinguisher nozzles or sprinklers, a tank for containing a non-freezing liquid, a source of water supply, said tank and water supply having separate connections with the supply pipe, movable gates or valves located in the pipes within the different rooms, and arranged to normally obstruct the flow of liquid therethrough, an electric circuit closer or switch in each room actuated by the corresponding valve in the pipe in that room, an alarm bell or signal located in a different room, and an electric circuit including the alarm and the several circuit closers; substantially as described.

3. In an automatic fire extinguishing system, the combination of a liquid supply pipe, branch pipes for conveying the liquid into different rooms of the building, said pipes having automatic fire extinguisher nozzles or sprinklers, a tank for containing a non-freezing liquid, a source of water supply, said tank and water supply having separate connections with the liquid supply pipe, movable gates or valves located in the branch pipes within the several rooms, and arranged to normally obstruct the flow of liquid therethrough, an electric circuit closer or switch in each room operated by the corresponding valve in the pipe in that room, an alarm bell or signal and an annunciator in a separate room, and an electric circuit including the alarm, the annunciator, and the several circuit closers; substantially as described.

4. In an automatic fire extinguishing system, the combination of a liquid supply pipe, branch pipes running into the several rooms, said pipes having automatic fire extinguisher nozzles or sprinklers, a tank for containing a non-freezing liquid, a source of water supply, said tank and source of water supply having independent connections with the supply pipe, movable valves or gates located in the branch pipes in the different rooms, and arranged to normally obstruct the flow of liquid therethrough, an electric circuit closer or switch in each room actuated by the corresponding valve in the pipe in that room, an alarm bell or signal, and an annunciator located in a different room, a separate alarm bell or signal located outside the building, and an electric circuit including the alarms, the annunciator and the several circuit closers; substantially as described.

5. In an automatic fire-extinguishing system, the combination of a system of pipes for conveying and distributing liquids throughout the building, said pipes being provided with automatic fire-extinguisher nozzles or sprinklers, a source of non-freezing liquid supply, a pipe connecting said source with the system of pipes, a source of water supply connected by a separate pipe with said system of distributing pipes, an automatic valve in said water-pipe normally shutting off the water, an automatic device controlled by the discharge of non-freezing liquid to open said water-pipe valve, movable valves or gates located in the distributing pipes within the several rooms and normally obstructing the flow of liquid therethrough, an electric circuit closer or switch in each room actuated by the corresponding valve in that room, an alarm bell or signal located in a different room, and an electric circuit including the alarm and the several circuit closers; substantially as described.

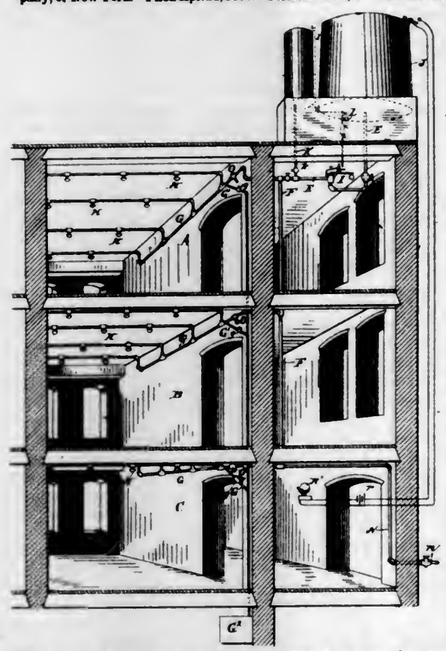
6. In an automatic fire-extinguishing system, the combination of a system of pipes for conveying liquids throughout the building, said pipes being provided with automatic fire extinguisher nozzles or sprinklers, an elevated reservoir containing a non-freezing liquid, a pipe connecting said reservoir with the conveying pipes whereby the latter are kept normally full of non-freezing liquid, an elevated reservoir of water, connected by a separate pipe with the conveying pipes, an automatic valve in said water pipe normally shutting off the water, an automatic device controlled by the discharge of the non-freezing liquid from its reservoir to open said water pipe valve whereby the water shall follow the non-freezing liquid through the conveying pipes, movable valves or gates located in said pipes within the several rooms and normally obstructing the flow of liquid therethrough, an electric circuit closer or switch in each room actuated by the corresponding valve in that room, and an alarm bell or signal and an electric annunciator in a separate room; substantially as described.

7. In an automatic fire-extinguishing system, the combination of pipes for conveying and distributing liquids throughout the building, said pipes having automatic fire-extinguisher nozzles or sprinklers, an elevated reservoir containing non-freezing liquid, an elevated reservoir containing water, said reservoirs having separate connection with the distributing pipes, an automatic valve in the water pipe normally shutting off the water, an automatic device actuated by the discharge of the non-freezing liquid from its reservoir to open the water pipe valve and allow the water to follow the flow of the non-freezing liquid through the distributing pipes, movable valves or gates in said pipes in the several rooms and normally obstructing the liquid flow therethrough, an electric circuit closer or switch in each room actuated by the valve in that room, an electric signal, and an electric indicator in a separate room, and a second electric signal outside the building, and independent electric circuits connecting said circuit closers or switches with said two alarms and the indicator.

8. The combination of the water tank, the non-freezing-liquid tank, said tanks being connected to the system of distributing pipes, the valve I', its stem I^3, a collar on said stem, a lever I^4 pivoted at one end and adapted to engage said collar, a pivoted bell-crank latch lever I^5 engaging the opposite end of the lever I^4 and holding it down upon the collar on the valve stem, an automatic trip for the latch lever, and connections between said trip and a float in the non-freezing liquid tank; substantially as described.

9. The combination of the water tank, the non-freezing liquid tank, said tanks being connected to the system of distributing pipes, the valve I', its stem I^3, a collar on said stem, a lever I^4 pivoted at one end and adapted to engage said collar, a pivoted bell-crank latch lever I^5 engaging the opposite end of the lever I^4 and holding it down upon the collar on the valve stem, a supplemental, pivoted, weighted, lever I^6, a yoke I^7 connected to said lever and engaging the latch arm of the bell crank lever I^5 to hold it in engagement with the lever I^4, an automatic trip, and connections between said trip and a float in the non-freezing liquid tank: substantially as described.

544,895. AUTOMATIC FIRE-EXTINGUISHER. WILLIAM HARKNESS, New York, N. Y., assignor to the General Fire Extinguisher Company, of New York. Filed Apr. 21, 1890. Serial No. 348,837. (No model.)



Claim.—1. In an automatic fire extinguishing system, the combination of a system of pipes for conveying liquids through the building, said pipes being provided with automatic fire extinguishing sprinklers or valves, a source of non-freezing liquid supply, a pipe connecting said source with said system of pipes, a source of water supply connecting by a separate pipe with said system of conveying pipes, an automatic valve in said water pipe to normally shut off the water, and an automatic device controlled by the discharge of non-freezing liquid to open said water pipe valve, whereby the water shall follow the non freezing liquid through the system of conveying and distributing pipes.

2. In an automatic fire extinguishing system, the combination of a system of pipes for conveying and distributing liquids through the building, said pipes being provided with automatic fire extinguisher sprinklers or valves, an elevated tank, or reservoir containing a non-freezing liquid, a pipe connecting said tank with said system of distributing pipes whereby the latter are kept normally full of the non-freezing liquid, an elevated tank or reservoir of water connecting by a separate pipe with said system of conveying or distributing pipes, an automatic valve in said water pipe to normally shut off the water, and mechanism substantially as described, controlled by the discharge of the non-freezing liquid, to open said water pipe valve, whereby the water shall follow the non-freezing liquid through the system of distributing pipes.

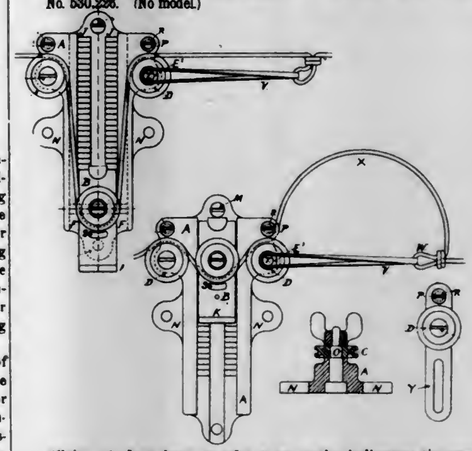
3. In an automatic fire extinguishing system, the combination of a main for conveying liquids to distributing pipes through the building, said distributing pipes being provided with automatic fire extinguisher sprinklers or valves, an elevated tank or reservoir containing a non-freezing liquid, an elevated tank or reservoir containing water, said tanks being connected to a branch of the main by separate supply pipes, and a valve in the branch between the said supply pipes, whereby the non-freezing liquid and water are kept separated.

4. In an automatic fire extinguishing system, the combination of a main for conveying liquids to distributing pipes through the building, said distributing pipes being provided with automatic fire extinguisher sprinklers or valves, an elevated tank or reservoir containing a non-freezing liquid, an elevated tank or reservoir containing water, said tank being connected to a branch of the main by separate pipes, an automatic valve in the branch between said pipes, whereby the non-freezing liquid and water are kept separated, and an automatic trip device, actuated by the flow of the non-freezing liquid from its tank to open the automatic valve in the water pipe, to enable the water to follow the non-freezing liquid through the distributing pipes and sprinklers.

5. In an automatic fire-extinguishing system, the combination of a series of pipes for conveying liquids through a building, said pipes being provided with automatic fire-extinguishing sprinklers or valves, a source of non-freezing liquid supply, a pipe connecting said source with the series of conveying pipes, a source of water supply connecting by a separate pipe with said system of conveying pipes, an automatic valve in said water pipe to normally shut off the water, and an automatic device adapted to be actuated by the discharge of non-freezing liquid to open said water valve, said water valve after being actuated being independent of the discharge of non-freezing liquid, whereby the water will follow the non-freezing liquid through the system of pipes with a velocity due to the head of water, and without liability of being interfered with by back-flow into the conduit for non-freezing liquid; substantially as described.

6. In an automatic fire-extinguishing system, the combination of a system of pipes for conveying and distributing liquids through a building, said pipes being provided with automatic fire-extinguishing sprinklers or valves, an elevated tank or reservoir containing a non-freezing liquid, a pipe connecting said tank with the system of conveying and distributing pipes, whereby the latter are kept normally full of the non-freezing liquid, an elevated tank or reservoir of water connecting by a separate pipe with said system of pipes, a normally locked valve which when released is adapted to be opened by the pressure of water from the water tank, and a trip actuated by the discharge of the non-freezing liquid for releasing said valve, said valve after its release being entirely independent of the supply of liquid in the tank originally containing the non-freezing liquid; substantially as described.

544,896. DRUM-STOP FOR STEAM-ENGINE INDICATORS. WILLIAM M. HENDERSON, Philadelphia, Pa. Filed Dec. 1, 1894. Serial No. 530,236. (No model.)



Claim.—1. In a drum stop for steam engine indicators, the combination of three grooved pulleys C, D, D, two rotating upon pins secured to a suitable frame, the third mounted on a sliding carriage, for relaxing the cord of an indicator when closed together equal to the circumferential length of rotation of the paper drum, and provided with a compensating elastic connection V, arranged and operating substantially as herein shown and described.

2. In a drum stop for steam engine indicators, the combination of two grooved pulleys D, D, rotating upon pins E, E', with guard rollers R, R, all secured to a suitable frame, and a third grooved tension pulley C, mounted on a sliding carriage, having a cord confining roller or lip, S, arranged and operating substantially as herein set forth.

3. In a drum stop for steam engine indicators, the combination of a suitable frame with pulleys D. D, attached, a sliding carriage with tension pulley C, and means for operating and securing the carriage along the racks J. J, substantially as shown and described.

4. In a drum stop for steam engine indicators, the combination of a suitable guide frame with pulleys D. D attached, a sliding carriage with tension pulley C, and means for controlling the tension of the actuating cord along a slotted path of the guide frame, substantially as herein shown and described.

5. In a drum stop for steam engine indicators, in combination with the three grooved pulleys C. D. D, the rack J. J of the guide frame A, and trunnions H. H spring L and tilting pawl I of the carriage B. substantially as shown and described.

6. In a drum stop for steam engine indicators, in combination with the three grooved pulleys C. D. D, the slotted guides F. F of the frame A, and trunnions H. H of the carriage B. substantially as shown and described.

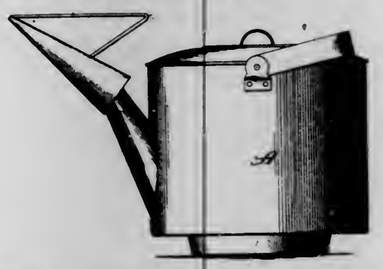
7. In a drum stop for steam engine indicators, in combination with the three grooved pulleys C. D. D. the rack J. J, and slotted guides F. F of the frame A, and the trunnions H. H, spring L and tilting pawl I of the carriage B, arranged substantially as herein set forth.

8. In a drum stop for steam engine indicators, in combination with the three grooved pulleys C. D. D, guard rollers R, R, and lip, S, the rack J, J, slotted guides F. F trunnions H, H, spring L, and tilting pawl I, arranged and operating substantially as herein set forth.

9. In a drum stop for steam engine indicators, two grooved pulleys D. D, rotating upon pins E. E', with guard rollers R, R, secured to a suitable frame, and a tension pulley C mounted on a sliding carriage, in combination with an elastic connection V, attached to the actuating cord, and to the drum stop, substantially as shown and described.

10. In a drum stop for steam engine indicators, a tension pulley C, mounted upon a carriage sliding on a suitable frame, in combination with slotted extension wings Y, carrying grooved pulley D, and guard roller R, to adjust the tension on the actuating cord, substantially as herein set forth.

544,897. APPARATUS FOR STEAMING AND RENOVATING PLUSHES, VELVETS, OR OTHER FABRICS. William T. Houston, Austin, Ill., assignor of one-half to Hope Reed Cody, same place. Filed Nov. 3, 1894. Serial No. 528,252. (No model.)



Claim.—1. A device for treating fabrics &c. comprising a steam conductor provided with a narrow unimpeded slit or opening for the passage of steam and a support arranged substantially above the opening.

2. As a new article of manufacture, an attachment for the spout of a kettle or other source of steam supply for the purpose of steaming or treating fabrics consisting of a cone provided with a narrow unimpeded slit or opening along its side through which the steam escapes or is forced.

3. A device of the class described comprising a steam conductor provided with a longitudinally extended opening and a wire supported by said conductor and arranged substantially above said opening, over which wire the fabrics to be treated are drawn.

4. A device for treating fabrics &c. comprising a hollow conductor open at one end and provided with a slit, said conductor being adapted to fit upon the spout of a steaming vessel or other source of steam supply, and a wire attached to said conductor and arranged above said slit in substantially the same vertical plane.

5. A device for treating fabrics comprising a steam conductor provided with a slit therein and a wire attached to the conductor substantially at the upper end of said slit, the free end of said wire entering through the lower portion of the slit into the interior of the conductor and adapted to act as a spring when applied in use.

6. A device for treating fabrics comprising a hollow cone provided with an opening and a wire arranged above said opening.

7. A device for treating fabrics comprising a hollow cone provided with a slit and a wire having one of its ends secured in the apex of the cone, said wire extending at an angle from the cone.

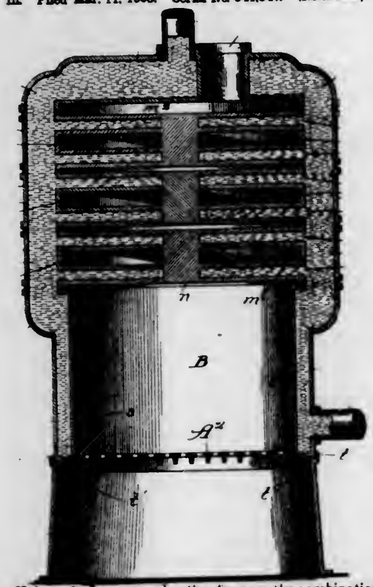
8. In combination with the spout of a steaming vessel a hollow cone provided with a longitudinal opening, a wire having one of its ends secured in the apex of the cone and means for removably securing the cone to the spout of a vessel.

9. The combination of a hollow cone provided with a slit and a wire having one of its ends secured in the apex of the cone and having its other end entering through the slit into the interior of the cone and forming a spring therein.

10. The combination of a steam conductor C provided with a longitudinally extending slit c and a wire attached to said conductor and having a straight portion D, a portion D' at an angle to said straight portion and a free portion D^3 within the conductor.

11. A device for treating fabrics adapted to be attached to the spout of a kettle comprising a steam conductor provided with a slit therein and a wire attached to the conductor and extending therefrom at an angle, the free portion of said wire entering into the interior of the conductor through the lower part of the slit, such free portion being looped and curved to form a spring adapted to bear against the front inner surface of the spout and the extreme free end of the wire extending at an angle to the loop and adapted to press against one side of the spout whereby a double spring is provided and the conductor securely held upon the spout.

544,898. BOILER-FURNACE. Henry H. Hungerford, Chicago Ill. Filed Mar. 11, 1895. Serial No. 541,347. (No model.)

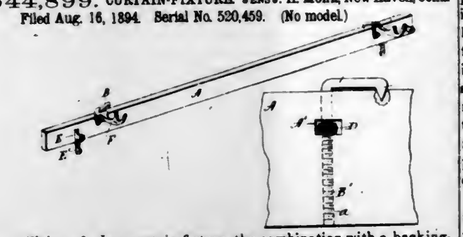


Claim.—1. In a water-heating furnace, the combination with the fire and dome chambers, of an intervening body-portion formed with vertically disposed water-columns extending to the dome chamber, and comparatively short inclined spirally disposed passages extending between the water columns and forming the walls of spiral flues, which carry off the products of combustion from the fire-chamber, substantially as described.

2. In a water-heating furnace, the combination with the fire and dome chambers, of an intervening body-portion comprising horizontal sections having vertical passages r^2 r^3 through them forming continuous vertical water columns which extend to the dome chamber, and inclined spirally disposed passages extending between the water columns and forming the walls of spiral flues which carry off the products of combustion from the fire-chamber, substantially as described.

3. In a water-heating furnace, the combination of the ash-pit, fire-chamber, water-jacket about the fire-chamber, horizontal sections above the fire-chamber having vertical passages forming water columns which communicate with the said water-jacket, inclined spirally disposed passages extending between the water columns and forming the walls of spiral flues which communicate with the fire-chamber, dome chamber above the sections communicating with the said water columns, flue space communicating with the said flues and having an outlet, discharge pipe extending from the dome chamber and return pipe extending to the said water-jacket, all constructed and arranged to operate substantially as and for the purpose set forth.

544,899. CURTAIN-FIXTURE. Jens J. H. Mohr, New Haven, Conn. Filed Aug. 16, 1894. Serial No. 520,459. (No model.)



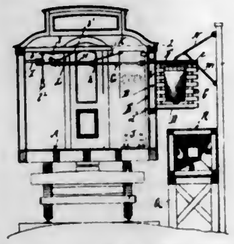
Claim.—1. In a curtain-fixture, the combination with a backing-piece, of curtain-roller brackets applied directly to the outer face thereof, and two suspension hooks, each consisting of a horizontal arm provided at its outer end with a downwardly turned retaining-point, and at its inner end with a downwardly turned vertical shank, which is swiveled in the backing-piece, substantially as set forth, and whereby the hooks are adapted to be turned in one direction or the other in the backing-piece to increase or diminish the reach of their horizontal arms, according to the projection of the window-casing.

2. In a curtain-fixture, the combination with a backing-piece, of curtain-roller brackets applied to the outer face thereof, and two suspension hooks, each consisting of a horizontal arm provided at its outer end with a downwardly turned retaining point, and having a downwardly extending, vertical shank located at the inner end of the said arm, and pivotally and vertically adjustably connected with the backing-piece, substantially as set forth, and whereby the hooks are adapted to be turned in one direction or the other in the backing-piece to increase or diminish the reach of their horizontal arms according to the projection of the window-casing, and to be vertically adjusted for truing the same.

3. In a curtain-fixture, the combination with a backing-piece, of curtain-roller brackets applied thereto, two pivotal horizontal, rearwardly extending, suspension hooks each having at its inner end a vertically threaded shank extending downward into the backing-piece from the upper edge thereof, and adjusting nuts mounted upon the threaded portions of the said shanks, and located in openings formed to receive them in the backing-piece, and provided for raising and lowering the shanks and hence the hooks as required to secure a true horizontal position for the curtain-roller, substantially as described.

4. In a curtain-fixture, the combination with a backing-piece adapted to take a bearing directly against a window-casing, of curtain-roller brackets applied to the outer face of the said backing-piece, two rearwardly extending suspension hooks connected with the backing-piece and adapted to be engaged with the casing to hold the backing piece firmly against the same, and two curtain-hole brackets adapted at their inner ends to be engaged with the said hooks, and to bear upon the outer face of the backing-piece with which they are connected through the medium of the hooks, substantially as set forth.

544,900. MAIL-BAG CATCHING AND DELIVERING MECHANISM. George R. Moore, East Springfield, Pa., assignor of one-fourth to Charles C. Strong, same place. Filed Mar. 13, 1895. Serial No. 541,534. (No model.)



Claim.—1. The combination in a mail bag catching mechanism for railway cars, of an upright plate or frame hinged on the outside of a railway car at the rear side of an opening therein, bar and link mechanism connected with and adapted to move the free end of said plate or frame outward at an angle with the side of the car, and retain it in such position during the operation of catching a mail bag, and mechanism connected therewith actuated by the impact of the bag when it enters the car, and operating to close said plate or frame up against the side of the car, substantially as and for the purpose set forth.

2. The combination in a mail bag catching mechanism for railway cars, of crane mechanism at the side of a railroad track for suspending a mail bag adjacent to cars passing on such track, an opening in the side of a railroad car having a spring actuated door so hinged to the front side thereof as to open inward, a vertical plate or frame hinged to the outside of said car at the rear side of said opening, so as to open outward, bar and link mechanism adapted to swing said plate or frame outward at an angle with the side of the car and retain it in such position until a mail bag is caught from the crane thereby, and mechanism connected with said bar and link mechanism, adapted to receive the bag when caught, and be operated by the impact thereof to close said plate or frame up against the side of the car, substantially as and for the purpose set forth.

3. The combination in a mail bag catching mechanism for railway cars, of a vertical plate or frame hinged to the outside of a railway car at the rear side of an opening therein, and adapted to swing outward from the side of the car at an angle therewith, a horizontal plate secured to the lower edge of said vertical plate or frame, a curved bar secured to the outer end of the top of said vertical plate or frame, link mechanism connecting said bar with the car frame, whereby said vertical plate or frame may be moved outward and inward, a spring actuated door hinged to the inside of the car at the side of the opening in the side of the car, and adapted to close the same and be opened inward by the impact of a mail bag being caught, so as to allow the bag to pass into the car, and an upright spring supported buffer plate adapted to receive impact of the mail bag, when in the car, and stop it, substantially as and for the purpose set forth.

4. The combination in a mail bag catching mechanism for railway cars, of a vertical plate or frame hinged to the outside of a railway car at the rear side of an opening therein, and adapted to be swung outward at an angle with the side of the car, a horizontal plate secured to the lower edge of said vertical plate or frame formed of sections hinged together, a buffer plate to sustain the impact of the bag when caught and received into the car, and cord mechanism connecting said buffer plate with said link mechanism, whereby the impact of the mail bag on said buffer plate operates to close said vertical plate or frame up against the side of the car, substantially as set forth.

5. The combination in a mail bag catching mechanism for railway cars, of a vertical plate or frame C hinged to the outside of a railway car at the rear side *b* of an opening B in the side of said car, a horizontal plate D, composed of the section *d* secured to the lower edge of the vertical plate or frame C, and the section *d'* hinged thereto, a curved bar F secured to the top of the outer end of the plate or frame C, a link G pivoted to the end of said bar F, a link H pivoted at one end to the central part of the link G, and at the other to a support I on the side of the car, a cord L secured to the end *g* of the link G and passing over pulleys on the car, a spring actuated door E hinged to the inside of the car at the front side of the opening B therein, a spring supported buffer plate J adapted to sustain the impact of a mail bag received into the car, a cord connecting said buffer plate with the end *h* of the link H, and a crane mechanism M N at the side of the railway track for suspending a mail bag to be caught, substantially as and for the purpose set forth.

6. The combination in a mail bag delivering mechanism for railway cars, of a crane rod pivoted to the sides of the door frame in the side of a railway car, a cord and weight for suspending said crane rod with a mail bag thereon, and for raising it up when not in use, and a box at the side of the railway track adapted to catch and receive mail bags from said crane rod as the car passes said box, substantially as and for the purpose set forth.

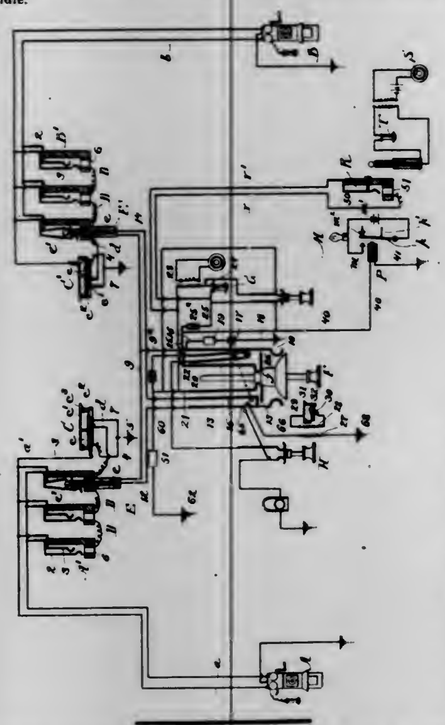
7. The combination in a mail bag delivering mechanism for railway cars, of a crane rod N' pivoted to the sides of the door frame O in the side of a railway car, a suspending rope P connecting with said crane rod N' and passing over pulleys *p*, *p'* *p'*, a weight p^3 on the end of said rope, a box R at the side of the railway track adapted to receive mail bags from said crane rod, and spring actuated automatic doors *r r r r* in the bag receiving end of said box, substantially as and for the purpose set forth.

8. The combination in a railway mail car, of an upright plate or frame hinged to the outside of such car at the rear side of an opening therein, bar and link mechanism connected with and adapted to move the free end of said plate or frame outward at an angle with the side of the car, and retain it in such position during the operation of catching a mail bag, and afterward close said plate or frame up against the side of the car, substantially as and for the purpose set forth.

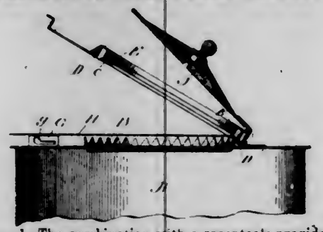
544,901. TELEPHONE-EXCHANGE APPARATUS. Joseph J. O'Connell, Chicago, Ill., assignor, by mesne assignments, to the American Bell Telephone Company, Boston, Mass. Filed Apr. 29, 1893. Serial No. 472,381. (No model.)

Claim.—In a telephone exchange system comprising a multiple switch-board and suitable adjunctive apparatus, the combination with the operator's telephone circuit and a key whereby said circuit is

thrown into and out of circuit of subscriber's line of a signal and means for controlling said signal connected with said key, whereby when said key is shifted to throw the operator's telephone into the subscriber's circuit, said signal will be brought into action to indicate that the operator is busy and when the operator's telephone is cut out of the subscriber's circuit, said signal will indicate that said operator is idle.



544,902. SEALED RECEPTACLE. PETER J. PAULY, Jr., St. Louis Mo. Filed Mar. 27, 1895. Serial No. 543,384. (No model.)

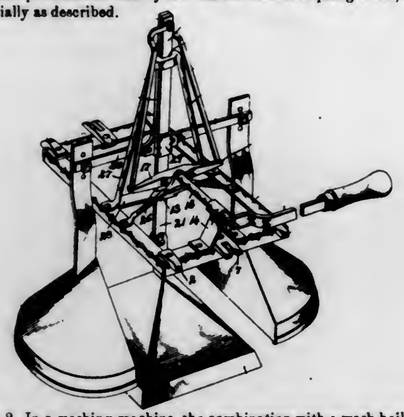


Claim.—1. The combination with a receptacle provided with an opening, of teeth at the edge of the opening, a clamp hinged to the receptacle, flanges on the clasp between which the teeth pass when the clamp is turned down, a sealing sheet, and a cover for protecting the sealing sheet through the opening in the clamp; substantially as described.

2. The combination with a receptacle provided with an opening, of projections arranged around said opening, a sealed sheet, a clamp provided with recesses to receive the projections, for holding the sheet in position, a hasp on the clamp, a projection on the receptacle which passes through the sealing sheet and hasp, and a seal which passes through the projection for sealing the hasp and clamp; substantially as described.

544,903. WASHING-MACHINE. EDWARD J. RICHMOND, Carthage, Mo., assignor of one-half to Isaac D. Hesser and Jacob Y. Hesser, same place. Filed July 11, 1894. Serial No. 517,245. (No model.)

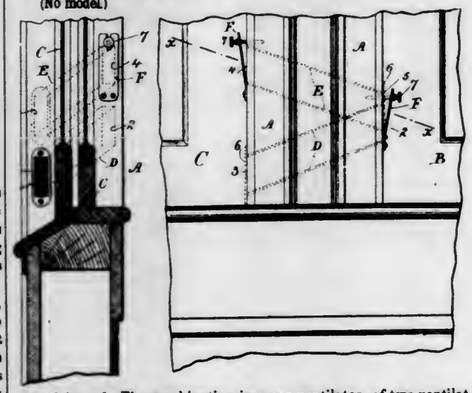
Claim.—1. In a washing machine, the combination of a horizontally disposed frame designed to be mounted on a wash-boiler and provided with suitable guides, centrally arranged reversely reciprocating plunger bars mounted thereon, and sliding on each other one of the plunger bars having at its bottom outward extending arms and provided with a keeper or guide receiving the other plunger bar, a rock shaft journaled on the frame and provided with oppositely disposed arms, the opposite inclined pitmen extending upward from the arms of the rock-shaft and connected with the upper ends of the plunger bars, a central pounder carried by one of the plunger bars, and end pounders carried by the arms of the other plunger bar, substantially as described.



2. In a washing machine, the combination with a wash boiler, of supporting plates arranged at the upper edge of the same and having end extensions and provided with clamps engaging the wash boiler, a supporting frame disposed transversely of the boiler and provided with outward extending feet resting upon the supporting plate and located between the end extensions, clothes pounders arranged within the boiler, and mechanism mounted on the frame for reciprocating the clothes pounders, substantially as described.

3. In a washing machine, the combination with a wash boiler, of supporting plates extending along and provided with clamps engaging the upper edges of the boiler, said plates being provided with outward extending supporting flanges, a transverse frame resting upon the sides of the boiler, and provided with projections arranged upon said supporting flanges and provided with slots, the pivotally mounted fastening devices arranged on the supporting flanges and consisting of shanks located in the slots of the projections and handle portions adapted to be turned transversely of the slots to fasten the projections to the supporting flanges, clothes pounders arranged within the boiler, and mechanism carried by the frame for reciprocating the pounders, substantially as described.

544,904. VENTILATOR FOR RAILWAY-CARS. GEORGE T. ROGERS, North Plainfield, N. J. Filed June 17, 1895. Serial No. 553,003. (No model.)

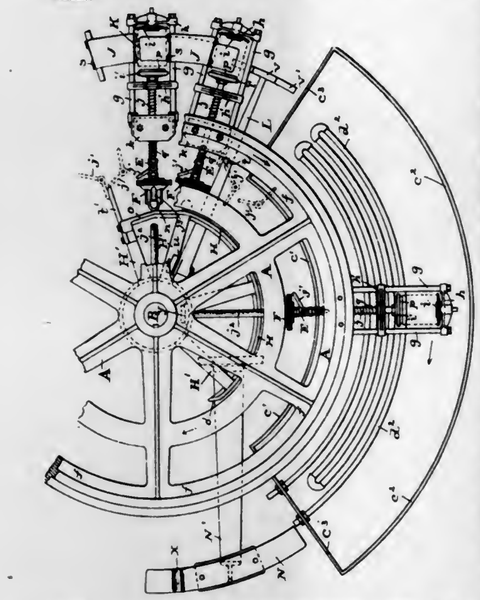


Claim.—1. The combination in a car ventilator, of two ventilating tubes passing through the side of the car between two of the windows, such tubes leading from the outside upwardly and inwardly in opposite directions and opening through the respective window frames inside and outside the car, substantially as set forth.

2. The combination in a car ventilator, of two ventilating tubes passing through the side of the car between two of the windows, such tubes leading from the outside upwardly and inwardly in opposite directions and opening through the respective window frames inside and outside the car, and movable stoppers applied to the ventilating device for regulating the volume of air passing through the same, substantially as set forth.

3. The combination in a car ventilator, of two ventilating tubes passing through the side of the car between two of the windows, such tubes leading from the outside upwardly and inwardly in opposite directions and opening through the respective window frames inside and outside the car, and stoppers formed of spring or sheet metal plates each connected at one end to the window frame the other end movable away from such window frame and a screw for adjusting the proximity of the moving end to the window frame, substantially as set forth.

544,905. CAN-TESTING MACHINE. WILLIAM H. H. STEVENSON Mount Washington, Md. Filed Aug. 18, 1894. Serial No. 520,442. (No model.)



Claim.—1. A sealing cap for closing the mouths of cans while being tested, having, in combination, a rigid disk mounted on the end of an air-pipe; and an elastic cap seated on the said rigid disk with an air-chamber between the rigid disk and elastic cap for the reception of air under compression,—said disk and cap provided with an always-open passage through them to transmit air from the air-pipe to the can under test, and also provided with a communication from the air-pipe to said air-chamber, whereby compressed air flowing from the pipe will enter the can which is under test and also enter the said air-chamber of the sealing-cap and inflate or press out the elastic cap.

2. A sealing cap for closing the mouths of cans while being tested, having, in combination, a rigid disk mounted on the end of an air-pipe; an elastic cap seated on the disk with an inflatable chamber between the disk and cap; a screw through the center of the elastic cap, said screw provided with an always-open passage, r', through which compressed air from the air pipe may flow to enter the can; and an air communication from the air-pipe to said inflatable chamber.

3. The combination, in a can-testing machine, of a rotary carrier having a box or hub provided with passages for supplying air under compression; an air-pipe having one end in communication with said box or hub and provided at the other end with a rigid disk; and an elastic cap on the disk provided on the side next to the disk with an inflatable annular chamber, p^3, said disk and cap having an always-open passage through them by means of which compressed air may flow from the pipe to enter the can, and also having an air-communication through which air may pass to said inflatable chamber; and a valve, E, in the air-pipe to control the supply of compressed air both to the can and inflatable chamber.

4. A sealing cap for closing the mouths of cans while being tested, having, in combination, a rigid disk mounted on the end of an air-pipe; an elastic cap having a depressed center seat, p^3, and provided on the side next to the disk with an inflatable annular air-chamber, p^3, which surrounds said depressed center; a screw having its head bearing on said seat and confining the cap and provided with an always-open passage, r', through which compressed air may flow from the air-pipe to enter the can to be tested; and a passage through which compressed air may flow to enter the said inflatable chamber.

5. In a can-testing machine, the combination of a rotary carrier; can-holders mounted on said carrier, each holder having a movable disk; an air-pipe leading from the hub of the rotary carrier to the said movable disk; a stationary cam-rail; a contact piece, n, carried by the air-pipe and which at one part of the revolution of the carrier bears on the said stationary cam-rail; and an equalizing case on the air-pipe between the said contact piece and movable disk, for the purpose described.

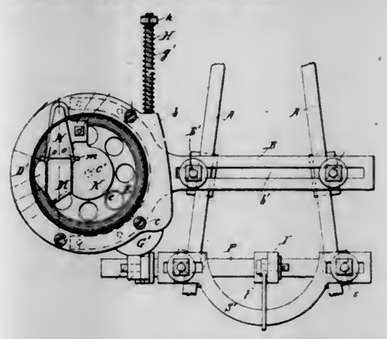
6. In a machine for testing cans by means of compressed air, the combination of a rotary carrier; can-holders mounted on said carrier; an air-pipe leading from the hub of the rotary carrier to each of said can-holders and serving to apply compressed air to the cans while they are in the holders; a valve-cock in each of said air-pipes to cut off the supply of compressed air to any given can-holder in case no can enters the said holder; and means whereby any one of the said valve-cocks will be closed automatically in the contingency that the can-holder which is in connection therewith fails to receive a can.

7. In a can-testing machine, the combination of a rotary carrier; can-holders mounted on said carrier; means to apply compressed air to the cans while they are in the can-holders; a valve for each separate can-holder to let in or cut off the compressed air; means attached to a stationary part of the can-machine and located in the circular path traversed by all the said valves and serving for automatically closing the valve connected with any can-holder which fails to receive a can; and a stationary knocker device to open any of said valves that may be closed.

8. In a can-testing machine, the combination of a rotary carrier; can-holders mounted on said carrier; means to apply compressed air to the cans while they are in the can-holders; a valve for each separate can-holder to let in or cut off the compressed air; a movable device located normally in the circular path traversed by all the said valves and serving when in its normal location to close said valves; and means mounted in the circular paths traversed by all the tin-cans in the holders, and connected with said valve-closing device so that a tin-can in the holder will move said device from its normal location out of the circular path of the said valves.

9. In a can-testing machine, the combination of a rotary carrier, can-holders mounted on said carrier; means to apply compressed air to the cans while they are in the can-holders; a valve for each separate can-holder to let in or cut off the compressed air; and a depressible arm to close the valve of any holder which contains no can and having a shoe which normally is in the circular path traversed by all the tin-cans in the holders, said shoe and arm being depressed by each tin-can.

544,906. CORN-PLANTER. JOHN T. WALTON, Walker, Mo. Filed Dec. 8, 1894. Serial No. 531,225. (No model.)



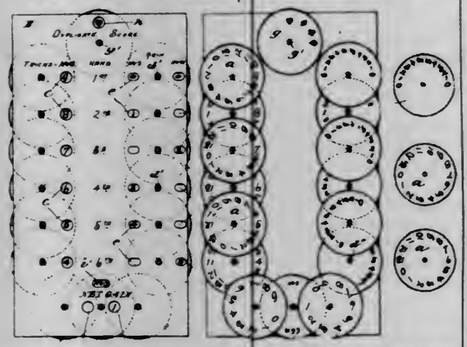
Claim.—1. In a corn planter adapted to be attached to a cultivator, the combination, with devices for dropping the corn operated by a slide; of an adjustable supporting arm provided with a long slot and resting on the cultivator beams, and hooked bolts for securing the said arm in position; a shaft and adjustable arms T and p, the arm p being pivoted to the said slide; a plate provided with a curved portion for clearing the arm T and resting on the cultivator beams; hooked bolts forming bearings for the said shaft and engaging with the said plate and beams; and an operating rod pivoted to the arm T, substantially as set forth.

2. In a corn planter, the combination, with a base plate provided with distance pieces and a nozzle, a ring having a flange secured over the said distance pieces, and the seed hopper above the ring; of the dropping plate provided with seed holes and ratchet teeth and journaled between the said base plate and flange; a spring-actuated stop pawl; a slidable bar provided at its rear end with a lug for the attachment of its operating mechanism, at its front end with a round

portion *g* slidable in a lug on the base plate and provided with a nut, and at its middle with a spring hook engaging with the said ratchet teeth; and a spiral spring interposed between the said nut and lug and operating to move the said bar in one direction, substantially as set forth.

3. In a corn planter, the combination, with the base plate provided with a central pin, the distance pieces *d*, the nozzle C', the lug *h*, and the guard J; of the dropping plate provided with seed holes and ratchet teeth and journaled on the said pin; a spring-actuated stop pawl; and a slidable bar having a hooked portion G' at one end engaging with one of the distance pieces and operating to guide the rear end of the said bar and prevent it from being slid too far forward, a round portion at the other end sliding in the said lug and provided with a nut on its end, a spring interposed between the said lug and nut, and a spring hook secured to the middle portion of the bar and engaging with the ratchet teeth, substantially as set forth.

544,907. **GAME-COUNTER.** LAWRENCE F. BRAINE, Ridgewood, N. J., and BANCROFT G. BRAINE, Brooklyn, N. Y. Filed Feb. 28, 1895. Serial No. 539,961. (No model.)



Claim.—1. The duplicate whist score card, consisting of two plates, secured one to the other, each having a series of oppositely placed openings therein, and a series of revolving disks located between the plates, each disk in the series having numbers on its opposite faces, from 1 to 13 inclusive, and disposed in such manner that the sum of the numbers simultaneously exposed through said openings, is 13, whereby the number exposed through one opening may indicate the tricks taken in the original score by one set of players while the oppositely and simultaneously exposed number will indicate the number to be taken in the duplicate score, by the same set of players, substantially as described.

2. A score card consisting of two plates secured together and having several series of openings therein, two series of revolving disks, each disk in one series bearing numbers from 1 to 13 on both of its faces which are simultaneously exposed on both sides of the counter through said openings, and each disk in the other series bearing numbers on one half of one face only which are exposed through openings on that respective side of said counter, substantially as described.

3. A game counter consisting of two plates secured together, one of which is provided with a series of openings *b* and the other with the several series of openings *c*, *e*, *f*, and the series of disks *a* and *d* secured to and between said plates and bearing numbers or characters registering with said openings, substantially as described.

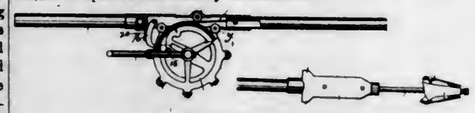
4. A game counter consisting of the plates A, B secured together and having several series of openings therein arranged as described, the series of disks *a d* and the disks *i*, *k* and *l* secured to and between said plates, and bearing numbers or characters registering with said openings in the plates, all constructed and arranged in a manner and for the purpose, substantially as set forth.

5. A score card consisting of two plates secured together, and having openings therein, and a series of disks secured to and between said plates, each disk in the series having its both sides or faces, bearing numbers from 1 to 13, and so disposed that the sum of the two numbers simultaneously exposed through said openings on the opposite side of the card shall equal 13, substantially as described.

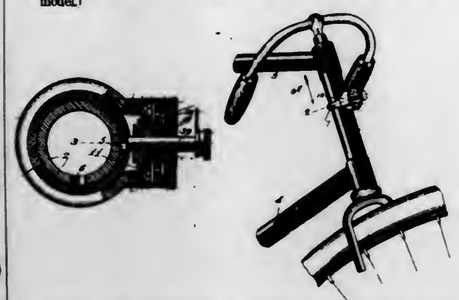
544,908. **BOILER-TUBE CLEANER.** FRANK M. CLARK, Tilton, N. H., assignor of one-half to William I. Holmes, Boston, Mass. Filed Jan. 2, 1895. Serial No. 533,513. (No model.)

Claim.—1. In a boiler tube cleaner, a body in combination with a reel thereon; a band wire wound on said reel; a scraper connected with the free end of said band wire and anti-friction rolls on said reel for engaging the coil of wire.

2. The tubular body provided with the guide, C, in combination with the reel attached to said body and provided with anti-friction rolls, *y*; the band wire, *x*, on said reel having its free end projecting through said body; the scraper, D, provided with spring-pushed blades and secured to said band wire and a stop for the reel, all being arranged to operate substantially as described.

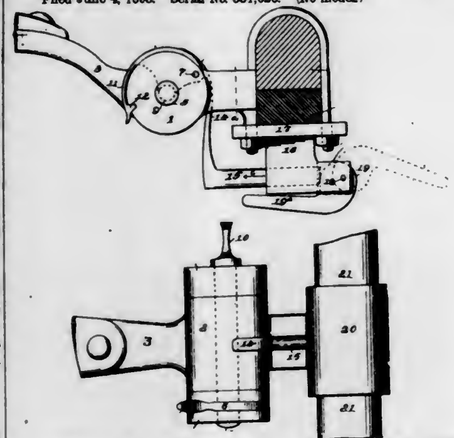


544,909. **COMBINATION-LOCK FOR BICYCLES.** GEORGE A. CRANCER, Lincoln, Nebr. Filed Jan. 21, 1895. Serial No. 535,612. (No model.)



Claim.—The combination, of a suitable shell, means for securing said shell in position upon the object which is to be locked, a fixed transverse partition in said shell, said partition having a circular aperture from which extends a lateral notch or recess, a bearing 18 mounted in the circular aperture of said partition and provided with a tubular bore, a bolt mounted to slide and turn in the bore of said bearing, a knob on the outer end of said bolt, a pointer connected to said bolt exterior of the shell, a graduated plate exterior of said shell and adjacent said pointer, a wedge-shaped tumbler pivotally connected at its outer end to the said bearing 18 and provided at its free end with a tongue or projection which extends at an angle relative to the body of said tumbler, a pin or projection 42 on said bolt to engage the free end of said tumbler when said tumbler is retracted, and means whereby the relative positions of the pin or projection of the bolt, the said tumbler and the tongue or projection 38 of said tumbler, may be approximated, to permit the free end of said tumbler to gravitate downward out of the path of said projection carried by the bolt, substantially as herein specified.

544,910. **THILL-COUPLING.** GEORGE A. FENN, Watertown, Conn. Filed June 4, 1895. Serial No. 551,628. (No model.)

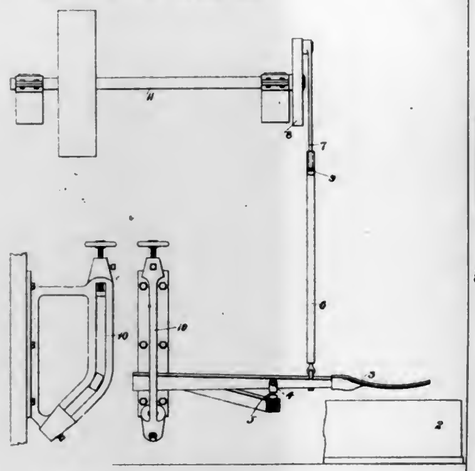


Claim.—1. In a thill coupling, the bolt 5 having the annular groove 9, coupling ear 1 having slot 4; pivotally supported latch 6 having groove 8 to register with the groove of said bolt, combined with the thin spring finger 11 projecting from the free end of said latch and carrying the lock-catch 12 adapted to engage with the notch 13 of the coupling ear, and thus lock said latch in position, as set forth.

2. The herein described improvement in thill couplings, consisting of the anti-rattler spring finger 14 having a shank 15, projection 16 having a hole therethrough to operatively admit said shank, handle cam 19 pivotally supported on said projection and adapted to engage with the free end of said shank, for the purpose described and set forth.

544,911. **PAN-EMPTYING MACHINE.** EMET S. FICKES, Calumet, assignor to Stevenson & Co., Wellsville, Ohio. Filed Oct. 5, 1892. Serial No. 447,883. (No model.)

Claim.—1. A pan-emptying machine comprising a pivoted shovel, a connection between the shovel and a moving part, said connection being arranged to raise and lower the shovel at determined intervals, and means for automatically tipping the shovel each time that it is raised; substantially as described.



2. A pan-emptying machine comprising a pivoted shovel, a crank and connecting rod arranged to raise the shovel at determined intervals, and a guide arranged to tip the shovel at each upward motion thereof; substantially as described.

3. A pan-emptying machine, comprising a pivoted shovel, a crank and connecting rod arranged to raise and lower the same, and a slotted guide through which the handle projects, said slot being curved for a portion of its length; substantially as and for the purposes described.

544,912. **PROCESS FOR MAKING HÆMATIN ALBUMEN.** NIELS R. FINSEN, Copenhagen, Denmark. Filed May 22, 1895. Serial No. 550,263. (No specimens.) Patented in Sweden Oct. 25, 1894, No. 8,586.

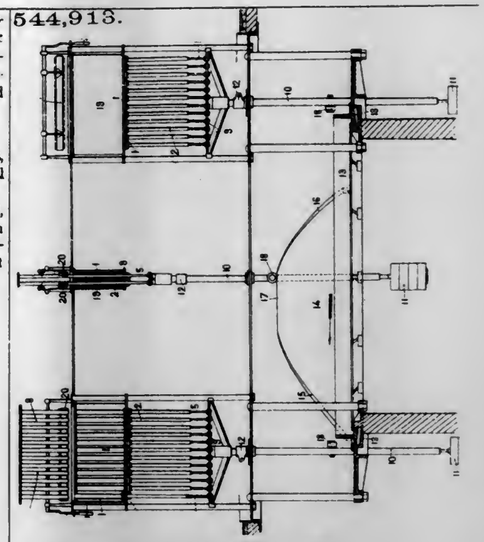
Claim.—1. The herein-described process for the production of hæmatin-albumen, which consists in mixing diluted defibrinated blood with an acid, coagulating the albumen by heating it to about 90° centigrade and washing the albumen with water, then drying it by extracting the water, and heating the product *in vacuo* at 45° centigrade and lastly pounding the brittle mass obtained and grinding it to a fine powder.

2. The herein-described process for the manufacture of a food product, which consists in mixing defibrinated blood with an acid, coagulating, washing and drying the albumen, heating the product *in vacuo*, and finally powdering it, substantially as described.

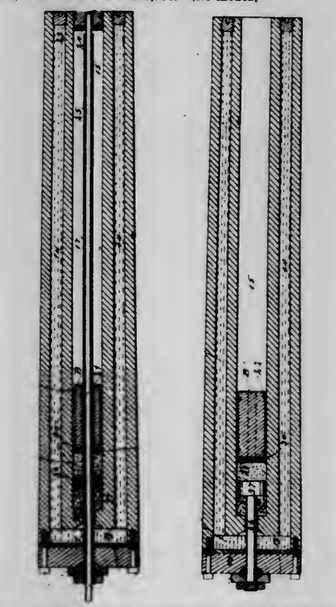
544,913. **APPARATUS FOR MOLDING WAX-COATED CANDLES.** LOUIS J. B. FOURNIER, Marseilles, France. Filed May 18, 1895. Serial No. 549,834. (No model.)

Claim.—In a machine for molding wax coated candles, the combination of a mold, of a cylindrical pusher mandrel having a smaller external diameter than the internal diameter of the mold, said pusher mandrel being arranged centrally within said mold and provided at its upper end with a plug centrally apertured for the passage of a wick and provided upon its upper end with a recess for molding the candle tip, means for projecting said pusher-mandrel into the mold to form an annular space between the mandrel and mold for the reception of the melted wax to form the exterior casing, means for retracting said mandrel for the reception of the filling, and means for raising said mandrel to eject the finished candle, substantially as described.

544,913.



544,914. **ORDNANCE.** JOHN GRAHAM, Davenport, Iowa. Filed July 5, 1893. Serial No. 479,581. (No model.)

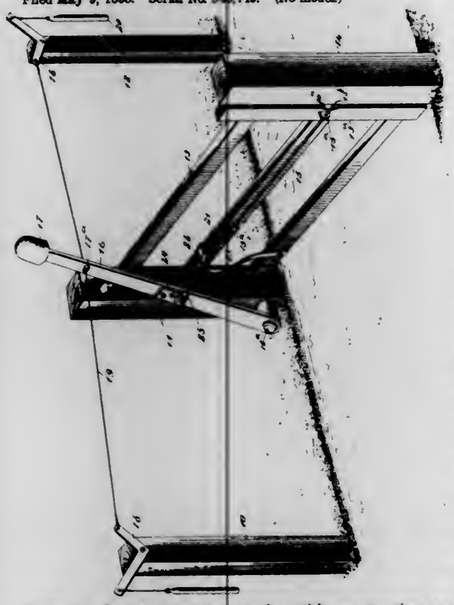


Claim.—1. In a gun, the combination with a barrel of a sectional shot, one section having a longitudinal opening and fitting as usual in the barrel, and the other section fitting in the muzzle of the barrel and provided with a tube adapted to be filled with an explosive, substantially as described.

2. In a gun, a barrel having a tube held centrally within its bore, the said tube extending from the breech nearly to the muzzle, in combination with a shot having an opening through it and sliding upon said tube, and a second shot fitting in the muzzle of the gun and provided with a tube projecting into the tube of the barrel, substantially as described.

3. In a gun, the combination with a barrel provided with a tube held centrally in its bore, the said tube extending from the breech nearly to the muzzle, of a shot having an opening through it and fitting upon the said tube, and a second shot held in the muzzle of the barrel and provided with a tube projecting into the tube of the barrel and adapted to be filled with an explosive, said second shot being provided at its inner face with a soft metal facing, substantially as herein shown and described.

544,915. GATE. RANDOLPH F. HAGEMAN, New Madison, Ohio. Filed May 9, 1895. Serial No. 548,749. (No model.)



Claim.—1. In a gate, the combination, with a supporting post and a latching post, of the gate hinged to the said supporting post, a weighted tumbler lever pivoted to said supporting post, the latch rod slidably mounted on the gate, the pivoted angle lever carried by the gate, a link connection between one member of the angle lever and latch rod, a link connection between the other member of the said angle lever and tumbler lever, the angle levers mounted on posts in line with the supporting post, the weighted handles on said angle levers, and the connection between said angle levers engaging loosely with the tumbler lever, substantially as specified.

2. The combination, with the supporting post and the latch post, of the gate hinged to the supporting post, the weighted tumbler lever, the latch rod slidably mounted on the gate and having one end turned around the upright at the free end of the gate, the means for imparting motion to the tumbler lever and connections between the latch rod and tumbler lever whereby said latch rod is moved in both directions by the said direct engagement with the tumbler lever, substantially as specified.

544,916. WOVEN FABRIC. ASA HARDY, Manchester, and EDWARD EVANS, Manningham, England. Filed Mar. 3, 1894. Serial No. 502,186. (No model.)



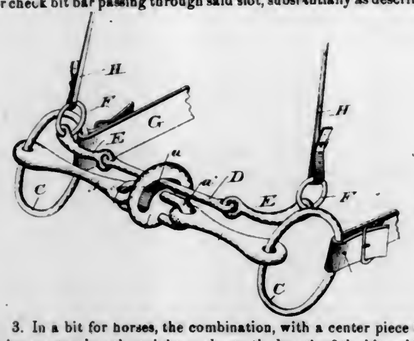
Claim.—1. A fabric consisting of alternating stripes of warp of two different kinds of fiber, and a weft of fiber like one of the stripes of warp, part of the weft forming a cut pile with the warp of the same fiber, the other part of the weft being interwoven with and binding the warps of both stripes, the back of said fabric being smooth and free from projecting ends, substantially as set forth.

2. A fabric consisting of alternating stripes of warp of two different kinds of fiber, and a weft of fiber like one of the stripes of warp, part of the weft forming a cut pile with the warp of the same fiber without being bound by the warps of the other stripe, the other part of the weft binding the warps of both stripes, and the back of said fabric being smooth and free from projecting ends, substantially as described.

544,917. BRIDLE-BIT. CHARLES N. HART, Pittsford, Vt. Filed May 21, 1895. Serial No. 550,106. (No model.)

Claim.—1. In a bit for horses, the combination, with a center piece arranged with its greatest length at right angles to the length of the bit and having a slot, of a pair of bit bars attached to said center piece, and an over-check bit bar passing through the slot, substantially as described.

2. In a bit for horses, the combination, with a center piece having an approximately oval shape and arranged with its greatest length at right angles to the length of the bit and provided with an oval slot, of a pair of bit bars attached to the center piece and an over check bit bar passing through said slot, substantially as described.



3. In a bit for horses, the combination, with a center piece having its greatest length at right angles to the length of the bit and having a segmental slot and an eye at each side, of a bit bar loosely attached to each eye, a ring at the outer end of each bit bar and an over check bit bar passing through and loosely within the slot in the center piece, and a ring at each end of the over check bit bar, substantially as described.

4. In a bit for horses, the combination, with a center piece approximately oval on its upper portion and having a segmental slot conforming to the said oval portion, the forward portion of said slot being nearer the periphery of the oval than the rear portion, of a bit bar attached to each eye, each bit bar having a ring at its outer end, and an over check bit bar comprised essentially of a center and two outer bars, passing loosely through the slot, substantially as described.

544,918. SULKY. THOMAS S. HEATH, Cross Timbers, Mo. Filed May 18, 1895. Serial No. 549,830. (No model.)



Claim.—1. A unicycle having a yieldingly-supported axle, and means for shifting the position of said axle to conform to any desired inclination, as set forth.

2. A unicycle having a yieldingly-supported axle, and means connected to said axle at or near its ends for applying variable pressure thereto, as set forth.

3. A unicycle having its axle yieldingly supported, foot-pedals and links or pitmen connected to said pedals and designed to bear on said axle at or near its ends, as set forth.

4. A unicycle having its axle yieldingly-supported, spring-pressed pedals, and links or pitmen connected with said axle at or near its ends, as set forth.

5. A unicycle having its frame provided with slotted cylinders, a wheel having its axle fitted in said cylinders, springs in said cylinders, and means connected to said axles near its ends for increasing and releasing the pressure thereon, as set forth.

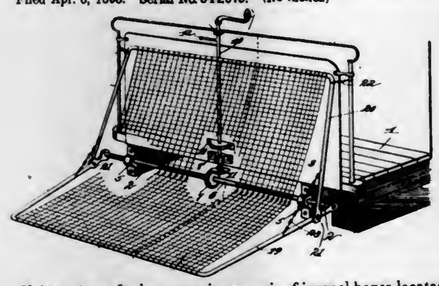
6. A unicycle having its frame provided with slotted cylinders, a wheel having its axle fitted in said cylinders, springs in said cylinders, pivoted foot-pedals, links or pitmen connected thereto, and spring-pressed connections between said links or pitmen and axles, substantially as set forth.

7. The combination with the vehicle frame and body, of the slotted cylinders secured to said frame and body, the wheel having its axle fitted in said cylinders, springs acting thereon, foot-pedals pivoted to said body, springs acting thereon, links or pitmen connected to said foot-pedals, levers to which said links or pitmen are connected, and springs between said levers and said axle, substantially as set forth.

8. The combination with the vehicle frame and body, of the slotted cylinders secured to said frame and body, the wheel having its axle fitted in said cylinders, springs acting thereon, foot-pedals pivoted to said body, cylinders connected to said pedals, springs inclosed therein, plunger rods pivoted at their outer ends to said body and working in said cylinders, links or pitmen connected to said foot-pedals, bell-crank levers, cylinders connected thereto, springs inclosed therein, and plunger-rods working in said cylinder and connected at their outer ends to said axle, substantially as set forth.

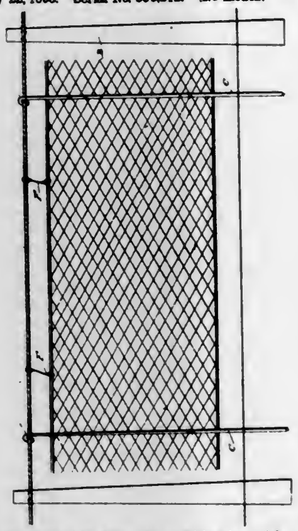
9. The combination with the frame and body, of the slotted cylinders, upper and lower springs located therein, adjustable rods in the upper ends of said cylinders for regulating the tension of said springs, the wheel having its axle provided with spherical portions fitted between said springs, the spring-pressed foot pedals, the spring-pressed levers for acting on said axle near its ends, and links or pitmen connecting said foot-pedals to said levers, substantially as set forth.

544,919. CAR-FENDER. JOHN B. HOAGLAND, St. Louis, Mo., assignor of five-eighths to L. Frank Ottofy and James A. Lane, same place. Filed Apr. 8, 1895. Serial No. 544,875. (No model.)



Claim.—A car fender, comprising a pair of journal-boxes located upon the end of a car, a shaft journaled in said boxes, a U-shaped frame having its ends fixed to said shaft, a U-shaped frame having its ends pivoted near the ends of and to the first mentioned frame, chains connecting said U-shaped frames, chains connecting the upper end of the last mentioned frame to the dashboard, a flexible net connecting the ends of said frames, a bevel gear-pinion located upon the transversely positioned shaft, suitable journal-bearings located upon the dashboard and in vertical alignment with each other, a shaft journaled in said bearings, a bevel gear-pinion mounted upon the lower end of said shaft and meshing with the first mentioned bevel gear-pinion, a ratchet-wheel located upon said shaft, a spring-actuated dog for engaging the teeth of said ratchet-wheel, and an operating handle for operating this vertically moving shaft.

544,920. WIRE FENCE. DANIEL KAUFMAN, Boiling Springs, Pa. Filed May 22, 1895. Serial No. 550,212. (No model.)



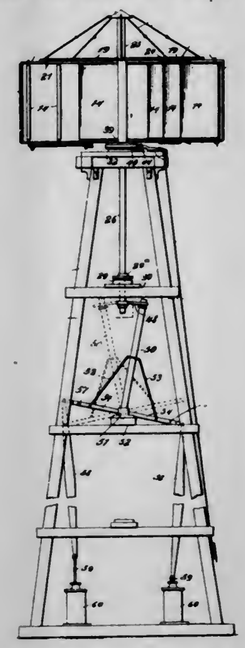
Claim.—In a portable fence the combination with a supporting cable and a barrier of woven wire, of stays upon which the woven wire is fastened, the stays having one end embedded in the earth the other end being formed with hooks and hung over the cable, substantially as described.

544,921. PICTURE. LUDWIG KNOEFEL, New York, N. Y. Filed Jan. 15, 1895. Serial No. 534,995. (No model.)

Claim.—As a new article of manufacture, a picture consisting of a white marble slab having a grained surface, a drawing produced on the said grained surface by a lithographic crayon, and a coating of varnish covering the drawing and grained surface, substantially as shown and described.



544,922. WIND-MOTOR. RICHARD LUNDQUIST, Laguna de Terminos, Mexico. Filed Sept. 10, 1894. Serial No. 522,561. (No model.)



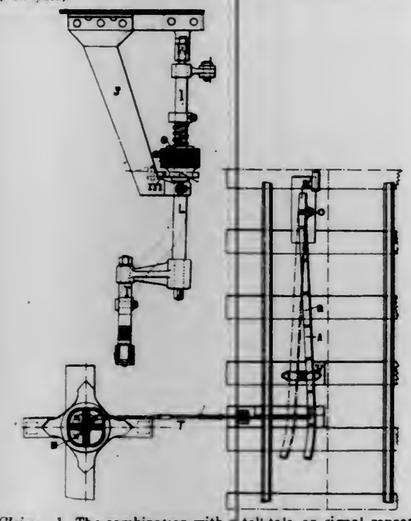
Claim.—1. In a wind motor, the wind-wheel comprising a frame having radially arranged members placed one above the other, cross-braces connecting the several members, a series of fans to engage the cross-braces, and links pivoted to the outer fans and arranged to slide on the cross-braces, substantially as described

2. In a wind wheel the combination of a frame having two members provided with aligned apertures, one of which extends through the member in which it is formed, a fan located between said frames and having pins at opposite edges adapted to enter the respective apertures, and a button pivoted on the side of the member having the aperture extending through it opposite to the fan and adapted when turned on its pivot to close said aperture, substantially as set forth.

3. In a wind motor, the combination of a bearing ring having a flange projecting from its inner side near its bottom, a series of rollers journaled vertically in said flange, and an inner bearing-ring mounted to turn on said rollers and adapted to encircle the shaft, said inner bearing-ring being provided in its interior with a series of rollers journaled to rotate in horizontal planes and adapted to bear on the periphery of the shaft, substantially as set forth.

4. A wind wheel having a series of radial frames each provided with an upper and a lower member, said frames being connected to one another by cross-braces having enlargements, fans pivoted at one edge in the frames and adapted to play between said braces, and links pivoted to the fans and having eyes to engage and slide on said braces, the enlargements of said braces forming stops to limit the sliding movement of the links, substantially as set forth

544,923. SAFETY APPLIANCE FOR RAILWAYS. EUGÈNE J. MARIN, Vincennes, France. Filed Mar. 28, 1893. Serial No. 468,038. (No model.)



Claim.—1. The combination with a tell-tale or signal repeater mounted on a locomotive, of a cranked lever L mounted on the locomotive and provided with a jointed pin *l'* adapted to be engaged by an adjustable rail or arm on the track, a shaft H through which the signal repeater is actuated, and a connecting rod B for transmitting motion from the lever L to the shaft H, substantially as described.

2. The combination in a signal repeating mechanism, of the vertical rotary shaft H mounted on a locomotive or car and provided with handle P and snail cam or stop C, the cranked lever L provided with a pin *l'* projecting in position to be engaged by an adjustable rail or arm on the track, and the connecting rod B for transmitting motion from the lever L to the shaft H, substantially as described.

3. The combination in a signal repeating mechanism, of the vertical rotary shaft H mounted on a locomotive or car, the cranked lever L provided at its lower end with a pin *l'* adapted to be engaged by an adjustable rail or arm on the track, a connecting rod B between the lever L and shaft H, the upper vertically-movable clutch ring *e* mounted on and rotating with the lever L, the spring *r* bearing on the upper part of said clutch ring, and the clutch-ring *e'* loose on the lever L and provided with pawl and ratchet *m*, *n*, the said clutch rings being provided with opposing cam surfaces, substantially as described.

4. The combination, in a signal repeating mechanism for locomotives or cars, of a vertical rotary shaft H through which the signal repeater is actuated, a cranked lever L mounted beneath the locomotive and connected with said shaft, and a jointed pin *l'* carried by the cranked lever and provided with a roller *d* adapted to be engaged by an adjustable rail or arm on the track, substantially as described.

544,924. HIGH EXPLOSIVE. HUDSON MAXIM, New York, N. Y. Filed July 7, 1894. Serial No. 516,858. (No specimens.)

Claim.—1. The herein described explosive compound, consisting of an intimate mechanical mixture, in a fine state of division, of an explosive colloid of gun cotton and nitro glycerin, and wet fibrous gun cotton.

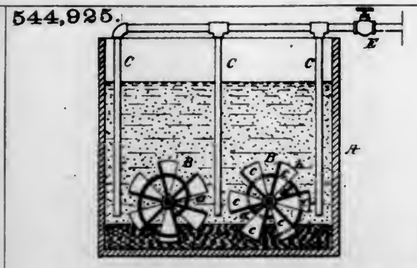
2. The herein described explosive compound, consisting of an intimate mechanical mixture in a fine state of division, of an explosive colloid of gun cotton and nitro glycerin, and fibrous gun cotton holding in suspension in its pores a solution of an oxygen-bearing salt such as nitrate of ammonia.

544,925. PROCESS OF AND APPARATUS FOR WORKING AURIFEROUS OR AURIFEROUS ORES. ELOY NORIEGA, Mexico, Mexico. Filed Jan. 31, 1893. Serial No. 460,332. (No model.) Patented in Mexico Oct. 29, 1892, No. 355.

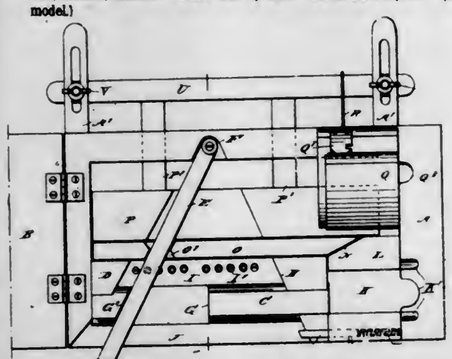
Claim.—1. The herein described process of treating ores, which consists in first mixing the ore pulp with mercury and zinc amalgam, and then adding to the mixture the subchloride of a suitable metal and introducing steam to heat and agitate the mixture, substantially as described.

2. An agitator for treating ores, formed of a screw propeller, and a plate attached to the screw propeller, and curved in the form of a spiral of gradually increasing diameter substantially as specified.

544,925.



544,926. MACHINE FOR PACKING CIGARETTES. ELOY NORIEGA, Mexico, Mexico. Filed Mar. 2, 1895. Serial No. 540,341. (No model.)



Claim.—1. The combination of a casing having a slide-way, and a receptacle in a continuation of the slide-way, one of the walls of the slide-way being mounted to slide bodily toward and from the other wall thereof in such a manner that the movable wall remains parallel to its initial position during its sliding movement, a plunger held to reciprocate in the said slide-way and adapted to enter the said receptacle means for operating the plunger, and means for sliding the movable wall of the receptacle toward the other wall thereof, substantially as described.

2. The combination of the casing having a slide-way and a receptacle, the said receptacle having a spring-controlled wall which is movable toward and from the opposite wall of the receptacle, a plunger held to reciprocate in the slide-way and receptacle, a slide engaging the spring pressed wall of the receptacle and constructed to move the said wall toward the other wall of the receptacle, and means for operating the plunger and the slide, substantially as described.

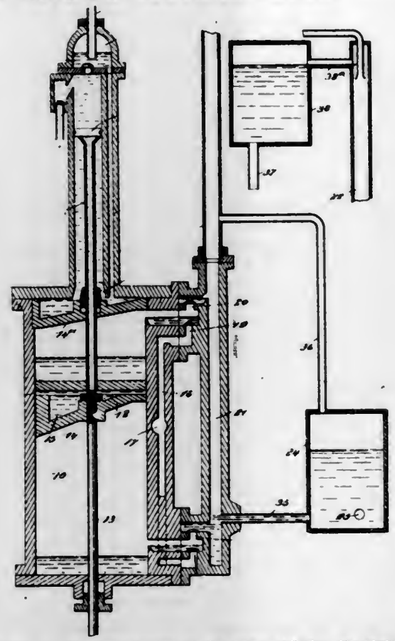
3. The combination of the casing having part of a slide-way for a plunger, a cross-bar having the other part of the said slide-way, made adjustable toward and from the first named part of the slide-way so that plungers of different widths may be received in the said slide-way, a plunger-operating mechanism, and a receptacle at one end of the said slide-way, the said receptacle having a movable wall adjacent to the adjustable cross-bar, substantially as described.

4. The combination, with the casing having a part of the slide-way, the adjustable cross-bar having the other part of the slide-way for the plunger, a receptacle located at one end of the said slide-way and provided with the movable wall adjacent to the said cross-bar, another adjustable cross-bar in the rear of the first named bar, a slide held to move between the two cross-bars and engaging the movable wall of the receptacle, and means for operating the said slide and plunger, substantially as described.

5. In a machine of the class described, a casing having an adjustable slide-way for the plunger, one part of the said slide-way being produced in the body of the casing, the said body also having a series of apertures arranged in pairs at different distances from the said slide-way, and a cross-bar having the other part of the slide-way and provided with apertures whose distances and positions correspond to those of the apertures in the body of the casing, substantially as described.

6. The combination of the casing having a slide-way, a plunger held to move therein, a receptacle at one end of the slide-way, a spring-pressed lid for closing said receptacle, a catch on the lid, a sliding pin on the casing to engage the said catch, means for operating the plunger, and a slide connected to the pin and projecting into the path of travel of the said operating means to open the lid when the plunger is in its extreme position, substantially as described.

544,927. COMPRESSION-PUMP. HARRY L. PARKER, Princeton, Ill. Filed Dec. 3, 1894. Serial No. 530,662. (No model.)



Claim.—1. The combination of the pump cylinder, the stationary liquid chamber at one end of the cylinder, the hollow piston located within the cylinder and having ports adapted to discharge liquid into the cylinder, the hollow piston rod secured to the piston to move therewith and extending into the liquid chamber, said piston rod communicating with the hollow of the piston and with the liquid chamber, and another piston secured to the said rod within the liquid chamber substantially as described.

2. A pump of the kind described, comprising a cylinder having suitable inlet and discharge ports, a reciprocating piston within the cylinder, means for supplying liquid to the cylinder, a stand pipe to receive the liquid and gas discharged from the cylinder, a liquid tank connected with the stand pipe and with the cylinder supply, and a second tank adapted to receive liquid from the cylinder supply and to overflow into the stand pipe, substantially as described.

3. The combination of the pump cylinder, the liquid chamber, the hollow piston in the cylinder, means for forcing the liquid from the liquid chamber to the interior of the piston, and an outlet pipe connected to the liquid chamber to allow the surplus liquid to escape therethrough, substantially as shown and described.

4. A compression pump, comprising a cylinder having suitable inlet and discharge ports, a hollow piston reciprocating in the cylinder, a liquid chamber at one end of the cylinder, a liquid piston reciprocating in the liquid chamber, a hollow piston rod connecting the two pistons and supplying liquid to the main piston, a stand pipe receiving the discharge from the cylinder, a liquid tank connected with the stand pipe and with the liquid supply chamber, and a second tank also connected with the liquid chamber and overflowing into the stand pipe, substantially as described.

5. A compression pump, comprising a cylinder having suitable inlet and discharge ports, a liquid chamber at one end of the cylinder, a hollow piston in the cylinder, a liquid piston in the liquid chamber, a hollow piston rod connecting the two pistons and supplying liquid to the main piston, and an air chamber having a valve-controlled connection with the outer end of the liquid chamber, and a channel connection with the inner end thereof, substantially as described.

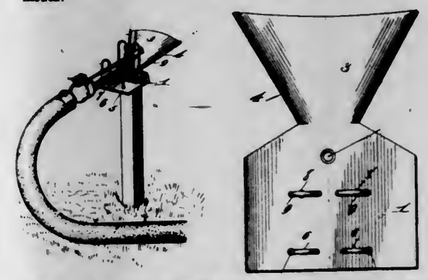
6. The combination of the pump cylinder, the stationary liquid chamber forming an axial continuation thereof, the hollow piston within the cylinder, the hollow piston rod extending from the piston into the liquid chamber and another piston secured to the piston rod within the liquid chamber, substantially as shown and described.

7. The combination with the pump cylinder and the hollow piston, of a hollow piston rod connected to the piston, and a liquid tank permanently communicating with the interior of the said piston rod and located at a higher level than the piston whereby the liquid will be constantly forced into the piston by gravity, substantially as described.

8. The combination with the pump proper and the stand pipe into the lower portion of which the gas is discharged, of a liquid supply device connected to the upper portion of the stand pipe for causing a cooling liquid to trickle down the said pipe, as and for the purpose set forth.

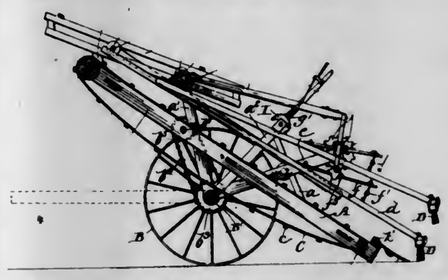
9. The combination with the pump proper and a stand pipe whose lower portion is connected to the gas discharge ports of the pump, of a liquid supply tank located at the upper portion of the stand pipe and connected thereto to allow a cooling liquid to trickle down the said pipe, and connections from the tank to both ends of the pump cylinder to keep up a continuous circulation of liquid during the operation of the pump, substantially as described.

544,928. SPRAYING ATTACHMENT FOR NOZZLES. ALWYN PATTERSON, Denver, Colo. Filed Mar. 4, 1895. Serial No. 540,519. (No model.)



Claim.—A spraying attachment for nozzles, comprising a plate having a portion thereof bent at an angle relative to the body portion thereof, said bent portion being convex in cross-section and provided with upturned edges, a spring-clamp having resilient corrugated arms located near the rear of the first mentioned plate, and a spring-clamp constructed with resilient arms having pairs of oppositely arranged bends therein located near the forward portion of the first mentioned plate.

544,929. STREET-SWEEPER. JOSEPH E. PORTER, Ottawa, Ill. Filed Feb. 14, 1895. Serial No. 538,352. (No model.)



Claim.—1. In a street sweeping machine, the combination with a suitable truck, of a frame adjustably mounted on the truck so that it may be set to either a horizontal or inclined position, an endless apron mounted on said frame and adapted to receive the dirt upon its upper surface at its lower end and convey it upward and dump it over the forward end of the truck frame into an independent cart located forward of the machine, the discharge being in line with the direction of movement of the apron and truck of the machine; an operating crank shaft, and brushes or brooms operated by the same; said brushes being secured to operating rods or bars which extend forward over the truck frame of the machine, and means for connecting said rods and crank shaft, and means for imparting a longitudinal reciprocating movement to said rods; said brushes being adapted to brush the dirt from the street forward on to the upper surface of the moving apron while the apron is constructed and arranged to carry up the dirt and discharge it over the forward end of the truck frame into an independent cart, substantially as described.

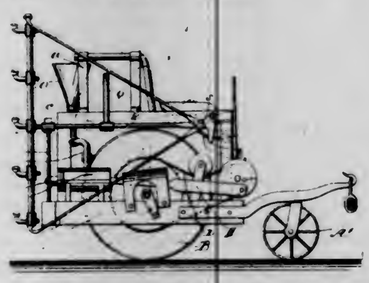
2. In a street sweeping machine, the combination with a suitable truck, a frame mounted on the same, a traveling apron mounted on said frame and connected to the running gear of the carriage, and adapted to receive the dirt upon its upper surface at its lower end and convey it upward and dump it over the forward end of the truck frame into an independent cart located forward of the machine, a crank shaft also connected to the running gear, brushes or brooms secured to operating bars or rods which are extended forward over

the truck frame, sliding journal boxes for connecting said rods to the crank shaft, means for imparting reciprocating longitudinal movements to said rods, and means for raising and lowering the said shaft whereby the brushes can be made to operate in contact either with the street surface or free of the same, substantially as described.

3. The combination with a suitable truck, of a frame mounted on the same, an endless carrying apron mounted on said frame, a dirt conducting apron at the rear of the frame, brushes or brooms, movable bars carrying the same, a shaft having a series of crank heads between its ends, sliding journal boxes for receiving the crank heads of said shaft, and connected with the movable bars, guides for the movable bars, pitmen connecting said movable bars to the crank shaft, gearing for operating the crank shaft and the endless apron, substantially as described.

4. In a street sweeper, the combination with a suitable truck, of a frame mounted on the same, a traveling apron mounted upon the said frame and connected to the running gear of the carriage, brushes or brooms, bars for supporting the same and provided with anti-friction rollers, guides for said rollers; and a crank shaft being adapted to reciprocate the brush bars both vertically and longitudinally, substantially as described.

544,930. SPRAYER. ALBERT G. PLOVIER, Puyallup, Wash. Filed Mar. 16, 1894. Serial No. 503,870. (No model.)



Claim.—1. In a spraying machine, the combination with a vertical nozzle-carrying pipe, and a supply pipe connected therewith, adapted to be rocked, of a swinging driver's seat, and connections between said seat and the said supply pipe, for causing the nozzle-carrying pipe to respond to the movement of the seat, thereby maintaining the nozzle-carrying pipe in the vertical position, substantially as described.

2. In a spraying machine, the combination with the pumps and a source of supply therefor, of a longitudinally-ranging pipe at each side of the machine, to which the pumps discharge, said pipes being pivotally supported at their front ends and provided with vertical pipes provided with discharge nozzles, the pivoted pipes being also adjustable toward and from each other, substantially as described.

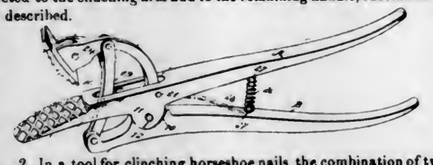
3. The combination, with the pumps and a source of supply therefor, of longitudinally ranging pipes at the sides of the machine, adjustable toward and from each other, pivoted bars connected with said longitudinal pipes, adapted to move the same, guide bars for guiding the pivoted bars, and means for locking the parts in the adjusted position, substantially as described.

4. The combination of the hollow roller, the pumps, the suction pipes of which have connection with the hollow roller, discharge pipes including flexible hose, pipes ranging longitudinally at the sides, to which said hose deliver, said longitudinal pipes having pivotal supports permitting them to rock transversely of the machine, and also permitting them to be swung toward and from each other, vertical pipes having vertical series of discharge nozzles said vertical pipes being supported from the longitudinal pipes, means for rocking said longitudinal pipes, and means for swinging the same toward and from each other, substantially as described.

5. In a spraying machine, the nozzle-carrying pipes disposed vertically at each side of the machine, and having each the vertical series of discharge nozzles, whereby the pressure of the pumps will be concentrated, the vertical series of nozzles and the concentrated pressure thus increasing the efficiency of the machine, in combination with pipes supporting the said nozzle-carrying pipes and pivotally connected with the machine frame to rock transversely thereof so as to maintain the nozzle-carrying pipes in a vertical position, means for rocking the supporting pipes and with them the nozzle-carrying pipes, and means for swinging said supporting pipes toward and from each other, substantially as described.

544,931. TOOL FOR CLINCHING HORSESHOE-NAILS. JOSEPH ROSCH, Wurtsborough, N. Y. Filed June 5, 1895. Serial No. 551,760. (No model.)

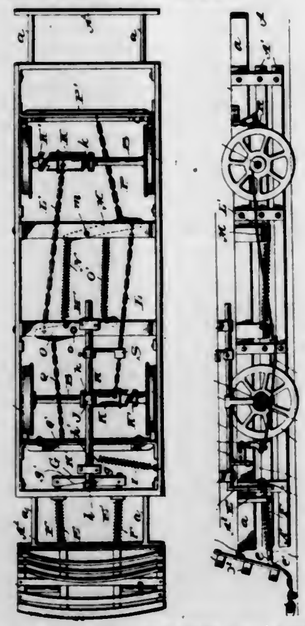
Claim.—1. In a tool for clinching horseshoe nails, the combination of two pivotally connecting handles, one being longitudinally slotted adjacent to its pivot and having contiguous to said slotted portion a serrated lip, the said lip having at its inner end a shoulder formed with a groove, a clinching arm pivoted within the slot of the handle, and a link projecting through said slot and pivotally connected to the clinching arm and to the remaining handle, substantially as described.



2. In a tool for clinching horseshoe nails, the combination of two handles pivotally connected, one of said handles having directly adjacent to its pivot a longitudinal slot and having contiguous to said slot a serrated lip, a clinching arm being within the slot of the said handle and projecting upwardly and forwardly adjacent to the serrated lip, a clinching plate pivotally connected to the arm and cooperating with the serrated lip, and a link extended through the slot of the handle and pivotally connected to the clinching arm and to the remaining handle, substantially as described.

3. In a tool for clinching horseshoe nails, the combination of two handles pivotally connected to each other, one of said handles having directly adjacent to its pivot a longitudinal slot and having contiguous to the slotted portion a serrated lip, the lip terminating at its inner end in a shoulder formed with a groove, a clinching arm pivoted in the slot of the handle and extended upwardly and forwardly over the serrated lip, a clinching plate pivotally connected to the free end of the clinching arm, and a link extended through the slot and pivotally connected to the clinching arm and to the remaining handle, substantially as described.

544,932. CAR-FENDER. ALAMANDO B. RUSS, Chicago, Ill. Filed Jan. 16, 1895. Serial No. 535,146. (No model.)



Claim.—1. A fender pivotally mounted above its center and rods pivotally connected therewith below its center and passing through a relatively fixed guide on a car, springs around said rods, and a brake controlling latch carried by the inner ends of said rods, substantially as described.

2. The combination with a brake setting mechanism, of a fender pivotally mounted on the end of the car to drop automatically toward the track in meeting with an obstruction and mounted below its center upon sliding means pivotally connected therewith, a latch carried by the inner ends of said rods and an interposed rocking part cooperating with said latch to control the brake setting mechanism, substantially as described.

3. The combination with brake-setting mechanism, of a fender hinged near its upper end on the end of a car to swing in the arc of a circle vertically and to automatically drop toward the track when meeting with an obstruction, and sliding rods provided with springs and pivotally connected with the fender below its pivot and adapted to control the brake-setting mechanism, substantially as set forth.

4. The combination with a brake-setting mechanism, of a fender pivotally-mounted near its upper end on the end of the car, means pivotally mounted on the fender, and a rock-shaft mounted to rock transversely of the truck and cooperatively-arranged to serve with said means for controlling said brake-setting mechanism, substantially as specified.

5. The combination with brake-setting mechanism, of a fender pivotally-mounted to drop toward the track when met by an obstruction, and a longitudinally-disposed rock-shaft mounted to rock transversely of the truck and having devices for cooperation with said fender and brake-setting mechanism to control the latter, substantially as specified.

6. The combination with a brake-setting mechanism, and a pivotally-mounted fender, of a longitudinally-disposed rock shaft for actuating the brake-setting mechanism, and a catch-plate carried by the fender for cooperation with means on said rock-shaft, substantially as specified.

7. A fender pivotally-mounted above its center and provided with spring-actuated rods pivotally-mounted thereon, and a catch-plate carried by said rods, combined with a rock-shaft having means cooperating with said catch-plate and carrying means for actuating brake-setting mechanism, substantially as specified.

8. A fender provided with bowed spring strips having elongated slots alternately-arranged on the fender and means permitting limited endwise movement of said strips, substantially as specified.

9. The combination with a fender pivotally-mounted above its center, of a clutch mechanism, a longitudinally-disposed rock-shaft having means for actuating said clutch mechanism and means pivotally mounted on and carried by the fender to be engaged by means on said rock shaft substantially as and for the purpose specified.

10. The combination of a clutch and brake-setting mechanism, a fender hinged above its center to swing vertically, a longitudinally-disposed rock-shaft, having means for actuating the clutch, and means carried on the fender for cooperation with means on the rock-shaft, substantially as and for the purpose specified.

544,933. CITRATE OF ETHENYLETHYLENAMIDIN AND PROCESS OF OBTAINING SAME. ALBRECHT SCHMIDT, Berlin, Germany, assignor to the Chemische Fabrik auf Aktien, vormals E. Schering, same place, and the Farbenfabriken, vormals Fr. Bayer & Co., Elberfeld, Germany. Filed Dec. 18, 1894. Serial No. 532,236. (Specimens.)

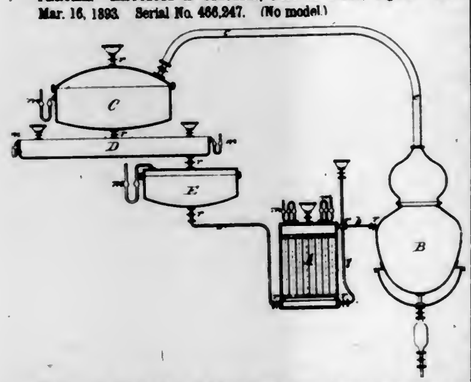
Claim.—1. The process of producing a new pharmaceutical product, which consists in combining equi-molecular proportions of citric acid and ethenylethylenamidin, substantially as described.

2. As a new article of manufacture, the salt which may be formed by combining citric acid and ethenylethylenamidin, corresponding with the general formula:

Citric acid ($C_6H_4N_2H.C.CH_3$)

forming a white crystalline mass, soluble in water, fit for employment as medicine in cases of uric acid concretions and rheumatism, substantially as described.

544,934. PROCESS OF EXTRACTING AND PURIFYING GUTTA-PERCHA. HIPPOLYTE E. SEBULLAS, Fort de L'Eau, Algeria. Filed Mar. 16, 1893. Serial No. 466,247. (No model.)



Claim.—1. A process of extracting gutta percha consisting in treating the parts of the tree with an alkali or its carbonate, then treating this residue with dilute hydrochloric acid, at the same time triturating it, then spreading this last residue into sheets and then treating the sheets to a stream of ammoniacal copper liquid, substantially as set forth.

2. A process of extracting gutta percha consisting in treating the parts of the tree with an alkali or its carbonates then treating the residue with dilute sulphuric acid, next spreading this last residue out into sheets and treating the sheets first with a stream of ammoniacal copper liquid and afterward with a current of carbonic gas or hydrogen gas, substantially as set forth.

544,935. MUD-GUARD FOR BICYCLES. JAMES W. SHONE, Rochester, N. Y., assignor to the Hall-Shone Company, same place. Filed Nov. 16, 1894. Serial No. 529,043. (No model.)



Claim.—1. A mud-guard stay for bicycles, consisting of a U-shaped frame the side members of which are made in sections pivotally secured together and folding in one direction only, a folding cross-brace connecting said side members together at one end, whereby said frame may be folded both laterally and longitudinally, and means for detachably connecting said frame to the rear axle of a bicycle, substantially as described.

2. A mud-guard stay for bicycles, consisting of a U-shaped frame the side members of which are made in sections pivotally secured together and folding in one direction only, the outer ends of each of the upper sections being provided with rigid inwardly projecting arms pivotally secured together by a hinge joint that permits said arms to fold but in one direction, and means for detachably securing said frame to the rear axle of a bicycle, substantially as described.

3. A mud-guard stay for bicycles, consisting of a U-shaped frame the side members of which are made in sections pivotally secured together and folding in one direction only, each section being pivotally secured to the inner side of the section next above it, the outer ends of each of the upper sections being provided with rigid inwardly projecting arms pivotally secured together by a hinge joint that permits said arms to fold but in one direction, the said arms being of unequal length, and means for detachably securing said frame to the rear axle of a bicycle, substantially as described and for the purpose specified.

4. A mud-guard stay for bicycles, consisting of a U-shaped frame the side members of which are formed in sections pivotally secured together by pivot pins, the outer ends of the upper sections being provided with rigid inwardly projecting arms pivotally secured together by pivot pins, the said bars and arms being provided with a projecting stud engaging a corresponding notch or recess in the adjacent bar or arm, and means for detachably securing said frame to the rear axle of the bicycle, substantially as described.

544,936. CAR-BRAKE. CHARLES F. SHOEMAKER, Chicago, Ill. Filed Apr. 20, 1895. Serial No. 546,511. (No model.)

Claim.—1. In a brake, the combination, with the axles of a truck and a peripherally grooved wheel secured on each axle, of a brake for each wheel and each comprising two segmental sections, pivotally connected to a fixed support below the center of the axle, the said brake sections having brake shoes shaped to conform to and enter in the groove of the wheel attached to the axle, one of the brake sec-

tions being provided with an extension at its upper end, an elbow lever fulcrumed on the said extension, a link connecting the vertical member of the lever with the upper portion of the opposing brake section, and means, substantially as described, for simultaneously operating both brakes, as and for the purpose set forth.



2. The combination, with an axle and a brake wheel secured thereon and provided with a peripheral V-groove, of a brake constructed in two segmental sections, pivotally attached to a support located below the center of the axle, each brake section being provided with a brake shoe V-shaped in cross section to enter and fill the groove in the brake wheel, an angled lever fulcrumed upon the upper end of one of the brake sections, its vertical member being shorter than its horizontal member, a link connection between the vertical member of the lever and the upper end of the opposing brake section, a crank shaft, and a toggle connection between the crank shaft and the horizontal member of the said lever, as and for the purpose specified.

3. In a car brake, the combination, with the axles of a car truck, brake wheels secured upon the axles, having peripheral V-grooves, and pedestals supported beneath the brake wheels, of a brake constructed in two segmental sections, a brake being adapted for application to each brake wheel and the sections being pivoted upon the pedestal beneath the center of the wheel, each section having a brake shoe shaped correspondingly to the shape of the grooves of the brake wheels, the inner sections of longitudinally aligning brakes being provided with extensions at their upper ends, angle levers fulcrumed upon said extensions, having their shorter and vertical members pivotally connected with opposing sections of the brake to which the levers are applied, a crank shaft, means for manipulating the crank shaft, and toggle connections between the crank shaft and horizontally aligning angle levers, as and for the purpose specified.

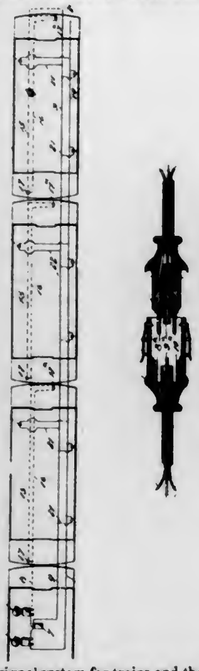
4. In a brake mechanism, a brake wheel having a V-shaped peripheral groove and adapted for attachment to an axle, a brake constructed in segmental pivotally connected sections, the pivot thereof having a vertical movement in a fixed support but adapted to prevent horizontal movement at the pivotal point adapted to embrace the brake wheel and to be pivoted below the center thereof, the braking surfaces of the sections being shaped correspondingly to the grooves of the brake wheels, an angle lever pivoted to one section of the brake and having link connection with the opposing section, the action of the lever being to draw the sections together or force them apart, and a brake-controlling mechanism connected with the said lever, as and for the purpose specified.

5. In a brake mechanism for cars, the combination, with the axles, brake wheels secured upon the said axles and provided with a peripheral V-groove, and brakes adapted to grip the brake wheels, each brake being constructed in segmental sections pivotally connected with each other at their lower ends, and to a support located beneath the brake wheel to which the brake belongs, the brake shoes of the brake sections corresponding in cross section to the cross sectional shape of the brake wheel groove, one section of each brake being provided with an extension at its upper end, of an angled lever fulcrumed upon the upper end of the longer section of each brake and connected by a link with the corresponding portion of the shorter section of the brake, a rock shaft located between the axles and provided with a crank arm, a horizontal link pivotally connecting longitudinally opposing levers, and a vertical link connecting the central portion of the horizontal link with the said crank arm, and means, substantially as shown and described, for rocking the shaft, as and for the purpose set forth.

544,937. ELECTRIC TRAIN-SIGNAL. FRANCIS C. R. VON STERNBERG, Brooklyn, N. Y. Filed Apr. 13, 1895. Serial No. 545,628. (No model.)

Claim.—1. An electric signal system for trains and the like, having a starting circuit including a generator and a signal and comprising two partial circuits located on each car of the train, each partial circuit on each car being provided with a circuit-closing device arranged to hold it normally open and being arranged to form when closed a shunt or short circuit to the other partial circuit on the same car, as set forth.

2. An electric signal system for trains and the like, having a starting circuit including a generator and a signal and comprising two partial circuits arranged in multiple on each car with their ends connected and adapted for connection to the connected ends of the partial circuits on the next car, each partial circuit on each car being provided with a circuit-closing device arranged to hold it normally open and being arranged to form when closed a shunt or short circuit to the other partial circuit on the same car, as set forth.



3. An electric signal system for trains and the like, having a starting circuit including a generator and a signal and comprising two partial circuits arranged on each car of the train and a circuit-closing device for each of the partial circuits arranged to hold its respective partial circuit normally open, the respective circuit-closing devices on each car being located at the opposite platforms thereof, and each partial circuit being arranged to form when closed, a shunt or short circuit to the other partial circuit on the same car, as set forth.

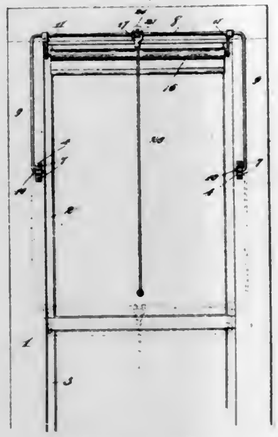
4. An electric signal system for trains and the like, having a starting circuit including a generator and a signal comprising two partial circuits arranged in multiple on each car with their ends connected and adapted for connection to the connected ends of the partial circuits on the next car, a circuit-closing device for each partial circuit arranged to hold its respective circuit normally open, the two circuit-closing devices on each car being arranged on the opposite platforms thereof, and each partial circuit being arranged to form when closed, a shunt or short circuit to the other partial circuit on the same car, as set forth.

5. An electric signal system for trains and the like, having a starting circuit including a generator and a signal and comprising two partial circuits located on each car of the train, each partial circuit being provided with a circuit-closing device arranged to hold normally open and being arranged to form when closed, a shunt or short circuit to the other partial circuit on the same car, a stopping circuit including a generator and a signal and comprising two conductors extending longitudinally of the train, one of said conductors forming a common return for the starting circuit, and circuit-closing devices arranged at intervals along the stopping circuit and connecting the conductors thereof in parallel, as set forth.

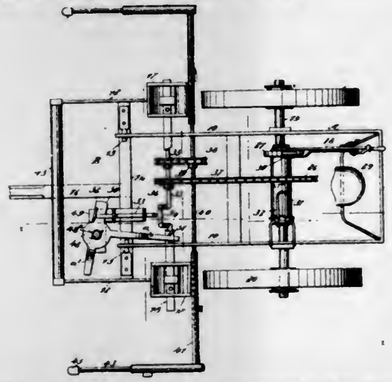
544,938. ADJUSTABLE WINDOW-CURTAIN FIXTURE. HERBERT M. STURGIS, St. Louis, Mo. Filed Mar. 27, 1895. Serial No. 543,327. (No model.)

Claim.—1. A curtain fixture, comprising a frame pivoted to the window-frame at points midway between the ends of the upper sash, hangers loosely mounted upon the horizontal portion of said frame and constructed to carry the curtain-roller, a catch loosely mounted upon said horizontal portion of the frame, a loop fixed to the window-frame in which said catch engages, and an operating rod or handle fixed to and depending from said catch.

2. The combination of a pair of journal-bearings fixed to the interior faces of the window-frame at points approximately midway between the upper and lower ends of the top sash, a metallic swinging frame, the lower ends of which are journaled in said bearings, hangers loosely mounted upon the horizontal portion of said frame, a catch loosely mounted upon the center of said horizontal portion of the frame, a collar for retaining said catch in position, an operating rod fixed to and depending from said catch, a loop adapted to engage said catch, said loop being fixed to the window-frame, and a curtain-roller hung to operate in the usual manner between the hereinbefore mentioned hangers.



544,939. CORN-PLANTER. JOSEPH URBANEK, Schuyler, Nebr. Filed Apr. 23, 1895. Serial No. 546,905. (No model.)



Claim.—In a seed planter, the combination of slide dropping mechanism, a spring-controlled lever connected to said mechanism, a reciprocal bolt, and means for periodically moving the same, substantially as described.

2. In a seed planter, the combination of seed dropping mechanism, a spring-controlled lever having a connection therewith, a reciprocal bolt capable of engaging the lever, and means for periodically operating the bolt, substantially as described.

3. In a seed planter, the combination of seed dropping mechanism, a bent and spring-controlled lever having one arm connected to said mechanism and having a projection on the other arm, a reciprocal bolt capable of engaging the projection, and means for periodically operating the bolt, substantially as described.

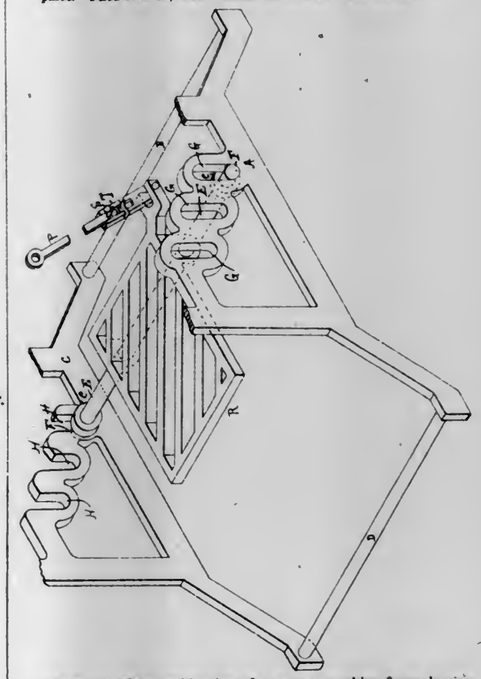
4. In a seed planter, the combination of seed dropping mechanism, a spring-controlled lever connected to said mechanism, a reciprocal bolt capable of engaging the lever, a rotary and driven shaft, and a double crank formed on the shaft and for periodically operating the bolt, substantially as described.

5. In a seed planter, the combination of slide dropping mechanism, a spring-controlled and bent lever having one arm connected to the mechanism and having a projection on the remaining arm, a reciprocal bolt, a rotary and driven shaft, and a double crank on the shaft and capable of periodically operating the bolt, substantially as described.

6. In a seed planter, the combination of dropping mechanism, a spring-controlled lever connected to the mechanism, a reciprocal bolt, a rotary shaft, a double crank thereon and capable of periodically operating the bolt, a second shaft parallel with the first shaft and geared therewith, and a marker at each end of the shaft, substantially as described.

7. A marker for seed planting machines, consisting of a rotary shaft, a sleeve extending at right angles thereto and longitudinally slotted, a marker rod movable longitudinally within the sleeve and having a stud projecting through a slot therein, and a spring for pressing the rod outwardly, substantially as described.

544,940. SEWING-MACHINE TREADLE. DAVID L. WHITTINGHAM, Detroit, Mich., assignor to the Ideal Manufacturing Company, same place. Filed Feb. 14, 1895. Serial No. 538,396. (No model.)



Claim.—1. The combination of a sewing-machine frame having at each side a plurality of independent bearings arranged at different heights for the rock-shaft of the treadle, the bearings at one side being open at their upper ends for enabling the rock-shaft to be lifted therefrom, with an adjustable pitman pivoted to said treadle.

2. In combination with the sewing machine frame A C, having a plurality of bearings G and steps H, rock shaft E having collar *e* and a treadle R thereon, and an adjustable pitman, substantially as shown and described.

544,941. BALLING-MACHINE. HENRY WHITE, North Andover, assignor of one-half to Harry Sutton, Salem, Mass. Filed Mar. 11, 1895. Serial No. 541,316. (No model.)

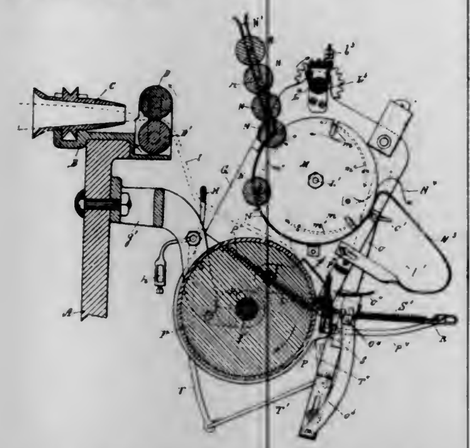
Claim.—1. In a balling machine a pair of intermittently rotating notched heads, core guides, and a series of cores arranged in said core guides communicating with the notches in said heads combined with an automatic ball lifter and discharge device and an automatic sliver severing mechanism substantially as and for the purpose set forth.

2. In a balling machine a constantly revolving drum having secured to its shaft a segmental gear combined with a pair of intermittently rotating notched spool carrying heads gearing for rotating said heads in unison, one of said heads having secured to its axle a segmental gear meshing in the segmental gear on the drum shaft substantially as and for the purpose set forth.

3. In a balling machine, the combination of a rotary drum, a pair of intermittently rotating notched core carrying heads, a lifter and ball discharge device, gears secured to said heads, and projections carried by said gears and operating to engage and raise said lifter and ball discharge device, substantially as described.

4. In a balling machine, a rotary drum and intermittently rotating notched core carrying heads combined with a ball lifter and discharge device, a pivoted spring pressed sliver cutting off device, a pivoted latch normally holding said cutting off device inoperative,

and projections carried by the ball lifting device and operating to release said pivoted latch during the operation of cutting off the sliver, substantially as described

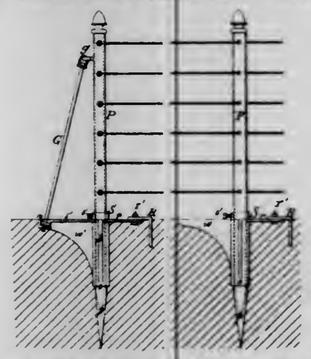


5. In a balling machine, the combination of a rotary drum, core guides, a pair of intermittently rotating notched core carrying heads adapted to receive the cores from the core guides, a spring actuated sliver cutting off device, a ball lifter and discharge device, means for releasing said cutting off device, and mechanism for returning the cutting off device to its normal position, substantially as described.

6. In a balling machine, the combination of a rotary drum, core guides, a pair of intermittently rotating notched core carrying heads, gear wheels secured on said heads, a shaft, pinions mounted in said shaft and meshing with said gears, and an adjustable friction device for regulating the tension on said heads, substantially as described.

7. In a balling machine a rotary drum and a pair of intermittently rotating notched core carrying heads M, M, having springs m', m', combined with core guides N', N', and the semi-circular inclosing bands N'', N'', with their forwardly projecting curved or inclined ball discharging portions N^3, N^3, substantially as and for the purpose set forth.

544,942. FENCE-POST AND SOCKET. JOHN F. WILLIAMS, Wassaic, N. Y. Filed Oct. 24, 1894. Serial No. 526,833. (No model.)



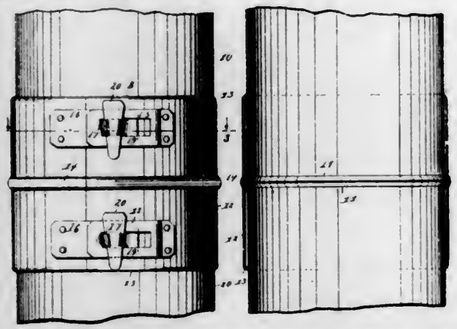
Claim.—1. A fence post socket provided with wings and a horizontal flange, a rectangular angle-piece and means for detachably securing it to said flange, substantially as described.

2. A fence post socket having a central sleeve for the reception and passage therethrough of a post, radial wings on said sleeve, and a horizontal flange on one of said wings provided with openings for a stay rod connection, substantially as described.

3. The combination of a fence post with a socket having a central sleeve for the passage of the post, and a wing or flange provided with a pocket for the reception of a threaded nut and a guy rod connected to the upper part of the post with a swivel and threaded at its lower end to engage with the aforesaid nut, substantially as set forth.

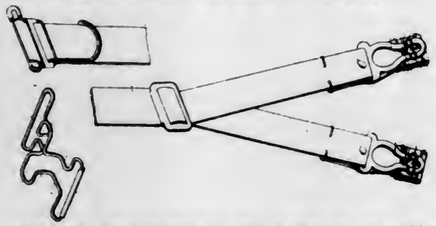
544,943. PIPE-JOINT COVER. JAMES L. WOODSIDE, Hawarden, Iowa. Filed Aug. 14, 1894. Serial No. 520,265. (No model.)

Claim.—1. A pipe-joint cover comprising a sheet metal band having its end portions adapted to lap one over the other when the cover is applied to the joint, said band having the side edges of its body and of its overlapped end portions bent inwardly and adapted to impinge on the peripheries of the pipe sections on opposite sides of the joint and having a central longitudinal groove in the inner faces of said body and overlapping end portions, and means for securing the ends of the band together, substantially as set forth.



2. In a pipe joint cover, the combination of a sheet metal band the side edges of which are bent to impinge upon the pipe sections, and also having a longitudinal groove formed intermediate of said bent edges and on the same side of the band therewith, two straps secured by their ends on the outer side of the band near its ends, one slotted and each having an inclined ear, the ear on one strap sliding in the slot of the other, and an edge tapered key adapted to separate the ears and contract the band, substantially as described.

544,944. GARMENT-SUPPORTER. GEORGE E. ADAMS, New Britain, Conn., assignor to the Traut & Hine Manufacturing Company, same place. Filed Nov. 19, 1894. Serial No. 529,287. (No model.)



Claim.—In a garment supporter, such as described, the combination with the loop having the key hole slot, supported by the web, of the stud member for cooperation therewith, formed from a single piece of wire bent to form the cross bar loops at opposite ends for the reception of the suspending webbing, with intermediate bridge portions between said cross bar loops, having their central portions bent upwardly to form shanks, and outwardly to form independent oppositely extending head flanges, capable of being sprung toward each other by the bight of the garment in the key hole slot; substantially as described.

544,945. APPARATUS FOR CARBURETING AIR. ALBERT E. ALDRICH, Lexington, Ky. Filed May 2, 1895. Serial No. 547,901. (No model.)

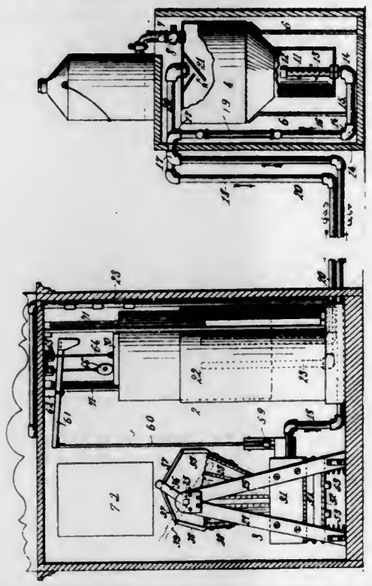
Claim.—1. In an apparatus for manufacturing gas from hydrocarbon liquid, the combination of a carburetor having in its lower part a laterally perforated air inlet, an outer pipe communicating with said inlet and extended above the normal level of hydrocarbon liquid in the carburetor, an air compressor having a compressed air chamber communicating with the upper end of said outer pipe, a gas holder communicating with the carburetor, and a safety valve communicating with the compressed air chamber and controlled from a moving part of the gas holder, substantially as described.

2. In an apparatus for manufacturing gas from hydrocarbon liquid, the combination of a carburetor, a gas holder in communication with the carburetor, an air chamber or reservoir from which compressed air may be supplied to the carburetor, and a safety valve connected with said chamber and controlled from a moving part of the gas holder, substantially as described.

3. In an apparatus for manufacturing gas from liquid hydrocarbon, the combination with a carburetor and a gas holder communicating with the carburetor, of an air chamber communicating with

the carburetor and provided with a safety-valve, lever mechanism for controlling said valve from the gas holder, and an air compressor communicating with the said air chamber through valved ports of larger area than the port through which the said air chamber and carburetor communicate, substantially as described.

4. In an apparatus for manufacturing gas from hydrocarbon liquid, the combination with a carburetor, a gas holder in communication with the carburetor, and an air compressor for supplying compressed air for the carburetor, of an air chamber or reservoir having valved inlet ports communicatiug with, and of the same area as, the air compressor, a pipe or passage leading from said air chamber to the carburetor and having less area than the air chamber inlet ports, and a safety valve for said air chamber controlled from a moving part of the gas holder, substantially as described.

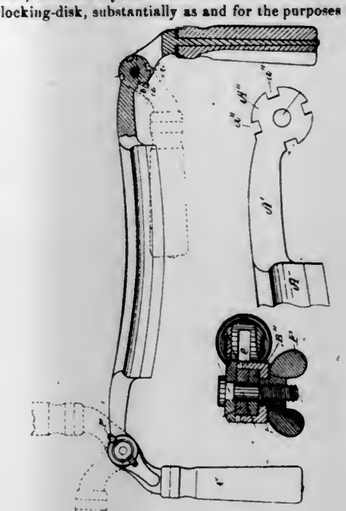


5. In an apparatus for manufacturing gas from hydrocarbon liquid, the combination of a carburetor, a gas holder communicating with the carburetor, an air compressor for supplying compressed air for the carburetor, an air chamber or reservoir intermediate the compressor and carburetor and communicating with each, a safety-valve for said compressed air chamber, lever mechauism through which said safety-valve is controlled from the movable part of the gas holder, a cabinet inclosing the gas holder, compressor and air chamber, a scale plate secured to the outside of the cabinet, a weight suspended from a cord connected with a moving part of the gas holder and passed over pulleys in the upper part of the cabinet, and an indicator carried by said weight and projected through a slot in the cabinet adjacent to the scale plate to indicate the contents of the gas holder, substantially as described.

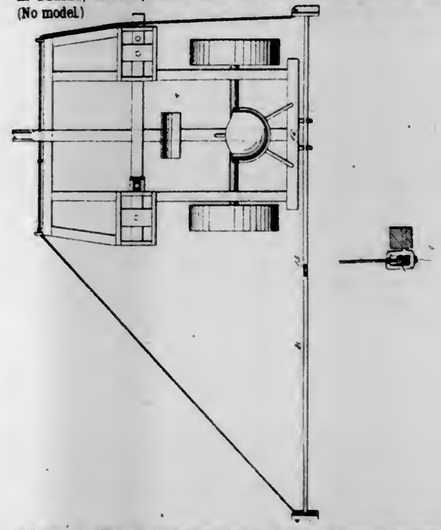
544,946. DRAWING-KNIFE. ALBAN ANDRÉN, Beverly, Mass. Filed May 11, 1895. Serial No. 548,896. (No model.)

Claim.—1. The combination with a cutting blade A having a shank A' provided with a hub A'' containing notches a'', of a bifurcated handle-shank B having ears B' and B'', one ear being smooth and the other having notches b^3 in its periphery, a non-rotary bolt D passing through the ears and hub, a locking-disk E mounted on and movable along the bolt and having locking prongs e adapted to engage the said notches, and a nut screwed on the bolt for moving the locking-disk into engagement with the notches in the notched hub and ear, substantially as and for the purposes described.

2. The combination with a cutting blade A having a shank A provided with a hub A'' containing a plurality of notches a'' in its periphery, a bifurcated handle-shank B embracing the hub of the cutting blade shank and having ears B' B'', one of which is smooth and the other provided with a plurality of notches b^3 in its periphery adapted to register with the notches in the periphery of the hub on the cutting blade shank, a bolt D extending through the hub and ears and having an angular portion engaging one of the ears, a locking washer E mounted on and movable along the bolt and having locking prongs e to enter the notches in the peripheries of the hub and ear, and a rotary nut F screwed on the bolt and bearing against the locking-disk, substantially as and for the purposes described.



544,947. GUIDE-MARKER FOR CORN-PLANTERS. HERRMAN A. BEHRNS, Orchard, Iowa. Filed Apr. 19, 1895. Serial No. 546,349. (No model.)

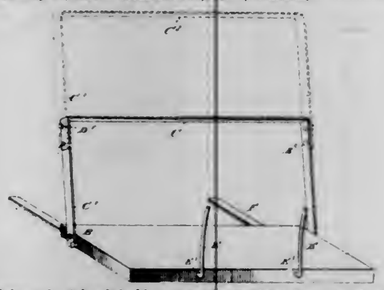


Claim.—1. The combination, with a planter, of brackets secured to the rear thereof, having longitudinal slots therein extending through the upper ends of the brackets, at which point the slots are reduced in width, a marking bar having sliding movement in the slots of the said brackets, provided with a marking shoe at each end, and shoulders between the center and each end, facing the brackets, together with a handle approximately centrally located, whereby the marking bar may be shifted to the right or to the left, as and for the purpose specified.

2. A marker for corn planters, the same consisting of brackets having longitudinal slots therein carried through their upper ends, the brackets being adapted for attachment to the rear of the planter, a rigid bar having sliding movement in the slots of the brackets, terminating at each extremity in a marking shoe and provided between the center and each end with an offset or shoulder facing the brackets, and a handle secured to the central portion of the marking bar, whereby it is manipulated, as and for the purpose specified.

3. A marker for corn planters, the same consisting of brackets having longitudinal slots therein carried through their upper ends, the brackets being adapted for attachment to the rear of the planter, a rigid bar having sliding movement in the slots of the brackets, terminating at each extremity in a marking shoe and provided between the center and each end with an offset or shoulder facing the brackets, a handle secured to the central portion of the marking bar, whereby it is manipulated, a guide rope or cable attached to the forward extremities of the marking shoes, guides through which the said rope or cable passes, adapted to be attached to the forward portion of the planter, and stops formed upon the said rope or cable between its guides, as and for the purpose specified.

544,948. BOOK-HOLDER. MELVINA BEYER, Philadelphia, Pa. Filed May 25, 1895. Serial No. 550,577. (No model.)



Claim.—1. A book holder, comprising a base formed at its under side and at the rear end thereof with a cut-out portion, arms pivoted to the said base at the cut-out portion, to form an extension for the base, a U-shaped rest pivoted with its side arms on the sides of the base, stop pins held in the sides of the base, to engage the said side arms so as to limit their swinging motion, and leaf holders mounted to turn in the front end of the base, and adapted to engage the leaves of a book to hold the latter open, substantially as shown and described.

2. A book holder, comprising a base formed at its under side and at the rear end thereof with a cut-out portion, arms pivoted to the said base at the cut-out portion, to form an extension for the base, a U-shaped rest pivoted with its side arms on the sides of the base, stop pins held in the sides of the said base, to engage the said side arms so as to limit their swinging motion, leaf holders mounted to turn in the front end of the base, and adapted to engage the leaves of a book to hold the latter open, a U-shaped extension rest pivoted with its side arms to the side arms of the said main rest, and stop pins held on the said rest, to hold the extension rest in alignment with the main rest, as set forth.

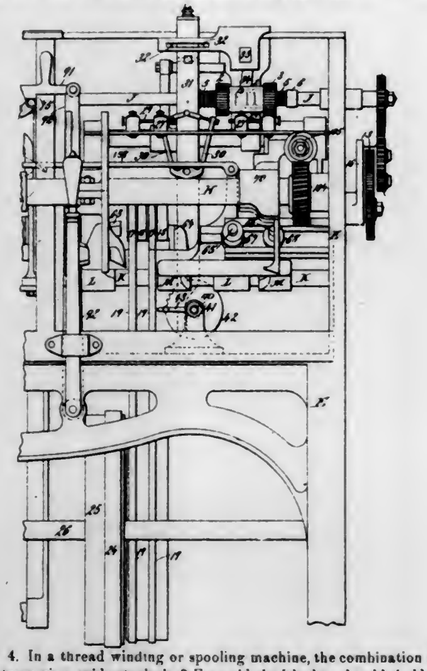
3. A book holder, comprising a base having pivotally mounted at one edge leaf-holding rods and having pivotally mounted at the opposite ends of the edges adjacent to the side having the leaf retaining pins a U shaped book support which is capable of swinging to embrace the leaf-retaining pins, substantially as described.

544,949. THREAD WINDING OR SPOOLING MACHINE. JOHN BOOTH, Bolton, England. Filed June 1, 1893. Serial No. 476,195. (No model.)

Claim.—1. In a thread winding or spooling machine, the combination of the traversing guide stock shaft F, a thread guide holder 54 consisting of the sleeve 142 mounted on said shaft and provided with recessed collar 143, boss 144, bit holder 145 and spring plunger 146, the reversing spindle J provided with clutch devices, gearing connecting said clutch devices with the shaft F, and means for shifting the clutch, substantially as shown and described.

2. In a thread winding or spooling machine, the combination with the traversing guide-stock shaft F and the thread guide holder 54, of the reversing spindle J, provided with the clutch piece 1, clutch wheels 2 and 3, collar 4, springs 5, and collars 6, the spur wheel 8 mounted on the guide stock shaft F and gearing with the clutch wheel 3, the connected wheels 7 and 7ª mounted on the same independent shaft or spindle and gearing respectively, with the wheel 2, and wheel 8, and means for shifting the clutch, substantially as shown and described.

3. In a thread winding or spooling machine, the combination with the traversing guide stock shaft F, the thread guide holder 54, the reversing spindle J provided with clutch devices, the driving shaft G, and the quadrant 16 and connected change gears driven from the shaft G and connected with the spindle J, of the fast and loose pulleys 17 and 18 mounted on the shaft G and provided with brake surfaces, the shaft H driven from the shaft G and having the double cam 70 mounted thereon, the fixed rod K, and the slides L and M supported on said rod and carrying brakes 63 and 64 operated directly from said cam 70, substantially as shown and described.



4. In a thread winding or spooling machine, the combination of the traversing guide stock shaft F provided with thread guide holder 54; the oscillatory and vertically movable shaper rod 31, the catch box 33 actuated from said shaper rod, the lever 34, links 35, springs 36, and reversing mechanism intermediate the lever 34 and guide stock shaft, substantially as shown and described.

5. In a thread winding or spooling machine, the combination of the traversing guide stock shaft F, the thread guide holder 54, the reversing spindle J, the wheel 8 on the guide stock shaft, clutch mechanism mounted on the reversing spindle J and comprising clutch wheels 2 and 3, the connected wheels 7 and 7ª mounted on an independent spindle and gearing respectively with the wheel 2 and wheel 8, the said clutch wheel 3 gearing also into the wheel 8, the lever 34 connected with the clutch mechanism, the catch box 33, and means for actuating said lever when released from the catch box, substantially as shown and described.

6. In a thread winding or spooling machine, the combination of the traversing guide stock shaft F, the thread guide holder 54, the lifting lever 55 on shaft F, the shaper rod 31 provided with incline 58 and rack 60, the shaft 40 provided with ratchet wheel 39 and pinion 41, the latter engaging with the rack on the shaper rod, the catch box 33, lever 34, links 35, springs 36, and the levers 44 mounted on the shaft 40 and carrying pawls 45 engaged with the ratchet wheel 39, substantially as shown and described.

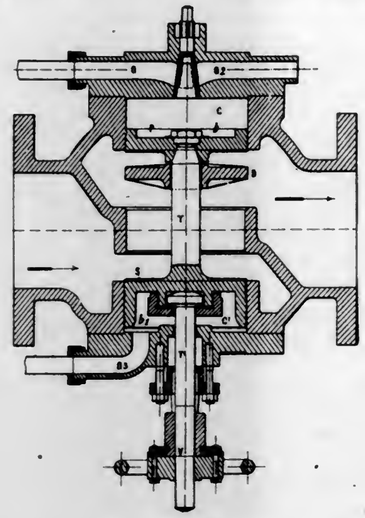
7. In a thread winding or spooling machine, the combination of the traversing guide stock shaft F, the thread guide holder 54 and lifting lever 55 on said shaft, the shaper rod 31 having adjustable incline 58, and means for raising the shaper rod, substantially as shown and described.

8. In a thread winding or spooling machine, the combination with the knife hook frame 150ª provided with bosses 151, the knife hook shaft 148 having spheroidal ends 148ª, the rollers 148ᵇ on the bosses 151, and the knife hook holder 150 mounted on said knife hook shaft, of the shaft H provided with cams 152 having surfaces 152ª and 152ᵇ, substantially as shown and described.

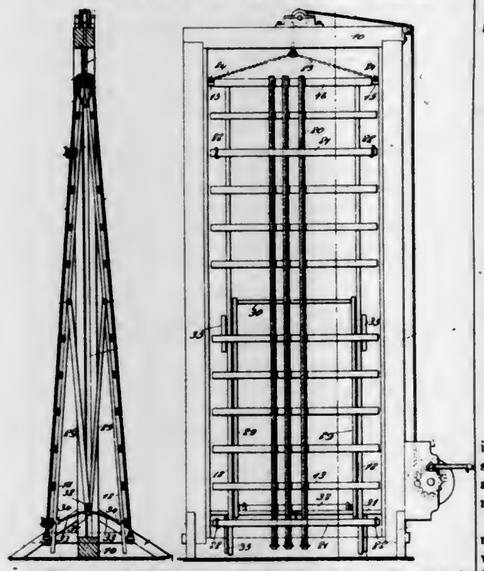
544,950. STEAM-VALVE. ALEXANDRE BOUCHER, St. Petersburg, Russia. Filed June 6, 1895. Serial No. 551,880. (No model.)

Claim.—1. The combination with a valve casing having a steam inlet and outlet and an intermediate valve seat, of a valve adapted to close against said seat and fitted in a cylinder in constant communication with the boiler, a piston fitted in a cylinder and rigidly connected with said valve, passages connecting said cylinder with the boiler, the steam pipe of the engine and the atmosphere respectively, and a valve for controlling said passages, substantially as described.

2. The combination with a valve casing having a steam inlet and outlet and an intermediate valve seat, of a valve adapted to close against said seat and fitted in a cylinder in constant communication with the boiler, a piston fitted in a cylinder and rigidly connected with said valve, passages connecting said cylinder with the boiler, the steam pipe of the engine and the atmosphere respectively, a valve for controlling said passages, and an auxiliary valve loosely arranged on the stem connecting the said valve and cylinder, and operating to seat upon the valve seat by back pressure, substantially as described.



544,951. FIRE-HOSE SUPPORTER. JAMES E. BRAMBLE, Gainesville, Tex. Filed Jan. 31, 1895. Serial No. 536,854. (No model.)



Claim.—1. A fire hose supporter, comprising a pair of oppositely arranged skeleton frames, a cross bar to which the inner ends of the frames are pivotally connected, a hoisting device to raise the inner ends of the frames, and a suitable guide for the ends of the cross bar, substantially as described.

2. A fire hose supporter, comprising a pair of skeleton frames, each comprising the longitudinal rails and the cross slats connecting said rails, a cross bar to which the inner ends of the rails are pivotally connected, a hoisting device to raise the inner ends of the frames, and swinging braces pivoted to the opposite frames and to a cross bar supported between them, substantially as described.

3. A fire hose supporter, comprising a pair of skeleton frames pivoted together at their inner ends, a guide for the frames, a hoisting device to raise and lower the inner ends of the frames, and clamping devices to fasten hose to the frames, substantially as described.

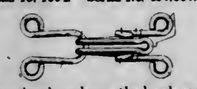
4. A fire hose supporter, comprising a pair of skeleton frames pivoted together at their inner ends, a hoisting device to raise and lower the inner ends of the frames clamping devices to fasten hose to the frames, a guide for the inner ends of the frames, braces pivoted to the opposite frames and to a support between the frames, and a fastening device to hold the frames in an elevated position, substantially as described.

5. A fire hose supporter, comprising an upright frame, a pair of skeleton frames, a cross bar pivoted to the skeleton frames and slidable in the upright frame, a second cross bar at the foot of the upright frame, braces pivoted to the lower cross bar and to the opposite skeleton frames, and a cable and windlass for raising the sliding cross bar, substantially as described.

6. The combination with the skeleton frames, and the cross bar to which the inner ends of said frames are pivotally connected, of the concaved hose bridge extending longitudinally on the said cross bar and covering the joints of the frame, substantially as described.

7. The combination, with the skeleton frames pivoted together at their inner ends, of a concaved hose bridge riding on the joint of the frames, and the fastening arms secured to the bridge and engaging the rails of the skeleton frames, substantially as described.

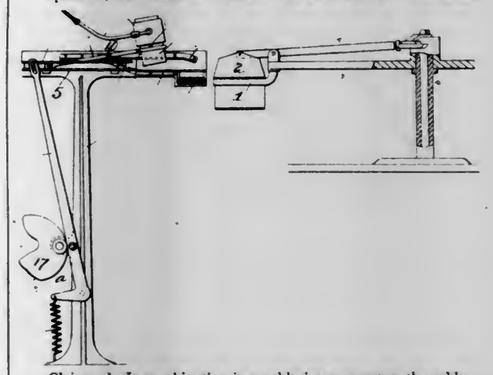
544,952. GARMENT-HOOK. HENRY S. BREWINGTON, Baltimore, Md. Filed Jan. 15, 1894. Serial No. 497,007. (No model.)



Claim.—1. In a hook and eye, the hook member made of a single piece of wire, bent to form retaining coils, which are adapted to act in conjunction with the enlarged end of the tongue, to sustain extra strain when brought on said hook, as and for the purpose set forth.

2. In a hook, for use in connection with an eye, the arms *d*, *d'*, eyes *c*, *c'*, and loops *g*, *g'*, in combination with the tongue *e*, enlarged at its extremity to form shoulders *i*, adapted to, abut against the loops *g*, *g'*, when extra strain is brought on the hook, as set forth.

544,953. CAN-SOLDERING APPARATUS. WILLIAM D. BROOKS, Baltimore, Md. Filed Mar. 16, 1895. Serial No. 542,040. (No model.)



Claim.—1. In combination in a soldering apparatus, the soldering iron, a reciprocating carrier therefor with operating means for the same in a direction longitudinally of the seam to and from its work and a cam track in the path of the reciprocating parts arranged to raise and lower the iron as it reciprocates to and from its work.

2. In combination in a soldering apparatus, the soldering iron and means for advancing and retracting the same toward and from its work, and mechanism arranged to reciprocate the iron when in its forward position the said advancing and retracting movements and the reciprocations taking place in a direction longitudinally of the seam.

3. In combination in a soldering apparatus, the soldering iron means for advancing and retracting the same to and from its work, and arranged to reciprocate the iron when in its forward position and in line with the advancing and retracting movements, and the cam track for raising and lowering the iron, substantially as described.

4. In combination, the iron, means for advancing and retracting the same, and the cam track arranged to raise and lower the iron, said cam track having a yielding portion, substantially as described.

5. In combination in a soldering apparatus, the soldering iron, a reciprocating carrier with operating means therefor for advancing and retracting the iron in a direction longitudinally of the seam, a cam track in the path of the reciprocating parts arranged to raise and lower the same, said iron having a reciprocating movement along the seam when in its forward position, substantially as described.

6. In combination, the iron, means for reciprocating the same to and from its work and also for reciprocating the iron on the work and the wiper fixed in the path of the moving iron to clean the same, as the iron is retracted from the work substantially as described.

7. In combination, the iron, means for reciprocating the same, and moving it to and from its work, including a clutch with means for throwing the same automatically out of operation and operating means for throwing the clutch into operation, controlled by the operator, substantially as described.

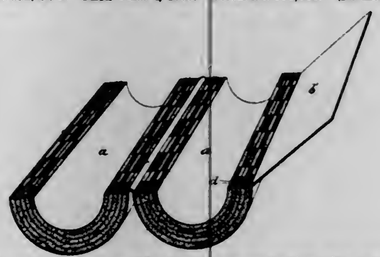
8. In combination in a soldering machine, the soldering iron, the flux brush, means for reciprocating the same, the flux bath and the cam track in the path of the reciprocating parts carrying the flux brush for lowering and raising the brush to and from the bath and to and from the cam, substantially as described.

9. In combination in a soldering apparatus, the means for advancing and retracting the iron to and from its work over the can, and into and out of the vertical plane of the can body and for reciprocating the iron when in engagement with the seam and means for raising and lowering the iron as it is advanced and retracted, substantially as described.

10. In combination in a soldering apparatus, the soldering mechanism, a flux brush, means for reciprocating the same to and from work and in a direction longitudinally of the seam and for giving the brush a to and fro motion along the seam when in contact therewith and means for raising and lowering the brush as it is retracted and advanced, substantially as described.

11. A reciprocating fluxing brush set upon a stand and a reciprocating soldering iron set upon an adjacent stand, said soldering iron being provided with means for advancing and retracting it and also for reciprocating it in its advanced position, in combination with a carrier arranged to bring the blanks successively into line with the fluxing and soldering tools, substantially as described.

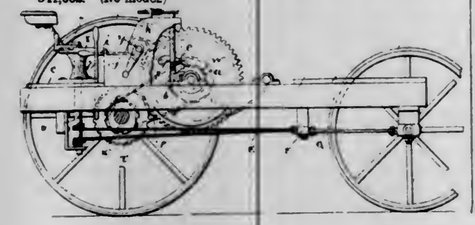
544,954. NON-CONDUCTING PIPE-COVERING. ROBERT T. BROOKS, Newark, N. J. Filed June 4, 1895. Serial No. 551,618. (No model.)



Claim.—1. A sheet of fabric for non-conducting pipe covering having pasted on one of its surfaces a series of rows of non-conducting strips *d*, the strips of each row being separated by spaces and the strips of one row lying opposite the spaces of the adjacent row, thereby forming a series of isolated spaces adapted to receive the loose non-conducting material, substantially as described.

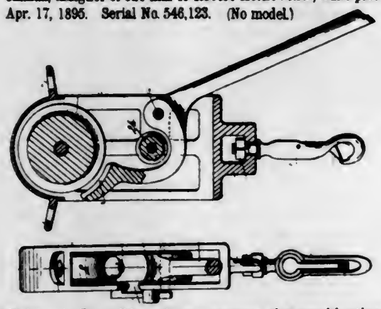
2. A non-conducting section for pipes &c., consisting of a series of layers of fabric and a series of stiffening strips interposed and pasted between said layers, said strips running transversely of the section and being separated by spaces and being arranged in a series of rows, the strips of one row coming opposite the spaces of the adjacent row, substantially as and for the purposes shown and described.

544,955. SPRING-MOTOR FOR VEHICLES. ALFRED BURDICK and HENRY T. WETZEL, Hubbell, Nebr. Filed Mar. 8, 1895. Serial No. 541,002. (No model.)



Claim.—A spring motor comprising a motor shaft, a driving shaft, the motor shaft having a rigid cog-wheel, the driving shaft having a collar carrying a cog wheel and a sprocket wheel, and adapted to move the cog-wheel out of engagement with the motor rigid wheel a collar upon the motor shaft and adapted to rotate free thereof a sprocket wheel, a sprocket chain passed around the said sprocket wheels, and a means for throwing the sprocket collar of the motor shaft in and out of locking engagement therewith, for the purpose of driving the drive shaft of the vehicle in either direction, for the purpose described.

544,956. LIFE-SAVING APPARATUS. ROBERT BUSTIN, St. John Canada, assignor of one-half to Robert Keltie Jones, same place. Filed Apr. 17, 1895. Serial No. 546,123. (No model.)



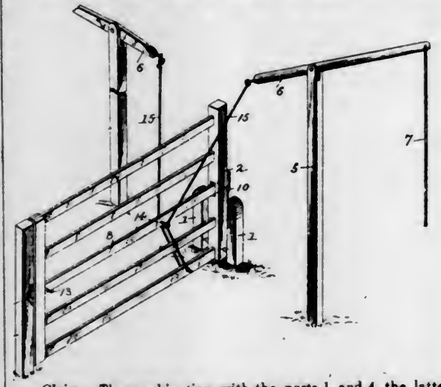
Claim.—1. In a life-saving apparatus, the combination with a traveler adapted to carry a life-belt or other support, of a pulley inclosed between the sides and adapted to ride on the shore-line, or hawser, one of the sides having an opening to admit said hawser, and a friction-brake consisting of a lever fulcrumed between the sides of the traveler and having a shoe upon one end adapted to compress the hawser against the pulley, the other end of said lever hanging below and in front of said traveler frame, substantially as described.

2. In a life-saving apparatus, the combination with a shore-line or hawser, of a tension-device consisting of a series of elastic strands arranged in apertures in separating heads, or spreaders, their ends being brought together and secured to a fastening device, substantially as described.

3. In a life-saving apparatus, the combination with a traveler adapted to move upon a shore-line, or hawser, of a life-belt attachable to and detachable from said traveler, and an auxiliary belt or strap pivotally connected to the life-belt at one point and normally lying in loops or keepers, on the outer face of the same, whereby a person sitting in the life-belt may be securely strapped therein, substantially as described.

4. In a life-saving apparatus, the combination with a traveler having a detachable life-belt and provided with pulley journaled between its sides and adapted to run upon a hawser, or shore-line, of a lever fulcrumed between the sides of the traveler and having its end bent, or curved, to pass beneath an auxiliary pulley and rise upon the rear side thereof, said end being provided with a shoe to bear against and press the said shoe against the hawser, substantially as described.

544,957. GATE. CHARLES E. CARDWELL, Commercial Point, Ky. Filed Apr. 3, 1895. Serial No. 544,334. (No model.)



Claim.—The combination with the posts 1 and 4, the latter of which is provided with a keeper, of a gate pivoted at its lower end

between said posts 1 and provided with apertures in its standards, a rail loosely seated in said apertures, and with its outer end adapted to engage the said keeper, and provided with a stop pin, a spring having its free upper end bearing against the inner end of said rail, screw eyes secured to each side of said rail, operating levers supported on posts 5, and ropes secured to the inner ends of said levers, passed through said screw eyes and secured to a fixed rail of the gate at the rear of the screw eyes, substantially as set forth.

544,958. STEREOTYPE-PLATE HOLDER. LEWIS E. CHAPIN, Brooklyn, N. Y. Filed Jan. 18, 1895. Serial No. 535,374. (No model.)



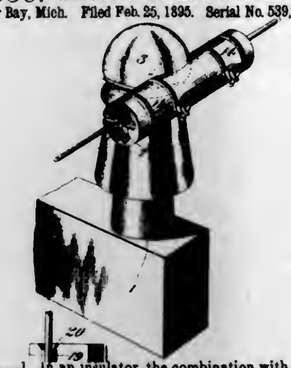
Claim.—1. The combination with a type plate of comparatively soft metal, such as type metal, and a lug or extension thereon, of a base having jaws of a material harder than the type plate.

2. The combination with a type plate and a lug, or extension thereon, of a base having jaws of a metal harder than the type plate, such jaws being provided with teeth, points, edges or other irregularities adapted to enter the said lug or extension.

3. The combination with a type plate of comparatively soft metal, such as type metal, and a lug formed on the said plate, of a two part base of harder metal having jaws provided with teeth, points, sharp edges or other irregularities adapted to enter the said lug or projection.

4. The combination with a type plate of comparatively soft metal, such as type metal, and a lug on the said plate, of a base having jaws provided with teeth, points, or sharp edges, of a material harder than the lug, and adapted to enter the same.

544,959. INSULATOR. REUBEN G. COLLINS and FRANK W. FOLEY, Dollar Bay, Mich. Filed Feb. 25, 1895. Serial No. 539,598. (No model.)



Claim.—1. In an insulator, the combination with a support, of a sheath provided with a tortuous groove or slot for the reception of a wire, substantially as specified.

2. In an insulator, the combination with a shield, of a sheath, and means for clamping a wire between the shield and sheath, substantially as specified.

3. In an insulator, the combination with a shield, of a sheath, means for clamping a wire between the shield and sheath, and separate and independent sheath clamping mechanism, substantially as set forth.

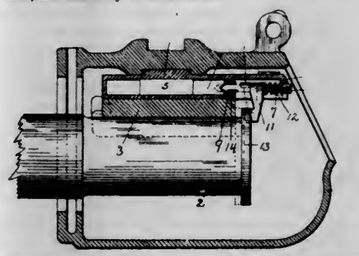
4. The combination with a shield, a sheath provided with a clamping slot, and a weakening slot, means for clamping the sheath to the shield, and sheath clamping mechanism, substantially as specified.

5. In an insulator, the combinaton with a cylindrical shield, of a sheath provided with a bite, or recess, adapted to conform to the contour of the shield, with a clamping slot and with a weakening slot, means for clamping the sheath to the shield, and sheath clamping mechanism adapted to clamp the straight portion of the wire upon either side of the bite, substantially as specified.

6. In an insulator, the combination with a cylindrical shield, of a sheath provided with a bite, clamping slot 6 gradually rounded shoulders 10 and 11, weakening slot 7, and with conical recesses 20, binding wires adapted to clamp the shield, and clamping wires adapted to clamp the sheath upon the wire, substantially as specified.

544,960. LUBRICATOR. JAMES H. COLLINS, Harrisburg, Pa. Filed May 18, 1895. Serial No. 549,805. (No model.)

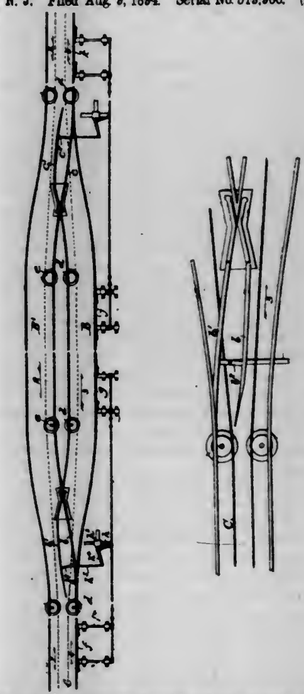
Claim.—1. The combination in a journal box and with a bearing therein, of an oil-box having a passage leading therefrom, a valve working in said passage and arranged to act as a stopper to prevent oil passing out of said oil-box when the journal is stationary, and means for positively moving said valve in its seat when the journal is in motion, substantially as described.



2. The combination with a journal and a bearing therefor, of an oil-box having a passage leading therefrom, a valve working in said passage and provided with a port alternately communicating with both ends of said passage, an arm depending from the piston operated in one direction by the pressure of the journal, and a spring pressing the piston in the opposite direction, substantially as described.

3. The combination with a journal and a bearing therefor, of the oil-box 4, having a recess 7 and a passage leading from the oil-box, a piston-valve 8 provided with port 14 working in said passage and recess and having an arm 11 bearing against the end of the journal, and a spring 12 for keeping the arm in contact with the bearing, substantially as described.

544,961. AUTOMATIC SWITCH. SEBERN A. COONEY, New York, N. Y., assignor of one-half to the John A. Roebling's Sons Company, Trenton, N. J. Filed Aug. 9, 1894. Serial No. 519,900. (No model.)



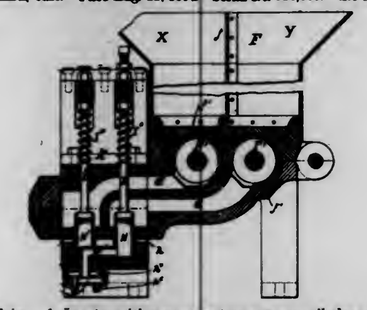
Claim.—1. In an automatic cable railway switch, the combination of a track, a turn-out or branch, a cable extending between the rails of the track and of the turn-out, a movable switch tongue at the junction of the track and turn-out, situated at a higher level than the cable and movable over or away from over the same, and automatic mechanism whereby the car may remove the overlying tongue from over the cable to permit the passage of the car, substantially as set forth.

2. In an automatic cable railway switch, the combination of a single track, a turnout, a cable having both limbs extending between

the rails of said track at each side of the turnout and opposite the latter having one limb between the rails of the track and the other between the rails of the turnout, movable switch tongues at the ends of the turnout situated at a higher level than the cable and overlying one or the other limb of the cable, and automatic mechanism operated by the car and connected with said tongues, whereby the car may remove the overlying tongue from that limb of the cable with which the car is joined, substantially as set forth.

3. In an automatic cable railway switch the combination with the main track and a turnout, of a cable having one limb extending between the rails of the track and the other limb extending between the rails of a portion of the track and between the rails of said turnout, movable switch tongues *b b'* at the end of the turnout overlying one or the other limb of the cable, a connection as b^3, below the cable and joined to said tongues, and means whereby the car may operate said connection to expose the cable, substantially as set forth.

544,962. DEPOSITING-MACHINE. ALEXANDER W. COPLAND, Cincinnati, Ohio. Filed Aug. 22, 1894. Serial No. 520,965. (No model.)



Claim.—1. In a depositing machine two or more cylinders adapted to receive different substances, pistons working therein, one piston adapted to make a full stroke in one direction, while another piston is making a partial stroke in the same direction, whereby the delivery of the substances is relatively controlled automatically, cutter or delivery tubes connected with the outlets of the piston cylinders, substantially as and for the purpose described.

2. The combination in a depositing machine of two or more cylinders adapted to receive different substances, pistons working therein, means for adjusting the pistons relatively to each other, whereby the delivery of the substances is automatically controlled, and cutter or delivery tubes connected with the outlets of the piston-cylinders, substantially as and for the purpose described.

3. The combination in a depositing machine of two or more cylinders adapted to receive different substances, pistons working therein, eccentric rods adapted to actuate the pistons and provided with adjustable sliding boxes, whereby the length of stroke of the pistons is adjusted, and mechanism for imparting motion to the eccentric rods, substantially as and for the purpose described.

4. The combination in a depositing machine of two or more cylinders adapted to receive different substances, pistons working therein, eccentric rods adapted to actuate the pistons and provided with eccentrics having the position of eccentricity therein adjustable, whereby the time at which the eccentric rods move is regulated, and mechanism for imparting motion to the eccentric rods, substantially as and for the purposes described.

5. The combination in a depositing machine of two or more cylinders adapted to receive different substances, pistons working therein, eccentric rods adapted to actuate the pistons, eccentrics adapted to actuate the eccentric rods, having the degree of eccentricity therein adjustable whereby the length of the stroke of the eccentric rods may be adjusted and mechanism for imparting motion to the eccentric rods, substantially as and for the purpose described.

6. The combination in a depositing machine of two or more cylinders adapted to receive different substances, pistons working therein, eccentric rods adapted to actuate the pistons, eccentrics adapted to actuate the eccentric rods, and having the degree and position of eccentricity therein adjustable, and mechanism for imparting motion to the eccentrics, substantially as and for the purpose described.

7. The combination in a depositing machine of two or more cylinders adapted to receive different substances, pistons working therein, eccentric rods adapted to actuate the pistons, adjustable sliding boxes in the eccentric rods, whereby the length of the stroke of the pistons may be adjusted, separable eccentrics adapted to actuate the eccentric rods, and means of adjusting the degree and position of eccentricity therein, substantially as and for the purpose described.

8. The combination in a depositing machine of a hopper having two or more divisions, each division provided with a worm, whereby the substance in that division is forced into a cylinder, cylinders, pistons working therein, eccentric rods adapted to actuate the pistons, adjustable sliding boxes in the rods, adjustable eccentrics adapted to actuate the rods, and a driving shaft whereby motion is imparted to the eccentrics, substantially as and for the purpose described.

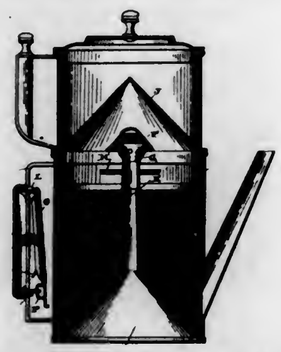
9. A hopper having two or more divisions, each division provided with a worm case, having an interior surface thereof corrugated parallel with the axis of the worm, a worm working therein, whereby the substances in each division of the hopper are forced into cylinders respectively, cylinders, pistons working therein, eccentric rods, adjustable sliding boxes therein, adjustable eccentrics adapted to actuate the eccentric rods, and a driving shaft adapted to actuate the eccentrics, substantially as and for the purpose described.

10. The combination in a depositing machine of a hopper having two or more divisions, each division provided with a worm actuated by adjustable gearing, whereby the substances in each division are forced into cylinders respectively, cylinders, adjustable pistons working therein, eccentric rods adapted to actuate the pistons, adjustable sliding boxes in the eccentric rods, eccentrics adapted to actuate the rods, the driving shaft adapted to actuate the eccentrics and provided with a crank arm, a connecting rod mounted thereon adapted to actuate a sprocket wheel carrying a sprocket chain, a cam mounted on the driving shaft adapted to support an adjustable table, substantially as and for the purpose described.

11. In a depositing machine a cutter consisting of a cutter case having therein two or more reservoirs, stationary tubes connected therewith and extending without all the reservoirs and a detachable bottom plate having partition or partitions attached thereto, substantially as and for the purpose described.

12. The combination in a depositing machine of two or more cylinders adapted to receive different substances, pistons working therein, means for adjusting the pistons relatively to each other, each piston delivering a substance into a cutter consisting of a cutter case having therein two or more reservoirs, tubes connected therewith and extending without all the reservoirs, substantially as and for the purpose described.

544,963. COFFEE-POT. JAMES K. CUMMINGS, Ladonia, Tex. Filed May 13, 1895. Serial No. 549,147. (No model.)



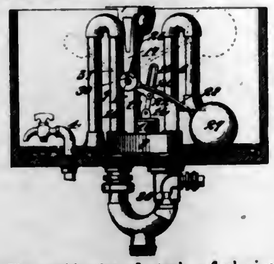
Claim.—1. The combination of the pot, the coffee container having the surrounding perforated wall reaching nearly to the bottom of the pot, the raised cone-shaped bottom for the receptacle which extends well up therein, the tube extended upward from the apex of the cone bottom, and the enlarged perforated spraying head or bonnet on the upper end of the tube, substantially as shown and described.

2. The combination of a coffee pot, rods K arranged vertically thereon, a sectional handle adapted to slide vertically thereon, and a means for securing the handle to the rods, substantially as shown and described.

3. The combination of a vertical guideway, a handle consisting of a fixed outer member, an inner member pivoted at one end and provided with biting edges upon its inner side to engage the guide-way when depressed by the hand so as to hold the handle in a fixed position upon the guide-way, and a spring for normally separating the sections of the handle, substantially as shown and described.

4. The combination with a coffee pot, of guide-ways K, heads L and M, the outer section of the handle positively secured to said head, the inner section pivotally secured to the upper head, an inwardly extending hook on the lower end of the swinging section which engages the lower head, biting edges on the said lower end adapted to engage rods K and hold the handle in a positive position when grasped, and a spring for holding the sections normally apart, substantially as shown and described.

544,964. WATER-CLOSET OR URINAL. MICHAEL J. CURRY, St. Louis, Mo., assignor to the N. O. Nelson Manufacturing Company, same place. Filed Apr. 25, 1895. Serial No. 547,089. (No model.)



Claim.—1. The combination of a tank, a flush pipe, a valve permitting water to pass from the tank to the flush pipe, a shaft, a lost motion connection between said valve and shaft, a float connected to said shaft, and a counterbalance weight mounted on the shaft and adapted to open said valve when moved beyond its center of gravity by said float; substantially as set forth.

2. The combination of a tank, a flush pipe, a valve admitting water from the tank to the flush pipe, a shaft, a crank on the shaft, a lost motion connection between said shaft and valve, a weight secured to the rock shaft, and a float mounted loosely on said shaft and having a lost motion connection with said weight, substantially as and for the purpose set forth.

3. The combination of a tank, a flush pipe, a valve admitting water from the tank to the flush pipe, a shaft, a crank on the shaft, a slotted link connecting the said crank to said valve, a weight secured to the rock shaft, and a float mounted on said shaft, substantially as and for the purpose set forth.

4. The combination of a tank, a flush pipe, a valve for opening a communication between said tank and said pipe, a shaft journaled in said tank, a crank on said shaft connected to said valve, a lever secured to the shaft and a float mounted loosely on said shaft and having a lost motion connection with said weight, substantially as and for the purpose set forth.

5. The combination of a tank, a flush pipe, a valve opening a communication between said tank and pipe, a shaft, a crank secured to the shaft and having a lost motion connection with said valve, a weight secured to the shaft, and a float mounted loosely on the shaft, said float having a notch receiving a pin on said weight, substantially as and for the purpose set forth.

6. The combination of a tank, a flush pipe, a valve for opening up communication between said tank and pipe, a rock shaft journaled in said tank, means for limiting the movement of the shaft, a crank secured to the shaft, a slotted link connecting said crank to said valve, a weight secured to the shaft and a float mounted loosely on the shaft and having a lost motion connection with said weight, substantially as and for the purpose set forth.

7. The combination of a tank, a flush pipe, a valve for opening a communication between said tank and pipe, means for operating said valve, a box located at the bottom of the tank and with which said pipe communicates by means of branches, a duplex siphon communicating with said box, and the legs of which are different lengths, and a pipe 35 located within the tank and communicating with the chamber of said box with which the long leg of the siphon communicates; said box having a partition dividing it into two chambers with which the legs of the siphon respectively communicate, substantially as set forth.

544,965. SPLICE. ANDREW DAVY, Salineville, Ohio. Filed Mar. 14, 1895. Serial No. 541,785. (No model.)



Claim.—1. The combination with binding plates, pins and longitudinally movable fastening plate adapted to be assembled upon contiguous rails for fastening them together, of an extension upon the fastening plate, an aperture in the extension of the fastening plate, a locking piece, an aperture in the locking piece, a slot communicating therewith, and a pin adapted to be inserted in the apertures in the extension of the fastening plate and in the locking piece and to enter the slot in the locking piece to secure the parts together, substantially as and for the purpose specified.

2. The combination with binding plates, pins and longitudinally movable fastening plate to be assembled upon contiguous rails for fastening them together, of an extension upon the fastening plate, an aperture in the extension of the fastening plate, a locking piece, an aperture in the locking piece, a slot communicating therewith, and a pin adapted to be inserted in the apertures in the extension of the fastening plate and in the locking piece and to enter the slot in the locking piece to secure the parts together, a second aperture in the extension of the fastening plate adapted to come opposite the aperture in the locking piece when the latter is in position, and a pin adapted to enter said second aperture in the fastening plate and the aperture in the locking piece to prevent the withdrawal of the locking piece, substantially as set forth.

544,966. FERTILIZER-DISTRIBUTER. WILLIAM H. DAVIS, Lexington, Ind., assignor of one-half to Francis M. Campbell, same place. Filed June 14, 1895. Serial No. 552,754. (No model.)



Claim.—1. The combination with the feed-wheel, and the vertically disposed side-plates or flanges of the hopper bottom between which said wheel may revolve, of the pivoted guard-plate closing the opening between said side flanges above and in front of the feed-wheel and having a pendent concave portion arranged to work in close proximity to the periphery of said wheel, a stop for limiting the movement of said guard-plate toward the wheel and means for sustaining said plate in its normal position with a yielding pressure tending to force it toward the wheel, substantially as described.

2. The combination with the bottom-plates of the feed-hopper having the pendent disk-like flanges, the feed-wheel and means for revolving the same, of the front and rear guard-plates each pivoted at one end and having a pendent concave portion arranged to work in close proximity to the periphery of said wheel, and to close the opening between said flanges in front and in rear of the wheel and a spring connecting the two guard-plates so as to exert a force tending to draw them together toward the periphery of the wheel, substantially as described.

3. In combination with the feed-wheel having a corrugated periphery, the front guard-plate pivoted at one end and having a pendent concave portion arranged to work in close proximity to the periphery of said wheel, a scraper also pivoted at one end and having its free end arranged to bear upon the periphery of the wheel opposite the guard-plate and a spring connecting said scraper and guard-plate and adapted to yieldingly sustain the same in operative position with respect to said wheel, substantially as described.

4. The combination with the feed-wheel and the vertically disposed side-plates between which said wheel may revolve of a pair of guard-plates, one in front and the other in rear of the wheel, each having a concave portion arranged to work in close proximity to the periphery of said wheel and to span the space between said side-plates, and a spring arranged to yieldingly sustain both of said guard-plates in operative position with respect to said wheel, substantially as described.

5. In combination with the feed-wheel and the side plates between which it is adapted to revolve, the front and rear guard plates each pivoted at one end and having a pendent concave portion arranged to work in close proximity to the periphery of said wheel, a scraper pivoted at one end to the rear guard-plate below the pivot of the latter, and a spring adapted to hold the scraper and both guard-plates in operative position with respect to said wheel, substantially as described.

6. In combination with the feed-wheel and the side plates between which it is adapted to revolve, the front guard-plate pivoted at one end and having a pendent concave portion arranged to work in close proximity to the periphery of the wheel, the rear guard-plate similarly arranged in respect of said wheel and the scraper pivoted to the latter guard-plate below the pivot of said plate, and springs connecting the front plate with said scraper on opposite sides of the wheel so as to sustain both plates and the scraper in operative position, substantially as described.

7. In combination with the feed-wheel and the rear guard-plate pivoted at one end and having a pendent concave portion facing the periphery of said wheel, the scraper pivoted to said guard-plate below the pivot of the latter, the spring arranged to hold said scraper and guard in operative position relatively to said wheel, and means

for moving the scraper out of contact with the wheel without moving the guard or interfering with the function of the spring in sustaining the guard in operative position, substantially as described.

8. The hopper-bottom and feed-wheel casing comprising a pair of concave or semi-circular plates adapted to be attached to the open bottom of the feed hopper, each having at their adjacent edges a pendent disk-like portion or flange with an opening therein through which the feed-wheel shaft may pass; said flanges being separated sufficiently to permit the feed-wheel to be interposed and revolve between them, and a pair of depending concave plates pivoted between said flanges, one in front and the other in the rear of said feed-wheel, so as to close the opening between the flanges in front and in rear of the wheel, and means for forcing said guard-plates toward the periphery of the wheel with a yielding pressure, substantially as described.

9. In combination with the hopper having the semicylindrical or concave metallic bottom-plates; the latter provided with pendent ring-shaped plates or flanges, the feed-wheel fixed upon a shaft which extends through the openings in said ring-shaped flanges so that the wheel may revolve between said plates, and a pair of guard-plates arranged in front and rear, respectively, of the periphery of said feed-wheel, each guard having a pendent concave portion arranged to work in close proximity to the periphery of the feed-wheel, so as to close the openings between the pendent flanges of the bottom-plates above the feed-wheel and yieldingly guard and direct the material issuing from the hopper, substantially as described.

10. In a fertilizer distributer, the combination with the agitator shaft, of the agitator consisting of a metallic rod or wire bent into the form of a loop at its center and having curved or spiral end portions flaring right and left from the loop; said loop being passed through an opening in the agitator shaft and locked thereto by a key-wire passing through the projecting portion of the loop and thence around the shaft, substantially as described.

11. In combination with the corrugated feed-wheels and the bottom plates having pendent flanges between which said wheels work, the pivoted guards placed in front and rear of the periphery of each wheel between said flanges, springs connecting said guards so as to sustain the same in normal position, and the agitator shaft provided with spiral rods or wires arranged at each side of said feed-wheels and flaring both ways from the point of attachment thereof to the agitator shaft, each agitator being provided centrally with a loop which passes through the agitator shaft, a key-wire passing through the projecting portion of the loop and thence around the shaft, substantially as described.

544,967. DEVICE FOR EFFECTING AIR-TIGHT CLOSURES FOR VESSELS. JOSEPH DAY, Bath, England. Filed Mar. 15, 1894. Serial No. 503,790. (No model.) Patented in England Jan. 27, 1893, No. 1,853.



Claim.—1. The combination of a receptacle with the herein described cover consisting of an elastic diaphragm, and retaining or confining rim to which the peripheral edge of the diaphragm is secured, leaving the center of the diaphragm free to be pressed, the said diaphragm being adapted to be placed on the open top of the receptacle whereby when the diaphragm is depressed and then the pressure is removed the natural tendency of the elastic diaphragm will be to seal he edges, substantially as set forth.

2. The combination of a receptacle with the herein described cover consisting of a stretched elastic diaphragm and a retaining or confining rim to which the peripheral edge of the diaphragm is secured, holding the same in its stretched condition, the said diaphragm being adapted to be placed on the open top of the receptacle whereby when the diaphragm is depressed and then the pressure is removed, the natural tendency of the elastic diaphragm will be to seal the edges, substantially as set forth.

3. The combination of a receptacle with the herein described cover consisting of a stretched elastic diaphragm and a retaining or confining rim to which the peripheral edge of the diaphragm is secured, holding the same in its stretched condition, the said diaphragm being adapted to be placed on the open top of the receptacle whereby when the diaphragm is depressed and then the pressure is removed, the natural tendency of the elastic diaphragm will be to seal the edges, the said retaining rim for the edge of the diaphragm being of greater diameter than and extending beyond and around the edge of the receptacle, substantially as set forth.

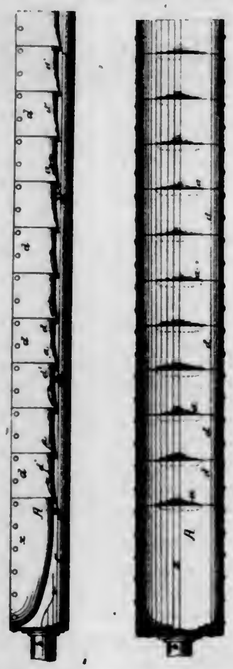
544,968. MATCH-SAFE. JOHN B. DENNIS, Ottumwa, Iowa, assignor of two-thirds to C. W. Major, same place, and Guy G. Major, Toledo, Ohio. Filed Mar. 21, 1895. Serial No. 542,677. (No model.)



Claim.—1. In a match safe, the combination with a holder having a hopper shaped bottom open to permit the passage of a single match, the segmental arms G provided with notches *c*, the rock shaft E, means for operating the rock shaft, the radial arms H, cross bar I, spring K and plates L M, substantially as and for the purpose set forth.

2. The sliding or pulsating plates *c*, *c*, in combination with the vibratory segmental arms G corrugated or roughened on their peripheries whereby the plates *c*, *c*, are caused to rise and fall, substantially as and for the purpose set forth.

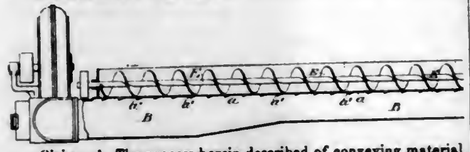
544,969. AIR-BLAST CONVEYER. JAMES M. DODGE, Philadelphia, Pa. Filed Feb. 28, 1895. Serial No. 540,002. (No model.)



Claim.—1. The combination in a conveyer, of a bed formed of a series of plates each plate having a portion extending under a portion of the adjoining plate and forming a passage for the fluid, with a fluid conductor connected to the bed and communicating with the said passage, substantially as described.

2. The combination in a conveyer, of a series of plates, each plate having a flat surface and a beveled surface, the beveled surface of one plate extending under the flat surface of the adjoining plate forming inclined passages, with a conductor for fluid under pressure, said conductor communicating with the passages between the plates so that the material will be impelled by the impact of fluid which freely escapes from the openings in the bottom of the bed, substantially as described.

544,970. PROCESS OF AND APPARATUS FOR CONVEYING MATERIAL. JAMES M. DODGE, Philadelphia, Pa., assignor to the Air Conveyor Company, Camden, N. J., and Nicetown, Pa. Filed July 10, 1895. Serial No. 555,572. (No model.)



Claim.—1. The process herein described of conveying material, said process consisting in feeding the material to the bed, conveying it by mechanical means, supporting it throughout its whole passage along the bed by the lifting or buoying action of air or other fluid escaping from pressure, substantially as described.

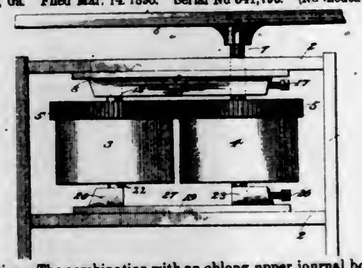
2. The combination in a conveyer, of the bed, a conductor for fluid under pressure, said bed having openings in its bottom communicating with the conductor, with a mechanical conveyor for the material, said material being supported throughout its whole passage along the conveyer by the lifting action of the air or other fluid escaping from the conductor through the openings in the bed, substantially as described.

544,971. HOOK AND EYE. ELLEN DONNELLY, Hempstead, N. Y. Filed Nov. 13, 1894. Serial No. 528,608. (No model.)



Claim.—The combination of a garment, a facing strip, a hook or eye having pin extensions passed through one edge of the facing strip and the said garment, whereby the two are connected together, the said facing strip being carried over the shank of the hook or eye and having its free edge stitched down to the garment over the same, substantially as set forth.

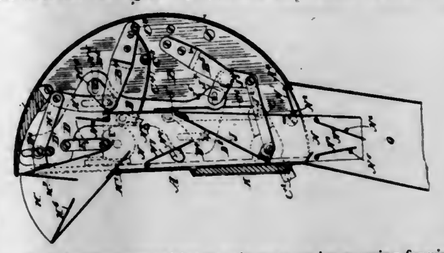
544,972. SUGAR-CANE PRESS. JAMES O. EASTERLING, Glennville, Ga. Filed Mar. 14, 1895. Serial No. 541,798. (No model.)



Claim.—The combination with an oblong upper journal box having continuous walls, an internal screw block recess and an aperture at one end, journal blocks located within the journal box at its opposite ends, an internally screw threaded screw block within the recess, and a screw passed through the aperture in the screw block engaging the threads in the block and abutting against one of the journal blocks, said blocks having semi-cylindrical recesses in their adjacent faces, of a plurality of separate journal boxes below the upper journal boxes provided with journal blocks, and journal block adjusting mechanism, the opposing faces of the lower journal blocks being provided with semi-cylindrical recesses and the space between the sides of the lower journal boxes being unobstructed, and a plurality of cog rollers provided with journals, substantially as specified.

544,973. FARE RECEIVER AND REGISTER. JOHN EVANS, Kensington, South Australia. Filed Oct. 29, 1894. Serial No. 527,181. (No model.) Patented in New South Wales May 17, 1894, No. 5,051.

Claim.—1. A fare box, comprising a case, a hinged receiver adapted to swing into and out of the case, a verifying window in the case, a hinged flap arranged below the receiver and adapted to be moved toward the window, a tube on the lower part of the case, a storage receptacle connected to said tube, a registering apparatus in the case, an operating lever projecting from the case, and operative connections between the lever and the receiver, and also between the said lever and the registering apparatus, substantially as described.



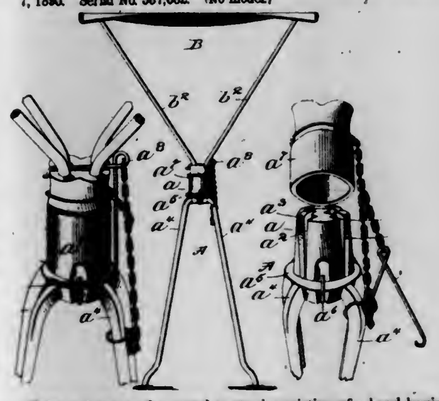
2. A fare box, comprising a main case, an inner casing forming a downward passage, a storage receptacle communicating with said passage, a receiver the lower end of which is hinged to the casing at the top of the passage, a lever projecting from the main case and operatively connected with the receiver, and a registering device operatively connected with the said lever, substantially as described.

3. In a fare box, the main case provided with a channel for the passage of the fare or ticket, a hinged flap arranged in said channel, a link pivoted to the flap, a crank lever having one arm pivoted on the link, the crank lever being fulcrumed on the case, a sliding plate connected by a pin with the other arm of the crank lever, another link pivotally connected with the sliding plate, and an operating lever fulcrumed in the case and pivoted to the second link, substantially as described.

4. A fare box, comprising a main case provided with an opening, a receiver hinged to the main case and adapted to rock in said opening, a link pivoted to the receiver, a crank lever fulcrumbed in the case and having one arm pivoted to the link, a sliding plate operatively connected by a pin with the other arm of the crank lever, an operating lever fulcrumed in the case, and a connection between the sliding plate and the operating lever, substantially as described.

5. A fare box, comprising the main case provided with a window, and with a channel for the passage of a fare or ticket, a movable receiver at the upper end of the said passage, the receiver also having a downward passage, a hinged flap located in the channel near said window in the case, a registering apparatus arranged in the main case, a lever pivoted in the case and projecting therefrom, and operatively connected with the receiver, with the flap, and with the registering apparatus, another hinged flap in the channel above the first mentioned flap, two other hinged flaps located in the channel below the first mentioned flap, and a storage receptacle on the main case below the channel therein and communicating therewith, substantially as described.

544,974. STOOL. JACOB M. GANTNER, Paschallville, Pa. Filed Feb. 7, 1895. Serial No. 537,602. (No model.)



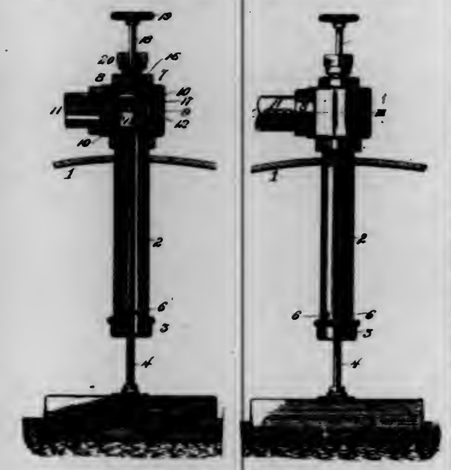
Claim.—A supporting stand or stool consisting of a head having recesses diagonally opposite, supporting legs having angular extensions seated in the recesses, a ring encircling the head and the angular extensions of the legs, a cap fitting over the head and abutting the ring, said cap being provided with sockets, a spring catch engaging the cap, a flexible seat, supporting rods pivotally attached to the seat and having their ends bent to enter sockets in the cap, as and for the purpose specified.

544,975. BAKING-POWDER. JOHN D. GREGORY, Louisville, Ky. Filed Apr. 11, 1895. Serial No. 545,365. (No specimens.)

Claim.—1. The composition of matter consisting of bicarbonate of soda, cream of tartar, and milk in a dry comminuted state deprived of its oleaginous properties and free from acid developed by fermentation, substantially as and for the purposes described.

2. The composition of matter consisting of bicarbonate of soda, cream of tartar, corn starch, and milk in a dry comminuted state deprived of its oleaginous properties and free from acid developed by fermentation, in the proportions substantially as specified, and for the purposes described.

544,976. AUTOMATIC BOILER-FEEDER. EDGAR L. HALL, St. Louis, Mo. Filed July 5, 1894. Serial No. 516,596. (No model.)



Claim.—In a boiler feeder, the combination of a tube perforated at its lower end and extending into the boiler, a head secured on said tube and provided with a perforated inner wall, a piston valve, formed of a ring and secured by arms to a stem extending through the tube working in said head, a disk carried by said valve, a set screw working in the head and adapted to bear upon the disk, by the adjustment of which the valve may be made to close properly, a cap on the perforated end of the tube through which the stem extends, and a float on said stem substantially as and for the purpose set forth.

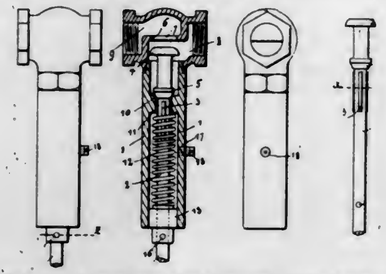
544,977. THRESHOLD AND WEATHER-STRIP FOR DOORS. NORMAN N. HAZELTON, Lamoni, Iowa. Filed May 15, 1895. Serial No. 549,389. (No model.)



Claim.—1. The combination of the door the threshold having a hinged section the door having a section fitting over the hinged section and the lifter engaging the hinged section made of spring material and arranged to be deflected by pressure against the hinged section when the door is closed whereby the lifter will be thrown under tension and will by its tension press and hold the hinged section tightly against the other section substantially as set forth.

2. The combination of the door, the threshold having the weather strip section hinged at one edge to the threshold frame and provided at its free edge with an upwardly projected rib or bead, the door section fitting over the hinged section, the lifting bar formed of spring metal deflected substantially as described and arranged to be sprung out of normal position and put in tension when the door is closed whereby to spring press the beaded edge of the hinged section against the door section, the operating rod connected at one end with said lifter and having at its free end a projecting arm and separate hook like seats arranged for engagement by said arm whereby the rod and lifter may be positively locked in either of their positions substantially as set forth.

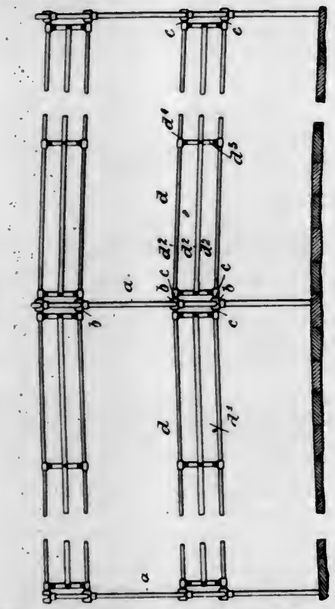
544,978. AIR-VALVE. CHARLES HOLTMANN, Pittsburg, Pa. Filed May 24, 1895. Serial No. 550,555. (No model.)



Claim.—1. A valve, consisting of a casing, a valve stem carrying guides and provided with a double valve and seats, an air exhaust, together with a collar and aperture through said collar and shaft for the reception of a pin, in combination with a spring and suitable means to automatically operate said valve substantially as described, and for the purpose set forth.

2. A valve, consisting of a casing, a valve stem carrying guides and provided with a double valve, and seats formed in the casing, and air exhaust arranged with said casing, in combination with a removable collar and spring and suitable means to automatically operate said valves, substantially as described.

544,979. SHIP'S BERTH. WILLIAM P. HOSKINS, Birmingham, England. Filed Dec. 6, 1892. Serial No. 454,296. (No model.) Patented in England Oct. 19, 1886, No. 13,304, June 14, 1890, No. 9,207, and Oct. 6, 1892, No. 17,801.



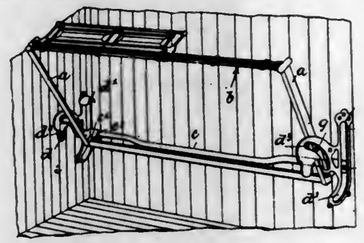
Claim.—1. In between deck fittings, the combination with a berth and upright supports, of coupling members, one a socket, the other a bulbous head fitting in said socket, said members being attached respectively to the framing and berth, substantially as described.

2. In between deck fittings of ships, the combination with boundary and parting rails comprising horizontal and vertical members pivotally secured together, of upright standards, sockets carried by said standards, and coupling members on said parting rails fitting in said sockets, substantially as described.

3. In between deck fittings of ships, the combination with upright standards and socketed bearings carried thereby, of shoes secured to parting off or divisional boards and formed with bulbous heads adapted to enter said socketed members, substantially as described.

4. In between deck fittings of ships, the combination with upright standards and socketed bearing brackets carried by said standards, of shoes formed with bulbous heads fitting said socketed bearings and with bulbous headed members on the berths, fitting sockets in said shoes, substantially as described.

544,980. SHIP'S BERTH. WILLIAM P. HOSKINS, Birmingham, England. Filed Dec. 6, 1892. Serial No. 454,297. (No model.) Patented in England July 13, 1887, No. 9,827, Oct. 28, 1889, No. 16,967, and Aug. 1, 1891, No. 13,098.



Claim.—1. A folding berth having double pivots in combination with stationary carrier brackets having double channels, grooves or slots, in which said pivots move, substantially as described.

2. In a folding berth, the combination with the berth, having double movable pivots on each side of stationary supporting brackets having double communicating slots in which said pivots move, one of said races or slots having a gate or opening d^3, substantially as described.

3. In folding berths, the combination with a dual pivot frame, and dual slotted brackets, of a fixed stop upon which the berth rests when lowered, substantially as described.

4. In folding berths, the combination with the berth of a shifting fulcra support comprising double pivot or roller bearings working in slotted plates, substantially as described.

5. In a berth, the combination of two sections hinged together, the inner section being supported upon double movable pivots with stationary brackets having races or channels in which said pivots work, substantially as described.

6. In folding berths, the combination with a jointed frame and dual pivots on the inner section of stationary brackets, having dual races or channels, substantially as described.

7. In berth framings, the lee-rails in combination with multiple-membered sides, the said lee-rails having feet or lower extensions i^3, with clips, each comprehending a front member u, having seating u', a back and jointed member t, screw pin r, and trunnion screw box s, substantially as described.

8. In a connection attachment for the lee-rails of ship's berths, the combination with the triple members b' b^3. b^3, of a depending face plate i^3, having lower part i^3, piercing i^4 and seat i^5; a screw pin comprehending shank r^3, collar r^4, and stem r^5; trunnion screw box s, having trunnion ends s^3, front member u, having seat u', back and jointed member t, having bearing t', and jointed end t^2 all combined, arranged, and acting, substantially as described.

544,981. SHIP'S BERTH. WILLIAM P. HOSKINS, Birmingham, England. Filed Dec. 6, 1892. Serial No. 454,298. (No model.) Patented in England Feb. 27, 1886, No. 2,544, Oct. 19, 1886, No. 13,304, Oct. 28, 1889, No. 16,967, and Aug. 1, 1891, No. 13,098, and in Germany June 18, 1891, No. 60,358.

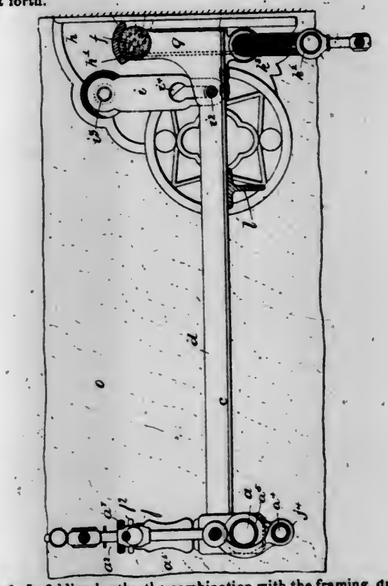
Claim.—1. The combination with a stationary bracket and a radius bar or swinging fulcrum, of a berth pivoted to said radius bar, and having a pivot center vertically movable on said bracket, substantially as described.

2. The combination with a stationary bracket having a vertical race, and a radius bar or swinging fulcrum, of a berth pivoted to the lower end of said radius bar and provided with a pivot center working in said race, substantially as described.

3. The combination with a stationary bracket and a swinging fulcrum or radius bar, of a berth pivoted to said fulcrum or bar, and having a pivot center elevated above the general plane of the berth and sliding on said bracket, substantially as described.

4. The combination in a folding berth of a stationary bracket having a vertical race, with a berth having a pivot center elevated above the general plane of the berth and working in said race, substantially as described.

5. In folding berths, the combination with the framing supported and hung at its inner end by double pivots or joint centers, of vertically disposed traverse races k^3, carried by brackets k, and adapted to admit of rear action and balancing or semi-balancing of the berth, as set forth.



6. In folding berths, the combination with the framing, dual centers, and swinging fulcra or radius bars, of races k^3, having upper abutments k', against which latter, enlargements e^3, of elevated end rails e, abut, substantially as described.

7. The combination with a folding berth frame, of swinging radius bars i, located at a short distance from the said inner end, and with the lower parts pivoted or jointed to the sides of the frame, and with the other and upper parts pivoted or jointed to a stationary support, substantially as described and set forth.

8. In folding berths, the combination with the framing, of pivot centers f, i^3, located respectively at the ends, and near the inner ends of the said framing, brackets k, having traversing slots k^3, swinging fulcra or radius bars i, elevated pillars g, back rail e, stops or abutments k' k^3, and brackets l, substantially as described.

9. In folding berths, the combination with a berth framing having pivot bearings of pivotally jointed and cranked stay rods k, with pivot ends k^4, working within said bearings, substantially as described.

10. In folding berths, the combination with the berth framing of the pillars a', screw threaded pegs a^2 on top of said pillars, and nuts a^7 on said pegs, of the lee-rail j, having hook shaped parts j^3, adapted to embrace said pegs, substantially as described.

11. In a berth, the combination with the longitudinally movable lee-rail, having bosses j^4, of the berth framing, provided with horizontal interchangeable stalks a^4 with nuts a^6.

12. In a folding berth, the combination with the berth framing, composed of two jointed sections, of swinging fulcra or radius bars, pivoted at their upper ends, and attached at their lower ends to the inner side of the outer section of the berth, substantially as described.

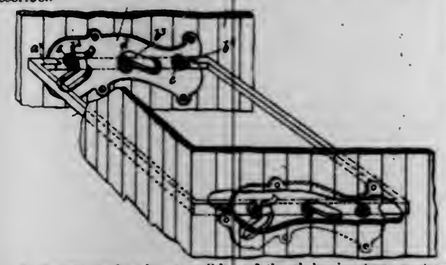
544,982. SOFA-BERTH. WILLIAM P. HOSKINS, Birmingham, England. Filed Mar. 17, 1894. Serial No. 504,021. (No model.) Patented in England Sept. 23, 1886, No. 17,885.

Claim.—1. In sofa berths, the combination with a revoluble framing having three trunnions at each end, of supporting brackets having each a seating c, and two races d', c', and seatings c, d, communicating with said races, substantially as described.

2. In sofa berths, the combination with a framing having three trunnions on each end, of brackets having each two races and a seating for the reception of said trunnions, substantially as described.

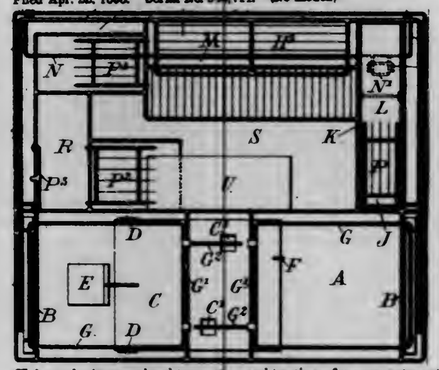
3. In a sofa berth having turn over, turn up, turn down, folding and reversible actions, the combination with the framing a, of rest trunnions, the roller pivots b', b^3, b^3, located upon the outer sides a^4, of the ends a^2, of the side framing and adapted to seat themselves upon take and work within and be supported by outstanding portions c, d, d', d^3, c, d', c^3, c^3, of supporting brackets, substantially as described.

4. In a sofa berth having turn over, turn up, turn down, folding, and pull out actions, the combination with rest trunnions or roller pivots b', b^3, b^4, upon the outer sides of each of the ends supported by and working and turning within outstanding portions c, d, e, of supporting brackets, with supplementary seating and rest brackets c^4, d^4, e^4, for the bringing forward of the said sofa berth, substantially as described



5. A combined and convertible sofa berth having turn up, turn down, folding, and reversible actions and with the said article having a frame for receiving bedding upon the one side and being upholstered upon the other, and with each of the opposite ends being provided with three rest trunnions or roller pivots which take and rest within seatings, and work and turn within races and bearings of portions or outstanding portions of supporting brackets, substantially as described.

544,983. ANIMAL-TRAP. THOMAS M. HOVELL, Elstree, England. Filed Apr. 22, 1895. Serial No. 546,711. (No model.)



Claim.—1. In an animal trap, the combination of a compartment A, having sliding doors B, at each end, levers G from which the doors are hung and which have tails G^2, a pivoted platform C held in a raised position by a balance weight and having holes C' or equivalent stops with which the ends of the lever tails G^2 engage when the doors are open so as to lock them in that position, substantially as described.

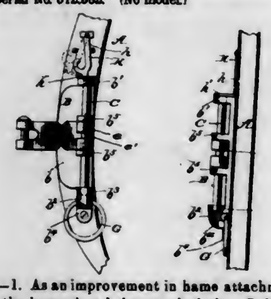
2. In an animal trap, the combination with a compartment A, of a vertically sliding door B suspended from a lever G with tail G^2 adapted to engage with a hole in a pivoted platform C so as to lock the door in the open position, and a rocking double ended lever H H' pivoted at one end to the door while the other end is adapted to be depressed by the weight of an animal so as to raise the door into the open position, substantially as described.

3. In an animal trap, the combination of a compartment A having sliding doors B at each end, levers G from which the doors are hung, a pivoted platform C with means for locking the doors in the open position, a rocking lever H H' H^3 pivoted to the doors and carrying a platform H^3 adapted to be depressed with the lever by the weight of an animal and thereby to raise the doors into the open position substantially as described.

4. In an animal trap, the combination of a compartment A, having sliding doors B at each end, levers G from which the doors are hung a pivoted platform C with means for locking the doors in the open position, a rocking lever H H' H^3, pivoted to the doors and carrying a platform H^3 adapted to be depressed with the lever by the weight of an animal and thereby to raise the doors into the open position, a passage K communicating with compartment A and containing a pivoted inclined platform L leading up to the platform H^3, a pivoted catch O for preventing the depression of the lever H H' H^3 so as to lock the doors in the closed position, and a lever device worked by the depression of platform L by an animal, for withdrawing the catch from the lever H H' H^3 so as to allow this to descend when the animal passes on to the platform H^3 substantially as described.

5. In an animal trap the combination of a compartment A closed by doors B B, a pivoted platform O adapted to lock the doors in the open position and to allow them to close when it is depressed, a rocking double ended lever H H' H^3 pivoted at one end to the doors and carrying at the other end a platform H^3 by the depression of which the doors are raised to the open position, a passage K communicating with compartment A and containing a pivoted inclined platform L, a catch O preventing the depression of lever H H' H^3, a device operated by the depression of platform L for freeing the lever H H' H^3 from catch O, passages Q R leading from platform H^3 to compartment S, and pivoted gates P P' P^2 in passages K Q and R for preventing the backward escape of the animal when in the said passages substantially as and for the purposes described.

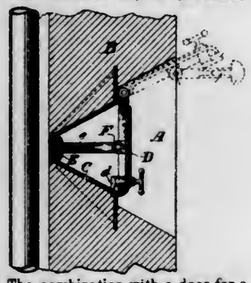
544,984. HAME. MOSES JOHNSON, Harrisburg, Ill. Filed May 24, 1894. Serial No. 512,382. (No model.)



Claim.—1. As an improvement in hame attachments, the combination with the hame A and the attached plate B, having apertured ears b' b^2 and the socket member b^3 at the lower end of the bolt C held in the ears with its lower end seated in the socket b^3 and having its upper end held flush with the top of the ear b' and a latch member pivoted to the hame A, having a foot portion adapted to be swung over the upper end of the bolt C, all arranged substantially as shown and described.

2. An improved attachment for hames, comprising a base plate having apertured ears and a socket at the lower end, a pintle held in the apertures and a swinging latch member adapted to be hung on the hame body having an outwardly extending horizontal member adapted when the latch is moved to its closed position to fit over the upper end of the pintle and hold it in place, all arranged substantially as shown and for the purposes described.

544,985. DOOR. WILLIAM E. KELLY, New Brunswick, N. J.; Kate A. Kelly and John C. Evans administrators of William E. Kelly, deceased. Filed Dec. 4, 1894. Serial No. 530,773. (No model.)



Claim.—1. The combination with a door for a doorway tapering from one side to the other, of a stopper pivotally connected to the door and serving to close the contracted portion of the doorway, substantially as specified.

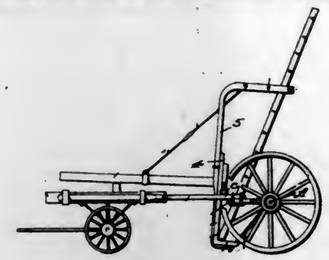
2. The combination with a door D, for a doorway tapering from one side to the other, of a stopper E provided with arms e pivotally connected to the inner side of the door, substantially as specified.

544,986. LADDER-TRUCK. JOHN LONGLEY, Rockland, Me. Filed May 31, 1895. Serial No. 551,063. (No model.)

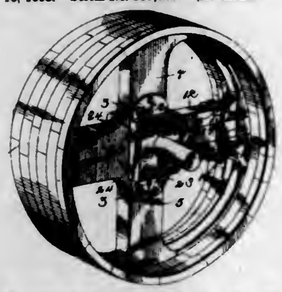
Claim.—1. In combination with a truck or carriage, a carrier pivoted thereto, and adapted to be tilted, a rigid extension from said carrier for supporting the end of said ladder and a removable support for the intermediate portion of said ladder.

2. In combination with a truck or carriage, a carrier pivoted thereto, a depending frame and a vertical standard, said carrier adapted to be tilted to elevate the ladder, substantially as described.

3. In combination with a truck or carriage, a carrier pivoted thereto, an extension thereon adapted to receive the end of the ladder, a depending frame serving to receive and support the ladder a distance from its end, a vertical standard projecting from said carrier and means for tilting the carrier, substantially as described.

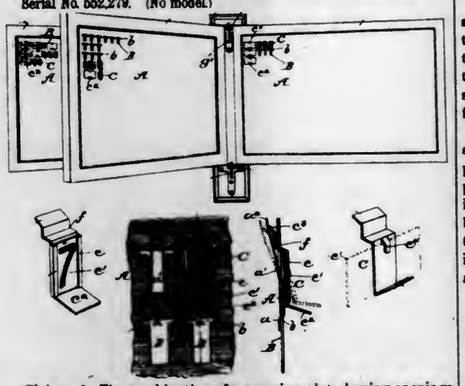


544,987. SECTIONAL PULLEY. MAHLON B. LORAH, Reading, Pa. Filed Jan. 18, 1895. Serial No. 535,319. (No model.)



Claim.—The combination, in a pulley having arms and the section 2 provided with recesses upon opposite sides and adapted to removably fit within one of said arms, which arm is also provided with recesses on opposite sides, of the plate having sockets, the headed bolts lying within the recesses of section 2 and of the arm, the heads of the bolts being within said sockets, and nuts screwing upon the bolts, in the manner and for the purpose specified.

544,988. STOCK-INDICATOR. ROSCOE L. MARK, Davenport, Iowa, assignor to the Mark Stock Keeper Co., same place. Filed June 10, 1895 Serial No. 552,279. (No model.)



Claim.—1. The combination of a carrying plate having openings through it, and a retaining spring for each opening arranged in said opening and secured by extension down into the next subjacent opening, and a detachable tablet substantially as shown and described.

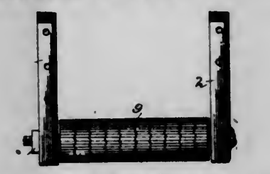
2. The combination of a carrying plate having T-shaped openings through it, a bent spring having its middle portion extended through said opening, its upper bent tongue extending behind the carrying plate, and its two lower ends extended in front of said plate and secured in the lateral branches of the T-shaped opening next below, and a detachable tablet substantially as shown and described.

3. The combination with the carrying plate having openings and retaining springs arranged in the openings and pressing forwardly at their upper ends; of a tablet having a stepped upper end bent zig-zag backwardly from its face and an outwardly flanged lower end substantially as shown and described.

4. The combination with the carrying plate having openings and retaining springs; of a tablet having a stepped upper end, a tongue or clip c^4 and an upwardly and outwardly bent flange at its lower end substantially as shown and described.

5. An indicator consisting of a supporting frame, a set of folding frames hinged thereto carrying plates having T-shaped slots, bent springs arranged in the slots and having their ends secured in the next lower slots and detachable tablets secured in the plate by means of the said springs substantially as shown and described.

544,989. RUB-IRON. DAVID L. MILLER, Wilson, Kans. Filed May 9, 1895. Serial No. 548,706. (No model.)



Claim.—A rub iron consisting of a bracket, a roller formed of a series of collars having intermeshing teeth at their ends, a bolt for journaling the collar to the bracket, and a nut for holding the bolt in place, substantially as set forth.

544,990. COMBINED STOPPLE AND HAND-HOLD. JOHN P. MILLER, Santa Cruz, Cal. Filed May 6, 1895. Serial No. 548,321. (No model.)



Claim.—1. A stopple and hand hold consisting of the lower or stopple portion tapered and adapted to fit the neck of the bottle and the upper portion secured to the upper large end of the stopple portion and provided at its upper end with a nipple to grip the pen staff, the stopple portion being provided with a central opening in line with said nipple and through which the pen staff plays substantially as set forth.

2. A stopple and hand hold for pen staffs consisting of the tapered stopple portion having a longitudinal bore and provided at its upper large end with a flexible yielding upwardly extended portion provided at its upper end with a nipple to grip the pen staff the bore in the stopple portion being sufficiently large to receive the pen staff but too small to permit the slipping therein of the upper flexible portion on the handle whereby the stopple portion will operate as a limiting stop to the downward movement of the pen staff all substantially as and for the purposes set forth.

544,991. SALESMAN'S DUPLICATING MEMORANDUM DEVICE. CHARLES H. MILLIKEN, Mechanic Falls, Me. Filed Jan. 2, 1895. Serial No. 533,603. (No model.)

Claim.—1. The combination in a salesman's duplicating memorandum device, of a casing or frame provided with a receptacle for a roll of paper, a bar located at the opposite end of said casing around which the paper from the roll passes so as to be superimposed upon itself, and an interposed manifolding sheet between the web of paper, for the purpose set forth.

2. The combination in a salesman's memorandum device, of a section having a bed or plate and receptacle for a roll of paper at one end, a guide-bar or roller located beyond the opposite end of the bed, and a section having an open portion and a slot above the same through which the web of paper passes, the parts being organized as shown and provided with a manifolding sheet whereby duplicate memorandums can be made on a single web.

3. The combination in a salesman's duplicating memorandum device, of sections having a receptacle for a roll of paper at one end, a bed or platen over which the web of paper passes and a bar or transverse guide beyond the bed or platen, means for retaining a carbon-sheet above said bed, the paper in the receptacle passing immediately above the bed around the bar and above the carbon-sheet the loose end of the paper being passed through a slot in the upper part of the frame, substantially as shown and for the purpose set forth.



4. The combination in a salesman's memorandum device, of a bed or platen, a bar or roller located adjacent to one end thereof and a roll-chamber at the other, said chamber being below the bed or platen to provide the tapered construction the bed of which is in an inclined position, the roll in the chamber having its web passed over the bed to the guide-bar and superimposed upon itself with an interposed manifolding sheet, substantially as shown and for the purpose set forth.

5. In a salesman's memorandum or autographic duplicating device, the combination, of a section A having a bed or platen, a rol receiving chamber and means for retaining on said section a check-sheet, of a section B hinged to the section A and having a cut away portion and a slot above the same, a serrated plate carried by the section B and a guide-bar or roller positioned beyond the bed or platen, means attached to the section B for retaining a carbon-sheet the same being adapted for use with a roll which is passed under the carbon-sheet around the guide-bar and through the slot in the upper part of the section B, for the purpose set forth.

6. In a roll carrying memorandum device for the purpose set forth, the combination, of a section A comprising a tapered block to which side pieces A^3 and an end piece A^4 are attached so as to form at the upper or thicker end of the block a roll-chamber, of a section B having angular side pieces and part which completes the roll-chamber and engages with the part A^3 of the section A, one of the sections carrying a guide-bar, the parts being pivotally connected to each other, substantially as shown and for the purpose set forth.

7. In a manifolding device, the combination with the sections A and B, the section B being struck up from a single piece of metal the section A having a tapered block A' with a concave end the side pieces A^3 and end piece A^4 being attached to said block, for the purpose set forth.

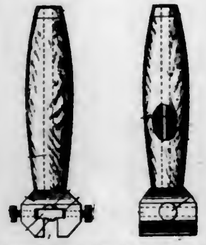
8. In a portable or pocket-autographic duplicating memorandum device, the combination, of a casing consisting of two sections pivoted to each other, one section being provided with a platen and at one end with a roll-chamber and the other section having a guide bar beyond the platen and a clamp for retaining one end of a carbon-sheet, the strip of paper being adapted when passed over the platen and guide-bar to form two stretches movable in opposite directions, with an interposed carbon-sheet, whereby autographic duplicating memorandums can be made from a single continuous sheet of paper.

9. In an autographic duplicating device, the combination, of a case having a platen and a roll chamber for receiving a roll of paper, a roller or guide adjacent to the opposite end of the platen from the roll-chamber by means of which a single continuous sheet of paper may be drawn to form two stretches movable in opposite directions, a holder for retaining one end of a piece of carbon paper whereby a continuous sheet of paper in two stretches—one above and the other below the carbon-paper—moving in opposite directions will counterbalance the friction or pull upon the carbon-paper, thus allowing the free end of the carbon-paper to remain in its position unmoved.

10. In a pocket or portable autographic memorandum device, the combination, of two sections pivotally connected to each other at the smaller end, the lower section being constructed so as to provide a platen or pad and beyond the same a roll receiving chamber the other section having beyond the platen a guide-bar, above the same a recording space and beyond said recording space an opening for the passage of the recording strip, a carbon-paper holder carried by the upper section, the parts when closed being substantially wedge-shaped to provide an inclined writing surface and to permit the same to be readily placed in the pocket, the single continuous strip which is used being passed around the guide-bar so that the two stretches thereof will be moved in opposite directions, the free end of the strip projecting through the upper section above the roll chamber, as set forth.

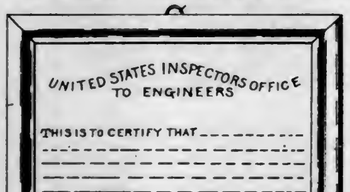
544,992. SKATE-SHARPENER. SAMUEL F. MORRIS, St. Louis, Mo. Filed May 21, 1895. Serial No. 550,147. (No model.)

Claim.—1. An improved skate sharpener, comprising a head having a rectangular slot or passage extending longitudinally through the center thereof, and having a vertically arranged slot or passage extending from the under side of said head to said rectangular passage, a shank formed integral with said head, a handle located upon said shank, set-screws extending through the sides of the head and into the rectangular passage, and a removable block provided with a longitudinally extending rib, said rib and block being formed with file faces.



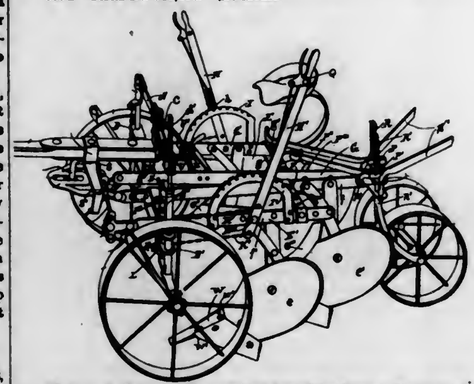
2. In an improved skate sharpener, a head constructed with longitudinally extending rectangular passages or slots at right angles to one another, one of which extends to the lower face of the head, said head being provided with a longitudinally extending concave groove in the top face of the horizontally arranged slot or passage, a block provided with a longitudinally extending rib, said block and rib being file-faced and located within the longitudinally extending slot or passage through the head, and set-screws passing through the sides of the head for holding and laterally adjusting the block.

544,993. CERTIFICATE-HOLDER. HARRY E. MCARTHUR, Saginaw, Mich. Filed Mar. 1. 1895. Serial No. 540,222. (No model.)



Claim.—The combination with a frame provided with a keeper, of a back hinged thereto and provided with a bolt casing having an elongated opening, and a bolt located in said casing having a stud projecting through the opening in the said casing and provided at its upper end with an aperture, through which a nail is adapted to project and by means of which the holder is supported and the parts thereof retained in a locked position, substantially as set forth.

544,994. PLOW. AUGUST PIRCH, Los Angeles, Cal. Filed July 21, 1894. Serial No. 518,191. (No model.)



Claim.—1. In a plow the combination of the frame; the rear supporting wheel journaled to the frame and having its stem projecting upward above its journal and provided with an angular shoulder and a cylindrical body above such shoulder; a lever arranged to embrace the angular shoulder to prevent the wheel stem from rotating and to be operated to be raised from the angular shoulder and to embrace the cylindrical portion of the stem to allow the wheel to turn; and the spring arranged encircling the stem and adapted to force the lever normally into engagement with the angular shoulder of the stem.

2. A plow comprising a gang of right hand plows and a gang of left hand plows secured together and provided with a draft rod extending across the front end of the plow beam and attached thereto; a clevis arranged to slide upon such draft rod, and a lever pivoted to the frame of the implement and arranged to be actuated to shift the clevis along the draft rod, substantially as and for the purpose set forth.

3. A plow comprising a gang of right hand plows and a gang of left hand plows secured together and provided with a draft rod extending across the front end of the plow beam, and also provided with a tongue-supporting beam arranged above the draft rod and parallel therewith; a clevis arranged to slide upon the draft rod; a tongue arranged upon and adapted to slide along the tongue-supporting beam, and provided with a bracket arranged to engage the clevis; and a lever pivoted to the frame of the implement and arranged to be actuated to shift the clevis along the draft rod, substantially as set forth.

4. In a plow, the combination of the supporting wheels; the vertical guide post; the guide arranged to slide therealong; the beam pivoted near its front end to the guide; the pulleys journaled in the guide; the actuating lever pivoted to the beam and provided with the arc rack and the pawl; the chain or other flexible device having one end secured to the lever above its pivotal point, passed forward under one of the pulleys in the guide, thence upward and secured to a suitable support, and the chain having one end secured to the lever below its pivotal point, passed forward over the other pulley in the guide, and thence downward and secured to a suitable support, substantially as described.

5. In a plow, the combination of the supporting wheels; the vertical guide posts; the guides arranged to slide therealong; the right and left hand gang of plows having the front end of their beams secured respectively to the guides; the draft rod extending along and attached to the front ends of the beams; the clevis arranged to slide along the draft rod; the tongue-supporting beam arranged above the draft rod; the tongue arranged to slide along the tongue-supporting beam and provided with the bracket connected with the clevis; the lever pivoted to the frame of the implement and arranged to be actuated to shift the clevis along the draft rod; the pulleys, two journaled in each guide; the actuating levers, one pivoted to each gang of plows, and provided with an arc rack and a pawl; the chains, or other flexible connections, one secured to each lever above its pivotal point and passed forward under one of the pulleys in its respective guide, and thence upward and secured to a suitable support, and one secured to each lever below its pivotal point, passed forward over the other pulley in its respective guide, and thence downward and secured to a suitable support, substantially as described.

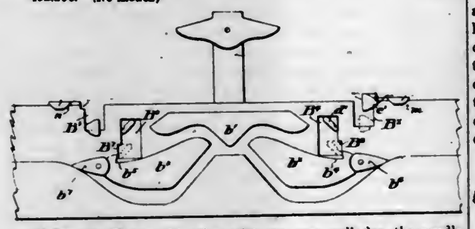
6. The colter set forth consisting of a gouge shaped body rigidly attached to the land side of a plow and projecting upward therefrom.

7. A plow provided with a fixed mold board, and with a revolving disk mold board arranged at the top of the fixed mold board and having its lower portion arranged behind and below the top of the fixed mold board, substantially as described.

8. A plow provided upon its upper face with a seat for a plow point, such seat being arranged between the landside and the share a point having its shank arranged to seat in the point seat and twisted to bring its cutting edge substantially horizontal when its shank is thus seated; and the bolts arranged to secure the point to the plow

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544,995. CIRCULAR-KNITTING MACHINE. GRAHAM REID and CHARLES STEVENSON, Philadelphia, Pa. Filed Nov. 28, 1893. Serial No. 492,290. (No model.)



Claim.—1. The combination with the cam cylinder, the needle cylinder and the needles, of a vertically movable needle-shifter capable of engagement with the needle hub; a spring normally tending to throw said shifter in the direction of its shifting movement, and permitting said needle-shifter to yield under the pressure exerted by the hub of the needle against the rotation of the cam cylinder and a detent adapted to hold said shifter against the compression of said spring before engagement with the needle hub, and releasing said shifter upon such engagement, substantially as set forth.

2. The combination with the cam cylinder, the needle-cylinder and the needles, of a vertically movable needle-shifter capable of engagement with the needle hub; a spring normally tending to throw said shifter in the direction of its shifting movement and permitting said needle shifter to yield under the pressure exerted by the hub of the needle against the rotation of the cam cylinder; a detent adapted to hold said shifter against the compression of said spring before engagement with the needle hub, and releasing said shifter upon such engagement; a tripper connected with said needle-shifter; and a tripping cam adapted to engage with said tripper and set the needle-shifter in position against the compression of its spring, substantially as set forth.

3. The combination with the cam cylinder, the needle cylinder and needles, of a vertically movable needle-lifter; a vertically movable needle depressor; springs normally tending respectively to throw the lifter upward and the depressor downward and for allowing said needle lifter and depressor to yield in the direction of pressure exerted by the hub of the needle against the rotation of the cam cylinder; detents capable of engaging said lifter and said depressor respectively against the compression of said springs; trippers connected respectively with said lifter and said depressor, and tripping cams arranged with reference to said trippers, substantially as set forth, whereby said tripper is permitted to engage operatively with its tripping cam and avoid operative contact with the other tripping cam, as and for the purposes specified.

4. The combination with the needle cylinder and its needles, of a cam cylinder having vertical slots symmetrically arranged with reference to the knitting cams in the manner set forth, each of said slots being provided with an off-set; needle-lifter and needle-depressors extending through said slots and adapted to engage within and be detained by said off-sets; springs normally tending to throw said lifters and said depressors, respectively, in the direction of their respective shifting movements, and also tending to throw them into engagement with the detaining off-set; and tripping devices, substantially as set forth, adapted respectively to depress the lifter against the tension of its spring and raise the depressor against the compression of its spring substantially as set forth.

5. In combination with a herein described slotted cam cylinder and needle-cylinder, a needle shifter extending through the slotted portion of the cam cylinder and comprising a bifurcated arm, and an intermediately hinged strip of greater vertical height than the end of said arm, said strip having a range of movement which permits it, when moved in one direction to form a step, for the needle hub, and when moved in an opposite direction, to clear said hub, substantially as set forth.

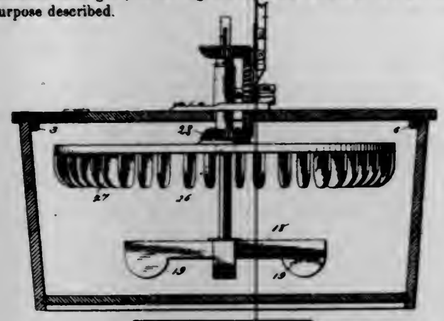
6. A knitting machine comprising a cam cylinder, having vertical slots provided with off-sets near their lower ends, said cam cylinder being also provided with a needle lifter including an arm adapted to engage the vertical slot and having a shoulder adapted to engage the off-set, a single spring normally pressing the arm vertically and also tending to rotate it so that the shoulder will engage the off-set, a needle hub adapted to engage the shoulder and rotate the arm against the compression of the spring, whereby the latter is permitted vertical movement; all substantially as described.

7. A knitting machine comprising a cam cylinder, having a central knitting cam and knitting cams b^3, b^3, with suitable switch cams, a cylinder upon which the same are mounted, having vertical slots formed through its wall, said slots having off-sets near their lower ends and at the side farthest away from the central knitting cam; needle lifters, comprising a vertical post secured to the cam cylinder, a block sliding thereon, having an arm engaging said slots, and a shoulder adapted to engage the off-set, said shoulder being provided with an inclined step or surface upon which the needle heel can ride, a spring upon said post normally acting to elevate the block and to keep the arm rotated away from the central knitting cam, means for depressing said block against the compression of the spring, whereby the rotating action of said spring causes the shoulder on the arm to engage the off-set, and a needle hub adapted in its movement to carry the needle into engagement with said shoulder and force the same out of said off-set, whereby said block is raised and the needle rides on the inclined step; all substantially as described.

544,996. WASHING-MACHINE. HARRY C. SCHULTZ and ANDREW G. SCHULTZ, Philadelphia, Pa. Filed Feb. 26, 1895. Serial No. 539,801. (No model.)

Claim.—In a washing machine, the combination of a rubbing frame adapted to revolve to and fro and have a vertical sliding move-

ment, the square spindle supporting and operating said frame, a sleeve in which said spindle has its bearing, a tubular bearing 9, for supporting said sleeve, a beveled pinion 11, meshing with gear 13, and a dasher board 24, pinion 23, bolted thereto and adapted to revolve around the lower end of sleeve 10, and gear 13, with which pinion 23, meshes, and means.—as the handle 28—for imparting the oscillating motion to said gear, all arranged to operate as shown and for the purpose described.



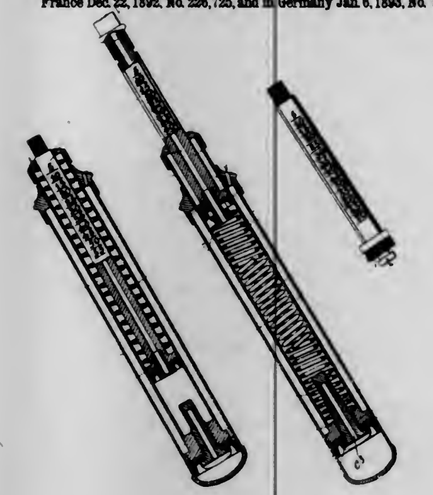
544,997. BUTTER-BOX. RUFUS A. SIMPSON, Ferndale, Cal. Filed May 14, 1895. Serial No. 549,276. (No model.)



Claim.—1. A butter box consisting of a box having an upwardly projecting flange A' at its upper edge, and a strap secured to said box and bent, at its upper end, over the flange thereof, in combination with a cover having a strap extending below its flange with a slot intermediate of its ends, through which the box strap passes, the lower projecting end of the cover strap being within the channel or groove formed between the flange A' of the box and the angular bend of the box strap, said straps forming a joint about which the cover is freely movable.

2. A butter box having a body, a cover hinged thereto, and a fastening device consisting of a strap or plate secured to the top of the box, bent at right angles through the front having an up-turned end, a channel formed in the front of the box into which said end projects when the cover is closed and a sliding bar adapted to lock the end of the strap therein.

544,998. PRESSURE-INDICATING INFLATOR OR AIR-PUMP. JOHN M. SMITH, West Bromwich, England. Filed Mar. 1, 1893. Serial No. 464,248. (No model.) Patented in England Sept. 27, 1892, No. 17,196; in France Dec. 22, 1892, No. 226,725, and in Germany Jan. 6, 1893, No. 71,598.

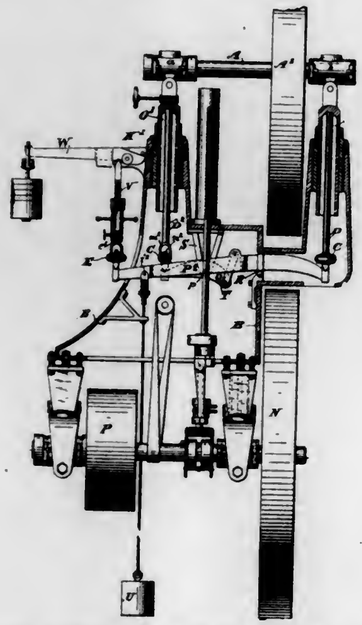


Claim.—1. An inflator or air pump, having a pressure indicator, consisting of a telescopic and graduated stalk or piston and a spring, in combination with a pump barrel and piston relatively movable and communicating motion to said stalk through the air compressed in the pump, substantially as described.

2. In an indicating inflator or air pump, the combination of a forcing casing, a pressure chamber, and a sealed stalk, with a spring, disposed and connected between the said stalk and pressure chamber, as set forth.

3. In an indicating inflator or air-pump, the combination of an exterior casing, an interior casing, having a piston end and check valve, a graduated stalk having a piston end working in said interior casing and a spring arranged within the interior casing and adapted to maintain the graduated stalk against the air pressure within the inflator substantially as described.

544,999. BAND-SAW MILL. EDWIN E. THOMAS, Bay City, Mich., assignor to Michael Garland, same place. Filed Apr. 12, 1894. Serial No. 507,233. (No model.)



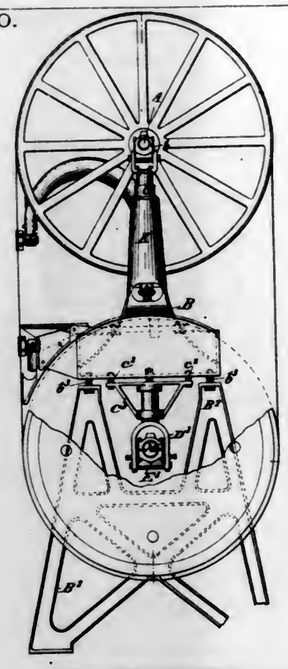
Claim.—In combination with the spindles D; and D^2, which, at their upper ends, support the upper shaft A; the lever P^3, fulcrumed on the husk with its shorter arm supporting spindle D, and its longer one the counterbalancing weight U; and the lever Q fulcrumed to the frame, with its shorter arm linked to the longer arm of lever P^3, and its longer arm supporting the spindle D^2, the springs, or cushions, C and C, arranged, respectively, intermediately of the spindle D, and its supporting lever P^3, and intermediately of the spindle D^2 and its supporting lever Q; the whole constructed to operate in the manner and for the purpose set forth.

545,000. BAND-SAW MILL. EDWIN E. THOMAS, Bay City, Mich., assignor to Michael Garland, same place. Filed Feb. 3, 1894. Renewed Jan. 4, 1895. Serial No. 533,822. (No model.)

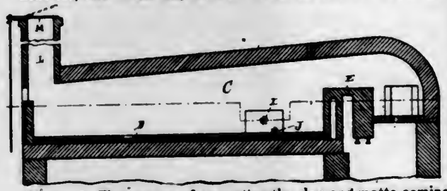
Claim.—1. In a band-saw mill of the type shown, the combination with the sustaining and adjusting levers P and Q mounted within the husk; and a counterbalancing weight depending from the longer arm of lever P, of a tension device, comprised of a spindle stepped on the rear end portion of lever P, and a weighted lever W pivoted to a bracket of the rear column and adapted to be held by a stop when not acting on said spindle; as and for the purposes set forth.

2. In the tension device of a band-saw straining mechanism, the combination with the distensible presser spindle c^2 V, (adapted to press down on the rear end of the main lever of said straining mechanism,) of a weighted lever fulcrumed to a fixed point, and having an eye, or vertical aperture, through which the upper end of said presser spindle may be passed; as and for the purpose hereinbefore described.

545,000.



545,001. PROCESS OF TREATING SLAG AND FURNACE THEREFOR. CHARLES M. VAN CLEVE, El Paso, Tex., and ROBERT D. RHODES, Leadville, Colo. Filed May 21, 1894. Serial No. 511,978. (No model.)



Claim.—1. The process of separating the slag and matte coming from blast furnaces employed in the reduction of precious metals, and for recovering therefrom the valuable metals, which consists in transferring these mixed products to an independently heated furnace and maintaining them there in a molten condition for separation by gravitation, covering the charge in such furnace with a layer of charcoal or similar material to assist in maintaining the charge in a condition of fluidity and to secure the reducing effect thereof upon the metallic oxides contained in the slag, and introducing into the layers of matte, metallic iron for the purpose of precipitating the lead in the matte in the form of base bullion, substantially as specified.

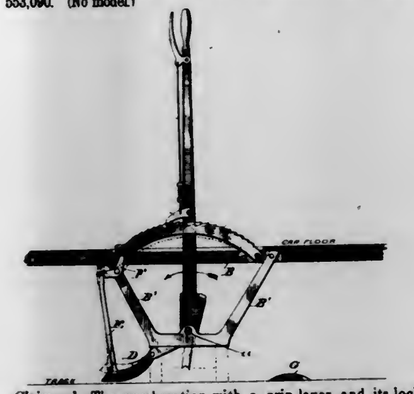
2. In the separation of the slag and matte coming from blast furnaces, the process of transferring the mixed liquid products to a separate reverberatory furnace, and maintaining them in a molten condition for separation by gravitation, and introducing into the layer of matte but not into the slag metallic iron whereby the lead is precipitated, substantially as and for the purposes described.

3. The process of separating the slag and matte coming from blast furnaces, and recovering the valuable metals which consists in transferring these mixed liquid products to a separate reverberatory furnace, and maintaining them there in a molten condition, charging upon the surface thereof a layer of coal, charcoal, or other fuel, and maintaining above the same a reducing atmosphere, precipitating the lead from the matte as base bullion by means of iron and drawing off base bullion, matte and clean slag at different levels, substantially as and for the purpose described.

4. A reverberatory furnace for treating the slag and matte from blasting furnaces having a hearth provided with a wrought iron surface plate, outlet taps at different levels, a choke damper on its stack, a receptacle inlet on one side, and water jackets in its wall, substantially as specified.

5. The process of separating the slag and matte from one or more blast furnaces and recovering the valuable metals, which consists in intermittently feeding these mixed liquid products into a separate reverberatory furnace, and maintaining them therein in a molten condition for separation by gravitation, and in subjecting the same to the reducing influence, first of a covering of charcoal, coal, or other fuel, secondly to a reducing atmosphere, and finally precipitating the lead from the matte as base bullion by means of iron extending into the matte but not above the same, substantially as specified.

545,002. AUTOMATIC GRIP-RELEASE. EUGENE A. WALTERS and FRED J. MAXON, Walworth, Wis. Filed June 17, 1895. Serial No. 553,090. (No model.)



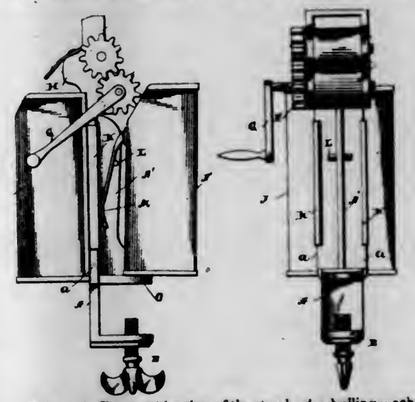
Claim.—1. The combination with a grip lever, and its locking pawl; of a toothed locking bar hinged at one end and free at the other, and tripping mechanism supporting the free end of the toothed locking bar in its normal working position, and adapted to be adjusted to effect movement of the free end of the locking bar away from the pawl substantially as and for the purpose described.

2. A grip mechanism consisting of a grip lever having a pawl, a downwardly movable locking bar, curved and provided with teeth on its upper convex edge to engage with the pawl above and means for adjusting it substantially as shown and described.

3. A grip mechanism having a toothed locking bar hinged at one end and free at the other, and automatic tripping mechanism for adjusting it substantially as and for the purpose described.

4. The combination with a grip lever, and its locking pawl; of a toothed locking bar hinged at one end and free at the other, a lever sustaining the said free end, a rod connected to the outer end of said lever, and a shoe hinged to the grip frame and also to the rod, and adapted to be operated upon by a projection in the road bed substantially as and for the purpose described.

545,003. PEA OR BEAN HULLER. WILLIAM WEAVER, Philadelphia, Pa. Filed May 16, 1895. Serial No. 549,560. (No model.)
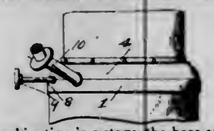


Claim.—1. The combination of the standard, a hulling mechanism supported thereby, the pea receiving receptacle, the vertical guides on its inner side for moving longitudinally on the extended vertical edges of the standard, substantially as shown and described.

2. The combination of a standard, a hulling mechanism at the upper end thereof, the transverse pin carried by the standard, a hull receiving receptacle, and the two spring arms on the rear of the receptacle for engaging said pin, substantially as shown and described.

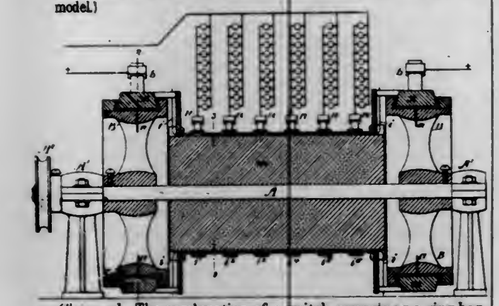
3. In a pea and bean huller, the combination of a frame carrying the vertical web A' and laterally extending shelf O, a hulling mechanism supported by the frame, receptacle N adapted to rest on the shelf, the spring arms M projected from the rear side of the receptacle, and pin L in web A' which said arms engage, substantially as shown and described.

545,004. OIL-STOVE. WILLIAM H. WILDER, Northampton, Mass. Filed July 2, 1894. Serial No. 516,301. (No model.)



Claim.—In combination in a stove, the base and upper drum section removably hinged together, the removable reservoir and the filling nose carried thereby and projecting laterally out through the joint between the base and drum section to be accessible from the outside of the stove and having its filling opening out of the vertical plane of the reservoir, substantially as described.

545,005. MULTIPLE ELECTRIC CIRCUIT AND MECHANISM FOR MAINTAINING SAME. TIMOTHY K. AMES and ELBERT A. PARKER, Peterborough, N. H. Filed Oct. 19, 1894. Serial No. 526,342. (No model.)



Claim.—1. The combination of a switch comprising a ring having a number of sets of blocks and a contact brush or brushes, means for rotating one part of said switch in respect to the other, conductors providing an electrical connection between the corresponding blocks of each set on the ring, a series of distributing terminals, one for each block of a set on the switch, each of said terminals being connected to one wire of the working circuit, electrical connections between each distributing terminal and its corresponding block of each set on the switch ring, and a direct line wire serving to return the current from the working circuits to the generator, substantially as specified.

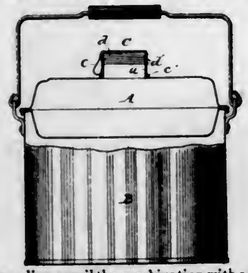
2. The combination of a pair of switches, each comprising a ring having a number of sets of blocks and a contact brush or brushes, means for rotating one part of each switch, in respect to the other part of the same, a series of working circuits, comprising as many as there are blocks in each set on the switches, connections whereby the current is caused to pass in succession through the blocks of the successive sets on each switch, whereby each circuit receives its current through two blocks simultaneously, and the entire series of circuits is energized a number of times on each rotation of the switch, and a direct line serving to return the current from each working circuit to the generator, substantially as specified.

545,006. INSOLE FOR SHOES. WILLIAM F. BAIRD, Woonsocket, S. D. Filed Feb. 7, 1894. Serial No. 499,333. (No model.)



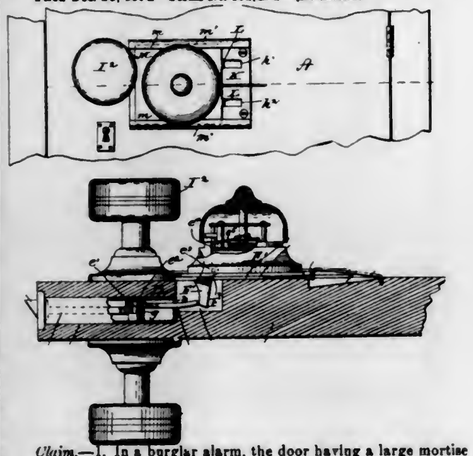
Claim.—As a new article of manufacture, a padded insole for a boot or shoe consisting of a double walled sole having one or more filling-adjusting openings therein, and a padded extension on one side adapted to extend up above the foot, over the instep, and also underneath, and detachably connected to the insole, substantially as set forth.

545,007. DINNER-PAIL. CHARLES E. BERTELS, Wilkes-Barré, Pa. Filed May 2, 1894. Serial No. 509,813. (No model.)



Claim.—In a dinner pail the combination with a liquid holder having a collar secured thereto, provided with a plain body and a crease or thread at its outer end, of a drinking cup having a plain body and a corresponding crease or thread near its bottom, said cup being adapted to fit upon the collar and their respective threads adapted to interlock, substantially as described.

545,008. BURGLAR-ALARM. FREDERICK BEE, Brightwood, D. C. Filed Dec. 20, 1894. Serial No. 532,424. (No model.)



Claim.—1. In a burglar alarm, the door having a large mortise formed therein, in which is seated the lock-casing a knob-spindle passing therethrough carrying a dog a latch having a catch formed on its free end pivoted or fitted on the lug formed on the lower end of a dog, a lever pivoted or fitted on the free end of said lug, the free end of the lever being passed through a hole in the mortise and lock casing and projecting into a smaller mortise formed in juxtaposition thereto, the free end of which is directed opposite to that of the free end of the latch and contacting with the lower end of a depending alarm mechanism trigger pivotally secured to and in the base of the bell substantially as described.

2. In a burglar alarm, the combination with the door having a large mortise with a lock-casing therein communicating with a smaller mortise through the medium of a hole or passage-way both in the large mortise and lock-casing, the rear end of the latch pivoted or fitted on a lug on the lower end of a dog, the forward end of a lever pivoted or fitted on the free end of said lug, the free end of which is directed opposite to that of the free end of the latch; of the spindle thimble having tappets formed thereon, the dog, and the spring secured to the lock casing and connecting with the dog for actuating the latch and spindle lever causing the latter to contact with the alarm mechanism trigger substantially as described.

3. In a burglar alarm the combination with the door having a large mortise with a lock-casing therein communicating through the medium of a hole or passage-way both in the large mortise and lock-casing with a smaller mortise; the rear end of the latch pivoted or fitted on a lug on the lower end of a dog, the forward end of a lever pivoted or fitted on the free end of said lug, the free end of which is directed opposite to that of the free end of the latch the spindle thimble having tappets formed thereon, the dog, a spring secured to the lock-casing and connecting with the dog for actuating the latch and spindle lever; of the alarm mechanism trigger pivotally secured to and in the base of the bell and contacting with the lever substantially as described.

4. In a burglar alarm, the combination with the door having a large mortise with a lock-casing therein communicating through the medium of a hole or passage-way, both in the large mortise and lock-casing with a smaller mortise; the rear end of the latch pivoted or fitted on a lug on the lower end of a dog, the forward end of a lever pivoted or fitted on the free end of said lug, the free end of which is directed opposite to that of the free end of the latch, the spindle thimble having tappets formed thereon, the dog, a spring secured to the lock-casing and connecting with the dog for actuating the latch and spindle lever; of the stationary and adjustable plates, the former having a long longitudinal slot therein and the latter having a shorter slot therein located above the longer slot in the forward end of the plates through which a depending mechanism trigger is passed and freely plays and is actuated by the aforesaid lever, longitudinal slots formed in the rear end of the stationary plate which engage depending or downwardly struck flanges on the adjustable plate, intermediate narrower slot, a hook or stop having one end secured to the door and the free end engaging the said slot substantially as described.

5. In a burglar alarm, a stationary plate secured to the door by screws or similar means, a longitudinal slot formed in its forward end extending midway the length of the plate, grooves or ways formed in the sides or edges of the plate by means of flanges "struck up" from the body thereof, longitudinal slots formed in the plate near the ways or edges for engagement with the downwardly struck flanges from the body and rear end of an adjustable plate carrying the bell-base, its mechanism and bell, said plate being movably secured in the ways of the stationary plate and a longitudinal slot formed in the forward end of the adjustable plate and registering with the longitudinal slot formed in the forward end of the stationary plate through which the trigger pivotally secured in the bell-base depends and plays, a narrower slot formed intermediate of the slots formed in the rear end near the edges or ways of the stationary plate for the reception of the stop or hook secured to the door, all substantially as described and for the purposes specified.

545,009. TROLLEY. GEORGE W. BIDDELL, Chattanooga, Tenn. Filed Feb. 2, 1895. Serial No. 537,035. (No model.)

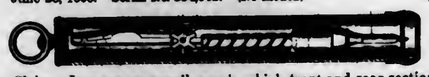


Claim.—1. A trolley comprising a rod, having a sleeve or head secured upon the end thereof, a shoulder projecting upwardly from said head, and a block pivoted upon said head, having the trolley journaled thereon, said block being adapted to partially rotate or yield laterally, and being limited in such movement by engagement with the shoulder of the rod.

2. A trolley comprising a rod having a sleeve or head upon the end thereof, a shoulder extending across the top thereof, a block pivoted upon the top of said trolley and carrying the trolley wheel, said block being adapted to yield laterally or partially rotate, and limited in such rotation by the shoulder, and screws extending through said block to project inwardly beyond the same and abut against said shoulder to adjust the throw of the wheel.

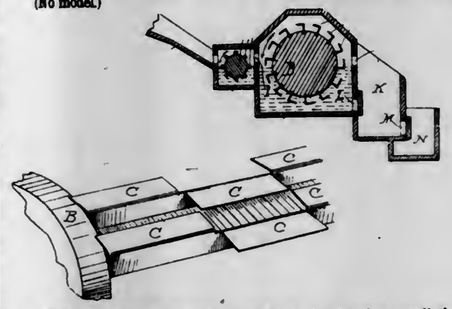
3. A trolley comprising a rod, having a cylindrical head rigidly secured thereon near the upper end, said head being provided with an elongated shoulder upon one side thereof, a flat elongated block pivoted or journaled upon the projecting portion of said rod, and secured thereto by means of a flange thereon, said block being adapted to laterally yield or partially rotate, and having its motion limited by said shoulder, screws extending through either end of said block, adapted to be projected beyond the inner face thereof to bear against the shoulder to adjust the throw of the wheel, an extension projecting from said block over the shoulder, and having bearings formed thereon in which the trolley wheel is journaled, and a cord or withdrawing device secured to said block.

545,010. PEN AND PENCIL CASE. CLARE W. BOMAN, New York, N. Y., assignor to the Eagle Pencil Company, same place. Filed June 28, 1895. Serial No. 554,362. (No model.)



Claim.—In a pen or pencil case in which front and rear sections are provided with rack bars engaging an intermediate pinion as described, a rack bar carried by one of the sections, having its inner end formed as a tongue spring-set inward or toward the pinion which it engages, and provided with locking notches to engage the axle of the pinion, in combination with a pinion formed as described to permit the inward movement of the tongue of the rack bar at the time the locking notches in said tongue are opposite the axle of the pinion, substantially as hereinbefore set forth.

545,011. AMALGAMATOR. GEORGE H. CHICK, San Francisco, Cal. Filed Feb. 9, 1894. Renewed July 17, 1895. Serial No. 556,254. (No model.)

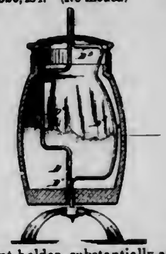


Claim.—1. An amalgamator consisting of a chamber, a cylinder, the shaft of which is journaled across the chamber, silvered or amalgamated pockets or cups secured upon the periphery of the cylinder in series which alternately face so as to present the open mouths of the cups in opposite directions, substantially as herein described.

2. An amalgamator consisting of a chamber, a cylinder provided with silvered or amalgamated cups fixed upon its periphery in series so that the cups open alternately in opposite directions, a preliminary receiving chamber into which the pulp to be treated is delivered, an agitating cylinder with arms rotating so as to stir up the material in the preliminary chamber, passages through which the material is delivered into the main chamber, other passages by which the waste discharges from said chamber, and a mechanism whereby the cylinders are constantly rotated, substantially as herein described.

3. An amalgamator consisting of a wooden cylinder adapted to rotate in a pulp containing chamber, and having removable oppositely facing amalgamated metallic cups or pockets attached to it.

545,012. DISTRIBUTING-BOTTLE. EDWARD W. DINSMORE, Lynn, Mass., assignor of one-half to John H. Brack, same place. Filed Oct. 20, 1894. Serial No. 526,431. (No model.)



Claim.—A condiment holder, substantially as described, consisting of the bottle having bearings in its upper and lower ends, the base on which said bottle is mounted, such base projecting below the lower edge of the bottle and forming a stand therefor, and the stirrer fixed to the base, projecting and operating within the bottle and having trunnion like portions journaled in the end bearings of the bottle whereby to steady the same upon its base, substantially as set forth.

545,013. PROCESS OF AND APPARATUS FOR CONVEYING MATERIALS. JAMES M. DODGE, Philadelphia, Pa., assignor to the Air Conveyor Company, Camden, N. J., and Nicetown, Pa. Filed June 26, 1895. Serial No. 554,118. (Model.)

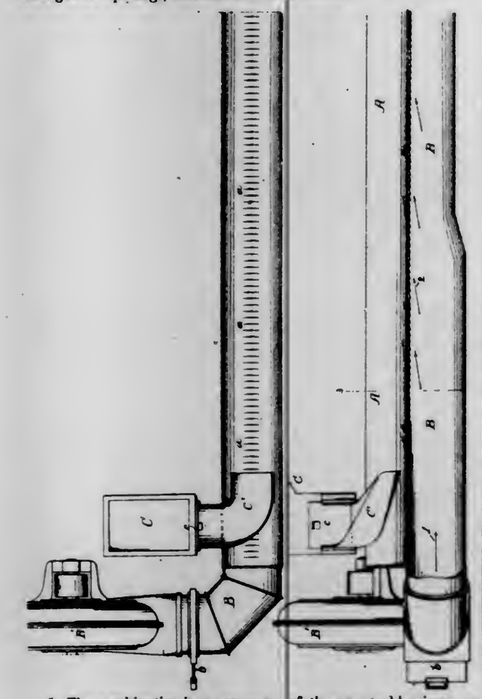
Claim.—1. As an improvement in the art of conveying material which consists in feeding the material to the conveyer, leaving it unconfined and subjecting it, at successive intervals in its path, to the lifting or buoying action of air or other fluid escaping from pressure, substantially as described.

2 The process herein described of conveying material, said process consisting in feeding the material to the conveyer, leaving it unconfined and impelling the material by the impact of fluid escaping from pressure at successive intervals in its path, substantially as set forth.

3. The combination of an open conveyer bed, with a conductor for fluid under pressure, said conductor having a series of openings at different points along the bed so that the material will be im-

pelled by the impact of fluid which freely escapes from the openings, substantially as described.

4. The combination in a conveyer, of the open bed having openings therein, a conductor for fluid under pressure extending along the bed and communicating with said openings so that the material will be impelled along the bed by the fluid which freely escapes through the openings, substantially as described.



5. The combination in a conveyer, of the open bed having a series of openings inclined in the direction of travel along the bed, a conductor for fluid under pressure communicating with said openings so that the material will be impelled along the bed by the impact of fluid which freely escapes from the openings, substantially as described.

6. The combination in a conveyer, of the open trough having a series of openings inclined in the direction of travel of the material along the trough, a conductor for fluid under pressure communicating with said openings so that the material will be impelled along the trough by the fluid which freely escapes from the openings, the conductor being larger at the inlet end than at the opposite end, substantially as described.

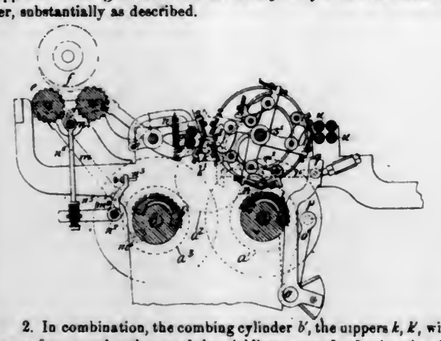
7. The combination in a conveyer, of a bed composed of one or more plates having slots therein, the plate at one side of each slot being depressed, with a conductor for air so arranged in respect to the bed that fluid under pressure in the conductor will escape through the openings in the bed, substantially as described.

8. The combination in a conveyer, of the trough, a conductor for fluid under pressure, said trough having passages therein communicating with the conductor, and a hood inclosing the trough, substantially as described.

9. As a means for conveying material, the combination of a conveyer bed having a series of openings along the length thereof, means for forcing fluid under pressure through said openings so that the fluid escaping from the openings will impel the material by impact along the conveyer, and means for regulating the pressure of such fluid so as to vary the blasts, whereby the length of the pile of material at the discharge end of the conveyer may be increased, substantially as described.

545,014. MACHINE FOR COMBING COTTON, SILK, OR OTHER FIBER. JOHN DUGDILL, Manchester, England, assignor of two-thirds to Platt Brothers & Company, Limited, Oldham, and John Kershaw & Company, Brighouse, near Halifax, England. Filed Oct. 5, 1893. Serial No. 487,213. (No model.) Patented in England July 11, 1885, No. 8,378.

Claim.—1. In combination in a combing machine, the combing cylinder b', the rock shaft j the nippers one of which is fixed thereto, the means for rocking the shaft with the fixed upper nipper the second nipper loosely pivoted on the said shaft and held normally closed against the fixed nipper and operating connections leading to the loose nipper for turning the same on the shaft j away from the fixed nipper, substantially as described.



2. In combination, the combing cylinder b', the nippers k, k', with means for operating them and the yielding means for forcing the nippers in strong contact when adjacent to the combing cylinder, substantially as described.

3. In combination, the combing cylinder b', the nippers movable toward and from the same and toward and from each other and the means for pressing the nippers together while adjacent to the combing cylinder consisting of the bearing n^3, the lever carrying the same and the spring pressing the lever substantially as described.

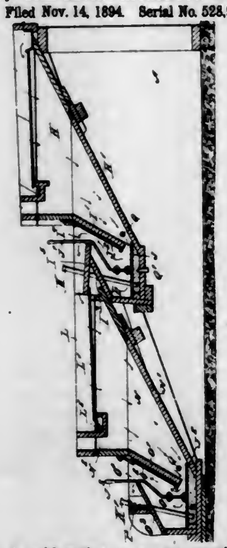
4. In combination, the combing cylinder b', the separable nippers k, k', movable toward and from the same and the series of rotary nippers, the shaft s' carrying the same, the oscillating cam for opening and closing said nippers and the opening finger for the nippers k, k', carried by the said oscillating cam, substantially as described.

5. In combination, the combing cylinder b', the separable nippers k, k', the means for operating them toward and from the combing cylinder and the reciprocating opening finger r^3 with means for operating it to separate the nippers, substantially as described.

6. In combination, the combing cylinder b', the separable nippers with means for reciprocating them, the rotary nippers, the shaft therefor with means for operating said shaft and the oscillating cam t for opening and closing the rotary nippers with means for operating said cam, substantially as described.

7. In combination, the combing cylinder b', the separable nippers with means for reciprocating them, the rotary nippers with means for rotating them, the oscillating cam for opening and closing the rotary nippers and the separating finger r^3 oscillating with the cam, substantially as described.

545,015. GOLD-SAVING APPARATUS. DENNIS G. FRISBIE, Dayton, Wyo. Filed Nov. 14, 1894. Serial No. 528,940. (No model.)



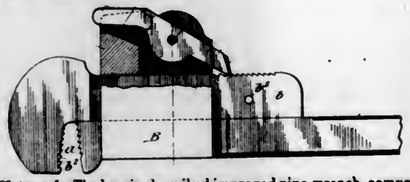
Claim.—1. A gold saving apparatus, provided with a settling tank, and an amalgam chamber into which discharges the lower end of the said settling tank, the said amalgam chamber being provided with a perforated plate forming a false bottom, between which and the real bottom is held mercury, and a copper plate forming one side of the said chamber and upon which the material is deflected by the oppositely inclined side of the chamber, substantially as shown and described.

2. A gold saving apparatus comprising a hopper formed with a nugget box into which passes the material, the said hopper being provided with a perforated bottom upon which discharges one side of the said nugget box, a settling tank into which passes the material passing through the said perforated bottom, an amalgam chamber into which discharges the lower end of the said settling tank, the said chamber being provided with a perforated plate removably held over mercury contained in the bottom of the said chamber, a copper plate forming one side of the said chamber, and a deflecting side arranged in an inclined position opposite the said copper plate, to deflect the material onto the said copper plate, substantially as shown and described.

3. In an amalgamator, a casing having a settling chamber and an amalgam chamber formed therein, the amalgam chamber being provided with an inlet at the bottom of one of its sides and with an outlet at the upper part of the same side, and having its wall on the side opposite the inlet and outlet inclined upwardly and toward the outlet, and the settling chamber being provided with an outlet at its bottom connected to the inlet of the amalgam chamber, substantially as set forth.

4. In an amalgamator, a casing having an amalgam chamber the inlet and outlet openings of which are formed, respectively, at bottom and top of rear wall, the front wall of said chamber being upwardly and rearwardly inclined, a perforated plate extending across the amalgam chamber at the level of the mercury therein and means for moving said plate, substantially as set forth.

545,016. WRENCH. SAMUEL H. HACKNEY, Paoli, Ind., assignor of one-half to Thomas B. Buskirk, same place. Filed July 21, 1894. Serial No. 518,207. (No model.)



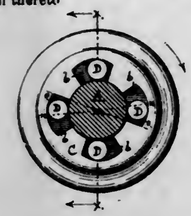
Claim.—1. The herein-described improved pipe-wrench, comprising the shank or handle having a rigid jaw, the keeper plates or wings formed integral with said shank or handle, the movable jaw having its shank fitted between said keeper-plates or wings and provided with teeth on its edge, and the differential pawls having inner and outer arms extended at different angles, substantially as set forth, said inner arms being held in engagement with the toothed edge of said shank, as stated.

2. The herein-described improved wrench, comprising the shank or handle having the rigid jaw, the keeper-plates or wings extended therefrom and formed integral therewith, the movable jaw, the shank thereof fitted between said keeper-plates or wings and having teeth on its edge, the differential pawls pivoted between said keeper-plates or wings, said pawls having inner and outer arms extended at different angles, and the springs for normally holding the inner ends of said pawls in engagement with the toothed edge of said shank, substantially as set forth.

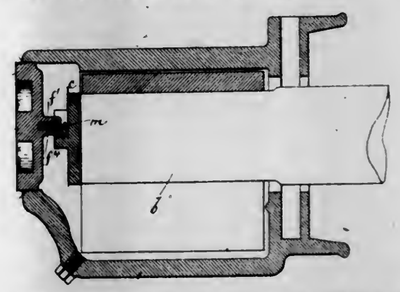
3. The herein-described improved pipe-wrench, comprising the shank or handle having the rigid jaw, the keeper-plates or wings extended therefrom and formed integral therewith, the movable jaw, the shank thereof movable between said keeper-plates or wings and having teeth on its edge, the block secured between said keeper plates or wings, two differential pawls having inner and outer arms extended at different angles, one of said pawls being longer than the other, and the springs bearing against said block and the outer arms of said pawls, whereby the inner ends of both of said pawls are alternately held in engagement with said rack teeth, substantially as set forth.

545,017. COMPRESSION-COUPLING FOR SHAFTS. ROBERT F. HARGRAVES, Providence, R. I. Filed Apr. 13, 1894. Serial No. 507,397. (No model.)

Claim.—The combination with a pair of abutting shafts having their axes in a common line, of a collar provided with a central bore to receive the adjacent ends of the shafts, said collar having a series of open-ended slots parallel with and opening into the central bore and formed with arc shaped bases, the radii of which arcs are equal, and less than the distances to the axes of the shafts, and a pair of rollers arranged end to end in each of said slots and bearing upon their respective shafts and the adjacent portions of the slot bases only and having diameters greater than the shortest distance between the surfaces of their respective shafts and the bases of the slots, whereby they may be influenced by their respective shafts only and may lie at all times parallel thereto



545,018. JOURNAL-BOX. LOUIS J. HIRT, Boston, Mass. Filed Mar. 28, 1893. Serial No. 468,056. (No model.)



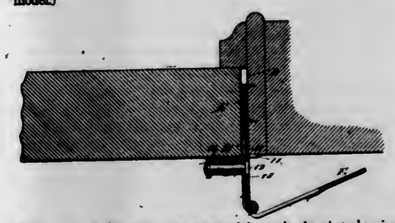
Claim.—1. In a journal box, the combination with the casing to receive the journal and provided with a screw-threaded opening g, of a cap f screw-threaded on its periphery to engage the screw-threaded opening g, a thrust-plate in said casing and means interposed between the said cap and thrust-plate to prevent vertical displacement of the said thrust-plate, substantially as described.

2. In a journal box, the combination with a casing to receive the journal and provided with an opening substantially in line with said journal, of a thrust-plate located in said casing in line with the said journal, and a cap seated in said opening and provided with a projection on its inner side to engage the thrust-plate and prevent vertical displacement of the said thrust-plate, substantially as described.

3. In combination, a casing; a thrust-plate c provided with a recess c^3; a cap f having a projection f' on the inner face entering the recess, and a spring m carried by the projection and engaging the thrust-plate, as described.

4. In a journal box, the combination with a casing to receive the journal and provided with an opening substantially in line with said journal, of a removable thrust-plate located in said casing and disconnected from the journal, a cap to close said opening, and means interposed between the said cap and thrust-plate to prevent vertical displacement of the said thrust-plate substantially as described.

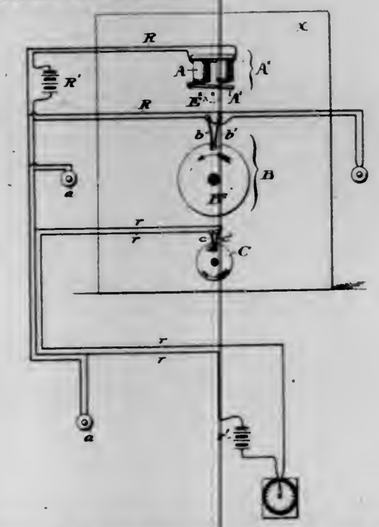
545,019. TEMPORARY LOCK. PAUL HOFFGARTNER and MATHIAS HOENNEN, Pocatello, Idaho, assignors of one-fourth to Henry Tell and Joseph Reuss, same place. Filed Mar. 4, 1895. Serial No. 540,433. (No model.)



Claim.—1. A door securer comprising a body plate having spurs and formed with an opening, a bracket pivoted to the outer end of said plate to swing at an angle to the plane thereof, said bracket being bent twice to form two spaced parallel members and an intermediate member that provides a broad surface adapted to bear against a door, and a bolt journaled in said parallel members and projecting at one end beyond the bracket for entering the opening in the body bolt, substantially as described.

2. A door securer comprising a body plate having spurs on one face and formed with an opening, an angular bracket pivoted to the outer end of the body plate to swing at an angle to the plane of the said plate, said bracket having bends forming spaced members and an intermediate member at right angles thereto for engaging a door, said spaced members having journaled therein a locking bolt that projects at one end to pass through the opening of the body plate, and a spacing plate also pivoted to the outer end of the body plate to swing at an angle to the plane of said body plate, the spacing plate having an opening near its inner end of a size to permit said plate to swing over the bracket and flat against the body plate, substantially as described.

545,020. ELECTRICALLY-CONTROLLED WINDING MECHANISM FOR TIME-LOCKS. WILLIAM H. HOLLAR, Philadelphia, Pa., GEORGE L. WEAVER, Boston, Mass., and ANTHONY KENNEDY, Charlestown, W. Va.; said Weaver and Kennedy assignors to said Hollar. Filed Apr. 1, 1895. Serial No. 543,997. (No model.)



Claim.—1. The combination with a time lock for a vault or safe, of a rewinding motor operatively related to the clock spring of the time lock movement; a detent normally restraining the action of the said rewinding motor; an electrically actuated disengaging device for said detent; an electric circuit controlling said disengaging device independently of the clock mechanism; and means situated exterior to the vault whereby said circuit may be controlled, substantially as set forth.

2. In a time lock, the combination, with a clock movement, of a re-winding motor operatively related to the clock spring; a detent normally restraining the action of said re-winding motor; an electro-magnet operatively related to said detent; an electric circuit including said electro-magnet and provided with a primary circuit-closer; a secondary circuit-closer adapted to close said circuit independently of the primary circuit-closer, and controlling mechanism, substantially as set forth, operatively connecting the winding motor with the secondary circuit-closer, whereby, upon the disengagement of the detent from the re-winding motor, said detent may be automatically restrained from re-engagement during a predetermined period of the re-winding action, substantially as set forth.

3. In a time lock, the combination, with a clock movement, of a re-winding motor operatively related to the clock spring; a detent normally restraining the action of said re-winding motor; an electro-magnet operatively related to said detent; an electric circuit including said electro-magnet and provided with a primary circuit-closer; a secondary circuit-closer, adapted to close said circuit independently of the primary circuit-closer; controlling mechanism, substantially as set forth, operatively connecting the re-winding motor with the secondary circuit-closer, whereby, upon the disengagement of the detent from the re-winding motor, said detent may be automatically restrained from re engagement during a predetermined period of the re-winding action; and automatic circuit-closing mechanism, whereby the primary circuit-closer may be actuated to a predetermined extent, substantially as set forth.

4. In a time lock, the combination, with a clock movement, of a re-winding motor operatively related to the clock spring; a detent normally restraining the action of said re-winding motor; an electro-maguet operatively related to said detent; an electric circuit including said electro-magnet and provided with a primary circuit-closer; a secondary circuit-closer; controlling mechanism, substantially as set forth, operatively connecting the re-winding motor with the secondary circuit-closer, whereby, upon the disengagement of the detent from the re-winding motor, said detent may be automatically restrained from re-engagement during a predetermined period of the re-winding action; a tell-tale; a circuit operatively related to said tell-tale; and an automatic circuit-closer for said tell-tale circuit, operatively connected with the re-winding motor, whereby the extent of operation of the re-winding motor may be reported, substantially as described.

5. In a time lock, the combination, with a clock movement, of a mechanically actuated, re-winding motor normally ready to act; a detent normally restraining the action of said re-winding motor; clutch mechanism, substantially as set forth, intermediate between said re-winding motor and the winding member of the clock spring; automatic controlling mechanism, substantially as set forth, whereby said clutch is shifted into and out of operation at the commencement and cessation respectively of the re-winding movement; and an electrically controlled disengaging device for said detent, substantially as set forth.

6. In a time lock comprising a plurality of clock movements, the combination with one or more clock movements less than the whole number, of a re-winding motor operatively related to the spring or springs of said clock or clocks; a detent normally restraining the action of said re-winding motor; an electrically controlled disengaging device for said detent; and stop mechanism operated by said re-winding motor and operatively related to the clock movement or movements not connected with the re-winding motor, whereby, upon the re-winding of the clock movement or movements selected for that purpose, the remaining clock movement or movements may be automatically stopped, substantially as and for the purposes set forth.

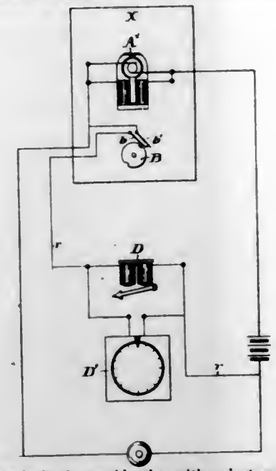
7. In a time lock, the combination, with a clock movement, of a re-winding motor; a detent normally restraining the action thereof; an electro magnet operatively related to said detent; an electric circuit including said electro-magnet and provided with a primary circuit-closer; mechanism substantially as set forth operatively connecting the re-winding motor with the winding member of the clock movement; a secondary circuit-closer adapted to close the said circuit independently of said primary circuit-closer, said secondary circuit closer comprising an elastic terminal normally out of contact with the other terminal; and a cam disk operated by the re-winding mechanism and engaging said elastic terminal, said cam disk having a portion of its periphery recessed, whereby when said terminal is in engagement with the recessed portion of the disk, the circuit will be open, and when said terminal is in engagement with the non-recessed portion of the disk, the circuit will be closed, substantially as set forth.

8. In a time lock, the combination, with a clock movement, of a re-winding motor; a detent normally restraining the action thereof; an electrically controlled disengaging device for said detent; a train of gearing intermediate between said re-winding motor and the winding member of the clock movement, said train including clutch mechanism; a disengaging device for said clutch mechanism arranged at a given point in the path of travel of the clutch; an automatic circuit-controller connected with said train and adapted to maintain a closed circuit during a predetermined period of operation of the train and to open the circuit at the conclusion of such period, the opening position of said circuit-controller corresponding with the position of the clutch mechanism at its disengaging moment, substantially as set forth.

545,021. ELECTRIC WINDER FOR TIME-LOCKS. WILLIAM H. HOLLAR, Philadelphia, Pa., GEORGE L. WEAVER, Boston, Mass., and ANTHONY KENNEDY, Charlestown, W. Va.; said Weaver and Kennedy assignors to said Hollar. Filed Apr. 17, 1895. Serial No. 546,152. (No model.)

Claim.—1. The combination with a time lock for a vault or safe, of a re-winding electric motor situated within the vault and operatively related to the clock spring of the time lock; an electric circuit comprehending said motor and provided with a source of electricity; and means independent of the clock movement and located exterior to the vault, whereby the said circuit may be controlled, substantially as set forth.

2. The combination with a time lock for a vault or safe; of a re-winding electric motor operatively related to a clock spring of the time lock movement; an electric circuit including said motor and extending to a point exterior to the vault, said circuit being provided with a suitable source of electricity; a primary circuit-closer located exterior to the vault and independent of the clock mechanism; a secondary circuit-closer adapted to close said circuit independent of the primary circuit closer; and controlling mechanism, substantially as set forth, operatively connecting the winding motor with the secondary circuit-closer, whereby upon the initiation of the motor action by means of the primary circuit-closer the circuit may be maintained in a closed state during a predetermined period of the re-winding action, substantially as set forth.



3. In a time lock, the combination with a clock movement, of a re-winding electric motor operatively related to the clock spring; an electric circuit including said motor, and provided with a primary circuit closer; a secondary circuit closer; controlling mechanism, substantially as set forth, operatively connecting the winding motor with the secondary circuit closer, whereby said circuit may be maintained closed during a predetermined period of the re-winding action; a tell-tale and a circuit operatively related to said tell-tale, whereby the extent of operation of the re-winding motor may be reported, substantially as set forth

4. In a time lock comprising a plurality of clock movements, the combination with one or more clock movements less than the whole number of a re-winding electric motor operatively related to the spring or springs of said clock or clocks; means to energize said motor; and stop mechanism operated by said re-winding motor and operatively related to the clock movement or movements in connection with the re-winding motor, whereby upon the re-winding of the clock movement or movements selected for that purpose, the remaining clock movement or movements may be automatically stopped, substantially as and for the purposes set forth.

545,022. MANUFACTURE OF TAPERED WROUGHT-METAL TUBING. WILLIAM JACKSON, Pittsburg, assignor of one-half to Robert S. Stephenson, Economy, Pa. Filed July 26, 1892. Serial No. 441,263. (No model.)

Claim.—1. The herein-described method of forming tapered wrought metal tubing, consisting in grasping a heated tube at two different points and drawing the same out and thereby tapering or reducing it in diameter and elongating the same, substantially as and for the purposes set forth.

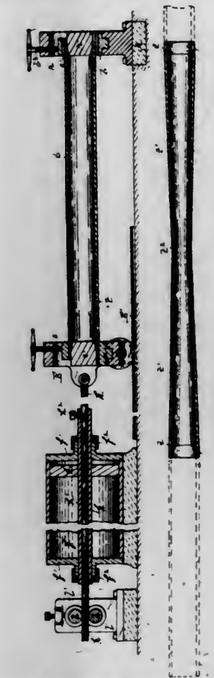
2. The herein-described method of forming tapered wrought metal tubing, consisting in grasping a heated tube at two different points and around an internal tapering former or mandrel, and drawing out the tube and thereby tapering and reducing the same in diameter and elongating it, substantially as set forth.

3. The herein-described method of forming and tapering wrought metal tubing, consisting in grasping a heated tube at two different points and around a suitable tapering former or mandrel which is suitably cooled and drawing out the tube and thereby tapering and elongating it, and during the drawing operation settling the tube around the mandrel, substantially as and for the purposes set forth.

4. The herein-described method of forming tapered wrought metal tubing, consisting in grasping a heated tube at two different points and drawing out the same and so tapering and elongating the same in both directions from the points at which it is grasped, permitting it to cool, and then cutting the tube at the point of smallest diameter to form two tapered tubes, substantially as set forth.

5. In apparatus for forming tapered wrought metal tubing, the combination of two clamping devices for grasping the tubing, mandrels entering within the tubing at points where the same is grasped, and a tapering former entering within the tube in the space between the clamps, said clamps being movable one from the other, substantially as and for the purposes set forth.

6. In apparatus for forming tapered wrought metal tubing, the combination of two clamping devices for grasping the tubing, mandrels entering within the tubing at points where the same is grasped, and a tapering former entering within the tube in the space between the clamps, said former being formed hollow and having connections to feed a cooling fluid thereto, substantially as and for the purposes set forth.



7. In apparatus for forming tapered wrought metal tubing, the combination of two clamping devices to grasp the tubing at suitable points, said clamps being movable one from the other, an annular mandrel entering within the tube at one clamp and a mandrel or former entering the tube within the other clamp, and having a tapered portion extending through the tube between the clamps and passing through the annular mandrel of one clamp, substantially as and for the purposes set forth.

8. In apparatus for forming tapered wrought metal tubing, the combination of two clamps for grasping the tubing at different points, one of said clamps having clamping jaws, and an annular mandrel adapted to enter within the tube between the jaws, said annular mandrel being vertically movable, and being suspended from the clamp by straps, substantially as and for the purposes set forth.

9. In apparatus for forming tapered wrought metal tubing, the combination of two clamping devices adapted to engage the tubing at different points, and a mandrel or former having a straight portion to receive the body of the tube not acted upon, and a tapered portion extending out in the space between the clamps, substantially as and for the purposes set forth.

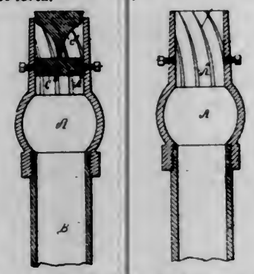
10. In apparatus for forming tapered wrought metal tubing, the combination of two clamping devices adapted to engage the tubing at different points, a carriage supporting one of said clamps, a hydraulic cylinder provided with a piston having a hollow piston rod, and a bar connected to the carriage and passing through such hollow piston rod and adapted to be connected thereto, substantially as and for the purposes set forth.

11. In apparatus for forming tapered wrought metal tubing, the combination of two clamping devices adapted to engage the tubing at different points, a carriage supporting one of said clamps, a hydraulic cylinder provided with a piston having a hollow piston rod, a bar connected to the carriage and passing through such hollow piston rod and adapted to be connected thereto, and operating rolls engaging with such bar to move the same, substantially as and for the purposes set forth.

545,023. AIR-FORCING DEVICE. GEORGE W. LORD, Boston, Mass., assignor to himself and Frank M. Wing and Lorenzo Cowan, same place, and William A. Smith, Chelsea, Mass. Filed Nov. 30, 1894. Serial No. 530,322. (No model.)

Claim.—1. The herein described air forcing device consisting of a smoke stack or chimney D having an air inlet D' and an upwardly curved air pipe E communicating with said opening and having a

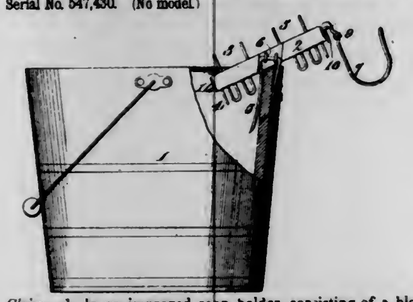
cup shaped trap or recess E^3 in its lower end and a discharge pipe or perforation E^4 thereon inside of the smoke stack combined with a steam ejector arranged within said pipe E and having a connecting pipe B leading to the source of steam pressure substantially as and for the purpose set forth.



2. In an air forcing device the herein described ejector consisting of a shell A connected to a steam pressure source and having an internally and spirally grooved neck combined with a vertically adjustable and tapering plug C arranged within the upper end of the neck and having a perforated disk C^4 adjustably secured within said neck substantially as and for the purpose set forth.

3. The herein described air forcing device consisting of a smoke stack or chimney and a curved air pipe secured within the same and open at its lower end to the outer air combined with an ejector arranged within said air pipe and connected to a steam pressure device and having an internally and spirally grooved neck, a tapering plug adjustably secured therein and having a perforated disk adjustably secured within said neck substantially as and for the purpose set forth.

545,024. SOAP-HOLDER. GEORGE O. ROGERS, St. Louis, Mo., assignor of one-half to Henry R. Hamley, same place. Filed Apr. 27, 1895. Serial No. 547,430. (No model.)

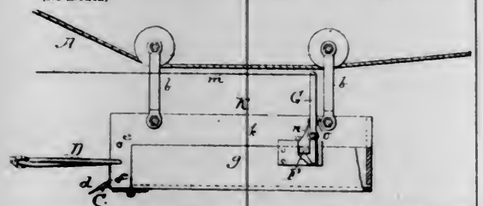


Claim.—1. In an improved soap holder, consisting of a block, prongs projecting from one side of the block, and reversible ears secured to the block in an angular position, and by which the block may be attached to a bucket or other object in inclined position, substantially as described.

2. In an improved soap holder, consisting of a block, prongs projecting from one side of the block, ears hinged to the block in an angular position, so as to be reversed from one side to the other, substantially as described.

3. In an improved soap holder, a block, a reversible means for supporting the block, prongs projecting from one side of the block by which a cake of soap may be held, and a marginal row of projections extending from the other side of the block, substantially as set forth.

545,025. SCOOP OR SHOVEL FOR EXCAVATING-MACHINES. CHARLES A. SMITH, Chicago, Ill. Filed July 30, 1894. Serial No. 519,002. (No model.)

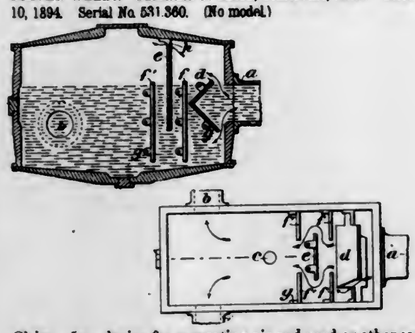


Claim.—1. A scoop K, the cutting-plate C therefor, clevis D, and travelers located over the forward and rear portions of said scoop, and hangers for suspending the same therefrom, and dogs G, in combination with the hinged bottom E provided with the sides *g*, and lugs F, as set forth.

2. A scoop K having its rear end closed and its forward end open, the cutting-plate C provided with prongs *d* an adjustable clevis, two travelers located, respectively over the front and rear portions thereof, hangers for suspending said scoop therefrom, and dogs G, in combination with the hinged bottom E provided with the sides *g*, lugs F spring *n* and stop-pins *o*, as set forth.

3. A scoop K having its rear end closed and its forward end open, the cutting-plate secured to and projecting at a downward angle from the forward edge of the bottom, two travelers located, respectively, over the front and rear portions thereof, hangers for suspending the scoop therefrom, and dogs G pivoted to the sides of said scoop near the rear end thereof, in combination with the hinged part of the bottom E having sides *g*, lugs F located with reference to and engaged by said dogs suitable springs for restoring said dogs to their normal positions and guard-plates H, as set forth.

545,026. SAND AND AIR SEPARATOR FOR ARTESIAN OR DRIVEN WELLS. BENJAMIN F. SMITH, Somerville, Mass. Filed Dec. 10, 1894. Serial No. 531,360. (No model.)



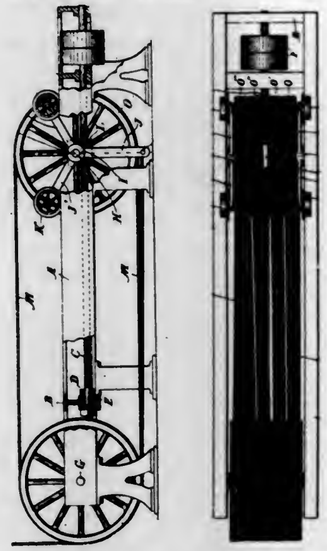
Claim.—In a device for separating air and sand or other earthy material from water, the combination with an air tight chamber having inlet and outlet openings, of a V-shaped deflector opposing the inlet opening and secured within the chamber to have passages on all sides thereof, a series of deflector plates *f* and *f'* secured to the sides of the chamber to form passages over, under and between them, and a deflector plate *e* secured to the upper wall of the chamber and extending downwardly between the deflector *f* and *f'* substantially as described.

545,027. COMBINED RULER AND BLOTTER. GEORGE L. WAITT, Philadelphia, Pa. Filed Jan. 16, 1895. Serial No. 535,073. (No model.)



Claim.—A ruler having a slot in one of its edges, a blotter therein, a blotter on the under side of the ruler, and staples securing both blotters in position, substantially as described.

545,028. ELEVATOR-HOIST. DAYTON D. WALTON, Grand Rapids, Mich., assignor of one-half to John R. Hall, same place. Filed Jan. 5, 1895. Serial No. 533,990. (No model.)



Claim.—1. In an elevator hoist, the combination with a fixed shaft and a movable shaft and a series of sheaves journaled on each shaft, of a screw arranged at right angles to the movable shaft and below the same, a nut connecting said screw and shaft, a rigid arm extending downward from said shaft and a cable attached at its end to said arm and engaging said sheaves, substantially as described.

2. In an elevator hoist, a series of stationary sheaves, a series of movable sheaves, a shaft on which said movable sheaves are journaled, a nut attached to said shaft, a screw engaging said nut below the horizontal plane of said shaft downwardly extended arms rigidly attached to said shaft, a transverse bar connecting said arms and a cable attached to said bar, and engaging said sheaves, substantially as described.

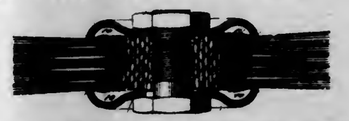
3. In an elevator hoist, in combination with the laterally movable shaft having the movable sheaves journaled thereon a nut downwardly projecting arms, and upwardly projecting arms, all rigidly attached to said shaft, a screw engaging said nut below the horizontal plane of said shaft, a bar connecting the downwardly projecting arms, a cable attached to said bar and engaging said sheaves, flanged wheels journaled on said upwardly projecting arms, and tracks traversed by said wheels, substantially as described.

4. In an elevator hoist, the arrangement and combination of a continuous series of stationary sheaves, a screw in line with the middle of said series and opposite the middle sheave of the series and a shaft moved by said screw and a series of sheaves journaled on said shaft and equally divided at each side of said screw and a hoisting cable engaging all of said sheaves, substantially as described.

5. In an elevator hoist, in combination with a series of stationary sheaves, and a series of movable sheaves a shaft on which said movable sheaves are journaled, a nut attached to said shaft, a screw engaging said nut below the horizontal plane of said shaft, downwardly projecting arms attached to said shaft, a cable attached at its end to said arms and engaging said sheaves, two upwardly projecting and diverging arms rigidly attached to each end of said shaft, flanged wheels journaled on said arms, and parallel tracks engaged and traversed by said flanged wheels, substantially as described.

6. An elevator hoist, consisting of parallel sills, transverse beams, a screw journaled in said beams, a thrust collar on said screw, ball bearings for said collar, a fixed shaft having a continuous series of sheaves, journaled thereon, a movable shaft having a series of sheaves journaled thereon, a nut on the middle of said shaft engaged below the horizontal plane of the shaft by said screw, divergent arms rigidly attached to said shaft, at each end, grooved wheels journaled on said arms and traversing said sills and means for rotating said screw, substantially as described.

545,029. WHEEL-BRUSH. CHARLES WEIBEL, Jr., Newark, N. J. Filed Mar. 6, 1895. Serial No. 540,774. (No model.)



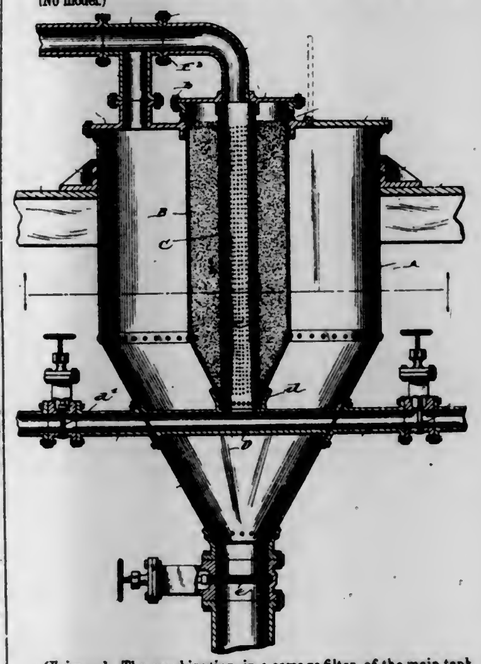
Claim.—1. In a wheel brush, the combination, with opposing head plates, a locking device connecting the two, and bristles formed into bunches having knots at their inner ends, the knotted ends of the bunches being contained between the head plates, the bunches being placed in rows one upon the other and breaking joints with each other, as and for the purpose set forth.

2. In a wheel brush, the combination, with head plates provided with annular chambers in their inner faces adjacent to their margins, and means for drawing the head plates together, of bristles formed in bunches, said bunches having knots at their inner ends, the bristle bunches being placed in annular rows with their ends between the head plates, the several rows breaking joints with each other the said head plates clamping the said bunches outside of their knotted ends, whereby the bunches when clamped between the head plates will be held together with a wedge like action, as and for the purpose specified.

3. In the construction of brushes, a forming block having a central cavity and a nipple projecting from the center of the cavity, and pins arranged in concentric rows on the block, the pins of the various rows being arranged in staggered order, substantially as described.

4. In the construction of wheel brushes, a forming table or block, having a central cavity and provided in the center of the cavity with a nipple adapted to hold the clamping centers of the brush and the connecting bolt thereof, pins arranged in rows around the said retaining device, the pins of the various rows being in staggered order, and a centering block located centrally within the inner row of pins, as and for the purpose specified.

545,030. SEWAGE-FILTERING APPARATUS. FREDERICK G. WISELOGEL, Indianapolis, Ind. Filed Feb. 26, 1895. Serial No. 539,805. (No model.)



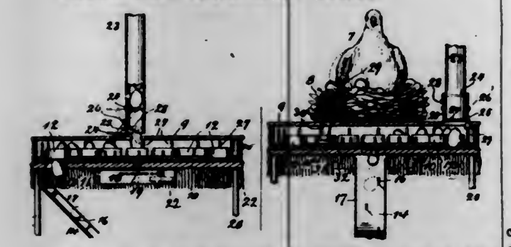
Claim.—1. The combination, in a sewage filter, of the main tank or structure, a filter structure centrally positioned therein having an open cylindrical center, a pipe leading off whereby the noxious gases are exhausted, and connections from said pipe both to said filter and to the main tank direct, substantially as shown and described.

2. The combination, in a sewage filter, of the main hopper-shaped tank provided with a closable top, a fluid drain-pipe passing through said tank with which a central filter may be connected, and said central filter composed of an inner and outer shell with filtering material

between them, the outer shell being tapered at the bottom and united to the inner shell, a support for said filter upon said drain-pipe, and means for readily disconnecting and removing said filter through the top of the main outer tank, substantially as shown and described.

3. The combination, in a sewage filter, of the main structure or tank A, a central filter composed of perforated cylinders B and C with filtering material between them, the pipe D to which the lower end of the filtering cylinder is connected, continuation pipes connected to said discharge pipe, a main discharge pipe E connected to the bottom of the tank and provided with a valve *e*, and a gas exhaust pipe F connected to the upper end of the apparatus, substantially as shown and described.

545,031. MECHANICAL TOY. FRANK WITTE, Cheviot, Ohio. Filed Dec. 8, 1894. Serial No. 531,181. (No model.)



Claim.—1. In a mechanical toy, the combination with the image 7, of a revolving carrier below adapted to receive and advance eggs and means whereby the discharge of the latter from the carrier is effected intermittently and one by one.

2. In a mechanical toy, the combination with the image 7, of a revolving carrier adapted to receive and advance eggs, a supply spout 23, to deliver eggs to the carrier, cut-off mechanism on the spout operating in a manner to supply eggs to the carrier one by one, and mechanism which causes the discharge of the latter from the carrier in the same manner.

3. In a mechanical toy, the combination with the image 7, representing substantially a bird provided with a movable wing, of a rotating carrier below, adapted to receive and advance eggs, means whereby the discharge of the latter from the carrier is effected intermittently one by one, and mechanism whereby the wing of the bird is caused to flap.

4. In a mechanical toy, the combination with the image 7, of a carrier below it, provided with cups open at their bottoms and circularly arranged, a platform 10, below the carrier, having an opening 13, in line with and below the open cups and a motor to rotate the carrier.

5. In a mechanical toy, the combination with the image 7, of a carrier below it, provided with cups open at their bottoms and circularly arranged, a platform 10, below the carrier, having an opening 13, in line with and below the open cups, a motor to rotate the carrier and an inclined chute 14, leading down from below opening 13, provided with the retarding stops 16.

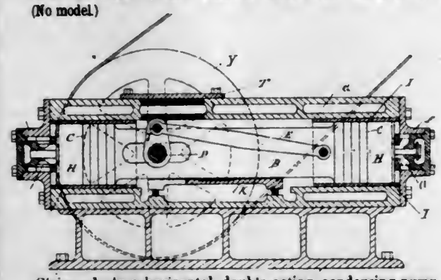
6. In a mechanical toy, the combination with the image 7, of a carrier below it, provided with cups open at their bottoms and circularly arranged thereon, a motor to rotate it, a platform 10, below the carrier having an opening 13, in line with and below the open cups, a supply spout terminating above them also in line therewith, adapted to hold eggs and having a cut-off mechanism and operative connection whereby the latter is operated by the rotating carrier.

7. In a mechanical toy, the combination with the image 7, of a carrier below it, provided with cups open at their bottoms and arranged in a circular row, a motor to rotate the carrier, a supply-spout terminating above and in line with the cups, adapted to hold eggs and having a cut-off mechanism, operative connection whereby the latter is operated by the rotating carrier in a manner to supply eggs to the latter, a platform 10, below the carrier, having an opening 13, in line with and below the open cups and an inclined chute 14, leading down from and below said opening 13, and provided with the retarding stops 16.

8. In a mechanical toy, the combination of the image 7, a rotating carrier below with a circular row of cups open at their bottoms, projecting pins 27, moving around with the carrier, a supply-spout 23, terminating above the line of cups, two reciprocating cut-offs 24, for it, supported by two pivotally connected levers 25, in a manner that when one of them closes the spout, the other opens it, one of said levers reaching to within the path of pins 27, to enable them to operate the cut-offs and a floor 10, below the carrier provided with an opening 13, below and in line with the cups through which the eggs, carried by the latter and received from the supply-spout, are discharged intermittently and one by one.

9. In a mechanical toy, the combination with the image 7, representing substantially a bird provided with a movable wing, a rotating carrier below it, adapted to receive and advance eggs and having projections 32, moving with it, means whereby the eggs are discharged from the carrier intermittently and one by one, a wire 29, secured to the movable wing of the bird, the lower end of which is bent to within the path of projections 32, to enable them to act upon it for the purpose of operating the wing.

545,032. CONDENSING-PUMP. STEPHEN W. WOOD, New York, N. Y. Filed Jan. 17, 1893. Renewed July 26, 1895. Serial No. 557,250. (No model.)



Claim.—1. In a horizontal, double acting, condensing pump the combination of two cylinders in axial alignment with each other, reciprocating pistons in said cylinders, a piston-rod connecting said pistons, and a vertically adjustable support to sustain the weight of the piston rod and pistons and to take up wear of the parts.

2. In a horizontal condensing pump the combination of a reciprocating piston rod and piston, and a vertically adjustable bearing for the piston rod to sustain the weight of the same.

3. In a gas-compressor the combination with the cylinder and its piston and with the valved supply and delivery pipes, through which gas is drawn into the cylinder and forced therefrom, of a valved pipe connection between the supply pipe and the cylinder in rear of the piston, and a cock in the supply pipe beyond said pipe connection, whereby, by cutting off the supply pipe any gas in rear of the piston may be drawn off.

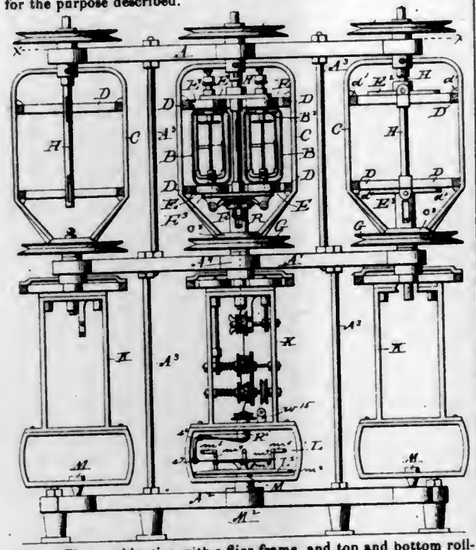
4. In a gas-compressor the combination with the driving shaft and with the frame or casing, of a shaft bearing having within it an annular water-chamber exterior to the bearing surface, and inlet and outlet passages communicating with said chamber to permit the passage of a current of water therethrough.

5. In a double acting pump the combination of two cylinders in alignment with each other, reciprocating pistons therein, a piston rod connecting said pistons, means for reciprocating the piston rod and pistons, and a stationary rest or support between the cylinders to sustain the weight of the piston rod and pistons, the said rest or support having an extended bearing surface to prevent angular movements of the piston rod.

545,033. CORDAGE-MACHINE. WALTER H. AVIS, Toronto, Canada, assignor to Robert C. Fisher, same place. Filed Dec. 2, 1893. Serial No. 492,616. (No model.)

Claim.—1. The combination with a vertical separable frame work, of lower, central and upper circular decks mounted on said frame work, an upper machine for unreeling and twisting the cord mounted between the central and upper deck, a lower machine for drawing and reeling the cord mounted between the central and lower deck, a central spindle, S, connecting said upper and lower machines, a central pulley, G, on said spindle, said upper machine consisting of an outside ring frame, rings carried by said ring frame, a second central spindle, H, said ring frame connected to said spindle S and said pulley, rollers engaging with the rings, said rollers connected with and operated by said spindle, H, flier frames within said ring frame and carrying said rollers, bobbin frames and spindles for said bobbin frames within said flier frames, a pulley O on said spindle, H, for operating the same, and a top below said rollers, said lower machine composed of a ring frame secured to said spindle, S, a ring, and rollers within said ring, a drawing frame carrying said rollers, a series of horizontal capstans mounted within said frame, worm and gear mechanism connected with said rollers for operating said capstans, and a reeling mechanism secured below and to the frame of the said drawing mechanism, substantially as described.

2. The combination with an upper and lower supporting deck of an outside vertical ring frame, C, mounted between said decks, upper and lower rings secured to the inner walls of said ring frame, upper and lower rollers placed inside of and in contact with said rings, fliers carrying said upper and lower rollers, bobbins within said fliers, top and bottom plates to which said rollers are journaled, a central shaft provided with sleeves to which said plates are secured, the upper end of the ring frame secured to a loose sleeve on said shaft, said shaft provided at its upper end with a pulley by which said fliers, rollers and bobbins are rotated, and a lower pulley and shaft for rotating the ring frame in an opposite direction to the fliers, substantially as and for the purpose described.



3. The combination with a flier frame, and top and bottom rollers, of the bobbin frame and bobbin spindle, a socket piece to which the lower end of the flier frame is connected, and in which the lower end of the bobbin spindle rests, an adjustable tension and unshipping device for releasing the bobbin spindle and bobbin frame, consisting of a rod, a pressure block carrying the bobbin spindle and to which block said rod is secured, a spiral spring around said rod and bearing at one end against said block, said upper roller having an upwardly extending hollow hub forming a shaft, said rod extending through said shaft, a bushing within said shaft forming the upper bearing of said spring, a screw coupling on said shaft and connected to said bushing to regulate the tension of said spring, substantially as described.

4. In combination with outside ring frame C, and its driving pulley, the upper and lower rings D, the upper and lower rollers E, having vertical hollow hubs top and bottom plates E^2 E^3, to which said rollers are journaled, a central shaft H provided with sleeves to which said plates are secured said plates having hollow horizontal portions, each provided with a spring for pressing said rollers against said rings, fliers B revolving within said ring frame and carrying said rollers bobbin frames and spindles within said fliers, brackets secured to said bottom plate E^2, pulleys on said brackets over which the cords are carried from the bobbin, a top below said pulleys, a hollow shaft R, in which said top is hung and a plate R^2, having perforations and guides for the cords, and to which said shaft is connected, substantially as and for the purpose described.

5. In combination with the top, of the hollow spindle, S, to receive the twisted cord from the top, a supporting deck in which said spindle is journaled and through which it extends, a sleeve on said spindle below said deck, the lower ring frame T secured to said sleeve, a ring T, the rollers T^2, a pulley G for actuating said spindle rollers, a spring tension device consisting of tubes V' radiating from said spindle and containing pins having springs thereon, and balls, V^2, pressing against said pins, the drawing frame, K, pendent rods, T^3, T^4, the upper ends of said rods extending into said tubes and bearing against said balls, substantially as described.

6. The drawing mechanism consisting of the combination with the drawing frame K of the ring frame and ring, the rollers carried by said drawing frame, pendent rods connecting said rollers and frame, said rods provided at their lower ends with worms, horizontal shaft, w^8, mounted in said frame and provided with a gear to engage with one of said worms and a capstan W, said capstan provided with a thumb nut to regulate the tension thereof, shaft w^7, and the capstan W', thereon, spring w^9, and gear w^6 thereon, and gear w^{10}, the latter gear engaging with the other of the said worms and lower shaft, w^{11}, capstan, W^2, drive pulley w^{14}, gear w^{12}, and spring w^{13}, on said shaft, hollow spindle R^4, and pulley s^5 thereon, and an intermediate pulley and belt connecting the pulley w^{14} and the pulley s^5 substantially as described.

545,034. REGISTER FOR COUNTING OPERATIONS OF MACHINES. STEPHEN M. BALKER, New York, N. Y., assignor to William H. Humphrey, Norfolk, Conn. Filed Mar. 3, 1893. Serial No. 464,533. (No model.)

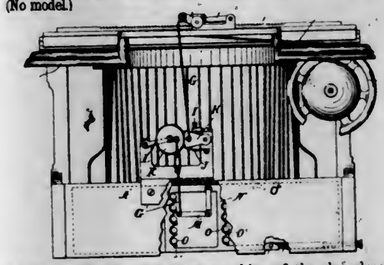


Claim.—1. The combination of a disk or drum, gear connected therewith, a pinion, a frame carrying said pinion, and a lever for swinging said frame, with a cam to turn said disk or drum, a lever to operate the cam, and means for simultaneously and conjointly moving said levers to disengage the gear and pinion and turn said cam, substantially as described.

2. The combination of a disk or drum and means for turning it, with a cam, a lever J to turn said cam, said lever having an opening N, and faces *h* and *i*, and with a rod M having eccentric part M^3, entering said opening N, and arranged to operate said lever, substantially as described.

3. The combination of a shaft, a series of disks or drums hung loosely thereon, each disk being provided with a gear *b* and toothed rims *f* connected with certain of said disks, laterally movable pinions *d*, a gear wheel E independent of said disks and a pinion meshing with said gear wheel and with the gear *b* on an adjoining disk, the other pinions being arranged to mesh with the gear *b* and the teeth on the rims *f* carried by the other disks, with a swinging frame carrying said pinions, a lever for operating said frame, cams carried by said disks, levers for operating said cams, and a rod or actuating means for operating the lever to disengage the pinions from the gears, and for also operating the cam-operating-levers to turn the disks to re-set them, substantially as described.

545,035. TYPE-WRITING-MACHINE ATTACHMENT. GLENN J. BARRETT, Grand Rapids, Mich., assignor to the Barrett, Barker and Saunders Company, same place. Filed Sept. 10, 1894. Serial No. 522,620. (No model.)



Claim.—1. In a type writing machine of the class described, in combination with the escapement, a frictionally engageable clutching device having its friction surfaces peripheral, vibratable axially on fixed pivots, mounted and adjusted for intermittent contact and arranged between, and connecting the end of the puller rod and the crank of the escapement, substantially as and for the purposes set forth.

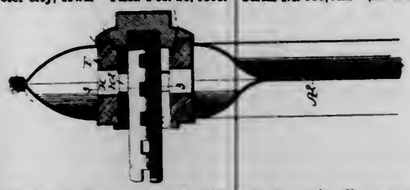
2. In a type writing machine of the class described, a clutching device, consisting of a friction wheel journaled on a pivoted arm and a segment having its periphery adapted to the periphery of said wheel, mounted and adjusted for intermittent engagement, and arranged between the end of the puller rod and the escapement, substantially as and for the purposes set forth.

3. In a type writing machine of the class described, a clutching device, consisting of a friction wheel, mounted for vertical as well as rotary movement, and a segment having its periphery adapted to the periphery of said wheel, pivoted to rotate in the same vertical plane with said wheel, adjusted for intermittent engagement therewith, and arranged between the end of the puller rod and the escapement shaft, substantially as and for the purposes herein set forth.

4. In combination with the escapement and puller rod, a friction wheel mounted for vertical as well as rotary movement, connected to the end of the puller rod, a segment having its periphery adapted to said wheel and pivoted for intermittent engagement therewith

and connected to the escapement, and a spring for actuating the segment, arranged substantially as described and for the purposes set forth.

545,036. SHEET-METAL RADIATOR. LE ROY S. BUNKER, Webster City, Iowa. Filed Feb. 26, 1895. Serial No. 539,742. (No model.)



Claim.—1. The combination with a sheet metal radiator section of a bushing device, cast complete in one piece having an annular projection on one end and a mating depression on the other, radial openings in its central portion and inwardly projecting lugs between the openings, for the purposes stated.

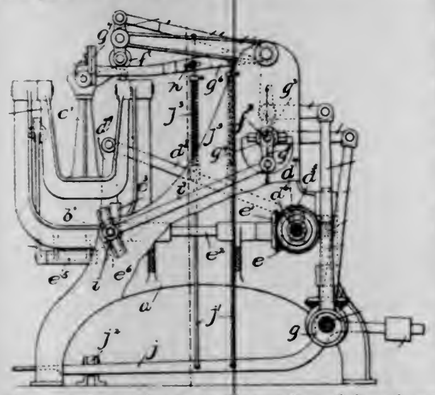
2. A sheet metal radiator, comprising a number of sheet metal sections each having annular shoulders at its ends and openings in the central portion of the shoulders, a bushing device placed in each end of each section, and resting in said shoulders and each having an annular projection at one end, an annular depression at the other, a central longitudinal opening, a number of radial openings and inwardly projecting lugs, two perforated pipes passed through the central opening of the bushing devices and nuts on the ends of said pipes to hold the sections together, substantially as set forth.

545,037. CHAIN-LINK. JOHN W. GARLAND, Pittsburg, Pa., assignor to Garland Chain Co., same place. Filed Apr. 11, 1894. Serial No. 507,121. (No model.)



Claim.—A chain link made of a single piece of wire or rod which at the middle is looped so as to form a central eye, the rod thence extending in opposite directions, reflexed at the end portions of the link, and the free ends engaged with said eye; substantially as described.

545,038. SOLE-LEVELING MACHINE. EDWARD C. JUDD, Boston, Mass. Filed June 26, 1893. Serial No. 478,785. (No model.) Patented in England Oct. 21, 1893, No. 19,876.



Claim.—1. In a sole-leveling machine, a roll or rolls for acting on the ball of the sole, a roll or rolls for acting on the shank, independent carriers supporting the rolls, and independent means for operating said carriers.

2. In a sole-leveling machine, a roll or rolls for acting on the ball of the sole, a roll or rolls for acting on the shank, independent carriers supporting the rolls, and means for adjusting the distance between the carriers.

3. The combination with a supporting and forming last, of a pair of longitudinally-reciprocating leveling-rolls operating substantially simultaneously, one upon each side of the bottom of the sole, and mechanism for adjusting said rolls to the contour of opposite sides of the bottom of the last.

4. The combination of a pair of leveling rolls operating substantially simultaneously, one upon each side of the bottom of a sole, mechanism for adjusting said rolls to the contour of opposite sides of the bottom of the last supporting said sole, and a leveling-roll operating upon the central portion of the bottom of said sole.

5. In an organized sole-leveling machine, the combination with a jack for supporting a shoe, and a carrier arranged above the jack, of roll-bearings adjustably mounted on the carrier, rolls arranged in the roll-bearings and having the angularity of their axes varied by the adjustment of said bearings, and devices for rigidly securing the roll-bearings directly to the carrier in the desired position of adjustment.

6. In an organized sole-leveling machine, the combination with a jack for supporting a shoe, and a reciprocating carrier arranged above the jack, of roll-bearings mounted on the carrier and adjustable independently of one another, rolls mounted in said independently adjustable bearings and having the angularity of their axes varied by the adjustment of the said bearings, and devices for rigidly securing the roll-bearings to the carrier in the desired position of adjustment.

7. In an organized sole-leveling machine, the combination with a jack for supporting a shoe, and a carrier arranged above the jack, of independently adjustable roll-bearings provided with curved or segmental slots, rolls mounted in said independently adjustable bearings and having the angularity of their axes varied by the adjustment of the roll-bearings, and screws passing through the slots of the roll-bearings into the carrier for rigidly securing the said bearings to the carrier in the desired position of adjustment.

8. In an organized sole-leveling machine, the combination with a jack for supporting a shoe, a reciprocating leveling-roll for acting on the ball or fore part of the sole, and a reciprocating carrier, of shank rolls having bearings independently adjustable on the said carrier to vary the angularity of the axes of the shank rolls and adapt the latter to sole shanks which vary in contour, devices for rigidly holding the bearings of the shank-rolls in their positions of adjustment, and means for reciprocating the leveling-roll and the carrier.

9. In a sole-leveling machine, rolls supported end to end and axially adjustable and having their confronting ends rounded or convexed.

10. In a sole-leveling machine, the combination with a reciprocating leveling-roll, a longitudinally oscillating jack, and mechanism for automatically reciprocating the leveling-roll and oscillating the jack, of adjustable connections positively connecting said roll and said jack for changing or regulating the travel of the roll relatively to the jack, substantially as described.

11. In a sole-leveling machine, a jack for supporting the shoe, the same comprising a yoke or tree pivotally supported and arranged to move on the pivot in the direction of length of the shoe, a yoke pivotally supported in said tree and arranged to move on its pivot in a direction transverse to the movement of the same, means for oscillating the tree, a cam-disk having a groove at the center of oscillation of said yoke, and a rock-shaft supported in a bearing on said tree and having an arm which carries a roll engaging said cam-groove, and an arm connecting it with the yoke.

12. The combination of a longitudinally movable jack, a vibrating fore-part roll, a shank-roll, means for moving the jack longitudinally and vibrating the fore-part and shank rolls, and mechanism for automatically changing the position of the shank-roll longitudinally with relation to the fore-part roll during the vibratory motion of the rolls.

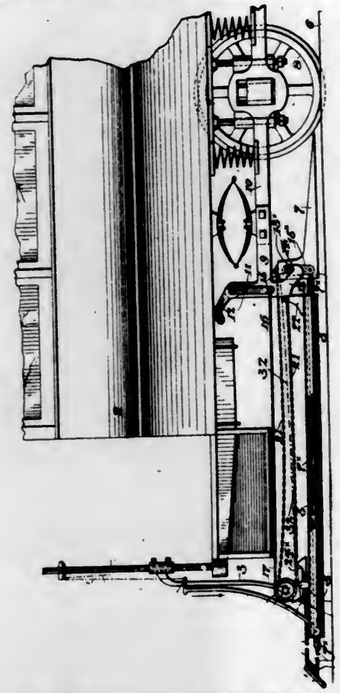
13. The combination with a longitudinally movable jack, a vibrating leveling roll, and means for moving the jack longitudinally, of a rocker-shaft, means for rocking said rocker-shaft, a lever pivotally mounted on the rocker-shaft and connected with the leveling-roll, and devices for vibrating the lever to impart a vibratory motion to the leveling roll.

14. In a sole-leveling machine, the combination of an oscillating jack having an adjusting way at its center of oscillation, a reciprocating leveling-roll, a lever which reciprocates said roll, and a rod connecting the pivot of said lever with the adjusting-way on the jack, as and for the purpose described.

15. In a sole-leveling machine, the combination of an oscillating jack having an arc-shaped adjusting-way at its center of oscillation, a leveling-roll or rolls for acting on the ball of the sole, a roll or rolls for acting on the shank, a bell-crank lever connected with the ball-roll or rolls, a shaft supporting said lever, means for actuating the lever, a sleeve mounted on said shaft and having oppositely-extending arms, a bell-crank lever supported by one of said arms and connected with the shank-roll or rolls, means for vibrating said lever, and a rod connecting the other arm of the sleeve with the adjustment-way on the jack-tree.

545,039. LIFE-SAVING GUARD AND FENDER FOR TROLLEY-CARS, &c. JOSEPH WEINMANN and BENJAMIN F. SHARP, Philadelphia, Pa. Filed Dec. 24, 1894. Serial No. 532,900. (No model.)

Claim.—1. In a car fender, a tubular frame having a support at its front end, a shoe connected a tube telescoping in said frame, a frame connected with a truck of the car, a rocking pin in said shoe having a projection engaging in a notch in said latter mentioned frame, and a trigger with an arm passing through said shoe tube and connected with a lever attached to said pin, substantially as described.



2. A tubular frame supported at its front end by means of a detachable catch, and a cross bar, a frame connected with a truck of a car, a shoe having a tube telescoping in said tubular frame and provided with a pin supported on said truck frame, a trigger with an arm extending through said shoe tube and connected with a lever for disengaging said pin from said truck frame, and means connected with said trigger for detaching said catch from said cross bar, said parts being combined substantially as described.

3. The rods 3, the frame guided on said rods, the tubular frames 5 hinged at their front ends to said frame 4, rollers 18 journaled in said rods 3, the frame 9 connected with a car truck, the tension levers 12 pivoted to said frame 9, the rods 16 pivotally connected with said lever and having the chains 17 connected therewith and passing over said rollers, the cross rod 19 connected with said chains, catches connected with said frames 5 and engaging said cross rod 19, shoes normally held on said frame 9, and having tubes telescoping in said frames 5, a trigger, with means for disengaging said shoes from said frames, and means for disengaging said catches from said cross rod, said parts being combined substantially as described.

4. In a car fender, a trigger, a frame movably attached to the front of the car, a shoe, means for supporting the same normally above the rails, and telescoping tubes intermediate said trigger, frame and shoe, whereby when an object is struck, the two latter move downwardly, substantially as described.

5. In a car fender, a tubular frame having its front end supported by a detachable catch and a frame pivotally connected at its lower end with said front end and having its upper end guided on rods connected with a car, said upper ends having hooks which engage said rods, said parts being combined substantially as described.

6. In a car fender and brake, a tubular frame having its front end supported by a detachable catch on a bar supported from the car, a shoe normally supported on an attachment of a car truck and having a tube telescoping in said tubular frame, a trigger with an arm having means to release said supporting catch and an arm passing through said shoe tube and provided with means for releasing said shoe from said truck, said parts being combined substantially as described.

7. In a car fender, the rods 3 having the rollers 18 and 18× journaled therein, the tension lever 12 pivotally mounted, the tubes 5 and 7× the rod 24 passing through the same, the lever 15× actuated by said rod, the pin 15, the shoe 7 in which said pin is mounted, the chain 21 passing around the pulley 18×, and attached to said shoe and tube 5, the cross bar 19, the connection therefrom to the tension lever, the trigger 23, a supporting device for the front of the tubes and connections from the trigger for tripping the same, substantially as described.

8. In a car fender, a frame having a notch 14, therein, a shoe 7 a pin 15 rotatable in said shoe and having a projecting portion 13× adapted to rest in said notch, a lever 15× attached to said pin, and means for actuating said lever, substantially as described.

545,040. RAIL-JOINT AND METHOD OF FORMING SAME. ALBERT HOFFMANN and HERMAN W. FALK, Milwaukee, Wis. Filed Mar 18, 1895. Serial No. 542,183. (No model.)



Claim.—1. An improved method of forming rail joints, consisting in cleaning the rail ends to be joined, forming or adjusting a mold upon said rail ends and over the joint so as to surround the webs and base flanges thereof, heating said mold and said rail ends, and pouring molten metal into said mold around and beneath the base flanges of both rails and uniting said metal directly to the surfaces of said rail ends by fusion.

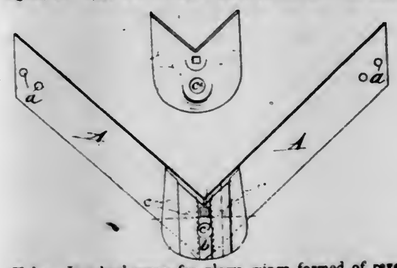
2. An improved method of forming rail joints, consisting in cleaning the rail ends to be joined, forming or adjusting a mold upon said rail ends, pouring molten metal into and through said mold, and finally permitting the metal to stand in the filled mold.

3. An improved method of forming rail joints, consisting in cleaning the rail ends to be joined, forming or adjusting a mold upon the rail ends over the joint, heating said mold and said rail ends, pouring molten metal into and through said mold and in contact with the surfaces of the web and upper and lower faces of the base flanges of both of said rail ends, and finally permitting the metal in filled mold to stand.

4. The method of joining the ends of rails, consisting in first preparing the ends of the rails for fusion, second arranging the ends of the rails in close proximity and in alignment, third placing a suitable mold around and over the sides and bases of the rail ends and across the joint, fourth introducing a stream of molten metal into the upper part of the mold at one side and causing it to pass down around the base flanges and up over the opposite side, substantially as described, and finally allowing the mold to become filled and the metal to stand, substantially as and for the purpose described.

5. An improved method of forming rail joints, consisting in preparing the ends of aligned rails for fusion, forming or adjusting a mold upon said rail ends and over the joint, heating said mold and said rail ends, pouring molten metal into said mold and uniting said metal to the surfaces of the webs and upper and lower faces of the base flanges of said rail ends by fusion.

545,041. HEEL-SWEEP FOR PLOWS. HENRY D. TERRELL, Covington, Ga. Filed Nov. 24, 1894. Serial No. 529,855. (No model.)



Claim.—In a heel-sweep for plows, wings formed of reversible plates thicker along their middle portions and beveled thinner to each edge, a clamp consisting of a front-plate adapted to be bolted to the foot of a plow and a back plate adapted to be bolted to said front plate with the said wings interposed and strengthened and caused to fit the beveled faces of the said wings by facial concaving, substantially as and for the purpose specified.

REISSUES.

11,505. SEASONING FLOOR-CLOTH, &c. FREDERICK WALTON, London, England. Filed June 27, 1895. Serial No. 554,279. Original No. 534,932, dated Feb. 26, 1895. Patented in England Apr. 2, 1890, No. 5,143; in France Jan. 9, 1891, No. 210,692, and in Germany Jan. 13, 1891, No. 58,365.

Claim.—The herein described process of seasoning floor cloths, which consists in coiling the floor cloth, together with a soft porous fabric interposed between its convolutions, and subjecting it to a rotary movement and to the conjoint action of heated air or gas under the pressure of several atmospheres, substantially as described.

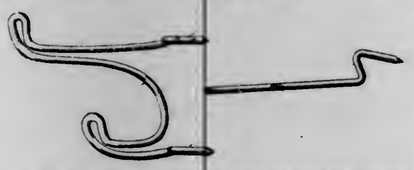
DESIGNS.

24,572. HANDLE FOR SPOONS. SILAS H. MANCHESTER, Providence, R. I., assignor to Fessenden & Co., same place. Filed July 11, 1895. Serial No. 555,665. Term of patent 7 years.



Claim.—The design for handles of spoons and similar articles as herein shown and described.

24,573. HOOK. CLINTON W. BAKER, Shamokin, Pa. Filed July 10, 1895. Serial No. 555,577. Term of patent 7 years.



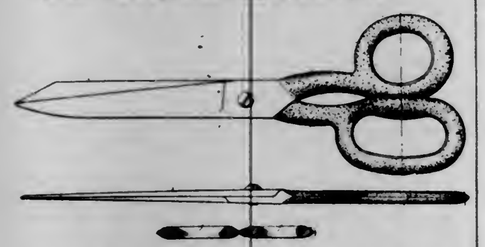
Claim.—The design for a garment hook, substantially as shown and described.

24,574. BUCKLE. CHARLES R. HARRIS, Williamsport, Pa. Filed July 6, 1895. Serial No. 555,165. Term of patent 7 years.



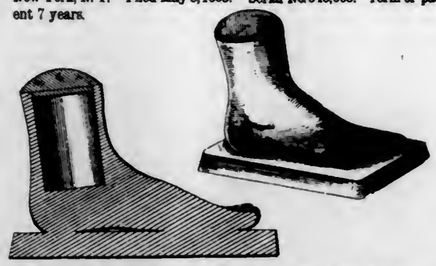
Claim.—The design for clasps or buckles herein shown and described.

24,575. SCISSORS OR SHEARS. DAVID C. WHEELER, Bridgeport, Conn., assignor to the Acme Shear Company, same place. Filed May 21, 1895. Serial No. 550,142. Term of patent 14 years.



Claim.—The design for scissors and shears substantially as shown and described.

24,576. RECEPTACLE FOR MATCHES, &c. LOUIS P. WHITEMAN, New York, N. Y. Filed May 8, 1895. Serial No. 548,605. Term of patent 7 years.



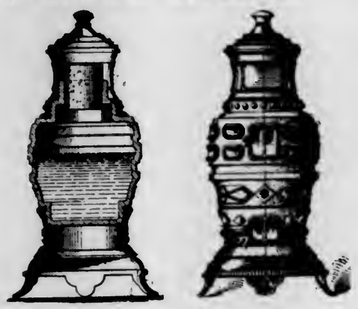
Claim.—The design for a receptacle for matches, &c., substantially as shown.

24,577. BOTTLE-STOPPER. JOHN H. GAULT, Philadelphia, Pa., assignor to the Hero Fruit Jar Company, same place. Filed Apr. 4, 1894. Serial No. 506,352. Term of patent 14 years.



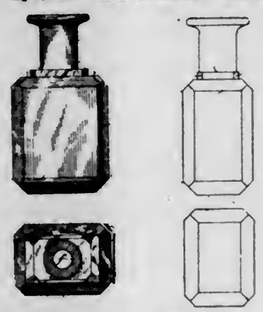
Claim.—The design for a bottle stopper a flange with a band having foliated ornamentation and a stem having an ornamental head in the shape of a buttercup as herein described and as shown in the accompanying drawings.

24,578. BOTTLE. ALFRED P. BABCOCK, Brooklyn, N. Y. Filed May 23, 1895. Serial No. 550,450. Term of patent 7 years.



Claim.—The design for a bottle, substantially as herein shown and described.

24,579. BOTTLE. WILLIAM W. LOWREY, Staten Island, N. Y. Filed July 9, 1895. Serial No. 555,442. Term of patent 3½ years.



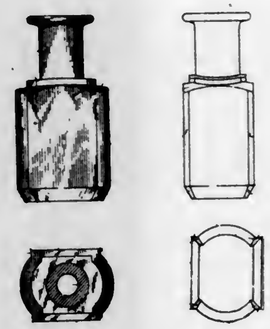
Claim.—The design for a glass bottle substantially as herein shown and described

24,580. BOTTLE. WILLIAM W. LOWREY, Staten Island, N. Y. Filed July 9, 1895. Serial No. 555,443. Term of patent 3½ years.



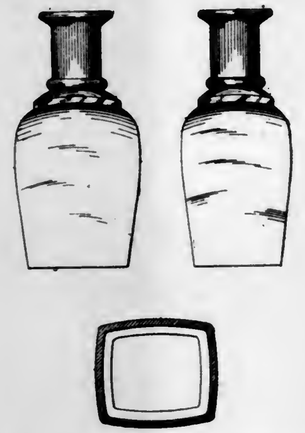
Claim.—The design for a glass bottle substantially as herein shown and described.

24,581. BOTTLE. WILLIAM W. LOWREY, Staten Island, N. Y. Filed July 9, 1895. Serial No. 555,444. Term of patent 3½ years.



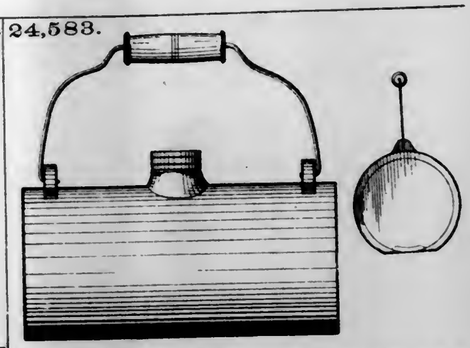
Claim.—The design for a glass bottle substantially as herein shown and described.

24,582. BOTTLE. WILLIAM W. LOWREY, Staten Island, N. Y. Filed July 13, 1895. Serial No. 555,931. Term of patent 3½ years.



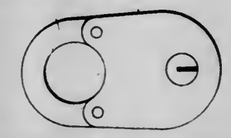
Claim.—The design for a glass bottle, substantially as shown and described.

24,583. BED-WARMER. ROBERT GOODWILL, Shamokin, Pa. Filed July 6, 1895. Serial No. 555,166. Term of patent 14 years.



Claim.—The design for a bed warmer herein shown and described.

24,584. PADLOCK. JAMES ROCHE, Terryville, Conn., assignor to the Eagle Lock Company, same place. Filed June 17, 1895. Serial No. 553,140. Term of patent 7 years.



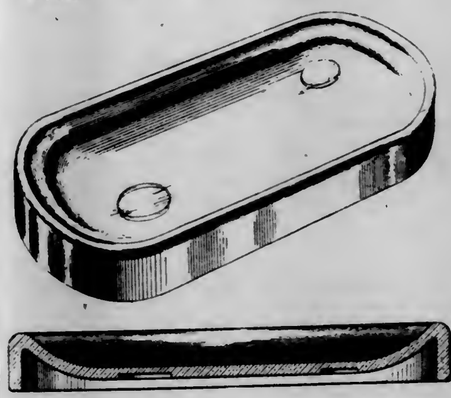
Claim.—The design for a padlock as herein shown and described the body and shackle of the bolt forming an oblong figure having rounded ends, and slightly tapering sides which converge from the outer end of the padlock to the inner or shackle-end thereof.

24,585. BOX-OPENER. ALBERT B. SCHOFIELD, Brooklyn, N. Y. Filed July 5, 1895. Serial No. 555,065. Term of patent 14 years.



Claim.—The design for a box opener, as herein shown and described.

24,586. CHANGE PLATE OR TRAY. WILLIAM T. MURPHY, New York, N. Y. Filed June 20, 1895. Serial No. 553,474. Term of patent 3½ years.



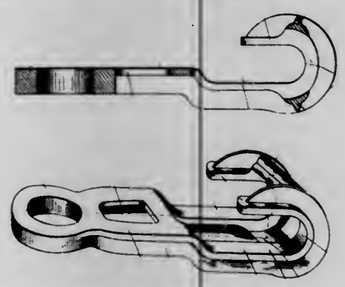
Claim.—The design for a change plate or tray, substantially as herein shown and described.

24,587. CYLINDER FOR HAND FIRE-EXTINGUISHERS. WILLIAM M. HARRISON, New York, N. Y., assignor, by mesne assignments, to the Eclipse Chemical Company, same place. Filed June 19, 1895. Serial No. 553,366. Term of patent 14 years.



Claim.—The design for a cylinder for hand fire-extinguishers, substantially as herein shown and described.

24,588. SWINGING BRACKET. JAMES MACPHAIL, Blue Island, assignor to the Piano Manufacturing Company, Chicago, Ill. Filed July 8, 1895. Serial No. 555,340. Term of patent 14 years.



Claim.—The design for a swinging bracket, substantially as herein shown and described.

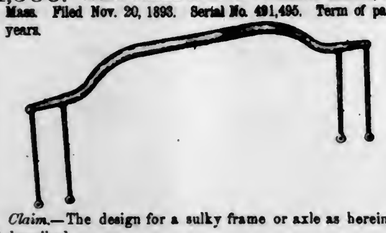
24,589. FONT OF PRINTING-TYPE. CHARLES H. BEELER, Jr., Philadelphia, Pa., assignor to the American Type Founders Company, Newark, N. J. Filed Nov. 22, 1894. Serial No. 529,652. Term of patent 7 years.

ABCDEFGHIJKLMNOPQRSTUVWXYZ

abcdefghijklmnopqrstuvwxyz

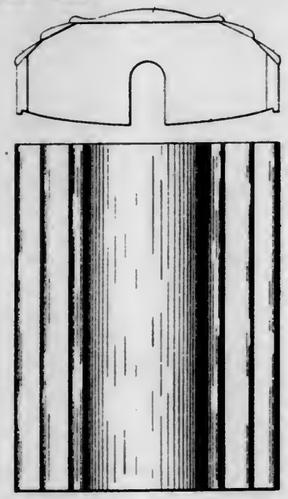
Claim.—The design for a font of printing type as herein described and as shown in the accompanying typographical impression.

24,590. SULKY FRAME OR AXLE. STERLING ELLIOTT, Newton, Mass. Filed Nov. 20, 1893. Serial No. 491,495. Term of patent 14 years.



Claim.—The design for a sulky frame or axle as herein shown and described.

24,591. CARPET-SWEEPER CASING. LOUIS GOSLER, Grand Rapids, Mich., assignor to T. Stewart White, Thomas Friant, Gaius W. Perkins, and Charles J. Reed, same place. Filed Sept. 14, 1894. Serial No. 523,042. Term of patent 7 years.



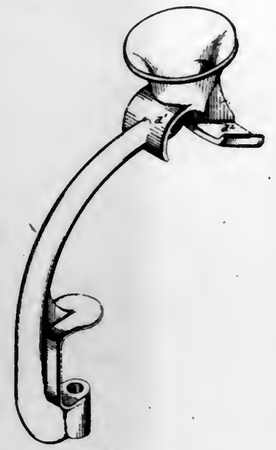
Claim.—The design for a carpet sweeper casing substantially as shown and described.

24,592. CASING FOR FRUIT-PRESSES. JOHN WILSON BROWN, Jr., Philadelphia, Pa. Filed July 9, 1894. Serial No. 517,014. Term of patent 14 years.



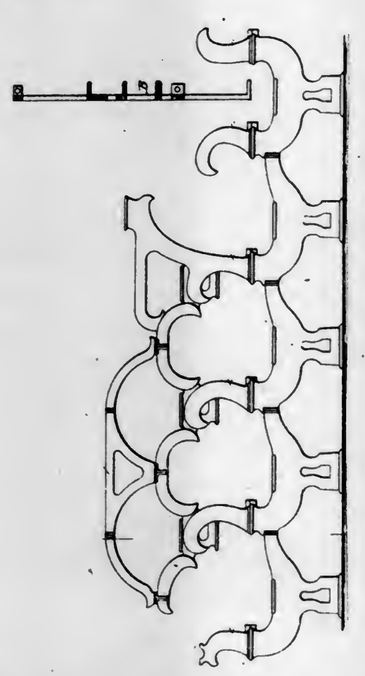
Claim.—The design for the casing of a fruit press, as herein described and shown in the accompanying drawing.

24,593. FRAME FOR RAISIN-SEEDERS. JOHN WILSON BROWN, Jr., Philadelphia, Pa. Filed Mar. 1, 1895. Serial No. 540,234. Term of patent 14 years.



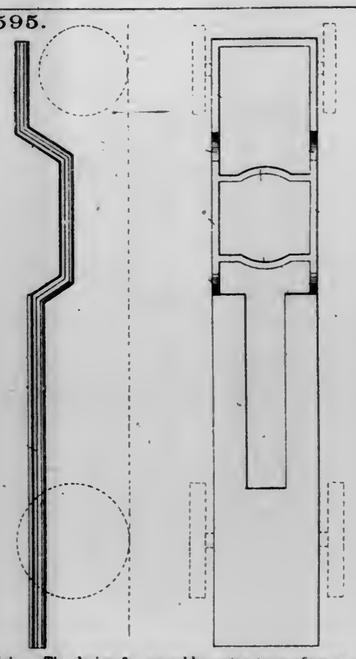
Claim.—The design for the frame of a machine for seeding raisins as herein described and shown in the accompanying drawing.

24,594. SIDE DRIER-FRAME. ALFRED HENRY SMITH, Wilmington, Del. Filed Jan. 17, 1895. Serial No. 535,275. Term of patent 7 years.



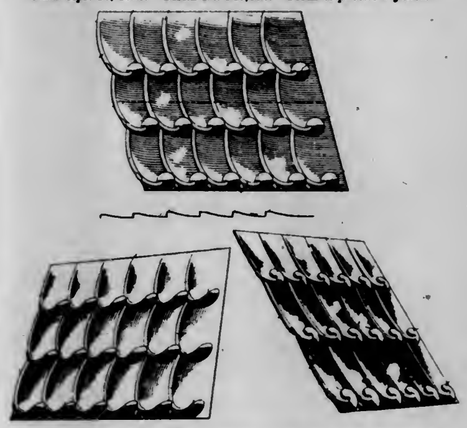
Claim.—The design for a side drier frame for paper making machines, as herein shown and described.

24,595. WATER-TOWER FRAME. ERNST F. STECK, Chicago, Ill. Filed Nov. 22, 1893. Serial No. 491,682. Term of patent 14 years.



Claim.—The design for portable water tower frames, substantially as herein shown and described.

24,596. ROOFING-PLATE. WILLIAM H. MULLINS, Salem, Ohio. Filed Apr. 17, 1895. Serial No. 546,136. Term of patent 7 years.



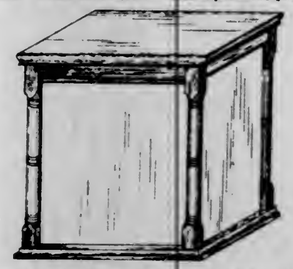
Claim.—The design for an ornamental roofing-sheet, substantially as herein shown and described.

24,597. ROOF-FINIAL. WILLIAM H. MULLINS, Salem, Ohio. Filed Apr. 1, 1895. Serial No. 544,098. Term of patent 7 years.



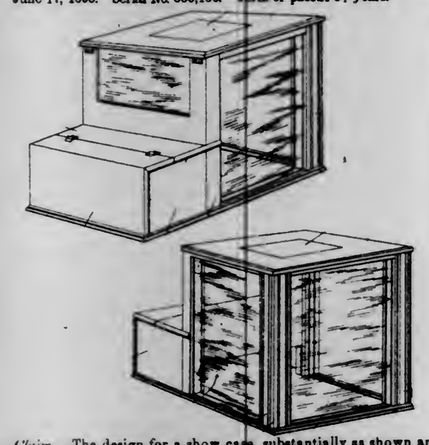
Claim.—The design for an ornamental finial, substantially as herein shown and described.

24,598. BRETZEL-CASE. JOHN MOHRING, Scranton, Pa. Filed Apr. 23, 1895. Serial No. 546,937. Term of patent 3½ years.



Claim.—The design for a bretzel case substantially as herein shown and described.

24,599. SHOW-CASE. WILLIAM W. DAVIS, Chicago, Ill. Filed June 17, 1895. Serial No. 553,136. Term of patent 3½ years.



Claim.—The design for a show case, substantially as shown and described.

24,600. DESK AND SEAT. JOSIAH C. GOODING, Covington, Ind. Filed July 17, 1895. Serial No. 556,294. Term of patent 14 years.



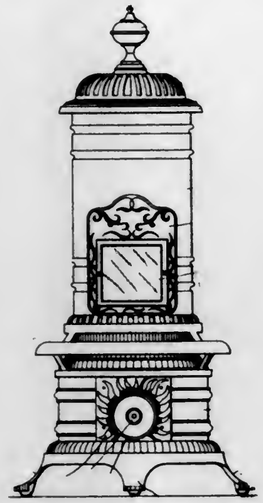
Claim.—The design for a desk and seat substantially as described and shown.

24,601. GAS OR OIL STOVE. AUGUSTINE C. WEST, Boston, Mass. Filed Jan. 7, 1895. Serial No. 534,136. Term of patent 7 years.



Claim.—The design for a gas or oil stove, substantially as described and shown.

24,602. STOVE. AUGUSTUS C. BARLER, Chicago, Ill. Filed Apr. 1. 1895. Serial No. 544,100. Term of patent 7 years.



Claim.—The design for a stove substantially as herein shown and described.

24,603. RANGE. THOMAS I. RANKIN, Philadelphia, Pa., assignor to the Abram Cox Stove Company, same place. Filed Nov. 22, 1894. Serial No. 529,654. Term of patent 7 years.



Claim.—1. The design for the cooking stove as herein described and shown in the accompanying drawing.

2. The design for the base of a cooking stove as herein described and shown.

3. The design for an oven door of a cooking stove as herein described and shown.

4. The design for a fire door as herein described and shown.

24,604. BASE FOR LAMPS. FRANZ YOKEL, Meriden, Conn., assignor to the Meriden Bronze Company, same place. Filed July 22, 1895. Serial No. 556,822. Term of patent 3½ years.



Claim.—The design for a base for lamps as herein described and shown in the accompanying illustration.

24,605. BASE FOR LAMPS. FRANZ YOKEL, Meriden, Conn., assignor to the Meriden Bronze Company, same place. Filed July 22, 1895. Serial No. 556,823. Term of patent 3½ years.

24,605.



Claim.—The design for a base for lamps as herein described and shown in the accompanying illustration.

24,606. BASE FOR LAMPS. FRANZ YOKEL, Meriden, Conn., assignor to the Meriden Bronze Company, same place. Filed July 22, 1895. Serial No. 556,824. Term of patent 3½ years.



Claim.—The design for a base for lamps, as herein described and shown in the accompanying illustration.

24,607. BASE FOR LAMPS. FRANZ YOKEL, Meriden, Conn., assignor to the Meriden Bronze Company, same place. Filed July 22, 1895. Serial No. 556,825. Term of patent 3½ years.



Claim.—The design for a base for lamps as herein described and shown in the accompanying illustration.

24,608. BASE FOR LAMPS. FRANZ YOKEL, Meriden, Conn., assignor to the Meriden Bronze Company, same place. Filed July 22, 1895. Serial No. 556,826. Term of patent 3½ years.



Claim.—The design for a base for lamps as herein described and shown in the accompanying illustration.

24,609. BASE FOR LAMPS. FRANZ YOKEL, Meriden, Conn., assignor to the Meriden Bronze Company, same place. Filed July 22, 1895. Serial No. 556,827. Term of patent 3½ years.



Claim.—The design for a base for lamps as herein described and shown in the accompanying illustration.

24,610. BASE FOR LAMPS. FRANZ YOKEL, Meriden, Conn., assignor to the Meriden Bronze Company, same place. Filed July 22, 1895. Serial No. 556,828. Term of patent 3½ years.



Claim.—The design for a base for lamps as herein described and shown in the accompanying illustration.

24,611. LAMP-FOUNT HOLDER. FRANZ YOKEL, Meriden, Conn., assignor to the Meriden Bronze Company, same place. Filed July 22, 1895. Serial No. 556,829. Term of patent 3½ years.



Claim.—The design for a lamp-fount holder as herein described and shown in the accompanying illustration.

24,612. LAMP-FOUNT HOLDER. FRANZ YOKEL, Meriden, Conn. assignor to the Meriden Bronze Company, same place. Filed July 22 1895. Serial No. 556,830. Term of patent 3½ years.



Claim.—The design for a lamp-fount-holder as herein described and shown in the accompanying illustration.

24,613. LAMP-FOUNT HOLDER. FRANZ YOKEL, Meriden, Conn., assignor to the Meriden Bronze Company, same place. Filed July 22, 1895. Serial No. 556,831. Term of patent 3½ years.



Claim.—The design for a lamp-fount holder as herein described and shown in the accompanying illustration.

24,614. LAMP-FOUNT HOLDER. FRANZ YOKEL, Meriden, Conn., assignor to the Meriden Bronze Company, same place. Filed July 22, 1895. Serial No. 556,832. Term of patent 3½ years.



Claim.—The design for a lamp-fount holder, as herein described and shown in the accompanying illustration.

24,615. TRIMMING. FRIEDRICH HASSENPFLUG, New York, N. Y., assignor to Hugo Maul & Co., same place. Filed July 20, 1895. Serial No. 556,647. Term of patent 7 years.



Claim.—The design for trimming as herein shown and described.

24,616. CARPET. ARCHIBALD F. REDDIE, Philadelphia, Pa., assignor to William H. McCallum and Irving McCallum. Filed July 12, 1895 Serial No. 555,765. Term of patent 3½ years.



Claim.—1. In the design for carpet the body *a*, substantially as shown.

2. In a design for carpet the border *b*, substantially as shown.

3. The design for carpet consisting of the body *a*, and the border *b*, substantially as shown.

24,617. CARPET. ARCHIBALD F. REDDIE, Philadelphia, Pa., assignor to William H. McCallum and Irving McCallum. Filed July 12, 1895. Serial No. 555,766 Term of patent 3½ years.



Claim.—1. In the design for carpet the body *a*, substantially as shown.

2. In a design for carpet the border *b*, substantially as shown.

3. The design for carpet consisting of the body *a*, and the border *b*, substantially as shown.

24,618. CARPET. ARCHIBALD F. REDDIE, Philadelphia, Pa., assignor to William H. McCallum and Irving McCallum. Filed July 12, 1895. Serial No. 555,767. Term of patent 3½ years.



Claim.—1. In the design for carpet the body *a*, substantially as shown.

2. In a design for carpet the border *b*, substantially as shown.

3. The design for carpet consisting of the body *a*, and the border *b*, substantially as shown.

24,619. CARPET. ARCHIBALD F. REDDIE, Philadelphia, Pa., assignor to William H. McCallum and Irving McCallum. Filed July 12, 1895. Serial No. 555,768. Term of patent 3½ years.

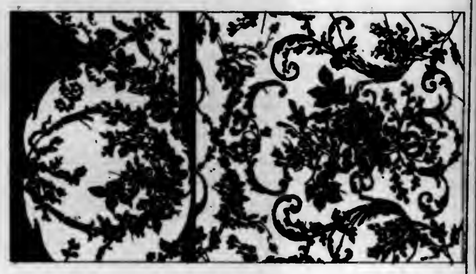


Claim.—1. In the design for carpet the body *a*, substantially as shown.

2. In a design for carpet the border *b*, substantially as shown.

3. The design for carpet consisting of the body *a*, and border *b*, substantially as shown.

24,620. CARPET. ARCHIBALD F. REDDIE, Philadelphia, Pa., assignor to William H. McCallum and Irving McCallum. Filed July 12, 1895. Serial No. 555,769. Term of patent 3½ years.



Claim.—1. In the design for carpet the body *a*, substantially as shown.

2. In a design for carpet the border *b*, substantially as shown.

3. The design for carpet consisting of the body *a*, and the border *b*, substantially as shown.

24,621. CARPET. ARCHIBALD F. REDDIE, Philadelphia, Pa., assignor to William H. McCallum and Irving McCallum. Filed July 12, 1895 Serial No. 555,770. Term of patent 3½ years.



Claim.—1. In the design for carpet the body *a*, substantially as shown.

2. In a design for carpet the border *b*, substantially as shown.

3. The design for carpet consisting of the body *a*, and the border *b*, substantially as shown.

24,622. CARPET. ARCHIBALD F. REDDIE, Philadelphia, Pa., assignor to William H. McCallum and Irving McCallum. Filed July 12, 1895. Serial No. 555,771. Term of patent 3½ years.



Claim.—1. In the design for carpet the body *a*, substantially as shown.

2. In a design for carpet the border *b*, substantially as shown.

3. The design for carpet consisting of the body *a*, and border *b*, substantially as shown.

24,623. CARPET. ARCHIBALD F. REDDIE, Philadelphia, Pa., assignor to William H. McCallum and Irving McCallum. Filed July 12, 1895. Serial No. 555,772. Term of patent 3½ years.



Claim.—1. In the design for carpet the body *a*, substantially as shown.

2. In a design for carpet the border *b*, substantially as shown.

3. The design for carpet consisting of the body *a*, and the border *b*, substantially as shown.

24,624. CARPET. ARCHIBALD F. REDDIE, Philadelphia, Pa., assignor to William H. McCallum and Irving McCallum. Filed July 12, 1895. Serial No. 555,773. Term of patent 3½ years.



Claim.—1. In the design for carpet the body *a*, substantially as shown.

2. In a design for carpet the border *b*, substantially as shown.

3. The design for carpet consisting of the body *a*, and the border *b*, substantially as shown.

24,625. CARPET. CHARLES FREDERICK GEDNEY, Brooklyn, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed July 15, 1895. Serial No. 556,084. Term of patent 3½ years.



Claim.—1. In a design for carpet, the body A, substantially as shown.

2. In a design for carpet, the border B, substantially as shown.

3. The design for carpets, consisting of the body A, and the border B, substantially as shown.

24,626. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed July 22, 1895. Serial No. 556,839. Term of patent 3½ years.



Claim.—The design for carpets, substantially as shown in the drawing accompanying this specification.

24,627. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed July 22, 1895. Serial No. 556,840. Term of patent 3½ years.



Claim.—The design for carpets, substantially as shown in the drawing accompanying this specification.

24,628. FRAME FOR LOCOMOTIVES. WILLIAM P. HERSHEY, Philadelphia, Pa. Filed May 3, 1895. Serial No. 548,058. Term of patent 14 years.



Claim.—The design for the frame of a locomotive as herein described and shown in the accompanying drawing.

TRADE-MARKS

REGISTERED AUGUST 20, 1895.

26,954. WATCHCASES. THE DUEBER WATCH CASE MANUFACTURING COMPANY, Canton, Ohio. Filed July 26, 1895.



Essential feature.—The words and numerals "GUARANTEED TO BE MADE OF TWO PLATES OF 14 KARAT GOLD OVER FINE HARD METAL AND TO WEAR FOR 20 YEARS" and the representation of a shield bearing an anchor. Used since July 10, 1895.

26,955. PINS. JULIUS T. ROSENHEIMER, New York, N. Y. Filed July 20, 1895.

"CANTBENDEM"

Essential feature.—The word "CANTBENDEM." Used since October, 1887.

26,956. CORSETS AND CORSET-WAISTS. WILLIAM PRETTY & SON, Ipswich, England. Filed July 24, 1895.



Essential feature.—The letters and character "P & S," associated with the representation of a double triangle. Used since November 18, 1893.

26,957. CORSETS. THE RENSHIE CORSET MANUFACTURING CO., New York, N. Y. Filed July 11, 1895.



Essential feature.—The representation of a red star and the white letters "R. C." produced upon the star. Used since January 1, 1895.

26,958. COATS AND PANTALOONS. THE STANDARD CLOTHING COMPANY, Boston, Mass. Filed July 26, 1895.



Essential feature.—The words "THE RUGBY SCHOOL SUIT" and the representation of a boy wearing a suit. Used since May 1, 1893.

26,959. SOFT CRINKLED PAPER. INGRAM INTERLINING COMPANY, New York, N. Y. Filed July 29, 1895.

CHEVERET.

Essential feature.—The word "CHEVERET." Used since June 25, 1895.

26,960. MECHANICALLY-SOFTENED FIBER PAPER. JOSHUA C. SMITH, Conowingo, Md., and New York, N. Y. Filed June 3, 1895.

INGRAMS

Essential feature.—The word "INGRAMS." Used since May 17, 1895.

26,961. PAPER BAGS. UNION BAG AND PAPER COMPANY, Chicago, Ill. Filed June 27, 1895.

ELEPHANT

Essential feature.—The word "ELEPHANT." Used since November 1, 1893.

26,962. CHEWING-GUM. DOSCHER BROS., Cincinnati, Ohio. Filed July 5, 1895.

DARK HORSE

Essential feature.—The words "DARK HORSE." Used since June 1, 1895.

26,963. CIGARS. CULVER BROTHERS, Howell, Mich. Filed June 22, 1895.

KNIGHTS OF THE LOYAL GUARD

Essential feature.—The words "KNIGHTS OF THE LOYAL GUARD." Used since February 1, 1895.

26,964. CHARTREUSE CORDIAL. IGNAZIO GIRAUD, Pavia, Italy. Filed July 22, 1895.

GRA-CAR

Essential feature.—The word "GRA-CAR." Used since December 12, 1892.

26,965. GIN. NETHERLANDS STEAM DISTILLERY CO., LIMITED, New York, N. Y. Filed July 5, 1895.

STEINHÄGER.

Essential feature.—The word "STEINHÄGER." Used since June 1, 1895.

26,966. PURE EXTRACT OF MALT. THE MALTONIC CO., Bath, Me. Filed May 21, 1895.

MALTONIC

Essential feature.—The word "MALTONIC" in capitals of the double-letter form, printed in red. Used since January 1, 1895.

26,967. TEA. SPRAGUE, WARNER & CO., Chicago, Ill. Filed July 1, 1895.

MONSOON

Essential feature.—The word "MONSOON." Used since June 26, 1893.

26,968. FLOUR, BREAKFAST-FOODS, CRACKED WHEAT, GRITS, FARINA, AND PURIFIED MIDDLINGS. NORTH DAKOTA MILLING COMPANY, Grand Forks, N. D. Filed July 12, 1895.



Essential feature.—The half-length representation of a negro chef dressed in white coat and cap. Used since March 1, 1895.

26,969. WHEAT-FLOUR. SPARKS MILLING COMPANY, Alton, Ill. Filed July 5, 1895.

RINGLEADER

Essential feature.—The word "RINGLEADER." Used since July 1, 1865.

26,970. RICE. GOLDBERG, BOWEN & LEHMBAUM, San Francisco, Cal. Filed Feb. 8, 1895.



Essential feature.—The word "CREOLE." Used since January 1, 1894.

26,971. POWDER FOR TOILET AND NURSERY PURPOSES. HENRY TETLOW, Philadelphia, Pa. Filed July 1, 1895.

SWANDOWN

Essential feature.—The words "SWAN DOWN." Used since June 1, 1895.

26,972. OLIVE LAUNDRY SOAP. Uso Conti, Leghorn, Italy. Filed June 22, 1895.



Essential feature.—The outline figure of a shield and the words "FABBRICA PREMIATA." Used since 1855.

26,973. OZONIZED VEGETABLE OILS. THE OZONE COMPANY, New York and Brooklyn, N. Y. Filed July 6, 1895.

THERAPOL

Essential feature.—The word "THERAPOL." Used since September, 1894.

26,974. LINIMENTS FOR WOUNDS OF HORSES AND CATTLE. ABRAHAM G. COX, Carlisle, Ind. Filed July 26, 1895.



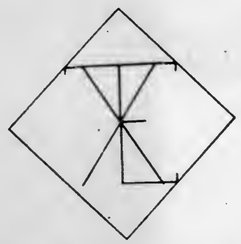
Essential feature.—The representation of a disk bearing the heads of a horse and a steer in perspective. Used since July 22, 1894.

26,975. SPECIFIC FOR USE AS A DISINFECTANT, DEODORIZER, WASH, GERMICIDE, AND HEADACHE REMEDY. THE IMPERIAL HYGENIQUE FLUID COMPANY, New York, N. Y., New Haven, Conn., and Newark, N. J. Filed July 2, 1895.

HYGENIQUE

Essential feature.—The word "HYGENIQUE." Used since September 3, 1894.

26,976. COUGH SIRUP. HETTIE SHORT and JOE SHORT, San Angelo, Tex. Filed Apr. 1, 1895.



Essential feature.—The representation of a square inclosing a monogram of the letters "T E X." Used since 1865.

26,977. REMEDY FOR DISEASES OF THE BLOOD. HOT SPRINGS MEDICAL COMPANY, Alexandria, Va., and New York, N. Y. Filed July 27, 1895.

PURA BLOOD

Essential feature.—The compound word "PURA-BLOOD." Used since July 1, 1895.

26,978. PILLS. WILLIAM ALBERT SITES, Baltimore, Md. Filed May 24, 1895.

DR. LANIER'S SILVER

Essential feature.—The abbreviation and words "DR. LANIER'S SILVER." Used since April 3, 1894.

26,979. TIN OR LEAD FOIL. THE JOHNSTON TIN FOIL AND METAL COMPANY, St. Louis, Mo. Filed July 29, 1895.

ANCHOR

Essential feature.—The word "ANCHOR" and the representation of an anchor. Used since July 1, 1895.

26,980. SAFETY-RAZORS. KAMPFE BROS., New York, N. Y. Filed July 15, 1895.



Essential feature.—The representation of a man shaving himself with a safety-razor. Used since January 14, 1885.

26,981. GLASS CHIMNEYS, LANTERN-GLOBES, AND REFLECTORS. GILL BROTHERS & CO., Steubenville, Ohio. Filed May 15, 1895.



Essential feature.—The representation of a charging buffalo. Used since July 1, 1890.

26,982. CERTAIN MUSICAL INSTRUMENTS. THE IMPERIAL COMPANY, Cincinnati, Ohio, Chicago, Ill., and New York, N. Y. Filed Mar. 8, 1895.

IMPERIAL

Essential feature.—The word "IMPERIAL." Used since December, 1886.

26,983. BICYCLES. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa. Filed Apr. 11, 1895.

SUPPLEE SPECIAL

Essential feature.—The words "SUPPLEE SPECIAL." Used since November 1, 1894.

26,984. BICYCLES. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa. Filed Apr. 11, 1895.

SUPPLEE STANDARD

Essential feature.—The words "SUPPLEE STANDARD." Used since November 1, 1894.

26,985. PORTLAND CEMENT. DUMON ET CIE., Brussels and Courtray, Belgium. Filed July 17, 1895.



Essential feature.—The representation of a rooster with one foot upon a globe. Used since July 1, 1894.

ANDREW B. GRAHAM
PHOTO-LITHOGRAPHER.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

HUSON *v.* YATES.

Decided July 25, 1895.

1. INTERFERENCE—PATENTEE AND APPLICANT.

"Public policy and the settled practice of the Office alike forbid the issue of a second patent for the same invention in any but a clear case—clear beyond a reasonable doubt;" but the fact that one party has unjustly obtained a patent is not final, for the rule as applied to this case is that "he is the first inventor who first forms a complete mental conception of the improvement in question, as proved not merely by himself but by full and certain disclosure to another, and who, under all the circumstances of the case, proceeds with reasonable diligence to the construction of a full-sized machine embodying the improvement in working form, and that this is so although another with a later conception first fully reduces the invention to practice."

2. SAME—SAME.

"Although Yates was the first to apply for a patent, and did so prior to the completion of Huson's machine, and subsequently received a patent thereon a few days before Huson made application, Huson was the first inventor; he was proceeding with reasonable diligence from April, 1891, to the completion of his invention on December 3, 1891, and was diligently engaged therein when Yates formed his first conception of this invention in October, 1891."

3. SAME—PRELIMINARY STATEMENT—ESTOPPEL.

The fact that Huson in his preliminary statement placed his conception in 1883, while his proofs of diligence apply only to the period subsequent to the "second conception" in 1891, does not create an estoppel *in pais*, because Huson did nothing nor omitted anything upon which Yates relied in building up his own status or upon the faith of which he acted otherwise than he would.

ON rehearing.

MECHANICAL MOVEMENT.

Application of Winfield S. Huson filed March 31, 1892, No. 427,151. Reissue application of William B. Yates filed July 25, 1892, No. 441,204.

Mr. L. W. Southgate for Huson.

Messrs. Dayton, Poole & Brown for Yates.

SEYMOUR *Commissioner:*

This is a rehearing of the appeal taken by Yates from the decision of the Examiners-in-Chief affirming the decision of the Examiner of Interferences in awarding priority of invention to Huson on the following issue:

In a mechanical movement, the combination with a reciprocating bed or member, of a controlling member adapted to be periodically connected to the bed to control the motion thereof, and means for imparting a positive to-and-fro motion to this controlling member.

On the 23d of March, 1895, the decision of the Examiners-in-Chief was affirmed by the Commissioner. The interference is between the reissue application of Yates, filed July 25, 1892, asking for the reissue of a patent granted to Yates March 22, 1892, upon an original application filed November 9, 1891. An error occurred in the second ground of the Commissioner's decision, and on this account a rehearing was ordered in order that the opinion might be withdrawn, and it is so withdrawn.

Huson had the conception of this invention early in May, 1891, and at that time he made preliminary drawings and a model of the invention. He submitted these to the directing officer of the Campbell Printing Company, of New York. Soon afterward working drawings were begun for a complete printing-press embodying this improvement, and were finished as early as June 20, 1891. On or about June 23 the treasurer of the Campbell Printing Company, upon submission of tracings of these drawings to him and upon conference between him and Huson, in general terms decided to adapt and apply the improvement to what was known as the "original No. 6 Campbell pony press" before building a completely-new press for the market. Mr. Wood, the vice-president of the company, had charge of such matters, but was then abroad Upon his return in July, 1891, the matter was carefully considered by him and approved, and the company decided to build a new machine with the movement in question. Accordingly an order to the factory in Taunton, Mass., which had been given in June, was revised, and issued September 26, 1891, for a new machine. Detailed working drawings were made and finished by October 10, 1891. Patterns and parts for the new machine were made in September and October and assembled in November, 1891. The movement as a whole and as defined in the issue was run at a high rate of speed by December 3, 1891, and its success demonstrated. The top works were added, and the completed printing-press was ready for sale on the 22d of January, 1892. In the following March it was sold to Gibbs Brothers & Moran, of New York city, and was thereafter and up to the taking of testimony in this case in practical and successful use. The preliminary drawings, the model, the working drawings, the patterns, the parts of the machine, and the machine itself all clearly concern and finally embody this improvement, and the time of the conception of the improvement, the commencement of the work, the various stages of its progress, and its final completion are proved beyond doubt.

Yates conceived this invention, and first disclosed it to others in October, 1891, and filed his application for a patent upon it November 9, 1891. He did not reduce to practice, nor did he attempt to do so, but relies upon his constructive reduction to practice con-

sequent upon his filing an allowable application therefor. Yates attempts to prove that he disclosed this invention to Huson in November or December, 1890; that he made a rough draft of the mechanical movement the next day or two, and that Huson saw it; but Yates himself testifies that he was not aware that Huson paid much attention to the rough draft; that it was not complete; that the matter was not referred to again; that he does not know what became of the draft; that he did not make any drawings embodying the invention in a connected mechanism; that he made no effort to find the rough draft, and does not know that he showed it to anybody else. Huson denies all of this that relates to himself.

This testimony is manifestly inadequate to sustain a finding such as Yates contends for, and it is accordingly considered that Yates must stand or fall by his conception in October, 1891, and his filing the allowable application of November 9, 1891.

Upon this state of facts counsel for Yates contends that under all authoritative decisions when the validity of a patent already granted is in issue in the Patent Office, as well as in the courts, no showing of diligence which shall fall short of an actual reduction to practice prior to reduction to practice by the patentee can be sufficient to defeat the patentee's right; that the filing of the allowable application was the full equivalent of actual reduction to practice by Yates on November 9, 1891, and that as Huson's mechanical movement was not actually run until December 3, 1891, he cannot prevail upon the question of priority. A large number of cases are cited from which numerous quotations are made in support of this contention. I have carefully examined them all, and such of them as are applicable to the facts in this case do not seem to sustain the contention of Yates. It does not seem necessary to discuss those that are inapplicable to the case or to discuss generally propositions of law that are only applicable to a different state of facts.

Ellithorp v. *Robertson* (4 Blatchf., 307–309) is cited by Yates, as follows:

> To defeat a patent that has been issued, it is not enough that some one, before the patentee, conceived the idea of effecting what the patentee accomplished. To constitute such a prior invention as will avoid a patent that has been granted, it must be made to appear that some one, before the patentee, not only conceived the idea of doing what the patentee has done, but also that he reduced his idea to practice and embodied it in some practical and useful form. The idea must have been carried into practical operation. The making of drawings of conceived ideas is not such embodiment of such conceived ideas into practical and useful form as will defeat a patent which has been granted.

That case was upon a bill in equity and prayed for a decree declaring the patent issued to Robertson to be void and the plaintiff entitled to receive a patent for his claimed invention and as specified in his claim presented to the Patent Office. The learned judge, before using the language quoted by Yates, had said:

> It should be borne in mind that there is no allegation in the bill, and no claim made by the plaintiff, that Robertson surreptitiously or unjustly obtained his patent for that which was in fact invented and discovered by the plaintiff, who was using reasonable diligence in adapting and perfecting the same. (P. 309.)

And again:

> If there had been any fraud in obtaining the patent issued to Robertson, or if it had been unjustly issued, the case would have been presented in another aspect. For it is provided by the fifteenth section of the patent act of July 4, 1836, (5 U. S. Stat. at Large, 123,) that a patent issued may be avoided if the patentee has surreptitiously or unjustly obtained his patent for that which was in fact invented or discovered by another, who was using reasonable diligence in adapting and perfecting the same. But there are no allegations of this kind in the bill; and there is no claim that Robertson either surreptitiously or unjustly obtained his patent, and no sufficient allegation in the bill that the plaintiff, at the time the patent to Robertson was issued, was using reasonable diligence in adapting and perfecting his invention. (P. 310.)

From *Cox* v. *Griggs* (1 Biss., 362,) Yates cites the following language:

> It is necessary, in order to prevent a man from having the benefit of his patent, that another person should first have discovered the thing and reduced it to actual practice.

But the principle is there most clearly recognized, that seems to be decisive of this case, in the following language from the opinion:

> It is the right and privilege of a party, when an idea enters his mind in the essential form of an invention—inasmuch as most inventions are the result of experiment, trial and effort, and few of them are worked out by mere will—to perfect by experiment and reasonable diligence his original idea, so as not to be deprived of the fruit of his skill and labor by a prior patent, if he is the first inventor. But there must be what we would consider reasonable diligence, looking at all the facts in the case. (P. 364.)

It is unnecessary to analyze similarly all the cases relied on by Yates or to cite authorities in support of the legal proposition that he is the first inventor who first forms a complete mental conception of the improvement in question, as proved not merely by himself but by full and certain disclosure to another, and who, under all the circumstances of the case, proceeds with reasonable diligence to the construction of a full-sized machine embodying the improvement in working form, and that this is so although another with a later conception first fully reduces the invention to practice.

The patent act appears to provide explicitly for such cases as may arise in the courts, and it is not doubted that the same law controls interference cases in the Patent Office.

In actions for infringement of a patent one of the statutory defenses under section 4920, Revised Statutes, is that the patentee had surreptitiously or unjustly obtained the patent for that which was in fact invented by another, who was using reasonable diligence in adapting and perfecting the same. This appears to be a precise statement of the relations between Huson and Yates; but with more elaboration it may be stated this way: that if Huson had invented this improvement in April, 1891, and from that time onward was using reasonable diligence in adapting and perfecting the same, until on December 3, 1891, he had the mechanical movement, which is that part of the bed-movement in a printing-press which constitutes this invention, reduced to material form in a full-sized machine, and on that day ran it at a high rate of speed with success, and if Yates, in October, 1891, also independently invented the improvement, and in November applied for a patent, and the following 22d of March received a patent therefor, then it follows that Yates unjustly obtained the patent.

The circumstance that Yates obtained a patent is material to this discussion only so far forth as the question of fullness and certainty of proof of the allegations of Huson are concerned. Public policy and the settled practice of the Office alike forbid the issue of a second patent for the same invention in any but a clear case—clear beyond a reasonable doubt. I have given the patentee the benefit of these strong presumptions in his favor and have exacted of Huson this high degree of proof.

Again, it is urged by Yates that an applicant seeking to overthrow a patent should be estopped from setting up or taking advantage of a later date of conception than that alleged in his preliminary statement and in his testimony; that otherwise a party in interference will seek to evade his real date of conception and instead establish some date only slightly earlier than that of his opponent, thereby lessening the time which he must account for in giving excuses for delay; and it is contended that it is necessary to establish diligence from the date of his own conception. Counsel for Yates cites *Christie* v. *Seybold*, (54 O. G., 957,) and the same case on appeal in 55 Fed. Rep., 69, in support of these propositions.

The facts upon which this contention is made are that Huson set up in his preliminary statement that he conceived the invention set forth in the declaration of interference some time in the summer of 1883, and that he then made a rough sketch and explained the invention to others; that in the spring of 1891 he made a drawing and explained the invention again to others. The proofs of this early conception in 1883 are wanting, except in the statement of Huson himself. It was accordingly held in the former decision, and is now again held, that Huson failed to establish a date of conception earlier than April, 1891.

The question now is whether Huson's preliminary statement that he conceived the improvement in 1883 and his inactivity from then to 1891, when he again addressed himself to the invention, are fatal to his otherwise clear title to priority in this case. Counsel for Yates contends that Huson's preliminary statement operates by way of estoppel. It is not an estoppel by matter *in pais*, because Huson did nothing nor omitted anything upon which Yates relied in building up his own status or upon the faith of which he acted otherwise than he would. As to Yates's claim that Huson is estopped by record or by analogy to estoppel by record, it may be a proper contention in interference cases, by analogy to actions at law, that a party is estopped for the purposes of the action by a material allegation or admission, in a preliminary statement, unless it is withdrawn or amended. In *Hinsdale* v. *Larned*, and another, (16 Mass., 64-69,) it was contended by the plaintiff that the defendants, having misbehaved in managing the affairs of a bank, could not set up the act of incorporation in their defense, but must be treated as a private association, and therefore liable to the payment of the notes of the bank absolutely; but it was decided that the plaintiff could not take that ground, for it was in direct opposition to the declaration, which, in his behalf, alleged expressly that the defendants and others were incorporated, and the court held that the plaintiff was therefore estopped to allege that the defendants had no charter.

Whether the preliminary statement of a party in interference being analogous to a plea in actions at law or to the allegations of the petitioner or the respondent in a court of equity calls for the application of the strict rules of pleading is an interesting question, and, so far as I am aware, has not been decided in the Patent Office; but it is unnecessary to decide this point, and I do not decide it. The conclusive answer to all this is that Yates was not obliged to use diligence from the date of his alleged conception, no matter how early, to the time of completing his machine. It is enough that for months prior to the conception of Yates, Huson was active—diligent—in a fully satisfactory degree—diligent about the improvement itself and the embodiment of it in a machine, not merely diligent upon paper. This appears to meet the requirements of all decided cases. I am not aware of any case where an inventor was defeated by reason of inactivity terminating long before the conception of his rival and who was diligently prosecuting the invention, not only at the time his rival entered the field, but long before. Mr. Commissioner Mitchell in *Christie* v. *Seybold* enunciated the principle in conformity with this view, and the Circuit Court of Appeals gave formal and express approval to the elaborate and carefully-considered opinion of the Commissioner. It is true that in that court an expression was used (55 Fed. Rep., 77) indicating that the burden was on Seybold to show that from the time of his original conception, which antedated that of Christie, he was using reasonable diligence in adapting and perfecting his invention to practical use; but the learned court on the last preceding page laid down the doctrine in these words:

> The reasonable diligence of the first conceiver must be pending at the time of the second conception, and must therefore be prior to it;

and the court further held that it was not sufficient that the reasonable diligence of the first conceiver began only when his rival entered the field. This, however, is far from holding that the diligence of the first to conceive must be continuous from the time of such conception onward to the completion of the invention under all circumstances as matter of law.

Upon a most careful review of both the facts and the law in this case and of the elaborate brief prepared by counsel for Yates it is considered that although Yates was the first to apply for a patent, and did so prior to the completion of Huson's machine, and subsequently received a patent thereon a few days before Huson made application, Huson was the first inventor; that he was proceeding with reasonable diligence from April, 1891, to the completion of his invention on December 3, 1891, and was diligently engaged therein when Yates formed his first conception of this invention in October, 1891.

The decision of the Examiners in-Chief in awarding priority to Huson is therefore affirmed.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Northern District of Illinois.

BRUSH ELECTRIC COMPANY *v.* WESTERN ELECTRIC COMPANY, (No. 21,545.) BRUSH ELECTRIC COMPANY *v.* WESTERN ELECTRIC COMPANY, (No. 22,211.)

Decided July 24, 1895.

BRUSH—ELECTRIC LAMP OR LIGHT REGULATOR—INFRINGEMENT—CLAIMS CONSTRUED.

The claims of the patent to Charles F. Brush, No. 219,208, issued September 2, 1879, contain "the element of dissimultaneous or successive separations between the members of each pair of carbons for the purpose of forming the arc between the

pair last separated. * * * It is, in other words, the characteristic feature of this lamp—the very purpose signified by its construction—that the position of the first arc shall be determined before lighting as between the two pairs of carbon. * * * Moreover, the feature of dissimultaneous arc-forming separations—referring here to the interval of hours between the arc-forming separation of the first pair to burn and the arc-forming separation between the added pair—is not in any one of the claims." *Held* that the lamps made under Patent No. 418,758, issued January 7, 1890, and Patents Nos. 502,535 and 502,536, issued August 1, 1893, to Charles E Scribner, do not contain mechanism constructed to cause the dissimultaneous initial separation of the carbons, and therefore do not infringe the Patent No. 219,208. (*C. F. Brush Elect. Co.* v. *Ft. Wayne Elect. Light Co.*, 50 O G., 434, and *Ib.* v. *Western Elect. Light and Power Co.*, 52 O. G., 1950.)

Mr. Henry A. Seymour, Messrs. Offield, Towle & Linthicum, and *Mr. William B. Bolton* for the complainants.

Messrs. Barton & Brown for the defendants.

SHOWALTER, *J.:*

In each of these causes the ground of action is an alleged infringement of Patent No. 219,208, for an electric lamp or light regulator, issued September 2, 1879, to Charles F. Brush, said patent being the property of complainant company.

In cause No. 21,545 it is insisted that electric lamps made by defendant company pursuant to Patent No. 418,758, issued to Charles E. Scribner January 7, 1890, and afterward assigned to defendant company, infringe the said Brush patent.

In cause No. 22,211 it is insisted that lamps made by defendant company pursuant to Patent No. 502,535 and lamps made by defendant company pursuant to Patent No. 502,536—each of said last-named patents having been issued to said Charles E. Scribner August 1, 1893, and afterward assigned to said defendant company—also infringe said Brush patent.

Prior to the first of these suits the complainant commenced a suit in the Federal circuit court at Toledo, Ohio, for an alleged infringement of said Brush patent by lamps made by this defendant company under said Patent No. 418,758 and used or dealt in by the defendants in that suit. It appears that this defendant assisted the defendants in that suit by paying the expenses, or some part thereof, incurred therein by or on behalf of said defendants; but this defendant was not a party to the record in the Ohio litigation. The jurisdiction of that court did not, nor could its decree in favor of complainant rendered pending the first of the causes in this court, in any way conclude this defendant company. The records here, even that in the first of the causes, contain a mass of evidence which was not before the court at Toledo. But I do not understand complainant's counsel to insist that either of these causes can be determined on the theory of a prior adjudication. He merely insists that the opinion of the court in the Ohio case may be determinative not only of one but of both the present causes.

There are seven claims in the said Brush patent. On the contention of complainant an infringement of each of these numbered from 1 to 6 is shown in each of the present causes; but this contention rests upon a construction of the Brush patent, extending in common to each of said claims, which is earnestly disputed by the defendant. The controversy, so far as it involves in common each of the six claims as contested in each suit, hinges upon this one point of construction.

If two carbon pencils placed so that their points touch, and thus being part of an electrical circuit, be slightly parted at their points, a current will continue to flow over the open space, burning said points and forming between them an arc of brilliant white light. This arc will persist while the current continues to flow, till, owing to the consumption of the pencil-points, the distance spanned becomes so great that the current, unable to overcome the resistance, ceases, the carbon points stop burning, and the light disappears.

If two parallel pairs of carbon pencils, with the points of each pair touching, are placed in an electrical circuit, so that in case either pair were removed the current would still pass through the other, such current will divide between the pairs. If such pairs be now separated at once and by a common and uniform movement, the arc will appear between the points of but one pair. It is not practical to make the points of the carbons impinge so that the resistances through each pair shall be mathematically equal, nor is it practical to separate the points so that the parting on one side shall be identical in time with that on the other. The reason why the arc forms between one pair only may be said to be that the other pair in fact parts first, thus throwing the entire current through the pair between which the arc forms.

While the partings may be in appearance simultaneous, they are not so in reality; or if we say the partings are in fact simultaneous then the resistance, being accidentally greater on one side, determines the formation of the arc on the other.

On May 7, 1878, complainant's assignor, Brush, patented a contrivance for feeding one carbon pencil toward the other, so as to preserve a practically uniform distance or length of arc between the burning points till the carbons should be consumed.

In this invention the carbons were arranged in a vertical line, with their points touching. The lower carbon was fastened by a clamp in a holder projecting from the base of the lamp-frame. The upper carbon was held in a clamp on the lower extremity of a holder which extended downward from the upper portion of the lamp-frame through a tubular soft-iron core of a solenoid, the helix of which was included in the main electric circuit, whereby the lamp was actuated, thence through a flattened loosely-fitting ring D, thence through a horizontal platform or floor, on which said ring rested when the lamp was not in operation. To the lower extremity of this core was attached a lifter C', a projection at the lower end of which extended under one side of said ring D. When the current passed through the carbons, the lifter, engaging said ring, tilted the same, so that it clamped and lifted the upper carbon rod, thus separating the carbon points, so that the arc was formed. As the resistance grew less by the shortening of the carbon rods in burning the current became less energetic and the upward pull of the lifter on the edge of the ring-clamp D relaxed, so that the upper carbon rod was permitted to pass imperceptibly downward,

whereupon the upward pull became more energetic, the increasing energy of the current causing the said ring-clamp D to tighten and hold the upper carbon in the new position. Thus the process went on until the upper carbon was so far consumed that the holder could descend no farther, the farther descent of the rod being stopped by an enlargement at its upper end, which at that period in the operation of the lamp engaged with the upper portion of the lamp-frame. The space between the carbon stumps then increased without further feeding until the current could no longer overcome the resistance, and the lamp ceased to burn.

On September 2, 1879, Brush secured, as before stated, the patent in suit. To his invention, as above described, he added a second pair of carbons, a second pair of carbon-holders, and a second movable or feeding carbon-rod. Each carbon-rod passed down through its ring-clamp, (marked the one C and the other C' in the new patent.) The lifter (marked D in the new patent) was triangular in form, with a stirrup at the top, in which was fastened a lever, which was to be operated by magnetic attraction. At each lower corner of said lifter D was an opening formed by two short projections, one above the other, each opening inclosing the edge of its appropriate ring-clamp C or C'. The lower arm or section of one of these openings was below the plane of the corresponding part of the opposite opening, so that, when the current passed through the carbons, as the lifter D was pulled up it first engaged the ring clamp of the added carbon-rod, separating the added pair of carbons, and after an interval of continuous movement the ring-clamp of the other carbon-rod was engaged by the other corner of said lifter D. The two rods continued thence to move together until the lifter D stopped, and the arc was formed between the carbons which were last separated. The latter pair of carbons being fed together and continuing to burn until consumed, the added pair of carbons then part and form the arc and continue to burn until consumed in manner as stated in said first patent to Brush. After the first pair of carbons have been consumed and have ceased to burn, the lamp in parting and burning the remaining pair is substantially identical with the invention described in said prior patent.

In 1874 one Mathias Day, acting on the observed fact above stated, that when two parallel pairs of carbons disposed in the same circuit so that the current divides between them are separated simultaneously an arc forms between but one pair, constructed his lamp, wherein he consumed two pairs of carbons in alternate or reciprocal succession. This lamp, however, failed of commercial success because in such parallel carbons so equally and simultaneously separated the arc persists but a short time in one pair before alternating to the other.

The ideas of the Brush invention in suit were apparently these:

First. By separating the added pair of carbons first he threw the entire current down the other pair, and thus determined that the arc should form between said other pair, or pair last separated.

Second. By separating the added pair at a greater distance apart than the other pair he avoided accidental alternation in the arc between the two pairs.

Third. By permanently holding the added pair in such separated relation the first pair could be fed together and consumed without stop.

In his specification Brush says:

My invention comprehends, broadly, any lamp or light regulator where more than one set of carbons are employed, wherein—say in a lamp having two sets of carbons—one set of carbons will separate before the other.

Again:

The operation of my device, as thus far specified, is as follows: When the current is not passing through the lamp, the positive and negative carbons of each set A A' are in actual contact. When, now, a current is passed through the lamp, the magnetic attraction of the helices E will operate to raise the lifter D. This lifter, operating upon the clamps C and C', tilts them and causes them to clamp and lift the carbon-holders B B', and thus separate the carbons and produce the voltaic-arc light; but it will be especially noticed that the lifting and separation of these carbons is not simultaneous One pair is separated before the other, it matters not how little nor how short a time before. This separation breaks the circuit at that point, and the entire current is now passing through the unseparated pair of carbons A'; and now when the lifter, continuing to rise, separates these points, the voltaic arc will be established between them and the light thus produced.

As already stated, after the first pair of carbons has been consumed, so that the first carbon rod, holding the stump of the burned carbon, ceases to feed, and the added pair of carbons thereupon part and burn, the lamp of the new patent, the special features of the new invention being now superfluous, is substantially identical with the lamp of said first patent.

In the new patent—that in suit—Brush does not in the specification describe or in the claims refer to the manner of burning the added pair as being a part of his new invention.

During the burning of the added pair the lamp has become substantially the invention protected by the said first patent.

The patentee says further in the specification of the patent in suit:

The lifter D, in the present instance, is so formed that when it is raised it shall not operate upon the clamps C C' simultaneously, but shall lift first one and then the other, (preferably the clamp C first and C' second, for reasons which will hereinafter appear.) This function of dissimultaneous action upon the carbons or their holders, whereby one set of carbons shall be separated in advance of the other, constitutes the principal and most important feature of my present invention.

In his drawings and in describing the mechanism and the action thereof of the patent in suit Brush shows only two pairs of carbons; but in other places in his specification and in his claims quoted below he speaks of two or more pairs of carbons. It will be seen that by affixing additional arms to the lifter D additional clamp-rings holding additional carbon-rods and pairs of carbons might be operated. In such case the clamp-rings would be engaged in rapid succession by the upward movement of the lifter D, and the arc would form, as before, between the pair of carbons last separated, so that in such case, as Brush puts it in his claims, the separations would take place "dissimultaneously or successively." The word "successively" is here synonymous with "dissimultaneously," the latter term having been coined to imply more definitely the unity of movement which characterizes the separations, whether between the members of two pairs or between the members of more pairs than two. I have said that the clutch-lever D might be made to effect separations between the members of more than two pairs; but for the purpose of thinking and reasoning about the case we do not

go astray if we think of one pair to be last separated and then burned and of one added pair to be more widely separated and thereupon maintained in such separated relation pending the burning of the other pair. The claims in controversy are as follows:

1. In an electric lamp, two or more pairs or sets of carbons, in combination with mechanism constructed to separate said pairs dissimultaneously or successively, substantially as and for the purpose specified.

2 In an electric lamp, two or more pairs or sets of carbons, in combination with mechanism constructed to separate said pairs dissimultaneously or successively and establish the electric light between the members of but one pair, (to wit, the pair last separated,) while the members of the remaining pair or pairs are maintained in a separated relation, substantially as shown.

3. In an electric lamp having more than one pair or set of carbons, the combination, with said carbon sets or pairs, of mechanism constructed to impart to them independent and dissimultaneous separating and feeding movements, whereby the electric light will be established between the members of but one of said pairs or sets at a time, while the members of the remaining pair or pairs are maintained in a separated relation, substantially as shown.

4. In a single electric lamp, two or more pairs or sets of carbons, all placed in circuit, so that when their members are in contact the current may pass freely through all said pairs alike, in combination with mechanism constructed to separate said pairs dissimultaneously or successively, substantially as and for the purpose shown.

5. In an electric lamp wherein more than one set or pair of carbons are employed, the lifter D or its equivalent, moved by any suitable means, and constructed to act upon said carbons or carbon holders dissimultaneously or successively, substantially as and for the purpose shown.

6. In an electric lamp wherein more than one pair or set of carbons are employed, a clamp, C, or its equivalent, for each said pair or set, said clamps C adapted to grasp and move said carbons or carbon-holders dissimultaneously or successively, substantially and for the purpose shown.

The observable interval between the point of time at which the separation between the added pair of carbons takes place and the point of time at which the separation of the other pair takes place—the purpose being to determine the arc between the pair last separated—is the dissimultaneousness found in each of said six claims.

With all respect for the learned writer of the opinion in the Toledo case and for the learned counsel for complainant, the formula of words "dissimultaneous arc-forming separation," does not carry any definite meaning. The adjectives "simultaneous" or "dissimultaneous" are words of comparison. The former means that two or more occurrences or happenings are identical in time; the latter, that they are successive—that is to say, with an interval between each two in succession. The arc-forming separation which takes place between the first pair of carbons to burn and the arc-forming separation which takes place several hours later between the added pair of carbons are certainly successive and, loosely speaking, dissimultaneous; but these separations lack the unity or continuity of movement implied in the term "dissimultaneous" when used in this patent. As already said, Brush coined the word "dissimultaneous" to express the momentary but observable interval—the slight but noticeable non coincidence in time—between the separation of the added pair of carbons and the separation of the other pair in a unitary and continuous movement due to mechanism as invented by him and described in the patent in suit, in contrast with an apparently simultaneous separation due to any mechanism appropriate for the latter purpose.

The patentee said further in his specification:

I do not in any degree limit myself to any specific method or mechanism for lifting, moving, or separating the carbon points or their holders, so long as the peculiar functions and results hereinafter to be specified shall be accomplished.

The specification and claims were evidently prepared with the idea that the mode of movement—to wit, the rapid, successive, and continuous separations between the pairs of carbons terminating in the arc between the pair last separated—could be secured to Brush regardless of the mechanism by which this mode of movement should be produced. In *Brush Electric Company* v. *The Fort Wayne Electric Light Company* Judge Gresham held, answering the contention that the first, second, third, and fourth claims were for functions or results, and hence void, that mechanism such as described in the drawings and specification, or a substantial equivalent, was an essential element in each of said claims. I am not called on to determine as between these constructions; but the conclusion reached apparently in the Toledo case, that no one of these claims contains the element of dissimultaneous or successive separations between the members of each pair of carbons for the purpose of forming the arc between the pair last separated, seems to me unsound.

The patentee says:

In the lamp as shown in the drawings the support K is in the form of a tube surrounding the carbon-holder B, and this support K is made of such a length that when the carbons A' shall have been sufficiently consumed a head upon the carbon holder B will rest upon the top of the support K, whereby the weight of the carbon-holder B and its support K shall at all times and under any circumstances be supported by the lifter D.

In other words, and without going again over the mechanism, the lamp is constructed so that the carbons A shall first burn. By reason of the support K being carried on the upper carbon-holder of the first pair of carbons to burn and of the greater distance between the two carbons of the added pair said added pair could not be burned first. It is, in other words, the characteristic feature of this lamp—the very purpose signified by its construction—that the position of the first arc shall be determined before lighting as between the two pairs of carbons; yet, in the opinion in the Toledo case this is declared to be "a wholly immaterial and useless feature."

Even if it were, in fact, immaterial which pair of carbons burned first—supposing it to be true that if the carbons were separated simultaneously instead of dissimultaneously the lamp would still operate—the fact remains that the patentee took from the Government claims in which the dissimultaneous separations are the special feature. Moreover, the feature of dissimultaneous arc-forming separations—referring here to the interval of hours between the arc-forming separation of the first pair to burn and the arc-forming separation between the added pair—is not in any one of the claims. In order to make out a case of infringement, the former element must be gotten out of and the latter must be gotten into each claim. This, in my judgment, cannot be done. The lamps made under Patent No. 418,758 do not contain mechanism constructed to cause the dissimultaneous initial separations of the carbons, nor do the lamps made under Patent No. 502,535, nor do the lamps made under Patent No. 502,536. I hold, therefore, that no infringement is made out in either suit.

The order will be in each case that the bill be dismissed for want of equity.

THE

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United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 72.—No. 9. TUESDAY, AUGUST 27, 1895. PRICE—$5 per year.

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It is hereby directed that in the printing of claims of applications for patents the punctuation of the claims as made by applicants be strictly followed, and that the punctuation of the specification made by applicants be not departed from except to cure a manifest absurdity.

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Issue of August 27, 1895.

Patents	394—No. 545,042 to No. 545,435, inclusive.
Designs	26—No. 24,629 to No. 24,654, inclusive.
Trade-Marks	29—No. 26,986 to No. 27,014, inclusive.
Labels	None.
Prints	None.
Reissues	None.
Total issue	449

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APPLICATIONS UNDER EXAMINATION.

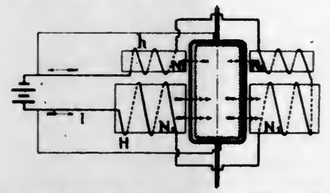
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GRANTED AUGUST 27, 1895.

545,042. HYSTERESIS-COMPENSATOR. BRUNO ABDANK-ABAKANOWICZ, St. Maur, France. Filed Mar. 17, 1893. Serial No. 466,407. (No model.) Patented in France Mar. 6, 1893, No. 228,400, and in Germany Mar. 22, 1893, No. 78,937.



Claim.—1. The method of correcting or neutralizing the effect of hysteresis in electro-magnetic apparatus, which consists in employing in such apparatus a main and an auxiliary magnetic circuit and neutralizing the effect of the residual magnetism of the first circuit by that of the second.

2. In combination, an electric circuit, and an electro-magnetic apparatus therein having a plurality of cores acting in opposition to each other, such cores having different magnetic material and so arranged that the resultant or differential effect of the cores actuates the apparatus and corrects or compensates for hysteresis, substantially as described.

3. In combination, an electric circuit, and an electro-magnetic apparatus therein having a plurality of cores acting in opposition to each other and of different magnetic retentiveness; the magnetic circuits of the apparatus being so disposed that the differential action of the cores furnishes the effective actuating force of the electro-magnetic apparatus, and neutralizes hysteresis effects, substantially as described.

4. In combination, in an electro-magnetic apparatus, a plurality of opposing cores having relatively different hysteresis coefficients and actuating the moving part or parts of the apparatus by the difference between their opposed effects, and means for energizing the cores.

5. The combination, in an electro-magnetic apparatus, of electro-magnets having respectively cores of soft iron and of hard iron or steel, the cores being arranged to act upon a moving part in opposition to each other, and means for energizing the cores.

545,043. HOOK. WILLIAM D. ATTWOOD and WILLIAM B. ST. JOHN, New Edinburg, Ark. Filed Apr. 5, 1895. Serial No. 544,597. (No model.)

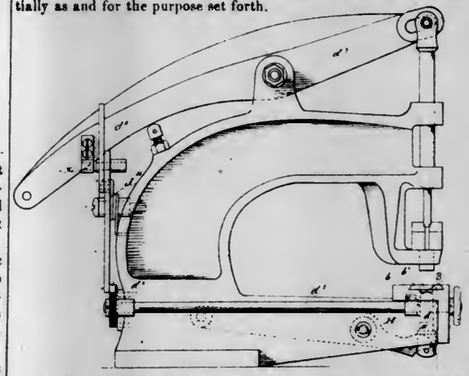


Claim.—The herein described quick action snapless hook made of a single piece of wire, formed with a loop or ring at one end, through which the rope is adapted to be passed, extending outwardly therefrom, bent back upon itself at one point and again bent forwardly, the two bends made therein being at right angles to one another, whereby the rope passing through said ring or loop may be passed around a supplemental hook and form a lock for holding said hook in place, substantially as described.

545,044. SETTING-MACHINE. WILLIAM J. AYER, Boston, Mass., assignor to the Standard Rivet Company, of New Hampshire. Filed Mar. 28, 1892. Serial No. 426,833. (No model.)

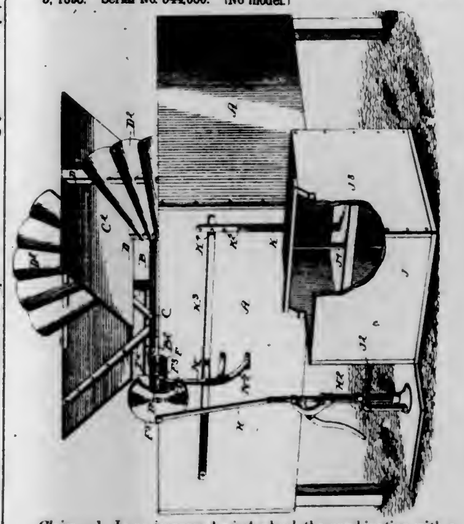
Claim.—1. The combination of a reciprocating anvil-punch; a block formed with a strip passage; an intermittently feeding mechanism for the strip; a die-plate having a perforation for the play of the anvil-punch, and a reciprocating driver, all organized and operating to set a fastening with its clinch in a washer severed from the strip fed through the strip-passage, substantially as set forth.

2. The combination in a setting machine, of a horn; a block having a strip-passage; an intermittently acting feeding mechanism for the strip; a tension device for the strip-passage; a female die-plate; a reciprocating anvil-punch and a reciprocating anvil, all substantially as and for the purpose set forth.



3. In a setting machine, the combination of a reciprocating driver; actuating mechanism therefor; and an intermittently acting feeding mechanism for the strip with means, substantially such as described, for connecting the driver mechanism with the feed actuating mechanism; a strip passage for the strip feed and a reciprocating anvil-punch, all combined and operating substantially as and for the purpose set forth.

545,045. WINDMILL. WALTER BATES, Collins, Iowa. Filed Apr. 5, 1895. Serial No. 544,686. (No model.)



Claim.—1. In an improved wind wheel the combination with a rotatable shaft, of a series of blades parallel with the shaft, and a series of radial feathered blades and means for protecting part of the wheel from wind pressure, for the purposes stated.

2. An improved wind wheel, comprising a rotatable axle, a series of radial arms fixed thereto, paddles fixed to the radial arms parallel with the axle, braces between said paddles, a series of feathered blades secured to said braces between the paddles, and a wind brake surrounding the lower portion of the wheel, for the purposes stated.

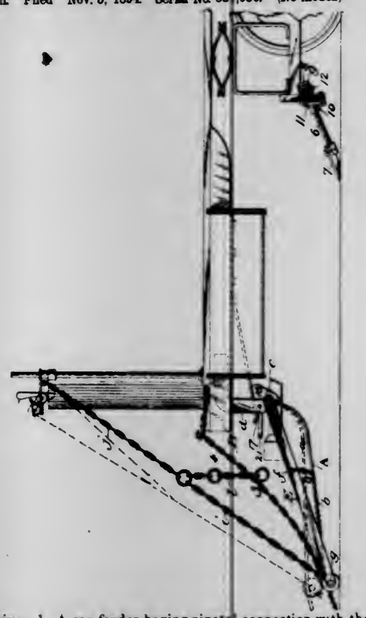
545,046. COLORS. WILHELM BECKMANN, Munich, Germany. Filed Sept. 28, 1894. Serial No. 524,321. (No specimens.)

Claim.—1. The process of making water colors or paints, which consists in adding to a binding material consisting of a mixture of water, gum arabic and linseed oil, glycerine, wax, tallow and green soap, and then boiling the same until it becomes a thin fluid mixture, and finally, after cooling, mixing the same with colors.

2. The process of making colors or paints, which consists in first mixing together water adhesive material, oil, glycerine, wax, tallow and green soap, then boiling the mixture, and finally adding the colors after the mixture has cooled, substantially as set forth.

3. A paint comprising water, adhesive material, oil, glycerine, wax, tallow and green soap, in combination with coloring material substantially as set forth.

545,047. STREET-CAR FENDER. RICHARD A. BREUL, Bridgeport, Conn. Filed Nov. 5, 1894. Serial No. 527,956. (No model.)



Claim.—1. A car fender having pivotal connection with the car and adapted to automatically disconnect its pivots from their mountings on the fender striking an object offering great resistance, substantially as specified.

2. In combination with a car, and supports pendent therefrom, and having notches in their rear edges, of a fender having pivots seated in the said notches, and retaining devices to hold the said pivots in their seats under normal conditions and adapted to yield and permit the said pivots to disengage themselves from the said supports on the fender striking an object offering great resistance, substantially as and for the purpose set forth.

3. In combination with a car, and supports having notches in their rear edges, of a fender having pivot supports seated in the said notches, and counterbalanced retaining dogs to hold the said pivots in their seats under normal conditions, and adapted to yield to permit the said pivots to disengage themselves from their supports on the fender meeting with an object offering great resistance, substantially as specified.

4. In combination with a car, and supports having notches in their rear edges, of a fender having pivot supports seated in the said notches, and pivoted counterbalanced dogs having their ends recurved and adapted to engage with the said pivots on opposite sides of the said notched supports, whereby an even bearing is obtained for the said pivots, substantially as set forth.

5. The combination with a car, and pendent supports having notches in their rear edges, of a fender having pivot supports seated in the said notches, dogs pivoted to the said pendent supports and having their lower ends recurved and having lateral extensions, and springs engaging with the said lateral extensions and exerting a pressure thereon to normally hold the dogs in position to close the open end of the said notches and retain the pivot supports therein, substantially as and for the purpose specified.

6. The combination with a car, of side bars pivoted at their rear ends to the car and having their front ends extended beyond the front end of the car, a cross bar connecting the front ends of the said side bars and provided with rolling supports, and a fender pivoted to the end of the car and adapted to fold independently of the side bars and supported at its front end when let down by the said cross bar, substantially as set forth.

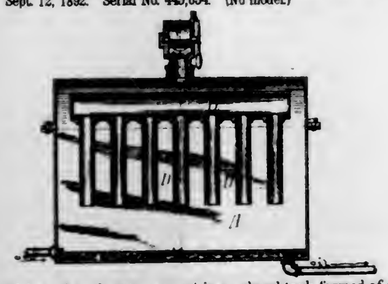
7. In a car fender the combination of, an approximately U-shaped frame pivoted to the front end of the car, pivoted side braces, front and a middle cross bar connecting the side braces, and a netting attached at its front and rear edges to, respectively, the front bar of the frame and the middle cross bar and at its ends to the side bars of the frame, the rear portion of the said netting curving up abruptly, substantially as described for the purpose specified.

8. The combination with a pivoted car fender, of side supports connecting the front portion of the fender with the dash board, a cross connection attached at its ends to the side supports midway of their ends, and a suspending and releasing mechanism to normally deflect the side supports from a straight line to hold the front end of the fender a proper distance above the road bed, substantially as set forth.

9. The combination with a car, and a fender projecting in advance thereof, of a supplemental fender for the draw bar composed of side chains, one on each side of the said draw bar and a cross chain above the draw bar connecting at its ends with the side chains, substantially as set forth.

10. A wheel fender comprising a plate attached to a cross bar of the truck and having inclined tubular guides, a shield, parallel bars attached at one end to the shield and working through the said guides, and having stops on their upper or rear ends, and a flat spring bearing against the rear ends of the bars to yieldingly hold the shield in operative position, substantially as described for the purpose specified.

545,048. CARBURETOR. CHARLES BRUNNER, Peru, Ill. Filed Sept. 12, 1892. Serial No. 445,654. (No model.)

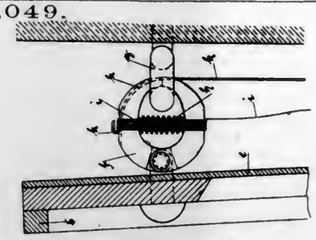


Claim.—A carburetor comprising a closed tank formed of upper and lower sections suitably secured together, a pipe entering the lower section near its bottom for supplying liquid hydrocarbon, an overflow opening near said bottom for determining the maximum depth of said liquid hydrocarbon, a lateral opening in the upper section, a tubular projection of said upper section surrounding the opening, a longitudinal header pipe in the upper portion of the tank extending substantially the full length thereof, a plurality of depending pipes attached at their upper ends to the header pipe with their ends open and terminating at a distance from the bottom of the tank, a lateral extension of said header pipe with its open outer end fitting within the tubular projection surrounding the opening in the upper portion of the tank and serving thereby to support the header pipe and the depending pipes connected thereto, an outlet opening in the top of the tank, a T pipe connected with said opening and constructed to form a valve casing, an oscillating valve plate pivoted in the angle of the T pipe and operating to close one branch of the same, a handle or pointer affixed to the pivot of the valve plate without the walls of the T pipe, and a graduated scale on the outside of the casting adjacent to the pointer, substantially as described.

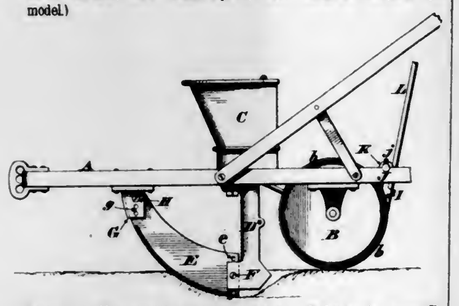
545,049. SELF-ACTING FIRE-GUARD FOR SHAFTS. KARL BUSSE, Lüneburg, Germany. Filed Sept. 21, 1894. Serial No. 523,714. (No model.)

Claim.—The combination with a pair of jaws attached to a trap-door, and an eye with which the jaws are normally engaged, of a combustible cord wound about said jaws to hold them in their position of engagement.

545,049.



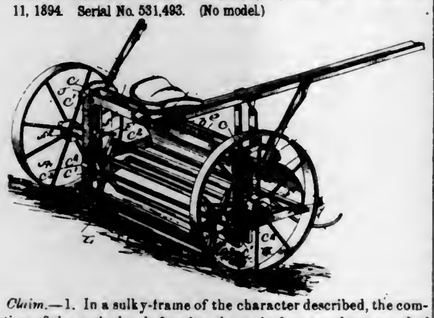
545,050. SEED-DRILL. JAMES CAMPBELL and ALBERT M. CAMPBELL, Harrison, Ohio. Filed Apr. 8, 1895. Serial No. 544,934. (No model.)



Claim.—1. The combination, in a seeder, of the grain spout D, having a forwardly-converging extension, grooved vertically at *d*; a bracket G, furnished with a series of perforations *g*; a runner E having a hole *e'*, near its front end, and a series of holes *e* near its rear ends; and fasteners F, H, for securing the runner to said spout and bracket, all as herein described, and for the purpose set forth.

2. A seed-planting implement provided with a swinging scraper I, having journals J, J', and a pair of lugs *j j'*, projecting from each journal, in combination with fasteners K, K', applied to the side-bars A, A', of the implement, and fitting between said lugs, which devices *J j j'*, *J j j'*, K, K', are the sole means for uniting the rear ends of said side-bars, as herein described.

545,051. SULKY-FRAME FOR AGRICULTURAL IMPLEMENTS. JOHN R. CARSON and JACKSON H. DENMAN, Jr., Chase, Tex. Filed Dec 11, 1894. Serial No. 531,493. (No model.)



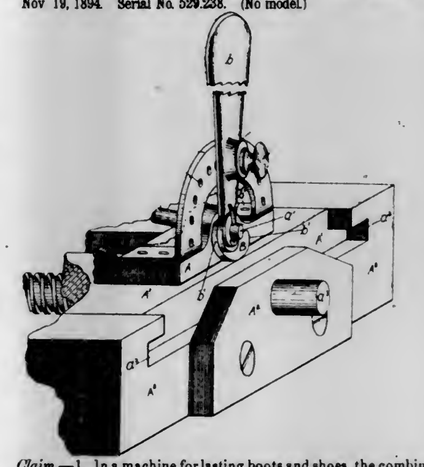
Claim.—1. In a sulky-frame of the character described, the combination of the arched axle forming the main frame and composed of two inverted U-shaped frames arranged in parallel relation and between which are mounted the wheels, bearings arranged at the lower ends of said frames for attachment of a cotton chopper plow or other implement and a draft frame connected with said lower ends, substantially as shown and described.

2. In a sulky-frame of the character described, the combination of a divided arched axle having its side ends separated by blocks and forming ways, the dovetailed sliding boxes mounted in said ways and adjustably connected to said blocks by pivoted arms, substantially as shown and described.

3. In a sulky-frame of the character described, the combination of the divided arched axle having bearings arranged at its lower ends for attachment of the several implements, the draft-frame composed of two frames attached to said lower ends and secured to the tongue, the draft beam D uniting said two frames to form the draft frame and adapted to receive the end of a plow or cultivator beam.

4. In a sulky-frame of the character described the combination of the divided arched axle, the tongue secured between the divisions of the axle and connected to the draft frame and the draft frame and the beam D, substantially as shown and described.

545,052. LASTING MACHINE. FRANK CHASE, Waterville, Me., assignor to the Chase Lasting Machine Company, Boston, Mass. Filed Nov 19, 1894. Serial No. 529,238. (No model.)



Claim.—1. In a machine for lasting boots and shoes, the combination of a tilting, reciprocating lasting-carriage with a tilter-block of varying operative dimensions and reciprocating with the lasting-carriage and means, substantially such as described, for adjusting the tilter-block and securing it in an adjusted position; said carriage being formed with a rest for the tilter-block and adjustment of the tilter block tilting the lasting carriage into a desired position, all substantially as and for the purpose set forth.

2. In a machine for lasting boots and shoes, the combination of a tilting, reciprocating lasting-carriage with a tilter-block; and a rest therefor moving with the carriage; a handle for the tilter-block and means for securing the tilter-block in desired position; said block being of varying operative dimensions and adjustable to tilt the lasting-carriage, all substantially as and for the purpose set forth.

3. In a machine for lasting boots and shoes, the combination of a tilting, reciprocating lasting-carriage, with a cam-shaped tilter-block pivoted on the carriage; a perforated locking-plate attached to the carriage; an arm projecting from the cam-shaped tilter-block and a spring controlled locking-bolt mounted in said arm, the arm being movable over the face of the locking-plate and the spring bolt entering a perforation in the locking-plate, whereby the lasting-carriage is tilted into and secured in any desired position; substantially as and for the purpose set forth.

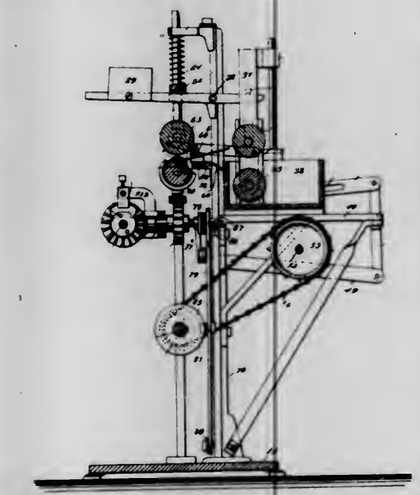
4. As a new article of manufacture, the herein described attachment for machines for lasting boots and shoes, said attachment comprising a perforated locking-plate; a tilter-block of varying operative dimensions; a handle for said block; a pivoted connection for said block, the pivoted connection being extended to form the lengthwise pin on which the carriage rocks sidewise, and a spring-controlled locking-bolt mounted in said handle, substantially as and for the purpose set forth.

545,053. TUBE-FORMING MACHINE. HERBERT E. CLARK, New York, N. Y., assignor to the Union Paper Company, same place. Filed Sept. 8, 1894. Serial No. 522,459. (No model.)

Claim.—1. A tube-forming machine, comprising oppositely arranged tube-forming rollers, one having a clamping device thereon, a pair of pasting rollers adjacent to the tube-forming rollers, and mechanism, for automatically separating the pairs of rollers, substantially as described.

2. A tube forming machine, comprising a tube forming roller, having a clamping device thereon, a bearing roller opposite the tube forming roller, spring-pressed arms carrying the boxes of the bearing roller, a lever mechanism for automatically raising the arms, a pair of separable pasting rollers arranged opposite the tube-forming and bearing rollers, weighted levers to move one of the pasting rollers in its bearings, and an operative connection between the weighted levers and the bearing roller shifting mechanism whereby the movable bearing roller and the movable pasting roller are simultaneously but oppositely moved, substantially as described.

3. A tube-forming machine, comprising a revoluble tube roller, a clamping device thereon, a second roller opposite the tube roller and moving in relation thereto, a guide in front of the tube roller, pasting rollers movable in relation to each other and arranged in front of the guide, and a lever mechanism for moving each pair of rollers in relation to each other, substantially as described.



4. The combination, with the tube roller, of the bearing roller above it, the pasting rollers one mounted in stationary and the other in vertically movable bearings, the spring-pressed shafts carrying the bearing tube roller, slide bars carrying the journals of the pasting roller, and levers and counterbalances for simultaneously moving the bearing roller and one of the pasting rollers, substantially as described.

5. In a tube-forming machine, the combination with the longitudinally recessed tube roller having a plate overlapping the said recess, of a clamping bar held in the recess and provided at intervals throughout its entire length with wedges, a second bar held behind the clamping bar and provided with wedges to engage those of the clamping bar, and means for longitudinally moving the inner bar, substantially as described.

6. The combination, with the tube roller having a longitudinal recess therein and the plate or jaw overlapping the said recess, of the spring-pressed clamping bar adapted to impinge on the jaw or plate and provided with wedges on its inner side, a second clamping bar arranged behind the first and provided with wedges to engage those of the outer clamping bar, and a sleeve slidable on a reduced end of the roller and adapted to engage the inner clamping bar, substantially as described.

7. The combination, with the tube roller, having a longitudinal recess, a reduced end and a plate or jaw overlapping the recess, of the outer and inner clamping bars in the said recess, means for forcing the bars outward by the longitudinal movement of the inner bar, the sleeve on the reduced end of the roller, the said sleeve being connected with the inner bar, and the swinging bearing arm adapted to engage the sleeve, substantially as described.

8. The combination with the tube roller and the clamping device and ejecting mechanism thereon, of the swinging bearing arm arranged near the end of the roller to work the clamping device, the double grooved cam wheel on the driving shaft of the machine, the cam lever having a cam arranged to alternately enter the grooves of the cam wheel, and an operative connection between the cam lever and the bearing arm, substantially as described.

9. The combination, with the tube roller and its ejecting mechanism, of a second roller near the end of the tube roller journaled at right angles to the tube roller, and means for rotating the second roller by the movement of the ejecting mechanism, substantially as described.

10. The combination with the tube roller and the ejecting fork, of the rack bar forming the shank of the fork, the gear wheel meshing into the rack bar, and an automatically reversing clutch controlling the movement of the gear wheel, substantially as described.

11. The combination, with the ejecting fork and its rack bar, of the pinion geared to the rack bar, a countershaft, oppositely arranged pinions loose on the countershaft and geared to the shaft of the first pinion, a clutch sleeve keyed to the countershaft to slide between the pinions, interlocking pins on the clutch sleeve and the pinions on the countershaft, and automatic mechanism for shifting the clutch sleeve at each revolution of the countershaft, substantially as described.

12. The combination, with the ejecting fork and its rack bar, of the pinion geared to the rack bar, the countershaft, the oppositely arranged pinions loose on the countershaft and geared to the shaft of the first pinion, a clutch sleeve slidable on the countershaft, interlocking pins on the clutch sleeve and the pinions near it, a slide rod connected with the clutch sleeve, a movable lever plate to move the slide rod, and a stud on one of the pinions of the countershaft to engage the lever plate, substantially as described.

13. The combination, with the tube-forming roller, the ejecting mechanism and the driving shaft, of sprocket wheels loose on the driving shaft and connected respectively with the tube-forming roller and the ejecting mechanism, a clutch device to lock the sprocket wheels to the driving shaft, a shipper to release the clutches, and cams on the sprocket wheel to work the shipper, substantially as described.

14. The combination, with the tube-forming and ejecting mechanisms, of the driving-shaft, the sprocket wheels loose on the shaft and connected respectively with the said mechanisms, pulleys rigid on the driving shaft, slide bolts mounted in the pulleys to engage the sprocket wheels, a shipper having arms to engage and release the slide bolts and striking arms to move it, and cams on the sprocket wheels to engage the striking arms of the shipper, substantially as described.

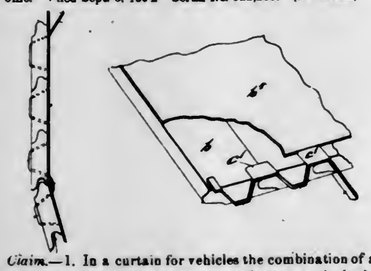
545,054. BUCKLE. LUCILE CLAS, Milwaukee, Wis. Filed June 25, 1894. Serial No. 515,632. (No model.)



Claim.—1. A double grip buckle composed of two sections each having two cross bars, one of which is located between the cross bars of the other section and has a gripping edge or face opposed to the gripping edge or face of the outer bar of that section, one section being formed or provided at the sides with parallel guides movable with the section of which they form part and in which the sides of the other section are held and adapted to slide, whereby the sections are held in parallel planes and the opposing cross bars are prevented from spreading transversely to the longitudinal movement of the sections, substantially as and for the purposes described.

2. A double grip buckle composed of two sections having opposing pairs of approximately equi-distant cross-bars arranged in approximately the same plane and serving as stops to prevent the separation of the sections, one cross bar of each section being located between the cross bars of the other section, and one section being formed or provided at the sides with parallel guides movable with the section of which they form part and in which the sides of the other section are held and adapted to slide, substantially as and for the purposes described.

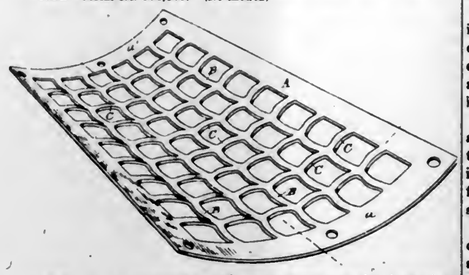
545,055. CURTAIN FOR VEHICLES. JAMES R. COTTON, Dayton, Ohio. Filed Sept. 6, 1894. Serial No. 522,293. (No model.)



Claim.—1. In a curtain for vehicles the combination of a flexible sheet b^4, with a series of slats cemented thereto, each slat having its bottom edge provided with a concave groove and its top edge with a convex projection adapted to interlock with the groove of the adjacent slat, and the ends of each slat provided with two convergent slots, a strip of flexible material c passed back and forth through each slat in the convergent slots, the edge of the strip of flexible material projecting beyond the end of each slat substantially as described.

2. In a curtain for vehicles the combination of slats, each having its bottom edge provided with a concave groove and its top edge with a convex projection, and the ends of each slat provided with two convergent slots, with a strip of flexible material c passed back and forth through each slat in the convergent slots, the edge of the strip of flexible material projecting beyond the end of each slat substantially as described.

545,056. SCREEN. GEORGE W. CROSS, Pittston, Pa. Filed Dec. 8, 1894. Serial No. 531,189. (No model.)

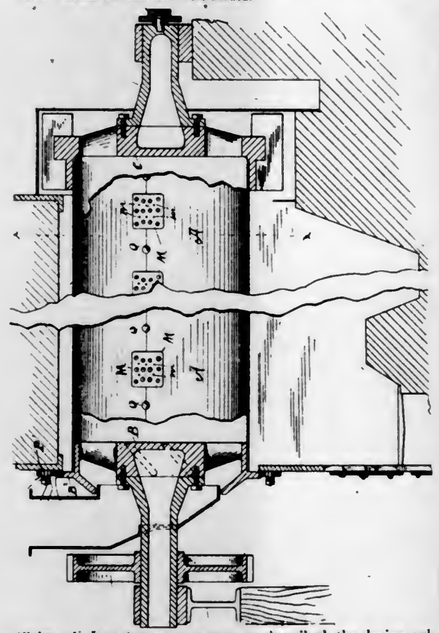


Claim.—1. A screening surface having rectangular interstices bounded by longitudinal and transverse webs, said transverse webs being continuous and sinuous in form, and each convex portion of said transverse webs being located between two adjacent interstices, substantially as described.

2. A screening surface provided with rectangular interstices, the longitudinal webs between such interstices being concave and the transverse webs being sinuous or undulatory, the convexities of said transverse webs being located between two adjacent interstices, substantially as described.

3. A screen segment having imperforate margins, the interstices in said segment being bounded by longitudinal and transverse webs, the former being concave between the interstices and the latter being continuous and undulatory between said margins, and the convexities thereof being located between two adjacent interstices, substantially as described.

545,057. MECHANICAL DRIER. FRANKLIN D. CUMMER, Cleveland, Ohio, assignor to Eliza E. Cummer, same place. Filed May 14, 1891. Serial No. 392,757. (No model.)



Claim.—1. In a drying apparatus, as described, the drying cylinder, the spider in the induction end of the cylinder and an annular inclined flange at the outer edge of said spider, and the breeching through which the material is fed to the cylinder extending within said flange and fitting closely about the edge thereof, substantially as set forth.

2. The cylinder described, and a series of parallel longitudinal lifting blades in said cylinder of different widths, substantially as set forth.

3. In drying apparatus, a furnace and drying cylinder, in combination with a breeching built about the front end of the cylinder and having its edge extending into the cylinder and fitting closely within the same all around, and a dust settling chamber in the line of draft above said breeching, substantially as described.

4. The apparatus described, comprising the furnace and the drying cylinder, said cylinder having a rimmed spider fixed in its front end and a trunnion on said spider, in combination with a breeching extending within the rim of said spider all around the edge thereof and a settling chamber above said breeching constructed to discharge into the breeching, substantially as described.

5. The furnace, the drying cylinder in the furnace and spiders and trunnions supporting said cylinder, the spider at the front end of the cylinder having an inclined rim forming the extremity of the cylinder, in combination with a breeching extending within said rim and fitting closely about the edge thereof, and a settling chamber above said breeching, substantially as described.

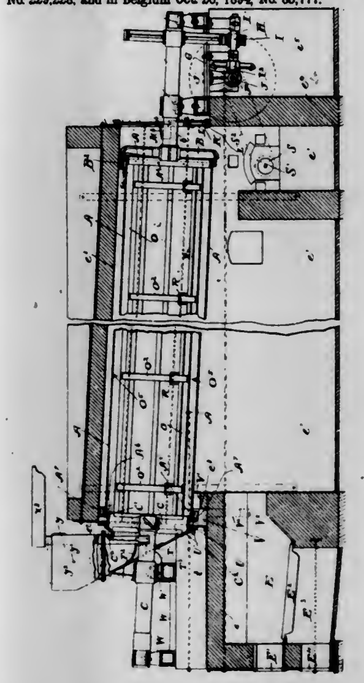
6. A mechanical drier comprising a rotating cylinder mounted on spiders with trunnions substantially as indicated, the arms of the spider at the induction end of the cylinder being set oblique to the axis of the cylinder, the other end of the cylinder discharging into a hood, wings connected with the cylinder and operating in such hood for discharging the material from the hood, substantially as set forth.

7. A mechanical drier comprising a revolving cylinder constructed in longitudinal sections, the sections being united at intervals by patches or plates secured to the two sections, holes through these plates and through the cylinder for equalizing the heat at the joints, wings connected with the interior of the cylinder and overlapping such holes and joints in the direction to deflect the material past such holes and joints on the ascending side of the cylinder, substantially as set forth.

8. The combined furnace or heating chamber, the drying cylinder set into said chamber and spiders for supporting said cylinder, the front spider having flat arms set oblique to the axis of the cylinder and an inclined annular flange outside said arms and a chute to feed the material into the cylinder arranged to deliver the material within said flange, substantially as set forth.

9. In a drying apparatus, a heating chamber, a drying cylinder in said chamber having a spider in one end provided with a ring on its outside and a right-angled flange about its periphery and an adjustable ring on the wall of said chamber encircling closely the said flange, thereby making a closed joint at that point, substantially as set forth.

543,058. MECHANICAL DRIER. FRANKLIN D. CUMMER, Cleveland, Ohio, assignor to Eliza E. Cummer, same place. Filed Apr. 9, 1894. Serial No. 506,856. (No model.) Patented in England Nov. 30, 1893, No. 23,045; in Canada Aug. 2, 1894, No. 46,714; in France Oct. 20, 1894, No. 229,228, and in Belgium Oct. 20, 1894, No. 85,777.



Claim.—1. In a drying apparatus a furnace chamber, a drying cylinder in said chamber and having trunnions with bearings outside said chamber, a breeching connected with one end of said cylinder, a settling chamber above said breeching and a suction fan in the draft passage from said settling chamber, substantially as set forth.

2. In a drying apparatus, a furnace, a heating chamber into which the furnace discharges, a drying cylinder in said chamber, its rear end exposed across its entire area for the admission of products of combustion from the furnace and having a spider and trunnion supporting each end of said cylinder, bearings for said trunnions outside of the said heating chamber, and a blower at the front end of said cylinder in the discharge flue or passage therefrom above the axis of the cylinder, substantially as set forth.

3. The combined furnace and heating chamber, the drying cylinder located in said chamber and having spiders and trunnions to support its ends, a breeching at the induction end of the cylinder through which the products of combustion escape and the material is fed to the cylinder having its lower wall inclined and arranged to project within the cylinder, and a suction fan in the draft passage from said breeching above said inclined portion, substantially as set forth.

4. The furnace and the heating chamber connected therewith, in combination with a drying cylinder in said chamber exposed at its rear end over its entire area to the inside of the chamber, and spiders and trunnions supporting the ends of the cylinder, a breeching at the front end of the cylinder through which the products of combustion are discharged and the material to be dried enters the cylinder and engaging the end of the cylinder at its periphery all around, and a suction fan in the draft passage from said breeching above the point where the raw material is fed to the machine, substantially as set forth.

5. The furnace and the heating chamber at the rear thereof extending above the throat or outlet from said furnace, and a revolving drying cylinder located in said chamber exposed over the whole of its rear end to the inside of said chamber, and having its front end raised some distance above the said throat or outlet, and projecting through the front wall of the heating chamber, whereby the drying cylinder is protected from the direct heat of the furnace at its front and the front end of the cylinder is kept cool, a breeching over the front end of the cylinder encircling the front end thereof, and a suction fan in the draft passage from said breeching, substantially as set forth.

6. The furnace, the heating chamber at the rear thereof and extending above the plane of the discharge of the furnace, a rotatable drying cylinder having its front end extending through the wall of said chamber and raised to be above the direct reach of the flame of the furnace, and the rear end of said cylinder exposed across its entire width to the inside of said chamber and arranged to discharge the dry material within the heating chamber, a device to remove said dried material from said chamber, a breeching at the front of the cylinder forming a discharge flue for the products of combustion, and a suction fan in the draft passage from said breeching on a plane above the axial center of the cylinder, substantially as set forth.

7. The furnace and drying chamber into which the furnace discharges, in combination with a rotatable drying cylinder in said chamber having its front end exposed outside the wall of said chamber, a breeching through which the material is fed to the cylinder and the products of combustion pass from the cylinder, said breeching extending within the end of the cylinder all around and fitting closely therein, and a suction fan in the line of draft from said breeching substantially as set forth.

8. The heating chamber, the drying cylinder, the breeching at the front of said cylinder having an inclined front portion running down to the bottom of the cylinder, a settling chamber above said inclined portion, and a suction fan in the draft passage from said settling chamber, substantially as set forth.

9. In a drying apparatus, the furnace and the heating chamber, in combination with the drying cylinder in said chamber, a plurality of settling chambers in the line of draft from said cylinder, and a suction blower in the line of draft between said settling chambers, substantially as described.

10. In a mechanical drier, the rotating cylinder, two rimmed and trunnioned spiders carrying opposite ends of the spiders, respectively, the trunnions being supported, the cylinder being reinforced at each end by a metallic ring, the rear reinforcing ring being flanged outwardly at its outer end and the rear spider being mounted upon said flange, the front reinforcing ring being flanged inwardly at its outward end with the flange resting upon and embracing the front spider, one of said spiders being operatively connected with the cylinder, and suitable means or mechanism operatively connected with the trunnion of said driving-spider for operating the latter, substantially as set forth.

11. In a mechanical drier, a rotating cylinder suitably supported at one end, a rimmed and trunnioned spider supporting the free end of the cylinder, suitable means operatively connected with the trunnion of said spider for driving the latter, one or more metallic plates a secured to the cylinder adjacent to said spider, said plate or plates having a laterally and outwardly U-shaped flange a^2 the inner side whereof is engaged by an inwardly-projecting arm on the spider, said flanged-plate or plates on the cylinder and projecting arm or arms of the spider establishing operative connection between the spider and cylinder and limiting the movement of the cylinder in the direction of the spider, substantially as set forth.

12. In a mechanical drier, a rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, the cylinder being suitably inclosed and a suitably inclosed space being provided at the rear end of the cylinder, which space is in open relation with the cylinder and through which space the material is discharged from the cylinder, an air-chamber forming the lower portion of the rear wall of said space, the front and rear walls of said chamber being perforated, substantially as shown, for the purpose specified.

13. In a mechanical drier, the rotating cylinder through which the material to be treated and products of combustion or heating-agent pass in opposite directions, respectively, the cylinder being provided internally with suitable devices for stirring the material in its passage through the cylinder, the cylinder being suitably supported from trunnions, a space at the rear of the cylinder through which space the material is discharged from the cylinder, a suitably constructed wall closing said space at the rear, and the rear supporting trunnion extending through said wall, that portion of the wall below the trunnion being partially formed by an air-chamber whose front and rear walls are perforated, substantially as indicated, a shelf at the top of said air-chamber upon which shelf a portion of the material discharged from the cylinder may lodge and form an insulation to prevent the escape of heat between the rear trunnion and said chamber, said shelf being located a sufficient distance below that trunnion to prevent material from piling upon said shelf to such an extent as to come in contact with the under side of the trunnion, substantially as set forth.

14. In a mechanical drier, the rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, the cylinder being provided internally with suitable devices for stirring the material in its passage through the cylinder, and being suitably inclosed and supported, a space at the rear of the cylinder through which space the material is discharged from the cylinder, a suitably constructed wall closing said space at the rear, said wall being partially composed of a plate M removable for repairs, observations or other purposes, substantially as set forth.

15. In a mechanical drier, a rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, the cylinder being provided internally with suitable devices for stirring the material in its passage through the cylinder and being suitably inclosed, a space at the rear of the cylinder through which space the material is discharged from the cylinder, a suitably constructed wall closing said space at the rear, the lower portion of said wall being formed by plates K and L, plate K having flanges K^3, K^3, K^4, and plate L fitting between flanges K^3 and K^4, said plates being perforated, as at k and l, respectively, and the upper portion of the aforesaid wall being formed by a metallic plate M resting upon flange K^3, said plate being mounted upon studs m rigid with the inclosure of the cylinder, the holes in plate M through which said holes extend being elongated vertically, a half-ring M mounted upon studs m against plate M and resting upon flange K^3 of plate K, and nuts m mounted upon the aforesaid studs against the outer side of half-ring N, all substantially as shown, for the purpose specified.

16. In a mechanical drier, a rotating cylinder supported by rimmed spiders, the trunnions of the respective spiders having journal-bearings so far separated as to support the spiders independently of the cylinder, substantially as and for the purpose set forth.

17. In a mechanical drier, a rotating cylinder containing a series of metallic lifting-blades arranged lengthwise thereof, adjacent lifting-blades being connected in groups by means of segmental straps, and suitable means for holding said blades out against the interior surface of the cylinder, substantially as and for the purpose set forth.

18. In a mechanical drier, the combination with the rotating cylinder, of lifting-blades arranged lengthwise of and adapted to engage the cylinder internally, and having one or more notches or gores, substantially as and for the purpose set forth.

19. In a mechanical drier, the combination with a rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, of lifting-blades, O, arranged lengthwise of and adapted to engage the internal surface of the cylinder, said lifting-blades having inwardly-presenting heads, O′, the lifting-blades being divided into groups and the blades of each group being connected by segmental straps provided at suitable intervals lengthwise of the cylinder, and suitable means for retaining said straps in position holding the lifting-blades out against the interior surface of the cylinder, substantially as set forth.

20. In a mechanical drier, the combination with the rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, of lifting-blades, O, arranged lengthwise of and adapted to engage the internal side of the cylinder, said lifting-blades having inwardly-presenting heads, O′, the lifting-blades being divided into groups and the blades of each group being connected by segmental straps provided at suitable intervals lengthwise of the cylinder, the segmental straps of one group of lifters being arranged immediately adjacent the segmental straps of the other group of lifters, the adjacent pair of straps of the two groups of lifters, respectively, being bent inwardly at one end, a screw-threaded rod extending through said inwardly-bent members of the straps and nuts mounted upon said rod at opposite ends of said members of the straps, respectively, and the other ends of said straps being suitably connected with the cylinder, substantially as set forth.

21. In a mechanical drier, the combination with a rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, of lifting blades, O, arranged lengthwise of and adapted to engage the interior surface of the cylinder, said lifting-blades having inwardly-presenting-heads, O′, the lifting-blades being divided into groups and the blades of the group being connected by segmental straps provided at suitable intervals lengthwise of the cylinder, the lifting-blades of each group of lifters being connected by segmental straps and the segmental straps of one group of lifters being located immediately adjacent the segmental straps of the other group of lifters adjacent straps of the two series of straps, respectively, being suitably connected with each other at one end and the other ends of said straps being bent outwardly, a pipe-section or tube extending through said outwardly-bent members of the straps and a bolt extending through said pipe-section or tube, the head of the bolt engaging the one end of the pipe or tube, the latter extending also through a T-iron or member rigid with and projecting inwardly from the shell of the cylinder, the hole in said T-iron or inwardly-projecting member of the cylinder being elongated in the direction of the length of the cylinder, substantially as and for the purpose set forth.

22. In a mechanical drier, the combination with the rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, of metallic lifting-blades arranged at suitable intervals lengthwise of the inner side of the cylinder, suitable means for holding said blades in position within the cylinder, and the blades being notched or gored at suitable intervals lengthwise thereof, substantially as and for the purpose set forth.

23. In a mechanical drier, the rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, the rear end of the cylinder being suitably supported and the front end of the cylinder being supported by a rimmed and trunnioned spider that is lipped or flanged inwardly, as at C^2, a breeching T fitted into said lip, as at l, a feed-pipe discharging into said breeching, and the latter being adapted to deliver the material to the aforesaid rimmed spider that has its arms arranged obliquely somewhat like the blades of a propeller-wheel to properly feed the material into the cylinder, the cylinder being suitably inclosed at the top and sides, a metallic plate e^7 secured to the front end of said inclosure and around the aforesaid spider, the arrangement of parts being such that a space e^8 is had between said plate and spider, a metallic ring U inclosing said space, the latter being held yieldingly in place by friction, substantially as set forth.

24. In a mechanical drier, the rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, the cylinder being suitably supported at its rear end and supported by a rimmed and trunnioned spider at its forward end, the cylinder resting upon and embracing said spider, a pocket V for catching any material that may escape from the cylinder between the lower side of the aforesaid spider and the shell of the cylinder, and a discharge or drain-pipe V^2 leading from said pockets to one side of the drying apparatus, substantially as set forth.

25. In a mechanical drier, a rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, the cylinder being suitably supported at its rear end and supported by a rimmed and trunnioned spider at its forward end, the cylinder resting upon and embracing said spider, a pocket V for catching any material that may escape from the cylinder between the lower side of the aforesaid spider and the shell of the cylinder, and a discharge or drain-pipe V^2 leading from said pocket to one side of the drying apparatus, and blade A^7 rigid with the cylinder and adapted to scoop the material from said pocket into the drain-pipe substantially as set forth.

26. In a mechanical drier, a rotating cylinder through which the material and heating-agent pass in opposite directions, respectively, the rear or discharging end of the cylinder being suitably supported, and the forward or feeding end of the cylinder being supported by a rimmed and trunnioned spider lipped or flanged inwardly, as at C^2, a breeching T, fitted into said lip or flange, a pipe or passage-way for discharging the material into said breeching, the latter being adapted to deliver the material to the aforesaid spider whose arms are arranged obliquely somewhat like the blades of a propeller-wheel, the forward side of said breeching having an opening to accommodate the location and operation of the trunnion of said spider, and a hood T^2 secured to said wall of the breeching over the trunnion, substantially as and for the purpose set forth.

27. In a mechanical drier, the rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, the rear end of the cylinder being suitably supported and the front end of the cylinder being supported by a rimmed and trunnioned spider, a breeching at the front end of the cylinder and a feed-pipe discharging into said breeching, the breeching being adapted to deliver the material to the spider whose arms are arranged obliquely not unlike the blades of a propeller-wheel, the trunnion of said spider extending through the breeching having bearing in suitable boxes that are supported by a single metallic frame, substantially as and for the purpose set forth.

28. In a mechanical drier, the combination with a rotating cylinder through which the material to be treated and products of combustion pass in opposite directions, respectively, of a lower breeching suitably supported at the front end of the cylinder and in open relation with the cylinder, an upper breeching X secured to the lower breeching, a feed-pipe or passage-way extending downwardly at the inner side of said breechings and discharging into the lower breeching, substantially as set forth.

29. In a mechanical drier, the combination with a rotating cylinder through which the material to be treated and products of combustion pass in opposite directions, respectively, of a lower breeching suitably supported at the front end of the cylinder and in open relation with the cylinder, an upper breeching X secured to the lower breeching, and a feed-pipe or passage-way extending downwardly at the inner side of said breechings and discharging into the lower breeching, the portion of said pipe that extends into the lower breeching being open at its inner side, substantially as set forth.

30. In a mechanical drier, the combination with a rotating cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, the lower breeching T located at the forward end of and in open relation with the cylinder, an upper breeching supported by said lower breeching, a feed-pipe or passage-way extending from said upper breeching into the lower breeching a dust-collecting and settling-chamber x^5 and a short duct x^4 establishing open relation between said chamber and the upper breeching, a stack x^6 for said chamber, and a fan or suitable device for establishing a forced draft through and from the cylinder through the breechings to the aforesaid stack, substantially as set forth.

31. In a mechanical drier, the combination with a rotating-cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, of a lower breeching T located at the forward end of and in open relation with the cylinder, an upper breeching supported by said lower breeching, a feed-pipe or passage-way extending from said upper breeching into the lower breeching, a dust-collecting and settling-chamber x^5, a short duct x^4 establishing open relation between said chamber and the upper breeching, a stack x^6 for said chamber, and a fan or suitable device for establishing a forced draft through and from the cylinder, through the breechings to the aforesaid stack, and a hood for precipitating more or less dust or fine material from the dust-laden vapors in the passage to the aforesaid stack, substantially as set forth.

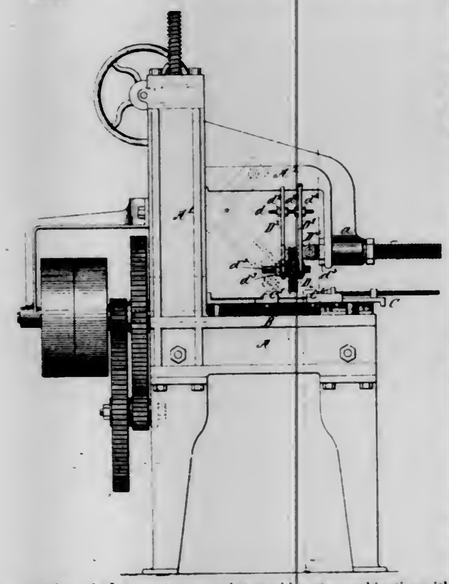
32. In a mechanical drier, the combination with the rotating cylinder through which the material to be treated and heating agent pass in opposite directions, respectively, a lower-breeching T located at the forward end of and in open relation with the cylinder, an upper breeching supported by said lower breeching, a feed-pipe or passage-way extending from said upper breeching into the lower breeching, a dust collecting and settling-chamber x^5, a short duct x^4 establishing open relation between said chamber and the upper breeching, and a stack x^6 for said chamber, of a fan or suitable device for establishing a forced draft through and from the cylinder, through the breechings to the aforesaid stack, said fan or draft-creating-device being located at the inner end of the aforesaid duct and operatively mounted upon a shaft that extends through the upper breeching, the portion of said shaft extending through the breeching being suitably jacketed, substantially as and for the purpose set forth.

33. In a mechanical drier, the combination with a rotating-cylinder through which the material to be treated and heating-agent pass in opposite directions, respectively, a lower breeching T located at the forward end of and in open relation with the cylinder, an upper breeching opening into the lower breeching, a feed pipe or passage-way extending from the upper breeching into the lower breeching, a dust-collecting and settling-chamber x^5, a short duct x^4 establishing open relation between said chamber and the upper breeching, and a stack x^6 for said chamber, of a fan or suitable device for establishing a forced draft through and from the cylinder, through breechings to

the aforesaid stack, the fan or draft-creating device being located at the inner end of the aforesaid duct and operatively mounted upon a shaft that extends through the upper breeching, the portion of said shaft extending through the breeching being suitably jacketed, the jacket being open from end to end and opening into the atmosphere outside, substantially as and for the purpose set forth.

34. In a mechanical drier, the combination with a rotating cylinder through which the material to be treated and heating agent pass in opposite directions, respectively, a lower breeching T located at the forward end of and in open relation with the cylinder, an upper breeching X, in open relation with the lower breeching, a feed-pipe or passage-way extending from the upper breeching into the lower breeching, and a short duct x^4 leading from the upper breeching, of a fan for establishing a forced draft through and from the cylinder, through the breechings, and aforesaid duct, the fan being located at the receiving-end of the aforesaid duct and operatively mounted upon a shaft that extends through the upper breeching and has bearing at opposite ends of the hub of the fan, one or more oil-cups Z′ suitably supported at the outer side of the casing in which the fan is located, said oil-cup or cups being located within a hot-air-chamber Z^3 formed substantially as indicated, and passage-ways leading from said cups to the aforesaid bearings, substantially as set forth.

545,059. WOOD-DECORATING MACHINE. SPENCER L. DAVIS, Chicago, Ill., assignor to the American Wood Decorating Machine Company, New York, N. Y. Filed Mar. 28, 1893. Serial No. 467,954. (No model.)



Claim.—1. In a wood decorating machine, the combination with the arm A^3 having the depending portion a, of a roller die support adapted to be set in an inclined position and sustained at its upper end from said arm, and an adjusting device, as D^2, applied to the part a and arranged to bear laterally against the lower end of said support.

2. In a wood decorating machine the frame of which is provided with an arm overhanging the bed, the combination with said arm, of roller die supporting arms and a connecting part uniting the upper ends of the die-supporting arms with the overhanging arms, said connecting part being pivoted to the overhanging arm and bodily movable lengthwise of the latter, substantially as set forth.

3. A wood decorating machine comprising a standard, an overhanging arm supported by said standard, an adjusting screw working horizontally through the outer end of said arm, and supports for a decorating roller connected to the overhanging arm and also connected laterally to the adjusting screw, substantially as set forth.

4. A wood decorating machine comprising a standard, an overhanging arm vertically adjustable on said standard, an adjusting screw working horizontally through the outer end of said arm, and supports for a decorating roller pivoted laterally upon said adjusting screw and also having pivotal and laterally adjustable connection with said arm, substantially as set forth.

5. In combination with the arm A^3 of a wood decorating machine, a roller die support consisting essentially of two arms which embrace the hub of the die and are adjustable toward and from each other, and two other arms rigidly connected with the first mentioned arms which embrace the arm A^3 and are adjustably secured thereto, whereby said die support is adjustably connected with the arm A^3 of the machine and the die may be variously inclined.

6. In combination with the arm A^3 and the die support of a wood decorating machine, an adjustable device connecting the die support with the arm, and an adjusting screw connected with the arm and arranged to engage the upper inclined side of the die support in its various inclinations whereby the pressure on the die is met from two or more directions.

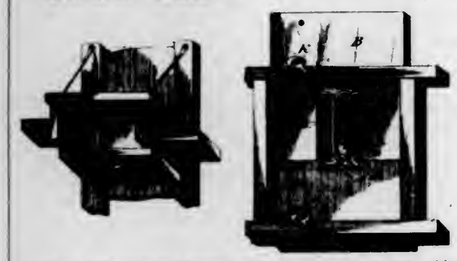
7. The combination with the horizontal arm A^3 of a wood decorating machine, a slide fitted to said arm, bars pivoted to said slide, and a die support attached to the bars, means being provided whereby the bars may be held at a required inclination.

8. In combination with the arm A^3, the slide F, the pivoted bars F′ provided with grooves at their lower margins, the die supporting arms D′ D^3 having projections fitted to said grooves, and means for holding said arms D′ D^3 at a required position with respect to the arms F′, means for holding the slide F in a required position on the arm A^3, and means for holding the arms F′ at a required inclination on the pivot, substantially as described.

9. In a wood decorating machine, the combination with the bed frame of a machine having a removable work-supporting table, of a bed roller projecting above said frame and auxiliary guide arms having curved engaging surfaces adapted to be adjustably secured so as to extend toward each other and engage the material operated upon at points opposite each other and above the bed roller, when the table is removed, substantially as described.

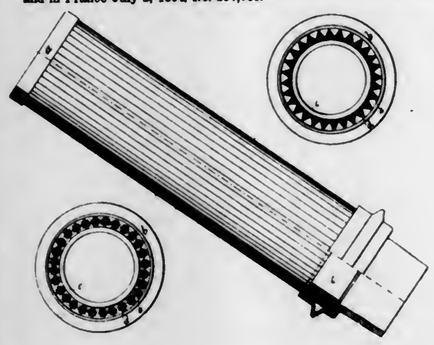
10. In a wood decorating machine, the combination with the bed frame of a machine having a removable work-supporting table, of a bed roller projecting above said frame, and auxiliary guide arms provided with guide rollers and adapted to be secured so as to extend toward each other and engage the material at points opposite each other and above the bed roller, when the table is removed, substantially as described.

545,060. STAND FOR BAND-CUTTERS ON THRASHING-MACHINES. WILLIAM S. DOWNING, Kelso, Kans. Filed Feb. 2, 1894. Serial No. 498,887. (No model.)



Claim.—In combined feeder and band-cutter stands on thrashing machines, the combination of sliding planks for band-cutter stands and looped metal slides with a center bolt secured to the feeder stand and bottom plank, all substantially as set forth.

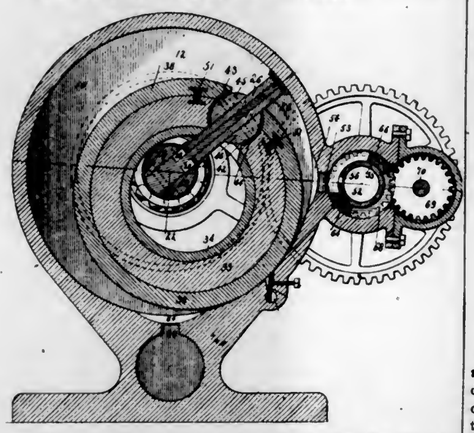
545,061. LAMP-CHIMNEY. MORITZ EPSTEIN, Stolberg, Germany. Filed Sept. 8, 1894. Serial No. 522,553. (No model.) Patented in Belgium Apr. 30, 1894, No. 109,477; in Austria June 23, 1894, No. 44/2,667, and in France July 2, 1894, No. 237,783.



Claim.—1. A lamp chimney comprising juxtaposited prismatic or fluted glass tubes d and aluminium wires c contained in said tubes, substantially as described and for the purpose specified.

2. In a lamp chimney the combination of juxtaposited prismatic or fluted glass tubes, the aluminium wires contained in said tubes, an upper metallic ring and a lower glass garniture composed of two rings, substantially as specified.

545,062. ROTARY ENGINE. CHARLES A. FISHER, Petersburg, Ill. Filed Sept. 8, 1892. Serial No. 445,365. (No model.)



Claim.—1. The combination of a cylinder having induction and eduction ports, a laterally expansible piston, an eccentrically mounted piston wheel, a bearing for said piston wheel intermediate the cylinder ports, segmental bearing blocks carried by the piston wheel in contact with opposite sides of the piston, and segmental lining plates intermediate said blocks and wheel, substantially as described.

2. The combination of a cylinder having induction and eduction ports, a laterally expansible piston, an eccentrically mounted piston wheel, a sleeve supporting said piston wheel, bearings for said sleeve, and a central shaft on which the piston is mounted, substantially as described.

3. The combination with a cylinder having induction and eduction ports, and a bearing plate 35 intermediate said ports, of an eccentrically mounted piston-wheel, having a laterally expansible casing 38, and a rotary piston composed of a fixed section 23 and a laterally expansible section carried by said fixed section and consisting of plates 25, 26, and 27, and the radially movable shoe 32, substantially as described.

4. The combination with a cylinder having induction and eduction ports, of a shaft extending centrally through the cylinder, a rotary piston consisting of a fixed section 23 rigidly secured to the said shaft and having its outer portion narrowed to form a web, laterally movable plates 25, 26, and 27, mounted upon each side of said web and the radially movable shoe 32, and an eccentrically mounted piston-wheel, substantially as described.

5. The combination with a cylinder having induction and eduction ports, a central shaft and a rotary piston mounted on said shaft, of a piston wheel eccentrically mounted in said cylinder around the central shaft and having an exterior expansible casing, substantially as described.

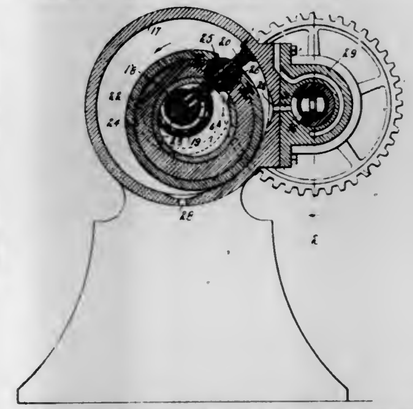
6. The combination of a cylinder having induction and eduction ports, a central shaft extended through the cylinder a rotary piston mounted on said shaft and an eccentrically mounted piston wheel inclosing the central shaft and having an exterior laterally expansible casing, substantially as described.

7. The combination of a cylinder having induction and eduction ports, a centrally mounted rotary piston, an eccentrically mounted piston wheel having an exterior laterally expansible casing, and a bearing for said piston wheel intermediate the cylinder ports, substantially as described.

8. The combination with a cylinder, having induction and eduction ports, a rotary piston, and a tubular piston wheel 33 having a bearing between said ports, of a casing 38 for said wheel, said casing consisting of three sections, 39, 40, 41, the inner section having inclined lateral edges, substantially as described.

9 The combination with a cylinder, having induction and eduction ports, and a rotary piston, of a tubular piston wheel encircling said piston and having a bearing between said ports, casing 38 for said wheel, said casing consisting of three sections 39—40—41, the inner section having inclined lateral edges, and a screw 88, having a tapering head adapted to bear against the adjacent portion of the central section 40, substantially as described.

545,063. ROTARY ENGINE. CHARLES A. FISHER, Petersburg, Ill. Filed Nov. 13, 1894. Serial No. 528,696. (No model.)



Claim.—1. The combination with the cylinder of a rotary engine, and a valve chamber having an induction port leading to the cylinder, of a rotary hollow valve located in said chamber and having one or more openings for the passage of steam from within said valve to said induction port, means for rotating said valve, a rotary cut-off arranged within said valve and having a web provided with one or more perforations for the passage of steam from one side of the cut-off to the other and carrying a segmental block in contact with the inner surface of the valve and adapted to close the valve openings for a longer or shorter period to prevent the induction of steam to the induction port, and means for controlling the operation of the cut-off, substantially as described.

2. The combination with the cylinder of a rotary engine, a valve chamber, and an induction port leading from said chamber into said cylinder, of a rotary hollow valve having openings for the passage of steam from within the valve and into the said induction port, a pin 38 secured transversely in one end of said valve, a shaft 39 provided at one end with a cap 41 fitting into the valve and having a slot 42 engaged with said pin, means for rotating said shaft, a rotary cut-off arranged in the said valve and adapted to control the valve openings, and means for operating said cut-off from a governor substantially as described.

3. The combination with the cylinder of a rotary engine, of a valve chamber, an induction port leading therefrom to said cylinder, a valve 36 having one or more perforations for the passage of steam from within said valve to said induction port, a rotary cut off arranged within said valve, said cut off consisting of two segmental blocks, a web connecting said blocks, said web having one or more perforations to permit of the passage of steam from one side to the other of said cut off, and means whereby said cut off may be rotated, substantially as described.

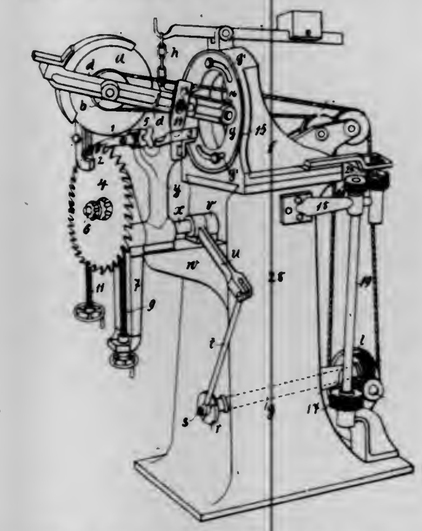
4. The combination with the cylinder of a rotary engine, of a valve chamber, an induction port leading therefrom to said cylinder, a valve 36 having one or more perforations for the passage of steam from within said valve to said induction port, a rotary cut off arranged within said valve, said cut off having a perforated web carrying a segmental block arranged in contact with the inner surface of said valve and arranged to close said perforations for a longer or shorter period to prevent the admission of steam to said induction port, means whereby said cut off may be rotated, a shaft connected to one end of said cut off, a pinion mounted upon the end of said shaft, a rack bar meshing with said pinion, a governor, and means for raising and lowering said rack bar by the movement of said governor, substantially as described.

5. The combination with the cylinder of a rotary engine, of a valve chamber, an induction port leading therefrom to said cylinder, a valve 36 having one or more perforations for the passage of steam from within said valve to said induction port, a rotary cut off arranged within said valve, said cut off having a segmental block arranged in contact with the inner surface of said valve and arranged to close said perforations for a longer or shorter period to prevent the admission of steam to said induction port, means whereby said cut off may be rotated, a shaft connected to one end of said cut off, a pinion mounted upon the end of said shaft, a rack bar meshing with said pinion, a

governor, means for raising and lowering said rack bar by the movement of said governor, said rack bar having a movable section, means for holding said movable section normally in operative position and for releasing said movable section when said rack bar is raised above a certain point, and means for automatically operating the cut off to shut off steam when said rack bar is disengaged therewith, substantially as described.

6. The combination with the cylinder of a rotary engine, of a valve chamber, an induction port leading therefrom to said cylinder, a valve 36 having one or more perforations for the passage of steam from within said valve to said induction port, a rotary cut off arranged within said valve, said cut off having a segmental block arranged in contact with the inner surface of said valve and arranged to close said perforations for a longer or shorter period to prevent the admission of steam to said induction port, means whereby said cut off may be rotated, a shaft connected to one end of said cut off, a pinion mounted upon the end of said shaft, a rack bar meshing with said pinion, a governor, means for raising and lowering said rack bar by the movement of said governor, and means for automatically operating said cut off to shut off the supply of steam when said governor stops, substantially as described.

545,064. SAW-SHARPENING MACHINE. RICHARD FLECK, Berlin, Germany. Filed Nov. 1, 1894. Serial No. 527,607. (No model.) Patented in Germany Oct. 4, 1892, No. 69,675; in England Jan. 25, 1893, No. 1,704, and in Denmark June 6, 1894. No. 3,947.



Claim.—1. In a saw sharpening machine, a saw support, a revoluble grinding disk and a support therefor adapted to move to and fro and to rise and fall, in combination with a templet adapted to vibrate in a plane at right angles to the plane of to and fro motion of the disk support and to control the rising and falling motion thereof, for the purpose set forth.

2. In a saw sharpening machine, a saw support, a revoluble grinding disk and a support therefor adapted to move to and fro, rise and fall and revolve about a horizontal axis, in combination with a templet adapted to vibrate in a plane at right angles to the plane of to and fro motion of the disk support and to control the rising and falling motion thereof, and a locking device for locking said disk support against rotation on its horizontal axis, for the purpose set forth.

3. In a saw sharpening machine, a saw support, a revoluble grinding disk and a support therefor adapted to move to and fro and rise and fall, in combination with a templet adapted to vibrate in a plane at right angles to the plane of to and fro motion of the disk support and to control the rising and falling motion thereof, and a saw feeding device adapted to vibrate synchronously with the templet, for the purpose set forth.

4. In a saw sharpening machine, a saw support, a revoluble grinding disk and a support therefor adapted to move to and fro in a horizontal and in a vertical plane, in combination with a saw feeding device and a templet adapted to vibrate in a plane at right angles to the plane of horizontal to and fro motion of the disk support, and to control the rising and falling motion thereof and the feed motion of the saw feeding device, for the purpose set forth.

5. In a saw sharpening machine, a support for the saw, a grinding disk, a support therefor having a to and fro motion in vertical and horizontal planes, in combination with a templet, a support therefor adapted to vibrate in a plane at right angles to the horizontal plane of motion of the disk support, and a feed dog adapted to move the saw a distance of one tooth at a time, said dog pivotally connected with the templet support, for the purpose set forth.

6. In a saw sharpening machine, a support for the saw, a grinding disk, a support therefor having a to and fro motion in vertical and horizontal planes, in combination with a templet, a support therefor adapted to vibrate in a plane at right angles to the horizontal plane of motion of the disk support, and a feed dog adapted to move the saw a distance of one tooth at a time, said dog pivotally connected with the templet support, and means for regulating the amplitude of the vibrations of the templet support, for the purpose set forth.

7. In a saw sharpening machine, the combination with a revoluble grinding disk, of the grooved guide standards 7 and 10, the saw supports 8 and 10*a*, the adjusting spindles 9 and 11, and the saw guide 12 connected with guide standard 10 at its upper end said parts arranged relatively to the grinding disk, substantially as set forth.

8. In a saw sharpening machine, the combination with the saw support, the carriage *f*, a grinding disk, a support therefor, articulated to said carriage and provided with a depending arm 14, and mechanism for imparting a to and fro motion to the carriage and a rotary motion to the grinding disk, of the templet 3 on which the aforesaid arm 14 has bearing, the bifurcated support *y* thereof, the feed dog 1 pivotally connected with one of the arms of said support *y*, and means for imparting a vibrating motion to the support *y* substantially as and for the purpose set forth.

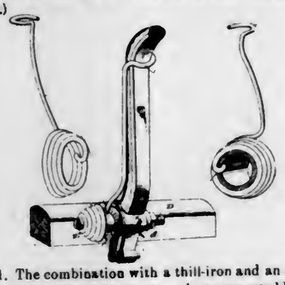
9. In a saw sharpening machine, the combination with the saw support, the carriage *f* provided with a circular bearing, an adjusting ring seated therein, a grinding disk, a support therefor articulated to said adjusting ring and provided with a depending arm 14, and mechanism for imparting a to and fro motion to the carriage and a rotary motion to the grinding disk, of a templet on which the arm 14 has bearing, a saw feeding device, and appliances for imparting synchronous to and fro motion to said templet and feeding device, substantially as and for the purpose set forth.

10. In a saw sharpening machine, a saw support, a revoluble grinding disk and a support therefor adapted to move to and fro and rise and fall, in combination with mechanism for varying the amplitude of the to and fro motion of said disk support, for the purpose set forth.

11. In a saw sharpening machine, a saw support, a revoluble grinding disk and a support therefor adapted to move to and fro and rise and fall, in combination with a templet adapted to vibrate in a plane at right angles to the plane of to and fro motion of the disk support and to control the rising and falling motion thereof, and regulating devices for regulating the amplitude of the to and fro motion of the disk support and the amplitude of vibration of the templet, substantially as and for the purpose set forth.

12. In a saw sharpening machine, a saw support, a revoluble grinding disk and a support therefor adapted to move to and fro and rise and fall, in combination with a templet adapted to vibrate in a plane at right angles to the plane of to and fro motion of the disk support and to control the rising and falling motion thereof, a saw feeding device adapted to vibrate synchronously with said templet, and adjusting devices for adjusting the amplitude of the to and fro motion of the aforesaid disk support and the vibrating motion of the templet, and saw feeding device, substantially as and for the purpose set forth.

545,065. COMBINED THILL-SUPPORT, ANTIRATTLER, AND COUPLING. WALTER L. FRAZER, San Diego, Cal., assignor of one-half to William Cooper, same place. Filed Oct. 20, 1894. Serial No. 526,519. (No model.)



Claim.—1. The combination with a thill-iron and an axle clip, of the interlocking arm and spool, a tongue plate supported by said arm and bearing upon the thill-iron and the clip plate, a thill supporting spring connected with the spool and the thill-iron respectively, and a pivotal bolt which supports the thill iron in the clip and connects the spool and arm to said clip, for the purposes described, substantially as set forth.

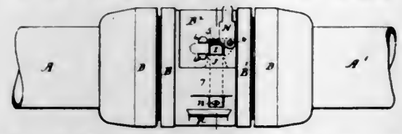
2. The combination with an axle clip, and a thill-iron pivoted thereto, of the interlocking spool and arm supported by said clip, a tongue plate pivoted to the arm and bearing against the clip plate and eye-formed end of the thill iron, respectively, and a thill-supporting spring having its coil fitted on and connected with the spool and its arm connected with the thill-iron, substantially as and for the purposes described.

3. The combination with an axle-clip, and a thill-iron, of a spring-tool, a pendent arm detachably interlocked with said spool, a pivotal bolt passing through the spool, arm, clip, and thill-iron, a tongue plate pivoted to the arm and bearing against the thill-iron, and the thill-supporting spring formed with a convolute coil which is fitted upon and connected with the thill-iron, substantially as and for the purposes described.

4. The combination with a clip, and a thill-iron, of a pendent arm provided with a recess, *g*, and radial projections therein, a spool fitted within said recess and having its tongues detachably interlocked with the radial projections of the arm, a bolt passing through the spool and arm and connecting the thill-iron to the clip, and a spring, substantially as and for the purposes described.

5. The combination with an axle clip and a thill-iron, of a pendent arm, a spool detachably locked with said arm, a single bolt which connects the thill-iron to the clip and detachably couples the arm and spool together, a tongue pivoted to the lower end of the arm and bearing at its opposite sides against the clip plate and eye of the thill-iron, respectively, and a thill-supporting spring formed with a convolute coil and with an arm, said coil being fitted upon and connected detachably to the spool, and said arm provided with an eye or loop to be fitted detachably to the thill-iron, substantially as and for the purposes described.

545,066. HOSE-COUPLING. JOHNNIE A. FREGEAU, North Brookfield, Mass. Filed May 9, 1895. Serial No. 548,665. (No model.)



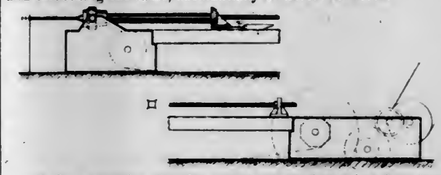
Claim.—1. The within described hose coupling, comprising the coupling member B provided with means for its attachment to the hose fabric, and having its coupling end formed with a fixed half section, and a hinged half section, internally fitted with the recess G, the centrally disposed shoulder *h* and inwardly projecting rim H, said hinged half section having a cavity 5, with a catch-bar J bridging over said cavity, and the spring-latch secured to the fixed half section and extending beneath the guard 7 thereon, with its free end adapted to enter beneath and catch, by outward flexure, upon said Bar J, when the parts are brought together, for retaining said hinged section; in combination, with the inner coupling member having the neck *f*, outwardly projecting rim F and shoulder E, all substantially as and for the purposes set forth..

2. In a hose coupling, the combination substantially as described, with inner and outer coupling members, the latter internally fitted to receive and engage the inner member, and provided with the fixed and the hinged semi-circular sections and the connecting latch, said hinged section having a thumb cavity 5 and catch-bar J formed therein for receiving the latch-end, and a movable cap-plate for covering the cavity over the end of the latch, for the purpose set forth.

3. In a hose-coupling, the combination of the coupling heads formed with inner and outer engaging members, the outer member provided with the hinged laterally swinging section, the latch devices for retaining said section closed, the guard-plate and adjustable cover over said latch, the outer end of said coupling members respectively provided with the tubular extension *b*, the shoulder *c* and screw-threaded part *d*, and the threaded clamping collar and the annulus arranged on said ends for attaching the hose fabric, substantially as shown and described.

545,067. APPARATUS FOR DRAWING RIBBED TUBES. OSCAR FRIEDRICH and WILHELM SCHULTE, Duisburg, Germany, assignors to Duisburger Eisen- und Stahlwerke, same place. Filed Mar. 7, 1895. Serial No. 540,806. (No model.) Patented in Germany Jan. 31, 1894, No. 79,607.

Claim.—1. In a machine for making seamless box-shaped beams, bearers and columns by the process herein described, the combination of a draw-bench having a fixed mandrel, a fixed draw plate, and a traveling carriage, to which latter one end of the work is fixed, such mandrel head being pointed at its front end so as to open the flattened hollow body, and both mandrel head and draw plate having initial spreading provisions and succeeding compressing surfaces reciprocally located and acting on the work to bring the material to the desired shape by first distributing it sidewise and then finally compressing and smoothing the same, substantially as herein set forth.



2. In a machine for the manufacture of seamless box-shaped beams, bearers and columns, by the process herein described, the combination of a draw bench having a draw plate consisting of a solid outer frame provided with trunnions mounted in bearings in the draw bench and having a conical aperture, of draw plate sections fitting such conical aperture, and having spaces between the sections to form longitudinally strengthening flanges or ribs on the work passing between them, such aperture having its part of larger diameter opposed to the entering work, whereby the work in its travel holds said sections in position, substantially as herein set forth.

3. In a draw-bench employed in conducting the process herein described, the combination of a draw plate constructed as herein described, with a mandrel head consisting of a fixed opening point, a fixed collar at the rear of such fixed point, a loose circular anvil passed over the point and fitting against such collar, and loose expander sections fitting around the neck of the head between the point and the anvil, whereby the form of the mandrel head can be varied, substantially as set forth.

4. In a draw-bench employed in conducting the process herein described, the peculiar construction of mandrel head and draw plate, each being formed with curved ribs parallel with the axis of the work, and with plain finishing surfaces, the said ribs being gradually widened and flattened from front to rear where they die off into the plain finishing surfaces, substantially as herein set forth and for the purpose stated.

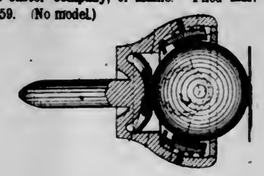
5. In a machine for drawing metal tubes, a draw plate, and a traveling carriage to which the work is fixed, in combination with a mandrel head over which the work is drawn to open, spread and shape it, said head having spreading provisions acting on the interior of the work and thinning and spreading it, and said head having beyond said spreading provisions a smooth surface acting on the interior of the work and smoothing and shaping it, substantially as and for the purpose set forth.

6. In machines for drawing metal tubes, a traveling carriage to which the work is fixed, and a draw plate having a die through which the work is drawn, said die having walls, having initial spreading surfaces acting on the work and thinning and spreading it, and having smooth surfaces succeeding said provisions acting subsequently on the work and compressing and shaping it as it is drawn through the die.

7. In machines for making hollow beams with longitudinal outer ribs, a mandrel head passing within the beam, and means for drawing the beam over the head, in combination with a draw plate having a die aperture surrounding said head and having walls, of the shape to be given to the outside of the work between the ribs of the latter, compressing the work against said head between the ribs and thereby shaping it, and having recesses between said walls coinciding with the longitudinal flanges of the work, receiving and passing these flanges during the drawing.

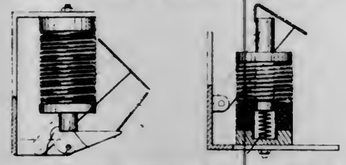
8. In machines for making metal tubes, means for grasping and moving the work, in combination with a mandrel head and a draw plate, relatively fixed and having reciprocal faces opposed to each other in the same cross sectional plane, the faces on the mandrel tapering outwardly and acting against the inner side of the work, and the faces on the draw plate tapering inwardly and acting against the outer side of the work, substantially as and for the purpose set forth.

545,068. BALL-CASTER. CHARLES H. GAFFNEY, Gloucester, Mass., assignor, by direct and mesne assignments, to the Crescent Automatic Caster Company, of Maine. Filed Mar. 18, 1895. Serial No. 542,159. (No model.)



Claim.—The herein described ball bearing caster consisting of a socket B having a vertical bearing surface F and a series of balls contained in a perforated cup arranged above the caster ball C and having a series of anti-frictionally journaled pockets I pivoted to the socket B and containing a series of anti-friction balls K adapted to bear against the caster ball substantially as and for the purpose set forth.

545,069. ELECTRIC ANNUNCIATOR. GEORGE J. GALBRAITH, Boston, Mass., assignor to the Electric Gas Lighting Company, same place. Filed Apr. 27, 1895. Serial No. 547,377. (No model.)

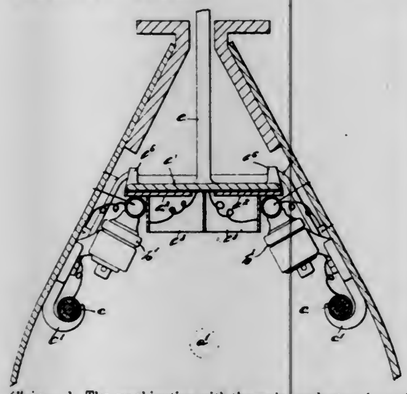


Claim.—1. A solenoid annunciator drop composed of a proper support, a solenoid, a sliding armature-core for said solenoid, a swinging multi-armed drop-plate composed of an announcing-disk and extensions or arms for hanging or loosely pivoting the same, and an arm to serve as a catch upon the sliding armature-core, whereby the same are adapted to be alternately retained and released by said sliding armature, and means for limiting the movement of the sliding armature, substantially as described.

2. A solenoid annunciator-drop composed of a proper support, a solenoid B having a hollow core *b*, a sliding armature C, a stop-pin a^3, a multi-armed drop D, having the announcing face *d*, the arms d', d', the arm d^3, and the angle-piece d^3, all combined and arranged substantially as and for the purposes described.

3. A solenoid annunciator drop composed of a proper support, a solenoid, a sliding armature-core for said solenoid, a swinging multi-armed drop-plate, adapted to be alternately retained and released by said sliding armature and a swinging lever adapted to both limit the movement of the sliding armature, and to alternately retain and release the drop-plate, according to the movements of the sliding armature, all substantially as described.

545,070. UNDERGROUND ELECTRIC RAILWAY. DAVID F. GRAHAM, Springfield, Ohio, and WILLIAM P. ALLEN, Chicago, Ill., assignors of one-third to Oliver S. Kelly, Springfield, Ohio. Filed June 21, 1894. Serial No. 515,255. (No model.)



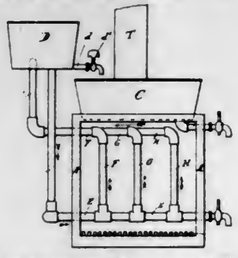
Claim.—1. The combination with the main conductors formed in insulated sections, as described, and a contacting device moving between said conductors, feeding wires having branches extending to said conductors, and switches in said branches, switch levers for operating said switches adapted to be moved by said contacting device, and auxiliary levers for operating said switch levers, said switch levers being each adapted to form an electrical connection from said feed wires to two sections of said conductor, substantially as specified.

2. The combination with a conductor supported in a conduit, as described, of a contacting device consisting essentially of a main supporting plate, metallic shoes or plates insulated from said supporting plate, bearing supports in contact with said plates or shoes, and contacting springs each supported in slotted openings in said bearing supports, said contacting springs being curved outwardly at the center and adapted to contact directly with the conductors, substantially as specified.

3. A contacting device for underground systems which consists essentially of a supporting plate arranged in a horizontal plane, metallic shoes parallel with said plate but insulated therefrom, contacting springs arranged at right angles to said shoes or plates and supported at the ends in slotted bearings, said springs being curved outwardly to form an elliptic or shuttle-shaped contacting device adapted to fit between the conductors and bear laterally against the same while the shoes rest in contact with said conductors and on top of the same, substantially as specified.

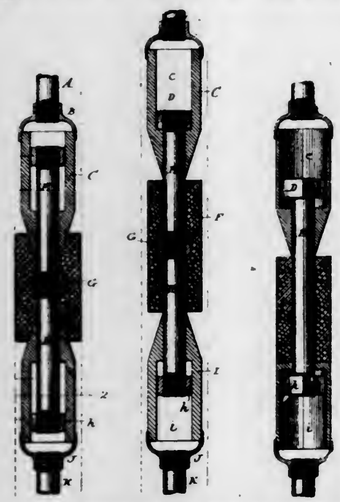
4. In an electric railway, a conduit having conductors therein, said conductors being arranged on each side of said conduit, and a contacting device consisting essentially of bowed contacting springs supported at each end in bearings so as to form a shuttle-shaped contacting device, as described, said contacting springs being supported on a main supporting plate having bearing shoes at right angles to said springs, said shoes being extended laterally beyond the contacting sides of said springs so as to rest on the top of the conductors while said springs are in contact with the sides of said conductors, substantially as specified.

545,071. EVAPORATOR. DIEUDONNÉ J. GRONDIN, Yamachiche, Canada. Filed May 31, 1895. Serial No. 551,059. (No model.) Patented in Canada May 18, 1894. No. 46,101.



Claim.—In an evaporator, the combination, with a stove, and a pan C supported directly over the stove; of a second pan D supported at a little distance above the pan C and provided with a valve for delivering its contents into it, the horizontal pipe E arranged inside the stove and connected to the lower part of the pan D, and the inclined pipes F, G, H, connected to the pipe E inside the stove and to the lower part of the pan D, substantially as set forth.

545,072. PACKING FOR OIL OR GAS WELLS. BENJAMIN C. HADDEN, Watson Farm, Pa. Filed Jan. 19, 1895. Serial No. 535,530. (No model.)

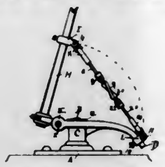


Claim.—1. The combination of the upper and lower enlarged pipe sections, one of which has a tapered end, an elastic packing arranged between the pipe sections, a tube extending through the packing and into angular recesses in the enlarged pipe sections both of which are free to slide on the tube, and detachable nuts on the ends of this tube free to slide within the recesses.

2. The combination of the upper and lower enlarged pipe sections having squared recesses, a packing arranged between the pipe sections and adapted to receive the tapered end of one of the pipe sections in its bore, a tube extending through the packing and into the squared recesses of the enlarged pipe sections both of which are free to slide on the tube, and nuts on this tubing within the squared recesses secured to the tube by opposing screw-threads.

3. The combination of a rubber packing having a central bore, a nut sunk in the bore of the packing, two pipe sections secured to the nut and extending in opposite directions through the packing, enlarged pipe sections having squared recesses and tapered ends, both of which are free to slide on the tube and squared nuts in these recesses secured to the ends of the tubes, which project from the packing.

545,073. TROLLEY. JULIUS L. HANSON, Omaha, Nebr. Filed June 4, 1895. Serial No. 551,695. (No model.)



Claim.—1. In a trolley stand the combination with a suitable base plate and post, of a hub revolubly held upon said post, said hub being provided with an extending arm, and ears, a trolley pole movably secured to said ears, an adjustable sleeve upon said extending arm, and adjustable sleeves upon said trolley pole, an extending bar movably secured to said arm-sleeve, a bar movably secured to said pole-sleeve, a spring bar movably secured to said arm-sleeve continuing in a ring and terminating in a stem, said stem being movably secured to the bar extending from said pole-sleeve, a spring bar movably secured to said pole-sleeve and continuing in a ring and ending in a stem, said stem being movably secured to said bar extending from said bracket-sleeve, all arranged substantially as and for the purpose set forth.

2. The combination with the base plate, A, provided with the extending post, B, of the hub, C, provided with the bracket, D, and eyes, E, the hinge, F, the trolley bar, H, secured to said hinge, F, the adjustable sleeve, L, secured to the bracket, D, the adjustable sleeve, I, secured to the pole, H, the plate, M, movably secured to the bracket-sleeve, L, the plate, A, movably secured to the pole sleeve, I, the fixed bar, 20, extending from said plate, M, the fixed bar, 6, extending from said plate, K, the spring, 9', extending in a ring and being movably held by said fixed bar, 6, the spring, 35, extending in a ring entwining said springs, 9 and 9', the end, 30, being movably secured to the bar, 20, all arranged substantially as and for the purpose set forth.

545,074. AUTOMATIC REVERSER AND SAFETY-CHECK FOR MILL-CARRIAGES. DE ELBERT P. HEATH, Tomahawk, Wis. Filed June 1, 1894. Serial No. 513,144. (No model.)

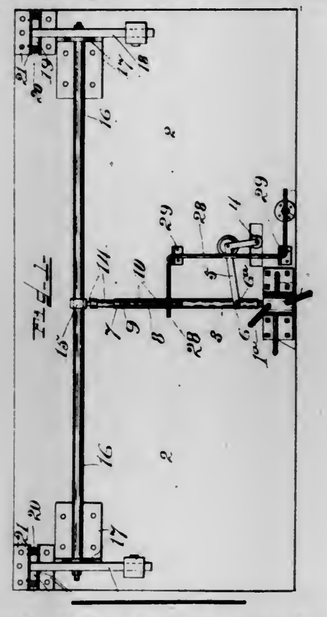
Claim.—1. The carriage reversing mechanism comprising the rock shaft journaled parallel with the travel of the carriage and having a weighted lever upon each end, bars secured to the levers and adapted by a vertical movement to operate the shaft, a crank upon the shaft, and a valve having a stem connected to the crank, and controlled by said mechanism, combined with the reverser secured upon the carriage for operating the said reversing mechanism, as set forth.

2. The combination with a saw mill carriage, and the reverser secured thereto, of the reversing mechanism having bars movable vertically through the mill floor and provided with rollers to engage the reverser at each end of the carriage travel, and means for coupling and uncoupling the said reversing mechanism comprising the trigger, the valve stem, the connecting rod, the crank shaft engaging the trigger, and the foot lever connected to the crank shaft and projecting vertically through the mill floor, as set forth.

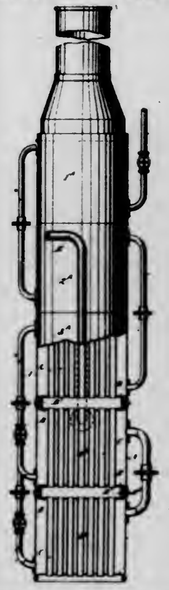
3. The combination with a saw mill carriage, and the carriage reversing mechanism, of the reversers secured to the carriage, the same comprising a track formed by top and bottom flanges, the latter being deflected to form a cam upon the outer end of the track, the vertically movable bars, and the rollers upon said bars adapted to engage the cams to operate the said reversing mechanism at each end of the carriage stroke, substantially as set forth.

4. The combination with the cams or reversers upon the carriage and the reversing mechanism, a slide valve the stem of which is provided with a sleeve, the notched connecting rod working in the sleeves, the crank shaft, and the trigger secured upon the sleeve and operated by the crank shaft to connect and disconnect the valve stem and connecting rod, as set forth.

5. The combination with the carriage, and the reversers secured thereto, the rock shaft journaled parallel with the travel of the carriage, the weighted levers secured to the shaft the bars connected to said levers and provided with rollers, the crank upon the shaft between the levers the steam valve and its connections to the crank, as set forth.



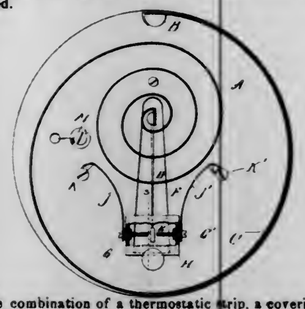
545,075. STEAM-BOILER. THOMAS HENDERSON, Waverley, New South Wales. Filed Aug. 17, 1894. Serial No. 520,573. (No model.)



Claim.—In a sectional tubular boiler, the combination with the shells A of abutting sections, and the tube plates or flue sheets B, having converging flanges to which said shells are riveted, of the internal ring B' taking against the heads of the shell rivets and the stud bolts B^3 clamping said ring to the rivet heads, substantially as and for the purpose set forth.

545,076. THERMOSTAT. GEORGE HILL, New Brunswick, N. J. Filed Jan. 3, 1895. Serial No. 533,696. (No model.)

Claim.—1. The combination of a thermostatic strip, a covering box, independently adjustable contacts carried thereby and means for adjusting the box together with circuit connections, substantially as described.

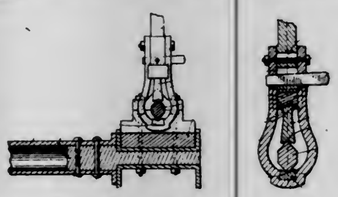


2. The combination of a thermostatic strip, a covering box, independently adjustable contacts carried by the box and extending into the same, a pivoted plate upon which the box is carried, and means for swinging the pivoted plate to adjust the position of the box, substantially as described.

3. In a thermostat, the combination of a box carrying independently adjustable contacts which extend into the same, a thermostat strip having a contact bar which extends into the box and into operative relation with the contacts therein and means for adjusting the position of the box, substantially as described.

4. The combination of a thermostat plate A, a thermostatic strip C having a contact strip D, a box H into which the contact strip D extends, independently adjustable contacts carried by the box and extending into the same, a pivoted plate I, upon which the box is carried having a toothed portion *d* and a post *g* carrying a pinion meshing with the toothed portion *d*, substantially as described.

545,077. HANGER FOR STONE-SAWING MACHINES. JOHN R. HOLMES, Chicago, Ill. Filed Mar. 11, 1895. Serial No. 541,269. (No model.)



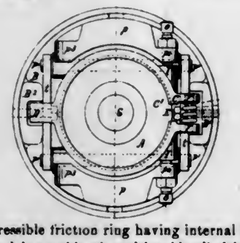
Claim.—1. The combination with the saw-carrying frame of the angular pivot bars mounted in suitable bearings thereon, the suspending straps provided in their lower parts with hardened depressions to engage the pivot bars, the suspending rods secured at their upper ends to a support and at their lower ends to the straps, and the oscillating arms pivotally secured at their upper ends above the pivot bars and engaging therewith at their lower ends, substantially as described.

2. The combination with the saw-carrying frame of an angular pivot bar mounted in suitable bearings thereon, the suspending strap D, having in its lower part the block d', provided with the recess d^3, and the slots *e*, in its upper portion for the wedge e', the block F, having the groove *f*, provided with the tooth f', and secured in the strap below the slot *e*, the forked arm G, having the depression g', in its lower end, and the suspending rod E, provided in its lower portion with the slots e^2, and e^3, and the wedge e', and bolt e^4, in said slots respectively, all constructed, arranged and operating substantially as and for the purpose set forth.

3. The combination with the saw-carrying frame of an angular pivot bar mounted in suitable bearings thereon, the suspending strap D, having in its lower part the block d', provided in its upper surface with the recess d^3, a block having a toothed groove or recess in its lower portion and secured in the strap D, above the pivot bar, an oscillating arm having at its upper end teeth or projections to engage those of the grooved block, and in its lower end a depression to engage the upper angle of the pivot bar, and the suspending rod E, secured at its upper end to a support and at its lower end to the strap, substantially as described.

545,078. FRICTION-CLUTCH. CHARLES C. KLEIN, Philadelphia, Pa. Filed Dec. 11, 1894. Serial No. 531,496. (No model.)

Claim.—1. A friction ring, kept in constant positive transmitting contact with one of the transmitting members by means of interlocking jaws projecting from its exterior surface and from the interior surface of said transmitting member respectively, approximately opposite to the cut in the circumference of said ring, in combination with said transmitting member, a cylindrical head and means for compressing said ring upon the cylindrical head, substantially as and for the purpose set forth.



2. A compressible friction ring having internal flanges inclosing a cylindrical head, in combination with said cylindrical head, a transmitting member or case, pressure levers and means for operating the same, substantially as and for the purpose set forth.

3. A friction ring kept in constant positive transmitting contact with one of the transmitting members by means of interlocking jaws projecting from its exterior surface and from the interior surface of said transmitting member respectively and having diametrically opposite said jaws counterbalancing lugs, in combination with a cylindrical head, a transmitting member or case, pressure levers and means for operating the same substantially as and for the purpose set forth.

4. A friction ring having surfaces at approximately right angles to the axial line of impinging pressure screws and approximately coinciding with a plane parallel with the axis of the shaft and passing through the axis of the pressure levers, in combination with a cylindrical head, pressure levers, pressure screws in said pressure levers, impinging upon said surfaces means for operating said pressure levers, and a transmitting member supporting said pressure levers, substantially as and for the purpose set forth.

5. In a friction clutch pressure levers acting in a plane passing longitudinally through the center of the clutch, adjusting pressure screws located on both levers to one side of that plane and corresponding with and acting upon surfaces provided upon the friction ring, counterbalancing extensions of said levers on the opposite side of said plane, combined with a compressible friction ring, a fast and a loose transmitting member and means for actuating said levers substantially as and for the purpose set forth.

6. In a friction clutch, tension pieces connecting the bearings for the fulcrum journals of the pressure levers and attached to the transmitting member which supports said pressure levers in combination with said transmitting member, a friction ring, a cylindrical head, pressure levers and means for actuating said pressure levers substantially as and for the purpose set forth.

7. In a friction clutch the improved actuating mechanism consisting of a trunnioned yoke a rigid stand or support, toggle links, an operating lever connecting said yoke and support, and a sliding sleeve, in combination with the transmitting members of a friction clutch, a friction ring, pressure levers and the means for operating said levers, substantially as and for the purpose set forth.

545,079. PROCESS OF PREPARING BLANKS FOR THE MANUFACTURE OF HORN-BUTTONS. FRANZ KONRAD, Niedergrund, Austria-Hungary. Filed Apr. 13, 1895. Serial No. 545,643. (No specimens.) Patented in Austria Jan. 5, 1895, No. 45/31.

Claim.—1. The herein-described improvement in the manufacture of horn buttons, which consists in subjecting the flattened horn disks to the action of a horn solvent and then polishing said disks.

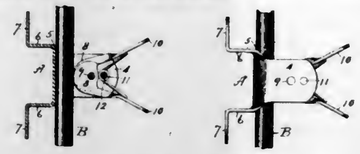
2. The herein-described improvement in the manufacture of horn buttons, which consists in boiling the press flattened horn disks in a horn solvent, as an alkali lye, and subsequently polishing said disks and rounding the edges thereof,

3. The herein-described improvement in the manufacture of horn buttons, which consists in boiling the press flattened horn disks in a horn solvent, as an alkali lye, and subsequently polishing said disks by subjecting the same to a tumbling operation.

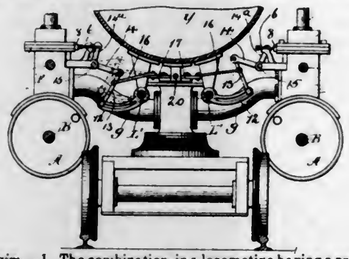
545,080. TRANSOM-ROD HOLDER. HENRY LEPPERT, New Britain, Conn., assignor to the Russell & Erwin Manufacturing Company same place. Filed Apr. 29, 1895. Serial No. 547,465. (No model.)

Claim.—The herein described transom rod holder consisting of a frame having the two broad sides 4, with a clamping socket 5 at their base or junction for bearing contact with one side of the transom rod,

and having also the feet 7 and supporting legs 6 extended from said socket, a pair of oppositely arranged eccentrics or cams secured between said sides 4 of said frame for acting on the other side of said rod, and a spring for pressing said cams toward said rod, substantially as described and for the purpose specified.



545,081. PORT-REGULATING VALVE. FRANK LESTER, Panhandle, Tex. Filed Nov. 14, 1894. Serial No. 528,809. (No model.)



Claim.—1. The combination, in a locomotive having a rock valve for controlling the induction and eduction ports of its cylinder, of a steam chest, a chest for carrying the valve and having ports leading from the steam chest to the valve, of slide valves 4, 5, for closing such ports, a rock lever for actuating such valves and having its opposite ends connected with them respectively, a crank shaft, crank arms 14, 14^a, carried by the crank shaft, connection between the crank arm 14^a, and the rock lever, a rock shaft, a cam carried by the axle of the drivers of the locomotive for rocking the shaft, a crank arm 12, carried by the rock shaft and a link bar 13, uniting the crank arm 12, with the crank arm 14.

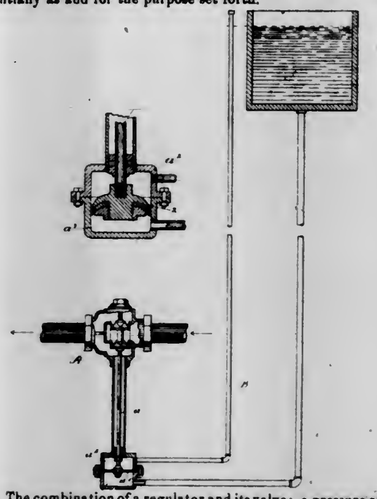
2. The combination in a locomotive having a rock valve for controlling the induction and eduction ports of its cylinder, of a steam chest, a chest for carrying the valve and having ports leading from the steam chest to the valve, of slide valves 4, 5, for closing such ports, a rock lever for actuating such valves and having its opposite ends connected with them respectively, a crank shaft, crank arms 14, 14^a, carried by the crank shaft, connection between the crank arm 14^a, and the rock lever, a rock shaft, a cam carried by the axle of the drivers of the locomotive for rocking the shaft, a crank arm 12, carried by the rock shaft, a link bar 13, uniting the crank arm 12, with the crank arm 14, and means for shifting the link bar 13, longitudinally upon the crank arm 12.

3. The combination in a locomotive having a rock valve for controlling the induction and eduction ports of its cylinder, of a steam chest, a chest for carrying the valve and having ports leading from the steam chest to the valve, of slide valves 4, 5, for closing such ports, a rock lever for actuating such valves and having its opposite ends connected with them respectively, a crank shaft, crank arms 14, 14^a, carried by the crank shaft, connection between the crank arm 14^a, and the rock lever, a rock shaft, a cam carried by the axle of the drivers of the locomotive for rocking the shaft, a crank arm 12, carried by the rock shaft, a link bar 13, uniting the crank arm 12, with the crank arm 14, and being longitudinally adjustable upon the crank arm 12, a bell crank 17, a link connecting one arm of this bell crank with the link bar 13, the other arm of the bell crank 17, being under control from the cab of the engine.

545,082. HYDROSTATIC PUMP-GOVERNOR AND TANK-FILLER. NATHANIEL C. LOCKE, Salem, Mass. Filed Feb. 2, 1895. Serial No. 537,071. (No model.)

Claim.—1. The combination of a regulator and its valve; a pressure-chamber case; a movable partition therein which divides the case into independent pressure chambers; means for connecting the valve and movable partition; an elevated tank and water leg, the tank being connected with one pressure-chamber and the water-leg with the other pressure-chamber; and the mouth of the water-leg being without the water-occupying portion of the tank, substantially as and for the purpose set forth.

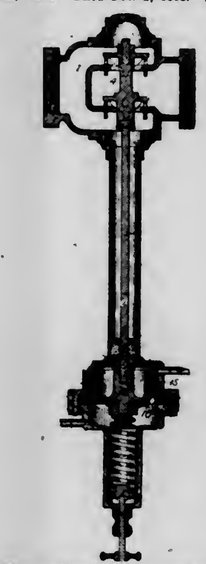
2. The combination of a regulator and its valve; a pressure chamber case; a movable partition therein which divides the case into independent pressure chambers; means for connecting the valve and movable partition; an elevated tank and water leg, the tank being connected with one pressure-chamber and the water-leg with the other pressure chamber; and the water-load in the leg being constant, substantially as and for the purpose set forth.



3. The combination of a regulator and its valve; a pressure chamber case; a movable partition therein which divides the case into independent pressure chambers; means for connecting the valve and movable partition; an elevated tank and water leg, the tank being connected with one pressure-chamber and the water-leg with the other pressure-chamber; and the water-leg being outside the tank, substantially as and for the purpose set forth.

4. The combination of an elevated tank and water-leg with a pressure-chamber-case; a movable partition therein which divides the case into independent pressure-chambers, and a spindle attached to the movable partition and projecting from the case, the tank being connected with one pressure-chamber and the water-leg with the other pressure chamber and the water-leg and its chamber being independent of the tank and its connected pressure-chamber, substantially as and for the purpose set forth.

545,083. BOILER FEED-PUMP REGULATOR. NATHANIEL C. LOCKE, Salem, Mass. Filed Feb. 2, 1895. Serial No. 537,072. (No model.)

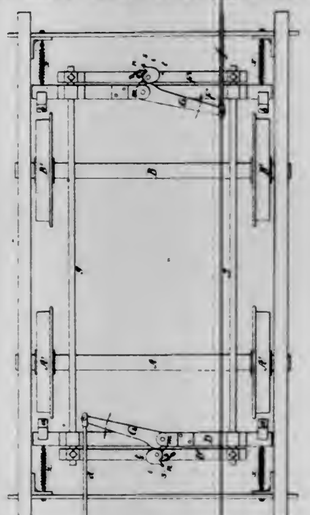


Claim.—1. The combination of a valve-casing having inlet and outlet ports, a valve and a valve-stem; with a diaphragm connected

with the valve-stem; a diaphragm-case divided into independent chambers by the diaphragm which is exposed and susceptible to variations of pressures in each of said chambers; an adjustable spring mounted opposite the valve-stem within the chamber on the other side of the diaphragm from the valve-stem; means for regulating the tension of said spring; each of said pressure chambers being provided with a conduit, all substantially as and for the purpose set forth.

2. The combination with a valve casing having inlet and outlet ports; a valve; and valve-stem of a diaphragm connected with the valve-stem; a casing for the diaphragm, said casing being separated from the valve-casing by a water-leg inclosing the valve stem and being divided into pressure chambers by the diaphragm, a pump conduit for one chamber and a boiler conduit for the other chamber which is provided with means inclosed by a pressure chamber for mechanically loading the diaphragm, additional to the boiler-pressure load, against the pump pressure.

545,084. SLACK-ADJUSTER. JACOB E. LOUGHRIDGE, Philadelphia, Pa., assignor of five-eighths to J. Warren Coulston and J. Warren Coulston, trustee, and Charles Watson, Charles O. Baird, and Abraham S. Patterson, same place; Mary R. Loughridge executrix of said Jacob E. Loughridge, deceased. Filed Sept. 24, 1894. Serial No. 523,927. (No model.)



Claim.—1. The combination in car braking mechanism, of a main brake beam, a supplementary brake beam connected to braking mechanism at the opposite end of the car, a brake operating lever hung to one of said beams, and a movable wedge carried by the other beam and acted upon by said brake operating lever so as to be advanced thereby when slackness of gear or wear of the shoes permits such advance, substantially as specified.

2. The combination in car braking mechanism, of a main brake beam, a supplementary brake beam connected to braking mechanism at the opposite end of the car, a brake operating lever hung to one of said beams, a movable wedge carried by the other beam, and acted upon by said brake operating lever so as to be advanced when slackness of gear or wear of shoes permits such advance, and means for retaining said wedge in its successive positions of advancement, substantially as specified.

3. The combination in car braking mechanism, of a main brake beam, a supplementary brake beam connected to braking mechanism at the opposite end of the car, a brake operating lever hung to one of said beams, a movable wedge carried by the other beam and acted upon by said lever so as to be advanced when slackness of gear or wear of the shoes permits such advance, and resilient means whereby the brake beam is retracted on the release of the lever, said resilient means also serving to maintain the lever and the wedge constantly in contact with each other, substantially as specified.

4. The combination in car braking mechanism, of the main brake beam, the supplementary brake beam connected to the braking mechanism at the opposite end of the car, a brake operating lever hung to one of said beams, a movable wedge carried by the other beam and acted upon by said brake operating lever so as to be advanced thereby when slackness of gear or wear of shoes permits such advance, means for retaining the wedge in its successive positions of advancement, and resilient means for retracting the brake beam and maintaining the wedge and lever constantly in contact, substantially as specified.

5. The combination in car braking mechanism, of a main brake beam, a supplementary brake beam connected to braking mechanism at the opposite end of the car, a brake operating lever hung to one of said beams, an eccentrically pivoted disk hung to the other beam and acted upon by said brake operating lever so as to be turned thereby when slackness of gear or wear of shoes permits such turning movement, and resilient means whereby the brake beam is retracted on the release of the lever, and said lever and disk are maintained constantly in contact with each other, substantially as specified.

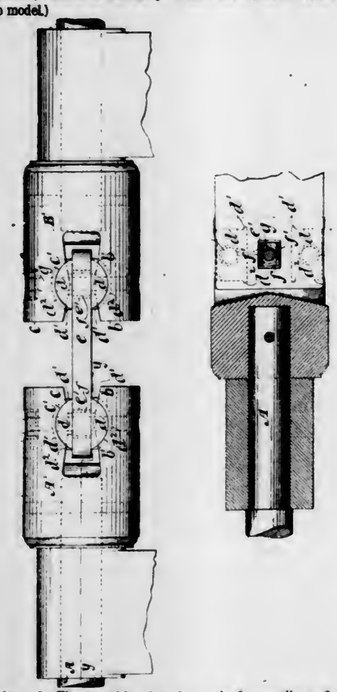
6. The combination in car braking mechanism, of a main brake beam, a supplementary brake beam connected to braking mechanism at the opposite end of the car, a brake operating lever hung to one of said beams, an eccentrically pivoted disk hung to the other beam and acted upon by said lever so as to be turned thereby when slackness of gear or wear of the shoes permits such turning movement, means for retaining said disk in its successive positions of advancement, and resilient means for retracting the brake beam on the release of the brake lever, and for maintaining said lever and disk constantly in contact, substantially as specified.

7. The combination of the main brake beam, the supplementary brake beam connected to braking mechanism at the opposite end of the car, a brake operating lever hung to one of said beams and an eccentrically pivoted disk hung to the other beam and acted upon by said brake operating lever so as to be turned thereby when slackness or wear of the gear permits such turning movement, substantially as specified.

8. The combination of the main brake beam, the supplementary brake beam connected to the braking mechanism at the opposite end of the car, a lever hung to one of said beams, an eccentrically pivoted disk hung to the other beam and acted upon so as to be turned by said lever, and a rack and pawl for retaining said disk in its successive positions of advancement, substantially as specified.

9. The combination of the main and supplementary brake beams, the brake operating lever hung to one of said beams, a disk eccentrically pivoted to the other beam and acted upon by said lever so as to be turned thereby, and stops for restricting such turning movement of the disk, substantially as specified.

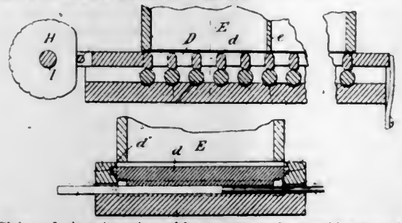
545,085. FLEXIBLE COUPLING FOR SHAFTING. MAX MANNESMANN, Remscheid, Germany. Filed June 12, 1894. Serial No. 514,284. (No model.)



Claim.—1. The combination in a shaft coupling of the bifurcated heads A' B'; there being round bottomed and grooved recesses, b' b^3 c' c^3, in the opposed faces of the jaws, b and c, of each of said bifurcated heads; corresponding flanged segments of cylinders seated in said grooved recesses; the blade, e, the end portions of which are seated with a sliding fit between the opposed flat faces of the said segments of cylinders and are provided with the slots, e' e', the transversely perforated sliding boxes, f f, and the locking pins, g g, respectively inserted through said sliding boxes and through the jaws of the said bifurcated heads.

2. A flexible shaft coupling composed of two bifurcated heads affixed respectively to the adjacent ends of the lengths of shafting to be coupled, a flat blade for transmitting rotatory motion from one of said bifurcated heads to the other, rotatable pairs of segments of cylinders seated in the opposed faces of the jaws of each of said bifurcated heads with their flat sides bearing with a loose sliding fit upon the sides of the said blade, a slot extending through each of the parts of said blade which are contained between the jaws of said bifurcated heads, a transversely perforated sliding box contained in each of said slots, and a locking-pin for each head extending through said sliding box and through transverse perforations in the jaws of the head.

545,086. MATCH-RACKING MACHINE. JOHN D. MANTION, Hull, and EDMUND G. SHEPHERD, Ottawa, Canada; said Mantion assignor of his right and said Shepherd assignor of two-thirds of his right to Edwin Septimus Leetham and Charles D. Chitty, Ottawa, Canada. Filed Dec. 4, 1894. Serial No. 530,829. (No model.)



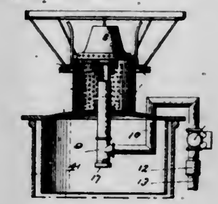
Claim.—1. In a match racking machine, the combination of a stationary plate, an upwardly projecting rim or flange secured to each longitudinal edge of said plate, provided with a series of notches at the level of the upper surface of said plate, rollers journaled in said rims between and clearing said notches and extending across said plate, a frame secured slidingly in said rims by runners adapted to move in wider grooves in said rims so as to allow vertical play and provided with slats parallel to said rollers and adapted to rest on the top of the same and in a little lower position in the spaces between them, a spring pressing said frame longitudinally in one direction, a vibrating cam disk with flat space against which said frame is pressed by said spring and carried upon a shaft receiving suitable motion and a hopper held above said frame, substantially as set forth.

2. In a match splint racking machine, the combination of a stationary plate B provided with a series of shallow segmental grooves extending transversely across the same, an upwardly projecting rim or flange at each longitudinal edge of said plate provided with a series of notches each adapted to pass a match splint between each groove in the plate and level with the upper surface thereof, a small roller journaled in said rims between each pair of said notches and clearing the same and for which the grooves in the plate form a suitable race, and a series of slats parallel to said rollers and forming a grid above them and held slidingly and with vertical play on and between said rollers, substantially as set forth.

3. In a match racking machine, the combination of a stationary hopper, a transversely grated bottom or grid held slidingly longitudinally and vertically under said hopper, a longitudinal guide rail at each side of said sliding bottom connected with the sides of said bottom by means of narrow runners in wide grooves to afford a vertical movement, a spring pushing said grid longitudinally in one direction, a cam disk with notches and a flat space against which the other end of said grid is pushed by the spring and which imparts to it the vibrating motion and also a longitudinal movement, rollers journaled in said guides below said sliding bottom parallel to the grating of the latter and supporting and raising the slats forming said grating when the latter are being moved longitudinally from the interstices of said rollers to a position above them, substantially as set forth.

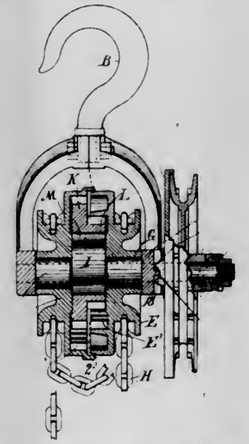
545,087. DROP-LIGHT. WILLIAM M. MILLER, Richmond, Va. Filed May 14, 1895. Serial No. 549,298. (No model.)

Claim.—1. In a drop-light, the combination of a standard having at its upper end an open head, a frame fitting removably within said head and provided with a top or cover, a gas tube passing centrally through the top or cover, said tube being provided with a removable drainage cap at its lower end, a perforated cylinder resting on the top and surrounding the gas tube, a chimney-supporting ring on top of this cylinder, a burner screwed on the central gas tube and serving to clamp said ring and cylinder in place, and a gas-supply pipe passing down through the top and connecting with the central gas-tube as and for the purposes described



2. In a drop-light, the combination of a standard having at its upper end an open head, a frame fitting removably within said head and provided with a top or cover, a gas tube passing centrally through the top or cover, a perforated cylinder resting on the top and surrounding the gas tube, a chimney-supporting ring on top of this cylinder, a burner screwed on the central gas tube and serving to clamp said ring and cylinder in place, and a gas-supply pipe passing down through the top and connecting with the central gas-tube, as and for the purposes described.

545,088. AUTOMATIC BRAKE FOR PULLEY-BLOCKS. EDWARD Y. MOORE, Milwaukee, Wis. Filed Apr. 2, 1894. Serial No. 505,983. (No model.)



Claim.—1. In an automatic brake for pulley blocks, the combination, of a frame, a main axle passing freely through the frame, a chain wheel loose on the main axle, a friction plate also loose on said axle, and mounted thereon to one side of the wheel, a wedging connection between the plate and the frame, said wedging connection when the wheel is turned in one direction to lower the load constructed to be tightened, whereby the plate is thrown in firm frictional contact against the adjacent side of the wheel, and said wedging connection when the wheel is turned in the opposite direction to raise the load adapted to be loosened, a part fixed on the axle and constructed to engage the opposite side of, and to rotate the wheel, a wedging connection being formed between said part and the wheel, which connection when the wheel is turned in the direction to lower the load is adapted to be loosened or disengaged simultaneously with the tightening or engaging of the first-named wedging connection, and to be tightened or engaged to act against the adjacent side of the wheel, as said wheel is turned in the opposite direction to raise the load, simultaneously with the loosening of said first-named wedging connection, and a lifting sheave, the downward pull of the load thereon, when the chain wheel is in a state of inertia, being adapted to turn the main axle, and thereby tighten both wedging connections, and prevent the descent of the load, substantially as set forth.

2. In an automatic brake for pulley blocks, the combination, of a frame, a main axle passing freely through the frame, a chain wheel loose on the main axle and provided with notches having inclined ends, a friction plate also loose on said axle and mounted thereon to one side of the wheel, a wedging connection between the plate and the frame, said wedging connection, when the wheel is turned in one direction to lower the load, constructed to be tightened, whereby the

plate is thrown in firm frictional contact against the adjacent side of the wheel, and said wedging connection, when the wheel is rotated in the opposite direction to raise the load, adapted to be loosened, a collar fixed on the main axle, said collar formed or provided with teeth having inclined ends, adapted to register with the inclined notches of the chain wheel and to have a slight play therein, the wedging connection thereby formed adapted, when the wheel is turned in the direction to lower the load, to be loosened or disengaged simultaneously with the tightening or engaging of the first-named wedging connection, and to be tightened or engaged to act against the adjacent side of the wheel, as said wheel is turned in the opposite direction to raise the load, simultaneously with the loosening of said first-named wedging connection, and a lifting sheave, the downward pull of the load thereon, when the chain wheel is in the state of inertia, adapted to turn the main axle, and thereby tighten both wedging connections, and prevent the descent of the load, substantially as set forth.

3. In an automatic brake for pulley blocks, the combination, of a frame of a pulley block, provided with a fixed part having an inclined surface, a main axle passing freely through the frame, a friction plate through which the main axle passes freely, said plate provided with oppositely beveled or inclined surfaces adapted to register with the inclined surface of the fixed part, and thereby form a wedge, a chain wheel on the pulley block axle, said wheel adapted, when rotated in one direction, to turn the plate limitedly, said plate when turned limitedly in one direction being forced, through the medium of the registering inclines or bevels laterally against the chain wheel, and when turned in the opposite direction being released from forcible engagement with said chain wheel, substantially as set forth.

4. In an automatic brake for pulley blocks, the combination, of a frame of a pulley block provided with a fixed part having an inclined surface, a main axle passing freely through the frame, a friction plate through which the main axle passes freely, said plate provided with oppositely beveled or inclined surfaces adapted to register with the inclined surface of the fixed part, and thereby form a wedge, a limiting stop or stops for the wedge, a chain wheel upon the main axle, said wheel adapted, when rotated in either direction, to turn the plate limitedly, said plate when turned limitedly in one direction being forced, through the medium of the registering inclines, laterally against the chain wheel, and when turned in the opposite direction being released from forcible engagement with said chain wheel, substantially as set forth.

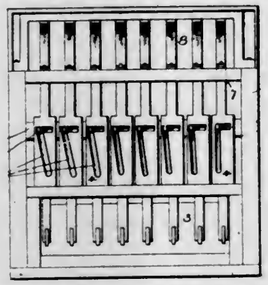
5. In an automatic brake for pulley blocks, the combination of a main axle, a pulley block frame having a fixed part formed or provided with an inclined surface, a chain wheel mounted loose on the axle, and provided with notches having inclined ends, a friction plate between the wheel and the inclined surface of the fixed part, through which plate the main axle passes freely, said plate provided with an inclined surface registering with the inclined surface of the fixed part, and a collar splined on the main axle, said collar formed or provided with teeth having inclined ends adapted to register with the inclined notches of the chain wheel, and to have a slight play therein, substantially as set forth.

6. In an automatic brake for pulley blocks, the combination, of a main axle, a pulley block frame having a fixed part formed or provided with an inclined surface, a chain wheel mounted loose on the axle and provided with notches having inclined ends, a friction plate between the wheel and the inclined surface of the fixed part, through which plate the main axle passes freely, said plate provided with an inclined surface registering with the inclined surface of the fixed part, a collar splined on the main axle, said collar formed or provided with teeth having inclined ends, adapted to register with the inclined notches of the chain wheel, and to have a slight play therein, and a nut on the end of the main axle, adapted to be turned against the collar, substantially as set forth.

7. In an automatic brake for pulley blocks, the combination of a main axle, a pulley block frame having a fixed part formed or provided with an inclined surface, a chain wheel mounted loosely on the axle and provided with notches having inclined ends, a friction plate between the wheel and the inclined surface of the fixed part, through which plate the main axle passes freely, said plate provided with an inclined surface registering with the inclined surface of the fixed part, a collar splined on the main axle, said collar formed or provided with teeth having inclined ends, adapted to register with the inclined notches of the chain wheel, and to have a slight play therein, an adjusting nut on the end of the main axle adapted to be turned against the collar, said nut provided with annularly arranged radial teeth, and a screw adapted to be passed between the space of any two of the teeth, and to enter the face of the collar, substantially as set forth.

545,089. ADDING-MACHINE. JAMES L. MCELYEA, Nona, Tex., assignor of one-half to G. R. Fergerson, same place. Filed Nov. 7, 1894. Serial No. 528,123. (No model.)

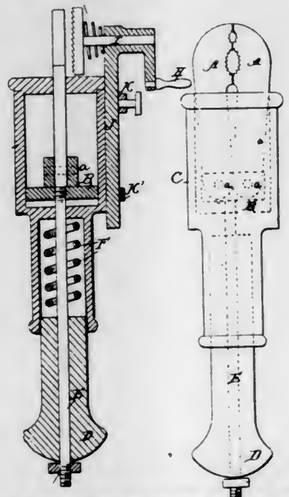
Claim.—1. In an adding and calculating machine, the combination with a casing, of a laterally reciprocating bar therein carrying pins on its outer face, rods having cam slots therein engaging said pins, key levers attached to said slotted rods, a ratchet wheel mounted in said casing engaged by a pawl carried by said bar, an indicating dial secured to the shaft upon which said ratchet wheel is mounted, whereby upon the depression of a key the said bar is reciprocated, the said ratchet wheel and indicator are turned and the amount is indicated on the face of the dial, substantially as described.



2. In an adding and calculating machine, the combination of a casing having a laterally reciprocating bar therein carrying a series of pins on its rear face, a series of rods having cam slots therein of varying sizes, adapted to move said reciprocating bar varying distances, key levers attached to said slotted rods, a ratchet-wheel mounted in said casing engaged by a pawl on said reciprocating bar, and an indicating dial secured to the shaft upon which said ratchet wheel is mounted, whereby upon the depression of one or the other of said key levers the said bar is reciprocated a distance corresponding with said key, the said ratchet wheel and indicating dial are turned and the indication is made upon said dial, substantially as described

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545,090. COMBINED SPICE HOLDER, GRINDER, NAIL-PULLER, AND GAS-WRENCH. FREDRICK S. MCKITTRICK and WILLIAM WILKSON, Johannesburg, South African Republic. Filed Jan. 17, 1895. Serial No. 535,286. (No model.)



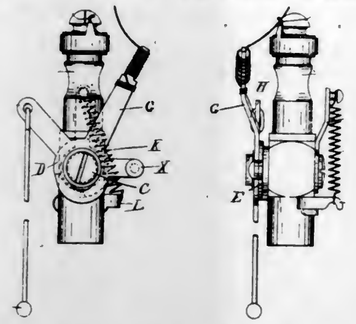
Claim.—1. In a tool of the character described the combination with the cylinder, the jaws held therein with means for operating them, and the detachable grinder or cutter, substantially as described.

2. In combination the cylinder, the spring pressed jaws supported therein, the handle for operating them, the detachable slide bar and the grinder carried thereby, substantially as described.

3. In combination the cylinder, the disk sliding therein carrying pivoted jaws, the shank, the sliding handle connected therewith, the spring, and the detachable grinder held in proximity to said jaws, substantially as described.

4. In combination, the cylinder provided with brackets, the jaws with means for operating them, the removable bar sliding in said brackets with means for locking it therein, and the grinder carried by said bar, substantially as described.

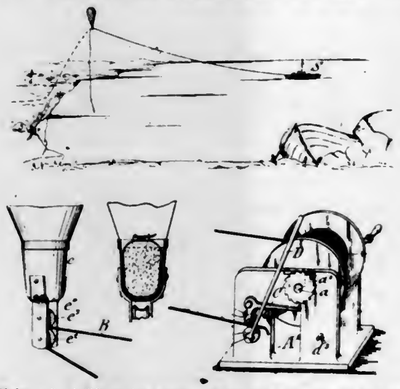
545,091. ELECTRIC GAS-LIGHTING APPARATUS. JAMES W. PALMER, Nashua, N. H., assignor to the Electric Gas Lighting Company of Maine. Filed Jan. 9, 1895. Serial No. 534,291. (No model.)



Claim.—1. The combination of a gas-burner pillar, provided with a fixed insulating electrode, an oscillating gas-cock, and a plate thereto affixed, and a three-arm vibrating piece, one arm loosely pivoted to said plate, one arm carrying the wiping electrode, and the third arm connected with an actuating rod or wire, substantially as described.

2. In an electric hand-lighting gas-burner, in combination with the oscillating gas-cock, a plate-piece thereto affixed and adapted to carry the vibrating electrode, and a vibrating electrode constructed with three arms, one to be affixed to said plate, one to carry the vibrating electrode, and one for connection with the operating wire, all substantially as described.

545,092. LIFE-SAVING APPARATUS FOR SHIPS. LEW PARKER, Brooklyn, assignor of one-fourth to William J. Quinlan, Port Richmond, N. Y. Filed Nov. 6, 1894. Serial No. 528,025. (No model.)



Claim.—1. A life-saving apparatus for ships, consisting of a life-saving line, a drum on which said line is wound, a balloon provided with a guide-roller at its lower part over which the line passes, whereby the balloon is connected with the line, means for inflating the balloon at the proper moment, mechanism for clamping the free end of the life-saving line, and mechanism for releasing the line and simultaneously arresting the unwinding motion of the drum, substantially as set forth.

2. In a life-saving apparatus for vessels, the combination with a life-saving line, and means for connecting the same at one end to a vessel, of a balloon provided with a guide-device through which the line loosely passes, and means for clamping the free end of the line and for releasing the same when the balloon is near the shore, substantially as set forth.

3. In a life-saving apparatus for vessels, the combination with a frame that is adapted to be supported on a vessel, a drum mounted to revolve in the frame and a life-saving line wound upon said drum, of a balloon connected with the line and provided with a guide-device through which the line loosely passes, mechanism for clamping or releasing the free end of the life-saving line and mechanism for arresting the drum when the free end of the life-saving line is released, substantially as set forth.

4. In a life-saving apparatus for ships, a balloon provided with a socket at its lower part, a sheave supported from said socket, guide-pulleys supported in the sheave, a life-saving line guided between said pulleys and around one of the same, means for connecting one end of the line with the vessel, means for inflating the balloon when it is desired to convey the life-saving line toward the shore, and means for clamping and releasing the other end of the line, substantially as set forth.

5. The combination with a balloon, provided with means for inflating the same and with a guide-device applied to the lower end of the balloon, a life-saving line passing over said guide-device, a winding drum to which one end of the life-saving line is attached, means for clamping the free end of the life-saving line, means for releasing said clamping-device and means for simultaneously arresting the drum, substantially as set forth.

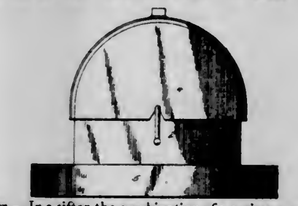
6. The combination of a life-saving line, a drum on which the same is wound, a supporting-frame for the shaft of said drum, a ratchet-wheel on the end of the shaft, a crank at the opposite end of the same, a spring-actuated bell-crank lever fulcrumed to the supporting-frame of the drum, said lever being provided with a pawl on the longer and a roller on the shorter arm, a toothed cam pivoted eccentrically to the supporting-frame below said roller, and a lever attached to the eccentric cam so as to clamp the free end of the line between the roller and cam, or release the same for permitting the engagement of the pawl of the bell-crank-lever with the ratchet-wheel on the shaft of the winding-drum, substantially as set forth.

545,093. PREPARED SHEET FOR STENCILS. CHARLES T. POMEROY and ELTWEED POMEROY, Newark, N. J. Filed June 17, 1895. Serial No. 553,143. (Specimens.)

Claim.—1. A prepared sheet for use as a stencil sheet consisting of a base of a felted structure composed of a comparatively small number of long and strong fibers and a comparatively large number of short and weak fibers massed together into a homogeneous non-perforate sheet, coated with a substance impervious to ink, substantially as described.

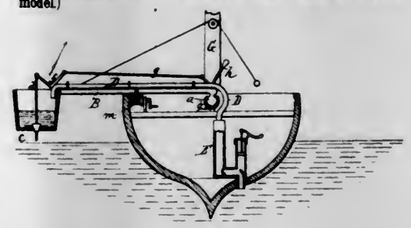
2. A prepared sheet for use as a stencil sheet consisting of a sheet of paper composed of a comparatively small number of long and strong fibers and a comparatively large number of short and weak fibers, massed together into a homogeneous non-perforate sheet, said sheet being coated with wax substantially as described.

545,094. ASH-SIFTER. JOHN G. P. PUTNAM, Claremont, N. H. Filed Mar. 20, 1895. Serial No. 542,529. (No model.)



Claim.—In a sifter, the combination of a casing, a cylindrical sieve journaled therein and provided with a hinged section or lid, and catches located at each end of the cylindrical sieve and each comprising a resilient plate mounted on the exterior of the body portion of the sieve and provided with a slot and having its upper free end curved outward, a supporting plate mounted on the interior of the body portion and arranged adjacent to the resilient plate, and having its upper end curved inward, and co-operating with the outwardly curved end of the resilient plate to form a flaring mouth or entrance to the space between the plates and a lug mounted on the exterior of the lid or hinged section and having a beveled portion and engaging the slot of the plate, substantially as described.

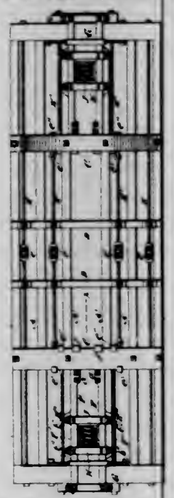
545,095. APPARATUS FOR TRIMMING SHIPS. EDMOND REDMOND, Rochester, N. Y. Filed Apr. 5, 1894. Serial No. 506,516. (No model.)



Claim.—1. The combination in an outrigger for ships, of the arm B, joint *a b* connecting said arm to the deck, tank C, secured to the free end of said arm, valve c in the bottom of said tank, and means for operating said valve, pump E, located on the ship, tube D connecting said pump and tank, and means for controlling the movement of the arm substantially as described.

2. In the art of trimming a ship an outrigger consisting of an adjustable arm that is extended from the side of the vessel and which carries at its extremity a tank that is held above the water in which the ship is floating, by said arm; the tank to be connected with apparatus by which water can be thrown into it or discharged therefrom.

545,096. RAILWAY-CAR CONSTRUCTION. WILLIAM H. RONEMUS, Cedar Rapids, Iowa. Filed May 27, 1895. Serial No. 550,882. (No model.)

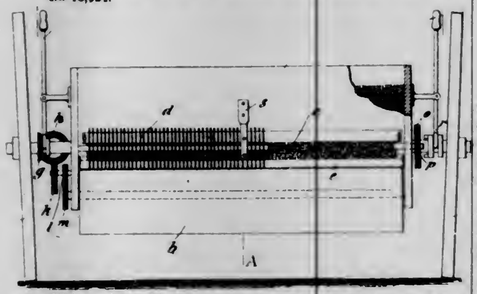


Claim.—1. The combination with a car, of the cheek-plates F F, having suitable lugs F' F' to connect them with the end sills B, recesses F'' on the under side, hooks *f f* at the other ends of said cheek-plates, and the bolster C with which said hooks connect, substantially as and for the purpose set forth.

2. The combination with a car, of the cheek plates F F having recesses F'' F'' adapted to receive the followers for the draw-bar springs, followers K K, and angle plates I I having inwardly bent tongues I' I' to hold said spring laterally in position.

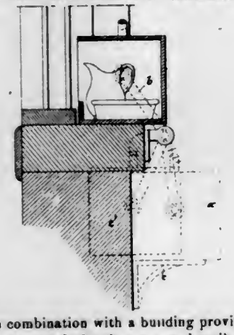
3. The combination with a car having bolsters, substantially as described, of the cheek-plates F F provided with hooks *f f* engaging said bolsters, truss-rods E' E' with hooks *e' e'*, connecting said bolsters, and truss-rods E'' E'' with hooks *e'' e''* connecting each bolster with the end sill of the car, substantially as and for the purpose set forth.

545,097. MACHINE FOR SCATTERING MANURE. EDUARD SCHEIBLICH, Kibitzberg, Germany. Filed Aug. 16, 1894. Serial No. 520,529. (No model.) Patented in Belgium May 9, 1894, No. 109,905; in Austria May 21, 1894, No. 44/1,753, and in England July 14, 1894, No. 13,621.



Claim.—A machine for scattering manure characterized by a chest (*a*) above the drum (*b*), said chest serving essentially to hold the manure and provided with a strew-roller (*d*) and a strew-plate (*e*), the latter curved according to the radius of the strew-roller (*d*), whereby drum and strew-roller will get their motions independent one from another by the wheels (*f*) of the machine for scattering manure and whereby the very same can be disengaged by means of the levers (*n*) and (*q*).

545,098. REFRIGERATOR. HENRY W. SCHLOSS, New York, N. Y. Filed May 24, 1894. Serial No. 512,273. (No model.)

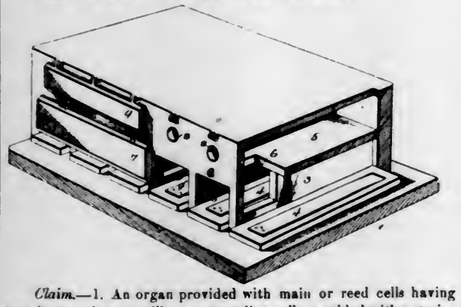


Claim.—The combination with a building provided with a window, of a box or receptacle for the purpose described, said box having one side open for access to its contents and being pivoted to the building at a point below the window and normally resting against the wall of the building with the latter acting as a cover for the open side of the box, and two links pivoted at their extremities respectively to the box and the building, whereby the box may be swung upward above its connections with the wall and onto the window sill to expose and make accessible its contents, substantially as described.

545,099. PROTOCATECHUIC ALDEHYDE-META-ALKYL-ETHERS AND PROCESS OF MAKING SAME. ALBRECHT SCHMIDT, Berlin, Germany. Filed July 21, 1894. Serial No. 518,241. (No specimens.)

Claim.—The process of obtaining protocatechuic aldehyde-meta-alkyl-ethers, which consists in causing a suitable compound of the type of benzyl chlorid to act upon a monometallic salt of protocatechuic-aldehyde, alkylating a salt of the so formed compounds of the type of para-benzyl-protocatechuic-aldehyde, and separating from the compounds of the type of para-benzyl-protocatechuic aldehyde-meta-alkyl-ether thereby obtained the protocatechuic-aldehyde-meta-alkyl ethers by decomposition, such as by means of hydrochloric or hydrobromic acid, substantially as set forth.

545,100. REED-ORGAN. WILLIAM SEYBOLD, Fort Wayne, Ind. Filed Jan. 31, 1895. Serial No. 536,859. (No model.)

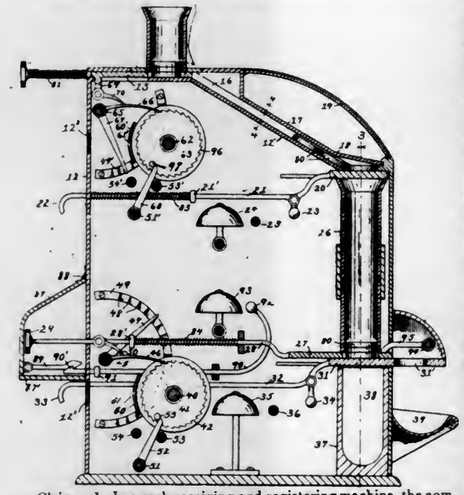


Claim.—1. An organ provided with main or reed cells having exterior openings, auxiliary or sounding-cells provided with exterior openings, each auxiliary or sounding-cell being permanently in communication with two contiguous main or reed cells, reeds arranged in the main or reed cells, and independent valves for controlling the exterior openings of the cells, substantially as specified.

2. An organ provided with parallel tiers of reed-cells and sounding cells, each sounding-cell being in communication with a reed-cell at a point contiguous to one end of the latter, and each cell being provided with an exterior opening, reeds arranged in the reed cells with the heels of their tongues under the points of communication of the sounding-cells with the reed cells, and independent mutes for closing the exterior openings of the sounding and reed cells, substantially as specified.

3. An organ provided with parallel tiers of reed cells and sounding-cells having exterior openings, each sounding-cell being equal in area to two contiguous subjacent reed cells and each sounding-cell being in communication with said two contiguous reed cells, reeds arranged in the reed cells, and independent mutes controlling the openings of said reed and sounding-cells, substantially as specified.

545,101. CASH RECEIVING, DELIVERING, AND REGISTERING MACHINE. LOCKERT N. SHOEMAKER, Greenfield, Ohio. Filed Mar. 30, 1892. Serial No. 427,141. (No model.)



Claim.—1. In a cash receiving and registering machine, the combination, with a row or series of cash receiving tubes 14, of a series of slides placed respectively beneath said tubes and designed to carry forward the cash received to the view of the customer, an incline 12' in which the cash is displayed to view, said incline being placed in front of said tubes, a row or series of tubes 26 placed beneath said incline, and a series of slides placed beneath said tubes for the purpose of dealing out money to the customer, substantially as set forth.

2. In a cash receiving and registering machine, the combination, with a row or series of cash receiving tubes 14, of a series of slides placed respectively beneath said tubes and designed to carry forward the cash received to the view of the customer, an incline 12' in which the cash is displayed to view, said incline being placed in front of said tubes, a slide 20 placed beneath said incline and designed to drop the cash from view into tubes 26, a row or series of tubes 26 placed beneath said slide, and a series of slides placed beneath said tubes for the purpose of dealing out money to the customer, substantially as set forth.

3. In a cash receiving and registering machine, the combination, with a row or series of money receiving tubes 14 of a series of slides placed respectively beneath said tubes and designed to carry forward the money received to the view of the customer, a like row or series of tubes 26 and a like series of slides for dealing out money to the customer, an incline 12' in which the cash is displayed to view, and a slide 20 designed to drop the cash from view into tubes 26, and registering mechanism which indicates in figures the sum of the amounts received and also the sum of the amounts dealt out, all substantially as set forth.

4. In a cash receiving and registering machine, the combination, with a row or series of money-receiving tubes 14, of a series of slides 15 placed respectively beneath said tubes and designed to carry forward the cash received to the view of the customer, and a series of wheels 63 and 63' mounted on an arbor 62 and having numbers on their peripheries, a rod or shaft 65 having a series of spring-pawls 66 which engage with and bear upon the ratchet teeth on said wheels, and pawls 70 for rotating said wheels one tooth or space at a time, said pawls resting and traveling forward upon said spring pawls, for the purpose set forth, and being connected to and operated in unison with said slides, the whole being so constructed and arranged that whenever a slide is pressed forward to exhibit a coin to view the corresponding wheel is rotated one space, thereby registering the value of the coin, all substantially as set forth.

5. In a cash receiving and registering machine, the combination, with a row or series of money-receiving tubes 14, of a series of slides 15 placed respectively beneath said tubes and designed to carry forward the money received to the view of the customer, and an incline 12' on which the money slides down to the foot of the incline and lodges in view of the customer, substantially as described.

6. In a cash receiving and registering machine, the combination, with a row or series of money-receiving tubes 14, of a series of slides 15 placed respectively beneath said tubes and having openings equal in diameter to said tubes, an incline in front of and having grooves respectively equal in width to said tubes, and a slide 20 immediately beneath the foot of the incline for dropping the money from the view of the customer, substantially as described.

7. In a cash receiving and registering machine, the combination, with an incline 12' having parallel grooves extending longitudinally with the machine, of a transverse slide 20 placed beneath the foot of said incline and designed to retain the coins in view of the customer, a row or series of money-receiving tubes 26 placed beneath said slide, and a series of slides placed respectively beneath said tubes for the purpose of dealing out money to the customer, substantially as set forth.

8. In a cash receiving and registering machine, the combination, with a series of slides 27 for dealing out money to the customer; of a series of stops or pawls 95 for arresting said slides when no coin is dealt out, substantially as set forth.

9. In a cash receiving and registering machine, the combination, with a series of slides 27 for dealing out money to the customer, of a series of stops or pawls 95 having their inner ends resting, respectively, upon said slides, for the purpose specified, substantially as set forth.

10. In a cash receiving and registering machine, the combination, with a row or series of money tubes 26, of a series of slides 27 placed respectively beneath said tubes and having operating rods 28 with pressure-buttons 29 and openings 30' immediately beneath said tubes, for the purpose specified, and stops 95 with their ends resting upon said slides, substantially as set forth.

11. In a cash receiving and registering machine, the combination, with a row or series of tubes 26, of a series of slides placed respectively beneath said tubes, a series of stops 95 with their ends resting upon said slides, respectively, for the purpose specified, and a money receptacle 39 placed in front of said slides, as and for the purpose set forth.

12. In a cash receiving and registering machine, the combination, with a row or series of tubes 26, of a series of slides placed respectively beneath said tubes, a transverse slide 31 beneath said slides and designed to drop the cash contained in said tubes into suitable pits or compartments 38 in the money drawer 37, a hammer 34 attached to the operating rod of said slide 31, and a bell or gong 35 to be actuated or sounded by said hammer, substantially as set forth.

13. In a cash receiving and registering machine, the combination, with a row or series of tubes 26, of a series of slides placed respectively beneath said tubes, a money receptacle 39 placed in front of said slides, a transverse slide 31 beneath said slides and designed to drop the money contained in said tubes into suitable pits or compartments 38 in the money drawer 37, a hammer 34 attached to the operating rod of said slide 31, and a bell or gong 35 to be actuated or sounded by said hammer, substantially as described.

14. The combination, in a cash receiving and registering machine, with a row or series of cash-tubes 26, of a series of slides 27 placed beneath said tubes and having operating rods 28 which carry pawls 50, and a series of wheels 41 and 41' mounted on an arbor 40 and having numbers on their peripheries, a rod or shaft 45 having a series of spring-pawls 46 which engage with and bear upon the ratchet-teeth 42 and 42' on said wheels, and pawls 50 for rotating said wheels one tooth or space at a time, said pawls resting and traveling forward upon said spring-pawls 46, for the purpose set forth, and being connected to and operated in unison with said slides 27, the whole being so constructed and arranged that whenever a slide 27 is pressed forward to deliver a coin into receptacle 39 the corresponding wheel 41 is rotated one space, thereby registering the value of the coin delivered, substantially as set forth.

15. The combination, in a cash receiver and register, with a row or series of money tubes 26, of a series of slides 27 placed respectively beneath said tubes, a transverse slide 31 placed beneath said slides, a cash receptacle 39, a hammer attached to the operating rod of said slide 31, a bell or gong to be operated or sounded by said hammer, and a money till or drawer 37 having pits or compartments 38 immediately beneath said tubes, substantially as described.

16. In a cash receiving and registering machine, the combination, with an arbor 40 mounted in the casing of the machine, of a series of wheels 41 rotatably mounted thereon, said wheels having numbers on their peripheries and ratchet teeth designed to be engaged by pawls 50 when slides 27 are pressed forward, and a rod or shaft 45 having spring pawls 46 which bear upon said ratchet teeth and an operating rod or arm 47 which is held in position by stops or ratchets 48 on plate 49, substantially as set forth.

17. In a cash receiving and registering machine, the combination, with an arbor 40 mounted in the casing of the machine, of a series of wheels 41 rotatably mounted thereon, said wheels having numbers on their peripheries and ratchet teeth designed to be engaged by pawls

50, rods 79 carrying pawls 50′, escapements 77 operated by rods 79, substantially as set forth.

18. In a cash receiving and registering machine, the combination, with an arbor 40 mounted in the casing of the machine, of a series of wheels 41 rotatably mounted thereon, said wheels having numbers on their peripheries and ratchet teeth designed to be engaged by pawls 50 and 50′, rods 28 carrying pawls 50, rods 79 carrying pawls 50′, slides 27 operated by rods 28, and escapements 77 operated by rods 79, substantially as set forth.

19. In a cash receiving and registering machine, the combination, with an arbor 40 mounted in the casing of the machine, of a series of wheels 41 rotatably mounted thereon, said wheels having numbers on their peripheries and ratchet teeth designed to be engaged by pawls 50′, rods 79 carrying pawls 50′, escapements 77 operated by rods 79, and the series of tubes or bill-box receptacles 26′, substantially as set forth.

20. In a cash receiving and registering machine, the combination, with an arbor 40 mounted in the casing of the machine, of a series of wheels 41 rotatably mounted thereon, said wheels having numbers on their peripheries and ratchet teeth designed to be engaged by pawls 50 and 50′, rods 28 carrying pawls 50, rods 79 carrying pawls 50′, slides 27 operated by rods 28, escapements 77 operated by rods 79, and the series of tubes 26 and 26′, substantially as set forth.

21. In a cash receiver and register, the combination, with an arbor 40 mounted in the casing of the machine, of a series of wheels rotatably mounted thereon, said wheels having ratchet teeth and being associated in pairs, a non-rotating disk between the wheels of each pair, pawls 50 designed to engage said ratchet teeth, rods 28 carrying said pawls, slides 27 operated by said rods, a transverse slide 31 placed beneath said slides, and a series of tubes 26, substantially as set forth.

22. In a cash receiver and register, the combination, with an arbor 40 mounted in the casing of the machine, of a series of wheels rotatably mounted thereon, said wheels having ratchet teeth and being associated in pairs, a non-rotating disk between the wheels of each pair, pawls 50 designed to engage said ratchet teeth, rods 28 carrying said pawls, slides 27 operated by said rods, a transverse slide 31 placed beneath said slides and carrying an arm or hammer 34, and a bell or gong 35 to be sounded by said arm or hammer, substantially as set forth.

23. In a cash receiving and registering machine, the combination, with an arbor 40 mounted in the casing of the machine, of a series of wheels rotatably mounted on said arbor, and a series of disks mounted on said arbor and held against rotation, said wheels having ratchet teeth and being associated in pairs and said disks being placed respectively between the wheels of each pair, and mechanism whereby, when one wheel makes one complete revolution the other wheel of that pair rotates one tooth or space, substantially as described, pawls 50 designed to engage said ratchet teeth, rods 28 carrying pawls 50, slides 27 operated by said rods, a transverse slide 31 placed beneath said slides, a series of tubes 26, and a money-drawer or till 37 having pits or compartments 38 beneath said slides, substantially as set forth.

24. In a cash receiving and registering machine, the combination, with an arbor 40 mounted in the casing of the machine, of a series of wheels and a series of disks mounted thereon, the wheels being rotatable and associated in pairs, and the disks being held against rotation and placed respectively between the wheels of each pair, the first wheel of each pair having ratchet teeth designed to be engaged by pawl 50 on rod 28, and carrying a spring dog 59 which presses against the adjacent disk 56, the second wheel 41′ of each pair having an annular row of teeth on the side nearest to the first wheel 41, and the disk 56 having a slot 57 through which the spring-dog 59 on the first wheel 41 projects to engage with the teeth on the second wheel 41′ and rotate said second wheel one tooth or space every time said first wheel makes one complete revolution, pawls 50 and 50′ designed to engage the ratchet teeth of wheels 41, rods 28 and rods 79 carrying said pawls, slides 27 operated by rods 28, escapements 77 operated by rods 79, the series of tubes 26, and the money-receptacle 39, substantially as set forth.

25. In a cash receiving and registering machine, the combination, with an arbor mounted in the casing of the machine, of a series of wheels rotatably mounted thereon and having studs projecting from one side, and pawls or stops arranged to allow said wheels to rotate in one direction, but to engage with said studs and arrest rotation in the opposite direction when zero reaches the reading slot 61, and coiled springs 44 designed to rotate said wheels in a backward direction and present zero in the reading slot whenever the spring pawls 46 are lifted out of contact with ratchet teeth 42, substantially as set forth.

26. In a cash receiving and registering machine, the combination, with an arbor mounted in the casing of the machine, of a series of wheels rotatably mounted thereon, each wheel having a stud 43 projecting from one side, and a coiled spring 44 having one end secured to said arbor and the other end describing a reverse curve and hooked part of the way around said stud 43 and tempered so that when the spring becomes wound up the hooked end slips from the stud and the spring partly unwinds, thus relieving the tension, said spring being designed to rotate said wheel in a backward direction and present zero in the reading slot whenever the spring-pawls 46 are lifted out of contact with ratchet teeth 42, pawls 50 and 50′ designed to engage said ratchet teeth, rods 28 and rods 79 carrying said pawls, slides 27 operated by rods 28, and escapements 77 operated by rod 79, substantially as described.

27. In a cash receiving and registering machine, the combination, with an arbor 40 mounted in the casing of the machine, and a series of wheels 41 having ratchet teeth 42 mounted thereon, of a shaft or rod 45 having a series of spring-pawls 46 secured thereto, said spring-pawls being adapted to engage with said ratchet teeth and prevent said wheels from rotating in a backward direction and also from rotating forward by accident or momentum, an arm 47 attached to said shaft or rod and designed to rotate said shaft or rod and thereby increase or diminish or entirely relieve the pressure of the spring-pawls 46 upon the ratchet teeth, and ratchets or stops 48 designed to hold said arm in any desired position, substantially as set forth.

28 In a cash receiving and registering machine, the combination, with an incline 12′ having grooves 16, a portion 12⁴ hinged at 72, and bill-boxes 71 in said grooves, of a rod 74 for operating said hinged portion, substantially as set forth.

29. In a cash receiving and registering machine, the combination, with an incline 12′ having grooves 16 designed to receive the bill boxes 71, the lower part 12⁴, of the incline being hinged as at 72, of an operating rod 74 having a shoulder or stop 74′ designed to engage with the casing of the machine and hold the rod and the hinged portion 12⁴ in their forward or normal position, substantially as set forth.

30. In a cash receiving and registering machine, the combination, with an incline 12′ designed to receive the bill boxes 71, the lower part 12⁴ of the incline being hinged and having an operating rod 74 provided with stop 74′, of a series of tubes or bill-box receptacles 26′ placed beneath the foot of said incline, substantially as set forth.

31. In a cash receiving and registering machine, the combination, with a series of tubes or bill-box receptacles 26′, of an escapement 77 for each tube or bill-box receptacle, said escapement having two upper and two lower arms projecting at right-angles to said tube or bill-box receptacle, substantially as set forth.

32. In a cash receiving and registering machine, the escapement 77 consisting substantially of a plate pivoted at the center and having two upper and two lower arms projecting at right angles to the plane of the plate, for the purpose specified, substantially as set forth.

33. In a cash receiving and registering machine, the combination, with a series of tubes or bill-box receptacles 26′, of an escapement 77 for each tube or bill box receptacle, said escapement consisting substantially of a plate pivoted at the center and having two upper and two lower arms projecting at right-angles to the plane of the plate, substantially as set forth.

34. In a cash receiving and registering machine, the combination, with a series of tubes or bill-box receptacles 26′, of an escapement 77 for each tube or bill-box receptacle, and a rod 79 by the operation of which the bill-boxes are dropped down one at a time into a compartment in money drawer 37, substantially as set forth.

35. In a cash receiving and registering machine, the combination, with a series of tubes or bill-box receptacles 26′, of an escapement 77 for each tube or bill-box receptacle, said escapement consisting substantially of a plate pivoted at the center and having two upper and two lower arms projecting at right-angles to the plane of the plate, and a rod 79 by the operation of which the bill-boxes are dropped down one at a time into a compartment in money-drawer 37, substantially as set forth.

36. In a cash receiving and registering machine, the combination, with an incline 12′ designed to receive the bill-boxes 71, the lower part of the incline being hinged and having an operating rod 74 provided with stop 74′ designed to hold the rod in its forward or normal position, a series of tubes or bill-box receptacles 26′ placed beneath the foot of said incline, of an escapement 77 for each tube or bill-box receptacle 26′, and a rod 79 by the operation of which the bill-boxes are dropped down one at a time into a compartment in money drawer 37, substantially as described.

37. In a cash receiving and registering machine, the combination, with a series of tubes or bill-box receptacles 26′, of an escapement 77 for each tube or bill-box receptacle, a rod 79 for operating said escapement and a pawl 50′ carried by said rod and engaging the ratchets of wheel 41, thereby registering the operations of escapement 77, substantially as set forth.

38. In a cash receiving and registering machine, the combination, with a series of tubes or bill-box receptacles 26′, of an escapement 77 for each tube or bill-box receptacle, said escapement consisting of a plate pivoted at the center and having two upper and two lower arms projecting at right-angles to the plane of the plate, a rod 79 for operating said escapement and a pawl 50′ carried by said rod and engaging the ratchets of wheel 41, thereby registering the operations of escapement 77, substantially as set forth.

39. In a cash receiving and registering machine, the combination, with a tube or bill-box receptacle 26′, of a rod 75 designed to force the bill from the bill-box 71 and carry it forward to the money receptacle 39, substantially as set forth.

40. In a cash receiving and registering machine, the combination, with a tube or bill-box receptacle 26′, and a bill-box 71 containing a bill or greenback placed therein, of a rod 75 designed to force the bill or greenback from the bill-box 71 and carry it forward to the money receptacle 39, substantially as set forth.

41. In a cash receiving and registering machine, the combination, with a tube or bill-box receptacle 26′, of an escapement 77, and a rod 75 designed to force the bill from the bill-box 71 and carry it forward to the money receptacle 39, substantially as described.

42. In a cash receiving and registering machine, the combination, with the casing 12, of a lid or cover 87 placed over pressure-buttons 29, a lock 89 secured to said lid or cover and engaging rod 90, a hammer 92 carried by said rod, and a bell or gong 93 to be operated or sounded by said hammer, substantially as set forth.

43. In a cash receiving and registering machine, the combination, with the casing 12, of a lid or cover 87 placed over pressure-buttons 29, a combination lock 89 secured to said cover or lid and engaging rod 90, and the collar 91 carried by rod 90 and designed to engage casing 12, substantially as set forth.

44. In a cash receiving and registering machine, the combination, with the casing 12, of a lid or cover 87 placed over pressure-buttons 29, a lock 89 secured to said lid or cover and engaging rod 90, a hammer 92 carried by said rod, a bell or gong 93 to be operated or sounded by said hammer, and the collar 91 carried by rod 90, substantially as set forth.

545,102. SURGICAL APPLICATOR. DAVID H. SLEEM, New York, N. Y. Filed Nov. 7, 1894. Serial No. 528,148. (No model.)

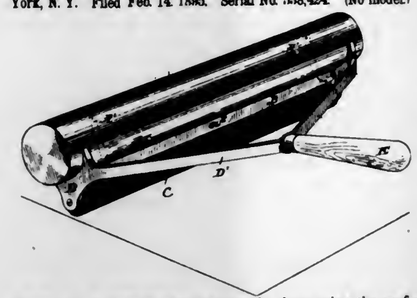


Claim.—1. In a vaginal applicator comprising a tube, a hollow conical shaped mouth-piece, a movable rod or ejector contained within the tube, a threaded connection between the rod or ejector and the tube, a groove in said ejector acting as a vent, a cap secured upon one end, forming the bottom of the conical mouth-piece which is adapted to receive a medicated cone, substantially as described.

2. In a vaginal applicator comprising a tube, a hollow conical shaped mouth-piece attached thereto, said tube and mouth-piece being adapted to hold a movable rod or ejector contained therein, said ejector having a screw-thread whereby it is adjusted with relation to the tube, a groove in the side of said ejector, said ejector also being hollow, and a cap fitting in the bottom of the said mouth-piece and fastened to the said ejector for the purpose and in the manner specified.

3. In a vaginal applicator, a tube provided with a cup shape, beveled edge mouth-piece containing in its cavity a hollow plunger provided at one end with a handle, said plunger being capable of being moved in and out of the outer tube, when desired, a vent or groove in the side of the plunger, a perforated cap fastened thereto fitting in the bottom of the mouth-piece, said mouth-piece being adapted to receive a tampon, a string passing through said hollow plunger attached to said tampon, substantially as described and for the purpose specified.

545,103. MOISTENING APPARATUS. DAVID H. SLEEM, New York, N. Y. Filed Feb. 14, 1895. Serial No. 538,424. (No model.)



Claim.—1. A dampening apparatus for dampening the surfaces of copying pads, blotters and the like, said apparatus comprising a reservoir adapted to hold water, bracket arms supporting said reservoir, a dampening roller journaled in said bracket arms, a wick extending through a slot in the reservoir and in contact with the dampening roller, a filling opening adjacent to said slot in the under side of said reservoir permitting the same to be filled without saturating the wick, when turned over to give access to the filling opening, and a handle arranged in such a manner when the device is not in use that the apparatus is supported by said handle and the reservoir, thereby preventing the saturation of the wick and moistening the dampening roller, substantially as and for the purpose described.

2. A dampening apparatus for dampening the surfaces of copying pads, blotters and the like, said apparatus comprising a reservoir adapted to hold water, bracket arms supporting said reservoir, a dampening roller journaled in said bracket arms beneath said reservoir, an air tube secured to the bottom of said reservoir where it communicates with the external air, and having its opposite open end within the reservoir near the top of same, said reservoir having a slot extending longitudinally for the greater portion of its length equal to the length of the dampening roller, spring plates forming front and rear walls to said slot, a wick doubled upon itself, a stiffening piece between the folded portions of the wick, said wick and strip being nipped between the spring plates, said wick extending through said slot into the reservoir, said wick also being in contact with the dampening roller, whereby moisture is supplied to the dampening roller, and a handle arranged in such a manner when the device is not in use that the apparatus is supported by said handle and the reservoir when turned upside down, thereby preventing the saturation of the wick and moistening the dampening roller and loss by evaporation, substantially as and for the purpose described.

3. A dampening apparatus for dampening the surfaces of copying pads, blotters and the like, said apparatus comprising a reservoir adapted to hold water, bracket arms supporting said reservoir, a dampening roller journaled in said bracket arms, a wick extending through a slot in the reservoir, a filling opening upon the under side of the reservoir adjacent to said slot permitting the same to be filled without saturating the wick, said wick also being in contact with the dampening roller, whereby moisture is supplied to the dampening roller, and a handle secured to the reservoir supporting brackets at such an inclination that the top of the reservoir and the end of the handle are on the same level so that when the device is not in use and is turned upside down the apparatus is supported by said handle and the reservoir, thereby preventing the saturation of the wick and moistening the dampening roller, substantially as and for the purpose described.

4. A dampening apparatus for dampening the surfaces of copying pads, blotters and the like, said apparatus comprising a reservoir adapted to hold water, an air tube wholly within the reservoir adapted to supply air to said reservoir, bracket arms supporting said reservoir, a dampening roller journaled in said bracket arms, a wick extending through a slot in the reservoir, said wick also being in contact with the dampening roller, whereby moisture is supplied to the dampening roller, and a handle arranged in such a manner when the device is turned upside down the apparatus is supported by said handle and the reservoir, thereby preventing the saturation of the wick and moistening the dampening roller, substantially as and for the purpose described.

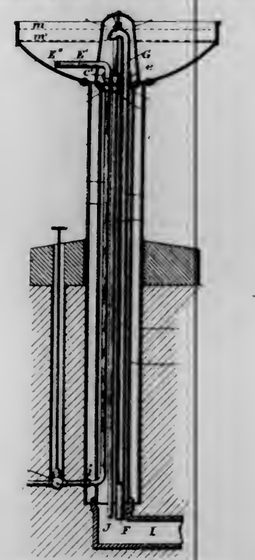
545,104. APPARATUS FOR RETARDING CONGELATION OF FLUIDS. ARNOLD R. SMITH, Ogdensburg, N. Y. Filed Mar. 28, 1895. Serial No. 543,533. (No model.)

Claim.—1. A non-congealing apparatus for fluids, comprising a hollow standard communicating directly with the open sewer and containing the supply, waste and air pipes, a fluid receptacle superimposed thereon, a hollow curb, or cover, located therein or connected therewith, inclosing the waste and air pipes and imperforate where in contact with the upper portion of the body of fluid in said receptacle, a siphon extension to the waste pipe with its intake located within said curb, or cover, and a short distance below the level of the exterior overflow of said receptacle, and a pipe conducting air from the sewer and discharging within said curb, or cover, above the level of the siphon pipe.

2. A non-congealing apparatus for fluids, comprising a hollow standard communicating directly with the open sewer and containing the supply and waste pipes, a fluid receptacle superimposed thereon, a hollow curb, or cover, located therein or connected therewith inclosing the intake to the waste pipe and imperforate where in contact with the upper portion of the body of fluid in said receptacle, a siphon extension to the waste pipe with its intake located within said curb or cover, and a short distance below the level of the exterior overflow of said receptacle, an air intake to said curb or cover, opening above the level of said siphon pipe, and a fluid-supply orifice discharging tangentially into said receptacle outside of said curb or cover.

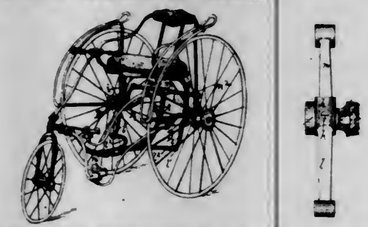
3. A non-congealing apparatus for fluids, comprising a fluid re-

ceptacle having a curb, or cover, located therein or connected therewith, which is imperforate where in contact with the upper portion of the body of fluid in said receptacle, a waste pipe having its intake located within said curb or cover, a supply pipe discharging into said receptacle outside of said curb or cover, and a pipe conducting air from the sewer and discharging within said curb or cover.



4. A non-congealing apparatus for fluids, comprising a fluid receptacle having a curb or cover located therein, or connected therewith, which is imperforate where in contact with the upper portion of the body of fluid in said receptacle, a waste pipe having its intake located within said curb or cover, and a supply pipe discharging into said receptacle outside of said curb or cover.

545,105. TRICYCLE. FRANK E. SOUTHARD, Toledo, Ohio. Filed Apr. 12, 1894. Serial No. 507,254. (No model.)

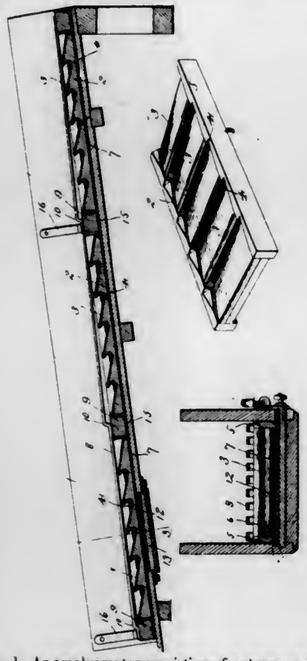


Claim.—1. The herein described axle-box or bearing, comprising a body (*c*), formed of malleable cast iron, having an axial bore and an enlarged recess at each end thereof, in combination with cup-shaped caps (*e*), disposed in said recesses with their mouths toward each other, anti-friction balls in the annular chambers formed by said caps, and flanges or lips upset upon the projecting edges or flanges of the axle-boxes (*c*), whereby the cups (*e*) are secured in place, substantially as and for the purpose specified.

2. In an axle-box or bearing, a cylindrical body formed of malleable iron, having an axial bore, an enlarged recess at one end thereof, and a sleeve at the opposite end of said cylindrical body having a corresponding recess, in combination with cup-shaped caps or plates (*e*) disposed in said recesses with their mouths toward each other, anti-friction balls in the annular chambers formed by said caps, and flanges or lips upset upon the projecting edges or flanges of the axle-boxes (*c*), whereby the cups (*e*) are secured in place, substantially as and for the purpose specified.

3. In a tricycle, a bracket-piece, formed of malleable cast iron, having an axle-box provided with a recess at one end and a corresponding recessed sleeve at the other end, cup-shaped caps in said recesses disposed with their mouths toward each other, anti-friction balls in the annular chambers formed by said caps, and flanges or lips upon the projecting edges or flanges of the axle-boxes (*c*) upset inwardly, whereby the cup (*e*) is secured against displacement, sockets for seat standards on said bracket-pieces and brace-arms (*l m*) on said bracket-pieces, in combination with the driving shaft and wheels of said tricycle, all substantially as and for the purpose specified.

545,106. GOLD SLUICE-BOX. CHARLES R. SPICER and JOHN B. WILSON, Helena, Mont. Filed Dec. 13, 1894. Serial No. 531,677. (No model.)



Claim.—1. An amalgamator consisting of a sluice-way, a removable sectional riffle in said way, a screen over said sectional riffle, and securing it in position, said screen consisting of the longitudinal bars 8 secured to cross-bars 9, means for removably securing said screen in place, an under passage, as 7 being formed under the sections of the riffle and under the bars 9, and an amalgam plate in said passage, substantially as described and for the purpose set forth.

2. An amalgamator consisting of a sluice-way, a removable sectional riffle in said way, a removable screen over said sectional riffle, said screen consisting of the bars 8 and cross-bars 9, said cross-bars holding the sections of the riffle in position, means for removably securing the screen in position, an under passage as 7 being formed under the sections and the cross-bars 9, and an amalgam plate in said passage, said plate being adapted to be removed sidewise from the sluice way without disturbing the riffles, substantially as described.

3. In an amalgamator, the combination of a sluice way, a sectional riffle in said way, a screen over said riffle, said screen extending over a plurality of sections of the riffle and consisting of the parallel bars 8 formed with shoulders 10 and secured to cross-bars 9, said bars extending across the sluice way between the sections of the riffles, said sections fitting loosely between these cross-bars, and abutting at their ends against the cross-bars, means for removably securing the screen in position, whereby the riffle sections will be protected and held in position, substantially as described.

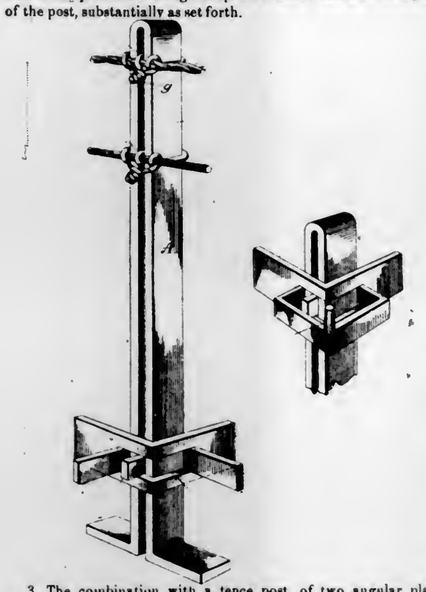
4. In an amalgamator the combination of a sluice-way, sectional removable riffles in said way, each of said sections consisting of side pieces 5, 5, and the central portion 6, the upper side of the portion 6 being stepped to form the inclined surfaces 3 and the pockets 4, said upper surface being covered with sheet-copper, the lower side of the section 6 being raised above the lower edges of the sides 5, 5, whereby a space or passage is formed between the bottom of the sluice-way and the bottom of the riffles, and an amalgam plate in said space or passage, substantially as described.

5. An amalgamator consisting of a sluice way, a riffle in said way, an under passage, as 7, being formed under said riffle, and an amalgam plate in said passage, substantially as described.

545,107. FENCE-POST. RANSOM R. SPOORE, Newark, N.Y. Filed Apr. 1, 1895. Serial No. 544,043. (No model.)

Claim.—1. The combination with a fence post, of a surface base comprising a pair of bent plates one having a closed slot therein and the bent part of the other extending into said slot and the inclosure formed by the plates when together adapted to receive the post therein, substantially as set forth.

2. The combination with a fence post comprising two parallel members, of two angular plates adapted to form a loop for the reception of the post and a wedge adapted to enter between the members of the post, substantially as set forth.



3. The combination with a fence post, of two angular plates adapted to form a loop for the reception of the post, means for securing said plates in position on the post and a gate pintle on one of said plates, substantially as set forth.

4. The combination with a fence post comprising parallel members, of two angular plates, one having a slot to receive an angular portion of the other whereby to form a loop for the reception of the post, a wedge adapted to pass through said slot and enter between the members of the post, and a gate pintle on one of said angular plates, substantially as set forth.

5. The combination with a post, of a surface base adjustably clamped to the external surface of the post, substantially as set forth.

6. The combination with a post comprising two parallel flanges, of a surface base adjustably connected with this post, and a device passed through the base and between the parallel flanges of the post to hold the base in vertical adjustment, substantially as set forth.

7. The combination with a fence post, of a surface base therefor, comprising two angular plates adapted to embrace the post, one of said plates having a closed slot for the reception of the other plate, substantially as set forth.

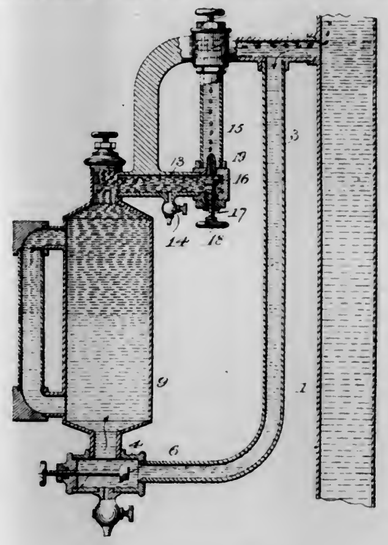
8. The combination with a fence post, of a surface base comprising two angular plates adapted to embrace the posts and project therefrom in different directions, one of said plates having a slot between its end at its angle and the angle of the other plate passing through said slot, thus forming a loop that will slip down from the upper end of the post to the desired position, and means for adjustably securing said plates to the post, substantially as set forth.

9. The combination with a fence post, of a surface base therefor comprising two interlocking plates adapted to embrace the post and project in different directions therefrom, and a wedge adapted to enter said post and prevent said plates from displacement, substantially as set forth.

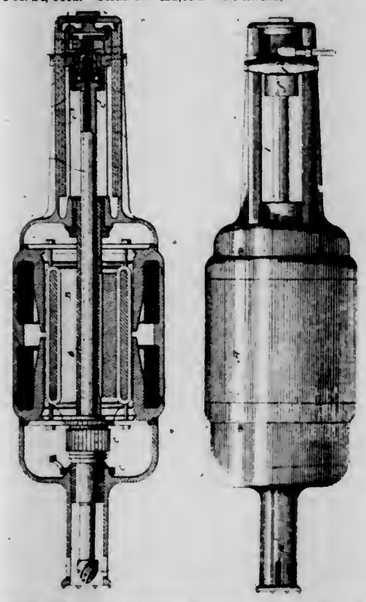
10. The combination with a metallic fence post comprising two parallel members, of an adjustable surface base comprising two interlocking plates adapted to embrace said post, and a wedge adapted to pass through one of said plates and enter between the members of the post, substantially as set forth.

545,108. AUTOMATIC OIL-FEEDER. WINFIELD S. REED and FRED R. STEVENSON, Galion, Ohio. Filed Oct. 23, 1894. Serial No. 526,745. (No model.)

Claim.—In a feeding apparatus, the combination of the water receptacle, the lateral pipe secured thereto provided at its outer end with a curved downwardly extending bracket, the vertical pipe curved outwardly at its lower end and connected at its upper end with said lateral pipe, the coupling secured to the lower end of said vertical pipe provided with a valve for opening and closing the same and with a draw off cock, the oil cup connected with said coupling, provided with a gage and with a filling opening and plug at its upper end, the lateral pipe connected with the oil cup and provided with a draw off cock the vertical feed column having a small tube at its lower end and connected at its upper end with the pipe leading from the water receptacle, the valve for opening and closing said tube and the valve for opening and shutting off communication between said column and the pipe leading to the water vessel, substantially as described.



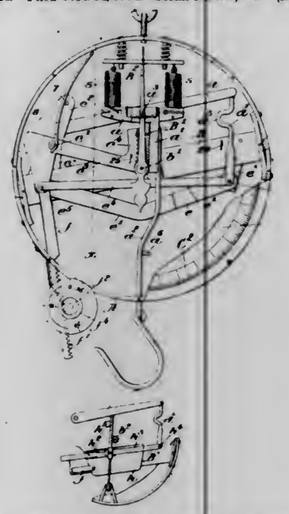
545,109. ROCK-DRILL. IMLE E. STOREY, Boulder, Colo., assignor to the Storey Electric Drill and Power Company, of Colorado. Filed Feb. 24, 1892. Serial No. 422,634. (No model.)



Claim.—In a drill, the combination of a motor, a drill rod driven thereby but capable of independent longitudinal motion, a forwardly extended housing frame through which the drill rod passes and upon

which the drill rests when in operation, a handle or handles attached to the drill rod by which it may be manually fed forward or withdrawn, and a back stop for the drill rod, substantially as described.

545,110. PRICE-COMPUTING APPARATUS. HORACE E. SWIFT, Boston, Mass., assignor to the Jones-Swift Manufacturing Company, Portland, Me. Filed Sept. 24, 1894. Serial No. 523,901. (No model.)



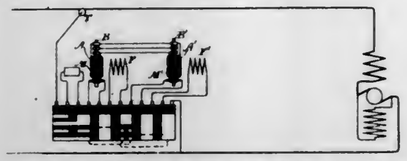
Claim.—1. In a price computing apparatus, the following instrumentalities, viz:—mechanism to measure and indicate the number of units in the article measured; movable computing mechanism to indicate the aggregate price of the measured article; a compound lever having a fixed fulcrum for one extremity and pivoted to the computing mechanism at its other extremity; a connection between the measuring mechanism and one intermediate joint of said lever, whereby it is moved; and an adjustable fulcrum for the other joint, movable in accordance with the unit price of the article, to control the movement of the computing mechanism relative to the measuring mechanism, substantially as described.

2. In a price computing apparatus, the following instrumentalities, viz:—mechanism to measure and indicate the number of units in the article measured; movable computing mechanism to indicate the aggregate price of the measured article; a compound lever having a fixed fulcrum for one extremity and pivoted to the computing mechanism at its other extremity; a connection between the measuring mechanism and one intermediate joint of said lever, whereby it is moved; an adjustable fulcrum for the other joint; and a manually operable controlling device to govern the position of said adjustable fulcrum, whereby the relative movement of the measuring and computing mechanisms is controlled by the unit price of the article measured, substantially as described.

3. In a price computing apparatus, the following instrumentalities, viz:—mechanism to measure and indicate the number of units in the article measured; movable computing mechanism to indicate the aggregate price of the measured article; a compound lever having a fixed fulcrum for one extremity and pivoted to the computing mechanism at its other extremity; a connection between the measuring mechanism and one intermediate joint of said lever, whereby it is moved; a rack bar to which the other joint is pivoted; and a graduated rotatable disk geared to said rack-bar and having the various prices per unit indicated upon it, whereby manual setting of said disk to a given unit price will move the rack-bar and joint of the lever into position to cause relative movement of the measuring and computing mechanisms in accordance therewith, substantially as described.

4. In a price computing apparatus, the following instrumentalities, viz:—a dial having concentric graduated scales thereon to denote units of measurement and aggregate price of the article measured; a pintle provided with a pinion and a pointer for one of said scales; a sleeve rotatable on said pintle and having also a pinion and a pointer to co-operate with the other scale; measuring mechanism geared to one of said pinions to move the corresponding pointer to indicate the number of units in the article measured; and actuator geared to the other pinion to cause its pointer to indicate the aggregate price of said article according to the unit price thereof; connections between and pivotally connected to the measuring mechanism and said actuator, including a compound lever having a fixed pivotal support and a controllably supported intermediate joint; and means to control the position of said joint relative to the other joint and the point of attachment to the actuator, substantially as described.

545,111. MEANS FOR SYNCHRONIZING ELECTRIC MOTORS. ELIHU THOMSON and EDWIN W. RICE, Jr., Swampscott, assignors to the General Electric Company, Boston, Mass. Filed Mar. 8, 1893. Serial No. 465,083. (No model.)



Claim.—1. In a power system, a continuous current generator, a circuit extended therefrom, a plurality of motors having field coils and armatures with continuous current windings adapted to receive the generated current, and multiphase connections taken from said windings; in combination with a circuit controller, whereby the speed of both armatures may be varied simultaneously, and independent of the multiphase apparatus.

2. In an electric railway system, the combination of a continuous current main, a vehicle making traveling contact therewith, a plurality of armatures mounted on the vehicle adapted for continuous current, connections taken from these armatures to rings, at points giving three-phase currents, mains connecting the rings between the several armatures and thereby synchronizing their rotation.

3. As a means of effecting synchronous rotation of a plurality of armatures, rotating in magnetic fields and included in the supply circuit from a generator, a continuous winding on such armatures connected at each coil to a commutator segment and at equal segmental distances to separate collecting rings, one ring for each segment of the total winding, with mains between the collecting rings on the several armatures forming a phasal connection between them; whereby a change of speed in one armature creates a difference of potential in the phasal system, and alternating electro-motive force is transmitted to the armature having the slower speed, causing its acceleration, thus synchronizing their speed.

4. In a power system, the combination of a generator, a circuit extending therefrom, a plurality of motors with single continuous current windings on the armatures connected to collector rings and a commutator, connections between like parts of the motors, those between the commutators transmitting continuous current at all times in one direction, those between the collector rings transmitting polyphase currents from the armature revolving at the higher speed to the one revolving at a lower speed, and a controller for changing the speed of all the motors independent of the connections between the collector rings.

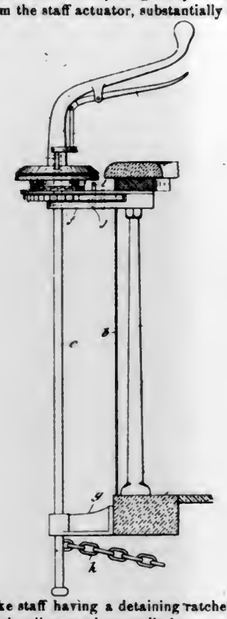
5. The combination in a power circuit of a plurality of motor armatures provided with collector rings and commutators, and fields deriving their current from a common source of continuous current, a controller for regulating the speed of the armatures simultaneously, three-phase mains connecting the collector rings of the several motors and transmitting current from the armature or armatures revolving at the greater speed to those revolving at a lower speed, these mains being independent of any outside source.

6. In a power system, the combination of a plurality of continuous current motor armatures having windings connected to both collector rings and commutator segments, receiving continuous current from an external source and rotated thereby, mains independent of any outside source connecting the collector rings and transmitting current when the speed of the armatures is different.

545,112. BRAKE FOR RAILWAY-CARS. JOSEPH W. VALIANT, Baltimore, Md. Filed Jan. 11, 1895. Serial No. 534,528. (No model.)

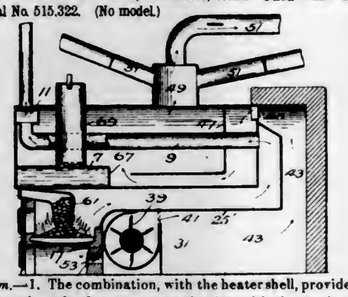
Claim.—1. Actuating mechanism for railway car brakes, comprising a brake staff, a detaining ratchet fast thereon, a pawl normally engaging such ratchet, a brake staff actuating ratchet, a staff-actuator loosely applied to the brake staff and carrying pawls in normal engagement with the staff actuating ratchet, and means operated from the brake handle for throwing the various pawls out of engagement with the several ratchets, substantially as described.

2. A brake staff, a bracket arranged adjacent to the dash rail and receiving the upper end of the brake staff, a detaining ratchet applied to the brake staff adjacent to said bracket, a pawl normally in engagement with said ratchet, a pawl releasing lever projecting above the plane of the said bracket, a staff actuating ratchet applied to said staff, a brake staff actuator loosely applied to said brake staff and carrying a pawl normally in engagement with the said staff actuating ratchet, and means for releasing the various pawls from their respective ratchets comprising a depressing plate and means to actuate it from the staff actuator, substantially as described.



3. A brake staff having a detaining ratchet applied to it adjacent to the dash rail, a pawl normally in engagement with the said ratchet, a crown wheel ratchet also applied to the brake staff adjacent to the first named ratchet, a brake staff actuator having a disk at its lower end, one or more pawls pivoted to said disk and normally held in engagement with the crown wheel ratchet to impart the rotary motion of the actuator to the brake staff, and a pawl releasing device comprising an annular plate arranged adjacent to the various pawls, and a lever applied to the brake staff actuator and connected with the said annular plate to force it against the pawls and detach them from their respective ratchets while the staff actuator is held quiet, thereby allowing the brake staff to rotate free of its actuating mechanism and under the unwinding action of the brake springs to release the brake, substantially as described.

545,113. COMBINED HEATING AND VENTILATING APPARATUS. DAVID S. WHITE, Northfield, Minn. Filed June 21, 1894. Serial No. 515,322. (No model.)



Claim.—1. The combination, with the heater shell, provided with the horizontal smoke-flues 9, communicating with the smoke-box 11 and the smoke-pipe 13, and provided also with the hot air dome 49, the deflecting plate 47, and the opening 45, of the fire-box arranged beneath the forward end of said shell and provided with a grate 19 and the bridge wall 17, the plate 25 forming a flue extending from said fire-box and communicating with said flues 9, the flue 43 extending beneath said plate 25 and connecting with said opening 45, the fan-casing 31 communicating with said flue 43, a fan arranged therein, and means for operating said fan, substantially as described.

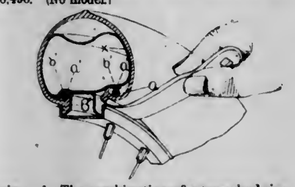
2. The combination, with the heater, of the fan casing provided with an opening leading to the space beneath the fire pot, means for closing said opening, the shaft extending through said casing, the fan 39 upon said shaft, the outer fan casing and fans 35 also upon said shaft and arranged in the walls of said outer casing, substantially as described.

3. The combination, with the heater, of the inner fan casing having an opening 41 leading to the air flue 43, the shaft extending through said casing, the fan 39 upon said shaft, the outer fan casing and the fans 35 also upon said shaft and having inclined blades and arranged in the walls of said outer casing, substantially as described.

4. The combination, with the heater of the fan casing, provided with an opening leading to the space beneath the fire pot, a fan arranged to be driven by the current of air passing through said opening, a second fan to be driven by said first named fan, and arranged to force a current of air into the heating chamber substantially as described and for the purpose set forth.

5. The combination, with the heater, of the fan casing, provided with an opening leading to the space beneath the fire pot, a fan arranged to be driven by the suction of air through said opening, said fan having inclined blades, a second fan to be driven by said first named fan, and said casing being provided with an exit opening to permit the current of air to pass into the heating chamber, substantially as described and for the purpose set forth.

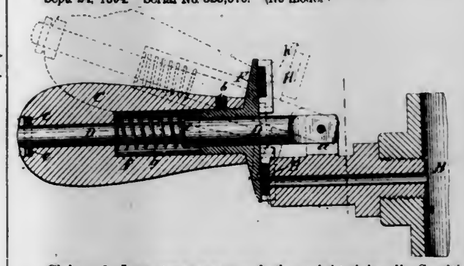
545,114. BICYCLE-TIRE. FREDERICK WHITE, Boston, Mass., assignor to Edward S. Beach, same place, and Emerson W. Law, Cambridge, Mass. Filed June 12, 1894. Renewed Feb. 15, 1895. Serial No. 538,490. (No model.)



Claim.—1. The combination of a troughed rim; a sheath formed with ribs along its exterior margins and flaps along its inner margins; a cross-wise divided hoop exterior to the rim and between the sides of which and the sides of the rim, the sheath ribs are confined; a pair of independent hoops bearing upon the inner surface of the sheath, and held by the flaps on the inner margin of the sheath, all substantially as and for the purpose set forth.

2. The combination of a rim; a sheath formed with ribs along its outer margin and flaps along its inner margin; a cross-wise divided hoop hollow in cross-section; and a pair of independent hoops bearing upon the inner surface of the sheath, all substantially as described.

545,115. GAGE-COCK. WILLIAM WILSON, Greenville, N. J. Filed Sept. 24, 1894. Serial No. 523,876. (No model.)



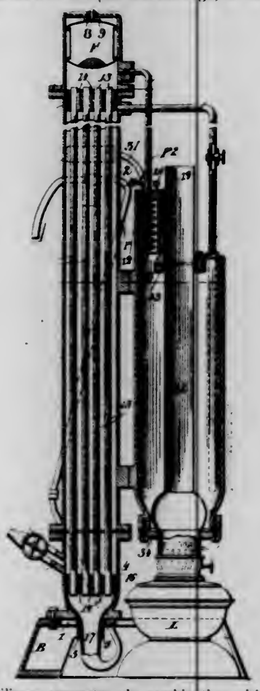
Claim.—1. In a steam gage-cock the weighted handle C, with face plate F, in combination with a central rod D, pivoted at one end to the vent plug A, and a spiral spring *g* surrounding said central rod D in the interior of the weighted handle, said spiral spring bearing at opposite ends against shoulders on said handle and rod, and means for holding the handle on the rod, substantially as shown and described.

2. In a steam gage-cock the weighted handle C, with face plate F, a central rod D, pivoted at one end to the vent plug A, a spiral spring *g* surrounding said central rod and having bearings on the rod and handle in combination with stop or pin *c* on said rod, and recesses *d*, *d*, in the end of the handle substantially as and for the purposes shown and described.

3. In a steam gage cock the revolving face plate F, carrying packings, the channeled packing arm G, with openings *h*, *h*, on the sides to receive and hold the strips of packing at right angles to the channels substantially as shown and described.

545,116. APPARATUS FOR STERILIZATION OF WATER. NICHOLAS YAGN, St. Petersburg, Russia. Filed May 16, 1893. Serial No. 474,470. (No model.)

Claim.—1. In a sterilizing apparatus, the combination of a heater or boiler, appliances for cooling the sterilized liquid by means of the liquid to be sterilized, a flexible discharge pipe for the sterilized liquid, and a thermostatic regulator adapted to more or less compress said pipe and control the flow of liquid therethrough, for the purpose set forth.



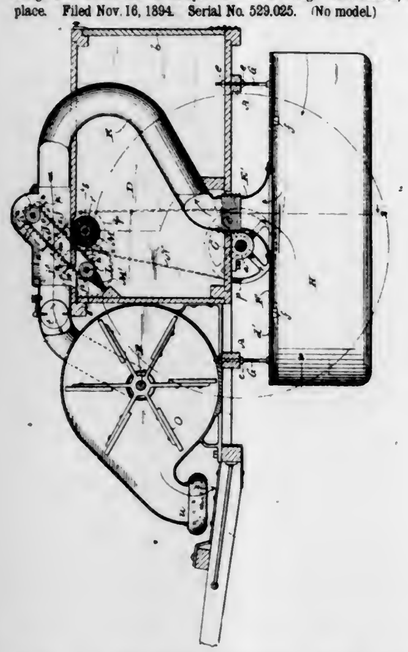
2. In a sterilizing apparatus, the combination with a heater or boiler, appliances for cooling the sterilized liquid by means of the liquid to be sterilized, and a flexible discharge pipe; of a thermostatic regulator comprising a holder for a liquid whose boiling point is about the same as that of the liquid to be sterilized, said holder in contact with the liquid in the heater, an expansible bulb or sack connected with the holder, and a spring-actuated clamp operating to normally compress the bulb and flexible discharge pipe, substantially as and for the purpose set forth.

3. In a sterilizing apparatus, the combination with a boiler, of a cooler composed of an outer shell, a plurality of open ended radiator tubes provided at each end with an elastic packing and spacing sleeve, said tubes arranged in a bundle the packed ends thereof secured fluid tight in the shell whereby a cooling chamber is formed between said packed ends, a pipe in communication with one end of the radiator tubes and the boiler respectively, a discharge pipe in communication with the opposite ends of said radiator tubes, a pipe connecting the boiler with one end of the cooling chamber, and a water supply connected with said chamber at its opposite end, substantially as and for the purpose set forth.

4. The herein described means for securing the radiator tubes fluid tight within the cooler shell, comprising elastic packing and spacing sleeves at each end of the tubes, said tubes tied together at their ends, an elastic packing interposed between the tied and packed portion of one end of the bundle of tubes and the cooler shell, and a metallic sleeve applied to the tied and packed portion at the opposite end of the bundle, said sleeve secured fluid tight to the shell, substantially as and for the purpose set forth.

5. An apparatus for sterilizing liquids, comprising a boiler, and an upright cooler composed of a cylindrical shell 2, cap 3, and base portion 4 bolted together fluid tight, a conical sleeve 15 provided with an annular flange secured between the bolt flange at the upper end of the shell and that of the cap 3, a pipe connecting said cap with the heater, a pipe connecting the upper end of the shell 2 with said heater, and a feed pipe connected with the base portion 4 of the cooler, in combination with open ended radiating tubes, an elastic packing and spacing sleeve 14 on each end of the tubes, said tubes tied together in a bundle at the packed ends, the upper packed end of the bundle seated fluid tight in the sleeve 15, and an elastic discharge pipe encompassing the lower packed end of the bundle of tubes and fitted fluid tight into the base portion 4 below the feed pipe, whereby the condenser is divided into feed, radiating, cooling and outflow chambers, substantially as and for the purpose set forth.

545,117. COTTON-PICKER. GEORGE W. YOUNG, Milwaukee, Wis., assignor of two-thirds to Joseph Flanner and Hugo Loewenbach, same place. Filed Nov. 16, 1894. Serial No. 529,025. (No model.)

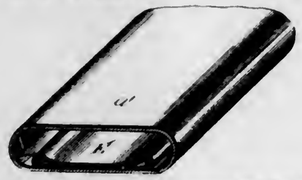


Claim.—1. A cotton picker, comprising a rotary fan mounted upon a suitable truck, a pipe connected to said fan terminating adjacent to the plant to be operated upon, a traveling screen belt interposed between said fan and pipe terminus, and a delivery receptacle at the discharge end of said screen belt, substantially as set forth.

2. A cotton picker, comprising a rotary fan mounted upon a traveling carriage, a traction driving gear for the fan, a suction pipe connected to the fan and terminating adjacent to the plant to be operated upon, a traveling screen belt interposed between the fan and said pipe, a casing for the belt provided with an inlet and outlet opening for the suction pipe, a discharge opening between the inlet opening and said belt, a cleaner for the belt, and a receptacle adjacent to the discharge opening, substantially as set forth.

3. A cotton picker, comprising a rotary suction fan mounted upon a traveling carriage, a pipe leading from the fan and opening into a box, a screen belt traveling across said opening, a delivery receptacle at the discharge end of the screen belt, a cleaner for the belt and a pipe leading from said box on the opposite side of the belt to a point adjacent to the plant to be operated upon, substantially as set forth.

545,118. PROCESS OF AND APPARATUS FOR VULCANIZING AIR-TUBES FOR PNEUMATIC TIRES. ERNEST W. YOUNG, Chicago, Ill., assignor to the Morgan & Wright, same place. Filed Jan. 22, 1895. Serial No. 535,759. (No model.)



Claim.—1. The within described improvement in the process of producing inner elastic air-tubes for pneumatic tires, consisting in forming the tube of unvulcanized rubber; confining it within a chamber formed by the interior of a shell or casing: causing the confined tube to flatten of its own accord and without weight or pressure upon it; and vulcanizing the flattened tube thus arranged and free from superposed weight, by superficially exposing the shell or casing within a vulcanizer and permitting the steam to have access to the chamber within such shell or casing only by passing through steam filtering material.

2. The within described improvement in the process of producing inner elastic air-tubes for pneumatic tires, consisting in forming the tube of unvulcanized rubber: confining it within a chamber formed by the interior of a shell or casing; causing the confined tube to flatten of its own accord except along the resulting longitudinal edge portions thereof, and upholding the latter so as to allow them to assume and maintain a curved form in cross-section; and vulcanizing the tube thus arranged, so as to produce a normally flattened inner elastic air-tube adapted for service in a pneumatic tire.

3. The within described improvement in the process of producing inner elastic air-tubes for pneumatic tires, consisting in confining the tubes in an unvulcanized condition in chambers formed within shells or cases, flattening the confined tubes without the application of weight or pressure; piling the cases in separated layers within a vulcanizer; and vulcanizing the tubes by superficially exposing the cases to steam and permitting the latter to enter the cases only through filtering material.

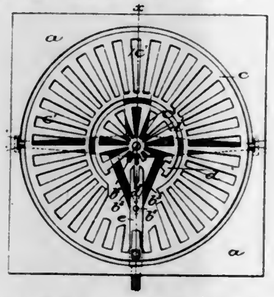
4. As an improvement in apparatus for vulcanizing inner elastic air-tubes for pneumatic tires in a flattened condition, a shell or case providing a chamber wherein the unvulcanized tube can flatten of its own accord, and having ports covered with filtering material, substantially as described.

5. As an improvement in apparatus for vulcanizing inner elastic air-tubes for pneumatic tires in a flattened condition a shell or case A provided with ports covered with steam filtering material and having a flat bottom a and curved or inclined sides a^4, the width of the flat bottom being less than the width of the proposed flattened air-tube whereby the edge portions of the flattened tube shall be supported by the inclined or curved sides, substantially as described.

6. As an improvement in apparatus for vulcanizing inner elastic air-tubes for pneumatic tires in a flattened condition the flattened tubular case A provided with ports a^2 covered with steam filtering material, and also having its ends temporarily capped by such material, substantially as described.

7. The within described improvement in vulcanizing inner air-tubes for pneumatic tires, consisting in arranging the tubes in an unvulcanized condition, in separated layers within a vulcanizer; allowing the tubes to flatten of their own accord and during the process of vulcanization maintaining them free from weight; and vulcanizing them in such flattened condition, for the purpose described.

545,119. ROTARY GRATE. OSCAR D. ADAMS, Springfield, Mass. Filed Mar. 27, 1894. Serial No. 505,337. (No model.)

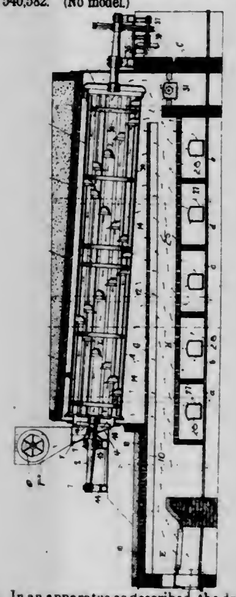


Claim.—1. In a grate, a supporting frame provided with a circular opening, a bridge-piece journaled at its ends on said frame and spanning said opening, an annular grated member and a centrally disposed, grated member supported upon said bridge-piece and revoluble about a common center, an operating lever fulcrumed upon said bridge-piece and operatively connected with said grate members respectively upon opposite sides of its fulcrum, and means for normally retaining said grate members in a substantially horizontal position, combined and operating substantially as set forth.

2. In a grate, a supporting frame provided with a circular opening, a bridge-piece having a rocking bearing at each end in said frame and provided midway between its ends with an upwardly projecting stud, an annular grate member and a centrally disposed, circular grate member both of which are centrally mounted upon said stud, and means substantially as described for simultaneously rotating said grate members in opposite directions about said stud as a center, combined and operating substantially as set forth.

3. In a grate, the combination with a supporting frame, as a, of the bridge-piece b provided with the central stud b^2 and arm b^3 carrying stud b^4, annular grate member c and circular grate member d centrally mounted upon said stud b^2, the latter member having the depending stud d^2, and lever e fulcrumed upon the stud b^4 of said bridge-piece, said lever embracing by its forked inner end the stud d^2 on said member d and having a pivotal connection, upon the opposite side of its fulcrum, with said member c, substantially as set forth.

545,120. DRYING APPARATUS. FRANKLIN D. CUMMER, Cleveland, Ohio, assignor to Eliza E. Cummer, same place. Filed Mar. 5, 1895. Serial No. 540,582. (No model.)



Claim.—1. In an apparatus as described, the drying cylinder open at both ends for the passage of the material and the products of combustion in opposite directions, inlet openings at intervals through the side of said cylinder and hoods or guards over said openings on the inside of the cylinder, substantially as set forth.

2. The drying cylinder having an inlet for the material at one end and an outlet for the material at the other end and inlet openings through its side, and hoods over said openings on the inside of the said cylinder having their direction of discharge substantially parallel with the axis of the cylinder, substantially as set forth.

3. The drying cylinder described, having a series of inlet openings through its side, elbow-shaped hoods over said openings on the inside of the cylinder, and lifting blades constructed to toss the material over the hoods, substantially as set forth.

4. The cylinder described, having inlet openings at intervals about its side and hoods over said openings of substantially elbow-shape, and open work shields or diaphragms in said hoods to prevent escape of material through them, substantially as set forth.

5. The cylinder described, having a series of openings through its side, and elbow-shaped hoods over said openings on the inside of the cylinder and having flaring discharges, substantially as set forth.

6. The cylinder described, having longitudinally arranged lifting blades on its inside, and a series of inlet openings over its surface between said blades and hoods over said openings having necks to raise the discharge above the floor of the cylinder and curved at their top to discharge in the direction of the end of the cylinder, substantially as set forth.

7. The drying cylinder open at both ends for the passage of the material and the products of combustion in opposite directions, and having inlet openings through the side of the cylinder, substantially as set forth.

8. The combined furnace and walled chamber for the drying cylinder, and the drying cylinder therein open at both ends and arranged in the line of draft and having covered inlet openings between its ends and a device at the front of the said cylinder to stimulate or augment the natural draft through said cylinder, substantially as set forth.

9. The apparatus described, comprising a furnace and a drying cylinder set into the line of draft from the furnace and open at its ends, and a perforated arch between the said cylinder and the line of draft from the furnace to the rear of the cylinder, substantially as set forth.

10. The furnace and the perforated arch forming a continuation of the furnace arch, and a revolving drying cylinder above said perforated arch and open at its ends to allow draft through the same, substantially as set forth.

11. The furnace and the perforated arch beyond the furnace over the line of draft, and a drying cylinder set into the line of draft above said perforated arch and provided with covered openings to admit heat into the cylinder about its side, substantially as set forth.

12. The furnace and the drying cylinder set into the line of draft therein, and provided with a series of hooded inlet openings between its ends, and a perforated arch extending substantially parallel to said cylinder beneath the same and separating the cylinder from the direct draft from the furnace, substantially as set forth.

13. The furnace, and the perforated arch forming an extension substantially of the arch of the furnace, in combination with the open ended revolving drying cylinder set into the line of draft and having its side provided with a series of inlet openings, and elbow shaped hoods over said openings, substantially as set forth.

14. The furnace and the perforated arch extending beyond the same toward the rear and forming the covering of the line of draft and a perforated air inlet arch beneath said line of draft, substantially as set forth.

15. The furnace constructed for a drying apparatus, the drying cylinder therein and an air inlet arch beneath said cylinder perforated at intervals for the passage of air, whereby the temperature of the products of combustion is reduced as air is admitted, substantially as set forth.

16. The construction described, consisting of the furnace proper, the parallel perforated arches forming the draft passage from the furnace between them, and the revolving drying cylinder set into the line of draft above said arches, substantially as set forth.

17. The furnace and the two perforated arches, one above the other, and having the draft passage between them, and mechanism to regulate the flow of air through the lower arch, substantially as set forth.

18. The furnace described, the parallel perforated arches and air inlets to the lower of said arches in combination with the open ended drier cylinder above said arches in the line of draft and having hooded inlet openings about its side, substantially as set forth.

19. The furnace and the two perforated arches, the drying cylinder set into the line of draft above said arches and having openings about its side, and hoods over said openings having their discharge directed toward the front of the cylinder, substantially as set forth.

20. The furnace proper and the draft passage from said furnace having perforated arches above and below the same, a cylinder in the line of draft above said arches and open throughout its length, hooded inlet openings in said cylinder and a device to produce artificial, draft through said cylinder, substantially as set forth.

21. The furnace and the revolving drying cylinder set into the line of draft therefrom and having inlet openings about its side and hoods over said openings, means at the front of said cylinder through which the material to be dried is fed thereto and means to produce an artificial draft through the cylinder and said hoods, substantially as set forth.

22. The apparatus described, comprising the furnace and expansion chamber, the drying cylinder in said chamber and having its front end exposed outside said chamber and hooded openings in the portion of the cylinder within said chamber, substantially as set forth.

23. The construction described, consisting of the furnace and the expansion chamber and a perforated arch beneath said chamber, and a cylinder having its front end projecting outside of said chamber and means to feed the material to be dried to said cylinder, substantially as set forth.

24. In a cylinder of the kind described, a tubular spindle or trunnion and tubular arms radiating from said spindle and an open passage through spindle and arms to admit air, substantially as set forth.

25. The cylinder in combination with the combined tubular spindle and arms and the band integral with said arms, said parts connected, substantially as set forth.

26. The furnace and the arch over the passage way therefrom provided with openings, and means to control said openings, substantially as set forth.

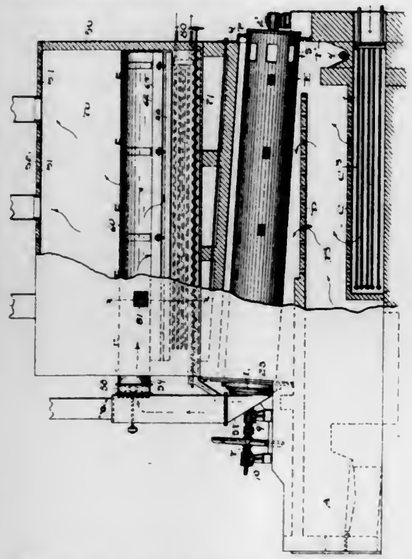
27. The furnace and the perforated arch to the rear thereof over the passage way, and a sliding part of non-combustible material to control the said perforations, substantially as set forth.

28 The furnace having a perforated arch at its rear and a chamber over said arch having air inlets at its side, substantially as set forth.

545,121. DRIER. FRANKLIN D. CUMMER, Cleveland, Ohio, assignor to Eliza E. Cummer, same place. Filed Apr. 16, 1895. Serial No. 545,846. (No model.)

Claim.—1. In a drying apparatus, a drying cylinder, a spider in the end of the cylinder, a hollow trunnion for said spider, a spring pressed rod through said trunnion, and arms connected with the inner end of said rod and the inside of said cylinder back from the end thereof, substantially as set forth.

2. The drying cylinder and a ring fixed thereto at one end and a journaled spider encircled by said ring a rod through the journal of said spider and connecting arms from the inner end of said rod to the inside of the cylinder, said rod provided with a spring to yield longitudinally, substantially as set forth.



3. The construction described consisting of the cylinder and the ring about its front end, the hollow journaled spider having a ring shaped periphery overlapped by the ring on said cylinder and the said rings constructed to engage and rotate together whereby the cylinder is turned, a rod through said spider journal, a spring encircling the rod outside said journal and the yoke or arms connected with the inner end of said rod and the inside of the cylinder, substantially as set forth.

4. The cylinder and the ring fixed to the end thereof, in combination with a spider having its periphery overlapped by the said ring and having a projection on its periphery against which the said ring is adapted to bear, connections independent of said spider to hold said ring and spider in operative relation, said connections fixed to the said cylinder some distance from its end, substantially as set forth.

5. In a drying apparatus as described, a drying cylinder having hooded inlets between its ends for the passage of the products of combustion and heated air and openings at its rear and side for the further inlet of products of combustion and for the discharge of the dried material, substantially as set forth.

6. The drying cylinder described, having a series of openings about its rear and side through which the dried material is discharged and the products of combustion are admitted to said cylinder, and having a supporting spider and journaled in its rear end outside said openings, substantially as set forth.

7. In a drying apparatus, a furnace and heating chamber and a rotating drying cylinder in said chamber, in combination with a dust collecting chamber and a walled passage in said chamber constructed to promote deposition of the dust, a draft passage from said cylinder to said walled passage, and a blower to promote artificial draft through said passages, substantially as described.

8. The apparatus comprising the furnace and heating chamber and a rotating cylinder in said chamber, in combination with a dust collecting chamber over the said heating chamber, a draft passage from the cylinder to said chamber, and a blower in said passage, substantially as described.

9. The dust chamber described having an inlet from the furnace and a blower connected therewith, and a passage way in said chamber provided with an opening along its bottom and closed about its sides and top and an outlet at the top of said chamber for the escape of the products of combustion substantially as set forth.

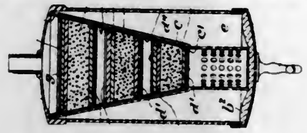
10. In a drying apparatus, a dust collecting chamber provided with an inlet passage extending into the same and open along its bottom, and a deflector or guard along the sides and bottom of the said passage to promote the deposit of the inflowing dust at the bottom of said chamber, substantially as set forth.

11. In a drying apparatus as described, a cylinder through which the products of combustion and the material dried pass in opposite directions, in combination with a dust chamber, a flue from said cylinder into said dust chamber and a blower in said flue, said dust chamber provided with means to promote the depositing of the dust at the bottom of said chamber, and the said chamber having sides converging toward the bottom thereof, substantially as set forth.

12. The dust chamber having an outside inclosing wall and inside downwardly converging sides —70— and a conveyer at the bottom of said sides —70—, substantially as set forth.

13. The dust chamber having the converging inner side walls and the conveyer at the bottom thereof, in combination with the dust inlet passage extending into said chamber and open along its bottom and an outlet at the top of said chamber, substantially as set forth.

545,122. FILTER. ADOLPHUS DAVIS, Montreal, Canada. Filed Feb. 12, 1894. Renewed June 22, 1895. Serial No. 553,735. (No model.)

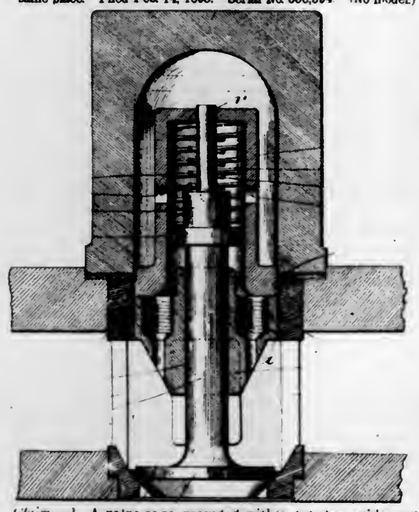


Claim.—1. In a filter, the combination with an outer casing, having suitable inlet and outlet, of a removable end piece for same, a removable internal carrier section held in position within the casing, to communicate with the inlet thereof, by said removable end piece when in place, and a number of removable filtering sections carried within said internal section the wall of which is perforated at a point below the lowermost of said filtering sections for the purpose set forth.

2. The filtering section composed of a hollow dish with open top inclined sides and foraminiferous bottom, and containing a section of felting upon said bottom, a body of granular substance upon such felting, a double layer of felting over such granular substance and a retaining device in the form of a ring forced downward to bear tightly against the sides of the dish and overlapping the edge of the uppermost layer of felting for the purpose set forth.

3. In a filter, the combination of casing *a*, having an inlet opening at its top end, and outlet as at *f*, a removable bottom end piece *b*, having suitable finger hold *b'*, internal removable funnel-shaped section *c* perforated as at *c'*, and filtering sections as described carried within said section *c* for the purposes set forth.

545,123. VALVE FOR COMPRESSORS. CHARLES DICKERMAN, Philadelphia, Pa., assignor to the Pennsylvania Iron Works Company, same place. Filed Feb. 14, 1895. Serial No. 538,394 (No model.)



Claim.—1. A valve-cage provided with a tubular guide and a hollow cylindrical extension, both of which are detachably connected thereto and the latter provided with an opening in its outer end, in combination with a valve seated in the cage and having a collar on the stem thereof, a spring resting upon said collar and the outer end of the valve stem engaging the opening in the outer end of the cylindrical extension.

2. A valve-cage having an internal screw-thread at its upper end and provided with a tubular guide having an external screw thread and with a hollow cylindrical extension having an external screw-thread and both of which screw-threads engage with the screw-thread of the valve cage, in combination with a valve seated in said cage and having a stem with a collar thereon, and a spring seated on said collar.

545,124. COMBINED BULLET-MOLD AND CARTRIDGE-LOADING IMPLEMENT. JOHN J. FLYCKT, St. Thomas, N. D. Filed May 9, 1895. Serial No. 548,685. (No model.)



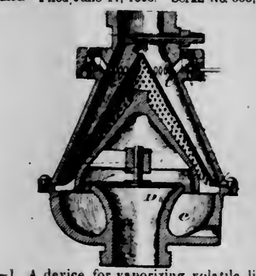
Claim.—1. In a bullet mold, the combination of a pair of jaws pivoted together, detachable parts of a bullet mold proper fitting recesses in the upper ends of said jaws, a perforated cut-off fitting guides along the sides of said jaws, a pivoted handle connected to one of said jaws and a pitman eccentrically connected to said handle and to said cut-off, substantially as and for the purpose described.

2. In a bullet mold, the combination of a pair of jaws pivoted together, two complementary parts of a bullet mold proper pivoted in recesses in the upper ends of said jaws, a perforated sliding cut-off for said mold, an adjusting screw for regulating the length of the bullet to be molded, means for holding the same normally against the lower edge of one of the parts of said bullet mold during a part of the movement of said jaws, and means for shifting the bullet laterally upon the further movement of said jaws, and for discharging said bullet therefrom, substantially as and for the purpose described.

3. In a bullet mold, the combination of a pair of jaws pivoted near their outer ends, complementary parts of a bullet mold proper, fitting recesses in the outer end of said jaw, a perforated sliding cut-off resting against the side of said jaws provided with elongated slots surrounding projecting pins on said jaws, a handle pivoted to one of the jaws, a pitman eccentrically connected to said handle and to said sliding cut-off, a bolt passing through one of the jaws, having a projecting ledge thereon, a tension spring for said bullet mold, having a boss at one end in which is mounted an adjusting screw for regulating the length of the bullet molded, a shoe adapted to engage with said ledge, an arm projecting laterally from said spring having a flange adapted to engage with one of said jaws, and a supplemental spring for holding said boss normally in engagement with one of the parts of said bullet mold proper, substantially as and for the purpose described.

4. The combination of a pair of jaws suitably pivoted together, a cartridge reloading and extracting mechanism, consisting of a cylindro-conical casing adapted to fit one of said jaws, with a bayonet joint connection and having a slot in one side near the open end thereof, a pair of arms pivoted together and fitting a recess in one of said jaws adjacent to said reloading device, one of the arms pivoted to the opposite jaw and a spring for normally holding said arms apart, substantially as and for the purpose described.

545,125. VAPORIZER FOR GAS-MOTORS. BENJAMIN W. GRIST, Philadelphia, Pa., assignor to the Pennsylvania Iron Works Company, same place. Filed June 17, 1895. Serial No. 553,063. (No model.)



Claim.—1. A device for vaporizing volatile liquids, comprising an outer casing, a foraminous cone within the casing and a liquid supply above said cone, in combination with an air supply below the cone.

2. A device for vaporizing volatile liquids, comprising an outer casing, a foraminous cone within the casing, a deflector within the cone and a liquid supply above the cone, in combination with an air supply below the cone and concentric thereto.

3. A device for vaporizing volatile liquids, comprising an outer casing a foraminous cone within the casing and a liquid supply above the cone, in combination with an air supply below the cone and provided with a check valve.

4. A device for vaporizing volatile liquids, comprising an outer casing constructed to be connected at its upper end with the induction pipe of a gas motor and having a passage through the bottom of the casing to supply air, and a valve controlling said passage, in combination with a foraminous cone within the casing and above the air supply and an oil supply above and adjacent to the apex of said cone.

5. A device for vaporizing volatile liquids, comprising an outer casing provided with means for connecting it with the induction pipe of a gas motor, an air supply in the bottom of the casing and having a flaring discharge end, a valve for controlling said supply, an annular liquid chamber and a passage leading therefrom, in combination with a liquid supply, means for spreading the liquid into a thin sheet and diffusing the air through the liquid.

6. A device for vaporizing volatile liquids, comprising an outer casing, a foraminous cone within the casing, an air supply below the cone and provided with a check valve and a deflector, a guide and guard for the check valve, in combination with a liquid supply above the cone.

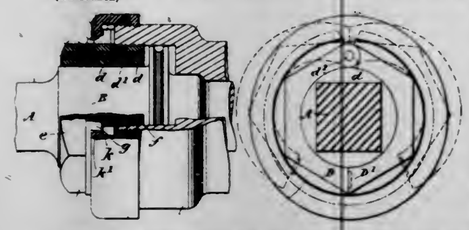
7. A device for vaporizing volatile liquids, comprising an outer casing, means for supplying liquid and means for spreading the liquid into a thin sheet and comminuting air, in combination with a main air supply at the lower end of the casing and a supplemental air supply near the upper end thereof.

8. A device for vaporizing volatile liquids, comprising an outer casing, means for supplying liquid and a foraminous cone to spread the liquid into a thin sheet and comminute air, in combination with a main air supply below the cone and a supplemental air supply near the apex of the cone.

9. A device for vaporizing volatile liquids, comprising an outer casing provided with a concentric air supply in its bottom, an annular supplemental air supply in the wall of the casing and provided with a cut off valve and a check valve and a foraminous cone, in combination with a liquid supply above the cone.

10. A device for vaporizing volatile liquids, comprising a two part conical casing, the lower section of which casing is provided with a concentric air supply nozzle extending above and below the bottom thereof, an annular liquid chamber around said nozzle a discharge communicating with said chamber and a valve seated upon the inner end of the nozzle, in combination with a deflector above and surrounding the valve, a foraminous cone above the deflector and a liquid supply above the cone.

545,126. HUB-ATTACHING DEVICE. FLORIAN LEBEL, Montreal, Canada. Filed Apr. 15, 1893. Renewed July 5, 1895. Serial No. 555,026. (No model.)



Claim.—1. In combination with an axle or the like and parts to be held in place thereon of a screw-threaded nut with uniform inner periphery formed in sections having interlocking ends, as set forth.

2. In combination with an axle or the like and parts to be held in place thereon, of a screw-threaded nut with uniform inner periphery formed in sections and hinged together as set forth.

3. In combination with an axle or the like and parts to be held in place thereon, of a screw-threaded nut with uniform inner periphery formed in sections and hinged together, and means externally of such nut for pressing the parts thereof closely together as set forth.

4. In combination with the journal of an axle or the like, and the hub box carried thereby, of a nut formed in two parts hinged together and having a screw threaded portion to take into a corresponding screw-threaded portion of such hub box, as set forth.

5. In combination with the journal of an axle or the like and the hub box carried thereby, of a nut formed in two parts hinged together having a screw threaded portion to take into a corresponding screw-threaded portion of such hub box, and a ring adapted to encircle and compress the parts of said nuts closely together and also screw threaded to take onto a corresponding screw-threaded portion of said hub box, as set forth.

6. The nut formed in two parts hinged together and having plane surfaced and screw threaded portions as set forth.

7. The combination of the nut formed in two parts hinged together and having plane surfaced and screw-threaded portions and a ring device adapted to encircle and compress the parts of said hub closely together as set forth.

8. The combination with an axle or the like and hub sleeve to be held in place thereon, of a nut having a beveled exterior surface and a ring encircling such nut and having a beveled interior surface to correspond with that of the nut and screw threaded to take onto such hub box as set forth.

545,127. ELEVATOR-INDICATOR. LOUIS MALM, Cleveland, Ohio. Filed Jan. 5, 1895. Serial No. 533,994. (No model.)



Claim.—1. In a floor indicator for elevator service the combination with a segmental plate and incandescent lamps secured radially thereto of a centrally pivoted index finger and shaft, terminals upon the segment plate for the several lamp circuits and contact points upon a switch arm connected with the main circuit adapted to move in unison with the index finger and include each lamp successively in the main circuit substantially as described.

2. In a floor indicator for elevators, the combination with a segmental plate, and incandescent lamps secured radially thereto and numbered consecutively of a centrally pivoted index finger and shaft and a switch arm upon said shaft registering with said finger provided with the terminal contacts of a main electric circuit, terminal contacts on the segment plate for the lamp circuit, and mechanism connecting the said shaft with the movements of the piston in the hydraulic cylinder, whereby the shaft will be rotated and the successive lamps will glow as the indicator points to them, substantially as set forth.

3. In a floor indicator for elevator service, the combination of a segment provided with radially arranged incandescent lamps, numbered serially, and contact points at the terminals of said lamp circuits, a central shaft provided with an index finger and switch arm bearing contact points, terminals on the main circuit adapted to engage the lamp terminal contacts as the shaft rotates, with means for rotating said shaft in unison with the movements of the elevator consisting in the stationary pulleys 6 and 7, cord 5, arm 10 secured upon the piston rod, spur gearing 11 and 12, shaft 30, pulley 13, and intermediate cords and pulleys, substantially as set forth.

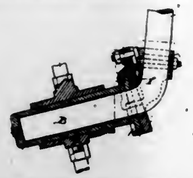
545,128. MANUFACTURE OF STARCH. ANSIL MOFFATT, Indianapolis, Ind. Filed Apr. 15, 1895. Serial No. 545,797. (No specimens.)

Claim.—The herein described process of treating wet starch, which consists, first, in removing the moisture by centrifugal action to within twenty-five per centum or thirty-six per centum of absolute dryness, then rendering pulverulent and homogeneous by mixing and sifting, then heating to from 110° to 160° Fahrenheit and subjecting to pressure at this temperature whereby the starch will be formed into coherent masses and finally drying out the starch to the proper state to enter commerce.

545,129. STAGGER-WHEEL AXLE-BOX FOR AGRICULTURAL IMPLEMENTS. GILPIN MOORE, Moline, Ill., assignor to the Deere & Company, same place. Filed May 15, 1895. Serial No. 549,361. (No model.)

Claim.—1. The combination with an axle having its end or spindle at an angle to the body portion thereof, of a box provided with a closed outer end and with a flange on its inner end, a box-holder provided with a U-shaped bracket adapted to embrace the bend of said axle and be secured thereto; said holder having a recess in which the flange of the box may revolve, and means for securing the flange in the recess of the box-holder, substantially as described.

2. In a wheel-box, the combination with an axle having its end at an angle to the body portion thereof, of an axle-box provided with an inner flange adapted to fit over the end of said axle, a box-holder comprising two members one of which is provided with a U shaped bracket adapted to embrace the bend of said axle and be rigidly secured to the axle and the other to revolubly and removably hold the flange of the axle-box in a recess in said members, and means for securing the two members together, substantially as described.



3. In a wheel box, the combination with an axle having its end at an angle to the body portion thereof, of an axle-box provided with a closed outer end and a flange on its inner end adapted to fit over the end of said axle, a box-holder comprising two members one of which is provided with a U-shaped bracket adapted to embrace the bend of said axle and be rigidly secured to the axle; said member being provided with a flange against which the flange of the axle box may abut, a cap or second member provided with side flanges forming a recess in which the flanges of the box-holder and axle-box may fit, together with means for removably holding the cap to the first mentioned member, substantially as described.

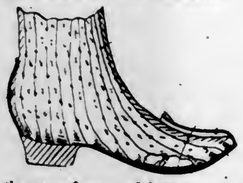
4. In a wheel box, the combination with an axle-box provided with a closed outer end and a flange on its inner end adapted to fit over the end of an axle, of a box-holder comprising two members one of which is adapted to be secured to the axle, a cap or second member fitting over a portion of the first mentioned member and forming therewith a recess in which the flange of the axle-box may fit, together with a bolt for removably holding the cap to said first mentioned member, substantially as described.

5. In a wheel box, the combination with an axle, of an axle-box provided with a closed outer end and a flange on its inner end adapted to fit over the end of said axle, a box-holder comprising two members one of which is provided with a flange and with a U-shaped bracket adapted to be secured to the axle, a cap or second member fitting over a portion of the flange of the first mentioned member and forming therewith a recess in which the flange of the axle-box may fit and revolve, together with a bolt having its body portion passed through said cap and having its head adapted to fit into a recess in the first or main member by which both members may be removably held together, substantially as described.

6. The combination with an axle, of an axle-box, a wheel carried by said box and adapted to rotate on the end of said axle, a box-holder adapted to revolubly hold the wheel on the axle, a U-shaped bracket forming a part of said box-holder, a clamping plate arranged on one side of the axle, together with bolts for securing the bracket and clamping plate to the axle, substantially as described.

7. The combination with an axle, of an axle-box, a wheel carried by said box and adapted to rotate on the end of said axle, a box-holder adapted to revolubly hold the wheel on the axle, a bracket forming a part of said box-holder, a clamping plate arranged on one side of the axle and having an extension forming a scraper for the wheel, together with means for securing the bracket and clamping plate to the axle, substantially as described.

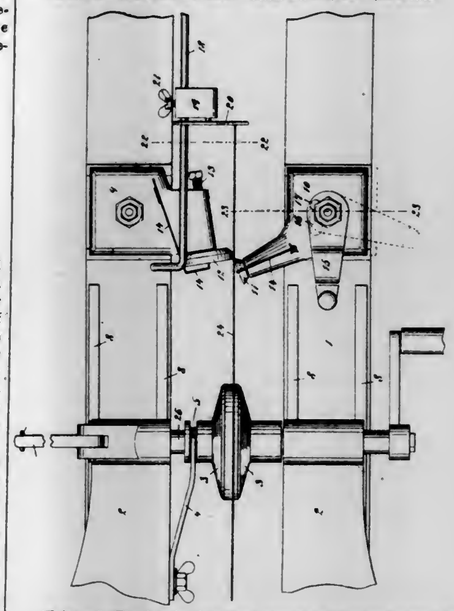
545,130. FOOTWEAR. JAMES H. MCKECHNIE, Granby, Canada. Filed Mar. 19, 1895. Serial No. 542,432. (No model.)



Claim.—1. In the manufacture of foot wear of the class described,—first placing the insole upon the last, lasting the edges of the leg portion thereto, attaching the edges of the lining of the rubber top to such insole and to the edges of the leg portion and then securing such rubber top to said lining and the rubber sole to such top.

2. In the manufacture of foot wear of the class described,—first placing the insole upon the last, lasting the edges of the leg portion thereto, attaching the edges of the lining of the rubber top to such insole, attaching the back of the heel or counter of the leg portion to the lining and then securing such rubber top to said lining and the rubber sole to such top.

545,131. SHEARS FOR TINNERS' USE. JOHN OHLER, New Orleans, La. Filed Mar. 26, 1895. Serial No. 543,292. (No model.)

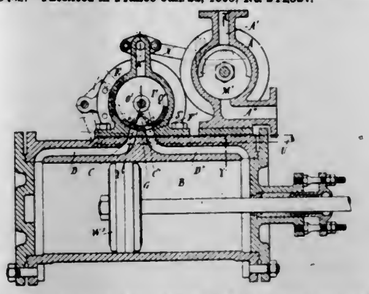


Claim.—1. The herein described circular or rotary cutters for tinners' use consisting of a cutter plate, a lever having a steel pin thereon working in a slot of the cutter plate, enabling the cutter to be thrown against, and away from a sheet of metal in the manner set forth.

2. The herein described circular or rotary cutters for tinners' use consisting of a cutter plate, a lever having a steel pin thereon working in the slot of the cutter plate, a gage for regulating the cut, and a gage holder, as set forth.

3. The herein described circular or rotary cutters for tinners' use, consisting of a cutter plate, a lever having a steel pin thereon working in the slot of the cutter plate; a gage for regulating the cut; a gage holder; means for adjusting the clamps, and springs for holding the cutters in position, substantially as described.

545,132. REVERSING-VALVE FOR ENGINES. ADRIEN PROLHAC, Fils, Allègre, France. Filed June 22, 1895. Serial No. 553,679. (No model.) Patented in France Jan. 22, 1895, No. 244,527.



Claim.—1. A reversing-apparatus for fluid-pressure engines, consisting in the combination with a distribution-device in which a rotary valve is employed and which has tubes appropriated one to the passage of fluid to and fro between one end of the engine cylinder and said distribution device and the other appropriated for the other end, of a valve-casing having a central partition dividing it into two chambers and having its wall in each chamber perforated with a set of ports to connect said chamber with both ends of the engine cylinder, and also perforated with two passages one at each side of the partition each individually appropriated to one of the aforesaid tubes, a valve in each said chamber to control the said set of ports therein, and means for operatively connecting the said valves reversely with each other and with an operating-rod, substantially as set forth.

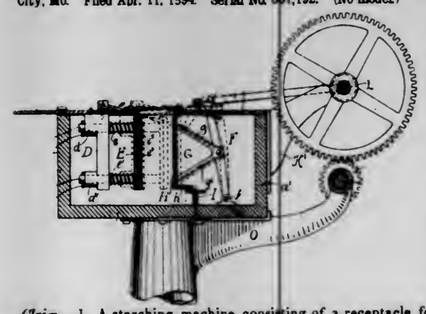
2. A reversing-apparatus for fluid-pressure engines, consisting in the combination with a distribution-device in which a rotary valve is employed and which has tubes appropriated one to the passage of the fluid to and fro between one end of the engine cylinder and said distribution-device and the other appropriated for the other end of a valve-casing having a central partition dividing it into two chambers, and having its wall in each chamber perforated with a set of ports to connect said chamber with both ends of the engine cylinder and also perforated with two passages one at each side of the partition, each individually appropriated to one of the aforesaid tubes, a disk with a perforated flange on a spindle in each chamber to control the said set of ports therein, toothed sectors on these spindles operatively connected with each other and an operating-rod therefor, substantially as set forth.

545,133. CONCRETE PIPE. ROBERT L. RANSOME, Chicago, Ill. Filed Jan. 11, 1895. Serial No. 534,559. (No model.)



Claim.—The method of uniting a connection to a concrete pipe just formed *in situ* upon a molding core: which consists in removing the adjacent earth, making a suitable hole in the pipe through to the core, placing the connection therein, supporting it against the core, and cementing it to the pipe.

545,134. STARCHING-MACHINE. LAVERN REYNOLDS, Kansas City, Mo. Filed Apr. 11, 1894. Serial No. 507,192. (No model.)



Claim.—1. A starching machine consisting of a receptacle for holding a suitable supply of liquid starch, and a cover to said receptacle having separate fixed and sliding parts, a yielding pad connected with the sliding part of said cover, and extending within said receptacle, a compressing plate opposite said pad and means for communicatiug a reciprocating movement to said plate for the purpose described.

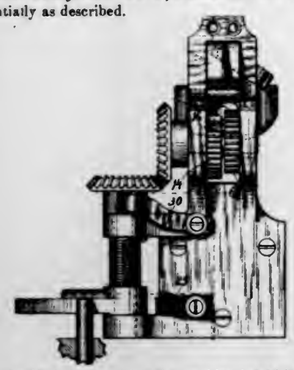
2. A starching machine consisting of a receptacle for holding a suitable supply of liquid starch and a cover to said receptacle having separate fixed and sliding parts, a pad connected with the sliding part of said cover extending within said receptacle, and a movable compression plate opposite said pad and mechanism connected with said sliding plate and said compression plate for operating said parts simultaneously as and for the purpose described.

3. A starching machine consisting of a receptacle for holding a suitable supply of liquid starch and a cover to said receptacle having separate fixed and sliding parts, a yielding plate having a pad thereon connected with said sliding plate and extending within the receptacle, a movable plate opposite said pad, pivoted vibrating bars having pivoted brace bars connected with said movable plate, a bearing for said movable plate within said receptacle and means for communicating a reciprocating movement to said vibrating bars for the purpose described.

545,135. YARN-CHANGING DEVICE FOR KNITTING-MACHINES. ADOLPH SEDMIHRADSKY, Milwaukee, Wis., assignor to the Kalamazoo Knitting Company, same place. Filed July 5, 1893. Serial No. 479,570. (No model.)

Brief.—Threads of different colors are severally gripped and released by wheels having segments removed from their peripheries and engaging a block above. The wheels are actuated automatically by the devices mentioned in the claims.

Claim.—1. In a device for automatically changing the threads being used in a knitting machine, a plurality of concurrently revoluble wheels having non-registering segments removed therefrom, and a plate held yieldingly to the perimeters of the wheels, whereby a thread between the perimeter of a wheel and the plate will be gripped and another thread between the plate and the face of the removed segment of the adjacent wheel is permitted to run freely therethrough, substantially as described.



2. In a knitting machine, the combination with the cam cylinder, the needle cylinder, and the needles therein, of a plurality of wheels having non-registering segments removed, mounted on the cam cylinder, and a spring-actuated plate having guides for the threads, located opposite to the perimeters of the wheels and adapted to grip threads of yarn thereto severally, substantially as described.

3. In mechanism for automatically feeding threads to and withholding them from a knitting machine, the combination of a plurality of concurrently rotating wheels, said wheels having non-registering segments removed therefrom, a thread-bearing plate located near to the wheels, a guide to direct the threads to the wheels, and means for intermittingly rotating said wheels, substantially as described.

4. The combination with the cam cylinder of a knitting machine, of a plurality of wheels 14, 14′ having non-registering segments removed therefrom mounted on said cylinder, a plate 10 provided with apertures 12, 12′ and with a partition 18, and a spring 13 adapted to hold the plate yieldingly to the perimeters of the wheels, substantially as described.

5. In a knitting machine, the combination with thread gripping wheels mounted on a shaft provided with a gear wheel, of a shaft having a wheel meshing with the gear wheel aforesaid, a tripping arm loose on the last mentioned shaft, which arm is provided with means to engage and carry the shaft with it in one direction, and other means by which the arm is retrieved, substantially as described.

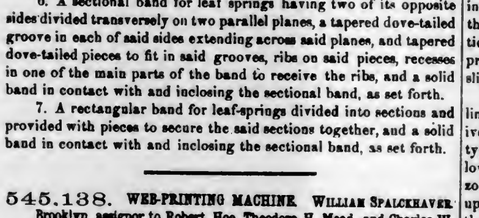
6. In a knitting machine, the combination with a revolving cam cylinder, of revoluble thread-gripping devices, a shaft mounted on the cylinder and geared to the gripping devices, a swinging arm loose on the shaft, a spring-actuated pin in the arm adapted to engage cam teeth on the shaft and to rotate the shaft therewith in one direction and to pass over the teeth when swung in the reverse direction, and a spring secured to the arm and to a relatively fixed support adapted to retrieve or swing the arm back in one direction, substantially as described.

7. In a device for actuating thread-gripping mechanism in a knitting machine, the combination of a shaft 24, a tripping arm 25 loose on the shaft having means to engage the shaft and rotate it therewith in one direction, means for engaging and swinging the arm with the shaft in one direction, and other means for swinging the arm in the reverse direction, and a spring 30 engaging the shaft yieldingly and preventing its rotation by friction with the arm when it is retrieved, substantially as described.

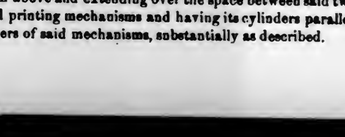
8. The combination with the frame and revoluble cam cylinder of a knitting machine, of a plurality of revoluble alternately acting gripping wheels fixed on a shaft, a second shaft geared to the first mentioned shaft, an arm loose on said second shaft having means to engage the shaft and rotate it therewith in one direction, a pin movable vertically in the frame adapted to be lifted into the path of the arm and thereby to trip it as the cylinder revolving carries the arm past the elevated pin, and a traveling pattern chain directly beneath the pin, which chain is provided with cam links adapted to elevate the pin as they pass it on the chain, substantially as described.

545,136. VEHICLE. JOHN R. SIMMS, Milton, Cal. Filed May 13, 1895. Serial No. 549,213. (No model.)

Claim.—The vehicle described comprising the axle having wheels at its ends, the shafts fixedly connected to the axle, the transverse bar D, connecting the shafts in advance of the axle, the longitudinal bars F, connected to and extending in advance and rear of the axle and connected at their forward ends to the transverse bar D, the transverse bar G, connecting the rear ends of the bars F, the frames H, connected to and rising from the longitudinal bars F, a transverse bar I, connecting the upper portions of said frames, the longitudinal guide rail N, connected at its ends to the bars D, and G, at the middles thereof, the hooks J, connected with the horizontal bars of the frames H, the body B, having the corrugated plates M, on its under side, and also having loops O, on its under side engaging the guide rail N, the bars L, removably seated in the depressions of the corrugated plates M, and having hooks at their ends, and the springs K, connected with the hooks J, and the hooks of the bars L, all substantially as and for the purpose set forth.



545,137. SECTIONAL BAND FOR SPRINGS. GEORGE R. SLOAN, Jr., and THOMAS A. SHEA, Oswego, N. Y., assignors to the National Railway Spring Company, same place. Filed June 20, 1895. Serial No. 553,492. (No model.)



Claim.—1. A band for leaf springs having two of its opposite sides divided transversely on several parallel planes, a groove in and extending across said sides at right angles to said planes, and pieces adapted to fit in said grooves to hold the parts together, as set forth.

2. A band for leaf-springs having two of its opposite sides divided transversely on two parallel planes, a groove in and extending across said sides at right angles to said planes, pieces provided with tongues to fit in said grooves, recesses in one of the parts of the band, and ribs on the pieces to fit in said recesses, as set forth.

3. A band for leaf springs having two of its opposite sides divided on two parallel planes, a dove-tailed groove in and extending across each of said sides at right angles to said planes, and pieces provided with tongues to fit in said grooves substantially as and for the purpose described.

4. A band for leaf springs having two of its opposite sides divided on several parallel planes, a tapered dove-tailed groove extending across each of said sides at right angles to said planes, and tapered pieces provided with tongues to fit in said grooves, substantially as described and shown.

5. A sectional band for leaf springs having two of its opposite sides divided transversely on two parallel planes, a tapered dove-tailed groove in each of said sides extending across said planes, and tapered dove-tailed pieces to fit in said grooves, ribs on said pieces, and recesses in one of the main parts of the band to receive the ribs, as set forth.

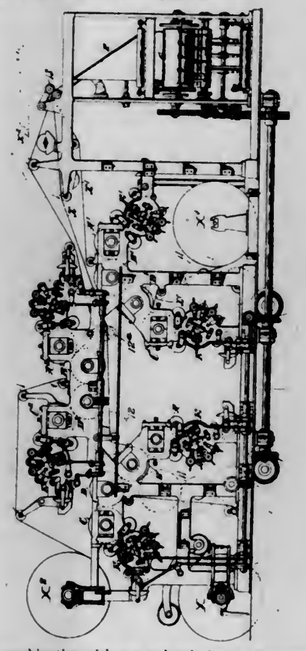
6. A sectional band for leaf springs having two of its opposite sides divided transversely on two parallel planes, a tapered dove-tailed groove in each of said sides extending across said planes, and tapered dove-tailed pieces to fit in said grooves, ribs on said pieces, recesses in one of the main parts of the band to receive the ribs, and a solid band in contact with and inclosing the sectional band, as set forth.

7. A rectangular band for leaf-springs divided into sections and provided with pieces to secure the said sections together, and a solid band in contact with and inclosing the sectional band, as set forth.

545,138. WEB-PRINTING MACHINE. WILLIAM SPALCKHAVER, Brooklyn, assignor to Robert Hoe, Theodore H. Mead, and Charles W. Carpenter, New York, N. Y. Filed Dec. 1, 1894. Serial No. 530,565. (No model.)

Claim.—1. The combination with two web printing mechanisms arranged in line with their cylinders parallel, of a third web printing mechanism above and extending over the space between said two first mentioned printing mechanisms and having its cylinders parallel with the cylinders of said mechanisms, substantially as described.

2. The combination with two web printing mechanisms arranged in line with their cylinders parallel, each mechanism having its successive type cylinders arranged one above the other whereby the horizontal space occupied by said printing mechanisms is reduced, of a third web printing mechanism above and extending over the space between said two first mentioned printing mechanisms with its cylinders parallel with the cylinders of said mechanisms, and having its successive type cylinders arranged in substantially the same horizontal plane, whereby the vertical space occupied by said third printing mechanism is reduced, substantially as described.



3. The combination with two web printing mechanisms arranged in line with their cylinders parallel, each mechanism having its successive type cylinders arranged one above the other and with the upper type cylinders of the two mechanisms separated farther than the lower type cylinders of said printing mechanisms, whereby the horizontal space occupied by the printing mechanisms is reduced and the upper type cylinders brought into position for convenient access from the opposite ends of the machine, of a third web printing mechanism above and extending over the space between said two first mentioned printing mechanisms with its cylinders parallel to the cylinders of said printing mechanisms and having its successive type cylinders arranged in substantially the same horizontal plane whereby the vertical space occupied by said third printing mechanism is reduced, substantially as described.

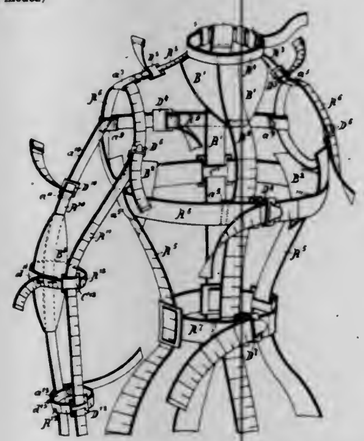
4. The combination with two web printing mechanisms arranged in line with their cylinders parallel, of a third web printing mechanism above and extending over the space between said two first mentioned printing mechanisms with its cylinders parallel with the cylinders of said mechanisms, a main delivery mechanism at one end of the press capacitated to deliver the webs without superposition of sections, and an auxiliary delivery mechanism at the same end of the press having a slitter and transferrer by which the sections of the slit web or webs may be superposed, substantially as described.

5. The combination with two printing mechanisms arranged in line with their cylinders parallel, each mechanism having its successive type cylinders arranged one above the other and with the upper type cylinders of the two mechanisms separated farther than the lower type cylinders of said printing mechanisms, whereby the horizontal space occupied by the printing mechanisms is reduced and the upper type cylinders brought into position for convenient access from the opposite ends of the machine, of printing mechanism above said two first mentioned printing mechanisms with cylinders parallel to the cylinders of said two first mentioned printing mechanisms, substantially as described.

6. The combination with two web printing mechanisms arranged in line with their cylinders parallel, each mechanism having its successive type cylinders arranged one above the other and with the upper type cylinders of the two mechanisms separated farther than

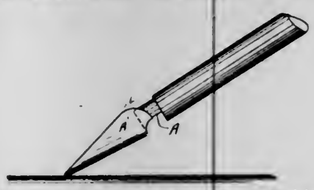
the lower type cylinders of said printing mechanisms, whereby the horizontal space occupied by the printing mechanisms is reduced and the upper type cylinders brought into position for convenient access from the opposite ends of the machine, of web printing mechanism above said two first mentioned printing mechanisms with cylinders parallel to the cylinders of said two first mentioned printing mechanisms, and web associating and delivery mechanism at one end of the press capacitated to deliver the product of all said printing mechanisms, substantially as described.

545,139. GARMENT-MEASURE. SAMPSON S. START, Jr., and MAY A. S. JOHNSON, Luverne, Minn. Filed July 2, 1894. Serial No. 516,366. (No model.)



Claim.—The tape A^8, and the stay B^3, to which the tape is secured, combined with the two arm tapes, the stay B^3, secured to the two tapes at the elbow, and the tapes A^{12} A^{13}, substantially as described.

545,140. WRITING PEN AND STYLUS. JULIUS A. STEGE, Louisville, Ky. Filed May 1, 1895. Serial No. 547,797. (No model.)



Claim.—1. In a writing-pen, a shank of semi-cylindrical form in cross section, an inflexible writing point and ink reservoir integral therewith bent in the opposite direction, said ink reservoir overlapping the shank for a portion of its length, and being provided with a split and ronnded point, substantially as shown and described.

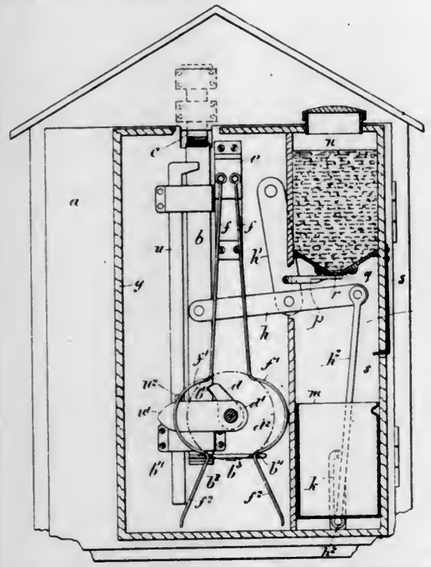
2. A pen comprising a shank semi-cylindrical in cross section and an ink reservoir integral with the shank and bent in the opposite direction and an opening, of substantially round form, when viewed from one end of the finished pen, cut transversely of the blank at the junction of the shank and reservoir and forming a continuation of the channels or openings along the shank and reservoir, substantially as described.

545,141. FIRE-ALARM BOX. THOMAS WALSH, Montreal, Canada. Filed Apr. 12, 1895. Serial No. 545,483. (No model.)

Claim.—1. In combination with the locking mechanism of a fire alarm box, an automatically operated grip or handcuff adapted to open and close, and connections between same and said locking mechanism whereby upon the movement of the latter to unlock the box the handcuff will be closed together with means for opening the handcuff, for the purpose set forth.

2. In combination with the locking mechanism of a fire alarm box, an automatically operated grip or handcuff adapted to open and close, and connections between same and said locking mechanism whereby upon the movement of the latter to unlock the box, the handcuff will be closed together with means for automatically opening the handcuff, for the purpose set forth.

3. In combination with the door of a fire alarm box,—of a locking bolt, a pair of rods forming a handcuff, a yoke piece connected with such locking bolt and adapted upon the movement in one direction of such bolt to close such handcuff, and means for operating such locking bolt for the purpose set forth.



4. In combination with the door of a fire alarm box, of a locking bolt, a pair of rods forming a handcuff, and each having an inclined portion, a yoke piece connected with such locking bolt and having slots to receive the inclined portions of such rods, and means for operating such locking bolt for the purpose set forth.

5. In combination with the door of a fire alarm box, of a locking bolt, a pair of rods forming a handcuff and each having an inclined portion, a yoke piece pivotally connected with such locking bolt and having slots to receive the inclined portions of such rods, and means for operating such locking bolt for the purpose set forth.

6. In combination with a fire alarm box and locking mechanism therefor, a secondary box or casing carried by the box proper and inclosing the locking mechanism, a hand hole through said secondary casing, a hand cuff or gripping device within such casing, means connected with said locking mechanism and said gripping device whereby upon movement of the locking mechanism the gripping device is caused to close and means for opening same for the purpose set forth.

7. In combination with a fire alarm box and locking mechanism therefor, an automatically operated grip or hand cuff adapted to open and close, and connections between same and said locking mechanism to secure the simultaneous closing of the handcuff with the unlocking of the box, and an automatically operating time release serving to open said handcuff for the purpose set forth.

8. In combination with a fire alarm box, a gravity hook carried by the frame thereof so as to overhang the upper edge of the door, a sliding bolt carried by the door and a rotary handle with connections between it and said bolt for raising same to operate said gravity hook, and an inclosing casing carried by the door having an opening therethrough in line with said handle for the purpose set forth.

9. In combination with the door of a fire alarm box,—of a vertically sliding locking bolt supported by an engaging detent, a pair of rods forming a handcuff normally open, a yoke piece connected with such locking bolt and adapted, upon the disengagement of such detent from the locking bolt and the consequent fall of same, to close such handcuff and means for operating such detent for the purpose set forth.

10. The combination of the secondary inclosing casing the locking bolt, the rods forming the handcuff, connections between said bolt and rods, an operating handle with detent engaging said bolt and an automatic time release comprising a lever, a movable supply of sand, a hopper for same and a receptacle into which such sand flows from the hopper, a finger controlling the flow operated by said lever and means for supporting said receptacle until filled with sand so as to depress said lever for the purpose set forth.

11. In combination with the door of a fire alarm box carrying a hopper with an outlet opening in its bottom,—of a locking bolt, a detaining device capable of being opened and closed, operative connection between same and the locking bolt, a device adapted to be moved in one direction by the closing of the detaining device and to open such detaining device by its return movement to its normal position, and means for operating such locking bolt for the purpose set forth.

12. In combination with the door of a fire alarm box carrying a hopper with an outlet opening in its bottom,—of a locking bolt, a detaining device capable of being opened and closed, operative connection between same and the locking bolt adapted to be moved in one direction by the closing of the detaining device and to open such detaining device by its return movement to its normal position, and means for returning such device to its normal position and for operating such locking bolt for the purpose set forth.

13. In a fire alarm box the combination with the door carrying a hopper provided with a temporarily covered outlet opening in its bottom,—of a locking bolt, a detaining device capable of being opened and closed, operative connection between same and the locking bolt, a device adapted upon the closing of the detaining device to uncover the outlet opening in the hopper and to move such open top receptacle to a position in close proximity to such uncovered outlet opening for the purpose set forth.

14. In a fire alarm box, the combination with the door and its locking bolt, an automatically operated grip or handcuff adapted to open and close, connections between same and said locking bolt and means for operating such locking bolt,—of a latch adapted to engage such locking bolt and a secondary bolt adapted to disengage such latch, with means for operating same for the purpose set forth.

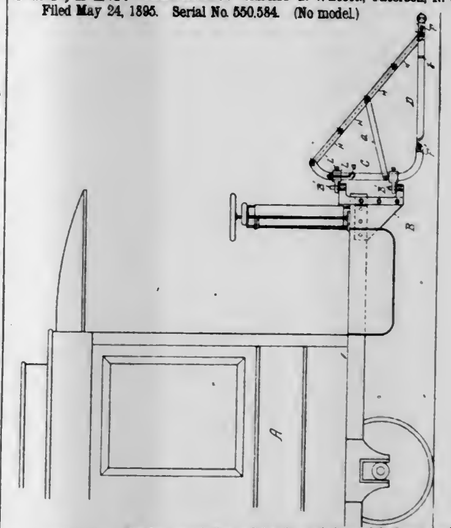
15. The combination with the door of a fire alarm box carrying a hopper with an outlet opening in its bottom,—of the vertically sliding locking bolt, the rods forming the handcuff pivotally connected to the door of the box, and each having an inclined portion, a yoke piece pivotally connected with such locking bolt and having slots to receive the inclined portions of such rods, an operating handle with detent engaging and supporting such vertically sliding bolt, an automatic time release comprising a swinging bar pivoted to the door of the box, a lever fulcrumed to such swinging bar and having one arm pivotally connected to the locking bolt and the other arm pivotally connected to a sliding carrier supporting an open topped receptacle beneath the hopper, a finger projecting from such swinging lever across and closing the outlet opening in the bottom of the hopper, a movable supply of sand carried by such hopper and an inclosing casing for such locking bolt, handcuff and releasing mechanism, with a hand opening in line with the operating handle, all for the purpose set forth.

16. The combination with the door of a fire alarm box carrying a hopper with an outlet opening in its bottom,—of the vertically sliding locking bolt, the latch and its operating bolt, the rods forming the handcuff pivotally connected to the door of the box and each having an inclined portion, a yoke piece pivotally connected with such locking bolt and having slots to receive the inclined portions of such rods, an operating handle with detent and finger for engaging and supporting such vertically sliding bolt and operating such latch operating bolt respectively, an automatic time release comprising a swinging bar pivoted to the door of the box, a lever fulcrumed to such swinging bar and having one arm pivotally connected to the locking bolt and the other arm pivotally connected to a sliding carrier supporting an open topped receptacle beneath the hopper, a finger projecting from such swinging lever across and closing the outlet opening in the bottom of the hopper, a movable supply of sand carried by such hopper and an inclosing casing for such locking bolt, handcuff and releasing mechanism with a hand opening in line with the operating handle all for the purpose set forth.

17. The combination with the door of a fire alarm box carrying a hopper with an outlet opening in its bottom,—of the vertically sliding locking bolt, the rods forming the handcuff pivotally connected to the door of the box, and each having an inclined portion, a yoke piece pivotally connected with such locking bolt and having slots to receive the inclined portions of such rods, an operating handle with detent engaging and supporting such vertically sliding bolt, an automatic time release comprising a swinging bar pivoted to the door of the box, a lever fulcrumed to such swinging bar and having one arm pivotally connected to the locking bolt and the other arm pivotally connected to a sliding carrier supporting an open topped receptacle beneath the hopper, a retaining spring carried by the side of the casing, a finger projecting from such swinging lever across and closing the outlet opening in the bottom of the hopper, a movable supply of sand carried by such hopper and an inclosing casing for such locking bolt, handcuff and releasing mechanism, with a hand opening in line with the operating handle, all for the purpose set forth.

18. The combination with the door of a fire alarm box carrying a hopper with an outlet opening in its bottom,—of the vertically sliding locking bolt, the latch and its operating bolt, the rods forming the handcuff pivotally connected to the door of the box and each having an inclined portion, a yoke piece pivotally connected with such locking bolt and having slots to receive the inclined portions of such rods, an operating handle with detent and finger for engaging and supporting such vertically sliding bolt and operating such latch operating bolt respectively, an automatic time release comprising a swinging bar pivoted to the door of the box, a lever fulcrumed to such swinging bar and having one arm pivotally connected to the locking bolt and the other arm pivotally connected to a sliding carrier supporting an open topped receptacle beneath the hopper, a retaining spring carried by the side of the casing, a finger projecting from such swinging lever across and closing the outlet opening in the bottom of the hopper, a movable supply of sand carried by such hopper and an inclosing casing for such locking bolt, handcuff and releasing mechanism with a hand opening in line with the operating handle all for the purpose set forth.

545,142. CAR-FENDER. ALFRED B. WATSON, Paterson, N. J. Filed May 24, 1895. Serial No. 550,584. (No model.)



Claim.—1. A fender consisting of back uprights with front and side bars hinged to the lower ends of said uprights, in combination with sections of netting connecting to the upper ends of said uprights and the front portion of said side bars, and braces pivotally connecting said uprights to the central portion of the net work, all constructed substantially as shown and described and for the purpose specified.

2. In combination with a railway car, a fender consisting of back uprights, a front bar and side bars hinged to the lower ends of said uprights, a cushion surrounding said front bar consisting of a spiral covering of any suitable material, a net work frame extending from the top ends of said uprights to the front portion or outer ends of the side bars consisting of sections adapted to fold when the side bars are raised and netting secured to each of said folding sections, and braces pivotally connecting the central folding point of the net work frame and the uprights, substantially as shown and described.

3. A railway car, hangers, provided with upright pins, secured to said car in combination with a fender consisting of back uprights, sliding supports through which said back uprights pass, set screws to secure said back uprights where desired in said supports, said supports provided with a lug having a hole adapted to fit around the upright pins on said hangers, a front bar and side bars secured to a cross bar the ends of said cross bar passing through the lower ends of said back uprights and secured so as to turn therein, a cushion surrounding said front bar and consisting of a spiral covering of any suitable material, a folding net work frame connecting the upper end of said back uprights and the front or outer portions of said side bars, net work secured on said folding sections and braces connecting said back bars and the sides of the folding net work frame midway between the ends thereof, all constructed substantially as shown and described.

545,143. SKELETON LETTERING. ALFRED WHITE, Toronto, Canada, assignor of two-thirds to Charles Norman Sutherland, same place, and Arthur Stanley King, Ottawa, Canada. Filed Apr. 23, 1895. Serial No. 546,836. (No model.)

Claim.—1. As a new article of manufacture a skeleton lettering comprising a combination of cut out characters and a connecting bar integral therewith in the form of a strip of such width as not to de-

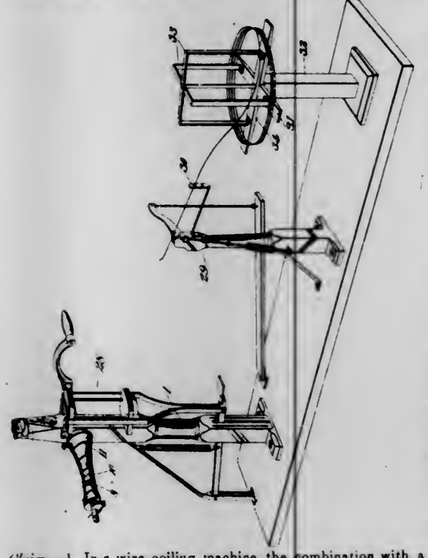
stroy their symmetry and identity extending directly from end to end of the characters and definitely and unalterably fixing the alignment and space between them, substantially as described.

CHEVIOTS

2. The combination with the cut out characters and connecting bar integrally formed therewith of a reinforcing bar extending throughout the length of the connecting bar and affixed to it as and for the purpose specified.

3. The combination with the cut out characters and connecting bar uniting them as specified, of a tongue extending outwardly from the bar as and for the purpose specified.

545,144. WIRE-COILING MACHINE. LA FAYETTE WILDERMUTH, Columbus, Ohio. Filed Apr. 26, 1895. Serial No. 547,217. (No model.)



Claim.—1. In a wire coiling machine, the combination with a support, of a plurality of relatively adjustable forming sections designed to form the wire between the coils formed on the mandrel, substantially as specified.

2. In a wire coiling machine, the combination with a support, of a plurality of relatively adjustable forming sections provided, respectively, upon their opposite sides with curved grooves, said forming sections being adapted to form the wire between the coils previously formed upon the mandrel, substantially as specified.

3. In a wire coiling machine, the combination with a support, of forming sections provided at opposite ends with curved grooves, a wire retaining lug, and means for adjusting the sections to increase or diminish the distance between the grooves, substantially as set forth.

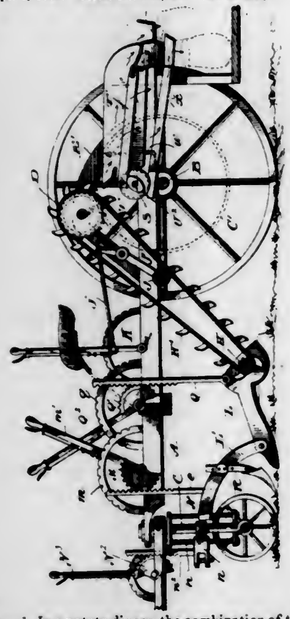
4. In a wire coiling machine, the combination with a support, of forming sections provided at opposite ends with curved grooves, a wire retaining lug, diagonal abutting edges upon the sections, and means for relatively adjusting the sections in the direction of the diagonal abutting edges, substantially as set forth.

5. In a wire coiling machine, the combination with a forming head, of curved grooves at opposite ends thereof, and wire retaining lugs at the end of each groove, substantially as set forth.

6. In a wire coiling machine of the character described, the combination with a post and its adjustable forming sections thereon, of a mandrel, a cutter, a horizontal guide arm, and a horizontal wire reel, substantially as set forth.

7. The combination with a support, smooth shaft and shaft actuating mechanism, of a base mandrel section secured upon the shaft, a terminal mandrel section, and an intermediate mandrel section longitudinally movable upon the smooth shaft, and co-operating steps or ledges upon the adjacent faces of the intermediate, base, and terminal mandrel sections, said steps or ledges being so disposed with respect to each other that the intermediate and terminal sections are secured to and movable with the base section when the latter is operated but may be readily slipped upon or from the smooth shaft for the purpose of using or dispensing with the intermediate section, substantially as specified.

545,145. POTATO-DIGGER. JOHN W. WOODS, Merriam, Kans. Filed Apr. 1, 1895. Serial No. 544,028. (No model.)



Claim.—1. In a potato digger, the combination of the endless conveyer mounted on sprocket wheels and carrying a series of buckets, the tightener J, the rod *j* to the frame carrying said tightener and lever *j'* and segment K, of the scoop L, the rack bar Q pivoted to its rear end, the geared segment Q' of the handle lever Q^2 and segment *q*, the curved member L' having its forward end mounted on the vertical rod N, the rack bar *e* secured to said member, the geared segment M meshing therewith, and a weed cutter R adjustably held on said member, all substantially as shown and described.

2. In a potato digger, the combination of the conveyer and adjustable scoop mounted as described, of the post C, the vertically adjustable clevis mounted thereon, the rack bar n^3 secured thereto, the geared segment N^3 and handle N^4 for raising and lowering the said clevis, the member L' mounted on the vertical rod N, and means for operating the machine, substantially as shown and described.

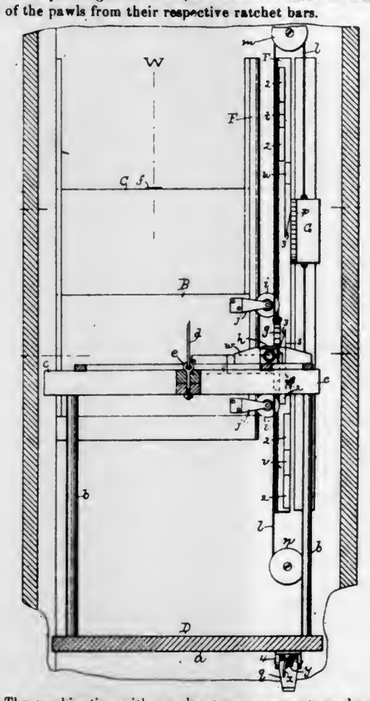
3. In combination with the conveyer as described, the series of grate bars mounted on suitable cross bars, the shaft S mounted on the main framework and carrying a cam T, designed to impart a vertical motion to the said grate bars, the irregular grooved wheel U' mounted on shaft S, the rod U^3 having a lug designed to travel in said groove, the pin *w* connecting the said rod U^3 to the frame carrying the grate bars, whereby a lateral reciprocating motion is imparted, means for operating the machine, substantially as shown and described.

4. In combination with the series of grate bars vertically and laterally movable, perforated assorting plate Y, the trough W', the shaking screen *w* and the trough Z, and geared mechanism for operating the machine, substantially as shown and for the purpose set forth.

545,146. ELEVATOR. NELSON BECKWITH, Somerville, Mass. Filed July 25, 1894. Serial No. 518,540. (No model.)

Claim.—1. The combination of the following instrumentalities, viz.:—an elevator cage, a gate or door in a wall of the elevator well, a lifting pawl and a holding pawl carried by the elevator cage, and two ratchet bars having a plurality of reversely inclined teeth co-operating with the said lifting and holding pawls and arranged with relation thereto to permit the holding pawl to pass by more than one tooth of its co-operating ratchet bar before the lifting pawl is disengaged from its co-operating ratchet bar, without increasing the distance the gate or door drops when the lifting pawl is disengaged from its co-operating ratchet bar, for the purpose specified.

2. The combination of the following instrumentalities, viz:—an elevator cage, a gate or door in a wall of the elevator well, a lifting pawl and a holding pawl carried by the elevator cage, and two ratchet bars having a plurality of reversely inclined teeth co-operating with the said lifting and holding pawls and arranged with relation thereto to permit the holding pawl to pass by more than one tooth of its co-operating ratchet bar before the lifting pawl is disengaged from its co-operating ratchet bar, without increasing the distance the gate or door drops when the lifting pawl is disengaged from its co-operating ratchet bar, and means to effect the disengagement of the pawls from their respective ratchet bars.



3. The combination with an elevator cage, a gate or door in a wall of the elevator well, two ratchet bars having a plurality of reversely inclined teeth and connected to the said gate or door to move therewith, and two pawls carried by the elevator cage to move both longitudinally and laterally and co-operating with said ratchet bars as described, and means to act on said pawls to disengage them from their ratchet bars, substantially as described.

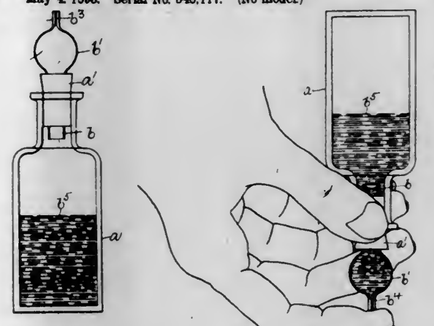
4. The combination of an elevator cage, a door in the wall of the elevator well, a lifting ratchet secured to said door and provided with a plurality of teeth, a cord secured to the door and carried over supporting sheaves above the doorway, and attached to a guided block, a down-acting ratchet secured to said block and provided with a plurality of teeth, a pawl arranged upon said cage at or near its top to engage the ratchet upon the door to raise or sustain the same, and a pawl arranged at the bottom of the cage to engage the ratchet upon said block to control and depress the same, and two cams arranged in the path of each ratchet as specified, whereby as the cage rises, the pawl at the top thereof will engage the ratchet upon the door and raise the same; while the pawl at the bottom of the door will engage the ratchet upon the block before the door ceases to rise; and when the cage descends the lower pawl by engaging the ratchet on said block will raise said door, and the upper pawl will engage the ratchet upon the door before it ceases to rise, substantially as specified.

5. The combination of cage D, the door, ratchet *g*, secured to the door and provided with a plurality of teeth, cord *l*, supported above the doorway, and block G, sustained by the door through said cord, reversed ratchet *p*, secured to said block and provided with a plurality of teeth, pawls *h*, *q*, respectively secured to the top and bottom of the cage and provided with actuating springs, cams *s*, *t*, arranged in the path of pawl *h*, and cams *u*, *v*, arranged in the path of pawl *q*, all substantially as specified.

6. The combination of cage D, the door, ratchet *g*, pawl *h*, adapted to have longitudinal and lateral play, upper cam *t*, and lower cam *u*, formed with front incline 2, and side incline 3, all arranged to operate, substantially as specified.

7. The combination of cage D, the door, guided block G, connected with and sustained by the door through and by cord *l*, ratchets *g*, *p* having a plurality of teeth, pawls *h*, *q*, and cams *s*, *t*, *u*, *v*, all constructed and combined to operate, substantially as specified.

545,147. BOTTLE. BURNHAM R. BENNER, Lowell, Mass. Filed May 4, 1895. Serial No. 548,117. (No model.)



Claim.—1. The combination with a bottle provided with a cork or stopper having an opening extended through it, of a measuring device carried by the stopper or cork and consisting of a tube inserted in said opening and terminating above the body portion of the bottle so as to permit substantially the entire contents of the bottle to be withdrawn through the said tube as described, a bulb attached to the said tube and in communication therewith, and a nipple attached to the bulb and provided with a capillary opening extended the length of the said nipple, for the purpose specified.

2. The combination with a bottle provided with a cork or stopper having a hole or opening extended through it, of a liquid measuring device consisting of a glass tube inserted through said opening to attach the device to the cork or stopper and terminating within the neck of the bottle to permit substantially the entire contents of the bottle to be removed through the said tube, and a bulb integral with the said tube forming a liquid receiving chamber, and provided with an air inlet, substantially as described.

545,148. TIRE FOR VELOCIPEDES. ISAAC BEST, Lawrence, Mass. Filed Jan. 17, 1895. Serial No. 535,220. (No model.)

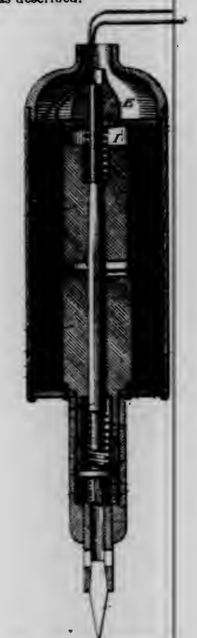


Claim.—A tire for velocipedes and other vehicles composed of independent sections of solid cork having ends divergingly cut to secure a circular form after assemblage, each of said sections provided within its longest periphery with a semi-circular groove adapted to receive and support a non-collapsing endless hollow tubing of rubber, in combination therewith the non-collapsing endless hollow tubing of rubber and the separable tubular outer covering of rubber adapted to be laced in position in a manner to maintain contact of the aforesaid cork body, and the hollow tubing substantially in the manner and for the purpose set forth.

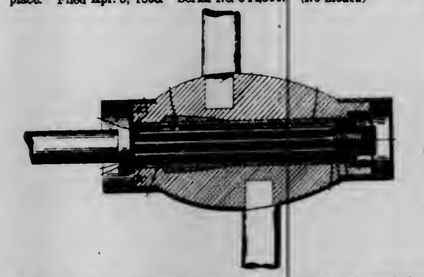
545,149. ELECTROMAGNETIC TOOL. CHARLES F. CARPENTER, Louisville, Ky. Filed Aug. 20, 1894. Serial No. 520,851. (No model.)

Claim.—1. In an electro-magnetic tool the combination of a fixed electro-magnet having its extension on the outer side of the motor coil, a solenoid or motor coil, an electro-magnet with axial hammer rod having a reciprocating motion therein, and counterbalancing or equipoising springs, substantially as described.

2. In an electro-magnetic tool, the combination of a helix, an iron exterior casing, an iron yoke piece, a fixed electro-magnet, and an electro-magnet held in balance, or equipoised, between two elastic forces, substantially as described.



545,150. ROLLER-BEARING. GEORGE W. CHELTON, Crisfield, Md., assignor to himself, Isaac H. Coalbaum, and Clarence P. Lankford, same place. Filed Apr. 5, 1895. Serial No. 544,599. (No model.)



Claim.—1. In combination with a spindle, a bearing consisting of rollers surrounding the spindle; a casing inclosing the rollers and retaining them in place; a device, other than that by which the box is kept on the spindle, for retaining the inclosing casing in position, said device being adjustably secured on the spindle and bearing against the end of the casing; a box adapted to engage the casing and to revolve the same about the rollers, said box adapted to be removed from the spindle without removing the casing, as set forth.

2. In combination with a spindle, a bearing consisting of rollers surrounding the spindle; a casing inclosing the rollers and retaining them in place; a device, other than that by which the box is kept on the spindle, for retaining the inclosing casing in position, said device being adjustably secured on the spindle and bearing against the end of the casing, a box adapted to engage the casing and to revolve the same about the rollers, said box adapted to be removed from the spindle without removing the casing; a nut located on the spindle and having an inwardly extending flange adapted to bear against said casing-retaining device, and a radially extending flange adapted to bear against the end of the box, and retain the same on the spindle, as set forth.

545,151. INSULATED SUPPORT FOR TROLLEY-LINES. FRANK X. CIOOTT, New York, N. Y., and WARREN J. BELCHER and FREDERIC C. BILLINGS, Hartford, Conn., assignors to the Billings & Spencer Company, Hartford, Conn. Filed Apr. 22, 1895. Serial No. 546,621. (No model.)

Claim.—1. In an insulated support of the class specified, the combination with an insulator stud adapted to support a trolley-line carrier; of a protector adapted to encircle said stud, and having a flaring lower portion; a separate yoke provided with means for connection with a guy-wire, and adapted to encircle the flaring lower portion of said protector and be wedged on said flaring lower portion, substantially as described.



2. In an insulated support of the class specified, the combination with the insulator-stud adapted to support a trolley-line carrier; of a protector adapted to encircle said stud comprising a sleeve and a flaring lower portion; a separate yoke provided with means for connection with a guy-wire, and adapted to fit on to both the sleeve and flaring lower portion of the protector, and be wedged on said flaring lower portion; and means for wedging said yoke thereon, substantially as described.

3. In an insulated support of the class specified, the combination with the insulator stud adapted to support a trolley-line carrier; of a protector adapted to encircle said stud comprising a sleeve and a flaring lower portion; a separate yoke provided with means for connection with a guy-wire, and adapted to fit on to both the sleeve and flaring lower portion of the protector, and be wedged on said flaring lower portion, substantially as described.

4. In an insulated support of the class specified, the combination with an insulator stud adapted to support a trolley-line carrier; of a bell-shaped protector adapted to encircle said stud, and having a portion of its outer surface beveled; a yoke provided with means for connection with a guy-wire, and adapted to fit said beveled surface, and be clamped thereon; means for clamping said yoke on said protector; and means for clamping said protector on the insulator stud.

5. In an insulated support of the class specified, the combination with an insulator-stud adapted to support a trolley-line carrier; of a protector for the stud provided with an exteriorly screw-threaded sleeve for encircling said stud, and with a flaring lower portion; a yoke provided with means for connection with a guy-wire and with a screw-threaded portion adapted to fit said screw-threaded sleeve; and with a flaring interior surface adapted to be wedged on the flaring portion of said protector, substantially as described.

6. In an insulated support of the class specified, the combination with an insulator stud adapted to support a trolley-line carrier; of a bell shaped protector for the stud provided with an exteriorly screw-threaded sleeve adapted to encircle said stud, and having a portion of its outer surface beveled; a yoke provided with means for connection with a guy-wire and adapted to screw onto said screw-threaded sleeve, and fit said beveled surface, and be clamped thereon; and means for clamping said protector onto the insulator stud.

7. In an insulated support of the class specified, the combination with an insulator stud adapted to support a trolley-line carrier; of a bell-shaped protector for the stud provided with an exteriorly screw-threaded sleeve for encircling said stud, and a beveled surface below said sleeve; a yoke provided with means for connection with a guy-wire, and having an interiorly beveled surface, said yoke being adapted to be screwed onto said sleeve, and be clamped on the beveled surface of the protector; means for clamping said protector onto the insulator stud; and means for preventing the rotation of the yoke.

8. In an insulated support of the class specified, the combination with an insulator-stud adapted to support a trolley-line carrier; of a protector for the stud provided with an exteriorly screw-threaded sleeve adapted to encircle said stud, and with a flaring lower portion; a yoke provided with means for connection with a guy-wire and with a screw-threaded portion adapted to fit said screw-threaded sleeve; and with a flaring interior surface adapted to be wedged on the flaring portion of said protector; means for wedging the yoke thereon; and means for clamping the protector on to the insulator-stud, substantially as described.

9. In an insulated support of the class specified, the combination with an insulator stud adapted to support a trolley-line carrier; of a bell-shaped protector for said stud provided with a beveled outer surface; a yoke provided with means for connection with a guy-wire and adapted to be clamped onto said beveled surface of the protector, and form a groove for holding a guy-wire; means for clamping said yoke on said protector; and means for clamping said protector onto the insulator stud.

10. In an insulated support of the class specified, the combination with an insulator stud adapted to support a trolley-line carrier; of a bell-shaped protector having an exteriorly screw-threaded sleeve adapted to encircle the insulator stud, and also having an exterior-beveled surface; a yoke provided with means for connection with a guy-wire, and adapted to screw onto said sleeve, and also having an interior-beveled surface clamping on to the beveled surface of the protector; a check-nut for clamping said yoke on the protector; and an inverted cup-shaped clamp adapted to screw onto said protector, and clamp the same onto the insulator stud.

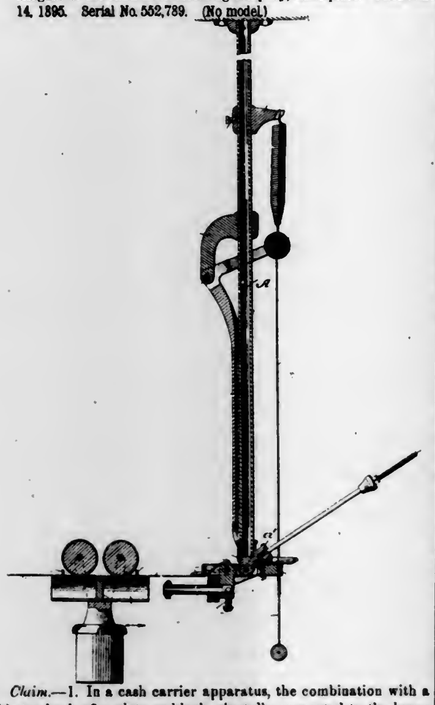
11. In an insulated support of the class specified, the combination with an insulator-stud adapted to support a trolley-line carrier; of a protector adapted to encircle said stud, and having a flaring lower portion; a separate yoke adapted to encircle the flaring portion of said protector and be wedged thereon; and provided with an arm on one side thereof adapted for connection with a guy-wire; and means for wedging said yoke on to said protector, substantially as described.

12. In an insulated support of the class specified, the combination with an insulator-stud adapted to support a trolley-line carrier; of a protector adapted to encircle said stud, and having a flaring lower portion; a separate yoke adapted to encircle the flaring portion of said protector and be wedged thereon, and provided with an arm on one side thereof adapted for connection with a guy-wire; means for wedging said yoke on to said protector; and means for clamping said protector on to the insulator-stud, substantially as described.

13. In an insulated support of the class specified, the combination with an insulator stud adapted to support a trolley-line carrier; of a bell-shaped protector for said stud provided with an exteriorly-beveled surface; a separate yoke provided with means for connection with a guy-wire, and having an interiorly-beveled surface adapted to bear on the beveled surface of the protector, and form a groove for holding a guy-wire; and means for clamping said yoke on said protector.

14. In an insulated support of the class specified, the combination with an insulator-stud adapted to support a trolley-line carrier; of a protector adapted to encircle said stud, and having a flaring lower portion; a yoke also having a flaring interior surface, and adapted to be wedged on the flaring lower portion of the protector, and provided with a downwardly-projecting arm at one side thereof adapted to connect with a guy-wire; and means for wedging said yoke on to the flaring portion of said protector, substantially as described.

545,152. CASH-CARRIER. JAMES W. CLARK, Janesville, Wis., assignor to the Clark Manufacturing Company, same place. Filed June 14, 1895. Serial No. 552,789. (No model.)



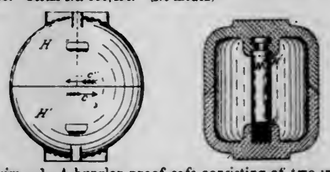
Claim.—1. In a cash carrier apparatus, the combination with a rigid standard, of a plate or block pivotally connected to the lower end thereof, and means whereby the block may be adjusted thereon, and the line wire attached to said pivoted plate or block, substantially as shown and described.

2. In a cash carrier apparatus, the combination, with the standard, of a plate or block attached to the lower end thereof, the line wire attached to said plate or block, a plunger projecting forwardly from said block, and in line with the line wire, and the car traveling upon said wire, and carrying a dash pot adapted to receive the plunger, substantially as shown and described.

3. In a cash carrier apparatus, the combination, with the standard, of a plate or block, secured to the lower end thereof, the line wire, secured to said plate or block, the car movable upon said wire, and having a pin or block arranged thereon, a lever pivoted upon the standard, and bifurcated at its upper and lower ends, a projecting or propelling bail attached to the lower end of the lever and adapted to contact with the pin or block on the carriage, an operating cord or wire, attached to the upper end of the lever, and means for returning said parts to their normal position, substantially as shown and described.

4. In a cash carrier apparatus, the combination, with the line wire, and standard, or suitable support to which said line wire is attached, of the carriage movable upon said line wire, and provided with a double dash pot or cylinder, and a tubular plunger supported from the standard or line wire support, said tubular plunger being provided with a vent pipe, and a ball valve located within the plunger at the inner end of said vent pipe, substantially as shown and described.

545,153. SAFE. HENRY J. COLBURN, Toledo, Ohio. Filed Feb. 23, 1895. Serial No. 539,430. (No model.)



Claim.—1. A burglar proof safe consisting of two integral hollow sections without door or other aperture, fitted to each other by close joint connections, having no external appendages except the knobs, indentations or other means whereby the parts are enabled to be grasped by machinery, and having concealed means for interlocking the said sections when the same are applied to each other and operated upon by powerful torsional apparatus substantially as specified.

2. A burglar proof safe consisting of two integral hollow sections without door or other aperture, fitted to each other by close joint connections having no external appendages except the knobs, indentations or other means whereby the parts are enabled to be grasped by machinery and having internal interlocking inclined lugs whereby when the two sections are applied to each other and one is turned by powerful machinery they become firmly united together and inseparable except by the application of a torsional force similar to that which united them, substantially as specified.

3. A burglar proof safe consisting of two integral sections without door, aperture, lock, keyhole or hinges, accurately fitted to each other on a line of juncture, and provided with screw-formed connections whereby when the matched parts are applied together and turned in opposite directions by powerful apparatus adapted for the purpose the said sections become firmly united together without appreciable crevice or means of entry, substantially as specified.

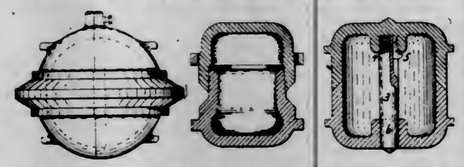
4. The burglar proof safe herein described, consisting of two concave matched sections fitted to each other on a circular line of juncture, and provided with external lugs or indentations and internal screw formed connections, adapted to be operated upon by powerful torsional machinery designed for the purpose, whereby the two sections are firmly closed upon and united to each other without locks, bolts, bars, keyholes, apertures, or external appliances, and incapable of separation except by a reverse process in a similar apparatus, substantially as specified.

5. The burglar proof safe herein described, consisting of massive concave integral metallic sections as H, H', having external lugs as H, flanges I, and internal inclined lugs and grooves K, K', whereby the said sections are adapted to be securely locked together by powerful torsional force mechanically applied through the said lugs H or equivalent indentations, and remain so locked until a similar force is similarly applied in reverse direction, substantially as specified.

545,154. SAFE. HENRY J. COLBURN, Toledo, Ohio. Filed Feb. 23, 1895. Serial No. 539,431. (No model.)

Claim.—1. A burglar proof safe, consisting of two integral, concave metallic sections accurately fitted to each other by a close tapered joint connection, having no external appendages except the

knobs, indentations or other means whereby the parts are enabled to be grasped by machinery, and constructed and adapted to be acted upon by powerful compressing machinery by which alone the closure and separation can be practically effected substantially as specified.

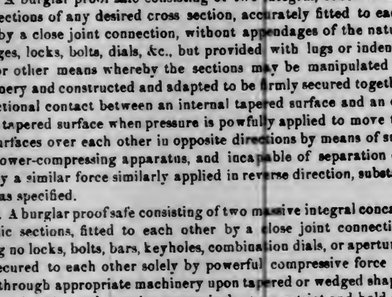


2. A burglar proof safe consisting of two integral, concave metallic sections of any desired cross section, accurately fitted to each other by a close joint connection, without appendages of the nature of hinges, locks, bolts, dials, &c., but provided with lugs or indentations or other means whereby the sections may be manipulated by machinery and constructed and adapted to be firmly secured together by frictional contact between an internal tapered surface and an external tapered surface when pressure is powfully applied to move the said surfaces over each other in opposite directions by means of suitable power-compressing apparatus, and incapable of separation except by a similar force similarly applied in reverse direction, substantially as specified.

3. A burglar proof safe consisting of two massive integral concave metallic sections, fitted to each other by a close joint connection, having no locks, bolts, bars, keyholes, combination dials, or apertures, but secured to each other solely by powerful compressive force applied through appropriate machinery upon tapered or wedged shaped surfaces, interior and exterior respectively, to constrict and hold the two sections together by frictional contact until separated by a similar force similarly applied in reverse direction, lugs or indentations being supplied upon the exterior of the said sections for manipulating the same, all substantially as specified.

4. The burglar proof safe herein described, consisting of two hollow massive shells or sections, fitted to each other by a close joint connection, and adapted, by means of tapered contacting surfaces, interior and exterior, to be securely locked and held together solely by frictional adhesion by means of pressure powerfully applied through suitable machinery, without apertures locks, bolts, bars, clocks, keyholes, combination dials or hinges, until separated by a similar force similarly applied in reverse direction, substantially as specified.

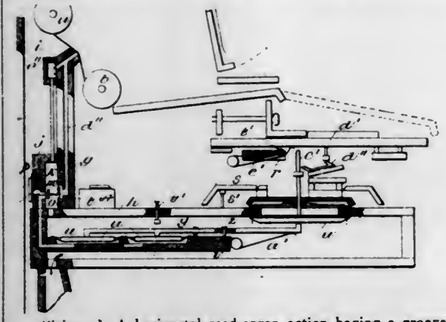
545,155. FIRE-ESCAPE. JOHN R. DUNCAN, Pittsburg Landing, assignor of one-half to Eli P. Churchwell, Savannah, Tenn. Filed Feb. 8, 1895. Serial No. 537,683. (No model.)



Claim.—1. A fire escape consisting of a journaled shaft having a rigid pulley, a lever extending parallel with the shaft and having a brake-shoe adapted to come in contact with the periphery of said pulley, a rope adapted to wind and unwind on the shaft, said rope passing from the shaft around a portion of the brake lever and then away from the lever in such manner as to operate the brake, said rope also having a lateral play along said lever, as set forth.

2. A fire escape consisting of a journaled shaft having a rigid pulley located thereon intermediate of its two ends; a rope secured to the said shaft on each side of the pulley, one rope adapted to wind on the shaft while the other is unwinding and vice versa; a lever parallel to the shaft and having a brake shoe adapted to come in contact with the periphery of said pulley, said ropes passing from the shaft around a portion of the brake lever and then away from the lever in such manner as to operate the brake, said ropes also having a lateral play along said levers, as set forth.

545,156. PNEUMATIC MUSICAL INSTRUMENT. ROBERT A. GALLY, Brooklyn, N. Y. Filed Feb. 12, 1895. Serial No. 538,122. (No model.)



Claim.—1. A horizontal reed-organ action having a grooved-board placed at or near the rear line of, and rising from the sounding-board, for the purpose set forth.

2. A horizontal reed-organ action having a grooved-board placed at or near the rear line of, and rising from the action, the grooved-board being turned forward at the top to facilitate the placing of the rolling parts.

3. An upright grooved-board rising at or near the rear line of a horizontal sounding-board, and the double-valve board attached to the rear face of the grooved-board to allow easy access to the double-valves from the rear of instrument.

4. A two-port pneumatic valve with a horizontal valve-rod guided by having the one port perpendicularly out of center with the other.

5. A valve-rod having its portion which is within the valve-hole bent into an eye to touch at one time two opposite points on the circumference of the valve-hole and thereby guide the rod and its valve or valves to their positions to control the port or ports.

6. An external valve free from the valve-rod, the valve-rod adjustably connected to the inner valve and pneumatic and adjustable from the outside.

7. A return-vent connected with the duct nearer to the operating-vent than to the pneumatic.

8. A return-vent placed in line with or adjacent to operating-vent and accessible through operating-vent.

9. A pneumatic board having several lines of pneumatics alternated on the face of the board toward the valve-board, the pneumatics operating the valves by levers having fulcra between the pneumatics and the valves.

10. A pneumatic board inside the main wind chest to operate the sounding valves, the pneumatic board communicating at the edge of main wind-chest to primary valves outside the chest.

11. An action-lever inside a chest, having its fulcrum extending through the wall of the chest to allow adjustment from outside.

12. A valve-lever operated by a key-tracker at one end and by a pneumatic at the other, a fulcrum placed between, the lever bearing against the fulcrum when worked by the pneumatic, but bearing away from fulcrum when worked by key, to allow free movement of the key.

13. An adjustable check to limit the throw of a lever inside a chest, the check extending through the wall of the chest for adjustment from the outside.

14. A sounding valve operated by a pneumatic and seated by a spring, the same valve also worked by a pushpin and key, an extra spring to uphold the key from pushpin, and the coupler working from the key to the octave pushpin and valve without moving octave key and its spring.

15. A spring placed to directly uphold a manual-key, the spring being checked in its rise, and the key resting on the spring and held to its normal level thereby.

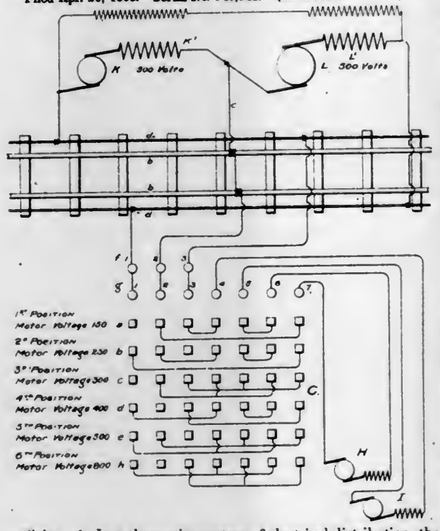
16. A spring placed to uphold a manual-key, the spring being checked in its rise by an adjusting-screw, and the key being held to its normal level thereby.

545,157. SCARF-FASTENER. GUSTAV A. HECKMANN, Barmen, Germany. Filed Apr. 2, 1895. Serial No. 544,206. (No model.)



Claim.—A scarf fastener comprising in combination two plates *b d* having orifices *b'* *d'* therein respectively, tubular extensions b^4, d^3, to said plates adapted to slide one within the other, a spring *e* and a cover plate *c* adapted to secure the scarf to said fastener substantially as set forth.

545,158. ELECTRIC RAILWAY. JOHN C. HENRY, Westfield, N. J. Filed Apr. 20, 1895. Serial No. 546,541. (No model.)



Claim.—1. In a three wire system of electrical distribution, the combination with the main leads and the neutral conductor, of two self-regulating dynamos of predetermined but unlike electro-motive force, substantially as described.

2. In a three wire system of electrical current distribution, two compound wound dynamos of different electro-motive force having their shunt coils connected in series, substantially as described.

3. In a three wire system of electrical current distribution, two dynamo electric generators of different electro-motive force having their series coils and armatures connected with the mains in the usual manner, and a single shunt coil circuit common to both machines, substantially as described.

4. In a three wire system of distribution, a pair of dynamos unmatched as to voltage connected together in series and having intermediate connection with the neutral wire; the shunt wires of the separate machines coupled in series and having their terminals connected at the points of greatest potential difference.

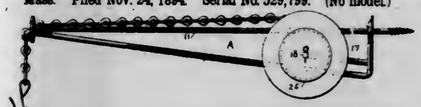
5. In a three wire system of electrical distribution adapted to furnish current to electric motors or translating devices whose requirements fluctuate a source of electrical energy consisting of two or more dynamos unmatched as to electro-motive force, said dynamos having their series coils and armatures coupled together in series, the neutral wire connected intermediate thereto, as shown, and having the shunt wires of the separate dynamos coupled in series and having their terminals connected to the assembled dynamos at the points showing the greatest potential difference.

6. The combination with sources of electrical supply arranged to furnish current of varying voltages, of translating devices, and a switch adapted to connect said translating devices with either or both sides of said sources of supply either in series or in parallel, substantially as described.

7. In a three wire source of electric supply, a switch adapted to connect two or more motors thereto from either side in series or in parallel.

8. In electric railroads, an arrangement of circuits leading from the terminals of dynamos having different electro-motive force; motors in traveling connection with said circuits, and a switch arranged to connect said motors with the circuits from either or both sides.

545,159. BIRD-CAGE HOOK. EDWIN C. HEYWOOD, Worcester, Mass. Filed Nov. 24, 1894. Serial No. 529,799. (No model.)



Claim.—1. As an article of manufacture, a hanging or supporting device comprising a frame or body-portion, a retractile drum mounted on said frame, a chain or cord connected to said drum, said frame being provided at one end with suitable fastening devices, and being bent laterally at its opposite end, and provided with a guide or eye for said chain, and means for securing said chain in its adjusted position, substantially as described.

2. A hanging or supporting device comprising a retractile drum and its cord or chain, a frame or body portion constructed from a single piece of wire, one end of said wire forming a journal for said drum, substantially as described.

3. A hanging or supporting device comprising a retractile drum and its cord or chain, and a frame or body portion constructed from a single piece of wire forming a guide for the chain, one end of said wire being threaded and the other end of said wire forming the journal for the retractile drum, substantially as described.

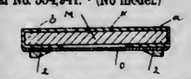
4. A hanging or supporting device comprising a retractile drum and its cord or chain, and a wire frame or body portion having a screw-shank, an extending arm 11, an eye forming a guide for the chain, a brace 15, a base 16 and a projecting end which forms the journal for the retractile drum, substantially as described.

5. A hanging or supporting device comprising a retractile drum and its chain, and a frame or body portion formed from a single piece of wire, said frame having a screw-shank, an extending arm 11, an eye forming a guide for the chain, projections 13 and 14 for securing the chain in its adjusted position, a brace 13, a flattened base 16, an extending arm 17 and a projecting end 18 which forms the journal for the retractile drum, substantially as described.

6. In a device of the class described, the combination of a drum, a spiral spring connected at one end to the journal of said drum, and a chain arranged to wind upon said drum, the end link of said chain being extended into the interior of the drum, and engaging a socket in the end of the spiral spring, substantially as described.

7. A sheet-metal drum comprising flanges and a body portion, the body portion and one flange being formed in one piece, and the other flange being formed of a separate piece, and an eyelet for securing the parts together, and for forming the journal of said drum, substantially as described.

545,160. SHOE. HARRY D. HOLBROOK, Utica, N. Y. Filed Jan. 14, 1895. Serial No. 534,941. (No model.)



Claim.—A shoe having an insole, strips 2, 2 secured on the under side of the insole by two rows of stitches, row *a* close to the outer shoulder edge of the strip and *b* removed from the inner edge, and having the inner edge formed into a pliable lip by trimming or beveling it from the stitches *b*, an upper, a welt, stitches passing through the body of the insole under the strips and through the rows of stitches *a* and *b*, the upper and the welt and the sole sewed to the welt, substantially as set forth.

545,161. SAFE-DEPOSIT LOCK. HENRY HORNE, New Britain, Conn., assignor to the Corbin Cabinet Lock Company, same place. Filed Sept. 15, 1894. Serial No. 523,103. (No model.)



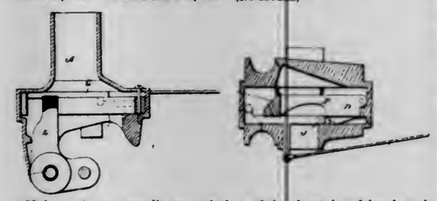
Claim.—1. The combination of a lock bolt and transverse sliding dog with a set of tumblers for the lock bolt and a set of tumblers for said sliding dog, both sets of tumblers arranged for being acted upon by their respective keys when centered on one and the same axis, said dog, lock bolt and tumblers, all being relatively arranged for having

both keys turn in the same direction for unlocking, and to permit the key for the sliding dog tumblers to make a complete revolution, substantially as described and for the purpose specified.

2. The combination of the lock bolt having the angular slot 10 at a point between its talons and outer end, the sliding dog arranged transversely to said lock bolt and having a fence fitted to said angular slot, a spring for throwing said sliding dog in one direction, a second dog having the longitudinal slot 23 with a shoulder at its outer end on the side that is farthest from the outer end of the lock bolt for holding said sliding dog against said spring, and a shoulder on the lock bolt adapted to engage said second dog on that side of the slot 23 which is opposite the shoulder at the outer end of said slot, substantially as described and for the purpose specified.

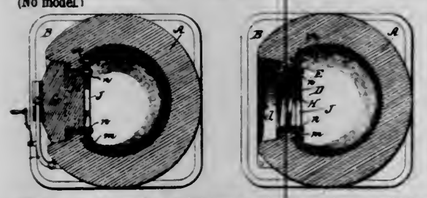
3. In a lock the combination of a sliding fence as 15 adapted to be moved by a key, and a tumbler having a slot within which said fence may work and with said slot inclined substantially as described, whereby, as the fence is moved by the key, the tumbler is moved in a direction to carry it away from the key as set forth.

545,162. CAR-COUPLING. JAMES JACKSON, Mansfield, Ohio. Filed Oct. 25, 1894. Serial No. 526,916. (No model.)



Claim.—A car coupling consisting of the draw head having the recessed wall, the coupling lever pivoted to the draw head, the pivoted latch, the cam bearing against the latch, the slide having the angular arm to receive the operating cord or rod, and the roller carried by the slide for engaging the cam.

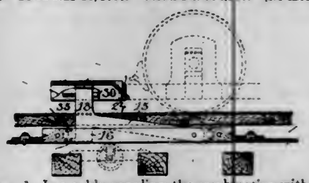
545,163. SAFE. PHINEAS F. KING, Chicago, Ill., assignor of a part to C. E. Stanley, same place. Filed June 7, 1895. Serial No. 552,047. (No model.)



Claim.—1. In a safe, a solid integral body portion, a solid integral door, automatically operating locking mechanism and a lock adjusting ring preliminarily positioned upon the door to adjust the locking mechanism to the ring and means for permanently holding the locking adjusting ring upon the safe body portion.

2. In a safe, a solid integral body portion, a solid integral circular door, locking mechanism, a lock adjusting ring adapted for preliminarily positioning upon the door to adjust the locking mechanism and a screw connection on said ring and on the door together with fastening devices for permanently holding the ring on the body portion.

545,164. CABLE-COUPLING. JOHN P. F. KUHLMANN, Seattle, Wash. Filed Jan. 11, 1895. Serial No. 534,569. (No model.)



Claim.—1. In a cable-coupling, the combination with a cable and means for driving the same, of a coupling secured to the cable and a device carried at the down-grade end of the car with which the coupling may engage to resist the weight of the car.

2. In a cable-coupling, the combination with the cable, and a frame included in the length of the cable, of a coupling-tongue pivoted in the frame and having a T-shaped head.

3. In a cable-coupling, the combination with a car, a channel-bar secured thereto having open ends and open on its lower surface, locking devices adapted to operate within the channel-bar, and means for actuating the locking-devices, of a cable, and a coupling-tongue mounted thereon and adapted to be engaged by the locking-devices.

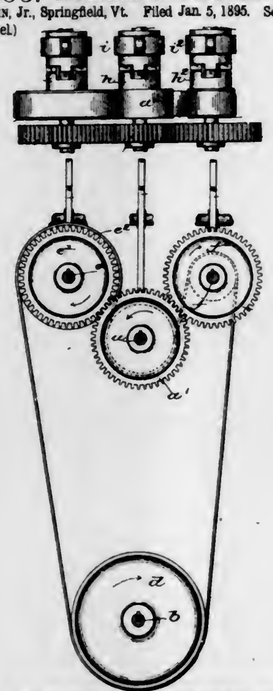
4. In a cable-coupling system, the combination with a car, a channel-bar secured thereto and furnished with inclined guides, and locking-devices adapted to operate within the bar, of a cable, and a tongue, pivotally mounted on the cable, adapted to be elevated and depressed by the guides in turn and to be engaged by the locking-devices, as described.

5. The combination with the cable 11, and the frame 13 secured thereto, of the tongue 15 having the arm 16 furnished with the stop 17 and the arm 18 furnished with the plate 19.

6. The combination with a car-truck, the cross-plate 20 secured thereto, the channel-bar 21 secured at its inner end to said plate, the fender-plates 22—22 connecting the outer end of the bar with the ends of the cross-plate, said channel-bar having the slots 25, 26 and 27, the guides 23 and 24 at the opposite ends of the bar within the same, the bracket 28 secured to the bar, the plate 29, pivoted in the slot 26, having the locking-bolt 30 working through the slot 27 and the end 29′ movable in the bracket 28, the cam 31 pivoted in said bracket and operating against the end of the plate 29, means for actuating the cam, the jaw 35, pivoted in the slot 25, extending within the bar and having the arm 36, and means, including a spring, for actuating the free end of this arm in two directions, of a cable, and a coupling-device carried thereby and adapted to be engaged in said channel-bar.

7. In a cable-coupling, the combination with a car-truck, a channel-bar secured thereto and having slots and locking-bolts mounted to operate through said slots, of a cable and a coupling tongue mounted thereon and adapted to be engaged by the locking-devices.

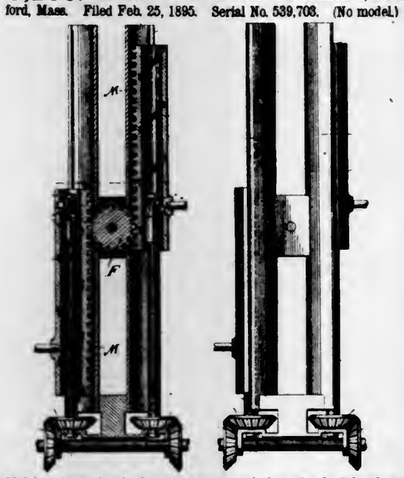
545,165. POWER-TRANSMITTING MECHANISM. MAXIM LA FOUNTAIN, Jr., Springfield, Vt. Filed Jan. 5, 1895. Serial No. 533,983. (No model.)



Claim.—1. A power transmitting mechanism, comprising the following elements, namely; a power shaft, a driven shaft, a shaft supplemental to the aforesaid shafts, power transmitting means connecting said power shaft and said supplemental shaft, a pulley mounted loosely on said power shaft, a pulley mounted loosely on said supplemental shaft, a belt for imparting power to said driven shaft and passing continuously around said pulleys, and a clutch mechanism for connecting each pulley with its supporting shaft, substantially as set forth

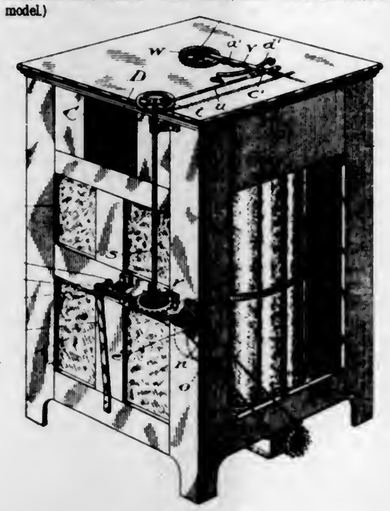
2. A power transmitting mechanism comprising the following elements, namely: a prime power shaft, a driven shaft, one or more shafts supplemental to said power shaft, gearing connecting said supplemental shafts continuously with said power shaft, a pulley mounted loosely on said prime power shaft and on each of said supplemental shafts, said pulleys being of different diameters, independent clutch mechanisms for alternately connecting said pulleys with their shafts, and a belt continuously in engagement with said pulleys and adapted to receive different speeds therefrom, substantially as set forth.

545,166. MECHANICAL MOVEMENT. ESERY LAYEUX, New Bedford, Mass. Filed Feb. 25, 1895. Serial No. 539,703. (No model.)



Claim.—A mechanical movement, consisting of a shaft having the bevel gears E, rigidly secured thereto; the upright shafts A, having their lower ends mounted in a suitable frame and provided with the bevel gears *e*, adapted to mesh with the bevel gears E, and their upper ends provided with the rigid clutches N, and the loose clutches D, having the projections *d*; the uprights C, C, arranged parallel with said shafts and provided with slides J, J, and having the spur gear F, mounted midway of, and between said uprights, with its teeth projecting through slots in said uprights; the tubes B, having their outer surfaces provided with longitudinal grooves adapted to engage the slides J, J, and having racks M, adapted to engage the spur gear F, and having projections H, and having their inside surfaces provided with spiral grooves L, adapted to engage the projections *d*, on the clutches D, whereby when the tubes B, are caused to move alternately up and down on the slides J, J, the shaft on which the gears E, are mounted, is caused to continuously revolve in one direction, as shown and described.

545,167. AUTOMATIC DUST-COLLECTOR. HARVEY C. MALSNESS, Stratford, Canada. Filed Jan. 3, 1895. Serial No. 533,692. (No model.)



Claim.—1. In a dust collector, a cylinder comprising two spiders, a series of rods connecting said spiders, and a continuous web of fabric passing aronnd said rods and dividing the space into an inner chamber and a series of outer chambers, the outside of both the inner and outer chambers being formed by said webbing, substantially as described.

2. In a dust collector, a cylinder comprising two spiders, a series of rods connecting said spiders, and a continuous web of fabric passing around said rods and dividing the space into an inner chamber and a series of outer chambers, one of said spiders affording communication to the central or inner chamber only, and the other spider constructed and arranged to afford communication to all of the series of outer chambers, substantially as described.

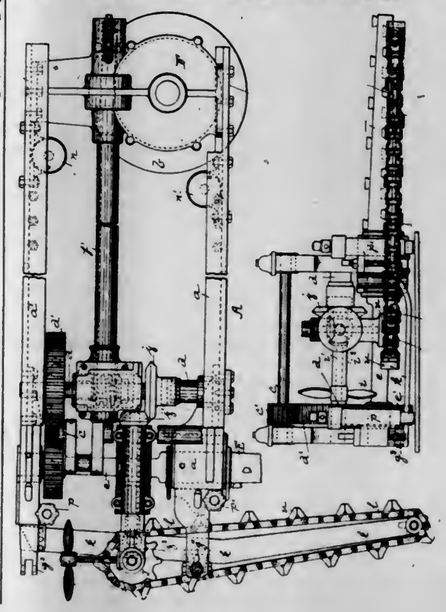
3. In a dust collector, a cylinder comprising upper and lower spiders, three series of rods connecting said spiders, and a continuous web of fabric passing from rod to rod and thus dividing the space between the spiders into a substantially star-shaped inner chamber M and into a series of outer chambers surrounding the chamber M, all of said chambers being surrounded by the fabric, substantially as described.

4. In a dust collector, a rotatable cylinder comprising a central cloth-walled chamber and a series of cloth-walled outer chambers, in combination with a casing constructed and arranged to direct the dust-laden air into said central chamber and thence up into said outer chambers, a triangular board constructed and arranged to successively close each outer chamber, means, substantially as described, arranged to revolve the said cylinder intermittently, and means arranged to agitate the chamber so cut off, substantially as and for the purpose specified.

5. In a dust collector, the combination of the following elements:—the casing A containing a cylinder E connected with a spindle F, ratchet-wheel *w* on said spindle, the lever *y* carrying a spring-dog *a′* arranged to act on said ratchet-wheel, a crank-wheel *t* a pitman *u* connecting said lever *v* and crank-wheel *t*, a bevel gear wheel *r*, a shaft *s* connecting said wheels *t* and *r*, a driving-shaft *n* carrying a pinion *q* meshing with said wheel *r*, a knocker *k*, and a pin having a connection with shaft *n*, and arranged to operate said knocker, as said shaft revolves, substantially as and for the purpose specified.

6. In a dust collector, having a cylinder C provided with inner and outer chambers, the combination of a casing provided with an upper chamber D, having a ledge G extending around it, arranged to allow the dust to enter the inner chamber only, the cylinder spindle F, means for revolving the said scraper and spindle, and the scraper G arranged to scrape the dust off the ledge G into the inner chamber, substantially as and for the purpose specified.

545,168. MINING-MACHINE. JONAS L. MITCHELL, Chicago, Ill., assignor to the Sullivan Machinery Company, same place and Claremont, N. H. Filed Feb. 14, 1894. Serial No. 500,123. (No model.)



Claim.—1. The combination with a mining machine having cutting mechanism extending out at the side thereof, and an anchoring post in front of the same to which rope connections are attached for drawing the machine toward the post, of a frame extending out at the rear of the mining machine and carrying guiding mechanism engaging with the mine floor to guide the movement of the machine, substantially as set forth.

2. The combination with a mining machine having cutting mechanism extending out at the side thereof, and an anchoring post in front of the same to which rope connections are attached for drawing the machine toward the post, of a frame extending out at the rear thereof and carrying a guide plow or rudder mounted in the frame and adapted to engage with the mine floor, and a weight above the plow, substantially as set forth.

3. The combination with a mining machine having cutting mechanism extending out at the side thereof, and an anchoring post in front of the same to which rope connections are attached for drawing the machine toward the post, of a frame for guiding the machine having a horizontal pivotal connection with the mining machine and carrying a guiding plow at the rear end of the same, substantially as set forth.

4. The combination with a mining machine having cutting mechanism extending out at the side thereof, and an anchoring post in front of the same to which rope connections are attached for drawing the machine toward the post, of a frame for guiding the machine carrying a guiding plow or rudder and having two arms connected to the mining machine, one arm being non-adjustable and the other arm having adjusting mechanism therein to vary the length thereof, substantially as set forth.

5. The combination with a mining machine, of a guide frame H having horizontal pivotal connection with the mining machine and carrying a guiding plow at the rear end thereof, substantially as set forth.

6. In combination with a mining machine, a guide frame having arms connected to the rear end thereof, one arm having adjusting mechanism to vary the length thereof, and a guiding plow mounted in the frame and adapted to engage with the mine floor, substantially as set forth.

7. In combination with a mining machine, a plate secured thereto and extending under the machine for the full width thereof to support the machine and to slide over the mine floor, substantially as set forth.

8. In combination with a mining machine, a plate secured thereto and extending under the machine for the full width thereof to support the machine and to slide over the mine floor, said plate having its forward end upwardly curved, substantially as set forth.

9. In combination with a mining machine having supports at the rear end, a supporting plate extending under the same for the full width thereof and connected only to the forward end of the mining machine and upon which the supports at the rear end rest, substantially as set forth.

10. In combination with a mining machine having supports at the rear end thereof, a supporting plate extending under the same for the full width thereof and having a swinging connection only with the forward end of the mining machine, and upon which the supports at the rear end rest, substantially as set forth.

11. In combination with a mining machine, a supporting plate extending under the same for the full width thereof and connected only to the forward end of the mining machine, and adjustable supports at the rear end of the machine operating between the machine and plate, substantially as set forth.

12. In combination with a mining machine, a supporting plate extending under the same for the full width thereof and having a swinging connection only with the forward end of the mining machine, and adjusting jacks at the forward end of the machine and adjusting jacks at the rear end of the machine, operating between the machine and said supporting plate, substantially as set forth.

13. In combination with a mining machine, a supporting plate extending under the same and connected thereto, and fluid operated jacks at one end of the machine and screw jacks at the other end of the machine for adjusting the relative positions of machine and plate, substantially as set forth.

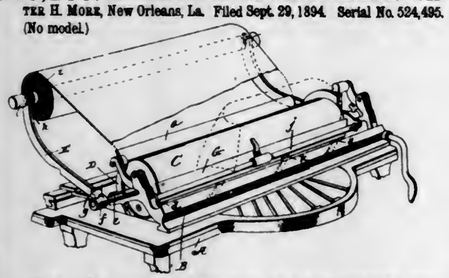
14. In combination with a long wall mining machine having cutting apparatus extending out at one side thereof and at the rear end thereof, a cleaner chain supported back of the cutting apparatus, and a rotary distributing wheel to spread the cuttings carried back by the cleaner chain, substantially as set forth.

15. In a long wall mining machine, the combination of a cutting apparatus extending out at one side thereof and at the rear end of said machine, a horizontally traveling cleaner chain back of the same, and a rotary distributing wheel to spread the cuttings carried back by the cleaner chain, substantially as set forth.

16. In a mining machine, the combination of a cutter bar extending out at one side of the machine, a horizontally traveling cleaner chain behind the same, a vertical shaft driving the same, and a horizontal shaft carrying a distributing wheel, and gearing between the said vertical shaft and the said horizontal shaft, substantially as set forth.

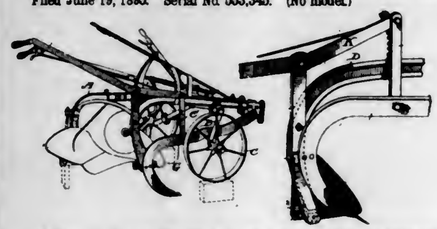
17. In a mining machine, a cleaner chain formed of links composed of straps with bolts or rivets passing through the same, and a scraper or cleaner formed of a bent strap having one portion thereof bent down and connected to the bolt or rivet at one end of the chain link and on one side of the chain and another portion thereof bent down and connected to the rivet at the other end of the chain and on the opposite side of the chain, substantially as set forth.

545,169. ADJUSTMENT FOR TYPE-WRITING MACHINES. WALTER H. MORE, New Orleans, La. Filed Sept. 29, 1894. Serial No. 524,495. (No model.)



Claim.—The type writing machine described consisting essentially of the platen carriage, the cradle or frame D, mounted on the carriage, the platen arranged in the cradle or frame D, and having the rods *e*, at its ends, the standards E, having the horizontally disposed sleeves at their lower ends arranged on the end rods *e*, of the platen and having the notches or bifurcations *h*, at their upper ends, the roller F, having the reduced portions *i*, adjacent to its ends seated in the notches *h*, of the standards E, and adapted to prevent casual removal of said standards from the end rods *e*, of the platen, and the cutter bar G, connected with the platen-frame or cradle and having the branches *k*, and also having its lower edge and the ends of said branches flared outwardly, substantially as and for the purpose specified.

545,170. SUBSOIL ATTACHMENT FOR GANG-PLOWS. STALEY D. POOLE, Moline, Ill., assignor to the Deere & Company, same place. Filed June 19, 1895. Serial No. 553,345. (No model.)



Claim.—1. In combination with the wheeled frame and gang plow or plows, the sub-soil plow having its beam pivoted at its forward end so as to permit the plow to be raised and lowered, a frame-bar or beam having a depending portion provided with a vertically disposed cutter arranged to work in proximity to said sub-soil plow, means for coupling the rear portion of said sub-soil plow-beam to said cutter-supporting beam, and means for adjusting said sub-soil plow and securing the same in different positions relatively to said cutter, substantially as described.

2. In a gang plow, the combination with the wheeled frame and plows, of a sub-soil plow having its supporting beam pivoted at its forward end to a fixture upon the frame, a frame-bar or beam having a depending portion loosely coupled to the rear end of said sub-soil plow beam so as to adapt the sub-soil plow to be raised and lowered, a vertically disposed cutting blade secured to said pendent portion of said frame-bar or beam, and means for raising and lowering and securing said sub-soil plow at different elevations, substantially as described.

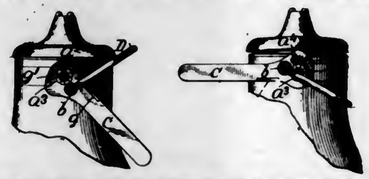
3. In a gang plow the combination with the plow-frame and plows, of the frame-bar or beam having a depending portion provided with a fin cutter, and having an upright bar or standard rigidly secured thereto, a sub-soil plow beam pivoted at its forward end to said frame or beam and loosely coupled at its rear end to said standard, so that it may be raised and lowered relatively thereto, and means for raising and lowering said sub-soil plow and securing the same in the desired position, substantially as described.

4. In a gang plow, the combination with the wheeled frame and plows, of the frame-bar or beam having a pendent curved portion with a cutter secured thereto, the sub soil plow-beam pivoted at its forward end and provided at its rear end with a sub-soil plow, the coupling uniting said cutter-supporting beam and sub-soil plow-beam so as to permit the latter to be raised and lowered relatively to the former, and means for raising and lowering said sub-soil plow-beam and securing the same in the desired position, comprising a hand-lever pivotally mounted on said cutter-supporting beam, a rack fixed to said beam, a pawl on said hand-lever engaging said rack, a pawl operating lever, and a link pivotally connecting one arm of said lever with the sub-soil plow beam, substantially as described.

5. In a gang plow, the combination with the plow frame and plows, of the curved frame-bar or beam carrying a vertically disposed cutter at its lower rear end arranged to run along the inside of the furrow last made, taking the place of the landside-bar of the ordinary plow, and adapted at the same time to form a cutting edge, the sub-soil plow-beam pivoted at its forward end and loosely coupled at its rear end to said frame-bar so as to be readily raised and lowered and secured in different positions relatively to said cutter, and means for raising and lowering said sub-soil plow and securing the same in the desired position, substantially as described.

6. In combination with a frame-bar or beam provided at its rear end with a vertically disposed cutter and with an upright or standard, of a sub-soil plow beam pivoted at its front end and carrying at its rear end a sub-soil plow arranged to work at one side of said cutter, and means for coupling said parts, comprising an L-shaped coupling-piece having one arm secured to said sub-soil plow beam and arranged to partially surround and embrace said standard so as to slide up and down the same, and an angular coupling-piece connecting said cutter-supporting beam and standard; one of the arms of the angular piece overlapping the shorter arm of the L-shaped coupling-piece, substantially as described.

545,171. LOCK FOR FRUIT-JAR COVERS. GEORGE E. PURPLE, Chicago, Ill. Filed Jan. 30, 1895. Serial No. 536,653. (No model.)



Claim.—1. The combination with a jar and its cover, of a clamping-lever, provided with a cam-end and adapted to engage with and lift said cover when the pressure of the locking-device is relaxed, substantially as described.

2. The combination with a jar, of a cover, having an overhanging edge, of a clamping-lever, provided with a cam-end and adapted to engage with the overhanging edge and lift said cover when the clamping-bail is disengaged, substantially as described.

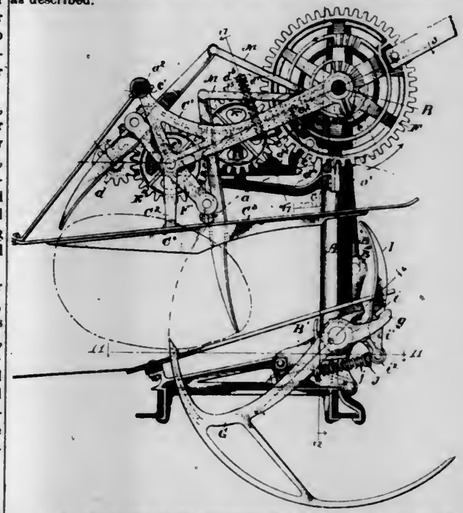
3. The locking device for fruit jar covers, consisting essentially of a flat metallic band surrounding the neck of the jar and having a tongue on one end passed and locked through a hole in the other end of said band, the material of the band at one side being swaged out to form a pivot bearing as described, a cam lever pivoted on said bearing, and a wire bail having one end passed through a round aperture in the cam lever at one side of the lever pivot, the other end of the bail passing through an opening in the band, all combined substantially as described.

4. The locking device for jar covers, consisting essentially of a band surrounding the neck of a jar, a pivot or pintle extending outwardly from this band, a lever journaled to said pintle to swing in a plane tangent to the circumference of the jar, and a bail attached at one end to the band at one side of the jar, and pivoted at its other end to the lever at a fixed distance from the pivot of the lever, said lever having a projection to engage the bail, all combined substantially as described.

5. The locking and unlocking device for jar covers, consisting essentially of a band surrounding the jar neck, a lever pivotally connected to said band to swing in a plane tangent to the circumference of the jar, said lever having a cam surface at its edge extending upward to engage the overhang of the cover when properly moved, and the bail connected to the said band at one side of the jar and to the lever at the opposite side of the jar, whereby the overhanging jar cover may be either locked or lifted by the proper movement of the lever, all combined substantially as described.

545,172. AUTOMATIC SELF-BINDER. CHARLES A. A. RAND, Chicago, Ill. Filed Mar. 20, 1893. Serial No. 466,961. (No model.)

Claim.—1. In a grain binder the combination of the packers, the packer cranks journaled in fixed bearings, the gear E^2, the clutch detent lever d^2 pivoted coincident with the axis of the said gear E^2, the driving shaft and pinion supported upon said lever and adapted to give rotation to the said gear E^2, the clutching devices for throwing the binding mechanism in motion, and the resistant I, substantially as described.



2. In a grain binder the combination of the packers, the driven gear E^2 carried upon fixed journals and so connected to the said packers as to give them rotation, the clutch detent lever pivotally mounted on an axis substantially coincident with the axis of the said driven gear, the driving pinion d journaled in the said lever and adapted to give rotation to the said gear; a clutching device and the resistant I, substantially as described.

3. The combination of the packers, the resistant against which the grain is packed, said packers so connected to the gear E^2 by clutching devices as to be intermittently driven thereby, the lever d^2, the pinion mounted thereon, said lever adapted to disengage a train of mechanism that shall produce disengagement of the packer shaft from the driving gear, substantially as described.

4. The combination of the driving gear E^2, the packer shaft, clutching mechanism connecting the said driving gear and packer shaft, the pinion d mounted in a yielding bearing, the lever connecting said bearing to binder clutching devices, and connecting mechanism moved by the binding devices to disengage the clutch that connects the packer to its driving gear, all combined substantially as described.

5. The combination of the gear E^2 journaled in the frame-work of the binder, packing devices clutched thereto and binding devices connected thereto, the lever d^2 pivoted substantially coincident to the axis of the said gear, the driving shaft and pinion a supported in said lever and adapted to give the said gear E^2 rotation, a spring for holding said lever normally in position for preventing engagement of the clutch that controls the binding devices, all combined substantially as described.

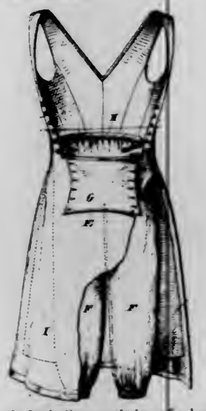
6. In a grain binder, the combination of the hollow packer shaft supported in the bearings of the main frame, the gear E^2 journaled therein, the said gear having the recesses e^2 and the packer shaft having the recess f, a clutch pawl supported in said packer shaft and adapted to be drawn into the recesses of the gear, and connecting mechanism adapted to be operated by the main binder gearing to force the said clutch pawl from engagement with the driving gear, substantially as described.

7. The combination of the needle pivoted in the binder frame, the compressor pivoted in the frame eccentrically thereto, the needle having the arm g adapted to engage the lug i and the compressor having the arm i', the pivotally hung spring bolt J and the latch K, all combined substantially as described.

545,173. ATHLETIC SUIT FOR LADIES. IDA M. REW, New York, N. Y. Filed May 27, 1895. Serial No. 550,757. (No model.)

Claim.—1. An athletic suit for ladies, consisting of a bodice or waist portion lined as described, a skirt extending therefrom, means for suspending the skirt and bodice from the shoulders and trousers secured to the lining, each trousers leg being loosely connected with

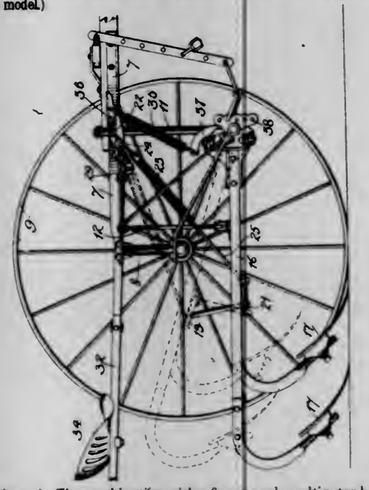
the skirt portion of the garment by means of one or more suitable strips, substantially as described.



2. An athletic suit for ladies consisting of a bodice or waist portion, lined as described, a skirt extending therefrom, means for suspending the bodice and skirt from the shoulders, and trousers secured to the front portion of the bodice lining and a draw string in the rear upper edge of said trousers, each trousers leg being loosely connected to the skirt portion of the garment by means of one or more independent strips.

3. In a bicycle or athletic suit, a skirt and a trouser portion enveloped by said skirt, each leg of the said trouser portion being loosely connected to the said skirt by independent connecting strips between the outside of the trousers and the inside of the skirt, substantially as described.

545,174. CULTIVATOR. LEVI ROADHOUSE, De Kalb, Ill., assignor to Abram Ellwood, same place. Filed Apr. 30, 1894. Serial No. 509,621. (No model.)



Claim.—1. The combination with a frame, and a cultivator beam, of a crank pivoted upon said beam and adapted to lift the same by its rotation, and an automatic suspending device connecting said crank with said frame, and adapted, when said crank is rotated to lift said beam, to automatically lock it in its hung-up position, substantially as described.

2. The combination with a frame, and a cultivator beam, of a crank pivoted upon said beam and adapted by its rotation to lift said beam, and an automatic suspending device connecting said crank with said frame and adapted when said crank is rotated to pass behind and above the pivotal connection of said crank with said beam, whereby said beam is automatically held in its hung-up position, substantially as described.

3. The combination with a frame, cultivator beams, and double crank levers pivoted upon said beams and adapted by their rotation to raise said beams, of automatic suspending devices connected at their upper and forward ends with said frame and at their lower ends with said double crank levers, and adapted when said double crank levers are rotated to lift said beams to automatically suspend said beams in their hung-up position, substantially as described.

4. In a cultivator, the combination with cultivator beams, and a frame, of double crank levers pivotally mounted upon said beams, and automatically operated links connecting said double crank levers with said frame, whereby as said double crank levers are rotated said cultivator beams are raised and automatically held in their hung-up position, substantially as described.

5. In a cultivator, the combination with cultivator beams, and a frame, of double crank levers pivotally mounted upon said beams and adapted by their rotation to raise said beams, and spiral springs connecting said double crank levers with said frame, substantially as specified.

6. In a cultivator, the combination with cultivator beams, and a frame, of double crank levers pivotally mounted upon said beams and adapted by their rotation to raise said beams, spiral springs hung upon said frame, and links connecting said spiral springs with said double crank levers, substantially as specified.

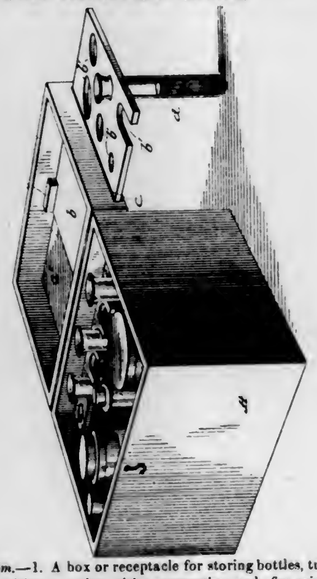
7. In a cultivator, the combination with cultivator beams, and a frame, of double crank levers pivotally mounted upon said beams and adapted by their rotation to raise said beams, notched arms secured to said frame, and spiral springs hung upon said notched arms and connecting said double crank levers with said frame, substantially as specified.

8. In a cultivator, the combination with cultivator beams, and a frame, of double crank levers pivotally mounted upon said beams and adapted by their rotation to raise said beams, notched arms secured to said frame, spiral springs hung upon said notched arms, and links connecting said spiral springs with said double crank levers, substantially as specified.

9. In a cultivator, the combination with a cultivator beam, and a frame, of a double crank lever pivotally mounted upon said cultivator beam, a hand lever mounted on the frame, locking devices for said hand lever, and automatic suspending means connecting the lower end of said hand lever with said double crank lever, whereby, as the double crank lever is rotated, said cultivator beam will be raised and automatically held in its hung-up position, substantially as specified.

10. The combination with a frame, and a cultivator beam hinged to said frame, of a double crank-lever pivoted on said beam, and an automatic suspending device connected at one end to said frame and at the other end pivotally connected with one crank of said lever, whereby as said lever is rotated said beam is raised and automatically held in its hung-up position, substantially as described.

545,175. COMBINED BOX AND RACK. JOSEPH ROSENBUSH, Montrose, N. J., assignor to the R. Hoehn Company, of New York. Filed Apr. 5, 1895. Serial No. 544,536. (No model.)



Claim.—1. A box or receptacle for storing bottles, tubes and the like comprising a casing with a supporting rack for said articles, a hinged cover, said cover being formed with flanges on its four sides, one of said flanges having a slit or opening, and a sliding rack in the form of a plate having openings or seats fitting within said cover and having one edge projecting into the slit or opening in the flange of the cover, and a guiding cleat for said rack arranged on the inside of said cover; substantially as described.

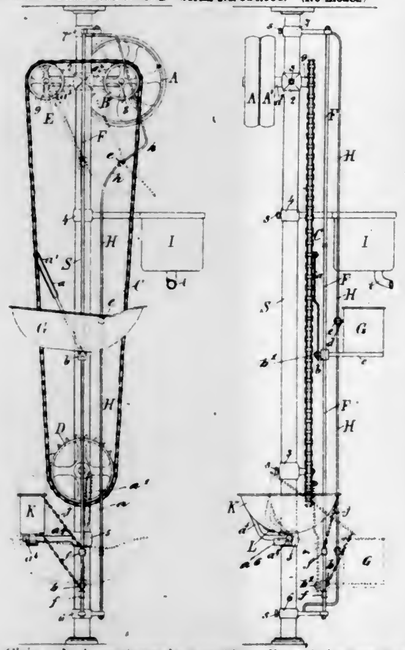
2. A box or receptacle for storing bottles, tubes or the like, comprising a casing, a hinged cover, said cover being formed with flanges on its four sides, one of said flanges having a slit or opening, and a sliding rack in the form of a plate provided with openings of varying shapes and sizes for the reception of bottles, test tubes and the like, said sliding rack fitting within the cover and having one edge projecting into the slit or opening in the flange of the cover, and a short guiding cleat for said rack arranged on the inside of said cover and adjacent one side only; substantially as described.

545,176. LID FOR BURIAL-CASKETS. CHARLES A. RUEBEKAM, Owasso, Mich., assignor to Lyman E. Woodward, same place. Filed Feb. 8, 1895. Serial No. 537,714. (No model.)



Claim.—A casket cover having an opening through it that is closed with the glass D, and suitable raised guides applied to the top of the cover around the opening above the glass; combined with a sliding cover composed of two sections hinged together and placed in the guides; the front section having a sliding movement, and also adapted to be raised at one end, while the rear section has only a sliding movement for the purpose of moving the front section backward, substantially as shown.

545,177. CREAM-ELEVATOR. THOMAS T. SABROE, Aarhuus, Denmark. Filed Sept. 1, 1894. Serial No. 521,950. (No model.)



Claim.—1. A continuously movable endless chain conveyer, a bucket, a link connected therewith and having endwise or sliding motion on one of the chain link pins, and a guide for the bucket, whereby when said bucket reaches a given point of its travel it will remain stationary for a period of time, for the purpose set forth.

2. An endless chain conveyer, comprising a conveyer chain arranged in the form of a triangle, with one base at the delivery end of the conveyer, a carriage, a guide rod F along which the carriage is adapted to travel, said carriage provided with a supporting arm, a link connecting the carriage with the conveyer chain, a bucket seated on the supporting arm of the carriage, a guide sleeve pivotally connected with the discharge end of said bucket, a guide rod H along which the sleeve is adapted to travel, said rod being parallel with the rod F for a certain distance and curving away from the rod near the delivery end of the conveyer, for the purpose set forth.

3. An endless conveyer comprising a conveying chain, a bucket connected therewith, a guide rod, a bucket support adapted to travel along the rod, a vessel at the receiving end of the conveyer chain adapted to tilt in one direction on its support, a slide on the guide rod adapted to be engaged by the bucket support and moved along with it, and a connection between the slide and discharge end of the vessel, whereby the latter is tilted by the bucket to discharge into the same when said bucket has reached a proper position, and means for returning the vessel into a normal position, substantially as and for the purpose set forth.

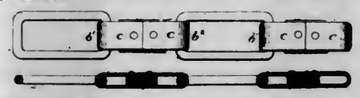
4. An endless chain conveyer comprising a conveyer chain, a carriage, a guide rod F along which the carriage is adapted to travel, said carriage provided with a supporting arm, a link pivotally connected with the carriage and the conveyer chain, a bucket resting on the supporting arm of the carriage, a guide sleeve pivotally connected with the bucket near its discharge end, and a guide rod H along which said sleeve is adapted to travel, in combination with a receiving vessel, a support therefor on which said vessel is adapted to tilt, a slide on guide rod F connected with the discharge end of the vessel, said slide adapted to be engaged by the bucket carriage and moved along therewith, thereby tilting the receiving vessel when the bucket has reached a position to receive the contents of said vessel, substantially as set forth.

5. An endless chain conveyer, comprising a conveyer chain, a carriage, a guide rod F along which the carriage is adapted to travel, said carriage provided with a supporting arm, a longitudinally slotted link pivotally connected with the carriage and the conveyer chain, a bucket resting on the supporting arm of the carriage, a guide sleeve pivotally connected with the bucket near its discharge end, and a guide rod H along which said sleeve is adapted to travel, in combination with a receiving vessel, a support therefor on which said vessel is adapted to tilt, a slide on guide rod F, a flexible connection between the slide and discharge end of the vessel, said connection shorter than the link that connects the bucket carriage to the conveyer chain, said slide adapted to be engaged by the bucket carriage and moved along therewith, thereby tilting the receiving vessel when the bucket has reached a position to receive the contents of said vessel, substantially as set forth.

6. In combination, the pillar S, the sleeves 2 and 3 adjustable thereon, the sprocket wheels B, E, supported from sleeve 2, the sprocket wheel D supported from sleeve 3, the conveyer chain C, the guide rods F, H, supported from the pillar, said guide rod H curved outwardly at *h*, the carriage *b* on rod F provided with a supporting arm, as *c*, a link pivotally connecting said carriage with one of the chain link pivots, a bucket seated on the arm *c*, and a slide, as *e* on the aforesaid rod H connected with the bucket near its discharge end, substantially as and for the purpose set forth.

7. In combination, the pillar S, the sleeves 6 and 7 adjustable thereon, the guide rods F, H, secured to said sleeves, the sprocket wheels, B, E, D, supported from the pillar the conveyer chain passing around said wheels, the vessel K adapted to tilt in one direction on its support, said vessel and sprockets adjustably supported from the pillar, a slide on rod F, a flexible connection between the slide and discharge end of vessel K, a carriage on said rod F adapted to engage the slide and move the same along the rod F, a carriage linked to the conveyer chain and provided with a supporting arm, a bucket seated on said arm and a sleeve adapted to slide on rod H, connected with the discharge end of the bucket, substantially as and for the purpose set forth.

545,178. CHAIN. DAVID J. SHELDRICK, Columbus, Ohio, assignor to Joseph A. Jeffrey, same place. Filed Oct. 1, 1891. Serial No. 407,427. (No model.)



Claim.—1. The herein described carrier chain, formed of the wrought round rod links A, A', each having its ends brought together to form a continuous flat loop, in combination with the intermediate alternately arranged links B, B each formed of a strip of relatively thin wrought metal bent to have its ends brought together to form a continuous loop, the bracing block C formed with a body part of a thickness equal to the interior space between the side bars of the link, and with bracing flanges or projections *c' c'* lying against the side edges of said side bars, and the rivets extending directly upward through the end parts of the wrought strip and bearing inward upon the outer faces thereof to hold said ends together and between the said flanges, substantially as set forth.

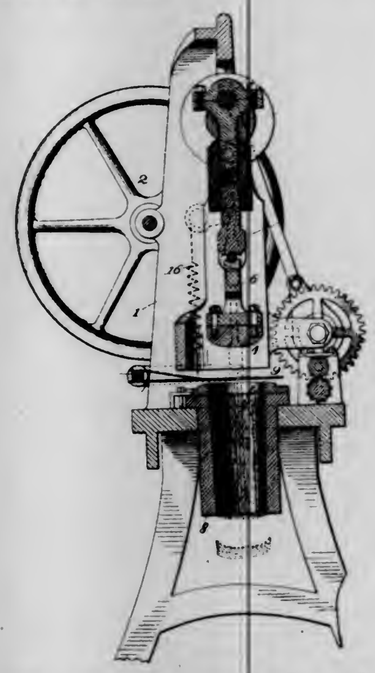
2. The herein described carrier chain it having the wrought rod links A, A', the intermediate coupler B formed of wrought metal and bent into a continuous loop, and the block C having a lateral exten-

sion for an attachment, and having the bracing flanges *c c* at the edges of the coupler, and a rivet for securing the block to the coupler, substantially as set forth.

3. In combination with the wrought rod links A, A', and the wrought metal coupler B formed into a continuous loop, a carrier block C lying between the side bars of the coupler, and having rivets for securing the block to the coupler, and also having means independent of the rivet, engaging the coupler, for assisting in securing the block against torsional or lateral movement in the coupler, whereby the rivets are relieved from strain, substantially as set forth.

545,179. PROCESS OF AND APPARATUS FOR MAKING DISHES OF WOOD OR WOOD PULP.

CHARLES STAFFORD, New York, N. Y., assignor to Annie Ames Hiss, East Orange, N. J. Filed May 28, 1894. Serial No. 512,824. (No model.)



Claim.—1. In a machine for punching and forming dishes and other articles from sheets of wood or other material, the combination of a punch having an under surface formed to the desired contour of the dish and integral with and bounded by, a cutting edge for separating the dish blanks and the sheet, a die and a tubular receiving chamber attached to said die and of configuration corresponding therewith, the die and chamber acting as a nesting device whereby the dishes first formed act together with the punch and die to shape the succeeding dishes, substantially as and for the purposes set forth.

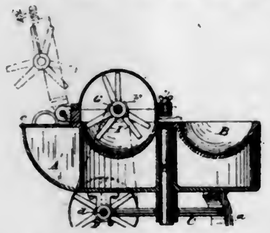
2. In a machine for punching and forming dishes and other articles from sheets of wood or other material, the combination of a punch having a cutting edge and a forming surface, a die and a tapering tubular dish receiving chamber supported immediately under said die and having a configuration corresponding thereto, substantially as set forth.

3. In a machine for punching and forming dishes and other articles from sheets of wood or other material, the combination of the punch having an under surface formed to the desired contour of the dish and integral with, and bounded by, a cutting edge for separating the dish blanks from the sheet, the die, the receiving chamber, the intermittently actuated feeding mechanism and the intermittently actuated clamping and stripping plate, the die and chamber acting as a nesting device whereby the dishes first formed act together with the punch and die to shape the succeeding dishes, substantially as set forth.

4. The process of punching and forming dishes and other articles from sheets of wood or other material consisting in punching the blank from the sheet and with the same movement carrying and pressing it against a mass of similar articles formed on the same machine whereby the latter act as formers for the blank being treated, substantially as set forth.

545,180. MEAT-CUTTING MACHINE.

LEOPOLD STRICKERT, Cincinnati, Ohio. Filed Aug. 31, 1894. Serial No. 521,826. (No model.)



Claim.—1. In a meat cutting machine, the combination, with a tank, of a frame secured to the top thereof, a bowl within the tank, two shafts journaled in the frame in alignment with each other, the adjacent ends of which are provided with knives, and means for rotating the shafts in opposite directions, substantially as set forth.

2. In a meat cutting machine, the combination, with a rotary bowl, of two shafts journaled above the same in alignment with each other, the adjacent ends thereof being provided with knives, and means for rotating said shafts in opposite directions, whereby the knives have a shearing cut, substantially as set forth.

3. In a meat cutting machine, the combination, with a rotary bowl, of a frame above the same, two shafts journaled in the frame in alignment with each other, one of the shafts being longitudinally immovable and the other one being adjustable longitudinally relatively thereto, knives upon the adjacent ends of said shafts, and means for rotating the shafts in opposite directions, substantially as set forth.

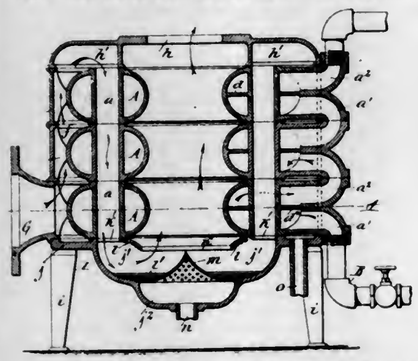
4. In a meat cutting machine, the combination, with a rotary bowl, of a frame above the same, two shafts journaled in the frame in alignment with each other, a pin in the end of one having its opposite end in engagement with the end of the other shaft, a wedge in engagement with said pin, knives upon the ends of the shafts, and means for rotating the shafts in opposite directions, substantially as set forth.

5. In a meat cutting machine, the combination, with a tank, of a frame hinged at one side thereof, means for securing the opposite side of the frame to the tank, two shafts in the frame in alignment with each other, knives upon the adjacent ends of the shafts, and means for rotating the shafts in opposite directions, substantially as set forth.

6. The combination, with a tank provided with an extension upon one side, of a cover for the extension, a frame hinged to the tank, a rotary bowl within the tank, shafts journaled in the frame in alignment with each other, knives upon the adjacent ends of the shafts, a cover for the knives, and means for rotating the shafts in opposite directions, substantially as set forth.

545,181. FEED-WATER HEATER.

DAVID P. STEWART, Buffalo, N. Y. Filed Nov. 24, 1894. Serial No. 529,815. (No model.)



Claim.—1. The combination with an inclosing shell, of superposed annular water chambers arranged in said shell and connected by water inlet and outlet nipples, each chamber being separated from the inclosing shell forming an outer heating passage or space around the chamber and provided with a central heating passage or space, and with heating flues formed integrally with the chamber and extending through the water space of the chamber between the central and outer heating passage or spaces, substantially as set forth.

2. The combination with the water chambers forming a central heating passage and having flues extending through the water spaces, of a separating chamber connecting the flues with the central heating passage and provided on its inner side with corrugations, whereby the liquid particles are separated from the steam, substantially as set forth.

3. The combination with the annular water chambers forming a central heating passage and having flues extending through the water spaces, of a separating chamber provided with a central opening communicating with the central heating passage and with surrounding openings communicating with the flues, substantially as set forth.

4. The combination with the superposed annular water chambers forming a central heating passage and having flues extending through the water spaces, of a separating chamber connecting the lower ends of the flues with the central heating passage, a collecting chamber arranged underneath the separating chamber, and a perforated diaphragm arranged between the separating and collecting chambers, substantially as set forth.

5. The combination with an inclosing shell, of superposed annular water chambers forming a central heating passage and separated from the surrounding shell by an outer heating passage, each water chamber being provided with flues extending through the same and with external inlet and outlet nipples projecting through the shell, the nipples of adjacent chambers communicating with each other, substantially as set forth.

6. A heating section consisting of an annular water chamber forming a central heating passage, inlet and outlet nipples connected with the water chamber, flues extending through the water chamber, and a shell section surrounding the water chamber and formed integrally therewith, substantially as set forth.

7. In a feed water heater, the combination with superposed annular water chambers, each provided with a surrounding shell section formed integrally with the water chamber and separated therefrom by a heating passage, and each provided with flues extending through the water space of each chamber and with inlet and outlet nipples, of connecting chambers connecting respectively the outer heating passage with the flues and the latter with the central heating passage, substantially as set forth.

8. A heating section consisting of an annular water chamber, flues extending through said water chamber, inlet and outlet nipples formed on the water chamber adjacent to each other and projecting outwardly therefrom, and a partition extending across the water chamber between the inlet and outlet nipples, substantially as set forth.

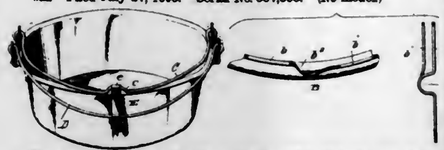
545,182. WOOD-STAIN.

DILLINGHAM B. TILLEY, Petersburg, Ky. Filed June 3, 1895. Serial No. 551,520. (No specimens.)

Claim.—The herein described composition of matter to be used in staining wood, consisting of waste from old paints, sal soda, pulverized resin, pure water, and linseed oil, in the proportions specified.

545,183. SAUCEPAN.

ROBERT B. VANDERBURG, Long Beach, Cal. Filed July 27, 1895. Serial No. 557,333. (No model.)



Claim.—1. The combination with the vessel and its pair of operating bails, of a bar or rod pivoted positively to each bail and spacing them apart, substantially as described.

2. The combination with the vessel and its pair of operating bails, of different lengths, and both adapted to fold down close to one side of the vessel, of a bar or rod pivoted positively to both bails, holding them apart at their middle portions and lying close to the side of the vessel when the bails are folded together, substantially as described.

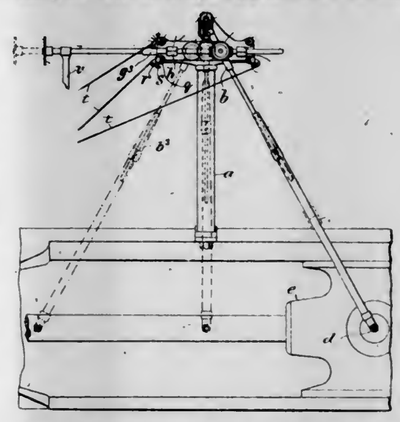
3. The combination with the vessel and its two operating bails of different lengths; one of said bails being cranked or offset at its middle, of the bar or rod having eyes at its ends, respectively receiving and pivoting on the said crank or offset and the middle portion of the other bail, substantially as described.

4. The combination with the vessel, having opposite twin ears, each having a pair of apertured lugs lying at opposite sides of the center of the vessel; the forward lugs being bulged outwardly at their lower ends to form cover receiving grooves, and the rear lugs projecting upwardly, exterior to the plane of the vessel out of the way of the cover and bails pivotally connected at their ends with said lugs and operatively connected at their middle portions, substantially as described.

5. The ear having apertured twin lugs projecting upward in parallel planes; the inner lug only having an outward bulge at its lower end forming a cover receiving groove in its inner face, substantially as described.

545,184. STEAM-ENGINE-INDICATOR REDUCING-GEAR.

JAMES WRIGHT, Montreal, Canada, assignor of one-half to Frank Wright same place. Filed June 26, 1894. Serial No. 515,784. (No model.)



Claim.—1. As an indicator reducing gear, an intermediary between the moving part of the engine and the connections leading to the indicator, in the form of a slide rod and lever for transmitting to such a slide rod the motion of said moving part of the engine, the lever having one end connected directly to said moving part of the engine.

2. In an indicator reducing gear, the combination with a suitable frame or standard, of a slide rod, connections leading from it to the indicator, and a lever pivoted to said frame or standard and having a sliding and rocking connection with the slide rod, the lever being connected directly with the moving part of the engine and variable in length to allow of its oscillation at different angles to the lines of motion of the moving part and slide rod and the slide rod being arranged in such position relatively to the line of reciprocation of the moving part of the engine that the velocity ratio of motion of the acting points are constant and invariable.

3. In an indicator reducing gear, the combination with a suitable frame or standard,—of a slide rod; connections leading from it to the indicator, and a lever pivoted to said frame or standard and having a rocking sliding connection with the slide rod, the lever being connected directly with the moving part of the engine and variable in length to allow of its oscillation at different angles to the lines of motion of the moving part and slide rod and the slide rod being arranged in such position relatively to the line of reciprocation of the moving part of the engine that the velocity ratio of motion of the acting points are constant and invariable.

4. In an indicator reducing gear, the combination with a suitable frame or standard as *a*, having guides *h h* slide rod *g*, carried and movable in said guides and having an open cylindrical case or boss *g'*, connections leading from such slide to the indicator, the rocking slide *g²* having perforations *g³* and fitting the open cylindrical case or boss *g'* of the slide rod, lever *b* fulcrumed upon said frame *a* at *c*, and having one of its ends working in the perforation *g³* of the rocking slide *g²* while the opposite end is made variable in length by means of telescoping parts *b' b³* and a pivotal connection of the part *b'* with the moving part of the engine as shown and for the purpose set forth.

5. In an indicator reducing gear, the combination with frame *a* and the parts for operating the cord or cords *t* leading to the indicator, of the standard *q*, one or more guide sheaves *r* and carriers adjustably mounted in such standard with means for holding the standard in place.

6. In an indicator reducing gear, the combination with a supporting frame, of a telescopic or sliding lever having one end connected directly with the moving part of the engine, slide rod and rocking slide, with which latter said lever has a sliding connection, in conjunction with one or more leading and adjustable pulleys for the transmitting cords or wires extending to the indicator or indicators.

7. In an indicator reducing gear, the combination with the supporting frame plate having a slot therein of a telescopic or sliding lever fulcrumed to same, a slide rod, and rocking slide with which latter said lever has a sliding connection, said slot allowing of varying the distance between the slide rod and the pin or fulcrum on which the lever swings for the purpose set forth.

8. In an indicator reducing gear, the combination of the slide rod with the case or boss carrying the rocking slide, the lever passing diametrically through such boss and rocking slide, the case being slotted to permit the required amount of vibration of the lever, having its outer periphery grooved and holes passing through the rim thereof in the manner and for the purpose described.

9. In an indicator reducing gear, the combination with a supporting frame, of a slide rod carried thereby, extensions from such slide rod, means for actuating the latter, and adjustable string or cord-guiding disks or levers carried by the extensions presenting along their edges a series of points of attachment for the cord or cords.

10. In an indicator reducing gear, the combination with perforated standards carried by the supporting frame of adjustable pulleys provided with socketed casings pivotally connected with said standards and the casings being perforated in line with the perforation in the standard for the purpose set forth.

11. In an indicator reducing gear, the circular case in the slide rod, with the slots allowing free vibration of the lever, with the projections of the case beyond the rocking slide with the circumferential groove, and string holes passing to the interior, in the manner and for the purpose set forth.

12. In an indicator reducing gear, the combination with a slide rod and operating lever, of a rocking slide, of plain cylindrical form and the slide rod formed to receive it for the purpose set forth.

13. In an indicator reducing gear, the extension from the end of the slide rod, and movable and adjustable levers or disks clamped in proper position on the extension presenting along their edges a series of points of attachment for the cord or cords, and also increase the number of indicators which can be used at the same time.

14. In an indicator reducing gear, the combination on a frame plate, of a telescopic lever, a slide rod, and extension of the same the said lever being fulcrumed to the frame plate, having one end connected to the moving part of the engine and having a sliding connection with said slide rod, and tangent or leading sheaves in the manner and for the purpose set forth.

15. In an indicator reducing gear, the combination with frame plate having a slot and the telescopic lever adjustably fulcrumed therein for the purpose of varying the length of diagram if desired, and also extending the action of the device to greater variations in the length of stroke.

16. In an indicator reducing gear, a telescopic lever, the main tubular part of which is constructed of two or more lengths or pieces coupled together, by which the instrument can at once be changed from a short to a long stroke.

17. In an indicator reducing gear having a frame plate, slide rod, and operating lever, the combination with the lateral arms or standards on the frame plate of adjustable tangent pulleys with their carriers pivotally mounted in said standards, for the purpose set forth.

18. In an indicator reducing gear, having a frame plate, slide rod, and operating lever, the vertical pivotal connection between the frame plate and the standard or other means of securing it in place for the purpose set forth.

545,185. COFFEE-CLEANER. BERNARD W. YOST, Lancaster, assignor of one-half to Joel P. Schelly, Philadelphia, Pa. Filed Feb. 16, 1895. Serial No. 538,728. (No model.)



Claim.—1. The combination, with a reciprocating screen-frame of series of screens arranged in succession from the head toward the foot thereof, the mesh of said screens decreasing in size from the head to the foot of said frame, a device adapted to discharge alternatively onto two of said screens adjoining each other, means for conveying the discharge from said device directly to a screen below said two adjoining screens, and a sceen forming a continuation of said series of screens and having a mesh larger than the mesh of any of the screens of said series, for the purpose specified.

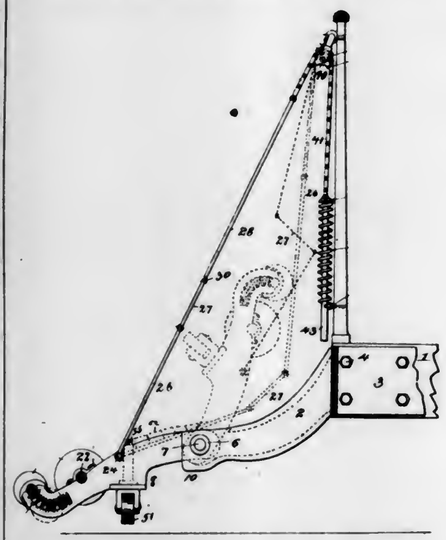
2. The combination, with a reciprocating screen-frame, of a series of screens of different sizes of mesh, a revoluble spout adapted to deliver onto two of said screens adjoining each other, means for conveying the discharge from said spout directly to a screen below said two adjoining screens, and a screen forming a continuation of said series of screens and having a mesh larger than the mesh of any of the screens of said series, for the purpose specified.

3. The combination, with a reciprocating screen-frame, of a series of screens of different sizes of mesh, a revoluble spout adapted to deliver onto two of said screens adjoining each other, a chute constructed to be removably secured to the frame under the spout and discharging to a screen below the spout, and a screen forming a continuation of said series of screens and having a mesh larger than the mesh of the screen onto which said chute delivers, substantially as and for the purpose specified.

4. The combination, with a reciprocating screen-frame, of a series of screens arranged in succession from the head toward the foot thereof, the mesh of said screens decreasing in size from the head to the foot of said frame, a single compartment extending beneath said series of screens and having a discharge opening, a device adapted to discharge alternatively onto two of said screens adjoining each other, means for conveying the discharge from said device directly to a screen below said two adjoining screens, a screen forming a continuation of said series of screens and having a mesh larger than the mesh of any of the screens of said series, and a separate compartment located beneath said screen having the larger mesh, for the purpose specified.

5. The combination, with a reciprocating screen-frame, of a series of screens arranged in succession from the head toward the foot of the frame, the mesh of said screens decreasing in size from the head toward the foot of the frame, a single compartment extending beneath said series of screens and having a discharge opening, a revoluble spout adapted to deliver onto two of said screens adjoining each other, a chute constructed to be removably secured to the frame under the spout and discharging to a screen below the spout, a screen forming a continuation of said series of screens and having a mesh larger than the mesh of any one of said series of screens, and a separate compartment located beneath said screen having the larger mesh, substantially as and for the purpose specified.

545,186. CAR-FENDER. CHARLES S. ANDREWS, New York, N. Y. Filed Apr. 23, 1895. Serial No. 546,809. (No model.)



Claim.—1. In a car fender, the combination with a car platform, arms pivoted thereto, a spring actuated roller mounted in bearings in the ends of said pivoted arms, and a screen, the forward end of which is movably secured to said arms at the rear of said roller, its rear and upper end being supported independently of said arms by springs, flexible connection between the springs and said upper end, and means for controlling the action of said springs, substantially as described.

2. In a car fender, the combination with the car platform, of the outwardly and downwardly extending fixed arms secured thereto, arms hinged upon said fixed arms, curved guide ways in the ends of said pivoted arms springs in said guide ways, a follower on the springs, and a roller rotatively supported upon said springs, and a movable screen to the rear of said roller, substantially as described.

3. In a car fender, the combination, with the platform, of the fixed arms secured thereto, further arms pivoted to said fixed arms, downwardly and rearwardly extending guide ways in said pivoted arms, a follower and spring in said guide ways, a shaft and a roller thereon journaled upon said follower and adapted to be moved downwardly and rearwardly against said springs, and a screen at the rear of said roller, substantially as described.

4. In a car fender, the combination, with the car platform, of the fixed arms secured thereto, arms fulcrumed to said fixed arms and supporting a roller at the outer extreme thereof, a downwardly and rearwardly extending guide way and springs therein for the roller, and means for limiting the downward movement of the pivoted arms, substantially as described.

5. In a car fender, the combination of the following instrumentalities: arms extending from the platform of the car, a plurality of transverse rollers supported rotatively on said arms, one of said rollers having a fixed plane of rotation, the other being adapted to be moved downwardly and rearwardly against the stress of the springs and to be forwardly and upwardly moved by the said springs and simultaneously rotated, substantially as described.

6. In a car fender, the combination with the arms extending outwardly from the platform of the car, a plurality of rollers rotatively and transversely supported at the forward ends of said arms, one of said rollers being larger in diameter than the other and having a fixed plane of rotation, the other and forward roller being adapted to be moved downwardly and rearwardly against the stress of springs and to be moved in the reverse directions by said springs, both rollers adapted to be rotated in the same direction, and a screen at the rear of said rollers, substantially as described.

7. In a car fender, the combination with the arms extending outwardly from the car platform, a plurality of transverse rollers rotatively supported at the forward ends of said arms, an articulated screen pivotally secured at one end of the arms at the rear of said rollers, and means for movably connecting the other end of said screen to the car platform, substantially as described.

8. The combination in a car fender, of the arms extending outwardly from the car platform, a plurality of transversely extending rollers rotatively supported in the forward ends of said arms, said rollers being of unequal diameters, the smaller roller being forward of the larger roller and adapted to be moved downwardly and rearwardly against the stress of springs and in the reverse directions by said springs, and an articulated screen movably secured at one end to said arms, springs secured to said car platform, and means for movably securing said screen to said springs, substantially as described.

9. The combination of the arms extending forwardly from the platform of a car, a plurality of rollers of different diameters rotatively secured in bearings in the forward ends of said arms, the smaller and forward roller being adapted to be moved downwardly and rearwardly against the stress of springs and by said springs in the reverse directions, an articulated screen secured to said arms at the rear of said rollers, springs secured to said car platform, means for movably securing the other end of said screen to said springs, and weights secured to said means, substantially as described.

10. In a car fender, the combination with the arms extending outwardly from the platform of a car, of a plurality of rollers rotatively supported in bearings at the forward ends of said arms and having different diameters, the smaller and forward roller being adapted to be moved downwardly and rearwardly against the stress of springs and forwardly and upwardly by said springs, an articulated screen at one end secured to said arms, springs secured to said car platform, means for securing the other end of said screen to said springs, weights secured to said means, and a detent for preventing the recoil of said springs secured to said means, substantially as described.

11. In a car fender, the combination, with the car platform, of the arms 2 secured to the platform, a slot 5, in the upper portion of said arms, a cross bar or web 10 beneath said slot, a shaft 7 journaled in bearings 6 in the end of said arms, the arms 8 pivoted to said arms 2 by the shaft 7 and carrying a spring actuated roller 16 at the outer extreme thereof, the cross bar 10 limiting the downward movement of the arms 8, the rear of the slot supporting the arms in their raised position, substantially as described.

12. In a car fender, the combination, with the car platform, of the fixed arms secured thereto, further arms pivoted to the fixed arms, a spring actuated roller at the ends of the pivoted arms, and counter rollers secured to the pivoted arms intermediate of their ends and extending downwardly therefrom, substantially as described.

13. The combination, in a car fender, of the fixed arms, other arms pivoted thereto, a guide-way in the ends of said pivoted arms, springs in said guide-way, a shaft and roller adapted to move in said guide-way against the stress of said springs, a further roller journaled in bearings on the pivoted arms to the rear of said spring actuated roller, and a screen supported at the rear of said rollers, substantially as described.

14. The combination in a car fender, of arms extending outwardly from the platform, a screen secured to said arms at one end and movably connected with springs at the other end, and a detent for checking the recoil of the springs, substantially as described.

15. The combination, in a car fender, of the arms extending from the platform, an articulated screen or netting pivotally secured to said arms, at one end and movably secured to springs at the other end, and a detent for checking the recoil of the springs, substantially as described.

16. The combination in a car fender, of the arms extending outwardly from the platform, a screen or netting pivotally secured to said arms at one end and movably secured to a spring at the other end, and a weight adapted to counterbalance the weight of said screen, sustain it in its projected position, and relieve the spring while the screen is at rest, substantially as described.

17. In a car fender, the combination with the arms extending outwardly from the car platform, the screen pivotally secured at one end to said arms, springs secured to said car platform, and means interposed between said screen and said springs for checking the recoil of said springs under stress of impact on said screen, substantially as described.

18. In a car fender, the combination with the arms extending outwardly from the car platform, of the screen pivotally secured at one end of said arms, springs secured to said car platform, means connecting said springs with said screen, a weight secured to said means, and further means for checking the recoil of said springs, substantially as described.

19. In a car fender, the combination with the arms extending forwardly of the car platform, a dash-board extending upwardly from the car platform, an articulated screen pivotally secured to the said arms at one end, sprocket wheels supported in hangers on the dash-board above the pivoted end of said screen, springs secured to said dash-board below said hangers, a sprocket chain secured to the other end of said screen passing over said sprocket wheels and connected to said springs, and detents co-operating with said sprocket wheels to prevent the recoil of said springs, substantially as described.

20. The combination in a car fender, of the arms extending forwardly of the platform of a car, the articulated screen pivotally secured at one end to said arms, a dash-board on the platform, hangers secured to the platform above the said pivoted end of the screen sprocket wheels in said hangers, a sprocket chain connected with the other end of said screen passing over said sprocket wheels and downwardly therefrom, a weight secured to the end of said chain, and means for guiding said weight, substantially as described.

21. In a car fender, the combination with the arm, a screen secured thereto, the dash-board, a sprocket wheel hanger secured to the dash-board, a sprocket wheel therein, a sprocket chain secured to the other end of said screen and passing over said sprocket wheel, means for resisting the rearward movement of said screen secured to the other end of said chain, and a dog secured to said hanger and engaging the teeth of said sprocket wheel, substantially as described.

22. In a car fender, the combination with the fixed arms extending outwardly from a car platform, arms pivotally secured to said fixed arms and forward of the same, an articulated screen movably secured to said pivoted arms at one end and movably supported upon the car platform at the other end, a spring, and means for checking the recoil of the spring connected with the screen at the latter end, substantially as described.

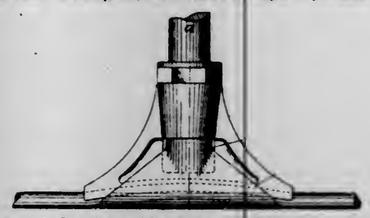
23. In a car fender, the combination with the arms extending forwardly of the platform, the articulated screen secured at one end to said arms, a dash-board, a hanger secured to said dash-board, a sprocket wheel in said hanger, a dog on said hanger engaging the sprocket wheel, a sprocket chain secured at one end to said screen and passing over said wheel, a cap secured at the end of said chain, a spring secured to the cap at one end and attached to the dash-board at the other, and a weight secured to said cap within said spring, substantially as described.

24. The combination in a car fender, of the fixed arms secured to the platform, further arms pivotally secured to said fixed arms forwardly thereof, a transversely extending roller having a resilient backing mounted in bearings at the forward ends of said pivoted arms, a guard roller mounted upon a vertical shaft rotatively supported in bearings in said pivoted arms adjacent the transverse roller, and means for limiting the downward movement of the pivoted arms, substantially as described.

25. In a car fender, the combination with the arms extending forwardly of the platform, further arms pivotally secured to said arms, a bar extending between the pivoted arms, hangers on the dash-board, sprocket wheels in said hangers, sprocket chains passing over said wheels, a rod transversely connecting said chains, articulated bars extending between said chains and said transverse bar, further rods extending transversely between said articulated bars, and a netting connecting the rods, and means for movably supporting the other end of said chains, substantially as described.

26. In a car fender, the combination with the arms 8, the roller 16 rotatively supported in bearings at the end of said arms, springs in said arms adapted to bear against the shaft of the roller, and a detachable cap 19 having a rounded surface secured over the end of said arms and holding said shaft against the stress of said springs, substantially as described.

545,187. TROLLEY-LINE CLAMP. WARREN J. BELCHER, Hartford, Conn. Filed Apr. 11, 1895. Serial No. 545,297. (No model.)

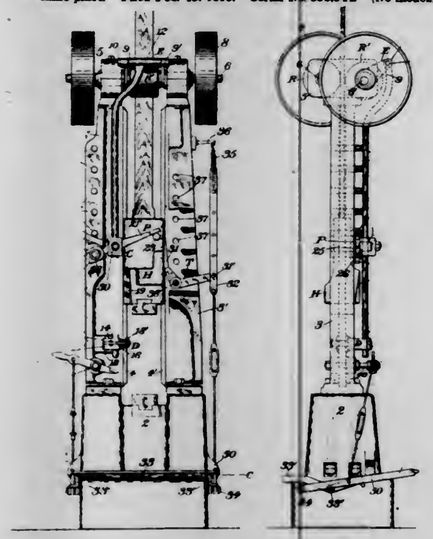


Claim.—1. In a clamp of the class specified, the combination with an upper and a lower clamping-member; the upper clamping-member comprising a receiving sleeve and a clamping-jaw, and having an opening intermediate of the lower end of said sleeve and the jaw; and the lower clamping-member comprising a clamping-jaw adapted to extend around the clamping-jaw of the upper member, and having a longitudinally-divided sleeve, the adjoining edges thereof meeting within the opening of the upper member, and having the sleeve thereof projecting into the receiving-sleeve when the members are assembled; and means for expanding said divided sleeve within the receiving-sleeve, and holding said members assembled, substantially as described.

2. In a clamp of the class specified, the combination with an upper and a lower clamping-member; the upper clamping-member comprising a receiving-sleeve and a clamping-jaw, and having an opening intermediate of the lower end of said sleeve and the jaw; and the lower clamping-member comprising a clamping-jaw adapted to extend around the clamping-jaw of the upper member, and having a longitudinally-divided, internally-screw-threaded sleeve, the adjoining edges thereof meeting within the opening of the upper member, and having the sleeve thereof projecting into the receiving-sleeve when the members are assembled; and a threaded-stud constituting a wedge adapted to enter and expand said divided screw-threaded sleeve in said receiving-sleeve, substantially as described.

3. In a clamp of the class specified, the combination with an upper and a lower clamping-member; the upper clamping-member comprising a receiving-sleeve and a clamping-jaw continuous from end to end thereof, and having an opening intermediate of the lower end of said sleeve and the jaw; and the lower clamping-member comprising a clamping-jaw adapted to extend around the clamping-jaw of the upper member, and having a longitudinally-divided internally-screw-threaded sleeve, the adjoining edges thereof meeting within the opening of the upper member, and having the sleeve thereof projecting into the receiving-sleeve when the members are assembled; and a screw-threaded stud constituting a wedge adapted to enter and expand said divided screw-threaded sleeve in said receiving-sleeve, substantially as described.

545,188. DROP-HAMMER. FREDERIC C. BILLINGS and FRANK LOMBARD, Harford, Conn., assignors to the Billings & Spencer Company, same place. Filed Feb. 15, 1895. Serial No. 538,544. (No model.)



Claim.—1. In a drop-hammer of the class specified, the combination with a frame; of a reciprocatory-hammer; lifting-rolls, one of which is shiftable toward and from the other; an actuating-rod in operative connection with said shiftable roll, and adapted for shifting said roll toward and from the other roll; a speed-reducing device comprising a lever connected to said actuating-rod, and having one end thereof fulcrumed to the frame, and having its other end in the path of movement of the hammer, whereby it will be operated by the hammer at a predetermined point in the ascending movement of said hammer to lift the actuating-rod with a relatively-low velocity as compared with the velocity of said hammer; and means co-operating with the hammer and adapted for controlling the closing movement of the shiftable roll, substantially as described.

2. In a drop-hammer of the class specified, the combination with a frame; of a reciprocatory-hammer; lifting-rolls, one of which is shiftable toward and from the other; an actuating-rod in operative connection with said shiftable roll, and adapted for shifting said roll toward and from the other roll; a speed-reducing device comprising a lever connected to said actuating-rod, and having one end thereof fulcrumed to the frame, and having its other end in the path of movement of the hammer, whereby it will be operated by the hammer at a predetermined point in the ascending movement of said hammer to lift the actuating-rod with a relatively-low velocity as compared with the velocity of said hammer; means co-operating with the hammer, and adapted for controlling the closing movement of the shiftable roll; a holding device in position and adapted for holding the actuating-rod in an elevated or roll-open position; and means for actuating said holding device, substantially as described.

3. In a drop-hammer of the class specified, the combination with a frame; of shiftable lifting-rolls, one of which is shiftable toward and from the other; a hammer; an actuating-rod for said rolls; and a speed-reducing device comprising a lever adjustably connected to said rod, and having one end thereof adjustably fulcrumed to the frame, whereby the height of movement of said hammer can be regulated, and the opposite end of said lever projecting into the path of movement of the hammer, whereby said actuating-rod and hammer have comparative movements of relatively-varying velocities, substantially as described.

4. In a drop-hammer, the combination with a frame; of an actuating roll-shifting rod; a reciprocatory-hammer; and a speed-reducing device consisting of a lever having its inner end fulcrumed to the frame and pivotally connected, intermediate of its ends to the roll-shifting rod and adapted to lift said rod, and having its opposite end thereof projected into the path of movement of the hammer, whereby at a predetermined point in the ascending movement of the hammer, a comparative movement is imparted to the shifting-rod at a relatively-low velocity, substantially as described.

5. In a drop-hammer of the class specified, the combination with a frame; of a reciprocatory-hammer; lifting-rolls; one of which is shiftable toward and from the other; an actuating-rod in operative connection with said shiftable-roll, and adapted for shifting said roll toward and from the other roll; a speed-reducing device comprising a lever connected to said actuating-rod, and having one end thereof fulcrumed to the frame, and its other end in the path of movement of the hammer, whereby it will be operated by the hammer at a predetermined point in the ascending movement of said hammer to lift the actuating-rod with a relatively-low velocity as compared with the velocity of said hammer; a holding device in position and adapted for holding the actuating-rod in an elevated or roll-open position; and means for actuating said holding device, subtantially as described, and for the purpose set forth.

6. In a drop hammer of the class specified, the combination with the side-frames, one of said side-frames having a series of openings therein; of lifting-rolls, one of said rolls shiftable into and out from engagement with the other of said rolls; a hammer; an actuating-rod operatively connected with one of said rolls for shifting said roll; and a speed-reducing device comprising a lever connected to said actuating-rod, and having one end thereof adapted to be fulcrumed in any one of said openings, and having its opposite end projecting into the path of the hammer, whereby the actuating-rod and hammer co-operate and have comparative movements of relatively-varying velocities, substantially as described

7. In a drop-hammer, the combination with a suitable framework carrying a reciprocatory-hammer, of two continuously rotatable hammer-lifting rolls, one of which is carried by an eccentric and is adapted for movement toward and from the other, an eccentric-actuating rod supported for longitudinal movement at one side of the path of movement of the hammer; a speed-reducing lever adjustably carried by the eccentric-actuating rod and having one end thereof fulcrumed upon the framework, and having the opposite end thereof projected into the path of movement of the hammer or into the path of movement of an abutment upon said hammer, and adapted to be operated by said hammer at a predetermined point in the ascending movement thereof, to impart longitudinal movement to the actuating-rod and reduce the velocity of said rod relatively to the velocity of the hammer, substantially as described, and for the purpose set forth.

8. In a drop-hammer, the combination with a frame; of hammer-lifting rolls, one of which is shiftable toward and from the other; a hammer; an actuating-rod for said shiftable-roll; a speed-reducing device operatively connected to said actuating-rod and operated by the hammer; and a holding device for holding said shiftable-roll in roll-opening position comprising a bracket secured to the frame and having a recess therein; a right-angled lever pivoted to said bracket and having its bent, free end projecting into the path of the hammer; and a sprieg secured in the recess of the bracket, and connected to said angled-lever, to hold the same in engagement with the actuating-rod, substantially as described.

9. In a drop-hammer of the class specified having a reciprocatory-hammer or ram, a pair of lifting rolls, one of which is shiftable toward and from the other, and an actuating-rod in connection with said roll, the combination therewith, and with the frame of the machine, of a speed-reducing lever in adjustable connection with the actuating-rod, and having a relatively short longitudinally-slotted arm fulcrumed upon a pin fixed to the framework of the machine, and having a relatively long arm projected into the path of movement of the drop-hammer, and adapted to be engaged and operated by said drop-hammer, to impart a relatively slow lifting movement to the actuating-rod at a predetermined point in the ascending movement of said hammer, substantially as described, and for the purpose set forth.

10. In a drop-hammer, the combination with the vertically reciprocating roll-shifting rod and with the reciprocatory-hammer, of a speed-reducing device consisting of a lever pivotally and adjustably connected intermediate to the ends thereof, to the roll-shifting rod, and having one end thereof movably-fulcrumed at one side of said rod, and having the opposite end thereof projected into the path of movement of an actuating-abutment upon the hammer; whereby, at a predetermined point in the ascending movement of the hammer, a comparative movement is imparted to the shifting-rod, at a relatively slow velocity, substantially as described, and for the purpose set forth.

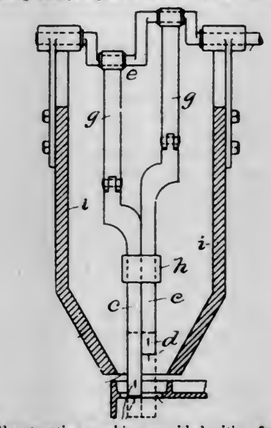
11. In a drop-hammer, in combination, a pair of lifting-rolls shiftable, the one toward and from the other, an actuating-rod in connection with the shifting-roll and adapted for longitudinal movement, to effect an opening or closing of said rolls; a speed-reducing lever pivotally-carried by said actuating-rod, having one end thereof fulcrumed at one side of said rod, and having the opposite end thereof projected into the path of movement of the hammer and adapted to be actuated by said hammer; a reciprocatory-hammer in position, and adapted for actuating said speed-reducing lever, at a predetermined point in the ascending movement of said hammer; and an auxiliary-holding device and a trip-lever, co-operating with each other and adapted, the holding-device for engaging and holding the actuating-rod in an elevated position, and the trip-lever for automatically-engaging and holding the hammer in its elevated position, and means in connection with, and adapted for, simultaneously actuating said auxiliary-holding device and trip-lever, and to throw them into engaging or disengaging positions, respectively and alternately, substantially as described, and for the purpose set forth.

12. In a drop-hammer, the combination with the vertically reciprocatory roll-actuating rod and with the vertically-reciprocatory hammer, in co-operative connection with said roll-actuating rod, of an auxiliary-holding device in position and adapted to engage, and hold the actuating-rod in an elevated position; a trip-lever in position and adapted for normally-engaging and holding the hammer in an elevated position; and a treadle mechanism in connection with, and adapted for, simultaneously operating the auxiliary-holding device and trip-lever, to simultaneously throw the auxiliary-holding device into engagement with the actuating-rod, and to throw the trip-lever out of engagement with the hammer, or vice versa, subetantially as described, and for the purpose set forth.

13. In a drop-hammer, the combination with the holding-device for the roll-actuating rod, and with the tripping-lever for the hammer, of a treadle mechanism in operative connection therewith and comprising a U-shaped treadle having the two side arms thereof pivotally-connected to opposite sides of the base or frame of the machine, and a U-shaped weighted-lever, having its side arms fulcrumed upon opposite sides of said frame, approximately midway of the length of said arms, and having their outer ends in sliding engagement with the side arms of the treadle, and adapted for normally-elevating said treadle, substantially as described, and for the purpose set forth.

545,189. DEVICE FOR FEEDING FIBER TO FIBER-TREATING MACHINES. JAMES M. BLAISDELL, May's Landing, N. J. Filed Mar. 12, 1894. Serial No. 503,314. (No model.)

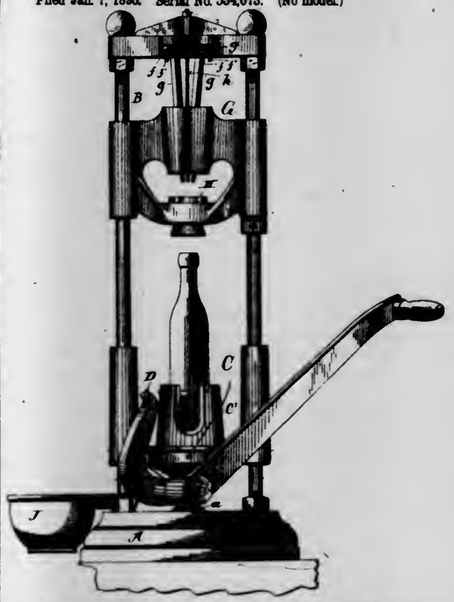
Claim.—1. A fiber-treating machine provided with a hopper having converging walls and a reduced aperture at the delivering end, in combination with two oppositely reciprocating plungers moving rectilineally through said reduced aperture, and means for simultaneously operating said plungers substantially as set forth.



2. A fiber treating machine provided with a feed aperture, and a hopper having converging walls and a reduced delivering aperture, in combination with two oppositely reciprocating plungers, moving rectilineally through said reduced aperture, guides for said plungers, and means for operating them simultaneously, substantially as set forth.

3. A fiber treating machine provided with a feed aperture, and a hopper having a reduced delivering aperture, in combination with two oppositely reciprocating plungers lying side by side and moving rectilineally through said reduced aperture, guides for said plungers, a rotating crank-shaft, and links for connecting said plunger with the said crank shaft, substantially as set forth.

545,190. CORKING-MACHINE. JOHN C. BLEVNEY, Newark, N. J., assignor to the De La Vergne Bottle and Seal Company, of New Jersey. Filed Jan. 7, 1895. Serial No. 534,073. (No model.)



Claim.—1. In a corking-machine, the combination of a stationary head-piece, a plunger secured thereto, a sliding throat for a stopper beneath said plunger, a bottle rest and means for raising the same with a bottle thereon, whereby the bottle may be moved against said throat and force the same up to the plunger and insert a stopper, substantially as described.

2. In a corking-machine, the combination of a stationary head-piece, a plunger secured thereto, a sliding throat for a stopper be-

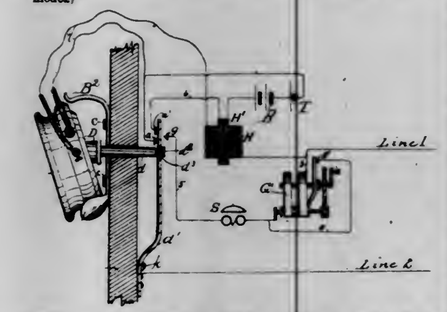
neath said plunger, a bottle-rest, a cam below the same, and means for operating said cam, whereby a bottle may be raised to said throat-piece and press the same up over said plunger and insert a stopper, substantially as described.

3. In a corking-machine, the combination of a stationary head-piece provided with radiating grooves, two or more convergent plungers secured thereto, and adapted to have a lateral motion within said grooves, a throat for a stopper beneath said plungers, a bottle-rest and means for raising the same with a bottle thereon, whereby the bottle may be brought against said throat and force the same over the plungers and insert a stopper, substantially as described.

4. In a corking-machine, the combination of a stationary head-piece provided with radiating grooves, two or more convergent plungers secured thereto and adapted to have a lateral motion along said grooves, a movable guide-piece having oblique openings for receiving and guiding said plungers, a throat for a stopper beneath said guide-piece, a bottle-rest and means for raising the same with a bottle thereon up to the plungers, whereby the bottle may be made to receive a stopper, substantially as described.

5. In a corking machine, the combination of a stationary head-piece having radiating grooves, two or more convergent plungers adapted to have a lateral motion along said grooves a bottle-rest, a cam beneath the same and a base provided with a roller beneath said cam, said roller being adapted to permit the cam to travel thereon, and means for operating the same, whereby the bottle may be lifted up to said plungers and cause the same to insert a stopper, substantially as described.

545,191. TELEPHONE HOLDER AND CUT-OUT. ARTHUR F. BOARDMAN, Somerville, assignor of one-half to James D. Leatherbee, South Braintree, Mass. Filed Jan. 2, 1894. Serial No. 495,315. (No model.)



Claim.—1. In a telephone switch, a receiver, a clamp therefor comprising a trough and a spring adapted to grasp and hold said receiver, telephone and call circuits, a spindle operated by inserting said receiver into and withdrawing it from said clamp to open or close said circuits.

2. In a telephone switch, a case, a receiver, a clamp for said receiver mounted on the outside of said case comprising a trough and spring adapted to grasp and hold said receiver, telephone and call circuits, switch contacts within said case controlling the continuity of said circuits, a spindle operating said switch contacts, operated by inserting the receiver into and withdrawing it from said clamp.

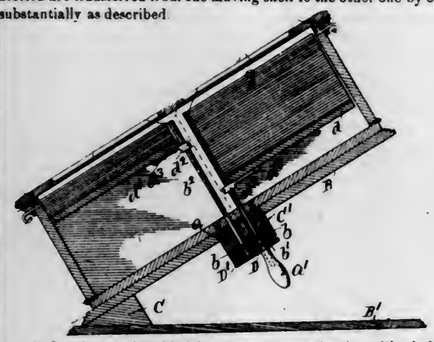
3. In a telephone switch, telephone and call apparatus, and circuits, a switch controlling said circuits, a "watch case" telephone receiver, a clamp comprising a curved trough and spring adapted to fit the face and edges of said receiver, and adapted to grasp and hold said receiver, said switch being operated by the insertion of the receiver into said clamp.

4. In a telephone switch, a telephone circuit, a call circuit, a switch for controlling said circuits, a "watch case" telephone receiver, a clamp comprising a curved trough and spring adapted to fit the face and edges of said receiver and adapted to grasp and hold said receiver, a spindle, said switch being operated by said spindle when said receiver is inserted into and withdrawn from said clamp.

545,192. PHOTOGRAPH HOLDER AND EXHIBITOR. HANS BORGERSEN, Chicago, Ill. Filed Apr. 17, 1895. Serial No. 546,038. (No model.)

Claim.—1. In a device of the kind described, the combination with a holder and exhibiting-case, containing pictures to be exhibited and provided on the under side with a pivotal body, of a base-support, consisting of an inclined part and a horizontal part joined at their meeting-ends, said pivotal body projecting through the inclined part and providing for the turning of the case end for end parallel with said inclined part, substantially as described.

2. In a device of the kind described, the combination with a holder and exhibiting-case, supported in an inclined position and having a transparent top, of companion movable shelves located in the respective ends of said case and adapted to support a packet of pictures, and means for simultaneously imparting an alternate movement in opposite directions to said shelves, whereby the pictures being exhibited are transferred from one moving shelf to the other one by one, substantially as described.



3. In a device of the kind described, the combination with a holder and exhibiting-case, supported in an inclined position, of companion endless screw-rods, having suitable bearings in the lower part of said case and extending upwardly therein and stopping short of the top, the companion engaging pinions, mounted on said rods, the movable shelves, traveling-nuts, mounted on said rods and provided with strap-extensions and rigidly fastened to the adjacent ends of said shelves, whereby the rotating of said rods will cause said shelves to have a simultaneous movement in opposite directions, substantially as described.

4. In a device of the kind described, the combination with a holder and exhibiting-case, provided with a pivotal body, of a supporting-base, pivotally mounting said case in an inclined position, the screw-rods, having their lower ends journaled in said pivotal body and the upper ends stopping short of the interior top, the companion engaging pinions, mounted on the lower part of said rods, and the movable companion shelves, having a threaded engagement and supported on said rods which are adapted to be simultaneously rotated in opposite directions, whereby one of said shelves is moved upward and the other downward, substantially as described.

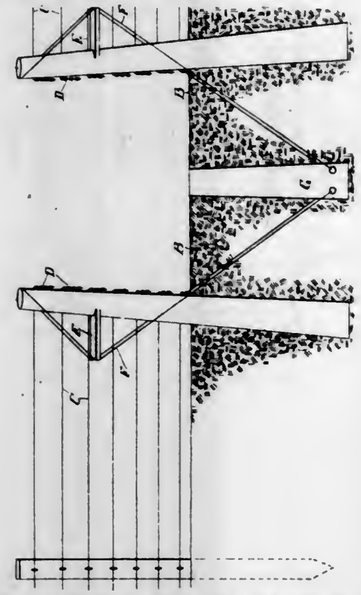
5. In a device of the kind described, the combination with a holder and exhibiting-case, supported in an inclined position, of companion screw-rods, the lower ends of which are provided with suitable journal-bearings and one of said rods projecting below the bottom of the case, and the upper ends stopping short of the interior top, a handle, fixed on the lower projecting end of one of said rods, the companion engaging-pinions, the shelves, having a threaded engagement with an alternate up-and down movement on said rods, and a packet of pictures, supported on and having their ends resting against one of said rods, whereby when the same is rotated the shelf is elevated and each picture as it clears the end of the rod gravitates onto the companion shelf, substantially as described.

545,193. PLOW-POINT. JAMES W. BOULDIN, Prescott, Ark. Filed Feb. 19, 1894. Serial No. 500,818. (No model.)



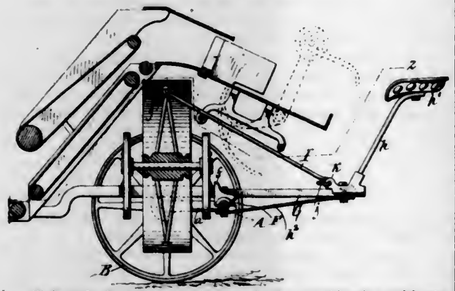
Claim.—A plow point having a forwardly convexed body portion or blade, and an integral cutter or fender projecting forward from one edge of the body portion or blade, the line of intersection of the cutter and the blade being in advance of those portions of the blade in the same horizontal plane, and the angle of intersection being greater than a right angle, whereby the cutter inclines outward or from the blade toward its front or cutting edge, the lower end of the body portion or blade forming a feeding point which inclines laterally in the opposite direction from the cutter or fender to compensate for the lateral draft caused by the cutter or fender, substantially as specified.

545,194. WIRE FENCE. JOHN W. BUCHANAN, Smithville, Ohio. Filed Dec. 3, 1894. Serial No. 530,632. (No model.)



Claim.—The combination with the post, A, the lateral arm, E, secured thereto intermediate the ends, and the anchor, G, located at the side of the post opposite said arm, of the brace wire, F, secured to the post above the arm extending downwardly over the end of the arm and then inclined downwardly to the opposite side of the post and secured to the anchor, substantially as described.

545,195. TRANSPORTING-TRUCK. HENRY J. CASE, Owasco, assignor to the Johnston Harvester Company, Batavia, N. Y. Filed May 13, 1895. Serial No. 549,091. (No model.)



Claim.—1. In a transporting truck, the combination with the frame provided with a rearwardly offset body or central portion, and wheel spindles arranged at the ends of the offset body, of saddles arranged on said frame, and clamping devices arranged adjacent to said saddles, substantially as set forth.

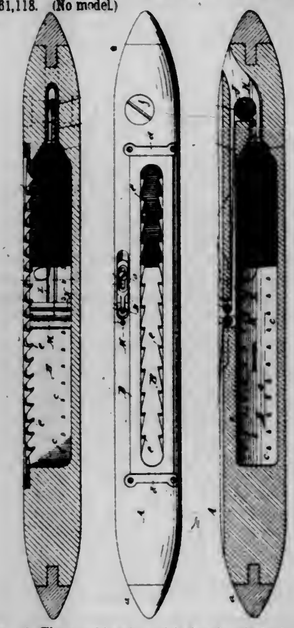
2. The combination with the frame provided with an offset body or central portion and wheel spindles arranged at the ends of the offset body, of saddles arranged at the junction of the offset body with said spindles and each provided with a seat and adjacent to said seat with a raised lug or post, and fastening bolts arranged in said lugs or posts, substantially as set forth.

3. The combination with the frame of the truck having a rearwardly offset body or central portion and wheel spindles arranged at the ends of said offset body, of a seat supporting bar extending rearwardly from the offset body of the frame and a hanger or supporting rod whereby the seat supporting bar is sustained in its normal position, substantially as set forth.

4. In a transporting truck, the combination with the frame and the wheels journaled thereon of a supporting bar projecting rearwardly from said frame, a seat mounted on said supporting bar, and a hanger or supporting rod connected with the rear portion of the supporting bar, substantially as set forth.

5. In a transporting truck, the combination of a rearwardly offset frame having at its front ends laterally projecting wheel spindles and wheels, supporting saddles and clamping devices whereby the truck frame is detachably secured to the harvester frame, a seat supporting bar extending rearwardly from the offset frame and a seat mounted thereon, substantially as set forth.

545,196. LOOM-SHUTTLE. WILLIAM H. CRAIG, Syracuse, N. Y., assignor to E. C. Stearns & Co., same place. Filed Aug. 5, 1890. Serial No. 361,118. (No model.)



Claim.—1. The combination with the shuttle body having an eye through which the shuttle thread passes, of two tension rollers arranged in said eye, a support on which one of said rollers is mounted capable of movement on the shuttle body toward and from the other roller, and means whereby said support is secured in its adjusted position, substantially as set forth.

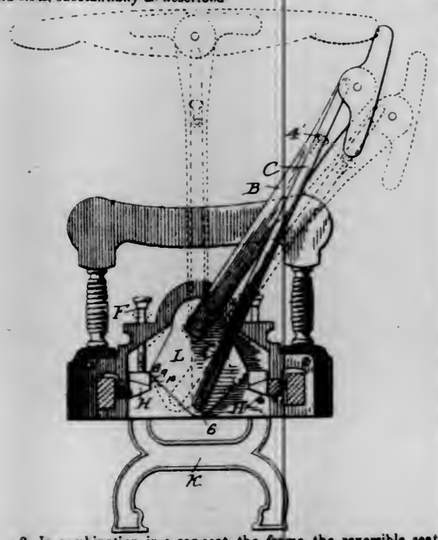
2. The combination with the shuttle body having an eye through which the shuttle thread passes, of a tension roller mounted on a stationary bearing in said eye, a roller support capable of movement on the shuttle body toward and from the stationary roller, a tension roller removably mounted on said support, and means whereby said support is secured in its adjusted position, substantially as set forth.

3. The combination with the shuttle body having an eye through which the shuttle thread passes, and a tension roller arranged in said eye, of a plate provided with an arbor projecting into said eye and capable of movement toward and from said roller, a removable tension roller mounted on said arbor, and means whereby said plate is secured in its adjusted position, substantially as set forth.

545,197. CAR-SEAT. GEORGE W. DRYER, Easton, Pa., assignor to the Bushnell Manufacturing Company, same place. Filed Mar 20 1895. Serial No. 542,521. (No model.)

Claim.—1. In combination, in a car seat, the base or frame, the seat back, the main striker arms pivoted to the base and back, plates pivoted to the frame and supplemental striker arms pivoted to the lower ends of the plates and pivoted to the seat back eccentrically, said main striker arms having slots with lateral extensions at their

upper ends, and the said supplemental arms having studs adapted to said slots, substantially as described



2. In combination in a car seat, the frame, the reversible seat back, the pivoted plates L supported upon fixed plates, striker arms supported upon the same pivot as the plates L, and connecting the seat back with the seat frame supplementary striker arms pivoted on the lower ends of plates L, a sliding connection between the main and supplemental striker arms a series of notches on both sides of the plates L, and locking bolts arranged to engage with said notches, said striker arms supporting the seat back adjustably, substantially as described.

3. In combination, in a car seat, the frame or base, the plates L pivoted thereto and having notches on its opposite edges, the seat back, the main striker arms pivoted to the frame and to the seat back, the supplemental striker arms pivoted to the seat back and to the plates at the lower ends thereof and the locking bolts arranged on opposite sides of the plates to engage the notched edges thereof, said main and supplemental striker arms having a sliding connection with each other substantially as described.

4. In combination in a car seat, the seat frame, the reversible seat back, the striker arms connecting the frame and back, the pivoted plates L, the supplemental striker arms connected therewith, the pivoted locking bolts, to engage the plates and arranged on opposite sides of the same and the vertically extending push bars for operating the bolts said main and supplemental striker arms having a sliding connection with each other, substantially as described.

5. In combination in a car seat, the seat frame, the reversible seat back, the striker arms connecting the back with the frame, the pivoted plates L, the connection therefrom to the back and the pivoted bolts extending longitudinally of the seat and having overlapping ends and the vertically arranged push bars for said locking bolts, substantially as described.

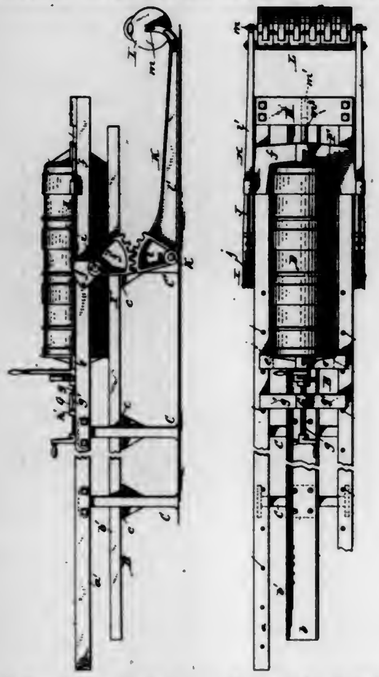
6. In combination in a car seat, the frame and seat back, the striker arm connecting the frame and back, the pivoted locking plates L, the connections therefrom to the seat back, the locking bolts, the push bars therefor and the end plates J having recessed inner faces for the plates L to work in, lugs for attachment to the frame and guides for the push bars, substantially as described.

7. In combination, the seat back, the seat frame, the striker arms pivotally connected thereto and to the seat back, the supplementary striker arms having a sliding and locking connection therewith and locking plates to which both striker arms are connected with means for locking the said plates, substantially as described.

545,198. CHEESE-PRESS. HARVEY FELDMEIER, Little Falls, N. Y., assignor to D. H. Burrell & Co., same place. Filed Dec. 17, 1894. Serial No. 532,009. (No model.)

Claim.—1. The combination with the press frame, the head block and its hand pressure mechanism, and the tail block moving on guides in the press frame, of flexible draft connections attached to the tail block, an automatic weight lever operating upon the same, and circular supports for the draft connections maintaining the latter parallel with the guides on the press-frame in the different positions of the tail block, substantially as set forth.

2. The combination with the press frame and the tail block moving on guides in the press-frame, of flexible draft connections attached to the tail block, an automatic weight lever, and intermediate levers mounted on fixed pivots on the press frame and having at opposite ends circular segments to which the draft connections are secured and connections with the weight lever, substantially as set forth.



3. The combination with the press frame and the tail block moving on guides in the same, of flexible draft connections attached to the tail block, an automatic weight lever, intermediate levers mounted on fixed pivots in the press frame and having circular segments to which the draft connections are secured, and means whereby the leverage between the weight lever and the intermediate levers is increased proportionally as the effective length of the weight lever is decreased in moving out of its horizontal position, substantially as set forth.

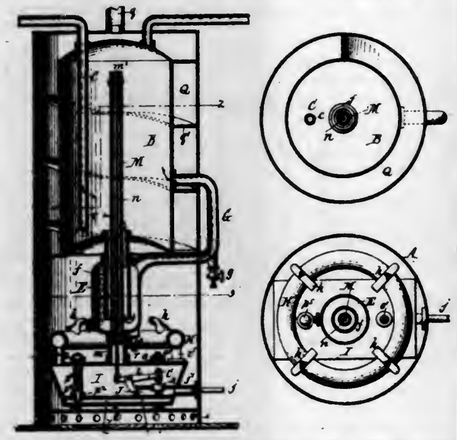
4. The combination with the press frame and the tail block moving on guides in the same, of intermediate levers pivoted to the press frame and having their lower arms provided with gear segments, draft connections extending from the upper arms of the intermediate levers to the tail block, and an automatic weight lever provided with gear segments which mesh with the segments of the intermediate levers, substantially as set forth.

5. The combination with the press frame and the tail block moving on guides in the same, of intermediate levers pivoted to the press frame and provided at their lower ends with eccentric or spiral gear segments, draft connections extending from the upper arms of said levers to the tail block, and automatic weight levers provided with eccentric or spiral gear segments which mesh with those of the intermediate levers, substantially as set forth.

545,199. WATER-HEATER. ALEXANDER D. GORDON, Buffalo, N. Y. Filed Jan. 14, 1895. Serial No. 534,765. (No model.)

Claim.—1. The combination with the main water heating chamber provided with an inlet for the cold water, of an auxiliary water heating chamber of less capacity arranged below the same and communicating with the main chamber by a descending cold water passage and by an ascending hot water passage, a gas burner arranged adjacent to said auxiliary chamber, a valve controlling the gas supply to said burner, and a thermostatic member exposed with its upper portion to the water in said main chamber and with its lower portion to the water in said auxiliary chamber, substantially as set forth.

2. The combination with the main water heating chamber, provided with an inlet for the cold water, of an auxiliary water heating chamber arranged below the same, a descending passage for cold water extending from the bottom of said main chamber to the lower portion of said auxiliary chamber, an ascending passage for the heated water extending from the upper portion of said auxiliary chamber, outside of said cold water passage, to the main chamber, a gas burner arranged adjacent to said auxiliary chamber, a valve controlling the gas supply to said burner and a thermostatic member controlling said valve and arranged in both chambers, substantially as set forth.



3. The combination with the main water heating chamber provided with an inlet for the cold water, of an auxiliary water heating chamber of less capacity arranged below the same and communicating therewith, a gas burner arranged adjacent to said auxiliary chamber, a valve controlling the gas supply to said burner, a thermostatic tube secured with its lower portion to said auxiliary chamber and extending upwardly through the same and into said main chamber, and a valve rod secured with its upper end to the upper end of said tube and extending downwardly through the same and connecting at its lower end with said valve, substantially as set forth.

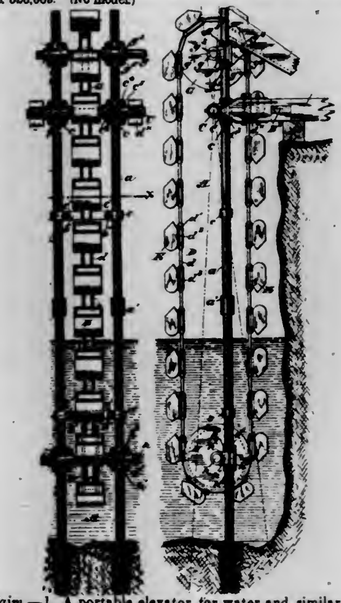
4. The combination with a main boiler or heating chamber and an auxiliary heating chamber, of a tube connecting the bottom of the main heating chamber with the top of the auxiliary heating chamber and terminating near the bottom of the latter, a circulating pipe connecting the top of the auxiliary heating chamber with the lower portion of the main heating chamber, a thermostatic tube or member extending through said connecting tube and into the main heating chamber and separated from said connecting tube by a water passage, a gas burner arranged adjacent to the auxiliary heating chamber and having a gas supply, and a valve controlling the passage of the gas to the burner and connected with the thermostatic tube or member, substantially as set forth.

5. The combination with a main boiler or heating chamber and an auxiliary heating chamber arranged below the same and connected therewith, of a circulating pipe connecting the auxiliary chamber with the main chamber, a gas burner arranged adjacent to the auxiliary chamber and having a gas supply, a regulating valve controlling the passage of gas to the burner, and a thermostatic tube arranged in said heating chambers and connected with said regulating valve, substantially as set forth.

6. The combination with a heating chamber, of a gas delivery chamber arranged underneath said heating chamber and provided with a gas inlet and in its top with an opening, a gas burner connected with said delivery chamber, a regulating valve applied to said gas inlet and arranged within the gas delivery chamber, a thermostatic tube arranged in said heating chamber and fixed at its lower end, whereby the tube is caused to expand upward, and a connecting rod extending through said thermostatic tube and the opening in the top of the gas delivery chamber and secured at its upper end to the thermostatic tube and having its lower end connected with said regulating valve, substantially as set forth.

7. The combination with a water heating chamber, of a gas delivery chamber arranged underneath said chamber, connected therewith by a tube or passage, and provided with a gas inlet, a burner connected with said delivery chamber, a regulating valve applied to said gas inlet, a thermostatic tube arranged in said heating chamber and having its lower end secured within said connecting tube or passage, whereby the thermostatic tube shuts off communication between the water heating chamber and the gas delivery chamber and a connecting rod secured at its upper end to the thermostatic tube, extending through the latter and said connecting tube or passage and having its lower end connected with said gas regulating valve, substantially as set forth.

545,200. WATER-ELEVATOR. GEORGE C. HORST, Columbus, Ohio, assignor to Joseph A. Jeffrey, same place. Filed Nov. 13, 1894. Serial No. 528,689. (No model.)



Claim.—1. A portable elevator for water and similar material, having a horizontal base frame or support at or near the upper end, and a vertical leg formed of upright tubing, and an endless chain carrier supported at the top and at the bottom on vertically adjustable shafts held in movable bearings clamped to the said upright tubes, substantially as set forth.

2. In a portable elevator, a vertical leg formed of two parallel tubes, in combination with an endless chain carrier having buckets, a bottom sprocket wheel, a vertically adjustable shaft for said wheel, movable bearings for said shaft clamped to the said tubes, a top sprocket wheel, a vertically adjustable shaft, a delivery chute vertically adjustable with said shaft, and vertical adjustable devices for securing said leg to a stationary bed frame or support, substantially as set forth.

3. The combination with the vertical leg of the elevator, and the supporting frame connected to the upper part thereof of a vertically adjustable trunnion shaft joining the vertical leg and the supporting frame, whereby the vertical leg can be supported on the ground in any of several positions independent of the upper frame, substantially as set forth.

4. The combination of the vertical elevator leg having an endless carrier, the vertically adjustable head shaft, the vertically adjustable chute F, and the vertically adjustable trunnion shaft, substantially as set forth.

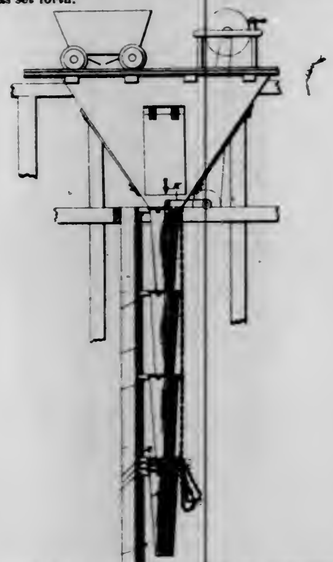
5. The combination with the vertical elevator frame and the base frame or support longitudinally adjustable on the vertical frame, of the endless carrier mounted on the elevator frame, and the trunnion support for said frame on an axis transverse to the planes of the carrier, substantially as set forth.

6. The combination with the base frame or support having the overhanging or projecting carriers, and the driving shaft mounted on said frame, of the vertical frame having the two vertical side supports, the trunnion shaft secured to said side supports and longitudinally adjustable thereon and mounted in the said carriers of the bed frame, and the endless carrier mounted on the vertical frame, substantially as set forth.

545,201. DEVICE FOR LOWERING AND DELIVERING COAL. LYMAN D. HOWARD, Columbus, Ohio, assignor to Joseph A. Jeffrey, same place. Filed Mar. 2, 1891. Serial No. 383,432. (No model.)

Claim.—1. In a coal lowering or piling mechanism, the combination of an upper supporting frame, a downwardly extensible delivery duct formed of a series of duplicate conical downwardly narrowing sections, the upper section supported from said frame, one or more ropes extending downward to the bottom section and adapted to elevate the sections below the upper one, a guide or brace for preventing lateral movement of the sections, and stops for preventing the sections from escaping respectively one from the other.

2. In a coal lowering or piling mechanism, the combination of the top supporting frame, a downwardly extensible duct formed of overlapping sections with the upper section supported from said frame, one or more ropes secured to the lower section for elevating it and lifting those above it, the movable sections of said series being provided at their upper ends with laterally extending guide or brace arms, one or more stationary guides or braces at the sides of the said sections, and stop devices on each movable section engaging with stop devices on the section above it to limit their relative movements, substantially as set forth.



3. In a coal lowering or piling mechanism, the combination of the top supporting frame, a downwardly extensible tubular delivery duct formed in separate overlapping telescoping sections, each section having a tubular body and one or more laterally extending supporting projections, one or more vertical series of stationary supports or rests, each of said series being adapted to engage with one of the supporting projections on a section of the delivery duct, and an elevating rope connected to the lowermost section, whereby each section can be vertically supported independently of the others, but they can all be elevated together when the bottom one is lifted, substantially as set forth.

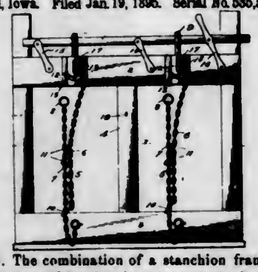
545,202. CAR-COUPLING. WILLIAM E. HOYT, Ravenswood, W. Va. Filed Apr. 11, 1895. Serial No. 545,390. (No model.)



Claim.—1. In a car coupler, a draw-head formed with segmental depressions or recesses in its upper and lower faces and provided with a vertical perforation for the passage of a locking or coupling pin, in combination with a bifurcated knuckle pivoted to the draw-head upon one side of the longitudinal center thereof and having an oppositely disposed pair of segmental arms located above and beneath the draw-head and operating in said depressions or recesses, and a vertically movable coupling pin notched to permit the outward and inward movement of said segmental arms and also adapted to engage said arms above and beneath the draw-head and lock said knuckle in closed position, said pin being disposed upon the opposite side of the draw-head to that upon which the knuckle is pivoted, as and for the purpose specified.

2. In a car coupler, the combination with the draw-bar and draw-head provided with a longitudinal perforation extending through the same, of a plunger rod located within said perforation, and provided with a shoulder operating in connection with an internally arranged shoulder within said longitudinal perforation for limiting the inward movement of the plunger, a head at the forward end of said plunger, a spiral spring disposed around said plunger and interposed between the head at the front end thereof and the internal shoulder within the draw-bar, and a retaining pin passing through the rear end of said plunger and connecting with the car body for holding the plunger drawn back, all arranged and adapted to operate in the manner specified.

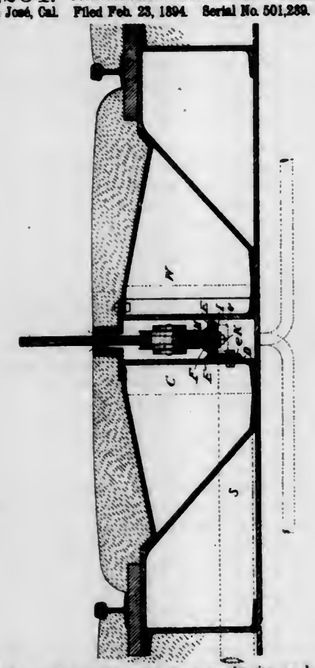
545,203. CHAIN STANCHION. HANS P. JENSEN and HANS LARSEN, Newell, Iowa. Filed Jan. 19, 1895. Serial No. 535,538. (No model.)



Claim.—1. The combination of a stanchion frame provided at its top with a horizontal bar 2, bolt casings mounted vertically on the bar 2 and provided with chain receiving slots, bolts disposed vertically in the casings and having a limited movement and provided at their upper ends with horizontal arms, a releasing bar arranged at the upper edge of the bar 2 and receiving the arms of said bolts on its upper edge, a link pivoted to the bar 2 and to the releasing bar, and an operating lever fulcrumed on the stanchion frame and connected with the releasing bar and adapted to swing the latter upward, whereby the bolts are simultaneously operated, substantially as described.

2. The combination of a stanchion frame, bolt casings mounted thereon and having inclined slots and provided with vertical slots, vertically disposed L-shaped bolts mounted on the casings, a horizontally disposed releasing bar located at the top of the stanchion frame beneath the arms of the bolts, a link connecting the releasing bar with the stanchion frame, and an operating lever similarly connected with the releasing bar and the stanchion frame, and projections mounted on the bolts and arranged in the vertical slots of the bolt casings and limiting the upward movement of the releasing bar, substantially as described.

545,204. CONDUIT ELECTRIC RAILWAY. CHARLES H. JOHNSON, San José, Cal. Filed Feb. 23, 1894. Serial No. 501,289. (No model.)



Claim.—1. In combination, the conduit, the angle iron secured therein forming a continuous shelf, the insulating material supported thereby, and the wire having its lower portion embedded within said insulating material and its upper portion exposed, substantially as described.

2. In combination, the conduit, the angle iron secured to the wall thereof, and forming a continuous shelf, flanges projecting upward from said shelf, insulating material upon said shelf and confined by the flanges and a wire having its lower portion embedded in said insulating material, substantially as described.

3. In combination, the conduit, the continuous shelf secured therein, the wire holders having shanks secured in said shelf, the wire passing over said wire holders, and the insulating material filling in the space between said wire and shelf and inclosing the lower portion of the wire throughout its length, substantially as described.

4. A trolley for conduit electric railways comprising the divided pipe P, flanges H' thereon with means for clamping them together, and an insulating washer interposed between said flanges, substantially as described.

5. A trolley for conduit systems comprising the divided pipe having its sections insulated from each other, the outer section having a squared outer end, the box shaped insulating covering surrounding said squared end, and the trolley wheel carrier having a socket clamped upon said insulating covering, substantially as described.

545,205. PROCESS OF SEPARATING GOLD. HENRY W. KELLY, Chicago, Ill. Filed Feb. 11, 1895. Serial No. 538,007. (No specimens.)

Claim.—1. In the separation of gold and other precious metals from ore, the herein described process which consists in mixing pulverized ore with bone dust or its equivalent, then adding water in excess of the bulk of said mixture, then agitating the same for from six to eight hours, then letting the mixture stand until settled and finally eliminating the ore at the bottom of the mass substantially as described.

2. The herein described process of separating gold the same consisting in mixing pulverized ore with bone dust and after adding water in excess of said ore and bone dust, then agitating the same for from six to eight hours and after settling adding and stirring in alkali with the water and bone dust and letting it stand for from four to six hours with an occasional stirring, and finally drawing off the water and passing it over amalgamating plates and extracting the gold therefrom, substantially as described.

3. The herein described process of separating gold the same consisting in mixing pulverized ore with bone dust and after adding water in excess of the bulk of said ore and bone dust, then agitating the same for from six to eight hours, and after settling adding alkali and letting the mass stand for from four to six hours with an occasional stirring, then drawing off the water, passing the same through a filter and conducting it over amalgamating plates, substantially as described.

4. The herein described process of separating gold from ore, the same consisting in mixing bone dust with pulverized ore then adding water in excess of the bulk of bone dust and ore, then stirring the mass for the time and in the manner specified and after settling adding an alkali, then letting it stand for from four to six hours with an occasional stirring, then drawing off and filtering the water, then passing the filtered water over amalgamating plates for extracting the gold therefrom, and finally removing the bone dust and dirt from the remaining heavy and settled ore, and then recovering the gold therefrom, substantially as described.

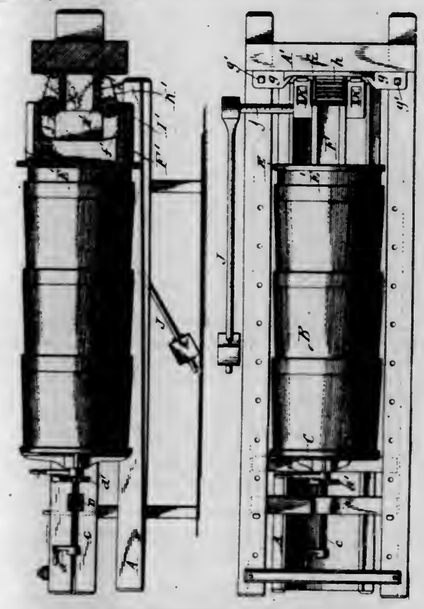
545,206. CHEESE-PRESS. CARL J. LUNDSTROM, Little Falls, N. Y., assignor to D. H. Burrell & Co., same place. Filed Jan. 9, 1895. Serial No. 534,302. (No model.)

Claim.—1. The combination with a supporting plate and a pressure block movable toward and from the same, of arms on the block and plate forming between them two pairs of opposing surfaces, a wheel arranged between each pair of opposing surfaces and geared with its support so as to roll as the block moves toward or from the plate, gear devices connecting said wheels and causing them to move in unison, and means whereby one of said wheels is actuated, substantially as set forth.

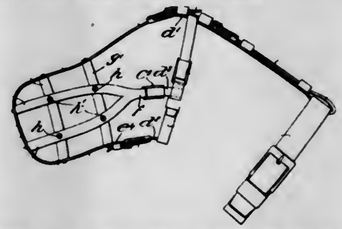
2. The combination with a supporting plate and a pressure block movable toward and from the same, of parallel arms secured respectively to the plate and the block, pinions interposed between adjacent arms and geared thereto, gears connecting the pinions, and means whereby one of said pinions is actuated, substantially as set forth.

3. The combination with a supporting plate and a pressure block movable toward and from the same, of parallel arms secured respectively to said plate and block and provided on their opposing sides with gear racks, gear pinions arranged between adjacent racks and meshing therewith, intermeshing gear segments secured to the pinions, and an actuating lever connected with one of the pinions, substantially as set forth

4. The combination with a supporting plate and a pressure block movable toward and from the same, of parallel arms secured respectively to said plate and block and provided on their opposing sides with gear racks, gear pinions arranged between adjacent racks and meshing therewith, a pair of gear segments secured to opposite sides of each pinion, and a weight lever secured to one of said pinions, substantially as set forth.



545,207. MUZZLE. JOHN B. MILLER, New Windsor, N. Y. Filed Feb. 28, 1895. Serial No. 539,977. (No model.)



Claim.—1. A muzzle consisting of a cage, an adjustable neck strap, an adjustable check strap and a collar strap, the cage being removably secured to the neck strap, and the neck strap removably secured to the collar strap by the check strap, whereby the cage is confined to the snout of the animal by the neck, check and collar straps, substantially as and for the purposes set forth.

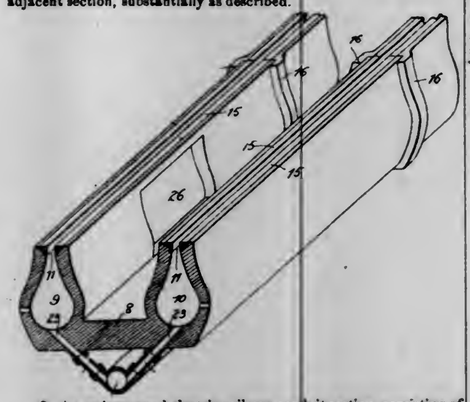
2. In an animal muzzle, a cage, consisting of the hoop straps, double side, top and bottom straps, the side, top and bottom straps crossing each other and united together in front of the hoop straps, and crossing the hoop straps and united thereto at the sides, top and bottom of the cage, neck and check straps and buckles consisting of gripping jaws or plates pivotally secured, the buckles uniting the cage to the neck strap, and the latter to the check-strap, substantially as and for the purposes set forth.

545,208. UNDERGROUND ELECTRIC RAILWAY. EMMA E. MOORE, Chicago, Ill. Filed Nov. 16, 1894. Serial No. 529,052. (No model.)

Claim.—1. An underground electric railway conduit-section that is U-shaped in cross-section and provided with separate conduits located in the two vertical side walls of the section and each having its upper portion contracted and provided with a slot for passage of a trolley-pole, substantially as described.

2. An underground electric railway conduit-section that is U-shaped in cross-section, having separate conduits located in the ver-

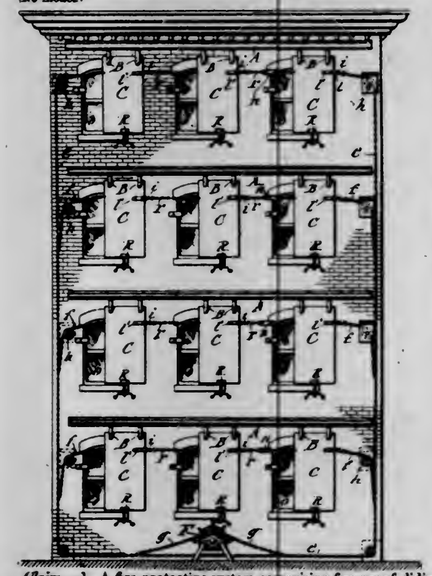
tical walls of the section, and each section provided at one end with a flange adapted to receive and form a close joint with the end of an adjacent section, substantially as described.



3. An underground electric railway conduit section, consisting of vitrified piping substantially U-shaped in cross-section and provided with passages in the vertical portions thereof, forming two separate inclosed conduits having slots at the top for passage of a trolley-pole, substantially as described.

4. An underground electric railway conduit-section substantially U-shaped in cross-section, comprising two separate conduits 9 and 10, located in the vertical side walls of the section and each provided with waste passages 23, in combination with a drain 21 in communication with said passages, substantially as described.

545,209. FIRE-PROTECTIVE WINDOW-SHUTTER. EDWIN J. MCCORMICK, Syracuse, N. Y. Filed Mar. 11, 1895. Serial No. 541,230. (No model.)

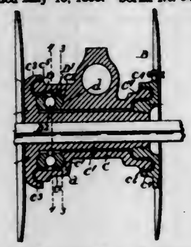


Claim.—1. A fire-protective system comprising fire-proof sliding outside shutters, separate chains between the respective shutters of each row and detachably connected thereto, a main chain extending in opposite directions from the drum of the winch and connected at its ends to opposite ends of the uppermost row of shutters, branch chains connecting the other rows of shutters to the main chain, and pulleys pivoted to the building and carrying the branch-chains in the manner set forth and shown.

2. In combination with a row of shutters connected at opposite ends of the row to a main chain by which to open and close said shutters, the eyes —*l*— *l*— attached to the shutters, and the chains —*r*— *r*— provided with the coupling-hooks —*i*—i— having their free ends projecting upward to enter said eyes from underneath and allow the hooks to be withdrawn by downward pressure on the chain, substantially as described and shown.

3. The within described fire proof jamb composed of wooden blocks —*t*— and intervening layers of asbestos —*t'*—, all united and enveloped in asbestos and the metallic sheathing —*s*— covering said jamb as set forth and shown.

545,210. BALL-BEARING FOR DISK HARROWS. ELIJAH A. OVERSHIRE, Detroit, Mich., assignor to the American Harrow Company, same place. Filed May 13, 1895. Serial No. 549,071. (No model.)



Claim.—1. In a ball bearing for disk harrows and analogous devices, the combination of an axle, a skein, a hub located about said skein, rings D D' located about one end of the skein between the skein and hub, and balls located between said rings, to receive the end strain, substantially as set forth.

2. A ball bearing for disk harrows and analogous devices having in combination an axle, a skein, a nut or washer engaged upon one end of the skein, a hub C located about said skein, rings D D' located in vertical planes about the skein between the hub and the skein, one of said rings having a fixed engagement with the hub and the other ring having a fixed engagement with the skein, and balls between the adjacent faces of said rings to receive the end strain, substantially as set forth.

3. A ball bearing for disk harrows and analogous devices having in combination an axle, a skein, a nut or washer engaged upon one end of the skein, a hub C located about said skein, rings D D' located in vertical planes about the skein between the hub and the skein, one of said rings having a fixed engagement with the hub and the other ring having a fixed engagement with the skein, and balls between the adjacent faces of said rings to receive the end strain, said nut or washer having an adjustable engagement with the skein and with an adjacent disk, substantially as set forth.

4. A ball bearing for disk harrows and analogous devices having in combination an axle, a skein, a nut or washer engaged upon one end of the skein, a hub C located about said skein, rings D D' located about the skein between the hub and the skein, one of said rings having a fixed engagement with the hub and the other ring having a fixed engagement with the skein, and balls between the adjacent faces of said rings to receive the end strain, said nut or washer having an adjustable engagement with the skein and with an adjacent disk, and said skein and washer each provided with a protecting flange projecting inwardly over the adjacent extremity of the hub, substantially as set forth.

5. A ball bearing for disk harrows and analogous devices having in combination an axle, a skein, a nut or washer engaged upon one end of the skein, a hub C located about said skein, rings D D' located about the skein between the hub and the skein, and balls between the adjacent faces of said rings to receive the end strain, substantially as set forth.

545,211. MOUNTING FOR ARTIFICIAL TEETH. CARL F. F. SCHRÖDER, Berlin, Germany. Filed June 9, 1894. Serial No. 514,039. (No model.)

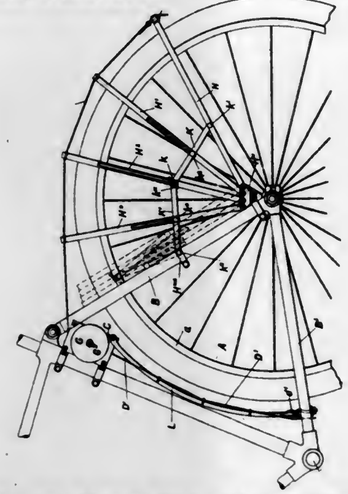


Claim.—The combination in a dental plate or obturator of a hollow metallic strengthening form and a surrounding coating of vulcanite, substantially as described.

545,212. MUD-GUARD FOR CYCLES. WILLIAM H. SNOW, Wirksworth, England. Filed Sept. 8, 1894. Serial No. 522,441. (No model.) Patented in England Dec. 18, 1893, No. 24,346.

Claim.—1. For cycles and other vehicles, a mud-guard comprising two lengths of flexible material secured to rollers contained in a suitable box or casing, the roller-spindles being furnished with pinions

gearing with a wheel on a central spindle which when rotated causes the rollers to turn in opposite directions so as to permit the withdrawal of or wind up both lengths of the mud-guard simultaneously, substantially as herein described.



2. For cycles and other vehicles, a mud-guard comprising two lengths D and D' of flexible material secured to rollers, such as *f f'*, mounted on spindles F and F' rotating in bearings in a box or casing C, spur-pinions F^3 and F^3 on the spindles F and F' gearing with a spur-wheel G^3 on a spindle G^x actuated by a spring G', the lengths D and D' being supported when extended by suitable framework, substantially as herein described.

3. In cycles and other vehicles, the improved means for supporting the extended mud-guard, comprising a supporting fork jointed to the frame of the machine, and intermediate slotted forks also jointed to the frame of the machine; the said forks being maintained equidistant from one another by means of two bars one of which is pivoted upon the frame of the machine and the other upon the outer fork their inner ends being coupled together and working in a slot in the central fork, each bar being moreover provided with a central stud which works in a slot in one of the intermediate forks and serves to insure the proper relative position thereof.

4. In cycles and other vehicles, the combination, with a length of flexible material acting as a mud-guard, of a collapsible framework comprising a supporting fork jointed to the frame of the machine, intermediate slotted supporting forks also jointed to the frame of the machine, a bar having one end jointed to the supporting fork, another bar having one end jointed to the frame of the machine, the other ends of the bars being connected with a pin which passes through the slot in one of the intermediate supporting forks, this pin being furnished with a thumb-nut, and pins on the bars working in the slots in the other intermediate supporting forks, so that, after the thumb-nut has been released, the extended framework can be collapsed and caused to lie against the frame of the machine, the tightening of the thumb-nut keeping the frame-work in its collapsed position, substantially as herein set forth.

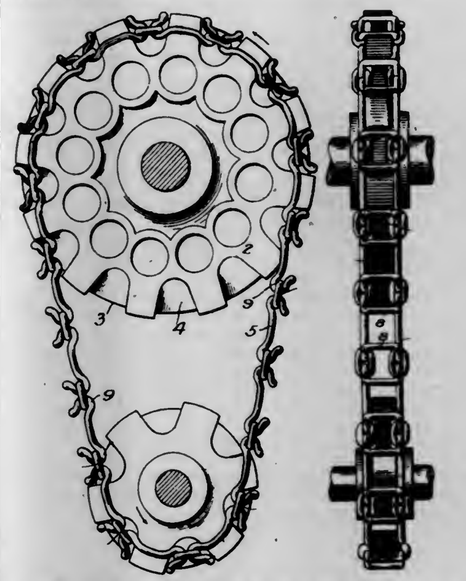
545,213. SPROCKET CHAIN AND WHEEL. ERICK J. SWEDLUND, Atwater, Minn. Filed June 1, 1894. Serial No. 513,131. (No model.)

Claim.—1. The sprocket chain, consisting of bent links, each comprising side portions 7 and inwardly turned cross bar portions 8 with the intervening loops 9 between said portions, and small connecting links extending between the same, substantially as described.

2. The sprocket chain, consisting of the main links each comprising the side portions 7 and cross bar portions 8 at each end thereof, said side portions being provided at each end with corner loops 9 extending beyond said cross bar portions, and suitable connections between the loop portion of adjacent links, substantially as described.

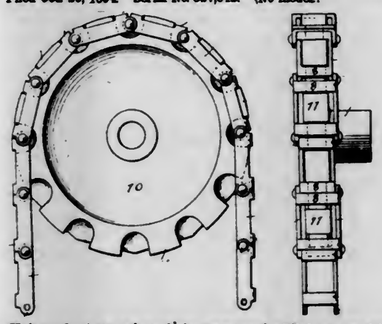
3. The sprocket chain, consisting of the main links each comprising the side portions 7 and cross bar portions 8 and corner loop portions 9 extending beyond said cross bar portions and small links 6 connecting said loop portions of the main links, in combination with the sprocket wheel having teeth, and the narrower face portion whereby side recesses are provided to admit the connecting links 6 of the chain, substantially as described.

4. The sprocket wheel provided with the short teeth 2, and opposite shallow recesses in each side between every two teeth, whereby the narrower convex face portion between the same is formed, substantially as described.



5. The sprocket belt composed of the main links having the inwardly turned cross portions 8, and side connecting links 6 in combination with the sprocket wheel having short teeth 2 and narrow face portions 3 between said teeth, said chain being so formed that the spaces between the teeth are substantially filled by the adjacent or abutting ends of the links, whereby slippage on the face of the wheel is avoided substantially as described.

545,214. SPROCKET-CHAIN. ERICK J. SWEDLUND, Atwater, Minn. Filed Oct. 29, 1894. Serial No. 527,312. (No model.)



Claim.—1. A sprocket chain, composed of links comprising flat sheet metal side portions, cross bar portions connecting the upper longitudinal edges of said side portions, and transverse pivots connecting the overlapping ends of the side portions of adjacent links, substantially as described.

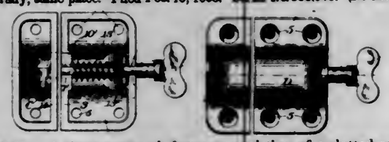
2. A sprocket chain, consisting of the links comprising side portions, the end or cross-bar portions connecting said side portions, and means for pivoting the abutting corners of the links upon one another, in combination, with the sprocket wheel having teeth, and narrower face portions between said teeth whereby side recesses are provided to receive the abutting corners of the links, substantially as described.

3. A sprocket chain, consisting of the links comprising side portions 7, the overlapping parts 9, the cross bar portions 8 at each end thereof behind said overlapping parts, and suitable connections between said overlapping parts, in combination with a sprocket wheel having teeth, and narrower face portions between said teeth whereby recesses are formed to receive the overlapping parts of the links, substantially as described.

4. The sprocket chain, consisting of links comprising side portions, cross bar portions connecting the longitudinal edges of said side portions, the adjacent ends of said side portions being arranged to

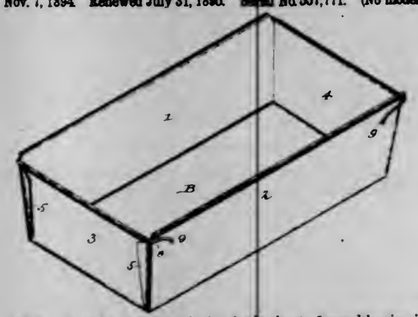
overlap, means for connecting the overlapping ends of said side portions together, in combination with a sprocket wheel having teeth 2 and narrow face portions 3 between said teeth, said chain being so formed that the spaces between the teeth are substantially filled by the adjacent or overlapping ends of the links, whereby slippage on the face of the wheel is avoided, substantially as described.

545,215. FASTENER FOR MEETING-RAILS OF SASHES. WILLIAM W. TORREY, Hartford, Conn., assignor of one-half to Thomas H. Brady, same place. Filed Feb. 15, 1895. Serial No. 538,575. (No model.)



Claim.—A three-part sash-fastener consisting of a slotted apertured casing having a cam therein; an open under-sided casing having two slotted bearings, one in each of its end walls communicating with its open under side, whereby the assembling of the parts is facilitated, and also having a locking recess in the exterior face of its rear wall, substantially at right angles to the slotted bearing in said wall, and in alignment with the slotted apertnre of the cam-casing; and a spring actuated cam-arm bolt having a device for preventing the withdrawal of the same from the casing, and adapted to have its cam-arm engage said recess and be locked therein, and to permit the outer edge of the cam-arm to be flush with the outer face of the rear wall of said casing when the bolt is in its non-locking position, substantially as shown, and for the purpose set forth.

545,216. BAKE-PAN. LEONARD R. WILLEY, Barre, Vt. Filed Nov. 7, 1894. Renewed July 31, 1895. Serial No. 557,771. (No model.)



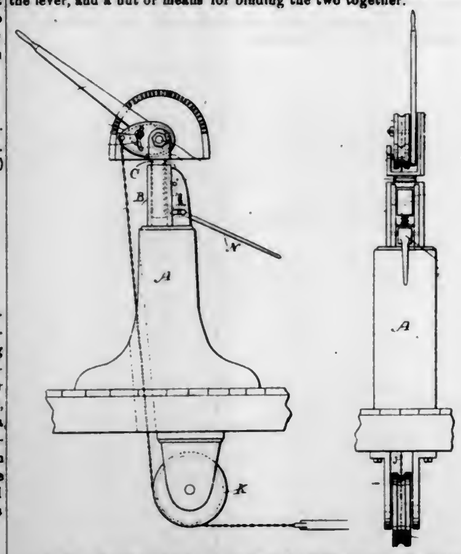
Claim.—A bake-pan formed of a single sheet of metal having its sides and ends integral with the bottom and separated at the corners and flanges 5, 6, at the union of the sides to lap the end pieces and hold them in position and apertures in the bottom, the said sides and ends being adapted to spring outward from the positions in which they may be locked, wire-bails journaled in the upper edges of the end pieces and formed with turned ends 9 adapted to be against the sides and lock the sides and ends in position, and the removable bottom B all constructed, arranged and combined as specified.

545,217. STREET-CAR BRAKE. HENRY T. ATKINSON, Oakland, Cal., assignor of five-twelfths to J. R. MOTTS, same place. Filed Feb. 12, 1895. Serial No. 538,100. (No model.)

Claim.—1. In a street car brake, a flexible chain connected with the brake rod, a direction pulley around which it passes, a cam fulcrumed in a standard upon the car around which the chain passes, a lever with which the cam is adjustably connected, said lever being movable to draw the chain up with gradually decreasing motion and increasing power or to release it by reverse movement.

2. In a street car brake, a cam fulcrumed upon a standard fixed upon the car, a chain passing around said cam and direction pulley and connected with the brake rod, a lever fulcrumed upon the same pin with the cam and adjustably connected with the cam so that the relative positions of the two may be changed and the movement of the lever and cam caused to act upon the chain and brake with a decreasing motion and increasing power.

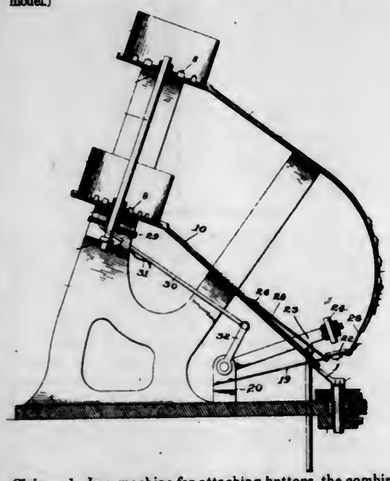
3. In a street car brake, a standard fixed upon the car, a lever turning about the fulcrum pin upon the standard, a grooved cam situated beside the lever, a chain passing about said cam extending downwardly and connected with the brake rod, a means for adjusting the cam with relation to the lever consisting of a segmental slot formed in the cam, a bolt passing through said slot connecting with the lever, and a nut or means for binding the two together.



4. In a street car brake, a standard fixed upon the car having a vertical channel in the upper end, a post movable in said channel having a rack formed upon one side of it, a cam and lever fulcrumed in the upper part of the post, a chain passing around the cam and connecting with the brake rod, and a pawl adapted to engage the teeth of the post and actuating mechanism whereby the post may be raised and the parts adjusted for elongation of the chain.

5. In a street car brake, a standard fixed upon the car, having a vertical channel in its upper end, a post movable in said channel with a rack formed upon one side of it, a cam and lever fulcrumed in the upper part of the post, a chain connecting the cam with the brake rod, a lever loosely fulcrumed to the standard so that its point may be engaged with or disengaged from the ratchet, to move the latter by successive impulses, and a spring-actuated pawl engaging the ratchet to retain it after having been lifted by the lever.

545,218. MACHINE FOR ATTACHING BUTTONS. JOSEPH BERNSTEIN, Philadelphia, Pa. Filed Jan. 15, 1895. Serial No. 534,943. (No model.)



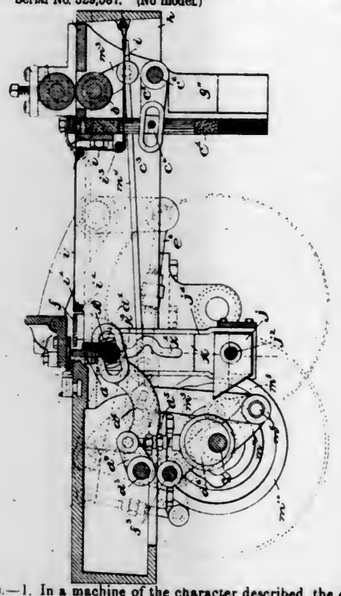
Claim.—1. In a machine for attaching buttons, the combination, with a fastener containing hopper and its chute, of a fixed anvil, a vertically-movable sleeve thereon provided with a trough extending in proximity to said chute, a spring tending to raise said sleeve, and a reciprocative die-carrying hammer adapted to co-act with said sleeve and anvil, substantially as described.

2. In a machine for attaching buttons, the combination, with the anvil and the yielding slotted button receptacle above the same, of the button containing hopper, and the chute provided with the inclined upper portion and the forwardly and inwardly curved lower portion, the upper portion extending from the hopper and the lower portion communicating with the slotted button receptacle, together with the hammer, substantially as described.

3. In a machine for attaching buttons, the combination, with the anvil, of the yielding slotted or bifurcated plate provided with a button receptacle therein and with forwardly-extending up-curved lugs the button containing hopper, the chute leading therefrom to said lugs, and the reciprocative hammer above said receptacle, substantially as described.

4. In a machine for attaching buttons, the combination, with a hopper, a chute, an anvil, a hammer, and an interposed yielding plate provided with a button receptacle, of the notched lever on said chute, and a link connecting said lever with the yielding plate, substantially as described.

545,219. PAPER-BOX MACHINE. JOHN C. BLUNDELL, Providence, assignor of one-half to Charles D. Wood, Lincoln, R. I. Filed Nov. 22, 1894. Serial No. 529,587. (No model.)



Claim.—1. In a machine of the character described, the combination of a horizontal support for the box, feed mechanism, means for operating the same to feed the paper horizontally up to the box, a device for applying paste to the paper along its forward edge, supplemental means for operating the feed mechanism to advance the pasted edge into the box, and a presser for sealing the pasted edge to the box.

2. In a machine of the character described, the combination of a horizontal support for the box, feed mechanism, means for operating the same to feed the paper horizontally up to the box, a device for applying paste to the paper along its forward edge, supplemental means for operating the feed mechanism to advance the pasted edge into the box, a presser for sealing the pasted edge to the box, and a folder for folding the paper over into the box.

3. In a machine of the character described, the combination of a horizontal support for the box, feed mechanism, means for operating the same to feed the paper horizontally up to the box, a device for applying paste to the paper along its forward edge, supplemental means for operating the feed mechanism to advance the pasted edge into the box, a presser for sealing the pasted edge to the box, and a knife to sever the paper.

4. In a machine of the character described, a feed-mechanism comprising a carriage movable longitudinally on the frame of the machine, a pair of rollers on said carriage, means for driving said rollers intermittently, a knife vertically movable in guides on the carriage, means for reciprocating said knife, a flexible sheet fastened at its opposite ends to fixed supports, and supports on the carriage for said belt arranged one above the other and holding a stretch of the sheet horizontal in front of the rollers, and stretch of said sheet vertical in front of the knife.

5. In a machine of the character described, a carriage adjustable longitudinally of the machine and supporting feed-devices and a cutter, a flexible sheet fastened at its opposite ends to fixed supports, and supports or guides on the carriage for said sheet whereby one stretch thereof is held horizontally in front of the carriage and another stretch vertically in front of the cutter.

6. In a machine of the character described, the combination of a horizontal support or table having a transverse opening, feed mechanism for advancing paper over the table and across the opening therein, and a pasting mechanism comprising a paste-applying bar rotatively mounted in vertically reciprocating supports and working through the opening in the table to apply the paste to the paper, means for reversing said bar in reciprocations of its supports, and a paste-holder below the bar to receive it when inverted.

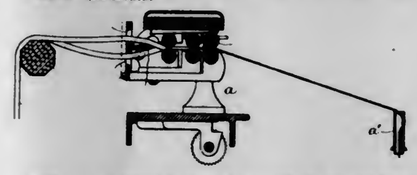
7. In a machine of the character described, a pair of feed-rollers, reciprocating driving mechanism connected therewith through one-way clutch devices and actuating said rollers to present the paper to the paster, and supplemental driving mechanism also connected with the rollers through one-way clutch devices and arranged to actuate the rollers when the primary mechanism is disconnected from them and carry the pasted paper into the box.

8. In a machine of the character described, the combination of a horizontal table for supporting the box, means for pasting the paper in the box while on said table, and a folder having a compound up-and-down and forward-and-back movement whereby it is adapted to fold the paper over into the box.

9. In a machine of the character described, the combination of a horizontal table for supporting the box, means for pasting the paper in the box while on said table, and a folder arranged to oscillate vertically by the table to fold up the paper and also arranged to move forward to carry the paper into the box.

10. In a machine of the character described, the combination of a horizontal table for supporting the box, means for pasting the paper in the box while on said table, a folder pivoted to oscillate vertically by the table and fold up the paper and carried by a support movable to shift the folder horizontally, means for oscillating the folder on its pivot, and means for shifting its support.

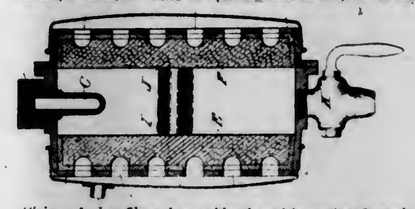
545,220. GUIDE FOR DRAWING AND CARDING MACHINES. JOHN H. BRACKETT, Wakefield, Mass. Filed May 6, 1895. Serial No. 548,293. (No model.)



Claim.—1. An improved guide for drawing and carding machines, comprising in its construction a member or plate *b*, said member being provided with an upper and a lower row of openings *d* and *f*, arranged in a staggered manner, and a web secured to said member between said openings, substantially as and for the purpose set forth.

2. In a drawing machine the combination of the rolls, a guide comprising in its construction a member or plate, *b*, said member being provided with two rows of openings, and a web secured to said member between said openings on the side next to the drawing rolls, substantially as and for the purpose set forth.

545,221. FILTER. GEORGE BRINCKMAN and FERDINAND WIEDERHOLDT, St. Louis, Mo. Filed Oct. 5, 1894. Serial No. 524,947. (No model.)



Claim.—1. In a filter, the combination with a casing, formed with a perforated end wall, of a filtering stone in said casing in juxtaposition to said perforated end wall, a cap G forming a chamber beyond said perforated end wall a perforated end closing plate for closing the open end of the casing, a filtering stone mounted in said plate, and a cap H forming a chamber beyond said perforated end closing plate, substantially as described.

2. In a filter, the combination with a casing formed with perforated end walls, of filtering stones in juxtaposition to said perforated end walls, cement which is interposed between said filtering stones and perforated end walls, said cement being bored out at the perforations, the boring extending somewhat into the outer faces of the filtering stones, caps G and H on the ends of the casing forming chambers for the filtered water, and an opening I—J which connects said chambers inside the casing, substantially as described.

3. In a filter, the combination with the casing formed with an opening I, of the perforated plate D formed with an opening J which registers with opening I of the casing, of the end caps G and H forming chambers for the filtered fluid, which said openings I—J connect, substantially as described.

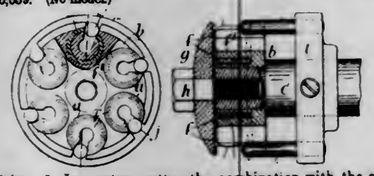
4. In a filter, the combination with the casing, of filtering stones located in each end thereof, an inlet nozzle formed with slits in its sides nearest the filtering stones, located at the top of the casing and between the filtering stones, an outlet cock for unfiltered water located at the bottom of the casing and between the stones, end closing caps for the casing forming chambers for the filtered water which chambers are connected by opening I—J inside the casing, and an outlet pipe for filtered water which is located near the upper edge of one of said closing caps, substantially as described.

5. In a filter, the combination with a suitable casing having perforated end walls, of filtering stones arranged in the casing near the walls, said stones being recessed at each perforation in the end plates, caps G—H upon the ends of the casing for the filtered water, a spray nozzle C formed with slits in its sides nearest the filtering stones, an outlet cock K arranged at the bottom of the casing, and an air valve L which is mounted in the casing between the two filtering stones near the inlet nozzle C, substantially as described.

545,222. PROCESS OF PRESERVING TIMBER. WILLIAM G. CURTIS and JOHN D. ISAACS, San Francisco, Cal. Filed Aug. 30, 1893. Serial No. 484,400. (No specimens.)

Claim.—The improved process herein described of impregnating timbers with preservative fluids, consisting in placing the timber in retorts, with vents left open to the air, then introducing creosote in sufficient quantities to submerge the timber in the same, then heating the timber and creosote to a temperature above the boiling point of the sap, at ordinary atmospheric pressure, whereby the sap is expelled from the timber, then closing the vents of the retorts and by the pressure thus caused by the continued heating, forcing the creosote into the pores of the timber to take the place of the evaporated sap, substantially as herein described.

545,223. CUTTER FOR TRIMMING THE EDGES OF BOOT-SOLES. MARK T. DENNE, Eastbourne, England. Filed May 21, 1895. Serial No. 550,059. (No model.)



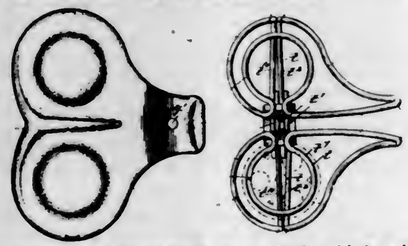
Claim.—1. In a rotary cutter the combination with the cutter disk provided with a series of annular recesses forming studs within the same, of a series of cylindrical cutters of a length substantially equal to the depth of said recesses, said cutters having end portions for engaging said studs and securing devices for adjustably clamping said end portions of said cutters in engagement with said studs, substantially as described.

2. In a rotary cutter the combination with the cutter disk provided with a series of annular recesses forming studs within the same, of a series of cylindrical cutters of a length substantially equal to the depth of said recesses, adapted to enter said recesses, and having end portions for engaging said studs, a clamping plate for engaging said end portions of said cutters for clamping them simultaneously in engagement with said studs and means for securing said clamping plate to said disk, substantially as described.

3. In a rotary cutter the combination with the cutter shaft, of the cutter disk provided with a series of annular recesses, a series of cylindrical cutters having radial slots formed therein, and adapted to enter said recesses, means for clamping said cutters in engagement with said disk, and an adjusting plate on said cutter shaft having projections for engaging the slots in said cylindrical cutters, substantially as described.

4. In a rotary cutter the combination of a cutter-disk *b* having a series of annular recesses formed therein, a series of cylindrical cutters, having radial slots and provided with flanges at one end, inserted into the said recesses, a clamping plate *g* for securing the said cutters in position in the said annular recesses and a series of adjusting pins such as *j* fixed to a plate upon the cutter shaft, substantially as described.

545,224. BICYCLE-SADDLE. ARTHUR J. EDDY, Chicago, Ill. Filed May 24, 1895. Serial No. 550,515. (No model.)



Claim.—1. In a bicycle saddle, the combination with the saddle-support engaging-block of a transverse seat-supporting bar mounted between its ends at the said block, and a seat frame supported at opposite sides upon the ends of said bar and formed of wire bent to yield more freely at the center than at the sides of the saddle, the seat frame being yieldingly supported between its front and rear ends on the said bar to have an up-and-down rocking motion at said ends, substantially as described.

2. In a bicycle saddle, the combination with the saddle-support engaging-block of a yielding transverse seat-supporting bar mounted between its ends at the said block, and a seat frame supported at opposite sides upon the ends of said bar and formed of wire bent to yield more freely at the center than at the sides of the saddle, the seat frame being yieldingly supported between its front and rear ends on the said bar to have an up-and-down rocking motion at said ends, substantially as described.

3. In a bicycle saddle, the combination with the saddle-support engaging-block of a transverse seat-supporting bar mounted between its ends at the said block, and a seat frame supported at opposite sides upon the ends of said bar and formed of wire bent to yield more freely at the center than at the sides of the saddle and to afford yielding bearing surfaces between the said sides and center, the seat frame being supported between its front and rear ends on the said bar to have an up-and-down rocking movement at said ends, substantially as described.

4. In a bicycle saddle, the combination with the saddle-support engaging block, of a spring seat frame formed with a transversely extending arm, supported toward its center at the said block, and with a horizontally disposed spring wire seat carried by the outer ends of said arm and formed between its center and opposite sides with bearing loops, substantially as described.

5. In a bicycle-saddle, the combination with the saddle-support engaging block, of a transverse seat-supporting bar mounted between its ends at the said block, and a seat-frame formed of longitudinally extending sections supported at their outer sides upon the ends of said bar, substantially as described.

6. In a bicycle-saddle, the combination with the saddle-support engaging-block, of a transverse seat-supporting bar mounted between its ends at the said block, and a seat-frame formed of longitudinally extending downwardly yielding sections supported at their outer sides upon the ends of said bar, substantially as described.

7. In a bicycle-saddle, the combination with the saddle-support engaging-block, of a transverse seat-supporting bar mounted between its ends at the said block, and a seat-frame formed of wire bent to produce a pommel and supported at opposite sides between its ends upon the ends of said bar, to render the saddle readily yielding at the pommel, substantially as described.

8. In a bicycle-saddle, the combination with the saddle-support engaging-block, of a transverse seat-supporting bar mounted between its ends at the said block, and a seat-frame formed of wire bent to produce a cantle, and supported at opposite sides between its ends upon the ends of said bar, to render the saddle readily yielding at the cantle, substantially as described.

9. In a bicycle-saddle, the combination with the saddle-support engaging-block, of a transverse seat-supporting bar mounted between its ends at the said block, and a seat frame formed of wire bent to produce a pommel and a cantle, and supported at opposite sides between its ends upon the ends of said bar to rock thereon and thus render the saddle readily yielding at the pommel and cantle, substantially as described.

10. In a bicycle-saddle, the combination with the saddle-support engaging-block, of a transverse seat-supporting bar mounted between its ends at the said block, and a skeleton seat-frame formed of parallel longitudinally extending sections separated from each other at the seat-portion, and supported at their outer sides upon the ends of said bar to yield more readily along the center of the saddle than at the sides thereof, substantially as described.

11. In a bicycle-saddle, the combination with the saddle-support engaging-block, of a transverse seat-supporting bar mounted between its ends at the said block, and a skeleton-frame in two parallel longitudinally extending sections forming together seat and pommel frame-portions of the saddle, and supported at their outer sides upon the ends of said bar to yield more readily along the center of the saddle than at the sides thereof, substantially as described.

12. In a bicycle-saddle, the combination with the saddle-support engaging-block, of a transverse seat-supporting bar mounted between its ends at the said block, and a skeleton-frame in two parallel longitudinally extending sections forming together seat and pommel frame-portions of the saddle separated at the seat-portion and connected together at the pommel-portion, and supported at their outer sides upon the ends of said bar to yield more readily along the center of the saddle than at the sides thereof, substantially as described.

13. In a bicycle-saddle, the combination with the saddle-support engaging-block, of a transverse seat-supporting bar mounted between its ends at the said block, and a skeleton-frame in two parallel longitudinally extending sections forming together seat and pommel frame-portions of the saddle, and supported at their outer sides between their ends upon the ends of said bar to yield more readily along the center of the saddle than at the sides thereof, and to rock on said bar to render the pommel yielding, substantially as described.

14. In a bicycle-saddle, the combination with the saddle-support engaging-block, of a transverse seat-supporting bar mounted between its ends at the said block, and a skeleton-frame in two parallel longitudinally extending sections forming together seat, pommel and cantle frame-portions of the saddle, and supported at their outer sides between their ends upon the ends of said bar to yield more readily along the center of the saddle than at the sides thereof, and to rock on said bar to render the pommel and cantle yielding, substantially as described.

15. In a bicycle-saddle, the combination with the saddle-bar engaging block, of a spring seat-frame formed with spring wire skeleton frame-sections extending transversely through the block, and supported to yield more freely along the center of the seat than at the sides thereof, substantially as and for the purpose set forth.

16. In a bicycle-saddle, the combination with the saddle-bar engaging-block, of a spring seat-frame formed with two sections each comprising a transversely extending arm supported toward its inner end at the said block, and an inward extending horizontally disposed seat-portion carried by the outer end of said arm, substantially as and for the purpose set forth.

17. In a bicycle-saddle, the combination with the saddle-bar engaging block, of a spring seat-frame formed with two sections each comprising a transversely extending arm supported toward its inner end at the said block and an inward extending horizontally disposed seat-portion carried by the outer end of said frame and formed with an outward extending loop supported at the inner side to the seat-portion, substantially as and for the purpose set forth.

18. In a bicycle-saddle, the combination with the saddle-bar engaging-block, of a spring seat-frame formed with two sections, each comprising a transversely extending arm supported toward its inner end at the said block and an inward extending horizontally disposed seat-portion carried by the outer end of said arm, the said transverse arms overlapping each other at the said block, substantially as and for the purpose set forth.

19. In a bicycle-saddle, the combination with the saddle bar engaging-block, of a spring seat-frame formed with two sections, each comprising a transversely extending arm supported toward its inner end at the said block and an inward extending horizontally disposed seat-portion carried by the outer end of said arm, the said transverse arms overlapping each other at the said block, and being bent coincidently at their overlapping portions to form a support receiving socket, substantially as and for the purpose set forth.

20. In a bicycle-saddle, the combination with the saddle-bar engaging-block, of a spring seat-frame comprising two sections, each formed of a length of wire bent to produce the transverse supporting-arm, outer forward rail f^4, center-rail f^5, loop f^7 and back-rail f^6, substantially as described.

21. In a bicycle-saddle, the combination with the saddle-bar engaging-block, of a spring seat-frame comprising two sections each formed of a length of wire bent to produce the transverse supporting-arm, outer forward rail f^4 and center-rail f^5 having the elevated free end-portion forming the pommel, loop f^7, and back-rail f^6 having the upwardly bent cantle-portion, substantially as and for the purpose set forth.

22. In a bicycle-saddle, the combination with the saddle-bar engaging-block, of a spring seat-frame formed with two sections each comprising a transversely extending-arm supported toward its inner end at the said block, and an inward extending horizontally disposed seat portion carried by the outer end of said arm, a reinforcing-plate or pad on each said section, and a seat covering of flexible material fastened upon the frame over the said reinforcing-plate or pad, substantially as and for the purpose set forth.

23. In a bicycle-saddle, the combination with the saddle-bar engaging-block, of a spring seat-frame comprising two sections each formed of wire bent to produce the transverse supporting-arm, outer forward rail, center-rail, loop and back-rail, and a reinforcing-plate or pad fitted upon the said loop, substantially as described.

24. In a bicycle-saddle, the combination with the saddle-bar engaging-block, of a spring-seat frame comprising two sections each formed of wire bent to produce the transverse supporting-arm, outer forward rail, center-rail, loop and back-rail, and a clip connecting the center-rails of the sections toward their forward ends, substantially as described.

25. In a bicycle-saddle, the combination with the saddle-bar engaging-block, of a spring seat-frame comprising two sections each formed of wire bent to produce the transverse supporting-arm, outer forward rail, center-rail, loop and back-rail, a clip connecting the center-rails of the sections toward their forward ends, and a seat-covering of flexible material fastened to the said clip, substantially as described.

545,225. WATCH-MOVEMENT BOX. EZRA C. FITCH and EDWARD A. MARSH, Newton, Mass. Filed Mar. 17, 1894. Serial No. 504,070. (No model.)



Claim.—1. A watch-movement box comprising in its construction a body and a cover having outwardly yielding resilient portions, a movement-holding cup secured to the head of said body, and complemental axially engaging but laterally disengaging means formed in said body and cover, substantially as and for the purpose set forth.

2. A watch-movement box comprising in its construction a body and a cover having outwardly yielding resilient portions, a movement-holding cup secured to the head of said body, and complemental similarly disposed conical shaped projections upon said body and cover arranged to be engaged when the parts are pushed together and to be disengaged by a lateral movement of said parts, substantially as and for the purpose set forth.

3. A watch-movement box comprising a body, an integral sheet metal concavo-convex outwardly yielding head, a cover having outwardly yielding spring toogues, said body and cover having telescopic sides provided with interlocking projections having a conical form, forming and constituting tapering protuberances which act as a cam to displace the resilient sides in the engagement and disengagement of the projections, and a movement-holding cup centrally secured to the head of said body, substantially as and for the purpose set forth.

4. A watch movement box comprising in its construction a body and a cover having outwardly yielding resilient portions, between which a watch movement may be yieldingly clamped, and axially engaging but laterally disengaging means for locking said cover and body together to maintain the yielding pressure of said portions on the interposed movement, substantially as and for the purpose set forth.

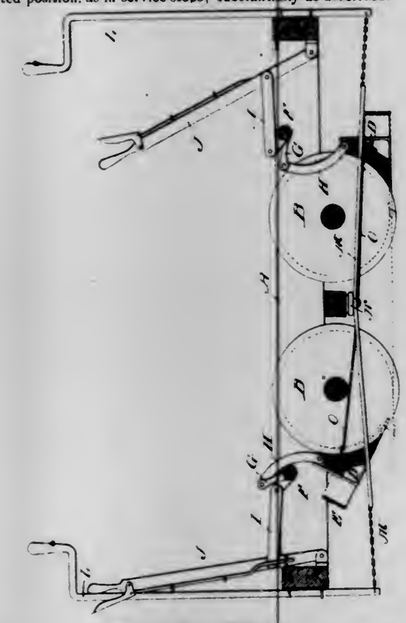
545,226. CAR-BRAKE. JOSEPH FRIEDRICHS, St. Louis, Mo., assignor of one-half to Henry A. Boeckeler, same place. Filed Mar. 5, 1895. Serial No. 540,571. (No model.)

Claim.—1. In a car brake, the combination with rock arms, of brake shoes, links by which the brake shoes are suspended from the rock arms, said links permitting the rock arms to swing past dead center while suspending the brake shoes, a lever for controlling the rock arms, and means for applying the brakes in service stops, independently of the rock arms, substantially as described.

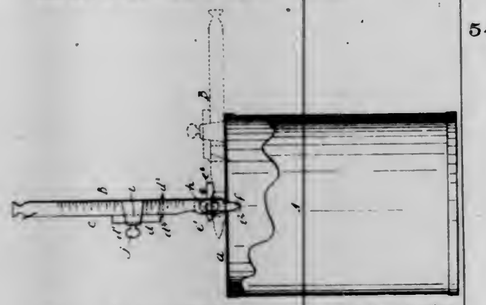
2. In a car brake, the combination with rock shafts provided with rock arms, of brake shoes, curved links by which the brake shoes are suspended from the rock arms, said links, by their curvature, carrying the pivotal points of connection therebetween and the rock arms, past dead center when the rock-arms are in their normal positions, thus throwing the weight of the brake shoes on the rock shafts, and means for rocking said shafts; substantially as described.

3. In a car brake, the combination with rock shafts provided with rock-arms, of brake-shoes, curved links by which the brake-shoes are suspended from the rock-arms, said links, by their curvature, carrying the pivotal points of connection therebetween and the rock-arms, past dead center when the rock-arms are in their normal position, thus throwing the weight of the brake-shoes on the rock shafts, levers for rocking said shafts and lowering the brake-shoes, as for

emergency stops, and means for applying the brakes, while in their elevated position, as in service stops; substantially as described.



545,227. CAN-OPENING DEVICE. JOSEPH GLOVER, Paterson, N. J. Filed Nov. 22, 1894. Serial No. 529,592. (No model.)



Claim.—1. In a can opener, the combination of a hook portion, a handle provided with two slots, a cutter holder between the slots, and a reversible cutter having a shank adapted to be adjustably secured in said holder at either side thereof.

2. In a can opener of the class described, a handle having two slots and a bridge between the slots, having an aperture and a set screw, a cutter having a shank adapted to be passed through said aperture from either end, and a blade to project through either slot, and a hook in one end of the handle.

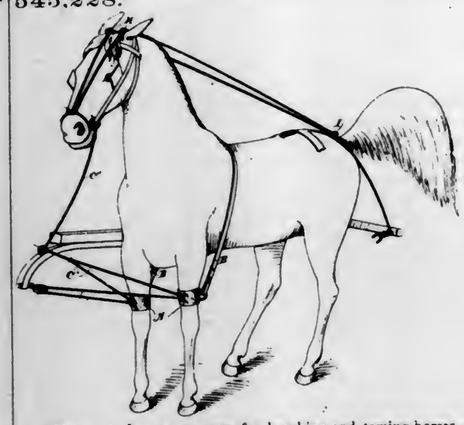
3. In a can opener of the class described, the combination with a handle having a slot, and a threaded aperture, a hook having a pointed end projecting beyond said aperture, and an adjustable cutter having a shoulder, and operating in connection with said pointed end substantially as and for the purpose set forth.

4. In a can opener the combination of a handle having divisional marks thereon, an adjustable cutter having a shoulder, a set screw for said cutter, and a point or marker operating with said adjustable shoulder for the purpose set forth.

5. A combined tool comprising a handle having at one end a punch, a hammer head, an aperture and a slot, and at its other end a second slot and a bridge between the slots having a set screw, a reversible cutter adjustably secured in said bridge and having a blade extending through either slot, and a hook portion engaging the aperture, all as set forth.

545,228. HORSE-BREAKING APPARATUS. JOHN W. GREEN, Cotati, Cal. Filed Apr. 22, 1895. Serial No. 546,737. (No model.)

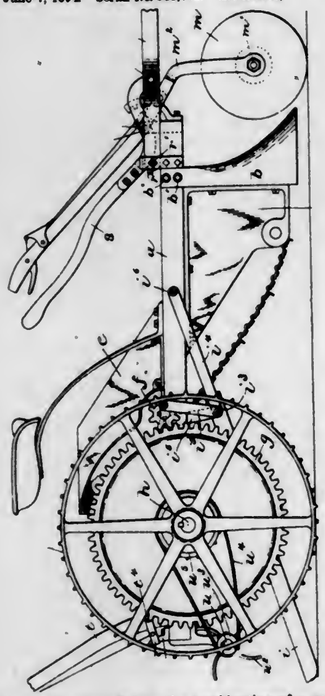
545,228.



Claim.—1. In an apparatus for breaking and taming horses, a rope to be secured around the upper jaw of the horse, having a knot or protuberance to press over the front of the nose, and guides through which said rope is led over the top of the head and the hips of the horse, said rope having its rear end adapted to be secured to a part of the vehicle whereby the raising of the hind quarters of the horse will bring a pull upon the rope and cause the knot or protuberance to press upon the nose of the horse.

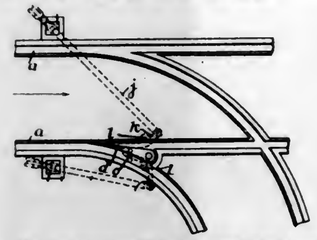
2. An apparatus for breaking or taming horses, consisting of knee-bands connected with the front legs of the horse and ropes leading from the bands and connected with the head stall, in combination with the rope secured around the upper jaw having a knot or protuberance pressing over the front of the nose, guides through which said rope is led over the top of the head and the hips of the horse to a point of attachment upon the singletree or other part of the wagon.

545,229. POTATO-DIGGER. GEORGE N. HOLLAND, Hampden, Me. Filed June 7, 1894. Serial No. 513,773. (No model.)



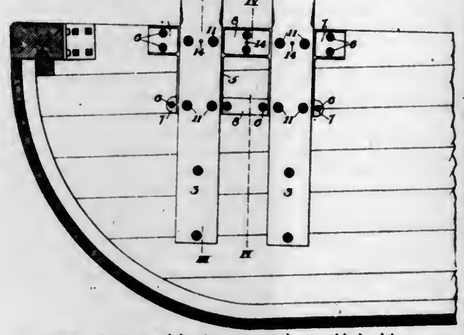
Claim.—In a potato-digger, the combination of a suitably constructed frame, a tongue pivoted thereto, a lever pivotally connected with said tongue, a concaved roller mounted in a yoke, a lever pivotally connected with said yoke, a pivot on the frame and common to both levers above mentioned and to the yoke, means for locking the yoke-controlling lever at different positions, side plows on the frame back of the roller, a scoop between said plows, and an elevator adjacent to said scoop.

545,230. AUTOMATIC SWITCH FOR ELECTRIC OR CABLE RAILWAYS. GEORGE T. JANVRIN and FRANK J. CONLON, Brooklyn, N. Y. Filed Dec. 12, 1894. Serial No. 531,564. (No model.)



Claim.—The combination with the switch point having a rigid pendent stud *f* projecting into the space below the rails, and with a push stud *b* located at each side of the main track and adapted to be thrust down independently by rolls on the car subject to the control of the engineer, of an elbow lever *h* connected to each push stud, a connecting rod *j* coupled with each rock lever, and a rock lever *k*, coupled with each rod respectively, and respectively located on opposite sides of the pendent stud and bearing on it, suitably to push the switch point either way according as one or the other of the push studs is actuated, the said rods connecting the rock levers of the push-studs with the point actuating levers, being suitably convergent to connect directly with the push stud levers at the opposite sides of the track and with the point actuating rock levers located relatively thereto all substantially as described.

545,231. SOCKET FOR CHECKING-POSTS. THOMAS M. JENKINS, Pittsburg, Pa. Filed Nov. 5, 1894. Serial No. 528,000. (No model.)



Claim.—1. A vessel having a gunwale provided with an open faced socket having side flanges bolted to the gunwale, and a checking-post rigidly secured in the open face by bolts passing through the socket and post, the lower portion of the post being secured directly to the side of the vessel, substantially as described.

2. A vessel having an open-faced socket secured to the inner face of its gunwale, a protecting plate upon the outer face of the gunwale, and a checking-post secured within the socket by bolts passing through the outer plate, substantially as described.

3. A vessel having a gunwale provided with an open-faced socket having side flanges bolted to the gunwale, and a checking post having a rear recess to receive the socket and rigidly secured within its open face by bolts passing through the socket and post, the lower portion of the post being secured directly to the side of the vessel; substantially as described.

545,232. INFLATABLE PUNCTURE-PLUG FOR PNEUMATIC TIRES. ROBERT JOHNSTON, Wilkes-Barré, Pa. Filed June 15, 1895. Serial No. 552,942. (No model.)

Claim.—1. The method of patching hose or tire which consists in forcing an inflatable patch through the puncture while the patch is deflated, injecting cement upon the outer side of the patch, then inflating it and maintaining it in the inflated condition until the cement has set, substantially as set forth.

2. A hose or tire patch consisting of an inflatable sack adapted to be inserted through a puncture, and means for inflating the sack after its insertion in the hose or tire, substantially as described.

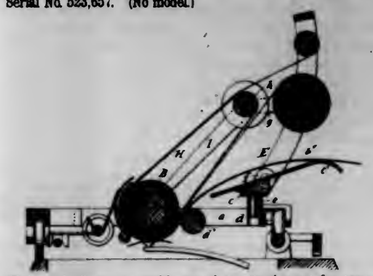


3. A hose or tire patch consisting of an elastic inflatable sack adapted to be inserted through a puncture and provided with an inflating tube for inflating the sack after its insertion in the hose or tire, substantially as described.

4. A hose or tire patch consisting of an elastic sack or disk and a relatively inelastic disk joined together at their edges, in combination with an inflating tube opening into the space between said parts, substantially as described.

5. A hose or tire patch consisting of a sack or disk of thin rubber and a disk of thicker rubber or rubber fabric joined at their edges in combination with an inflating tube opening into the space between said parts, substantially as described.

545,233. COPYING ATTACHMENT FOR TYPE-WRITING MACHINES. CHARLES H. KEITH, New York, N. Y. Filed Sept. 20, 1894. Serial No. 523,657. (No model.)



Claim.—1. In a removable copying attachment for type-writing machines, the combination of a paper supply holder, a copy receiver, a carbon paper guide and holder, and means for holding the attachment in position on the machine substantially as shown and described.

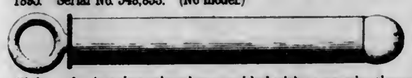
2. The combination, with a type-writing machine, of a removable copying attachment comprising an endless duplicating belt passing around the platen roller, and a guide roller for guiding the endless duplicating belt, substantially as described.

3. The combination, with a type-writing machine, of an endless duplicating belt, a roller for guiding the same, a copy paper supply holding roller, and a spring-actuated copy-receiving roller, substantially as described.

4. The combination in a type-writing machine, of a platen roller, a duplicating belt supporting roller, an endless duplicating belt passing around the platen roller, a copy paper holding roller, and a removable spring-actuated copy receiving roller, substantially as described.

5. The combination, with the paper holding and belt supporting rollers, of a jointed frame, and a hooked brace pivotally connected therewith, for holding the frame in the position of use, substantially as described.

545,234. SYRINGE. WILLIAM KIEL, Butler, N. J., assignor to the Butler Hard Rubber Company, New York, N. Y. Filed May 10, 1895. Serial No. 548,833. (No model.)



Claim.—1. A syringe chamber provided with an annular threaded bushing having a restricted intermediate portion, in combination with a flexible tip interposed between the chamber and the bushing.

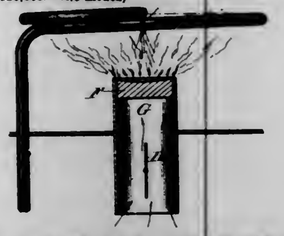
2. A joint for syringe tips, comprising a syringe chamber, a bushing secured thereto having an enlarged outer end, a threaded inner end, and a restricted intermediate portion forming a clamp seat and said enlarged end constituting a means for inserting and removing the bushing.

3. The combination in a syringe chamber of a barrel provided with a threaded opening, a threaded bushing or sleeve secured thereto, and a flexible tip adapted to be inserted between said bushing and threaded opening whereby said tip meshes or is forced into the thread to form a fluid tight joint.

545,235. PROCESS OF POLISHING WOOD. GEORG F. KROHN, Altona, assignor to August Paul Horn, Hamburg, Germany. Filed Aug. 3, 1894. Serial No. 519,386. (No specimens.) Patented in Germany Apr. 27, 1894, No. 75,740.

Claim.—The process of polishing wood which consists in first rough polishing it and then finishing it off with a mixture composed of alcohol, acetone, benzoin, sandarac and benzine, substantially as specified.

545,236. OIL-BURNER. ROBERT H. LAIRD, St. Louis, Mo., assignor to William Henry Laird New York, N. Y. Filed Aug. 18, 1894. Serial No. 520,663. (No model.)



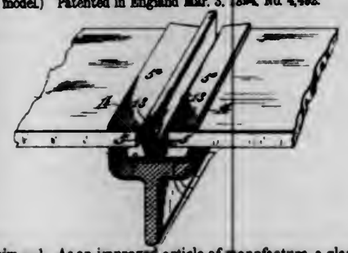
Claim.—1. In an oil burner, the combination with an outer casing, of a vaporizing coil located in the upper part of the casing and having its end portion extending across the space within the coil, a depending nipple on the cross-over portion between the coils, a hollow frame supported in the casing below the nipple, and a drip deflector plate secured in the upper end of the frame and having marginal recesses constituting air passages, substantially as described.

2. In an oil burner, the combination with a casing, of a vaporizing coil located in the upper part of the casing having its end portion extending across the space within the coil, a depending nipple on the cross-over portion between the coils, a hollow frame supported in the casing below the nipple, a drip deflector plate secured in the upper end of the frame and having marginal recesses constituting air passages, and a damper in the holder below the plate, substantially as described.

3. In an oil burner, the combination with a casing, of a vaporizing coil therein having a central depending nipple thereon, a vertical hollow frame of a diameter less than that of the coil, a deflector fixed in the upper end of the frame, and having air passages at its edge leading from the interior of the frame, substantially as described.

4. In an oil burner, the combination with a vaporizing coil provided with a suitable ejection opening, of a hollow casing arranged in line with said opening, and a drip deflector plate secured in the end of said casing nearest the opening, and having marginal recesses constituting air passages between its edges and the side walls of the casing, substantially as described.

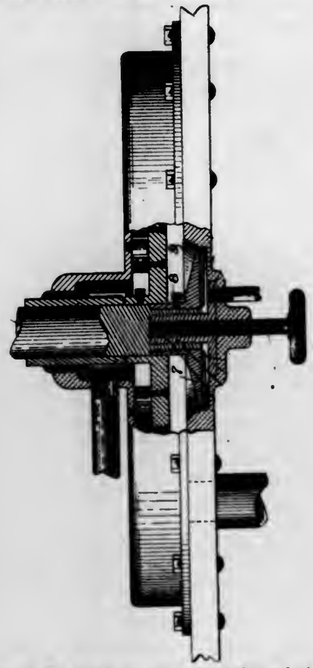
545,237. GLAZING-BAR FOR ROOFS, SKYLIGHTS, &c. HARRY C. LASHAM, London, England. Filed Sept. 18, 1894. Serial No. 523,511. (No model.) Patented in England Mar. 3, 1894, No. 4,492.



Claim.—1. As an improved article of manufacture, a glazing-bar of ductile metal formed integral with a base or body 1 having longitudinal, pendent flanges 2 at its edges for embracing an ordinary sash-bar or iron beam, longitudinal edge ribs 3, longitudinal, central core-piece 4, and inclined wings 5 extending from the core-piece and movable to and from the latter to form an expansion joint, substantially as and for the purposes described.

2. A glazing-bar drawn in a single piece of ductile metal with the base 1, pendent side flanges 2, upwardly projecting edge ribs 3, a central, vertical core-piece 4, and inclined wings 5 leading from opposite sides of the core-piece from points below the level of the upwardly projecting edge-ribs and formed with extensions 5ª which gradually increase in thickness toward their outer edges to prevent warping, said wings being movable toward and from the core-piece to form an expansion joint, substantially as and for the purposes described.

545,238. MEANS FOR COUNTERBALANCING END-PRESSURE IN STEAM-TURBINES. ERNEST A. LE SUEUR, Ottawa, Canada. Filed Nov. 5, 1894. Serial No. 527,868. (No model.)



Claim.—1. The combination with the shaft 1, and a balance plate mounted thereon, of a plate formed with a depression or chamber in which said balance plate works, the said depression or chamber having its outer portion enlarged to permit escape of liquid around the edge of the balance plate, and means for delivering liquid into the space between the face of the balance plate and the bottom of the depression or chamber, substantially as described.

2. The combination with the shaft 1, and a balance plate mounted thereon and provided with means for causing the liquid to revolve therewith, of a chamber in which said plate revolves, and means for delivering liquid into the space between the face of the balance plate and the proximate wall of the chamber, substantially as described.

3. The combination with the shaft 1, and a balance plate mounted thereon and provided with means for causing the liquid to revolve therewith, of a chamber in which said plate revolves, means for delivering liquid into the space between the face of the balance plate and the proximate wall of the chamber, and means providing for the escape of the liquid from the chamber when the liquid end pressure overbalances the steam end pressure, substantially as described.

4. The combination with the shaft 1, and a balance plate mounted thereon and provided with means for causing the liquid to revolve therewith, of a plate formed with a depression or chamber in which said balance plate works, the said depression or chamber having its outer portion enlarged to permit escape of liquid around the edge of the balance plate, and means for delivering liquid near the axis of rotation into the space between the face of the balance plate and the bottom of the depression or chamber, substantially as described.

545,239. HAND-TRUCK. EDWARD LIPSKA, Dubuque, Iowa, assignor of one-half to George J. Eichhorn, same place. Filed Mar. 29, 1895. Serial No. 543,774. (No model.)

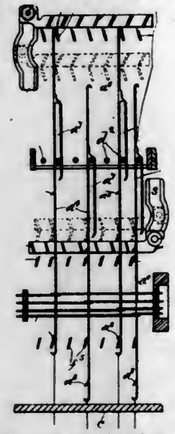


Claim.—1. In a hand-truck a lever for raising and lowering the platform thereof, having a handle, a plate secured to the outer end of said handle, with slots in said plate and means secured to the base and the platform of said truck for removably attaching the lever to the truck, substantially as described and shown.

2. A hand truck consisting of the base, cranks pivoted thereto, and a platform applied to the upper ends of the cranks, combined with the removable lever and tongue having a hook on its lower end, and a slot in its side, and the projections on the side of the base and platform with which the lever engages, substantially as set forth.

3. A hand-truck consisting of a base A, resting on wheels *a*, *a*, platform C, cranks B, B, said cranks pivoted in the platform farther apart than they are pivoted in the base, roller D, pivoted to the platform, staple E, secured to the base, and lever F, having plate with slots *g*, and *h*, adapted to engage the roller D, and staple E all combined to operate substantially as described and shown.

545,240. JACQUARD MACHINE FOR LOOMS. AMOS LOCKWOOD, Halifax, England. Filed Dec. 22, 1894. Serial No. 532,695. (No model.) Patented in England July 1, 1892, No. 12,222, and in Germany May 7, 1894, No. 75,878.



Claim.—1. In a Jacquard machine, the combination of upright needles having grid-hooks and elongated downturned guiding and pivoting-nooks, cross-bars straddled by said elongated hooks and constituting fulcra therefor, a bottom-board, neck-cords attached to the lower ends of the upright needles and passing through the bottom-board, and card-operated horizontal needles engaged with the upright needles.

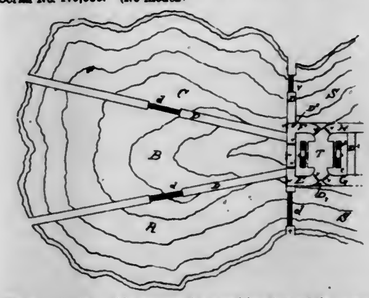
2. In a Jacquard machine, the combination of upright needles having grid-hooks and elongated downturned guiding and pivoting hooks, vertically reciprocating cross-bars straddled by said elongated hooks and constituting fulcra for the needles, a bottom-board, neck-cords attached to the lower ends of the upright needles and extending through the bottom-board, and card-operated horizontal needles engaged with the upright needles.

3. In a Jacquard machine, the combination of upright needles having grid-hooks and elongated downturned guiding and pivoting hooks, vertically reciprocating cross-bars straddled by said elongated hooks and constituting fulcra for the needles, a bottom-board, neck-cords attached to the lower ends of the upright needles and extending through the bottom-board, card-operated horizontal needles engaged with the upright needles, reciprocating grids for engagement with certain of the grid-hooks of the upright needles, and stationary grids for engagement with others of the grid-hooks of the upright needles.

4. In a Jacquard machine, the combination of upright needles having grid-hooks and elongated downturned guiding and pivoting hooks, cross-bars straddled by said elongated hooks and constituting fulcra therefor, a bottom-board, neck-cords attached to the lower ends of the upright needles and passing through the bottom-board, card-operated horizontal needles engaged with the upright needles, reciprocating grids for engagement with the grid-hooks of the upright needles, laterally movable guide-bars arranged adjacent to said grids and vertically movable therewith, and means for intermittently shifting said guide-bars, substantially as and for the purpose described.

5. In a Jacquard machine, the combination of upright needles having grid-hooks and elongated downturned guiding and pivoting hooks, cross-bars straddled by said elongated hooks and constituting fulcra therefor, a bottom-board, neck-cords attached to the lower ends of the upright needle and passing through the bottom-board, card-operated horizontal needles engaged with the upright needles, reciprocating grids for engagement with certain of the grid-hooks of the upright needles, stationary grids for engagement with others of said grid-hooks, guide-bars arranged adjacent to the reciprocating grids and carried up and down therewith, said guide-bars being also laterally movable, and means for intermittently shifting said guide-bars, substantially as and for the purpose set forth.

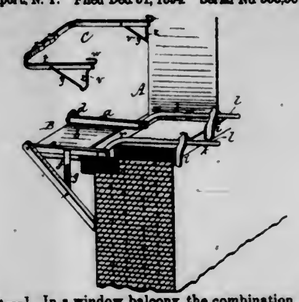
545,241. MANNER OF OBTAINING POWER BY RISE AND FALL OF TIDE. ROBERT MENAGH, Victoria, Canada. Filed June 28, 1893. Serial No. 479,066. (No model.)



Claim.—1. In a tide power the combination of the reservoirs A, B, C, and dams D D D, and hollow caisson or water way K, together with a wheel or turbine running in a box or chamber T connected with cross channels E T H and F T G so that two channels ends G and H influx and efflux open to sea and the influx and efflux ends E and F open directly or indirectly to the reservoirs A B C, fitted with controlling valves or gates V substantially as described.

2. As a means of producing power by rise and fall of the tide, the combination of a dam D built across a bay and containing a caisson with valved waterways leading to and from each of the reservoirs formed by building two or more dams across said bay, and leading into valved pipes E F G H passing through turbine or water wheel running on shaft carrying one or more rotary pumps *r r*, together with a pipe running therefrom to an auxiliary reservoir R supplying a turbine or water wheel and thence running into one or more reservoirs or the sea substantially as and for the purposes specified.

545,242. PORTABLE WINDOW-BALCONY. FURDUSH G. MERRITT, Brookport, N. Y. Filed Dec. 31, 1894. Serial No. 533,381. (No model.)



Claim.—1. In a window balcony, the combination, with the platform *b* and sustaining braces *d d*, of the ratcheted draw bars *k k* pivoted to the platform and extending through the window, the clamps *i i* sliding on the draw bars, and the spring dogs *m m* engaging with the ratchets, as shown and described and for the purpose specified.

2. The portable balcony consisting of the side-pieces *a a*, the platform *b* the pivoted braces *d d*, the slotted stays *f f*, the ratcheted draw bars *k k* pivoted to the side bars, extending through the window, the clamps *i i* sliding on the draw bars and the spring dogs *m m* engaging with the ratchet teeth, as shown and described and for the purpose specified.

3. The combination, with the guard C, consisting of two parts sliding one upon the other, of the stays at the ends of the guards, each consisting of a hook *w* which engages with a screw eye, a shoulder *x* offset to bear against the casing, and a brace *y* connected with the guard, as shown and described and for the purpose specified.

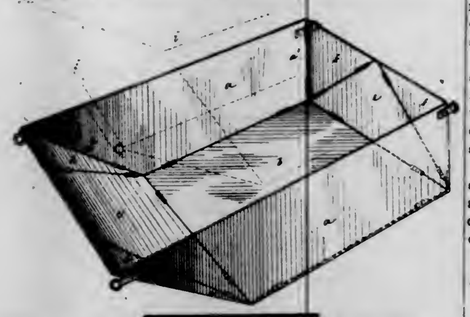
545,243. BATH-TUB. FERDINAND J. MILLER, New York, N. Y., assignor of one-half to Adolph Mueller and Jacob Pfeiffer, same place. Filed June 7, 1895. Serial No. 551,994. (No model.)

Claim.—1. A folding bath tub composed of a bottom, hinged sides, and hinged sectional head and foot pieces, which are hinged to the sides of the tub substantially as specified.

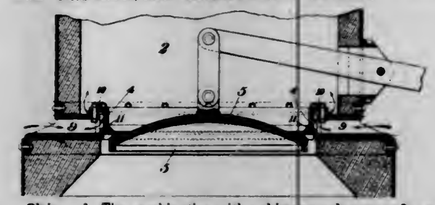
2. A folding bath tub composed of a bottom, hinged sides, a quadrilateral head piece, an isosceles foot piece and triangular corner pieces hinged to the head and foot pieces, substantially as specified.

3. The combination of a folding bath tub having hinged sides and hinged sectional head and foot pieces, which are hinged to the sides

of the tub with a water proof pocket and means for securing said pocket to the tub, substantially as specified.



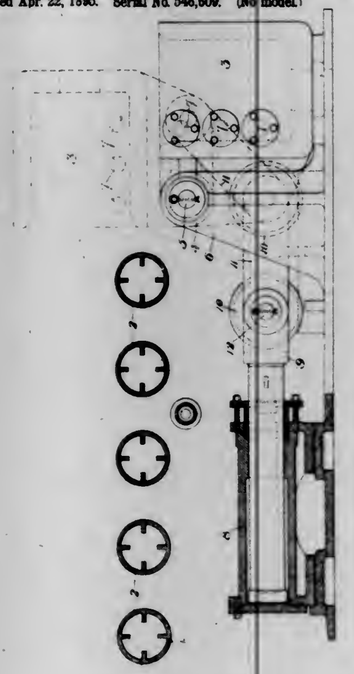
545,244. FURNACE-VALVE. GEORGE W. MCCLURE, Pittsburg, Pa. Filed Jan. 15, 1895. Serial No. 534,977. (No model.)



Claim.—1. The combination with a chimney-valve seat, of a supporting ring, said seat and ring having an intermediate annular air passage communicating with the chimney-flue and also communicating with the atmosphere, for the passage of a cooling current of air; substantially as described.

2. A chimney valve-seat having a supporting ring within which the seat is supported, said ring being composed of separated disks affording an air passage and a seat supported on the ring and having a flange by which it is fixed thereto, said flange and ring being separated to afford an air-passage; substantially as described.

545,245. INGOT-TILTER. GEORGE W. MCCLURE, Pittsburg, Pa. Filed Apr. 22, 1895. Serial No. 546,609. (No model.)

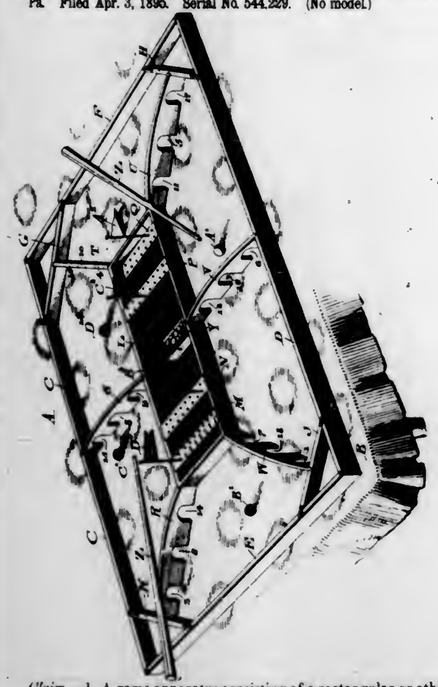


Claim.—1. The combination with a table comprising driven feed-rollers, of a tilting holder pivoted adjacent thereto, and arranged to receive and hold the ingot in an upright position, and a motive cylinder situate under the table and connected with the tilting-holder: substantially as described.

2. The combination with a table comprising driven feed-rollers of a tilting holder pivoted adjacent thereto, and arranged to receive and hold the ingot in an upright position, a motive cylinder situate under the table and connected with the tilting holder, and a wheel carried by the plunger of said cylinder and running upon a track: substantially as described.

3. The combination with a table comprising driven feed-rollers, of a tilting holder pivoted adjacent thereto, and arranged to receive and hold the ingot in an upright position, and anti-friction rollers contained within the holder at the side thereof; substantially as described.

545,246. GAME APPARATUS. ROBERT MCCURDY, Philadelphia, Pa. Filed Apr. 3, 1895. Serial No. 544,229. (No model.)



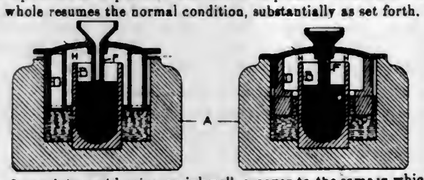
Claim.—1. A game apparatus consisting of a rectangular or other shaped frame, composed of sides and end pieces, braces connecting said sides and ends at each end of the corners thereof, a rectangular or other shaped inclosure within said frame, arches extending from each of the corners of said inclosure to said braces and arches extending from the long sides of the inclosure to those of the frame, and balls adapted to pass through slots in said arches, said parts being combined substantially as described.

2. A game apparatus consisting of a folding frame, consisting of hinged sectional sides and end pieces connected with said sides, braces, a box adapted to be located within said frame, arches extending from the corners of said box to said braces, and arches extending from the sides of the box to the sides of said frame, balls adapted to pass through opening in each of said arches, and markers in said box, substantially as described.

3. In a game of the character described, the jointed sides C and D, the end pieces E and F, the bridges R, S, T, U, V, and W, each provided with a plurality of numbered openings therein, the central box L adapted to receive a box containing chips or similar counting devices, said box being adapted to support the apertured strips M, N, P, and Q, in which markers or flags are adapted to be placed, in combination with cues and balls adapted to be propelled through said bridges, substantially as described.

545,247. INKSTAND. KESTER J. PEERS, Boston, Mass. Filed Jan. 15, 1895. Serial No. 534,990. (No model.)

Claim.—1. An inkstand consisting of an ink well, a water chamber, a cover common to both which by reason of its buoyancy normally floats upon the water in said chamber, a dip-funnel in said cover and a tube depending from said funnel into the ink in the said ink well, the whole so constructed and arranged that by the depression of the cover and the consequent displacement of the water and confined air the ink in the ink well is depresed and caused to rise into the said tube and dip-funnel and upon the removal of the pressure from the cover the whole resumes the normal condition, substantially as set forth.



2. An inkstand having an ink well, a cover to the same in which is a dip-funnel from which a tube depends into the ink in said ink-well a suitable liquid medium for sustaining said cover in an elevated floating position independent of the ink in said ink well and a chamber for said liquid medium, all substantially as and for the purposes herein more fully set forth.

3. In an inkstand, the combination of a water chamber, an ink-well, a cover common to both and so constructed as to float upon the water in said water chamber, a dip-funnel in said cover and a tube depending from said dip-funnel into said ink well, all substantially as and for the purposes herein described.

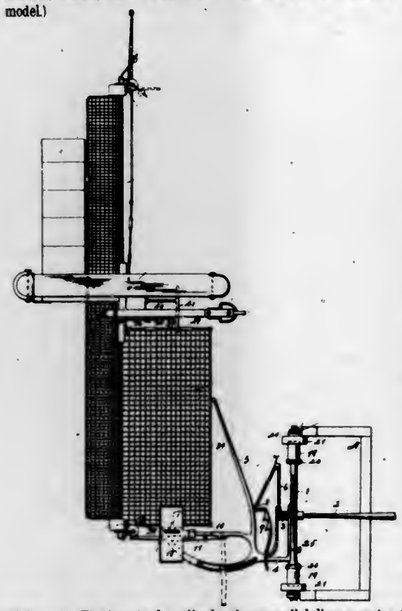
4. In a water sealed inkstand, a cover so constructed as to float upon the water in said stand, substantially as described.

5. An inkstand having two chambers one for ink and the other for water, a cover common to both, said cover being so constructed as to float upon the water in said water chamber, and thus sealing the ink from exposure to atmospheric influences, substantially as herein described.

6. The combination of the water chamber A, the ink well B, the dip-funnel E and the tube F with a cover, common to both the water chamber and the ink well and carrying the said dipfunnel and tube, so constructed as to float upon the water in said water chamber, all substantially as and for the purposes set forth.

7. The combination of the water chamber A, the water contained therein, the ink well B, the cover C its depending buoyant ring D, the dip-funnel E and the tube F, all substantially as described.

545,248. RAILWAY MAIL-DELIVERY DEVICE. ORVILLE D. ROGERS, Shoals, Ind. Filed Mar. 1, 1895. Serial No. 540,212. (No model.)



Claim.—1. The herein described railway mail delivery and catching device, comprising a suitable frame, a transverse rock bar journaled therein, an operating handle attached thereto, a rigid catcher frame secured to said bar, and having an oblique projecting catcher arm, a clutch spring attached to the catcher frame and forming with said frame and arm a throat or pocket for the pouch, a delivery stem, independent of the said catcher arm means for attaching the pouches thereto, and a trip device for releasing said pouches, substantially as specified.

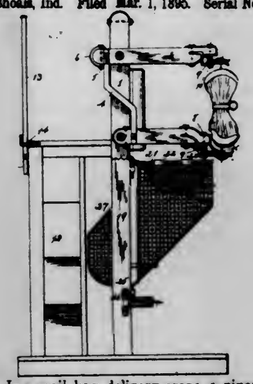
2. In a railway mail catching and delivering device, the rock-bar 1, its operating handle, means for limiting the rotation of said bar, the catcher frame rigidly secured thereto, the clutch spring secured to said catcher frame, the extended catcher arm, said arm frame and spring forming a throat or pocket adapted to hold the bag when caught the delivery stem, independent of the said catcher arm the trip arm pivoted to said stem and arranged to hold the pouches thereon, and means for releasing said arm, substantially as specified.

3. In a railway mail catching and delivering device, the rock-bar 1, its handle 2, the rigid catcher frame 4, having the arm extension and the clutch spring 6, having the reverse bend 7, the heel at 8 adjacent to said arm, and the free portion forming with said arm a throat or pocket for a mail pouch, said free portion having spurs substantially as specified.

4. In a railway mail catching and delivering device, the combination with the rock-bar 1, and the catching devices of the delivery stem 10 having the pin and ring slots therein, the trip arm 11 pivoted to said stem and having a stud or pin adapted to engage the pin slot of said stem, the guides 12 for said arm, the check-spring 13 carried by said guides, and having a catch shoulder for said trip arm, the coil spring 14 also carried by said guides, and the fender pans attached to said stem, substantially as specified.

5. The combination with the train device arranged to deliver one or more pouches and at the same time to catch a pouch from a holding crane, said device having a projecting catch arm, and a trip arm controlling the release of the pouches to be delivered, of a crane having the pivotal pouch-holding arms, folding catch baskets adjacent to the crane, a device attached to the crane post for holding said baskets open, said device being operated to release the baskets by the falling of the lower crane arm, pockets in connection with the catch baskets for receiving the pouches as the baskets close, and a device adjacent to said baskets for actuating said trip arm, substantially as specified.

545,249. RAILWAY MAIL CRANE AND CATCHER. ORVILLE D. ROGERS, Shoals, Ind. Filed Mar. 1, 1895. Serial No. 540,213. (No model.)



Claim.—1. In a mail bag delivery crane, a pivoted supporting arm for the crane, a diamond shaped hook 7, pivoted to the outer end portion of such arm, a spring coiled around the pivot of said hook and attached to said pivot and to said arm, a guard stirrup 10 for preventing the rings of the bags from passing too far back on said hooks and a bowed spring 11 secured to the inner end portion of said hook and bearing against the same at its free end portion, substantially as specified.

2. In a railway mail crane, the pivotal crane arms 2 and 3, the arm 2 having a counterbalancing weight, the link connecting said arms, the diamond-shaped hooks pivotally secured in said arms, the coil springs for holding said hooks in alignment, the guard stirrups for said hooks, and the guard springs therefor, substantially as specified.

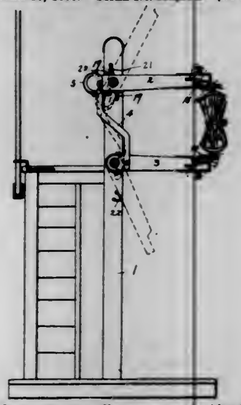
3. The combination with a railway mail crane having pivotal pouch-supporting arms, of one or more folding catch baskets adjacent to said crane and an arm pivoted to the crane post and adapted to hold said baskets in open position, said arm being operated to release the baskets by the falling of the crane arm, substantially as specified.

4. The combination with a railway mail crane, having pivoted pouch supporting arms, of one or more folding net catch baskets adja-

cent to said crane, an arm attached to the crane post and arranged when extended to hold said basket or baskets in open position, said arm being operated to release the basket or baskets by the falling of the crane arm and a spring for closing each of said baskets when released, substantially as specified.

5. A catch basket for mail pouches comprising a support and back-guard, a frame pivotally attached to said support, and arranged to open away from or close against said support, a flexible covering for said frame, a pouch receiving pocket into which said basket discharges at its lower rear portion, means for holding said basket in open position and a spring for closing the same, substantially as specified.

545,250. RAILWAY MAIL-CRANE. ORVILLE D. ROGERS, Shoals, Ind. Filed June 10, 1895. Serial No. 552,284. (No model.)



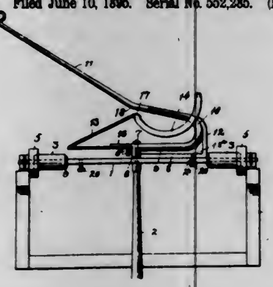
Claim.—1. In a railway mail crane, the combination of a pivoted crane arm, a rod or bolt journaled vertically in the outer end portion of the said arm, the spring therefor, the hook arm 9 attached to the said bolt, said hook arm having a shank portion and an intermediate swelled portion which tapers to a downwardly turned point, the guard spring secured to the hook arm, the stirrup having the vertical stop arms 16, and the spring stop or stops for the crane arm, substantially as specified.

2. In a railway mail crane, a pivoted crane arm, a rod or bolt journaled vertically in the outer end portion of said arm, the double spring therefor, one part of said spring being coiled around each end portion, the hook arm 9 attached to the said bolt, its bent guard spring and the stirrup secured to said crane arm, said stirrup having the vertical arms 16 which are forward of said rod or bolt, and the bow portion which connects the said arms, substantially as specified.

3. In a railway mail crane, the combination with the counterweighted pivoted crane arm having a beveled lug on its upper and lower edge adjacent to its pivot, of the two springs, one adjacent to and in contact with one of the said lugs of said springs having a horizontal portion 20 and an inclined portion 21, substantially as and for the purpose specified.

4. In a railway mail crane, the combination with the crane post and the crane arms pivoted to the said post, of the spring stop for limiting the downward movement of the lower of said arms, said stop consisting of a piece of spring material bent acutely upon itself and secured at its ends to the said post below the said lower arm one limb of said piece having an inclination which corresponds to the inclination of the said arm in its lowered position, substantially as specified.

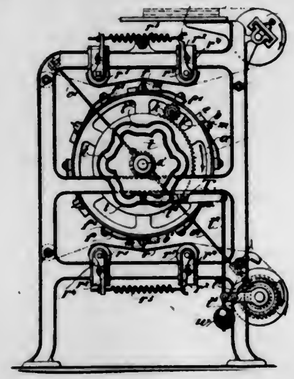
545,251. RAILWAY MAIL-CATCHER. ORVILLE D. ROGERS, Shoals, Ind. Filed June 10, 1895. Serial No. 552,285. (No model.)



Claim.—1. In a railway mail catching device, the combination of a suitable frame or support, of the transverse bar or shaft journaled therein, its handle bar or lever, the pivoted reversible catcher frame having the oblique catcher arm, and the spring having a forked and bent extension through which the said arm passes, substantially as specified.

2. In a railway mail catching device, the catcher frame having the arm 8, U-loop 10, and oblique arm 11, and the spring secured to said frame and having a forked or slotted extension which embraces said loop, and a heel, as 17, which is in juxtaposition to the inner portion of the arm 11, substantially as specified.

545,252. CLOTH-RUBBING APPARATUS. JOHANN SCHWEITER, Horgen, Switzerland. Filed Sept. 21, 1894. Serial No. 523,744. (No model.)



Claim.—1. In a cloth rubbing apparatus, the combination, with the frame, a drum provided with a shaft journaled in the frame, and scraper blades yieldingly supported upon the periphery of the drum, of means for guiding and drawing the material through the machine, flexible pressure aprons arranged upon tension rollers located at diametrically opposite points of the drum, and means for adjusting the tension of said rollers, substantially as set forth.

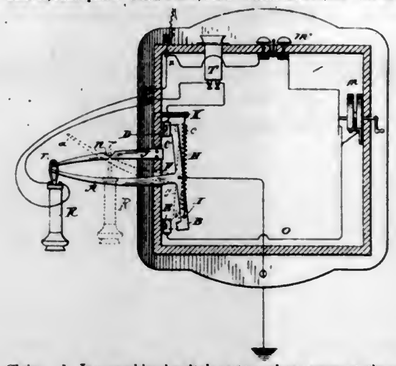
2. In a cloth rubbing apparatus, the combination, with the frame, a drum provided with a shaft journaled in the frame, and a series of scraper blades arranged upon the periphery of the drum, of means for guiding and drawing the material through the machine and around the drum, flexible pressure aprons arranged at diametrically opposite points of the drum, tension rollers to which the opposite ends of the aprons are attached, levers fixed to the rollers, and tension springs connecting each set of levers, substantially as set forth.

3. In a cloth rubbing apparatus, the combination, with the frame, and a drum mounted therein and provided on its periphery with a series of elastically mounted scraper blades, means for guiding the material around the drum, a take-up roller around which the material is caused to be wound and means for imparting an intermittent rotary motion to the take-up roller, the same comprising a cam wheel, arranged upon the shaft of the drum, a ratchet wheel fixed to the take-up roller, an actuating lever provided with a pawl adapted to engage the teeth of said ratchet wheel, and connections between said cam wheel and the actuating lever, substantially as set forth.

4. In a cloth rubbing apparatus, the combination with the frame, a drum provided with a shaft journaled in the frame, and a series of scraper blades arranged upon the periphery of the drum, and provided with shanks, of disks mounted loosely on the shaft and provided with peripheral cogs, a second shaft journaled in the drum and provided with pinions adapted to engage said cog disks, whereby the disks may be rotated, said disks being provided with a series of eccentric slots, guide-bars extending through the heads of the drum and into said eccentric slots, said guide-bars guiding the shanks of the blades, springs arranged the blades and guide-bars, and means for pressing the material against the knives, substantially as set forth.

5. In a cloth rubbing apparatus, the combination, with the frame, a drum provided with a longitudinally movable shaft mounted in the frame, and scraper blades arranged upon the periphery of the drum, of a take-up roller for drawing the material through the machine, means for guiding the material, a cam wheel on the shaft of the take-up roller, a lever pivoted to the frame of the machine, said lever being connected with the shaft of the drum so that the same may rotate and yet be longitudinally shifted by the movement of the lever, and means for pressing the material against the knives, substantially as set forth.

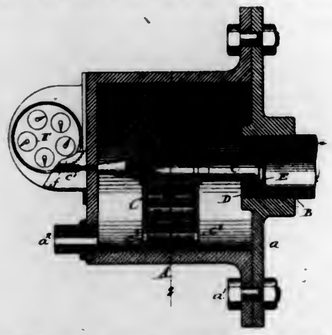
545,253. COMBINED TELEPHONE-RECEIVER SUPPORT AND SWITCH. GEORGE F. SHAVER, Yonkers, N. Y., assignor to Amy R. Shaver, same place. Filed Dec. 6, 1894. Serial No. 531,051. (No model.)



Claim.—1. In a combined switch and telephone support, the combination of a fixed post and a pivoted lever provided with contact points the post and the lever being set so as to form a lock when the switch is in one extreme position and so that their outer ends are brought nearly together when the switch is in the other extreme position, and a telephone provided with a ring or equivalent actuating mechanism whereby it is sustained by the support and operates the switch, substantially as described.

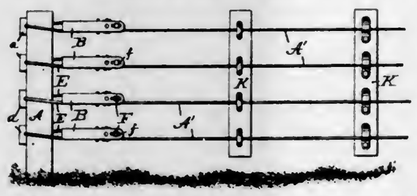
2. The combination of a T-shaped circuit changing switch A, B, C, curved up at its outer end, circuit terminals D, E, pivot G, spring H, post J, and ring r, substantially as described.

545,254. ROTARY WATER-METER. ISAAC SMITH, Nottingham, England. Filed July 6, 1894. Serial No. 516,743. (No model.)



Claim.—The combination of the casing, the hollow shaft mounted to revolve therein, the disk mounted on the shaft and having in it a spiral passage of the same cross section throughout its length, winding around the axis of the hollow shaft, communicating at one end with the hollow shaft and at the other end with the exit port, an outlet to the casing, and registering mechanism connected with the shaft and driven thereby.

545,255. WIRE FENCE. HENRY S. STAUFFER, Farmersville, Pa. Filed Oct. 13, 1894. Serial No. 525,779. (No model.)

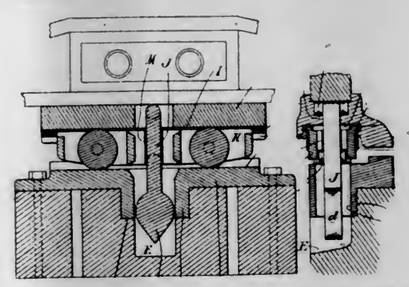


Claim.—1. The combination, in a wire-fence, of an open-ended U-shaped frame, a drum journaled in the arms of the frame and adapted to have a fence-wire attached thereto, a ratchet-wheel on one end of the drum, a rod having one end thereof pivoted to the arm of the frame opposite the ratchet-wheel, the other end of said rod engaging the arm of the frame adjacent to the ratchet-wheel and being constructed to be moved parallel with the longitudinal edge of said arm, to be engaged with or disengaged from the ratchet-wheel, a movable bearing-plate disconnected from the drum-mechanism and located within the arms of the frame between said drum and the closed end of said frame, ears on the bearing-plate lapping the arms of the frame, a coiled spring bearing on said plate and on a bearing at the closed end of the frame, and a double wire having its ends passing through separate openings in said bearing-plate, said ends passing through the coiled-spring and the bearing at the closed end of the frame and being adapted to be secured to a post, substantially as and for the purpose specified.

2. The combination, in a wire-fence, of a frame having a slot in an arm thereof parallel with the longitudinal edge of said arm, a drum journaled in the arms of said frame and adapted to have a fence-wire attached thereto, a ratchet-wheel on the end of the drum adjacent to the arm of the frame having the slot therein, an angular head formed on the other end of the drum, a rod having one end pivoted in the arm of the frame adjacent to said head and the other end threaded and passing through said slot, said rod being adapted to engage the ratchet-wheel, a nut on the threaded end of the rod, and a connection between said frame and a post, substantially as and for the purpose specified.

3. The combination, in a wire-fence, of an open-ended U-shaped frame, one of the arms of said frame having a slot therein parallel with the longitudinal edge thereof, a drum journaled in the arms of the frame and adapted to have a fence-wire attached thereto, a ratchet-wheel on the end of the drum adjacent to the arm of the frame having the slot therein, a rod having one end pivoted in the arm of the frame opposite the slot and the other end threaded and passing through said slot, said rod being adapted to engage the ratchet-wheel, a nut on the threaded end of the rod, means for rotating the drum, a movable bearing plate engaging said arms between the drum and the closed end of the frame, a coiled-spring bearing on said plate and the cross-piece closing the end of the frame, a doubled wire having its ends passing through openings in the bearing-plate, said ends extending through the coiled-spring and the closed end of the frame and being adapted to be secured to a post, substantially as and for the purpose specified.

545,256. CAR SIDE BEARING. FRANCIS G. SUERMIEL and AUGUSTUS TORREY, Detroit, Mich. Filed Apr. 11, 1895. Serial No. 545,372. (No model.)



Claim.—1. In a side bearing for cars, the combination of the car plate, the bolster plate, a roller carriage between said plates, flanges on the carriage engaging grooves in the car plate, for the purpose described, and means for controlling the movement of the carriage on the car plate, substantially as described.

2. In a side bearing for cars, the combination of the car plate, the bolster plate, a roller carriage between, flanges on the carriage engaging grooves in the car plate for the purpose described, and a coupling bar suspended from the car plate acting to control the movement of the carriage, substantially as described.

3. In a side bearing for cars, the combination of the car plate, the bolster plate, the roller carriage between, and a coupling bar suspended from the car plate, passing through the carriage, and having its lower end engaging the bolster plate for the purpose described.

4. In a side bearing for cars, the combination of the apertured car plate, the apertured bolster plate, the intermediate roller carriage, a coupler having trunnions at the top, saddle bearings in the car plate in which the trunnions are supported, lugs on the side of the bar, vertical guides in the carriage with which said lugs engage, and the head as described engaging bearings on the bolster plate.

5. In a side bearing for cars, the combination of the car plate, the bolster plate, the roller carriage between said plates, and the emergency flanges O, P on said plates, as and for the purposes set forth.

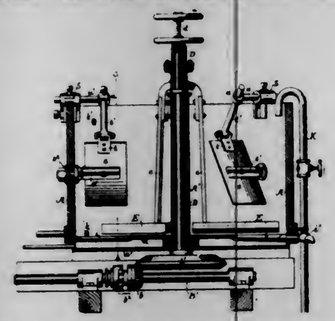
545,257. DRESS-PROTECTOR. ALBERT S. WAITZFELDER, New York, N. Y. Filed June 8, 1895. Serial No. 552,078. (No model.)



Claim.—1. As a new article of manufacture, the herein described dress protector consisting of a flat stiffener *a*, an open-work covering *b* having projecting edges c c, a facing strip *e* embracing the said stiffener and its covering and secured thereto, the said facing strip being formed into a bight at one edge of the stiffener and having a cord located in the bight.

2. As a new article of manufacture, the herein described dress-protector consisting of a flat stiffener *a* provided with an openwork covering *b* having corded edges c consisting of cords 1, 2, 3, 4, surrounded by braid threads and an enlarged cord 5 also surrounded by the braid threads, substantially as described.

545,258. SEPARATOR. THOMAS WALKER and JOHN F. CARTER, Philadelphia, Pa., assignors to John A. Barham and Joseph A. Vincent, same place. Filed May 23, 1893. Serial No. 475,284. (No model.)



Claim.—1. The combination in a separator, of the tank, depressions or pockets in said tank containing amalgam, circulating blades elevated above the bottom of the tank by which motion is given to the material under treatment, with horizontally pivoted blades mounted on the body of the tank so that they can be adjusted to direct the material toward the pockets, substantially as described.

2. The combination of the stationary tank, amalgam collectors in the bottom of the tank, movable blades arranged above the bottom of the tank, mechanism for moving said blades, with blades horizontally pivoted to the side of the tank to direct the material down toward the collectors, a rod attached to the upper end of each blade, and adjustably secured to the tank, so that the blades can be set at different angles, substantially as described.

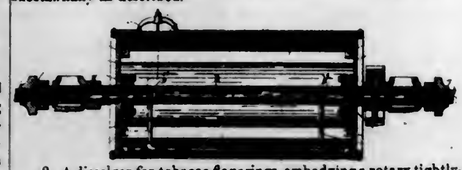
3. The combination of the pan formed of two plates providing a steam space, for heating the pan, side walls forming with the pan a tank, inclined blades on the walls of the tank, extended depressions or pockets in the said pan, directly under the blades an independent valved passage communicating with one or more of said depressions, whereby the amalgam is carried away from the apparatus, water inlet and outlet, circulating blades mounted above the bottom of the tank, a central shaft to which said blades are secured, and mechanism for driving said shaft, substantially as described.

4. The combination of the stationary tank, amalgam collectors in the bottom of the tank, a vertical shaft, blades carried thereby, an arm *s'*, a blade *s* thereon, a rod *t'* pivoted to the upper portion of the blade, a rod *u'* having a head *u* through which the rod *t'* passes, a pivot block S for the rod *u'* with set screws for retaining the rods *u'* and *t'* in place, substantially as specified.

5. The combination of the stationary tank, amalgam collectors in the bottom of the tank, a vertical shaft, blades carried thereby, an arm *s'*, a blade *s* thereon, said arm extending through the tank and provided with a clamping nut, a rod *t'* pivoted to the upper portion of the blade, a rod *u'* having a head *u* through which the rod *t'* passes, a pivot block S for the rod *u'* with set screws for retaining the rods *u'* and *t'* in place, substantially as specified.

545,259. DISSOLVER. RICHARD F. WHALEN, Rochester, N. Y. Filed Nov. 26, 1894. Serial No. 529,998. (No model.)

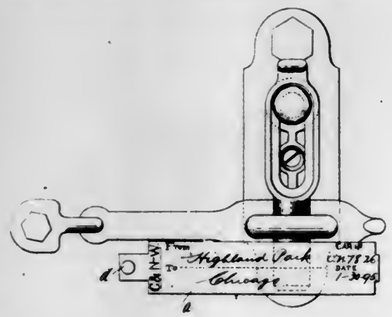
Claim.—1. A dissolver for tobacco flavorings, embodying a rotative tightly-closed shell or casing for receiving the fluid and material to be dissolved, strips extending lengthwise of the shell and projecting from its inner periphery, said strips serving to engage and lift the material to be dissolved and to abrade the surface of the same and heating pipes having coils arranged between a pair of said strips, substantially as described.



2. A dissolver for tobacco flavorings, embodying a rotary tightly-closed casing for receiving the material to be dissolved, strips extending substantially horizontally within said casing and serving to engage and lift the material to be dissolved and to abrade the surface of the same, heating pipes within said casing, said heating pipes being arranged horizontally between two adjacent strips only, and inlet and outlet pipes connected with said heating pipes, substantially as described.

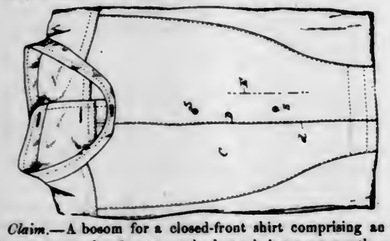
3. A dissolver for tobacco flavoring comprising a substantially horizontal closed shell for receiving the material to be dissolved having the inner faces of its opposite heads or ends provided with projecting lugs, means for revolving the shell, supports or strips for engaging and agitating the material to be dissolved projecting from the inner face of the shell and having their opposite ends fixed to said lugs, a heating pipe for heating the material to be dissolved having a series of substantially horizontal coils arranged in proximity to the inner face of the shell and only between two adjacent supports or strips and laterally extending ends connected to the hollow extremities of the shaft, and inlet and outlet pipes for the heating fluid connected to the opposite extremities of the shaft, substantially as set forth.

545,260. CAR-SEAL. THOMAS S. WHEELWRIGHT, Highland Park, Ill. Filed Feb. 4, 1895. Serial No. 537,279. (No model.)



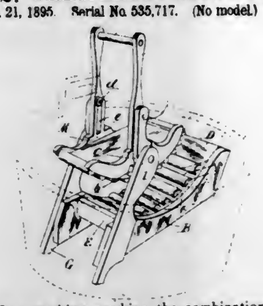
Claim.—As a new article of manufacture, a car seal or tag formed of sheet metal and provided with a coating of composition, as described, having the property of receiving pencil or ink hand-writing and retaining the lead of the pencil or the ink although the seal be subjected to rain or other effects of the weather; whereby hand-writing may be placed upon the face of the seal in such a manner as to resist the weather, and the removal of the coating without destroying the hand-writing is prevented; substantially as described.

545,261. SHIRT. FRANK L. WYETH, Manchester, N. H. Filed May 13, 1895. Serial No. 549,031. (No model.)



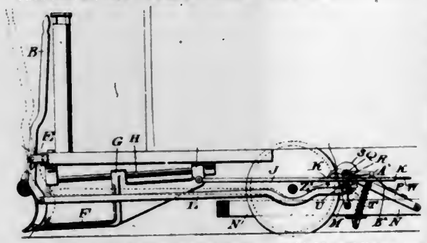
Claim.—A bosom for a closed-front shirt comprising an inner stiffening part and a front part the latter being permanently united, to the former along a line at one side of the longitudinal center of the bosom and folded back to the opposite side of said center and there reversely folded, said union forming the sole connection of the front and back parts intermediate their exterior edges, all substantially as set forth, whereby an open front shirt is simulated.

545,262. WASHING-MACHINE. RICHARD A. YORK, Auburn, Ind. Filed Jan. 21, 1895. Serial No. 535,717. (No model.)



Claim.—In a washing machine, the combination with an independent removable frame, of the vertically disposed overhanging side bars l having the stop plates *b*, links pivoted to the side bars having the oppositely arranged bearing portions *a* and c arranged to engage the stop plates, and retain the links in different positions, and the rubber member carried by the links, substantially as described.

545,263. CAR-FENDER. WILLIAM H. BIGLER, Philadelphia, Pa. Filed Nov. 27, 1894. Serial No. 530,134. (No model.)



Claim.—1. A car fender having a pivoted shield, a sliding scoop, supported on inclined bars secured to the under side of the car arms pivotally attached respectively to said shield and scoop and mechanism as described connected with said shield arm and adapted to engage a rack on said scoop arm for advancing the latter, said parts being combined substantially as described.

2. A car fender having a shield and scoop, bars connected with said parts, a rack on one bar, a toggle lever connected with the other, an arm carrying a pinion connected with one limb of said lever, and a friction pulley on said arm adapted to contact with one of the wheels of the car, substantially as described.

3. A car fender having a rising and falling shield and a sliding scoop, and inclined rods secured to the car furnishing supports for said scoop, said shield being adapted to ride in said scoop when the latter is thrust forward, and downward, substantially as described.

4. In a car fender, a shield and scoop, a bar, a toggle lever connected with said bar, a swinging arm attached to one limb of said toggle, and a frame on the car to which the other limb is attached a pinion and friction wheel on said arm, and a bar with a rack thereon, said wheel being adapted to engage with one of the wheels of the car, and said pinion to mesh with said rack, said bars being connected respectively with said shield and scoop, the parts named being combined substantially as described.

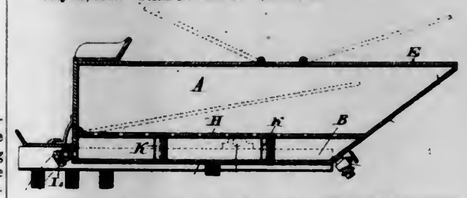
5. In a car fender, the bars J and L connected with a shield and scoop at the front of the car, the rack K on the bar J, the toggle lever M on the bar l, the arm P, the pinion R, and the friction wheel S on said arm, and the roller U on said arm below said rack, the latter having the recess W, which is adapted to permit the same to lower on said roller, substantially as described.

6. In a car fender, a rack connected with the scoop at the front of the car, and a pinion meshing with said rack, in combination with a pawl adapted to engage with said rack, and provided with shoulders adapted to engage the under side of the rack for again raising the same after being disengaged from said pinion, substantially as described.

7. In a car fender, a pivoted shield, a sliding scoop movable on inclined guide rods secured to the car, an arm pivoted to said shield, a toggle lever pivotally connected to a frame at one end and at its axle to said shield arm, a spring controlled arm pivoted to said frame and to the upper end of said toggle lever, said last mentioned pivotal connection having thereon a friction pulley, a pinion and a pawl, an arm connected with said scoop having a rack thereon, engaged by said pinion, and a shoulder on said pawl adapted to support said rack arm, said parts being combined substantially as described.

8. A car fender having a pivoted shield, a scoop depending and supported on inclined bars secured to the under side of a car, arms pivotally attached to said shield and scoop respectively, and mechanism connected with said shield and scoop arm for operating the latter on the movement of the former, said parts being combined substantially as described.

545,264. DUMPING-WAGON. WILLIAM BOOTH, Gladwyne, and SAMUEL STURGIS, West Manayunk, Pa. Filed Mar. 5, 1894. Renewed July 25, 1895. Serial No. 557,093. (No model.)



Claim.—1. A dumping wagon having a perforated false bottom and posts rising from the bottom proper, the false bottom being hinged to the body of said wagon and resting on said posts, substantially as described.

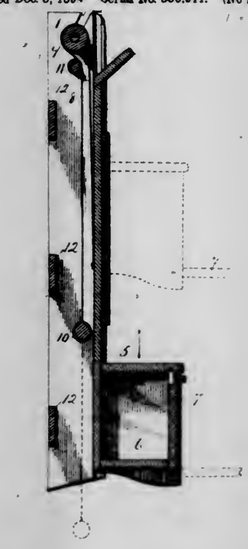
2. A dumping wagon consisting of a body having a tail end sloping inwardly from the top to the bottom, a hinged perforated false bottom, posts on the bottom proper, on which the false bottom rests, and a valve on the body below said false bottom, said parts being combined substantially as described.

3. A dumping wagon having its bottom provided with a perforated false bottom, and posts on the bottom proper, said false bottom being removably supported on said posts, substantially as described.

4. A dumping wagon having a body provided with journals on the sides thereof, above the sills of the wagon, a perforated false bottom, and posts on the bottom proper, said false bottom being removably supported on said posts, and the parts named combined substantially as described.

5. A dumping wagon having a body provided with journals on the sides thereof, above the sills of the wagon, a sloping tail end, a perforated false bottom, and posts on the bottom proper, said false bottom being removably supported on said posts, and the parts named combined substantially as described.

545,265. SHAVING-CABINET. ANDREW W. BRENNAN, Towanda, Pa. Filed Dec. 5, 1894. Serial No. 530,911. (No model.)



Claim.—1. A shaving cabinet comprising a frame, a slide carrying a mirror, a leaf or table extending horizontally from the lower portion of the slide, both the mirror and the leaf or table being carried by said slide, means for simultaneously adjusting both the slide and table and holding the slide at various adjustments, said means consisting of a counterbalancing weight located back of the slide, a flexible band connecting said weight with the slide, and a revoluble roll for said band to pass over, said roll extending transversely across the frame, substantially as and for the purposes described.

2. A shaving cabinet consisting of a frame and the slide carrying the mirror, in combination with an apron attached at one end to the slide and provided at another point with a counter-balancing weight and passed over a suitable support at the upper portion of the frame, said apron being adapted to close the space to the rear of and above the slide as the latter is lowered, substantially as and for the purposes described.

3. In a shaving cabinet, the combination with a frame and a slide carrying the mirror, of an apron attached to said slide and provided with a counter-balancing weight, a shaft or roller at the upper portion of the frame and over which said apron passes, and a second roller or soaft below the first named shaft and directing the apron toward the front of the first named roller or shaft, substantially as and for the purposes described.

4. In a shaving cabinet, the combination with a frame and a slide carrying a mirror, of an apron attached to said slide and passed over a suitable support and provided with a counter balancing weight, and a shelf attached to said slide and projecting in front of the apron to form a pocket between the apron and shelf, substantially as and for the purposes described.

545,266. CHAIN-LINK. RICHARD A. BREUL, Bridgeport, Conn. Filed May 23, 1895. Serial No. 550,418. (Model.)



Claim.—1. The improvement in a chain link, constructed of a single piece of wire, bent at its center to form a loop, sides, and converging, curved, overlapping ends, the lapped portion containing an unreduced double layer of the wire employed, said improvement consisting in the herein described interlocking teeth E, located on and mutually engaging the inner meeting faces of the above defined overlapping ends, all substantially as and for the purpose set forth.

2. As a new article of manufacture, a split chain link having overlapping hooked ends, on the inner faces of which are formed by pressure, without removing any of the stock or material, the herein-described interlocking teeth E and strengthening ribs E', arranged as specified, substantially as and for the purpose set forth.

545,267. CULTIVATOR. HARDY W. CAMPBELL, Putney, S. D. Filed Sept. 4, 1894. Serial No. 522,021. (No model.)

Claim.—1. In a cultivator, the combination, with a suitable carriage, of a series of carrying bars pivotally connected at their forward ends to said carriage, a spring connected to each bar and forming a support for the rear end thereof, a series of teeth supported upon said bar, means for adjusting said teeth, and a raising device for raising said bars and teeth, substantially as described.

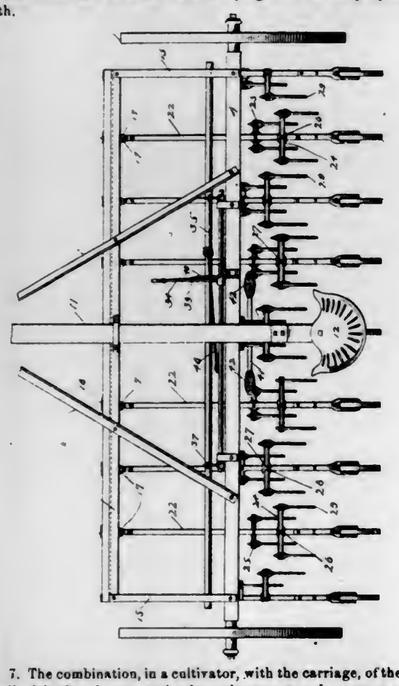
2. In a cultivator, the combination with a suitable carriage, of a series of carrying bars pivotally connected at their forward ends to said carriage, groups of teeth secured upon each of said bars, means for raising and lowering said bars and teeth, and means under the control of the operator for simultaneously moving all of said teeth laterally in either direction.

3. In a cultivator, the combination with a suitable carriage, of a series of carrying bars connected at their forward ends to laterally movable slides, gronps of teeth secured upon each carrying bar, the teeth upon adjacent bars not being opposite to each other, and means for supporting the rear ends of said carrying bars.

4. In a cultivator, the combination, with a suitable carriage, of a series of carrying bars, laterally adjustable slides to which the forward ends of said carrying bars are pivoted, means for supporting the rear ends of said carrying bars, groups of teeth secured upon said carrying bars, and means for vertically and laterally adjusting said carrying bars and said teeth.

5. In a cultivator, the combination, with a suitable carriage of a series of carrying bars pivotally supported at their forward end upon said carriage, groups of teeth carried by each of said bars, means for supporting the rear ends of said carrying bars, a bar or rod extending transversely of the machine, means under the control of the operator for moving said bar across the machine in either direction, and connections between said bar and each of said carrying bars.

6. In a cultivator, the combination, with a suitable carriage, of a series of longitudinal draft or carrying bars pivotally connected at their forward ends to the carriage and each provided at its rear end with a series of teeth, a raising and lowering lever and spring connections between said lever and said carrying bars, for the purpose set forth.

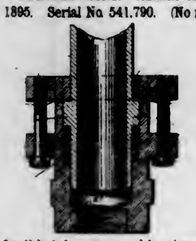


7. The combination, in a cultivator, with the carriage, of the longitudinal draft rods or carrying bars, the transverse bars arranged on said carrying bars, the curved spring teeth removably secured on said transverse bars, means for supporting the rear ends of said carrying bars, and for adjusting the height of said teeth, substantially as described.

8. In a cultivator, the combination, with the carriage, of the series of carrying bars pivotally connected at their forward ends to said carriage, groups of teeth carried by each bar, a transverse rod upon said carriage, connections between said rod and said bars, means for raising said rod, and means for moving said rod transversely of the carriage.

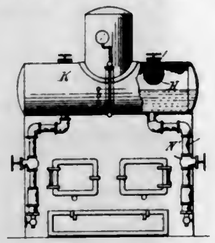
9. In a cultivator, the combination, with the transverse draft bar 14, of the series of clips 16, the series of carrying bars connected to said clips by universal couplings, means for supporting the rear ends of said bars, groups of teeth carried by said bars, means for raising and lowering said bars and said teeth and means for laterally adjusting said bars and teeth.

545,268. FLEXIBLE JOINT. ALBERT CAMPBELL, Noroton, Conn. Filed Mar. 14, 1895. Serial No. 541,790. (No model.)



Claim.—In a flexible joint, the combination with a body or casing having its outer end constructed with two slots located opposite each other, of an annular packing-ring located within the said casing, a rotatable pipe-section located within the casing, and provided with a circumferential band or shoulder adapted to bear at one edge upon one edge of the said annular packing-ring, a yoke having a central opening for the said pipe-section to pass through, adapted to bear upon the outer edge of the band or shoulder thereof, and provided with oppositely projecting lugs, having internally threaded openings, and screw-bolts entering the threaded openings of the said lugs, and connected with the body or casing, which is slotted to receive the same, substantially as set forth.

545,269. BOILER. BARZILLIA J. COLLER, Detroit, Mich. Filed Dec. 26, 1894. Serial No. 532,929. (No model.)



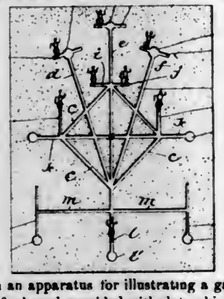
Claim.—1. In a boiler, the combination of horizontal headers a series of rhombic sections connected thereto at one corner each comprising a lower inclined manifold extending over the grates, a series of vertical pipes extending from the upper face thereof, the series extending across the boiler and an upper manifold parallel to the lower manifold and into which the vertical pipes lead, substantially as described.

2. In a boiler, the combination of horizontal headers on each side of the fire, a series of rhombic sections connected thereto at one corner, alternately to the opposite headers, and each section comprising a lower inclined manifold extending over the fire space, a series of vertical pipes extending from the upper face thereof, an upper manifold parallel to the lower manifold into which the vertical pipes lead, outlet pipes from the upper end of the upper manifold, and a universal header into which said outlet pipes connect.

3. The combination of a multiple of furnaces, independent water circulating pipes, or boilers for each furnace universal headers at the top of each boiler, a common steam drum into which the headers connect, return connections from the drum to the bottom of each boiler, and valves in the universal header connections and in the return connections substantially as described.

4. The combination with the boiler comprising the side headers, the universal header at the top and connecting circulating pipes between, of a steam drum having the downwardly inclined portion *a* and located at the front of the boiler, a return connection from the steam drum to the side headers, and a connection from the universal header to the steam drum entering at the top on the plane of and opposite the downwardly inclined portion *a* of said drum, substantially as and for the purpose described.

545,270. BASE-BALL-GAME INDICATOR. SAMUEL R. CROWDER, Richmond, Va. Filed June 4, 1895. Serial No. 551,633. (No model.)



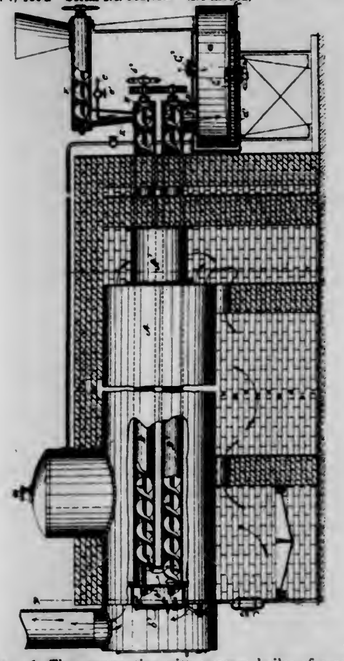
Claim.—1. In an apparatus for illustrating a game of base ball the combination of a board provided with slots which form the "diamond," and one or more short slots connected to these slots at one or more "bases" and extending at right angles to the adjacent diagonal line of the "diamond," substantially as described.

2. In an apparatus for illustrating a game of base ball an inclined support having a series of slots therein to indicate the field, a series of symbols working in said slots, each symbol carrying a bar which extends through one of the slots and carries a weight at its lower end, and a friction-block carried by the bar and adapted to engage the support upon its upper surface whereby the symbols will be held in their placed position and be maintained in a vertical position, substantially as described.

3. In an apparatus for illustrating a game, the combination of an inclined board having a series of slots therein, a symbol working in said slots, said symbol consisting of a bar adapted to pass through the slots in the board, a figure secured to its upper end, a weight secured to its lower end and a pivoted friction block carried by said bar and adapted to bear upon the upper surface of the board, substantially as described and for the purpose set forth.

4. In an apparatus for illustrating a game of base-ball the combination of a board provided with slots to indicate the field, the outer ends of a suitable number of said slots terminating in enlarged openings, and a series of symbols working in said slots and adapted to be passed through the enlarged openings at the outer ends of said slots, substantially as described and for the purpose set forth.

545,271. APPARATUS FOR COOKING COTTON-SEED MEAL. BENJAMIN DARNEY, Bonham, and WILLIAM I. YOPP, Houston, Tex. Filed Mar. 7, 1894. Serial No. 502,752. (No model.)



Claim.—1. The combination with a steam boiler of a conveyer tube and conveyer entering the boiler at one end, an interior chamber contiguous to the soot chamber and containing the inner bearing for the conveyer, and a door into said interior chamber from the soot chamber, substantially as and for the purpose set forth.

2. In an apparatus for cooking cotton-seed meal the combination of a boiler having an end-extension or neck extending from the boiler proper, to the furnace-wall, and a meal conveyer entering said boiler within the extension or neck and arranged below the water level, substantially as set forth.

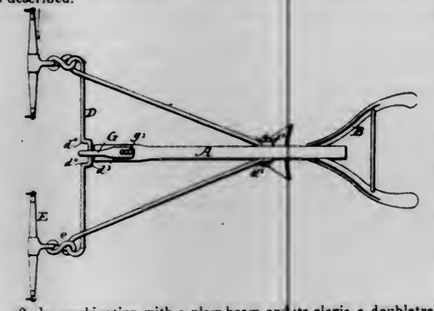
3. In an apparatus for cooking cotton-seed meal the combination of a boiler having a lateral extension or neck extending from the boiler proper to the furnace wall, a meal conveyer entering the boiler through said extension or neck together with the discharging conveyer passing out through the same, substantially as and for the purpose set forth.

4. In an apparatus for cooking cotton-seed meal the combination of a boiler having a lateral extension or neck extending from the boiler proper to the furnace wall, a meal conveyer entering the boiler through said extension or neck together with the discharging conveyer passing out through the same, with a supply feeder for the first conveyer and an evaporating vessel adapted to receive the meal discharged from the other conveyer, substantially as and for the purpose set forth.

545,272. PLOW-DOUBLETREE. THOMAS N. DALLIS, Spartanburg, S. C., assignor of one-half to Clarence Gresham, Charlotte, N. C. Filed Apr. 30, 1895. Serial No. 547,682. (No model.)

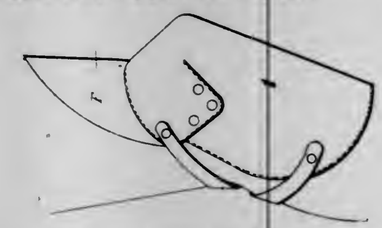
Claim.—1. In combination with a plow-beam and its clevis, a doubletree consisting of a rod D passed longitudinally through the loop of said clevis, and having looped bends thereon, and two braces

converging from said looped bends to the sides of the plow-beam, the rear end of said braces being secured to the plow-beam substantially as described.



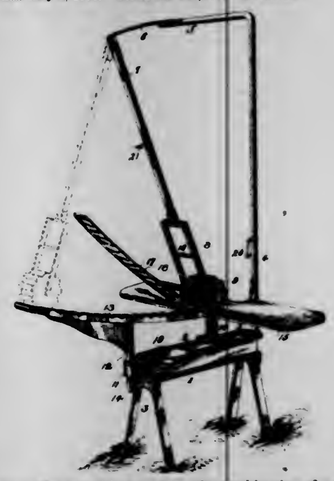
2. In combination with a plow beam and its clevis, a doubletree consisting of a rod D having a rearwardly extended bend d^3 in the middle of its length and passed longitudinally through the loop of said clevis, eyes d upon said rod and two braces integral with the rod D and converging rearwardly, the rear end of said braces being secured to the plow beam substantially as described.

545,273. KNEE-PAD. STONEWALL J. DOWLING, Greenville, Tex. Filed Oct. 24, 1894. Serial No. 526,378. (No model.)



Claim.—A knee pad formed of pliable material, and consisting of a body having side gores, the upper end of the body being turned up with the overlapping edges of the gores, fixedly secured, an apron secured to the upturned end and straps for attaching the pad in place for the purpose described.

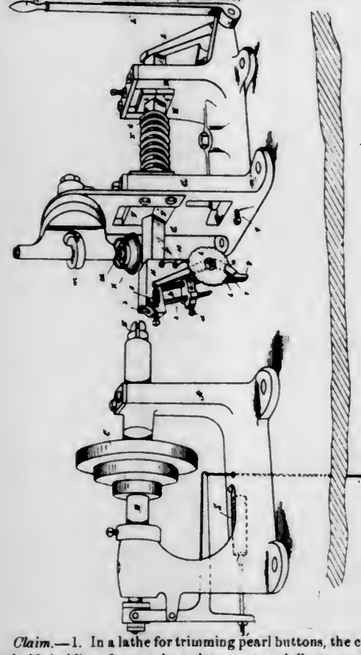
545,274. STARCHING-MACHINE. GEORGE EICHHOLTZ, Milton Pa. Filed May 2, 1895. Serial No. 547,900. (No model.)



Claim.—1. In a starching machine, the combination of a support, a starching board adjustably supported at the front end thereof, said board being curved longitudinally and corrugated transversely on its upper face, a swinging frame pivoted at its rear end and adapted to surround the starching board, said frame carrying a straining cloth adapted to cover the corrugated surface of the board, a standard rising from the support in rear of the starching board; a forwardly-projecting spring secured at the upper end of said standard, a depending lever pivoted to the forward end of said spring and carrying a corrugated roller adapted to travel over the curved corrugated surface of the starching board, substantially as described.

2. In a starching machine, the combination of a support, a horizontal starching board supported on the forward end thereof and above the same, said starching board being curved downward longitudinally and being corrugated transversely, a frame pivoted at its rear end and adapted to fit over the starching board and carrying a straining cloth adapted to cover its corrugated surface, and an upright swinging operating lever pivoted at its upper end and carrying a corrugated roller at its lower end adapted to travel over the corrugated surface of the starching board, as and for the purposes set forth.

545,275. BUTTON-TRIMMING MACHINE WITH AUTOMATIC KNIFE-SHARPENER. ANDREW A. RELIFF, Detroit, Mich. Filed Oct. 26, 1893. Serial No. 489,224. (No model.)



Claim.—1. In a lathe for trimming pearl buttons, the combination of a knife holding frame adapted to move axially toward and away from the button holding chuck of said machine, a knife feeding screw placed obliquely with respect to the path of travel of said frame, a ratchet wheel and intermediate gearing whereby said ratchet wheel is adapted to rotate said screw, and a ratchet driving pawl adapted to coact with a fixed part of the frame-work and drive said ratchet wheel, substantially as described.

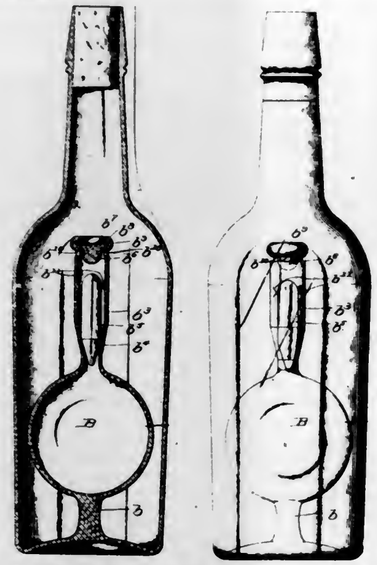
2. In a lathe for trimming pearl buttons, the knife frame K, adapted to be carried by the horizontally moving carriage F, the knife feeding screw b, having its ends journaled in said frame, the nut c, adapted to engage the feeding screw, the knife k, adjustably held at one end by means of the nut whereby it is compelled to move with said nut and having its opposite end guided by means of an opening through the frame, the pinion i, mounted on the screw, the worm screw 2, journaled in the frame and adapted to engage said pinion, the ratchet wheel 3, secured to one end of said worm screw, and the pawl lever 4, loosely hung on the shaft of the ratchet wheel adapted to coact with the frame whereby said ratchet wheel is operated, all combined to operate substantially as and for the purpose described.

545,276. NON-FILLABLE BOTTLE. BURD P. EVANS, Philadelphia, Pa. Filed May 25, 1895. Serial No. 550,614. (No model.)

Claim.—1. The combination with a bottle, of an inclosed communicating receptacle provided with means for trapping a quantity of air, for the purpose described.

2. The combination with a bottle, of an inclosed non-removable communicating receptacle provided with an air egress and means for trapping the contained air, for the purpose described.

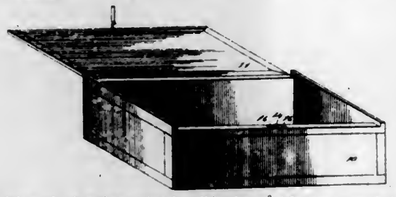
3. The combination with a bottle, of an inclosed device having requisite inlets and outlets, and a valve controlling the outlet, for the purpose described.



4. The combination with a bottle, of an inclosed non-removable receptacle having requisite inlets and outlets and an inaccessible valve controlling the outlet, for the purpose described.

5. The combination with a bottle, of an inclosed receptacle, consisting of a hollow body, a tubular continuation provided at or adjacent its end with a series of openings, a sealed stopper closing one of the openings, and a valve within the tube controlling the outlet, for the purpose described.

545,277. BOX-LID RAISER AND FASTENER. CHARLES L. FEINBERG, Brooklyn, N. Y. Filed May 21, 1895. Serial No. 550,079. (No model.)



Claim.—1. A spring acting box lid raiser and fastener, consisting of a catch fixed to the box lid, a keeper fixed to the adjacent portion of the box body, and a spring combined with the keeper and capable of raising the lid upon the disengagement of the catch and keeper, that portion of the body which carries the keeper being yielding so that it may be moved to engage or disengage the catch and keeper, substantially as described.

2. A box, having secured to its lid a catch, the same consisting of a rod formed with a projection thereon, the body portion of the box having secured thereto and adjacent to the catch a tube receiving the catch and formed with an opening therein, and an expansive spring located within the tube, substantially as described.

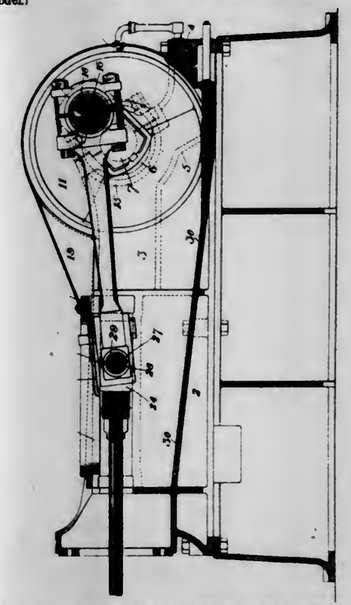
545,278. BUTTON. HERMANN C. FISCHER, Boston, Mass., assignor of one-half to Alvin T. Morrill, same place. Filed Apr. 15, 1895. Serial No. 545,747. (No model.)



Claim.—1. In a separable button, the member bearing a shank provided near its base with lugs at opposite points, the other end of the said shank being suitably constructed to engage corresponding devices within the receiving member, the receiving member consisting of a hollow cylinder or sleeve, slotted lengthwise, fixed at one end to a plate, the portions of the said cylinder included between the said slots possessing elasticity, the said plate being pierced by an orifice corresponding to the bore of the cylinder and suitably constructed to engage the outer end of the said shank substantially as and for the purposes shown and described.

2. In a separable button, the member bearing a shank provided with lugs at opposite points near the base and at opposite points near the free end of the said shank, the line joining the middle points of opposite lugs lying in different planes, the receiving member consisting of a hollow cylinder or sleeve, slotted lengthwise, fixed at one end to a plate, the divisions of the cylinder between the said slots having elasticity, the said plate being pierced by an orifice corresponding to the bore of the cylinder, the said plate possessing recesses corresponding with and continuing the said slots, the whole constructed and arranged substantially as and for the purposes shown and described.

545,279. AUTOMATIC LUBRICATOR FOR ENGINES. FRED F. FISCHER, Pittsburg, Pa. Filed May 3, 1895. Serial No. 548,000. (No model.)



Claim.—1. An engine having a reservoir for a quiescent body of lubricant said reservoir being cut off from the crank pit, means for conducting a portion of the lubricant from the reservoir to a bearing, and channels arranged to lead the used oil back to the quiescent reservoir; substantially as described.

2. An engine having its frame hollow, forming a reservoir for a lubricant said reservoir being cut off from the crank pit, a feeder leading the lubricant from the reservoir to a bearing, and a passage from the bearing back to the reservoir; substantially as described.

3. An engine having its frame hollow, forming a reservoir for a lubricant said reservoir being separate from the crank pit, a feeder leading the lubricant from the reservoir to a shaft bearing, a passage from the bearing back to the reservoir, a crank disk having a groove to receive the oil from the shaft, and a passage leading from the groove to the crank-pin; substantially as described.

4. An engine having a curved splasher, and guides having holes leading from the splasher to the cross-head; substantially as described

5. An engine having a hollow frame froming a reservoir separated from the crank pit, a curved splasher, a lip on its inner face to catch the oil, and a pipe leading therefrom to the reservoir, substantially as described.

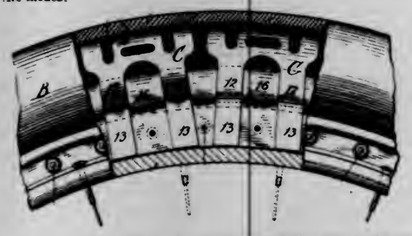
6. An engine having a bed provided with a cavity having a downwardly-sloping bottom, forming a reservoir cut off from the crank pit a ring arranged to feed oil from the upper part of the reservoir formed by the cavity, and channels arranged to lead the oil back to the lower portion of the reservoir; substantially as described.

7. An engine having a curved splasher and a cross-head guide having an oil hole or gutter beneath the lower end of the splasher said guide having a conduit leading from the gutter to the cross head, substantially as described.

8. An engine having a curved splasher and oil conduits leading from beneath the end of the splasher through the cross-head guides to the cross-head, central depressions in the upper face of the cross-head, and holes leading therefrom through the cross-head to the cross-head pin; substantially as described.

9. An engine having a splasher, a cross-head guide having a gutter beneath the end of the splasher, and arranged to receive oil therefrom, a channel leading from the gutter through the guide and a hole in the cross-head leading to the cross-head pin; substantially as described.

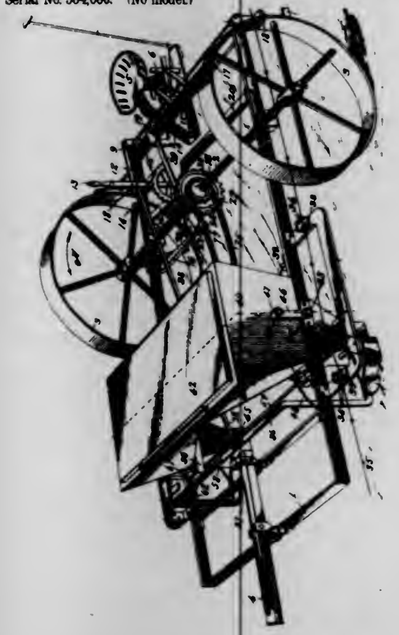
545,280. ELASTIC TIRE FOR VEHICLE-WHEELS. PATRICK FITZGERALD, Springfield, Mass. Filed May 31, 1895. Serial No. 551,089. (No model.)



Claim.—1. In a vehicle wheel, the combination with a rim, of a series of individual tire-supporting sections, each consisting of a thin metallic spring shell having a tread portion and separated tongues or prongs at the sides and base brought to approximately cylindrical form, the said sections being secured to the rim at intervals, and the tire inclosing the sections and supported thereby, substantially as described.

2. In a vehicle wheel, the combination with a rim composed of paired hoop-like sections, *a*, *a*, of a series of individual tire-supporting sections, each consisting of tread portion, 10, and the separated side and base prongs, 12, 12, which have the angular terminals in the median longitudinal plane of the section, the tire, B, of rubber, inclosing and supported by the said sections, and having its edge portions together with the said angular terminals of the metallic sections extended between the rim sections and the bolts passed transversely through the rim sections clamping the said interposed parts of the tire and metallic sections between them, substantially as described and shown.

545,281. POTATO-PLANTER. THOMAS L. GOOD, Edwardsville, Ill., assignor of one-half to William J. Good, St. Louis, Mo. Filed Jan. 7, 1895. Serial No. 534,086. (No model.)



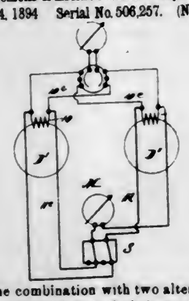
Claim.—1. In a potato planter, a double mouthed hopper mounted upon the forward end of the planter, shafts mounted for rotation and positioned transversely through said hopper, force feed disks mounted upon the lowermost shaft, agitating pins mounted upon the upper shaft, oscillating spring-actuated fingers or plates mounted on each side of the force feed disks, and suitable driving mechanism for the shafts.

2. In a potato planter, a frame, an axle, supporting-wheels, a double-mouthed hopper mounted near the forward end of said planter, force-feed mechanism in said hopper, sprocket-gearing connecting said force-feed mechanism to said axle, dropping-chutes vertically-arranged beneath the mouths of said hoppers, a check-row mechanism and its wire, and inclined tilting bottoms for said chutes, the same being tilted or operated by the check row wire.

3. The combination of a frame, supporting-wheels, a double-mouthed hopper mounted on the forward portion of said frame, chutes vertically-arranged beneath the mouths of said hopper, covering shovels pivotally connected to the rear portion of said frame, a U-shaped bar 36 pivoted to the side portions of said frame so that its upper portion projects in a plane above said frame, a hand-lever 13, connections between said hand-lever and said covering shovels, a rod 38 pivoted to the center of said U-shaped bar and connected to said hand-lever, and furrow plows 37 the forward ends of which are rigidly connected to the depending ends of said U-shaped bar 36, whereby when the upper portion of said U-shaped bar is thrown forward said furrow-plows will be elevated and said covering shovels will be simultaneously elevated, substantially as herein specified.

4. In a potato planter, the force-feed disk-hubs 56 constructed each with a series of radial fingers 57 in pairs, so that a space is formed between the fingers which compose each pair and another space is formed between the adjacent edges of each pair, the peripheries of said fingers being curved to conform to the radius of a circle common to all of said fingers, in combination with a shaft on which said hubs are mounted, suitable driving-mechanism, and spring-plates 74 passed partly around said hubs and thence extended rearwardly and fixed to the frame of the machine, substantially as herein specified.

545,282. MEANS FOR INDICATING COINCIDENCE OF PHASE OF TWO ALTERNATING OR POLYPHASE CURRENT MACHINES. JOHANNES H. F. GÖRGES, Berlin, Germany, assignor, by mesne assignments, to The Siemens & Halske Electric Company of America, Chicago Ill. Filed Apr. 4, 1894. Serial No. 506,257. (No model.)



Claim.—1. The combination with two alternating or multiphase machines, each provided with a similarly located auxiliary coil, of an indicator for indicating when the separate currents generated by said auxiliary coils correspond in potential; substantially as described.

2. The combination with two alternating or multiphase machines, each provided with a similarly located auxiliary coil, of a differential indicator for indicating when the separate currents generated by said auxiliary coils correspond in number of periods; substantially as described.

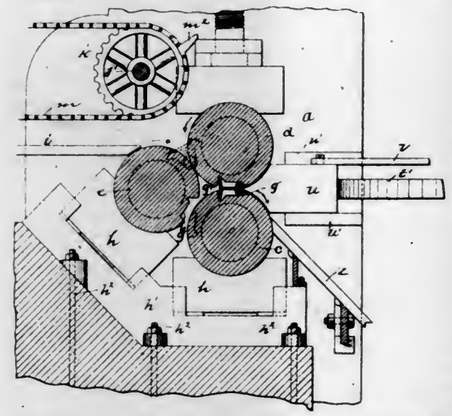
3. The combination with two alternating or multiphase machines, each provided with a similarly located auxiliary coil, of an indicator for indicating when the separate currents generated by said auxiliary coils correspond in potential, and a differential indicator for indicating when the said currents correspond in number of periods; substantially as described.

4. The combination with two alternating or multiphase current machines, each provided with a similarly located auxiliary coil; of a potential indicator; a switch by means of which the current generated in each coil may be separately caused to pass through the potential indicator; a current indicator; and a switch by means of which the currents from the two coils may be caused to pass in opposite directions through the current indicator.

5. A means to indicate the synchronism and displacement in phase of the magnetism of alternating or polyphase current machines to be coupled in parallel, comprising a similarly located auxiliary coil on the armature of each machine, independent of and separate from the main coils of said machines and a current indicator provided with a direct reading scale and needle adapted, when the two currents are transmitted through it in opposite directions, to show the condition of both machines.

6. The combination with two alternating or multiphase current machines, each provided with an auxiliary coil; of a potential indicator; a switch and interposed connections between said coils and switch; a direct reading current indicator; a second switch and interposed connections between said coils and said second switch.

545,283. APPARATUS FOR STRAIGHTENING RAILS. ARCHIBALD M. GORE, Braddock, Pa. Filed Dec. 21, 1894. Serial No. 532,529. (No model.)



Claim.—1. In apparatus for straightening rails, rods, &c., the combination with suitable housings, of two or more parallel rolls mounted therein and having longitudinal grooves formed therein, said grooves being adapted to coincide with each other during the revolution of said rolls, substantially as and for the purposes set forth.

2. In apparatus for straightening rails, rods, &c., the combination with suitable housings, of two or more parallel rolls mounted therein and having longitudinal grooves formed therein, said grooves being adapted to coincide with each other, and mechanism for feeding a rail thereto, substantially as and for the purposes set forth.

3. In apparatus for straightening rails, rods, &c., the combination with suitable housings, of two or more parallel rolls mounted therein and having longitudinal grooves formed therein, said grooves being adapted to coincide with each other, a table in front of said rolls, and mechanism for carrying the rail from said table into said grooves, substantially as and for the purposes set forth.

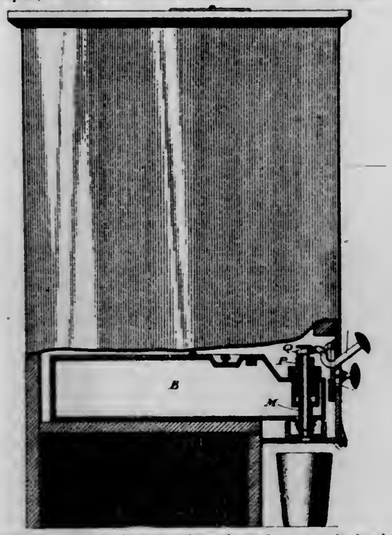
4. In apparatus for straightening rails, rods, &c., the combination with suitable housings of two or more rolls mounted therein and having longitudinal grooves formed therein, said grooves being adapted to coincide with each other, a table in front of said rolls, sprocket wheels mounted above said table, chains on said sprocket wheels, and fingers on said chains adapted to feed a rail from said table to said groove, substantially as and for the purposes set forth.

5. In apparatus for straightening rails, rods, &c., the combination with suitable housings, of a bottom roll, a top roll, and a roll in front of said rolls, said rolls having longitudinal grooves formed therein, and mechanism for driving said rolls, whereby the grooves on said top and front rolls are brought into coincidence with each other, and the grooves in said top and bottom rolls, substantially as and for the purposes set forth.

6. In apparatus for straightening rails, rods, &c., the combination with suitable housings, of a bottom roll, a top roll, and a roll in front of said rolls, said rolls having longitudinal grooves formed therein, and mechanism for driving said rolls, whereby the grooves on said top and front rolls are brought into coincidence with each other, and the grooves in said top and bottom rolls, and a reciprocating presser in the rear of said rolls, substantially as and for the purposes set forth.

7. In apparatus for straightening rails, rods, &c., the combination with suitable housings, of a bottom roll, a top roll, and a roll in front of said rolls, said rolls having longitudinal grooves formed therein, and mechanism for driving said rolls, whereby the grooves on said top and front rolls are brought into coincidence with each other, and the grooves in said top and bottom rolls, a cam in the rear of said rolls, a presser mounted in suitable guides in the rear of said rolls, said cam being adapted to move in contact with said presser, and a pitman connecting the said presser to said cam, substantially as and for the purposes set forth.

545,284. SODA-WATER FOUNTAIN. ROBERT M. GREEN, Philadelphia, Pa. Filed Oct. 10, 1893. Serial No. 487,717. (No model.)

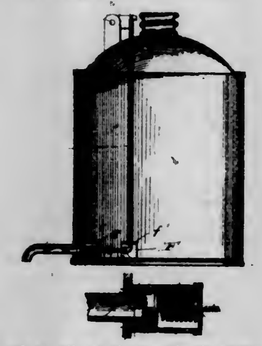


Claim.—1. In a soda water fountain, a door, a swinging lever mounted on said door, a jar or can, and a valve for said jar or can having a sliding stem, said sliding stem and swinging lever being detachably connected, substantially as described.

2. In a soda water fountain, a jar or can, a door, a swinging lever mounted on said door, and having a bifurcation on its inner end and a valve for said jar or can having a sliding stem, which latter is freely embraced by said bifurcation, and adapted to have its head engaged by said bifurcation when the lever is operated substantially as described.

3. In a soda water fountain, a door, a lever thereon, adapted to be detachably connected with the stem of the valve of the syrup jar or can and a locking bolt adapted to have said lever pass through the same substantially as described.

545,285. OIL-CAN. WALTER N. GREEN, St. Joseph, Mo. Filed Dec. 27, 1894. Serial No. 533,047. (No model.)



Claim.—In an oil can, the combination with a rod, each end of which is bent at right angles, one of such bent portions being outside on the top of the can, while the other is journaled in a bearing inside and at the bottom of the can, a link connected to the lower bent portion of the said rod, a valve, the valve seat, a screw threaded opening through the same, a projection 3 extending laterally beyond the sides of the opening in the valve seat, the upper surface of said projection being slanted, a cylindrical body 5 integral with and extending from the valve seat, thus forming a valve casing, openings 13 extending through said casing near the valve seat, a perforated cap for said casing, a valve stem working through said perforated cap, an eye formed on the outer end of said valve stem, said stem being connected to the said rod by means of the link, a coiled spring seated on the valve and confined within the cylinder by means of the cap, as described.

545,286. FEED-ROLLER. WILLIAM GUTENKUNST and CHARLES A GUTENKUNST, Milwaukee, Wis. Filed Jan. 14, 1895. Serial No. 534,785. (No model.)

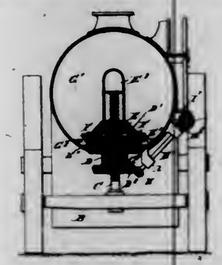


Claim.—1. A pair of feed rollers each provided with one or more rows of long or high teeth, and with intermediate blank spaces and having the remainder of its surface provided with shorter or lower teeth, and said teeth being arranged in a generally quincunx order over the entire surface of said roller, and said rollers being geared together so as to bring the teeth of each roller into mesh both longitudinally and circumferentially with the teeth of the opposed roller, and said long or high teeth on each roller being arranged to enter the spaces between the long or high teeth of the opposed roller, and to engage with the cylindric surface of said opposed roller, substantially as described.

2. A pair of feed rollers each provided with rows of teeth, the teeth forming the several rows being arranged so as to alternate lengthwise and circumferentially of the rollers, and the teeth of one or more of the rows on each roller being made longer or higher than the teeth of the other rows, and adapted to bear against the cylindric body of the opposed roller, said rollers being geared together so as to bring said teeth into mesh both longitudinally and circumferentially of the rollers, and raised annular bearing faces at opposite ends of said rollers adapted for engagement with each other, substantially as and for the purpose described.

3. An improved feed-roller comprising a central shaft of tool-steel or analogous tough material, and an exterior portion of chilled or highly tempered metal provided with rows of grasping teeth, and one or more rows of cutting teeth longer or higher than said grasping teeth, substantially as and for the purpose described.

545,287. LEVELING-MACHINE. WILLIE C. HANCOCK, Albany, Ky. Filed May 14, 1895. Serial No. 549,311. (No model.)



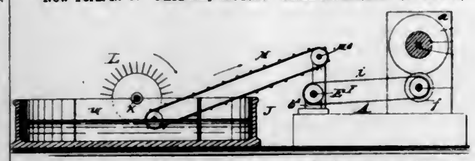
Claim.—1. The combination with an axle and a boiler, of a screw rod rigid on the axle and projecting upwardly into the boiler, a tubular casing arranged within the boiler and receiving the screw rod, a block secured to the boiler and directly below the tubular casing, a nut pivotally connected to the block and operating on the screw rod and means for revolving the nut, substantially as described.

2. The combination with an axle and the parts supported thereby, of a rigid screw rod carried by the axle, a block pivotally connected to the parts supported by the axle, a nut fitting within the block and having an annular groove therein, a set screw carried by the block and projecting into the groove of the nut, and means for revolving the nut, substantially as described.

3. The combination, with an axle and a boiler carried thereby, of a threaded rod rigid on the axle, a block connected to the boiler, a nut rotatively mounted in the block and operated with the rod, a diagonally disposed shaft having bearings on the outside of the boiler and geared with the nut, and means for revolving said shaft, substantially as described.

4. The combination with an axle and a supported part of a rigid screw rod, a nut operating thereon and having an annular groove, a block receiving the nut and revolubly holding the same, a set screw passing through the block and into the groove of the nut, and means for operating the nut, substantially as described

545,288. GLUE-STOCK CUTTER AND FEEDER. PETER C. HEWITT, New York, N. Y. Filed July 20, 1894. Serial No. 518,114. (No model.)



Claim.—1. In a glue stock cutter and feeder, the combination of a series of rotary circular cutters, a series of serrated disks extending between the cutters, a series of guards projecting between the cutters, and endless carrier belts passing between the serrated disks, substantially as specified.

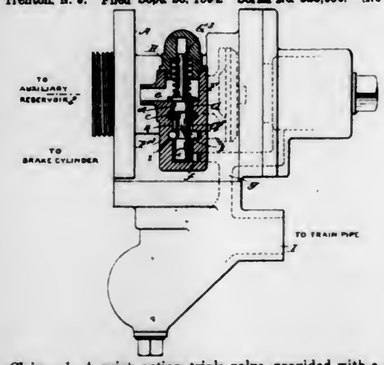
2. The combination of a series of rotary circular cutters, a series of serrated disks extending between the cutters, and endless belts passing between the serrated disks, substantially as specified.

3. In a glue stock cutter and feeder, the combination of a series of serrated disks, a series of circular cutters extending between the serrated disks, and adjustable gearing connecting the shafts of the serrated disks and circular cutters for communicating motion from the shaft carrying the circular cutters, to the shaft carrying the serrated disks and endless belts, while at the same time allowing of raising or lowering the cutter shaft, substantially as specified.

4. In a glue stock cutter, the combination of a series of rotary knives spaced and rigidly mounted on a shaft, a series of serrated disks spaced and rigidly mounted on a shaft, the edges of the serrated disks projecting between the series of rotary knives and alternating in position with the knives, and endless cords passing around the collars between the serrated disks, for conveying the glue stock to the knives, the knives and serrated disks being geared to revolve at different peripheral speeds, substantially as specified.

5. A washer and feeder for a glue stock cutter, the same being formed of an agitator for keeping the glue stock suspended and in motion and removing impurities therefrom, a glue stock cutter and a conveyer constructed to continuously carry glue stock from the washer to the cutter, substantially as specified.

545,289. QUICK-ACTION TRIPLE VALVE. WILLIAM HIRST, Trenton, N. J. Filed Sept. 20, 1894. Serial No. 523,656. (No model.)



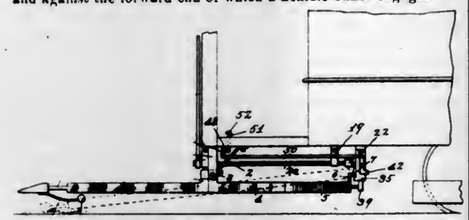
Claim.—1. A quick action triple valve, provided with a retaining valve having a spring-pressed piston valve arranged in the triple valve exhaust, and normally held in an open position by pressure from the train pipe, the said valve on a reduction of pressure in the train pipe, connecting the triple valve exhaust port with a port leading to the main valve chamber, to connect the auxiliary reservoir with the brake cylinder, substantially as shown and described.

2. A quick action triple valve, provided with a retaining valve, comprising a casing into which opens the exhaust port of the triple valve, a spring-pressed piston valve arranged in the said casing, and adapted to connect the said exhaust port with the open air, or the said exhaust port with an air passage leading to the main slide valve chamber, substantially as shown and described.

545,290. AUTOMATIC CAR-FENDER. JOHN D. HODGES, Ellendale, assignor of two-thirds to William Beinker and John Shaw, St. Louis, Mo. Filed July 1, 1895. Serial No. 554,322. (No model.)

Claim.—1. An improved car-fender, comprising a pair of hangers depending from the car platform, a frame fixed to said hangers, a second frame hinged to the first mentioned frame and extending forward in the same plane therewith, a flexible buffer arranged on the

forward end of said last mentioned frame and arranged to move longitudinally upon the forward end of said last mentioned frame, suitable hangers fixed to the under side of the car-body and depending therefrom, a spring-actuated trigger located in said hangers beneath which a pin on the rear end of the first mentioned frame normally engages, tripping devices for said trigger, a bell-crank arranged beneath the car-platform, a rod extending from one arm thereof to the tripping device of the trigger, a pin extending upwardly through the car-platform to operate the bell-crank, a shaft journaled for rotation immediately above the first mentioned frame, a curved arm on the rear end thereof to engage against the rear end of the first mentioned frame, a lever fixed to the forward end of said shaft to operate the same, a spring-actuated rod extending through the first mentioned frame, and bearing against the tripping device of the trigger, a spring-actuated rod extending longitudinally through the second mentioned frame, and crossed-bars arranged in the forward end of said frame against which the forward end of the spring-actuated rod engages and against the forward end of which a flexible buffer engages.



2. In a car-fender, a frame fixed beneath the car-platform, a second frame hinged to the forward end of said first mentioned frame, a flexible buffer arranged to move longitudinally upon the forward end of the second mentioned frame, a trigger arranged adjacent the rear end of the first mentioned frame, a tripping device for said trigger, means for operating said tripping device from the top of the car-platform, suitable means for automatically releasing the trigger as the buffer engages with an obstruction, and means for resetting the fender from the car-platform.

3. In combination with an improved car-fender, a shaft journaled longitudinally beneath the car-platform, a curved arm fixed to the rear end thereof, the same lying immediately above the rear end of the fender and adapted to engage therewith, and a lever fixed to and extending upwardly from the forward end of said shaft in front of the dashboard of the car to operate said shaft.

4. In an improved car-fender of the class described, a tripping device comprising a pair of hangers depending from the car-body, a trigger pivoted between the upper ends thereof, said trigger having a widened lower end, a spring-actuated bar pivoted in the same plane with the trigger and depending between the hangers, said trigger being connected to said bar, the lower end of said bar being turned upwardly and outwardly, an arm fulcrumed upon the side of one of the hangers, its lower end being turned laterally to engage with the upturned end of the bar, an arm pivoted to and extending forward from the upper end of the fulcrumed arm, a bell-crank arranged beneath the car-platform, to one arm of which the forward end of a rod connects, and a pin fixed to the opposite arm of said bell-crank, the same extending upwardly through the car-platform.

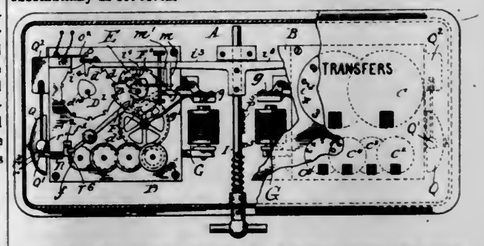
5. In a car-fender, a pair of hangers fixed to and depending from the under side of the car-platform, a frame fixed to said hangers, a second frame hinged to said first mentioned frame, a flexible buffer arranged upon the front of the second mentioned frame and moving longitudinally thereon, transversely arranged strengthening bars in said second mentioned frame, crossed-bars having their front ends extending forward in the same plane with the flexible buffer, a spring-actuated rod moving longitudinally within said second frame and arranged to be engaged by the crossed-bars as the same are engaged by the flexible buffer, a trigger, a tripping device arranged beneath the car-body to normally engage the rear end of the fender, and a rod extending through the first mentioned frame from the first mentioned rod to the tripping device.

6. In an improved car-fender, a frame arranged beneath the car-platform, a frame hinged to said first mentioned frame in the same plane therewith, the forward ends of the side-pieces of said second frame being reduced in size, a flexible buffer arranged to move longitudinally upon said reduced forward ends, spring-arms fixed to and extending rearwardly from the under side of said flexible buffer, and weights arranged upon the ends of said spring-arms.

545,291. FARE-REGISTER. STEPHEN C. HOUGHTON, San Francisco, Cal. Filed Sept. 10, 1894. Serial No. 522,577. (No model.)

Claim.—1. In a fare register, a box, two sets of trip registers, and two sets of total registers in said box, and a re-setting device acting simultaneously upon the said two trip registers, substantially as described.

2. In combination with a box, registering dials as C, and C', forming a trip register, detachable clutch mechanism upon the spindle of one of such dials, a re-setter consisting of a pull-down rod, having a cross-arm, a projection upon said cross-arm for positively operating said clutch mechanism, and cams upon the spindles of said dials, all substantially as set forth.



3. In a fare register, operated by an electric circuit and having two sets of trip registers, a pull-down rod having an electrical contact with and forming a part of the main circuit at both ends of the box, and connections between said pull-down rod, and the trip registers, substantially as and for the purposes set forth.

4. In combination with a box, and with duplicated registering mechanisms, a pull-down or re-setting rod having a cross arm, connections between each end of the said arm and the registering mechanism for re-setting the latter by the movement of the pull-down rod and a contact point at each end of the rod, whereby such rod is placed in the main circuit and breaks such circuit at the beginning of its downward movement, substantially as set forth.

5. In a fare register and in combination, a pull-down rod having a rack, a direction-indicating disk frictionally mounted upon a pin, a quadrant gear upon said pin adapted to engage with said rack, and a lock for holding the disk stationary during the ascent of the pull-down rod, substantially as described.

6. In a fare register, a box having trip registers or dials, a pull-down rod for resetting such dials, a direction-indicating disk having a notched edge and frictionally mounted upon a shaft, a rack upon the pull-down rod, a toothed quadrant upon said shaft adapted to engage with said rack, a locking pawl for said disk, an arm connected to the operating lever of the machine for unlocking said pawl and disk, and a projection carried by the pull-down rod for re-locking said pawl to the disk, substantially as set forth.

7. In combination in a fare register a gong and striker, the magnet and armature, an armature lever and a lock to prevent a second stroke of the striker, said lock being controlled by the armature lever, substantially as described.

8. In combination in a fare register, the gong, the striker, the armature and armature lever, and the lock arranged when set to yield in one direction, the said lock being controlled by the armature lever, substantially as described.

9. In combination in a fare register, the gong, the striker, the armature lever, the pivoted stop arranged to be released by the armature lever and to be set in locking position by contact with the moving striker, the said armature lever returning the lock to normal position, substantially as described.

10. In a fare register and in combination, a magnet and armature, a lever *f* connected to said armature, a gong, a ball striker, and a pivoted lock having projections *r*, *r'* and a weight r^2, said lock being controlled by the armature lever substantially as and for the purposes set forth.

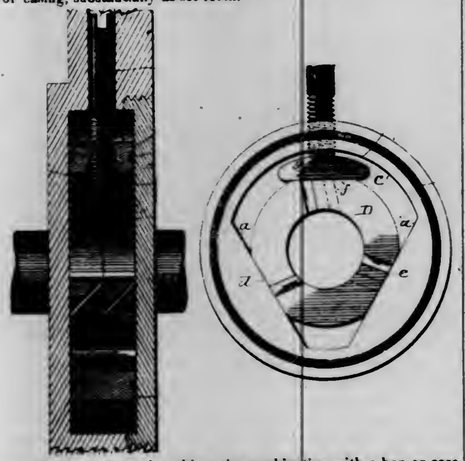
545,292. PISTON-ROD PACKING. EDWARD HUBER and JACOB W. MILLER, Marion, Ohio. Filed Apr. 17, 1895. Serial No. 546,060. (No model.)

Claim.—1. In a piston rod packing, the combination with a casing having inclines therein, and a piston rod, of a sectional packing ring, and means substantially opposite the point toward which the inclines converge for bearing against these packing rings and thereby forcing them from all sides against the rod, substantially as set forth.

2. In a piston rod packing, the combination with a casing, and a piston rod, said casing having two converging walls, of a sectional packing ring bearing against said converging walls and against which the piston rod operates, and means for forcing the rings toward the point toward which the walls converge, substantially as set forth.

3. In a piston rod packing, the combination with a disk or casing having two beveled interior walls adapted to bear against a sectional packing ring at two joints thereof and an adjustable plate adapted to bear against the packing ring at another joint thereof, substantially as set forth.

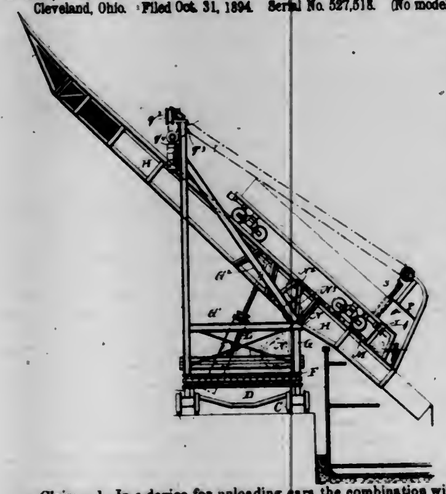
4. In a piston rod packing, the combination with a disk or casing having two inclined inner walls, of a sectional packing ring adapted to bear against said inclined walls at two joints formed by the junction of the sections thereof, a plate adapted to bear against the packing ring at another joint between the sections thereof, and a screw connected with said plate and passing through the wall of the disk or casing, substantially as set forth.



5. In a piston rod packing, the combination with a box or case and sectional packing rings located within said box or case, of a disk or casing located within said box or case and adapted to move therein, said disk or casing having two inclined or beveled interior walls bearing against the packing ring at two joints formed by the juncture of the sections thereof, a movable plate within said disk or casing and bearing against the packing ring at another joint, and a screw connected with said plate, said screw passing through a screwthreaded hole in the wall of the disk or casing and entering a hole in said box or case, substantially as set forth.

6. In a piston rod packing, the combination with a plate adapted to be secured to a cylinder head, and having a recess, and another plate adapted to screw into said recess, said plates forming a box or casing, of a disk or casing located between said plates and having inclined or beveled interior walls, a packing ring made in sections and bearing against said inclined or beveled walls at two joints formed by the juncture of the sections of said packing ring, a plate adapted to bear against the packing ring at another joint, and a screw bearing against said plate and passing through the wall of the disk or casing, substantially as set forth.

545,293. DEVICE FOR UNLOADING CARS. GEORGE H. HULETT, Cleveland, Ohio. Filed Oct. 31, 1894. Serial No. 527,518. (No model.)



Claim.—1. In a device for unloading cars, the combination with a support and a tilting platform carried by said support, of a shaft carried by the tilting platform, means connected to the support and engaging the shaft whereby the latter may be rotated as the platform is tilted, and gate elevating devices actuated by said shaft.

2. In a device for unloading cars, the combination with a truck, a tilting platform carried thereby, and a shaft carried by the tilting platform, of means connected to a part carried by the truck and engaging the shaft whereby the latter may be rotated while the tilting platform is moving on its axis, substantially as set forth.

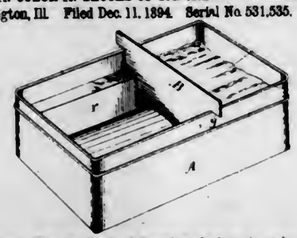
3. In a device for unloading cars, the combination with a support and a tilting platform carried thereby, of a shaft on the tilting platform, a drum on the shaft, a flexible device attached to the support and passing around the drum for rotating the latter as the tilting platform is moved on its axis and gate elevating devices carried by the shaft, substantially as set forth.

4. In a device for unloading cars, the combination with a support and a tilting platform carried thereby, of a shaft carried by the tilting platform, a drum loose on the shaft, a clutch for locking the drum to the shaft, gate elevating devices carried by the shaft, and means attached to the support and engaging the drum for rotating the latter as the tilting platform turns on its axis, substantially as set forth.

5. In a device for unloading cars, the combination with a support and a tilting platform carried thereby, of a shaft on the tilting platform, a drum on the shaft and gate elevating devices attached to the shaft, a flexible line attached at its ends to the support and passing around the drum, and a device for taking up the slack in the flexible line as the discharging end of the tilting platform is being raised.

6. In a device for unloading cars, the combination with a support and a tilting platform thereon, of a shaft carried by the tilting platform, a drum loose on the shaft, a clutch for locking the drum to the shaft, and gate elevating devices attached to the shaft, a flexible line attached at its ends to said support and passing around the drum, and a weight for taking up the slack in said flexible line, substantially as set forth.

545,294. METHOD OF AND APPARATUS FOR FORMING DESIGNS IN COLOR IN BLOCKS OF ICE-CREAM. WILLIAM H. HUNTER, Bloomington, Ill. Filed Dec. 11, 1894. Serial No. 531,535. (Specimens.)



Claim.—1. The method of forming designs in color in forms of ice-cream or like plastic material herein described, which consists in building up the form within a mold by successively adding the plastic material of a different color from that preceding, the surface of the material in the mold prior to each change of color being given a true contour, according to the design, by scraping the surface with a templet and removing the excess of material, substantially as set forth.

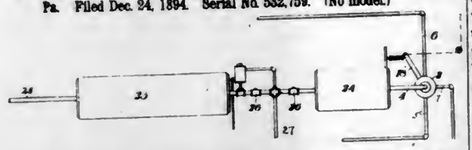
2. The method of forming designs in color in forms of ice cream or like plastic material herein described, which consists in placing in a mold for the form or block, frozen cream of one color, then shaping the surface thereof by means of a templet and removing the excess of material, then placing in the mold frozen cream of another color and again shaping the surface with a templet, and thus building up a form, substantially as described.

3. An apparatus for forming ice-cream forms with a color design therein, consisting of a box mold and a set of templets having a gage to fix the extent of projection into the box, said templets having profiles adapted to successively shape the surface of the cream according to a certain design, by scraping it, substantially as and for the purpose set forth.

4. In an apparatus for forming blocks of ice-cream or like plastic material with designs therein in color, a set of templets for forming a certain design, said templets having profiles adapted to successively shape the surface of the material according to the design, by scraping it, prior to a change in the color of the same, substantially as set forth.

5. In an apparatus for forming blocks of ice cream or like plastic material with a design therein in color, a set of templets for forming a heart core to the block, the same consisting of one templet having a bottom central projection conforming in outline to the bottom part of a heart, and a second templet having a bottom central recessed profile conforming in outline to the top of a heart, the pair of templets being adapted to be successively used, substantially as herein described and for the purpose set forth.

545,295. AIR-BRAKE SYSTEM. HERBERT E. HUNT, Pittsburg Pa. Filed Dec. 24, 1894. Serial No. 532,759. (No model.)



Claim.—1. In an air-brake system, the combination with a whistle, a braking cylinder and a sanding cylinder, of a valve having an inlet from the air reservoir, and ports leading to each of said cylinders and whistle; substantially as described.

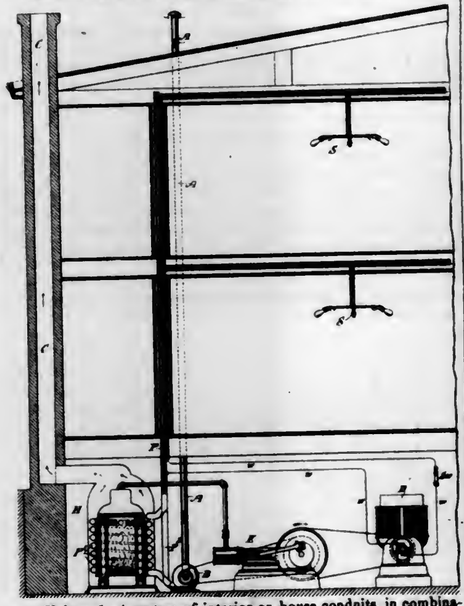
2. In an air-brake system, the combination with a braking cylinder and a sanding cylinder, of a valve having an inlet from the air reservoir, ports leading to each of said cylinders, and an exhaust port for the sanding cylinder; substantially as described.

3. In an air-brake system, a main reservoir, and an auxiliary reservoir, having a connection therebetween provided with a check-valve arranged to prevent back flow from the auxiliary reservoir, a supply pipe leading into said connection, a pipe leading from the main reservoir to a valve controlling the brake-cylinder and a pipe leading from the auxiliary reservoir to an emergency valve controlling the brake-cylinder; substantially as described.

4. In an air-brake system, the combination with a braking cylinder and a sanding cylinder, of an emergency valve arranged to first admit air to the sanding cylinder and thereafter to the brake-cylinder, said valve having a port arranged to exhaust the sanding cylinder after the air is cut off from the braking-cylinder; substantially as described.

5. In an air-brake system, the combination with a whistle, a sanding cylinder and a braking cylinder, of a valve arranged to admit air first to the whistle and sanding cylinder and thereafter to the braking cylinder; substantially as described.

545,296. ELECTRIC CONDUIT. CHARLES J. KINTNER, New York, N. Y. Filed Mar. 16, 1893. Serial No. 466,200. (No model.)



Claim.—1. A system of interior or house conduits, in combination with means for forcing air through said conduits and additional means located near electrical translating devices for regulating the flow of air at points near said translating devices whereby improved insulation is effected in the conduits, substantially as described.

2. A system of interior or house conduits consisting of a main and one or more branch tubes inclosing main and branch conductors in combination with electric translating devices, a blower for forcing air through the tubes and means located near the translating devices for regulating the flow of air into the room or rooms where they are located whereby improved insulation is effected in the conduits, substantially as described.

3. A system of interior or house conduits consisting of main and branch tubes inclosing main and branch conductors in combination with a dynamo electric machine operatively connected to the main tube and its inclosed conductor, a blower, a steam boiler, an air inlet pipe, a heating tube and a steam engine adapted to drive both the blower and the dynamo whereby improved insulation is effected in the conduits, substantially as described.

4. A system of interior or house conduits consisting of a main and branch tubes inclosing respectively a main and branch conductors, translating devices operatively connected to the branch tubes and their inclosed conductors, means located near the translating devices for regulating the flow of air, a dynamo electric machine operatively connected with the main tube and its inclosed conductor and a blower having connection with an inlet pipe and the main tube, the blower and the dynamo being driven by a common source of power whereby improved insulation is effected in the conduits, substantially as described.

5. A combined system of interior or house conduits and air conveying tubes consisting of main and branch tubes having supplemental or side tubes which inclose main and branch conductors, said compound tubes being provided with intervening openings, substantially as described.

6. A combined system of interior or house conduits and ventilating or heating apparatus consisting of compound or double tubes provided with intervening openings, one portion of the compound tubes inclosing insulated conductors and the other being adapted to convey air under pressure, substantially as described.

7. A combined system of interior or house conduits and ventilating or heating apparatus consisting of double tubes having intervening openings, substantially as described.

8. A combined ventilating and conduit tube consisting of a main tube for conveying air and a side tube hinged thereto for inclosing an insulated conductor whereby improved insulation is effected in the conduits, substantially as described.

9. A combined ventilating and conduit tube consisting of a main tube for conveying air and a side tube inclosing an insulated electrical conductor whereby improved insulation is effected in the conduits, substantially as described.

10. A pair of conducting conduit tubes, a conducting lug integral with each tube and an expansible connector detachably secured to each lug, substantially as described.

11. A pair of conducting conduit tubes having their ends in alignment and each provided with a conducting lug and a detachable expansible connector secured to said lugs, substantially as described.

12. A pair of conduit tubes having each a conducting lug at its end, in combination with an expansible connector provided with means for uniting it to the adjacent lugs, substantially as described.

13. A dynamo electric machine having its commutator brushes inclosed in a protecting casing, in combination with means controlled by the current supply for keeping the casing closed, substantially as described.

14. A dynamo electric machine having its current collecting brushes wholly inclosed by a casing having a door provided with means for locking it and means controlled by the current from the machine for keeping said door locked while machine is running, substantially as described.

15. A dynamo electric machine having its current collecting brushes inclosed in a casing provided with a door for affording access to the brushes, in combination with an electro-magnetic locking device adapted to lock the door while the machine is in operation, substantially as described.

16. A dynamo electric machine provided with a protecting casing for the current collecting brushes and mechanical connections between the door and one of the brushes for lifting it out of contact with the commutator when the door is open, in combination with electro-magnetic means for keeping the door locked while the machine is in operation, substantially as described.

17. In a system of electrical distribution a series of concentric conductors running from the generator to the translating devices, in combination with a protecting casing which surrounds or incloses the current collecting devices of the generator, whereby the entire system is rendered safe from accidental shocks, substantially as described.
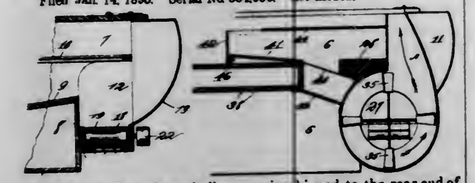
18. In a system of electrical distribution a current main inclosed in and insulated from a surrounding concentric conducting current main, one or more translating devices located in one or more concentric branch mains and a protecting casing surrounding the current collectors of the generator, substantially as described.

19. In a system of electrical distribution a pair of concentric current mains insulated from each other and operatively connected through current collecting devices with a generator of electricity, in combination with a protecting surrounding casing for the current collecting devices.

20. A pair of concentric current mains insulated from each other and connected to the current collecting devices of an electrical gen-

erator, in combination with a surrounding protecting casing for the current collectors, said casing being provided with a door or other means of access to the current collectors and an electro-magnetic locking device adapted to lock the door while the generator is running, substantially as described.

545,297. CLOVER-HULLER. JOHN W. KIRSHMAN, California, Mo. Filed Jan. 14, 1895. Serial No. 534,930. (No model.)



Claim.—1. In a clover huller, a casing hinged to the rear end of the frame work of said huller, an endless carrier operating within said casing, means for operating said endless carrier, a fan or discharge chamber located at one side of said casing and into which said endless carrier discharges, a fan operating within said discharge chamber, means for driving said fan, and a re-cleaning attachment mounted on the side of said clover huller.

2. In a clover huller, a casing hinged to the rear end of the frame work of said huller, an endless carrier carried by and operating in the lower end of said casing, means for operating said endless carrier, a fan or discharge chamber formed at one side of said hinged casing and into which the endless carrier discharges, a fan operating within said discharge chamber, and a re-cleaning attachment comprising a chamber having an inclined bottom and an inclined screen, a discharge opening from the screen onto the endless carrier, and a hinged cover and side for said re-cleaning attachment.

3. In a clover huller, a re-cleaning attachment comprising a frame-work, an inclined bottom mounted upon said frame work, an inclined screen extending from said inclined bottom to a discharge opening through the side-wall of the huller, and a side wall and top for said re-cleaning attachment fixed together and hinged at one end of said attachment.

4. In a clover huller, the combination of a casing hinged to the rear end of said huller, an endless carrier operating in the base of said casing, a fan or discharge chamber formed at one end of said casing, and a re-cleaning attachment having a hinged side and top, the straw and chaff from said re-cleaner discharging onto the endless carrier carried by the hinged casing, and the cleaned seed from said re-cleaning attachment passing through a discharge spout into a suitable receptacle.

5. The combination with the usual fan and operative parts of a clover-huller, of an additional fan which is in the form of a suction-fan, mounted for operation upon the rear portion of the hulling machine and arranged to remove by suction all of the dust and other refuse material from the interior of said hulling machine, substantially as herein specified.

545,298. DOWELING-MACHINE. CHRISTIAN LOETSCHER, Dubuque, Iowa. Filed Dec. 6, 1894. Serial No. 531,030. (No model.)

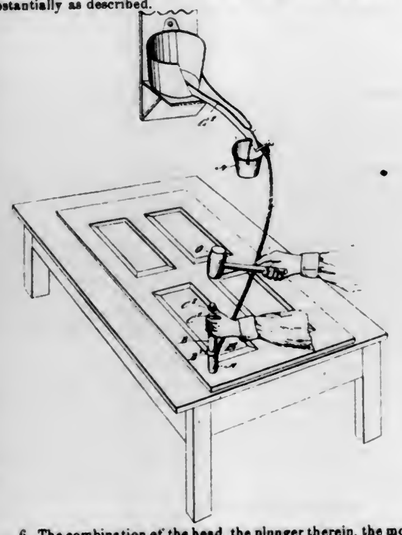
Claim.—1. A doweling machine, comprising a hollow head, a movable plunger in the head, and a collar movable relatively to the head and controlled by the plunger, the head and the collar being provided with a dowel feed passage arranged at an angle to the line of motion of the collar, substantially as described.

2. A doweling machine comprising a head formed with a longitudinal bore, and a side feed opening for delivering the pins or dowels to the said bore, a plunger in the bore, a collar movable longitudinally of the head and controlled by the plunger, said collar having an opening adapted to register with the side feed opening of the head, and inclined relatively to the line of motion of the collar and a spring for returning the collar to its normal position after it has been engaged by the plunger, substantially as described.

3. A doweling machine, comprising a head formed with a longitudinal bore, a side feed opening for delivering the pins or dowels to the said bore, a plunger operating in the bore, a spring-pressed collar held above the upper end of the head and adapted to be engaged by the plunger shank, and a pawl held in the said head and adapted to be engaged by the said spring-pressed collar to move the pawl in contact with the dowel and hold the same temporarily in place, substantially as shown and described.

4. A doweling machine, comprising a head formed with a longitudinal bore, and a side feed opening for delivering the pins or dowels to the said bore, a plunger in the bore, a movable collar controlled by the plunger, and a dowel-retaining device controlled by the movement of the collar, substantially as described.

5. The combination of the hollow head, the plunger movable longitudinally therein, and the collar surrounding the plunger within the head and movable longitudinally thereof, the collar being controlled by the plunger, and the head and collar being provided with a dowel feed passage inclined relatively to the line of motion of the collar, substantially as described.

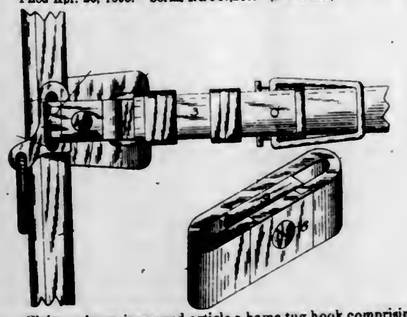


6. The combination of the head, the plunger therein, the movable collar controlled by the plunger, the head and the collar being provided with a dowel feed passage, and the pawl arranged to project into said passage and controlled by the said collar, substantially as described.

7. In a doweling or like machine, a feed device consisting of an inclined spout having a longitudinal groove in its upper surface to permit of a dowel sliding lengthwise thereon and a stop plate at the lower end of the spout and provided with a substantially circular through aperture registering with the groove of the spout, substantially as described.

8. In a doweling or like machine, a feed device consisting of an inclined spout having a longitudinal groove in its upper surface to permit of a dowel sliding lengthwise thereon, a stop plate located at the lower end of the spout and provided with a substantially circular through aperture registering with the groove of the spout, and a feed tube connected to the said plate and extending substantially in alignment with the lower end of the groove, substantially as described.

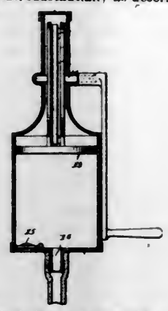
545,299. HAME-TUG HOOK. JOSEPH C. MAHAFFEY, Tingley, Iowa. Filed Apr. 26, 1895. Serial No. 547,215. (No model.)



Claim.—As an improved article a hame tug hook comprising the plate having its ends bent or curved and cut-away or recessed, the plate having correspondingly cut-away ends, the packing or filling and the screw-bolt for connecting said plates together, substantially as described.

545,300. AIR-PUMP FOR BICYCLES. AQUILA B. MARSHALL, New York, N. Y., assignor of two-thirds to Edwin R. Dickinson, same place, and Charles B. Boynton, Newark, N. J. Filed Aug. 23, 1894. Serial No. 521,099. (No model.)

Claim.—1. The combination with a bicycle, of a pump secured thereto and comprising a cylinder having a reduced upper end and an inlet valve and discharge nipple in its bottom, crank disks mounted in the reduced upper end of the cylinder, a piston in the cylinder and connected with the crank disks, and a crank detachably secured to the axle of the crank disks, substantially as described.



2. The herein-described air pump, comprising a cylinder reduced and flattened at one end and provided at the other with an inlet valve and discharge nipple, a cap for the nipple, a piston in the cylinder, crank disks journaled in the flattened portion of the cylinder and operatively connected with the piston, a detachable crank for the axle of the crank disks, and a cap to cover the crank axle, substantially as described.

3. An improved air pump for bicycles, comprising a cylinder having a flattened upper end, and provided in its bottom with an inlet valve and a discharge nipple, the flattened portion of the cylinder being provided with bearings, one of which is externally screw threaded to receive a cap, crank disks, each provided with an axle fitting in said bearings, the axle of the screw threaded bearing projecting therethrough, a piston in the cylinder, a pitman connecting the piston with the crank disks, and a crank adapted to fit upon the projecting axle of the crank disks, substantially as herein shown and described.

545,301. CONSTRUCTION OF ARCHES, PARTITIONS, &c. FOSTER MILLIKEN, New York, N. Y. Filed Nov. 9, 1894. Serial No. 528,295. (No model.)

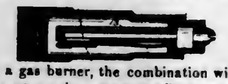


Claim.—1. In the construction of arches, floorings, partitions, and the like, an apertured supporting material provided with open corrugations extending transversely from one support of the arch or other structure to the other, strengthening bars extending longitudinally of the open corrugations, at the apexes thereof, and a bedding of cement or concrete covering the said apertured material and filling the upwardly open cavities formed by the corrugations, substantially as described.

2. The herein described method of constructing arches, which consists in corrugating wire or like material, reinforcing the said corrugated material at its corrugations, bending the corrugated material to shape, the corrugations being less defined at the crown than at the buttress of the arch, and bedding the reinforcing material and the corrugated material with cement or concrete, as and for the purpose specified.

3. The combination with the beams or other supports, of the supporting material resting thereon and provided with corrugations extending transversely from one support to the other, the corrugations being less defined at the center than adjacent to the supports, and a suitable bedding upon the said material, substantially as described.

545,302. AUTOMATIC VALVE FOR GAS-BURNERS. ARDON M. MITCHELL, Brooklyn, N. Y. Filed Mar. 30, 1894. Serial No. 505,729. (No model.)



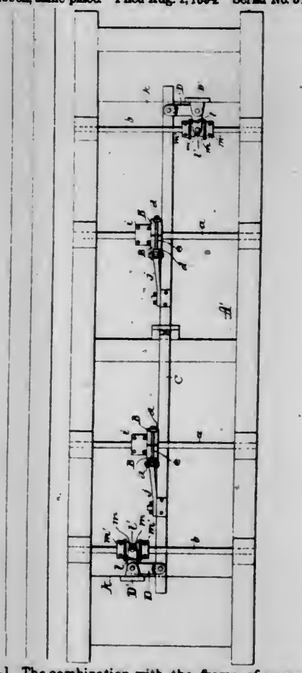
Claim.—1. In a gas burner, the combination with the tip and burner tube, of a port, a valve automatically operated by a device composed of materials having different coefficients of expansion, a perforated pillar composed of heat conducting material containing said port and a heat insulating material between said pillar and said tube.

2. A packing composed of a plurality of layers of metallic foil in contact with each other wrapped upon a support.

3. In a gas burner, the combination with a port, a valve automatically operated by variations of temperature and a packing composed of a plurality of layers of metallic foil in contact with each other wrapped upon a support.

4. In a gas burner, the combination with a port, of a valve moving in a diagonal or curved line with reference to said port automatically opening and closing said port and varying its size in proportion to the heat present by the expansion and contraction of the device composed of materials having different co-efficients of expansion.

545,303. OFFSETTING DEVICE FOR SAWMILL-CARRIAGES. JAMES MCALLISTER, South Manistique, Mich., assignor of one-half to A. C. Hubbell, same place. Filed Aug. 1, 1894. Serial No. 519,201. (No model.)

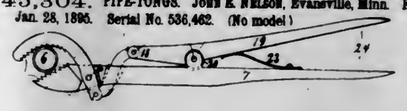


Claim.—1. The combination with the frame of a saw mill carriage and axles, of a friction device mounted on and capable of turning a limited distance with one of said axles, said friction device comprising two boxes having a lining of soft material to produce a gripping surface, two heads or plates, connecting devices between said heads or plates adjustable and springs bearing against said heads or plates and boxes, and a connection between said friction device and a part independent of said frame, substantially as set forth.

2. The combination with the frame of a saw mill carriage and an axle, of a collar mounted on and capable of turning a limited degree with said axle, two boxes having a lining of soft material to grip said collar, plates bearing against said boxes, rods and nuts connecting said plates, said boxes being made with sockets, springs in said sockets, said springs bearing at one end against the bottom of said sockets and at their other ends against said plates, and a connection between said boxes and a part independent of said frame, whereby when the carriage is first moved said frame will be offset automatically, substantially as set forth.

3. The combination with the frame of a saw mill carriage and an axle, of a sectional collar comprising segments of cylinders secured on said axle, a friction device adapted to grip said collar, a bar connected with said friction device, a bell crank-lever pivoted to the frame and to said bar, collars arranged in pairs on another axle, and connected with said bell crank lever and means for preventing said collars from moving laterally on the axle, substantially as set forth.

545,304. PIPE-TONGS. JOHN E. NELSON, Evansville, Minn. Filed Jan. 28, 1895. Serial No. 536,462. (No model.)



Claim.—Pipe tongs consisting of the primary arm 7, having the lips 22, hole or slot 15, reduction 8, and slanting corrugated jaw 4, a secondary arm as 19, pivoted between the lips 22, and extending partly in front thereof, the bifurcated curved and corrugated jaw 3, pivoted upon and extending beyond the reduction 8, the link 14, extending through the hole 15, and connecting the rear end of the swinging jaw with the front end of the short arm 19, on opposite sides of the primary arm and the spring 23, for throwing the arms apart when released, substantially as shown and described and for the purpose set forth.

545,305. AUTOMATIC CAR-COUPLING. WILLIAM PERSELL and REDMAN NEWLEE, Wellsville, Mo. Filed May 21, 1895. Serial No. 550,146. (No model.)



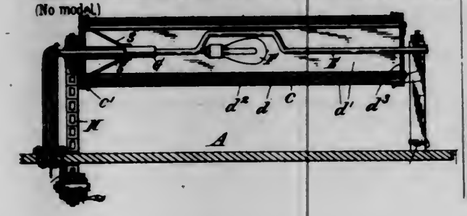
Claim.—1. In an improved car coupling, a pair of timbers fixed to the under side of the body of the car, a draw-head arranged between said timbers, said draw-head having a recess formed in its rear end, a movable pin or plunger located in said recess, plates located in and lying flush with the sides of the draw-head, a bar extending transversely through slots formed in the parallel timbers, the draw-head and the plunger, and a coil-spring interposed between said bar and the rear ends of the plates.

2. In an improved car coupling, a pair of timbers lying parallel with each other and fixed to the under side of the car body, plates located upon the inner faces of said timbers, a draw-head arranged between said timbers and having a recess formed in its rear end, plates located in and lying flush with the sides of the rear end of the draw head, the rear ends of said plates being turned inwardly to overlap each other, an end-plate arranged and held upon said overlapping ends of the plates, a plunger located in the aperture of the draw-head and having its end passed through the end-plate and overlapping ends of the side-plates, a bar passing transversely through the parallel timbers, draw-head, plates thereon and plunger, and a coil-spring interposed between said bar and the end-plate.

3. In an improved car coupling, a draw-head having the ordinary link-recess formed in the forward end thereof and having a pair of vertical passages through the forward end of said draw-head and having recesses formed in and extending upwardly from the under side of said draw-head, a block having a bifurcated forward end pivoted in said recesses, a bar arranged to move vertically through one of said vertical bores or passages, a block formed integral with the upper end of said bar, a coupling-pin carried by the forward end of said block and passing through the remaining one of the vertical passages, and an operating lever attached to said block for raising and lowering the same.

4. In an improved car coupling, a draw-head having the usual link-recess formed in the forward end thereof and having a pair of vertically arranged passages formed through the forward end of the draw-head, said draw-head being also constructed with a pair of vertically arranged recesses extending upwardly from its under side, a block having a bifurcated forward end, arms formed integral with and extending forward from the bifurcated forward end of said block, said block being pivoted in the vertical recesses in the under side of the draw-head, a vertically arranged bar passing through the rear one of the vertical passages, the same resting upon the block when the device is uncoupled, a block formed integral with the upper end of said bar, a coupling pin carried by the forward end of said block and arranged to move in the vertical pin-aperture or passage, and an operating hand-lever pivoted to the rear end of the block and fulcrumed to the end of the car-body.

545,306. STREET-CAR SIGN. JOSEPH M. PETER and WINFIELD GARRETT, Cincinnati, Ohio. Filed June 6, 1895. Serial No. 551,809. (No model.)



Claim.—1. In a street-car sign, the combination of a stationary shaft; a pair of supporting-standards for the opposite ends of said shaft; a skeleton-frame having two or more open panels or sights, and a supporting-sleeve whereby it is loosely mounted upon said shaft and adapted to rotate thereover; an end-head in said skeleton-frame from which said sleeve projects, and a pair of door-plates at the opposite, open end of said skeleton-frame; a cylinder or sign-proper having two or more indicator-plates thereon and removably fitting within said skeleton-frame; and an illuminator mounted on said shaft; the whole being constructed, arranged, and said sign-portion adapted to be operated around said shaft, substantially as herein set forth.

2. In a street-car sign, the combination of a stationary shaft having a bend or offset therein, and a suitable illuminating-device mounted in said bend; a pair of standards for supporting the opposite ends of said shaft; an open, paneled skeleton-frame having a supporting-sleeve whereby it is loosely mounted, free to be rotated, on said shaft; an end-head in said skeleton-frame from which said sleeve projects inwardly and around said shaft, and a pair of latched door-plates at the opposite, open end of said skeleton-frame; a cylinder or sign-proper having two or more indicator sign plates thereon, and removably fitting within said skeleton-frame; and a sprocket wheel and chain mechanism leading from said end-head of the skeleton-frame to the under side of the car-roof convenient to the operator on the platform below; substantially as and for the purpose specified.

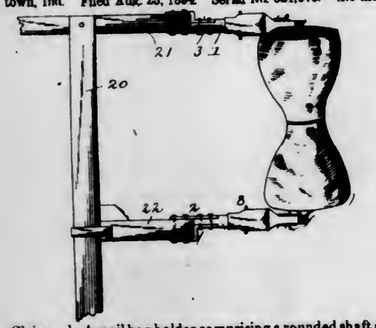
3. In a street-car sign, the combination of a stationary hollow-shaft having a bend or offset therein, and a suitable illuminating-device mounted in said offset; a pair of standards for supporting the opposite ends of said shaft, one standard being hollow and receiving in its upper lateral opening the screw-threaded end of said shaft, and the other standard being made in two corresponding parts hinged at their lower ends upon the car-roof, and divisibly coupled at their upper ends by means of a suitable nut; a transparent-sided sign having an internal sleeve, which latter is mounted on said shaft free to permit the rotation of said sign thereover; and a sprocket wheel and chain mechanism having a suitable ratchet and spring-pawl device, leading from said sign to the under side of the car-roof convenient to the motorman or driver; substantially as herein set forth.

545,307. PIPE-TRAP. HOWARD F. POOL, Lynn, Mass. Filed Mar. 15, 1894. Serial No. 503,734. (No model.)



Claim.—In a pipe trap the combination of a receiving and discharge pipe, the adjacent ends of which are arranged laterally out of alignment, a downwardly and laterally bent trap section, openings in the adjacent ends of the receiving and discharge pipes and removable covers for said openings all substantially as described.

545,308. MAIL-BAG HOLDER. CARLTON H. REBBLER, Hagerstown, Ind. Filed Aug. 23, 1894. Serial No. 521,073. (No model.)



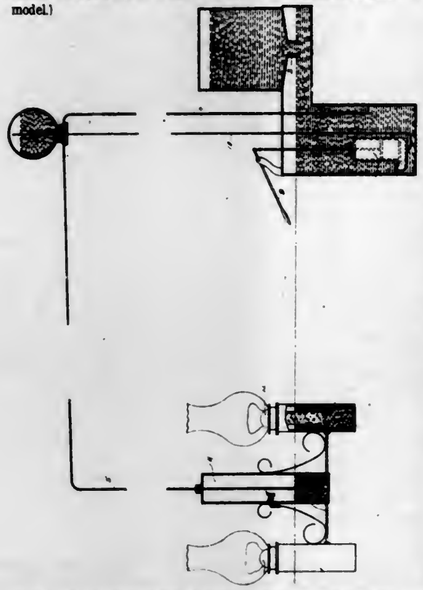
Claim.—1. A mail bag holder comprising a rounded shaft attached to a crane arm and a mail bag supporting device having a tubular body mounted thereon to turn with a combined longitudinal and rotary motion as the mail bag is taken from it, substantially as set forth.

2. A mail bag holder comprising a shaft attached to a crane arm, a rotating and sliding mail bag supporting device mounted on the shaft, and means for automatically returning said device to its normal position after the mail bag has been removed, substantially as set forth

3. The mail bag holder consisting of the round shaft having the transverse guide pin, a tubular body mounted on said shaft and having inclined bearing faces at its inner end engaging with said pin, and oppositely extending projections at its outer end, and a coiled spring secured on the outer end of the shaft to bear against said tubular body, substantially as and for the purpose set forth.

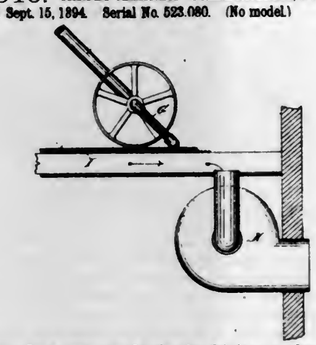
4. The herein-described mail bag holder consisting of the round shaft having the transverse guide pin, and the bearing nut or collar at its outer end, the tilter consisting of the tubular body having the inclined bearing faces at its inner end and the oppositely extending grooved projections at its outer end, and the coiled spring mounted on the shaft between the outer end of the tubular tilter-body and the fixed bearing nut; substantially as set forth.

545,309. APPARATUS FOR HYDROCARBON LIGHTING. FRANK RHIND, Meriden, Conn. Filed Jan. 17, 1895. Serial No. 535,209. (No model.)



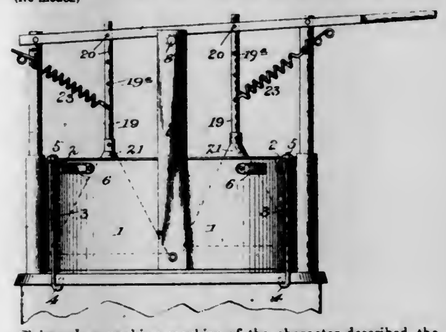
Claim.—In a hydrocarbon lighting system the combination with a tank, a supply pipe, a reservoir 11 in which the supply pipe terminates and means for preserving a seal in reservoir 11 should the oil in said reservoir become exhausted, of a reservoir 6 placed at the highest point in the supply pipe, a pump submerged in the tank and a pipe leading from reservoir 6 to the pump by which air may be exhausted from said reservoir so that oil will pass to said reservoir from the supply pipe without breaking the seal in reservoir 11.

545,310. CARPET-CLEANER. FRANK RICHARDS, New York, N.Y. Filed Sept. 15, 1894. Serial No. 523,080. (No model.)



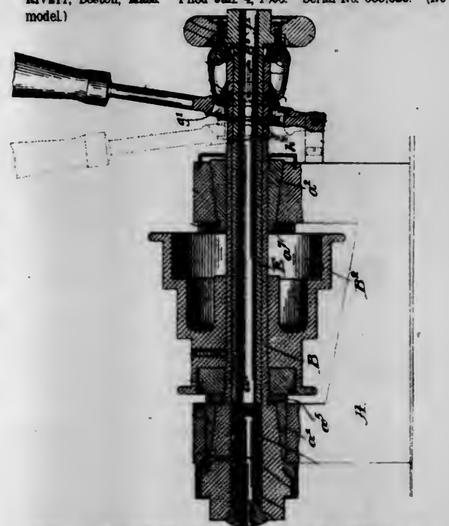
Claim.—In an apparatus for cleaning fabrics, a perforated surface for supporting the article in a fixed position, a movable device for traversing the article and discharging compressed air therethrough and thereupon, and means substantially as described for withdrawing the dust and foreign matters dislodged, all combined for operation substantially as and for the purposes set forth.

545,311. WASHING-MACHINE. KENNER F. RICE, Eureka Springs, Ark., assignor of one-half to John B. Pendergrass, same place, and William M. Edgar, Lockwood, Mo. Filed Feb. 26, 1895. Serial No. 539,789. (No model.)



Claim.—In a washing machine of the character described, the combination with the boiler, the pumps, the pipes connecting the pumps and boiler, the uprights secured to the boiler, the oscillating shaft, and the piston rods connected with said lever, of the vertically adjustable rods and formed with a number of holes, the conical compressors secured to the lower ends of said rods, the coiled springs having their inner ends bent into hooks which engage with said holes, and their other ends bent into a number of loops, and the hooks secured to the piston rods with which said loops engage, substantially as described.

545,312. DRAWING-IN SPINDLE FOR HEAD-STOCKS. EDWARD RIVETT, Boston, Mass. Filed Jan. 4, 1895. Serial No. 533,820. (No model.)



Claim.—1. The combination with a tubular chuck-spindle, a drawing-in spindle journaled therein, and a chuck connected to and adjusted by rotation of said drawing-in spindle, of independent means to positively lock the latter from rotation in the chuck-spindle, and devices to clamp and unclamp the chuck, substantially as described.

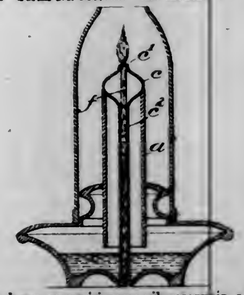
2. A tubular chuck-spindle, a drawing-in spindle journaled therein, and a chuck adjusted by rotation of the drawing-in spindle, combined with means to lock said spindles together and maintain the adjustment of the chuck, clamping devices carried by the chuck-spindle to open or close the chuck, and an actuator to control said clamping devices, substantially as described.

3. A tubular chuck-spindle, a drawing-in spindle journaled therein, and a chuck adjusted by rotation of the drawing-in spindle, combined with a collar on and rotatable with the drawing-in spindle ad-

jacent the rear end of the chuck-spindle, a locking device to lock said collar and chuck-spindle together, and means to clamp the chuck and relieve the locking device from torsional strain, substantially as described.

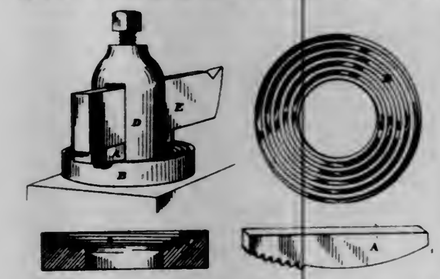
4. A tubular check-spindle, a drawing-in spindle journaled therein, and a chuck connected to and adjusted by rotation of the drawing-in spindle, combined with a collar rotatable with said drawing-in spindle and adjacent the rear end of the chuck-spindle, and a locking pin on one to enter one of a series of holes in the other, to lock the collar and chuck-spindle together, to thereby prevent independent rotation of the drawing-in spindle, substantially as described.

545,313. LAMP. ROBERTSON J. ROBERTSON, Chelsea, Mass. Filed May 2, 1894. Serial No. 509,777. (No model.)



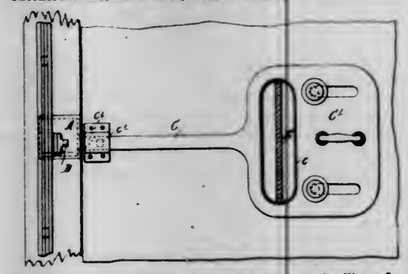
Claim.— A lamp comprising an oil reservoir, a supporting tube projecting upwardly therefrom, a burner having a flame opening surrounded by the material of said burner, a wick tube arranged within the said supporting tube leading to said burner and having an enlarged bulb portion resting upon the end of said supporting tube and forming a vaporizing and condensing chamber close to said burner and through which the wick passes to the burner, substantially as described.

545,314. TOOL-HOLDER FOR LATHES. JOSEPH A. ROTHWELL, Brooklyn, N. Y. Filed May 13, 1895. Serial No. 549,203. (No model.)



Claim.—The combination of the collar B, provided with a spherical spiral, the shoe A, provided with projections to engage in the spiral of the collar B, and the ordinary post D, to constitute a tool-holder substantially as set forth in the foregoing specification.

545,315. LIFT. ALEXANDER SHEPHERD and JOHN M. SHEPHERD, Edinburgh, Scotland. Filed Dec. 27, 1893. Serial No. 494,901. (Model.) Patented in England Dec. 15, 1893, No. 24,161.

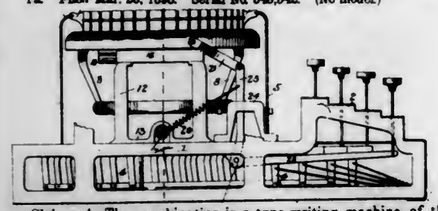


Claim.—1. The combination in a lift, hoist or the like, of a door having a bolt or sneck D, with a lock having a pivoted bolt B, and a shutter C' and rod C adapted to unlock the lock and be engaged by the bolt or sneck, substantially as set forth.

2. The combination in a lift, hoist or the like, of a door having a bolt or sneck D, the car having lower luggage compartment, the lock having pivoted bolt B, and the shutter C', and rods C and C², substantially as set forth.

3. The combination in a lift, hoist or the like, of a door having a bolt or sneck D, a lock having a bolt B with inclined or beveled nose and adapted to lock the bolt or sneck D, a shutter C' adapted to close the rope opening, and a rod C extending from the shutter and adapted to engage the inclined nose of bolt B for releasing sneck D and formed with opening c' for engagement of sneck D, substantially as set forth.

545,316. TYPE WRITING MACHINE. ELMER S. SHINER, Milton, Pa. Filed Mar. 28, 1895. Serial No. 543,542. (No model.)

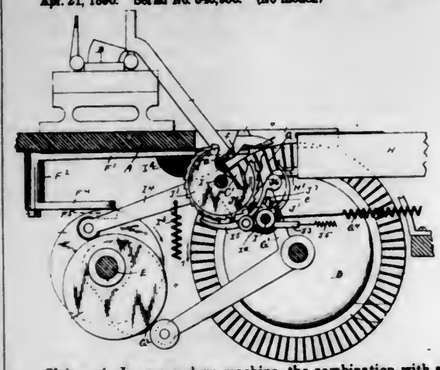


Claim.—1. The combination in a type writing machine, of the horizontally movable type ring, provided with pivoted type bars having one or more characters thereon, the plates secured to said type ring, the standards at opposite ends of the machine, one of which is adjustable, the ball bearings located between said plates and standards, the coiled spring, and means for moving said ring by depressing a key, substantially as described.

2. The combination in a type-writer, of the horizontally movable type-ring, provided with pivoted type-bars having two or more characters thereon, the grooved plates forming ways and the standards at opposite ends of the machine, the two balls located in one of said ways, near each end thereof, the single ball located in the other way at or near the center, the coiled spring and means for moving said type-ring by depressing a key; substantially as described.

3. In a type-writer, the combination with the horizontally movable type-ring and the bearing-plates secured to opposite sides thereof provided with grooves having convex edges, and provided with pins at suitable points of the adjustable standards at one side of the machine, the standards at the opposite side, the grooved plates secured to said standards, the pins, the ball-bearings and means for shifting said type-ring; substantially as described.

545,317. ENVELOPE-MACHINE. HENRY D. SWIFT and DANIEL W. SWIFT, Worcester, Mass., assignors, by direct and mesne assignments, to the Logan, Swift & Brigham Envelope Company, same place. Filed Apr. 21, 1890. Serial No. 348,938. (No model.)



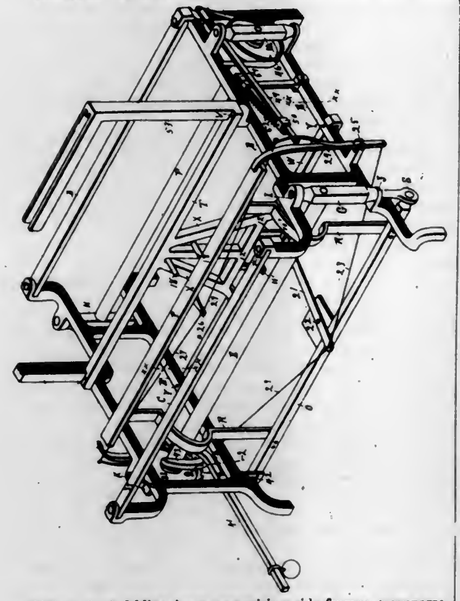
Claim.—1. In an envelope machine, the combination with a till to receive the finished envelopes, of a pusher blade having a reciprocating motion to carry the envelopes into said till, and a reciprocating envelope carrier by which the finished envelopes are brought in front of said pusher blade, said envelope carrier having a variable motion, whereby certain of the envelopes are placed in a different position in front of said pusher blade, substantially as described.

2. The combination, in an envelope machine, of a till to receive the envelopes, a reciprocating pusher blade, to carry the envelopes into said till, an envelope carrier by which the envelopes are carried in front of said pusher blade, and a stop plate by which the motion of said carrier is limited and the position of the envelopes thereby determined, substantially as described.

3. In an envelope machine, the combination with a till to receive the finished envelopes, a reciprocating pusher blade, by which the envelopes are carried into said till and an envelope carrier by which the envelopes are placed in front of said pusher blade, of a stop plate by which the motion of said carrier is limited, said stop-plate being provided with an aperture whereby the motion of said carrier is varied, substantially as described.

4. In an envelope machine, the combination with a till to receive the envelopes, an envelope carrier, by which the envelopes are carried into said till, and a stop plate for limiting the motion of said carrier, said stop plate consisting of a wheel rotated by a series of intermittent motions equaling the number of envelopes in a bunch, and being provided with an aperture, whereby the carrier is allowed to carry certain of the envelopes farther than the envelopes which constitute the bunch, substantially as described.

545,318. CARPET-LOOM. IRA J. TUTTLE, Morrice, Mich., assignor to William H. Kynett, same place. Filed Mar. 20, 1895. Serial No. 542,504. (No model.)



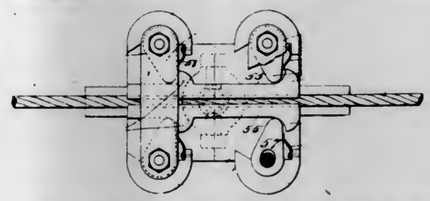
Claim.—1. A folding loom, comprising side-frames, transverse-bars pivotally attached at the ends to the side-frames, supports attached to said side-frames in a swiveled manner, a carpet-beam, warp-beam, and a batten having pivotal bearings in said swiveled supports, and a guide-frame for the harness-frames of a loom pivoted at the ends to said side-frames, substantially as set forth.

2. The combination, of the cam-plates, one of them being provided with the cam-serration and a cam-projection each side thereof, and the other being provided with the cam-roller and a cam-serration each side thereof, and one of said cam-plates being also provided with the forwardly projecting pins, means for operating said cam-plates, a batten, a spring cushioned lever pivoted to said batten and provided with the projection at each of the two outer corners, an oscillating-lever provided with the forward projection for operating said spring cushioned lever by contacting with the projections at its outer corners, said oscillating lever being also provided with the lateral projections with which the forwardly projecting pins of the cam-plate contact to oscillate said lever, the picker-sticks, and cords attached thereto and to the spring cushioned lever, substantially as set forth.

3. The combination, of the cam-plates, one provided with the cam-serration and cam-surfaces and cam-projections each side thereof, the other provided with the cam-roller and cam-serrations each side thereof, harness-frames, connecting-rods pivotally attached to said harness-frames and to one of the cam-plates, and reciprocating-bars pivotally attached to the other cam-plate, a rocking-shaft, a batten attached thereto, and a lifting-lever attached to the rocking-shaft and adapted to be tilted upward thereby to raise on the reciprocating-rods, substantially as set forth.

5. The combination of a loom-frame, a carpet-beam provided with the end ratchet-wheel, a batten, a rocking-shaft to which said batten is attached, a block, a link attaching said block to the loom-frame, a weighted lever attached at one end to said block, pawls of different lengths pivoted to the block in position to engage the teeth of the ratchet-wheel, a pivoted elbow-lever having a fulcrum pin at one end adjustably resting against the block, the other end of said lever being adapted to rest against the roll of carpet forming on the carpet-beam, and an arm attached to the rocking-shaft of the batten and adapted to raise on the weighted-lever when the batten swings back after beating up a strand of woof, substantially as set forth.

545,319. LOG-HAULING DEVICE. ALBERT VAN DUZER and WALTER KIRBY, Scotia, Cal. Filed Apr. 26, 1894. Serial No. 509,104. (No model.)



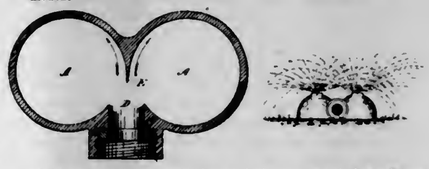
Claim.—1. The combination with a cable, of a hook for engaging a log, and a grip carried by the hook for engaging the cable, said grip automatically gripping the cable when the cable moves faster than the log, and releasing the same when the log moves faster than the cable, substantially as described.

2. The combination, with the hook, of the plate fastened thereon, the movable jaws slidably secured to the plate, and the toggles pivoted on the plate to engage the jaws, substantially as described.

3. The combination with a hook, of jaws carried by the hook and provided with projections, and spring pressed and pivoted toggles adapted to engage the projections of the jaws, substantially as described.

4. The combination with a hook, of a plate to which the hook is pivoted, jaws carried by the said plate, toggles pivoted on the plate and adapted to engage the jaws, and springs engaging the toggles to hold them out of engagement with the jaws, substantially as described.

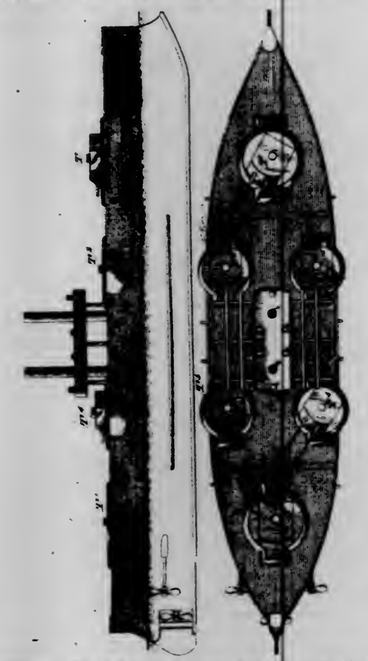
545,320. LAWN SPRINKLER OR IRRIGATOR. JOHN P. VAN SICKLE, Pasadena, Cal. Filed Sept. 15, 1894. Serial No. 523,127. (No model.)



Claim.—1. A lawn sprinkler or irrigator consisting of two circular chambers connecting with each other and with an entrance channel and flexible water supply pipe common to both chambers, and having between the said circular chambers a vertical dividing edge or tongue for dividing the water conveyed by the supply pipe into two portions, and having a central orifice in the top of each chamber whereby the water is given a rotary motion within the said chamber and escapes tangentially, and those portions of the escaping water adjacent to the orifices strike against and break each other up into spray so as to fall upon the ground immediately surrounding the lawn sprinkler or irrigator, while the rest of the water is thrown by centrifugal action over that portion of the ground surrounding the central portion, all operating in the manner and for the purposes substantially as set forth.

2. A lawn sprinkler or irrigator consisting of two chambers having a common inlet passage for the water, a dividing or separating tongue or edge placed opposite the inlet, each chamber having a dome shaped upper part provided with a discharge orifice, the whole operating in the manner and for the purposes substantially as set forth.

545,321. WAR-SHIP. GEORGE W. VAN HOOSE, Tuscaloosa, Ala. Filed Nov. 10, 1894. Serial No. 528,421. (No model.)



Claim.—1. The combination in a war ship, of a turntable, a rising and falling gun carriage and housing mounted upon said turntable, and an encompassing and heavily armored barbette extending from the upper deck to a point below and inclosing the turntable and gun operating mechanism, said barbette fitting closely to the periphery of the turn table throughout a part of the periphery, and being extended away from the same at one or more other parts substantially as and for the purpose described.

2. The combination in a war ship, of a turntable, a rising and falling gun carriage and housing mounted thereon, and an inclosing and protecting barbette opening through the deck and having a circular shape on the middle parts to correspond to and back up the turntable under firing strain and also give armor space for the barbette and extended in the form of one or more longitudinal openings through the deck to permit of the rise and fall of the long guns therethrough substantially as and for the purpose described.

3. The combination with a rising and falling and horizontally rotating gun supporting and operating mechanism; of a central telescopic ammunition conduit substantially as and for the purpose described.

4. A war ship having a series of barbettes extending below deck, and provided with one or more elongated openings *b*, turn-tables arranged within the barbettes and fitting the same closely except at the elongations *b*, and rising and falling gun carriages and housings mounted upon said turntables and arranged to be elevated above the deck to firing position, or be dropped within and below the barbette, the said deck being perfectly clear and unobstructed in said lower adjustment of the guns, whereby one set of guns may fire directly over another and the armament be thus given an increased efficiency substantially as and for the purpose described.

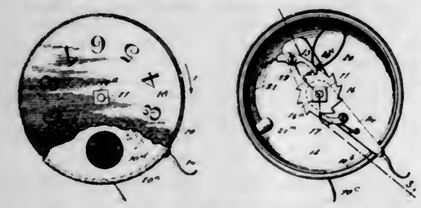
5. The combination with a rising and falling gun carriage and housing; of an annular lifting and supporting ram and a central tubular conduit for ammunition passing through the annular ram substantially as and for the purpose described.

6. The combination with a turntable having a vertical casing or walls; of a swiveling gun carriage and housing having corresponding vertical walls arranged to rise or fall within said casing and to lock and rotate with it, substantially as and for the purpose described.

7. The combination of a vertically adjustable gun housing E having an inclined and heavily armored front face E, circular edges *s s'*, and a swiveling central tube forming an ammunition conduit, a turntable carrying the gun housing and arranged to lock with it in rotary adjustment but permit vertical movement of the same and a barbette having a circular bearing surface corresponding to the circular edges of the turn table substantially as and for the purpose described.

8. The combination with an encompassing barbette; of a turntable having a circular casing C of large diameter and anti-friction rollers *e* beneath its edges and also a circular lower casing C' of smaller diameter bearing a hydraulic ram and actuating mechanism, and a rising and falling gun carriage and housing sustained upon and operated by said ram substantially as and for the purpose described.

545,322. GAME-COUNTER. JOSEPH VOELKER, Pittsburg, Pa. Filed May 16, 1895. Serial No. 549,561. (No model.)



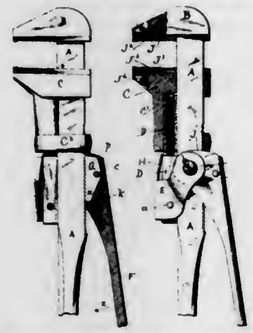
Claim.—1. In a register, the combination with a case, and a cap-piece thereon having a single orifice, of an inverted concave bell nearly equal in diameter to that of the case, and arranged within the same, a dial rotatably supported on the post, and having a series of indicators adapted to successively appear at the orifice in the cap-piece, and actuating mechanism arranged within the bell and adapted to move the dial and expose the indicators in sequence at the orifice in the cap-piece, substantially as described.

2. In a register, the combination with a case provided with a cap or top having an opening therein, of an inverted concave bell secured in the case, a post projecting from the center of the bell, a ratchet wheel secured to the upper end of the post, a dial secured to the ratchet wheel, a lever mounted on the post and projecting through the case, a pawl carried by the lever engaging the ratchet wheel, and a second pawl engaging the ratchet wheel and carrying a bell hammer, substantially as described.

3. In a register, the combination with a closed case having an opening in its top, of an inverted concave bell in the case, a post securing the bell to the case, a ratchet wheel on the upper end of the post below the top of the case, a dial secured to the ratchet wheel, an arm on the post, a pawl carried by the arm and engaging the ratchet wheel, a bell hammer carried by the pawl, a lever mounted loosely on the post and projecting through the case and a pawl pivoted on the lever and engaging the ratchet wheel, substantially as described.

4. In a register, the combination, with a cylindrical case, and a cap-piece therefor having a single orifice, of an inverted concave bell held in the case by an upright post, an arm laterally projected from said post, a spring-pressed lever on the post above the arm, a ratchet wheel loose on the post, a spring-pressed pawl therefor, a dial carried by the ratchet wheel and having a series of indicators adapted to successively appear at the orifice in the cap-piece, and a bell hammer having its heel piece pivoted on the arm, said heel piece being spring-pressed toward the ratchet wheel opposite from its pawl and serving as a detent dog for said ratchet wheel, substantially as described.

545,323. PIPE-WRENCH. JOHN E. WAKEFIELD, Worcester, Mass. Filed Apr. 1, 1889. Serial No. 305,525. (No model.)

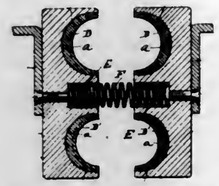


Claim.—1. The combination with a bar having a fixed head and provided with teeth, of a saddle engaging the teeth on said bar, a sliding jaw sliding on said bar, an arm carried by said sliding jaw and parallel with said bar, said arm being adjustable in length, substantially as described, a lever handle pivoted on said saddle and a link connection between said lever handle and said arm, substantially as described.

2. A bar having a fixed head and provided with teeth, a sliding jaw sliding on said bar and provided with a screw-threaded socket, a screw-threaded bolt entering said socket and extending parallel with said bar and forming an adjustable arm, a saddle engaging the teeth on said bar and a lever handle pivoted on said saddle and operatively connected with said adjustable arm by a link connection, substantially as described.

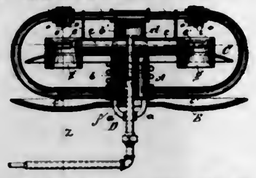
3. The combination of a bar having a fixed head and provided with teeth, a saddle engaging said teeth, a lever handle pivoted on said saddle, a jaw sliding on said bar, a pivoted link connecting said jaw and said lever handle and capable of an angular movement, by which said saddle is lifted out of engagement with said toothed bar and a spring held by said lever handle and having its tension applied to said saddle to rock it upon its pivot and hold its surface parallel with the toothed surface of said bar, substantially as described.

545,324. CLAMPING-JAW FOR PIPE-VISES. JOHN E. WAKEFIELD, Worcester, Mass. Filed Jan. 6, 1890. Serial No. 336,070. (No model.)



Claim.—The combination of the hard metal blocks B, B', provided with recesses, the soft metal faces D, D' held in said recesses, angle plates J, J, pivoted to said blocks, spring F, by which the blocks are forced apart, and bolts G, G, by which the movements of said blocks are limited, substantially as described.

545,325. OIL-GAS-BURNING APPARATUS. JOHN W. WEEKS, Providence, R. I., assignor to Christopher A. Pierce, same place. Filed Jan. 7, 1895. Serial No. 534,107. (No model.)



Claim.—1. In an oil gas burning apparatus, a main case or chamber having a hood or deflector with open combustion chambers at its outer ends, said deflector having air passages made in it leading from an air chamber inclosed in said case and having an inlet air passage at its lower end, to outlet openings in the sides of said combustion chambers, and a central oil pipe, substantially as described.

2. In an oil gas burning apparatus the combination of a central oil chamber opening at its upper end into a receiving chamber and surrounded by an air chamber or passage open at its lower end, combustion chambers connected by passages with said air chamber, a pipe leading from said receiving chamber to burner heads placed over said combustion chambers, substantially as specified.

3. In an oil gas burning apparatus, a main case or chamber having a central oil chamber opening at its upper end into said main case or chamber, an air passage surrounding said oil chamber having an opening at its lower end, and air passages leading from its upper end to combustion chambers, a pipe or pipes extending out from the side of said main chamber up to and over the top to burner heads, substantially as described.

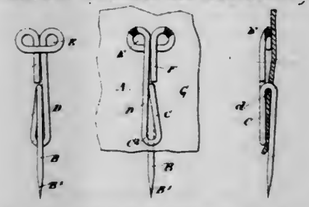
4. In an oil gas burning apparatus, combustion chambers having air openings in their sides with sloping projecting hoods over said openings within the chamber to produce a suction of air from the openings by the blast of the gas flame down past the sloping hoods through the chamber, substantially as described.

5. In combination with the combustion chambers and burner heads of an oil gas burning apparatus a small movable hood to cover between said heads and chambers, to prevent the burned air from below coming up over the chambers to the flame and reducing the draft of fresh air from the opening in the sides of said chambers, substantially as described.

6. In an oil gas burning apparatus, a main chamber inclosing an air chamber open at its lower end and connected at its upper end with combustion chambers and surrounding an oil chamber or passage opening at its upper end into said main chamber, substantially as described.

7. In an oil gas burning apparatus, a main chamber inclosing an air chamber open at its lower end and connected at its upper end with combustion chambers and surrounding an oil chamber or passage opening at its upper end into said main chamber, a coil of pipe surrounding said main chamber having connection with a water supply and with burner heads arranged to keep the gas and steam separate, substantially as described.

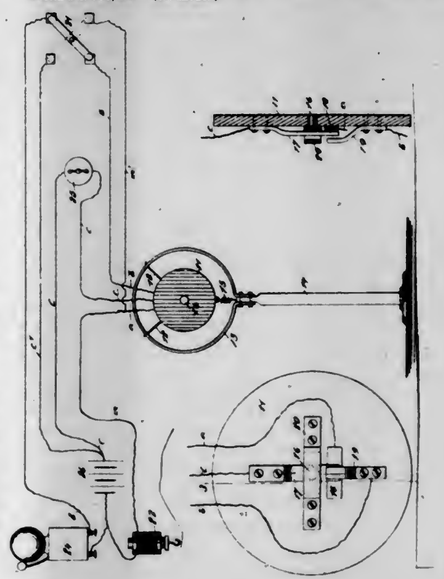
545,326. FASTENING-PIN FOR NECKWEAR. JOSEPH WEIL, New York, N. Y. Filed Oct. 25, 1894. Serial No. 526,960. (No model.)



Claim.—1. A fastening pin for the neck bands of articles of neck wear, formed of a single and continuous piece of wire pointed at the lower end of a pin part, bent U shaped at the upper end of the pin part and carried down to about half the length of said pin part and in a plane in front of that of the pin part, to form a shank, then bent upward in the same plane, a distance above the top of the pin part, and bent at its upper end to form an eye behind the upwardly extending part and then extending from said eye down to the top of the pin part substantially as herein shown and described.

2. A fastening pin for the neck bands of articles of neck wear formed of a single and continuous piece of wire pointed at the lower end of a pin part, bent U shaped at the upper end of the pin part to extend downward in a plane in front of the pin part and then again bent upward to form a second shank at the side of and in the same plane with the first mentioned shank and an eye at the upper end of said second shank, behind the shanks the pin part being inclined slightly toward the two shanks and with them forming a spring pocket for receiving a part of the fabric and clamping it, substantially as herein shown and described.

545,327. ELECTRIC TARGET. MILTON T. WESTON, Kenton, Ohio, assignor to the Halcyon Cycle Company, same place. Filed Dec. 8, 1894. Serial No. 531,232. (No model.)



Claim.—1. In an electric target, the combination of a target having a movable bull's-eye, a circuit closer actuated from said bull's eye and having two contact points, an electric circuit including an alarm, the circuit closer and one of its contact points, a second normally closed electric circuit including an electro magnet, the said circuit closer and the other contact point, and a hanger supported by the said magnet, substantially as set forth.

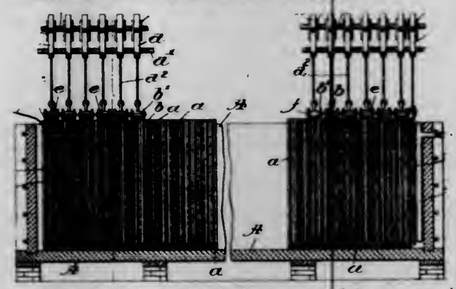
2. A target, provided with a movable bull's-eye, contact points fixed upon the target, and a spring point operated by the movement of the bull's-eye to make or break a circuit, a magnet, an alarm, a hanger adapted to be attracted by the magnet, and an electric connection, substantially as set forth, between the contact points of said magnet and alarm, as set forth.

3. The combination, with a target having a movable bull's-eye, fixed contact points, and a movable point operated by the bull's-eye for engagement with either of the fixed points, a battery in circuit connection with all of the said points, an alarm, and a magnet located in the said circuits, likewise a switch whereby the target may be short circuited, as and for the purpose set forth.

4. A target, a frame in which the target is suspended, a movable bull's eye, an alarm, a supporting device, and an electrical connection, substantially as described, between the supporting device and alarm and the bull's eye, whereby upon the movement of the bull's-eye in one direction the supporting device and the alarm will be brought into operation, as and for the purpose specified.

5. In an electric target, the combination of a target having a movable bull's-eye, the circuit closer actuated from the bull's-eye and having two contact points, an electric circuit including an alarm, the circuit closer and one of said contact points, a second electric circuit including an electro-magnet, the said circuit closer and the other contact point, a hanger supported by the magnet, and means for short-circuiting the said circuit closer, substantially as set forth.

545,328. PROCESS OF AND APPARATUS FOR REFINING METALS ELECTROLYTICALLY. WILLIAM H. WIGGIN, Worcester, Mass. Filed May 22, 1894. Serial No. 512,077. (No model.)



Claim.—1. The herein described process of refining copper and like metals, which consists in suspending plates of the impure metal in a vertical position in an electrolyte, dissolving pure metal from the anode side of one plate and depositing it upon the cathode side of the next plate by electrolytic action, and maintaining the surfaces of the plates free from bubbles of gas or impurities by constantly agitating the plates in vertical planes, substantially as described.

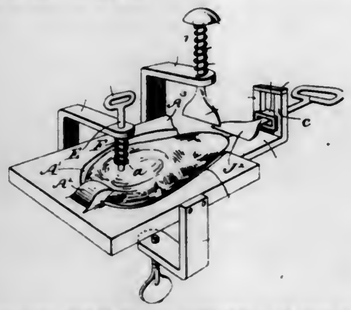
2. In an apparatus for refining copper and like metals by electrolysis, a tank for the electrolyte, and a movable yoke to support plates of the impure metal vertically therein, combined with an actuating shaft, and insulated connections between it and the yoke, whereby the latter is moved to constantly agitate the plates in vertical planes in the electrolyte, substantially as described.

3. In an apparatus for refining copper and like metals by electrolysis, a tank for the electrolyte, guides or channels therein, a movable yoke, and plates of the impure metal supported thereby and directed by the guides or channels, combined with an actuating shaft, and insulated connections between it and the yoke, whereby the latter is moved to agitate the plate in the electrolyte, substantially as described.

4. In an apparatus for refining copper and like metals by electrolysis, a tank for the electrolyte, a series of yokes above the tank, and retaining pins adapted to pass through ears on plates of the impure metal and connect them to yokes, combined with an actuating shaft, and connections between it and said yokes, whereby rotation of the shaft raises and lowers the yokes to agitate the plates in the electrolytic solution, substantially as described.

545,329. OYSTER-OPENING MACHINE. FERDINAND ZOCCHINI, New York, N. Y. Filed Oct. 17, 1894. Serial No. 526,168. (No model.)

Claim.—1. An oyster opening machine comprising a bed-plate adapted to receive an oyster therein, means thereon for holding the oyster, a knife journaled vertically upon said plate, adapted to be depressed to strike off one end of the oyster, a spring above the knife to maintain the same normally raised, and an opening blade at one end of the plate adapted to be forced inwardly between the shells of the oyster to separate the same.



2. An oyster opening machine comprising a bed-plate having a recess therein to receive an oyster, a normally depressed plunger journaled above the plate to retain the oyster in position, a vertically journaled depressible knife adapted to strike off one end of the oyster and mounted near the edge of the plate, an extension at said end of the plate, and a reciprocable and partially rotatable knife mounted in said extension, and projecting inwardly upon a substantial level with the plate to enter between the shells of the oyster.

3. An oyster opening machine comprising a bed-plate having a clamp to secure it to a supporting surface, and a recess therein to receive the oyster, a spring pressed rod mounted upon the plate and arranged to bear upon the oyster and hold the same yieldingly in place, a normally raised spring plunger mounted upon said plate and having a flat elongated knife blade upon the lower end thereof to strike off one end of the oyster, an extension projecting forwardly from the bed-plate, having bearings thereon in which is mounted a vertically sliding box, a rod journaled in the said box in such manner as to be capable of pivotal movement, a flat knife blade upon the inner end of the said rod, and a handle upon the outer end thereof adapted to force the same inwardly to bring the knife blade into engagement between the shells of the oyster.

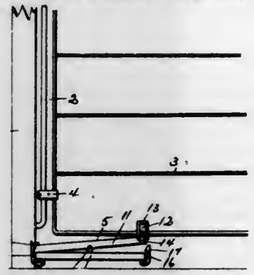
4. An oyster opening machine comprising a bed-plate having a clamp depending therefrom to secure the same to a supporting surface, a recess or concavity to receive the oyster in the top of the said plate, opening at the front of the same, a lug projecting from the said plate over the recess to receive the oyster thereunder, an angular bearing at the rear of the plate overhanging the recess, a rod journaled therein having a handle thereon to raise the same, and a spiral spring surrounding the said rod to normally press the same downwardly upon the oyster, an extension at the rear of the plate, a similar angular bearing secured to the said extension, ranging over and slightly in front of the recess, a vertical plunger journaled in the said bearing, having a flat elongated knife blade formed upon the lower end thereof, a head upon the top thereof, and a spring between the bearing and the head arranged to maintain the said plunger normally raised, an extension projecting forwardly from the plate, having yielding material secured thereto in alignment with the plunger to take the impact of the knife, bearings projecting upwardly from the end of the said extension, a box sliding vertically between the same, having an apertore extending therethrough and outwardly flared at each end, a rod journaled in the said aperture having a flat elongated knife blade upon the inner end thereof, and a handle upon the outer end thereof to force the said rod inwardly, whereby the knife may be brought into engagement between the shells of the oysters to separate the same, substantially as shown and described.

545,330. GATE. MELVILLE B. BAIRD, Tulsa, Ind. Ter. Filed Aug. 22, 1894. Renewed July 26, 1895. Serial No. 557,251. (No model.)

Claim.—1. In a gate, a gate post, a gate hinged thereto, having a vertical movement, and normally supported upon a tilting track, means whereby when the gate is raised the track is tilted automatically, and catches for holding the track in a tilted position until the gate is opened or closed.

2. In a gate, a gate post, a guide secured thereto, a gate hinged to the guide having a vertical movement, a roller pivotally secured to the gate normally resting upon a tilting track, a flange upon the track, and a projection upon the gate for engagement beneath the flange, whereby when the gate is raised, the track moves therewith and is tilted, and a catch for holding the same in a tilted position.

3. In a gate, a gate post, a gate hinged thereto having a vertical movement, a cradle comprising a lower section, an upper tilting section pivotally secured thereon, a roller pivoted to the gate normally resting upon the upper section of the cradle, catches pivotally secured to the lower section of the cradle, ropes or cables secured to the gate at one end, whereby when the opposite end is pulled the gate is raised and means for automatically tilting the cradle simultaneous to raising the gate, whereby the gate is opened or closed by gravity.



545,331. SCREW HOLDER AND DRIVER. JAMES R. BAILEY, Connellsville, Pa. Filed Mar. 14, 1895. Serial No. 541,783. (No model.)

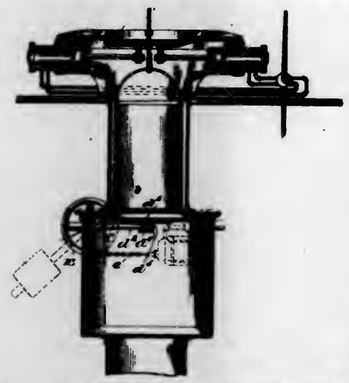


Claim.—1. In a screw holder and driver, the combination with a pair of legs and screw holding nibs thereon, of a fulcrum above the nibs on which the legs move to expand the nibs as against the sides of a screw slot, and means for actuating the legs, substantially as set forth.

2. The combination with a pair of legs and screw holding nibs thereon, of a fulcrum above the nibs beyond which the legs are separated, the nibs being adapted to be separated by the movement of the legs toward each other above the fulcrum, and means for actuating the legs toward each other, substantially as set forth.

3. The combination with a pair of legs and nibs, of a fulcrum above the nibs, a slit above the fulcrum, bows in the legs, and a sliding ring for compressing the bows, substantially as set forth.

545,332. AIR-LOCK FOR CAISSONS. WILLIAM C. BARR, Jersey City, N. J. Filed May 9, 1895. Serial No. 548,787. (No model.)



Claim.—1. An air-lock for caissons, comprising a cylinder having a seat therein, a swinging arm, a gate, and a ball-and-socket connection between said arm and said gate, as set forth.

2. An air lock for caissons, comprising a cylinder having a seat therein, a swinging arm having its free end rounded, a gate, and socket-plates secured to the latter and inclosing said rounded end of said arm, as set forth.

3. An air-lock for caissons, comprising a cylinder having a seat, a rock-shaft, a gate carried by said rock-shaft and a piston connected to said shaft and operating in an air-cylinder, as set forth.

4. An air-lock for caissons, comprising a cylinder having a seat a rock-shaft having an arm, a gate loosely mounted on said arm, a piston operating in an air cylinder, and connections between said piston and said rock-shaft, as set forth.

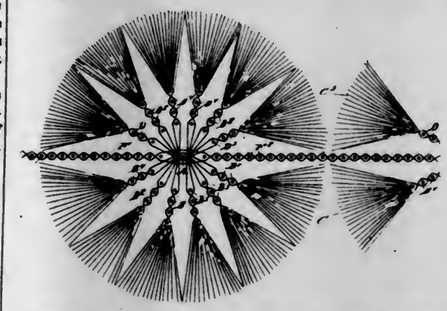
5. An air-lock for caissons, comprising a cylinder having a seat, a rock-shaft having an arm, a gate mounted on said arm, a wheel on said rock-shaft, a piston operating in an air cylinder, and a chain connected at its ends to said piston and said wheel, as set forth.

6. The combination with the air-confining cylinder having an offset, of a ring secured thereto and having a groove, rubber in said groove, a shaft having a wheel on one end, an arm secured to said shaft at one end, a gate loosely mounted on the free end of said arm, an air-cylinder having a valved pipe opening therein, a piston movable in said air cylinder, and a chain connecting the rod of said piston to said wheel, substantially as set forth.

545,333. AZO ORANGE DYE. HEINRICH A. BERSTEREN, Mannheim, and PAUL JULIUS, Ludwigshafen, assignors to the Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Filed Apr. 11, 1895. Serial No. 545,396. (Specimens.) Patented in Germany Oct. 8, 1893, No. 80,973, and in France May 7, 1894, No. 238,340.

Claim.—The new coloring matter which can be obtained by the combination of the tetrazo-compound of benzidin-disulfoacid with a nitro diamin such as nitro-meta-phenylene-diamin and which occurs as a dark reddish brown powder soluble in water and which is precipitated from its aqueous solution by soda solution and yields a deep orange precipitate from its aqueous solution on the addition of dilute sulfuric acid, all substantially as described.

545,334. WOVEN CHENILLE FABRIC. LEEDHAM BINNS, Philadelphia, Pa. Original application filed Mar. 7, 1894, Serial No. 502,650. Divided and this application filed Dec. 13, 1894. Serial No. 531,699. (No model.)



Claim.—1. As a new article of manufacture, a woven chenille fabric comprising a web, central warps within the said web, separate sets of warps on opposite sides of the said central warps and on opposite sides of the said web, wefts binding the said separate sets of warps some of the wefts passing over the said central warps of the web and binding the separate sets of warps on one side of the web, and the remainder of the wefts passing under the said central warps and binding the separate sets of warps on the other side of the web, the ends of the wefts projecting from the outermost warp threads in the several sets on each side of the web, to form tufts, substantially as shown and described.

2. As a new article of manufacture, a woven chenille fabric comprising a continuous web, separate sets of warps arranged at intervals laterally of the said web, and wefts interwoven with the said separate sets of warps, the ends of the wefts projecting from the outermost warp threads to form tufts, substantially as described.

3. As a new article of manufacture, a woven chenille fabric comprising a continuous web, separate sets of warps arranged at intervals laterally of the said web, central warps located in the web at the intervals separating the said sets of warps, and wefts interwoven with the central warps and the separate sets of warps, the ends of the wefts projecting from the outermost warp threads to form tufts, substantially as described.

3. As a new article of manufacture, a woven chenille fabric comprising a continuous web, separate sets of warps arranged at intervals on opposite sides of the said web, and wefts interwoven with the said separate sets of warps, the ends of the wefts projecting from the outermost warp threads to form tufts, substantially as described.

4. As a new article of manufacture, a woven chenille fabric comprising a continuous web, separate sets of warps arranged at intervals on opposite sides of the said web, central warps located in the web at the intervals separating the said sets of warps, and wefts interwoven with the central warps and the separate sets of warps, the ends of the wefts projecting from the outermost warp threads to form tufts, substantially as described.

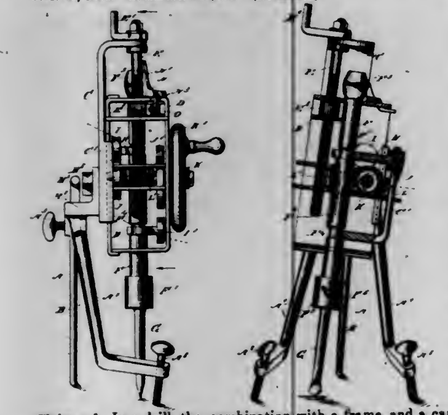
5. A strand of chenille, comprising a continuous cord, separate sets of warps radiating at intervals from the said cord, and wefts interwoven with the said sets of warps, the ends of the wefts projecting from the outermost warp threads to form tufts, substantially as described.

6. A strand of chenille, comprising a continuous cord, separate sets of warps radiating at intervals from the said cord on opposite sides of the same, and wefts interwoven with the said sets of warps, the ends of the wefts projecting from the outermost warp threads to form tufts, substantially as described.

7. A strand of chenille, comprising a continuous cord, central warps located in the cord at intervals, separate sets of warps radiating from the said central warps, and wefts interwoven with the said sets of warps and extending toward the central warps, the ends of the wefts projecting from the outermost warp threads to form tufts, substantially as described.

8. A strand of chenille, comprising a continuous cord, central warps located in the cord at intervals, separate sets of warps radiating from the said central warp on opposite sides of the cord, and wefts likewise radiating from the said central warps on opposite sides of the cord and interwoven with the said sets of warps, the ends of the wefts projecting from the outermost warp threads to form tufts, substantially as described.

545,335. HAND-DRILL. ROBERT BINNIE, Bolivar, Pa. Filed Mar. 26, 1895. Serial No. 543,228. (No model.)



Claim.—1. In a drill, the combination with a frame and a carriage mounted thereon, of a drill shaft mounted in the carriage, a sliding frame secured to the drill shaft and provided with wheels, a driving shaft, cams on the driving shaft and engaging the wheels of the sliding frame, a worm on the driving shaft, and a worm wheel in which the drill shaft slides, the said shaft having a key and groove connection with the said worm wheel, substantially as described.

2. In a drill, the combination with a frame, and a carriage fitted to slide thereon, of a ratchet nut mounted in the carriage, a feed screw mounted in the frame and passing through the ratchet nut, a reciprocating drill shaft having a double cone shaped head, and a sliding pawl mounted on the carriage and adapted to be alternately engaged by the head of the drill shaft, substantially as described.

3. In a drill, the combination with a frame and a carriage fitted to slide thereon, of a ratchet nut mounted in the carriage, a feed screw mounted in the frame and working in the ratchet nut, a reciprocating drill shaft having a double coned head, and a spring pressed and sliding pawl mounted on the carriage and provided with two arms alternately engaged by the head of the drill shaft, substantially as described.

4. In a drill, the combination with a frame and a carriage mounted thereon, of a drill shaft mounted in the carriage and having a double cone shaped head, a sliding frame secured to the drill shaft, cams on the driving shaft for engaging the said sliding frame, a worm on the driving shaft, a worm wheel in which the drill shaft slides, a ratchet wheel on the drill shaft, and a sliding pawl engaging the ratchet wheel and operated by the head of the drill shaft, substantially as described.

545,336. BLACK DYE. RENÉ BOHN, Mannheim, assignor to the Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Filed Oct. 9, 1894. Serial No. 525,364. (Specimens.) Patented in England June 5, 1893, No. 10,996, and in France Apr. 7, 1894, No. 237,610.

Claim.—1. As a new article of manufacture the black coloring matter such as can be obtained by treating dinitro-naphthalene with sodium sulfid, which yields fast black shades on vegetable fiber on dyeing from a bath rendered strongly alkaline with soda, all substantially as described.

2. The specific black coloring matter which can be obtained by treating dinitro-naphthalene with sodium sulfid and subsequently with hydrochloric acid and is applied to vegetable fiber by the aid of a reducing agent such as grape sugar and a strongly alkaline solution and which is almost insoluble in caustic soda and in concentrated sulfuric acid even on warming substantially as described.

545,337. BLACK DYE. RENÉ BOHN, Mannheim, assignor to the Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Filed Oct 9, 1894. Serial No. 525,365. (Specimens.) Patented in England June 5, 1893, No. 10,996, and in France Apr. 7, 1894, No. 237,610.

Claim.—The specific black coloring matter which can be obtained by treating dinitro-naphthalene with sodium sulfid and subsequently with acetic acid and can be applied to vegetable fiber by the aid of a strongly alkaline dye bath and which is soluble in soda solution giving a violet solution, soluble in concentrated sulfuric acid giving a dirty green solution turning blue and dirty red on heating substantially as described.

545,338. AUTOMATIC VENDING-MACHINE. GEORGE H. BOWIE, Ottawa, Canada, assignor of one-half to John Charles Roger, same place. Filed May 13, 1895. Serial No 549,116. (No model.)



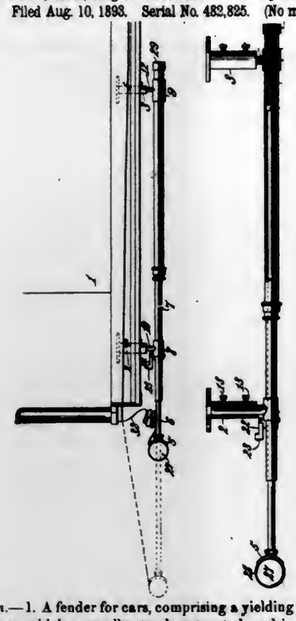
Claim.—1. In an automatic vending machine for newspapers and similar articles, the combination with a suitable casing having a transverse delivery slot, of an endless apron with adhesive surface having its upper face opposite said slot and adapted to travel in a direction toward said slot, a pair of rollers suitably journaled upon which said apron is mounted, a sleeve journaled upon the axle of one of said rollers adjacent to one of the ends, a pinion upon said sleeve, a ratchet wheel upon said sleeve, a spring detent at the end of the roller gearing into said ratchet wheel, a wheel journaled upon a stud secured to the sides and gearing into said pinion and into a rack below, a rack secured upon a movable piece below said apron and gearing into said wheel and a bottom held slidingly below said apron and carrying said rack, substantially as set forth.

2. In an automatic vending machine for newspapers and similar articles, the combination with a suitable casing having a transverse delivery for said articles, of a lip or flap hinged at the bottom of said slot so as to close the same when raised, shoulders at the interior of the casing against which said lip abuts when raised and prevent it being pushed inwardly, a sliding bottom below said delivery slot, a link pivoted to the rear of said bottom, a pitman pivoted to said link and to the inner face of said lip and a support for the forward end of said pitman near its connection with said lip, substantially as set forth.

3. In an automatic vending machine for newspapers and similar articles, the combination with a suitable casing having a lower forward projecting part covered by a top, a delivery slot above the rear edge of said top and the adjustable bottom or gage of a door, a bottom having its front edge extending partly under said top of the projecting part and adapted to be moved forward, a slide made movable in said bottom and projecting through the front of said projecting part and adapted to be automatically retracted, registering transverse slots in said top slide and sliding bottom, a rib under said slots adapted to support a coin in the slots of said bottom and slide and allow it to drop when said parts have been moved forward, an endless apron having an adhesive surface and having its upper surface opposite the delivery slot, rollers upon which said apron is mounted and means of causing said apron to travel forward when the sliding bottom moves forward and to remain stationary when said bottom slides back, substantially as set forth.

4. In an automatic vending machine for newspapers and similar articles, the combination with a suitable casing having a transverse delivery slot above the top of the lower projecting part of the casing, of a flap or lip pivoted to said top and closing said slot, a sliding bottom below said top, a pair of rollers journaled above said bottom, an endless apron having its upper part opposite said delivery slot, a link pivoted to the rear of said bottom, a curved pitman pivoted to said flap or lip and to said link and supported upon the axle of the front roller and means of moving said bottom forward by means of an automatically retracted slide movable in said bottom and having a slot registering with slots in said top and bottom and adapted to be connected by a coin inserted in said slot, substantially as set forth.

545,339. AUTOMATIC CAR-FENDER. FREDERICK A. BRAGG, North Adams, Mass., assignor of one half to John Boyd Thacher, Albany, N. Y. Filed Aug. 10, 1893. Serial No. 482,825. (No model.)



Claim.—1. A fender for cars, comprising a yielding longitudinally sliding frame which normally stands retracted, and is automatically slid horizontally in advance of the car when released, and a locking device which holds the frame retracted and automatically releases said frame when the latter yieldingly strikes a person or object, substantially as described.

2. A fender for cars, consisting of a flexible support or net, a spring yielding frame which normally stands retracted and is automatically projected longitudinally in advance of the car when released, and a locking device which holds the frame retracted, substantially as described.

3. A fender for cars, consisting of a flexible support or net, a spring yielding frame which normally stands retracted and is automatically projected longitudinally in advance of the car when released, and a locking device which holds the frame retracted and automatically releases said frame when the latter yieldingly strikes a person or object, substantially as described.

4. The combination with a car, of a flexible support or net, a longitudinally spring-yielding frame supported by the car, and a gravitating locking dog which holds the frame retracted and automatically releases the latter on striking a person or object, substantially as described.

5. The combination with a car, of a flexible support or net, a longitudinally yielding frame suspended from the car, a locking device which normally holds the frame retracted, and means automatically projecting the frame longitudinally in advance of the car when the locking device releases said frame, substantially as described.

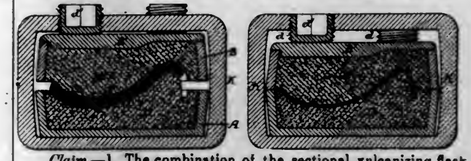
6. The combination in a car fender, of a cross head carrying a cushion, rods or tubes connected with the cross head, tubes in which said rods or tubes slide longitudinally, springs acting on the rods or tubes to project them longitudinally, supporting brackets connected by a cross bar having a tubular socket, a rod adapted to slide through said socket and connected with the cushion carrying cross head, and a locking dog carried by the tubular socket and adapted to engage and disengage said rod, substantially as described.

545,340. PIPE-COVERING. EDWARD P. BREWER, Norwich, Conn. Filed Jan. 7, 1895. Serial No. 534,052. (No model.)



Claim.—A pipe covering of flexible material, having a crimped body section, said crimps being connected at one side by a web that is creased and folded between the crimps, and also connected at the opposite side by one or more strips, all substantially as specified.

545,341. VULCANIZING-FLASK. WISTAR P. BROWN, Philadelphia, Pa. Filed Feb. 2, 1895. Serial No. 537,149. (No model.)

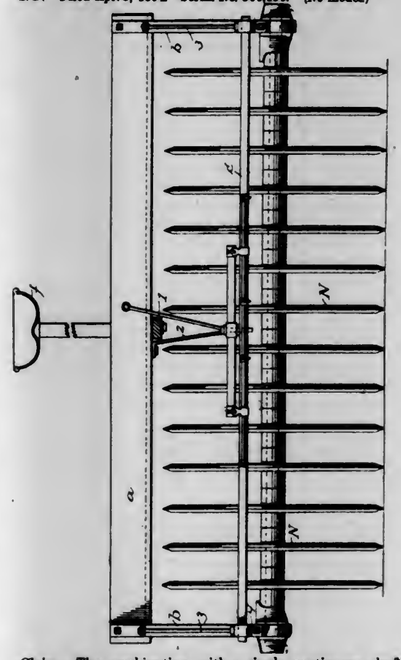


Claim.—1. The combination of the sectional vulcanizing flask, with a compressor comprising a top plate, a bottom plate, and connecting end bars, said top plate being provided with one or more screw plugs for bearing upon the top plate of the flask, each of said screw plugs having a portion adapted for receiving a wrench, and capable of being screwed down below the upper face of the top plate of the compressor, substantially as specified.

2. The combination of the sectional vulcanizing flask, with a compressor comprising a top plate, a bottom plate, and connecting end bars, said top plate being provided with a series of screw plugs distributed throughout the area of the plate and adapted to bear upon the top plate of the flask and press said flask downward upon the bottom plate, substantially as specified.

3. The combination of a sectional vulcanizing flask, with a compressor, comprising a top plate, a bottom plate and connecting end bars, said top plate having notches for the reception of the jaws of a retaining wrench, and being provided with one or more screw plugs for bearing upon the top plate of the flask, substantially as specified.

545,342. SUBSURFACE-PACKER. HARDY W. CAMPBELL, Putney, S. D. Filed Apr. 3, 1894. Serial No. 506,150. (No model.)



Claim.—The combination, with a single continuous shaft, of a series of wedge-faced wheels mounted upon said shaft, a space being provided between every two wheels extending from the hubs thereof to the peripheries and said wedge-faced wheels constituting the only bearings for said machine upon the surface of the ground, whereby the wheels are permitted to sink to the bottom of the furrows and pack the sub-soil, fixed boxes forming bearings for said shafts, standards secured upon said boxes, and a suitable frame mounted upon said standards, substantially as described.

545,343. CATCH-BASIN COVER. GEORGE G. CAMPBELL, Milwaukee, Wis. Filed Apr. 11, 1894. Serial No. 507,187. (No model.)

Claim.—1. A catch basin cover, consisting of the combination of an open base plate, a raised portion covering a part of the opening in

said base plate, and adapted to occupy the space above the opening within the curb line, a facing opposite said raised portion, adapted to support the earth and pavement of the street at a higher level than that of the gutter, grating extending from the top of said raised portion to the top of said facing, and grated sides extending downward and laterally along the gutter line, with the lower end or edge thereof supported upon the base plate, substantially as described.



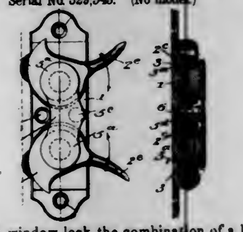
2. A catch basin cover, adapted to be located at a street corner, consisting of the combination of an open base plate, a raised portion covering part of the opening in said base plate, and adapted to occupy the space above the opening within the curb line, an angular or curved facing opposite said raised portion, adapted to support the earth and pavement of the street between the cross walks at a higher level than that of the gutter, inclined grate bars extending from the top of the raised portion to the top of said facing, and widening laterally to completely fill the space between the cross walks over said opening, together with gutter grate bars extending laterally from the sides of the raised portion along the run of the gutter, with the lower ends of said bars supported upon the base plate, substantially, as described.

3. A catch basin cover, consisting of the combination of an open base plate, a raised portion covering a part of the opening in said base plate, and adapted to occupy the space above the opening within the curb line, a facing opposite said raised portion, adapted to support the earth and pavement of the street at a higher level than that of the gutter, grating extending from the top of said raised portion to the top of said facing, grated sides extending downward and along the gutter line to the base plate, and a horizontal flange R extending along the gutter sides of said cover, and above the grating, adapted to support the planking or material of the cross walk, substantially, as described.

4. A catch basin cover, consisting of the combination of a horizontal open base plate of usual form, a flat topped raised portion adapted to cover that portion of the opening in the base plate within the curb line and a slanting topped portion adapted to cover the remainder of said opening and provided with one or more openings adapted to admit water from the level of the street and lateral gutter openings adapted to admit water from a lower level, substantially as described.

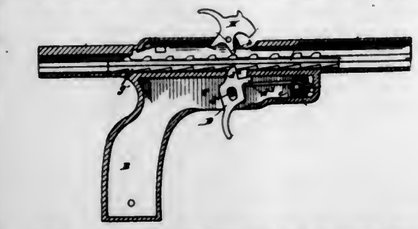
5. A catch basin cover, consisting of the combination of an open base plate, a raised portion covering part of the opening in said base plate and adapted to occupy the space within the curb line, a facing, of varying height, opposite said raised portion, said facing being highest at its central portion, adapted to support the earth and pavement of the street at a higher level than that of the gutter, and inclined grating or grate bars covering the space between said facing and the raised portion within the curb line, substantially, as described.

545,344. SASH-HOLDER. JAMES CARR, Adrian, Mich. Filed Nov. 21, 1894. Serial No. 529,543. (No model.)



Claim.—In a window lock the combination of a base-plate provided with a pair of projecting studs, a pair of oppositely arranged cam-levers having bearings through which said studs project, independent springs surrounding the studs and each engaging at one end with a fixed point and at the other end with a cam-lever, a cap-plate having recesses on one side at its ends, arranged to receive the projecting ends of the studs and carrying on the same side with said recesses, a stop-post projecting to the base-plate, intermediate of the two levers and forming a stop for either to limit its movement when the other binds, and a connecting screw passing through the base-plate into the stop-post and thereby holding the base and cap-plates together and securing the cam-levers in place, substantially as set forth.

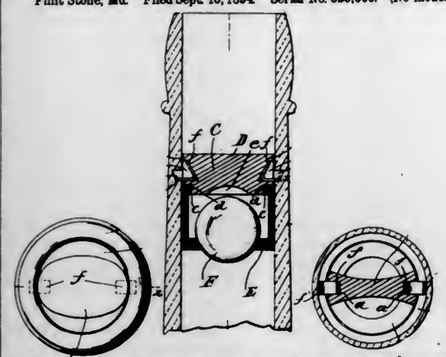
545,345. TOY PISTOL. ROBERT F. CARTY and WILLIAM A. DOWNES, Detroit, Mich. Filed June 15, 1895. Serial No. 552,963. (No model.)



Claim.—1. In a toy pistol, the combination of a barrel, a magazine provided with a rack on its under side, and a rack on its upper side, a trigger adapted to engage the lower rack and push the magazine forward, a hammer adapted to be raised by the upper rack, and a spring adapted to drive the hammer downward, substantially as described.

2. In a toy pistol the combination of a barrel, a magazine adapted to be advanced through the barrel, and provided with receptacles for detonating caps, a hammer adapted to be alternately raised by the magazine and to strike against the caps carried thereby, substantially as described.

545,346. ATTACHMENT FOR BOTTLES. MILLARD CHENEY, Flint Stone, Md. Filed Sept. 15, 1894. Serial No. 523,066. (No model.)



Claim.—The combination, with a bottle having an annular recess in its neck, of a stopper, or device for preventing the refilling thereof, consisting of a body portion having a ring adapted to fit within the neck of the bottle, a strip cut out on its sides and extending across said ring and having a top piece elliptical in form, each end of said strip being provided with recesses substantially triangular in form, with the base downward, triangular plate springs in each of said recesses, one end of which is adapted to enter the annular recess in the neck of the bottle, a circular box, the top of which is open and provided with an inwardly extending annular flange adapted to enter an annular groove formed in the body portion, said box being adapted to closely fit within the neck of the bottle and the lower side thereof being apertured to form a valve seat, and a ball valve in said box adapted to be seated thereon, the under surface of the body being provided with a concavity to receive the ball valve when the bottle is tilted and retain the same in alignment with its seat, substantially as shown and described.

545,347. COMMUTATOR OR COLLECTOR BRUSH. CHARLES L. COFFIN, Detroit, Mich. Filed Feb. 5, 1895. Serial No. 537,406. (No model.)

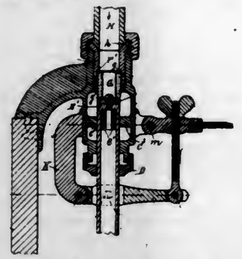


Claim.—1. A commutator or collector brush consisting of a perforated metal strip having a continuous edge.

2. A commutator or collector brush consisting of a strip of sheet metal perforated a portion of its length, with a continuous edge along the perforated portion.

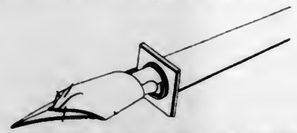
3. A commutator or collector brush consisting of a strip of sheet metal comprising a solid non perforated portion and a perforated portion having a continuous edge.

545,348. BALL-COCK FOR WATER-CLOSET VALVES. JAMES CRAWFORD and JOSEPH H. YOUNG, Boston, Mass. Filed Mar. 11, 1895. Serial No. 541,309. (No model.)



Claim.—In a ball cock for water closet tanks, a valve case having arranged within it a valve seat and a vertically movable valve pipe arranged in said valve case and opening downward by the pressure of the water, combined with a float lever carrying at one end a float ball and its other end pivoted to a fixed support, a lifting lever pivoted to the valve pipe and fulcrumed at one end to a fixed support, and a connecting rod pivotally connected at one end to the free end of the lifting lever and at its other end adjustably secured to the float lever, and means for effecting the adjustment of said lever, substantially as described.

545,349. RESERVOIR ATTACHMENT FOR PENS. GEORGE W. DALLY, Philadelphia, Pa. Filed Jan. 23, 1895. Serial No. 535,884. (No model.)



Claim.—A reservoir attachment for pens, comprising a casing having open ends converging to clasp the pen, the lower end of the casing on the upper side being doubly slit to form a tongue, as and for the purpose described.

545,350. PENCIL-SHARPENER. JOSEF DEUTSCHBEIN, Euskirchen, Germany. Filed Mar. 30, 1895. Serial No. 543,820. (No model.)



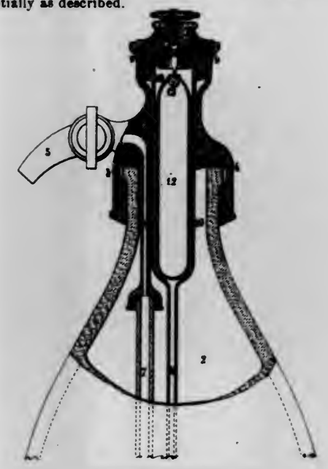
Claim.—1. In a pencil sharpener, the combination of a recessed housing, a cutter to lie flat against one surface of said recess and having a longitudinal groove at its back and a bow to lie in said groove and press the cutter against the housing and means to attach said bow to the housing substantially as described.

2. The combination of a recessed housing, a cutter to lie flat against one surface of said recess, a longitudinal groove at the back of said cutter, and a bow to lie in said groove said bow having its shanks fast in the adjacent side of said housing recess and operating to retain the cutter in position substantially as described.

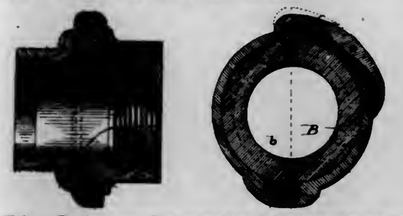
3. The combination of a recessed housing A, a cutter B having recess b'' at the back, and adapted to lie with its surface b against the recess surface a of the housing, a bow c to lie in said cutter groove and having shanks c' c'' fast in the adjacent surface a' of said housing, all parts co-operating in the manner and for the purpose substantially as described and shown.

545,351. SELTZOGENE. VICTOR E. J. DURAFORT, Paris, France. Filed Feb. 19, 1895. Serial No. 538,993. (No model.) Patented in France Aug. 22, 1892, No. 223,985, and in England Jan. 10, 1893, No. 509.

Claim.—An apparatus for the direct saturation of liquids with gases, consisting of a siphon-head for a bottle, or receptacle, a cap, or stopper, to which is attached a tube having at its lever end a prolongation constituting a dip-tube, a removable and replaceable cartridge, or receptacle, containing compressed or liquefied gas, inserted in the tube beneath the cap or stopper, the upper end of said cartridge having a ball held by pressure in an orifice in the upper end of the cartridge, and a screw-threaded rod tapped through the cap, or stopper, and adapted to unseat said ball by being screwed inward, substantially as described.

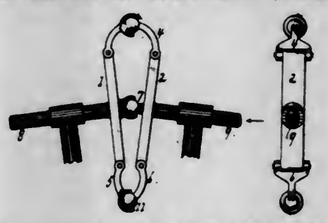


545,352. HOSE-COUPLING. WILLIAM EARL, Norristown, Pa. Filed Feb. 7, 1895. Serial No. 537,592. (No model.)



Claim.—The hose coupling comprising the male member having radial lugs or projections, the female member having bayonet slots to receive said lugs or projections, and the catch pivoted upon the female member and having a notch in its under side, at one end to receive one of said lugs or projections, said catch also having in one side, opposite its notch, a beveled indentation to provide, as the members are screwed together for the passage of one lug or projection engaging therewith into said notch, said catch having its opposite end resting upon an elastic cushion to permit the forcing down and locking of the engaging or notch-bearing end of the catch with the aforesaid lug of the male-member, substantially as set forth.

545,353. UNIVERSAL JOINT. GEORGE P. PENNER, New London, Conn. Filed Jan. 3, 1895. Serial No. 533,747. (No model.)

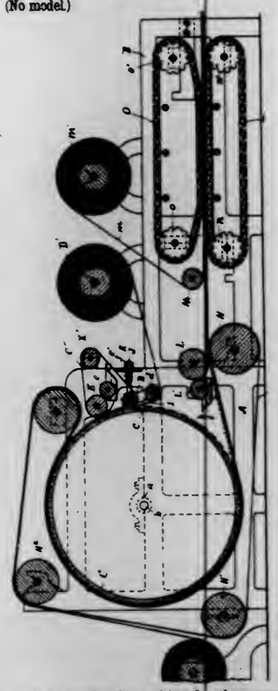


Claim.—1. A joint, consisting of the shafts 8 and 9, the heads 1 and 2 rigidly fixed respectively to the shafts, and each having its ends lying at opposite sides of the shafts, and two pairs of links, the links of each pair being pivoted together, and the two pairs being symmetrically disposed and pivoted respectively to the ends of the heads at the opposite sides of the shaft, substantially as shown and described.

2. A joint comprising the pieces or heads 1 and 2 jointed centrally to one another, in combination with a link jointed to each piece, said links being jointed to one another substantially as described.

545,354. MACHINE FOR CORRUGATING AND FACING PAPER.

JEFFREY T. FERRES, Anderson, Ind. Filed Feb. 21, 1895. Serial No. 539,304. (No model.)



Claim.—1. In a machine for making faced corrugated paper the hollow corrugating and drying drum C the face of which has teeth or corrugations formed thereon, and a series of passages pierced in the shell of the drum at the ends of the corrugations for admitting currents of air from the interior of the drum into the corrugations, in combination with a corrugating roll and a pasting roll, substantially as specified.

2. In a machine for making faced corrugated paper the hollow drum C supported upon a hollow shaft through which air is supplied to the interior of the drum, said drum having teeth or corrugations formed on its face, each alternate corrugation or depression having one of its ends closed at one end of the drum and the next corrugation closed at the opposite end, and alternate series of air passages pierced through the face of the drum between the closed end of the corrugations and the corrugated paper adjacent thereto, substantially as specified.

3. A machine for making faced corrugated paper composed of a suitable frame, a combined corrugating and drying drum, a coacting spring controlled corrugating roll meshing therewith, means for forcing currents of air through the corrugations while they are carried around said drum, paste rolls for applying paste or its equivalent to the ribs of the corrugated sheet, and an endless belt supported upon a series of rolls arranged outside of the periphery of the corrugating and drying drum and partially embracing the periphery thereof, substantially as specified.

4. In a machine for corrugating and facing paper the combination with a combined corrugating and drying drum and a coacting corrugating roll, of an endless circumferential embracing belt supported on suitable rollers outside of the drying drum, a pasting device interposed between the corrugating roll and endless embracing belt, means for feeding a strip of facing paper upon the pasted surface of the corrugated paper and between it and the circumferential belt, and means for forcing currents of air through the corrugations while they are carried around said drum, substantially as specified.

5. In a paper pasting and corrugating machine the combination with the hollow corrugating and drying drum C having its peripheral face corrugated, and the idler roll d' of the coacting corrugated roll D mounted upon links 1 hinged to the axis of roll d', and means for adjusting roll D to and from the drum C, substantially as specified.

6. In combination with the combined corrugating and drying drum C and the coacting roll D, paste roll E and idler roll X', the belts c^3 resting upon the corrugated paper as it passes from said roll D and holding the same in contact with drum C, substantially as specified.

7. In a machine for corrugating, facing and pasting paper, the combination with the toothed corrugating and drying drum C, the toothed corrugating roll D, paste roll E, and means for feeding paper between the corrugating drum and roll, of the pasting roll L, L', means for feeding facing paper to and pasting it upon the corrugated paper, and the two sets of endless aprons N, O, one of which supports the under side of the paper and the opposite apron resting upon and pressing the facing paper upon the face of the corrugated paper, whereby the corrugated paper and facing paper applied thereto are held in close contact until set and dried substantially as specified.

8. A machine for making faced corrugated paper composed of a suitable frame, a combined corrugating and drying drum, a coacting corrugating roll, meshing with said corrugating and drying drum, paste rolls for applying paste or its equivalent to the ribs of the corrugated sheet, an endless belt supported upon a series of rolls arranged outside the periphery of the corrugating and drying drum and partially embracing the periphery thereof, and two endless metal aprons for additionally drying the single face or for applying a second strip of paper to form a double faced corrugated paper, substantially as specified.

9. In a machine for facing corrugated paper employing one or more endless aprons N, a series of heater jet burner pipes S arranged transversely across the path of the apron lags and close to the under side of said lags whereby the same are heated to dry the paper carried by said lags, substantially as specified.

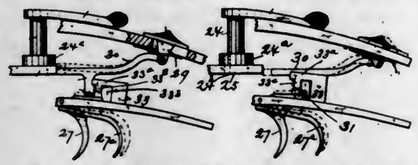
10. In combination with the two series of endless aprons N, O, composed of the lags P, P', fastened to sprocket chains, a series of jet burner pipes S, S', arranged along the path of travel and between the loops of each apron whereby the lags are heated and distribute the heat to both facings of the corrugated aper, substantially as specified.

11. In combination with an endless apron having lags P, P', supported on sprocket chains driven by sprocket wheels, the air pipes T, T', arranged at each end of said lags, opposite the open ends of the corrugations of the paper resting thereon and a series of holes in pipes T, T', for ejecting currents of air through the flutes of the corrugated paper, substantially as specified.

12. In a machine for facing corrugated paper employing an endless apron composed of lags P, P', mounted upon carrying chains, the air pipes T, T', arranged just outside of the path of paper travel, each having a series of openings and alternating spaces, the openings of one pipe being opposite the spaces of the opposing pipe, whereby the currents of air are passed alternately in opposite directions through the flutes of the paper, substantially as specified.

545,355. SAFETY DEVICE FOR BREAKDOWN GUNS.

FRANK A. FOSTER, Norwich, Conn., assignor to the Crescent Fire Arms Company, same place. Filed Sept. 18, 1894. Serial No. 523,351. (No model.)



Claim.—1. In a fire arm of the herein described class, the combination, with a movable thumb piece, of a lever pivotally secured thereto at one end, the opposite end of said lever being in the path of the barrel bolt, and the intermediate portion being provided with a downwardly projecting portion, a pin on each side of said portion, and a standard secured to the lower tang of the frame and provided with an overhanging portion which is slotted and provided with a downward projection, substantially as set forth.

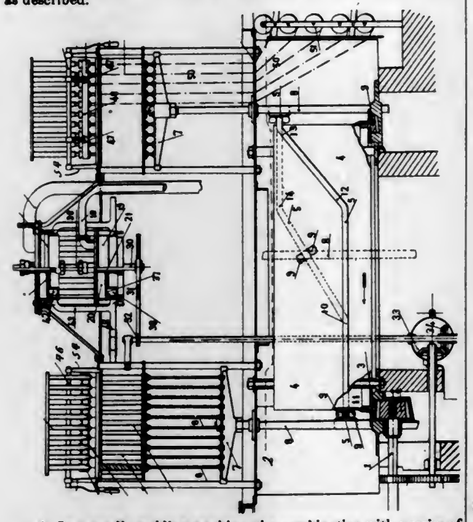
2. In a fire arm of the herein described class, the combination, with a movable thumb piece provided with a plate to project through the upper tang, of a lever pivotally secured to the projecting portion, the opposite end of the lever being provided with a downwardly projecting portion, a standard rigidly secured to the lower tang, and a bow spring between the upper tang and the lever with its bowed portion in engagement with the lever forward of the pivotal point, whereby the spring acts as a break for the thumb piece and also forces the free end of the lever downward, substantially as set forth.

545,356. APPARATUS FOR MOLDING CANDLES.

LOUIS J. B. FOURNIER, Marseilles, France. Filed Dec. 14, 1893. Serial No. 493,678. (No model.)

Claim.—1. In a candle molding machine, the combination with a series of mold boxes, a group of molds arranged in each box, reciprocating ejectors arranged in said molds, a rod connected to each group of ejectors, and a rotary drum provided with a peripheral cam-shaped rib engaging said rods and operating to raise and lower the ejectors and hold them in their raised and lowered position for definite periods of time, substantially as described.

2. In a candle molding machine, the combination with a series of mold boxes, a group of molds arranged in each box, reciprocating ejectors arranged in said molds, a rod connected to each group of ejectors, a rotary drum provided with a peripheral cam-shaped rib engaging said rods and operating to raise and lower the ejectors and hold them in their raised and lowered position for definite periods of time, and means for grasping and holding the molded candles over the molds after they have been ejected from the latter, substantially as described.



3. In a candle molding machine, the combination with a series of mold boxes, a group of molds arranged in each box, reciprocating ejectors arranged in said molds, a rod connected to each group of ejectors, a rotary drum provided with a peripheral cam-shaped rib engaging said rods and operating to raise and lower the ejectors and hold them in their raised and lowered position for definite periods of time, and means for alternately and automatically supplying hot and cold water to the mold boxes, substantially as described.

4. In a candle molding machine, the combination with a series of mold boxes, a group of molds arranged in each box, reciprocating ejectors arranged in said molds and axially cored throughout their length, means for raising and lowering said ejectors, means for grasping and holding the molded candles over the molds, and a series of wick spools, one for each mold, the wicks passing from said spools through suitable guides and through the axially cored ejectors to the molds, substantially as described.

5. In a candle molding machine, the combination with a series of mold boxes, a group of molds arranged in each box, a hot and a cold water distributing box each having discharge passages corresponding in number to the mold boxes, pipes connecting said passages with said mold boxes and rotary cut-offs arranged in said distributing boxes and operating to alternately supply hot and cold water to the mold boxes, substantially as described.

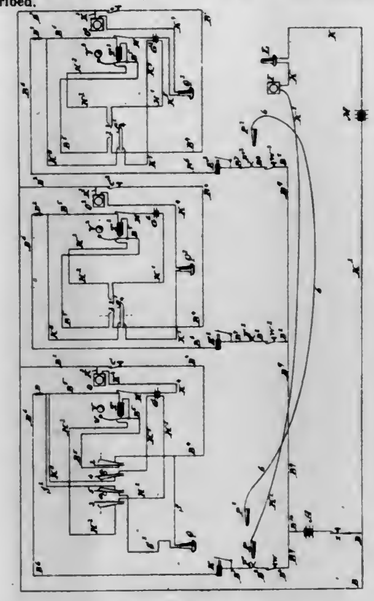
545,357. ELECTRIC SIGNALING DEVICE.

WEBSTER GILLETTE, New York, N. Y., assignor to Alexander S. Williams, same place. Filed July 5, 1894. Serial No. 516,633. (No model.)

Claim.—1. A main circuit and battery A, a transmitter battery, and a local battery and circuit, combined with an alarm in the local circuit, a receiver, a transmitter, a contact maker for switching the main circuit out of action and the local circuit into action, and contact makers for switching the transmitter battery and the receiver and transmitter into the main circuit, substantially as described.

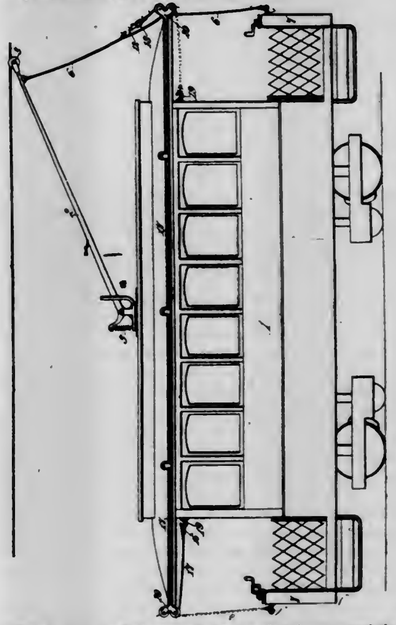
2. A contact breaker for a telephone system comprising the normally open contacts 2, 3, 4 and 5, the contacts 4 and 5 being located between the contacts 2 and 3, a lever pair having one lever arm interposed between the contacts 2, 4 and another lever arm interposed between the contacts 3, 5, and a spring for normally closing the levers toward the inner contacts 4 and 5, said levers being adapted for the reception of the telephone transmitter to spread said levers for freeing the inner contacts and for closing the outer contacts, substantially as described.

3. An electro magnet provided with a cap b having a central aperture for the magnet core and parts of the flange surrounding said aperture cut and bent to form lips c a pintle d in said lips and an annunciator tag hinged to the pintle whereby the annunciator may be rapidly and directly connected to the coil, substantially as described.



545,358. TROLLEY-CONTROLLER FOR ELECTRIC RAILWAYS.

LEONIDAS W. P. GRAY and PHILIP G. DOESCHER, New Orleans, La. Filed May 23, 1895. Serial No. 550,431. (No model.)



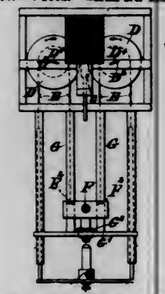
Claim.—1. A trolley-controller for an electric car, consisting of a rope connected to the end of the car and to the trolley-pole and an independent rope traversing the top of the car from end to end and carried over pulleys at the ends, said rope being detachably connected at one end to the rope on the trolley-pole at the rear end of the car and carried through the latter longitudinally, its forward end being secured in reach of the gripman at the forward end of the car, substantially as described.

2. A trolley-controller for an electric car, consisting of a flexible connection between the trolley-pole and the rear end of the car, a swivel-snaffle permanently connected to said flexible connection, an independent, flexible connection detachably secured to the swivel-snaffle and led over a pulley 18 to the forward end of the car-roof and thence carried back over the head of the gripman to the end of the car-body and secured to the latter detachably, substantially as described.

3. In an electric car, the combination with the trolley pole of a flexible connection permanently secured thereto at, or near, the trolley-supporting end, the lower end of said connection being detachably connected to a device on the rear dash-board, a swivel-snaffle permanently secured to said flexible connection above the roof of the car, and a second flexible connection traversing the car from end to end beneath suitable pulleys upon the ends of the car-roof and intermediate of the same, its ends being provided with rings or loops, the ring at the rear end of the car engaging a spring-closed hook on the swivel-snaffle, and that at the forward end being caught in a hook on the end of the car-body, substantially as described.

4. In an electric car, the combination with a trolley pole, of a flexible connection permanently secured to said trolley-pole at, or near, the trolley-fork, the other end of said connection being adapted to engage a hook on the rear dash-board, a second flexible connection traversing the car longitudinally, double pulleys at the two ends of the car-roof between the upper and lower members of which said connection passes, and a swivel-snaffle on the flexible connection secured to the trolley-pole, said snaffle having a spring-closed hook to receive a ring on the rear end of the second flexible connection, the journal end of the latter being carried over the lower member of the double pulley on the front end of the car and thence led back and secured to a hook on the end of the car-body, substantially as described.

545,359. ELECTRIC-ARC LAMP. HAYES T. HARRISON, London, England. Filed Nov. 19, 1892. Serial No. 452,566. (No model.)



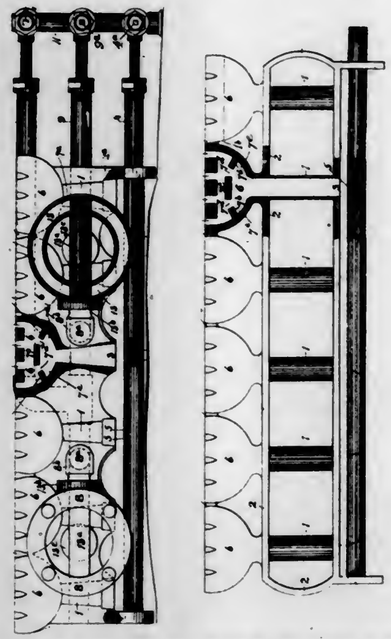
Claim.—1. In an electric arc lamp, the combination of a frame having telescopic side bars, a lower cross-bar carrying a carbon holder, pulleys, cords passing over said pulleys and connected with said carbon holders, a magnet core, and a friction block carried by said core between and adapted to engage said pulleys, the parts operating as described.

2. In an electric arc lamp the combination of a pair of pulleys, cords passing over said pulleys upper and lower carbon holders connected to said cords, a friction block arranged between said pulleys and against opposite sides of which the peripheries of said pulleys are caused to bear by gravity, solenoids arranged in the lamp circuit, magnetic cores for said solenoids connected to said friction block, and a magnetic plate to which said solenoids are fixed substantially as herein described for the purpose specified.

3. In an electric arc lamp the combination of a pair of pulleys D, a support formed with inclined slots D' in which the journals of said pulleys are mounted, a friction block C arranged between and in contact with the peripheries of said pulleys, solenoids B arranged in the lamp circuit, magnetic cores A A carried by a magnetic cross bar A' connected with said friction block, a magnetic plate B' to which said solenoids are connected, a dash-pot J connected to said cross bars, cords passing over said pulleys and carbon holders F F' connected to the ends of said cords substantially as described.

545,360. GAS-BURNER. HARRY H. HIBBERD, Wheeling, W. Va., assignor to George Hibberd & Son, same place. Filed Aug. 31, 1894. Serial No. 521,835. (No model.)

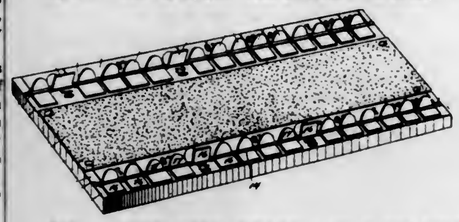
Claim.—1. A gas-burner comprising a commingling tube and a spreading semi-circular chamber 6 formed with an approximately oblong top having a series of burner-openings 7, with a central transverse partition-plate 7^c, and with outwardly projecting end plates 7^b, extending across the mixing chamber and providing narrow transverse passages 7^d intermediate of the tubes, and the burner-openings, and pockets 7^e located beneath the end plates; the partition-plates and the end plates dividing the mixing chamber into two parts, substantially as described.



2. A gas-burner comprising a spreading semi-circular chamber 6 formed with an approximately oblong top having a series of burner-openings 7, with a central transverse partition-plate 7^c, and with outwardly projecting end plates 7^b, extending across the mixing chamber and providing narrow transverse passages 7^d intermediate of the tubes and the burner-openings, and pockets 7^e located beneath the end plates, and a commingling tube tapered toward the partition-plate for directing the flow of mingled air and gas onto the center thereof the partition-plate and the end plates dividing the mixing chamber into two parts, substantially as described.

3. A gas-burner comprising a supporting rack 2 having end brackets 2^a the supply pipe 4, the horizontal commingling tubes and mixing chambers, the vertical commingling tubes and mixing chambers, the plugged supply pipe 9 communicating with one of the vertical commingling tubes, the supply pipe 10 supporting the inner end of the plugged pipe and communicating with the other vertical commingling tube and the main pipe common to all the supply pipes having independent valves for the supply pipes; substantially as described.

545,361. GAME-COUNTER. WILLIAM F. HOCHSPEIER, Jersey City, N. J. Filed Jan. 10, 1895. Serial No. 534,471. (No model.)



Claim.—1. A game counter, comprising a row of score figures and angular pieces to cover the figures, each of said angular pieces being pivoted at its angle and having one part or wing adapted to normally cover the figures in line therewith, the other portion or wing normally extending upward and serving as means for tilting the angular piece, substantially as described.

2. A game counter, comprising a marking board, rows of figures at the sides of the board, and angular tilting pieces to cover the figures, each of said angular tilting pieces being pivoted at its angle and having its parts or wings approximately of the same length, whereby when one wing is turned down the other stands up to serve as a handle to manipulate the said tilting piece, substantially as described.

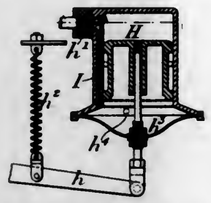
3. A game counter, having parallel rows of figures, one row consisting of figures arranged in groups and the other of figures indicating the figures in the groups of the opposite row, and movable finger-pieces between the two rows of figures and adapted to normally cover the figures arranged in groups, substantially as described.

4. A game counter, comprising a board having parallel rows of figures thereon, one row having its figures arranged in groups or series and the other having figures to correspond to those in the groups of the opposite row, and tilting angular finger pieces pivoted between the rows of figures, substantially as described.

5. The combination, with the marking board and the parallel rows of figures thereon, of the rod arranged longitudinally between the rows of figures, and the angular finger pieces fulcrumed on the rod, each of said angular finger pieces having one of its wings or parts adapted to normally cover a figure in one of said rows, the other wing extending upward and adapted to be depressed by the finger substantially as described.

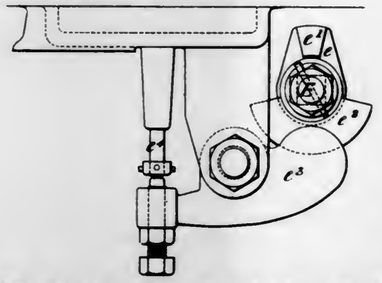
6. A game counter, comprising a central marking board, parallel rows of figures on opposite sides of the board, rods extending longitudinally between each pair of figure rows, and tilting angular finger pieces on the rods, substantially as described.

545,362. BRAKE APPARATUS FOR GAS TRACTION-CARS. HENRY P. HOLT, London, England. Filed Apr. 20, 1895. Serial No. 546,585. (No model.) Patented in England Nov. 1, 1893, No. 20,677; in France Aug. 4, 1894, No. 240,557, and in Belgium Aug. 4, 1894, No. 111,251.



Claim.—In a gas traction car, a brake cylinder and piston, the cylinder having at its one end ports governed by a slide valve in a case which communicates with a reservoir of gas under pressure and having at its other end a space covered by a flexible diaphragm this space communicating by a lateral passage with the middle port of the slide facing, and by a pipe with the gas supply of the engine, arranged and operating substantially as and for the purpose set forth.

545,363. REVERSING VALVE-GEAR FOR GAS OR OIL MOTOR ENGINES. HENRY P. HOLT, London, England. Filed Apr. 20, 1895. Serial No. 546,586. (No model.) Patented in France Aug. 4, 1894, No. 240,557, and in Belgium Aug. 4, 1894, No. 111,251.



Claim.—In a gas or oil motor engine in combination with the valve countershaft a compound cam for working the exhaust and gas supply valves and the ignition apparatus, loose upon the shaft, and having a projecting tooth, arranged to meet either face of a driving segment fixed on the shaft, substantially as and for the purpose set forth.

545,364. TONGUE-SUPPORT. THOMAS I. HYDE, Jr., Clifton Forge, Va. Filed Dec. 1, 1894. Serial No. 530,574. (No model.)

Claim.—The combination with the tongue, of the plate, B, secured to the under side of said tongue, said plate provided with downwardly extending wings, C, the spring bar, E, secured at one end to said plate and having its opposite end free but inclosed by said wings, the support, D, having an inclined top bearing against said spring bar at its free end and hung pivotally between the wings of said plate, whereby said support when sustaining said tongue is adapted on the moving of the vehicle to be carried up against the tongue by the action of said spring bar, substantially as described.



545,365. CAPSULE-FILLER. ALBERT M. INGALLS, Duluth, Minn. Filed May 14, 1894. Serial No. 511,193. (No model.)

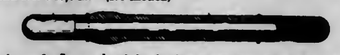


Claim.—1. A capsule filler, comprising a funnel provided at its outlet end with an expansible and contractible tube to receive and hold by contraction a capsule body while being filled, and a double-ended reversible rammer provided with a longitudinal bore serving as an air vent, substantially as described.

2. A capsule filler, comprising a stand or support, a funnel mounted movably thereon and provided at its lower outlet end with an expansible tube to receive and hold by contraction a capsule body, while being filled, the bore of said tube being smaller than the capsule to be filled and of the same diameter throughout its length and a rammer, substantially as described.

3. In a capsule filler, a double-ended reversible rammer having a longitudinal bore serving as an air vent, substantially as described.

545,366. THERMOMETER-CASE. PHILIP JARDEN, Washington, D. C., assignor to Alfred A. Smith, same place. Filed Apr. 23, 1895. Serial No. 546,942. (No model.)



Claim.—1. In a physician's thermometer case, the combination with the case proper, of an auxiliary receptacle on the case, and a fixed partition located between the receptacle and interior of the case, having an opening therein, whereby a communicating passage is formed between the interior of the case and receptacle, and the instrument is prevented from moving into the receptacle, substantially as described.

2. In a physician's thermometer case, the combination with the thermometer holding case and means for opening and closing the same, an auxiliary receptacle on the case, and a fixed perforated partition between the interior of the receptacle and interior of the case, substantially as described.

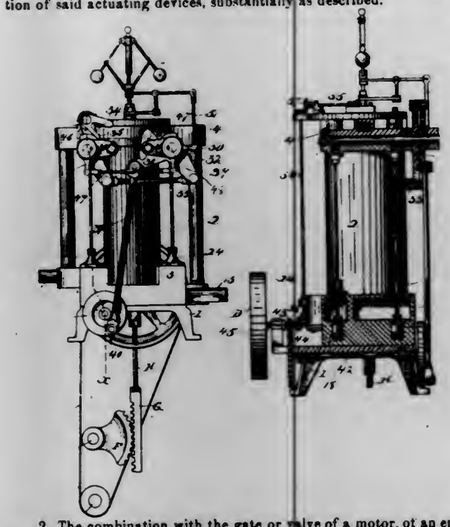
3 In a physician's thermometer case, the combination with the case having a fixed perforated end, of a cap for the perforated end, fashioned to constitute a receptacle, and means for removably securing the cap on the case, substantially as described.

4. In a physician's thermometer, the combination with a case for the thermometer having a fixed perforated section, a closure for the case, and a closed receptacle secured to the case over the perforations and communicating with the interior of the case through the perforations, substantially as described.

545,367. GOVERNOR FOR FLUID-MOTORS. WILLIAM JULIAN, Rochester, N. Y. Filed Apr. 3, 1895. Serial No. 544,314. (No model.)

Claim.—1. The combination with a gate or valve of a fluid motor, of an engine for controlling it embodying a movable piston, and

having fluid supply passages leading to opposite sides of the piston, and fluid exhaust passages leading from opposite sides of said piston, valves in each of said passages, and connections between each exhaust valve and its corresponding supply valve on the opposite side of the piston, actuating devices substantially as described for operating said valves in pairs, and a governor for controlling the operation of said actuating devices, substantially as described.



2. The combination with the gate or valve of a motor, of an engine for controlling it embodying a movable piston, valves for controlling the supply to and valves for controlling the exhaust from said piston, said valves being connected in pairs consisting of a supply and an exhaust valve, a continuously operating valve actuating device, detachable connections between it and each of the pairs of valves, and a governor for connecting either pair of valves with the actuating device, substantially as described.

3. The combination with the gate or valve of a motor, of an engine for controlling it embodying a movable piston, valves for controlling the supply of fluid to opposite sides of the piston, valves for controlling the exhaust from opposite sides of the piston, connections between each supply valve and its corresponding exhaust valve for causing their simultaneous operation, both said supply valves opening toward the fluid supply and each of said exhaust valves opening toward the side of the piston controlled by it, actuating devices substantially as described for operating the valves in pairs, and a governor controlling the operation of the actuating devices, substantially as described.

4. The combination with the gate or valve of a motor, of an engine for controlling it embodying a movable piston, valves for controlling the supply of fluid to opposite sides of the piston, valves for controlling the exhaust from opposite sides of the piston, connections between each supply valve and its corresponding exhaust valve for causing their simultaneous operation, both said supply valves opening toward the fluid supply, and each of said exhaust valves opening toward the side of the piston controlled by it, a continuously operating valve actuating device, detachable connections between it and each of the pairs of valves, and a governor for causing the connection of either pair of valves with the valve-actuating device, substantially as described.

5. The combination with the gate or valve of a motor, of an engine for controlling it embodying a movable piston and having valves controlling the supply of fluid to opposite sides of said piston, valves for controlling the exhaust from opposite sides of said piston, connections between each supply and its corresponding exhaust valve, movable supports, and latch connections between them and the pairs of valves, and a governor actuated by the motor controlling the engagement of the latches, substantially as described.

6. The combination with the gate or valve of a motor, of an engine controlling it embodying a movable piston and having valves controlling the supply of fluid to opposite sides of said piston, valves for controlling the exhaust of fluid from opposite sides of the piston, connections between each supply and its corresponding exhaust valve, the oscillatory arbors, one for each pair of valves, and arms thereon, oscillatory levers and latches between said levers and arms, cams for engaging the latches and controlling their operation, and a governor operated by the motor and controlling the movement of the cams, substantially as described.

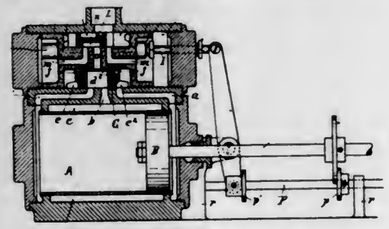
7. The combination with the cylinder, the piston operating therein, valves controlling the supply of fluid to opposite sides of the piston, valves controlling the exhaust from opposite sides of the piston, connections between each supply and its corresponding exhaust valve, movable supports having latches thereon arranged to operate the valves in pairs, and a governor device controlling the engagement of said latches with the valve-operating devices, substantially as described.

8. The combination with the gate or valve of a motor, of an engine for controlling it embodying a movable piston, valves for controlling the supply and valves for controlling the exhaust from said piston, the oscillatory shafts, each operating one exhaust and one supply valve, the arms on said shafts, having the pins, the continuously operating valve-actuating device having the latches for engaging said pins, the cams for controlling said latches, and a governor device operating the cams to cause the engagement of one or the other of the valve shafts with the actuating device, substantially as described.

9. The combination with the main frame embodying the cylinder and having inlet exhaust passages, and the piston operating in said cylinder, of the two pairs of valves, each having a stem with a rack thereon, the two oscillatory shafts having gears engaging the racks, and the catch-pins the oscillatory levers, the latches thereon, the cams cooperating with the latches, and the governor connected to the cams for oscillating them, substantially as described.

10. The combination with the cylinder, the piston operating therein, the casting having the chambers 6, 8 and 9, and passages 12, 16, 17 and 22, the casting having the passages 11 and 21 and the tubes 10 and 20, of the valves 14, 15, 18 and 19 connected for operation in pairs, substantially as described.

545,368. VALVE FOR MOTORS. ALLEN T. MILLER, Dayton, Ohio, assignor to Kuhns Brothers, same place. Filed Mar. 21, 1895. Serial No. 542,669. (No model.)



Claim.—The combination with a motor cylinder and its ports and piston, the auxiliary cylinder E, and the duplex piston D D' having its ends connected by a neck *h* provided on the under side with an annular flange, of the main valve G having an annular flange engaged with the corresponding flange of the said piston neck and provided with a central discharge port and with ports $e e^3$ at its ends, and the auxiliary valve H seated upon the upper side of the piston neck *h*, substantially as described.

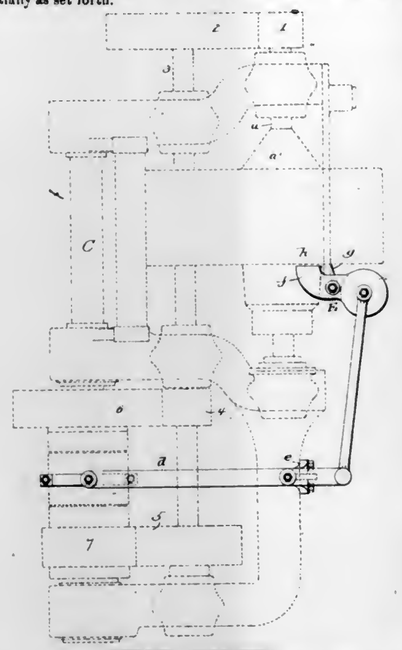
545,369. CLUTCH-OPERATING DEVICE. WILLIAM H. MORGAN, Alliance, Ohio, assignor of three-fourths to Thomas R. Morgan, Sr., Thomas R. Morgan, Jr., and John R. Morgan, same place. Filed Dec. 6, 1894. Serial No. 531,043. (No model.)

Claim.—1. The combination with an electric motor, a driven shaft, and gearing between the armature shaft and the driven shaft, of a clutch on the driven shaft, an armature to be acted upon by the field magnet of the motor, and connections between said clutch and armature, substantially as set forth.

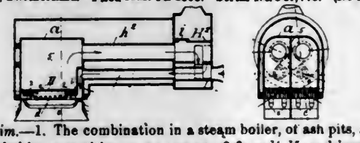
2. The combination with an electric motor and a shaft adapted to be driven by said motor, of an electro-magnetic armature adapted to be attracted and repelled alternately by the field magnet of the motor, a clutch on said shaft and a connection between said armature and the clutch, substantially as set forth.

3. The combination with an electric motor, a driven shaft, a clutch on the driven shaft and gearing between said driven shaft and motor, of a pivoted electro-magnetic armature adjacent to the field magnets and of a like polarity when energized to the field magnets, a pivotal lever connected with said clutch and a rod connecting the electro-magnetic armature with the pivoted lever, substantially as set forth.

4. The combination with an electric motor and a driven shaft, of a counter shaft adapted to receive motion from the shaft of the motor, a small and a large gear fixed to said counter shaft, a large and a smaller gear wheel loosely mounted on the driven shaft, said large gear meshing with the small gear on the counter-shaft and the smaller gear on the driven shaft meshing with the larger gear on the counter-shaft, a clutch between the loose gears on the driven shaft whereby to lock one or the other of said gears to the shaft, pivoted levers connected with said clutch, a pivoted electro-magnetic armature adapted to be acted upon by the field magnets of the motor, and rods connecting said electro-magnetic armature with said pivoted levers, substantially as set forth.



545,370. STEAM-BOILER. JAKOB R. MÜLLER-LANDSMANN, Lotzwil, Switzerland. Filed Mar. 14, 1895. Serial No. 541,773. (No model.)



Claim.—1. The combination in a steam boiler, of ash pits, a fire-box divided by a partition, an upper set of flues h', h^2, and lower set of pipes g', g^2, passing through the boiler, the upper flues h', h^2, are connected at one end of the fire-chamber, and at the other to the diagonally opposite and forward end of the return pipes g^2, g', respectively, said return pipes connected to the ash pit, whereby the products of combustion from one side of the divided furnace are transferred into the ash-pit of the other, substantially as described.

2. The combination in a steam boiler, of ash pits, a fire-box divided by a partition, an upper set of flues h', h^2, and lower set of pipes g', g^2, passing through the boiler, the upper flues h', h^2, being connected at one end of the fire-chamber, and at the other end to the diagonally opposite and forward end of the return pipes g', g^2, respectively, the return pipes connected to the ash-pit, as described, and the front ends of the pipes g', g^2, provided with outwardly projecting air-pipes, so that the products of combustion from one side of the divided furnace, shall be mixed with fresh air during its transfer to the ash pit of the other side of the furnace, substantially as set forth.

545,371. CURTAIN-FIXTURE. DELBERT R. MCCAPES and EDWARD D. QUINN, Vermillion, S. D., assignors of one-half to D. M. Inman, same place. Filed Jan. 29, 1895. Serial No. 536,590. (No model.)



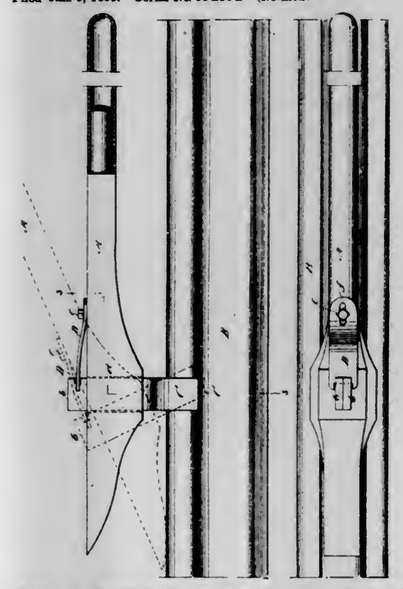
Claim.—1. A curtain fixture, comprising a longitudinally slotted barrel, means for fastening the barrel to a support, a bracket slidable in the barrel and projecting through the slot, an adjusting rod extending upward into the barrel and connected with the bracket, and a fastening device to fix the position of the bracket and rod, substantially as described.

2. A curtain fixture, comprising a longitudinally slotted barrel having means for attachment to a support, an adjusting rod extending upward into the barrel, a bracket secured to the rod and projecting from the slot in the barrel, and means, as the pin on the rod and the notches in the barrel, for fastening the bracket, substantially as described.

3. A curtain fixture, comprising a top socket having means for attachment to a support, a barrel longitudinally slotted and having its upper end held in the socket, means for securing a barrel to a support, a bracket slidable in the barrel and projecting from the slot, and an adjusting rod extending upward into the barrel and adapted to move the bracket, substantially as described.

4. The combination, with the longitudinally slotted barrel having notches at one edge of the slot, and means for securing the barrel to a support, of the adjusting rod extending upward into the barrel and provided with a pin to engage the notches, a spring to press the pin into engagement with the notches, and a bracket carried by the rod and projecting through the slot, substantially as described.

545,372. CAR-MOVING BAR. JOHN MCFARLAND, Austin, Canada. Filed Jan. 9, 1895. Serial No. 534,304. (No model.)



Claim.—1. In a railroad car-moving bar or lever, the combination, with the lever proper, of independent jaws fitting loosely in said lever and adapted to rest on the rail carrying the car and to grip it upon opposite sides, substantially as specified.

2. The combination with the car-moving bar or lever, of the independent jaws provided with upwardly tapering shanks fitting loosely in said lever, essentially as and for the purposes described.

3. The combination, with the car-moving bar or lever, and the independent jaws having upwardly tapering shanks fitting loosely in said lever, of a spring connecting said lever with said shanks, essentially as specified.

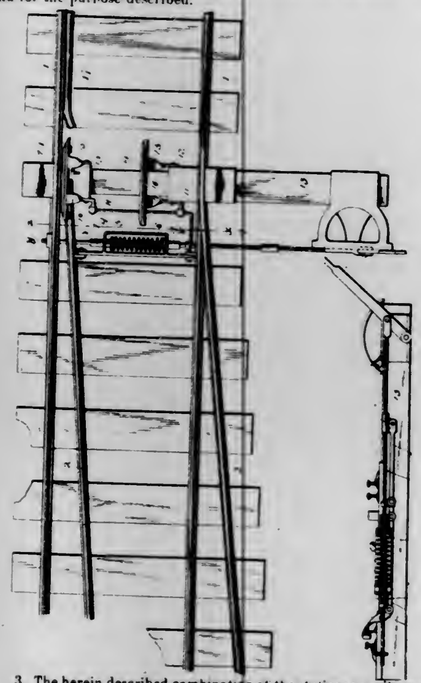
4. The combination, with the car-moving bar or lever and the independent jaws having upwardly tapering shanks fitting loosely in said lever, of a spring connecting said lever with said shanks, said spring being adjustable relatively to said jaws and lever and capable of disconnection from said jaws, substantially as and for the purpose or purposes herein set forth.

545,373. GUARD FOR RAILROAD-SWITCHES. WRIGHT MCKISSACK, Bridgeport, Ala. Filed Mar. 15, 1895. Serial No. 541,919. (No model.)

Claim.—1. In a guard for switches, the combination with the stationary and movable rails, the latter adapted to be operated by suitable switch mechanism, a pair of guards supported by swinging levers connected with a pitman by which motion is imparted to the guards and means for operating the pitman and the movable rails as and for the purpose described.

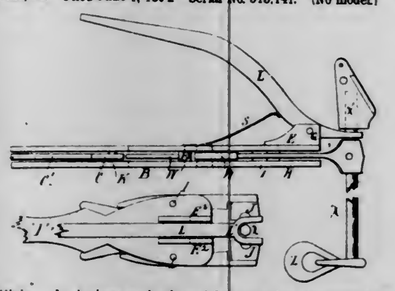
2. In a guard for switches, the combination with the stationary and movable rails, the latter adapted to be operated by suitable switch

mechanism, a pair of swinging guards, a pitman operating the guards and a spring pressed rod operating the pitman and movable rail as and for the purpose described.



3. The herein described combination of the stationary rails, movable rails, the rod 4, lever 3, frame 5, spring 6, pitman 9, levers 15 and 16, and guard rails 14, bolted thereto, all arranged to operate as shown and for the purpose described.

545,374. HAMMER-STEM EXTRACTOR. WALTON NELSON, Pottsville, Pa. Filed June 1, 1894. Serial No. 513,141. (No model.)



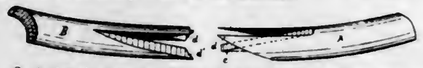
Claim.—1. A piano maker's tool for removing the stems from the hammer butts or heads, consisting of a clamping device having swiveled jaws and suitable levers, means for operating the levers in combination with a forked end lever, as and for the purpose described.

2. In a piano maker's tool or instrument for removing or resetting hammer stems, the clamping device shown having swiveled jaws that may be set at any angle, in combination with the forked end lever L, as and for the purposes set forth.

3. In the piano maker's tool or instrument herein shown and described, the combination of the top and bottom plates T and B, the cam C with handle C', wedge W having guide stems W' W², blocks E², E², spring D, levers H H and opening springs R R, swiveled jaws J J, lugs E E, spring S, with the forked end pivoted lever L, arranged substantially as and for the purposes herein set forth.

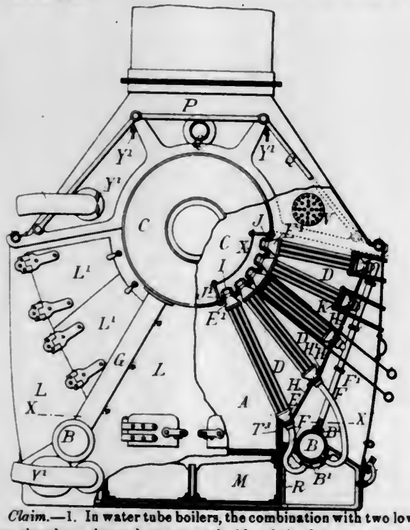
545,375. RIM FOR VEHICLE-WHEELS. EUGENE H. OLDS, Fort Wayne, Ind. Filed July 18, 1894. Serial No. 517,923. (No model.)

Claim.—1. A rim joint for a wheel, having the meeting ends of the rim-piece formed with diverging, elongated, beveled and pointed tongues and correspondingly shaped grooves, the tongues of one rim-piece lying opposite and interlocking with the grooves of the other rim-piece, substantially as shown and described.



2. A rim-piece for a vehicle-wheel having its ends formed with forked interlocking tongues having opposing tapering bevels throughout their entire length, substantially as shown and described.

545,376. TUBULAR BOILER. ERNEST PETERSEN, London, England. Filed Nov. 22, 1894. Serial No. 529,615. (No model.) Patented in England Dec. 7, 1893, No. 23,577; in Belgium May 4, 1894, No. 109,769; in France May 12, 1894, No. 238,484; in Italy Feb. 7, 1895, LXXIV, 375; in Hungary Feb. 11, 1895, No. 2,150, and in Austria Apr. 30, 1895, No. 45/1,523.



Claim.—1. In water tube boilers, the combination with two lower water chambers situated one on each side of the furnace grate, and a water and steam chamber above the grate, of groups of small water tubes connected at each end to a closed tapering cup or box formed of one piece, the large flat end being adapted to receive the said small tubes while the small end has a threaded neck for connection to the other parts of the boiler, the one such box having its neck passed through a hole in the said upper water and steam chamber and secured by a screw-nut on the inside, while the other cup or box is connected by its neck and a connecting tube to one of the said lower water chambers of the boiler, there being several rows of such tube groups arranged on each side of the furnace, substantially as described.

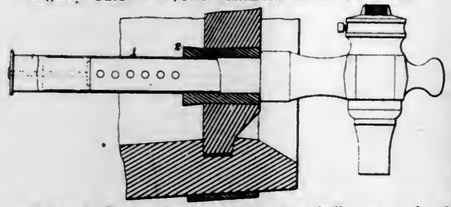
2. A compound water tube for water-tube boilers consisting of a group of tubes of small diameter connected at each end to cups or boxes formed of a single piece of a tapering shape, having at their large flat end a series of holes for the reception of the ends of the tubes, and at the small end a threaded tubular neck for connection to other parts of the boiler the reduced portions of the cup being fitted in tapered openings in the water and steam drum, and the threaded portion thereof being entirely inclosed within said drum, substantially as described.

3. A box or cup for a compound water tube, consisting of a tapering receptacle E formed of one piece and having a flat face at the larger end, with a series of holes adapted to receive the ends of the water tubes D and a threaded tubular extension at the smaller end, adapted to be secured to the water and steam chambers of the boiler the reduced portions of the cups being fitted in tapered openings in the water and steam drum, and the threaded portion thereof being entirely inclosed within said drum, substantially as described.

4. In water tube boilers, the combination with an upper water and steam chamber C, and two lower water chambers B, of compound water tubes composed of a number of small tubes D fixed at each end in tapering cups or boxes E E', of which the cups E are fixed by pipes F to the chambers B while the cups E' are fixed directly to the chamber C, there being several longitudinal rows of said compound tubes arranged one above the other, the reduced portions of the cups being fitted in tapered openings in the water and steam drum, and the threaded portion thereof being entirely inclosed within said drum substantially as described.

5. In water tube boilers, the combination with an upper water and steam chamber C, and two lower water chambers B, of compound water tubes composed of a number of small tubes D fixed at each end in tapering cups or boxes E E' of which the boxes E are fixed by tubes F to the chambers B while the boxes E' are fixed to the chamber C by having their screwed necks passed through holes in the chamber and secured by internal screw-nuts and washers, the coned surface of the boxes being made to fit water-tight into the coned holes in the chamber C, and the threaded portions of the necks being entirely inclosed within said drum substantially as described.

545,377. TAPPING CASKS, &c. HENRY W. RICE, Nottingham, England. Filed Feb. 20, 1895. Serial No. 539,105. (No model.)

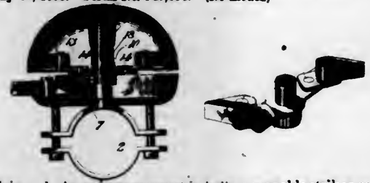


Claim.—1. The combination with a cask or similar receptacle, of a stopper for the cask, said stopper being provided with a disk at its inner end, and a cylindrical tap of smaller diameter than the stopper and disk, and having a cutting edge at one end, said tap when forced upon the stopper serving to cut its passage therethrough, the cut portion remaining in the end of the tap and so arranged that when the tap is withdrawn the portion of the stopper carried by the tap will fill the opening in the portion remaining in the cask and thereby close the latter, substantially as described.

2. In a closing device for the discharge opening of casks and the like, the combination with a suitable tap passing through said discharge opening, perforations arranged upon the inner portion of the tap, a stopper carried by the inner end of the tap, and a plate of larger diameter than the tap, and secured to one end of the stopper, and adapted when the tap is withdrawn to abut against the inner sides of the cask whereby the stopper is pulled from the tap and closes the discharge-opening, substantially as described.

3. The combination with a stopper having a cylindrical cut in one end thereof and extending partially through the same, of a disk or plate secured to one end of the stopper, and covering the cylindrical cut, said disk or plate being of larger diameter than the cut, and of smaller diameter than the stopper, substantially as described.

545,378. BELL. EDWARD D. ROCKWELL, Bristol, Conn. Filed May 17, 1895. Serial No. 549,658. (No model.)



Claim.—1. As an improvement in bells, a movable striker carrier, a striker delivering arm pivoted approximately to the end thereof, and a striker pivotally secured to the striker delivering arm, substantially as specified.

2. In bell mechanism, the combination with a movable striker, a striker delivering arm pivoted to the striker, and a wedge-shaped striker pivotally secured at its head to the arm, substantially as set forth.

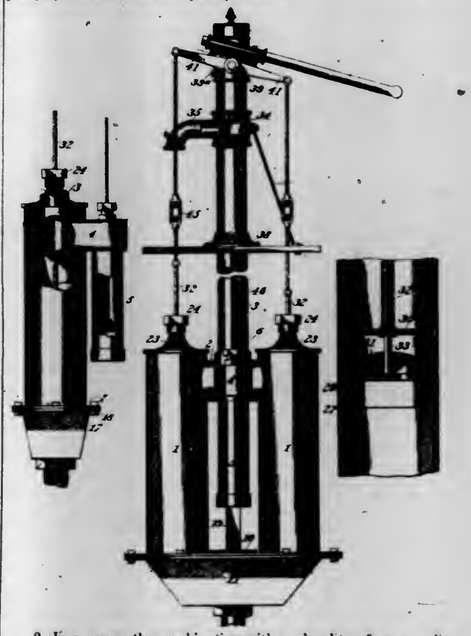
3. In bell mechanism, the combination with a frame and rotary carrier, of a striker delivering arm pivoted to the carrier, a striker pivoted to the arm, and carrier actuating mechanism, substantially as set forth.

4. In bell mechanism the combination with a frame, rotary carrier, gong and lug upon the gong, of carrier actuating mechanism, a striker delivering arm pivotally connected to the carrier, and a striker pivoted to the arm, substantially as set forth.

5. In bell mechanism, the combination with a rotary carrier, and means for actuating the same, of a sleeve upon the carrier, a cushion upon the sleeve, and a striker pivotally secured to the carrier, substantially as set forth.

545,379. PUMP. JOSEPH B. RODGER, Lamoni, Iowa. Filed Dec. 20 1894. Serial No. 532,481. (No model.)

Claim.—1. In a pump, the combination with a plurality of cylinders and a common discharge pipe, of a priming cylinder common to both pump cylinders, pistons within the pump cylinders, and a piston within the priming cylinder designed to be actuated to prime the pump cylinders, substantially as specified.



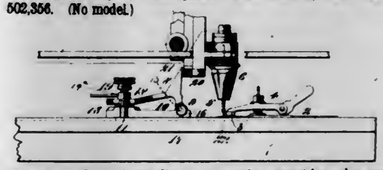
2. In a pump, the combination with a plurality of pump cylinders and a common discharge pipe, of a priming cylinder common to the pump cylinders and located intermediate thereof, pistons within the pump cylinders designed when actuated to incidentally fill the priming cylinder, and a piston within the priming cylinder independent of the pistons within the pump cylinders and designed to be actuated to simultaneously prime the pistons within the several pump cylinders, substantially as specified.

3. The combination with the cylinders and discharge pipe, of a plurality of valves connected by a spring, and a plate provided with depending lugs adapted to secure the valves in place, substantially as specified.

4. The combination with the cylinders and discharge pipe, of a valve box, a plurality of valves therein connected by a spring, a plate 10 provided with depending lugs adapted to secure the valve in place and a wedge 19 adapted to secure the plate 10 in place, substantially as set forth.

5. The combination with the cylinders and discharge pipe, of a valve box provided with a medial aperture in its top, a plurality of valves in the valve box, and a detachable plate adapted to close the aperture and secure the valve in place, substantially as specified.

545,380. ROUTING-MACHINE. CARL SCHRAUBSTADTER, Jr., and CHARLES R. SCHILLING, St. Louis, Mo., assignors to the Western Engravers' Supply Company, same place. Filed Mar. 5, 1894. Serial No. 502,356. (No model.)

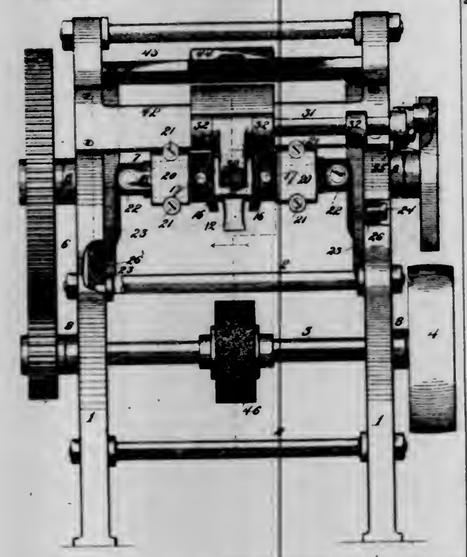


Claim.—1. In a channeling and routing machine, the combination of a suitable support, a tool provided with a segment, a plate adjustably secured to said support and having hinged thereto a combined gage and guide, and which bears against the said segment substantially as shown and described.

2. In a channeling and routing machine, the combination of a support, a tool, a plate adjustably secured to said support, and a combined gage and guide pivoted to said adjustable plate and adapted to be moved into horizontal position for gaging the position of the tool

and into vertical position for guiding the tool, substantially as shown and described.

545,381. MACHINE FOR MOLDING BOOT OR SHOE COUNTERS. JACOB R. SCOTT, Chicago, Ill. Filed Feb. 11, 1895. Serial No. 537,971. (No model.)



Claim.—1. A machine for molding counters for boots and shoes comprising a fixed wiper plate, a shaft, a radial arm secured to the shaft, and adapted to carry a last, a cross-head secured to the arm, a pair of slides mounted on the cross-head, clamps pivoted to the slides for embracing the last, and means for operating the slides; substantially as described.

2. A machine for molding counters for boots and shoes, comprising a fixed wiper plate, a shaft, a radial arm secured to the shaft and adapted to carry a last, a cross-head secured to the arm, a pair of slides having rollers and mounted on the cross-head, clamps pivoted to the sides for embracing the last, and means for operating the slides consisting of cams secured to the side frames for pressing the slides inward, and springs secured to the cross-head for pressing the slides outward; substantially as described.

3. A machine for molding counters for boots and shoes comprising a fixed wiper plate, a shaft, a radial arm secured to the shaft, and adapted to carry a last, a cross-head secured to the arm, a pair of slides mounted on the cross-head, clamps pivoted to the slides for embracing the last, means for operating the slides, a rock-shaft, a gage secured to the rock-shaft, and means for operating the rock-shaft; substantially as described.

4. In a machine for molding counters for boots and shoes, the combination of a movable last, a wiper plate, a gage for adjusting the counter on the last, and means for automatically operating said gage, consisting of a rock-shaft to which the gage is secured, a slotted crank on the rock-shaft, a slotted pivoted lever, a bolt connecting the slotted end of the lever with said crank, a friction roller secured to said lever, and a cam disk for operating said lever, substantially as set forth.

5. A machine for molding counters for boots and shoes comprising a fixed wiper plate, a main-shaft, a brush, mounted on the main shaft, the counter-shaft, gearing connecting the main shaft and counter-shaft, a radial arm secured to the counter-shaft, and adapted to carry a last, a cross-head secured to the arm, a pair of slides mounted on the cross-head, clamps pivoted to the slides for embracing the last, and means for operating the slides; substantially as described.

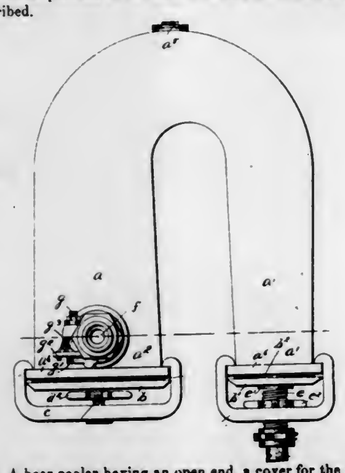
545,382. BEER-COOLER. EDWARD SEITZ, Peoria, Ill. Filed Apr. 27, 1895. Serial No. 547,350. (No model.)

Claim.—1. A beer cooler comprising the U-shaped vessel provided with open ends and closing means therefor, and with beer inlet and outlet ducts at opposite ends of the vessel respectively, substantially as described.

2. A beer cooler comprising the U-shaped vessel having the beer inlet and outlet at opposite ends respectively, the highest and lowest portions of the interior of the vessel at the outlet end thereof, substantially as described.

3. A beer cooler comprising the U-shaped vessel tapering and increasing in size from its inlet to its outlet end, substantially as described.

4. A horizontally disposed U-shaped beer cooler vessel gradually increasing in size from its inlet to its outlet end and having the highest and lowest portions of its interior at its outlet end, substantially as described.



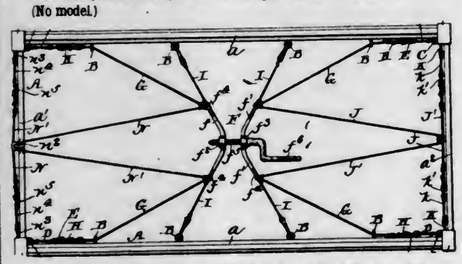
5. A beer cooler having an open end, a cover for the same having an opening, a pipe passing through said opening and bearing against the outer face of the cover and exteriorly threaded, a clamp yoke through which the pipe extends, and a locking nut on the pipe bearing against the clamp, substantially as described.

6. The U shaped beer cooler body tapering from one end to the other and provided with rests, as a^3 and bottom depression a^3, substantially as described.

7. The beer cooler body having the open exteriorly flanged ends, caps closing the same, the yokes hooking under the flanges and passing over the caps and provided with screw clamping means to force the caps against and closing said ends, an inlet pipe passing through the closure at one end of the body, a top outlet opening near the opposite end of the body, and the beer outlet pipe passing down through said top opening, substantially as described.

8. The combination, in a beer cooler, of a hollow cooler body having a beer inlet opening, a top opening in said body, a plug fitted therein and forming a tight joint, a beer outlet pipe passing down through the plug to the bottom of the body, a branch duct from said pipe at the exterior of the body and extending down through the plug and opening into the top of said body, a turn plug in said branch at the exterior of the body and provided with a handle, and a bracket carried by said pipes and having end stops between which the handle moves, substantially as described.

545,383. BRACE AND CLAMP FOR BEDSTEADS. THOMAS H. SHEPHERD, Kellis' Store, Miss. Filed Apr. 16, 1895. Serial No. 545,914. (No model.)

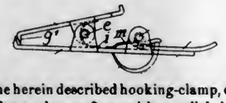


Claim.—1. The combination with a four sided frame, of a centrally arranged adjusting clamp, two wires connected to the clamp, one of said wires passed around a guiding device located on the foot board about centrally of its width and attached to one of the foot posts at points above and below the rail fastening; two other wires connected to the clamp, one of said wires passed through a guiding device located on the head board about centrally of its width and connected to one of the head posts above and below the rail fastening and the other wire passed through the guiding device and connected to the other head post above and below the rail fastening; two wires connected to the clamp and passed through guiding devices located on the side rails and connected to the foot posts at points above and below the rail fastening and two wires connected to the clamp and passed through guiding devices on the side rails and connected to the head posts at points above and below the rail fastening; and two wires connected to the clamp and secured at their outer ends to one of the side rails, and two other wires connected to the clamp and secured at their ends to the other side rail, substantially as described.

2. The combination with a four sided frame, of a centrally arranged adjusting clamp, wires connected to the respective ends of said clamp and passing first to the foot and head boards and then to the corner posts, and wires also connected to said clamp and passing first to the sides and then to the corner posts; the construction being such that the frame is bound firmly together in both lateral and longitudinal directions, substantially as described.

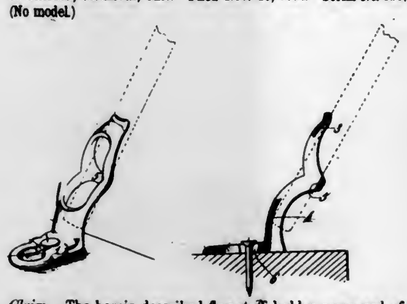
3. In a bedstead clamp and brace, the combination of a centrally arranged adjusting clamp, two wires connected to the clamp, one of said wires passed through a guiding device located on the foot board and connected to one of the foot posts in a parallel lateral direction and the other wire passed through the guiding device and secured to the other foot post in a parallel lateral direction; two wires connected to the clamp each of which is passed through guides on the respective side rails and attached to the foot posts in a longitudinal parallel direction; two wires connected to the clamp, one of said wires passed through a guiding device on the head board and connected to one of the head posts in a lateral parallel direction, and the other wire passed through the guiding device and connected to the other head post in a parallel lateral direction; two wires connected to the clamp and pass respectively through guides on the side rails and are connected to the head posts in a parallel longitudinal direction, and two sets of rails connected to the clamp and secured at their outer ends to the side rails, substantially as described.

545,384. CLASP. CHARLES SICHLER, Berne, Switzerland. Filed Jan. 28, 1895. Serial No. 536,507. (No model.) Patented in France Nov. 30, 1893, No. 234,434; in Switzerland Dec. 1, 1893, No. 7,621, and in Belgium Mar. 5, 1894, No. 108,831.



Claim.—The herein described hooking-clamp, consisting of a base-plate having a flat under surface, with parallel slots in the portion thereof, a spring-actuated lever, pivoted to the upper side of the base-plate and having curved hooks adapted to operate in the slots therein, or be entirely withdrawn from same, and a spring actuated clamp, pivoted to the upper surface of the base plate, so that its front end shall impinge against the forward end of the base-plate, substantially as and for the purpose set forth.

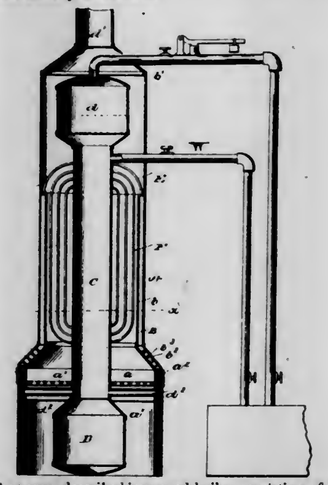
545,385. FLAGSTAFF-HOLDER. JOSEPH SIMPSON and BENJAMIN L. SIMPSON, Columbus, Ohio. Filed Nov. 19, 1894. Serial No. 529,339. (No model.)



Claim.—The herein described flag-staff holder composed of the base portion provided with a slot to detachably engage a permanent fastening and one or more socket arms integral with said base, projecting therefrom at an angle, and each constructed to receive and securely brace a flag-staff, substantially as shown and described.

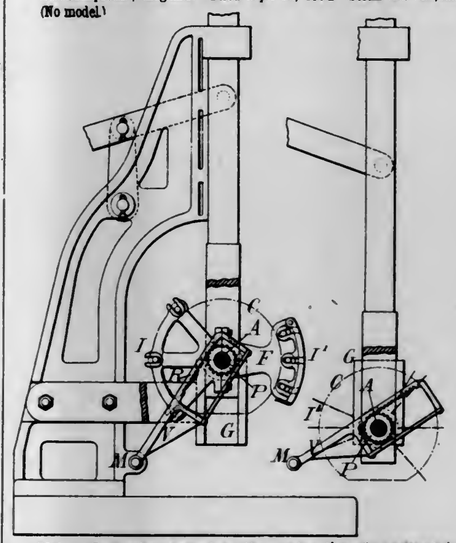
545,386. BOILER. LORENZO H. SPARKS, Warren, Ohio, assignor of one-half to Elmer U. Sparks, same place. Filed Apr. 20, 1893. Serial No. 471,124. (No model.)

Claim.—1. The herein-described boiler, comprising the casing, the inner wall concentric with said casing forming a water jacket said casing and inner wall having upper and lower cylindrical portions, and an inclined portion, hollow rivets extending through said casing and wall in the said inclined portion, the grate above the lower end of said inner wall, the central cylinder having drums at its ends, the series of tubes opening at their ends into said cylinder, the series of tubes extending from the upper ends of said water-jacket and opening into said cylinder, and the series of horizontal tubes immediately beneath said grate opening at their ends into said cylinder and water-jacket, substantially as set forth.



2. The herein-described improved boiler, consisting of the casing having a lower cylindrical portion provided with a series of door-covered openings, the water jacket, the grate located in said cylindrical portion, the central cylinder extended through said grate, the tubes beneath said grate connecting said cylinder with said water jacket, the series of tubes connecting the upper end of said water jacket with said cylinder, the series of tubes opening at their upper and lower ends into said cylinder and located between the latter and the water jacket, and the upper and lower drums communicating with said cylinder and located respectively above and below the points of connection of said latter tubes with said cylinder, substantially as set forth.

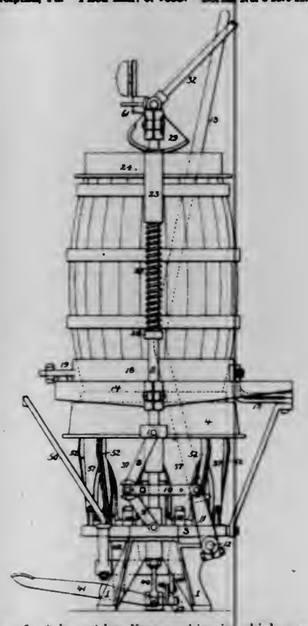
545,387. PRINTING-MACHINE. ROBERT F. SPROULS, Kittabury, Berkhampstead, England. Filed Sept. 28, 1894. Serial No. 524,383. (No model.)



Claim.—In a printing machine, the combination of a reciprocating and vertically guided cylinder, an oscillatory frame carrying inking rollers arranged in operative contact with the periphery of said cylinder, a pinion fixed on the axis of said frame, a vibrating arm piv-

oted at one end to the back frame of the machine and a rack carried by the other end of said arm and gearing with said pinion, whereby when the cylinder is reciprocated the inking rollers are oscillated about its periphery, substantially as described.

545,388. BARREL-HEADING MACHINE. JOHN B. STANHOPE, Philadelphia, Pa. Filed Mar. 8, 1895. Serial No. 540,941. (No model.)



Claim.—1. A barrel heading machine in which are combined a hoop driver, means for supporting the staves, a table or platform carrying the pieces of the barrel head, and movable so as to introduce said head into the open end of the barrel, and stave spreaders whereby the open end of the barrel can be expanded prior to the introduction of the head, and then permitted to contract so that the staves engage with and retain said head.

2. A barrel heading machine in which are combined means for supporting and for truing the barrel staves, a platform or table carrying the pieces of the barrel head, and movable so as to introduce said head into the open end of the barrel, stave spreaders for expanding the end of the barrel, prior to the introduction of the head, and a hoop driver whereby a hoop is driven onto the staves after the introduction of the head.

3. A barrel heading machine in which are combined means for supporting the barrel staves, a table or platform carrying the pieces of the barrel head, and movable so as to introduce said head into the open end of the barrel, stave spreaders whereby the end of the barrel is expanded before the introduction of the head, a hoop driver for forcing the hoop onto the staves after the introduction of the head, and a presser plate acting upon the end of the barrel opposite that which receives the head.

4. A barrel heading machine in which are combined a hoop driver, means for supporting the staves of the barrel, a table or platform carrying the pieces of the head, and movable so as to introduce said head into the open end of the barrel, stave spreaders and a split compression ring whereby the staves are centered.

5. A barrel heading machine in which are combined a hoop driver, stave supporting plates on which the ends of the staves rest, a table or platform carrying the pieces of the barrel head, and movable so as to introduce said head into the open end of the barrel, and stave spreaders whereby the end of the barrel is expanded for the introduction of the head, and then permitted to contract so as to cause the staves to engage with and retain the head on the driving of the hoop.

6. A barrel heading machine in which are combined stave supporting plates on which the ends of the staves rest, means for supporting and driving the hoop, a table or platform carrying the pieces of the barrel head, and movable so as to introduce said head into the open end of the barrel, a series of stave spreaders, and arms carrying the stave supporting plates and acted upon by said table or platform so as to center the hoop.

7. A barrel heading machine in which are combined supporting plates for the ends of the staves, means for supporting and driving the hoop, a table or platform carrying the pieces of the barrel head, and movable so as to introduce said head into the open end of the barrel, a series of stave spreaders, and a series of pairs of arms, the arms of each pair carrying one of the stave supporting plates, and said arms being independently movable so as to change the position of said plates.

8. A barrel heading machine in which are combined plates for supporting the ends of the staves, means for supporting and driving the hoop, a table or platform carrying the pieces of the barrel head, and movable so as to introduce the said head into the open end of the barrel, a series of stave spreaders, a series of pairs of arms each carrying one of the stave supporting plates, the arms of each pair being independently movable, and means whereby one of the arms is actuated by the head carrying table and the other by a stave spreader.

9. A barrel heading machine in which are combined means for introducing the head into one end of a barrel, a presser plate acting on the other end of the barrel, guide rods upon which said presser plate can slide vertically, and upon one of which it can swing laterally so as to be withdrawn from above the barrel, springs for supporting the presser plate, and a shaft having cams for acting upon said presser plate when the latter is swung into position over the end of the barrel, substantially as specified.

545,389. DENTAL MATRIX. JOSEPH M. STROUT, Portland, Me. Filed Dec. 27, 1894. Serial No. 533,119. (No model.)



Claim.—1. A matrix retainer, consisting of opposing jaws provided with spurs to engage the matrix, a nut and a screw device connecting the nut with one of the jaws, whereby one jaw may be moved to or from the other by the manipulation of a single nut, as specified.

2. A matrix retainer, consisting of a barrel having a jaw formed thereon, a second jaw opposed to the barrel jaw and provided with a shank entering the said barrel, each jaw having a spur to engage the matrix and a sleeve held to turn in the barrel and having threaded connection with the shank of the second jaw, whereby the barrel may be made to travel to and from the jaw with the shank, as and for the purpose specified.

3. A matrix, the same consisting of a band constructed in sections, the said sections being provided with openings at their ends, and a fastening device comprising a body having pins therein, adapted to enter the openings in the sections of the matrix, and a pivoted locking arm or button adapted to be carried over the overlapping ends of the band and to an engagement with the pins on the body of the said fastening device, as and for the purpose set forth.

4. A matrix, comprising two sections detachably connected at one end and a clamping device adapted to be connected to the opposite ends of said section whereby the same are secured together, substantially as set forth.

5. A matrix, comprising two sections detachably connected at one end and having their opposite ends perforated, in combination with a clamping device having spurs adapted to engage said perforations, substantially as set forth.

545,390. SECONDARY BATTERY. ILLIUS A. TIMMIS, London, England. Filed Feb. 28, 1895. Serial No. 540,126. (No model.)

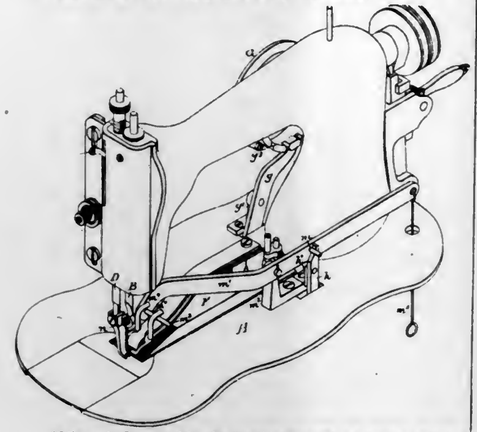


Claim.—1. An element for secondary batteries consisting of a thin sheet of metal corrugated in parallel uninterrupted continuous lines, and folded or plaited in continuous lines intersecting the corrugations, substantially as described.

2. An element for secondary batteries consisting of a thin sheet of metal bent into folds or plaits and having linear indentations parallel to each other and intersecting the faces of the plaits at an acute angle to the lines of the latter, substantially as described.

3. An element for secondary batteries consisting of a thin sheet of metal having a series of oblique or diagonal linear corrugations or indentations and folded or plaited in lines parallel with one of the edges of the sheet, substantially as described.

545,391. SEWING-MACHINE. ROBERT W. THOMSON, Lynn, Mass., assignor to the Philadelphia Barring Machine Company, Camden, N. J. Filed July 30, 1894. Serial No. 519,019. (No model.)



Claim.—1. In a machine for forming successive groups of stitches with intervening spaces, the combination of the stitch forming and work feeding devices, with mechanism for severing the thread beneath the work, said mechanism comprising a device for entering the loop of the last stitch of the group before the same is drawn tight and a cutting blade or knife for severing the thread after the same is tightened, substantially as described.

2. In a machine for forming successive groups of stitches with intervening spaces, the combination of the stitch forming and work feeding devices, with cutting mechanism for severing the needle thread beneath the work after the formation of each group of stitches, one of the elements of said cutting mechanism being a contracted blunt finger, projecting from a blade or knife, for entering the loop of needle thread before the same is drawn tight to complete the last stitch of the group.

3. In a machine for forming successive groups of stitches with intervening spaces, the combination of the stitch forming and work feeding devices with mechanism for severing the needle thread beneath the work before the completion of the last stitch of the group, said severing mechanism comprising a finger for entering the loop of needle thread before the same is drawn tight to complete the last stitch, a knife and reciprocating mechanism therefor, said mechanism comprising two independent sets of operating devices, the first causing a primary stage of the movement and the second causing the final stage of the same.

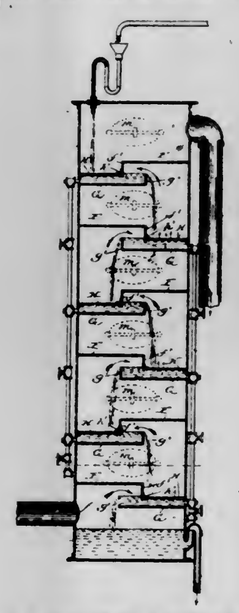
4. In a machine for forming successive groups of stitches with intervening spaces, the combination of the stitch forming and work feeding devices, with mechanism for severing the needle threads beneath the work on the completion of a group of stitches, a device for entering the loop of the last stitch of the group before the same is drawn tight, the cam which controls the operation of the feeding device, and connections between said cam and severing mechanism, whereby the said cam causes the severing mechanism to cut the thread beneath the work after the last stitch of each group has been completed, substantially as described.

5. In a machine for forming successive groups of stitches with intervening spaces, the combination of the stitch forming and work feeding devices, with a severing device having a two-stage movement, whereby it is caused to sever the needle thread beneath the work on the completion of the last stitch of each group, the cam which controls the operation of the feeding devices, the lever which effects the opening of the clamp of the work holder, mechanism whereby the feed controlling cam is caused to impart to the severing device the first stage of its movement, and mechanism whereby the clamp opening lever is caused to impart to said severing device the final stage of its movement, substantially as described.

6. In a machine for forming successive groups of stitches with intervening spaces, the combination of the stitch forming and work feeding devices, with a device adapted to sever the needle thread beneath the work on the completion of each group of stitches, a slide carrying said severing device and having a pin or projection, a cam slide, means for reciprocating the same, and means for imparting to the severing slide movement whereby its pin or projection will be brought into the path of said reciprocating cam slide, substantially as specified.

7. In a machine for forming successive groups of stitches with intervening spaces, the combination of the stitch forming and work feeding devices, mechanism whereby the needle thread is severed beneath the work on the completion of each group of stitches, and a frictional retaining device for the needle thread independent of the usual tension device and mounted upon the needle bar, substantially as specified.

545,392. GAS WASHER AND SCRUBBER. WILLIAM TRACY, Leavenworth, Kans. Filed Apr. 24, 1895. Serial No. 547,036. (No model.)



Claim.—1. A gas-scrubber having within its case, a series of horizontal partitions one above the other, each composed of an upper and a lower flanged diaphragm as set forth extending from opposite sides of the case to and beyond its center, the upper one having a perforated plate reaching from its flange to the wall of the case, and such flange dipping into the lower diaphragm below its highest water line, all substantially as and for the purposes set forth.

2. In a gas-scrubber partition composed of the parts F and G projecting from opposite sides of the case and having the ledges f' and g' respectively the ledge f'' extending downward below the upper edge of g' and forming a seal,—a perforated plate hinged near the center of the case to the part F, all substantially as set forth.

3. In combination with the case and with its gas inlet and outlet, the described series of upper diaphragms having each a ledge f' to form a seal, the perforated plates and water-chambers, all located alternately at opposite sides of the case, and the pipes l l at opposite sides of the case, each of said pipes connecting with said alternate water-chambers, substantially as and for the purposes set forth.

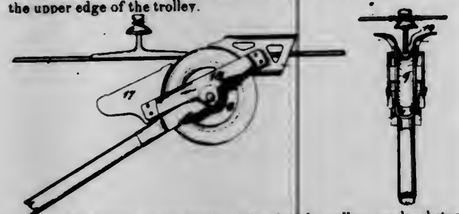
4. In combination with the casing and its described flanged partitions, the upper flange being adapted to dip into water to make a water seal, the described series of perforated plates each hinged near the center of the case and each constituting a part of a diaphragm, and located alternately at opposite sides of the case and in proximity to the manholes, all substantially as set forth.

5. In combination with the case and its diaphragms, and their ledges g' and f'', the latter serving to form a seal, the perforated plates, the pipes at opposite sides of the case and each connected to alternate water trays located on opposite sides of the case, and valves in said pipes, and whereby upon opening all the valves in one of said pipes, the apparatus is made to serve as a washer at one side, and as a scrubber at the opposite side, all substantially as set forth.

545,393. GUARD AND GUIDE FOR ELECTRIC TROLLEYS. JOHN R. TRESLER, Westwood, assignor of one-half to Joseph H. Moore, Cincinnati, Ohio. Filed June 1, 1895. Serial No. 551,360. (No model.)

Claim.—1. A guide-piece 17 for electrical trolleys, substantially of the shape as shown, adapted to receive the wire or its equivalent between its upright sides and pivotally supported in front of the trolley and in a position to be normally below the upper part of the latter from which position it is adapted to rise for the purpose described.

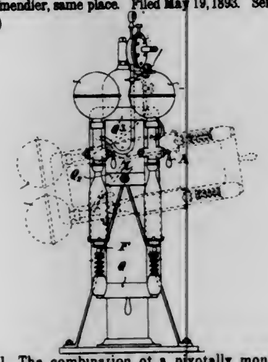
2. The combined guard and guide for electric trolleys, substantially of the shape as shown and adapted to receive the wire or its equivalent between the upright sides thereof, both guard and guide pivotally supported one in front, the other behind the trolley and normally in a position wherein the guard is above, and the guide below the upper edge of the trolley.



3. The guard 16 and guide 17 for electric trolleys, each substantially of the shape as shown and each adapted to receive the wire or its equivalent between its upright sides and a frame 18 whereby the two are connected and whereon the whole is pivotally supported in a manner that brings guard 16 normally above the upper part of the trolley.

4. The guard 16 and guide 17 for electric trolleys, each substantially of the shape as shown and each adapted to receive the wire or its equivalent between its upright sides and a frame 18 whereby the two are connected and supported, guard 16 behind and guide 17 in front of the trolley, said frame 18 being pivotally supported and the weight of guide-part 17 preponderating over the weight of the guard for the purpose of holding the latter normally elevated.

545,394. CONTINUOUS-ACTING APPARATUS FOR PRODUCTION OF SPARKLING DRINKS, &c. OTTO UHLICH, Cologne, Germany, assignor to Carl Malmendier, same place. Filed May 19, 1893. Serial No. 474,840. (No model.)



Claim.—1. The combination of a pivotally mounted swinging frame vertically self adjusting spring pressed bottle supporting disks mounted at the lower part of said frame, fixed bottle neck holders K at the upper part of said frame each vertically above one of said disks, mixing chambers M above said holders K rigid tubular connections from each of said mixing chambers to each neck holder flexible tube connection to connect said mixing chambers to a gas receiver and means for swinging said frame and to close the gas conduit substantially as described.

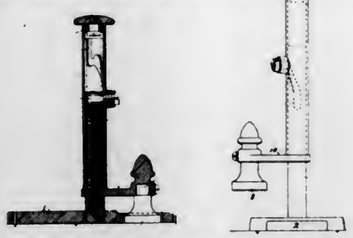
2. The combination of a pivotally mounted swinging frame, a spring pressed self adjusting bottle supporting disk mounted at the lower part of said frame, a neck holder K rigidly connected to the upper part of said frame a mixing chamber M above said neck holder tubular T-piece T having flange *f* to attach to said frame, and nozzle *e*, said T-piece connecting the holder K and chamber M, flexible tubular connection from said nozzle to a gas receiver and means to close said gas conduit and to swing said frame in the manner and for the purpose substantially as described.

545,395. SEALING CONTRIVANCE. LOUIS P. VALIQUET, New York, N. Y., assignor, by mesne assignments, to Georgestine A. R. Atkins, same place. Filed June 29, 1895. Serial No. 554,411. (No model.)

Claim.—1. The combination of a wax-holder, a seal standing normally away therefrom, a finger-piece connected to said seal, and means for directing the seal to the wax-holder upon depression of said finger-piece; substantially as set forth.

2. The combination of a wax-holder, a seal standing normally away therefrom, a finger-piece connected to said seal, and a cam for directing the seal to the wax-holder when the finger-piece is depressed; substantially as set forth.

3. The combination of a wax-holder, a seal standing normally away therefrom, a finger-piece connected thereto, means for directing the seal to the wax-holder when the finger-piece is depressed, and a spring for returning the seal when the pressure on the finger-piece is relieved; substantially as set forth.



4. The combination of a wax-holder, a seal standing normally out of the plane thereof and connected to a slide or carrier, and means for automatically moving the said seal toward and over said wax-holder and guiding or directing it thereinto during the downward movement of said slide or carrier; substantially as set forth.

5. The combination of a wax-holder, a seal standing normally at one side thereof and attached to a slide or carrier, and a cam and pin for swinging said seal around simultaneously with the depression of the slide or carrier and causing it to move over and down to the wax; substantially as set forth.

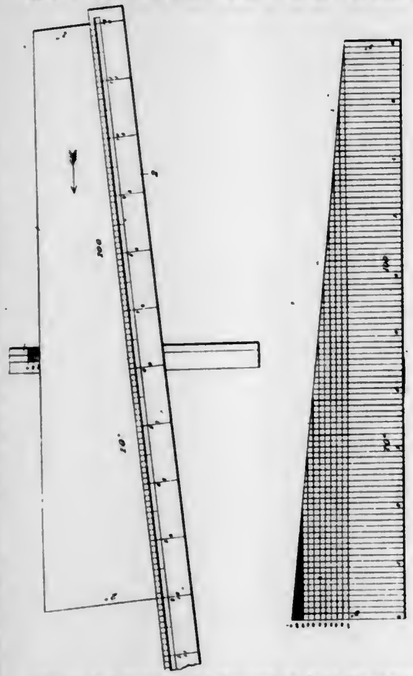
6. The combination of the wax-holder or ring, the slide, the post, and the cam and pin; substantially as set forth.

7. The combination of a wax-holder or ring, a slide or carrier having a seal and a pin, a post having a cam slot, and a return spring; substantially as set forth.

8. The combination of a base plate having a wax-holder or ring, and a hollow post provided with the continuous slots 4 5 6, a slide having a pin and a seal, and a return spring; substantially as set forth.

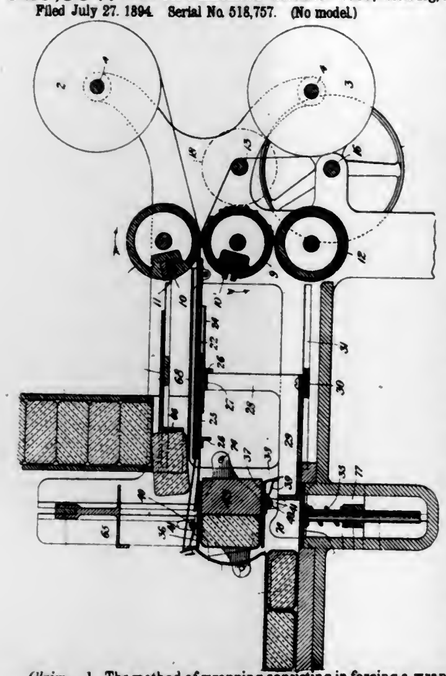
9. The combination of a wax-holder, a cam, and a slide or carrier having a seal, a pin and a swiveled finger-piece; substantially as set forth.

545,396. DIVIDING-INSTRUMENT. ANTHONY VUTORSKEY, Buffalo, N. Y. Filed Mar. 8, 1895. Serial No. 540,928. (No model.)



Claim.—In a device of the character set forth, the combination with a ruler, divided off into units of length and proportional parts of units of length, of a dividing or graduating plate to be used in connection therewith, the same having one side a multiple of linear units in length, one edge thereof a single linear unit in length and the other edge a proportional part of a linear unit in length, substantially as described.

545,397. WRAPPING-MACHINE. GEORGE R. WARD, Pittsburg, Pa. Filed July 27, 1894. Serial No. 518,757. (No model.)



Claim.—1. The method of wrapping consisting in forcing a wrapper and article into a bottomless box, rotating the same a partial revolution, and forcing a second wrapper and article into the box, thereby ejecting the first; substantially as described.

2. The method of wrapping, consisting in forcing a wrapper and article into a bottomless box, rotating the same a partial revolution, and simultaneously bringing a second wrapper and article over the bottom of the box and then forcing the same thereinto thereby ejecting the first; substantially as described.

3. The combination with a bottomless wrapping box, of means for rotating the same upon itself, and means for forcing the article and wrapper thereinto and ejecting it therefrom; substantially as described.

4. The combination with a bottomless wrapping-box and means rotating the same upon an axis intermediate of its length, of nippers located thereon and arranged to pull forward the wrapper; substantially as described.

5. The combination with the bottomless rotatory wrapping-box, of means for forcing the article and wrapper thereinto, means for rotating the box upon an intermediate axis, and nippers thereon arranged to pull forward the wrapper; substantially as described.

6. The combination with a bottomless rotatory wrapping-box and means for rotating the same about an intermediate axis, of nippers located thereon and arranged to pull forward the wrapper, and means for opening the nippers and closing them upon the wrapper; substantially as described.

7. The combination with a bottomless rotatory wrapping-box, of means for rotating the same about an intermediate axis and a shield arranged to fold the wrapper as the box turns; substantially as described.

8. The combination with a bottomless rotatory wrapping-box, of means for rotating the same about an intermediate axis, means for forcing the article and wrapper thereinto and ejecting it therefrom, and a movable table arranged to receive the same when forced from the box; substantially as described.

9. The combination with a bottomless rotatory wrapping-box, of means for rotating the same about an intermediate axis, means for laying the wrapper and article upon its open top, and means for forcing the same thereinto and ejecting it therefrom; substantially as described.

10. The combination with a bottomless box, of means for rotating it upon an intermediate axis, and mechanism for forcing a wrapper and article thereinto, said mechanism being arranged to operate each partial revolution of the box, whereby the first article is ejected by the second.

11. The combination with a bottomless rotatory wrapping-box, of means for forcing a wrapper and article part way therethrough, means for rotating the box, and nippers upon the box arranged to pull a second wrapper into place in its rotation; substantially as described.

12. The combination with a bottomless rotatory box, of means for rotating the same about an intermediate axis, a movable head arranged to force the wrapper and article thereinto, and a movable table arranged to receive the same when ejected therefrom; substantially as described.

13. The combination with a bottomless rotatory box, of means for rotating the same upon an intermediate axis, means for feeding the wrapper and article thereto, a movable head arranged to force the wrapper and article thereinto, and a movable table arranged to receive the same when ejected therefrom; substantially as described.

14. The combination with a bottomless rotatory box, of a movable head arranged to force the wrapper and article thereinto, a movable table arranged to receive the same when ejected therefrom, and a sliding cross-head arranged to raise the table; substantially as described.

15. The combination with a bottomless rotatory box, of a movable head arranged to force the wrapper and article thereinto, means for rotating the box intermittently upon an intermediate axis, and a movable table arranged to receive the same when ejected therefrom; substantially as described.

16. The combination with a bottomless rotatory box, of a movable head arranged to force the wrapper and article thereinto, a movable table arranged to receive the same when ejected therefrom, and a slide arranged to push the wrapped article from the table; substantially as described.

17. The combination with a bottomless rotatory box, of a slide arranged to feed the article thereto, a movable head arranged to force the wrapper and article thereinto, means for rotating the box intermittently upon an intermediate axis, and a movable table arranged to receive the wrapped article; substantially as described.

18. The combination with the feeding and cutting mechanism, of a sheath through which the wrapper is forced, and a wrapping box rotatory upon an intermediate axis and having nippers arranged to pull the wrapper into place; substantially as described.

19. The combination with the feeding and cutting mechanism, of a sheath through which the wrapper is forced, means for depositing the article upon the wrapper, and a rotatory wrapping-box pivoted upon an intermediate axis and having nippers arranged to pull the wrapper into place; substantially as described.

20. The combination with the feeding and cutting rolls, of a sheath through which the wrapper is forced, means for depositing the article upon the wrapper, a rotatory bottomless wrapping-box into which the article and wrapper are forced, and means for rotating the box intermittently upon an intermediate axis; substantially as described

21. The combination with a bottomless rotatory box, of a movable head arranged to force the wrapper and article thereinto, a movable table arranged to receive the same when ejected therefrom, and folding flanges arranged to act upon the wrapper as the table is lowered; substantially as described.

22. The combination with a bottomless rotatory box, of a movable head arranged to force the wrapper and article thereinto, a movable table arranged to receive the same when ejected therefrom, folding flanges arranged to act upon the wrapper as the table is lowered, and a slide having folding ears and arranged to move the wrapped article from the table; substantially as described.

23. The combination with continuously rotating feeding rolls, of an intermittently rotating bottomless wrapping-box to which the wrapper passes; substantially as described.

24. The combination with continuously rotating feeding rolls, of an intermittently rotating bottomless wrapping-box to which the wrapper passes, and means for forcing the wrapper and article into the box and ejecting it therefrom; substantially as described.

25. The combination with the rotatory bottomless wrapping box, of turning mechanism therefor, upper and lower movable cross-heads and a horizontal pusher, all of which are connected by links to the same actuating mechanism; substantially as described.

26. The combination with the rotatory bottomless wrapping-box, of turning mechanism therefor, an article-feeding slide, upper and lower movable cross-heads, and a horizontal pusher, all of which are connected by links to the same actuating mechanism; substantially as described.

27. The combination with the rotatory bottomless wrapping-box, and a slide arranged to feed the article thereto, of a movable floor arranged to support the article in its movement during the rotation of the box; substantially as described.

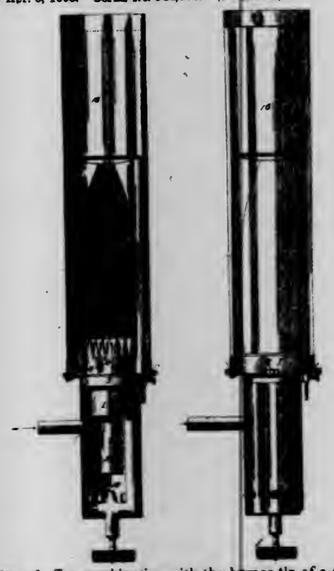
28. The combination with the rotatory bottomless wrapping-box and a slide arranged to feed the article thereto, of a movable floor arranged to support the article in its movement during the rotation of

the box, and a head arranged to force the article into the box; substantially as described.

29. The combination with the feeding rolls, of a wrapping box arranged to rotate about an intermediate axis and having nippers arranged to seize the paper, said nippers being removed from the feeding rolls a distance equal to the length of the wrapper; substantially as described.

30. The combination with the continuously moving wrapper-feeding mechanism, of means for depositing the article on the wrapper while it is being drawn forward, a wrapping box arranged to rotate about an intermediate axis, and means for forcing the article and wrapper thereinto; substantially as described.

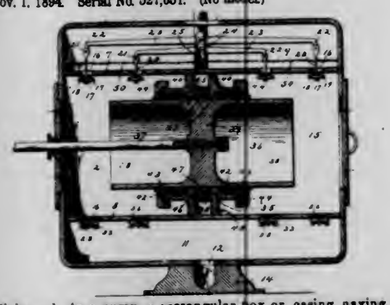
545,398. APPARATUS FOR PRODUCING INCANDESCENT LIGHT FROM HYDROCARBON OIL. CHARLES E. WHITE, Kansas City, Mo. Filed Apr. 8, 1895. Serial No. 544,901. (No model.)



Claim.—1. The combination with the burner tip of a device for generating gas or vapor from hydro-carbon oil, and burning the same in the form of a non-luminous heating flame, of a mantle of refractory material capable of incandescence, and an intermediate connecting thimble extending inside the mantle and having a corrugated surface for the passage of air, substantially as described.

2. The combination with the burner tip of a device for generating gas or vapor from hydro-carbon oil, and burning the same in the form of a non-luminous heating flame, of a mantle of refractory material capable of incandescence, and an intermediate removable connecting thimble extending inside the mantle and having a corrugated surface for the passage of air and also having projecting therefrom supporting arms for the chimney, all substantially as described.

545,399. PUMP. LUTHER WILSON, Jr., Louisville, Ky., assignor of two-thirds to John E. Gould and George Edgar, Jr., same place. Filed Nov. 1, 1894. Serial No. 527,651. (No model.)



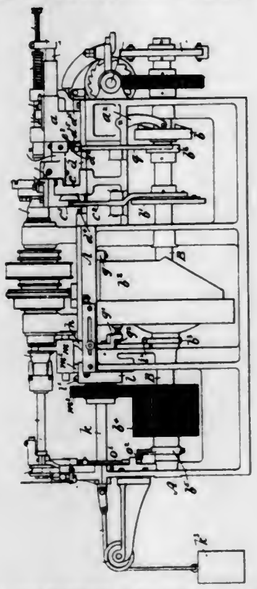
Claim.—1. In a pump, a rectangular box or casing having opposite open sides, and upper and lower valve plates provided with opposite sets of valve openings therein, a centrally arranged stationary packing partition between said valve plates, a double-bucket piston arranged to reciprocate through said partition, the outlet valves supported to work below the valve openings in the lower valve plate, different length levers pivotally supported at an intermediate point above the upper valve plate, inlet valves pivotally suspended from the extremities of said levers and working below the openings in the upper valve plate, a screen arranged horizontally in the chamber above the upper valve plate, and opposite removable side plates detachably bolted over the opposite open sides of the box or casing, substantially as set forth.

2. In a steam pump, the combination of the box or casing provided with upper and lower valved chambers, a stationary packing partition arranged centrally in the box or casing and provided with an inclosed oil reservoir, the piston arranged to reciprocate through the partition, and an oil packing-ring arranged within the oil reservoir on the piston and provided in its inner side with an annular groove, and with a series of oil holes communicating with the groove and said reservoir, substantially as set forth.

3. In a steam pump, the combination of the pump box or casing provided with upper and lower valved inlet and outlet chambers, a stationary packing partition arranged centrally within the box or casing between the upper and lower chambers thereof and comprising separate stuffing boxes spaced from each other and inclosing therebetween an oil reservoir, a double-bucket piston arranged to reciprocate through the stuffing boxes forming the partition, and an oil packing ring fitted within said oil reservoir between the stuffing boxes, substantially as set forth.

4. In a steam pump, the combination of the pump box or casing provided with upper and lower valved inlet and outlet chambers, a stationary packing partition arranged centrally within the box or casing and comprising a pair of spaced stuffing box plates provided at one side with offstanding stuffing boxes and inclosing therebetween an oil reservoir, the pump piston arranged to reciprocate through the stuffing boxes of the partition, and an oil packing ring arranged within the oil reservoir on the piston and provided in its inner side with an annular lubricant groove, and with a series of oil holes extending through the ring and communicating with the groove and said reservoir, substantially as set forth.

545,400. SCREW-MACHINE. GEORGE E. WITHERELL, Hartford, Conn., assignor to the Hartford Machine Screw Company, same place. Filed June 18, 1894. Serial No. 515,001. (No model.)



Claim.—1. In combination with a reciprocating carriage supporting a blank holding spindle, the blank holding spindle, a taper bar bearing a cutting tool in operative relation to the spindle, and a former having a patterned surface in operative engagement with the taper bar and connecting devices whereby the former is adapted to be automatically reciprocated by the movement of the carriage, all substantially as described.

2. In a screw machine, a reciprocating carriage supporting a blank holding spindle, the blank holding spindle, a taper bar bearing a cutting tool in operative relation to the spindle, a former slide operatively connected to the carriage, and a former bar pivoted on the slide with its patterned surface in engagement with the taper bar, all substantially as described.

3. In a screw machine, a reciprocating carriage supporting a blank holding spindle, the blank holding spindle, a taper bar bearing a cutting tool in operative relation to the spindle, and a former bar loosely connected with the carriage whereby the latter has a limited movement independent of the former bar, and with the patterned surface on said former bar in contact with the taper bar, all substantially as described

4. In combination with a reciprocating carriage supporting a blank holding spindle, the blank holding spindle, a rocking taper bar bearing a cutting tool in operative relation to the spindle, a former bar pin adjustably secured to the taper bar, and a former having a patterned surface in operative engagement with the taper bar and connecting devices whereby the former is adapted to be automatically reciprocated by the movement of the carriage, all substantially as described.

5. In combination with a reciprocating carriage supporting a blank holding spindle, the blank holding spindle, a rocking taper bar bearing a cutting tool in operative relation to the spindle, a former having a patterned surface in operative engagement with the taper bar and adapted to be reciprocated by the movement of the carriage, and a reciprocating die spindle borne in operative relation to the blank holding spindle, all substantially as described.

6. In combination with a reciprocating carriage supporting a blank holding spindle, the blank holding spindle, a rocking taper bar bearing a cutting tool in operative relation to the spindle, a former having a patterned surface in operative engagement with the taper bar and adapted to be reciprocated by the movement of the carriage, a reciprocating die spindle located in operative relation to the blank holding spindle, and means for allowing the rotation of the die spindle during a portion of its lengthwise movement, all substantially as described.

7. In combination with a reciprocating carriage supporting a blank holding spindle, the blank holding spindle, a rocking taper bar bearing a cutting tool in operative relation to the spindle, a former having a patterned surface in operative engagement with the taper bar and adapted to be reciprocated by the movement of the carriage, a lengthwise reciprocating die spindle borne in operative relation to the blank holding spindle, a stop located in the die spindle and preventing its rotation during a portion of its reciprocating movement, a spring tending to hold the die spindle in a normal position away from the blank holding spindle, a lever shaft bearing an adjusting screw in engagement with the end of the die spindle, the adjusting screw, and means for reciprocating the lever shaft, all substantially as described.

8. In combination with a reciprocating carriage supporting a blank holding spindle, the blank holding spindle, a cam in engagement with the carriage to cause its movement in one direction, means for moving the carriage in the opposite direction, and means for holding the carriage at rest out of engagement with the cam, all substantially as described.

9. In combination with a reciprocating carriage supporting a blank holding spindle, the blank holding spindle, a cam in engagement with the carriage to cause its movement in one direction and a weight connected to the carriage to hold it normally in engagement with the cam and cause its movement in the opposite direction, and a bolt adapted to be thrust into the path of movement of the carriage and hold the latter at rest during a fall on the cam away from the carriage, all substantially as described.

10. In combination with a reciprocating carriage supporting a blank holding spindle, the blank holding spindle, a cam in engagement with the carriage to cause its movement in one direction and a weight connected to the carriage to hold it normally in engagement with the cam and cause its movement in the opposite direction, a vertically movable bolt adapted to be thrust into the path of movement of the carriage, and a cam in engagement with the bolt to cause vertical movement thereto, all substantially as described.

11. In combination with a reciprocating carriage supporting a blank holding spindle, the blank holding spindle, a cam in engagement with the carriage to cause its forward movement and a weight connected to the carriage to hold it normally in engagement with the cam and cause its backward movement, a vertically movable bolt adapted to be thrust into the path of movement of the carriage, a cam in engagement with the bolt to cause vertical movement thereto and an adjusting screw located on the carriage in the path of movement of the bolt and adapted to engage the main cam to force the adjusting screw against the bolt, all substantially as described.

12. In combination with a reciprocating carriage supporting a blank holding spindle, a feed plunger extending through the spindle and having frictional grasping points, a chuck secured to the spindle to grasp a blank held therein, and an adjustable stop secured in the path of movement of the carriage to limit its backward movement whereby the length of stock to be cut from the blank may be predetermined, all substantially as described.

13. In combination with a reciprocating carriage supporting a blank holding spindle, the blank holding spindle, a chuck secured to the spindle, a reciprocating wedge borne on the spindle and adapted to operate the chuck, a reciprocating chucking slide in engagement with the wedge, a chucking cam pulley rotatively mounted on the carriage to reciprocate therewith and adapted to operate the chucking slide, and means for rotating the chucking cam pulley, all substantially as described.

14. In combination in a screw machine, a reciprocating carriage supporting a blank holding spindle, the blank holding spindle, a chuck secured to the spindle, a reciprocating wedge borne on the spindle and adapted to operate the chuck, a reciprocating chucking slide in engagement with the wedge, a chucking cam pulley rotatively mounted on the carriage to reciprocate therewith and adapted to operate the chucking slide, a web gear secured to the chucking cam pulley, a chucking gear secured to the main shaft and in mesh with the web gear, and means for driving the main shaft, all substantially as described.

15. In combination with the frictional feed plunger of a screw machine, a spring plunger thrusting against the feed plunger, a bolt, normally in engagement with said feed plunger but adapted to be withdrawn at certain intervals, means for withdrawing the bolt, and a trip located in the path of movement of the feed plunger when released from the rod of metal and adapted to operate to stop the machine, all substantially as described.

16. In combination with the frictional feed plunger of a screw-machine, a grooved disk secured to the feed plunger, a spring plunger thrusting against the feed plunger, a bolt normally in engagement with said feed plunger, a connecting rod secured to the bolt and in engagement with a cam on the main shaft of the machine, the cam, means for driving the main shaft, a trigger located in the path of movement of the feed plunger, a catch adapted to be released on the movement of the trigger, a connection between the catch and the trip of a stop motion, and said trip, all substantially as described.

17. In combination with the frictional feed plunger of a screw machine, a grooved disk secured to the feed plunger, a spring plunger thrusting against the feed plunger, a bolt normally in engagement with the feed plunger, a connecting rod secured to the bolt and in engagement with a cam on the main shaft of the machine, a handle operatively connected to the bolt, the cam, means for driving the main shaft, a trigger located in the path of movement of the feed plunger, a catch adapted to be released on the movement of the trigger, a connection between the catch and the trip of a stop motion and said trip, all substantially as described.

18. In combination with a feed plunger adapted to exert a frictional hold upon a blank of metal, a chuck adapted to intermittently grasp the blank, means for forcing the feed plunger backward, means for holding the feed plunger when the chuck is opened, and a trip adapted to be operated by the backward movement of the feed plunger, all substantially as described.

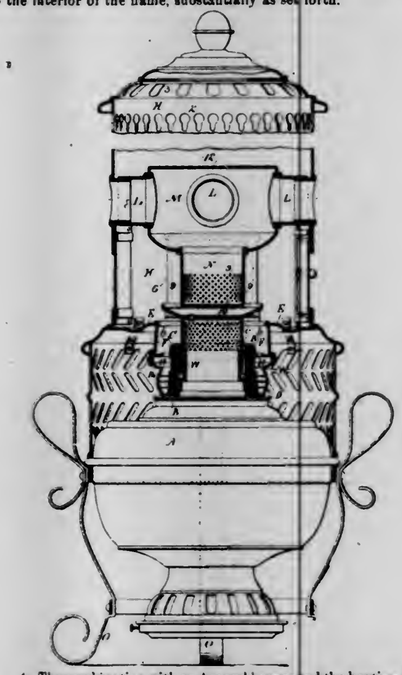
19. In combination with a feed plunger adapted to exert a frictional hold on a blank of metal, means for forcing the plunger backward, means for holding the plunger and blank against backward movement, and a trip adapted to be operated by the backward movement of the plunger, all substantially as described.

545,401. DRUM FOR LAMPS. LEWIS J. ATWOOD and HENRY H ASHENDEN, Waterbury, Conn., assignors to the Plume & Atwood Manufacturing Company, same place. Filed Oct. 1, 1894. Serial No. 524,579. (No model.)

Claim.—1. The combination with a lamp reservoir and the Argand wick and central air tube, of an openwork cylinder surrounding and resting upon the reservoir, a septum resting upon the openwork cylinder and having an annular pendent flange upon its inner edge, an air distributer around the burner and adjacent to the lower edge of the pendent flange, a heating cylinder resting upon the septum and having an openwork upper end for the escape of heated air and the products of combustion and an internal drum having lateral inlet tubes for air and an opening in the drum adjacent to the flame of the lamp, substantially as set forth.

2. The combination with a lamp having an Argand wick and central air tube and a deflector at the upper end of the air tube, of an openwork cylinder resting upon the lamp reservoir, a septum upon the openwork cylinder having an annular pendent flange at its inner edge surrounding the flame, a heating cylinder resting upon the septum, an internal drum over the flame and lateral tubes extending from the internal drum and opening through the heating cylinder and a hanging deflector through which air passes from the internal drum to the flame, substantially as set forth.

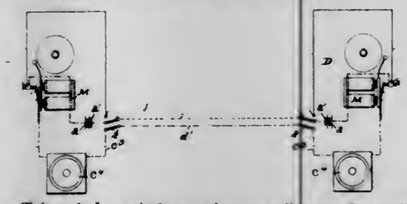
3. The combination with a lamp having an Argand wick and central air tube and a deflector over the air tube, of a heating cylinder, a support for the same, a septum closing the lower end of the heating cylinder, and having an annular hanging flange around the flame, a drum within the heating cylinder and over the flame and having lateral tubes extending through the heating cylinder for the admission of air and a hanging perforated deflector through which air passes to the interior of the flame, substantially as set forth.



4. The combination with an Argand burner and the heating drum, of a wick guard having an outer and an inner ring and bars across the upper end of the wick and extending from one ring to the other to limit the surface of wick exposed and the size of the flame within the heating drum and prevent smoke or odors, substantially as specified.

5. The combination with an Argand lamp having an air distributer and deflector, of an openwork cylinder above and resting upon the lamp, a septum extending from the air distributer to the openwork cylinder, a heating cylinder resting upon and connected with the septum and having a perforated upper end for the escape of heated air and the products of combustion, an opening and slide near the lower end of the heating cylinder to give access to the flame, and an internal drum and lateral tubes opening into the drum, and a hanging deflector for admitting air from the internal drum to the flame, substantially as set forth.

545,402. TELEPHONE AND RETURN-CALL SYSTEM. THOMAS R. BRIMNER, Baltimore, Md., assignor, by direct and mesne assignments, to the North American Interior Telephone Company, of Baltimore City. Filed Aug. 16, 1894. Serial No. 520,445. (No model.)



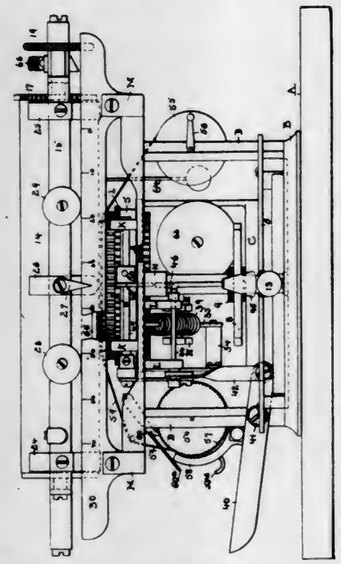
Claim.—1. In a telephone and return call system for hotels and other interiors, the combination of a number of call-boxes, each box comprising a battery, bell and telephone-receiver and transmitter—said boxes being in the different rooms; a main battery, an annunciator, a push-button board, and a telephone receiver and transmitter all in the office; a circuit comprising two wires—one wire thereof having independent connection from a call-box in a room to the push-button board, annunciator, telephone receiver and transmitter and main battery in the office, and the other wire also having connection from the call-box in a room to a wire, *f*, which has a common electric connection with all the other call-boxes in the rooms and leads to the main battery in the office—the poles of said battery in the office being connected normally in opposing polarity relative to the poles of each of the batteries in the several call-boxes in the rooms so as to avoid the production of a current which will operate the annunciator or bells; and means for reversing the poles of either the main battery or any one of the call-box-batteries for the purpose of producing current to operate the call-bells of both the room and office instruments.

2. The combination of two batteries; two automatic electric call-bells; a circuit connecting said batteries in opposing polarity normally through the said call-bells; and two pole-reversing devices, one at each call-bell, each arranged in the circuit and capable of making two different connections—one a vibrator stroke and the other a single stroke—between a call-bell and the circuit.

3. The combination of a circuit comprising two wires and including a source of electricity; two automatic electric call-bells in the said circuit; and means for making two different connections with each of the bells,—one a vibrating stroke connection in which the circuit is automatically opened and closed by the action of the bell-hammer when a current is set up, and the other a single-stroke connection in which the circuit is permanent or continuous—the bell giving a single-stroke only for each make of the circuit.

4. The combination of an automatic electric call-bell having one battery connection; two line wire terminals, 1, 2; a battery contact piece, 3; two call-bell contact pieces, 4, 5; and means for making contact between the one line wire terminal and the battery contact piece, and the other line wire terminal with one of the call-bell contact pieces, 4, in the one case, or, in another case, for making contact between the last mentioned line wire terminal and the battery contact piece and the first mentioned line wire terminal with the other call-bell contact piece, 5, for the purpose set forth.

545,403. TYPE-WRITING MACHINE. ALBERT B. DICK, Chicago, Ill., assignor to the A. B. Dick Company, same place. Filed Aug. 30, 1893. Serial No. 484,355. (No model.)



Claim.—1. In a type-writing machine, the combination of a type-wheel revoluble in a horizontal plane, a movable index beneath the type-wheel and connected therewith for revolving the same, a plurality of type-bearing plates or spindles loosely carried by said type-wheel and arranged radially in a single row and capable of reciprocating vertically a printing character at the upper end of each of said plates or spindles, an alignment finger adapted to engage with and lock said type-wheel, and a hammer adapted to elevate one of said type-bearing plates or spindles when the type-wheel is locked, substantially as described.

2. In a type writing machine, the combination of a vertical shaft, a type-wheel carried thereby and comprising a lower plate and an upper plate connected together and revolving in a horizontal plane, a movable index beneath said type-wheel and connected therewith for revolving the same, a plurality of type-bearing plates or spindles vertically mounted in said lower and upper plates, a printing character carried by the upper end of each of said type-bearing plates or spindles, a plurality of teeth extending entirely around the periphery of the lower plate, an alignment finger adapted to engage between said teeth and to lock the type-wheel, and a hammer adapted to elevate one of said type-bearing plates or spindles when the wheel is locked, substantially as described.

3. In a typewriting machine, the combination of a type-wheel revoluble in a horizontal plane, mechanism beneath the type-wheel for revolving the same, a plurality of type-bearing plates or spindles carried by said type-wheel and capable of reciprocating vertically, a printing character carried by the upper end of each of said plates, an alignment finger adapted to engage with and lock said type-wheel, a hammer adapted to elevate one of said type bearing plates or spindles when the wheel is locked and mechanism connected with said alignment finger and said hammer for operating the same simultaneously, substantially as described.

4. In a typewriting machine, the combination of a type-wheel revoluble in a horizontal plane, mechanism beneath the type-wheel for revolving the same, a plurality of type-bearing plates or spindles carried by said type-wheel and capable of reciprocating vertically, a printing character carried by the upper end of each of said plates or spindles, an alignment finger adapted to engage with and lock said type-wheel, a hammer adapted to elevate one of said type-bearing plates or spindles when the wheel is locked, a finger plate pivoted to the frame of the machine, and connections between said finger plate and said alignment finger and said hammer, whereby said alignment finger and said hammer will be operated simultaneously, substantially as described.

5. In a typewriting machine, the combination of a type-wheel revoluble in a horizontal plane, mechanism beneath the type-wheel for revolving the same, a plurality of type-bearing plates or spindles carried by said type-wheel and capable of reciprocating vertically, a printing character carried by the upper end of each of said plates or spindles, an alignment finger adapted to engage with and lock said type-wheel, an anvil mounted beneath said type-wheel near the periphery thereof and adapted to be elevated and engage with one of said type-bearing plates or spindles when the type-wheel is locked, and a hammer adapted to engage with and elevate the anvil, substantially as described.

6. In a typewriting machine, the combination of a type-wheel revoluble in a horizontal plane, mechanism beneath said type-wheel for revolving the same, a plurality of type-bearing plates or spindles carried by said type-wheel and capable of reciprocating vertically, a printing character carried by the upper end of each of said type-bearing plates or spindles, an alignment finger adapted to engage with and lock said type-wheel, an anvil mounted beneath the periphery of said type wheel and adapted to be elevated and engage with one of said type-bearing plates or spindles, a hammer adapted to engage with and elevate the anvil, a finger plate pivoted to the frame of the machine, and connections between said finger plate and said alignment finger and said hammer for simultaneously operating said alignment finger and said hammer, substantially as described.

7. In a typewriting machine, the combination with a type-wheel carrying its type loosely in a horizontal plane, of a movable index by the movement of which said type-wheel is rotated in said horizontal plane, and a movable hammer, and an alignment finger operating independently of the index movement whereby the type-bearing wheel is first brought into position and the printing character operated, substantially as described.

8. In a type-writing machine, the combination of a type-wheel revoluble in a horizontal plane, mechanism beneath the type-wheel for revolving the same, a plurality of type-bearing plates or spindles carried by said type-wheel and capable of reciprocating vertically, a printing character carried by the upper end of each of said plates or spindles, an alignment finger adapted to engage with and lock said type-wheel, a hammer adapted to elevate one of said type-bearing plates or spindles when the type-wheel is locked, a rack bar carried by the frame of the machine, a finger plate pivoted to the frame of the machine, mechanism connected with said finger plate for feeding said rack bar, and a platen mounted upon said rack bar and carried by the same, substantially as described.

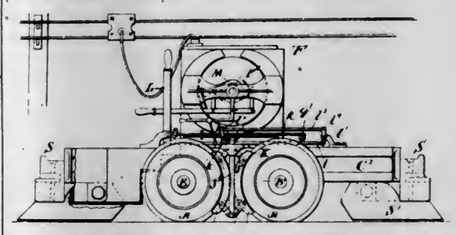
9. In a typewriting machine, the combination of a type-wheel revoluble in a horizontal plane, mechanism beneath the type-wheel for revolving the same, a plurality of type-bearing plates or spindles carried by said type-wheel and capable of reciprocating vertically, a printing character carried by the upper end of each of said plates or spindles, an alignment finger adapted to engage with and lock said type-wheel, a hammer adapted to elevate one of said type-bearing plates or spindles when the wheel is locked, a rack bar carrying a platen mounted in the frame of the machine, a pawl or dog engaging with said rack bar, a finger plate pivoted to the frame of the machine and connections between said finger plate and said pawl or dog for feeding the rack bar intermittently, substantially as described.

10. In a typewriting machine, the combination of a type-wheel revoluble in a horizontal plane, mechanism beneath the type-wheel for revolving the same, a plurality of type-bearing plates or spindles carried by said type-wheel and capable of reciprocating vertically, a printing character carried by the upper end of each of said plates or spindles, an alignment finger adapted to engage with and lock said type-wheel, a hammer adapted to elevate one of said type bearing plates or spindles when the type-wheel is locked, a rack bar carrying a platen mounted in the frame of the machine, a pawl or dog engaging with said rack bar, a finger plate 31, pivoted to the frame of the machine, connections between said finger plate 31 and said pawl or dog for retracting the same, a spring connected with said pawl or dog for advancing the same and feeding the rack bar intermittently, a finger plate 40, pivoted to the frame of the machine and overlapping the finger-plate 31, and connections between said finger plate 40 and said alignment finger and hammer for simultaneously operating said alignment finger and said hammer, substantially as described.

11. In a typewriting machine, the combination of a ribbon carrying spool provided with ratchet teeth, a feed pawl and detaining dog, said dog being provided with a finger overlapping said pawl, whereby, by the movement of the pawl, the dog is moved out of engagement with the ratchet teeth, substantially as described.

12. In a typewriting machine, the combination of a type-wheel revoluble in a horizontal plane, mechanism beneath the type-wheel for revolving the same, a plurality of type-bearing plates or spindles carried by said type-wheel and capable of reciprocating vertically, a printing character carried by the upper end of each of said plates or spindles, an alignment finger adapted to engage with and lock said type-wheel, a hammer adapted to engage with one of said type-bearing plates or spindles when the wheel is locked, a finger plate pivoted to the frame of the machine, connections between said finger plate and said alignment finger and said hammer for simultaneously operating said alignment finger and said hammer, two ribbon carrying spools, one on each side of the type-wheel, an ink ribbon extending from said spools over the periphery of the type-wheel, ratchet teeth on one of said spools, and a pawl carried by said finger plate and engaging with said ratchet teeth, substantially as described.

545,404. ELECTRICALLY-OPERATED MINE-CAR. HENRY B. DIERDORFF, Columbus, Ohio. Filed Dec. 24, 1889. Serial No. 334,906. (No model.)



Claim.—1. A mine car having a body or frame supported upon the track wheels and constructed of metal throughout in several parts separable on central vertical planes of division, and adapted to be bolted together, substantially as set forth.

2. A mine car having a body or frame work supported upon track wheels formed of several cast iron sections C C bolted centrally together as at c^1 c^2 and having bearings or means of supporting the axles and car shafting, substantially as set forth.

3. A mine car having a frame or body formed of separable sections of cast iron bolted together at points near their ends, in combination with the track wheels and their axles on the under side of said cast iron frame, a shaft for transmitting power to said axle, mounted in bearings on said frame, said shaft and said axles being in substantially the same plane, and a motor mounted on said frame above said shaft and transmitting power thereto, substantially as set forth.

4. A mine car having a frame work or body separable in central vertical plane, in combination with the motor mounted on said frame, the track wheels, and the axles therefor, mounted in bearings under the frame, and gearing for transmitting power from said motor to said axles, substantially as set forth.

5. In a mine car the combination of the track wheels, the axles, the platform, the electric motor, the gearing connecting said motor with the axle, the commutator brushes, the brush reversing lever, the brush adjusting lever, independent of said brush reversing lever said levers being in proximity to each other, substantially as set forth.

6. In a mine car the combination of the platform the track wheels, the axles, the electric motor having an armature shaft arranged transversely of the car, said motor being arranged substantially as set forth to provide a free space for the operator, the two sets of reversible or interchangeable brushes the rocking devices for adjusting the brushes around the commutator and the levers N and O situated transversely to the armature shafts and projecting horizontally toward the operator's space, substantially as set forth.

7. In, a mine car, the centrally open rectangular main frame formed in two parts of cast metal, each part being cast with an inwardly extending flange or plate C^2 and comprising a side bar and the inwardly turned part of a cross or end bar at each end of the side bar, means for connecting rigidly the inwardly turned parts of the end bars, the axles supported on the under sides of the two side sections of the main frame, each axle having a gear wheel between the sides of the main frame, and a power shaft also supported on the under side of the main frame, and geared to both of said wheels, substantially as set forth.

8. In a mine car, the combination of the centrally open main frame, the armature shaft F^3 above the main frame, a countershaft G, the spur gearing connecting the shafts F^3 and G, the shaft E below the shaft G, the spur gearing connecting said shafts G and E, and the gearing connecting the said shaft E with the axles, the said gearing being situated in the central open space of the said main frame, substantially as set forth.

9. A mine car having a centrally open rectangular main supporting frame formed of two sections of cast metal separable on the central longitudinal plane, means for rigidly fastening together, the said two sections, in combination with the cast metal fenders S' S' detachably secured to the said rectangular frame there being one of said fenders at each end of the frame, substantially as set forth.

10. In a mine car, the combination with the main frame, the axles beneath said frame, the shaft E, the gearing connecting the said shaft with the said axles, the shaft G, the gearing connecting the shaft E with the shaft G, the last two said gearings being arranged between the sides of the main frame, the transverse engine or armature shaft, the pinion thereon and the gear wheel on shaft G meshing therewith, said pinion or gearing being outside of the vertical planes of the space between the sides of the frame, substantially as set forth.

11. In a mine car, the combination with the main frame or truck, of the driving wheels having bearings therein, the frame secured to the truck, the motor mounted on said frame, an intermediate shaft, intermediate reducing gearings between the motor and the shaft, and connections between the shaft and the driving wheels, substantially as set forth.

12. In a mine car, the combination with the truck or frame, the driving wheels having bearings therein, the frame rigidly mounted on the said truck, the motor mounted on said frame, an intermediate or counter shaft, reducing gears between the motor and said shaft, and spur gearing connecting said shaft with said driving wheels, substantially as set forth.

13. In a mine car the combination with the main frame having the side bars C, C', driving wheels, and the axles therefor mounted on said side bars of the plate mounted on said side bars and having motor supporting standards, a shaft journaled in bearings on said plate, a motor mounted on said standards, gearing connecting said motor and said shaft, and power connections between said shaft and said axles, substantially as set forth.

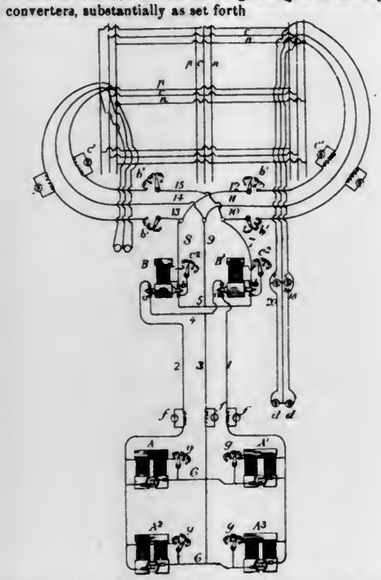
545,405. SYSTEM OF ELECTRICAL DISTRIBUTION. THOMAS A. EDISON, Llewellyn Park, N. J. Original application filed Dec. 6, 1886, Serial No. 220,799. Divided and this application filed Aug 29, 1887. Serial No. 248,108. (No model.)

Claim.—1. In a system of electrical distribution, the combination of a source of electricity of high tension, a circuit extending therefrom, tension reducing converters in series across said circuit, translation circuits supplied by said converters and a conductor extending from between said converters to the source of supply, substantially as set forth.

2. In a system of electrical distribution, the combination of a source of electricity of high tension, a circuit extending therefrom, tension reducing converters having their primary circuits in series across said circuit, a low tension circuit extending from the secondary circuits of said converters, said secondary circuits being joined in series, translating devices in multiple series across said low tension circuit, a conductor extending from between the translating devices to the secondary converter circuits, and a conductor extending from between the primary converter circuits to the high tension source, substantially as set forth.

3. In a system of electrical distribution, the combination of a main station or source of supply, a circuit extending therefrom, to a sub station, a circuit extending from said sub-station supplying translating devices, and means at the sub-station for regulating the generation of current at the main station, substantially as set forth.

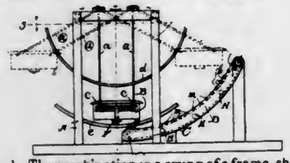
4. In a system of electrical distribution, the combination of a source of electricity of high tension, a circuit extending therefrom, rotating converters having their high tension or primary coils connected with the high tension circuit and their secondary coils discharging a current of low tension, and means for regulating the field magnets of said convertera, substantially as set forth



5. In a system of electrical distribution, the combination of a source of electricity of high tension, a circuit extending therefrom, rotating converters having their primary coils connected with said high tension circuit and their secondary coils discharging a current of low tension, and a circuit connected with said secondary coils for energizing the field magnets of said converters, substantially as set forth

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545,406. GIANT SWING. ELMER E. HIGINBOTHAM, Chicago, Ill. Filed Dec. 8, 1894. Serial No. 531,268. (No model.)



Claim.—1. The combination in a swing of a frame, shafts mounted in the frame so as to rock therein, hangers secured to the shafts, a car suspended on the hangers, a propeller arranged to travel in concave guides beneath the car, means for forcing the propeller up such guides, a trigger on the car and a lever connected to the trigger whereby the trigger can be engaged with the propeller or disengaged therefrom; substantially as described.

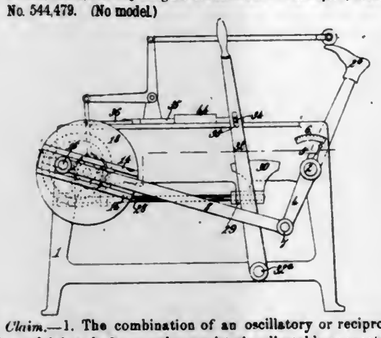
2. The combination in a swing, of a frame, concave guide rails on the frame, shafts mounted in the frame so as to rock therein, hangers secured to the shafts, a car suspended on the hangers between the concave guides, a propeller arranged to travel in concave guides beneath the car, concave guides, means for forcing the propeller up such guides, a trigger on the car and a lever connected to the trigger, whereby the trigger can be engaged with the propeller or disengaged therefrom; substantially as described.

3. In a swing consisting of a frame, guides thereon, rocking shafts therein, hangers and a car suspended by the hangers, a trigger consisting of a pivotal engaging piece, a roller in the upper end of such pivotal engaging piece, a roller mounted in a rigid frame, a lever and a block secured to the lever so as to be raised from between the rollers and forced into position between such rollers by the movement of the lever, and a propeller with which the trigger is engaged and disengaged by the movement of such lever; substantially as described.

4. In a swing consisting of a frame, guides thereon, rocking shafts therein, hangers and a car suspended by the hangers, the combination of concave guide rails underneath the car, and a brake within the car, such brake consisting of a frame arranged to be in contact with the concave rails and to be disengaged therefrom, and means for raising and lowering the brake; substantially as described.

5. In a swing consisting of a frame, guides thereon, rocking shafts therein, hangers movable between the guides, and a car suspended by the hangers, the combination of concave guide rails beneath the car, and a brake within the car arranged to be brought in contact with the concave rails and to be freed from contact therewith, such brake consisting of a vertically movable block, a screw for forcing the block down and for raising it up, and rollers mounted in the block, such rollers being in contact with the concave rails when the block of the brake is forced down; substantially as described.

545,407. VARIABLE-MOTION MECHANISM FOR SOLE-LEVELING OR OTHER MACHINES. EDWARD C. JUDD and FREDERICK W. COY, Boston, Mass., said Coy assignor to said Judd. Filed Apr. 4, 1895. Serial No. 544,479. (No model.)



Claim.—1. The combination of an oscillatory or reciprocatory device, a driving-shaft, a crank or wrist-pin adjustably connected with the driving-shaft, a cam shiftable along the length of the shaft and in operative connection with the crank or wrist-pin for adjusting the latter relatively to the center of motion, means for shifting and holding the cam stationary in connection with the crank or wrist-pin while the latter and the shaft rotate, and means for shifting the cam and locking it and the crank or wrist-pin together when the desired adjustment of the crank or wrist-pin is effected.

2. The combination of an oscillatory or reciprocatory device, a driving-shaft, a disk or wheel secured to the driving-shaft and having an adjustable crank or wrist-pin, a connection between the oscillatory or reciprocatory device and the crank or wrist-pin, crank or wrist pin adjusting-devices mounted on the driving-shaft and adapted to be thrown into and out of engagement with the said shaft, a lever, a rod connected with the lever, and a lever detachably connected with the rod and actuated at intervals by a part of the crank or wrist-pin adjusting-devices mounted on the driving shaft, for severing and establishing the operative connection between the detachably connected rod and lever.

3. The combination of a rotary driving-shaft, a radially adjustable crank or wrist-pin connected with the driving-shaft, a cam loosely mounted on the driving-shaft, movable along the length thereof and normally held in engagement with the driving-shaft and with a part of the crank or wrist-pin, devices for shifting the cam on the shaft and locking said cam thereto and in engagement with a part of the crank or wrist-pin, devices for locking the cam stationary in operative connection with the crank or wrist-pin while the latter and the driving-shaft continue to rotate, and lever mechanism for shifting the cam on the driving-shaft from one of said locking devices to the other.

4. The combination with a machine having an oscillatory or reciprocatory device or member, and a rotary-shaft, of a disk or wheel fixed to the shaft and having an adjustable crank or wrist-pin in operative connection with the oscillatory or reciprocatory device or member, a cam movable along the length of the shaft and engaged with a part of the crank or wrist-pin for adjusting the latter relatively to the center of the shaft, a rock-shaft having devices connecting it with the cam for shifting the latter along the length of the rotary-shaft toward and from the disk or wheel which carries the crank or wrist-pin, a lever engaged with a part of the rock-shaft for turning the latter to shift the cam when said lever is actuated, and means for locking the cam either to the disk or wheel or to a fixed part of the frame.

5. The combination with a machine having an oscillatory or reciprocatory device or member, and a rotary-shaft, of a disk or wheel fixed to the shaft and provided with a radially adjustable crank or wrist-pin, a cam shiftable on the shaft and acting upon the crank or wrist-pin to adjust the latter relatively to the center of the shaft, a clutch for connecting and disconnecting the cam and the disk or wheel, a clutch for connecting and disconnecting the cam and a fixed object, a pivoted swinging lever, and connections between the lever and the cam for shifting the latter on the rotary shaft to engage one or the other clutch.

6. The combination of a rotary-shaft carrying a shoe-jack, a leveling-roll under which the shoe-jack oscillates, travel or stroke-changing mechanism in operative connection with the rotary-shaft and actuated whenever required by a moving part of the machine to change or vary the extent of motion or travel of the jack without stopping the operation of the power-transmitting shaft, an index or scale, and a pointer moved by the travel or stroke-changing mechanism over the index or scale to indicate the extent of motion of the oscillatory shaft which carries the shoe-jack.

7. The combination with a machine having an oscillatory or reciprocatory device or member, and a rotary-shaft, of a disk or wheel provided with a crank or wrist-pin adjustable relatively to the center of the shaft, a link or pitman connecting the crank or wrist-pin with the oscillatory or reciprocatory device or member, a cam mounted on the rotary-shaft and acting upon the crank or wrist-pin to shift the latter toward or from the center of the shaft, devices for shifting the cam into engagement with the disk or wheel, devices for shifting the cam out of engagement with the disk or wheel, and devices which hold the cam stationary when out of engagement with the disk or wheel while the rotary shaft and the crank or wrist-pin continue to rotate.

8. The combination with a machine having an oscillatory shaft, and a rotary driving-shaft, of a crank-arm on the oscillatory shaft, a disk or wheel having an adjustable crank or wrist-pin, a link or pitman connecting said crank-arm with the crank or wrist-pin, a cam acting upon the crank or wrist-pin to shift the latter relatively to the center of the shaft, a clutch for connecting and disconnecting the cam and the disk or wheel, a clutch for connecting and disconnecting the cam and a fixed object, and suitable mechanism for shifting the cam on the shaft to engage one or the other clutch.

9. The combination with a machine having an oscillatory shaft provided with a crank-arm, and a rotary driving-shaft provided with a disk or wheel having a radially adjustable crank or wrist-pin, of a link or pitman connecting the crank or wrist-pin with the crank-arm of the oscillatory shaft, cam mechanism mounted on the driving-shaft and operating to adjust the crank or wrist-pin relatively to the center of said shaft, a hand-lever, connections between the hand-lever and the cam mechanism for causing the latter to adjust the crank or wrist-pin, an index or scale, and a pointer moved by oscillatory shaft over the index or scale to indicate the extent of motion of said oscillatory shaft.

10. In a machine having an oscillatory or reciprocatory device or member, a disk, plate, or wheel fixed to a rotary-shaft and provided with a crank or wrist-pin adjustable relatively to the center of motion and in operative connection with said device or member, a cam for varying the distance of the crank or wrist-pin with respect to the center of motion, means for holding the cam stationary whenever desired while the shaft and crank or wrist-pin continue to rotate, and means for locking the cam and the disk, plate or wheel together when the desired adjustment of the crank or wrist-pin is effected.

11. The combination with a machine having an oscillatory or reciprocatory device or member, and a rotary-shaft, of a disk or wheel fixed to the shaft and having an adjustable crank or wrist-pin in operative connection with the oscillatory or reciprocatory device or member, a cam mounted on the shaft for adjusting the crank or wrist-pin relatively to the center of the shaft, a rock-shaft in operative connection with the cam for shifting the latter toward and from the disk or wheel which carries the crank or wrist-pin, and a lever acting on a part of the rock-shaft for turning the latter to shift the cam.

12. The combination with a machine having an oscillatory or reciprocatory device or member, and a rotary-shaft, of a disk or wheel fixed to the shaft and provided with an adjustable crank or wrist-pin in operative connection with the oscillatory or reciprocatory device or member, a cam mounted on the shaft and acting on the crank or wrist-pin to shift the latter relatively to the center of the shaft, a rock-shaft connected with the cam for shifting the latter toward and from the disk or wheel, an inclined plate rigid with the rock-shaft, and a lever having an inclined guide engaging the inclined plate for turning the rock-shaft when the lever is actuated

13. The combination with a machine having an oscillatory or reciprocatory device or member, and a rotary-shaft, of a disk or wheel fixed to the shaft and provided with an adjustable crank or wrist-pin, a cam acting upon the crank or wrist-pin to shift the latter relatively to the center of the shaft, a clutch for connecting and disconnecting the cam and the disk or wheel, a clutch for connecting and disconnecting the cam and a fixed part of the main frame, and suitable mechanism for shifting the cam on the shaft.

14. The combination with a machine having an oscillatory or reciprocatory device or member, and a rotary-shaft, of a disk or wheel fixed to the shaft and provided with an adjustable crank or wrist-pin, a cam acting upon the crank or wrist-pin to shift the latter relatively to the center of the shaft, a clutch for connecting and disconnecting the cam and the disk or wheel, a clutch for connecting and disconnecting the cam and a fixed part of the main frame, a rock-shaft con-

nected with the cam for shifting the latter on the shaft, and a lever acting upon a part of the rock-shaft to turn the latter when the lever is actuated.

545,408. BICYCLE DRIVING MECHANISM. THOMAS J. LINDSAY, Lafayette, Ind. Filed Oct. 9, 1894. Serial No. 525,352. (No model.)

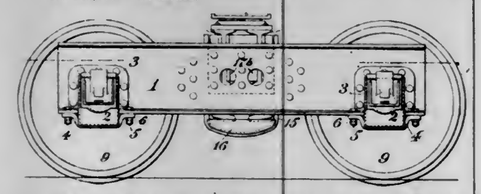


Claim.—1. The combination, in a bicycle driving mechanism, of the pedal shaft mounted in the usual surrounding shell forming part of the bicycle frame, and provided with pinions upon its ends, and the usual sprocket or chain wheel; structures secured to the shell by suitable interposed parts, one of which incloses or forms a shield for the sprocket wheel or chain; ball races in said structures; rings surrounding said structures, and bearing on the balls in said ball races, and extending out and forming the pedal arms, said rings being provided with internal gears which engage with the pinions on the pedal shaft; and guard strips which hold the balls from dropping out of place when the sides of the structure may be removed, substantially as shown and described.

2. The combination, in a bicycle driving mechanism, of the pedal shaft mounted in suitable bearings in a surrounding shell or casing forming part of the bicycle frame, and provided with pinions upon its ends, and the usual sprocket or chain wheel; structures secured to the shell by suitable interposed parts, one of which incloses and forms a shield for the sprocket or chain wheel; ball races in said structures; rings surrounding said structures, and bearing on the balls in said ball recesses, and extending out and forming the pedal arms, said rings being provided with internal gears which engage with the pinions on the pedal shaft; said several parts being arranged and operating substantially as set forth.

3. The combination, in a bicycle driving mechanism, of the usual pedal shaft; pinions on the ends of said pedal shaft; a casing structure secured to the bicycle frame-work composed of two sides united together by transverse rivets or bolts, and each having near the upper end one side of a ball race; and pedal arms formed at their inner ends into rings embodying internal gears adapted to engage with and drive said pinions, and provided with surfaces on each side of said gears which form the other sides of said ball races; and balls inserted in said ball races; each group of mechanism being thus provided with two ball races, one on each side of the engaging gears, substantially as shown and described.

545,409. CAR-TRUCK. ALBERT R. MANSFIELD, Salem, assignor of one-half to Samuel M. Felton, Cincinnati, Ohio. Filed May 9, 1895. Serial No. 548,703. (No model.)



Claim.—1. In a car truck, the combination, substantially as set forth, of two metal beam side frame members, commercial channel bar transoms connecting said side frame members, spring supports formed of plates of metal of substantially U section interposed between and connected to the transoms, springs resting on said spring supports, and a metal beam bolster supported on said springs.

2. In a car truck, the combination, substantially as set forth, of two metal beam side frame members, metal beam transoms connecting said side frame members, spring supports formed of plates of metal of substantially U section interposed between and connected to the transoms, springs resting on said spring supports, and a bolster formed of two connected commercial I beams and supported on said springs.

3. In a car truck, the combination, substantially as set forth, of two metallic bolster beams, and distance pieces each formed of two channels fitted in box form between, and secured to, the webs of the bolster beams near one end thereof.

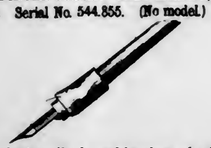
4. In a car truck, the combination, substantially as set forth, of two metallic bolster beams, distance pieces interposed between and secured to said beams at or near their ends, and chafing pieces formed of plates bent into the form of channels with interposed and side flanges and secured to the outer sides of the bolster beams.

5. In a car truck, the combination, substantially as set forth, of a side frame member formed of a commercial I beam, cut to required length, and having axle box recesses cut in its web and the flanges on one of its sides near its ends, and angle plates bent into substantially U form and riveted to the beam around the tops and sides of the axle box recesses.

6. In a car truck, the combination, substantially as set forth, of two transom beams a spring support connected thereto and formed of a continuous plate of metal bent into substantially U form, and a spring seat fitting in the curved central portion of the spring support and having an upper face adapted to serve as a bearing for a spring or springs.

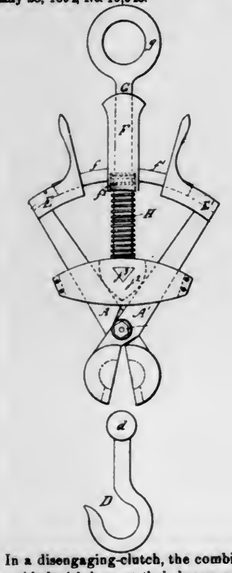
7. In a car truck, the combination, substantially as set forth, of a metal beam side frame member, of commercial rolled form, having an axle box recess near each of its ends, an angle plate bent into substantially U form and riveted to the beam around the top and sides of each axle box recess, and axle boxes fitting in said recesses and held rigidly to the frame member.

545,410. FINGER-GUARD. ABEL MIEHLER, Philadelphia, Pa. Filed Apr. 8, 1895. Serial No. 544,855. (No model.)



Claim.—The herein described combination, of a holder 3, a body 1, concaved surface 4, projections 5 and 6, and surfaces 7, whereby said projections are blended with the body, as shown and described.

545,411. DISENGAGING CLUTCH. ORBY C. MOOTHAM, Bournemouth, assignor of one-fourth to James Grieve Lorrain, London, England. Filed Dec. 5, 1894. Serial No. 530,852. (No model.) Patented in England May 23, 1894, No. 10,048.



Claim.—1. In a disengaging-clutch, the combination of two fulcrumed levers provided with jaws at their lower ends, a yoke loosely embracing the upper ends of the levers, a suspension-rod fastened at its lower end to the yoke, a collar-piece guided on the rod, above the yoke, and provided with means for guiding the upper ends of the levers, and an expansion-spring interposed between the yoke and the collar, substantially as set forth.

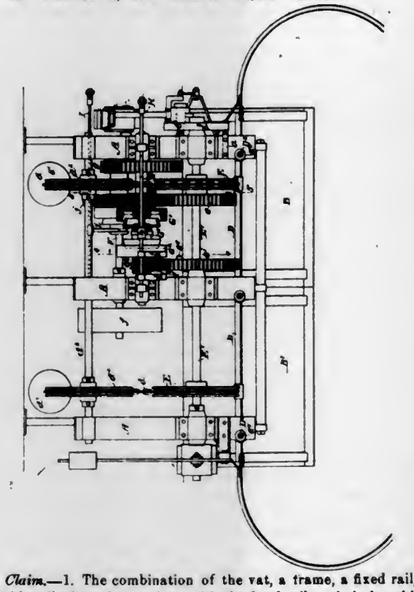
2. In a disengaging-clutch, the combination of two fulcrumed levers provided with jaws at their lower ends, a yoke loosely embracing the upper ends of the levers, a suspension-rod fastened at its lower end to the yoke, a collar-piece guided on the rod, above the yoke, and provided with curved side-arms for guiding the upper ends of the levers, and an expansion-spring interposed between the yoke and the collar, substantially as set forth.

3. In a disengaging-clutch, the combination of two fulcrumed levers provided with jaws at their lower ends, a yoke loosely embracing the upper ends of the levers, a suspension-rod connected with the yoke and provided with a ring at its upper end, a collar-piece provided with a recess in its lower end and having laterally-projecting arms for guiding the upper ends of the levers, and an expansion-spring resting at its lower end upon the yoke and seated at its upper end in said recess, substantially as set forth.

4. In a disengaging-clutch, the combination of two fulcrumed levers provided with jaws at their lower ends, guide-wings fixed to the upper ends of the levers, a yoke loosely embracing the upper ends of the levers below said guide-wings, a suspension-rod connected with the yoke, a collar-piece provided with side-arms guided in said wings, and an expansion-spring interposed between the yoke and the collar, substantially as set forth.

5. In a disengaging-clutch, the combination of two fulcrumed levers provided with jaws at their lower ends, guide-wings fixed to the upper ends of the levers and provided with upwardly-projecting extension-pieces, a yoke loosely embracing the levers above their pivot, a suspension-rod connected with the yoke, a collar-piece provided with side-arms guided in said wings, and an expansion-spring interposed between the yoke and the collar, substantially as set forth.

545,412. PICKLING-MACHINE. LOUIS N. MCCARTER, Norristown, Pa. Filed Jan. 18, 1895. Serial No. 535,402. (No model.)



Claim.—1. The combination of the vat, a frame, a fixed rail, a movable rail adapted to register with the fixed rail, a chain by which the movable rail is suspended, a shaft having a wheel over which the chain passes, a driven shaft geared to said wheel, shifting mechanism so arranged that the movable rail, can be raised or lowered and mechanism for vertically reciprocating the rail when lowered, substantially as described.

2. The combination of a vat, a frame, a fixed rail and a movable rail, a chain by which the movable rail is suspended, a counterbalance for the rail, a crate adapted to the rails, a driving shaft, a driven shaft, a chain wheel thereon over which the chain passes, two sets of gears and clutches through which motion is imparted from the driving shaft to the driven shaft, with means for shifting the clutches so as to raise or lower the movable rail with the crate, substantially as described.

3. The combination of the vat, a crate, the vertically movable rail, chains by which the rail is suspended, counterbalance weight on the end of each chain, a driven shaft, wheels thereon engaging with the chains, a driving shaft, an intermediate shaft, two clutches on said shaft, one clutch being connected to the driving shaft through one train of gears and the other clutch geared to the driven shaft through another train of gears, and mechanism for operating the clutches so that when one clutch is in gear the rail will be raised and when the other clutch is in gear the rail will be lowered, substantially as described.

4. The combination in a machine for pickling plates, of the vat, the crate, the movable rail, chains supporting said rail, a driven shaft having wheels engaging with the chain, means for raising and lowering the rail through the medium of the shaft, a crank pin on said shaft an eccentric and an eccentric rod engaging with the pin, and means for driving said eccentric so that the crate immersed in the liquor will have a reciprocating motion, substantially as described.

5. The combination of the vat, the crate, the movable rail, chains supporting said rail, a counterbalance for the crate, a driving shaft and a driven shaft, a wheel on said driven shaft engaging with the chains, friction clutches through which motion is imparted from the driving shaft to the driven shaft, a lever for shifting the clutches, an eccentric and eccentric rod, a disk on the driven shaft having a pin with which the eccentric rod engages, a shifter for throwing the eccentric into and out of gear with the driving shaft, and a lever for disconnecting the eccentric rod from the pin, substantially as described.

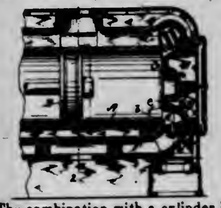
6. The combination in a crate for pickling machines, of the platform having transverse bars, the frame having longitudinal bars, rivets or bolts extending from the platform to the frame at the points where the bars cross, and means for suspending the crates in the liquor, substantially as described.

545,413. KNEE-SPREADER FOR HORSES. CHARLES L. PASSMORE, Fulton, Ill., assignor of one-half to Edwin L. Passmore same place. Filed May 9, 1894. Renewed June 25, 1895. Serial No. 554,051. (No model.)



Claim.—In a knee spreading device, the combination, with a clip block, of a clip, the free ends of which project through the block and are each provided with a nut, a follower and a set screw connected with the block, a bracket engaging with the clip at one end and having its opposite end bent at an angle and seated between the clip block and the nut on the lower end of the clip, a downwardly projecting spring, the upper end of which is bent at an angle and journaled transversely in the bracket, and a strap at the lower end of the spring for connecting it with the leg of a horse, substantially as set forth.

545,414. EXHAUST-VALVE FOR STEAM-ENGINES. JOHN W. SARGENT, Providence, R. I., assignor to the Rice & Sargent Engine Company, same place. Filed May 9, 1895. Serial No. 548,729. (No model.)



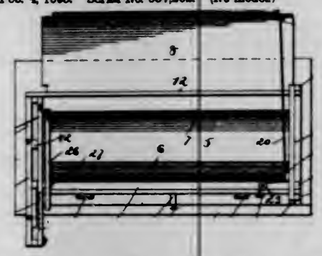
Claim.—1. The combination with a cylinder having an exhaust-port and a valve-seat intersecting the bore of the cylinder, of a valve cut away to allow the removal of the piston, without necessitating the removal of the valve.

2. The combination with a cylinder, having an exhaust-port and a valve-seat intersecting the bore of the cylinder of a valve having its front edge straight, and its rear edge curved, to allow the removal of the piston without necessitating the removal of the valve.

3. The combination with a cylinder having an exhaust-port, and a valve-seat intersecting the bore of the cylinder, of a valve provided with a steam passage, and having its front edge straight, and its rear edge overhanging the outer ends of the steam passage of the valve, and curved to allow the removal of the piston, without necessitating the removal of the valve.

4. The combination with a cylinder having an exhaust port, and a valve seat intersecting the bore of the cylinder, of a valve provided with a steam passage, and having its front edge straight, and its rear edge overhanging the outer ends of the steam passage of the valve, substantially as described.

545,415. ANIMAL-STOCK. CONRAD SCHECHER, Cleveland, Tex. Filed Feb. 4, 1895. Serial No. 537,262. (No model.)



Claim.—1. In a device of the character described, the combination with standards rising from the floor or support, and a rod passing through them; of a framework consisting of a flooring, one side rigidly connected with said flooring, an opposite narrow side also rigidly connected with said flooring, a movable side, hinges connecting it with the upper edge of the narrow side, braces for holding the parts in position, the whole being pivotally mounted on said rod, a neck clamp at one end of and carried entirely by the framework, a pivoted catch at this end of the framework detachably engaging the upper edge of the swinging side, a rope connected with the upper edge of this side at its opposite end and passing over pulleys, and a pin in the floor, to which said rope is detachably connected, all as and for the purpose set forth.

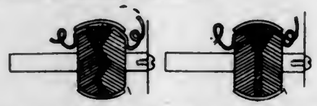
2. In a device of the character described, the combination with standards rising from the floor or support, and a rod passing through them; of a framework consisting of a flooring, one side rigidly connected with said flooring, a beam projecting inwardly from the upper edge of this side, a swinging side connected by hinges with the opposite edge of said flooring, braces for holding the parts in position, the whole being pivotally mounted on said rod, a neck clamp at one end of and carried entirely by the framework, and fastening means substantially as described connected with the upper edge of the swinging side and standing entirely at the upper end of the framework for detachably holding said side closed, all as and for the purpose set forth.

3. In a device of the character described, the combination with standards rising from the floor or support; of a rocking framework pivotally connected with the upper ends of said standards and consisting of a flooring normally resting on the support, diverging side braces at the ends connected at their upper extremities by cross braces, one side rigidly connected with one edge of the flooring and inclining outwardly therefrom to a point beneath the cross braces, a swinging side connected by hinges with the opposite edge of said flooring and adapted to fall outwardly between the side braces at the opposite side of the framework, longitudinal beams at the upper edges of the two sides, means for detachably fastening the swinging side when closed, a board closing one end of the framework for a short distance above its flooring, and a neck clamp substantially as described connected with the upper edge of this board, all as and for the purpose set forth.

4. In a device of the character described, the combination with standards rising from the floor or support, a framework pivotally connected with said standards and consisting of a flooring, one fixed side, one swinging side, and means for fastening the swinging side when closed; of a hook and eye for holding the framework when moved to its tilted position, a board rising from the flooring for a short distance at one end of the framework, a bar pivoted to the upper edge of this board and extending through a guide at the top of the framework, a lever also pivoted to the upper edge of this board beyond the fixed side and moving in said guide, a ratchet on the latter with which the lever engages, and a link connecting the lever and bar at a point above the guide, all as and for the purpose set forth.

545,416. TELEPHONE. GEORGE F. SHAVER, Yonkers, N. Y., assignor to Amy R. Shaver, same place. Filed June 8, 1895. Serial No. 552,059. (No model.)

Claim.—1. In a telephone system a primary circuit which includes a battery the primary coil of an induction coil and a transmitter, in combination with a switch-lever and a mouthpiece attached to the lever and constructed and connected so that the primary circuit shall be opened by moving the mouthpiece and lever away from the transmitter and closed by moving the mouthpiece and lever into such position that the mouthpiece shall register with the face of the transmitter, substantially as described



2. In a telephone system, the combination of a conversing circuit, conversing apparatus therein, a shunt for shunting out the transmitting apparatus, and a transmitter mouthpiece for operating the shunt which opens the shunt when brought to register with the face of the transmitter, substantially as described.

3. In a telephone system, the combination of a conversing circuit, transmitter and receiver apparatus included therein, a shunt for shunting out this apparatus, a primary transmitting circuit, a circuit closer in the transmitting circuit operated with the shunt, so as to be opened whenever the shunt is closed and vice versa, and a mouthpiece for the transmitter to operate the shunt and circuit closer, substantially as described.

4. In a telephone system, the combination of a two-wire conversing circuit, conversing apparatus consisting of a receiver and a secondary induction coil included therein, a shunt for shunting out the conversing apparatus, a primary transmitter circuit including the transmitter battery and primary induction coil, a circuit closer included therein and operating with the shunt, and a permanent grounding branch in which is included the signaling apparatus, substantially as described.

5. In a telephone system, the combination of a two-wire conversing circuit, conversing apparatus therein, a shunt to shunt out the conversing apparatus, a mouthpiece for the transmitter to operate the shunt, and a permanent grounding branch in which is included a signaling apparatus, substantially as described.

6. In a telephone system, a two-wire conversing circuit, conversing apparatus and a secondary induction coil included therein, a shunt for shunting out the conversing apparatus, and a primary transmitting circuit including a transmitter battery and primary induction coil, a circuit closer included therein, a mouthpiece to operate the shunt, and circuit closer, and a permanent grounding branch in which is included a signaling apparatus, substantially as described.

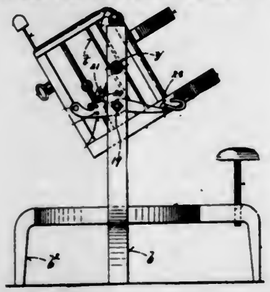
7. A telephone transmitter consisting of electrodes having faces presented toward each other and making an angle so as to form a trough, the loose carbon filling the trough, substantially as described.

8. A telephone transmitter having two electrodes with adjacent faces parallel throughout a portion thereof and diverging throughout a portion thereof with loose carbon filling the space between their faces, substantially as described.

9. A telephone transmitter having two electrodes with adjacent faces which are serrated and parallel throughout a portion thereof and diverging throughout a portion thereof, the space between the electrodes being filled with loose carbon, substantially as described.

10. A telephone transmitter consisting of electrodes having faces which are divergent throughout a portion thereof, metallic strips attached to their faces at their most widely separated points, the strips being connected to the line wires, with loose carbon filling the space between the faces of the electrodes, substantially as described.

545,417. COMBINATION-CHAIR. JAMES SHERIDAN and JOHN W. MCNULTY, Lawrence, Mass.; Walter Coulson executor of said John W. McNulty, deceased; said Coulson assignor to Ellen J. Lee, same place. Filed Jan. 12, 1894. Serial No. 496,686. (No model.)



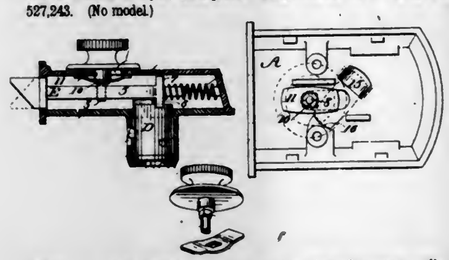
Claim.—1. In a chair of the character described, the body in combination with a seat vertically and pivotally adjustable thereon; locking mechanism therefor; the locking lever 18 pivoted to swing vertically on said body and having hooks engaging a projection on the seat and the bolt, *m*, for locking said lever, substantially as described

2. In a chair of the character described, the body in combination with a seat vertically and pivotally adjustable on clamping-bolts in said body; the lever, 18, pivoted on said body and having the hooks 22 and 25 engaging a projection on said seat and a bolt engaging in an opening for locking said lever.

3. In a chair of the character described, the base, A, in combination with the seat provided with rods, *t*, the bolts, *w*, for locking said rods to standards on the base, so that they are vertically and pivotally adjustable thereon; the lever, 18, pivoted to the standard and provided with hooks, 22, and 25 engaging projections on said seat; the bolt 20, engaging in an opening in said lever all being arranged substantially as described.

4. In a chair of the class described the base and standards in combination with the seat, C, vertically and pivotally adjustable thereon and provided with the rods, *t*, bolts, *w*, clamping said rods to the standards; the detachable bottom, *i*, the swinging bar, *k*; the swinging tray, 15; the lever, 18, the bolt, 20, locking the lever; and a projection on the seat engaging a hook on the lever all being arranged substantially as specified.

545,418. LOCK. FRANK SOLEY, Philadelphia, Pa., assignor of one half to William E. Dyer, same place. Filed Oct. 29, 1894. Serial No 527,243. (No model.)



Claim.—1. In a cylinder lock, the combination of a rotary cylinder, a shell, a mortise in the shell, segmental tumblers pivoted in the cylinder, a locking dog pivoted in the cylinder beyond the arc of said tumblers engaging with said tumblers and controlled thereby to enter or withdraw from the said mortise, and means independent of the rotation of the cylinder tending to move the dog out of said mortise toward the tumblers.

2. In a cylinder lock, the combination of a rotary cylinder, a shell, a mortise in the shell, segmental tumblers pivoted in the cylinder, a dog in the cylinder pivoted beyond the arc of said tumblers and controlled thereby to enter or withdraw from the said mortise, and a spring tending to move the dog out of said mortise toward the tumblers.

3. In a cylinder lock, the combination of a cylinder, a shell, a dog in the cylinder adapted to lock with the shell, a series of tumblers pivoted in the cylinder and formed in true segments with their arcs containing notches located in the arcs of the segments and engaging with the dog.

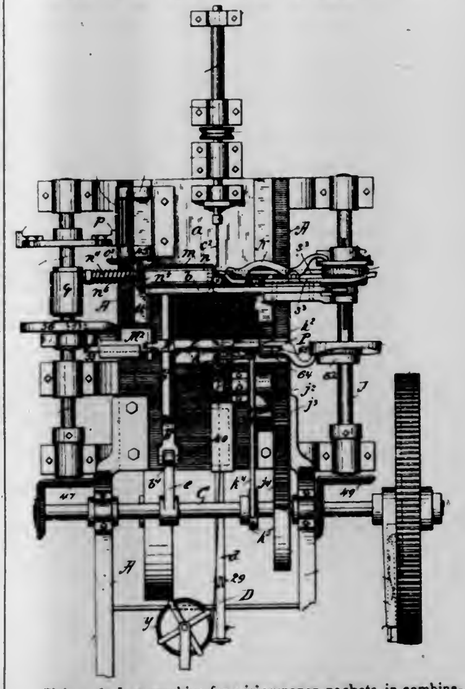
4. In a cylinder lock, the combination of a cylinder, a shell, a dog in the cylinder adapted to lock with the shell, a series of tumblers pivoted in the cylinder and formed segmentally with their arcs containing notches variably located and engaging with the dog; said dog being also pivoted in the cylinder and having a spur engaging with the several notched arcs of the tumblers.

5. In a latch lock, the combination with a suitable housing, and a latch bolt, of a throw off device consisting in a suitable external handle and its shank connected with the bolt, and rotating on an axis at right angles to the length of the bolt, and movable with the bolt in the direction of the length thereof, and a segmental spring plate bearing frictionally on the housing, connected rigidly to the shank of the said handle so as to rotate therewith, and a suitable stop in the housing with which the plate is adapted to engage by rotation when the bolt has been drawn back by the handle, and the latter partly rotated to throw off the latch.

6. The rotary cylinder provided with the retaining groove 65 therein, and the fixed shell provided with the retaining stud 66 for limiting the rotary movement of the cylinder, substantially as shown.

7. In combination, a cylinder having a mortise, a pack of tumblers pivoted in said mortise and disposed in parallel lines with the cylinder, mortises, as 31, formed in the sides of the cylinder mortise to receive and guide the key, and a key having a fork adapted to enter mortises 31, substantially as described.

545,419. MACHINE FOR WIRING PAPER PACKETS. LOUIS H. STELLMANN, Brattleborough, Vt., assignor of twenty-seven fiftieths to Frank J. Holman, same place, and Charles B. Hopkins, Hinsdale, N. H. Filed Feb. 23, 1895. Serial No. 539,325. (No model.)



Claim.—1. In a machine for wiring paper packets, in combination, a support and clamp for the packet, mechanism for perforating the packet whereby the wire may be introduced therethrough, devices for forming the eye in one extremity of the wire, and means for overturning an extremity of the wire in proximity to the face of the packet, substantially as described.

2. In a machine for wiring paper packets, in combination, a support and clamp for the packet, mechanism for perforating the packet, means for feeding the wire through the perforation, devices for forming the eye in one extremity of the wire, a shear for cutting off the wire from the length running from the supply, and means for overturning an extremity of the wire in proximity to the face of the packet, substantially as described.

3. In a machine for wiring paper packets, a support and clamp for the packet, and mechanism for perforating the packet, a feed motion for introducing the wire through the perforation, mechanism for forming a loop in one end of the wire, a mechanism for cutting off the wire from the length running from the supply, and devices for overturning both of the extremities of the wire and pressing them closely against the opposite sides of the packet, substantially as described.

4. In a machine for wiring paper packets, in combination, a support and clamp for the packet, and mechanism for perforating the packet, a feed motion for introducing the wire through the perforation, mechanism for forming a loop in one end of the wire, a mechanism for temporarily confining the wire at a point between its place of severing and the supply, a mechanism for cutting off the wire from the length running from the supply, and devices for overturning both of the extremities of the wire and pressing them closely against the opposite sides of the packet, substantially as described.

5. In a machine for wiring paper packets, in combination, a supporting table and clamp for the packet, mechanism for perforating the packet, a mechanism for feeding the wire through the perforation in the packet, an intermittently operating wire-confining device, and devices for forming an eye in one extremity of the fed wire, substantially as described.

6. In a machine for wiring paper packets, the combination with a shaft, table, the reciprocatory clamp-table, *b*, and a latch therefor, a wheel continuously loosely rotatable upon said shaft, and having clutch-teeth, a clutching dog carried by and revolving with said shaft, and a device for restraining the dog from clutching, of a treadle adapted to release the upper table to descend upon and clamp the packet, and to operate the clutch-restraining device for permitting

the engagement of the clutch-dog with the said wheel whereby the shaft will be rotated and the eye-forming and wire-bending devices which are primarily operated by said shaft, will be actuated, substantially as described.

7. In a machine for wiring paper packets, the combination with the means for supporting and clamping the packet, and the vertical bar, *d*, carrying the vertical drill-spindle and having connection at its lower end with the treadle, D, which is provided therefor and which has the spring-pawl, 38, of the shaft, C, having the arm, *g*, fixed thereon and having the continuously running wheel, F, loose thereon, the clutch-dog movably mounted on the said arm and having a spring for throwing it into clutch, a device normally restraining said dog from clutching and operated by the pawl on the treadle to release the dog to clutch upon the upwardly returning movement of the treadle, substantially as described.

8. In a machine for wiring paper packets, in combination, the counter-shaft, C, having the arm, *g*, fixed thereon and the continuously running wheel, F,—loose thereon,—which is provided with clutch teeth, the dog, g^3, pivoted on the arm, *g*, and having the offset depending projection, g^4, the sliding bar, *h*, having the cam projection, h^2, and the retracting spring, h^3, for said bar, the angular lever, *i*, having one arm connected to said bar, *h*, and the treadle having the pawl, 38, which is adapted to trip said angular lever, *i*, substantially as and for the purposes set forth.

9. In a machine for wiring paper packets, in combination, the main table, E, and the upper vertically movable gravity table, *b*, having the depending post, b^3, the latch, *f*, for engaging said depending post for temporarily supporting the table, the treadle-operated reciprocatory bar, *d*, which operates the said latch and the cam, *e*, for elevating the said post and table, substantially as and for the purpose set forth.

10. In a machine for wiring paper packets, the combination with the post, b^3, depending below the upper, movable. table, *b*, of the rock-shaft, f^2, having the angular arm, which constitutes the latch, *f*, and having the second arm, f^3, with the inclined projection, f^4, the spring, f^5, and the treadle-operated bar, *d*, provided with the arm, d^2, which has a portion thereof to impinge against the said incline, f^4, substantially as and for the purpose set forth.

11. In a machine for wiring paper packets, in combination, the driving-shaft, B, and the couuter-shaft, C, a pinion, B^2, fixed on the driving shaft and the gear-wheel, F,—which has the clutch-teeth, 34,—loose on the counter-shaft, a clutch-dog carried by the counter-shaft and adapted to clutch the wheel, F, a device for restraining the dog from clutching and a spring for pressing the dog to clutch, the movable upper table, *b*, and a latch therefor, and the fixed main table, E, the bar, *d*, carrying the drill spindle and operative to control the latching device for the upper table, a treadle having a connection with said bar, *d*, and having a pawl, 38, to move said clutch-dog-restraining-device, and means for duly returning the upper table to its elevated position, substantially as described.

12. In a machine for wiring paper packets, the combination with means for supporting, clamping, and perforating the packet, and a mechanism for feeding the wire through the perforation in the packet, of the rotary cylinder, *n*, having on its end the axial and eccentric studs, n^3, n^3, between which the extremity of the fed wire protrudes, and means for imparting, intermittently, rotational movements to the cylinder whereby the eccentric stud revolves about the axial one, substantially as and for the purpose set forth.

13. In a machine for wiring paper packets, the combination with means for supporting, clamping, and perforating the packet, and a mechanism for feeding the wire through the perforation in the packet of the endwise reciprocatory, rotary cylinder, *n*, having on its end the axial and eccentric studs, n^3, n^3, between which the extremity of the fed wire protrudes, means for imparting, intermittently, rotational movements to the cylinder whereby the eccentric stud revolves about the axial one, and also means for imparting, periodically, to the cylinder an endwise movement, substantially as and for the purpose set forth.

14. In a machine for wiring paper packets, the combination with means for supporting, clamping and perforating the packet, and a wire feed motion, of the rotary cylinder, *n*, having on its end the axial and eccentric studs, n^3, n^3, between which the extremity of the wire protrudes, means for imparting, intermittently, rotational movements to the cylinder, and the followers, *s*, *s*, movable at right angles to and at opposite sides of the axis of the cylinder, and in a line adjacent the end thereof, and means for imparting to them reciprocatory movements, substantially as and for the purposes set forth.

15. In a machine for wiring paper packets, the combination with the main table, E, and the vertically reciprocatory upper table, *b*, and means for operating it, drilling mechanism for the packet and a wire feed motion, of the rotary cylinder, *n*, mounted on and bodily movable with the upper table, and having on its end the axial and eccentric studs, n^3, n^3, between which the extremity of the fed-up wire protrudes, and means for imparting, intermittently, rotational movements to the cylinder, whereby the eccentric stud revolves about the axial stud, all substantially as described.

16. In a machine for wiring paper packets, the combination with the main table, E, and the vertical reciprocatory upper table, *b*, and means for operating it, a mechanism for perforating the packet and a wire feed motion, of the rotary cylinder, *n*, mounted on and bodily movable with the upper table, and having on its end the axial and eccentric studs, n^3, n^3, means for imparting, intermittently, rotational movements to the cylinder, the followers, *s*, *s*, also mounted on the upper table, movable at right angles to and at opposite sides of the axis of the cylinder, and in a line adjacent the end thereof, and means for imparting duly to them their reciprocatory movements, substantially as and for the purposes set forth.

17. In a machine for wiring paper packets, the combination with the main table, E, and the vertically reciprocatory upper table, *b*, and means for operating it, mechanism for perforating the packet and a wire feed motion, of the cylinder rotatably mounted on the upper table and having on its end the axial and eccentric studs and also provided with the gear-wheel, n^5, the shaft, H, having thereon the sector gears, *p*, *p*, the pinion, *o*, adapted to be engaged by the sector gears successively, and having as a part thereof the gear, o^3, in mesh with said gear, n^5, substantially as described.

18. In a machine for wiring paper packets, the combination with the cylinder, *n*, having the axial and eccentric studs, n^3, n^3, and having the spindle extension, n^4, and means substantially as described for imparting intermittently rotational movements to the cylinder, of the shaft, H, having thereon the cam, *q*, substantially as described.

19. In a machine for wiring paper packets, in combination, the slide, *a*, having the upper table, *b*, and the long pinion, *o*, carried by the slide, the cylinder, *n*, having studs, n^3, n^3, the spindle, n^4, and the gear, n^5, the shaft, H, having thereon the cam, *q*, and sector-gear, *p*, *p*, and the gear, o^3, movable with said pinion, *o*, and in mesh with gear, n^5, all substantially as and for the purposes set forth.

20. In a machine for wiring paper packets, the combination with means for supporting, clamping, and perforating the packet, and a wire-feed motion, of the rotary cylinder, *n*, having on its end the axial and eccentric studs, n^3, n^3, the followers, *s*, *s*, arranged near the end of, and at right angles to the length of, the cylinder, and having combined therewith the levers, s^2, s^2, the spring, s^5, and the operating cams, s^4, s^4, substantially as described.

21. In a machine for wiring paper packets, the combination with the table, E, and the movable upper table, *b*, and means for operating it, a drilling mechanism and a wire-feed motion of the rotary cylinder, *n*, on the upper table having on its end the axial and eccentric studs, the followers, *s*, *s*, arranged near the end, and at right angles to the length, of the cylinder, the shaft, J, having the cams, s^4, s^4, splined thereon and constrained to move vertically in unison with the upper table, the levers, s^2, s^2, operated by the cams, and operating the followers, and the retracting spring, s^5, all substantially as described.

22. In a machine for wiring paper packets, the combination with means for supporting, clamping, and perforating the packet, and a wire feed motion, devices for forming the eye in the up-fed extremity of the wire, of a means for severing the wire below the packet comprising the sliding shear-bar, M, the rotatable shaft, H, having thereon the cam for imparting the shearing movement to the shear-bar, and means for retracting the shear-bar, substantially as described.

23. In a machine for wiring paper packets, the combination with means for supporting, clamping, and perforating the packet, and a wire feed motion, devices for forming the eye in the up-fed extremity of the wire, of a means for severing the wire below the packet comprising the sliding shear-bar, M, having in connection or continuation thereof the separated members, 55 and 56, in different planes, and the rotatable shaft, H, having thereon in different planes the cams, 53 and 54, substantially as described.

24. In a machine for wiring paper packets, in combination, means for supporting, clamping, and perforating the packet, and a wire-feed motion and devices for forming the eye in one extremity of the wire, of the bars, L and M, movable below and above the packet, angularly to and intersecting the line of feed of the wire, a connection between said bars, L and M, whereby they move in unison, and a cam having an operating connection with one of said bars, substantially as and for the purposes set forth.

25. In a machine for wiring paper packets, in combination, means for supporting the packet and the upper movable clamping table, a drilling mechanism and a wire-feed motion, devices for forming the eye in one extremity of the wire, the bar, L, having a slide support upon the upper table, and the bar, M, having a slide support below the plane of support for the bottom of the package, the depending rod provided to the slide, L, and having a vertically sliding connection with the lower slide, M, and means for imparting reciprocatory movements to one of the slides, substantially as described.

26. In a machine for wiring paper packets, in combination, a supporting table having the intersecting perforations, 42 and 43, and a clamping device for the packet, mechanism for perforating the packet, a wire-feed motion, devices for forming an eye in one extremity of the up-fed wire, a shear for cutting off the wire from the length running from the supply, and an intermittently operating wire-confining device which consists in the stud or finger, *k*, movable in the perforation, 42, the lever, k^3, intermediately pivoted, another intermediately pivoted lever, k^4, the cam, k^2, and a retracting spring, substantially as described.

27. In a machine for wiring paper packets, in combination, means for supporting and perforating the packet, and the movable upper table, *b*, devices for forming the eye in the upper extremity of the wire, a shear for cutting off the wire from the supply below the packet, means for overturning the portions of the wire protruding above and below the packet, and pressers for forcing the overturned extremities of the wire against the opposite faces of the packet, the same consisting of levers, (the upper one of which is pivotally mounted upon the upper table) and both of which have swinging movements toward and from the faces of the packet and means for imparting to them their swinging pressing movements.

28. In a machine for wiring paper packets, in combination, means for supporting and perforating the packet, and the movable upper table, *b*, devices for forming the eye in the upper extremity of the wire, a shear for cutting off the wire from the supply below the packet, the reciprocatory slide-bars, M and L, the former for shearing and overturning one part of the wire, and the latter for overturning the opposite part of the wire, and pressers for forcing the overturned extremities of the wire against the opposite faces of the packet, the same consisting of levers (the upper one of which is pivotally mounted upon the upper table) and both of which have swinging movements toward and from the faces of the packet, and also endwise movements to present their extremities across, and to withdraw them from their positions across, the line of wire-feed and means for imparting to these pressers their swinging and endwise movements, substantially as described.

29. The presser, N, combined with upper table, *b*, on which it is mounted, the slide, N^2, on said upper table, and the double cam, *t*, splined on shaft, J, and operating to move the presser in its two directions, substantially as described.

30. In a machine for wiring paper packets, the combination of the main table, E, a feed mechanism for the wire, a mechanism for perforating the packet, and the wire-shearing and over-turning bar, M, of the presser, P, mounted to slide on the fulcrum upon which it has its swinging support, and the double cam, *v*, for imparting to the presser its swinging and its endwise movements, substantially as described.

31. The combination of cylinder, *n*, having axial stud, n^3, and eccentric stud, n^3, and means for imparting rotational movements to the cylinder, with the followers movable at right angles to the length of the cylinder at opposite sides thereof and having means for imparting thereto their approaching and receding movements, substantially as described.

32. In a machine for wiring paper packets, the combination of cylinder, *n*, having axial stud, n^3, and eccentric stud, n^3, and means for imparting rotational and also axial movements to the cylinder, with the followers movable at right angles to the length of the cylinder, at opposite sides thereof, and means for imparting thereto their approaching and receding movements, substantially as described.

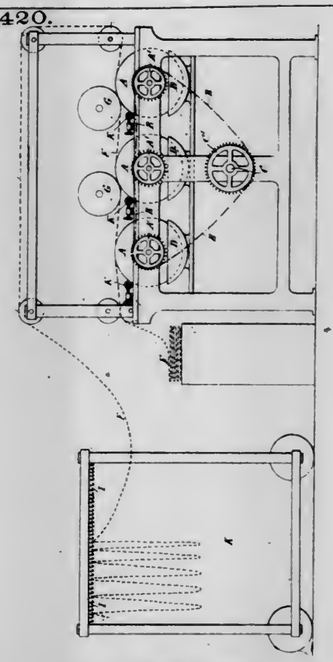
545,420. PROCESS OF DYEING PILE FABRICS. FRANK BAMFORD, Bradford, England, assignor to Lister & Co., Limited, same place. Filed June 24, 1895. Serial No. 553,855. (No model.)

Claim.—1. The hereinbefore described process for obtaining a design or figure of two or more different colors on pile fabrics, which consists in first embossing the pile surface of the fabric to press down or lay flat portions of the pile, then applying a dye to the parts of the pile which are left erect and afterward steaming and washing the fabric and raising the pile, which was previously embossed or pressed down, substantially as described.

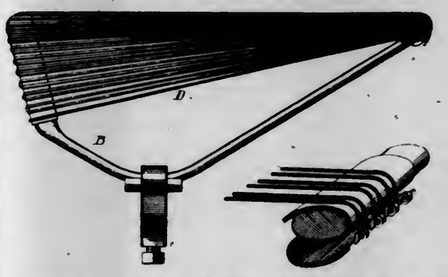
2. The hereinbefore described process for obtaining a design or figure of two or more different colors on pile fabrics, which consists in first embossing the pile surface of the fabric, to press down or lay flat portions of the pile, then applying a mordant or resist to the portions of the pile which are left erect and afterward dyeing the piece and steaming and washing and raising the pile, which was previously embossed or pressed down, substantially as described.

3. The hereinbefore described process for obtaining a design or figure of two or more different colors on pile fabrics, which consists in first embossing the pile surface of the fabric in the gray or undyed state, to press down or lay flat portions of the pile, then applying a dye to the parts of the pile which are left erect, then steaming and washing the fabric and raising the pile which was previously embossed or pressed down, and afterward dyeing the piece in a dye bath in the ordinary way, substantially as described.

545,420.



545,421. SADDLE FOR BICYCLES, &c. EDGAR B. BRACE, Stony Creek, Conn. Filed May 4, 1895. Serial No. 548,079. (No model.)



Claim.—1. A saddle having its seat composed entirely of substantially non-elastic strands, each strand being supported at one or both ends of said saddle by suitable yielding devices, substantially as described.

2. A saddle consisting of a frame B, yielding devices attached thereto, and substantially non-elastic strands extending from the forward to the rear end of said frame and held by the said yielding devices, substantially as and for the purpose specified.

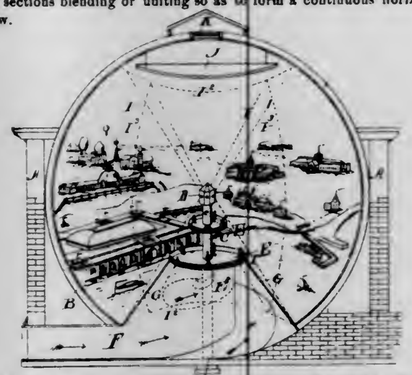
3. A saddle consisting of a frame B, yielding devices attached thereto at each end thereof, said yielding devices having hooked ends over which substantially non-elastic strands extending from the forward to the rear end of said saddle are hooked, substantially as and for the purpose specified.

545,422. REPRODUCING DEVICE. CHARLES A. CHASE, Chicago, Ill., assignor to the Chase Electric Cyclorama Company, of Illinois. Filed Jan. 25, 1894. Serial No. 498,054. (No model.)

Claim.—1. The method of reproducing views such as landscapes or the like, which consists in first making an image thereof in sections, then producing photographic slides of such sections, then reproducing by projecting from such slides the said section views simultaneously upon a receiving surface, the several section views joining or blending into each other so as to make a continuous reproduction.

2. The method of reproducing landscapes or the like, consisting in photographing the entire horizon from a given point, dividing the negatives or photographs into sections and preparing stereopticon plates from such sections, and then inserting said plates in a number of reproducers or stereopticons arranged so that the several sections

will be projected upon a receiving surface, the contiguous or adjoining sections blending or uniting so as to form a continuous horizon view.

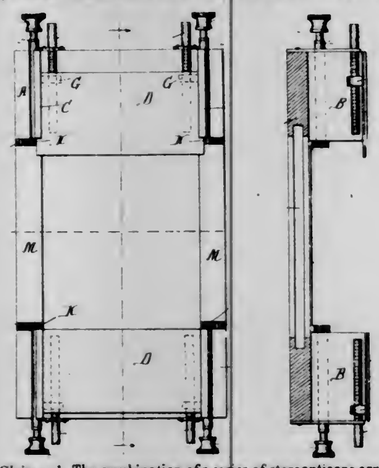


3. The combination in a reproducing device of a number of reproducers adapted each to reproduce a separate view, a receiving surface upon which said views are projected, said reproducers being associated with each other and with the receiving surface in such a manner that the several views reproduced by them are projected upon the receiving surface so as to be joined or blended into a continuous reproduction.

4. The combination with a polyhedral shaped apartment, of a number of reproducers or stereopticons grouped near the center of such apartment and a series of views, slides or plates taken from a given point, each reproducer adapted to project a separate view upon the wall of the apartment and arranged so that the several views are joined or merged together, whereby different views taken from a given point, each comprising part of the horizon, shall be reproduced upon the wall of said apartment so as to show a continuous view of the entire horizon.

5. The combination with an apartment of a polyhedral form, of a number of reproducers or stereopticons grouped near the center of such apartment and placed at an equal distance apart and a series of views, slides or plates taken from a given point, each reproducer adapted to project a separate view upon the wall of the apartment and arranged so that the several views are joined or merged together, whereby different views taken from a given point, each comprising part of the horizon, shall be reproduced upon the wall of said apartment so as to show a continuous view of the entire horizon.

545,423. STEREOPTICON PANORAMA MACHINE. CHARLES A. CHASE, Chicago, Ill., assignor to the Chase Electric Cyclorama Company, of Illinois. Filed Sept. 24, 1894. Serial No. 523,976. (No model.)



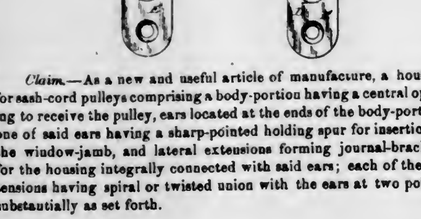
Claim.—1. The combination of a series of stereopticons arranged so as to project a horizon picture, with section views, slides or plates each containing slightly more than its proportionate amount of the horizon view, and means for reducing the light on the overlap portions so that the separate portions of the reproduced view will be blended into one substantially homogeneous view.

2. The combination of a series of stereopticons adapted to reproduce a horizon view, with a series of views, slides or plates, one for each stereopticon, each plate containing slightly more than its proportionate amount of the total picture, and movable shutters in advance of the views, slides or plates and adapted to cut off a portion of the light at the sides so as to blend and reduce the light of the overlapping portions of the reproduced picture.

3. The combination of a series of stereopticons adapted to produce a horizon picture, with a series of views, slides or plates and movable shutters located at the top and bottom of the pictures to be reproduced and adapted to be moved with relation to such picture or views, slides or plates so as to cut off the light and produce a uniform upper and lower surface of the complete picture.

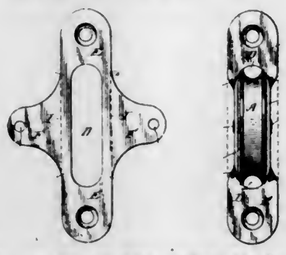
4. The combination with two or more stereopticons arranged so as to project adjacent portions of the same view upon a receiving wall, of a blending device associated with each stereopticon and adapted when properly manipulated to substantially obliterate the line of demarkation between the separate portions of the reproduced view.

545,424. PIPE-WRENCH. FRANK L. FELGER and ROBERT D. SHAFER, Fayette, Ohio. Filed Nov. 30, 1894. Serial No. 530,464. (No model.)



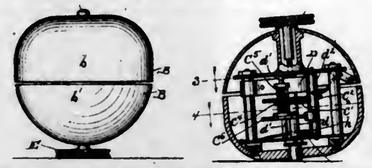
Claim.—A wrench having a fixed jaw integral with a handle and provided with a compoundly-curved serrated face, said fixed jaw and handle being longitudinally slotted and the slot extending in the jaw from the rear end to a point approximately at the center thereof, a swinging jaw having a concave serrated face and a reduced shank pivoted within said slot, the pivotal point of the shank being in advance of the rear end of the serrated face of the fixed jaw and said shank being extended beyond its pivotal point to form a tongue 6 of which one side provides an abrupt shoulder located within the slot of the handle in all positions of the swinging jaw and arranged approximately in the plane of the axis of movement of the jaw, the extremity of the swinging jaw being abrupt and being adapted to project beyond the end of the fixed jaw when the swinging jaw is in its normal position, and the front edge of the shank being adapted to form a stop to limit the insertion of an object between the jaws and determine the points of engagement of the serrated faces of the jaws with the object, and a spring located within the slot in the handle and permanently engaging said shoulder on the extension of the shank, said spring being concealed within the slot and the pressure thereof against the shoulder being approximately perpendicular to the plane of the shoulder in all positions of the swinging jaw, substantially as specified.

545,425. SASH-PULLEY. ESSINGTON N. GILFILLAN, Chicago, Ill., assignor of one-half to Harris A. Wheeler, same place. Filed Feb. 20, 1893. Serial No. 463,027. (No model.)



Claim.—As a new and useful article of manufacture, a housing for sash-cord pulleys comprising a body-portion having a central opening to receive the pulley, ears located at the ends of the body-portion, one of said ears having a sharp-pointed holding spur for insertion in the window-jamb, and lateral extensions forming journal-brackets for the housing integrally connected with said ears; each of the extensions having spiral or twisted union with the ears at two points, substantially as set forth.

545,426. BURGLAR-ALARM. ISAIAH L. HAUSER, Chicago, Ill. Filed May 7, 1895. Serial No. 548,411. (No model.)



Claim.—1. In a burglar alarm and call bell, the combination of a two part case or shell, a spring and a train actuated thereby mounted in one part of the case and a bell composing the other part, a lock to the train, a push button in the part of the case holding the spring and train, such push button extending beyond the surface of the part of the case containing the spring and train, and a thumb wheel on the other part of the case, such thumb wheel serving to wind the spring and also as a base on which the device can be set; the case having the center of gravity in the part thereof containing the push button and of such shape that when the device is not resting on the thumb wheel its stable position is one wherein the push button is forced in and the lock released by the weight of the device; substantially as described.

2. The combination in a burglar alarm and call bell of a two part case, a spring and a train mounted in one part of the case and a bell composing the other part of the case, an escapement to the train and a bell hammer secured to the escapement shaft, an arm secured to such escapement shaft, and a spring lever yieldingly maintained in engagement with the arm, with a push button in contact with the spring lever, such push button extending beyond the surface of the part of the case containing the spring and train and by which push button said spring lever can be forced out of engagement with the arm on the escapement shaft.

545,427. CAR-BRAKE. FRANK HENSLEIN, Jr., Philadelphia, Pa., assignor of one-third to Lizzie I. Hoffman, same place. Filed June 15, 1895. Serial No. 552,947. (No model.)



Claim.—1. In a car brake, the combination of a frame adapted to be secured to the under side of the car, a cog wheel rotatably mounted in said frame, brake operating shafts on the front and rear platforms of the car, connections between said shaft and said cog wheel, a pair of shafts having pinions at their outer ends, which mesh with said cog wheel, brake shoes and connections between said brake shoes and said drums, whereby upon operating the shafts upon the platform of the car, said brakes may be thrown down in contact with the rails, substantially as described.

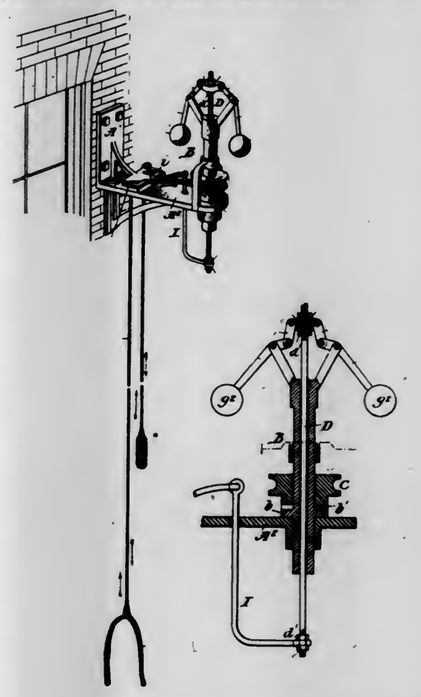
2. In a car brake, the combination of a frame adapted to be secured to the under side of the car, a cog wheel rotatably mounted in said frame, a pair of diametrically arranged arms projecting outwardly from said cog wheel, pitmen connected to the outer ends of said arms, brake operating shafts mounted on the front and rear platforms of the car, a flexible connection between said shafts and said pitmen, a pair of horizontally arranged shafts or drums having pinions on their outer ends meshing with said cog wheel, a block moving in ways in said frame, chains connecting said movable block and said shafts or drums, a pair of levers pivoted to a stationary block in said frame having brake shoes secured to their outer ends, rods connecting said movable block and said lever, and springs between said stationary and movable blocks, substantially as and for the purpose described.

545,428. FIRE-ESCAPE. FRED HUTCHINSON, Bird City, Kans. Filed Jan. 9, 1895. Serial No. 534,294. (No model.)

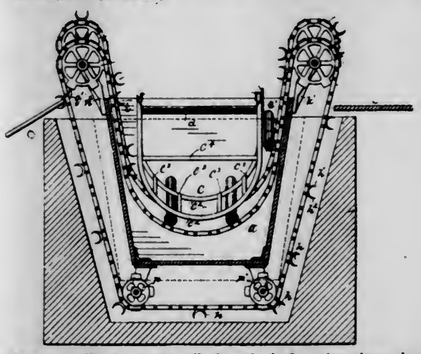
Claim.—1. A fire escape comprising a frame, a drum mounted on the frame a rope provided with a belt or the like passed around the drum, a plate over which the rope passes, a reciprocating rod, a brake attached to the rod and adapted to bear on the rope, and a ball governor attached to the reciprocating rod, substantially as described.

2. A fire escape comprising a frame, a drum mounted on the frame a rope passing around the drum, one end of the rope being provided with a belt or the like, and the other end being provided with a weight, a plate over which the rope passes, a reciprocating rod, a brake attached to the rod and bearing on the rope, and a ball governor attached to the rod, substantially as described.

3. A fire escape comprising a frame provided with means for attaching it to a window frame or the like, a drum mounted on the frame and provided with teeth, a vertical revoluble portion having teeth engaging those on the drum, a rope passed around the drum, a plate on the frame over which the rope passes, a reciprocating bar, a brake attached to the rod and adapted to bear on the rope where it passes over the plate, and a ball governor connected to the bar and receiving motion from the drum, substantially as described.



545,429. METHOD OF AND APPARATUS FOR COATING PIPE. DAVID T. LEWIS, Pittsburg, Pa., assignor of five-eighths to Wilbur F. McKelvy and James D. Glover, same place. Filed July 25, 1894. Serial No. 518,574. (No model.)



Claim.—1. The herein described method of coating pipe or bars consisting of carrying the same laterally and in an inclined position into and out of the bath, substantially as and for the purposes set forth.

2. The combination with a pot or tank for containing coating materials; of chain carriers having pipe rests or holders thereon, mounted on the pot so as to enter the bath on one side and pass out on the other side and so carry the pipe into and out of the bath at the other side of the pot, substantially as set forth.

3. The combination of a pot or tank for containing coating materials, chain carriers having pipe holders thereon mounted on the pot so as to enter the bath on side and pass out on the other side and so carry the pipe into and through and raise it out at the other side of

the pot, and a depending guide-frame entering within the pot to hold the pipe therein, substantially as set forth.

4. The combination of a pot or tank for containing coating materials; chain carriers having pipe holders thereon adapted to enter the bath on one side and to carry it through and raise it out at the other side of the pot, and a depending guide-frame entering within the pot to hold the pipe therein, said guide-frame being supported at the ends of the pot, substantially as set forth.

5. The combination of a pot or tank for containing coating materials; chain carriers having pipe holders thereon adapted to enter the bath on one side and to carry it through and raise it out at the other side of the pot, and a depending guide-frame entering within the pot to hold the pipe therein, said guide frame having a curved lower portion corresponding to the course of the chain carriers through the bath, substantially as set forth.

6. The combination with a pot for containing coating materials, of chain carriers having pipe holders thereon adapted to enter the bath at one side, carry the pipe through and raise it out at the side of the pot, and a protecting cover extending between the ends of the pot and covering the central part thereof, substantially as set forth.

7. The combination with a pot or tank for containing coating materials, of sprocket chains having pipe holders thereon adapted to enter the bath on one side and carry the pipe through and raise it out at the other side of the pot, and a vertical plate extending for the length of the pot at the entrance side, so as to form a flux box, substantially as set forth.

8. The combination with a tank or pot for containing coating materials, of a continuous chain having pipe holders thereon adapted to enter the bath on one side and carry the pipe through and raise it out on the other side and passing thence downwardly under the pot, and sprocket wheels on which such chain carriers are mounted, substantially as set forth.

9. The combination with a tank or pot for containing coating materials, of a continuous chain having pipe holders thereon, adapted to enter the bath on one side and carry the pipe through and raise it out on the other side of the pot, and passing thence downwardly under the pot and sprocket wheel on which such chain carriers are mounted, and a discharge guide in the course of the pipe, substantially as set forth.

10. The combination with a pot or tank for containing coating materials, of driving sprocket wheels at one side of the same, but on different horizontal planes and chain carriers passing around said sprocket wheels and into the bath in the pot and thence over sprocket wheels mounted on different horizontal planes, substantially as set forth.

11. The combination with a pot or tank for containing coating materials and a furnace surrounding the same, of chain carriers mounted on sprocket wheels on said pot and within said furnace, so as to pass in the course into and out of the bath in the pot, and thence under the pot into and out of the furnace chamber, substantially as set forth.

12. The combination with a tank for containing coating materials, and a furnace surrounding the same and having recesses therein, of chain carriers mounted on sprocket wheels and passing into and out of the bath in the pot, and thence through such recesses within the furnace chamber, substantially as set forth.

13. The combination with a tank for containing coating materials, of a skeleton frame depending in said tank, a chain carrier for carrying pipe through the coating material entering the tank on one side, passing below the skeleton frame and passing out of the tank at the other side, and having holders thereon of crescent shape and having hooks of the crescent extending out in both directions from the main body, substantially as set forth.

545,430. METHOD OF AND APPARATUS FOR COATING PIPE. DAVID T. LEWIS, Pittsburg, Pa., assignor of five-eighths to Wilbur F. McKelvy and James D. Glover, same place. Filed July 25, 1894. Serial No. 518,573. (No model.)

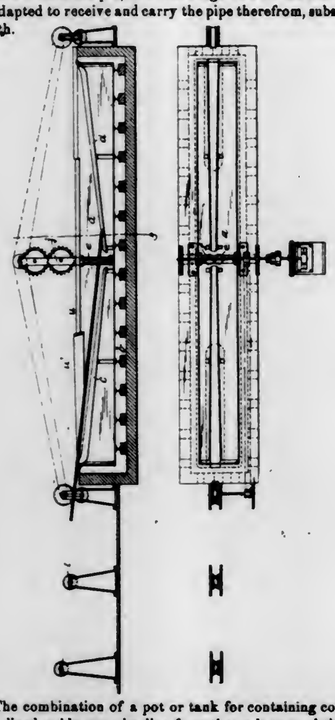
Claim.—1. The herein-described method of coating pipe, consisting in passing the pipe longitudinally and at an incline into the bath, entirely submerging the pipe in the bath and while it is so submerged carrying it longitudinally along therein, and finally carrying it through and out of the bath at an incline and at the opposite end, substantially as set forth.

2. A combination of a pot or tank for containing coating material, inclined guide-ways leading from the ends toward the center thereof, and vertical plain-faced feeding rolls in the pot between the inclined guide-ways, substantially as set forth.

3. The combination of a pot or tank for containing coating material, and vertical plain-faced feeding rolls in the pot, adapted to grasp the pipe and move it longitudinally through the bath and permit of the vertical motion therein, substantially as set forth.

4. The combination of a pot or tank for containing coating material, vertical plain-faced feeding rolls in the pot and entrance rolls at the forward end of the pot adapted to force the pipe forward into the vertical rolls within the pot, substantially as set forth.

5. The combination of a pot or tank for containing coating material, vertical plain-faced feeding rolls in the pot, entrance rolls at the forward end of the pot adapted to force the pipe forward into the vertical rolls within the pot, and discharge rolls at the other end of the pot adapted to receive and carry the pipe therefrom, substantially as set forth.



6. The combination of a pot or tank for containing coating material, inclined guide-ways leading from the ends toward the center, vertical plain-faced feeding rolls in the pot between the inclined guide-ways and entrance rolls at the forward end of the pot adapted to force the pipe along the forward inclined guide-ways into the vertical feeding rolls, substantially as set forth.

7. The combination of a tank or pot for containing coating material, vertical plain-faced feeding rolls in the pot, and a cover extending over the pot and having receiving and discharge openings leading from the ends toward the center of the same, substantially as set forth.

8. The combination of a pot or tank for containing coating material, inclined guide-ways within the pot leading from the ends toward the center, vertical plain-faced feeding rolls in the pot between the guide-ways and a series of guide-rolls in front of the forward end of the pot, arranged to hold the pipe at the same incline as the forward guide-way and direct it into the vertical feeding rolls in the pot, substantially as set forth.

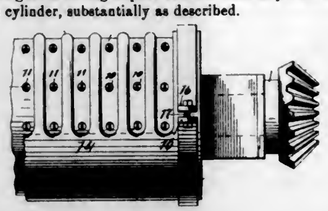
9. The combination of a pot or tank for containing coating material, vertical plain-faced feeding rolls in the pot, and means for adjusting the same laterally, substantially as and for the purposes set forth.

10. The combination of a pot or tank for containing coating material, a housing above the pot, a vertical roll depending into the pot and mounted in bearings in the housing, and a second vertical roll depending into the pot and mounted in sliding adjustable bearings in the housing, substantially as set forth.

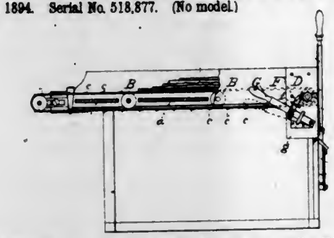
545,431. PICKER-STEM GUARD FOR COTTON-HARVESTERS. GEORGE LIEPENARD, Brooklyn, N. Y. Filed Sept. 27, 1894. Serial No. 524,231. (No model.)

Claim.—1. In a cotton harvester, the combination of a cylinder or stem having heads at its ends and hackle fingers or pins to project from said cylinder, with a curved plate or bar extending along said cylinder, and having projecting guards or fingers, a band passing around one of said heads and over one end of said plate or bar, means for clamping said band upon the said head to hold said plate or bar, and means for securing said plate or bar to the opposite head, substantially as described.

2. In a cotton harvester, the combination of a rotative cylinder or stem having peripheral apertures and hackle fingers or pins adapted to be projected through said apertures, with a curved plate or bar extending along said cylinder or stem and having a groove or recess A to permit free passage of said hackle fingers or pins, and guards or fingers extending from said plate and lying over said cylinder, said cylinder and guards having a space between them to permit free rotation of the cylinder, substantially as described.

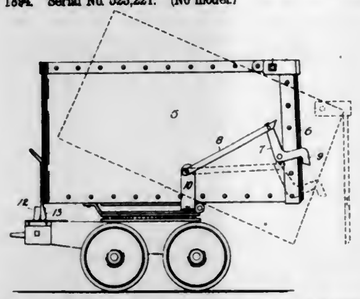


545,432. PIE-PLANT-CUTTING MACHINE. DAVID M. MEFFORD, Toledo, Ohio, assignor to Frank W. Chamberlain, same place. Filed July 28, 1894. Serial No. 518,877. (No model.)



Claim.—The combination of the feed box A, roller B' B", cleated belt C, ratchet wheel D, the hand lever G, the pawl F, and the hand operated knife H; the lever G, and the knife H being both within reach of a single operator whereby he is enabled to operate and control both the feed and the cut.

545,433. ORE-CAR. GEORGE E. TRUAX, Denver, Colo. Filed Sept 17, 1894. Serial No. 523,221. (No model.)



Claim.—In an ore car, the combination with the car-body and the door, of a metal strap applied transversely to the top of the door and having rearwardly extending projections embracing the outer surface of the car-sides, and suitable hinge pins engaging said projections, substantially as described.

545,434. KETTLE. ROBERT H. WILES, Freeport, and HARRY BITNER, Chicago, Ill. Filed Jan. 2, 1895. Serial No. 533,553. (No model.)

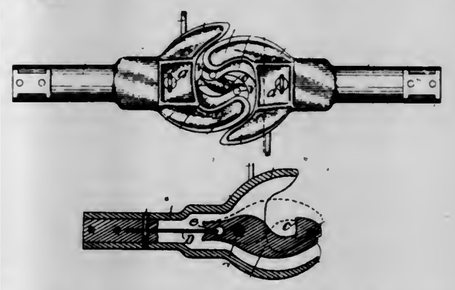


Claim.—1. The combination with a kettle of a bail hinged thereto and free to swing in one direction only from a position substantially at right angles to the top of the kettle, the bail being provided with an approximately central handle, adapted by its rotation to rotate the bail, and having a lateral extent affording leverage for such rotation.

2. The combination with a kettle, of a wire bail hinged thereto and free to swing in one direction only from a position substantially at right angles to the top of the kettle, the bail being formed with an approximately central integral skeleton handle having a width affording leverage for rotating the bail.

3. The combination with a kettle, of a bail formed of two pieces of wire having their outer ends hinged to the kettle, their inner ends being oppositely off-set and connected to form an open skeleton handle; substantially as shown and described.

545,435. CAR-COUPLING. JAMES H. DALY, Detroit, Mich., assignor of three-fourths to James McLaren, Clarence D. Brown, and James M. Stark, same place. Filed May 12, 1894. Serial No. 511,063. (No model.)



Claim.—1. In a car-coupler, the combination of the draw-head, the hook pivoted centrally therein upon a removable pin, said hook having a way in its opposite horizontal faces extending horizontally thereof across its point of pivot, the elbow lever pivoted in said head and engaging in the way in the undermost side of said hook in the rear of the pivot thereof, whereby said hook is made reversible in the draw-head.

2. In a car-coupler, the combination of the draw-head, the hook pivoted centrally therein, the shoulder on said hook concentric with its point of pivot lying within the draw-head, and the lug on the inner face of the draw head engaging said shoulder.

3. In a car coupler, the combination of the draw-head having a recess in one side of the mouth thereof, the hook pivoted in said mouth and adapted to swing into said recess, the point or engaging end of said hook having the vertically extending shoulders which project into line with the horizontal faces of said draw-head on each side of said recess.

4. In a car-coupler, the combination of the draw-head, the hook pivoted therein, said hook having a curved shoulder extending partially around its point of pivot concentric therewith and having a longitudinal way in its face crossing said point of pivot and opening through said shoulder, the elbow lever pivoted in the draw-head one end of which engages in said way in the hook, substantially as specified.

DESIGNS.

24,629. BUTTON OR BADGE. JAMES B. EVANS, Springfield, Mo. Filed July 1, 1895. Serial No. 554,649. Term of patent 3½ years.



Claim.—The design for a button or badge, made substantially as herein shown and described.

24,630. BADGE. WILLIAM CECIL BOWER, Birmingham, Ala. Filed July 2, 1895. Serial No. 554,770. Term of patent 3½ years.



Claim.—The design for a badge, substantially as shown and described.

24,631. STAIR-CARPET BUTTON. ROBERT H. WARREN, Newark N. J. Filed Aug. 1, 1895. Serial No. 557,903. Term of patent 7 years.



Claim.—The design for a stair-carpet button, substantially as herein shown and described.

24,632. STAIR-CARPET BUTTON. ROBERT H. WARREN, Newark, N. J. Filed Aug. 1, 1895. Serial No. 557,904. Term of patent 7 years.



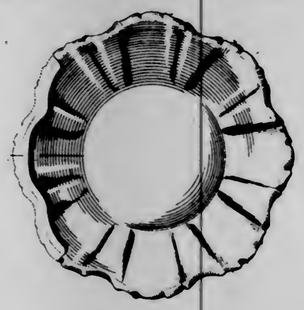
Claim.—The design for a stair carpet button herein shown and described.

24,633. PAPER-FASTENER. SAMUEL HY. CROCKER, London, England. Filed Apr. 10, 1895. Serial No. 545,247. Term of patent 14 years.



Claim.—The design for a paper fastener herein shown and described.

24,634. DISH. CHARLES EDWARD HAVILAND, Limoges, France. Filed July 26, 1895. Serial No. 557,247. Term of patent 7 years.





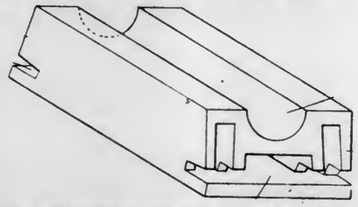
Claim.—The design for a dish, substantially as shown and described.

24,635. RAZOR-WIPER. WILLIAM H. BRIDGMAN, Brooklyn, N. Y. Filed July 27, 1895. Serial No. 557,390. Term of patent 14 years.



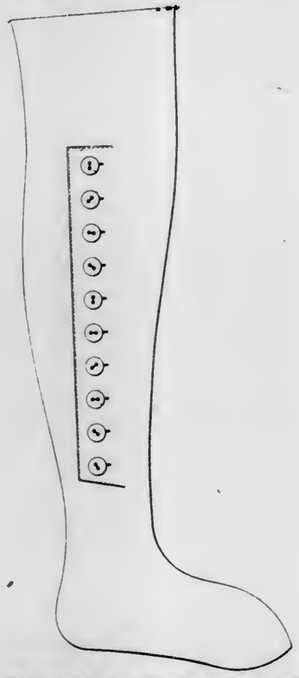
Claim.—The design for a razor-wiper, substantially as herein shown and described.

24,636. TILE. WILLIAM D. HENRY, Allegheny, Pa. Filed Mar. 9, 1895. Serial No. 541,194. Term of patent 14 years.



Claim.—The design for a tile, substantially as herein shown and described.

24,637. BICYCLIST'S STOCKING. ARNOLD SESSLER, New York, N. Y. Filed June 14, 1895. Serial No. 552,854. Term of patent 14 years.



Claim.—The design for a stocking herein shown and described.

24,638. BOX-STRAP BOLT. JAMES H. BAKER, Allegheny, assignor to the Baker Forge Company, Ellwood City, Pa. Filed Mar. 5, 1895. Serial No. 540,667. Term of patent 7 years.



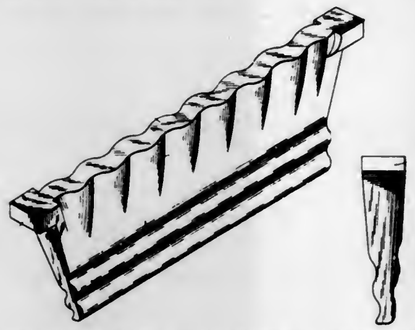
Claim.—The design for a box strap bolt substantially as herein shown and described.

24,639. VALVE-CASING. WILLIAM H. HENDRICK, St. Louis, Mo., assignor to the N. O. Nelson Manufacturing Company, of Missouri. Filed May 16, 1895. Serial No. 549,590. Term of patent 3½ years.



Claim.—The design for a valve-casing substantially as herein shown and described.

24,640. GRATE-BAR. CURT OBST, New York Mills, N. Y., assignor of one-half to Ernst Scholl, same place. Filed July 31, 1895. Serial No. 557,731. Term of patent 7 years.



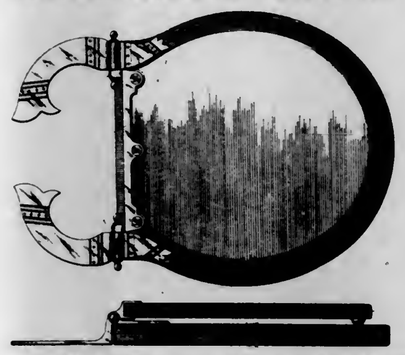
Claim.—The design for grate bars for furnaces, as herein shown and described.

24,641. BAT. JOSEPH BOLLER, Brooklyn, N. Y. Filed July 12, 1895. Serial No. 555,774. Term of patent 7 years.



Claim.—The design for a bat, substantially as herein shown and described.

24,642. WATER-CLOSET COVER. EARL H. ISRAEL, St. Louis, Mo., assignor to the L. M. Rumsey Manufacturing Company, same place. Filed July 2, 1895. Serial No. 554,769. Term of patent 7 years.



Claim.—The design of a water-closet cover, substantially as herein shown and described.

24,643. STOVE. JOSEPH LEON GOSELLIN, Cleveland, Ohio, assignor to the Indianapolis Stove Company, Indianapolis, Ind. Filed July 26, 1895. Serial No. 557,282. Term of patent 3½ years.



Claim.—1. In a design for a stove, the top substantially as shown and described.

2. In a design for a stove, the body substantially as shown and described.

3. In a design for a stove, the base substantially as shown and described.

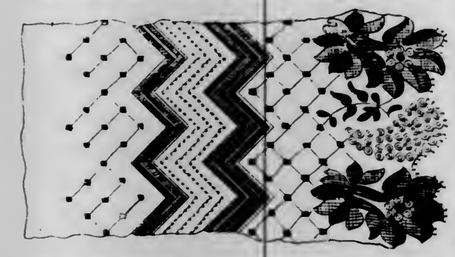
4. The design for a stove, substantially as shown and described

24,644. RADIATOR. CHARLES F. WALTHER, Buffalo, N. Y. Filed Aug. 1, 1895. Serial No. 557,905. Term of patent 7 years.



Claim.—The design for a radiator, substantially as shown and described.

24,645. PATTERN FOR LACE. HERBERT O. SHARPE, Brooklyn, N. Y., assignor to Abraham G. Jennings and Albert G. Jennings, same place. Filed July 24, 1895. Serial No. 557,057. Term of patent 7 years.



Claim.—The design for a pattern for lace, substantially as herein shown and described.

24,646. CARPET. EMIL G. SAUER, Brooklyn, N. Y., assignor to the Lowell Manufacturing Company, of Massachusetts. Filed July 26, 1895. Serial No. 557,245. Term of patent 3½ years.

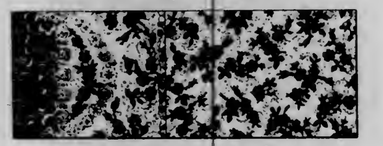


Claim.—1. In a design for carpet, the body A, substantially as shown.

2. In a design for carpet, the border B, substantially as shown.

3. The design for carpet, comprising the body A and the border B, substantially as shown.

24,647. CARPET. HENRY HORAN, East Orange, N. J., assignor to the Lowell Manufacturing Company, of Massachusetts. Filed July 30, 1895. Serial No. 557,637. Term of patent 3½ years.



Claim.—1. In a design for carpet, the body A, substantially as shown.

2. In a design for carpet, the border B, substantially as shown.

3. The design for carpet, comprising the body A and the border B, substantially as shown.

24,648. CARPET. CHARLES CASSEBEER, West Hoboken, N. J., assignor to the Lowell Manufacturing Company, of Massachusetts. Filed July 12, 1895. Serial No. 555,776. Term of patent 3½ years.



Claim.—1. In a design for carpet, the body A, substantially as shown.

2. In a design for carpet, the border B, substantially as shown.

3. In a design for carpet, the body A and the border B, substantially as shown.

24,649. CARPET. CHARLES FREDERICK GEDNEY, Brooklyn, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed July 30, 1895. Serial No. 557,640. Term of patent, 3½ years.



Claim.—1. In a design for carpet, the body A, substantially as shown.

2. In a design for carpet, the border B, substantially as shown.

3. The design for carpet, consisting of the body A, and the border B, substantially as shown.

24,650. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed July 30, 1895. Serial No. 557,641. Term of patent 3½ years.



Claim.—1. In a design for carpet, the body A, substantially as shown.

2. In a design for carpet, the border B, substantially as shown.

3. The design for carpet, consisting of the body A and the border B, substantially as shown.

24,651. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed July 30, 1895. Serial No. 557,642. Term of patent 3½ years.

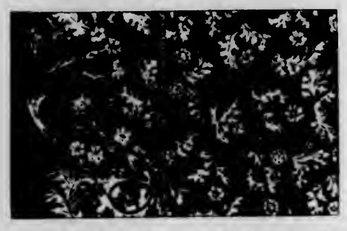


Claim.—1. In a design for carpet, the body A, substantially as shown.

2. In a design for carpet, the border B, substantially as shown.

3. The design for carpet, consisting of the body A, and the border B, substantially as shown.

24,652. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed July 30, 1895. Serial No. 557,643. Term of patent 3½ years.

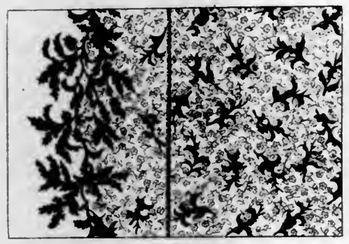


Claim.—1. In a design for carpet, the body A, substantially as shown.

2. In a design for carpet, the border B, substantially as shown.

3. The design for carpet, consisting of the body A, and the border B, substantially as shown.

24,653. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed July 30, 1895. Serial No. 557,644. Term of patent 3½ years.

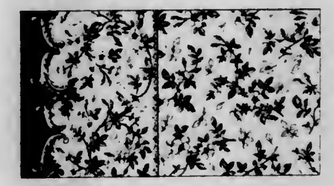


Claim.—1. In a design for carpet, the body A, substantially as shown.

2. In a design for carpet, the border B, substantially as shown.

3. The design for carpet, consisting of the body A, and the border B, substantially as shown.

24,654. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed July 30, 1895. Serial No. 557,645. Term of patent 3½ years.



Claim.—1. In a design for carpet, the body A, substantially as shown.

2. In a design for carpet, the border B, substantially as shown.

3. The design for carpet, consisting of the body A and the border B, substantially as shown.

TRADE-MARKS

REGISTERED AUGUST 27, 1895.

26,986. COUNTERS FOR BOOTS OR SHOES. RUSSELL COUNTER COMPANY, Woburn, Mass. Filed July 15, 1895.



Essential feature.—The representation of a worn shoe exposing the counter. Used since June 5, 1895.

26,987. WAIST AND HOSE SUPPORTERS. GEORGE W. HOYT & Co., Chicago, Ill. Filed June 17, 1895.

ROYAL

Essential feature.—The word "ROYAL." Used since February 15, 1895.

26,988. COTTON AND JUTE DRESS GOODS, SHEETINGS, SHIRTINGS, AND SIMILAR GOODS. JOSEPH HERSCH & SONS, New York, N. Y. Filed July 11, 1895.

JUTEINA

Essential feature.—The word "JUTEINA." Used since January 1, 1892.

26,989. SILK-WARP DRESS GOODS. THE FIRM OF RICHARD H. FRANCKE, New York, N. Y. Filed July 24, 1895.

Llama

Essential feature.—The word "LLAMA." Used since June 24, 1895.

26,990. MEDICAL COMPOUND FOR THE TREATMENT OF FEVERS, NEURALGIA, AND RHEUMATISM. BUSH & Co., Worcester, Mass. Filed July 31, 1895.

Analpyrodyne.

Essential feature.—The word "ANALPYRODYNE." Used since January 10, 1895.

26,991. REMEDY FOR RHEUMATISM. LOUISE FILKINS, New York, N. Y. Filed May 20, 1895.



Essential feature.—The representation of a winterberry plant having four leaves and seven buds. Used since June, 1891.

26,992. REMEDY FOR HEART FAILURE AND PNEUMONIA. AUSTIN ELLIOTT, Kansas City, Kans. Filed July 11, 1895.

THE GOLDEN HEART

PROTECTOR

Essential feature.—The words "THE GOLDEN HEART PROTECTOR." Used since August 15, 1893.

26,993. HERB TEAS, OILS, AND LINIMENTS. CHARLES F. CADWALLADER, Benton, Kans. Filed May 9, 1895.

TWENTY 20 MINUTE



Essential feature.—A portrait of the registrant, the number "20," the words "TWENTY MINUTE," and the letters "C. S. C." Used since June 20, 1884.

26,994. NATURAL MINERAL WATER. ERNST VON ECKARDSTEIN, Pritzel, Germany. Filed July 17, 1895.

BLUE LABEL

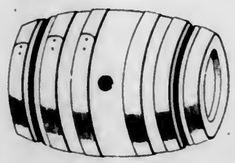
Essential feature.—The words "BLUE LABEL." Used since 1885.

26,995. MINERAL WATER AND OTHER NAMED BEVERAGES. GEORGE E. SMITH, Galveston, Tex. Filed Dec. 13, 1894.



Essential feature.—A monogram of the letters "G E S," with the words "HIGH ISLAND" on the letter "S." Used since December 1, 1895.

26,996. LAGER-BEER. ROCHESTER BREWING COMPANY, Rochester, N. Y. Filed July 30, 1895.



Essential feature.—The representation of a green groove between the hoops at one end, and of a red groove between the hoops at the other end, of shipping barrels or kegs. Used since January 1, 1880.

26,997. CIGARS. ANDREW PETERSON, Newark, N. J. Filed Aug. 1, 1895.

EL GLOBO

Essential feature.—The words "EL GLOBO." Used since June 1, 1894.

26,998. PLUG-TOBACCO. LEONARD H. NEUDECKER, Baltimore, Md. Filed Aug. 3, 1895.



Essential feature.—The representation of a pair of scissors. Used since September 1, 1894.

26,999. MATCHES. CONTINENTAL MATCH COMPANY, New York, N. Y. Filed July 31, 1895.

CLOVER

Essential feature.—The word "CLOVER." Used since March 1, 1895.

27,000. MATCHES. CONTINENTAL MATCH COMPANY, New York, N. Y. Filed July 31, 1895.

NEW ERA

Essential feature.—The words "NEW ERA." Used since March 1, 1895.

27,001. TOILET PAPER. ECLIPSE PAPER MANUFACTURING CO., Charleston, S. C. Filed July 20, 1895.

W. W. Simons

Essential feature.—A representation of the fac-simile signature "W. W. SIMONS." Used since June 23, 1895.

27,002. CURRYCOMBS. NEW YORK STAMPING COMPANY, Brooklyn, N. Y. Filed Aug. 3, 1895.

ECLIPSE

Essential feature.—The word "ECLIPSE." Used since April 28, 1891.

27,003. BICYCLE LAMPS OR LANTERNS. THE PLAGE & TERRY MANUFACTURING COMPANY, Montclair, N. J., and New York, N. Y. Filed July 18, 1895.

Pathlight

Essential feature.—The word or words "PATHLIGHT." Used since March 18, 1895.

27,004. BUTCHERS' KNIVES AND ANALOGOUS TOOLS. LANDERS, FRARY & CLARK, New Britain, Conn. Filed Aug. 1, 1895.

LEE

Essential feature.—The word "LEE." Used since December, 1851.

27,005. TEAS. APPLETON, MACHIN & SMILES, London, England. Filed Aug. 1, 1895.



Essential feature.—The representation of two human figures dressed in Eastern costume carrying between them a box or package. Used since May 1, 1895.

27,006. TEAS. APPLETON, MACHIN & SMILES, London, England. Filed Aug. 1, 1895.

KANDEGAMA

Essential feature.—The word "KANDEGAMA." Used since January 1, 1895.

27,007. STARCH. ALBERT HILS and CHARLES H. HUFF, Canton, Mo. Filed Aug. 3, 1895.

NOXALL

Essential feature.—The word "NOXALL." Used since April 8, 1895.

27,008. SOAPS AND WASHING COMPOUNDS. FREDERICK MEYER, Lafayette, Ind. Filed July 6, 1895.

"SHAMROCK"

Essential feature.—The word "SHAMROCK." Used since June 5, 1895.

27,009. WHEAT-FLOUR. WILLIAM LUSTMAN MILLING COMPANY, Superior, Wis. Filed July 19, 1895.

SENSATION

Essential feature.—The word "SENSATION." Used since October, 1893.

27,010. CANNED SALMON. MARSHALL J. KINNEY, Astoria, Oreg. Filed June 26, 1895.



Essential feature.—The representation of a "ROSEBUD." Used since November 1, 1894.

27,011. CONDENSED MILK. MOHAWK CONDENSED MILK COMPANY, Rochester, N. Y. Filed July 29, 1895.

LILY

Essential feature.—The word "LILY." Used since August 1, 1893.

27,012. MAPLE SIRUP. SCUDDER, COHN & BROWN, Chicago, Ill. Filed Aug. 3, 1895.



Essential feature.—The words "SCUDDER'S CANADA SAP" and the representation of brownies drawing maple sap and making maple sirup. Used since May, 1894.

27,013. SAUSAGES. SCHOENLAND BROS., Portland, Me. Filed July 26, 1895.



Essential feature.—The representation of a tomato. Used since June 30, 1895.

27,014. AXLE-GREASE. THE OMAHA LUBRICATOR COMPANY, Omaha, Nebr. Filed June 7, 1895.



Essential feature.—The representation of the head of an Indian chief, with the word "OMAHA" across his forehead. Used since January 14, 1895.

ANDREW B. GRAHAM
PHOTO-LITHOGRAPHER.
WASHINGTON, D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

PRATT AND JOHNS *v.* THOMSON.

Decided August 3, 1895.

1. INTERFERENCE — PATENTEE VERSUS APPLICANT — BURDEN OF PROOF.

Pratt and Johns, in view of the issue of the patent to their opponent, have the burden of showing beyond a reasonable doubt that they are prior inventors and are entitled to a patent for the same subject-matter.

2 SAME—SAME—SAME—PATENT INADVERTENTLY ISSUED—PRESUMPTION.

The record held not to show that Thomson's patent was inadvertently issued, or that Pratt and Johns's application was not before the Examiner who passed Thomson's application to issue, or that it was not done upon full consideration. In whatsoever division either application may have been, it is to be presumed that the Office in treating one knew of the other and that when the Thomson patent issued it was considered that he was justly entitled to his patent. The burden of proof is therefore on his opponent.

3. SAME—EQUIVALENTS—CONDUCT OF PARTIES.

Where it was contended that powdered asbestos was not the equivalent of powdered soapstone as a lubricant for electrical packings, and it appeared that when Pratt and Johns received an order from the Thomson-Houston Company for electrical packings they made use of powdered asbestos in place of powdered soapstone as the lubricant, and that the product was accepted by the Thomson-Houston Company as answering every purpose of electrical insulation, and it further appears that Thomson set up in his preliminary statement that Pratt and Johns reduced the invention to practice in accordance with instructions given by him in this order, *Held* that powdered asbestos is the equivalent of powdered soapstone within the meaning of the issue.

APPEAL from the Examiners-in-Chief.

COMPOSITION FOR INSULATING MATERIAL.

Application of Rufus N. Pratt and Henry W. Johns filed June 2, 1887, No 240,085. Patent granted Elihu Thomson October 6, 1891, No. 460,765.

Mr. Edmund Wetmore and *Mr. Harry R. Williams* for Pratt and Johns.

Mr. Henry C. Townsend for Thomson.

SEYMOUR, *Commissioner:*

This is an appeal from the decision of the Examiners-in-Chief awarding priority of invention to Pratt and Johns upon the following issue:

An electrical insulating composition, consisting of a fibrous mineral insulator as a base, a cementing insulating substance, such as rubber, and a lubricator consisting of an insulating material, as and for the purpose described.

Henry W. Johns, one of the junior parties in this case, was the first in this country to introduce asbestos for practical purposes, and prior to 1886 had invented and manufactured materials composed in part or wholly of asbestos for a variety of purposes. Rufus N. Pratt, the other junior party, of the Pratt & Cady Company, of Hartford, had used asbestos under a patent to John Dewrance, of England, and had applied it to other uses than Dewrance contemplated, and in October, 1885, applied for a patent on a process of manufacturing, which was issued to him March 23, 1886, No. 338,358. The process of that patent differs from that which was contemplated by these parties when the ingredients were selected along the lines of this issue in that the latter is a dry process, requiring a lubricant to assist in molding, whereas the earlier processes, employing rubber dissolved in naphtha, did not require a lubricant. In October, 1886, the Johns Pratt Company, of Hartford, of which H. W. Johns was president and R. N. Pratt treasurer, a company formed in the September previous, began the manufacture of a composition of which the principal ingredients were long-fiber asbestos, coated with a film of rubber dissolved in naphtha, and a filler of powdered asbestos. A given quantity of rubber was dissolved in naphtha. Into this was sifted long-fiber asbestos, then pulverized asbestos, and into this was mixed pulverized sulphur. This mass was molded by hand, evaporated, and then pressed into solidity. It was then ready for vulcanization in the usual way. The long fiber asbestos gave strength to the composition, the rubber served as a binder, and the powdered asbestos served to fill out the mold, so as to produce a form of satisfactory finish. It is claimed by Pratt and Johns that soapstone was sometimes used in place of powdered asbestos prior to October, 1886; but on this point the proof is doubtful, Mr. Fleming, who first testifies to it, confessing at last that he could not positively say whether soapstone was used as an ingredient or for anything more than to powder the molds. The proportions of the ingredients varied according to the particular use for which the composition was intended. When used only for valve-packing, piston-packing, and the like, it was usually made up with plumbago instead of powdered asbestos. From about January, 1887, both forms were made by Pratt and Johns in large and increasing quantities commercially.

A compound of asbestos fiber and rubber vulcanized and not containing any additional material would form a substance which would make an efficient electrical insulator. With soapstone or plumbago added for any purpose a smaller amount of rubber, which was the ingredient of greatest cost, might be used, for either would occupy room which would otherwise have to be filled with rubber. As plumbago is not an insulator, while soapstone is, one form of the material would be an insulator, while the other would not, but

would be an excellent piston-packing. The material would be more compact and strong without the soapstone or plumbago than with it, if the necessary larger amount of rubber were used. The soapstone or plumbago is a filler as well as a lubricant, and pure asbestos in fiber or pulverized is a good non-conductor, as is also pure soapstone. A good quality of asbestos, whether in the ground or fibrous state, has a moderate degree of feel, and generally the better the asbestos the more smooth it is. Asbestos fiber in compositions of this kind is hard to machine and injurious to tools. Soapstone is easier to machine; but if a considerable percentage of fibrous asbestos be used the easing effect of the soapstone, so far as machining is concerned, is disguised, if it does not altogether disappear. Asbestos is often associated with soapstone or talc-like minerals and may contain in the ground state more or less of these substances.

The lubricant of this issue appears to have three functions: first, to produce a composition which for packing around moving parts should have a high degree of natural lubrication; second, to render the composition easily wrought upon with tools, and, third, to aid in molding. Plumbago, talc, argillite, and soapstone were known to be natural lubricants at the earliest time mentioned in this case.

On October 25, 1886, the Waterhouse Electric Company, of Hartford, gave a sample order to the Johns-Pratt Company, upon the solicitation of Edward B. Hatch, acting in behalf of the latter company, for sheet-asbestos packing one-sixteenth of an inch thick, moderately hard, and to be a non-conductor, and this order was soon afterward filled by the Johns-Pratt Company, and the material was used by the Waterhouse Electric Company for electrical insulation. Similarly, on January 20, 1887, January 28, February 11, 18, 21, and 22, May 2, 25, and 30, 1887, and at other times other orders were received by the Johns-Pratt Company from the Waterhouse Electric Company for articles intended for electrical insulation and for molds in which to form them. During 1887 still other orders were received and filled by the Johns-Pratt Company from the Eddy Electric Company, the Edison Electrical Company, at Schenectady, and the Thomson-Houston Company, at Lynn, with the latter of which Thomson, the senior party in this case, was actively connected. The first orders from the Thomson-Houston Company were received and filled in the early half of the year 1887; but the precise time is not disclosed in the record. From that time onward until about July, 1893, the Johns-Pratt Company sold the Thomson-Houston Company, or the General Electric Company, with which it became amalgamated, large amounts of this insulating composition, probably to the extent of fifty thousand dollars' worth. It contained no plumbago and it does not appear that it contained any soapstone; but ground or powdered asbestos was the ingredient used as the filler. Upon this ingredient turns one of the principal controversies of the case, there being no controversy about either the long-fiber asbestos or the rubber.

The question is whether powdered asbestos is the equivalent of powdered soapstone within the meaning of this issue. It is claimed by counsel for Thomson that the lubricant in the issue is a powdered filler having a natural lubricating quality and that Pratt and Johns cannot have the benefit of anything as a lubricant which would not be a lubricant within the meaning of the word as contained in their original application; that if in the original application Pratt and Johns had specified the proportion in which the ingredients entered into their composition it would be true that their composition would be theirs for other purposes than for the one mentioned in the specification; that the issue is not broad enough to include anything used as a filler and of an insulating nature in combination with the fibrous asbestos, and that if the ground asbestos assists in molding it would be simply because it is in a finer state of subdivision, and not because it is a better natural lubricant.

Upon this question of fact the conduct of the parties before any controversy arose is not to be overlooked. Pratt and Johns treated powdered asbestos as a filler and made their much-advertised composition of matter, which they called "Vulcabeston," with this filler whenever it was ordered for electrical insulation or was intended for that use. When they received their order from the Waterhouse Electric Company on October 25, 1886, they so made use of it as a filler. When they received orders from the Thomson-Houston Company, they made use of it for the same purpose, and when the Thomson-Houston Company received the molded forms used as sockets in their incandescent lamps the composition was accepted with powdered asbestos as the ingredient, as if it answered every purpose of electrical insulation as well as long-fiber asbestos, rubber, and soapstone would, which Thomson had mentioned to Webster; but still more significant, Thomson in his amended preliminary statement said of these forms so ordered of the Johns-Pratt Company by his company and so used by the latter that—

> the invention was reduced to practice in accordance with instructions given by him as to the making of the composition in the winter or spring of the year 1887, at just what date he is not able to say, because the composition was made, as he verily believes, by his opponents in this interference from instructions from himself to them.

It was not made by the Thomson-Houston Company prior to this time, or at any time except since this interference was declared, and then only for the purpose of producing samples, chiefly to be used in this case. I cannot presume that Thomson, skilled chemist and electrician as he is, could have been ignorant of the ingredients of this material. It appears that the molded forms were shown to him about the time they were first received, and I must consider that he prepared his preliminary statement, and especially his amended preliminary statement, with care and with knowledge of all the facts. What, therefore, both Pratt and Johns and Thomson himself treated at the time as a composition of matter such as was demanded by this issue must, in the absence of any explanation or explanatory circumstances, be treated now as they treated it then. Moreover, as has been found from the expert testimony in this case, powdered asbestos is inherently a substance of some degree of natural lubrication for the purposes of aiding in the molding and for the purposes of facilitating machine-working upon

the forms made from this substance. It exhibited a degree of lubrication sufficient to bring it within the issue.

It is claimed by Thomson that the course of Pratt and Johns in respect to their application is wholly at variance with their present contention that prior to the issue of the Thomson patent they had, independently of Thomson's suggestion, made or suggested the insulating composition patented to Thomson.

Thomson filed his application for a patent August 5, 1889, and his patent, No. 460,765, issued October 6, 1891. By amendment, after the Thomson patent issued, and on December 8, 1891, Pratt and Johns insert claims the same as those made by Thomson and erase the statement of the intended uses in frictional or adhesive contact, and also the statement that the lubricating quality is a permanent lubricating character given to the products as they wear away. They insert a statement of the advantage of the lubricating material in molding and the statement:

> We do not consider the several natural lubricants equivalents for all purposes—that is, plumbago would not answer where the composition is to be used for insulating purposes.

It is to be noted that all these changes concern the uses of the article after manufacture, except that referring to the advantage of a lubricant in molding. Still it remains true that the substances which Pratt and Johns stated in their original application that they preferred to use for the purpose of making their composition—plumbago, soapstone, talc, argillite, and like natural lubricants, added, when finely divided, to the mass of asbestos and dissolved rubber and sulphur during the mixing operation—make a composition of matter which is serviceable as packing for frictional parts, and that if not made with plumbago the composition would be an efficient electrical insulator.

I have examined the prior art for the purpose of construing this issue; but in construing it the specification and claims of the Thomson patent are treated as controlling.

I find in this record no sufficient evidence to support the conclusion that the Thomson patent was inadvertently granted, little to show that the Pratt and Johns application was not before the Examiner who passed the Thomson application to issue, or that it was not done upon full consideration. In whatsoever division either application may have been at the various stages when either was under examination it is to be presumed that, so far as it was the duty of the Office in treating one case to know the other, it acted upon such knowledge, and that when the Thomson patent issued it was considered that he was justly entitled to his patent under the law. That the Office thought otherwise when this interference was declared or thinks otherwise now does not destroy this presumption. From this it follows that Thomson is properly the senior party in this case and that Pratt and Johns have the burden of proof, and, in view of the issue of the patent to their opponent, have the additional burden of showing beyond a reasonable doubt that they are prior inventors and are entitled to a patent for the same subject-matter. The facts herein found, and on these the decision is based, are thought to be proved with the certainty demanded by this rule.

I find no sufficient evidence in this record for the claim of counsel for Thomson that Thomson communicated to Pratt and Johns, or to either of them, or that Pratt and Johns, or either of them, derived any information from Thomson that led Pratt and Johns to use any ingredient of this composition of matter for insulating purposes, or that Pratt and Johns, or either of them, received any information from Thomson respecting this invention which deprived Pratt and Johns of the merit of originality therein. It does not appear that any thought was bestowed upon this particular subject by Thomson before the Johns Pratt Company had received the order from the Waterhouse Electric Company of October 25, 1886, although it may be that Thomson's first conversation with Webster, admittedly inadequate as a disclosure, was some time in this same month.

In omitting to find that soapstone was used by Pratt and Johns as an intermixed ingredient in this composition of matter in 1886 I have not failed to consider the testimony of Pratt and of Johns and of Fleming and of Colton and of Hatch; but their opportunities of observation are, in my judgment, insufficient to enable them to know the ingredients with such certainty as to justify a finding to that effect, based on their testimony.

Upon the whole record and upon a careful study of the very able briefs of counsel upon both sides of this case my conclusions are and it is considered that in this electrical insulating composition ground asbestos is the equivalent of soapstone in the proportions named in Thomson's specification and in his patent and in Pratt and Johns's application, original or amended, and in the composition as actually made by Pratt and Johns in the latter part of the year 1886 and following and in the composition so made by them and sold to the General Electric Company, with the knowledge of Thomson, and as used by them for electrical insulation. It is considered, too, that the composition of matter is original with Pratt and Johns; that knowledge of none of its ingredients was acquired from Thomson by them prior to its manufacture by them; that there is no error in the decision of the Examiners-in Chief in awarding priority to Pratt and Johns, and their decision is accordingly affirmed.

EX PARTE KINNEY.

Decided August 3, 1895.

TRADE-MARKS—"ROSEBUD."

The representation of a rosebud and the word "Rosebud" are registrable in one application, it appearing that the trade-mark is a lawful common-law mark and the prescribed statutory requisites are present.

ON petition.

TRADE-MARK FOR CANNED SALMON.

Application of Marshall J. Kinney for registration filed June 26, 1895.

Messrs. A. H. Evans & Co. for the applicant.

SEYMOUR, *Commissioner:*

This is a petition taken from the Examiner's refusal to register as a trade-mark for salmon the symbol "Rosebud." The Examiner's refusal is based upon the fact that the applicant is trying to have registered

two symbols in one application—the representation of a rosebud and the word "Rosebud." The essential features of the application are set forth in alternative forms.

In refusing registration the Examiner was following precedent, although some of the cases turn on the question whether the word and the figure are true alternatives. It seems that the trade-mark as offered is, so far as appears, a lawful common-law mark, and where the prescribed statutory requisites are present it is thought that the administration of the law should be reasonably liberal concerning registration.

I incline to adopt his view, and the petition is granted.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court of Appeals—Second Circuit.

WESTINGHOUSE AIR BRAKE COMPANY *v.* NEW YORK AIR BRAKE COMPANY *et al.*

Decided May 28, 1895.

1. WESTINGHOUSE—BRAKE MECHANISM—INFRINGEMENT.
   Claims 1, 2, and 4 of Letters Patent No. 360,070, dated March 29, 1887, to George Westinghouse, Jr., for an improvement in brake mechanism, infringed.
2. SAME—SAME—INFRINGEMENT DOUBTFUL—PRELIMINARY INJUNCTION.
   Whether the first claim of Letters Patent No. 376,837, dated January 24, 1888, to George Westinghouse, Jr., for an improvement in brake mechanism, is infringed is too doubtful to be resolved in favor of complainant upon a motion for a preliminary injunction, and should be reserved for disposition upon the final hearing of the cause.

Messrs. Kerr & Curtis, *Mr. J. Snowden Bell*, *Mr. George H. Christy*, and *Mr. Frederic H. Betts* for the appellee.

Mr. J. E. Maynadier and *Mr. F. P. Fish* for the appellants.

Per curiam:

We agree with the court below (70 O. G., 388) that the defendant's apparatus is an infringement of the first, second, and fourth claims of Patent No. 360,070, and deem it unnecessary to add anything to the opinion of Judge Lacombe. The question whether the apparatus is an infringement of the first claim of Patent No. 376,837 is too doubtful to be resolved in favor of the complainant upon a motion for a preliminary injunction and should be reserved for disposition upon the final hearing of the cause. So far as the order appealed from allows an injunction for the infringement of this claim it should be reversed; otherwise it is affirmed.

Ordered accordingly.

U. S. Circuit Court—District of New Jersey

AMERICAN GRAPHOPHONE COMPANY *v.* EDISON PHONOGRAPH WORKS.

Decided June 24, 1895.

PLEADING—REPLICATION—DOES NOT ADMIT SUFFICIENCY OF PLEA.
When the defendant interposed a plea, setting out at length certain contracts alleged to have been executed, and claiming, in virtue of said contracts, a license under the patents in suit, and complainant filed a general replication to the plea, *Held* that the replication did not merely put in issue the truth of the plea, admitting its sufficiency, if proved, but that the facts of the plea, if proved, will avail the defendant only so far as in law and equity they ought to avail him. (*Pearce* v. *Rice*, 142 U. S., 28.)

SUR-PLEA and replication.

STATEMENT OF THE CASE.

The suit was brought for infringement of Letters Patent Nos. 341,214 and 341,288, granted to C. A. Bell and Sumner Tainter May 4, 1886, known as the "graphophone patents." Defendant interposed a plea, setting out at length certain contracts alleged to have been executed, and claiming, in virtue of said contracts, a license under the patents in suit. Complainant filed a general replication to the plea.

At the argument of the plea it was contended by the defendant that the replication merely put in issue the truth of the plea, admitting its sufficiency, if proved, and leaving only the question whether the contracts set out at length in the plea had been duly executed by the parties thereto.

Mr. Anthony Pollok and *Mr. Philip Mauro* for the complainant.

Mr. Richard N. Dyer and *Mr. S. O. Edmonds* for the defendant.

ACHESON, *J.:*

In *Pearce* v. *Rice* (142 U. S., 28) the Supreme Court distinctly held that under the practice in chancery, as modified by equity rule 33, when by filing a replication issue is taken upon a plea the facts, if proven, will avail the defendant only so far as in law and equity they ought to avail him. The force of that ruling was not at all weakened by the decision in *Horn* v. *Detroit Dry Dock Company*, (150 U. S., 610,) that when the established plea meets and satisfies all the claims of the bill it ought, in law and equity, to avail the defendant so far as to require a final decree in his favor, and that matters wholly foreign to the issue made by the pleadings are not to be considered. In the still more recent case of *Green et al.* v. *Bogue et al.* the doctrine laid down in *Pearce* v. *Rice*, *supra*, was reiterated and acted upon by the Supreme Court.

Such being the authoritatively-settled rule of practice, it follows that, notwithstanding the execution of the written agreements set out in the plea is proved, and even if it be conceded that it is also shown that all those agreements were executed with the knowledge and consent of the complainant and for the purpose stated in the plea, it is yet incumbent upon the court to look into the agreements to see whether, as asserted by the plea, the defendant was thereby—

licensed in perpetuity to make and sell, under the graphophone patents, including the patents referred to in said bill of complaint, a machine called the "phonograph," and supplies therefor.

Accordingly, such an examination of the agreements has been carefully made by the court, and with a result unfavorable to the defendant. I am unable to discover that the agreements of August 1 and October 10, 1888, purport to invest the defendant with a perpetual license to manufacture and sell under the complainant's patents; nor do I perceive that Lippincott had authority so to deal with the complainant's patents. His rights with respect to the graphophone patents are to be found in the two agreements between him and the complainant, one original and the other supplemental, dated, respectively, March 26 and August 6, 1888. The rights thereby conferred upon Lippincott were personal to himself, and were subject to certain terms and conditions. I am of the opinion that the agreements relied on, even when considered together, did not confer upon the defendant the license set up in the plea. Beyond this it is not necessary now to go.

And now, June 24, 1895, the plea is overruled, without prejudice to the defendant's right to answer the bill, and leave is granted to the defendant to file an answer within thirty days from this date.

U. S. Circuit Court—District of New Jersey.

NEW DEPARTURE BELL COMPANY *v.* HARDWARE SPECIALTY COMPANY *et al.*

Decided July 25, 1895.

1. ROCKWELL—BELLS—NOT INFRINGED.
   Letters Patent No. 456,062, for improvements in bells, granted to Edward D. Rockwell July 14, 1891, construed to be for a specific device and not infringed.
2. SAME—SAME—INVALID.
   Claim 2 of Letters Patent No 471,982, for improvements in bells, granted to Edward D. Rockwell March 29, 1892, construed in view of the prior art and *Held* to be invalid.

Mr. John J. Jennings and *Messrs. Newell & Jennings* for the complainant.

Mr. J. C. Clayton and *Messrs. Coult & Howell* for the defendants.

ACHESON, *J.:*

This suit is based upon two Letters Patent granted to Edward Dayton Rockwell, assignor to the plaintiff—namely, No. 456,062, dated July 14, 1891, and No. 471,982, dated March 29, 1892—for improvements in bells. The earlier patent has a single claim, as follows:

A bell-striker having a central aperture for loosely pivoting it to a rotating hand and various striking points or surfaces around its exterior and adapted to be rotated on its pivot by each blow to bring to bear a new striking surface, substantially as set forth.

The defendants are charged with the infringement of this patent, and also with infringement of the second claim of the other patent, which reads thus:

2. The combination, with a base-plate, of a revoluble striker-bar spring-actuated in one direction, a lever operatively connected therewith and adapted to rotate the striker-bar in opposition to the force of the spring, and a gong, substantially as set forth.

These patents were before the Circuit Court of the United States for the District of Connecticut in the case of *The New Departure Bell Company* v. *Bevin Bros. Manufacturing Company*, (64 Fed. Rep., 859.) The plaintiff insists that the rulings there made are conclusive in this court of the present controversy and require a decree against the defendants under the well-established rule that in patent causes a decision upon the merits at final hearing in one circuit will be followed, upon the like state of proofs, by courts of co-ordinate jurisdiction in other circuits. I cordially approve of this rule, and if the facts had justified my so doing I would unhesitatingly have acted upon it here. Its application to the present case in the manner proposed would have relieved me of the labor of original investigation. But as I read the opinion of the learned court of the second circuit it does not by any means have the scope which the plaintiff claims for it. Besides, new evidence of great importance has been submitted here. Furthermore, the defendants are manufacturing bicycle-bells under and in strict accordance with two Letters Patent, numbered, respectively, 507,804 and 507,805, dated October 31, 1893, granted to Samuel Goulden, assignor to the Hardware Specialty Company. Under these circumstances, then, I conceive it to be my clear duty in disposing of this bill to exercise my own independent judgment.

It is quite plain, even upon the face of Rockwell's patents, and is still clearer by the proofs, that neither of his alleged inventions here involved was of a primary character. The avowed object of his first patent was simply to produce—

a more effective and more durable device for sounding bells.

Now, loosely-pivoted bell-strikers freely moving on their pivots and having various exterior striking-points and so constructed and arranged as to be thrown by centrifugal force against the side of the bell to sound it and then instantly to rebound and upon the next stroke presenting a new point of contact to the surface of the bell were undoubtedly old and well known. This is indisputable under the proofs. The striker shown by the Rockwell patent has a central aperture, and it is loosely carried by a pin extending up from the striker-plate. Upon the uncontradicted evidence I have the greatest difficulty in discovering any patentable novelty in this device. It is operated by the same means and in the same way and produces the same results as the prior devices. Pivotally to connect the striker to the rotary arm by a hole through the center of the striker instead of by a hole away from the center would seem to involve at the most the exercise only of good judgment and common mechanical skill. If there is any invention here at all, it is of the lowest order. The plaintiff, then, is to be held strictly to Rockwell's specific device. Such, indeed, was the conclusion of the court in the case of *The New Departure Bell Company* v. *Bevin Bros. Manufacturing Company*, *supra*. It was there declared:

Inasmuch as loosely-pivoted bell strikers are not new, the patentee must be limited to the construction claimed by him.

The court therefore held that the defendant did not infringe. The language of the court was this:

Inasmuch as the striker of defendant's device has no central aperture, does not rotate, and does not by each blow bring to bear a new striking-surface, it does not embody the invention claimed in said patent, and is not an infringement thereof.

The defendants' hammers or strikers have shanks which work in slots in the hammer-arms and are secured therein by burrs riveted on the hammer-shanks, and between the burrs and hammer-arms are sliding friction-washers to prevent rattling. It is very certain that the defendants do not use the construction described by Rockwell and specified in his claim. That claim calls for a bell-striker having—

a central aperture for loosely pivoting it to a rotating hand.

The defendants' hammer does not have a central aperture. It has no aperture whatever. It has a projecting shank which works in a slot in the hammer-bar. Now, if, in the face of proofs to the contrary, it be conceded that Rockwell was the first to make the peculiarly-formed striker described in his patent, the advance, if any, which he thus made was very slight, and he and his assignee must be confined to the precise device he has claimed. The owner of this patent is in no position to invoke the doctrine of equivalents.

(*Keystone Bridge Company* v. *Phœnix Iron Company*, 12 O. G., 980; 95 U. S., 274, 278; *Railway Company* v. *Sayles*, 15 O. G., 243; 97 U. S., 554; *McClain* v. *Ortmayer*, 57 O. G., 1229; 141 U. S., 419; *Holman* v. *Jones*, 9 C. C. A., 385.) The Supreme Court in its latest rulings seems more and more inclined to hold mere improvers rigidly to their claims. (*Wright* v. *Yuengling*, 69 O. G., 639; 155 U. S., 47; *Deering* v. *Winona Harvester Works*, 69 O. G., 1641; 155 U. S., 286, 294; *Coupe* v. *Royer*, 70 O. G., 779; 155 U. S., 565.)

Waiving the question of patentability, I am of the opinion that infringement of Patent No. 456,062 is not shown.

The specification of Patent No. 471,982 states that the object of the invention of that patent is—

> to produce a bicycle-bell that is compact, simple, strong, durable, and reliable and by which a sound resembling that of an electric bell, but of increased purity of tone, may be produced.

It must, however, be noted here that bicycle-bells having all these general characteristics and producing such a sound were old and well known prior to this invention.

The second claim of this patent, which only is here involved, is for a combination consisting of five constituents—namely, a base-plate, a revoluble striker-bar spring-actuated in one direction, a lever so connected with the striker-bar as to move it in opposition to the force of the spring, the spring itself, and a gong. The combination, it will be perceived, is not limited to any particular form of hammer or striker, and, unless by implication, is not even limited to bicycle-bells. The lever of the combination is pushed circumferentially of the bell by means of a thumb-piece. This precise feature of construction, however, was old and in common prior use on bicycle-bells. Reference here need be made only to the Serrell patent of October 2, 1883, for an "alarm-bell for bicycles," which shows a horizontally-acting thumb-lever conveniently located so that the rider can operate the mechanism. The claim under discussion is silent as to the general mechanism customarily employed to operate the striker-bar and to produce the desired stroke of the bell; but this mechanism is to be implied as entering into the construction. Otherwise the specified combination would be useless. The claim, which has the usual ending "substantially as set forth," calls for a "gong." The specification and drawings show a gong provided with a "lug" extending inwardly from the surface of the bell to receive the stroke of the hammer. No other form of gong is mentioned or shown. The specification here reads:

> This gong is preferably provided on one side with a lug 25, against which the strikers impinge when the striker bar is revolved, producing thereby a clear musical tone. By this means, also, I am able to make the gong large enough to be for all time out of reach of the strikers, even after their pivotal apertures have become, as they will in use, enlarged by friction, and thereby avoid liability of their touching the gong at more than one place and interfering with its sounding properly.

As described and illustrated in the specification and drawings, the striker-bar is pivoted centrally, so that no sound can be produced at all without the presence of the "lug 25." The plaintiff's bicycle bells manufactured and put on the market under this patent always have had the projecting "lug 25." The bell adjudged to infringe in the case of *The New Departure Bell Company* v. *Bevin Bros. Manufacturing Company*, *supra*, had such a lug. On the other hand, the defendants do not use such a lug or any equivalent thereof. In the defendants' bells the hammer-arm is pivoted eccentrically and the hammer strikes against the surface of the bell itself. As already mentioned, the defendants are manufacturing under and agreeably to two later patents, the mere issuing of which creates a presumption of a patentable difference between the plaintiff's bells and the defendants' bells. (*Miller* v. *Eagle Manufacturing Company*, 66 O. G., 845; 151 U. S., 186, 208.) Now, whether the lug does not impliedly enter into the claim under consideration is a serious question, notwithstanding the patentee's insertion into his specification of the word "preferably." Certain it is that without such a lug or its equivalent Rockwell's construction, as disclosed to the public by this patent, is inoperative; but if the gong called for by the claim is the described gong—one with an inwardly-projecting lug—then the defendants do not infringe.

Assuming, however, that the claim is not so limited, we pass to the consideration of the question whether, in view of the prior state of this particular art, the combination involved invention. Here, upon the whole evidence, I am constrained to give a negative response. I shall not undertake to discuss the proofs in detail, but shall confine myself to a patent which was not before the court in the Connecticut case—the French patent of November 16, 1881, to D'Allemagne, for improvements in bells imitating the call of an electric bell. In this patent are to be found all the elements of this Rockwell claim, combined and operating in substantially the same way and for the same purpose, with the single exception that the operative push-bar of the French patent, of which the lever of the claim is the manifest mechanical equivalent, has a vertical action instead of a horizontal movement. Now, as we have seen, this horizontally-working thumb-lever for operating the mechanism of bicycle-bells was not new. Did it, then, involve invention to substitute it for the vertical push-bar of the French patent? To ask the question is to answer it. The substitution was evident to a mechanic of ordinary skill. As conclusive of the correctness of this view I refer, briefly, to the Allen and Goulden patent of May 20, 1890, for improvements in alarm-bells. That patent itself shows, in combination with a base-plate, gong, and a rotary hammer-spindle provided with arms carrying the hammers and spring-actuated in one direction, a lever fixed upon the driving-spindle and adapted to rotate the hammer-arms in opposition to the force of the spring. In this structure, it is true, the prime actuating device is a wire attached to the free end of "the lever *l*," which is operated by pulling the wire; but the specification states:

> It is immaterial how the handle or lever *l* be actuated, as it might readily be moved by a suitable lever or handle engaging with its free end, as we have sometimes constructed it, or by any other suitable means.

Here we have the clearest instructions for putting in the place of the pull-wire an auxiliary lever, which, in the case of a bicycle-bell, obviously would be the old thumb-lever of the Serrell patent that Rockwell adopted.

Let a decree be drawn dismissing the bill of complaint, with costs.

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COMMISSIONER'S DECISIONS—	
Schribner *v.* Kellogg	1495
DECISIONS OF THE U. S. COURTS—	
United States Printing Company *v.* American Playing Card Company	1499

The Official Gazette.

THE OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $10; single copies, 10 cents, if mailed to foreign countries 10 cents additional for postage; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $3.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Withdrawal of Cases from Issue.

Hereafter all amendments proposed to allowed applications which involve a withdrawal from issue, and all petitions and requests relating thereto, shall be filed with the docket clerk, Mr. J. M. Emory, and transmitted by him to the Primary Examiner for report. If the Examiner shall report favorably to the admission of such amendment, the matter will be laid before the Commissioner for immediate determination. If the Examiner shall report unfavorably, the case will be docketed and will be heard and decided by the Commissioner in regular course, unless good reasons shall appear for immediate action.

Notice.

It is hereby directed that in the printing of claims of applications for patents the punctuation of the claims as made by applicants be strictly followed, and that the punctuation of the specification made by applicants be not departed from except to cure a manifest absurdity.

Amendment to the Rules of Practice.

The following regulations for the conduct of proceedings in the Patent Office are established:

65. An applicant will be considered to persist in his claim for a patent without altering his specification in case he fail to act in prosecution of the same for six months after the Office action thereon, and thereupon the Examiner will make a re-examination of the case.

134. In appealable cases in which no limit of appeal is fixed, no appeal will be entertained by any tribunal in the Office unless taken within six months from the action which puts the case in condition for appeal, unless it be shown to the satisfaction of the Commissioner that such delay was unavoidable.

68. In every case pending before the Office more than five years, in which the record raises the presumption that there have been intentional delays in prosecution, the Examiner may require the applicant to show cause why the case was not more rapidly prosecuted, and at the hearing thereon, or upon failure of the applicant to appear, the Examiner will determine, under all the circumstances of the case, whether there have been intentional and unreasonable delays in prosecution, and upon finding the fact to be so, he will reject the case for that reason. Present Rules 65, 69, and 134 are repealed, and present Rule 68 is renumbered 69.

The foregoing rules will be in effect on and after April 15, 1895, and will affect pending cases as though the last Office action were upon said date.

Oaths of Applicants in Foreign Countries.

It is hereby directed that oaths accompanying applications for patents made within the following-named foreign countries must be taken before a minister, chargé d'affaires, consul, or commercial agent holding commission under the Government of the United States:

Austria-Hungary.	Netherlands.
Argentine Republic.	Norway.
Belgium.	Peru.
Brazil.	Portugal.
Costa Rica.	Russia.
Denmark.	San Salvador.
Haiti.	Servia.
Honduras.	Sweden.
Italy.	Switzerland.
Mexico.	

Applications filed in this Office presenting oaths not executed in compliance with this order will be treated as incomplete.

Privileges of the Scientific Library.

Persons who are not employés of the Office may, under the supervision and direction of the Librarian, make extracts, in pencil, from descriptions and drawings contained in the Scientific Library, such extracts, when in the nature of copies, not to exceed one-third of the descriptions or drawings from which the copies are made. Violation of this order will subject all persons and parties concerned in the violation to exclusion from thereafter making any such extracts or copies whatever.

Publishers' Catalogues.

This Office would be pleased to receive from manufacturers and publishers such catalogues, circulars, price-lists, or other advertisements relating to the sciences and mechanical arts as are published by them for gratuitous distribution; but notice is hereby given such manufacturers or dealers who feel disposed to send their publications that not less than three copies should be forwarded in order that the subjects may be properly indexed, classified, and subclassified in the Scientific Library for convenient and ready reference.

Issue of September 3, 1895.

Patents	431	No. 545,436 to No. 545,866 inclusive.
Designs	3	No. 24,655 to No. 24,657, inclusive.
Trade-Marks	26	No. 27,015 to No. 27,040, inclusive.
Labels	None.	
Prints	None.	
Reissue	1	No. 11,506.
Total issue	461	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Prints.	States.	Patents and Designs.	Trade-Marks and Prints.
Alabama	1	....	New Hampshire	3	....
Arizona Territory	....	....	New Jersey	9	....
Arkansas	2	....	New Mexico Ter.	....	....
California	9	1	New York	63	7
Colorado	4	....	North Carolina	1	....
Connecticut	12	1	North Dakota	....	....
Delaware	....	....	Ohio	25	2
District of Columbia	3	....	Oklahoma Ter.	....	....
Florida	1	....	Oregon	1	....
Georgia	7	....	Pennsylvania	35	3
Idaho	....	....	Rhode Island	4	....
Illinois	48	1	South Carolina	....	....
Indian Territory	1	....	South Dakota	....	....
Indiana	18	....	Tennessee	3	1
Iowa	10	....	Texas	6	....
Kansas	8	....	Utah Territory	2	....
Kentucky	2	....	Vermont	1	....
Louisiana	1	....	Virginia	1	....
Maine	6	....	Washington	2	....
Maryland	7	....	West Virginia	3	....
Massachusetts	43	4	Wisconsin	12	....
Michigan	13	1	Wyoming	2	....
Minnesota	6	....	U. S. Army	2	....
Mississippi	3	....	U. S. Navy	....	....
Missouri	13	....			
Montana	....	....	Total to citizens of the United States	396	21
Nebraska	3	....			
Nevada	....	....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentine Republic	....	....	Japan	....	....
Austria-Hungary	....	....	Mexico	....	1
Barbadoes	....	....	Netherlands	1	....
Belgium	1	....	Newfoundland	....	....
Bermuda	....	....	New South Wales	....	....
Brazil	....	....	New Zealand	....	....
British Guiana	1	....	Norway	....	....
Canada	6	1	Porto Rico	....	....
Chile, Republic of	....	....	Portugal	....	....
Colombia	....	....	Queensland	....	....
Cuba	....	....	Roumania	....	....
Denmark	....	....	Russia	....	....
Ecuador	....	....	Scotland	....	1
England	8	1	South Australia	....	....
Finland	....	....	Spain	....	....
France	3	1	Sweden	....	....
Germany	17	....	Switzerland	....	....
Greece	....	....	Venezuela	....	....
Guatemala	....	....	Victoria	....	....
Hawaii	1	....	West Australia	....	....
India	....	....			
Ireland	....	....	Total to citizens of foreign countries	38	5
Italy	....	....			

APPLICATIONS UNDER EXAMINATION.

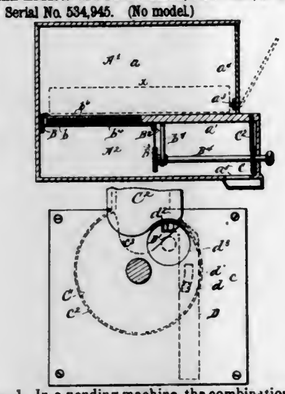
Condition at Close of Business August 27, 1895.

Division No.	Subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears.—Under one month.			
15	Plastics, Paper-Making, Paving Glass, Fuel, Bread-Making, etc	July 30	Aug. 26	76
11	Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather Working Machinery.	Aug. 2	Aug. 24	141
31	Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	Aug. 2	Aug. 23	47
3	Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	July 30	Aug. 22	91
4	Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Aug 16	Aug. 19	47
12	Mechanical Engineering, Stores-Service, etc.	Aug. 3	Aug. 19	133
14	Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	July 29	Aug. 19	105
5	Fine Arts, Stationery, Book-Binding, Music, etc.	July 30	Aug. 17	126
17	Paper-Manufactures and Printing.	July 29	Aug. 17	94
23	Instruments of Precision, Acoustics, etc.	July 29	A g. 17	117
27	Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Aug. 2	Aug. 15	109
2	Farm Stock, Products, etc	July 29	Aug. 15	132
10	Carriages and Wagons	July 29	Aug. 15	144
13	Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Aug. 2	Aug. 12	76
25	Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone-Working, Vegetable Cutters and Crushers.	July 29	Aug. 11	114
6	Chemistry, Explosives, Medicines, Fertilizers, Preserving, Photography, Sugar and Salt, Surgery.	Aug. 7	Aug. 10	128
30	Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	July 29	Aug. 10	101
29	Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	July 27	Aug. 10	112
18	Steam-Engineering, etc	July 29	Aug. 9	68
34	Railway Brakes, Draft Appliances, and Rolling-Stock.	July 29	Aug. 9	131
8	Furniture, Beds, Store Furniture, etc.	July 29	Aug. 6	237
1	Tillage and Fences	Aug. 2	Aug. 2	195
19	Stoves and Furnaces	July 29	July 31	294
26	Pneumatics, Refrigeration, Air and Gas Engines, etc.	July 28	July 30	206
16	Telegraphy, Telephony, Electric Lighting and Signaling.	July 27	July 29	135
20	Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, Optics.	July 27	July 29	210
22	Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	July 31	July 23	134
	Between one and two months.			
21	Textiles, etc.	July 20	Aug. 14	88
9	Hydraulics, Fire-Extinguishers, etc.	July 1	Aug. 5	343
7	Harvesters, Games and Toys, and Velocipedes.	July 20	July 29	520
36	Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	July 20	July 27	139
32	Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels, etc.	July 22	July 25	278
24	Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	July 9	July 9	238
	Total number of applications awaiting action			5,109
	Under one month in arrears.			
	Designs	Aug. 13	Aug. 14	75
	Trade-Marks	Aug. 23	Aug. 23	28

PATENTS

GRANTED SEPTEMBER 3, 1895.

545,436. AUTOMATIC NEWSPAPER-SELLING APPARATUS. ABRAHAM ABELSON and LOUIS LESSER, New York, N. Y. Filed Jan. 15, 1895. Serial No. 534,945. (No model.)



Claim.—1. In a vending machine, the combination with a casing, of a horizontally movable discharger, a rotary shaft, a flexible connection between said shaft and discharger and a lock releasing mechanism for said shaft operated by the insertion of a coin, substantially as specified.

2. In a vending machine, the combination with a casing, having the upper and lower compartments of the discharger extended into each of said compartments, a rod upon which the discharger moves, the return spring, the horizontal shaft in the lower compartment, a wheel on said shaft, a flexible connection between said wheel and discharger, and a lock releasing mechanism for the shaft rendered operative by the insertion of a coin, substantially as specified.

3. In a vending machine, the combination with a casing, a discharger, a rotary shaft and a connection between the discharger and shaft, of a locking mechanism, comprising a casing, a notched disk in said casing and rigidly mounted on the shaft, a coin chute registering with the normal position of the notch, a locking lug engaging with the disk and means for releasing the lug from the disk by the rotary movement of a coin, substantially as specified.

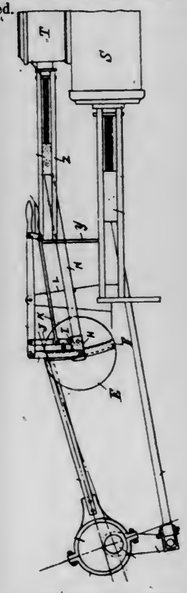
4. In a vending machine, the combination with a rotary shaft, of a locking mechanism, therefor comprising a disk mounted on the shaft and having a notch adapted to receive a coin, a coin chute registering with the normal position of said notch, a lug extended into a slot in said disk, and a pivoted finger engaging against the spring plate and extended into the line of movement of a coin, carried by the disk, substantially as specified.

5. The combination with a discharging mechanism comprising a rotary shaft, of the lock casing consisting of the two plates, a notched disk mounted on the shaft and movable in a recess formed in one of said plates, the spring plate having a lug extended into an arc shaped slot in said disk, a horizontally swinging finger operated by the movement of a coin to release the lug from the disk and the coin ejector, substantially as specified.

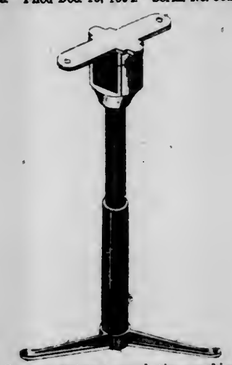
545,437. REVERSE-MOTION FOR STEAM-ENGINES. JOHN L. ALEXANDER, Hazelrigg, Ind. Filed May 18, 1895. Serial No. 549,753 (No model.)

Claim.—1. The combination with a steam engine a disk mounted thereon, an eccentric to operate said disk, a slidable dog on the block of said disk, said block in the arc of a circle, teeth in said block, a reverse lever connected to the dog by means of a connecting rod, and means to lock the reverse lever at any portion of the stroke desired substantially as shown and described.

2. In a reverse or valve gear for steam engines consisting of a disk operated by the eccentric of the engine and mounted on the crank shaft, a block on said disk in the arc of a circle, said block provided with teeth on one side, a dog slidable on said block, a valve rod connecting said dog with the valve-stem, a cross head and reverse lever connected to said dog by means of a link, said reverse lever fulcrumed to a suitable bracket, a pawl slidable in said dog, a lever connected to said dog and reverse lever, a connecting rod between said lever and the handle of the reverse lever, and a spiral spring between the two said connecting levers to hold said pawl in position, substantially as shown and described.



545,438. SCAFFOLDING STAND OR SUPPORT. JAMES A. ALLEN, Adams, Mass. Filed Dec. 18, 1894. Serial No. 532,243. (No model.)



Claim.—1. In a scaffolding stand, the combination with the adjustable tubular standard and the top piece having the upwardly extending arms, of the top plate having the downward extension entering the top of the tubular standard; substantially as and for the purpose set forth.

2. In a scaffolding stand the combination with the adjustable tubular standard and the top piece having the upwardly extending

arms provided with notches in their ends, of the top plate having the downward extension entering the top of the tubular standard, and provided with ribs or projections on its under side fitting in the depressions in the ends of the arms, when the top plate is in position, as and for the purpose set forth.

545,439. APPARATUS FOR REPRODUCING PHONOGRAMS. EDWARD H. AMET, Waukegan, assignor to Charles Dickinson, Chicago, Ill. Filed June 7, 1895. Serial No. 551,944. (No model.)



Claim.—1. In a machine for copying and reproducing phonograms, the combination with a reproducing stylus secured to a vertically vibrating lever, a laterally vibrating lever upon which said first mentioned lever is mounted, a yoke on said laterally vibrating lever, a spring extending between and bearing against the arms of said yoke and also against said stylus carrying lever, substantially as specified.

2. In a machine for copying and reproducing phonograms, the combination with a reproducing stylus secured to a vertically vibrating lever, a laterally vibrating lever upon which said first mentioned lever is mounted, a yoke on said laterally vibrating lever, a spring extending between and bearing against the arms of said yoke and also against said stylus carrying lever, and a cushion between said spring and stylus carrying lever, substantially as specified.

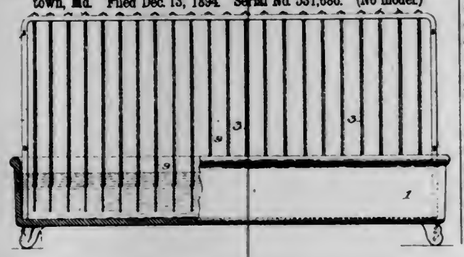
3. In a machine for copying and reproducing phonograms, the combination with a reproducing stylus secured to a vertically vibrating lever, a laterally vibrating lever upon which said first mentioned lever is mounted, a yoke on said laterally vibrating lever, a spring extending between and bearing against the arms of said yoke and also against said stylus carrying lever, an engraving stylus, a lever carrying the same and means for connecting said engraving stylus carrying lever with said reproducing stylus carrying lever, substantially as specified.

4. In a machine for copying and reproducing phonograms, the combination with a reproducing stylus secured to a vertically vibrating lever, a laterally vibrating lever upon which said first mentioned lever is mounted, a yoke on said laterally vibrating lever, a spring extending between and bearing against the arms of said yoke and also against said stylus carrying lever, an engraving stylus, a lever carrying the same and means for connecting said engraving stylus carrying lever with said reproducing stylus carrying lever, substantially as specified.

5. In a machine for copying or reproducing phonograms, the combination with a reproducing stylus F, a lever F′ on which it is mounted, a flat spring F^4 supported at both ends and bearing at its middle against said lever F′, an engraving stylus H, a lever H′ on which it is mounted, and a connection between said levers f″ and H′, substantially as specified.

6. In a machine for copying or reproducing phonograms, the combination with a reproducing stylus F, a lever F′ on which it is mounted, a flat spring F^4 supported at both ends and bearing at its middle against said lever F′, an engraving stylus H, a lever H′ on which it is mounted, and a connection between said levers F′ and H′, and a rubber cushion F^5 between said lever F′ and spring F^4, substantially as specified.

545,440. AIR-MOISTENER. WILLIAM H. ARMSTRONG, Hagerstown, Md. Filed Dec. 13, 1894. Serial No. 531,686. (No model.)

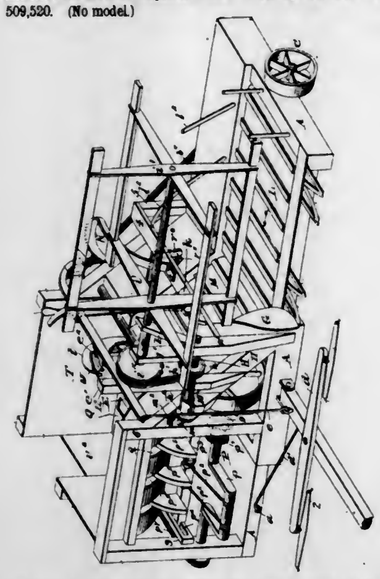


Claim.—1. In an air moistener, the combination of the water receptacle or pan 1, the wire cage or frame 2 and the sheets of porous material 3 as and for the purpose substantially as set forth and described.

2. In an air moistener, the combination of the water receptacle, the wire cage or frame, the wires 7 and 9, and the sheets of porous material substantially as described and set forth.

3. In an air moistener, the combination of the water receptacle, 1, the wire cage or frame 2, the wire 7 with its bent projections 8 and loops 10 and 12, the wire 9, and the sheets of porous material 3, as and for the purposes substantially as described and set forth.

545,441. CORN HARVESTER AND BINDER. RICHARD ARTMANN and REINHART PROEHL, Mapleton, Minn. Filed Apr. 28, 1894. Serial No. 509,520. (No model.)



Claim.—1. In a corn harvester, the combination of a platform having at one end a cutting apparatus, a reel, and a horizontally-disposed traveling apron, and at the opposite end a gavel-forming compartment having a floor curved upwardly at its front end and provided with a series of slots, a bar having packers to operate through the said slots, actuating mechanism for the said packers, a binding arm adapted to operate through a slot in the said bottom, a wire-twisting mechanism arranged exterior to the gavel-forming compartment, an ejector arranged to operate through an opening in the floor of the compartment and moved by the packer actuating mechanism, a gate closing an opening in the side of the aforesaid compartment, a spring for normally holding the gate closed, and connections between the said gate and the ejector, whereby the two operate simultaneously, substantially as described for the purpose set forth.

2. In a corn harvester, the combination with the platform and a gavel-forming and binding mechanism at one end of the platform, of a cutting apparatus at the opposite end of the platform, a traveling apron disposed in the rear of the cutting apparatus, and bars arranged to engage with the top ends of the stalks and tilt the latter, whereby the butt ends are caused to advance toward the gavel-forming and binding provisions, substantially as set forth.

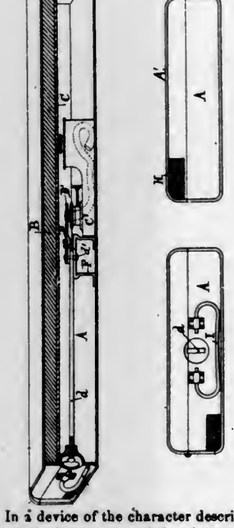
3. In a corn harvester, the combination with the platform having a gavel-forming and binding mechanism at one end, of a cutting apparatus at the opposite end of the platform, a traveling apron located in the rear of the cutting apparatus, a reel disposed to operate directly above the traveling apron, and bars arranged to co-operate with the reel and apron to reverse the position of the stalks and cause the latter to advance butt end foremost toward the gavel-forming and binding mechanism, substantially as specified.

4. In a corn harvester, the combination with a platform having a cutting apparatus and traveling aprons, of a gavel-forming compartment having a bottom, or floor, curved upwardly at its front end and provided with a series of slots, a packer arranged to operate through the slots, a binding arm to move upward through the bottom of the compartment, a wire-twisting mechanism in the rear and exterior to the said compartment, a gate, or door, closing an opening in the side of the compartment, and an ejector adapted to operate through an opening in the floor of the compartment and operatively connected with the gate, whereby the said parts operate in unison, substantially as and for the purpose set forth.

5. In a corn harvester, the combination with a platform provided with cutting apparatus and traveling aprons, of a gavel-forming compartment having its bottom curved upwardly on its front side and provided with slots, a bar provided with a series of packers to operate through the said slots, a binding mechanism, a door, or gate, closing an opening in the side of the compartment, an approximately U-shaped ejector frame having its upper portion normally closing a slot in the bottom of the compartment, and actuating means for the said ejector frame and gate, whereby these parts are operated at the same time to throw the bundle from the machine, substantially as set forth.

6. The herein-specified corn harvester and binder, comprising a platform having a gavel-forming compartment at one end and the cutting apparatus at the opposite end, traveling aprons to convey the stalks to the compartment, a reel adjustably mounted over the horizontal apron, rods arranged in the rear of the apron and adapted to engage with the tops of the stalks and cause the latter to advance butt end foremost to the compartment, a wire-twisting mechanism arranged in the rear of the compartment, and comprising a slotted tube having a cutting edge, a wire holder, and a twister, the latter having hooked ends, a binding arm adapted to operate through a slot in the bottom of the compartment and through an opening in the rear wall of the said compartment to reach the wire-twisting mechanism, packers disposed to operate through slots in the front curved end of the compartment bottom, a door closing and opening in the side of the compartment, an ejector frame operatively connected with the door, and constructed to normally close a slot in the bottom of the compartment, actuating mechanism for the ejector frame, binding arm and twisting mechanism operatively connected with the packer driving mechanism, and a clutch under the control of the driver to throw the binding mechanism in gear when required, substantially as set forth.

545,442. HEATING APPARATUS FOR CARRIAGES OR RAILWAY-CARS. ARTHUR BASCARY, Paris, France. Filed June 26, 1895. Serial No. 554,099. (No model.) Patented in France Dec. 22, 1894, No. 243,765.



Claim.—1. In a device of the character described, the combination with a casing, of a lamp arranged therein, a plate of refractory material as specified adapted to be heated by the lamp, an adjustable rod carried by the casing, one end projecting through the casing, arms pivotally connected to the opposite or inner end of the rod, and guide pins arranged and adapted to effect the spreading or closing of the arms in the manner described when the rod is moved respectively inwardly and outwardly, for the purpose set forth.

2. In a device of the character described, the combination with a casing, of a lamp arranged therein, a plate of refractory material as specified adapted to be heated by the lamp, an adjustable rod carried by the casing, one end of said rod projecting through the latter, arms pivotally connected to the opposite or inner end of the rod, guide pins *a a′*, arranged to bear upon the outer edges of the arms, and the pin *b* arranged to bear upon the inner adjacent edges of said arms whereby to effect the spreading and closing of the latter when the rod is moved respectively inwardly and outwardly, for the purpose set forth.

3. The combination with the casing having a hinged lid and air-admission and outlet openings, of the plate of refractory material carried in the upper part of the casing, the lamp arranged within the casing below the refractory plate, the horizontally movable rod projecting at one end through the casing, arms pivotally connected at one end to the inner end of the rod and the opposite ends of the arms being adapted to uncover and partially cover the wick of the lamp, the pins *a a′ b*, arranged to bear upon the outer and inner edges of the arms for the purpose specified, and the support F having a slot within which works the pivotal pin of the arms, all as described.

545,443. BAG. LORENZO D. BENNER, Peoria, Ill., assignor to the Union Paper Bag Machine Company, Philadelphia, Pa. Filed June 23, 1887. Serial No. 242,333. (No model.)



Claim.—1. The herein described method of forming the bottoms of bags from bellows folded tubes, which consists in folding the opposite edges of the upper plies of one side of the blank inward on longitudinal lines, folding outward the triangular corners or pieces of said inwardly folded portions, then folding inward the triangular corner pieces so they will lie over the body of the blank, then folding the inturned portion of the tube back on the longitudinal lines to their outer positions, and completing the bottom by folding over the end flap, substantially as described.

2. The herein described bag comprising the bellows folded tube provided with the triangular folded pieces 12, the triangular pieces 14, overlapping the pieces 12, and the folded end flap 15, substantially as described.

545,444. SEAMLESS LEATHER ARTICLE. FRIEND J. BRINGHAM, Chicago, Ill., assignor to the Seamless Leather Company, same place. Filed Oct. 6, 1894. Serial No. 525,097. (No model.)



Claim.—1. A seamless article of leather made of a single piece of leather split edgewise forming an expanded pocket, substantially as described

2. A seamless article of leather made of a single piece of leather split edgewise forming an expanded pocket and a stiffening piece inserted in said pocket to hold it expanded substantially as described.

545,445. SKIRT FOR DOUBLE HARNESS. FRIEND J. BRINGHAM, Chicago, Ill., assignor to the Seamless Leather Company, of Illinois. Filed Jan. 9, 1895. Serial No. 534,389. (No model.)

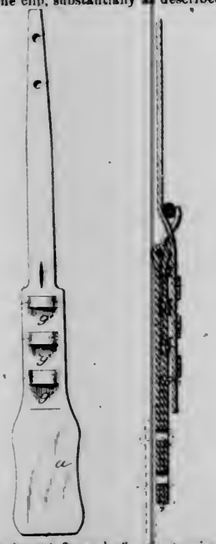


Claim.—In combination the skirt strap A, having the slitted and expanded lower end and the slitted upper end, the trace bearer B having its upper end inserted in the upper slit and adapted to be held therein by the pad screws or equivalent means, the said bearer having its lower end reduced and provided with shoulders, and inserted in the slit in the lower end of the skirt, substantially as described.

545,446. HAME-TUG. FRIEND J. BRINGHAM, Chicago, Ill., assignor to the Seamless Leather Company, of Illinois. Filed Jan. 9, 1895. Serial No. 534,394. (No model.)

Claim.—1. The tug attachment formed of a single piece of leather *a b*, the part *a* being slitted longitudinally to form a passage for the part *b*, and provided with a transverse loop, the part *b* provided with

a perforation *d*, for the buckle, and being drawn through the transverse loop and the longitudinal slit, in combination with the buckle and a loop *h*, and with means for connecting the ends *a* and *b* to each other and to the hame clip, substantially as described.



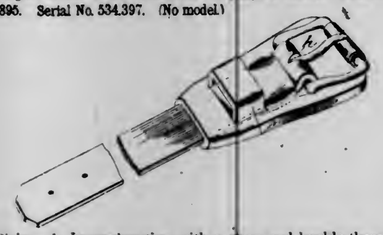
2. The tug attachment formed of a single piece of leather *a b*, integral loops made in the surface of the part *a* with spaces between, independent loops in said spaces, said loops being held in place by the part *b* passing through them and through the permanent loops, substantially as described.

3. The tug attachment formed of a single piece of leather *a b*, integral loops made in the surface of the part *a* with spaces between, independent loops in said spaces, said loops being held in place by the part *b* passing through them and through the permanent loops, and a buckle held in the loop formed by turning back the part *b*, substantially as described.

4. The tug attachment formed of a single piece of leather *a b*, the part *a* being slitted longitudinally and having integral loops in its surface, and the part *b* passing through said loops and the slitted part and independent loops secured to the part *a* by the part *b*, substantially as described.

5. A single piece of leather *a b*, the part *a*, being slitted longitudinally to form a passage for the part *b*, and provided with an integral or transverse loop to hold the buckle in place, the part *b* being drawn through the transverse loop, and the longitudinal slit, and a loop for the end of the strap, substantially as described.

545,447. BUCKLE-CHAFE. FRIEND J. BRINGHAM, Chicago, Ill., assignor to the Seamless Leather Company, of Illinois. Filed Jan. 9, 1895. Serial No. 534,397. (No model.)

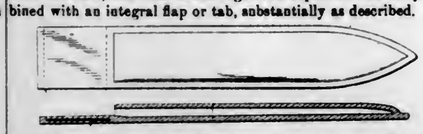


Claim.—1. In combination with a strap and buckle thereon, a chafe therefor having a transverse slit *b* and a longitudinal slit *a* extending from the slit *b* to the end of the chafe, the end of the strap being held within the longitudinal slit, substantially as described.

2. A buckle chafe A formed with transverse slits *b*, *c*, *d*, and with the expanded slit *a* extended to the slit *b*, a loop *f*, and a strap *g* having a buckle, said strap being threaded through the slit *b*, *c*, *d*, and out through the slit *a*, substantially as described.

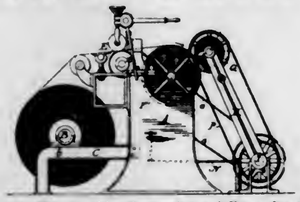
545,448. SHEATH OR CASE. FRIEND J. BRINGHAM, Chicago, Ill., assignor to the Seamless Leather Company, of Illinois. Filed Jan. 9, 1895. Serial No. 534,399. (No model.)

Claim.—1. A case formed out of leather split in a plane parallel with the sides, but with uncut edges and expanded into shape combined with an integral flap or tab, substantially as described.



2. A case formed out of leather split in a plane parallel with the sides, but with uncut edges, and expanded into shape, a flap or tab integral therewith, and a transverse split forming a loop for attaching the case to a belt or the like, substantially as described.

545,449. MACHINE FOR WINDING PAPER. NORMAN H. BROKAW, Kaukauna, Wis. Filed Dec. 31, 1894. Serial No. 533,481. (No model.)

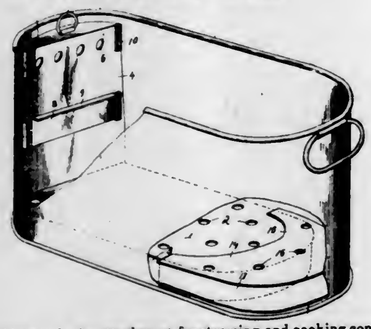


Claim.—1. The combination, substantially as hereinbefore set forth, a main frame, an unimpeded, freely revolving shaft for supporting a roll of paper to be re-wound, of a frictionally driven drum over which the paper to be re-wound passes, and a positively driven re-winding shaft mounted to recede from the drum as the diameter of the paper wound on the shaft increases, said drum being so mounted that it supports the re-winding shaft to relieve it from the weight of the paper and to prevent it from springing or bending.

2. In a machine for re-winding paper, the combination of a main frame, an unimpeded, freely-revolving shaft for supporting a roll of paper to be rewound, a re-winding shaft, swinging arms on which this shaft is mounted, a driving shaft in line with the axis about which the arms swing, driving connections between the driving shaft and re-winding shaft, whereby the latter is positively revolved to wind the paper upon it, and a drum over which the paper to be re-wound passes and which supports the weight of the re-winding shaft and the roll of paper thereon, thereby preventing the shaft from springing or bending.

3. The combination, substantially as hereinbefore set forth, of a main frame, a shaft for supporting a roll of paper to be slit and re-wound, slitting apparatus through which the paper passes, a shaft on which the paper in smaller rolls is re-wound, swinging arms on which the re-winding shaft is mounted, a driving shaft in line with the axis about which the arms swing, a pulley on the driving shaft connected by belt gearing with a pulley on the re-winding shaft, a cylinder of large surface area mounted in bearings below the bearings of the re-winding shaft and arranged to support the re-winding shaft and the roll of paper thereon to prevent it from springing or bending.

545,450. STEAM-COOKER. JOSEPH R. BROWN, Salem, Oreg. Filed June 20, 1895. Serial No. 553,442. (No model.)



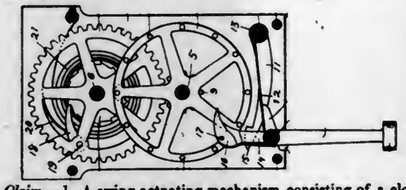
Claim.—1. An attachment for steaming and cooking comprising a perforate false bottom having an upright hollow extension provided with a series of horizontally-disposed openings arranged at different levels, and a gate common to the series of openings and adapted to be shifted from one set of openings to the other, whereby the attachment can be used in connection with a large or small quantity of food or articles, substantially as set forth.

2. An attachment for steaming and cooking comprising a perforate false bottom having an upright hollow extension provided with a series of horizontally-disposed openings arranged at different levels, and having vertical ways at the ends of each set of openings, and a gate adapted to be applied to the exterior of the hollow extension and to be shifted from one set of openings to the other, whereby the attachment is adapted for a large or small quantity of food or articles, substantially as specified.

3. The combination with an attachment for steaming and cooking comprising a perforate false bottom having an upright hollow extension formed with escape openings, of an extensible end section comprising a crescent-shaped top having openings formed therein and a depending flange at the outer edge of the said top, substantially as described for the purpose set forth.

4. As an improved article of manufacture, an attachment for steaming and cooking comprising a perforate false bottom having a depending flange and provided at one end with an upright hollow extension which is curved on its outer side and flattened on its inner side, and which extends approximately the full width of the bottom, said extension being closed at its upper end, and having at different levels in its inner flattened side a series of horizontally-disposed openings, a shiftable gate common to each set of openings and adapted to close one or the other thereof, and an extensible end section, substantially as described for the purpose set forth.

545,451. SWING-ACTUATING MECHANISM. JOSEPH A. BRUNNER, Fort Wayne, Ind. Filed Jan. 23, 1895. Serial No. 535,882. (No model.)



Claim.—1. A swing actuating mechanism, consisting of a clock train, mounted as shown in supporting brackets, an escape wheel having a series of peripheral pins in lieu of teeth, a pendulum arbor having an engaging pawl for the escape wheel and an actuating lug for the holding pawl, a holding pawl 11 fixed on the rock shaft 3 and adapted for an alternate engagement with the said escape-wheel, a rock-shaft 3 having an actuating spring 12 for the purpose specified, a pair of winding drums rigidly mounted upon the extended ends of the driving-wheel shaft and provided with suspending chains or cables mounted in the slotted ends of the oscillating arbor-bar, all substantially as described.

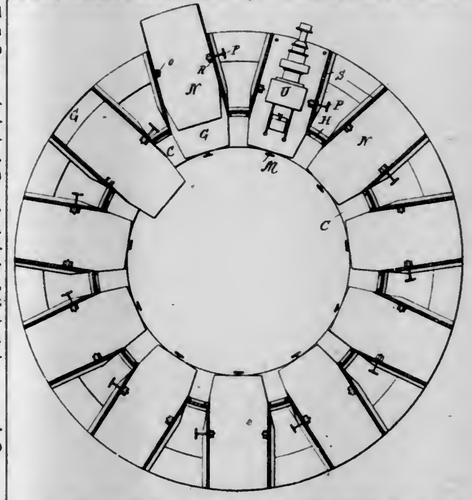
2. In a swing actuating mechanism, the combination of the supporting brackets 1 united by the rods 2, a clock train having an escape-wheel with a series of parallel peripheral pins for the purpose specified, a pendulum arbor comprising a rock-shaft having a central depending arm provided with a slotted guide-bar for the seat supporting chains an oblique lug to actuate the holding pawl, and a pawl to engage the escape-wheel and provided with a spring pressed detent, as described, a rock-shaft 3 provided with a rigid holding pawl 11 for the escape wheel and an actuating spring 12 adapted to engage the lug 24 on the rock shaft 4, and a pair of winding drums rigidly fixed on the ends of the shaft 6 and provided with the chains or cables 27 mounted as shown and carrying at their lower ends a swing-seat 29, and the seat-supporting chains arranged as shown, all substantially as and for the purpose described.

545,452. STEREOPTICON PANORAMA MACHINE. CHARLES A. CHASE, Chicago, Ill., assignor to the Chase Electric Cyclorama Company, of Illinois. Filed Sept. 24, 1894. Serial No. 523,975. (No model.)

Claim.—1. A table with its central portion removed, in combination with a series of primary carriages adapted to move circumferentially thereabout, and a series of secondary carriages each mounted on a primary carriage and adapted to move radially and along such primary carriage, and a stereopticon mounted upon each secondary carriage.

2. The combination of a table with annular way therearound and having its central portion removed, undercut grooves on the opposite sides of such way, a series of radially disposed axles having suitable wheels to run in such grooves and stereopticon tables supported upon such axles so as to travel circumferentially, the whole so arranged that the stereopticons may be moved separately around the opening in said table so as to vary their relative position.

3. The combination of a table with a series of primary carriages thereon, and a series of secondary carriages each adapted to move radially and along the primary carriage by means of racks and pinions associated therewith, said primary carriages adapted to be moved about a common center, but entirely disconnected from such center.



4. The combination in a device for manipulating two or more stereopticons adapted to be used in projecting continuous views upon a receiving surface, of a table, a series of primary carriages supported by said table and adapted to be moved around a common center, and a series of secondary carriages each mounted upon a primary carriage and adapted to be moved therealong, and a stereopticon mounted upon each of said secondary carriages whereby said stereopticons may be quickly and easily moved to a position in which the portions of the view projected by each stereopticon may be brought into the required relation.

545,453. TREADLE FAN ATTACHMENT. NIAL N. CHASE, Litchfield, Ill. Filed Feb. 14, 1895. Serial No. 538,413. (No model.)



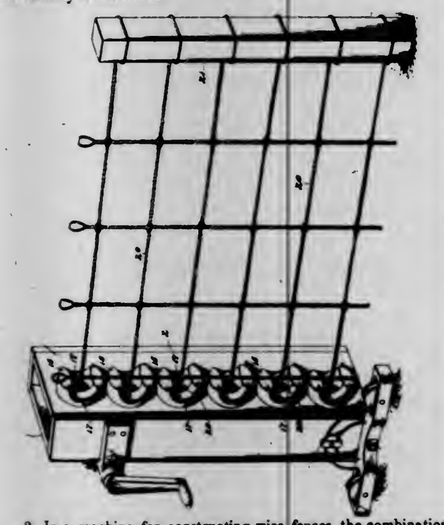
Claim.—1. The combination of a foot provided with means for attachment to a table, a standard hinged to said foot, a coiled spring secured at one end to said standard, and at the other end to the foot, a button or stop on the standard to limit its movement, a fan-supporting lever fulcrumed upon the standard, and connections between said lever and an operating treadle, substantially as specified.

2. The combination of a foot provided with means for attachment to a table, a standard hinged to said foot, means for yieldingly securing the standard in the desired position with relation to the foot whereby it is adapted to yield forwardly, a lever fulcrumed upon the standard, lateral arms carried by the lever and terminating in sockets adapted to receive fan-stems or handles, and connections between the lever and an operating treadle, substantially as specified.

545,454. WIRE-FENCE MACHINE. SAMUEL Z. CLARK, Rushville, Ill. Filed May 28, 1895. Serial No. 550,969. (No model.)

Claim.—1. In a wire fence machine, the combination with the frame or housing in which the twisting wheels are journaled, of a bumper or spacing block comprising an annular casting provided with a central aperture and with oppositely disposed notches for the reception of the bolt heads or nuts by means of which said bumper or spacing block is secured to the frame or housing, and an inwardly project-

ing annular flange or sleeve formed integrally with said bumper or spacing block and extending through the wall of the frame or housing, said sleeve forming a bearing for the hub of the twisting wheel, substantially as described.



2. In a machine for constructing wire fences, the combination with the frame or housing in which the twisting wheels are mounted, of a carrier having a pivotal connection with the base of said frame or housing, a pair of semicircular concentric wires or rods carried by said carrier and bearing against the face of the frame or housing, and a notched and pivoted button secured to the frame or housing and adapted to co-operate with said concentric wires or rods for adjusting the angle of the machine frame with relation to the carrier, substantially as specified.

545,455. VALVE FOR PNEUMATIC TIRES OR OTHER ARTICLES. CLEMENTS COURTNEY, London, England. Filed Nov. 16, 1894. Serial No. 528,962. (No model.) Patented in England Mar. 16, 1894, No. 5,506.



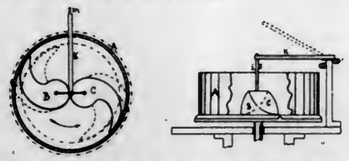
Claim.—1. The combination with a valve casing, of a valve stem, a tube of rubber or other similar material within the casing closed at one end and connected at its open end with said valve stem and having an incision or other suitable opening through its side, and a stop for the closed end of the tube during inflation, substantially as and for the purpose described.

2. The combination with a valve casing having an inner shoulder, of a valve stem, and a tube of rubber or other suitable material in said casing closed at one end by a plug adapted to seat against said shoulder, the plug and shoulder being arranged to permit the passage of fluid when the plug is seated, said tube being connected with the valve stem at its opposite end and having an incision or other suitable opening through its side, substantially as and for the purpose described.

3. The combination with a valve casing D, of a valve stem *a*, tube *d* of rubber or similar material closed at its inner end and connected at its outer end with said stem and having an incision or other suitable opening through its side, a stop for the closed end of the tube during inflation, and guide rod 12 extending from the closed end of the tube into the valve stem, substantially as and for the purpose described.

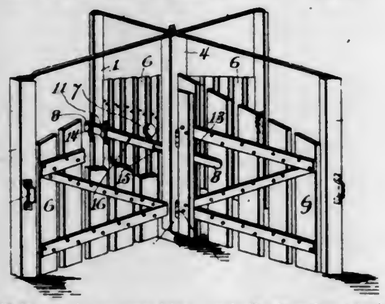
545,456. TRITURATING AND EMULSIFYING MACHINE. WILLIAM B. COWAN, Guelph, Canada. Filed May 9, 1894. Serial No. 510,585. (No model.)

Claim.—1. The grinding stones B and C with base or butt rounded in a semi-cylindrical form about a vertical axis formed by the fork tangs which project into them, thus forming a pivot upon which they swing till their points touch the edge of the revolving pan, actuated automatically by the friction of the revolving pan and the pressure of the material being operated upon in connection with a revolving pan and means for operating the same substantially as hereinbefore described and illustrated in the drawings.



2. The fork J (upon which the grinding stones swing) with upright stem (*i*) square at the top and the fork holder K fitting on to and holding it firm in position; said fork holder being attached at its other end to the fixed post L by means of a hinge controlled by a spring or springs of any suitable form, for the purpose of holding the fork holder either down on the fork stem or up out of the way, the whole in connection with a revolving pan and means for operating the same as hereinbefore described and illustrated in the drawings.

545,457. TURNSTILE-GATE. BENJAMIN T. COWLEY, New Boston, Tex. Filed May 24, 1895. Serial No. 550,475. (No model.)

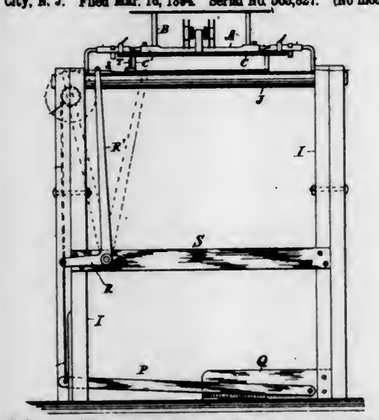


Claim.—1. A gate comprising a vertically pivoted post, horizontal wings fixed to the post, a wing hinged to the post, and the slidable latch bar adapted to lock the said post to an adjacent fence, and to lock the said hinged wing to the aforesaid post, substantially as set forth.

2. In a turn-stile gate, the combination of the vertically pivoted post, the gate wings fixed to the post, with the gate wing hinged to the post, and the latch bar slidably secured to the fixed wing opposite the hinged wing and adapted to slide through the said post, to lock the hinged wing to the post, as set forth.

3. The slotted post, the brace rods connecting the ends of intersecting fences, and in which the said post is pivoted, combined with the wings fixed to the post, the wing hinged to the post, and the latch bar slidably secured upon the fixed wing opposite the hinged wing to lock the latter with said post and the post with the fences, as set forth.

545,458. TYPE-WRITING MACHINE. JOSEPH M. CRARY, Jersey City, N. J. Filed Mar. 16, 1894. Serial No. 503,827. (No model.)



Claim.—1. The combination, with the typewriter having suitable footp ieces, and a feed carriage with lever to actuate the line feed, and a spring drum to reverse the carriage, of a stand having the typewriter fitted removably to its top, the stand being provided with stops, as l^2, adapted to admit the foot pieces and resist the longitudinal movement of the same, the treadle P, the treadle lever with arms R, R', of unequal length, the connection S' from the treadle to the short arm, the detachable connection *s* from the long arm to the feed lever, and the spring drum having a spring of suitable strength to perform the triple function of lifting the treadle, actuating the line feed, and shifting the carriage, substantially as herein set forth.

2. The combination, with a suitable stand having a treadle pivoted thereon and a bell crank with arms of unequal length, a typewriter with foot pieces to rest upon the stand and stops upon the stand to admit the same, the hand lever M having a pawl formed with two teeth l', l^3, a feeding roll L with ratchet wheel *l* to fit said teeth, the auxiliary lever T having one end arranged to engage the under end of the pawl, the stops *n* to restrict the lever's movement, a connection from the lever to the long arm of the bell crank, and a connection from the treadle to the short arm of the bell crank, substantially as herein set forth.

3. The combination, with a suitable stand having a treadle and bell crank pivoted thereon, of stops upon the upper ends of the stands, a typewriter with foot pieces arranged to fit between the stops, the hand lever M pivoted upon the typewriter carriage and provided with the tooth *n'* and the pawl having teeth l', l^3, the auxiliary lever T having one end arranged to engage the under end of the pawl, the pulley *u'* pivoted upon the carriage below the opposite end of the lever, a connection from the auxiliary lever to one arm of the bell crank, and a connection from the treadle to the other arm of the bell crank, substantially as set forth.

4. The combination, with the ring casting A and rolls supported thereon to guide the carriage, of the carriage having the feeding roll L and platen K mounted thereon, the ratchet wheel *l* upon the end of the feeding roll, the hand lever M pivoted upon the bar C' at the end of the carriage and provided with the slot O, having the stud P pivoted within the same and provided with pin *o'*, the tooth *n'* upon the end of the hand lever with pawl having teeth l' and l^3, pivoted adjacent thereto, and provided with toe *m'*, a pin to stop the same, and spring m^3 to press the toe against the pin, and spring *m* to move the pawl normally downward substantially as herein set forth.

5. The combination, with a suitable stand having a treadle and bell crank pivoted thereon, of stops upon the top of the stand and a typewriter with foot pieces to fit between the stops, the typewriter carriage having the lever M provided with tooth *n'* and pawl having teeth l', l^3, the auxiliary lever T with one end arranged to engage the under end of the pawl, the pulley *u'* pivoted on the carriage under the opposite end of the lever, the stop *m* below the lever, and the adjustable stop *u'* pivoted upon the carriage and provided with handle u^3 to set such stop, a connection from the treadle to the bell crank, and the cord *s* extended under the pulley *u'* and connecting the bell crank with the lever T, as and for the purpose set forth.

6. The combination with a typewriter having foot pieces to rest upon a stand, and a carriage movable longitudinally between such foot pieces, of the stand consisting of the jointed legs I, I' with bars J at the top and canvas J' stretched between the same, the bar S attached to the legs I and carrying the bell crank with horizontal arm R and vertical arm R', a detachable connection from the arm R' to the typewriter carriage, a treadle pivoted suitably to one of the legs I, and a connection from the end of the treadle to the bell crank R, the whole arranged and operated substantially as set forth.

7. In a type writer, the combination with the bed ring A carrying the type bars H adapted to strike downward and having rolls to support the carriage, of the carriage formed of the tie bars C' and integral sheet metal channel bars C attached thereto, with the feeding rack teeth formed directly in the edge of one of such channel bars, and the feeding roll and platen being supported at their ends upon the tie bars C', and suitable means for actuating the carriage and roll, substantially as described.

8. In a type writer having the type mechanism with supporting feet, and a carriage movable beneath such mechanism, the combination, with the bed A having parallel studs D projected upon opposite sides, of the foot pieces E having the rods E' corresponding with the studs, the sleeves F fitted movably to the rods with stops to limit their motion and carrying clamping devices to engage the studs, as herein set forth.

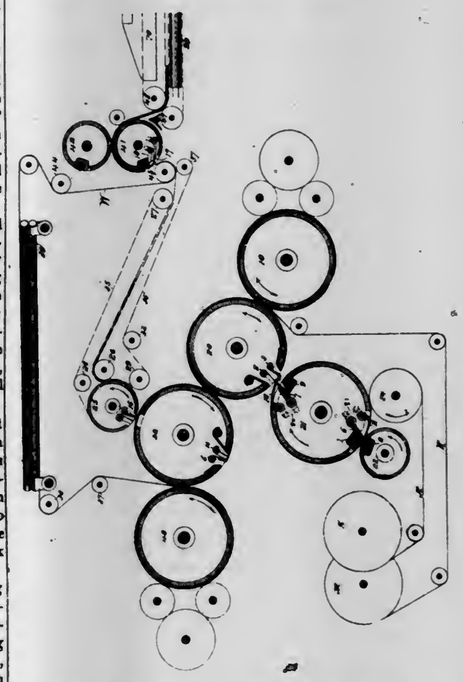
9. In a typewriter having the type mechanism with supporting feet and a carriage movable beneath such mechanism, the combination, with the bed A having parallel studs D projected upon opposite sides, of the foot pieces E having the rods E' corresponding with the studs, the sleeves F fitted movably to the rods and notched upon their upper sides at the outer end, and provided with the guide rolls G and the eccentric cams H to clamp the studs, substantially as set forth.

10. In a typewriter, the combination with the carriage having a feed roll for propelling the paper, of a rectangular bar platen having greater width than thickness and coated upon its broader sides with hard and soft india rubber to make the sides equidistant from the center, pivots fixed centrally at the ends of the platen, similar seats *k* adjacent to one of the pivots, and a spring *k'* adapted to press upon one of the seats, as and for the purpose set forth.

11. In a typewriter provided with the bed ring A and type bars adapted to carry the types into the center of the ring, of the bearing A^3 at the rear side of the ring, ribbon-spools *g*, *g'* mounted upon a stud g^3 in such bearing and provided with the ratchet wheels *h*, *h'* adjacent to the bearing, levers h^2 pivoted upon the bearing and actuated by suitable connection to the buttons H', pawls *i*, *i'* and springs i^3 carried by the levers h^2, and the lever *j'* pivoted upon the rear side of the bearing, with stops at its opposite sides, and carrying the double wedge *j* to detach either of the pawls at pleasure from its ratchet wheel, substantially as herein set forth.

12. The combination with a typewriter having the bed ring A, with studs D projected from opposite sides, of the foot pieces E having at their ends rods E' corresponding to such studs, and the coupling sleeves F notched upon the upper side and having cams fitted through the notches to clamp upon the studs, as and for the purpose set forth.

545,459. MECHANISM FOR ASSOCIATING SHEETS. LUTHER C. CROWELL, Brooklyn, assignor, by direct and mesne assignments, to Robert Hoe, Theodore H. Mead, and Charles W. Carpenter, New York, N. Y. Filed Oct. 1, 1892. Serial No. 447,503. (No model.)



Claim.—1. The combination with a receiving cylinder running at high speed, adapted to receive and support a main web and provided with means for engaging and retaining short or supplemental sheets thereon, of a carrying cylinder running at an appropriate low speed and provided with means for retaining a sheet thereon, the two said cylinders co-operating, the carrying cylinder to slowly feed a short or supplemental sheet onward to the receiving cylinder and the latter to seize and transfer said sheet to its surface in association with the main web, substantially as described

2. The combination with a cylinder provided with means engaging, retaining and carrying onward sheets delivered in succession to it, a more rapidly moving receiving cylinder provided with means for engaging said sheets and laying the same upon its surface, and means for delivering a main web to said receiving cylinder, substantially as described.

3. The combination of a cutting mechanism for dividing a web transversely into sheet lengths, with a cylinder provided with means engaging, retaining and carrying successive sheets onward, a more rapidly moving receiving cylinder provided with means for engaging

said sheets and laying the same upon its surface, and means for delivering a main web to said receiving cylinder, substantially as described.

4. The combination with a revolving carrying cylinder having means for retaining supplemental sheets thereon and means for lifting the leading end of each sheet from off its surface, of a more rapidly revolving receiving cylinder provided at one end with means for engaging and retaining said sheet and carrying the same upon its surface, and having its other end adapted to receive and carry a main web or sheets length, substantially as described.

5. The combination with a revolving carrying cylinder having means for retaining supplemental sheets thereon and means for lifting the leading end of each sheet from off its surface, and a cutting mechanism operating to sever a web into sheets, of a more rapidly revolving receiving cylinder provided at one end with means for engaging and retaining said sheet and carrying the same upon its surface, and having its other end adapted to receive and carry a main web or sheets length, substantially as described.

6. The combination with a revolving carrying cylinder having means for engaging, retaining and carrying onward small or supplemental sheets delivered in succession to it, and a more rapidly moving receiving cylinder provided with means for engaging retaining and carrying said sheets, and with means for delivering thereto a main web with which the supplemental sheet is to be associated, substantially as described.

7. The combination with a revolving carrying cylinder having means for engaging, retaining and carrying onward small or supplemental sheets delivered in succession to it, and a more rapidly moving receiving cylinder provided with means for engaging retaining and carrying said sheets, with means for delivering thereto a main web with which the supplemental sheet is to be associated, and provided with means for delivering said sheet from its surface, substantially as described.

8. The combination with a cutting mechanism for dividing a web transversely into sheet lengths and a revolving carrying cylinder having pins for engaging, retaining and carrying each sheet, of a more rapidly revolving receiving cylinder provided at one end with grippers operating to seize said sheet and carry it onward upon its surface, and at the other end adapted to receive and carry a main web, substantially as described.

9. The combination with a cutting mechanism for dividing a web transversely into sheet lengths and a revolving carrying cylinder having pins for engaging, retaining and carrying each sheet, and with a throw off for detaching the head of said sheet from the pins, of a more rapidly revolving receiving cylinder provided at one end with grippers operating to seize said sheet and carry it onward upon its surface, and at the other end adapted to receive and carry a main web, substantially as described.

10. The combination with a cylinder provided with a cutting blade, and a cylinder provided with a cutting slot for co-operation with said blade in dividing a web into sheets and pins for engaging, retaining and carrying said sheets onward, of a more rapidly revolving cylinder provided at one end with grippers operating to seize said sheet and carry it onward upon its surface, and at the other end adapted to receive and carry a main web, substantially as described.

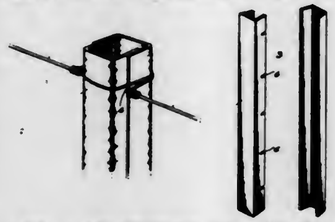
11. The combination with a cylinder provided with a cutting blade, and a cylinder provided with a cutting slot for co-operation with said blade in dividing a web into sheets and pins for engaging, retaining and carrying said sheets onward and with a throw off for detaching the head of said sheet from the pins, of a more rapidly revolving cylinder provided at one end with grippers operating to seize said sheet and carry it onward upon its surface, and at the other end adapted to receive and carry a main web, substantially as described.

12. The combination with a cutting mechanism for dividing a web into sheets, and a revolving cylinder having two sets of pins for engaging, retaining and carrying the sheets, of a more rapidly revolving receiving cylinder provided at one end with grippers operating to seize each sheet and carry it onward upon its surface, and at the other end adapted to receive and carry a main web, substantially as described.

13. The combination with a cutting mechanism for dividing a web into sheets, and a revolving cylinder having two sets of pins for engaging, retaining and carrying the sheets, and throw off for detaching the heads of the sheets from the pins, of a more rapidly revolving receiving cylinder provided at one end with grippers operating to seize said sheets and carry it onward upon its surface, and at the other end adapted to receive and carry a main web, substantially as described.

14. The combination with cutting mechanism operating to sever a web into sheets, a revolving carrying cylinder having means for engaging, retaining and carrying onward small or supplemental sheets delivered in succession to it, and a more rapidly moving receiving cylinder provided with means for engaging, retaining and carrying said sheets and with means for delivering thereto a main web with which the supplemental sheet is to be associated, substantially as described.

545,460. FENCE-STAY. WILLIAMS D. DILLER, Boiling Springs, Pa. Filed Feb. 27, 1895. Serial No. 539,869. (No model.)

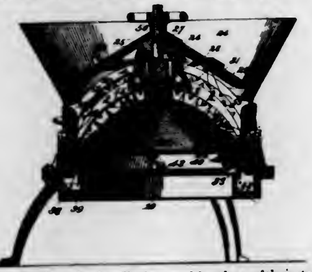


Claim.—1. The combination with the line wires of a fence, of a metallic picket composed of similar parts having corresponding flanged edge portions, the flanges of one part having notches to receive the line wires and enter and be embraced by the flanges of the opposite part, the line wires being clamped between the said parts, and means for securing the parts together, substantially as set forth.

2. The combination with the line wires of a fence, of a metallic picket composed of similar parts formed from strips of metal having their edge portions flanged, the flanged edges of one part having notches to receive the line wires and disposed upon one side of the line wires, the other part being arranged on the opposite side of the said line wires, the flanges of one part being contracted, and the flanges of the opposite part being flared, and binding wires passed around the two parts of the picket to secure them together and having their extremities coiled around the line wires, substantially as set forth.

3. In a fence, the combination with the line wires, of a metallic picket composed of similar parts formed from strips of metal having their edge portions flanged, the flanged edges of one part having notches to receive the line wires and disposed upon one side of the line wires, the other part being arranged on the opposite side of the said line wires, and having its flanged edge portion embracing the flanged edge portions of the part provided with the said notches, and binding wires passed around the component parts of the picket to clamp them together, and having their end portions coiled about the line wires on opposite sides of the said picket, substantially as specified.

545,461. FEED-MILL. JAMES H. EASTWOOD, Kansas City, Mo. Filed Nov. 5, 1894. Serial No. 527,927. (No model.)



Claim.—1. In a feed-mill, the combination with a stationary spider frame provided with a lining in the shape of an annular burr or friction-surface, of a center-post extending rotatably through said spider-frame and supported upon a ball-bearing, a burr supported from said center-post so as to be elevated when the post is raised and to descend when the post is lowered, and operating in conjunction with the first mentioned burr, a rotatable spider-frame above the stationary spider-frame and slidingly and rigidly, (with reference to rotary motion) mounted upon the said center-post, and a hopper carried by said rotatable spider-frame, substantially as set forth.

2. In a feed-mill, the combination with a stationary spider-frame, comprising the annular portion, the table having a central opening and the arms connecting said annular portion and the table and provided with upwardly projecting and depending teeth, and having a lining in the shape of a burr, which is rigidly secured to said annular portion, of a center-post mounted upon a ball-bearing and extending rotatably through the opening of said table, a cone provided with external teeth carried by said center-post, and a burr carried by said cone and adapted to operate in connection with the first-mentioned burr, a rotatable spider-frame, comprising an annular portion, a hub portion, which is mounted slidingly and rigidly, (with reference to rotary motion) upon the center-post, and the arms connecting the annular and hub-portions and provided with depending teeth, and a hopper carried by said rotatable spider-frame, substantially as set forth.

3. In a feed-mill, the combination with a stationary spider-frame, comprising the annular body-portion, the table having a central opening, and the arms connecting said annular portion and table, and provided with upwardly projecting and with depending teeth, and provided also with a lining in the shape of a burr, and an annular stationary feed-pan supported below said burr and provided with a discharge opening, of a center-post extending rotatably through the opening of said table and mounted upon a ball-bearing, a cone carried by said post and provided with external teeth adapted to act in conjunction with the depending teeth of said spider-frame, a burr carried by said cone and adapted to act in conjunction with the first-mentioned burr, a conveyer operatively connected to rotate with the center-post, having a circular rim or body-portion, and spades which depend within the feed-pan, a rotatable spider-frame, comprising the annular portion, the hub-portion, which is mounted slidingly and rigidly, (with reference to rotary motion) upon the center-post, and the arms provided with depending teeth which act in conjunction with the upwardly projecting teeth of the first-mentioned or stationary spider-frame, a hopper carried by said rotatable spider-frame, and means to vertically adjust said center-post, substantially as set forth.

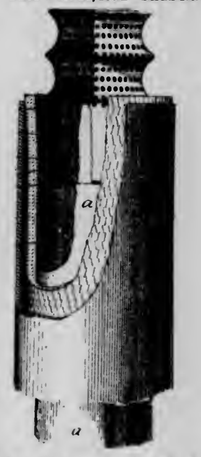
4. In a feed-mill, the combination with a stationary spider-frame, comprising the annular body-portion, the table having a central opening, and the arms connecting said annular portion and table, and provided with upwardly projecting and with depending teeth, and provided also with a lining in the shape of a burr, and an annular stationary feed-pan supported below said burr and provided with a discharge opening, of a center-post extending rotatably through the opening of said table and mounted upon a ball-bearing, a cone carried by said post and provided with external teeth adapted to act in conjunction with the depending teeth of said spider-frame, a burr carried by said cone and adapted to act in conjunction with the first-mentioned burr, a conveyer operatively connected to rotate with the center-post, having a circular rim or body-portion, and spades which depend within the feed-pan, spring-plates secured to said spades and bearing with a yielding pressure upon the bottom of the pan, a rotatable spider-frame, comprising an annular portion, a hub-portion mounted slidingly and rigidly, (with reference to rotary motion) upon the center-post, and the arms connecting said annular and hub portions and provided with depending teeth adapted to act in conjunction with the upwardly projecting teeth of the first-mentioned or stationary spider-frame, a hopper carried by said rotatable spider-frame, means to vertically adjust the center-post and the parts carried thereby, an apertured cone secured rigidly within the hopper and a similar apertured cone mounted rotatably upon the first-mentioned cone, substantially as set forth.

6. In a feed-mill, the combination with a stationary spider-frame, provided with a grooved table carrying balls, and with teeth projecting upwardly from the arms of said spider-frame, of a rotatable spider-frame provided with a grooved hub-portion also mounted upon said balls, so as to constitute a ball-bearing connection between said spider-frames, and a hopper carried by said rotatable spider-frame, substantially as set forth.

7. In a feed-mill, the combination with a stationary spider-frame, provided with a grooved table carrying balls, and provided also with teeth projecting upwardly from the arms of said spider-frame, and antifriction rollers rotatably journaled in and supported by the annular portion of the said spider-frame and projecting slightly above the upper surface thereof, of a rotatable spider-frame comprising an annular portion resting upon said antifriction-rollers, a hub-portion grooved in its under side and resting upon the said balls, and arms connecting said annular and hub-portions and provided with depending teeth, and a hopper carried by said rotatable frame, substantially as set forth.

8. In a feed-mill, the combination with a stationary spider-frame, comprising the annular portion provided with an annular groove in its upper inner margin and with a lining in the form of a burr, a table provided centrally with a cylindrical aperture and grooved in its upper side concentric to said aperture and carrying balls in said groove, and the arms connecting the annular portion and the table and provided with upwardly projecting and with depending teeth, antifriction-rollers journaled rotatably in said annular portion of the spider-frame and projecting slightly above the upper surface thereof, an annular stationary feed-pan carried below said burr and provided with a discharge opening, and legs supporting said spider-frame, of a second spider-frame, comprising the annular portion resting rotatably upon said antifriction-rollers and having a depending flange engaging the groove of the first-mentioned spider-frame, the hub-portion provided with an annular groove in its under side, engaged by said balls, and with the central opening, and vertical ribs projecting inwardly thereof, and the arms connecting said annular and hub portions and provided with depending teeth, a hopper carried by said rotatable spider-frame, a cap resting upon the hub-portion of the rotatable spider-frame and provided with a cylindrical recess or cavity registering with the opening of said hub, a center-post mounted rotatably within said table and provided with vertical grooves engaged by the ribs of said hub-portion, and with the threaded or bolt extension which extends through and above the cap, a cone carried by said post; provided externally with teeth, a burr carried by said cone, a conveyer consisting of a rim detachably connected to the burr, and spades depending vertically within the annular feed pan and provided with spring-plate extensions, and a hand-wheel threaded internally and engaging the threaded or bolt extension of the post and bearing upon the upper side of the said cap, substantially as set forth.

545,462. CENTRAL-DRAFT LAMP. WILLIAM H. EDSALL and FRANK L. LATHROP, Brooklyn, assignors to the H. L. Judd & Company, New York, N. Y. Filed June 20, 1894. Serial No. 515,119. (No model.)



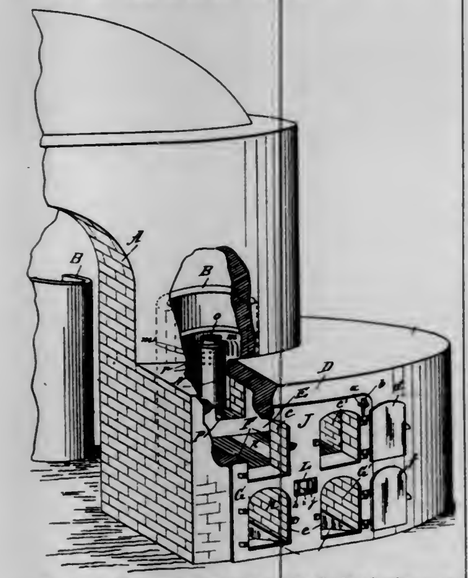
Claim.—1. In a lamp, the combination of a draft tube having the entire portion which forms the upper end thereof contracted for a considerable portion of its length, and a removable spreader perforated at its upper portion and having an imperforate depending portion extending therefrom, the lower end of which depending portion is smaller in diameter than the largest diameter of the draft tube and which is adapted to fit over and be supported on the contracted portion of the draft tube, whereby an inclosed circumferential groove or recess is formed near the lower end of the spreader the walls of which recess are formed on one side by the spreader and on the other by the wick, substantially as and for the purposes specified.

2. In a lamp, the combination of a draft tube, a removable spreader adapted to fit over the outside of and be supported thereby, said spreader having an outwardly extending perforated portion, closed at the top and larger in diameter than the largest diameter of the draft tube and located so that it will extend below the edge of the wick when the lamp is in condition for use, the upper end of said draft tube extending substantially to the height of the outwardly extending portion of the spreader, substantially as and for the purposes specified.

3. In a lamp, the combination of a draft tube, a removable spreader adapted to fit over the outside of and be supported thereby, said spreader having an outwardly extending perforated portion, larger in diameter than the largest diameter of the draft tube and located so that it will extend below the edge of the wick when the lamp is in condition for use an imperforate depending portion extending from said outwardly extending perforated portion which imperforate depending portion is gradually reduced in diameter toward the lower end thereof, and an outer tube surrounding and concentric to said draft tube, the outer tube extending to the height of the outwardly extending portion of the spreader, substantially as and for the purposes specified.

4. In a central draft lamp, the combination of an outer tube, a draft tube contained therein, having its upper end reduced, a removable, covered, perforated spreader having circumferential reductions of smaller diameter than the internal diameter of the reduced portion of the draft tube and circumferential ridges, the lowermost of which is larger than the circumference of the draft tube, an imperforate depending portion integral therewith and of gradually reduced circumference to its lower end, said spreader being adapted to fit over and engage the draft tube, as and for the purposes specified.

545,463. KILN. HENRY H. EVERHARD, Massillon, Ohio. Filed May 6, 1895. Serial No. 548,256. (No model.)



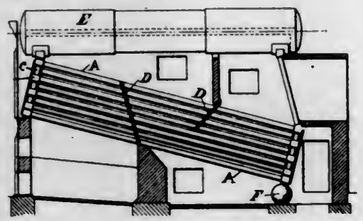
Claim.—1. The combination with a kiln, of a bag having a vertical conduit with passages leading therefrom to the inside of the bag, a fire box comprising a single fire or fuel combustion chamber, extending from one wall of the said fire box to the other, and having two separate sets of grate bars at the sides thereof, two ash pits, one under each set of grate bars, a wall separating the ash pits, an aperture or passage leading through the kiln wall from the fire chamber to the bag a vertical tube within the bag, an air conduit leading from the front of the fire box between the grate bars to the vertical tube or flue within the bag, said vertical tube or flue having apertures or passages at its upper portion leading into the bag, and corresponding conduits leading to the vertical conduit in the bag wall, the said passages of which wall correspond or register with the passages in the central flue, and the front plate having openings to correspond with the two sets of grate bars and the two ash pits, and doors to close said openings, substantially as set forth.

2. The combination with the kiln of a bag and a fire box, the latter having one fire or fuel combustion chamber provided with two separate sets of grate bars, one at each side of said chamber, a passage smaller than said chamber leading to the bag inside the kiln, a vertical tube or flue central to the bag having at its upper portion apertures leading from the said flue into the bag, a conduit leading from the front of the fire box into the last named flue, the ash pits under the separate grates, a wall separating the ash pits, and a front door plate provided with doors, substantially as set forth.

3. The combination with a kiln, of a bag, and a fire box having a single combustion chamber communicating with the interior of said bag and provided with two sets of grate bars having beneath them two ash pits separated by a wall, a vertical flue or tube about central to the bag, said tube provided at or near its upper end with apertures which lead into the bag, and a conduit leading from the front of the fire box to the central tube or flue, substantially as set forth.

4. The combination with a kiln, a bag, a vertical tube central thereto and a fire box communicating with said bag, the bag having in its wall a vertical conduit which terminates a distance below the upper end of the bag and which communicates with the interior of the bag through a horizontal passage; the vertical tube having apertures at or near the upper end in line or approximately in line with the aforesaid horizontal passage of the bag; the fire box having two separate sets of grate bars, and two ash pits below the grate bars, said ash pits being separated by a wall; a conduit leading from the front of the fire box to the vertical conduit of the bag, and a conduit leading from the front of the fire box to the tube or flue central to the bag, substantially as set forth.

545,464. STEAM-BOILER. WILLIAM D. EWART, Chicago, Ill. Filed May 15, 1894. Serial No. 511,312. (No model.)



Claim.—1. In a water tube boiler the grouped water tubes having spaces between the members thereof, and the groups having larger spaces between them, the said groups being so disposed with relation to each other that baffling groups will be above the spaces between the groups, substantially as described.

2. In a water tube boiler, the tubes arranged in groups in horizontal rows with spaces between the members thereof, and the groups having larger spaces between them, the said groups being so disposed with relation to each other that the narrow spaces in one horizontal row are over the wide spaces in the next lower horizontal row, substantially as described.

3. In a water tube boiler, the combination of a number of groups of water tubes arranged in pairs side by side with narrow spaces between the tubes of each pair, and supported in headers the said groups having larger spaces between them, and being so arranged that the spaces between the tubes of the pairs will come between or above the larger spaces between the groups of tubes, substantially as described.

4. In a water tube boiler, the combination of substantially horizontal rows of water tubes, headers connecting water tubes in horizontal groups, and relatively long thimbles connecting the headers in alternate horizontal rows, and forming substantially upright header sections, whereby great flexibility is secured to allow for expansion and contraction of parts without interference between adjoining header sections, substantially as set forth.

5. In a water tube boiler, the combination of substantially horizontal rows of water tubes arranged in pairs, individual headers for each pair, and relatively long upright thimbles connecting the headers of alternate horizontal rows, substantially as and for the purpose set forth.

6. In a water tube boiler, the combination of water tubes, a substantially vertical header section connecting same, and a steam and water separating device providing an upward channel for the steam, and obstruction against the ready entrance of the body of the water from the water tubes into the steam passage way formed in the said header section, said passage way having openings at intervals in its length located favorably for the entrance of steam liberated in the water tubes or headers, substantially as and for the purpose set forth.

7. In a water tube boiler, headers connected upwardly by thimbles, water tubes connected with said headers, and obstructing devices located substantially opposite the water tube openings within the said headers, said devices being arranged to form with the said thimbles upward steam ways in the header sections, substantially as and for the purpose described.

8 In a water tube boiler, headers connected with pairs of water tubes in alternate horizontal rows, upright thimbles connecting said headers, channels within said headers forming with the said thimbles almost continuous upright steam passage ways, and openings in said passage ways for the entrance of steam at intervals in the upward course, substantially as shown and described.

9. In a water tube boiler, the combination of the water tubes with deflector bricks provided with gravitating or self-adjustable T heads adapted to rest on the tubes and with bodies adapted to hang down between the tubes and close the space against movements of the hot gases in lines parallel to the tubes, substantially as and for the purpose set forth.

10. In a water tube boiler, the combination of the water tubes with deflector bricks provided with gravitating or self-adjustable T heads adapted to rest on the tubes and with bodies adapted to hang down between the tubes and close the space against movements of the hot gases in lines parallel to the tubes, said bricks being of such a configuration that a series of them will form a practically solid deflector wall, substantially as and for the purpose set forth.

11. In steam boilers, water tubes suitably supported and grouped in substantially horizontal or slightly inclined positions, in combination with deflector walls composed of self adjustable bricks or plates, each of which is supported in a substantially upright position by lateral projections adapted to engage with adjacent tubes, said bricks or plates having their centers of gravity below the lines of their supports, substantially as and for the purpose set forth.

545,465. SEALED PACKAGE. OLIN S. FELLOWS, Middletown, N. Y. Filed Oct. 18, 1894. Serial No. 526,254. (No model.)



Claim.—A sheet metal can formed with an end cap having an exterior flange fitting over the end of the can body to which it is soldered, said cap being bent between its flange and its end plate to form a circumscribing concave interior groove above the end of the can body when the end plate is in substantially the same plane as that of the edge of the can body, and a circumscribing reduction in thickness in the cap at or above the edge of the can body and coinciding with said interior groove, for the purpose of preventing the soldering of the end plate to the edge of the can body, and of adapting the can thus capped to contain fluids or semi-fluids by limiting the capacity thereof to the height of the can body substantially in the manner set forth.

545,466. SEALED PACKAGE. OLIN S. FELLOWS, Middletown N. Y. Filed Oct. 29, 1894. Serial No. 527,254. (No model.)



Claim.—1. A sheet metal can having an end plate, with a flange by which the end plate is soldered to the inner side of the can body, a stripping portion on the can body coinciding with said soldered joint by which the end plate and can body are secured together and provided with a stripping tongue for engagement with a strip-winding key, a circuitous reduction in thickness in the can body adjoining the plane of the end plate and a circuitous space formed between the inner surface of the can body and the opposed surface of the flange on the end plate for the purpose of preventing the flow of solder beyond the line of severance, substantially in the manner and for the purpose described.

2. A sheet metal can having an end plate with an outward flange by which the end plate is soldered to the inner side of the can body, a stripping portion on the can body coinciding with said soldered joint by which the end plate and can body are secured together and provided with a stripping tongue for engagement with a strip-winding key, a circuitous reduction in thickness in the can body adjoining the plane of the end plate, and a circuitous space formed between the inner surface of the can body and the opposed surface of the outward flange on the end plate for the purpose of preventing the flow of solder beyond the line of severance, substantially in the manner and for the purpose described.

3. A sheet metal can having an end plate with an outward flange by which the end plate is soldered to the inner side of the can body, a stripping portion on the can body coinciding with said soldered joint by which the end plate and can body are secured together and provided with a strip winding key, a circuitous reduction in thickness in the can body adjoining the plane of the end plate, a circuitous space formed between the inner surface of the can body and the opposed surface of the outward flange on the end plate for the purpose of limiting the flow of solder, and a circuitous shoulder formed upon the can body to determine the position of the end plate substantially in the manner and for the purpose described.

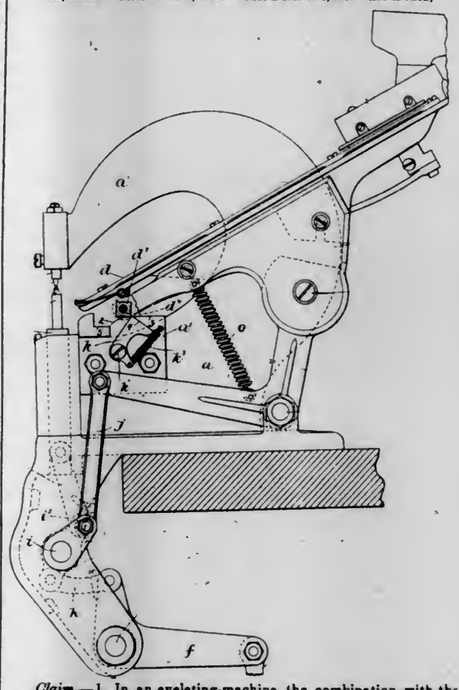
545,467. SEALED PACKAGE. OLIN S. FELLOWS, Middletown, N. Y. Filed Oct. 29, 1894. Serial No. 527,255. (No model.)



Claim.—1. A sheet metal can having an end plate with an inward flange by which the end plate is soldered to the inner side of the can body, a stripping portion on the can body coinciding with said soldered joint by which the end plate and can body are secured together and provided with a stripping tongue for engagement with a strip-winding key, a circuitous reduction in thickness in the can body adjoining the edge of said inward flange, and a circuitous space formed between the inner surface of the can body and the opposed surface of the inward flange on the end plate for the purpose of preventing the flow of solder beyond the line of severance, substantially in the manner and for the purpose described.

2. A sheet metal can having an end plate with an inward flange by which the end plate is soldered to the inner side of the can body, a stripping portion on the can body coinciding with said soldered joint by which the end plate and can body are secured together and provided with a stripping tongue for engagement with a strip-winding key, a circuitous reduction in thickness in the can body adjoining the edge of said inward flange, a circuitous space formed between the inner surface of the can body and the opposed surface of the inward flange on the end plate for the purpose of limiting the flow of solder, and a circuitous shoulder formed upon the can body to determine the position of the end plate substantially in the manner and for the purpose described.

545,468. FOOT-POWER EYELETING-MACHINE. SEYMOUR FIELD, Quincy, assignor to the Merrick Sewing Machine Company, Boston, Mass. Filed June 3, 1895. Serial No. 551,455. (No model.)



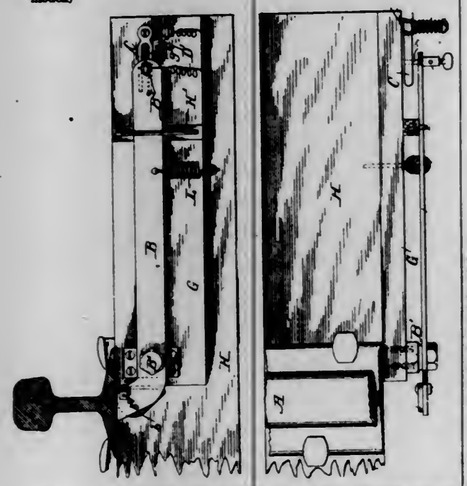
Claim.—1. In an eyeleting-machine, the combination with the eyelet-setting devices, the eyelet-chute, and mechanism for operating said parts, of the fixed track formed to raise the chute during its backward movement, and the movable track adapted to guide the chute horizontally during its forward movement.

2. In an eyeleting-machine, the combination with the eyelet-setting devices, the eyelet-chute, and mechanism for operating said parts, of the fixed track formed to raise the chute during its backward movement, the swinging arm having one end formed as a track adapted to constitute an extension of a part of the fixed track, and a spring whereby said arm is permitted to yield to the backward movement of the chute and is thrown forward to operatively locate its track under the chute.

3. An eyeleting-machine comprising in its construction the supporting frame having the fixed track, the lever *e* pivoted to said frame, the carrier d^3 pivoted to said lever and provided with a device such as a trundle-roll to bear on the fixed track and with a shoe adjacent to said roll, the arm *k* pivoted to the frame and provided with the movable track 4, a spring controlling said arm, a stop or rest 5 arranged to support the chute at one end of the fixed track.

4. In an eyeleting-machine, the combination with the supporting frame, the eyelet-setting devices, and the chute and its carrier, of the operating mechanism comprising the chute-supporting lever *e*, the rock-shaft *i* having the arms i' i^3 and i^3, links j' k^3 connecting the arms i^3 i^3 with the lever *e* and the bottom set, respectively, the treadle-lever *f* and the link *k* connecting said lever with the arm i', the said arm i^3 and link *k* constituting a toggle-joint which raises the bottom set.

545,469. ELECTRICAL SIGNALING APPARATUS. JOHN H. FILDES, Chicago, Ill. Filed June 12, 1895. Serial No. 552,506. (No model.)



Claim.—1. In a circuit closer for railway signals, the combination with a rail of a railway track and a pivoted lever arranged to be actuated by a passing train, of a contact carried thereby forming one terminal of the circuit, a swinging terminal having a bifurcated extension in which the lever contact is placed, and an insulated section on the swinging terminal substantially as described.

2. In a circuit closer for railway signals, the combination with a lever adapted to be actuated by a passing train, of a contact on the lever, and a swinging bifurcated contact having an insulated section with which the lever contact normally engages, substantially as described.

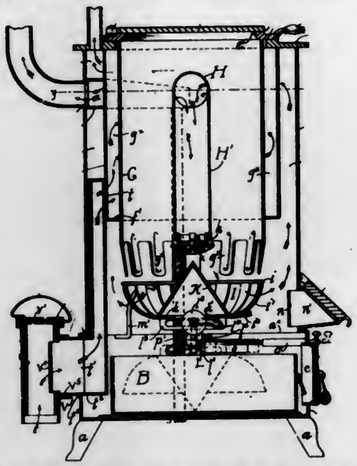
3. In a circuit closer for railway signals, the combination with a lever adapted to be actuated by a passing train, of a contact on the lever, a swinging bifurcated contact having an insulated section with which the lever contact normally engages, a pivotal support for said swinging contact, and a spring pressing against said swinging contact, substantially as described.

4. In a circuit closer for railway signals, the combination with a lever arranged to be actuated by a passing train, an electrical contact carried by the lever, and a spring-pressed swinging terminal formed with a recess having an insulated wall section with which the contact normally engages, and a terminal wall section with which the contact engages upon the movement of the lever, substantially as described.

5. In a circuit closer, the combination with a rail of a railway track and an actuating lever arranged to be operated by a passing train, of a contact on the lever, a terminal loosely mounted and having a recess into which the contact projects, insulating material at one side of the recess, and means for limiting the movement of the terminal to the movement of the contact, substantially as described.

545,470. HEATING APPARATUS. CHRISTIAN FISCHER, Kansas City, Kans. Filed Apr. 3, 1895. Serial No. 545,014. (No model.)

Claim.—1. In a heating apparatus comprising a case, a magazine for fuel within said case having a passage for the products of combustion between said case and magazine, and an outlet in said case, a hot air and draft chamber between said magazine and said case in said passage, and openings in the sides of said magazine, and an air conducting pipe within said magazine, and in said openings and communicating with said hot air and draft chamber, a draft pipe connected with said air conducting pipe extending downwardly within said magazine to the place of combustion and means for supplying air to the hot air and draft chamber substantially in the manner and for the purpose set forth.



2. In a heating stove a case having an outlet for the products of combustion in its upper portion, and an inlet for the cold air in the base of said stove, a magazine within said stove having a hot air and draft chamber between said magazine and said case, and pipe openings in the sides of said magazine, and a pipe in said openings communicating with said hot air and draft chamber, and a draft pipe connected with said air conducting pipe extending downwardly in said magazine to the place of combustion, a fire pot beneath said magazine and a cold air conductor within the cold air inlet extending to and connected with the said hot air and draft chamber substantially as and for the purpose described.

3. In a heating stove a case having an outlet for the products of combustion in the upper part thereof and an inlet for the cold air in the base of said stove, an interior concentric hot air and draft case having a circular passage for the products of combustion between the respective cases a magazine on the inner side of the concentric hot air and draft case having pipe openings communicating with said hot air and draft case, a fire pot beneath said magazine, an air conducting pipe in said pipe openings and a draft pipe connected with said air conducting pipe extending downwardly within said fire pot, and a cold air conductor in the said cold air inlet in the base of said stove extending within the passage for the products of combustion and connected with said hot air and draft case, and means for regulating the supply of cold air to the said conductor substantially as described.

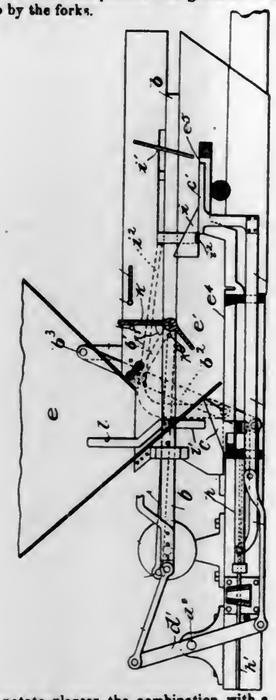
4. In a heating stove a case having an outlet in the upper part thereof for the products of combustion and an inlet for the cold air in the base of said stove an interior concentric hot air case having a circular passage for the products of combustion between the respective cases, and a horizontal circular deflecting flue within the passage for the products of combustion and immediately below the outlet in the exterior case and extending part of the distance in said passage in opposite directions a heat conducting pipe connected with said horizontal flue extending through the exterior case and vestibucts connected at one end with the said deflecting flue and having the other end extending through the base of said stove for the purpose described.

545,471. POTATO-PLANTING MACHINE. SAMUEL H. FISH, Hinsdale, assignor of one-half to Henry C. Middaugh, Clarendon Hills, Ill. Filed June 18, 1894. Serial No. 497,209. (No model.)

Claim.—1. In a potato planter, the combination with two series of separating fingers adapted to gather between their opposed faces a number of potatoes, of piercing forks adapted to be inserted into one or more of the potatoes thus gathered to remove the same from between the separating fingers and drop the same in the drills, substantially as described.

2. In a potato planter, the combination with two series of separating fingers, of means for moving the same toward one another to form between the opposed faces a temporary pocket to single out the potatoes, and piercing forks adapted to be inserted into one or more potatoes thus singled out to remove the same from the temporary pocket, substantially as described.

3. In a potato planter, the combination with the automatically operated forks for carrying the potatoes one hill at a time, of a yielding pocket into which the potatoes are gathered to be in position to be taken up by the forks.



4. In a potato planter, the combination with a series of forks mounted upon a cylinder moved step by step, of cam mechanism for operating the forks to take up and drop the potatoes one hill at a time, and a pocket having a yielding wall or side to prevent crushing the potatoes when gathered therein, said pocket being in the path of the forks, whereby the potatoes are brought into position to be picked up by the forks, substantially as described.

5. The combination with a reciprocating bar or carriage, of a detent carried thereon, a ratchet wheel adapted to be engaged and rotated thereby, and carrying a projection or stop, and a limiting stop mounted upon said bar in a stationary position and adapted to be engaged by the stop upon the ratchet wheel only when said ratchet wheel tends to travel faster than the detent, substantially as described.

6. In a potato planting machine, the combination with the reciprocating separating fingers provided with inclined surfaces adapted upon the approach of the fingers to form a temporary pocket, of piercing forks adapted to pierce potatoes in said pocket, and means for separating said fingers to permit the removal of said pierced potatoes by said piercing forks, substantially as described.

7. In a potato planting machine, the combination with the reciprocating bar, of the reciprocating separating fingers connected by linkage with said bar, whereby they are caused to approach and recede from one another, the disk carrying the piercing forks adapted to be rotated step-by-step as said bar is reciprocated, and the cam actuated by the reciprocation of said bar adapted to cause the piercing forks to enter the temporary pocket formed by the separating fingers, and to withdraw the same from the potatoes at another point in the travel of the disk, substantially as described.

8. In a potato planting machine, the combination with the separating fingers adapted to form a temporary pocket, of a yielding mounting for one of the series of fingers; whereby the capacity of said pocket may be varied, substantially as described.

9. In a potato planting machine, the reciprocating separating fingers adapted on their approach to form a temporary pocket, one series of said fingers being yieldingly mounted, whereby the capacity of said pocket may be varied, substantially as described.

10. In a potato planting machine, the combination with the separating fingers *c* mounted upon the reciprocating rod *k'*, of the link b^5, the end thereof encircling said rod *k'*, and the spring k^3 located between the end of link b^5 and rod *k'*, substantially as described.

11. In a potato planting machine, the combination with the arms carrying the piercing forks, of the cam *r* provided with the groove comprising the parallel portions r^3 r^3 and the angular portions r^4 r^4, in which the ends of said arms are adapted to travel, the rocking block s^4 movable with said cam, and the reciprocating detents s' s^3 adapted to rock said block s^4 to impart a rocking movement to said cam, substantially as described.

12. In a potato planter, the combination with the separating fingers adapted to be approached to form a temporary pocket to single out a number of potatoes, of piercing forks adapted to be inserted into said pocket to remove one or more potatoes therefrom, and cam mechanism for inserting said forks into said pocket before said separating fingers have receded to open said pocket, substantially as described.

13. In a potato planting machine, the combination with the reciprocating bar *b*, of the separating fingers *c*, *c'* adapted to be approached thereby to form a temporary pocket, the detents s' s^3 adapted to be reciprocated by said bar *b*, the rocking block s^4 adapted to be engaged thereby, the cam *r* for actuating said piercing forks, the movement of said detents s' s^3 relatively to said bar *b* being such that said piercing forks are caused to enter the temporary pocket before the same is opened by the recession of the separating fingers, substantially as described.

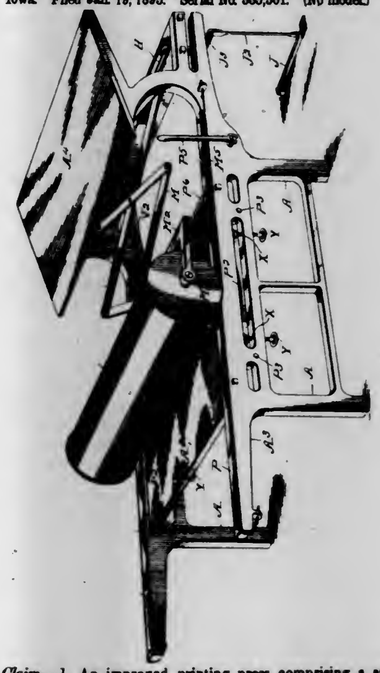
14. In a potato planting machine, the combination with the ratchet wheel m^3 adapted to rotate the disk carrying the piercing forks, of the reciprocating detent *m*, adapted to rotate said ratchet wheel step-by-step, and the stop *o* adapted to engage with lugs *o'* to limit the movement of the ratchet wheel independently of said detent, substantially as described.

15. In a potato planting machine, the combination with the reciprocating bar *b* of the separating fingers *c'* mounted upon the reciprocating bar d^3, the pivoted lever *d'*, and the links *d* and d^3 connecting the ends of said lever with said reciprocating bars *b* and b^4, substantially as described.

16. In a potato planting machine, the combination with the reciprocating bar *b*, of the oscillating lever b^3 connected therewith by link *b'*, the link b^2, the separating fingers *c* and a yielding connection between said fingers *c* and the end of said link b^2, substantially as described.

17. In a potato planting machine, the combination with the swinging scooping plate *k* mounted upon the reciprocating bar *b*, of the stationary stop k^2 adapted to impart to the scooping end of said plate a thrusting movement, and the resiliently mounted pin *k'* adapted to yieldingly limit the swinging of said plate, substantially as described.

545,472. PRINTING-PRESS. HARVEY L. FISHER, Des Moines, Iowa. Filed Jan. 19, 1895. Serial No. 535,501. (No model.)



Claim.—1. An improved printing press comprising a suitable frame, a type bed thereon, tracks at the side of the bed, an impression member mounted on said tracks, a yoke connected with the axle of

the impression member, a series of lazy tongs levers pivotally connected with the said yoke at one end and with a stationary support at the other, the latter ends having segmental gears on their meeting edges in mesh with each other, a vertical shaft mounted in the machine frame, an arm loosely mounted on said shaft to rotate in a horizontal plane, a link connected with said arm and with one of the lazy tongs levers so that when the levers are at either limit of their movement the said arm and link will be in alignment and means for rotating said arm, for the purposes stated.

2. An improved printing press comprising a suitable frame, a type bed thereon, tracks at the side of the bed, an impression member mounted on said tracks, a yoke connected with the axle of the impression member a series of lazy tongs levers pivotally connected with the said yoke at one end and with a stationary support at the other, the latter ends having segmental gears on their meeting edges in mesh with each other, a vertical shaft mounted in the machine frame, an arm loosely mounted on said shaft to rotate in a horizontal plane, a link connected with said arm and with one of the lazy tongs levers, so that when the levers are at either limit of their movement the said arm and link will be in alignment, a gear wheel loosely mounted on said shaft, spring actuated pawls connected with said gear wheel to engage said arm, and means for holding said pawls either in or out of engagement with the arm, for the purposes stated.

3. An improved printing press comprising a suitable frame, a type bed thereon, tracks at the side of the bed, an impression cylinder mounted on said tracks, cables wound upon the ends of the impression cylinder and secured at the ends of the tracks, a yoke connected with the axle of the impression cylinder, a series of lazy tongs levers pivotally connected with the said yoke at one end and with a stationary support at the other, the latter ends having segmental gears on their meeting edges in mesh with each other, a stub axle fixed in the machine frame in a vertical position, a gear wheel loosely mounted thereon, the spring actuated pawls on said gear wheel as shown, a bar having the downward projection on its under side with an inclined face and cam surface as shown, to engage said pawls, an arm on said axle having a segmental downward projection, a link pivoted to the outer end of said arm and to the lazy tongs levers so that said link and arm will be in alignment when said levers are at the limits of their stroke, and means for operating said gear wheel, for the purposes stated.

4. In an improved printing press the combination with a suitable frame, a type bed thereon, and tracks projecting above the sides of the type bed. of a block in the central portion of each track, a metal bar on each track secured thereto at its ends only, with its central portion resting on said block, and means for elevating said blocks, for the purposes stated.

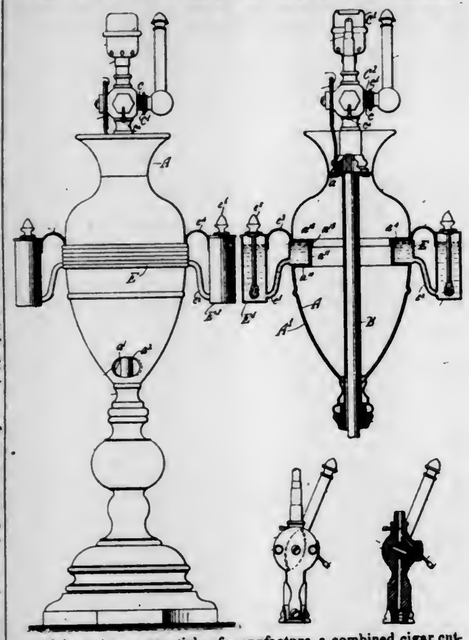
5. In an improved printing press, the combination with a suitable frame, a type bed thereon, and tracks projecting above the sides of the type bed, of a block in the central portion of each track, a metal bar on each track secured thereto at its ends only, with its central portion resting on said block, two rock shafts mounted in suitable bearings beneath the bed, one or more arms on each shaft projecting downwardly, rods pivotally connecting the arms, disks on the ends of said rock shafts, blocks placed in notches in the disk and engaging the under edge of the aforesaid blocks, and means for imparting motion to one of said rock shafts, for the purposes stated.

6. In an improved printing press, the combination with a suitable frame, a type bed thereon, and tracks projecting above the sides of the type bed, of a block in the central portion of each track, a metal bar on each track secured thereto at its ends only, with its central portion resting on said block, and means for elevating said blocks, one or more coil springs placed in suitable vertical bores in the machine frame, with their upper ends impinging said blocks and set screws passed upwardly through said bores and in engagement with the lower ends of said springs, for the purposes stated.

7. An improved printing press, comprising a suitable frame, a type bed thereon, tracks at the side of the bed, an impression cylinder mounted on said tracks, a yoke connected with the axle of the impression cylinder, a series of lazy tongs levers pivotally connected with the said yoke at one end and with a stationary support at the other, the latter ends having segmental gears on their meeting edges in mesh with each other, a stub axle fixed in the machine frame in a vertical position, a gear wheel loosely mounted thereon, the spring actuated pawls on said gear wheel as shown, a bar having the downward projection on its under side with an inclined face and cam surface as shown, to engage said pawls, an arm on said axle having a segmental downward projection and a segment projecting horizontally in an opposite direction from said arm, a link pivoted to the outer end of said arm and to the lazy tongs levers so that said link and arm will be in alignment when said levers are at the limits of their stroke, and means for operating said gear wheel, flat metal bars on top of said tracks secured only at their ends, blocks under the central portions of said bars, two rock shafts mounted beneath the type bed, means for connecting them, devices fixed to their ends to engage and elevate said blocks when the shafts are rocked, a vertical shaft in the machine frame adjacent to said gear wheel, an arm on its top adapted to be engaged by said horizontally projecting segment and means for connecting said shaft and the said rock shafts, for the purposes stated.

8. An improved printing press, comprising a suitable frame, a type bed thereon, tracks at the side of the bed, an impression cylinder mounted on said tracks, a yoke connected with the axle of the impression cylinder, a series of lazy tongs levers pivotally connected with the said yoke at one end and with a stationary support at the other, the latter ends having segmental gears on their meeting edges in mesh with each other, a stub axle fixed in the machine frame in a vertical position, a gear wheel loosely mounted thereon, the spring actuated pawls on said gear wheel as shown, a bar having the downward projection on its under side with an inclined face and cam surface as shown, to engage said pawls, an arm on said axle having a segmental downward projection and a segment projecting horizontally in an opposite direction from said arm, a link pivoted to the outer end of said arm and to the lazy tongs levers so that said link and arm will be in alignment when said levers are at the limits of their stroke, and means for operating said gear wheel, flat metal bars on top of said tracks secured only at their ends, blocks under the central portions of said bars, two rock shafts mounted beneath the type bed, means for connecting them, devices fixed to their ends to engage and elevate said blocks when the shafts are rocked, coil springs placed in suitable vertical bores in the tracks to impinge the under sides of said blocks, and set screws in said bores with their ends in engagement with the lower ends of said springs, a vertical shaft in the machine frame adjacent to said gear wheel an arm on its top adapted to be engaged by said horizontally projecting segment and means for connecting said shaft and the said rock shafts, for the purposes stated.

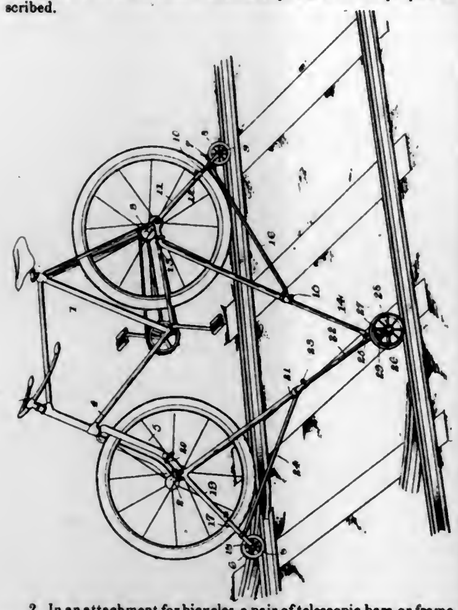
545,473. CIGAR CUTTER AND LIGHTER. WILLIAM F. FOLMER, New York, N. Y. Filed June 20, 1893. Serial No. 478,299. (No model.)



Claim.—As a new article of manufacture, a combined cigar cutter and lighter, comprising a burner with its supply port, a by-pass for the burner, a cigar tip cutter mounted upon the burner or appurtenance thereof, a crank for operating the same, a hollow receptacle located immediately below the burner and adapted to receive the tips, and an annular reservoir for inflammable material supported in an angular recess provided in the peripheral portion of the hollow receptacle, substantially as specified.

545,474. BICYCLE ATTACHMENT. TRAVIS A. FOWLER, Hillsdale, Mich. Filed June 4, 1895. Serial No. 551,631. (No model.)

Claim.—1. An attachment for bicycles, comprising a pair of telescopic bars or frame pieces secured rigidly to the frame of the bicycle and provided with rollers or track wheels adapted to engage with and roll upon the head of a rail, and a suitable laterally projecting frame provided with a flanged wheel for engaging and rolling upon the opposite rail of the track, substantially as and for the purpose described.



2. In an attachment for bicycles, a pair of telescopic bars or frame pieces each provided with a flanged roller or track wheel at its lower end and having a perforation for the reception of one of the axles of the machine, an extension upon each of said arms in line with portions of the frame of the machine, and a suitable clip or clamping device for engaging said extensions with the machine frame, in combination with laterally extending bars or frame pieces carrying a flanged roller or wheel for engaging the opposite rail of the track, substantially as specified.

3. In an attachment for adapting bicycles to be ridden upon a railway, a pair of inclined rigid arms extending in advance and in rear of the machine frame and provided with rollers or track wheels for engaging one of the rails, in combination with laterally and diagonally extending bars or frame pieces carrying a balancing track wheel adapted to engage the opposite rail, and the oblique braces interposed between said forwardly and rearwardly extending rigid arms and the laterally and obliquely extending bars or frame pieces, all arranged substantially as and for the purpose described.

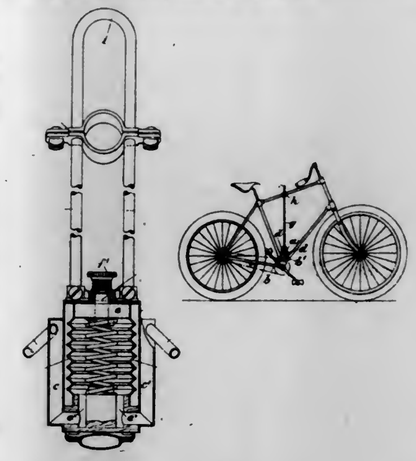
4. An attachment for bicycles, comprising a laterally projecting frame secured rigidly to the machine frame and provided with a vertically extending and slotted portion or arm, in combination with a balancing track wheel mounted upon a shaft or axle adjustable vertically with relation to said vertical portion or arm of the frame, substantially as and for the purpose specified.

545,475. POWDER-DUSTER FOR CYCLES. SELIG FRANKEN, Jr., Arnhem, Netherlands. Filed Mar. 4, 1895. Serial No. 540,463. (No model.)

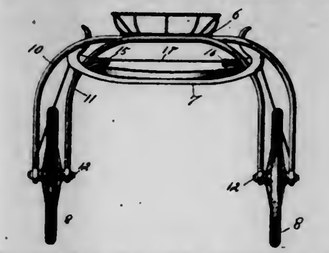
Claim.—1. A device for enabling cyclists to protect themselves from the attacks of dogs, secured to the framework of the machine near the pedal-shaft by means of brackets or supports, and comprising a chamber for the reception of pepper or equivalent pulverulent material, a plunger, worked near the seat-pillar by means of rods, for ejecting said material, and pipes for distributing the same on each side of the machine in the immediate vicinity of the pedal-shaft, substantially as herein described.

2. In an apparatus adapted for attachment to cycles for affording cyclists protection from the attacks of dogs, the combination with the collapsible chamber c', disposed within the cylinder a, the latter being furnished with securing brackets $b\ b'$, of a plunger e, connected with said chamber and operated by rods g, and pipes $d\ d'$ which serve to diffuse the pepper or other pulverulent material into the atmosphere about the pedal shaft of the machine, substantially as set forth.

3. In an apparatus adapted for attachment to cycles for affording cyclists protection from the attacks of dogs, the combination with the collapsible pepper chamber c', disposed within the cylinder a, of a plunger e, connected with said chamber, distributing pipes $d\ d'$ projecting from each side of the apparatus, upwardly extending rods g for operating the plunger, clamp h attached to the framework near the seat-pillar for guiding and securing the rods g and clamps $b\ b'$ for attaching the metal cylinder a to the lower part of the framework near the pedal-shaft, substantially as set forth.



545,476. SULKY. EDWARD S. FRASIER, Aurora, Ill. Filed May 25, 1893. Renewed May 25, 1895. Serial No. 550,718. (No model.)

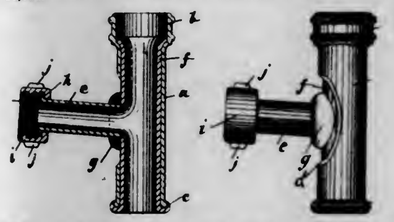


Claim.—1. A sulky axle consisting of two curved members arranged at an angle to each other, and wheel spindles supported between the lower ends of said members, substantially as described.

2. In a sulky, the combination with an axle composed of two curved members 10—11 arranged at an angle to each other, of wheels journaled between the lower ends of said members, a seat mounted upon the upper portions of said members, and shafts, substantially as described.

3. In a sulky, the combination with an axle composed of two curved members 10—11 arranged at an angle to each other, of wheels journaled between the lower ends of said members, a seat mounted upon said axle, shafts, and external and internal braces for the ends of said members, substantially as described.

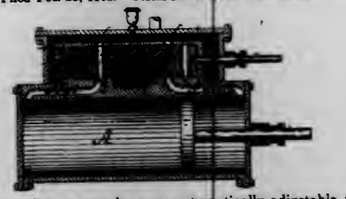
545,477. MEANS FOR CONNECTING SOIL-PIPES. WILLIAM J. FREEMAN and EDWIN FREEMAN, London, England. Filed Sept. 17, 1894. Serial No. 523,271. (No model.) Patented in England Aug. 1, 1893, No. 14,760.



Claim.—1. In a means for connecting discharge pipes to traps and as a new article of manufacture the metal spigot and socket pipe a having an orifice in the side thereof and a lead lining f the parts being so arranged that a branch may be soldered to said lining through said orifice substantially as described and for the purpose stated.

2. In a means for connecting discharge pipes to trape the combination of a spigot and socket pipe *a* having an orifice in the side thereof and a lead lining *f* with a pipe *e* attached at one end to the said lining and provided with a flange at the other end and an internally screwed collar bearing, on the said flange all substantially as specified and for the purpose stated.

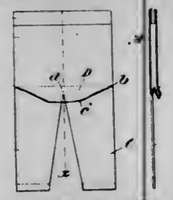
545,478. BALANCED VALVE. WILLIAM F. GOULD, Des Moines, Iowa. Filed Feb. 23, 1892. Serial No. 422,509. (No model.)



Claim.—1. In a steam chest, an automatically adjustable valve cover adapted to inclose the top and sides of a valve and to alternately rise and fall at its end portions and also adapted to move longitudinally, in combination with a slide valve, for the purposes stated.

2. In a steam engine having a cylinder, a reciprocating pinion within the cylinder and provided with a valve seat, induction and exhaust ports extending through the valve seat, a steam chest inclosing said valve seat and ports, a valve fitted to the valve seat, a sliding valve cover fitted to said valve adapted in length relative to the steam chest as required to move longitudinally and grind its seat and to allow either end of the cover to rise from the valve seat while the other end remains in contact with the valve seat, in the manner set forth for the purposes stated.

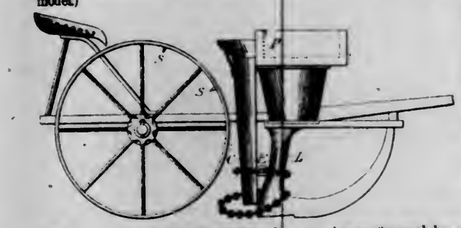
545,479. KNITTED GARMENT AND METHOD OF MAKING THE SAME. JOHN HOLMES, Boston, Mass. Filed Nov. 19, 1894. Serial No. 529,235. (No model.)



Claim.—1. As a new article of manufacture, a knitted garment comprising a body portion, legs, and a seamless seat portion having knitted therein a narrow gore between the back of the body and the crotch, to give the requisite fullness to the seat portion, substantially as described.

2. The herein described method of making knitted pants, which consists in forming the body portion by circular knitting to the beginning of the seat; throwing out the needles upon which the front of the body portion has been knitted; knitting upon the remaining needles and narrowing, to thereby form a fullness at the seat portion between the back of the body and the crotch; throwing in all the needles and completing the body portion by circular knitting to the crotch; and thereafter completing the legs, substantially as described.

545,480. POTATO HAND-DROPPING ATTACHMENT. CICERO H. FROST, Lee Centre, Ill. Filed Apr. 18, 1890. Serial No. 546,278. (No model.)



Claim.—1. In a potato hand dropping attachment for seed droppers, the combination, with a seed box, the rear or face board of which is provided with an opening, of a hopper secured to the board to register with the opening, a seed conductor communicating with the hopper, the lower end of which is provided with means for engaging with the heel of the shoe of the machine, and a slide for closing the opening through the face board, substantially as set forth.

2. In a potato hand dropping attachment for seed droppers, the combination, with a seed box, the rear or face board of which is provided with an opening, a semi cylindrical flaring hopper secured to the board to register with the opening, a semi-cylindrical seed conductor communicating with the hopper, the lower end of which is provided with a shoulder for engaging with the shoe, a brace for securing the conductor to the hopper, and means for securing the conductor to the standard of the shoe of the machine, substantially as set forth.

3. In a potato hand dropping attachment for seed droppers, the combination, with a seed box, the rear or face board of which is provided with an opening, a flaring semi-cylindrical hopper secured to the board by means of strips or connectors forming slides, a removable plate or slide within said slide and having a slot in its upper portion, a button on the board projecting through the slot, a conductor secured to the hopper and extending to the heel of the machine, and means for securing the conductor to the standard of the shoe of the machine, substantially as set forth.

545,481. MEDICINE-DOSE INDICATOR. ROBERT FULLERTON, Des Moines, Iowa. Filed Jan. 19, 1895. Serial No. 535,429. (No model.)



Claim.—A cup cover having a hand and a pointer jointly pivoted to the center of the cover, a clock dial at the circumference of the cover and concentric with the pivot of the movable hand that extends to the dial, a scale of numerals located in an eccentric position relative to the said hand and dial and the pivoted pointer that extends to said scale marked "Quantity," the pivoted hand marked "Next Dose," a prepared place on the cover for a person's name and a prepared place on the cover for a doctor's directions, arranged in the manner set forth for the purposes stated.

545,482. ACCOUNT-FILE. LEVI W. GILSON, Fremont, Ohio. Filed Feb. 21, 1895. Serial No. 539,239. (No model.)

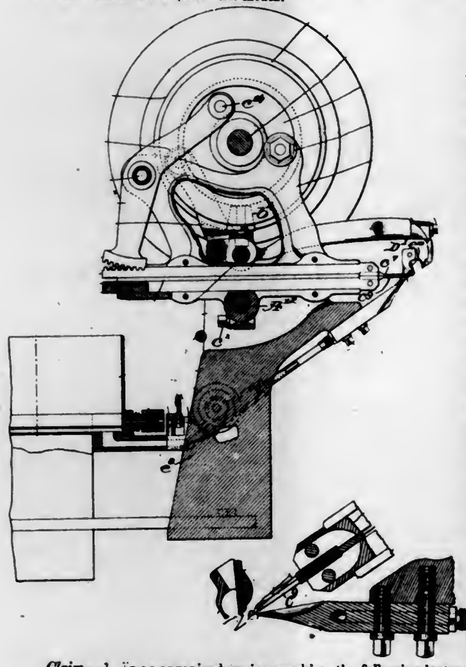


Claim.—1. An account file, comprising a base, a hollow stem rising therefrom, an arched rod having one leg removably fitted in the hollow stem, and a swinging arm or plate hingedly connected with the base and engaging the other arm of the arched rod, whereby the same is held rigidly in operative position, substantially as described.

2. An account file, comprising a base, a hollow stem mounted thereon, an arched rod having one leg reduced and fitting in the stem and supported thereon, the other leg being provided with a horizontal shoulder, and a plate or arm hingedly connected with the base and engaging the arched rod and supported by the horizontal shoulder thereof, substantially as described.

3. An account file, comprising a base provided with a vertical back, a hollow stem mounted on the base, the arched rod having its front leg reduced to form a shoulder and fitted within the hollow stem, said rod having its rear leg recessed to form a horizontal shoulder and an inclined face, and a plate hingedly mounted on the back and arranged to swing downward into a horizontal position upon the shoulder of the rod and provided at its outer edge with a notch, receiving the rod and holding the same against lateral movement, substantially as described.

545,483. SOLE-SEWING MACHINE. LOUIS GODDU, Winchester, assignor to James W. Brooks, trustee, Petersham, Mass. Filed Jan. 22, 1894. Serial No. 497,696. (No model.)



Claim.—1. In an organized sewing machine, the following instrumentalities, viz:—a work-rest to hold the upper against the edge of the sole; a thread delivery; a device to pull off and hold distended at the side of the pusher adjacent the last stitch made a quantity of thread for the next stitch; a thread pusher to engage said distended thread, said device and the thread pusher being located at the same side of the work-rest said pusher to enter the work from the side acted upon by the work rest; and means to actuate said pusher and thread distending and pulling-off device, to operate, substantially as described.

2. In an organized sewing machine, the following instrumentalities, viz:—a work-rest to support the upper against the edge of the sole; a thread delivery; a device to pull off and hold distended at the side of the pusher adjacent the last stitch made a quantity of thread for the next stitch; a thread pusher to engage said distended thread, said device and the thread pusher being located at the same side of the work-rest said pusher to enter the work from the side acted upon by the work rest; means to actuate said pusher and thread distending and pulling-off device, and a pitch gage, to operate, substantially as described.

3. In an organized sewing machine, the following instrumentalities, viz:—a work-rest to support the upper against the edge of the sole; a thread delivery; a device to pull off and hold distended at the side of the pusher adjacent the last stitch made a quantity of thread for the next stitch; a thread pusher to engage said distended thread, said device and the thread pusher being located at the same side of the work-rest said pusher to enter the work from the side acted upon by the work rest; means to actuate said pusher and thread distending and pulling-off device, and an awl to make a hole to be entered by said pusher, substantially as described.

4. In an organized sewing machine, the following instrumentalities, viz:—a work-rest to support the upper against the edge of the sole; a thread delivery; a device to pull off and hold distended at the side of the pusher adjacent the last stitch made a quantity of thread for the next stitch; a thread pusher to engage said distended thread, said device and the thread pusher being located at the same side of the work-rest said pusher to enter the work from the side acted upon by the work rest; means to actuate said pusher and thread distending and pulling-off device, an awl to make a hole to be entered by said pusher, and a pitch gage, to operate substantially as described.

5. In a sole sewing machine, a thread delivery; a stationary work-rest having a narrow edge or corner located near said thread-delivery and against which the edge of the sole rests; and a thread measuring device to engage said thread and pull out a sufficient quantity for the next stitch; combined with a pusher movable adjacent to said work-rest and located at the same side of the work, to engage said measured and distended thread and push it into a sole from its edge, substantially as described.

6. In a sole sewing machine, a thread delivery; a stationary work-rest having a narrow edge or corner located near said thread delivery; and a thread-measuring device to engage said thread and pull out a sufficient quantity for the next stitch; combined with a pusher to engage said measured thread and push it into a sole from its edge; and a guard interposed between the said measuring device and the upper of the shoe being stitched, substantially as described.

7. In an organized sewing machine, the following instrumentalities, viz:—a work-rest to support the upper against the edge of the sole; a thread delivery; a device to pull off and hold distended at the side of the pusher adjacent the last stitch made a quantity of thread for the next stitch; a thread pusher to engage said distended thread, said device and the thread pusher being located at the same side of the work-rest said pusher to enter the work at the side acted upon by the work rest; and means to actuate said pusher and thread distending and pulling-off device, and a feeding device to automatically engage the work and move it along said work-rest, substantially as described.

8. In an organized sewing machine, the following instrumentalities, viz:—a narrow work-rest to support the upper at or near the edge of the sole, along which rest the work may be slid between successive stitches; a thread delivery; a thread measuring device to pull out and hold distended a quantity of thread for the next stitch, a thread pusher to engage said measured loop of thread while the said device holds the thread distended between it and the thread delivery; means to move said pusher and thread measuring device, and devices to intermittingly engage and aid in holding the work against said work-rest while the said pusher is pushing a loop of thread through the upper and into the sole from its edge toward the longitudinal center of the sole, substantially as described.

9. A sole sewing machine containing the following instrumentalities, viz:—a narrow work-rest; a thread delivery in close proximity thereto; a thread measuring device; an awl carrier or bar, having an awl; a pusher carrier or bar having a pusher; devices to actuate said carriers or bars independently one of the other in said frame; and devices to move said carriers substantially at right angles to the line of movement of the work over said work-rest whereby the pusher may be made to enter a hole from which the awl has just retired and to fill said hole with thread, substantially as described.

10. In a sole sewing machine, a narrow work-rest against which the work may be pressed; a thread guide in said work-rest having a thread delivery opening and pocket, both located just back of the acting edge of said work-rest; combined with a thread measuring device; and means to move it to engage and draw the thread for a measured length from said delivery, substantially as described.

11. In a sole sewing machine, a thread delivery; a stationary work rest having a narrow edge or corner and located near said thread delivery; and a thread measuring device to engage said thread; combined with a guard interposed between the said measuring device and the upper of the shoe being stitched; substantially as described.

12. In a sole sewing machine, a narrow work rest having a corner against which the upper may be pressed to keep it firmly in contact with a portion of the inner sole near its edge; and a piercing awl to enter the edge of the sole; combined with an adjustable throat piece to act as a guide or steadying device for the awl, substantially as described.

13. In a sole sewing machine, a work rest having a narrow edge to aid in keeping the upper and sole in contact at the stitch making point; a pitch gage; an awl; a thread pusher; a thread measuring device; and an independent puncturing feeder to pierce the sole from the side opposite the awl and pusher, near the path of movement of the said awl and pusher substantially as described.

14. In a sole sewing machine, a thread guide; a work-rest; and a rocking frame having its pivot substantially parallel to the edge of the work rest; combined with an awl-carrier and a pusher-carrier mounted in said frame; an awl attached to the awl-carrier; a thread pusher attached to the pusher-carrier; and with means to tip the said frame substantially at right angles to the length of the seam to be made, whereby the thread-pusher may be made to enter the hole made by the awl, to operate substantially as described.

15. In a sewing machine, a rocking frame, an awl carrier mounted therein and provided with an awl; a pusher carrier mounted therein and provided with a thread pusher; a thread delivery; a narrow work

rest; and a pitch gage; combined with a thread measuring device to take the thread at the thread guide, and measure off the same for the next stitch to be made: and with means to actuate said frame and to reciprocate said carriers independently whereby the awl, while the work is at rest, is made to penetrate the material, and is then withdrawn therefrom and is carried out of line with said hole by a movement of said frame, the pusher in the meantime being put opposite the hole made by the awl and in line with the thread held stretched between the thread guide and the thread measuring device, and whereby the pusher is then reciprocated to push the measured thread into the hole made by the awl and retire from said hole and leave said thread therein doubled, substantially as described.

16. In a sole sewing machine, a rocking frame, an awl carrier mounted therein and provided with an awl; a pusher carrier mounted therein and provided with a thread pusher; a thread delivery; a narrow work rest; and a pitch gage; combined with a thread measuring device to take the thread at the thread guide, and measure off the same for the next stitch to be made: and means to actuate said frame and to reciprocate said bars independently, whereby the awl, while the work is at rest; is made to penetrate the material, is then withdrawn therefrom, and the pusher by a movement of the frame is put opposite the hole made by the awl and in line with the thread stretched between the thread guide and the thread measuring device, the pusher bar being then reciprocated to put the measured thread into the hole made by the awl and being then retracted from said hole leaving said thread doubled therein; and with a puncturing feeder to engage and hold the material during the time that the latter is being punctured by the awl and while the pusher acts to fill the awl hole with thread, substantially as described.

17. In a sole sewing machine, a work-rest, against which the work is held while being stitched, a device having two penetrating points to enter the sole to be stitched, combined with stitch-forming devices and actuating means therefor, the said points entering the sole at each side the stitch-making point and holding said sole firmly while the stitch is being made therein, substantially as described.

18. In a sole sewing machine, a narrow work-rest; and a puncturing feeder having two work-penetrating points to enter the sole to be stitched, combined with a thread-pusher; and actuating devices for said pusher and feeder, whereby the points of the feeder are made to enter the sole at each side the stitch being made in the sole, and to hold said sole while the pusher is entering it, as and for the purposes set forth.

19. A sole sewing machine containing the following instrumentalities viz:—a work-support; a feeding device adapted to move the work in the direction of the length of the seam; a vibrating frame having its pivot substantially parallel to the direction of feed of the work; a pusher carrier having a thread pusher; an awl carrier having an awl, said carriers being mounted in the same vertical plane; and devices to reciprocate said carriers, actuate said feeding device, and tip said frame transversely to the direction of the movement of the feeding device when feeding the work over the work-support, substantially as described.

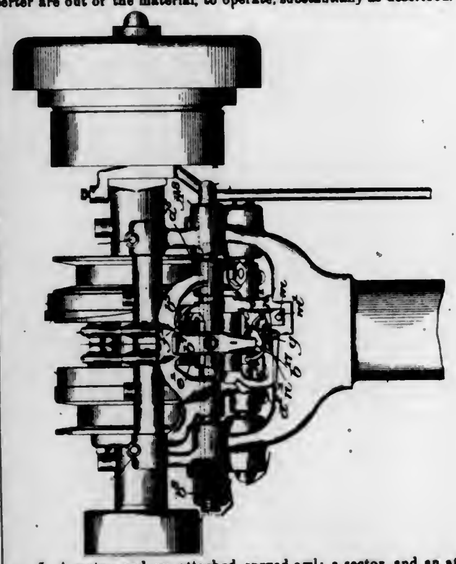
545,484. SOLE-SEWING MACHINE. LOUIS GODDU, Winchester, assignor to James W. Brooks, trustee, Petersham, Mass. Filed Jan. 22 1894. Serial No. 497,697. (No model.)

Claim.—1. In a sole sewing machine, the following instrumentalities, viz:—a work-rest; a sector, and an attached curved awl; a sector, and an attached curved thread pusher or inserter; devices to move said sectors laterally in unison and to rock them alternately; a thread-guide; and a thread-measuring device to draw the thread therefrom and to move it into the path of the pusher, substantially as described.

2. In a sole sewing machine, the following instrumentalities, viz:—a work-rest; a sector, an attached curved awl; a sector, and an attached curved thread pusher or inserter; devices to move said sectors laterally in unison and to rock them alternately; a thread-guide; a thread-measuring device to draw the thread therefrom and to move it into the path of the thread pusher or inserter, and an independent device having a point to enter the work and keep it against the work-rest during the time that the awl is in the work, substantially as described.

3. In a sole sewing machine, the following instrumentalities, viz:—a work-rest; a sector, an attached curved awl; a sector, and an attached curved thread pusher or inserter; devices to move said sectors laterally in unison and to rock them alternately; a thread-guide; a thread-measuring device to draw the thread therefrom and to move it into the path of the thread pusher or inserter, and a pitch gage, substantially as described.

4. In a sole sewing machine, the following instrumentalities, viz:—a work-rest; a sector, and an attached curved awl; a sector, and an attached curved thread pusher or inserter; devices to move said sectors laterally in unison and to rock them alternately; a thread-guide; a thread-measuring device to draw the thread therefrom and to move it into the path of the thread pusher or inserter; a slide frame in which is mounted a stud on which the said sectors rock; and means to move said frame laterally while the awl and thread pusher or inserter are out of the material, to operate, substantially as described.



5. A sector, and an attached curved awl; a sector, and an attached thread pusher or inserter, said awl and thread pusher pointing in the same direction; means to rock said sectors alternately about their fulcra; and devices to move said sectors in the direction of the length of said fulcra, substantially as described.

6. A work-rest, a movable frame having a fulcrum, sectors mounted thereon and provided with an awl and a stitch-forming device: a thread-guide carried by said frame, and a sliding block and connected thread-measuring device, combined with devices to move said frame, and with devices to move said block on said frame, substantially as described.

7. The movable frame having a fulcrum, two sectors mounted thereon; and a curved awl and a curved thread pusher or inserter attached to said sectors; a thread-guide carried by said frame, a sliding block, and its connected thread-measuring device, and cams to move said frame and said block on said frame, combined with a work-rest and pitch gage mounted on a bar having guides independent of said frame, substantially as described.

8. The movable frame having a fulcrum, an awl sector and a thread-pusher sector; and an awl and thread pusher attached to said sectors respectively, a thread-guide carried by said frame; a sliding block and its connected thread-measuring device, devices to move said frame and said block on said frame; and a work-rest having guides independent of said frame; combined with an independent feeding device, and means to withdraw said work-rest from said feeding device while the latter is acting to feed the material, substantially as described.

9. In a sole sewing machine, the following instrumentalities, viz:—a work-rest and stitch-forming devices; combined with a feeder to hold the work to be stitched against the work-rest, and a pitch gage rigidly connected to the work-rest, the said pitch gage guiding the outermost surface of the sole while the edge of the sole is held against the upper, the latter lying against said work-rest, substantially as described.

10. In a sole sewing machine, a slide bar, a connected work-rest having an attached pitch gage, and a feeding device having a work-impaling point, combined with a lever, and devices to move it to retract the said work-rest while the feeding device engages and moves the work, substantially as described.

11. In a sole sewing machine, the following instrumentalities viz:—a work-rest, a pitch gage; a sliding frame; an awl and its sector; a thread pusher or inserter and its sector, and a thread-guide carrier mounted on said frame and provided with a thread-guide; devices to move said awl sector about its fulcrum to force the awl into the work and then retract it, devices to move said sliding frame in the direction of the seam while the awl is out of the work to bring the thread pusher or inserter opposite the awl hole, and devices to turn the thread pusher or inserter about its fulcrum to cause it to put the thread in loop form into the hole made by the awl and then to retract said thread pusher; a thread-guide to supply a thread to said thread pusher; and a feeding device independent of said awl and thread pusher to feed the material over said work-rest, substantially as described.

12. In a sole sewing machine, the following instrumentalities, viz:—a work-rest; a pitch gage; a sliding frame; an awl sector; a thread pusher sector and a thread-guide carrier mounted on said frame; an awl; a thread pusher; a thread-guide; devices to move said awl sector about its fulcrum to force the awl into the work and then retract said awl, devices to move said sliding frame in the direction of the seam while the awl is out of the work to bring the thread pusher opposite the awl hole, and devices to turn the thread pusher about its fulcrum to cause it to put the thread in loop form into the hole made by the awl and to retract said thread pusher; a thread-guide to supply a thread to said thread pusher; and a feeding device independent of said awl and thread pusher, to feed the material over said work-rest; and a welt guide, substantially as described.

13. In a sole sewing machine, the following instrumentalities, viz:—a work-rest; an awl and a thread-pusher or inserter located both on the same side of the work-rest; and devices to move them into and out of the work alternately; a thread-guide; a thread-measuring device to engage the thread and draw it from said guide; and means to actuate the thread-guide to hold the thread out of the path of the awl, and thereafter to move it into the path of the thread pusher or inserter, substantially as described.

14. In a sole sewing machine, a work-support; an intermitting feed device for feeding the work; a curved awl independent of said feeding device, a curved pusher; carriers therefor rotatable alternately about a common axis: and means to move said carriers laterally into position to cause said pusher to rotate in a curved line coincident with the curved path of operation of said awl, substantially as described.

15. A sliding frame, and a sector mounted thereon and provided with a device to engage and put the thread into the stock in the form of a loop, combined with a thread-guide having its carrier mounted on said frame, a thread-measuring device, and means to move said thread-guide to supply the thread-measuring device with thread for the stitch to be made, substantially as described.

16. The sliding frame, the block provided with the thread-measuring device, and devices to slide the frame and block independently, combined with a thread-guide carried by and movable on said frame to present thread to the thread-measuring device, substantially as described.

17. In a wax thread sewing machine, a laterally sliding frame provided with stitch-forming devices, and a thread guide having its carrier pivotally mounted on said frame to rock in a vertical plane, combined with means to move said sliding frame and to rock the thread guide carrier on said frame, substantially as described.

18. In a wax thread sewing machine, a sliding frame provided with stitch-forming devices, and having a sector lever mounted on it, combined with a bar having an attached work-rest, said bar being guided independently of said frame, and devices to move said lever, substantially as described.

19. A laterally sliding frame having stitch-forming and feeding devices, and provided with a tension device, combined with a pull-off lever mounted on said frame, and devices to move said pull-off, substantially as described.

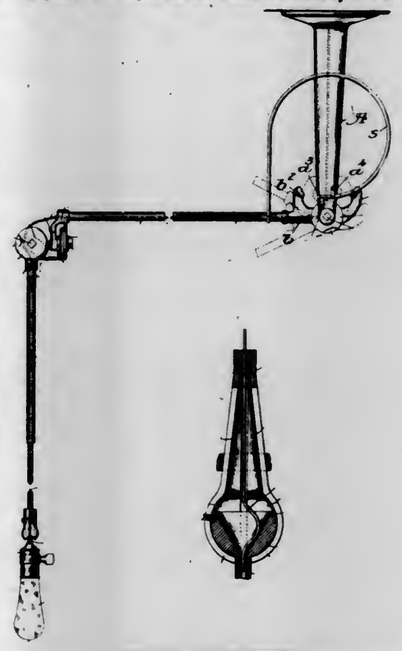
545,485. ADJUSTABLE SUPPORT FOR ELECTRIC OR OTHER LAMPS. LOUIS GODDU, Winchester, assignor to James W. Brooks, Petersham, and Frank F. Stanley, Swampscott, Mass., trustees. Filed Mar. 30, 1894. Serial No. 505,747. (No model.)

Claim.—1. In an adjustable lamp support, a tubular main stem having one end pivotally connected to a supporting stand, a tubular carrier stem, and a universal joint connecting the main and carrier stems at their adjacent ends, whereby a loop in the conducting wires is avoided, combined with means for attaching the lamp to the free end of the carrier stem, the conducting wires for the lamp passing through and from one to the other stem at their adjacent open ends, substantially as described.

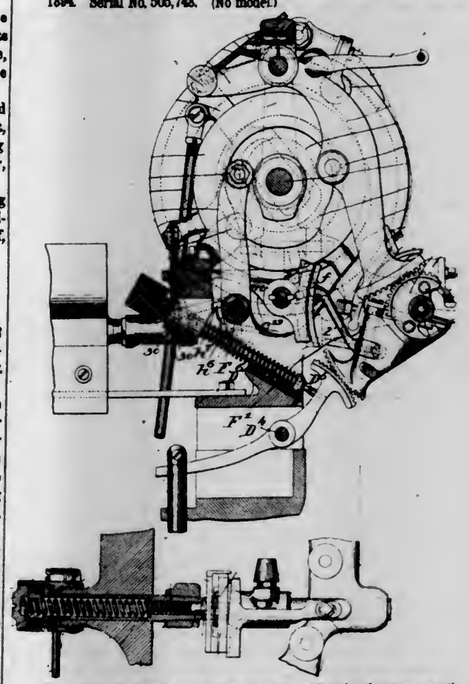
2. A main stem pivotally supported at one end, a transverse bearing surface rigidly secured to its outer end, and a plate pivoted thereto at its base and provided with a friction bearing, at right angles to the plate combined with a lamp-carrying stem, a bearing surface rigidly secured thereto and pivoted to the plate to co-operate with its friction bearing surface, and a counterbalancing spring to control the main stem, substantially as described.

3. A standard, a main stem pivoted thereto, and limiting stops therefor, combined with a lamp-carrying stem, a universal joint connecting said stems at their adjacent ends, and a counterbalancing spring to act upon and maintain the main stem in position relative to the standard, substantially as described.

4. A standard, a stem pivoted thereto, and limiting stops therefor, combined with a lamp supported by the stem, and a counter-balancing spring to act upon the said stem, substantially as described.



545,486. SEWING-MACHINE. LOUIS GODDU, Winchester, assignor to James W. Brooks, trustee, Petersham, Mass. Filed Mar. 30, 1894. Serial No. 505,748. (No model.)



Claim.—1. In a sole sewing machine the following instrumentalities, viz;—a work rest, and a presser-foot; devices to lock the same at a distance one from the other according to the thickness of the material between them, and to separate the said surfaces to effect the

release thereof during the feeding of the material; an awl, and a pusher; devices to actuate them, and to cause the awl to penetrate and feed the material, as described; a thread measuring device to engage and measure off the thread and hold the same preparatory to and while the pusher acts to push the thread into the awl hole; devices to actuate said measuring device variable distances according to the thickness of the material; a tension device, and a thread pull-off to make slack thread at one side the tension device, substantially as described.

2. A pivoted work-support; stitch-forming devices; devices to oscillate said work-support, and locking devices to lock the work-support in place; combined with a thread-measuring device carried by said work-support; and actuating devices to move the said thread-measuring device for a greater or less distance according to the thickness of the material, substantially as described.

3. A pivoted work-support; stitch-forming devices; devices to oscillate said work-support, and locking devices to lock the work-support in place; combined with a thread-measuring device carried by said work-support; and actuating devices to move the said thread-measuring device for a greater or less distance according to the thickness of the material; and with a pawl to engage the oscillating frame of the work-support and effect the release of the work between it and the said presser foot, substantially as described.

4. A work-support having a shaft provided with a thread measuring device and with an arm, and a cam to act on said arm and turn said shaft, combined with a positioning device to act on said arm after each stitch to put the thread-measuring device in its starting position, and means to actuate said positioning device, substantially as described.

5. In a sole sewing machine, the oscillating work-support provided with a throat-plate having a shoulder k^4 to support the thread; and a pocket close to said shoulder, combined with a thread-measuring device carried by said work-support; and devices to move said thread-measuring device, substantially as described.

6. In a sole sewing machine, the oscillating work-support provided with a throat-plate having a shoulder k^4 to support the thread; and a thread rest k^{40}, combined with a thread-measuring device carried by said work-support; and devices to move said thread-measuring device, substantially as described.

7. In a sole sewing machine, the oscillating work-support provided with a throat-plate having a shoulder k^4 to support the thread; a pocket; and a thread rest; combined with a thread-measuring device carried by said work-support; and devices to move said thread measuring device, substantially as described.

8. In a sole sewing machine, the oscillating work-support provided with a throat-plate having a shoulder k^4 to support the thread, a pocket; and a tension device mounted on said work-support; combined with a thread-measuring device carried by said work-support; and devices to move said thread-measuring device, substantially as described.

9. An oscillating work-support having a thread-measuring device provided with an arm 2; a cam against which said arm may move; a movable carriage, and a positioning device attached thereto; combined with a spring-pressed block to bear said arm toward said positioning device and cam, substantially as described.

10. A work-support; a shaft having an attached carriage provided with a feeding device, and devices to move said carriage, combined with a feed controller co-operating with said shaft; a feed regulating device; a treadle, and connections between it and said feed controller to operate the latter, substantially as described.

11. In a sole sewing machine, the shaft C having the flange c, its attached carriage having a stud w'; a spring to move the shaft in one direction, and a cam to act on said stud and move the carriage in the opposite direction; combined with a feed controller having a flange c^3, and devices to adjust said feed controller longitudinally to determine the approach of the said stud toward said cam, substantially as described.

12. The carriage c^{10} having a threaded portion, and the work-support having the tubular shaft, combined with an awl-carrying segment having a threaded hub screwed into said threaded portion, substantially as described.

13. The sliding feed carriage c^{10} having at one end the projection b^{19}, the thread clamping roll b^{20} carried thereby, and the rest 31 with which said roll co-operates, substantially as described.

14. The movable frame, its roll and rest to clamp the thread; combined with the rod h^3, and studs to pull the thread from the source of supply while the thread is clamped between said rod and the stitch-forming device; a lever to which said rod is connected, and a cam to move said lever, substantially as described.

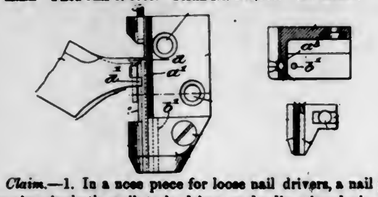
15. In a sole sewing machine, a yielding work-support; an opposed rigid foot; a sector; an awl at one end of said sector, a pusher or thread-inserter at the other end thereof and located in the same vertical plane as the awl; means to oscillate the sector; a thread-measuring device carried by said work-support; devices to move said thread-measuring device to measure off thread; devices to move the sector laterally in a horizontal plane while the awl is in the material to feed the same, the devices for oscillating the said sector being moved to retract the awl at the end of its feeding movement, the pusher engaging the thread and pushing it directly into the hole last made and left by the awl, substantially as described.

16. In a sole sewing machine, the following instrumentalities, viz;—a work-rest; a presser-foot; an awl, and a pusher, devices to actuate them, and to cause the awl to penetrate and feed the material, as described; a thread-measuring device carried by the said work-rest to engage and measure off the thread and hold the same preparatory to and while the pusher acts to push the thread into the awl hole; and devices to actuate said measuring device variable distances according to the thickness of the material, substantially as described.

17. A presser-foot; a pivoted work-support; an awl having its center of oscillation coincident to that of the work-support, devices to actuate said awl, devices to actuate said work-support to keep the work on the work-support against the presser-foot while the awl is penetrating the material; and a thread-measuring device carried by said work-support; and a stitch-forming device to engage said measured thread; combined with devices for actuating said thread-measuring device, substantially as described.

18. In a sewing machine, the following instrumentalities, viz;—a work-support; a tension device; a feeding device to feed the material on the work-support; means for varying the stroke of the feeding device; a pull-off to pull the thread from the tension device; stitch-forming mechanism, and connections between the feeding device and the pull-off, whereby the latter is moved by or through the former and whereby the stroke of the pull-off is varied in accordance with the length of the stroke of the feeding device, substantially as described.

545,487. NOSE-PIECE FOR LOOSE-NAIL DRIVERS. LOUIS GODDU, Winchester, assignor to James W. Brooks, trustee, Petersham, Mass. Filed Jan. 9, 1895. Serial No. 534,800. (No model.)



Claim.—1. In a nose piece for loose nail drivers, a nail passage to receive singly the nails to be driven, and a directing device in said passage to engage the heads of improperly presented nails and turn them on their longitudinal axes into correct position to be driven, substantially as described.

2. In a nose piece for loose nail drivers, a nail passage to receive singly the nails to be driven and corresponding in cross-section to the shape of the nail heads, and a directing device at the entrance to said passage, to engage the heads of improperly presented nails and turn them on their longitudinal axes into correct position to be driven, substantially as described.

3. In a nose piece for loose nail drivers, a nail passage to receive the nails to be driven, and a cam surface at the entrance to said passage to turn the heads of improperly presented nails into correct position to be driven, with the width of the nail heads in a fixed direction, substantially as described.

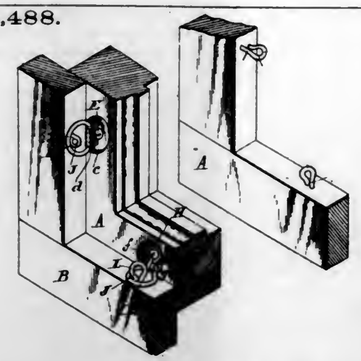
4. In a nose piece for loose nail drivers, a nail passage open longitudinally at its upper end to receive the nails and inclosed at its lower or delivery end, and a directing device, comprising adjacent oppositely turned cam surfaces at the entrance to the delivery end of the passage, to turn in one or the other direction, a nail improperly presented, substantially as described.

5. In a nose piece for loose nail drivers, a main supporting portion having a longitudinally open groove therein to form a nail passage, a removable back attached to said main portion and grooved to form the inclosed delivery end of the nail passage, and a directing device at the upper end of the delivery end of the passage, to turn into correct position the heads of improperly presented nails, substantially as described.

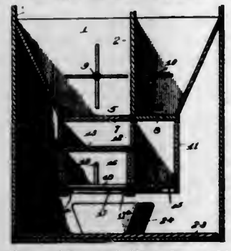
545,488. SHUTTER-FASTENER. FREDERICK S. GRAVES, North Hancock, Me. Filed Nov. 27, 1894. Serial No. 530,118. (No model.)

Claim.—The combination with the frame A, formed with circular recesses *e*, *f*, the loops G, consisting of a piece of wire with its extremities bent inwardly forming eyes, the headed screws for fastening the loop to the frame and the bail F, having inwardly bent end F', journaled in said eyes, of the window casing B, and the eccentric catches I, consisting of a piece of wire screw threaded at one end and engaging with the casing and the opposite end bent into an eye, substantially as described.

545,488.

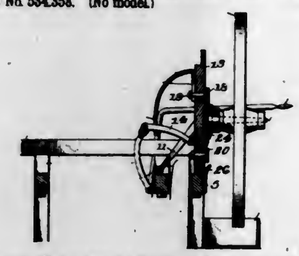


545,489. FLOUR CABINET AND SIFTER. FLEMON R. GREINER, Lakeland, Fla. Filed Apr. 11, 1895. Serial No. 545,330. (No model.)



Claim.—In a flour cabinet and sifter, the combination with a bin having a communicating throat and cut-offs, of a sifter fitted to slide in the space below the cut-offs, the side walls of the sifter being rabbeted at their lower edges, a screen forming the bottom of the sifter and removably fitted to the lower edges of said side walls, the upper surface of the screen frame combining with said rabbets to form guide-grooves, said screen frame being provided at its front end with an exposed handle, and a reciprocatory agitator having a stem mounted in an opening in the front of the sifter, and a flat head fitted at its lateral edges in said guide-grooves and operating in contact with the upper surface of the screen, substantially as specified.

545,490. WHEEL HANDLING DEVICE. CHARLES W. GRESHAM and LAFAYETTE T. GRESHAM, Fredericksburg, Ind. Filed Jan. 9, 1895. Serial No. 534,358. (No model.)

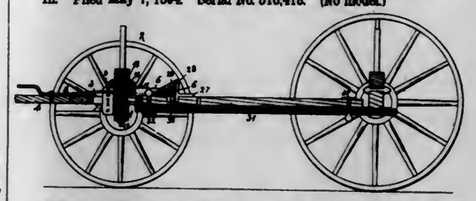


Claim.—1. The combination with a frame, of a spindle-carrying plate connected by swinging arms to the frame, a rock-shaft having a crank-arm, a link connecting the extremity of the crank-arm with one end of said plate, and a guide or bracket secured to the other end of said plate and slotted to receive said link, substantially as specified.

2. The combination with a frame, of a rock-shaft carrying a crank-arm, a spindle-carrying plate, swinging-arms connecting an intermediate point of said plate with the frame, a link connecting one end of the plate with the said crank-arm, a guide or bracket slotted to receive said link, and means for adjustably securing said guide or bracket to the other end of the plate, substantially as specified.

3. The combination with a frame, of a spindle-carrying plate, swinging arms connecting the plate to the frame and pivotally connected to the plate approximately at the center of its length, a crank arm carried by a rock-shaft mounted in rear of the pivotal points of connection of the swinging arms with the frame, a link connecting the free end of the crank arm with the plate upon one side of the pivotal point of connection of the swinging arms with the plate, and a guide or bracket secured to the plate upon the other side of the point of connection of the swinging arms thereto and loosely connected to the link, whereby when the plate is in a horizontal position the swinging movement of the crank arm causes a vertical movement of the plate and subsequently a swinging movement thereof to arrange the plate in a vertical position with its lower end supported upon the frame, substantially as specified.

545,491. WAGON RUNNING-GEAR. THOMAS GRIENITZ, Rockford, Ill. Filed May 7, 1894. Serial No. 510,413. (No model.)

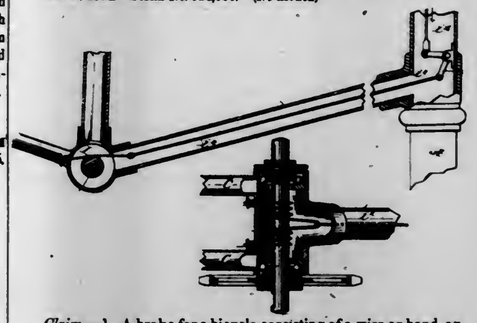


Claim.—1. In a wagon running gear, the combination of a front axle, a bolster having a pivotal connection with the axle through the medium of a king bolt, the king bolt having an opening extending transversely through its upper end and terminating in two branches, and a pin extending through the opening and through the bolster.

2. In a wagon running gear, the combination of a front axle and a reach having a connection therewith, the connection consisting of a bushing through which the king bolt passes and plates secured to the end of the reach supporting the bushing in a pivotal manner.

3. In a wagon running gear, the combination of a front axle, plates secured to the front face thereof, each provided with a vertical series of perforations, a tongue having a pivotal connection with the axle, a bar spring secured to the tongue having one end passing between the plates, its other end curved upward having a vertical opening through which a bolt passes holding the evener to the tongue, and a pin located in the perforations over the end of the bar spring.

545,492. BRAKE. EDWARD S. HALL, New York, N. Y. Filed Oct. 5, 1894. Serial No. 524,966. (No model.)



Claim.—1. A brake for a bicycle consisting of a wire or band, applied directly and coiled upon the pedal or crank-shaft in a direction corresponding with the motion of the same, and within the tube joining the journals of said crank-shaft and suitably secured at one of its ends, in combination with means for drawing the coil and thereby tightening the same upon the shaft.

2. A brake for a bicycle consisting of a wire, cord or band applied directly and coiled upon the pedal or crank shaft in a direction corresponding with the motion of the same, and within the tube joining the journals of said shaft and suitably secured at one end and provided at its other end with connections to the hand of the rider, whereby the same may be drawn and tightened, in combination with the rear wheel of the bicycle, and a sprocket chain connecting the axle of the same with the crank or pedal axle, substantially as described.

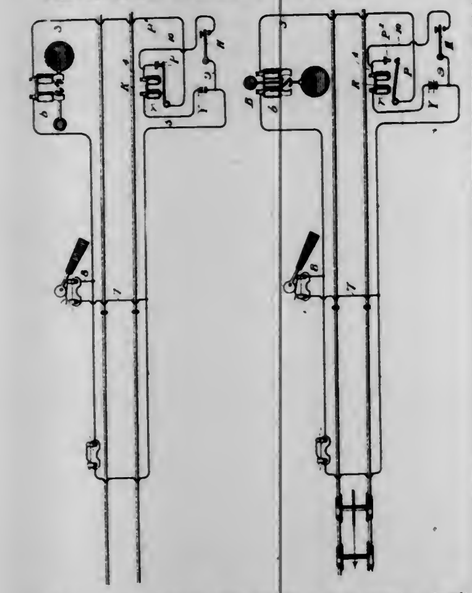
545,493. GLOVE-FASTENER. FRANK E. HALL, Boston, Mass., assignor, by mesne assignments, to the Consolidated Fastener Company, Portland, Me. Filed Jan. 11, 1895. Serial No. 534,522. (No model.)

Claim.—1. A fastener for gloves or other articles consisting of a button and button-hole member provided with a socket piece having the integral arms *b* and springs *c* integral with the blank and intermediate of the arms, substantially as described.

2. A fastener for gloves or other articles consisting of a button and button-hole member provided with a socket piece having the integral arms *b* and springs *c* integral with the blank and intermediate of the arms in combination with the collet D, substantially as described.



545,494. RAILWAY BLOCK-SIGNAL SYSTEM. ALVAN W. HALL, New York, N. Y., assignor of one-half to Alfred M. Collett, same place. Filed June 15, 1895. Serial No. 552,864. (No model.)



Claim.—1. In a railway signal system, a block signal, a circuit closer in conjunction therewith and operated thereby, an automatic supplemental signal for said block signal, and a normally closed circuit including a track instrument, substantially as described.

2. In a railway signal system, a block signal, a circuit closer in conjunction therewith and operated thereby, an automatic supplemental signal for said block signal, and a normally closed circuit track instrument with a battery and circuit all arranged substantially as and for the purpose specified.

3. In a railway signal system, a block signal, a circuit closer in conjunction therewith said circuit closer being normally open and being adapted to be mechanically closed by said block signal, an automatic supplemental electric signal to operate as a failure indicator, a normally closed circuit track instrument adapted to be mechanically opened by a train, all substantially as and for the purpose specified.

4. In a railway signal system, a block signal, a normally open circuit closer in conjunction therewith and adapted to be closed when said signal is at "danger," a supplemental automatic signal, a normally closed circuit track instrument and a circuit, relay and battery all arranged substantially as and for the purpose specified.

545,495. SUPPORT FOR OVERHEAD ELECTRIC CONDUCTORS. MELANCTHON HANFORD, Malden, assignor to Charles J. Goodwin, Springfield, Mass. Filed Apr. 25, 1894. Serial No. 508,935. (No model.)

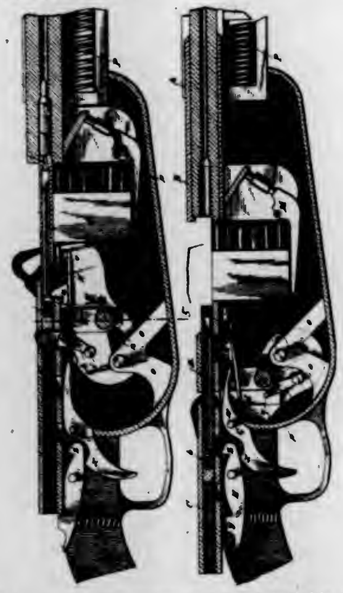


Claim.—1. In a supporting device for overhead electric conductors, the combination with a supporting coupling member having a transverse extension secured thereto or integral therewith; of a supported coupling member consisting of a longitudinal portion connected with the conductor and in line therewith and an upward extension terminating in a hook adapted to fit the said transverse extension, and an engaging portion of said supported member adapted to engage the supporting member when the longitudinal portion of said supported member is in a substantially horizontal position, substantially as described.

2. In a supporting device for overhead electric conductors, the combination with a supporting coupling member having an upwardly projecting socket open at the sides and bottom and a bolt or rod extending transversely across the said socket, of a supported coupling member adapted to cooperate therewith, said supported member consisting of a longitudinal portion connected to the conductor and in line therewith, an upward extension at the end opposite said conductor, a lug or projection on the side thereof adapted to engage an edge of the socket of the supporting member, and a hook at the end of said extension adapted to engage the transverse bolt of the supporting member, substantially as described.

3. In a supporting device for overhead electric conductors, the combination with a supporting coupling member having an open socket and a mutilated or flattened bolt secured thereto, and extending from one side to the other thereof, of a supported coupling member having a hook adapted to fit the rounded portion of said bolt, the mouth of said hook being smaller than the diameter of such rounded portion, and a lug adapted to engage an edge of said socket, as set forth.

545,496. RECOIL-OPERATED FIREARM. ALBERT HAUFF, Berlin, Germany. Filed Aug. 25, 1894. Serial No. 521,271. (No model.) Patented in England Sept. 12, 1893, No. 17,114; in Belgium Aug. 20, 1894, No. 111,454; in Hungary Sept. 21, 1894, No. 1,159, and in Austria Nov. 23, 1894, No. 44/6,062.

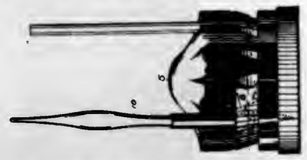


Claim.—1. The combination, of a barrel, guided in a shell connected with the stock, a breech bolt, a guide sleeve for said breech-bolt, connected with the barrel, an oscillating cam-piece, a locking block for the breech-bolt actuated by said cam-piece and a resetting spring on the guide-shell of the barrel, adapted to return the parts automatically into locked position for firing after the breech-bolt has been moved back by the recoil and tilting of the cam-piece, substantially as set forth.

2. The combination, with a barrel guided in a shell connected with the stock, the breech-bolt and the guide-sleeve for the same, of a spring-actuated locking detent provided with catches for locking the guide-sleeve when the breech-bolt is in the breech, and for retaining the same in drawn back position when a new magazine is to be inserted, substantially as set forth.

3. The combination, with the guide-shell of the barrel, and the barrel of a breech-piece, a guide-sleeve for said breech-piece, connected with the barrel, an oscillating cam-piece, a locking block for the breech-piece actuated by said cam-piece, a resetting spring on the guide-shell of the barrel, and a pivoted sear and a boss on the cam-piece, adapted to engage the sear and release it from the firing-pin at the forward limit of the closing movement of the parts whereby after the first discharge the parts are automatically opened and locked by the recoil action of the arm and the latter automatically actuated until all the cartridges in the magazine are discharged, substantially as set forth.

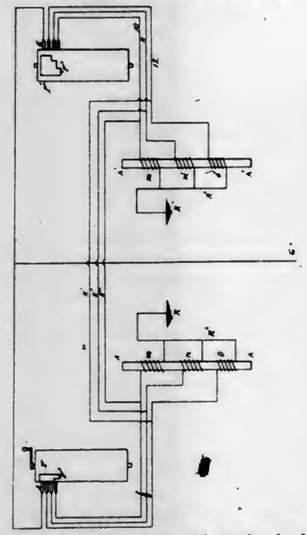
545,497. PEN-RECEPTACLE. JAMES H. HAYDEN, Denver, Colo. Filed Feb. 27, 1895. Serial No. 539,902. (No model.)



Claim.—1. A roundish domed shaped device 5, with projections 9 longer in height than in width, pressed or molded or made into its side, and standing in an upright position, with a V or tooth shaped notch 12, cut or molded into each projection 9, an elastic band or spring garter 6, which is to encircle aforesaid pen receptacle or pen rack 5 and enter the notches 12 for the purpose of holding up the pen handles, pencils, or brushes, and the like, substantially described and for purposes specified.

2. A roundish dome shaped device 5 with cuts 8, down its side, large enough to admit a pencil, an elastic band or spring garter 6, stretched around said device held in position by V or tooth shaped notches (12) in the projections (9) which stretch the elastic a little more at the upper side than the lower side, allowing the pencil or pen-handle to more easily enter between the elastic and the pen receptacle, an inverted cap 7, forced onto the receptacle 5, for the purpose of catching ink which often runs down from the pens, all substantially as and for the purpose set forth.

545,498. ELECTRIC BRAKE. WILLIAM L. HEDENBERG, New York, N. Y. Filed May 7, 1894. Serial No. 510,346. (No model.)



Claim.—1. An electric brake, comprising a bar having shoes located in proximity to wheels, a plurality of coils on said bar immovable with relation to the bar, connections from said coil or coils to a source of power, and a controller arranged to throw one or more coils into circuit at a time, whereby said shoes will advance toward said wheels to apply the brake with more or less force, substantially as described.

2. In an electric brake, a bar having a plurality of coils immovable relatively to the bar and adapted to be drawn toward the wheels, combined with a controller adapted to throw one or more coils into circuit at a time, as and for the purposes specified.

3. In an electric brake, a pair of bars or cores provided with polar extensions each having a plurality of coils that are respectively connected together, circuit controllers for the coils of each of said bars, said controllers being arranged to throw one or more coils into circuit at a time, a lead wire or conductor passing to said controllers, and wheels in proximity to said bars, whereby both of said bars will be operated simultaneously to apply the brakes when the circuit is closed by one controller, through the coils of like relation to the polar extensions, substantially as described.

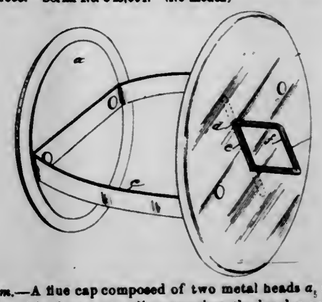
4. In an electric brake, the combination of a truck and wheels, with a bar pivotally carried thereby provided with polar extensions and having its ends in proximity to said wheels, shoes operated by said bar, springs to hold said bar away from said wheels, stop pieces to act with said springs, a plurality of coils on said bar to magnetize it, to cause it to approach the wheels, and a controller arranged to energize the coils of like relation to the polar extensions, substantially as described.

5. In an electro-magnetic brake, the combination with a moving element, of a core provided with a polar extension, coils wound on the core at different points along its length and immovable relatively thereto, and means for cutting-in one or all of the coils, substantially as set forth.

6. In an electro-magnetic brake, the combination with a moving element, of magnet cores having polar extensions, which polar extensions are adapted to frictionally contact with the moving element upon the energization of any of the coils wound on the cores, two or more coils arranged on a single core, and means for energizing the coils of like relation to the polar extensions, substantially as set forth.

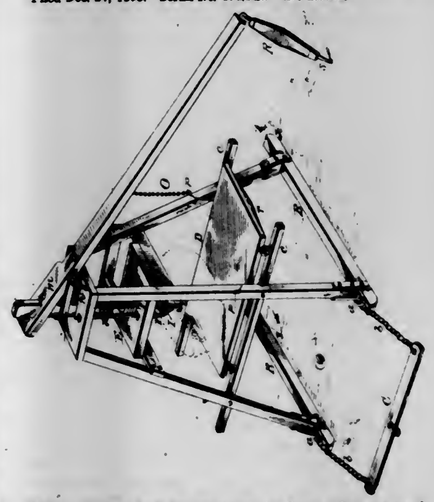
7. In an electro-magnetic brake, the combination with magnet cores, having polar extensions, of two or more coils arranged on a single core, and means for energizing the coils of like relation to the polar extensions, substantially as described.

545,499. FLUE-CAP. FRANK A. HEGGY, Canton, Ohio. Filed Apr. 15, 1895. Serial No. 545,691. (No model.)



Claim.—A flue cap composed of two metal heads *a*, a non-combustible head *b* of a greater diameter than the head *a* and having a flexible edge adapted to rest against the inner wall of a stove pipe thimble, spring arms D curved out and adapted to press against the thimble, and a cap C, substantially as set forth.

545,500. HOISTING-MACHINE. OLE R. HESTAD, Appleton, Minn. Filed Dec. 27, 1893. Serial No. 494,842. (No model.)



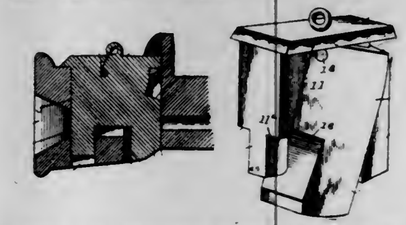
Claim.—1. In a hoisting machine, the frame, the two tracks c, rigidly secured to its inner side, the stationary platform secured in the

upper portion of the frame, and provided with a threaded opening, the top, and the two rods *d* which pass down through both top and platform; combined with the screw threaded winding post, the chain F, fastened at one end to a rod *d* and at the other to the post; a guiding pulley over which the chain passes, a lever for operating the winding post, and a truck which is placed upon the tracks after the object has been raised, substantially as shown.

2. In a hoisting machine, a frame composed of four posts, which are united at their upper ends, and have their lower ends secured together in pairs by runners B, and a hoisting mechanism applied to the top of the frame, combined with the two trucks *c* secured rigidly to the inner sides of the frame, and extending beyond its sides at both ends, and a truck D, which is only placed upon the tracks after the object has been raised, substantially as described.

3. The winding post, and the slotted lever applied to the upper end thereof, combined with the metal strap M, which has one end wound around the post, and the pin *n*, by which the outer end of the strap is secured to the lever, substantially as set forth.

545,501. CAR-COUPLING. JULIUS R. HENDERSON and JOHN H. HARRIS, Iola, Kans., assignors of one-third to H. L. Henderson, same place. Filed Oct. 16, 1894. Serial No. 526,091. (No model.)



Claim.—1. In a car coupling, the combination of a draw-head, a coupling pin mounted therein, and provided at its front portion with lateral enlargements, forming inclined shoulders at their rear sides and horizontal shoulders at their lower terminals adapted to engage the upper face of a link, and a pin support composed of opposite sides embracing the rear portion of the coupling pin, and having a lower rearwardly offset weighted portion, and arranged to engage the inclined shoulders of the coupling pin, substantially as described.

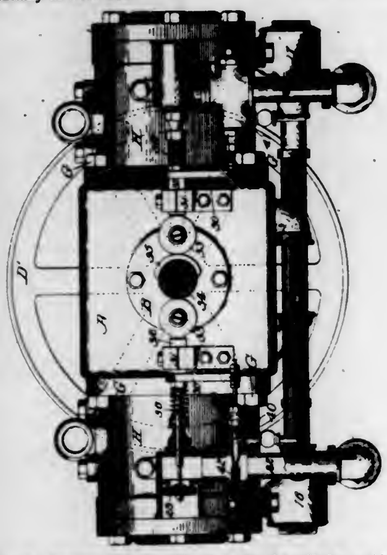
2. In a car coupling, the combination of a draw-head, a coupling pin mounted therein and having at its rear a vertically disposed guide or arm, and provided at its front portion with lateral enlargements forming inclined shoulders at the rear sides and horizontal shoulders at their lower terminals, said coupling pin being provided at its top with a plate or flange, and having at its rear a recess 13 forming a lower shoulder, and the pin support pivoted at its upper front corner to the coupling pin, and comprising the opposite sides embracing the rear portion of the coupling pin and conforming to the configuration of the same and having rearwardly offset lower portions 15, a transverse web connecting the front edges of the lower portions 15, and a cross-piece 17 connecting the upper rear corners of the sides and located in the recess 13, substantially as described.

545,502. GAS-ENGINE. HERBERT H. HENNEGIN, St. Louis, Mo. Filed Feb. 11, 1895. Serial No. 537,988. (No model.)

Claim.—1. In a gas engine, the combination with two cylinders arranged in line with each other, of pistons operating in said cylinders, which pistons are connected to a common rod, a cross-head arranged in the rod, a slide-block arranged in the cross-head, pipes which lead from the inner ends of the cylinders to the outer ends of the opposite cylinders, check-valves which control the openings of said pipes into the outer ends of the cylinders, branch pipes which lead from the first mentioned pipes, inwardly opening check-valves arranged in the branch pipes, air-intake valves in the outer ends of the branch pipes, pumps for forcing the oil into the branch pipes, the pumps and the air intake valves of each cylinder being operated together means for operating the pumps and air intake valves, and a governor mounted on the engine shaft for controlling said means; substantially as described.

2. In a gas engine, the combination with the shaft, of a cam sleeve slidingly arranged thereon, a governor for said sleeve, rollers which bear against the cam surface of said sleeve, non-circular rods in which said rollers are mounted, air intake valves arranged on the ends of the rods, pump plungers which are adjustably connected to the rods, and springs for forcing the rollers against the cam-surface, whereby when one air intake valve is open and the pump is forcing the oil in front thereof, the other air intake valve is seated and its connected pump is receiving a charge to be forced in front of its air-intake valve when the latter is unseated substantially as described.

3. In a gas engine, the combination with two cylinders arranged in line with each other, pistons operating in said cylinders, said pistons being connected to a common rod and said pistons also controlling the cylinder exhaust ports, valved connections between the ends of the cylinders whereby the pistons compress the air and gases for each other, an electric terminal on the pistons, an electric terminal on each of the cylinder heads with which the piston terminals alternately contact to form an arc to ignite the compressed charges, air intake valves and gas pumps which are operated from the shaft of the engine, and a governor for controlling said valves and pumps; substantially as described.



4. In a gas engine, the combination with the cylinder, and its piston, forming one terminal of an electric circuit, of posts mounted in the cylinder head and insulated therefrom, an arm pivoted in one of the posts and resting upon the other, said posts and pivoted arm forming the other terminal of an electric circuit, the wire being connected to the post upon which the arm rests, and means on the moving piston to complete the circuit through the arm, and, raising it, form an arc between its end and the post upon which it rested, substantially as described.

5. In a gas engine, the combination with the cylinder and its piston forming one terminal of an electric circuit, of posts mounted in the cylinder head and insulated therefrom, an arm pivoted in one of the posts and resting upon the other, said posts and arm forming the other terminal of an electric circuit, the wire being connected to the post upon which the arm rests, a spring on the piston for contacting with the arm to complete the circuit, and a projection on the piston for contacting with the arm to raise its end from the post upon which it rested, to form an arc, substantially as described.

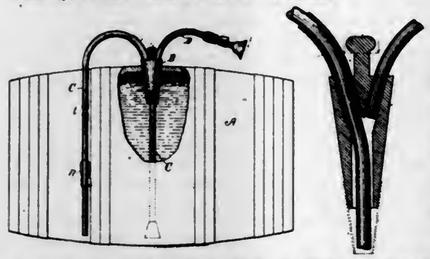
6. In a gas engine, the combination with a check-valve, of an open pocket for receiving the stem, a spring in the pocket, which surrounds the stem and exerts a tendency to seat the valve, the diameter of said stem being increased or provided with a sleeve which entirely fills the space within the coils of the spring, substantially as described.

7. In a gas engine, the combination with the casing and the driving shaft, of a cam surface arranged on the driving shaft, a squared shank mounted in bearing on the casing, a roller mounted on the shank, a valve stem projecting from the cross head, an air intake valve on said stem, a plunger adjustably mounted on the cross-head, a gas opening arranged in advance of the travel of said plunger, and a yielding plug for confining the gas in front of the plunger, which plug is unseated to permit the escape of the gas when the plunger is actuated, substantially as described.

8. In a gas engine, the combination with two cylinders arranged in line with each other, of pistons within said cylinders which are connected to a common rod, a cross head arranged in the rod, a sliding block arranged in the cross-head, valved connections between the ends of the cylinders, and a governed sleeve which controls the air intake valves and gas pumps; substantially as described.

9. In a gas engine, the combination with two cylinders arranged in line with each other, pistons operating in said cylinders which control their own exhaust, valved connections between the ends of the cylinders whereby the pistons compress the air and gases in advance of each other, means for exploding the compressed charges, connections between the ends of the cylinders, and means located on the shaft for controlling the air intake valves and gas pumps; substantially as described.

545,503. SIPHON. FRANK S. HILLHOUSE, Kalamazoo, assignor of one-half to Hazeltine & Perkins Drug Company, Grand Rapids, Mich. Filed Sept. 17, 1894. Serial No. 523,189. (No model.)



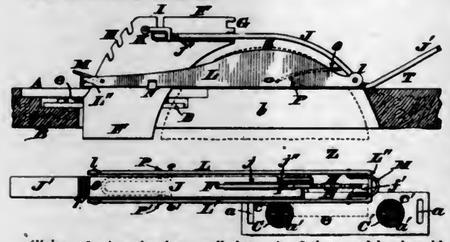
Claim.—1. The combination of the tapered bung, B, of rigid, inelastic material with a passage therethrough branched into two at the top; a knob, *r*, on a stem above said bung for convenience in handling and inserting the same; a rubber tube, C, passing through one branch of said passage through the main part at the bottom which is slightly larger than the tube; a taper thimble, E, to be placed on the lower end of said bung to reduce the size thereof approximately the size of the siphon pipe; an air pipe, D, leading through the other branch of said opening from the top of the bung to the single passage at the bottom to introduce air through the annular space around the siphon pipe, substantially as described for the purpose specified.

2. The combination of the tapered bung, B, of rigid, inelastic material with a passage therethrough branched into two at the top; a knob, *r*, on a stem above said bung for convenience in handling and inserting the same; a rubber tube, C', inserted into one of the branches of said passageway securely; a rubber tube, C, inserted adjustably through said tube, C', down through the single part of the passageway into the barrel; a pipe, D, inserted in the other branch of said passage, for the purpose of introducing air pressure from the lungs, for the purpose specified.

3. The combination of a tapered bung of rigid, inelastic material with a passage therethrough approximating the size of the lower end of the bung and branching in two openings out at the top of the bung; a rubber tube, C', secured in one branch of said passage; a siphon tube adapted to be inserted through the said tube C' and adapted to pass down through the single passage at the bottom of the bung leaving an annular space around the pipe at the bottom of the bung; a rubber pipe inserted in the other branch of said passage for the purpose of introducing air pressure from the lungs of the operative to start the siphon, as specified.

4. The combination of a tapered bung of rigid material with a passage extending upwardly from the bottom thereof and approximating the size of the lower end of the bung and branching obliquely into two passages out at the top of the bung; a siphon pipe inserted adjustably through one of said branch passages and the main passage, the said pipe being slightly smaller than the main passage; and a pipe to deliver air pressure to the barrel, inserted in the opposite branch opening at the top of the bung, for the purpose specified.

545,504. SAW-GUARD. FRANCIS M. HOOVER, Brookville, assignor to Isaac Kinsey and Lewis R. Ward, Milton, Ind. Filed Apr. 29, 1895. Serial No. 547,510. (No model.)



Claim.—1. A spring-bar applied to a kerf-plate, and having side presser-plates pivoted to it, which plates are provided with an independent spring.

2. A saw-guard including a bed-plate; a clamp-plate connected thereto; a dovetail-plate having a lateral-flange inserted between said plates; a kerf-plate having guides that admit said dovetail-plate; and a spring-bar applied to said kerf-plate.

3. The combination, in a saw guard, of a kerf-plate; a spring-bar applied thereto; and a pair of spring-actuated side-plates L, L', pivoted to said bar, said plates being provided with inwardly-bent integral-guides *n*, *n'*, that bear against the opposite sides of said kerf-plate, in the manner described, and for the purpose stated.

4. A saw-guard including a kerf-plate; a spring-bar applied to it; side presser-plates pivoted to said bar; and a device for retaining the free ends of said plates in an elevated position.

5. A saw-guard including a spring-bar; a pair of side presser-plates pivoted thereto; and a spring O, having a central bend in contact with said bar; its ends applied to said plates; and pins P, P', inserted in the latter, near the ends of said spring O.

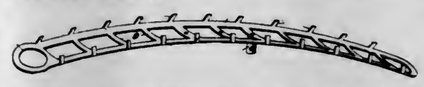
6. A saw-guard including a kerf-plate having a slot I, provided with a lateral extension *i*; a spring-bar J having a longitudinal slot *j*, cross bar *j'*, and notch *j''* and a keeper K applied to said plate, and engaged with notch *j''*.

7. The combination, in a saw-guard, of the slotted bed-plate A *a a*; clamp-plate D, secured thereto; dovetail-plate E, having a flange *e*, fitted between said plates A, D; kerf-plate F, having guides *f*, *f''*, that engage with said plate, E; a keeper K, applied to said plate F; a longitudinally-slotted spring-bar J *j j' j''*, carried by said plate F; and side presser-plates L, L', pivoted to said spring-bar, and retained in their normal positions by a spring O.

545,505. COMPOSITION FOR DRESSING LEATHER. FREEMAN A. HURD, Red Bank, N. J. Filed Apr. 3, 1894. Serial No. 506,212. (No specimens.)

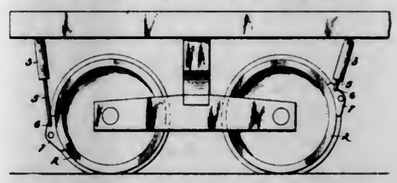
Claim.—The herein described composition of matter for softening and rendering leather waterproof consisting of paraffine lamp black, oleic acid, and petroleum, combined and in about the proportions specified.

545,506. METALLIC FASTENER FOR PNEUMATIC TIRES. JAMES L. JOHNSON, Fort Madison, Iowa. Filed Feb. 23, 1895. Serial No. 539,409. (No model.)



Claim.—A metallic fastening device for the outer case or cover of a pneumatic tire, made from a single sheet metal blank shaped to conform to the curvature of the exterior surface of the tire and comprising a longitudinally extending plate, two rows of oppositely disposed and inwardly converging pins or hooks projecting from the convex face thereof and formed integrally with the edges of said plate and adapted to engage eyelet holes in the outer case or cover of the tire, and an integral loop at one end of said plate for embracing and supporting the valve, the whole device being formed of a single piece of metal and adapted to be applied to the exterior surface of said outer case or cover and between the latter and the wheel rim, substantially in the manner and for the purpose specified.

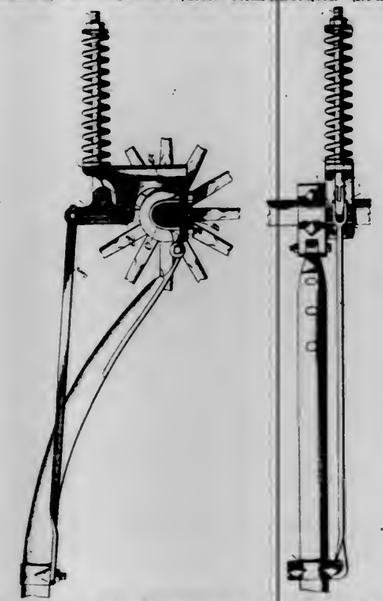
545,507. CAR-BRAKE. FRANK S. JOHNSON, New Bedford, Ill. Filed June 22, 1895. Serial No. 553,707. (No model.)



Claim.—1. In a car brake mechanism, the combination with the car body, of a guiding cylinder or casing secured to and suspended beneath the same, a brake shoe suspending link capable of sliding within said cylinder or casing, and a brake shoe carried by and suspended from the lower end of said link, substantially as and for the purpose described.

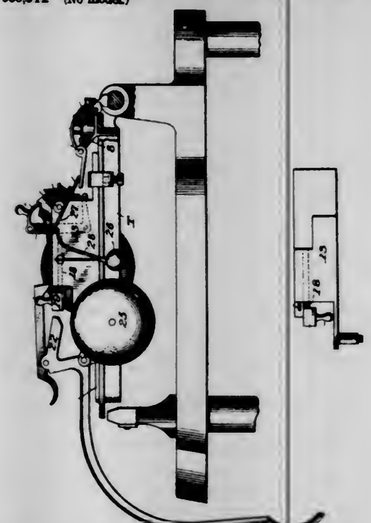
2. In a car brake mechanism, the combination with a guiding cylinder or casing connected to and suspended beneath the frame of a car or truck, of an elongated link arranged within said guiding cylinder or casing, a brake shoe having a transverse horizontal opening near its upper end; and an intermediate link having said shoe suspended upon its lower end and capable of sliding at its upper end within said guiding cylinder or casing and the interually arranged link, substantially in the manner and for the purpose specified.

545,508. VEHICLE-SHAFT SUPPORTER. CHARLES G. KLICK, Columbus, Ohio. Filed June 27, 1895. Serial No. 554,231. (No model.)



Claim.—A vehicle shaft supporter comprising a standard *a*, with means for attaching it to the axle, a lever *e* pivoted thereto, a rod *f* with means for attaching the same to the shaft, a rod *h* on the lever *e* and a coiled spring secured on the rod *h* against the standard, substantially as described.

545,509. TYPE-WRITER ATTACHMENT. ROBERT LANSING and GARY M. JONES, Watertown, N. Y. Filed June 19, 1895. Serial No. 553,344. (No model.)



Claim.—1. A device for automatically varying at regular intervals, the travel of a type-writing machine carriage, consisting of a stop adjustable to positions to obstruct or permit the full movement of the carriage, a stop shifting device, and means for moving said stop shifting device on the movements of the spacing lever, substantially as described.

2. The combination with the carriage and spacing lever of a type-writing machine, of a stop for limiting the full movement of the carriage, and devices intermediate of the stop and lever for shifting the stop, substantially as described.

3. The combination with the carriage and spacing lever of a type-writing machine, of a stop for limiting the full movement of the carriage, and devices intermediate of the stop and lever for shifting the stop, and means for sounding an alarm upon each movement of the stop, substantially as described.

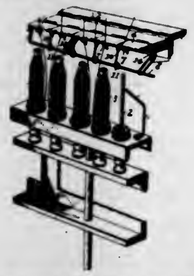
4. The combination with the frames T, U, and spacing lever of a type-writing machine, of a movable stop device for the movement of the carriage supported by the frame T, a stop operating device supported by the frame U, and means for moving the latter device from the spacing lever, substantially as described.

5. The combination of the carriage and spacing lever of a type writing machine, an adjustable stop, a device for shifting said stop at regular intervals, and adjustable means for operating said device from the spacing lever, whereby to throw the shifting device into and out of operation, substantially as described.

6. The combination with the carriage and spacing lever of a type-writing machine, of an adjustable stop, a shaft carrying a stop operating arm and ratchet wheel, and a lever, and a pawl for operating said wheel arranged to be vibrated on the movement of the spacing lever, substantially as described.

7. An attachment for type writing machines, consisting of a stop device and stop operating devices capable of a step by step movement under the action of the spacing lever, and means for securing the parts in position in respect to said lever, and to the frame of the machine, substantially as described.

545,510. YARN-PROTECTOR ATTACHMENT FOR SPINNING-MACHINES. MATTHIAS LARNER, Milltown, Canada. Filed Nov. 27, 1894. Serial No. 530,154. (No model.)



Claim.—1. In an attachment of the class described, the combination with the guide bar, the spindles, and the ring-rail of a spinning frame; of a longitudinal protector wire loosely hung beneath the guide bar above the upper ends of the spindles, and an arm attached to the ring-rail and provided with an upper angled end to be carried against said protector wire to shift the position of the latter, substantially as set forth.

2. In an attachment of the class described, the combination with the guide bar, spindles, and ring-rail of a spinning frame, of a protector wire loosely suspended from the guide bar of the spinning frame above the spindles, and a shifting arm attached to the ring rail of the spinning frame for shifting the position of the wire by the movement of said rail, substantially as set forth.

3. In an attachment of the class described, the combination with the guide bar, bobbin spindles and ring rail of a spinning frame; of a series of wire hanger links loosely suspended from the guide bar between the thread guides thereof, a series of wire guard loops alternating with said hanger links and loosely connected at their upper ends to the under side of said guide bar in rear of the hanger links, a longitudinal protector wire strung through said guard loops and hanger links, and suspended thereby at one side of the yarn or thread of the bobbins above the latter, and a shifting arm attached to the ring rail and provided with an upper angled end to be carried against said protector wire, substantially as set forth.

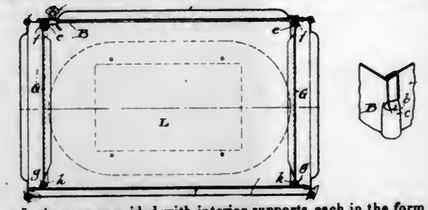
545,511. DOMESTIC OVEN. AUGUST LINDEMANN, Milwaukee, Wis. Filed Feb. 13, 1895. Serial No. 538,178. (No model.)

Claim.—1. A sheet-metal oven comprising a collapsible shell provided with a collapsible lining, a detachable shell-bottom, a detachable lining-bottom, and a detachable top having a lining.

2. A sheet-metal oven comprising a shell having its ends and sides in hinge-connection, a lining consisting of end-pieces in hinge-connection with a side of the shell, a side likewise joined to the end-pieces, and a detachable bottom; a detachable bottom for the shell, and a detachable shell top having a lining.

3. A sheet-metal oven comprising a collapsible shell having inturned flanges, a detachable bottom that rests on the flanges, and a detachable top.

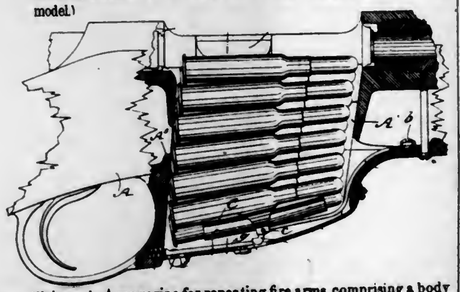
4. A sheet metal oven comprising a shell having the vertical edges of its ends and sides in the form of curls, those of the ends loosely engaging those of the sides, a shell-lining consisting of end-pieces provided with vertical edge curls loosely engaging curls on the shell, a side in like connection with said end pieces, and a detachable bottom; a detachable bottom for the shell, and a top detachably engaging said shell.



5. An oven provided with interior supports, each in the form of an acute angle device having more or less of a horizontal portion thereof run through the adjacent portion of said oven and extended parallel thereto.

6. A sheet-metal oven comprising a collapsible shell, and a collapsible lining in hinge-connection with the shell.

545,512. MAGAZINE FOR REPEATING FIREARMS. FRANK E. LODETTI, Rondout, N. Y. Filed Nov. 2, 1894. Serial No. 527,711. (No model.)



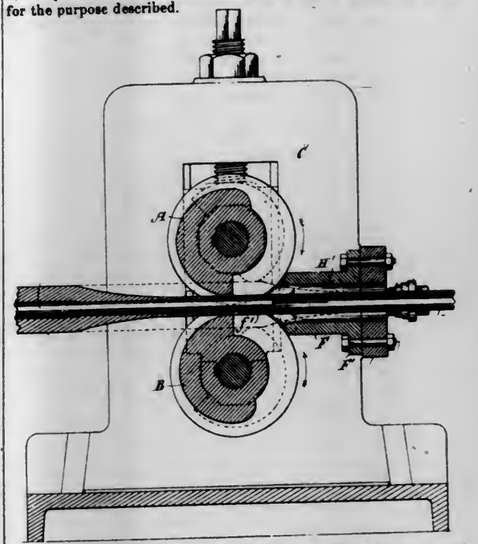
Claim.—1. A magazine for repeating fire arms, comprising a body of sufficient width to receive two or more rows of cartridges therein, a plate-spring secured to the base thereof beyond its main body, a plate pivoted to the free end of the said spring, and depressed longitudinally at one side to hold the rows of cartridges at unequal heights, springs secured to the magazine at each side near the top thereof and bent downwardly, a catch depending from the plate spring, a normally projected bolt sliding in the base of the magazine, and a button upon the said bolt, whereby the same may be slid backwardly or caused to engage the catch, substantially as shown and described.

2. A magazine for repeating fire arms, having a plate spring secured to the base thereof beyond its main body, a plate pivoted to the free end of the said spring at the bottom of the magazine to force the cartridges upwardly, a catch depending from the spring, a bolt sliding in the base of the magazine, a spring at the rear of the said bolt to hold the same normally forward, and a button upon the said bolt, whereby the same may be slid backwardly or caused to engage the catch, substantially as shown and described.

3. A magazine for repeating fire arms comprising a body of sufficient width to receive therein two or more rows of cartridges, a plate spring secured to the base thereof beyond its main body, a plate pivoted to the free end of the said spring at the bottom of the magazine to force the cartridges upwardly, the said plate being longitudinally concaved and bent downwardly at one side to hold the rows at unequal heights, springs secured near the top of the magazine at each side thereof and bent downwardly to bear upon the cartridges to maintain the same in place and to guide the same into the barrel, a catch pivoted to the plate spring at the bottom, a bolt having studs thereon working in slots in the magazine base, a spiral spring behind the bolt to force the same forwardly, and cause it to engage with the catch and hold the spring out of engagement with the cartridges, whereby a single loading arm is formed, and a button upon one of the studs to actuate the said bolt, substantially as shown and described.

545,513. APPARATUS FOR ROLLING SEAMLESS METALLIC TUBES. MAX MANNESMANN, Remscheid, Germany. Filed Jan. 28, 1895. Serial No. 536,442. (No model.)

Claim.—1. The combination as herein set forth of the paracentric rolls, A B, the housing standards, C C, the mandrel, E, the work gage provided with the bifurcated jaws, *f f'*, the yoke, H, fastening devices for fastening said work gage to said yoke, the bolts, I I, screwed into the housing standards, C C, each of the said bolts having a spring, J, interposed between its head and the outer face of said yoke, as and for the purpose described.



2. A mandrel for supporting a hollow metallic ingot, a pair of step by step acting rolls, substantially such as described, for progressively reducing successive sections of said ingot into integrally united lengths of thin shelled tubing, in combination with a spring supported work gage bifurcated at one end and having its bifurcated end projecting partially into the space between said two rolls, as and for the purposes set forth.

3. A mandrel for supporting a hollow metallic ingot and a pair of step by step acting rolls substantially such as described for progressively reducing successive sections of said ingot into integrally united lengths of relatively thin shelled tubing, in combination with a work gage projecting partially into the space between said rolls, the said work gage affording clearance for the finished tubing but adapted to present a bearing and act as a stop for the unreduced or incompletely reduced forward end of the ingot for the purpose of arresting each of the endwise feeding movements of the ingot at a prescribed point.

4. A mandrel for supporting a hollow metallic ingot and a pair of step by step acting rolls substantially such as described for progressively reducing successive sections of said ingot into integrally united lengths of relatively thin shelled tubing, in combination with a tubular work gage bifurcated at one end and having its bifurcated end projecting partially into the space between said two rolls, as and for the purpose specified.

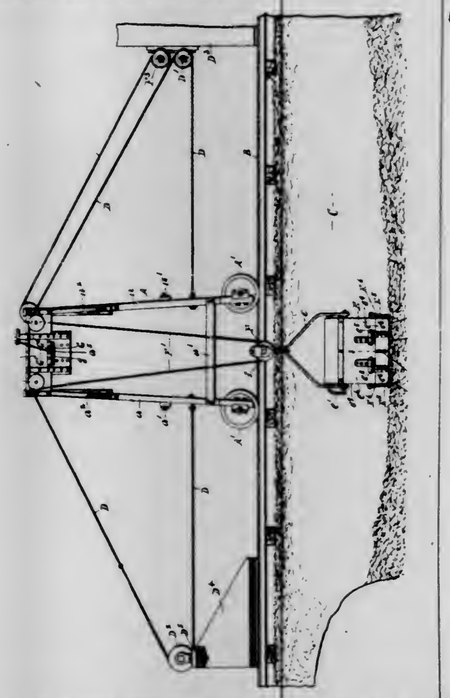
545,514. HOISTING APPARATUS. THOMAS MARSELL, Syracuse, N. Y. Filed Apr. 29, 1895. Serial No. 547,507. (No model.)

Claim.—1. In a hoisting apparatus, the combination of a carriage A having opposite substantially parallel supporting walls a^2 formed with perforations a^3 therethrough, spring bars G having their lower ends g' secured to the supporting walls a^2, and their opposite ends g movable through the perforations a^3 and provided with engaging shoulders projecting laterally from the adjacent faces of said supporting walls, a support F movable between the walls a^2 and having its opposite sides formed substantially parallel and provided with shoulders f' for automatically engaging the former shoulders, a bucket or receptacle E connected to said support, and means for raising and lowering the bucket, substantially as and for the purpose set forth.

2. In a hoisting apparatus, the combination of a carriage having opposite supporting walls formed with perforations therethrough, spring bars having corresponding ends extending upwardly beneath the perforations and secured to the inner faces of the supporting walls, their intermediate portions extending toward each other from the lower extremities of said ends, and their opposite ends extending laterally from the upper extremities of said intermediate portions through the perforations in said walls for forming yielding engaging shoulders, a support movable between the supporting walls and having its opposite sides provided with shoulders for forcing the inclined intermediate portions of the spring bars inwardly and engaging the

former shoulders, and a bucket or receptacle connected to the support, substantially as and for the purpose set forth.

3. In a hoisting apparatus, the combination of a carriage, spring engaging shoulders secured to the carriage, a vertically movable support provided with shoulders for engaging the former shoulders, a bucket or receptacle connected to the support, a pair of levers secured to opposite sides of the carriage for forcing the engaging shoulders from operative position, and a lever pivoted to the carriage and connected to the former levers for operating both simultaneously, substantially as and for the purpose specified.



4. In a hoisting apparatus, the combination of a carriage, spring engaging shoulders secured to the carriage, a vertically movable support provided with shoulders for engaging the former shoulders, a bucket or receptacle connected to the support, a pair of levers pivoted to the carriage and having corresponding extremities connected to said engaging shoulders for forcing the same from operative position, links pivoted to the opposite ends of the former levers, a rocking lever having its opposite ends pivoted to the adjacent ends of the links, and an actuating lever connected to the rocking lever for operating the same, substantially as and for the purpose set forth.

5. In a hoisting apparatus, the combination of a carriage having opposite supporting walls formed with perforations therethrough, spring bars having corresponding ends secured to the supporting walls, and their opposite ends movable through the apertures and provided with engaging shoulders projecting laterally from the adjacent faces of the supporting walls, a support movable between said walls and having its opposite sides provided with shoulders for automatically engaging the former shoulders, a bucket or receptacle connected to the support, a pair of levers pivoted to the outer faces of the supporting walls, and having corresponding ends engaged with the projecting ends of said spring bars, links pivoted to the opposite ends of said levers, and a rocking lever having its opposite ends pivoted to the adjacent ends of the links for actuating the pivoted levers, substantially as and for the purpose described.

6. In a hoisting apparatus, the combination of a support, a bucket or receptacle secured to the support and provided with a fixed shoulder, and a movable bottom wall, provided with a transverse guide, and having an upturned shoulder projecting from one side edge and hinged to the adjacent upright wall of the bucket or receptacle, a lock movable in the guide for detachably engaging the fixed shoulder, a hand piece movable through the upturned shoulder for operating the lock, and a spring arranged in the guide for forcing the lock into operative position, substantially as and for the purpose specified.

7. In a hoisting apparatus, the combination of a support, a bucket or receptacle secured to the support and provided with a fixed shoulder, and a movable bottom wall, provided with a transverse guide, and having an upturned shoulder projecting from one side edge and hinged to the adjacent upright wall of the bucket or receptacle, a lock movable in the guide for detachably engaging the fixed shoulder, a hand piece movable through the upturned shoulder for operating the lock, a spring arranged in the guide for forcing the lock into operative position, a lever pivoted to an upright wall of the bucket or receptacle, and a link connected to one end of the lever and to the bottom wall, substantially as and for the purpose set forth.

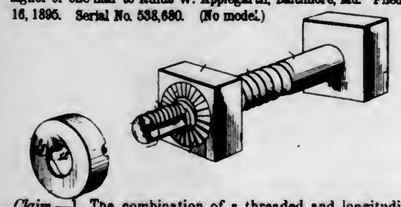
545,515. NUT-LOCK. FRANK A. MERSHON, Sparrow's Point, assignor of one-half to Rufus W. Applegarth, Baltimore, Md. Filed Feb 16, 1895. Serial No. 538,679. (No model.)



Claim.—1. The combination with a plate formed integral with a series of depressions surrounding bolt-holes, and having circular, toothed, or ratchet edges, screw-threaded bolts, and nuts, of nut carriers, each composed of a plate having marginal flanges or rims embracing the nut and formed with an elastic pawl or tongue overhanging and spring yielding toward and from one of the flanges or rims of the nut-carrier plate and adapted to engage the circular, toothed, or ratchet edge of one of the depressions in the said plate, substantially as described.

2. The combination with a railway-rail, a rectangular plate provided with a series of depressions surrounding bolt-holes, and having circular, toothed, or ratchet edges, screw-threaded bolts, and nuts, of nut-carriers, each composed of a plate having marginal flanges or rims to embrace the nut and provided with an elastic pawl or tongue projecting from one corner of the plate, constituting a longitudinal prolongation of one of the flanges or rims, and overhanging and spring yielding toward and from one of the other flanges or rims, so that the plate can lie against the bottom of one of the depressions while the pawl or tongue engages the circular, toothed, or ratchet edge thereof, substantially as described.

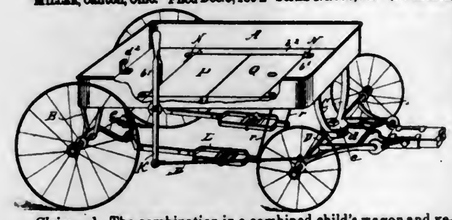
545,516. NUT-LOCK. FRANK A. MERSHON, Sparrow's Point, assignor of one-half to Rufus W. Applegarth, Baltimore, Md. Filed Feb. 16, 1895. Serial No. 538,680. (No model.)



Claim.—1. The combination of a threaded and longitudinally grooved bolt having a channeled or furrowed portion trending diagonally or spirally in a direction opposed to the direction of the screw-thread of the bolt, and communicating with the longitudinal groove, with a nut having a toothed, or ratchet face, and a nut-locking cup or block having an elastic pawl or tongue, and a bolt-hole, the edge of which is provided with a lip or lug adapted to traverse the groove in the bolt and engage the diagonally or spirally channeled or furrowed portion, substantially as described.

2. The combination of a threaded bolt having a reduced end portion, grooved longitudinally and constructed with a plurality of channels or furrows trending diagonally or spirally in a direction the reverse of the direction in which the screw-thread of the bolt trends, with a nut having an annular, toothed, or ratchet face, and a nut-locking cup having an elastic pawl or tongue secured in the bottom thereof, and a bolt-hole, the edge of which is provided with a lip or lug adapted to traverse the groove in the bolt and enter one of the diagonal or spiral channels or furrows, substantially as described.

545,517. COMBINED WAGON AND VELOCIPEDE. CHARLES R. MILLER, Canton, Ohio. Filed Dec. 3, 1894. Serial No. 530,645. (No model.)



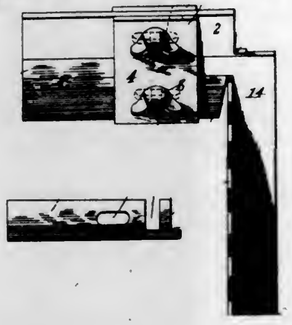
Claim.—1. The combination in a combined child's wagon and velocipede as herein described, of a folding section of the bottom of the body, formed of the boards P and Q, hinged together and to the bottom board b', the board P adapted to be folded back and down on the rear board b', and the board Q forward and down on the board P, and means for spacing the boards apart to increase the height of the seat formed by said boards, substantially as described and for the purpose set forth.

2. The combination in a combined wagon and velocipede as herein described, of a body A, having a portion of the bottom of the body adapted to fold back upon the rear portion b', and forward on itself, the support d^3 and clip d^4, whereby the boards P and Q may be spaced from the bottom of the wagon and apart, to provide a raised seat, substantially as described and for the purpose set forth.

3. The combination with the fixed bottom boards, b' b', of the boards, P and Q, hinged together and one hinged to one of the fixed bottom boards, means for spacing the boards apart to increase the height of the seat formed thereby, and clips, N, each having a horizontal portion, 1, to be secured to the fixed board, b', a vertical part, 2, to engage the edge thereof, a lateral portion, 4, to support the hinged board, and an extension, 3, to be secured to the side boards, b^3, of the body, substantially as set forth.

4. The combination with the body of the vehicle having a folding bottom formed of boards, P and Q, hinged together and to the bottom board, b', the board, P, adapted to be folded back and down on the rear board, b', and the board, Q, forward and down on the board, P, and means for spacing the boards apart to increase the height of the seat formed by said boards, of pedals supported beneath the bottom and connected with the wheels of the body, whereby the vehicle may be driven, substantially as set forth.

545,518. GAGE FOR SIDE-FILING SAWS. WILLIAM H. MILLER, Lock Seven, W. Va. Filed Apr. 22, 1895. Serial No. 546,791. (No model.)



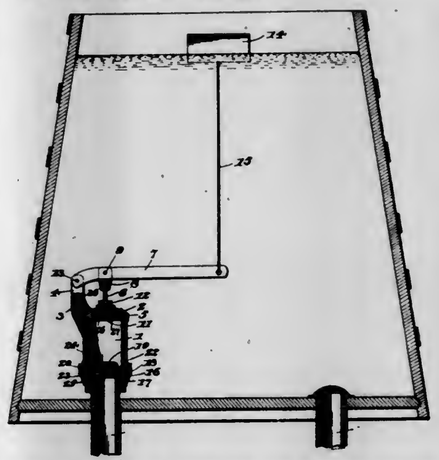
Claim.—1. A device of the above referred to class consisting of a square, clamps arranged thereon and gages adjustable in the clamp, for the purpose described.

2. A device of the class described consisting of a square, clamps arranged thereon, an upper gage having its end of hardened steel, and the lower gage with a beveled end, as and for the purpose specified.

3. A device of the class described consisting of a square, and in combination therewith gages adjustable with relation to the square as and for the purpose described.

4. A gage for side filing saws consisting of a square, clamps arranged on the arm thereof and gages having slots to receive the clamping bolts, whereby they are adjustably secured, as and for the purpose described.

545,519. VALVE. HENRY P. MOHN, Ashland, Ohio. Filed Mar. 9, 1894. Serial No. 503,042. (No model.)



Claim.—In a valve, the combination with an upright cylindrical valve casing provided at its lower end with a check valve, and in its closed top with an upwardly tapered valve seat; of an inwardly opening solid movable conical valve plug arranged to work within the casing and into said tapered valve seat, said movable valve plug being provided with an enlarged central vertically disposed water passage having at its lower end a conical valve seat, a vertically arranged valve rod or stem of a smaller diameter than and mounted to loosely work within the vertical water passage of the movable valve plug, said rod or stem being provided with an upper threaded portion and at its lower end with an integral conical valve head registering in the conical valve seat at the lower end of the conical water passage through the valve plug and adapted to open downwardly in advance of the said valve plug, a stop-nut adjustably mounted on the threaded portion of the rod or stem above the plane of the valve plug and adapted to work against the top of the latter to open the same, a float actuated lever, and an adjustable connection between the lever and said rod or stem, substantially as set forth.

545,520. TROLLEY-GUARD. JAMES T. MOODY, WILLIAM SHAWD, and ADAM J. BAKER, Springfield, Ohio. Filed Feb. 23, 1895. Serial No. 539,411. (No model.)



Claim.—1. A trolley provided with lateral guards, and a latch guard journaled to one side of the space between the said lateral guards and normally projected across the said space, substantially as described and for the purpose specified.

2. A trolley having lateral guards, and a latch guard journaled to one lateral guard and normally projected across the space between the said lateral guards, substantially as set forth.

3. A trolley having lateral guards, and a latch guard journaled to one lateral guard and adapted to make positive engagement at its opposite end with the other lateral guard, substantially as specified.

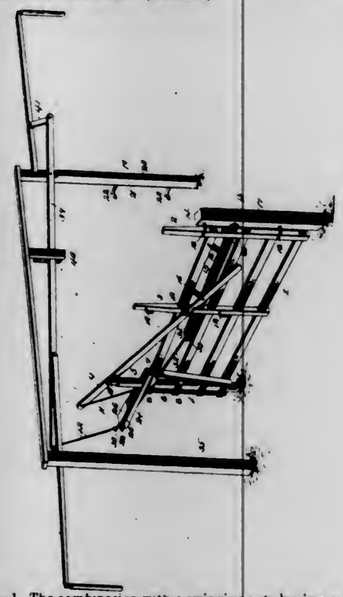
4. A trolley having lateral guards, a shaft journaled in bearings on one lateral guard and having a crank arm to which the releasing or pull rope is attached, and a latch guard attached to the upper end of the shaft and normally extending across the space between the said lateral guards, substantially as specified.

5. In a trolley, the combination with the trolley head having guide ways in its sides and having slots extending into said guide ways, of guards mounted in the said guide ways, and fastenings for adjustably securing the said guards in the guide ways, substantially as set forth for the purpose described.

6. The combination with the frame of a trolley head, having guideways, of lateral guards adjustably held in the said guideways, and a latch guard carried by and movable with the lateral guards, substantially as described.

7. A trolley head comprising similar side pieces having a socket at one end to receive the trolley pole, and having guideways at the opposite end, means for securing the side pieces together and clamping the trolley pole between them, lateral guards adjustably held in the said guideways, a shaft journaled to one of the lateral guards and having a crank arm to which the releasing rope is attached, a latch guard attached to the shaft and having its free end entering a notch in the remote lateral guard, and a spring for normally projecting the latch guard across the space between the lateral guards, substantially as specified.

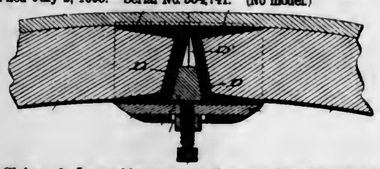
545,521. GATE. JOHN H. MORRIS, Maquoketa, Iowa. Filed Jan. 19, 1895. Serial No. 535,521. (No model.)



Claim.—1. The combination with a swinging gate having an arm projecting in rear of its pivotal point, of opposite hand levers of the first and second orders, respectively, an intermediate lever pivoted between its ends and having the extremity of its long arm arranged above the gate arm and at a point between the vertical planes of the gate arm when the gate is in its open and closed positions, the arms of the intermediate lever being connected to the hand levers whereby a downward movement of the outer end of either hand lever will cause the elevation of the extremity of the long arm of the intermediate lever, a bell-crank lever mounted upon the gate arm, a latch on the gate connected to one arm of said bell-crank lever, and connections between the said extremity of the intermediate lever and the other arm of the bell-crank lever, whereby the gate latch is retracted to release the gate and lateral strain is exerted upon the gate arm through the bell-crank lever to impart a swinging movement to the gate, substantially as specified.

2. The combination of a swinging-gate having an arm projecting beyond its pivotal point, of pivotal hand-levers arranged with their free ends upon opposite sides of the plane of the gate when the latter is in its closed position, an intermediate lever pivoted between its extremities, its short arm being connected to one of the hand-levers between its pivotal point and its outer end, and its long arm being connected at an intermediate point to the extremity of the inner arm of the other hand-lever which is pivoted at an intermediate point, the free end of the long arm of the intermediate lever being arranged in a plane midway between the vertical planes of the gate when in its closed and open positions and above the plane of the gate-arm, and a link connecting said extremity of the long arm of the intermediate lever with the end of the gate-arm, whereby downward movement of either hand-lever will cause an upward movement of the long arm of the intermediate lever to impart swinging movement to the gate, and whereby the weight of the long arm of the intermediate lever operating through the link by which it is connected to the gate-arm continues said movement of the gate, substantially as specified.

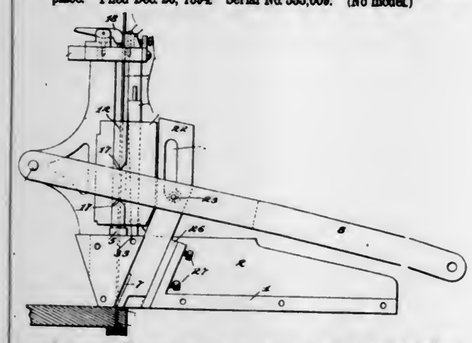
545,522. VEHICLE-WHEEL. STEPHENS NEAL, Talbotton, Ga. Filed July 2, 1895. Serial No. 554,741. (No model.)



Claim.—1. In combination with the two adjoining ends of a felly of the two part casting B and C adapted to be placed over the ends of the felly sections and when in place having a wedge shaped recess between the ends of the sections and the sides of the castings overlapping as described, a wedge shaped block E seated within the wedge shaped chamber between the ends, the metallic strip F serving as a dowel to unite the casting sections, and the set screw I for moving the block E, substantially as and for the purpose described.

2. In a tire tightener, the combination with the castings adapted to receive the adjacent ends of the felly sections the outer faces of said castings being provided with a continuous longitudinal groove, the wedge, its set screw, the jam nut upon the shank of the screw, and a tire having its under face provided with a rib to engage the slot in the faces of the castings, substantially as described.

545,523. MACHINE FOR MAKING AND DRIVING WIRE NAILS. JOHN R. NOYES, Baltimore, Md., assignor to Walter H. Harrison, same place. Filed Dec. 26, 1894. Serial No. 533,009. (No model.)



Claim.—1. The combination, in a machine of the class described, with a die-piece having an inclined face through which the wire passes, of a cutter arranged to co-operate with the die-piece to sever the wire, a clamp for holding the wire while it is being cut, and a cam projection upon the cutter shank for operating the clamp, substantially as described.

2. The combination, in a machine of the class described, with a die-piece having an inclined face through which the wire passes, and a cutter adapted to co-operate therewith to sever the wire into sections, of a clamp for holding the wire, a cam projection on the cutter shank for operating the clamp, and means for feeding successive portions of the wire to the cutter, said clamp and feeding devices being arranged to operate alternately, whereby the wire is free to move while being fed and clamped while being cut, substantially as described.

3. The combination, in a machine of the class described, with a die through which the wire passes, a cutter co-operating with the die and arranged to sever the wire by an inclined cut, said cutter having a shank provided with an elongated slot, a pin arranged to travel in the slot and to move the cutter by engagement alternately with the ends of the slot, said pin being carried by a lever or equivalent operating device, substantially as described.

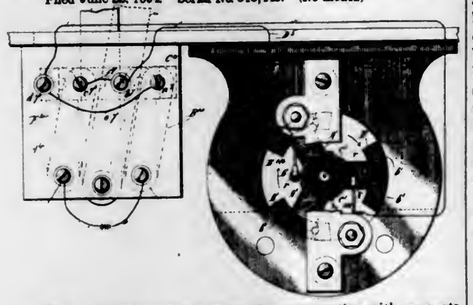
4. In a machine of the class described, the feeding device consisting of the carriage longitudinally movable in guides, a movable clamping piece mounted in the carriage, a tapered key also mounted in the carriage, and suitable abutments on the main frame arranged to alternately tighten and loosen the key as the carriage is reciprocated, substantially as described.

5. In a machine of the class described, the combination with the main frame, of a lever pivoted to said frame, a feeding carriage movable in the direction of the wire and suitably guided by the frame, said carriage being in engagement with the lever, fixed and movable clamping plates mounted in the carriage, a tapered key-piece in engagement with the movable clamping plate and suitable abutments on the main frame for driving and releasing said key-piece, substantially as described.

6. In a machine of the class described, the feeding carriage reciprocating in guides, said carriage being provided with a fixed clamping plate, a tapered movable clamping plate and a reversely tapered key, means for reciprocating the carriage and suitable abutments for engaging the key to drive and release the same as the carriage is reciprocated, substantially as described.

7. The combination, with the die-piece and cutter and the reciprocating feeding device, of the pivoted retaining pawl arranged to prevent backward movement of the wire and the adjustable block opposite said pawl and arranged to co-operate therewith, substantially as described.

545,524. ELECTRIC MOTOR. JOHN O'NEIL, New York, N. Y. Filed June 22, 1894. Serial No. 515,445. (No model.)



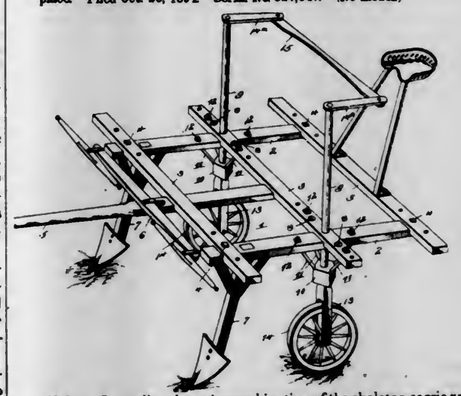
Claim.—1. In an electro-motor the combination with magnets, A, and a revoluble armature, C, having radial arms, A', of the heads, B', carried upon the ends of the arms, having bores, *a*, parallel or substantially so with the axis of motion of the armature and helices coiled upon the arms, and carried or extended through the said bores to promote the magnetization of the heads, and connected with a suitable commutator, substantially as and for the purpose herein set forth.

2. In an electro-motor the combination with magnets A, and a revoluble armature, C, having radial arms, A', of the heads, B', carried upon the ends of the arms, having bores, *a*, slitted as shown at, *a'*, and arranged parallel to the axis of motion of the armature, helices coiled upon the said arms and extended through the said bores to promote the magnetization of the heads and a commutator for making and breaking the current in succession through the helices, substantially as and for the purpose herein set forth.

3. In an electro-motor the combination of the duplicate magnets, C, placed opposite each other, a revoluble armature, A, having radial arms A', armature heads, B', carried at the outer ends of said arms, having bores, *a*, slitted as at, *a'*, commutator plates, *g*, revolubly with the armature, blocks, *h*, for insulating said plates, and helices wound upon the arms, continued through the bores and connected to the plates, *g*, and commutating devices arranged for connecting with the source of electric energy, substantially as and for the purpose herein set forth.

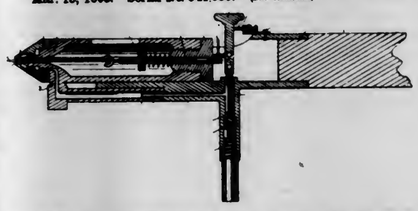
4. In an electro-motor the combination of the duplicate magnets, C, placed opposite each other, the revoluble armature having arms A', and armature heads, B', the plates, *g*, insulated or separated from each other and carried by and insulated from the axial part of the armature, helices carried by the said arms, wires connecting the plates with the respective helices as described, and conducting rollers arranged to bear against the said plates, and spring supports for said rollers, means for insulating the rollers from said supports, and wires for conducting the current to said rollers, all substantially as and for the purpose herein set forth.

545,525. SULKY-PLOW CARRIAGE. NEWDAYGATE B. OUSLEY, Poulan, Ga., assignor to Robert N. Ousley and John N. Ousley, same place. Filed Oct. 26, 1894. Serial No. 527,047. (No model.)



Claim.—In a sulky plow, the combination of the skeleton carriage body having opposite laterally-adjustable side bars and an intermediately located transverse bearing-bar, intersecting the side bars at right angles thereto said bearing-bar being provided with a series of bearing-openings at both sides of its center, bearing collars arranged in a fixed position below said adjustable side bars and adapted to align with one of the bearing-openings in the bearing-bar, a series of hanger rods connected at their lower ends to said bearing collars and detachably bolted at their upper ends to the side bars and to said bearing bar, opposite parallel vertical wheel shafts mounted in the bearing collars and the bearing-openings directly above said collars, said shafts extending above and below the carriage body and carrying at their lower ends guide wheels, offstanding shaft arms connected at one end to the upper ends of the shafts above the carriage body, and a single connecting bar connecting the other ends of said shaft arms to provide for the simultaneous adjustment of both shafts, substantially as specified.

545,526. AIR-BRUSH. JOSEPH S. OVERMAN, Canton, Ohio. Filed Mar. 15, 1895. Serial No. 541,939. (No model.)



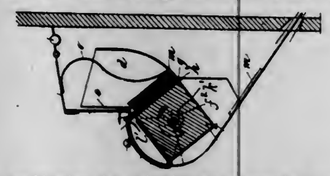
Claim.—1. The combination in an air brush, of a color tube, having an aperture in the forward end thereof, an air duct leading thereto, a valve rod, a lever to move said rod longitudinally in the tube, a needle valve loosely secured to said rod, and adapted to close the said aperture in the color tube, whereby the color is carried forward and the needle valve laterally controlled or held central to the aperture by the air blast, substantially as described and for the purpose set forth.

2. The combination in an air brush of a color tube, and holder, of the rod and needle valve loosely secured thereto, an actuating lever and a gage adapted to arrest the rearward movement of the lever, and to swing laterally out of the way of the lever, substantially as described and for the purpose set forth.

3. In an air brush, the combination with a color tube and an air tube adapted to eject the coloring matter from the former tube, of a valve for controlling the discharge from the color tube, said valve being loosely held in said color tube and adapted to be centered in the discharge opening of said color tube by the air blast, substantially as set forth.

545,527. AUTOMATIC-CHANGING TABLET FOR POST-BOXES, &c. JEAN PAPE and MAX WERNAER, Dresden, Germany. Filed Dec. 16, 1890. Serial No. 374,860. (No model.)

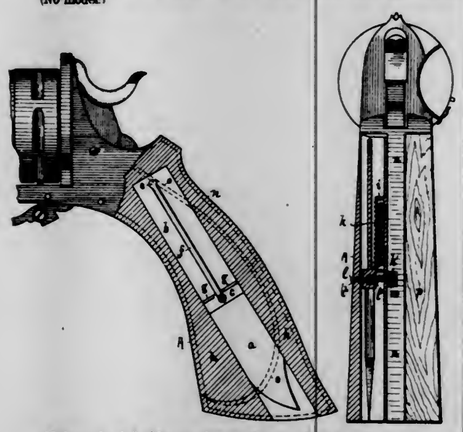
Claim.—1. In combination, the box or casing, the polygonal drum journaled therein, the receptacles for tablets or cards above said drum, the movable cover covering the exposing opening for said drum, means whereby the movement of the cover will rotate the drum, said drum having flanges or ledges to engage the bottom tablet or card and carry it in front of the exposing opening, substantially as described.



2. In combination, the casing having an exposing opening, the polygonal drum journaled in said casing, and having ledges on its edges, the receptacle above said drum having an open bottom arranged to deliver tablets to the drum, the cover for permitting access to said receptacle, a spring carried by said cover arranged to bear normally against the pile of tablets, the movable cover for the exposing opening, and means whereby the movement of the cover will rotate the drum one step, substantially as described.

3. In combination, the casing having an exposing opening, the polygonal drum journaled in said casing and having ledges *g* on its longitudinal edges, and projections *h*, the open ended receptacle within the casing arranged to hold a pile of tablets, a filling opening to the casing above the receptacle having a suitable cover, a spring carried by said cover depending within the receptacle and arranged to bear on the pile of tablets, the movable cover for the exposing opening having a spring for closing the same, and a hook carried by the cover arranged to engage the projections *h*, substantially as described.

545,528. KNIFE ATTACHMENT FOR REVOLVERS. ERNST PAUL, Wiesbaden, Germany. Filed Oct. 15, 1894. Serial No. 525,959. (No model.)



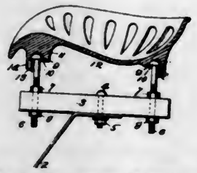
Claim.—1. A knife attachment for revolver handles comprising a butt sheath, a knife blade having stubs *g* and a longitudinal central slot *f*, two spiral springs held within the sheath upon opposite sides of the slot to bear against said stubs, and a central spanner pin adapted to engage with the blade and hold it in either its open or its closed position, substantially as described.

2. A knife attachment for revolver handles comprising a butt sheath *h*, an endwise moving blade *a*, *b*, fitted within the sheath having a longitudinal slot *f*, and a stub *g* projecting from the side thereof, a spiral spring *k*, interposed between the sheath and handle to push the blade outwardly, and a spanner pin *l* adapted to fit the groove in the blade and interlock with either end thereof, substantially as described.

3. A knife attachment for revolver handles comprising a butt sheath *h*, having an outwardly projecting socket *h'*, and an inwardly projecting flange *i*, a blade *a*, *b*, having a slot *f*, and end notches *d*, *e*, and actuated by a spring *k* and a spanner *l*, spring *m*, to fit the socket *h'* and act upon the spanner, substantially as described.

545,529. OSCILLATING SEAT FOR REAPERS, MOWERS, &c. ROBERT S. PENCE and CHARLES H. SCOTT, Kearney, Mo. Filed Mar. 14, 1895. Serial No. 541,823. (No model.)

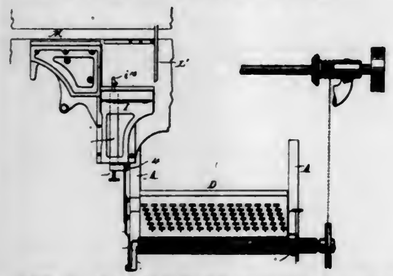
Claim.—1. An oscillating seat for reapers, mowers, and other vehicles, comprising a bar carried by the seat-supporting spring of the vehicle, bolts extending vertically and adjustably through said bar, and a seat provided with cavities in which the heads of said bolts rest, substantially as set forth.



2. An oscillating seat for reapers, mowers, and other vehicles, comprising a bar carried by the seat-supporting spring of the vehicle, bolts extending vertically through said bar, a seat provided with cavities in which the heads of said bolts rest, and retaining-springs carried by said seat and extending transversely of said cavities and the under side of the heads of said bolts, substantially as set forth.

3. An oscillating seat for reapers, mowers, and other vehicles, comprising a seat-supporting spring, a bar pivotally mounted upon the same, bolts extending vertically through said bar, provided with hemispherical heads at their upper ends, nuts engaging said bolts at the upper and lower sides of said bar, a seat provided with hemispherical cavities in which rest the said hemispherical heads of said bolts, and springs carried by lugs depending from the seat and extending transversely of said cavities and the under sides of the heads of said bolts, substantially as and for the purpose set forth.

545,530. LINOTYPE-MACHINE. ALBERT D. PERIS, Brooklyn, assignor to the Mergenthaler Linotype Company, New York, N. Y. Filed Apr. 8, 1895. Serial No. 544,905. (No model.)



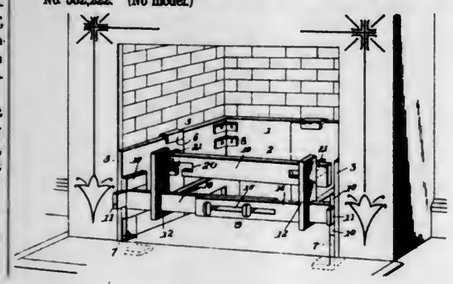
Claim.—1. In a linotype machine the movable assembler in combination with mechanism power driven for moving the same and means for controlling the movement.

2. In a linotype machine the movable assembler in combination with a crank shaft and pitman, a driving clutch and finger lever connections for controlling the clutch.

3. In a linotype machine, the assembling elevator, the crank shaft and pitman, the constantly driven pulley, the clutch for connecting the shaft and pulley, the pulley actuating spring and the finger key lever arranged to disengage and hold the clutch.

4. In a linotype machine, the combination of the movable assembler the crank and pitman, the bar connected to the pitman and carrying the hook and an adjustable connection between said bar and the assembler.

545,531. COMBINED FIREPLACE-LINING AND ANDIRON-SUPPORT. OLIVER B. PERKINS, Marquez, Tex. Filed Dec. 18, 1894. Serial No. 532,322. (No model.)



Claim.—1. The combination with a lining provided on the inner faces of its sides with horizontal ways, andirons provided at their fronts with openings, and a horizontal bar passing through said openings and supporting the andirons, and provided at its ends with horizontal slides arranged in said ways and adapted to be moved inward and outward, whereby the andirons are adjustable, substantially as described.

2. The combination with a lining provided at opposite sides with horizontal ways, andirons provided at their fronts with openings and having L-shaped arms arranged at their tops, a horizontal bar passing through said openings and supporting the andirons, and provided with slides arranged in said ways, and the top connecting bar having longitudinal slots and provided with transverse entrance slots to permit the arms to be inserted into the slots, substantially as described.

545,532. TELEGRAPH-KEY. GEORGE F. PHILBROOK, Lisbon Falls, Me. Filed Jan. 19, 1895. Serial No. 535,551. (No model.)



Claim.—1. In a telegraph key, a pivoted button arranged to fall over when left without pressure and provided with an integral extension forming an electrical contact piece, in combination with another contact piece arranged in the path of the contact-piece first mentioned, to make contact therewith and close the circuit when the button falls over substantially as set forth.

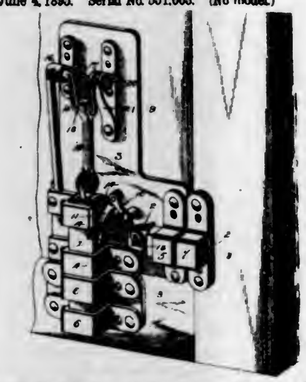
2. In a telegraph key, a pivoted button arranged to fall over when left without pressure and provided with an integral extension forming an electrical contact piece, in combination with a spring which is bifurcated at its end to receive the said contact-piece and forms the other contact, closing the circuit when the button falls over substantially as set forth.

3. A telegraph key provided with a pivoted key-button which has a raised semi-circular rim on the rear or inner part of its periphery, for the purpose of facilitating the turning up of the said button into working position by the operator's finger, the forward or outer part of the periphery of the said button being left smooth substantially as set forth.

4. A telegraph key provided with a pivoted key-button which has a raised semicircular rim on the rear or inner part of its periphery to facilitate the lifting of the button into working position by the operator's finger, and countersunk weights near the outer part of its periphery to insure the falling over of the button when left without pressure substantially as set forth.

5. A telegraph-key provided with a pivoted button for automatic circuit-closing, the said button having leaden weights countersunk in it near its outer edge for the purpose set forth.

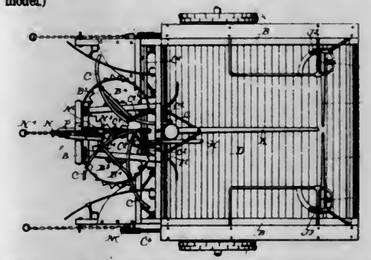
545,533. DOOR-FASTENER. MIKE P. PIETLE, Louisville, Ky., assignor of two-thirds to John Wm. Miller and John A. Carr, same place. Filed June 4, 1895. Serial No. 551,663. (No model.)



Claim.—1. In a locking device, the combination of a pair of bolts mounted for reciprocation and arranged at right angles to each other, a straight lever fulcrumed intermediate of its ends and having one end pivotally connected to one of the bolts, a straight link connected to the other end of the lever and to the other bolt, a bar disposed longitudinally of the latter and connected with the same, and a crank-shaft connected with the bar and adapted to reciprocate the bolts and forming a lock for the same, substantially as described.

2. In a locking device, the combination of a pair of bolts of unequal length mounted for reciprocation and disposed at right angles to each other, a lever fulcrumed intermediate of its ends and arranged adjacent to the bolts, and having one end provided with an elongated opening, and connected with the shorter bolt by a pivot located in said opening, a link pivoted to the longer bolt, and provided at its other end with an opening, and connected with the other end of said lever by a pivot arranged in its opening, a crank shaft having a crank bend connected with the longer bolt and adapted to reciprocate the same, and a spring for locking the crank shaft against accidental movement, substantially as described.

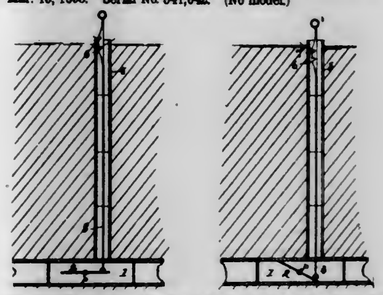
545,534. CORN HARVESTER AND SHOCKER. HERBERT E. POAGE, Newton, Iowa. Filed Oct. 2, 1894. Serial No. 524,768. (No model.)



Claim.—1. The combination with a corn harvester having an endless platform adapted to receive corn stalks in an upright position and be moved rearwardly to deposit the shock on the ground surface, of a guide fixed to one side of the machine frame projecting upwardly and inwardly and rearwardly and having its rear end curved outwardly and forwardly and slotted horizontally an arm pivoted near its central portion in said guide with its outer end in said slot, a contractile spring attached to the outer end portion of said arm and to said guide, and a gravity latch mounted on said guide to engage the said arm, substantially as and for the purposes stated.

2. In an improved corn harvester the combination of an endless platform extended horizontally and adapted to receive corn stalks in an upright position, means for rotating said platform by power derived from the traction wheels of the device, means for controlling the movement of the platform, an arm supported above the central portion of the platform and extended rearwardly, two guides at opposite sides of the machine frame, an arm pivoted in each end extended inwardly, a coil spring for holding its end forwardly and a pawl for preventing said end from moving rearwardly, all arranged and combined, substantially as and for the purposes stated.

545,535. DRAIN-TILING. CHARLES ROWEY, Bethany, Ill. Filed Mar. 13, 1895. Serial No. 541,642. (No model.)



Claim.—The combination in a line of drain tile, of a cylindrical valved section having two diametrically located pivot supports in its sides, a valve 2 balanced wholly within said section and having its pivots half way of its length, an observation tube above the valved section, a cross rod in said tube, and a valve rod also in the observation tube and having notches in its upper end and its lower end secured to the balanced valve 2 substantially as described.

545,536. FORK ATTACHMENT. CHARLES A. RUSSELL, Otsego, Mich. Filed Jan. 18, 1895. Serial No. 535,422. (No model.)

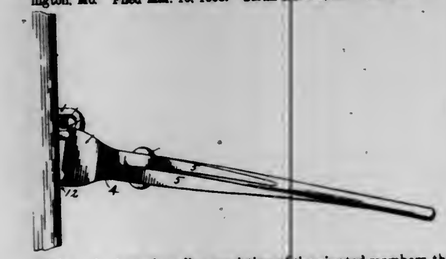
Claim.—1. The combination, with the fork, of the fulcrum of

curved spring steel adapted to hook over the cross portion of the fork to each side of the handle and engage the under side of the handle to support and strengthen it; a socket to receive the upper end of the fulcrum to retain the same in place upon the handle, for the purpose specified.



2. The combination, with the fork, of a fulcrum consisting of a spring portion, B, doubled to project downwardly and rearwardly therefrom, with hooks, E, E, thereon formed to engage over the head of the fork, A', with a rest, D, to engage under the lower end of the fork handle and serve to support and strengthen the same at that point; a socket, F, to receive the upper end of the fulcrum so that the fulcrum can be detached by merely compressing the sides of the loop, B, together and unhooking it from the handle, or attached by hooking it over the handle and compressing the same so that the end shall engage in the socket, as specified.

545,537. STAPLE-PULLER. ALBERT H. RUSSELL, Mount Washington, Mo. Filed Mar. 16, 1895. Serial No. 542,047. (No model.)



Claim.—1. A staple puller consisting of the pivoted members, the oppositely disposed jaws thereon and recesses in said jaws of such depth that when the jaws are closed the opposing edges of the recesses will close upon and grasp the prong of the staple before the meeting edges of the jaws come together, substantially as set forth.

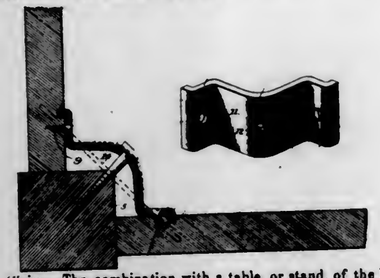
2. A staple puller adapted to grasp a single prong of the staple above or below the wire and consisting of the pivoted members, the oppositely disposed jaws thereon, the recesses in said jaws of such depth that when the jaws are closed the opposing edges of the recesses will close upon and grasp the prong of the staple before the meeting edges of the jaws come together, and the points on the jaws beyond the recesses to press the wire aside and permit engagement with the prong of the staple, substantially as set forth.

3. A staple puller adapted to grasp a single prong of the staple above or below the wire and consisting of the pivoted members provided with the oppositely disposed jaws recessed to such depth that when the jaws are closed the opposing edges of the recesses will close upon and grasp the prong of the staple before the meeting edges of the jaws come together and points formed on said jaws by the excision of said recesses adapted to press aside the wire and permit engagement of the prong of the staple in said recess, substantially as set forth.

4. A staple puller consisting of the pivoted members provided with oppositely disposed jaws and points on said jaws formed by the excision of recesses in the meeting edges of the jaws whereby it is adapted to engage the prong of the staple above or below the wire substantially as set forth.

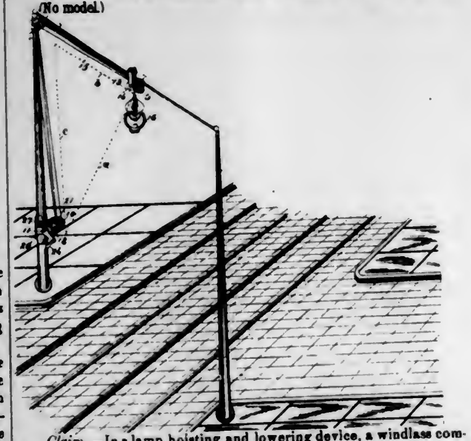
5. A staple puller consisting of the members 5 pivoted together at 6, the oppositely disposed jaws 7 on said members, the recesses 8 in the meeting edges of said jaws of such depth that when the jaws are closed the opposing edges of the recesses will close upon and grasp the prong of the staple before the meeting edges of the jaws come together, and the points 10 formed on said jaws by the excision of the recesses and adapted to press aside the wire and permit the engagement of the prong of the staple in said recesses, substantially as set forth.

545,538. TABLE-LEG FASTENING. WILL P. SELLERS, Kokomo, Ind., assignor of one-third to Hugh Brown, same place. Filed Mar. 13, 1895. Serial No. 541,594. (No model.)



Claim.—The combination with a table, or stand, of the herein-specified means for detachably connecting the leg to the side rails, consisting of a sheet metal brace having a curved middle portion, and having its end portions bent outwardly to lie against the inner sides of the rails and terminating in outer flanged ends, which are adapted to enter kerfs provided in the inner sides of the rails, a lag screw for connecting the middle portion of the brace to the leg, fastenings for attaching the end portions of the said brace to the side rails, and a stay for connecting the lower edge portions of the rails, substantially as described for the purpose set forth.

545,539. DEVICE FOR HOISTING OR LOWERING LAMPS. FRANK W. SMITH, St. Louis, Mo. Filed Dec. 26, 1893. Serial No. 494,757. (No model.)

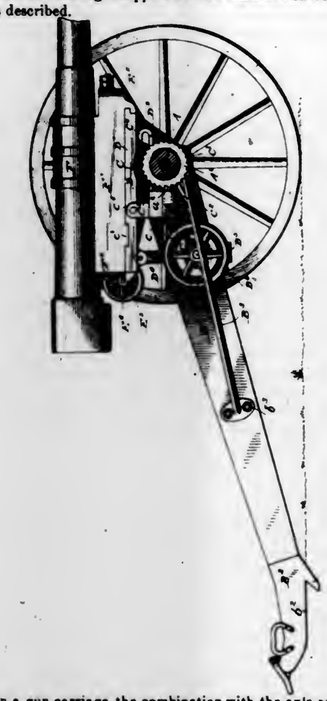


Claim.—In a lamp hoisting and lowering device, a windlass comprising arms for securing the same to a suitable pole, suitable bearings projecting from said arms, a longitudinally movable revolving shaft within said bearings, a feather on said shaft, a revolving drum and pulley on said shaft, grooves within said drum and pulley for the reception of the feather, a spring actuated pawl, a ratchet wheel on the shaft co-operating with said pawl, a crank arm for rotating said shaft, an endless rope winding over the pulley, a fixed pulley and guide pulleys for the same, a rope passing over the drum, a lamp secured to the free end of said rope, a suitable way, a traveling pulley at the end of said rope and adapted to be secured to the endless rope, substantially as set forth.

545,540. HYDRAULIC-RECOIL GUN-CARRIAGE. MORRIS F. SMITH, Philadelphia, Pa., assignor to the William Cramp & Sons Ship and Engine Building Company, same place. Filed Mar. 4, 1895. Serial No. 540,492. (No model.)

Claim.—1. In a gun-carriage, the combination with the axle and trail, of two supports or brackets each comprising a sleeve surrounding the axle, an end plate secured to the trail and having ribs, and braces connected to the trail, substantially as described.

2. In a gun-carriage, the combination with the axle and trail, of supports or brackets comprising a sleeve fitting the axle, an end plate secured to the trail, and a bracket-plate connected to the sleeve and end plate and forming a support for the ammunition-box, substantially as described.

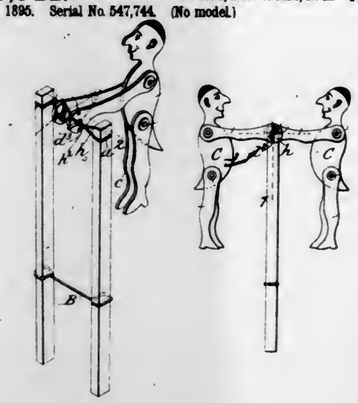


3. In a gun-carriage, the combination with the axle and trail, of supports or brackets mounted on the axle and secured to the trail and comprising a sleeve having an extension projecting through an opening in the side of the trail, an end plate secured to the trail, and a horizontal bracket-plate, substantially as described.

4. In a gun-carriage, the combination with the axle and trail, the latter comprising steel plates embracing the axle, of a support or bracket at each side of the trail also embracing the axle, each of said supports comprising a sleeve, an end plate, and a bracket-plate formed in one piece and secured to the trail-plates, substantially as described.

5. In a gun-carriage, the combination with the gun-supporting frame, of a sleeve supporting the gun, and hydraulic cylinders and pistons interposed between the sleeve and frame, the cylinders having a uniform bore for a certain distance in front of the pressure face of the pistons and then a tapering bore, whereby a uniform resistance is offered to the recoil at first, and then gradually increased, substantially as described.

545,541. TOY. REUBEN A. SMITH, East Weare, N. H. Filed May 1, 1895. Serial No. 547,744. (No model.)

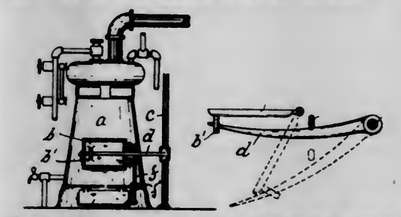


Claim.—1. In a device of the class described, a puppet arm having an aperture formed in its extremity and a slot bifurcating the said extremity and leading into the aperture, the width of the slot being less than the diameter of the aperture, substantially as described.

2. In a device of the class described, the combination of the side pieces connected at intermediate points, the puppet arms, the extremity of each arm having an aperture formed therein and bifurcated by a slot leading into the aperture but of less width than the diameter of the said aperture, and also having notches radial to the aperture and at right angles to the slot, and the cord passing between the ends of the side pieces, wound around the bifurcations of one of the said arms and twisted as it passes through the aperture in the other arm, substantially as described

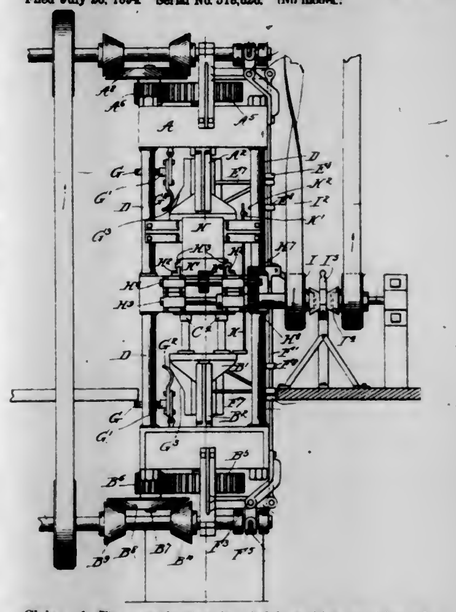
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545,542. FURNACE-REGULATOR. WILLIAM R. SMITH, Norwich, Conn. Filed July 18, 1895. Serial No. 556,429. (No model.)



Claim.—In a furnace having feed and ash-pit doors, means for opening and closing the former consisting of an arm engaging said door as set forth, and mechanism for simultaneously closing and opening the ash-pit door consisting of a lever having one of its ends connected with said ash-pit door and its other end located in the path of the said arm; all being substantially as and for the purpose specified.

545,543. BRICK-MACHINE. WALTER J. SOPER, Chicago, Ill., assignor to the Chicago Hydraulic-Press Brick Company, same place. Filed July 26, 1894. Serial No. 518,626. (No model.)



Claim.—1. The combination, in a brick making machine, of a table containing openings into which the clay is placed, a cross head above and below said table carrying dies adapted to fit into said openings, means by which said cross heads are moved toward said table and automatically brought back to their normal position, and an automatic brake adapted to be operated by being brought into engagement with the cross-head that stops said cross heads in said latter position.

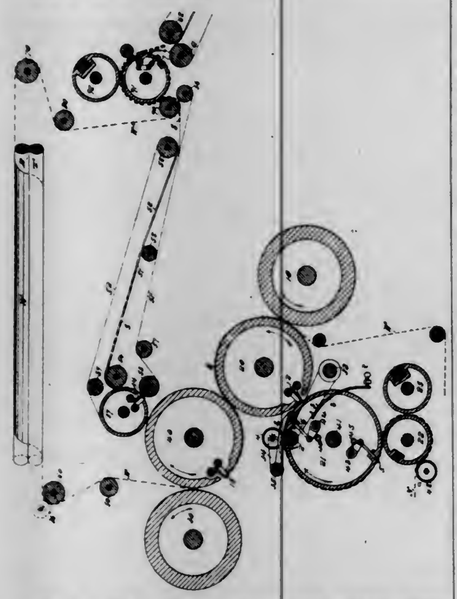
2. The combination, in a brick machine, of a plate or table provided with openings into which the clay is placed, a cross head carry-

ing dies adapted to fit into said openings, means of moving said cross head comprising a screw shaft working in a threaded hole in said cross head and operatively connected to a shaft provided with a friction disk, a brake wheel attached to said latter shaft and adapted to make contact with a brake shoe, a spring connected to said brake shoe and adapted to engage a beveled surface on the cross head to operate the brake, two friction cone pulleys adapted to alternately engage said disk and revolve it in opposite directions and means of moving said cone pulleys, substantially as described.

3. The combination with a brick machine having reciprocating crossheads, of a brake comprising a brake-shoe adapted to bear against a brake-wheel connected with a moving part of the machine, and a spring arm connected to said brake-shoe and adapted to engage a beveled surface on one of said crossheads whereby said brake is set at a predetermined point, substantially as described.

4. The combination in a brick machine of a top and bottom plate and an intermediate plate all rigidly connected together, openings in said intermediate plate in which the clay is placed, a cross-head above and below said intermediate plate, each carrying dies adapted to fit into said openings, means for moving said cross-heads comprising screw shafts working in threaded holes in said cross heads and having bearings in said top and bottom plate, said screw shafts being operatively connected to shafts associated with said top and bottom plates and provided each with a friction disk, two friction cone pulleys associated with each of said disks, each group attached to a longitudinally movable shaft, a rod or the like connected to each of said latter shafts and adapted to move it so that said cone pulleys may alternately be brought into engagement with their respective disks, stops attached to said rods, and arms attached to said crossheads, adapted to engage said stops at a predetermined point, substantially as described.

545,544. SHEET-ASSOCIATING MECHANISM. WILLIAM SPALCKHAVER, Brooklyn, assignor to Robert Hoe, Stephen D. Tucker, Theodore H. Mead, and Charles W. Carpenter, New York, N. Y. Filed July 6, 1892. Serial No. 439,128. (No model.)



Claim.—1. The combination with a receiving cylinder running at a high speed and a carrying cylinder running at an appropriate low speed of interposed driving pulleys running at high speed, whereby a sheet advanced slowly upon the carrying cylinder is accelerated to the high speed of the receiving cylinder and delivered thereto, substantially as described.

2. The combination with a receiving cylinder running at high speed and a sheet carrying cylinder running at an appropriate low speed of interposed driving pulleys running at high speed, and co-operating movable bearings for said pulleys, substantially as described.

3. The combination with a receiving cylinder running at high speed and a sheet carrying cylinder running at an appropriate low speed, of interposed driving pulleys running at high speed, and co-operating rotative bearings for said pulleys, substantially as described.

4. The combination with a receiving cylinder running at high speed and a sheet carrying cylinder running at an appropriate low speed, of interposed driving pulleys running at high speed, and co-operating spring seated rotative bearings for said pulleys, substantially as described.

5. The combination with a receiving cylinder running at high speed and a sheet carrying cylinder running at an appropriate low speed, of interposed driving pulleys running at high speed, and bearing rollers 2, substantially as described.

6. The combination with a receiving cylinder provided with sheet holding devices and running at high speed, and a carrying cylinder provided with sheet holding devices and running at an appropriate low speed, of driving pulleys operating to rapidly advance a sheet when released from the carrying cylinder and deliver the same to the holding devices of the receiving cylinder, substantially as described.

7. The combination with a receiving cylinder provided with sheet holding devices and running at high speed, and a carrying cylinder provided with sheet holding devices and running at an appropriate low speed of driving pulleys operated to rapidly advance a sheet when released from the carrying cylinder and deliver the same to the holding devices of the receiving cylinder, and conductors for guiding the sheet from said pulleys to the sheet holding devices, substantially as described.

8. The combination with a receiving cylinder running at a high speed and a carrying cylinder running at an appropriate low speed, of a cutting mechanism co-operating with the latter to sever a web into sheets, and a sheet transferring mechanism interposed between the receiving and carrying cylinders, whereby sheets advanced slowly upon the carrying cylinder are successively taken therefrom by the receiving cylinder and advanced thereby at its high speed, substantially as described.

9. The combination with a receiving cylinder having sheet holding devices and running at high speed, and a carrying cylinder provided with sheet holding devices and running at an appropriate low speed, of cutting devices for severing a web into sheets, and driving pulleys operating to rapidly advance each sheet released from the carrying cylinder and deliver the same to the holding devices of the receiving cylinder, substantially as described.

10. The combination with a receiving cylinder having sheet holding devices and running at high speed, and a carrying cylinder provided with sheet holding devices and running at an appropriate low speed, of cutting devices for severing a web into sheets, and driving pulleys operating to rapidly advance each sheet released from the carrying cylinder and deliver the same to the holding devices of the receiving cylinder, and conductors for guiding the sheets from said pulleys to the sheet holding devices, substantially as described.

11. The combination of the receiving cylinder 20, its grippers 12, and means for revolving it at a high speed, the receiving cylinder 21, its reciprocating pins 5 or 6, the driving pulleys 4, and a moving bearing co-operating with said pulleys, substantially as described.

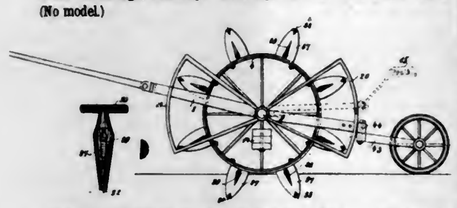
12. The combination with a type cylinder as 10, an impression cylinder as 20, the latter provided with grippers 12 and means for conveying a main web to said cylinders to be printed at one end thereof, and with a sheet carrying cylinder as 21 driven at a lesser speed than the cylinders 10, 20, and provided with devices for holding a sheet thereon; of driving pulleys, as 4, whereby a small or supplemental sheet advanced slowly is accelerated and delivered to the grippers 12 and printed at the other end of the cylinders 10, 20, substantially as described.

13. The combination with type cylinders 30, 10, impression cylinders 40, 20 respectively having grippers 13, 12, and means for conveying a main web to be printed to one end of said cylinders, and with a sheet carrying cylinder as 21 driven at an appropriate lower speed than the cylinders 30, 40, 20, 10, and provided with devices for holding a sheet thereon, of driving pulleys 4 and co-operating moving bearings, whereby a small or supplemental sheet slowly advanced is accelerated to the speed of and delivered to the cylinder 20 to be printed at the other end of the cylinders 30, 40, 20, 10, substantially as described.

14. The combination with the type cylinders 10, 30, impression cylinders 20, 40, means for conveying a main web thereto for printing the same at one end of said cylinders and turning bars T, B, for transferring said web laterally to the vertical plane of travel of supplemental sheets, of a carrying cylinder 21 provided with sheet holding devices, driving pulleys 4 and co-operating moving bearings operating to nip and accelerate a supplemental sheet slowly advanced by the cylinder 21 and deliver the same to the grippers of the cylinder 20 to be printed at the other ends of the cylinders 10, 20, 40, 30, and means for delivering said supplemental sheet to and associating it with the main web or sheets severed therefrom, substantially as described.

15. The combination with the type cylinders 10, 30, impression cylinders 20, 40, means for conveying a main web thereto for printing the same at one end of said cylinders, turning bars T, B, for transferring said web laterally to the vertical plane of travel of supplemental sheets and a cylinder 91 provided with means for severing said web into sheets and collecting successive sheets upon its surface and delivering the same therefrom, of a carrying cylinder 21 provided with sheet holding devices, driving pulleys 4 and co-operating moving bearings operating to nip and accelerate a supplemental sheet slowly advanced by the cylinder 21 and deliver the same to the grippers of the cylinder 20 to be printed at the other ends of the cylinders 10, 20, 40, 30, and means for delivering said supplemental sheet to the cylinder 91 for association with the sheets from the main web, substantially as described.

545,545. DIBBLING-MACHINE. GEORG K. SPITZENBERG, Frankfurter Niederlage, Germany. Filed Apr. 19, 1895. Serial No. 546,420. (No model.)

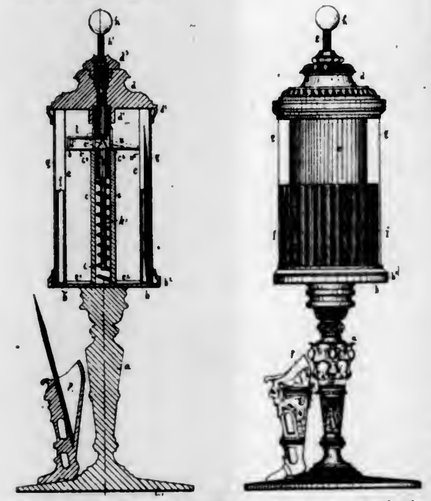


Claim.—1. A device for forming slits or holes for the reception of plants or cuttings, consisting of a tapered body 87 having a flat face and a rounded face joining to form cutting edges at the sides and beveled below to form a horizontal cutting edge, the latter carrying a transverse cutting blade 88.

2. A device for forming slits or holes for the reception of plants or cuttings, consisting of a tapered body 87 having a flat face and a rounded face joining to form cutting edges at the sides and beveled below to form a horizontal cutting edge, the latter carrying a transverse cutting blade 88, and having down the center of the rounded face a flattened portion extended outward above to form an angular projection.

3. A device for forming slits or holes for the reception of plants or cuttings, consisting of a tapered body 87 having a flat face and a rounded face joining to form cutting edges at the sides and beveled below to form a horizontal cutting edge, the latter carrying a transverse cutting blade 88, and having down the center of the rounded face a flattened portion extended outward above to form an angular projection and upon its flat face a projection 91 for designation of the cutting depth.

545,546. RECEPTACLE FOR TOOTHPICKS. HEINRICH STAUB, Potsdam, Germany. Filed Sept. 8, 1894. Serial No. 522,521. (No model.) Patented in Belgium Sept. 14, 1894, No. 111,822, and in France Oct. 13, 1894, No. 242,066.



Claim.—1. A delivery receptacle comprising an outer casing having a discharge opening in its bottom plate, a magazine cylinder supported to rotate therein, a push rod in the same axis with the cylinder carrying a toothed arm to engage with apertures in magazine cylinder and a detent lever similarly pivoted to the central tube and actuated by the said arm to give intermittent rotation to the magazine cylinder, substantially as described.

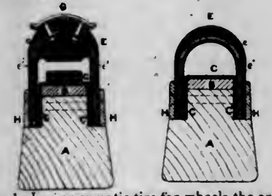
2. In a delivery receptacle, the combination with the outer casing having a central tubular post, of the magazine cylinder having a perforate cap plate fitted thereon, a push rod in said post carrying a toothed arm and a detent lever pivoted to the post and engaging with said arm to intermittently actuate the magazine cylinder by the movement of the push rod substantially as described.

3. In a delivery receptacle, the combination with the outer casing having a discharge opening b', of the intermittently rotating cylinder carrying shells f, brought successively above said discharge opening by the intermittent rotation of the cylinder, a central hub tube or post, a push rod supported therein carrying a toothed arm to engage with the cylinder and a spring within the tube to lift the push rod, substantially as described.

4. In a delivery receptacle, the combination of the outer casing having a single discharge opening, the magazine cylinder, the central post, the push rod and spring supported therein, the arm l, secured to the push rod and the tilting detent lever n, pivoted to the post and actuated by the arm l, to act conjointly therewith upon the magazine cylinder, substantially as described.

5. In a delivery receptacle, the combination with a cylinder having a perforate head, of an axial push rod carrying arm l, and depending cone tooth l', to engage successively said perforations, and a detent lever having pivot hole m, supported thereby upon the post or cylinder axis, prongs n', to engage the arm l, and a depending tooth n^3, to engage the perforation of the cylinder head, substantially as described.

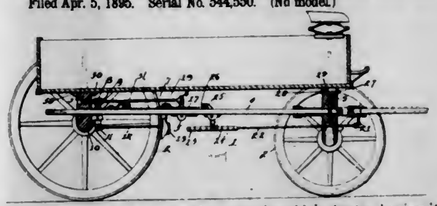
545,547. TIRE FOR VEHICLE-WHEELS. WILLIAM STELFOX, Manchester, England, and JAMES W. O. WALKER, DOUGLAS CAIRNEY, and WILLIAM PURVIS, Glasgow, Scotland. Filed Feb. 4, 1895. Serial No. 537,303. (No model.)



Claim.—1. In a pneumatic tire for wheels the combination with the fellies A and hoop B of an inner cover inclosing and covering the periphery and sides of the fellies to prevent the escape of air and provide an air-tight joint an outer cover or tread with a space between the two covers into which air under pressure can be pumped and the rings H, attached to both sides of the wheel by which the covers are secured substantially as described.

2. In a pneumatic tire for wheels the combination with the fellies A and hoop B of the inner cover C covering the fellies the buffer D projecting therefrom the external cover E forming an air space between the two covers the buffer F projecting from the inner side of the cover E the rings H by which the covers are secured to the wheels and the protecting plates G substantially as described.

545,548. VEHICLE-BRAKE. CHARLES STEVER, St. Louis, Mo., assignor of one-half to the John A. Neukum & Company, same place. Filed Apr. 5, 1895. Serial No. 544,550. (No model.)

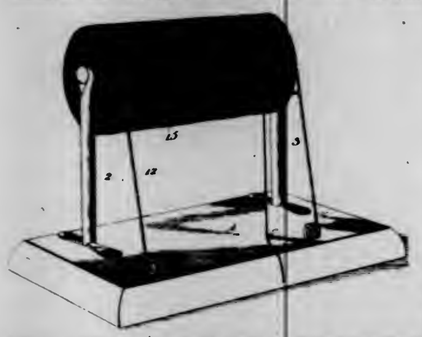


Claim.—1. In an improved automatic vehicle brake, having its braking mechanism operated by the coupling, a casting mounted in bearings upon said coupling, an arm or rod connecting said casting to an arm secured to the tongue, which operates said casting, and bringing it in contact with the plates secured to the rear axle braces, for the purpose of keeping the brake unlocked while backing, substantially as shown and described.

2. In an improved automatic vehicle brake, operated by a cover plate 17, forming part of the rear gearing levers 6 operating in slots, formed in said cover plate, a rod 7 connecting said levers to a cross

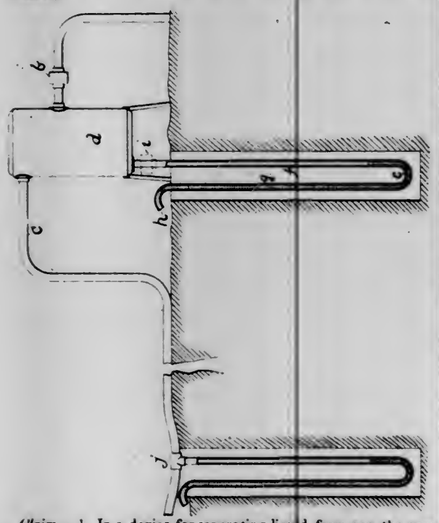
bar 8, and adjustably secured thereto, said cross bar 8 secured at each end to vertical levers 9 having their bearings in U shaped castings, secured to the axle rods 12 connecting said levers to the brake beam, for the purpose of locking the brake, a casting secured to the coupling pole and operated by a rod secured to the tongue for the purpose of preventing said brake from locking when backing, a roller located in guides secured on the front bolster, so as to allow the rolling of the body when said brake is in operation, substantially as shown and described.

545,549. TWINE-RACK. JOHN C. STRODEL and WILLIAM STRODEL, Huntington, Ind. Filed Apr. 30, 1895. Serial No. 547,687. (No model.)



Claim.—A twine reel comprising a base, standards mounted upon the base and provided at their upper ends with angular openings, a spindle having angular portions to fit in said openings in the standards, provided at one end with a head and at the other end with a slot for a split key, said spindle being adapted to support a cylindrical spool, and a pressure guide having spring-actuated side-arms, the extremities of which are secured to the base, and parallel upper and lower guide rods of which the former bears against the surface of the spool to prevent excessive rotation thereof, the loose end of the twine being adapted to pass between said rods, substantially as specified.

545,550. DEVICE FOR SEPARATING LIQUID FROM GAS. GEO. SYMONS, Sheridan, Ind. Filed Jan. 17, 1895. Serial No. 535,191. (No model.)

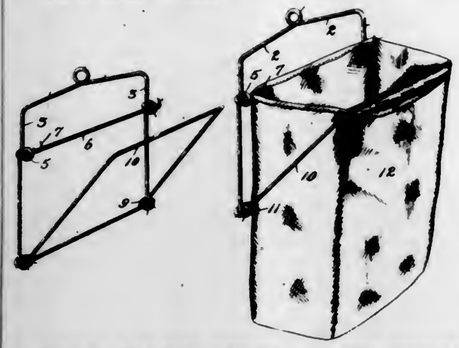


Claim.—1. In a device for separating liquid from gas, the combination, with a tank or pipe having gas therein at a pressure less than a predetermined maximum, of a U-shaped pipe extending downward from said tank or pipe and of such length that the weight of a column of the liquid intended to be separated contained in the discharge arm of said U-pipe shall be at least as great as the said maximum pressure of the gas in said tank or pipe upon an area equivalent to the working cross section of said arm of the U-pipe, for the purpose specified.

2. In an apparatus for separating liquid from natural gas, the combination with a natural gas well of a pipe leading therefrom, a regulator in said pipe, and a U-shaped pipe beyond the regulator extending downward to such a depth that the weight of a column of the liquid intended to be separated contained in the discharge arm of said U-pipe shall be at least as great as the gas pressure per similar area maintained by said regulator, for the purpose specified.

3. In a device for separating liquid from gas, in combination, a supply pipe *a*, a receiving tank *d*, a regulator *b* located between said supply pipe and tank, a discharge pipe *c* adapted to convey the gas from said receiving tank, and a U-shaped pipe *e* extending downward from said tank to such a depth that the weight of a column of the liquid intended to be separated contained in the discharge arm of said U-pipe shall be at least as great as the pressure per similar area of the gas within the tank, substantially as described.

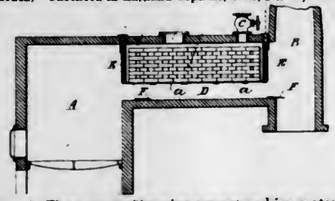
545,551. BAG-HOLDER. LEVI J. TANQUARY, Walnut, Kans., assignor of one-half to T. F. Jones, same place. Filed June 28, 1895. Serial No. 554,354. (No model.)



Claim.—1. A bag holder comprising a rectangular supporting frame made from wire and having the vertical parallel side arms thereof formed each with a coil intermediate of its ends, a horizontal bar passing through and supported within said coil and having its opposite ends passed around the side arms of the supporting frame and projected to a point in advance of the plane of the supporting frame where they are upturned and pointed, and a pivotal frame connected to said main frame and adapted to receive and support the outer edge of a bag, substantially in the manner specified.

2. In a bag holder, a main supporting frame composed of wire and formed with a pair of vertically extending parallel side arms provided at their lower extremities with eyes or loops, eyes or coils formed in said side arms at or near their upper end and disposed in horizontal alignment and adapted to receive a horizontal cross bar, the terminals of which are coiled around the side bars of the main frame and extended forwardly where they are upturned and pointed to engage the rear edge of a bag, a lower connecting bar engaging the eyes or loops in the lower ends of the side bars of the main frame, and a bail frame also composed of wire and having the extremities of its side bars looped around and pivotally engaged with said lower bar, the swinging end of said bail frame being adapted to receive the outer edge of the bag and to hold the mouth thereof open, substantially in the manner specified.

545,552. APPARATUS FOR BURNING CEMENT-MAKING MATERIALS AND PROCESS OF OBTAINING CARBON DIOXID. WILLIAM R. TAYLOR, Rochester, England. Filed Apr. 5, 1895. Serial No. 544,573. (No model.) Patented in England Sept. 26, 1891, No. 16,375.

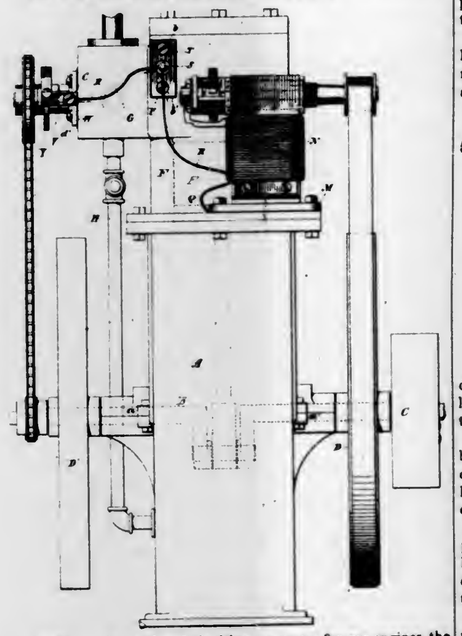


Claim.—1. The process of burning cement-making materials such as specified, and of obtaining carbonic acid gas therefrom, said process consisting in first heating said materials by direct contact with gaseous products of combustion, until the moisture, organic matter and the like are driven off and the temperature is reached at which carbonic acid gas is given off, and subsequently continuing the heating of said materials out of contact with the gaseous products of combustion during the formation of the carbonic-acid gas, substantially as described.

2. In apparatus for burning cement-making materials, such as lime, chalk or the like, the combination with a furnace or fusing kiln, of a chamber retort or kiln constituting in part the exhaust flue of said furnace and through which the products of combustion are adapted to pass, and a valve or valves for closing the flue around the retort while the circulation takes place through the latter and a valve or valves for closing the retort when the circulation takes place around the same, whereby the carbonic acid gas may be withdrawn from the retort after the proper temperature has been reached, substantially as described.

3. In apparatus for burning cement-making materials, such as lime, chalk, or the like, the combination with a furnace or fusing kiln, of a chamber, retort or kiln located in the exhaust flue and through, or around and in coutact with which the products of combustion are adapted to pass, and a valve or valves for closing the flue around the retort while the circulation takes place through the same and a valve or valves for closing the retort when the circulation takes place around the same, whereby the carbonic acid gas may be withdrawn from the retort after the proper temperature has been reached, said temperature being maintained by the passage of the products of combustion through the flue in contact with the retort, substantially as described.

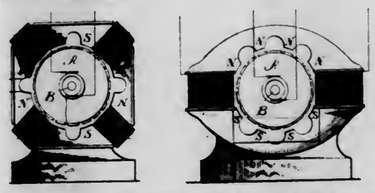
545,553. ELECTRIC IGNITING APPARATUS FOR GAS-ENGINES. HENRY THAU, New York, N. Y., assignor to James W. Irwin, same place. Filed Oct. 20, 1894. Serial No. 526,433. (No model.)



Claim.—1. In an electric igniting apparatus for gas engines, the combination of a gas engine, and a dynamo suitably supported thereon having a belt passing over the armature pulley and the fly-wheel of the engine with the circuit closing device arranged to operate without the cylinder, of the sparking device arranged to operate within the cylinder to form a contact therein before the circuit completed without the cylinder is broken, and to continue said contact within said cylinder after the conducting continuity of the circuit closing device without the cylinder is broken until a spark is produced within said cylinder to ignite and explode the gas charge therein, and the dynamo circuit broken, substantially as specified.

2. In an electric igniting apparatus for gas engines the combination of conductors; a cam disk carried by the valve shaft; said valve shaft being operated by the crank shaft, a contact secured to an insulated support on the engine, said contact and cam disk representing the two terminals of the dynamo circuit, a fixed contact extending into the cylinder supported in an insulated block secured to the engine, and adapted to form a wiping contact with a stud on the face of the rotary valve operating the supply and exhaust mechanisms, combined with a dynamo supported on a platform secured to the engine, said dynamo having one pole thereof grounded on the engine, and the other connected to the spring contact and the contact extending into the cylinder, and a belt passing over the dynamo pulley and the fly wheel of the engine, to operate the dynamo, substantially as, and for the purposes set forth.

545,554. ALTERNATING-CURRENT GENERATOR OR MOTOR. ELIHU THOMSON, Swampscott, Mass. Filed Sept. 29, 1891. Serial No. 407,130. (No model.)

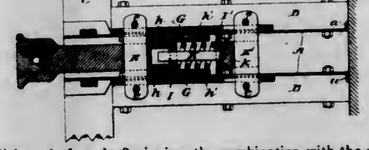


Claim.—1. In an alternating current motor or generator, the combination substantially as described, of a field magnet and an armature magnet one having a series of coils and the other having its poles subdivided into separate polar projections spaced according to the scale of spacing of the poles for the first.

2. In an alternating current motor or generator, the combination substantially as described, of an armature having a series of bobbins, and a field magnet having each of its poles subdivided into separate polar projections whose spaces are twice the space of the bobbins of the armature.

3. The combination substantially as described, of an armature having a series of windings which are alternately reversed, and a field magnet having poles each subdivided into separate polar projections, as and for the purpose described.

545,555. DRAFT-RIGGING. JAMES G. TOMLINSON, Meridian, Miss. Filed Apr. 16, 1895. Serial No. 545,912. (No model.)



Claim.—1. In a draft rigging, the combination with the sills or draft timbers, of wrought metal draft plates bolted thereto, and follower guides on said plates, said guides having their rear ends open to admit the follower, substantially as described

2. In a draft rigging, the combination with the sills or draft timbers, of wrought metal draft plates bolted thereto and follower guides on said plates, each composed of a front end and upper and lower horizontal parallel bars, the rear end being left open substantially as described.

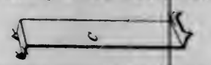
3. In a draft rigging, the combination with wrought metal draft plates, of follower guides thereon having open rear ends, a follower having ears fitting said guides, and a rear follower fitting between the draft plates in the rear of the guides and adapted to be stopped by their rear ends, substantially as described.

4. In a draft rigging, the combination with wrought metal draft plates having front and rear horizontal slots, of cross bars passing through said slots, the rear one abutting normally against the rear ends of its slots, a draw bar engaging with the front cross bar, a tail pin entering a socket in the draw bar and having a bifurcated rear end embracing the rear cross bar, two followers loosely mounted on the tail pin, a spring between the followers, and slotted links connecting the cross bars outside of the draft plates, whereby all butting strains will be sustained by the rear cross bar and the draft plates, substantially as described.

5. In a draft rigging, the combination with the slotted draft members, of a draw bar, a cross bar passing snugly through the draw bar, links outside of said draft members, fitting snugly over the ends of the cross bar, a rear cross bar passing through elongated slots in the links and abutting normally against the rear ends of slots in the draft members, a bifurcated tail pin engaging the rear cross bar, followers through which the pin passes, springs between said followers, and follower guides on the draft members adapted to resist the pulling strains on the draw bar, but not to receive its thrust under butting strains, substantially as described.

6. In a draft rigging, the combination with vertical slotted draft members, of follower guides thereon, a follower having ears received in said guides, a rear follower fitting between said members in the rear of said guides, a spring between the followers, a tail pin passing through said followers and spring and a cross bar passing through the rear end of said tail pin and through slots in the draft members, whereby the cross bar supports the tail pin, rear follower and spring so that upon removing the cross bar the tail pin, followers and spring may be dropped down and removed without disturbing the other parts of the draft gear, substantially as described.

545,556. HOLDING-CLIP FOR BOX-FILES. FELIX TRAMBLAY, Chicago, Ill. Filed Aug. 18, 1894. Serial No. 520,710. (No model.)



Claim.—1. A holding device for file case index sheets, comprising a straight, resilient, sheet metal strip, the end portions of which are bent at right angles to the body of the strip and are provided with teeth which project outward in planes substantially parallel with the body of the strip, substantially as described.

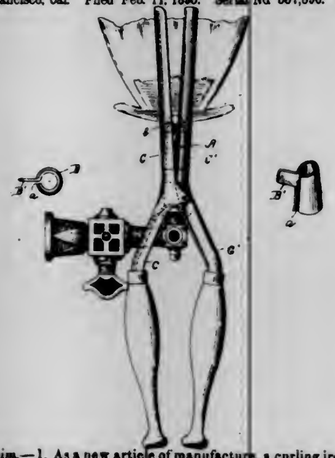
2. A holding device for file case index sheets, comprising a straight, resilient, sheet metal strip, the end portions of which are bent at right angles to the body of the strip and extend from opposite sides of the same, said end portions being provided with teeth which project outward in planes substantially parallel with the body of the strip, substantially as described.

3. A holding device for file case index sheets, comprising a straight, resilient, relatively wide, sheet metal strip or strap, the end portions of which are bent at right angles to the body of the strip and are provided with teeth which project in opposite directions in planes substantially parallel with the body of the strip, substantially as set forth.

4. The combination, with a file case having a bottom wall and a top wall which forms an overhanging ledge, and a series of index sheets, of a holding device for the index sheets comprising a straight, resilient, sheet metal strip, the end portions of which are bent at right angles to the body of the strip and which are provided with teeth adapted to engage the opposing surfaces of said bottom and top walls of the case, substantially as described.

5. The combination, with a file case having a bottom wall, and a top wall which forms an overhanging ledge, a series of index sheets within the case, each provided with a tag or projection at its margin provided with an elongated slot therein, of a holding device for the index sheets, comprising a straight, resilient, relatively wide sheet metal strip, the end portions of which are bent at right angles with the body portion of the strip and provided at their end margins at the corners thereof with teeth adapted to engage the opposing surfaces of said bottom and top walls of the case, substantially as described.

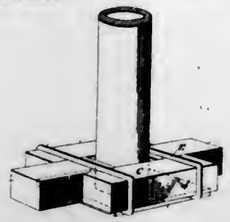
545,557. CURLING-IRON HOLDER. GEORGE A. TURNER, San Francisco, Cal. Filed Feb. 11, 1895. Serial No. 537,896. (No model.)



Claim.—1. As a new article of manufacture, a curling iron holder, consisting of a metallic thimble adapted to be secured over a burner provided with an integral outwardly projecting holding flange.

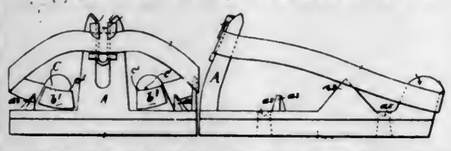
2. As a new article of manufacture, a curling iron holder, consisting of a tapering slit thimble adapted to be secured over a burner, provided with an integral outwardly-projecting holding flange.

545,558. ANCHOR FOR FENCE-POSTS. LEWIS VANBRIGGLE and PHILIP VANBRIGGLE, Groomsville, Ind. Filed Nov. 16, 1894. Serial No. 528,980. (No model.)



Claim.—In a fence post, the combination with the lower end of the post, of two oblong blocks parallel on opposite sides of the post and resting against the same, oblong blocks interposed between the ends of said other blocks and abutting against the post, their outer ends projecting beyond the ends of the side blocks, tie bands projecting around the overlapping ends of the blocks on opposite sides of the post, and means on the post engaging the blocks whereby the blocks prevent the upward movement of the post, substantially as described.

545,559. NAILLESS HORSESHOE. WILLIAM H. WALKER, London, England. Filed May 17, 1895. Serial No. 549,690. (No model.)



Claim.—1. In a shoe for horses and other hoofed animals, the combination of an upper part, with one or more side clips a^2 and projections a^3 and having heel lugs C, and front lug A with ratchet teeth a', a spring clip D, and a band B, with a wearing part a^4, substantially as set forth.

2. A nailless horse shoe provided with a bifurcated toe pillar having serrations or teeth in the proximate faces of its limbs, and a strap adapted to be connected with the heel ends of the shoe and fitting over the bifurcated portion of said pillar, of a locking clip adapted to seat in the fork of the aforesaid pillar and engage the serrations thereof, said clip provided with abutments for the opposite edges of the strap to hold the same against vertical displacement on the pillar, for the purpose set forth.

3. A nailless horse shoe provided with a bifurcated toe pillar having serrations or teeth in the approximate faces of its limbs, and a strap detachably connected with the respective heel ends of the shoe and fitting over the bifurcated portion of the pillar, in combination with a spring clip adapted for insertion between the limbs of the pillar and constructed to interlock with the serrations thereof, said clip provided with a transverse abutment for the lower edge of the strap and with locking lugs projecting downwardly over the upper edge of said strap, substantially as and for the purpose set forth.

4. A nailless horse shoe provided with a bifurcated toe pillar having serrations or teeth in the proximate faces of its limbs, and shouldered heel projections C, and a strap bent upon itself and adapted to hook under the shoulders of the heel projections and fit over the bifurcated portion of the toe pillar, of an expansible locking device adapted to seat between the limbs of the toe pillar and interlock with the serrations of its limbs, said locking device provided with abutments adapted to lock the strap against vertical displacement on the pillar, for the purpose set forth.

545,560. PROCESS OF DEPILATING HIDES. GEORGE C. WALTER, Hastings, Mich. Filed May 16, 1894. Serial No. 511,478. (No specimens.)

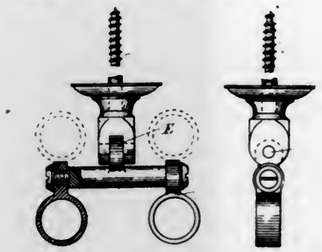
Claim.—1. The process of depilating and preparing hides consisting of applying to the flesh sides thereof a compound consisting of a mixture, by measure, of one part sodium sulphide, two parts lime and four parts water.

2. The herein described process for depilating and preparing hides, consisting in applying to the flesh side thereof a compound containing only sulphide of sodium, lime and water mixed to a pasty consistency.

3. The herein described process for depilating hides consisting in applying to the flesh side thereof a mixture of sulphide of sodium, lime and water and folding the flesh side of the hide together, as specified.

4. The process for depilating and preparing hides consisting of applying to the flesh side of the hides a solution consisting of alkaline sulphide, lime and water mixed to a pasty or soupy consistency for the purpose of removing the hair, cleansing the hides and loosening the fleshy material, as specified.

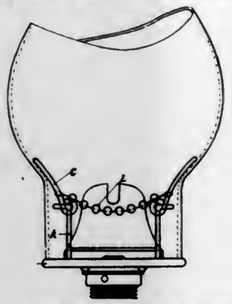
545,561. PIPE-HANGER. HENRY C. WERDEN, Quincy, Mass. Filed May 6, 1895. Serial No. 548,211. (No model.)



Claim.—1. In a pipe-hanger, the combination of a supporting device, a cross-bar attached thereto, a ring mounted on the cross-bar and adapted to rotate thereon in a plane at right angles to the length of the bar, and means for retaining the ring in its adjusted position, all substantially as described.

2. In a pipe-hanger, the combination of a supporting device, a cross-bar attached thereto, two rings mounted upon the cross-bar and adapted to rotate thereon independently of each other in planes at right angles to the length of the bar, and means for retaining the said rings in their adjusted positions, all substantially as described.

545,562. LAMP-CHIMNEY HOLDER. GEORGE A. WELCH, Malden, Mass. Filed Dec. 12, 1893. Serial No. 493,483. (No model.)



Claim.—In a lamp chimney holder—two guides mounted upon the burner, each guide having a curved horizontal portion, U-shaped wire grips so mounted upon said horizontal portions as to normally press outward in opposite directions, substantially as specified.

545,563. COMBINED LAST AND TREE. ALEXANDER R. WELLMAN, Worcester, Mass., assignor to Porter & Gardiner, same place. Filed Nov. 12, 1894. Serial No. 528,478. (No model.)



Claim.—1. The combination of a tree, a separable last, means for locking or securing the parts of said last together, means carried by said tree for unlocking the parts of said last and means also carried by said tree for detachably securing the last to the tree, substantially as described.

2. The combination of a separable last, a latch for securing the parts of said last together, a tree, a latch-operating lever, a catch-lever for detachably securing the last to the tree, and means for simultaneously actuating said latch-operating lever and said catch-lever, substantially as described.

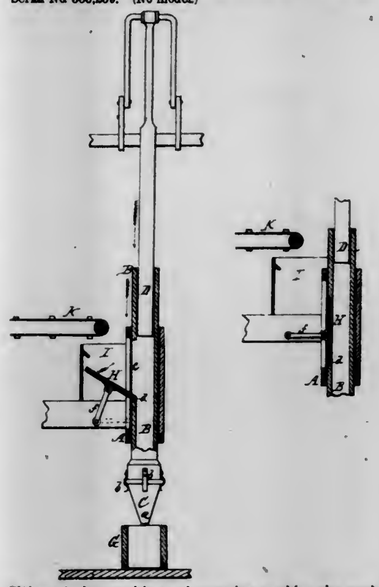
3. The combination of a tree, a two-part last, means for securing the last to the tree, a latch for detachably locking the parts of said last together, a latch-operating lever mounted in said tree, a sliding piece or plate also mounted in said tree and connected to operate said latch-operating lever, substantially as described.

4. The combination of a tree, a two-part last, means for holding the last upon the tree a latch for detachably locking the parts of said last together, a latch operating lever mounted in said tree, a pivoted lever for actuating said latch-operating lever, and a cam-slide for actuating said pivoted lever, substantially as described.

5. The combination of a tree, a two-part last, a latch for detachably locking the parts of said last together, a latch-operating lever, a catch lever for securing the last to the tree and a slide connected to simultaneously actuate said latch-operating lever and said catch lever, substantially as described.

6. The combination of a last, a tree, a catch-lever, a spiral spring engaging said catch-lever, a pin extending from the tree into said last, and a single securing screw for fastening the spiral spring and the pin in place, substantially as described.

545,564. FEEDING ATTACHMENT FOR PACKING AND WRAPPING MACHINES. HENRY D. WHIPPLE, Rochester, assignor to the Automatic Machinery Company, Port Byron, N. Y. Filed Jan. 17, 1895. Serial No. 535,239. (No model.)



Claim.—1. In a packing and wrapping machine, the combination of a stationary support, a feeding tube movable therein, a plunger resting in the tube, having independent movement, a movable valve covering an opening in the feeding tube, and means for closing the valve automatically when the feeding tube receives longitudinal movement.

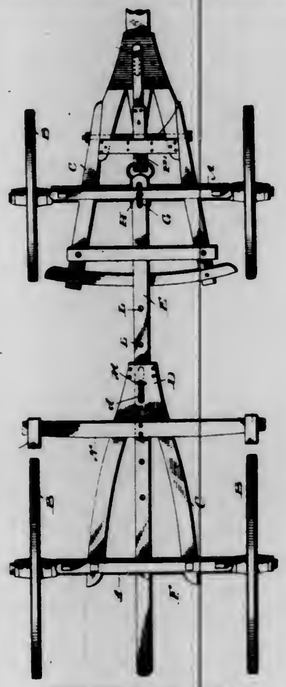
2. In a packing and wrapping machine, the combination of a stationary support, a feeding tube movable therein, a plunger resting in the feeding tube, having independent movement, a movable valve covering an opening in the feeding tube, and a link pivoted at one end to the valve and at the other to a stationary support, and serving to close the valve when the feeding tube receives longitudinal movement.

3. In a packing and wrapping machine, the combination of a stationary support, a feeding tube movable therein, a plunger resting in the feeding tube, having independent movement, a movable valve covering an opening in the feeding tube and forming a chute to receive the material to be acted on, a link attached to the valve and to a stationary support, serving to close the valve when the feeding tube receives longitudinal movement, and an endless apron for feeding the material to the valve.

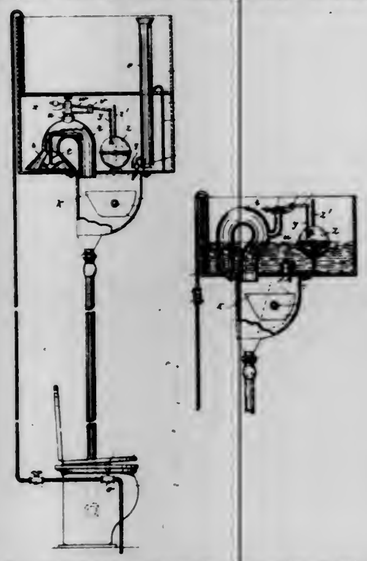
545,565. AUTOMATIC BRAKE FOR WAGONS. JAMES W. WILDMAN, North Andover, Wis. Filed June 17, 1895. Serial No. 553,126. (No model.)

Claim.—In combination with the running gear of a wagon a sliding tongue and reach having clevis connection, the said reach having

an elongated slot G, a king bolt working in said slot, the perforations L, a plate D secured to the rear hounds of the truck, an elongated slot in said plate, the pin M having its shank portion engaging in one of the said perforations L and working in the slot *d*, the said reach sliding on both axles of the vehicle, and the cross piece N carrying brake shoes, and secured to the said reach, substantially as shown and described.



545,566. **WATER-CLOSET-FLUSHING APPARATUS.** JOHN WRIGLEY, Elmira, N. Y., assignor of one-half to Milton M. Elmendorf, same place. Filed Mar. 1, 1895. Serial No. 540,199. (No model.)



Claim.—1. In a flushing device for water closets, a tank, a receptacle arranged on the under side of the tank, a fulcrumed tilting bucket supported in said receptacle, a drip pipe leading from the tank into the receptacle and above the bucket, a cock in said drip pipe and a valve controlled siphoning pipe in said tank and communicating with the said receptacle, all said parts substantially as and for the purposes described.

2. In a flushing device for water closets, a lower and upper tank, a drip pipe connecting the upper and lower tanks, an overflow pipe leading from near the top of the upper tank into the lower tank, a receptacle on the under side of the lower tank, a tilting bucket fulcrumed in said receptacle, a drip pipe leading from the lower tank into the receptacle and above the bucket, a valve controlled siphoning pipe in said lower tank and communicating with the said receptacle, and a valve controlled supply pipe leading into the upper tank, and means for controlling said valve in the supply pipe, all said parts, substantially as and for the purposes described.

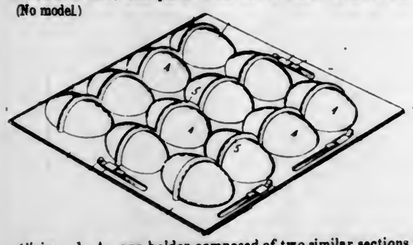
3. In a flushing device for water closets, a tank, a receptacle on the under side of the tank, a fulcrumed tilting bucket in said receptacle, a drip pipe leading from the tank into the receptacle and above the bucket, a cock in said drip pipe, a siphoning pipe in the tank and communicating with the receptacle, a valve controlling said siphoning pipe and means for automatically controlling said valve, all said parts, substantially as and for the purposes described.

4. In a flushing device for water closets, a tank, the flushing pipe communicating with said tank, through an intermediate receptacle, a fulcrumed tilting bucket in said receptacle, a drip pipe leading from the tank into the receptacle and above the bucket and provided with a regulating cock, a siphoning pipe in said tank and communicating with the receptacle, a valve controlling said siphoning pipe, a fulcrumed lever carrying said valve, and a float connected with said lever, all said parts substantially as and for the purposes described.

5. In a flushing device for water closets, a lower and upper tank, a drip pipe connecting the upper and lower tanks, an overflow leading from near the top of the upper tank into the lower tank, a siphoning pipe in the lower tank, means for starting said siphoning pipe, means for breaking the action in the siphoning pipe, and a valve controlled supply pipe leading into the upper tank, all said parts, substantially as and for the purposes described.

6. In a flushing device for water closets, a lower and upper tank a drip pipe connecting the upper and lower tanks, an overflow leading from the upper tank into the lower tank, a valve controlled supply pipe for the upper tank, a siphoning pipe in the lower tank, an air pipe communicating with said siphon pipe, a valve on the free end of the air pipe, means for controlling said valve, and means for controlling the valve of the supply pipe, all said parts substantially as and for the purposes described.

545,567. **EGG-HOLDER.** ANDREW J. BAKER, Auburn, N. Y., assignor of three-fourths to Hiram W. Babcock, William B. Thorpe, and Adelbert P. Rich, same place. Filed Oct. 16, 1894. Serial No. 526,086. (No model.)



Claim.—1. An egg holder composed of two similar sections provided with corresponding semi-egg-shaped concavities registering and forming egg pockets, and having continuous grooves at the top and bottom of the pockets forming projecting exterior hollow cushioning ribs, substantially as described.

2. An egg holder, composed of two similar sections provided with corresponding semi-egg-shaped concavities, and having transversely disposed grooves forming exterior cushioning ribs, said sections being provided at the ends and at opposite sides of the concavities with depressed portions forming recesses, the recesses of one section registering with those of the other section to provide ventilating openings, substantially as described.

545,568. **TYPE.** LINN B. BENTON, Milwaukee, Wis., assignor to the American Type Founders Company, New York, N. Y. Filed Mar. 1, 1893. Serial No. 464,162. (No model.)

Claim.—1. Piece fractions formed on bodies of the same body-wise dimension as those of regular font figures or characters with which they are designed to be used and having dividing lines cast partially on bodies with ascending figures and partially on separate bodies with descending figures, substantially as and for the purposes set forth.

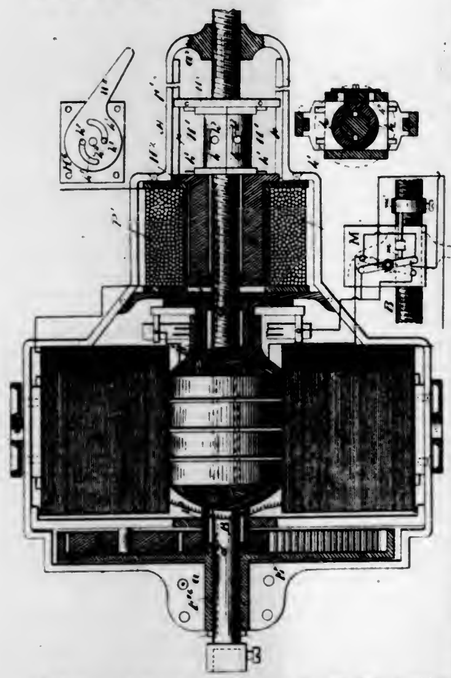
2. Piece fractions formed on bodies of the same body-wise dimension as those of regular font figures or characters and comprising one set of figures formed on the upper portion of their bodies with a portion of dividing lines, and another set formed on the lower portion of their bodies with the remainder of the dividing lines, substantially as and for the purposes set forth.



3. Piece fractions comprising one set of figures formed on the upper portion of their bodies with a portion of oblique dividing lines, and another set of figures formed on the lower portion of their bodies with the remaining portion of the oblique dividing lines, substantially as and for the purposes set forth.

4. Piece fractions cast on bodies of the same body-wise dimension as those of regular font figures or characters with which they are designed to be used, and comprising one set of ascending figures with a portion of oblique dividing lines, one set of ascending figures without such lines, one set of descending figures with remaining portions of the dividing lines, and one set of descending figures without such lines, substantially as and for the purposes set forth.

545,569. **ELECTRIC TOOL AND MACHINE.** HENRY H. BLISS, Washington, D. C., assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed Dec. 24, 1886. Serial No. 222,524. (No model.)



Claim.—1. In a machine of the character described the combination of a frame adapted to be made stationary, a carrier moving forward and back upon and held by the said stationary frame, an operating bar or shaft secured to the said moving carrier, an electric motor revolving the said operating bar or shaft, a current conductor on the stationary frame electrically connected with the motor, and means operated by the said electric motor for advancing the carrier relatively to the frame, substantially as set forth.

2. In a boring or cutting machine of the character described, the combination of a frame adapted to be made stationary, a cutter carrier moving upon and held by the said stationary frame, a rotating cutter bar or shaft secured to the said cutter carrier, an electric motor revolving the said cutter bar or shaft, means operated by the said electric motor for advancing the cutter carrier relatively to the frame, and a switch, or current-changing mechanism, substantially as described automatically operated by the cutter carrier when moving relatively to the stationary frame, substantially as and for the purposes set forth.

3. In a boring or cutting machine of the character described the combination of a frame adapted to be made stationary, a cutter carrier moving upon and held by the said stationary frame, a continuously rotating cutter bar or shaft secured to the said cutter carrier, an electric motor revolving said cutter bar or shaft, a current conductor on the stationary frame electrically connected with the motor, and means substantially as described for causing the cutter carrier to move relatively to the stationary frame, the last said means being operated electrically in the same circuit that operates the rotation causing motor, substantially as described.

4. In a boring or cutting machine of the character described, the combination of the stationary frame, the cutter carrier, the cutter shaft or bar secured to the carrier, means for continuously revolving the cutter bar or shaft, electrically operated devices for causing the cutter carrier to move relatively to the stationary frame and a current conductor on the stationary frame electrically connected with the said carrier-moving devices, substantially as set forth.

5. In a boring or cutting machine, the combination of a frame, a cutter carrier upon the said frame, electrically operated devices for continuously rotating the said cutter bar or shaft, an electrically operated mechanism for moving the cutter carrier relatively to the frame and a current conductor on the frame electrically connected with the said carrier-moving mechanism, both the latter being in one and the same circuit, substantially as set forth.

6. The combination of the stationary frame, the carrier moving thereon; the operating mechanism on the carrier, an electric motor for actuating said mechanism, a positively acting feed mechanism for the carrier (in contradistinction to a hydraulic or air feed mechanism) and a switch or current changer operated by the carrier, substantially as set forth.

7. The combination of the stationary frame, the carrier moving on said frame, an operating shaft or bar as at C, mounted on said carrier, an electric motor for actuating the said shaft or bar and a solenoid or electro-magnet with a movable core for holding the said shaft or bar to its work, substantially as set forth.

8. The combination of the main frame or bed, the electric motor having the hollow armature, the shaft moving longitudinally through the said hollow armature, and the gearing interposed between the armature and the shaft, substantially as set forth.

9. The combination of the main frame or bed, the electric motor having the hollow armature, the shaft mounted axially in the hollow armature and the two independent bearings for the said armature, both being independent of the shaft, and the gearing which connects the armature and the shaft, substantially as set forth.

10. The combination of the main frame or bed, the shaft B, the electric motor, having a hollow armature around the shaft, the gearing connecting the electric motor and the said shaft B and a bearing for each end of the armature which holds it out of contact with the shaft, substantially as set forth.

11. The combination of the main frame or bed, the shaft B, the electric motor having the hollow armature around the shaft, said shaft being adapted to move through said armature, and means substantially as set forth for imparting power from the armature to the shaft whereby they are independent of each other as to direction or speed of motion, substantially as described.

12. The combination of the main frame or bed, the carrier moving thereon, the electric motor, the core for moving the carrier, the solenoid or magnet which actuates the core, and devices substantially as set forth which electrically connect the solenoid or magnet with the motor, substantially as described.

13. The combination of the carrier, the core which moves said carrier, the solenoid or magnet which actuates said core, and a guide for the core independent of the carrier, substantially as set forth.

14. The combination with the carrier, and the motor having a hollow armature around the carrier, of the solenoid or magnet and the core arranged around the carrier, substantially as set forth.

15. The combination of the rotating shaft B, the motor and armature, the solenoid or magnet, the frame which supports all of the aforesaid parts, and means supplemental to the shaft and interposed between the solenoid or magnet and the shaft through which means the magnet acts to move the shaft, substantially as set forth.

16. The combination of the carrier, the motor for rotating the carrier, a solenoid independent of the motor, the core connected to the carrier and adapted to be moved by the said solenoid, substantially as set forth.

17. The combination of the carrier, the solenoid, means substantially as described engaging with the carrier to advance it, the core actuated by the said solenoid and connected to the said carrier-advancing means, said core being arranged substantially as set forth to be held stationary or forced backward when the carrier meets resistance, substantially as set forth.

18. The combination with the carrier of the means substantially as described for moving it consisting of a solenoid and a nut engaging

with a carrier and adapted to move longitudinally therewith, substantially as set forth.

19. The combination with the carrier of the means substantially as described for moving it consisting of a solenoid, and a nut mounted on a movable guide independent of the carrier, substantially as set forth.

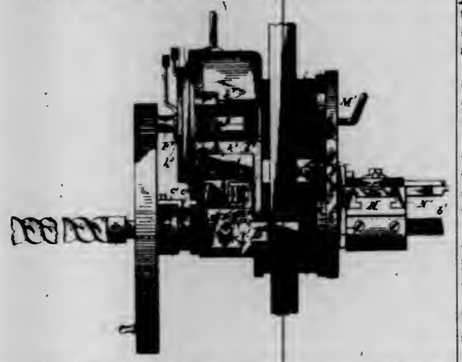
20. The combination with the carrier of the means substantially as described for moving it consisting of a solenoid, a nut mounted on a movable guide, independent of the shaft on which the nut moves transversely to the carrier, and a guide on which the nut moves parallel with the carrier, substantially as described.

21. The combination with the carrier, of the solenoid or electromagnet, the movable core and the divisible nut carried by the core, substantially as described.

22. The combination with the carrier, and the electric motor for effecting rotation, of the nut adapted to engage with the carrier and to move backward with the carrier, and means substantially as described for holding the said nut forward, substantially as set forth.

23. The combination of a rotating and longitudinally-feeding drill-rod, a support therefor, an electric motor having a rotating armature-shaft on said support, gearing between said armature-shaft and drill rod, feeding mechanism for the drill-rod, and devices for disengaging said feeding mechanism from the drill-rod to admit of a quick return of the drill-rod independently of said feeding mechanism, substantially as set forth.

545,570. ELECTRIC COAL OR ROCK DRILL. HENRY H. BLISS, Washington, D. C., assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed Sept. 6, 1888. Serial No. 284,685. (No model.)



Claim.—1. An electric drill or analogous machine, having in combination, a field magnet, a rotary armature, an armature shaft having its bearings on one part of the field magnet, a longitudinally movable driven shaft having its bearings on another part of the field magnet, and a driven wheel concentric with the last said shaft and mounted independently thereof in fixed relations with the field magnet, substantially as set forth.

2. An electric drill or analogous machine, having in combination, a field magnet, a rotary armature, an armature shaft mounted on one part of the field magnet, and having a driven shaft mounted on another part of the field magnet parallel with the armature shaft and situated to lie across the planes of the armature, whereby said driven shaft can be elongated without unduly elongating its supporting connection by which it is held to the motor, substantially as set forth.

3. In an electric drill or analogous machine, the combination of a field magnet, a rotary armature, an armature shaft, a driven shaft having a bearing in front of the armature and a bearing in rear of the armature, all the aforesaid parts being connected together as a unitary structure which is vibratable or axially adjustable, a supporting frame for said structure adapted to be made stationary, and an axial support interposed between the said frame and structure, substantially as set forth.

4. In an electric drill or analogous machine, the combination of the field magnet, the armature, and the armature shaft mounted at one end in one of the cores of the field magnet, and the other end mounted in a bearing secured to the pole piece of the field magnet, substantially as set forth.

5. In an electric drill or analogous machine, a field magnet having two parallel cores, an armature shaft mounted in one of said cores and out of line with the axis thereof and a driven shaft mounted in the other field core, and extending through it, substantially as set forth.

6. In an electric drill or analogous machine, a field magnet having parallel cores and helices, the armature having its shaft parallel to the axes of the cores, and situated out of the midway line between their axes, the power devices, and the driven mechanism geared to the armature shaft and supported on the field magnet, substantially as set forth.

7. In an electric drill or analogous machine, the combination with the field magnet, of the trunnions supporting the field magnet, the power mechanism, and the driven mechanism, connected to said field magnet, substantially as set forth.

8. In an electric drill or analogous machine, the combination of the field magnet, the armature, the trunnion or hinge like support which carries the field magnet, and the stationary frame which supports said trunnion, substantially as set forth.

9. In an electric drill or analogous machine, the combination of the rotary armature, a field magnet having two poles adapted to lie, either in a vertical line one above the other, or in lines inclined to the vertical, and the axial support for the said magnet bodily movable vertically, substantially as set forth.

10. In an electric drill or analogous machine, the combination with the portable frame adapted to be made stationary, of the field magnet adjustable vertically on said frame, the armature, the armature shaft, and the pole pieces of the field magnet having the armature shaft at their axis and arranged to vibrate to have said axis horizontal or inclined to the horizontal, substantially as set forth.

11. In an electric drill, or analogous machine, the combination with the stationary frame, of the field magnet supported in said frame, the armature, the driven shaft supported on said magnet, and the means secured to said magnet for advancing the operative parts, substantially as set forth.

12. In an electric drill or analogous machine, the combination of the armature, the armature shaft, supported as set forth to be adjusted in vertical planes around a horizontal axis, the field magnet, the main supporting frame for said magnet, and the driven shaft mounted in fixed relations to the armature shaft and adjustable axially therewith, substantially as set forth.

13. In an electric drill or analogous machine, the combination of the frame, the field magnet, the operative parts, the power transmitting devices on one side of said magnet, and the advancing mechanism on the other side, substantially as set forth.

14. In an electric drill or analogous machine the combination of the frame, the field magnet, the armature supported thereon, one of the cores of said magnet having an aperture, the driven part passing through said aperture, and the power transmitting devices, substantially as set forth.

15. In an electric drill a field magnet, having attached thereto the driven shaft, the devices which support the magnet, and mechanism actuated by the motor for advancing the operative parts of the drill, substantially as set forth.

16. In an electric drill or analogous machine, a field magnet having the driven shaft passed through it, the wheel which actuates said shaft mounted on said magnet and means for holding said wheel in place relatively to said magnet independently of the driven shaft, substantially as set forth.

17. In an electric drill or analogous machine, the combination of the field magnet pole pieces the armature between them, the closing devices for the chamber between the pole pieces, the armature shaft passing through said closing devices, the commutator and the adjustable brushes inside of said chamber, and means outside thereof connected to the brushes for adjusting them, substantially as set forth.

18. In an electric drill or analogous machine, the combination, with the pole pieces and the armature mounted between them of the commutator inside of the outer plane of the armature, the adjustable brushes also inside of said plane and devices for closing the chamber formed in the armature, substantially as set forth.

19. In an electric drill or analogous machine, the combination with the field magnet pole pieces, and the armature mounted in the chamber between them of the closing devices for said chamber, the armature shaft having one end supported directly in a core of the field magnet, and having the power wheel outside of said closing devices, substantially as set forth.

20. In an electric drill or analogous machine, the combination with the field magnet having pole pieces, the rotary armature between them, and the commutator, of the protecting wall formed with or secured to the field magnet and extending to or beyond the outer lines of the commutator, and the armature shaft having a bearing directly in the metal forming the field magnet, whereby the parts are reduced, and the commutator and brushes are protected when the motor is being carried, substantially as set forth.

21. In an electric drill or analogous machine, the combination with the field magnet having pole pieces, the rotary armature between them, and the armature shaft having a bearing directly on the metal forming part of the magnetic circuit of the field magnet of the plate or shield in front of the pole pieces and armature, and having the armature shaft passed therethrough, substantially as set forth.

22. In an electric drill or analogous machine, the combination with the field magnet pole pieces, the armature mounted between them, the parts driven by the armature and supported on the field magnet, and the neutral pieces of the field magnet, arranged to assist in supporting the operative parts of the machine, substantially as set forth.

23. In an electric drill or analogous machine, the combination with the field magnet pole pieces, and the armature, of the closing devices in front of the armature, the adjustable brushes in the pole chamber, the stationary electric conductor inside of said chamber and connected with the brushes, substantially as set forth.

24. In an electric drill or analogous machine, the combination with the pole pieces and the armature, of the brushes and the commutator in the pole chamber, the stationary electric conductors in said chamber connected with the brushes means for adjusting the brushes, and the removable closing devices in front of the armature, substantially as set forth.

25. In an electric drill or analogous machine, the combination with the field magnet pole pieces, and the armature, of the closing devices in front of the armature, the brushes inside thereof, and means accessible from the outside of said closing devices for adjusting the pressure of the brushes, substantially as set forth.

26. In an electric drill or analogous machine, the combination with the field magnet pole pieces, the armature having its shaft parallel to the axis of the field helices, and the neutral or connecting piece of the field magnet, of the brushes mounted between the front plane of the armature, and said neutral piece, and means for adjusting the brushes, substantially as set forth.

27. In an electric drill or analogous machine, the combination with the field magnet, the commutator, and the armature, of the closing devices in front of the armature, the brushes inside thereof and the separable electrical contacts inside thereof, substantially as set forth.

28. In an electric drill or analogous machine, the combination with the field magnet, and the armature, of the front bearing for the armature, the wheel outside of said bearing, the driven shaft mounted on one core of the magnet, and the gearing interposed between said wheels and the driven shaft, substantially as set forth.

29. In an electric drill or analogous machine, the combination with the field magnet, the commutator, and the armature, of the closing devices in front of the armature, the adjustable brushes, and the wheel on the armature shaft outside of the said closing devices, substantially as set forth.

30. In a portable electric drill or analogous machine, the combination of the portable supporting frame, the field magnet secured thereto, the armature, the armature shaft, the field magnet and armature being provided with wire helices having two insulated terminals external to the aforesaid parts and a detachable conductor section having at its end two insulated terminals adapted to be detachably connected to the aforesaid external terminals, substantially as set forth.

31. In a portable electric drill or analogous machine, the combination with the movable and adjustable field magnet, and the driven parts, of the contacts secured thereto, and a detachable portable conductor section having at its end two mutually insulated terminals each surrounded by an insulating or protecting casing, and said portable conductor being adapted to be detachably connected to supply mains, substantially as set forth.

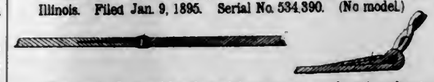
32. In a portable electric drill or analogous machine, the combination with the driven parts, of the movable and adjustable field magnet, the portable frame, the contacts supported thereon, the inclosing devices for said contacts, and the portable contacts adapted to be engaged therewith, substantially as set forth.

33. In a portable electric drill or analogous machine, the combination with the driven parts and the portable field magnet of the contacts supported thereon and a portable conductor section having at its end mutually insulated contacts surrounded by a protecting casing and corresponding with the aforesaid contacts, and the switch supported on the magnets, substantially as set forth.

34. In a portable electric tool of substantially the character described, the combination of the following elements, namely an electric motor having a rotating armature and a field magnet, a portable frame, the adjustable connecting devices for attaching the motor to the frame in different positions vertically, a trunnion or hinge like support interposed between said vertically adjustable connecting devices and the motor and adapted to permit the motor to be adjusted axially, the rotary driven shaft geared to the armature and connected to the field magnet by bearings holding it in a fixed line in relation thereto, and a detachable electric conductor section or cable having insulated contacts or circuit sections and adapted to be attached to said motor and convey current thereto irrespective of the vertical or axial positions to which it is adjusted on said frame or trunnion, substantially as set forth.

545,571. WITHDRAWN.

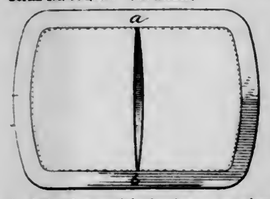
545,572. JOINT FOR ENDS OF LEATHER STRAPS. FRIEND J. BRINGHAM, Chicago, Ill., assignor to the Seamless Leather Company, of Illinois. Filed Jan. 9, 1895. Serial No. 534,390. (No model.)



Claim.—1. In combination with a strap, a pocket therein at a distance from the end thereof extending at an angle to the face and of a width less than that of the strap, and a strap end fitted to said pocket and secured, substantially as described.

2. A splice for straps consisting of strap ends, each having a pocket and a projecting tongue, the tongue of one strap end being adapted to enter the pocket of the other and being reversed in position, substantially as described.

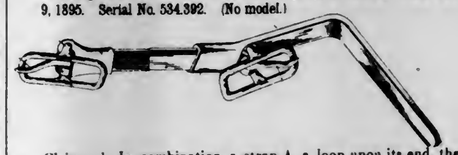
545,573. LEATHER ARTICLE. FRIEND J. BRINGHAM, Chicago, Ill., assignor to the Seamless Leather Company, of Illinois. Filed Jan. 9, 1895. Serial No. 534,391. (No model.)



Claim.—1. A leather article having a seamless margin and a seamless back, a central slit extending partially through the thickness of the leather of less length than the width of the leather, and pockets formed in the upper face of said article and extending in opposite directions from said central slit, substantially as described.

2. A seamless leather article having an intact margin and an intact back, pockets in its upper face extending in opposite directions from a central slit and a filling in said pockets bridging the central slit, substantially as described.

545,574. STRAP AND BUCKLE. FRIEND J. BRINGHAM, Chicago, Ill., assignor to the Seamless Leather Company, of Illinois. Filed Jan. 9, 1895. Serial No. 534,392. (No model.)



Claim.—1. In combination, a strap A, a loop upon its end, the strap being turned and passed through said loop, a buckle held thereby, a buckle held by the doubled end of the strap A at its opposite extremity, a strap B, and a loop on the end thereof embracing and confining the doubled end of the strap A, substantially as described.

2. In combination, a strap A, a buckle held by the doubled end thereof, a seamless loop inclosing and confining the doubled end of the strap and a strap B integral with and having a free end extending from said loop, substantially as described.

545,575. SHAFT-TUG LOOP. FRIEND J. BRINGHAM, Chicago, Ill., assignor to the Seamless Leather Company, of Illinois. Filed Jan. 9, 1895. Serial No. 534,393. (No model.)



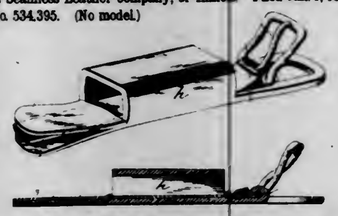
Claim.—1. The tug loop formed of a strap wider at one end and narrower at the other, the wider part having a transverse slit *e* made through the leather and a longitudinal passage formed by splitting the leather from the point *f*, through to the end, a buckle, the narrower part *b* of the strap being drawn through the slit *e*, and the passage in the wider part of the leather, the projecting end being adapted to connect with the tongue of the buckle, all substantially as described.

2. A strap slitted through to form an opening *c* with the end of the strap passed through the opening to form a loop to confine a fastening device, and an independent loop secured in place between the opposing faces of the parts of the strap, substantially as described.

3. A shaft loop comprising a strap having a narrow portion *b* and a wider portion *a* of sufficient length to form the complete loop, the said portion *a* having a channel extending through the same to the end, the said narrow portion being turned to form a loop and passed through the channel of the part *a*, and inclosed thereby, the buckle held by the turned portion *b*, the projecting end thereof engaging the buckle tongue, substantially as described.

4. A shaft loop comprising a strap having a narrow portion *b* and a wider portion *a*, the said portion *a* having a longitudinal passage formed by splitting the leather, and a buckle held by a loop in the strap, the said narrow portion passing through the longitudinal passage in the wider portion, substantially as described.

545,576. HAME-TUG. FRIEND J. BRINGHAM, Chicago, Ill., assignor to the Seamless Leather Company, of Illinois. Filed Jan. 9, 1895. Serial No. 534,395. (No model.)

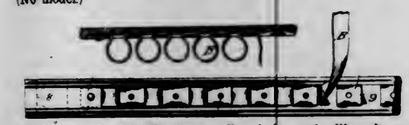


Claim.—1. The method of making box tugs consisting in cutting out a blank with end portions of less width than the center, splitting said central portion longitudinally from end to end leaving uncut margins and then expanding the split center to form sides approximately in line with the sides of the strap ends, substantially as described.

2. A box tug, formed out of a split blank having lateral extensions, consisting of an expanded box and integral strap ends, the top of said box being formed by the upper thickness of the strap and the sides of the box by the split lateral extensions, substantially as described.

3. The strap, the box integral therewith, the loop E and the buckle, the end of the strap being doubled to inclose the buckle bar and being passed under the loop E, substantially as described.

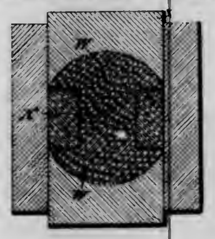
545,577. SEAMLESS LEATHER ARTICLE. FRIEND J. BRINGHAM, Chicago, Ill., assignor to the Seamless Leather Company, same place. Filed Dec. 4, 1893. Renewed Apr. 27, 1895. Serial No. 547,400. (No model.)



Claim.—1. In a bridle front, collar, belt or the like, the combination with a strap having integral loops in its surface formed out of a part of the thickness of the leather, of a strip drawn through said loops lengthwise of said article, substantially as described.

2. In a bridle front, belt or like leather articles, the combination with a strap having integrally formed loops on its surface in the thickness of the leather, of a binding strip having recessed edges and partly inclosing said strap, and a facing strip passing through said loops and partially concealed by them, and concealing the edges of the binding strip, substantially as described.

545,578. PROCESS OF CONSTRUCTING POOL-BALLS. GEORGE H. BURT, Milburn, N. J. Filed Oct. 31, 1894. Serial No. 527,560. (No model.)

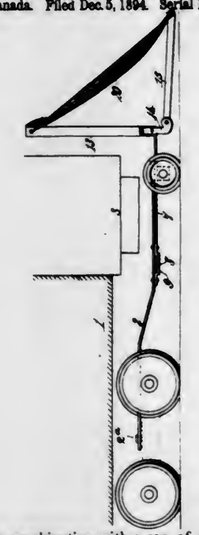


Claim.—1. The herein described process of constructing a pool ball, which consists in compressing a central segment and then removing a central core from the same, and finally pressing the material which forms the adjacent side segments through this central opening and causing said parts to be firmly united together.

2. The herein described process of constructing a pool ball which consists in first forming a central segment with an opening therethrough, and then compressing additional material through this opening and causing the parts to be integrally united together.

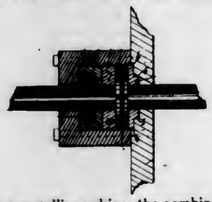
3. The herein described process of forming a pool ball having segments of different color, which consists in first compressing one segment and simultaneously forming an opening therethrough, and then forming the other segments by subjecting material of different color to additional pressure against the lateral faces of the first segment and through the central portion thereof..

545,579. CAR-FENDER. ROBERT BUSTIN, Boston, Mass., assignor of two-thirds to Wesley Vanwart, Fredericton, and John R. McConnell, Marysville, Canada. Filed Dec. 5, 1894. Serial No. 530,920. (No model.)



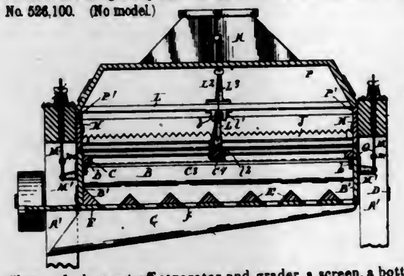
Claim.—The combination with a car, of a bar or beam pivoted to the car truck and extending forward therefrom, an axle or shaft journaled in the front end of the bar or beam and having guide-wheels for traversing the railway rails, a yoke-shaped frame provided with journal boxes in which said axle or shaft is journaled, and having its front end portions extended laterally over the railway-rails, uprights or standards carried by the lateral extensions of the yoke shaped frame, stretcher-bars connected with the lower ends of the standards or uprights, a rod or shaft connecting the front ends of the stretcher-bars and provided with an elastic buffer, and a net connected with said rod or shaft and with the upper ends of the standards or uprights, substantially as described.

545,580. METALLIC PACKING. THOMAS CRABTREE, McCook, Nebr. Filed Nov. 15, 1894. Serial No. 528,946. (No model.)



Claim.—In a metallic packing, the combination of the following instrumentalities, to wit: the housing D adapted to receive an ordinary piston rod, of the packing ring, A the principal two-part dished packing ring C, said ring having an annular groove 3, and a central opening 6, the two-part metallic packing E, said ring being provided with the pin 7, the spring 8 encompassing the dished ring C, the sectional packing rings F and H, each section being less than half a circle and being provided with a circumferential groove, and the spring 9 within said groove, all substantially as and for the purpose set forth.

545,581. ADJUSTABLE CUT-OFF SEPARATOR AND GRADER. DAVID J. DAVIDSON, Port Huron, Mich., assignor to the Davidson, Martin Manufacturing Company, same place. Filed Oct. 16, 1894. Serial No. 526,100. (No model.)



Claim.—1. In a cut off separator and grader, a screen, a bottom located beneath said screen provided with a series of longitudinal inverted V-shaped partitions separating said bottom into a series of longitudinal troughs, transverse ported slides to open the bottom of said troughs at any desired point, discharge ducts arranged beneath each of said ported slides, said bottom and said screen simultaneously agitable in the same direction, substantially as set forth.

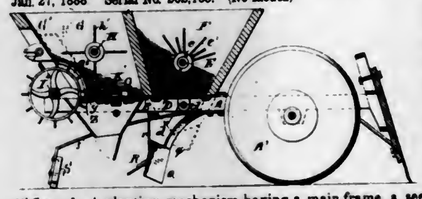
2. In a cut off separator and grader, the combination of a screen, a bottom located therebeneath, means for vibrating said bottom and screen in the same direction, a series of longitudinal inverted V-shaped partitions secured to the upper side of said bottom parallel to each other and separating said bottom into a series of longitudinal troughs, a series of transverse ported slides adapted to open the bottom of all of said troughs at any desired point, and inclined discharge ducts secured to the bottom beneath each of said slides, substantially as set forth.

3. In a cut off separator and grader, an agitable frame B, a screen located therein, a bottom located at the base of said frame beneath said screen provided with a series of longitudinal inverted V-shaped partitions separating said bottom into a series of longitudinal troughs, a series of transverse ported slides to open the bottom of said troughs, a discharge duct arranged beneath each of said slides, and means for agitating said frame, substantially as set forth.

4. In a cut off separator and grader, an agitable frame B, a screen located therein, a bottom located at the base of said frame beneath said screen provided with a series of longitudinal inverted V-shaped partitions separating said bottom into a series of longitudinal troughs, a series of transverse ported slides to open the bottom of said troughs, a discharge duct arranged beneath each of said slides, and means for agitating said frame, said agitable frame made vertically adjustable, substantially as set forth.

5. In a cut off separator and grader, the combination of a supporting frame A, an agitable frame B, a screen engaged with the agitable frame and means to vertically adjust the agitable frame, adjustable follow boards, said agitable frame having a bottom located beneath said screen provided with a series of longitudinal troughs, a series of transverse ported slides to open the bottom of said troughs, a transverse discharge duct arranged beneath each of said slides and means for agitating the agitable frame, substantially as set forth.

545,582. PLANTER. JOHN H. ELWARD, Whitewater, Wis. Filed Jan. 27, 1888. Serial No. 262,165. (No model.)



Claim.—1. A planting mechanism having a main frame, a seed hopper secured to said frame, a corn feeding mechanism connected with said hopper and adapted to be supplied from the chamber therein, and a cotton seed feeding wheel having forcing fingers which penetrate or move through the bottom of the hopper independently of the corn feeding mechanism whereby they can positively force charges of cotton seed through it, the said corn feeding mechanism and cotton feeding wheel being each adapted to have all of its parts thrown out of action when the other is operating, substantially as described.

2. A planting mechanism having a main frame, a seed hopper secured to said frame, a corn feeding mechanism connected with said hopper and adapted to be supplied from the chamber therein, and a cotton seed feeding wheel mounted on a shaft outside of the hopper chamber and having seed forcing fingers which penetrate or pass through one of the walls of the hopper in entering the same and which penetrate or pass through the bottom of the hopper in passing out therefrom, the said corn feeding mechanism and cotton seed feeding wheel being each adapted to have all of its parts thrown out of action when the other is operating, substantially as described.

3. The cotton planting mechanism entering the main frame, a seed hopper secured to the said frame, a corn feeding mechanism connected with said hoppe: and adapted to be supplied from the chamber therein, and a cotton seed feeding wheel mounted on a shaft in rear and outside of the hopper and directly behind the corn feeding mechanism and having forcing fingers which penetrate or pass through the rear wall of the hopper in entering the same and penetrate or pass through the bottom of the hopper in passing out therefrom, whereby they can positively force charges of cotton seed out from the same seed chamber through the bottom thereof, the said corn feeding mechanism and cotton feeding wheel being each adapted to have all of its parts thrown out of action when the other is operating, substantially as described.

4. A planting mechanism having a main frame, a hopper secured to said frame having a seed chamber, a corn feeding mechanism connected with said hopper and adapted to be supplied from said chamber, a cotton seed feeding wheel mounted on a shaft in rear and outside of said hopper, a shaft mounted below the corn feeding mechanism parallel to the aforesaid shaft, and provided with a wheel for operating the corn feeding mechanism, the said two parallel shafts being adapted to be alternately engaged with a driving wheel, substantially as described.

5. A planting mechanism having a main frame, a hopper secured to said frame and having a seed chamber, a horizontally mounted, revolving corn feeding plate connected with said hopper, and adapted to be supplied from said chamber, and a cotton seed feeding wheel mounted on a shaft outside and in rear of the said hopper and adapted to revolve partially within the same, a shaft mounted directly below the aforesaid corn feeding mechanism and parallel to the last aforesaid shaft, and having a wheel connected with a revolving corn dropping plate and a driving mechanism adapted to be detachably engaged alternately with the two said parallel shafts, substantially as described.

6. A planting mechanism having a main frame, a hopper rigidly secured to said frame having a seed chamber, a corn feeding mechanism connected with said hopper and adapted to be supplied from said chamber, and a cotton seed feeding wheel mounted on a shaft outside of said hopper and having forcing fingers which move into the said chamber through the rear wall and out therefrom through the bottom, the length of the inward projecting parts of the said fingers being variable, substantially as set forth, the said corn feeding mechanism and cotton feeding wheel being each adapted to have all of its parts thrown out of action when the other is operating, substantially as described.

7. In a planter, the combination with a main frame and a seed receptacle rigidly secured to said frame and having a wall plate provided with a wheel aperture, of a cotton seed feed wheel, the said wheel and wall plate being adjacent to each other, and one being adjustable relatively to the other, substantially as set forth, independently of any movement of the hopper relatively to the frame to vary that part of the wheel which projects through the aperture in the said plate, substantially as set forth.

8. In a planter, the combination with the feed forcing wheel feeding fingers, of the adjustable plate adjacent to the wheel and movable relatively to both the said fingers and the seed receptacle, substantially as set forth.

9. In a planter, the combination with the seed receptacle and the feed forcing wheel arranged to intersect one of the walls of the receptacle, said wall having a passage way for the wheel and fastening mechanism for said wall adapted to permit it to be moved relatively to the said seed receptacle to adjust it in relation to the feed wheel, substantially as set forth.

10. A planting mechanism having a seed carrying receptacle with two compartments, two alternately acting seed feeding mechanisms, one for cotton and the other for corn, one taking its charges of seed from one of said compartments and the other from the other compartment and each adapted to be thrown out of operation when the other is acting and both being permanently secured to the said seed receptacle, substantially as described.

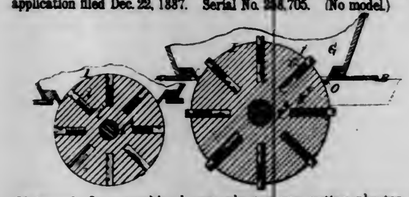
11. A planting mechanism having a seed carrying receptacle with two seed compartments, a vertically arranged force feed wheel for cotton having fingers passing through the rear wall of one of said seed compartments and corn carrying devices arranged to travel in proximity to the bottom of the other seed compartment, both said seed feeding mechanisms being permanently secured in position, and each being adapted to be operated when the other is thrown out of action, substantially as described.

12. A planting mechanism having a seed carrying receptacle with two seed compartments, a force feed mechanism for cotton seed

mounted outside of the said seed carrying receptacle and having its feeding devices arranged to take charges of seed from one of said compartments, and corn feeding mechanism situated inside of the other of said compartments, and a movable partition between the seed compartments, the seed feeding mechanisms being adapted to be alternately thrown into and out of action, substantially as set forth.

13. A planting mechanism having a seed carrying receptacle with two seed compartments, a vertically moving feed wheel mounted at the rear of said receptacle and having teeth to force charges of seed from one compartment, a horizontally arranged seed wheel in the other compartment said seed wheels being actuated alternately, a power mechanism alternately connected with said seed wheels, a removable partition between said compartments, and a common feed spout below and receiving material from both of said compartments, substantially as set forth.

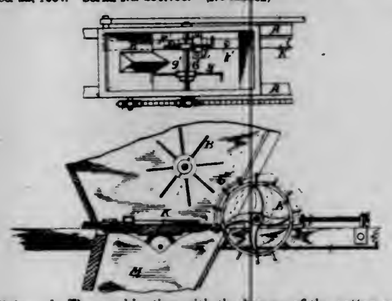
545,583. PLANTER. JOHN H. ELWARD, Whitewater, Wis. Original application filed Sept. 15, 1887, Serial No. 249,767. Divided and this application filed Dec. 22, 1887. Serial No. 258,705. (No model.)



Claim.—1. In a combined corn planter and cotton planter, the combination with the hopper, of the seed dropping wheel having a series of cavities, fingers adapted to project from the periphery of said wheel and also to be placed inside of said periphery, and a series of independent screw threaded devices for adjusting said fingers to different positions and holding them in one or the other, substantially as set forth.

2. The combination with the hopper or seed receptacle having two compartments, of a seeding wheel mounted below one of said compartments and at the side or end of the other and having a series of seed cavities and a series of adjustable seeding fingers, substantially as set forth.

545,584. PLANTER. JOHN H. ELWARD, Whitewater, Wis. Filed Dec. 22, 1887. Serial No. 258,738. (No model.)



Claim.—1. The combination with the hopper of the cotton seed feeding wheel mounted outside of the hopper and adjustable relatively thereto independently of any movement of the hopper, substantially as set forth.

2. The combination with the hopper having its bottom provided with rearwardly projecting parallel arms, of a distributing wheel having fingers or teeth and the adjustable journal boxes having slotted portions through which nutted bolts are passed, substantially as shown and described.

3. The combination with the hopper and the toothed cotton feed wheel of the adjustable plates or flanges at the sides of the inwardly projecting portion of the wall, and the clamping mechanism on the outside of the hopper for securing said plates after adjustment, substantially as set forth.

4. The combination of the hopper and the toothed wheel of the adjustable plates or flanges at the side of the inwardly projecting portions of the wheel, means for joining together the said flanges at their upper ends and a clamping device outside of the hopper by which both of said flanges can be secured rigidly, substantially as set forth.

5. The combination with the hopper and the toothed cotton seed feeding wheel, of clamping bolts c^6 for securing said wheel after adjustment, and the lock supplemental to said bolts for preventing displacement of the wheel, substantially as set forth.

6. The combination with the hopper and the toothed cotton seed feeding wheel, of the sliding bearings for the said wheel, and the horizontally arranged adjusting mechanism for the seed wheel, substantially as described.

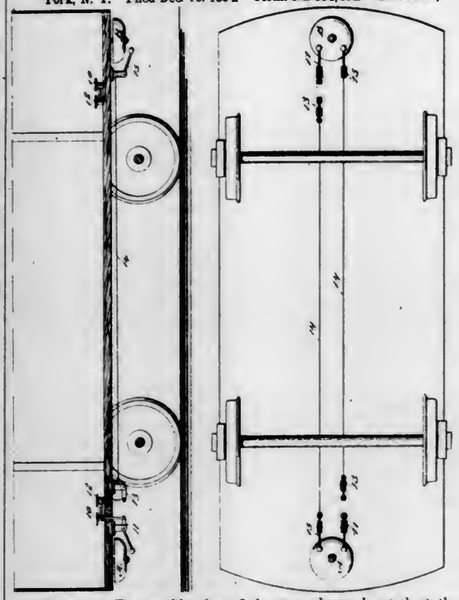
7. The combination with the hopper and the cotton seed feeding wheel mounted outside of the hopper, of the bottom plate of the hopper having rearwardly projecting metallic arms secured thereto for supporting the cotton seed feeding wheel, substantially as described.

8. A planting mechanism having a seed carrying hopper, a cotton seed feeding wheel mounted outside of said hopper adapted to have a portion thereof pass through the rear wall and bottom of the hopper, and the reciprocating corn dropping bar mounted in said hopper, the said cotton seed feeding wheel and the reciprocating corn dropping bar being adapted to receive charges of seed from the feed hopper and each adapted to be thrown out of action when the other is in operation, substantially as set forth.

9. The combination with the hopper and the cotton seed feeding wheel, of the sliding bearings for said wheel, the screw rod c^9, the abutment c^8 and clamp c^{10}, substantially as described.

10. In a cotton and corn planting machine, a cotton planter feed wheel which penetrates the rear wall and bottom of the hopper substantially as and for the purpose set forth in combination with a sliding corn dropping device arranged substantially as set forth and for the purpose specified.

545,585. CAR SIGNALING APPARATUS. CHARLES HAROLD, New York, N. Y. Filed Dec. 10, 1894. Serial No. 531,414. (No model.)



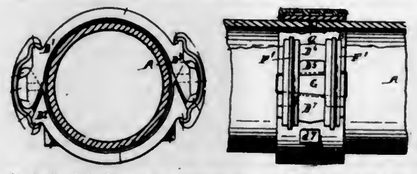
Claim.—1. The combination of the two alarms located at the ends of the car, and two sounding devices for each alarm, one of the said devices of each alarm being constructed to be operated from the same end of the car that carries the said alarm, and the other device having operative connections extending to the opposite end of the car, substantially as described.

2. The combination, of the two alarms located at the ends of the car, two actuating devices projecting adjacent to each other from each platform of the car, an operative connection from one of the said devices to the alarm at the same end of the car, and an operative connection from the other actuating device to the alarm at the opposite end of the car, substantially as described.

545,586. PIPE-JOINT. SOLON G. HOWE, Detroit, Mich., assignor of one-half to David Inglis, same place. Filed Nov. 1, 1894. Serial No. 527,629. (No model.)

Claim.—1. Two adjoining pipes, provided on their ends with the flanges a', a^3, combined with a metallic sleeve D, made in two parts, and provided with end flanges d^3, d', d^2, the compressible sleeve held between the flanges d, d^2, and means for compressing the metallic sleeve upon the compressible one; the flanges a', a^3, upon the pipes being made to catch between the two flanges at each end of the metallic sleeve, substantially as shown.

2. A pipe joint having in combination a band, a compressible sleeve made of two semi-circular pieces of wood, and a metal sleeve made in two semi-circular parts compressed about and upon the wooden sleeve, and means to hold the parts of the metal sleeve in compressed position upon the wooden sleeve, substantially as set forth.

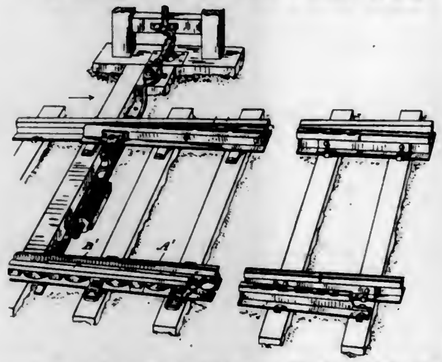


3. A pipe joint having in combination a compressible sleeve made in sections, and a metal sleeve also made in section, and provided with projecting lugs D^4, D^5, D^6, D^7; the lugs D^6, D^7, each having wedge shaped edges leading from the ends of the sleeve inward toward the center; wedges inserted between the projecting lugs D^4, D^5, and clamping wedges F' engaging the lugs D^6, D^7, on each end of the sleeve, substantially as set forth.

4. A pipe joint having in combination a compressible sleeve made in section, a metal sleeve made in sections, a wedging device engaging said metal sections upon the compressible sleeve, said metal sections provided with projecting lugs D^6 D^7 each having wedge-shaped edges leading from the ends of the sleeve inward toward the center of the sleeve, and additional clamping wedges F' F' engaging said lugs on each end of the sleeve, substantially as set forth.

5. In a pipe joint, a compressible sleeve, and a metal sleeve formed in sections, each provided with projecting lugs D^6 D^7 having wedge shaped edges leading from the ends of the sleeves inward toward the center, and clamping wedges engaging said lugs on each end of the sleeve, substantially as set forth.

545,587. RAILROAD-SWITCH. CHARLES S. JACKSON, Bridgeburg, Canada. Filed July 1, 1895. Serial No. 554,580. (No model.)



Claim.—1. In a railroad switch the combination with the main rail having a series of openings in the web, of the split rail having a series of projections formed on or attached to the adjacent side of the split rail opposite the openings in the main rail as and for the purpose specified.

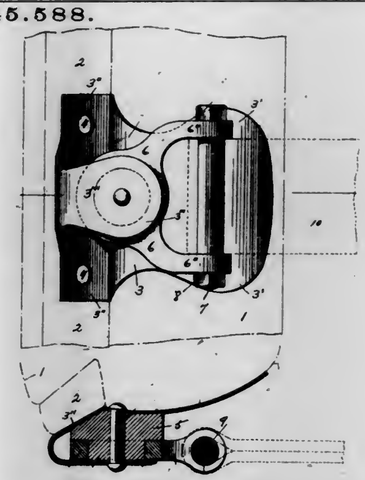
2. In a railroad switch the combination with the main rail having a series of openings in the web, of the split rail the bar fitted into it and provided with a series of projections opposite the openings in the main rail as and for the purpose specified.

3. In a railroad switch the combination with the main rail having a series of openings in the web, of the split rail the bar fitted into and secured to the same, and the rounded projections having the ridge tops arranged as and for the purpose specified.

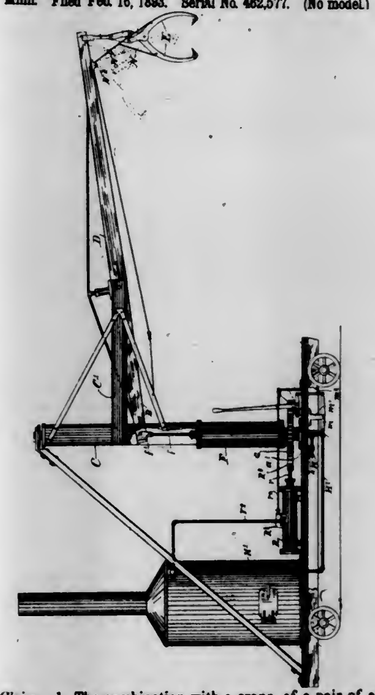
545,588. HAME-TUG ATTACHMENT. JOSEPH JEANNOTTE, Worcester, Mass., assignor to Joseph Geoffroy and Joseph A. Brule, trustees, same place. Filed June 7, 1895. Serial No. 552,044. (No model.)

Claim.—In a hame tug attachment, the combination with a plate, having the rear portion curved in cross section, and the front portion flat, and extending at an angle to the curved portion, and a rearwardly extending portion substantially parallel to the main portion of the plate, and a block, with a circular boss, secured on said plate, intermediate the main portion and the rearwardly extending portion, of a tug loop having an opening therein adapted to fit on said boss, to give a swivel motion to said loop, substantially as set forth

545,588.



545,589. POWER-CRANE. FREDERICK O. KILGORE, Minneapolis, Minn. Filed Feb. 16, 1893. Serial No. 462,577. (No model.)



Claim.—1. The combination with a crane, of a pair of engines applied one to raise or lower the load and the other to swing the crane and a common controller for the valves of both engines, substantially as described.

2. The combination with a crane having a pivoted jib, of a pair of reciprocating engines, the reciprocating members of which act respectively one to oscillate the mast and the other to oscillate the jib and a common hand controller for the valves of both engines mounted for simultaneous or independent action on the said valves, whereby both engines may be independently or simultaneously operated under control from a common source, substantially as described.

3. The combination with a crane having a pivoted jib, of a pair of reciprocating engines applied one to swing the crane and the other to raise or lower the jib, and a common controller for the valves of both engines in the form of a hand-lever having a universal movement, substantially as and for the purposes set forth.

4. The combination with the crane having a pivoted jib of the engines F F' and R R' operating as described, the bell crank handlever M pivoted to the swivel m^3, and provided with the connections m^3 m H' to the valve F^3 and with the connections r^6 r^7 r^4 to the valve r^3, arranged and operating, substantially as described.

5. The combination with a crane having a pivoted jib, of the pair of reciprocating engines having their reciprocating members applied respectively one to swing the crane and the other to raise or lower the jib, a common controller for the valves of both engines capable of independent or simultaneous action thereon, a lazy tongs grapple having its head toggle connected to the jib by an unyielding link, and a grapple opening device provided with an operating connection extended to within reach of the operator, whereby both of the engines and the grapple are under the control of a single operator from one position.

6. The combination with a crane having a pivoted jib of the engine on the mast having its piston applied to operate the jib and provided on one of its cylinder heads with a recessed extension forming a pintle or pivot for the mast and a seat for the engine valve, a sliding valve in said seat and a combined supply pipe and valve stem movable axially in said seat for supplying the fluid and controlling the valve, substantially as described.

7. In a crane having the pivoted jib D, the combination with the lazy tongs grapple E e having its head toggle pivotally connected with the jib by the rigid link e', of the guide sheave N^3 located on the jib, a short distance back of the grapple, and the combined opening and swinging device N applied to the grapple and provided with the common connection N' passing over said sheave N^3, substantially as and for the purpose set forth.

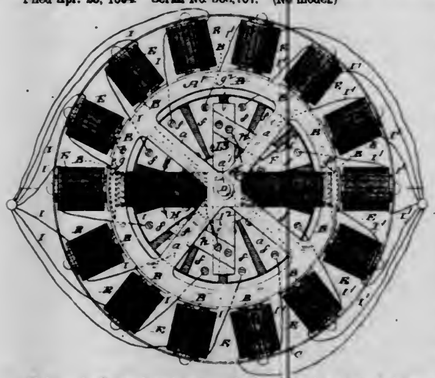
545,590. SPINNING-SPINDLE. HENRY D. KLOTZ, New York, N. Y.
Filed Dec. 10, 1894. Serial No. 531,351. (No model.)



Claim.—1. The combination, with a spindle rail, a spindle, and its bearing mounted yieldingly on the rail, of an anti-vibrating spring held rigidly at one end by the spindle bearing so as to partake of the vibratory movements thereof on its yielding bearing, but at its other end loose and free to vibrate laterally in all directions in accordance with its own period of vibration.

2. The combination, with a spindle rail, a spindle, its bearing mounted yieldingly on the rail, and a spring interposed between the bobbin-holding portion of the spindle and the portion of the bearing mounted yieldingly on the rail, of an anti-vibrating spring held rigidly at one end by the spindle bearing, but its other end loose and free to vibrate laterally in accordance with its own period of vibration.

545,591. ELECTRIC MOTOR. OTTO E. H. KRAMER, St. Louis, Mo.
Filed Apr. 23, 1894. Serial No. 508,707. (No model.)



Claim.—1. In an electric motor the combination of the field magnets radially arranged, the two diamagnetic frame pieces and a pole piece for each magnet whose ends are attached to said frame pieces and support the magnet, substantially as described.

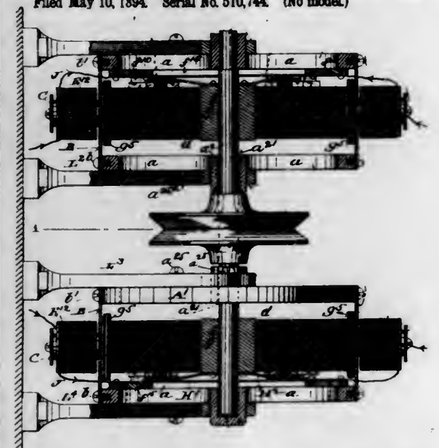
2. The circular series of field magnets supported on an inner diamagnetic frame, an outer paramagnetic ring connecting the cores of the magnets, and an armature, substantially as described.

3. In an electric motor, the combination of a series of field magnets supported on an inner diamagnetic ring and having their outer poles connected by means of a paramagnetic ring, substantially as described.

4. In an electric motor, the combination of a series of field magnets each having a pole piece a frame within which the armature of the motor revolves, composed of two side pieces of diamagnetic material and to which the ends of the pole pieces of said field magnets are attached and a straight spool wound armature, and commutator for leading electricity from the field magnets to the armature coils and from the latter coils to the field magnets, substantially as described.

5. In an electric motor the combination of the outer circular series of magnets and the inner circular frame, the pole pieces of said magnets being parts of said frame, substantially as described.

545,592. ELECTRIC MOTOR. OTTO E. H. KRAMER, St. Louis, Mo.
Filed May 10, 1894. Serial No. 510,744. (No model.)



Claim.—1. The combination of two motors whose armatures run on a single shaft and are supported solely in outer bearings, substantially as described.

2. The combination of two motors having stationary field magnets and revolving armatures said armatures being supported on a single shaft and the armature shaft carrying between the armatures a pulley, substantially as described.

3. The combination of two motors each having a circular series of stationary field magnets, and the armatures of both magnets being supported on a single shaft journaled at its ends only, in outer bearings and carrying midway between the armatures the pulley substantially as described.

4. The combination of the motor-frame and the plumber blocks, said frame being journaled in said blocks to be rotated when released, substantially as described.

5. The combination of the motor-frame having the socket, the motor shaft stepped in said socket, and the supports for said motor frame, substantially as described.

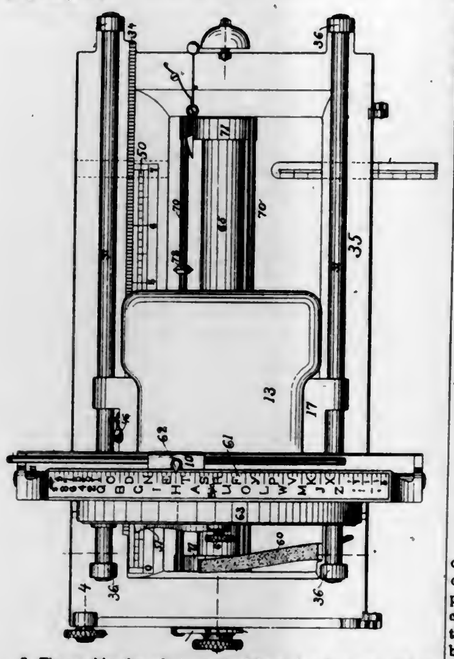
545,593. POULTICE. REINHOLD KUHNERT, Berlin, Germany.
Filed May 1, 1895. Serial No. 547,723. (No specimens.)

Claim.—A cataplasm or poultice consisting of a mixture of linseed meal and sodium acetate contained in a water-tight flexible cover.

545,594. TYPE-WRITING MACHINE. SWANTE P. LARSON, Chicago, Ill.
Filed Mar. 26, 1894. Serial No. 505,152. (No model.)

Claim.—1. The combination in a type-writing machine supported upon rollers, and adapted to be moved thereon upon a level plane to space the lines of writing, of a sliding-frame, adapted to be fed or moved along to space or form the letters in writing, a supporting frame pivotally attached to said sliding frame and movable thereon in a vertical direction, a type-wheel rigidly mounted upon a shaft journaled to be rotated in said supporting frame, and adapted to be moved vertically therewith to form the impression, and a spring adapted to lift said type-wheel and frame to a non-impression position substantially as and for the purpose specified.

2. The combination in a type-writing machine, adapted to write upon a level plane as described, of a type-bearing-wheel mounted upon a shaft, and adapted to be rotated therewith, an index upon the face side of said type-wheel of the letters and characters borne thereon, a frame adapted to form a support and bearing for said type-wheel and shaft, said frame pivotally attached to a slide, and adapted to be moved in a vertical direction thereon to form the impression, said slide adapted to be fed or moved along the line of writing one letter for each impression movement, and a stop attached to said type-wheel frame, adapted to limit the upward or non-impression movement thereof, and also adapted to press down the paper holding spring when the impression is formed, substantially as and for the purpose specified.



3. The combination of a type-wheel formed as described, and removably mounted upon a shaft, said shaft supported in a frame pivotally attached to a slide, a drum secured to said shaft, a flexible wire cord wound around said drum and secured at one point thereto, the ends of said wire cord, attached to the opposite ends of a spring bar adapted to hold said wire cord tightly drawn around said drum, said spring bar centrally supported by, and attached to an indicator arm fitted to slide upon a guide rod transversely to said shaft, to rotate said shaft and type wheel, substantially as and for the purpose specified.

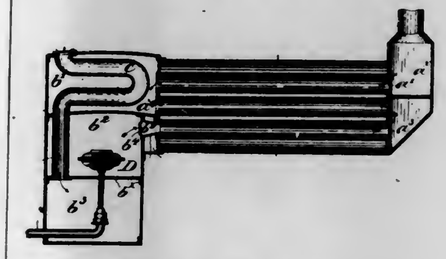
4. In a type-writing machine adapted to be moved as described to write upon a level plane or sheet, the combination therein of a type-wheel provided upon its front face with an index of the letters and characters upon the periphery thereof, and with a detachably formed registering toothed ring secured to the reverse side of said type-wheel; said type-wheel removably mounted upon a shaft, and adapted to be rotated therewith, said shaft journaled in bearings of a supporting frame pivotally attached to a slide, said slide provided with a fixed pointer adapted to indicate the letter to be printed represented upon the face side of the type-wheel, an upward projecting arm formed with or attached to said slide, adapted to limit the downward or impression movement of the type-wheel, and a fixed registering tooth attached to said slide substantially as and for the purpose specified.

5. In the described type-writing machine the combination of a type-wheel supported upon a shaft, and adapted to be rotated therewith; said shaft journaled in a vertically movable frame, an index attached to the top of said frame transversely to said shaft, representing the letters and characters upon said type-wheel, and an indicator pointer attached to a spring-bar adapted to move connectedly and in unison with the periphery of said type-wheel to indicate the letter or character thereon to be written, substantially as and for the purpose specified.

6. The combination in the described type-writing machine, of a feed motion arm actuated by the impression movement of the type-wheel frame, an intermediate pawl, carrying arm pivotally attached to said feed motion arm, and operated by means of a fixed point or projection upon one side of said feed motion arm, and an adjustable projection upon the other side to vary the stroke of said pawl carrying arm, a retaining pawl, and a shaft provided with a transverse projection interposed between said pawls and adapted to simultaneously lift and retain said pawls lifted from the teeth of the feed rack, substantially as and for the purpose specified.

7. The combination of a type-wheel supporting frame, pivotally attached to a sliding frame, an ink-roller carrying arm pivotally attached to said type-wheel frame, and provided with a lateral cam projection thereon, a stationary stud roller supported upon said sliding frame, said ink-roller and arm adapted to be pushed or turned to one side of the impression point, by said cam acting against said roller with the downward impression movement, and to be carried underneath the type-wheel to ink the type by means of a spring, when the upward movement takes place, an inking pad, attached to the bed plate frame of the machine for inking said ink-roller, and a screw rod attached to said supporting pivoted frame with a nut adjustable thereon, to form a stop, to limit the lifted height of said frame, the free end of said screw adapted to press down a paper retaining spring, substantially as and for the purpose specified.

545,595. HYDROCARBON-BURNER. BENJAMIN F. LAWTON, Riverdale, N. J.
Filed July 1, 1895. Serial No. 554,562. (No model.)



Claim.—1. The combination with a steam-generator having flues, of an apparatus connected therewith for mixing hydrocarbon vapor or gas with air in proper proportions for use, said apparatus comprising an air-chamber b^3, means for introducing heated air to said chamber, a combining chamber b^3, a perforated diaphragm or partition between the chambers b^3 and b^3, a pipe to lead the hydrocarbon to the chamber b^3, a mixer or nozzle on the delivery end of said pipe, means for leading the mixed air and hydrocarbon to the flues of the boiler, and an igniting chamber whereat the gases are ignited at the point where they enter said flues, substantially as set forth.

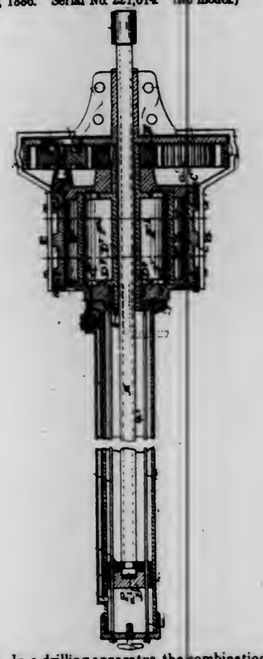
2. The combination with a steam-generator having three tiers of flues a', a^3 and a^3, the chamber a, connecting the front ends of the tiers of flues a^3 and a^3, the breeching $a^\times$, to receive the gases from the upper tier of flues a', and the stack a^4, of the chamber b', connecting the flues a' and a^3 at their rear ends, the combining chamber b^3, the air-chamber b^3, the perforated partition between the chambers b^3 and b^3, the air-supply pipe c, extending through the chambers b' and b^3 and opening into the chamber b^3, whereby a supply of heated air is provided, the pipe leading the hydrocarbon to the combining chamber b^3, the perforated mixing nozzle on the delivery end of said pipe, the igniting chamber b^4, between the chamber b^3, and the rear ends of the flues a^3 of the generator, the nozzles b^5, adapted to lead the gases from the combining chamber to the flues across the igniting chamber, and the screen or screens over the gas-outlets from the combining chamber, substantially as set forth.

3. The combination with a flue-boiler or steam-generator, of an igniting chamber b^4, at the rear end of the flues of said generator, said chamber provided with a door, means for mixing air and hydrocarbon gas or vapor, a chamber to contain said mixed gas and air adjacent to the igniting chamber, a screened outlet for said gases where the latter pass to the generator flues, and nozzles b^5, extending from said outlets into the flues across the igniting chamber, said nozzles having apertures b^6, to permit of the ignition of the gases, substantially as set forth.

4. In an apparatus for mixing heated air with hydrocarbon gas or vapor, a chamber b', adapted to receive heated gases, a hot air-chamber b^3, an air-pipe c, extending through the chamber b' and adapted to deliver air to the chamber b^3 in regulated quantity, a combining or mixing chamber b^3, a perforated partition $b^\times$ between the air-chamber and said combining chamber, and a pipe adapted to lead hydrocarbon gas or vapor to said combining chamber in regulated quantities, said combining chamber having a screened outlet for the mixed gases, substantially as set forth.

5. In a hydrocarbon burner, the combination with the supply-pipe d^{10}, the tube d^3, connected therewith, means for regulating the supply of gas passing from the pipe d^{10} to the tube d^3, the air-chamber d, about the tube d^3, means for regulating the admission of air to said chamber d, the mixing chamber d^2, having outlet perforations in its top or crown, the perforated diaphragm d^4, between the air-chamber and the mixing chamber, and the chamber or perforated nozzle d^5, on the end of the tube d^3, within the mixing chamber, substantially as set forth.

545,596. COAL OR ROCK DRILL. BENJAMIN A. LEGG, Columbus, Ohio, assignor to the Lechner Manufacturing Company, same place. Filed Dec. 8, 1886. Serial No. 221,014. (No model.)



Claim.—1. In a drilling apparatus, the combination of the rotary drill shaft, the rotary engine having a rotary piston concentric with the drill shaft the driving wheel secured to the piston and the gear wheel driven thereby and connected to the drill shaft, substantially as set forth.

2. The combination of the rotary engine the piston thereof having a hollow axis or shaft, the gear wheel secured to said hollow shaft, the rotary drill shaft passing loosely through the said gear wheel, and means connecting the said gear wheel with the shaft, substantially as set forth.

3. The combination of the rotary engine, having its piston mounted on a hollow shaft formed with journals secured in bearings on the engine, the gear wheel secured to the said hollow shaft, the drill shaft situated loosely in the said hollow piston shaft, the wheel concentric with said gear wheel and engaging with the drill shaft and provided with a hollow shaft or journal, the bearing for the last said hollow shaft or journals secured to the stationary parts of the engine, substantially as described.

4. In a coal or rock drill the combination of the engine, the rotating engine shaft; the driving wheel actuated by the engine, the drill shaft parallel to the engine shaft, the driven wheel which actuates the drill shaft and has a hollow shaft or journal on that side of the wheel opposite to the engine and parallel to the engine shaft, a bearing for said hollow shaft or journal, a support for the said bearing secured to the engine, and a driving wheel for actuating the aforesaid driven wheel mounted on the axis thereof, substantially as described.

5. In a coal or rock drill the combination of the engine, the driving wheel rotated by the engine, the drill shaft, and the driven wheel connected to the drill shaft, said drill shaft, driving wheel and driven wheel being all mounted on the same axis, substantially as set forth.

6. In a coal or rock drill the combination of the drill shaft, the engine, the driving wheel connected to the engine and situated concentrically with the drill shaft, the driven wheel connected to the drill shaft, and the intermediate wheel between the driving and the driven wheels and supported upon the engine, substantially as described.

7. The combination of the drill shaft, the wheel engaging therewith, the feed tube and piston for advancing the drill shaft, the engine with rotary piston, said drill shaft, feed tube, driven wheel and rotary piston being all concentric, and the intermediate devices for transmitting power from the engine piston to the said driven wheel, substantially as described.

8. The combination of the drill shaft, the driven wheel engaging with the shaft, the rotary engine having its piston concentric with the said wheel, the stationary frame and the trunnions situated on a line above the bottom of the piston chamber and in the plane of the drill shaft, substantially as set forth.

9. In a drilling apparatus the combination with the rotating drill shaft, of a feed tube, a non-rotating piston therein and one or more guides stationary relatively to the drill shaft, and on lines eccentric to the drill shaft and engaging with the piston to prevent it from rotating substantially as set forth.

10. In a drilling apparatus the combination with a rotating drill shaft of the feed tube O, the piston therein and the rods R R passing directly through the piston, said rods being held stationary relatively to the drill shaft to the ends of the tube, substantially as described.

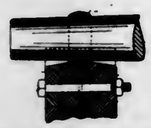
11. In a drilling apparatus, the combination with a rotary drill shaft, of a feed tube, the piston therein, and guides for said piston parallel to said drill shaft, and mounted stationarily in the ends of the feed tube, substantially as set forth.

12. In a drilling apparatus, the combination with a rotary drill shaft of the feed tube, a non-rotating piston therein, and guide rods mounted entirely within the feed tube, substantially as set forth.

13. In a drilling apparatus, the combination with a rotary drill shaft, of a feed tube, the non-rotating piston therein loosely connected to said shaft, guide rods passing through the piston, and a stop to limit the backward movement of the piston, substantially as set forth.

14. In a drilling apparatus, the combination with the drill shaft and the power devices for rotating said shaft, of the feed tube mounted directly behind the power device, the non-rotating piston loosely connected to the end of the drill shaft, and means stationary relatively to the feed cylinder engaging positively with said piston to prevent it from rotating, substantially as set forth.

545,597. MANUFACTURE OF FINGER-RINGS. HARRY LEHR, New York, N. Y., assignor of one-half to the Meerbott Manufacturing Company, same place. Filed Dec. 17, 1894. Serial No. 532,028. (No model.)



Claim.—1. The herein described improvement in the manufacture of finger rings consisting in cutting out a circular imperforate blank, stamping the same up into a cup shape, cutting out the bottom of the cup and thereby forming a cylindrical ring blank, and swaging such ring blank between a mandrel and dies with recessed surfaces to give the blank the required sectional shape, substantially as set forth.

2. The herein described improvement in the manufacture of finger rings consisting in cutting out a circular imperforate blank, stamping the same up into a cup shape, cutting out the bottom of the cup and thereby forming a cylindrical ring blank, and swaging such ring blank between a mandrel and dies with recessed surfaces to give the blank the required sectional shape, and also rolling the ring between rollers to finish the surfaces of the edges, substantially as set forth.

3. In the manufacture of finger rings the dies K and L having plain recessed surfaces and divided into two parts centrally and longitudinally through such recessed surfaces, and removable plates introduced between the two parts of the dies and having plain edges conforming to the curved recessed surfaces of the dies and which plates are changeable for similar plates of different thicknesses, and bolts for securing the dies and plates together so as to adapt such dies to finger rings of different widths, substantially as set forth.

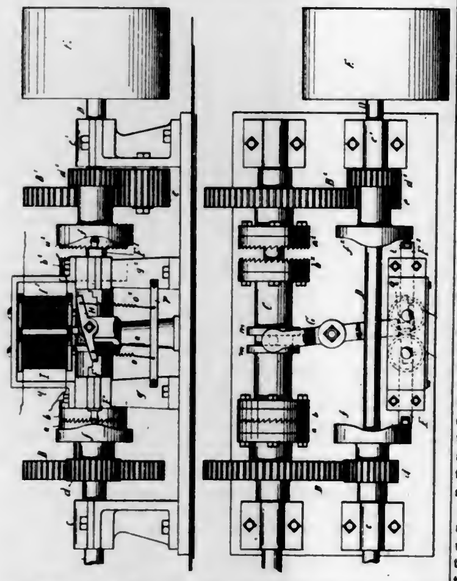
545,598. LUBRICATOR. THEODORE G. LEWIS, Buffalo, N. Y., assignor to the Buffalo Dental Manufacturing Company, same place. Filed Feb. 4, 1895. Serial No. 537,152. (No model.)



Claim.—1. The combination with a stud or stem provided at its upper portion with a projecting flange and in its lower portion with an oil duct, of a cap or cylinder inclosing said stem and provided at its lower portion with an inwardly extending flange, and a spring arranged between the cap and the stem and bearing at its ends against the flanges of the cap and stem, respectively, substantially as set forth.

2. The combination with a stud or stem provided at its upper end with a head or flange and in its lower portion with an oil duct, of a cylinder surrounding said stem and provided at its lower end with an inwardly extending flange, in its upper portion with an internal shoulder and above said shoulder with an inwardly-turned lip, a disk closing the upper end of said cylinder and confined between said shoulder and said lip, and a spring surrounding the stem between the flanges of the cap and the stem, substantially as set forth.

545,599. WATER-WHEEL GOVERNOR. WINFIELD S. LIBBEY, Lewiston, Me. Filed Aug. 21, 1894. Serial No. 520,889. (No model.)



Claim.—1. The combination with a gate operating shaft, gear wheels loose on the shaft, and a clutch carried by the said shaft, of a drive shaft parallel with the gate operating shaft, gearing between the drive shaft and the gear wheels of the gate operating shaft to revolve the said gear wheels in opposite directions, a pivoted clutch operating lever having one end extending adjacent to the drive shaft, means operated by the drive shaft for swinging the clutch operating lever on its pivot to shift the clutch, a governor, and means for controlling the movement of the clutch operating lever from the governor, substantially as described.

2. The combination with a gate operating shaft, gear wheels loose on the shaft, and a clutch carried by the said shaft, of a drive shaft parallel with the gate operating shaft, gearing between the drive shaft and the gate operating shaft to revolve the said gear wheels in opposite directions, a pivoted clutch operating lever having one end extending adjacent to the drive shaft, cams on the drive shaft, intermediate mechanism between the cams and the clutch operating lever for swinging the said lever on its pivot to shift the clutch, a governor, and means for controlling the movement of the clutch lever from the governor, substantially as described.

3. In a water wheel governor, the combination with a gate operating shaft, gear-wheels loosely mounted on the shaft and a clutch carried by said shaft, of a drive shaft, gear wheels meshing with the gear wheels of the gate operating shaft to revolve them in opposite directions, cams on the drive shaft, a pivoted lever for operating the clutch sliding bars for operating the said lever, said bars being operated by the cams, a governor, and means for controlling the movement of the said pivoted lever from the governor, substantially as described.

4. In a water wheel governor, the combination with a gate, operating shaft, gear wheels loose on the shaft, and a clutch carried by said shaft, of a drive shaft, gear wheels meshing with the gear wheels of the gate operating shaft for revolving them in opposite directions, cams on the drive shaft, a pivoted lever for operating the clutch, a tilting and spring actuated bar on one end of the said lever, sliding and spring pressed bars operated by the cams and adapted to engage the tilting bar, and means for tilting the said bar to bring it into engagement with the said sliding bars, substantially as described.

5. In a water wheel governor, the combination with a gate operating shaft, gear wheels loose on the shaft, and a clutch carried by said shaft, of a drive shaft, gear wheels meshing with the gear wheels of the gate operating shaft for revolving them in opposite directions, cams on the drive shaft, a clutch operating lever, a tilting and spring actuated bar on one end of the clutch lever, sliding and spring pressed bars operated by the cams and adapted to engage the tilting bar, a governor, and means operated by the governor for tilting the said bar, substantially as described.

6. In a water wheel governor, the combination with a gate operating shaft, gear wheels loose thereon, clutch disks carried by said wheels, a sleeve fitted to slide but not to turn on the said shaft and clutch disks carried by the sleeve, of a drive shaft, pinions on the shaft, one of the pinions meshing with one of the gear wheels, an intermediate pinion meshing with the other gear wheel and the pinion of the drive shaft, a pivoted lever engaging the sleeve, a tilting and spring actuated bar on one end of the pivoted lever, cams on the drive shaft, sliding and spring pressed bars operated by the cams and provided with shoulders adapted to be engaged by the tilting bar, and means for tilting the said bar to bring its ends in line of travel of the sliding bars, substantially as herein shown and described.

7. In a water wheel governor, the combination of a gate operating shaft, spur wheels placed loosely on the shaft and furnished with clutch disks, a sleeve movable lengthwise of the shaft but not revoluble thereon, clutch disks secured to the sleeve, a lever engaging the sleeve and carrying a tilting lever of magnetic material, reciprocating bars arranged below the ends of the tilting lever, means for reciprocating the bars and revolving the spur wheels in opposite directions, and electro-magnets arranged to act on the tilting lever, substantially as specified.

8. In a water wheel governor, the combination with a gate operating shaft, gear wheels loose on the shafts, and a clutch carried by the said shaft, of a drive shaft, gear wheels for revolving the gear wheels of the gate operating shaft in opposite directions, a clutch operating lever, a tilting and spring actuated bar of magnetic material on one end of the clutch lever, cams on the drive shaft, sliding and spring pressed bars operated by the cams and adapted to engage the tilting bar, electro magnets adjacent to said tilting bar, a governor, and electrical connections between the governor and magnets for alternately energizing the magnets, substantially as and for the purpose set forth.

9. In a water wheel governor, the combination with a gate operating shaft, and a reversing mechanism for said shaft, of electro magnets for controlling the reversing mechanism, a governor, a centrally pivoted lever with which the governor is connected, spring contacts under the ends of the lever, a fixed contact beneath one of the spring contacts, and the electrical connections between the contacts and the magnets, substantially as and for the purpose set forth.

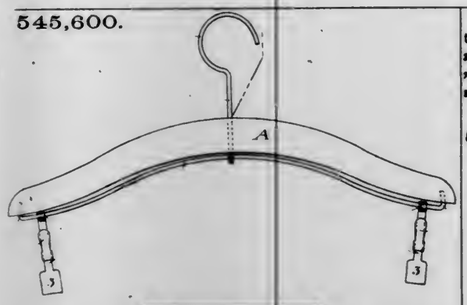
10. In a water wheel governor, the combination with a gate operating shaft, a reversing mechanism for said shaft, electro magnets for controlling the reversing mechanism, a governor, and electrical connections between the governor and magnets, of a traveling arm operated by the gate operating shaft, a spring above the arm and having two contact points with which the arm is adapted to engage, contact points above the spring and electrical connections between the contacts and magnets, substantially as and for the purpose set forth.

11. In a water wheel governor, the combination with a gate operating shaft having one end prolonged and screw threaded, a reversing mechanism for said shaft, electro-magnets for controlling the reversing mechanism, a governor, and the electrical connection between the governor and magnets, of a nut traveling on the screw threaded end of the said shaft, and provided with an arm, a contact spring above the said arm and having downwardly extending projections contact points above the spring contact, and the electrical connections between the contacts and the magnets, substantially as described.

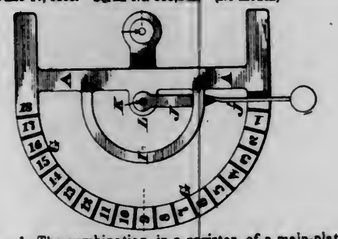
545,600. DEVICE FOR HANGING GARMENTS. BERNARD LIPSCHITZ, East Albany, N. Y., assignor to Jenny Lipschitz, same place. Filed Apr. 4, 1895. Serial No. 544,427. (No model.)

Claim.—The improvement in garment suspenders herein described, consisting of a body, A, provided with a central opening, 7, that passes vertically therethrough, a bar, B, secured longitudinally to the under side of said body, movable grippers, C, arranged to slide on said bar, and a hook, D, whose straight stem is fitted to slide loosely through the central opening 7; the lower end of said stem having an eye, 5, that encircles the bar B, as and for the purpose specified.

545,600.



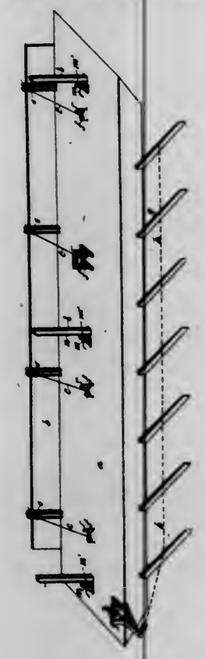
545,601. GAME-COUNTER. JOHN F. LORETSON, Cincinnati, Ohio. Filed June 17, 1895. Serial No. 553,045. (No model.)



Claim.—1. The combination, in a register, of a main-plate having an inner arc-bar, an outer notched and numbered arc-bar; means for attaching said plate to a support; and a pivoted flexible index that engages with either one of said notches, and is retained in place by said inner arc-bar, substantially as herein described.

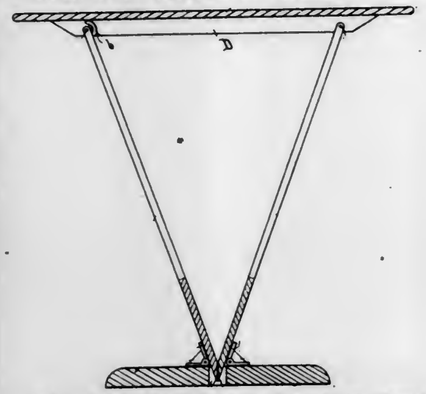
2. The combination, in a register, of the main-plate A, having an inner arc-bar I, an outer notched and numbered arc-bar F, lateral lugs B, B', C, a screw D tapped in the lug C; and a flexible index J J', pivoted to the instrument at K, which index is adapted to engage with either one of said notches, and to be retained in place by said inner arc-bar I, all as herein described, and for the purpose set forth.

545,602. DEVICE FOR CLEANING OUT CHANNELS. MORRELL M. LOONEY, La Crosse, Wis. Filed May 15, 1895. Serial No. 549,493. (No model.)



Claim.—The combination of the barges *a*, the iron aprons *b*, and the fins *g* carried by said barges, and crabs *f* connected to and operating said aprons, and spuds *l* connected to and operated by the crabs *m* and the crab *k* connected to and operating the fins, substantially as described.

545,603. FOLDING TABLE. WILLIAM MACOMBER, Buffalo, N. Y. Filed Nov. 30, 1894. Serial No. 530,307. (No model.)



Claim.—1. Two vertical standards engaging with a base and hinged thereto, beveled interior faces to limit the spread of said standards, transverse cleats and a top, said cleats being pivoted to one of said standards and engaging with the other, for the purposes set forth.

2. The combination of a base with two vertical standards hinged thereto, a top, transverse cleats secured thereto and pivoted to one of said standards and engaging with the other, the lower ends of said standards extending below the hinge point and having their interior lower faces beveled to limit and equalize the spread of said standards, said standards and said cleats forming a stable, inverted isosceles triangle having its apex rigid with said base, as set forth.

3. A base, two vertical standards hinged thereto, a top, and transverse cleats pivoted to one of said standards and engaging with the other, and blocks or stops rigidly secured to said base to limit and equalize the spread of said standards, substantially as set forth.

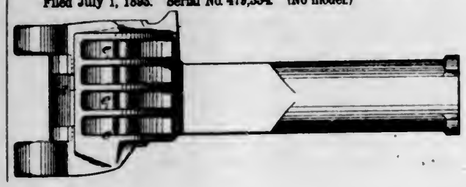
4. Two vertical standards hinged to a base, and having an equal and limited spreading action, a top, transverse cleats secured thereto, a pivot or rod pivoting said cleats to one of said standards, projections upon the other of said standards and two pairs of blind notches in said cleats, the one pair engaging said projections when the table is open to hold it rigid, and the other pair engaging said projections when the table is folded to hold said standards parallel and rigid, for the purposes set for.

5. A base, two vertical standards, a mortise or slot within said base, hinges engaging said base and standards, blocks or stops secured to said base to limit and equalize the spread of said standards, interior beveled faces upon said standards, a top, transverse cleats secured thereto, a rod pivoting one of said standards to said cleats, projections upon the other of said standards, two pairs of notches in said cleats, the one pair taking over said projections when the table is open and the other taking over said projections when said table is folded, substantially as and for the purposes set forth.

6. A base B, having a mortise G, and blocks *d*, standards A and A', hinges F, F, a top C, secured to cleats D, D, cleats D, D, pivoted to standard A' and engaging with standard A, as set forth.

7. A base B, hinged to standards A, A', a top C, cleats D, D, a pivot-rod E', pivoting said cleats to said standard A, a rod E, blind notches *c*, engaging the ends of the rod E when the table is open and blind notches *b* engaging the ends of said rod E when the table is closed, for the purposes set forth.

545,604. CAR-COUPLING. STEPHEN J. MEEKER, Newark, N. J. Filed July 1, 1893. Serial No. 479,334. (No model.)

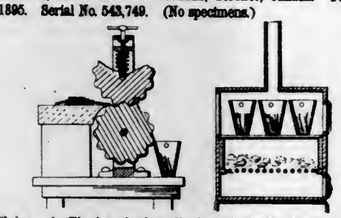


Claim.—1. In a car-coupler, the head of draw-bar provided with the guard-arm *d* and one or more ribs located on its inner shell extending to a point at either side of the line of union between the arm and the shank of draw-bar, substantially as described and for the purpose set forth.

2. In a car coupler, the head of draw-bar provided with the guard-arm *d* having a shoulder on its rear side, a series of ribs extending from said shoulder to the forward end of the arm, and one or more ribs located on the inner shell of the draw-bar, extending to a point at either side of the line of union between the head and shank of draw-bar, substantially as described and for the purpose set forth.

3. In a car-coupler, the draw-bar provided with a series of ribs located on its several inner walls extending to a point at either side of the line of union between its head and shank, substantially as described and for the purpose set forth.

545,605. MANUFACTURE OF FLAKE MICA FOR BOILER-COVERINGS, &c. HENRY C. MICHELL, Toronto, Canada. Filed Mar. 29 1895. Serial No. 543,749. (No specimens.)



Claim.—1. The herein described method of reducing block mica, crystals or refuse sheets or pieces of mica in which the laminæ are united together in their natural form, as found, into flake mica, consisting in first opening the edges of the laminæ of the pieces and then holding such pieces, so that the edges of the laminæ are presented and subjected edgewise to the direct draft from a blast as and for the purpose specified.

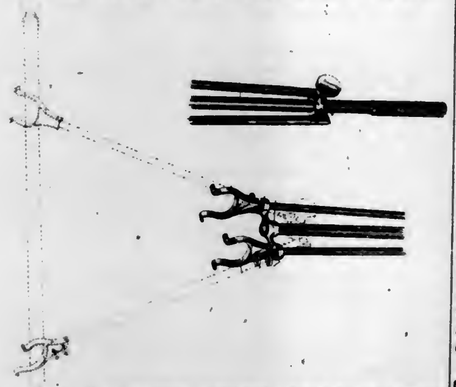
2. The herein described process of reducing refuse sheets or pieces of mica into flake mica consisting in first corrugating the refuse sheet mica and then subjecting edgewise to the action of a blast as and for the purpose specified.

3. The herein described process of reducing refuse sheets or pieces of mica into flake mica consisting in first corrugating the refuse sheet mica, next in applying heat to such refuse sheets or pieces of mica and then subjecting edgewise to the action of a blast as and for the purpose specified.

4. The herein described process consisting in first corrugating the refuse sheet mica then passing it edgewise beneath a blast and finally corrugating the flakes as and for the purpose specified.

5. As a new article of manufacture flake mica reduced into corrugated form as and for the purpose specified.

545,606. DUSTER AND CURTAIN-POLE LIFTER. CARL L. NELSON, Seattle, assignor to Andrew Nelson, Kirkland, Wash. Filed Jan. 26, 1893. Renewed Mar. 6, 1895. Serial No. 540,779. (No model.)



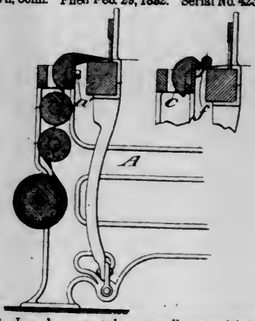
Claim.—1. An implement comprising a handle having a smooth upper end, a cross-head having guides, an adjustable collar adapted to freely slide on said handle, rods connected with said collar and adapted to be diverged by the guides on the cross piece.

2. An implement comprising a handle having a smooth upper end, a cross-head having guides, an adjustable slidable collar, rods connected with said collar and adapted to be diverged by the guides on the cross piece, said diverging arms being provided with means near their upper ends for supporting thereon an article.

3. An implement comprising a handle, a cross-head having guides near its ends, an adjustable collar provided with means for securing it in any position on the handle, rigid diverging rods pivotally connected to the flanged arms of said adjustable collar, and passing through the guides in the cross-head, and means near their upper ends for supporting outside thereof an article.

4. An implement comprising a handle, a cross-head on said handle having guides near its ends, an adjustable collar having a set screw therein and provided with flanged sides, rigid divergent rods pivotally connected to said flanged sides and passing through the guides in the cross-head, said rods being each provided at their free end with a yoke and with eyes.

545,607. LOOM FOR WEAVING VALANCES. ISAAC E. PALMER, Middletown, Conn. Filed Feb. 29, 1892. Serial No. 423,193. (No model.)



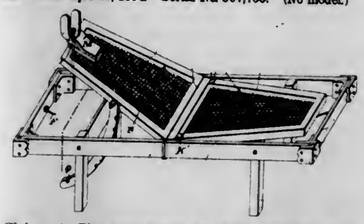
Claim.—1. In a loom, a take-up roll comprising adjustable sections having tapered ends and means for securing the sections in adjusted position toward and away from one another longitudinally of the roll, substantially as set forth.

2. The combination with the lay, and the cloth-roll having tapered ends, of a breast beam having its ends tapered, substantially as set forth.

3. The combination with the lay, and the cloth roll having tapered ends, of the breast beam comprising adjustable sections having tapered ends, substantially as set forth.

4. The combination with the lay, and the cloth roll having tapered ends, of the breast beam having tapered ends and a guide extending across the loom intermediate of the lay and breast beam to hold the fabric level, substantially as set forth.

545,608. EMBALMING-TABLE. GEORGE R. PASSMORE, Malvern, Pa. Filed Apr. 16, 1894. Serial No. 507,753. (No model.)

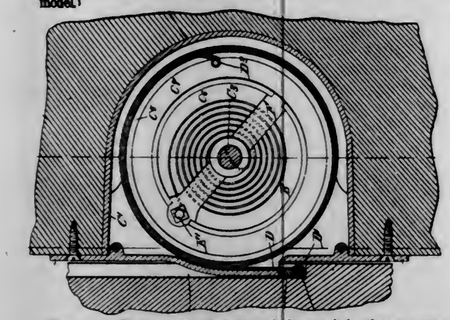


Claim.—1. The combination of a main supporting frame consisting of two sections connected by hinges each of which is provided with an upwardly extending stud, the legs hinged to the frame, the staples carried by one set of the legs, a body supporting frame consisting of two sections hinged together and one provided with laterally projecting plates having openings formed therein to receive the studs on the hinges connecting the sections of the main frame, and adjusting bars connected to the other section of the body supporting frame and adapted to engage the staples on the legs to hold the frame in any desired inclined position.

2. The combination of a main supporting frame consisting of two sections connected by hinges each of which is provided with an upwardly extending stud, the legs hinged to the frame, the staples carried by one set of the legs, a body supporting frame consisting of two sections hinged together, each section provided with hooks, and one provided with laterally projecting plates having openings formed therein to receive the studs on the hinges connecting the sections of the main frame, and adjusting bars connected to the other section of

the body supporting frame and adapted to engage the staples on the legs to hold the frame in any desired inclined position and to engage the hooks on the frame to render the sections thereof rigid.

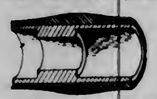
545,609. SASH-BALANCE. FRANCIS X. PATHENY and JOHN C. HARTIG, Chicago, Ill. Filed July 13, 1894. Serial No. 517,486. (No model.)



Claim.—1. The combination of a window sash having a recess in one side opening at the outer surface of the sash, a block adapted to fit into the recess in the sash, a metallic ribbon having one end attached to said block the other end passing through an aperture in a plate attached to the window frame and being fastened to a pulley placed in a recess in said frame, said plate projecting outwardly above said aperture so as to form a stop for said block, and a spiral spring coiled within said pulley, one end of said spring being fastened to the case of the pulley so as to revolve with it, the other end being fastened to a fixed central pivot, substantially as described.

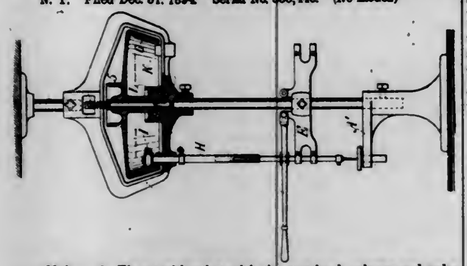
2. The combination of a window sash having a recess in one side opening at the outer surface of the sash, a block adapted to fit into the recess in the sash, a metallic ribbon having one end attached to said block, the other end passing through an aperture in a plate attached to the window frame and being fastened to a pulley placed in a recess in said frame, said pulley projecting slightly through said aperture, a spiral spring coiled within the pulley one end of said spring being fastened to a threaded pin or screw rotating with the pulley, the other end being fastened to a fixed central pivot, and a side bar removably connected to said threaded pin and pivot and adapted to prevent the spiral spring being withdrawn from or inserted in the pulley.

545,610. CLARINET. GUSTAV F. PRUEFER, Providence, R. I. Filed Mar. 9, 1893. Serial No. 465,308. (No model.)



Claim.—The improved clarinet herein described, whose joints are made of wood and covered with a hard rubber casing cemented thereto, substantially as described.

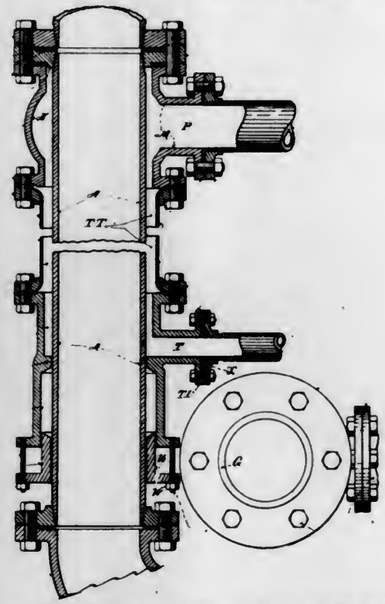
545,611. DRILLING APPARATUS. HENRY R. REEVE, Brooklyn, N. Y. Filed Dec. 31, 1894. Serial No. 533,446. (No model.)



Claim.—1. The combination with the standard, column and yoke frame, of a driving drum having a conical frictional surface, and a belt pulley, a shaft and spindle for the drill or other tool, and means for raising and lowering the same, and a frictional pinion upon the upper end of the shaft adapted to come into contact with the conical surface of the driving drum as the tool, spindle and shaft descend, substantially as set forth.

2. The combination with the standard, column and yoke frame, of a driving drum having a conical frictional surface, an upper and lower center for the shaft of the driving drum, an oil holding vessel around the lower center, a spindle for a boring or other tool, a shaft for driving the same, and a pinion upon the upper end of the shaft and within the conical portion of the driving drum, substantially as set forth.

545,612. SURFACE CONDENSER. JAMES REDHAW, Denver, Colo. Filed Dec. 28, 1894. Serial No. 533,194. (No model.)



Claim.—1. The combination of one or more lengths of pipe interposed in the pipe delivery of a pump in juxtaposition to its water cylinder, and provided with pipe connections at each end, a cylindrical casting surrounding said pipe and secured at one end to one of said pipe connections, a depending lip on said pipe connection extending into said casting adapted to hold it concentric to said pipe, a casing surrounding said pipe and secured to said cylindrical casting, a second cylindrical casting secured to the opposite end of said casing and provided with a stuffing box and gland whereby it may be packed around the said inner pipe, an exhaust inlet in the first named casting and a condensed water outlet in the second named casting connected respectively to the exhaust and suction pipes of a pump, as set forth.

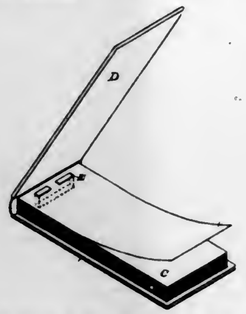
2. The combination with one or more lengths of pipe interposed in the delivery pipe of a pump, provided with a flanged coupling at its end, of a cylindrical casting surrounding said pipe and secured to said coupling, a depending lip on said coupling extending into said casting, whereby it is held concentric to the pipe, a casing surrounding said pipe and secured to said cylindrical casting, a second cylindrical casting secured to the opposite end of said casing, an expansive joint arranged in said casting around said pipe, an exhaust inlet in the first named casting connecting with the pump's exhaust pipe and an outlet in the second named casting connected with the suction pipe of the pump or to an independent air pump, as specified.

545,613. PUNCH. JULIUS C. RICHARDSON, Auburn, N. Y. Filed Oct. 20, 1894. Serial No. 526,492. (No model.)



Claim.—In a punch, the combination, with the handles pivotally secured together, one end of one of which is bifurcated and one arm is provided with a cutting block and the other arm is provided with a slotted barrel located tangentially thereto, said slot extending only a portion of the length of the barrel and being located adjacent to the arm, the corresponding arm of the other handle being provided with teeth arranged in the arc of a circle with the pivotal point as a center, and adapted to fit within said slot, a cutter head within the barrel, one side of which is provided with transversely arranged teeth, and the opposite side is provided with a spiral groove, a pin through the side of the barrel to engage with the groove, substantially as set forth.

545,614. PROCESS OF PREPARING SOAP-SHEETS. WILLIAM H. ROACH and ALPHONSE J. TOURVILLE, Seattle, Wash., assignors of one-third to Alexander Alison, same place. Filed Nov. 30, 1894. Serial No. 530,390. (No specimens.)



Claim.—The process of making sheets of soap which consists in coating a fabric with thin layers of soap, drying the same, then oiling the surface and polishing them by the application of a warm smooth metallic surface thereto under pressure, substantially as set forth.

545,615. SHIRT. SAMUEL G. SCHENCK, New York, N. Y. Filed June 1, 1895. Serial No. 551,365. (No model.)

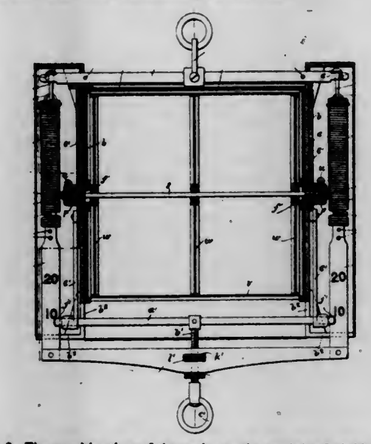


Claim.—As an improved article of manufacture, a shirt, comprising a body portion which is cut away at the part corresponding to the bosom thereof, and two halves of a vest front, each stitched to said body portion only along the margin of said opening, and extending laterally in both directions, and also downwardly therefrom, whereby there are formed outer lateral flaps adapted to conceal the suspenders of the wearer, inner lateral flaps covering the opening at the bosom, and pendent flaps to take over the waistband of the trousers, substantially as described.

545,616. AUTOMATIC COMPUTING-SCALE. ALBERT U. SMITH, Seymour, assignor of one-half to Edmond C. Smith, Westport, Conn. Filed May 2, 1895. Serial No. 547,929. (No model.)

Claim.—1. The combination of the casing *a* the uprights *b* rigid with the sides thereof, the cross bar *c*, the draft rods *k* connected at their lower ends by a yoke *n*, the springs interposed between said draft rods and cross bar in the manner specified, the indicator drum journaled within the uprights and carrying pinions which are engaged by rack bars, the cross rod *a'* to which the lower ends of the rack bars are connected, the screw *b'* depending from the cross rod and passing through the yoke *n*, and the set nuts on said screw, substantially as and for the purpose set forth.

2. The combination of the indicator drum constructed of thin skeleton frames of a very light material, the periphery of said drum being formed of a sheet of paper having the divisions of the weight scale and other numerals printed thereon, the pinions carried by the shaft of said drum, adjustable conical bearings wherein said shaft is journaled, the cross bar *c* having a suspending clip secured thereon, the headed draft pins supported loosely within the notched ends of the cross bar *c* after the manner of a stirrup connection, the bow shaped clips in the ends of the draft pins, the springs between the coils of which said clips are inserted, whereby the tension on said springs may be altered as described, the draft rods *k*, the yoke *n* whereby said rods are connected, the cross rod *a'* to which the rack bars are pivoted and whose ends are notched and embrace said draft rods so as to be capable of sliding thereon, a ring from which the scale pan is suspended, and suitable adjusting connections between the yoke *n* and said cross rod *a'*, substantially as described.



3. The combination of the casing *a*, the uprights *b* rigid with the sides thereof, the cross bar *c*, the draft rods *k* connected at their lower ends by a yoke *n*, the springs interposed between said draft rods and cross bar, the indicator drum journaled within the uprights and carrying pinions, the rack bars engaging with said pinions, the cross rod *a'* to which the lower ends of the rack bars are connected, and the pin *b'* pivoted to said cross rod and rigidly connected with the yoke *n* as to vertical movement and provided with means whereby a scale pan may be attached, substantially as set forth.

4. The combination of the cross rod *a'*, the springs connected at their upper extremities to a stationary part of the scale, the draft rods suspended from the lower extremities of said springs, the yoke connecting the lower ends of said draft rods, the pin *b'* pivoted to the cross rod *a'* and depending therefrom and provided at its lower extremity with means for attaching a scale pan said pan being rigidly connected with the yoke *n* as to vertical movement, the rotatory weight indicating device, and means carried by the cross rod *a'* for operating said device, substantially as set forth.

545,617. NUT-LOCK. JEFFERSON D. TYNES, Fort Smith, Ark. Filed Dec. 18, 1894. Serial No. 532,147. (No model.)



Claim.—1. A nut lock consisting of a bar having its ends curved around to form a bolt hole and having one of said ends bent back outside the body portion with a reversed curve of uniform radius and sprung outwardly and terminating in a beveled end, and having its other end bent to form a flat bearing substantially as and for the purpose described.

2. A nut lock consisting of a bar having its ends curved around to form a bolt hole, and having one of said ends bent backward and outside the body portion with a reversed curve of uniform radius and sprung outwardly and terminating in a beveled end, and having its other end bent to form a flat bearing and bent or sprung inwardly substantially as and for the purpose described.

545,618. ROTARY CUTTER. AMBROSE S. VOSE, Boston, Mass. Filed June 13, 1895. Serial No. 552,629. (No model.)

Claim.—1. In a rotary cutter or trimmer, the combination of the following instrumentalities, viz:—a body or wheel, a plurality of cut-

ters provided with cutting edges and pivotally secured to the said body or wheel to permit their cutting edges to be adjusted with relation to the periphery of the said body or wheel, pins or projections carried by the said cutters, a rotatable device carried by the said wheel and provided with slots into which the said pins or projections extend, and means carried by the wheel, normally engaging said rotatable device to hold the same against movement, and thereby hold the pivotal cutters with their cutting edges in a fixed position with relation to the periphery of the body or wheel, substantially as described.



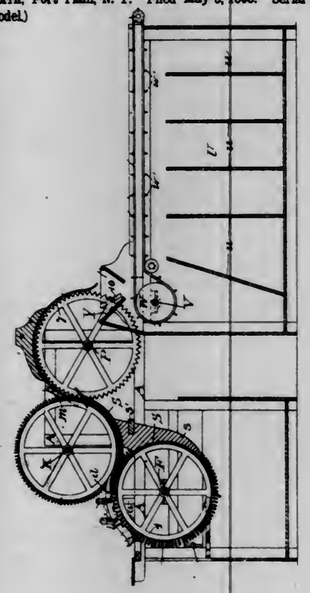
2. In a rotary cutter or trimmer, the combination of the following instrumentalities, viz:—a body or wheel provided with a flange and grooved for the attachment thereto of a plurality of cutters pivotally secured to the said body or wheel, pins or projections carried by the said pivotal cutters, an actuating device carried by the said wheel and provided with slots into which the said pins or projections are extended, and a clamping nut secured to the wheel and normally engaging the slotted actuating device, substantially as and for the purpose specified.

3. In a rotary cutter or trimmer, the combination of the following instrumentalities, viz:—a body provided with a bore or opening, a plurality of segmental sections pivotally connected to said body and provided with cutting edges, laterally extended pins or projections carried by said sections, and an actuating ring provided with slots into which the said pins or projections extend, for the purpose specified.

4. In a rotary cutter or trimmer, the combination of the following instrumentalities, viz:—the body A provided with a peripheral groove, segmental sections provided with cutting edges and with arms extended into the said groove, pivot pins securing said arms to the said body, studs or projections extended laterally from the said sections, an actuating ring provided with cam or inclined slots into which the said studs extend, and means to secure the said ring against movement from its adjusted position, substantially as described.

5. In a rotary cutter or trimmer, the combination of the following instrumentalities, viz:—a body provided with a bore or opening, a plurality of segmental cutters pivotally connected to the said body and provided with cutting edges, laterally extended pins or projections carried by the said segmental cutters, and an actuating device provided with slots into which the said pins or projections extend, substantially as described.

545,619. MACHINE FOR SEPARATING BROOM-CORN. ALPHONSO WALRATH, Fort Plain, N. Y. Filed May 8, 1895. Serial No. 548,521. (No model.)

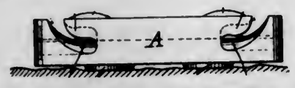


Claim.—1. In a machine for cutting, separating and sorting broom hurl, the combination of a frame a rotary knife suitably mounted, a means for imparting motion to said knife, a series of wheels mounted and adapted to operate on a shaft adjacent to said knife, a series of studs adjusted in the periphery of one of said wheels, a separator suitably mounted adapted to engage the short pickings and conduct them between said studs close to the periphery of said wheel, a curved notched guide mounted above said wheels adapted to bend and snap the hurl in connection with toothed wheels, with a guide attached to the lower end of said separator, with a series of wheels suitably mounted operating in connection with those above referred to, but revolving in an opposite direction, with a third series of wheels suitably mounted revolving in the direction of the first mentioned wheels, with a suitable guide placed between the first and the second series of wheels by the operation of which the hurl is caused to follow the second set of wheels and the pickings follow the first set of wheels, with a guide arranged to conduct the hurl from the second set of wheels to the third set, with suitable clearers causing the straw to be detached from the wheels, a bottomless trough into which the hurl is deposited after clearance from the third set of wheels, a belt suitably mounted extending along the edge of a sorting box, a series of transverse partitions in said sorting box, a series of short belts running along the opposite edge of said sorting box and extending from said trough to each division of the sorting box respectively, with a series of upwardly projecting pins arranged in each of said belts, substantially as described and for the purpose set forth.

2. In a machine for cutting, separating and sorting broom hurl, a frame in combination with a suitable knife, a means for imparting motion thereto, with a series of wheels suitably mounted and adapted to carry the hurl and pickings, the wheel nearest said knife provided with studs along its periphery, a series of feather edge wedge shaped strips secured a slight distance from each other and arranged to conform to the contour of said wheel and provided at its lower end with a projecting guide forming a separator and mounted adjacent to one of said wheels, said separator operating to conduct the pickings, after the straw has been cut, between the studs on said wheel and retain them close to the periphery of the wheel and prevent them from being sprung away therefrom by the operation of the machine, substantially as described and for the purpose set forth.

3. In a machine for cutting, separating and sorting broom hurl, a frame, a suitable knife mounted therein, with means for imparting motion thereto, a series of wheels mounted in said frame and adapted to carry the straw after having been operated upon by said knife, a second series of wheels mounted above the first mentioned series of wheels and arranged to carry the hurl from said first mentioned wheels after the pickings have been separated therefrom, with a third series of wheels mounted in said frame operating in connection with said second series of wheels and arranged to conduct the hurl from said second series of wheels upward and over said third series of wheels dropping the hurl therefrom into a suitable receptacle, with means for clearing each of said set of wheels of the straw, substantially as described and for the purpose set forth.

545,620. CLEAT FOR ELECTRIC WIRES. MONTRAVILLE M. WOOD, Chicago, Ill. Filed Jan. 11, 1895. Serial No. 534,531. (No model.)



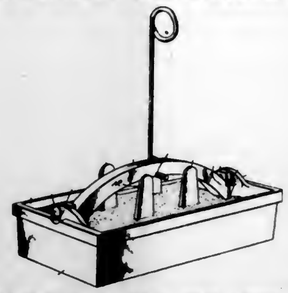
Claim.—1. In a cleat for electric wires, a body having a slot, the opening of which is substantially parallel or in line with the length of the wire, and which is curved within the cleat so as to form a hump or bend on the wire to prevent its longitudinal motion.

2. A cleat for electric wires consisting of a body with a slot in the face thereof substantially parallel to the length of the wire and bending into a horizontal position, and a tongue and recess forming the walls of said slot, whereby it forces the wire into a loop or hump to prevent the wire from longitudinal movement.

545,621. FIRE-KINDLER. LYNDON WORSTER, Hannibal, N. Y. Filed May 23, 1895. Serial No. 550,389. (No model.)

Claim.—1. A fire kindler having a pan or casing provided in opposite walls with vertical grooves, a supporting-bar having its terminals fitting in said grooves, and stops secured removably to the pan or casing in the paths of the terminals of the supporting-bar, substantially as specified.

2. A fire kindler having a pan or casing provided in opposite walls with vertical grooves, perforated ears arranged adjacent to the upper extremities of the grooves, bolts arranged in said perforated ears and engaged at their inner ends by nuts, and a supporting-bar having its terminals fitted in the grooves and held from displacement by the nuts on the inner ends of said bolts, substantially as specified.

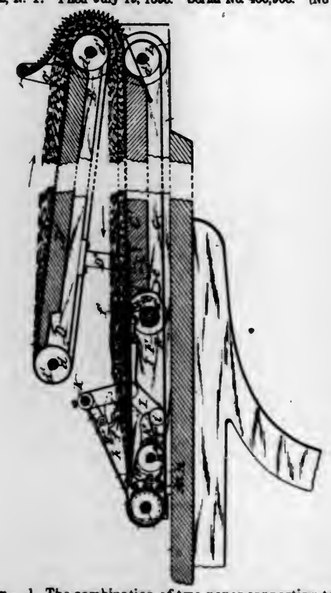


3. A fire kindler having a pan or casing, a supporting-bar removably attached thereto, and an agitator arranged in the pan and provided with upstanding spurs or arms projecting, respectively, upon opposite sides of the plane of the supporting-bar, said agitator being adapted to be rocked in the pan to distribute filling material, substantially as specified.

4. A fire kindler having a pan or casing, a supporting-bar removably secured thereto, and an agitator having a base, upstanding spurs or arms arranged, respectively, upon opposite sides of the plane of the supporting-bar, and a depending supporting stud adapted to bear upon the bottom of the pan and upon which the agitator may be rocked to distribute filling material in the pan, substantially as specified.

5. A fire kindler having a pan or casing, a supporting-bar removably secured thereto and extending longitudinally of the pan, and an agitator comprising an approximately H-shaped base, pairs of upstanding spurs or arms arranged, respectively, upon opposite sides of the plane of the supporting-bar and adapted to engage said bar to prevent displacement of the agitator, and a depending supporting stud provided at its lower end with an enlarged foot to bear upon the bottom of the pan and upon which the agitator may be rocked to distribute filling material in the pan, substantially as specified.

545,622. PAPER-FEEDING MACHINE. THOMAS A. BRIGGS, Arlington, Mass., assignor to the Briggs Manufacturing Company, Niagara Falls, N. Y. Filed July 19, 1893. Serial No. 480,908. (No model.)



Claim.—1. The combination of two paper-supporting tables disposed one over the other and with the upper inclined toward the rear end of the lower, shafts at opposite ends of each of said tables, rollers fixed to said shafts, belts running on said rollers and carrying the pile of paper from the lower end of the upper table to the adjacent end of the lower table, guides conducting the pile of paper at its point of transfer from table to table, and paper feeding devices at the delivery end of the lower table delivering the sheets singly from the pile as set forth.

2. The combination of two paper-supporting tables disposed one over the other and with the upper inclined toward the rear end of the lower, transverse shafts at opposite ends of each of said tables, rollers fixed to said shafts, endless belts running on said rollers and carrying the pile of paper from the upper to the lower table, friction-pulleys fixed respectively to the shaft at the lower end of the upper table and to the shaft at the adjacent end of the lower table and driving the belts in unison, guides conducting the pile of paper at its point of transfer from table to table, and paper feeding devices at the delivery end of the lower table passing the sheets singly from the pile as set forth.

3. The combination with a paper-supporting table of a superposed supplemental paper-supporting table supported at one end on props and at the opposite end by friction-pulleys on the upper table riding on friction-pulleys on the lower table, and paper-conveying belts receiving motion from said pulleys as set forth.

4. The combination with a paper-supporting table, transverse roller shafts at opposite ends of said table and paper conveying belts running on the rollers of said shafts, of a superposed supplemental table having transverse roller shafts at opposite ends, and paper conveying belts running on the rollers of said shafts, friction pulleys fixed to the roller shaft at the rear end of the lower table, friction pulleys fixed to the adjacent roller shaft of the upper table and riding on the peripheries of the lower friction pulleys and thereby supporting the upper table at one end and props supporting the opposite end of the upper table as set forth.

5. The combination with two paper-supporting tables disposed one over the other and paper conveying belts carrying the pile of paper from the upper table to the lower table from the rear end of the latter, a transverse bar supported on the upper table over the rear end of the lower table, segmental guide-plates hung on said rod, and flexible bands extending from the aforesaid bar to the lower table and bearing on the backs of said guide-plates as and for the purpose set forth.

6. In combination with the paper-supporting table, roller-shafts at opposite ends of said table, paper conveying belts running on the rollers of said shafts, and a rock-shaft extending across the table, oscillatory levers at opposite sides of the table actuated by the rock-shaft, a transverse shaft pivoted to said levers, paper-pushing fingers fixed to the latter shaft at intervals of its length, a crank fixed to the end of said shaft, a vertically movable stem actuating the crank, and a reciprocating bar actuated from the rock-shaft and imparting motion to the aforesaid stem as set forth.

7. In combination with the paper supporting table, roller-shafts at opposite ends of said table, paper conveying belts running on the rollers of said shafts, and a rock-shaft extending across the table, oscillatory levers at opposite sides of the table actuated by the rock-shaft, a transverse shaft pivoted to said levers, paper-pushing fingers fixed to the latter shaft at intervals of its length, a crank fixed to the end of said shaft, a vertically movable stem having an arching head actuating the crank, a slide passing under said head and lifting and dropping the same, and a cam-plate attached to the rock-shaft and actuating the slide as set forth.

8. In combination with the paper-supporting table, roller-shafts at opposite ends of said table, paper-conveying belts running on the rollers of said shafts, and the rock-shaft extending across the table, a cam-plate fixed to the rock-shaft, levers at opposite sides of the table, a pitman connecting one arm of said levers to the cam-plate and having a longitudinal play on the lever, a transverse shaft pivoted to the levers, paper-pushing fingers fixed to the latter shaft at intervals of its length, a crank fixed to the end of said shaft, a vertically movable stem having an arching head traversed by the crank, a slide passing under the said head and provided with a recessed seat for the head when in its lower position, a lug projecting laterally from the slide, and two cams on the aforesaid cam-plate disposed a distance apart to engage the aforesaid lug during the latter parts of the movements of the cam-plate as set forth.

9. In combination with the paper-supporting table, roller-shafts at opposite ends of said table, paper-conveying belts running on the rollers of said shafts, and a rock-shaft extending across the table, the roller shaft —*a*"— back of and near to the front roller-shaft, endless belts transmitting motion from the shaft —*a*"— to the front shaft, the cam-plate —*c*— fixed to the rock-shaft, the three armed lever —I— having one arm connected with the cam-plate by the longitudinally movable pitman —J—, the shaft —K— pivoted to another arm of the lever —I—, the shaft —*m*—, arm —*l*"— and crank —*n*— fixed to said shaft, the plate —*l*—, connected to said arm and provided with the notch —*l*'—, the finger —*j*— attached to the shaft —K— and adapted to engage the said notch, the ratchet-wheel —*k*"— fixed to shaft —*a*"—, the lever —*h*"— mounted loosely on said shaft and having its rear end in the path of the third arm of the lever —I—, and the pawl

—*i*— pivoted to the lever —*k*"— and engaging the aforesaid ratchet substantially as and for the purpose specified.

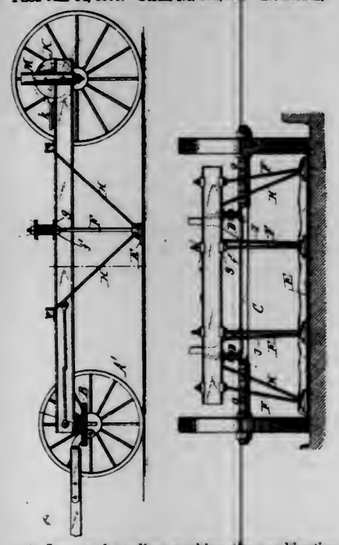
10. In combination with the paper-supporting table C, roller-shafts at opposite ends of said table, paper-conveying belts running on the rollers of said shaft, and rock-shaft extending across the table, the cam-plate —*e*—, the lever —I— shaft —K—, crank K' and fingers —*j*'—*j*'—*j*— mounted on the latter shaft, the vertically movable stem —*g*'— provided with the arching head —*g*"—, the slide —*f*— provided with the recess —*f*"— and lug —*f*'—, the shaft —*m*—, arm —*l*"—, and crank —*n*— fixed to said shaft, the plate —*l*— connected to said arm and provided with the notch —*l*'—, the ratchet-wheel —*k*'— fixed to the shaft —*a*"—, the lever —*k*"— mounted loosely on said shaft and having its free end in the path of the lever —I—, and the pawl —*i*'— pivoted to the lever —*k*"— all combined to operate substantially as set forth.

11. In combination with the lever —I—, paper-pushing fingers —*j*'— receiving reciprocating motion from said lever and mechanism intermittently lifting said fingers, the rock-shaft —F—, the plate —H— fastened to said shaft and imparting motion to the aforesaid lever and the plate —*e*— provided with two cams for actuating the aforesaid lifting mechanism and expansible between the cams and adjustably secured to the plate —H— as set forth.

12. In combination with the shaft —K— provided with a longitudinal groove, the finger —*j*'— formed with the loop —*r*—, and tongue —*r*'—, and the latch —*i*— inserted between said tongue and finger, and pivoted thereto as set forth and shown.

13. The finger —*j*'— formed of a metal plate tapered gradually in thickness to the free end thereof and formed with the transverse groove —*u*— in its top and with the corresponding ridge —*u*'— on its bottom, in combination with the shoe —*v*— formed of sheet metal and having integral with it the ears —*v*'—*v*'— bent over into the groove —*u*— and holding the shoe on the ridge —*u*'— upon which it is allowed to rock as set forth.

545,623. ROAD-GRADING MACHINE. OLIVER T. DUTRO, Buffalo, N. Y. Filed Jan. 14, 1895. Serial No. 534,754. (No model.)



Claim.—1. In a road grading machine, the combination with a wheeled supporting frame, of a transverse horizontal cutting blade suspended from said frame, and adjusting devices whereby the cutting blade is bent or sprung lengthwise, substantially as set forth.

2. In a road grading machine, the combination with a wheeled supporting frame and a transverse horizontal cutting blade, of a suspension rod secured at its lower end to the cutting blade, capable of moving vertically in said supporting frame and provided above and below the same with adjusting nuts which bear against said frame, whereby the suspension rod may be adjusted vertically in said frame for bending or carving the cutting blade lengthwise, substantially as set forth.

3. In a road grading machine, the combination with the front and rear axles, of a longitudinal beam or frame connecting said axles, a cutter carried by said beam or frame, and a cam or eccentric whereby the beam or frame is elevated for raising the cutter, substantially as set forth.

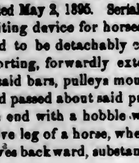
4. The combination with the front and rear axles and longitudinal beams connecting said axles and resting loosely upon the rear axle, a cutter suspended from said beams, and lifting cams or eccentrics pivoted to the rear portions of said beams and adapted to bear against the rear axle, substantially as set forth.

5. The combination with a front and rear axle and a longitudinal beam or frame connecting said axles and resting loosely upon the rear axle, of a stop which holds said beam or frame against longitudinal movement on the rear axle but permits the same to rise and fall with reference to said axle, a cutter carried by said beam or frame, and a lifting device for elevating the rear portion of said beam or frame, substantially as set forth.

6. The combination with the front and rear axles and longitudinal beams connecting said axles, resting loosely upon the rear axles and provided with notches or recesses, of stops secured to the rear axle and engaging with said notches or recesses, cams or eccentrics pivoted to the rear portion of said beams and adapted to bear against the rear axle, and a cutter suspended from said beams, substantially as set forth.

7. In a road grading machine, the combination with the front and rear axles and the wheels mounted thereon, of a series of removable washers or space blocks arranged on each of the axle spindles, whereby the wheels may be adjusted laterally on the spindles, substantially as set forth.

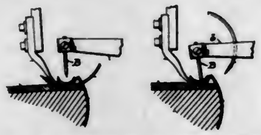
545,624. METHOD OF DESIGNING. WILLIAM S. EATON, Sag Harbor, N. Y. Filed Apr. 17, 1895. Serial No. 546,069. (No model.)



Claim.—1. A changeable pattern plate for use in watch case designing and the like, composed of sections, each having a design portion thereon forming a part of the unitary design, said sections with their design portions being constructed and designed to fit each other and produce a complete and perfect design for all the changes or adjustments of the sections.

2. As a new article of manufacture, a changeable pattern plate, for use in watch case designing and the like, composed of sections each having a design portion thereon forming a part of the unitary design, said sections with their design portions being constructed and designed to fit each other and produce a complete and perfect design for all the changes or adjustments of the sections which are divided from each other on radial lines and are grouped to form the complete design, substantially as described.

545,625. SEWING-MACHINE. ALFRED B. FOWLER and GEORGE E. WARREN, Pawtucket, R. I., assignors to the Lincoln Sewing Machine Company, Exeter, N. H. Filed Apr. 2, 1894. Serial No. 506,009. (No model.)

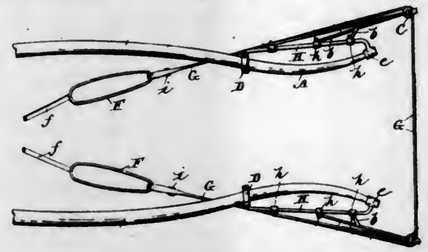


Claim.—In a sewing machine, the needle; mechanism for actuating it to cause it to penetrate the between substance; the feeding point; mechanism for actuating it to cause it to move endwise and penetrate the between substance in a path at right angles to the path of the needle; and mechanism to move the feed point sidewise after it has penetrated and while it is in the between substance, for feeding the work leaving the shoe free to be turned upon the feeding point as an axis during the feeding operation; all combined and operating substantially as and for the purpose specified.

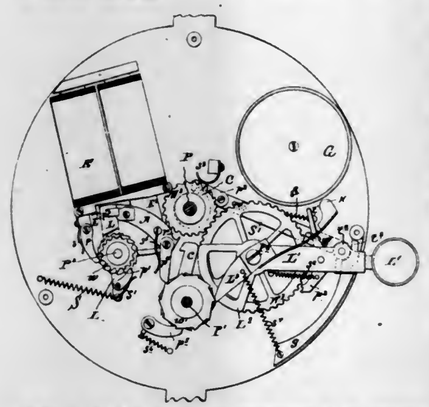
545,626. GAITING DEVICE FOR HORSES. HARRY G. GOULD, Oshkosh, Wis. Filed May 2, 1895. Serial No. 547,911. (No model.)

Claim.—1. A gaiting device for horses consisting of the combination of bars adapted to be detachably connected to the shafts of vehicles, pulley supporting, forwardly extending, brace frames adjustably mounted on said bars, pulleys mounted on the outer ends of said frames, and a cord passed about said pulleys in front of the horse and provided at each end with a hobble which is adapted to be attached to the respective leg of a horse, whereby one leg is pulled forward as the other moves backward, substantially as described.

2. A detachable gaiting device for horses consisting of the combination of bars each having a socket at one end and a clip at the other whereby they may be detachably applied on the ends of shafts, forwardly extending brace frames adapted to be adjusted on said bars, yoke brackets at the outer ends of said frames, pulleys mounted in said yokes, and a cord passed through said yokes and about the pulleys in front of the horse and having its ends extending backward to the respective hind legs of the horse, and hobbles for connecting the ends of said cords to said hind legs, substantially as described.



545,627. FARE-REGISTER. HENRY F. HUGHES, Brooklyn, assignor to W. Kennon Jewett, New York, N. Y. Filed Sept. 27, 1894. Serial No. 524,315. (No model.)



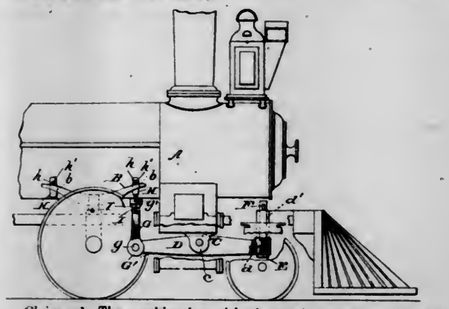
Claim.—1. In a fare register the combination of an actuating lever, a locking lever having a finger piece and adapted to be moved in and out, as described, and to remain in either position it is placed in an engaging device connected with the actuating lever, and an engaging device in engagement with the locking lever and adapted, as described, to be by it moved into engagement with the engaging device connected with the actuating lever, substantially as set forth.

2. In a fare register, the combination of an actuating lever, a reversing lever provided with a finger piece and a sector extension and adapted to be moved in and out as described, an engaging device connected with the actuating lever, in engagement with the face of said sector extension and adapted to be by it moved into engagement with the engaging device of the actuating lever, a cam guide and an engaging device on the reversing lever, which will engage with the cam guide upon the movement of the reversing lever and hold it inward except when in its normal position, all substantially as described.

3. In a fare register, the combination of a shaft, a pinion mounted in fixed position (as to lateral movement) on said shaft, a trip register wheel and a totalizer wheel, both continuously engaging said pinion, an operating lever mounted on the same shaft with the pinion, a ratchet-wheel and a pawl (engaging its teeth) one of which is secured to the lever and the other of which is secured to the pinion, all substantially as set forth.

4. The combination of a slide, a locking lever provided with a stop adapted to move across the path of the slide when that is retracted, but engage it when extended, a pawl on the slide and a cam secured to the trip registering device, substantially as described, and adapted to engage said pawl when moved in one direction, but disengage therefrom when moved in the other direction, said cam and registering device being arranged as described, whereby, when at zero, it will hold said slide retracted, all substantially as set forth.

545,628. EQUALIZING MEANS FOR LOCOMOTIVE-ENGINES. JOHN E. HUGHES, Pine Bluff, Ark., assignor of two-thirds to Spencer W. Kenward and Robert M. Galbraith, same place. Filed Oct. 6, 1894. Serial No. 525,130. (No model.)



Claim.—1. The combination with the engine truck cradle, the engine saddle, and the front drive springs, of a longitudinal bar pivoted about the center of its length to the engine saddle and having its front end secured to the truck cradle, a transverse bar having apertures in its ends and a projection on its lower surface to which the rear end of the longitudinal bar is pivoted, and threaded hangers secured to the springs passing down through the apertures of the said transverse bar and provided with nuts thereon, substantially as described.

2. The combination with the engine truck cradle, the engine saddle, and the front drive springs, of a longitudinal bar pivoted at about its middle to the engine saddle and provided at its front end with a vertical aperture and at its rear end with a transverse aperture, a bolt securing the front end of the said bar to the truck cradle, a transverse bar having vertical apertures in its ends and provided with spaced lugs on its under side at the middle and between which the rear end of the longitudinal bar is pivoted, hangers secured to the springs and having their ends threaded and projecting through the openings of the transverse bar, and nuts on the said hangers, substantially as described.

545,629. SAFETY APPLIANCE FOR ELECTRIC CONDUCTORS. ADELBERT E. HUTCHINS, Detroit, Mich. Filed May 5, 1893. Serial No. 473,107. (No model.)



Claim.—1. In an apparatus of the character herein set forth, the blocks applied upon the ends of the sections of the conductor and having enlarged heads with inclined undercut bearing surfaces, and the frame for receiving said blocks having interior ledges with inclined bearing surfaces, the said frame being closed at top and open at bottom and constituting a portion of the conductor and the parts being arranged to separate as soon as the line is slackened, substantially as and for the purposes explained.

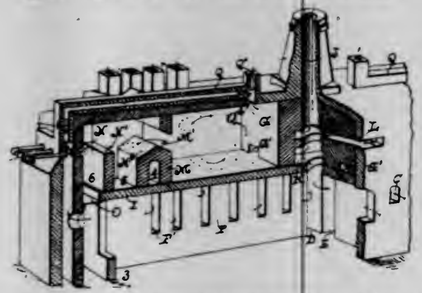
2. In combination with the blocks connected with the sections of the conductor and the frame for receiving and holding said blocks, of the arms pivoted within the frame, bearing upon the blocks and operated by springs, substantially as and for the purposes set forth.

3. In combination with the frame, the conductor, the blocks attached thereto and the auxiliary conductor, the levers pivoted in the frame, and the insulated plates located in the paths of said levers, the levers being held normally out of contact with the plates by bearing upon the blocks connected with the conductor, and the insulated plates being connected with the idle or auxiliary conductor, the parts being arranged to operate substantially as and for the purposes explained.

4. In combination with the blocks connected with the sections of the conductor and the frame for receiving and holding said blocks, of the arms pivoted within the frame, bearing upon the blocks and operated by springs, and the springs K. K., insulated and interposed between the frame and blocks, substantially as shown and for the purposes set forth.

5. In an apparatus of the character herein set forth, the combination with the main conductor and the blocks attached to the sections thereof, of the frame composed of the closed top and side walls, the same being open at bottom to receive the blocks and provided with means for connecting it with supports, and constituting, when the parts are in working position, a section of the main conductor, substantially as shown and described.

545,630. GLASS-MELTING TANK. THOMAS P. KENNEY, Hartford City, Ind. Filed Mar. 20, 1894. Serial No. 504,188. (No model.)



Claim.—1. The combination in a glass melting tank of fire boxes arranged at opposite ends of the tank, heating chambers communicating with each other and with the fire boxes, air passages extending under the heating chambers and fire boxes, and an outlet stack for the air passages located between the heating chambers, substantially as described.

2. In a glass melting tank, the combination with the fire box and heating chamber, of horizontal gas inlets leading into the fire box opposite the heating chamber, vertical air passages arranged in the path of the gas inlets, a return flue leading from the melting chamber to the fire box having a downwardly extending portion terminating at a point above and adjacent the gas inlets and in line with one of the vertical air passages and a passage opposite the gas inlets leading into the heating chamber, substantially as described.

3. A glass melting tank having the melting chambers divided by an arched partition, a stack extending up over and above the said arch, tunnels under the melting chambers an opening extending up from the tunnels through the arch and stack, and a horizontal opening L, extending through the said tank crosswise and communicating with the stack opening, all as shown and described.

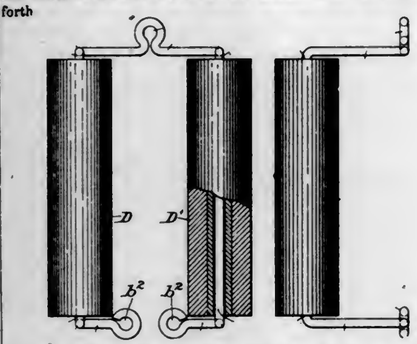
4. In a glass melting tank, the combination with the fire box and heating chamber, of a tunnel under the tank, air passages leading into the tunnel, a vertical air outlet stack at one end of the tunnel beyond the heating chamber, and passages at the opposite end of the tunnel leading to the fire box, substantially as described.

545,631. BICYCLE-STAND. ISAAC KNOWLDEN, Brooklyn, N. Y., assignor to the Pope Manufacturing Company, Portland, Me., and Hartford, Conn. Filed May 7, 1895. Serial No. 548,422. (No model.)

Claim.—1. A bicycle stand comprising two vertical members, and horizontal arms to support said members in substantial parallelism and at a proper distance from the wall, each of said arms having a foot bent at right angles thereto and parallel with the wall and provided with an eye, substantially as set forth.

2. A bicycle stand formed of a continuous piece of wire bent to form vertical members, horizontal supporting arms for said vertical members and a foot to bear against the wall and connecting the horizontal arms at one end of the vertical members, substantially as set forth.

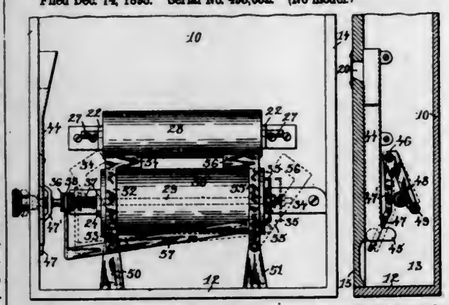
3. A bicycle stand comprising two vertical members, horizontal arms to support said members in substantial parallelism and at a proper distance from the wall, means to secure said arms to the wall, and rollers mounted on said vertical members, substantially as set forth



4. A bicycle stand comprising two vertical members, and horizontal arms to support said members in substantial parallelism and at a proper distance from the wall, each of said arms having a foot bent at right angles thereto and parallel with the wall and provided with an eye, and rollers mounted on said vertical members, substantially as set forth.

5. A bicycle stand formed of a continuous piece of wire bent to form vertical members, horizontal supporting arms for said vertical members, a single foot for each of the arms at one end of the vertical members and a common foot connecting the horizontal arms at the other ends of the vertical members, and rollers mounted on said vertical members, substantially as set forth.

545,632. COIN-CONTROLLED ADVERTISING-MACHINE. HORACE A. MANLEY, Boston, assignor to William N. Osgood, Malden. Mass. Filed Dec. 14, 1893. Serial No. 493,632. (No model.)



Claim.—1. In an advertising-machine, the combination with a case, a mechanism carrying advertisements located therein, a door or cover having a central opening and a laterally-extending slot or opening at the side of said central opening, and a transparent plate covering said openings, of a pivoted shutter for closing the lateral slot, a rotatable reciprocal shaft, means for connecting the shutter and the shaft, a coin-controlled device for locking the shaft from reciprocation, and an engaging device on the shaft for engaging the advertisement carrying mechanism.

2. In a coin-controlled advertising-machine, the combination with a case, a system of rollers journaled therein, and a band carried by the rollers, of a reciprocal shaft on which one of the rollers is journaled, and an engaging device carried by the shaft and adapted to be engaged with and released from the roller by the reciprocation of the shaft.

3. In a coin-controlled advertising-device, the combination with a case, a system of rollers journaled therein, a band carried by the rollers, and a door having an opening through which a portion of the band may be viewed, of a reciprocal shaft, mounted in bearings, on which one of the rollers is journaled, a shutter movably supported within the case for closing the opening in the door, and a device connecting the shutter with the shaft whereby the reciprocation of the shaft tends to operate the shutter.

4. In an advertising-machine, the combination with an incased roll, a reciprocal shaft on which the roll is journaled, and an engaging device carried by the shaft for engaging the roll, of a plurality of shutters supported within the case, and mechanism connecting the shutters with said shaft whereby the shutters are operated simultaneously by the reciprocation of the same.

5. In a coin-controlled advertising-machine, the combination with a case, a reciprocal shaft rotatably mounted therein and extending through a perforation in the side of the same, an actuating-roller journaled on the shaft within the case, an engaging-device carried by the shaft for engaging the roller, and a coin-controlled locking device for locking the shaft against reciprocation, of a series of shutters located within the case and connected with the shaft, as described.

6. In a coin-controlled advertising-machine, the combination with a case, a mechanism contained therein and adapted to be operated by a rotatable reciprocal shaft, of the shaft reciprocally and rotatably mounted therein having one end extending through one side of the case, and furnished with a conical enlargement tapering inward, an engaging-shoulder adjacent to such enlargement, and an outwardly tapering enlargement removed from said shoulder, on the shaft, and a coin-controlled lever adapted to engage said shoulder to prevent the reciprocation of the shaft and having an arm adapted to bear on the second enlargement when operated by a coin, as described.

7. In a coin-controlled mechanism, the combination with a shaft rotatably and reciprocally mounted in the case and having an engaging shoulder, of a coin-operated lever supported transversely to the direction of the shaft and having a counterweighted locking-arm to engage the shoulder on the shaft, and a forwardly-extending arm adapted to be acted on by the coin, as described.

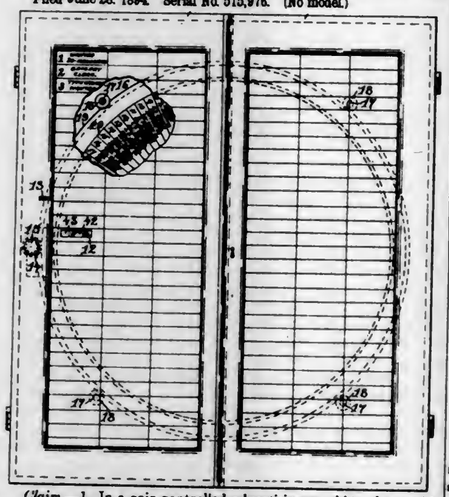
8. In a coin-controlled advertising-machine, the combination with a case, a shaft rotatably and reciprocally mounted therein and having an engaging-device, of an actuating-cylinder journaled on the shaft and a stop for preventing the reciprocation of the cylinder away from the engaging-device.

9. In a coin-controlled advertising-machine, the combination with a case, and the shaft 29 rotatably and reciprocally mounted therein and having the enlargement 39, the tapering portion 41, the shoulder 42 and the oppositely-tapering enlargement 43 separated from said shoulder by a portion of the shaft, of the lever 46 having the arm 47 furnished with the bent portion 47', and the counter-weighted locking-arm 48 adapted to engage the shoulder 42 of the shaft, and means for directing a coin to the arm 47, as described.

10. In a coin-controlled-advertising-machine, the combination with a case, and the shaft 29 journaled therein and having the enlargement 39, the tapering portion 41, the shoulder 42 and the oppositely tapering enlargement 43 separated from the shoulder 42 by a portion of the shaft, of a locking-device contained within said case adapted to engage the shoulder 42 and when unlocked to be operated by said tapering enlargements 41 and 43, as described.

11. In a coin-controlled device, the combination with a case having sight openings in one side thereof, of the brackets 50 and 51 contained within the case, the arm 52 having the pendent extension 53 and the shutter 54 pivoted to the bracket 50, the arm 55 having the shutter 56 pivoted to the bracket 51, the bar 57 pivoted to the lower end of the extension 53 and to the main portion of the arm 55, and means for reciprocating said bar 57 to operate the shutters, as described.

545,633. COIN-CONTROLLED ADVERTISING-MACHINE. HORACE A. MANLEY, Boston, assignor to William N. Osgood, Malden, Mass. Filed June 28, 1894. Serial No. 515,976. (No model.)



Claim.—1. In a coin-controlled advertising-machine, the combination with the case, of a series of long bearings mounted therein, a disk rotatable on said bearings and free to move longitudinally thereon, and a coin-controlled mechanism for operating the disk.

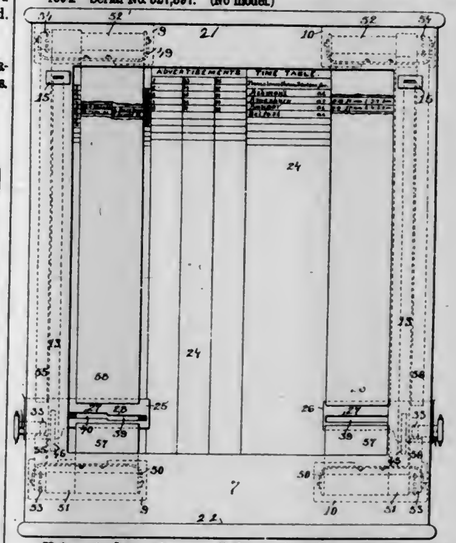
2. In a coin-controlled advertising-machine, the combination with a coin-chute having an opening in its side as distinguished from its edge, of the coin-lever 36 pivoted parallel to the plane in which the coin is guided by the chute and extending through the opening in the side of the chute, a rotatable shaft reciprocally mounted adjacent to the coin-lever, and means, operated by the coin-lever, adapted to release said shaft to allow of its reciprocation.

3. In a coin-controlled advertising-machine, the combination with a pivoted shutter comprising the member 40 having the parallel-plates 41 and 42 extending therefrom, of a coin-controlled device for operating the shutter.

4. In a coin-controlled advertising-machine, the combination with a metallic frame, a reciprocally moving shaft journaled in bearings therein having a knob at its outer end, and an enlarged shoulder, a collar on the shaft, and a spring for exerting a pressure on the shaft toward the knob, a plate, pivoted above the shaft and extending in a direction at right angles thereto, having a step for engaging the collar and a depending coin-lever, a cross-bar pivoted above the free edge of said plate and adapted to engage the same when it is partially thrown upward, said cross-bar being furnished with a depending finger to be engaged by the shoulder of the shaft and with an arm extending upward from said bar, and a shutter pivotally supported and adapted to be elevated by the arm, of an address-carrying device, and means operated by the shaft for moving the same.

5. In a coin-controlled advertising-machine, the combination with a suitable case having a name-slot, a coin-chute and a circular opening in the front beneath the coin-slot, a series of numbered advertisements displayed on the face of the machine, and an address-carrying device contained within the case and adapted to be operated by a rotatable shaft, of the frame 22, secured within the case, having the spring-socket 23, the back 24 furnished with the recessed portion 25 provided with the slots 25' and 27, the shaft 28, having the knob 15 and the shoulder 29, journaled in said frame, the collar 30 on the shaft, the coiled-spring 31, surrounding the shaft, bearing in the spring-socket and on said collar, a device carried by the shaft for engaging the address-carrying device, the plate pivoted above the shaft and having the coin-lever 36 and the step 35 for engaging the upper portion of the collar, the cross-bar 37, pivoted above the free edge of the plate 33, having the finger 38 for engaging the shoulder 29, and the arm 39 extending through the slot 25', and the shutter 40 pivoted to the side 24 of the frame 22 and adapted to be operated by the arm 39, as and for the purpose described.

545,634. COIN-CONTROLLED MECHANISM. HORACE A. MANLEY, Boston, assignor to William N. Osgood, Malden, Mass. Filed Oct. 29, 1894. Serial No. 527,397. (No model.)



Claim.—1. In a coin controlled machine, the combination with means for supporting matter to be viewed, of a plate movable before such matter and having a viewing slot, and a coin controlled mechanism mounted on said plate and including a coin lever and a shutter cooperating with the lever and adapted to close the viewing slot.

2. In a coin controlled mechanism the combination with means for supporting matter to be viewed, of a shield mounted to move before such matter, a traversable coin controlled mechanism connected with the shield, and means for locking the mechanism and shield in position.

3. In a coin-controlled machine, the combination with a plate traversably mounted therein and having a viewing slot, of a shutter pivoted on said plate, and a coin-controlled lever cooperating with the shutter to lock the same against operation.

4. In a coin-controlled machine, the combination with a case containing matter to be viewed, a plate traversably mounted before said matter and furnished with a viewing slot, and a shutter for closing the slot, of shields connected with the plate for hiding that portion of the matter not covered by the traversable plate.

5. In a coin-controlled machine, the combination with a case, and a plate traversably mounted therein and furnished with a viewing slot, of a shutter for closing the slot, a device for operating the shutter, and means for automatically locking the plate in position when the shutter is operated.

6. In a coin-controlled machine, the combination with a case, a plate traversably mounted therein and furnished with a slot, and a shutter pivoted to the plate and adapted to close the slot, of a coin-lever pivoted to said plate and adapted to lock the shutter, a device for operating the shutter when unlocked, and means for automatically locking the plate in position when the shutter is operated.

7. In a coin-controlled machine, the combination with a case, a plate traversably mounted therein and having a slot, a shutter pivoted to said plate and adapted to close the slot, of a device reciprocally mounted on the plate to which a portion of the shutter is pivoted, and a coin-lever adapted to engage the shutter to lock the same.

8. In a coin-controlled machine, the combination with a case, and a toothed rack secured thereto, of a plate traversably mounted over the rack and having an opening, a shutter pivoted to the plate for closing the opening, a second plate reciprocally mounted on the first plate and pivoted to the shutter, and means carried by the reciprocal plate for engaging the rack.

9. In a coin-controlled machine, the combination with a case containing matter to be viewed, a plate traversably mounted in the case before such matter and having an opening through which such matter may be viewed, and a shutter for closing the opening, of belts in the nature of shields secured to said plate, rollers on which these belts may be wound, and means connected with said plate for actuating the rollers during the reciprocation of the plate.

10. In a coin-controlled machine, the combination with a case, and a serrated strip secured thereto and having a longitudinal rib, of a plate traversable in the case over said rack and having a slot, an L-shaped lip secured to the plate and adapted to traverse along the rib of the serrated strip, a shutter pivoted to said plate for closing the slot, a second plate reciprocally mounted on the first plate being pivotally connected with the shutter and carrying a locking bolt adapted to be engaged between the serrations of the strip.

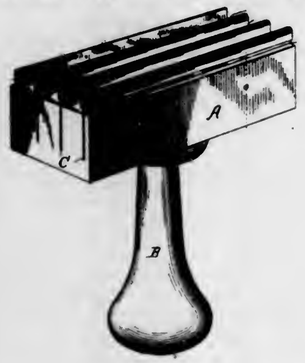
11. The combination with a case provided with the front 7, the vertical side-frame of which has the groove 12, the coin-chute 13 and a lateral vertical side slot, the strips 16 and 17 secured along the side slot, and the plate 14 secured over the coin-chute, of the plate 25 extending through the side slot having a name opening, a vertical lever-slot 34 and the horizontal opening 33, a shutter arm pivoted on said plate having the opening 38 with the upper inclined edge 38' and a shutter, the coin-lever 45 pivoted to swing in the lever opening extending through the coin-chute and having the shoulder 47 and the inclined end 48 adapted to extend through the opening 38 of the shutter-arm, and the plate 41 reciprocal in the opening 33 and pivoted to the shutter-arm, having the knife-bolt 42 for engaging between the serrations of the plate 17, and the grip 43 for operating and traversing the whole, as described.

12. In a coin-controlled machine, the combination with a case, spring bearings secured at the upper and lower portions thereof, the rollers 51 and 52 journaled in the bearings and having the sprockets 53 and 54, belts secured to the main bodies of said rollers, and a sprocket-belt engaging in the sprockets, of a plate as 25 traversably mounted in the case between the rollers to which the ends of the respective belts are secured, said plate having a name slot, and a coin-controlled shutter mechanism mounted on the plate.

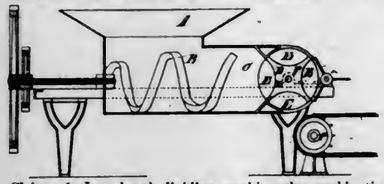
545,635. TYPE-HOLDER. CASSIUS F. MOORE, Chicago, Ill. Filed Jan. 30, 1895. Serial No. 536,666. (No model.)

Claim.—1. A type-holder of the kind described, comprising a block, provided with grooves having parallel sides or walls, holding-strips of a single thickness inserted in and projecting beyond the face of the block to provide type-channels or spaces therebetween, a reinforce-cap, mounted on the edges of said strips, and locking-pins, inserted through said block and strips, substantially as described.

2. In a type-holder, the combination of a block, a series of holding-strips, of a single thickness and seated in said block and having the outer edges projecting therefrom, and a reinforce-cap, adapted to fit over and stiffen the edges of said strips, substantially as described.



545,636. DOUGH-DIVIDING MACHINE. JAMES W. MCKAY, Chicago, Ill. Filed Mar. 26, 1895. Serial No. 543,246. (No model.)



Claim.—1. In a dough dividing machine, the combination with the dough serving mechanism of the chambered receptacle revoluble step by step upon a horizontal shaft, and adjustable devices for varying the size of the said chambers by wholly occupying portions thereof substantially as shown and described.

2. In a dough dividing machine, the combination with the dough serving mechanism of the chambered receptacle revoluble upon a horizontal shaft suitably journaled and operated, adjustable devices for varying the size of the said chambers by wholly occupying portions thereof, and a revoluble scraper adapted to enter the said chambers and remove their contents, substantially as and for the purposes shown and described.

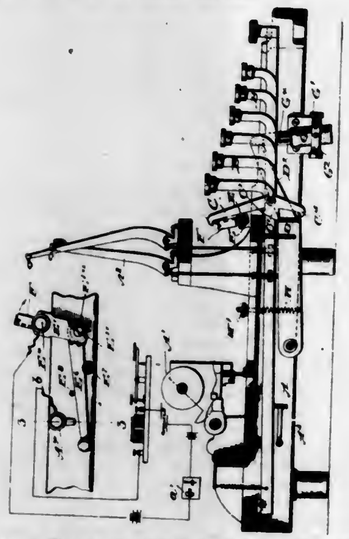
3. In a dough dividing machine, the combination with the dough serving mechanism of a chambered receptacle revoluble upon a horizontal shaft suitably journaled, adjustable devices for varying the size of the said chambers by wholly occupying portions thereof, a revoluble scraper adapted to enter the said chambers in turn and to remove their contents, and gearing by which the said chambered receptacle and the said revoluble scraper are relatively rotated, substantially as and for the purposes shown and described.

4. In a dough dividing machine, the combination with the dough kneading and serving mechanism of a set of chambers arranged mouths outwardly about a central shaft suitably journaled, each of the said chambers having an open end, the hollow cylindrical piece possessing interior divisions corresponding to the said chambers in number and form, the said cylindrical piece being adjustable to cover and occupy more or less of the said set of chambers, a revoluble scraper adapted to enter each of the said chambers in turn and to remove its contents, gearing and clutches by which the said set of chambers and the said scraper are alternately rotated, the whole substantially as and for the purposes shown and described.

5. In a dough dividing machine, the combination with the kneading and serving mechanism of a set of chambers approximately equal in area at their mouths and arranged mouths outwardly about a central shaft suitably journaled, each of the said chambers having an open end, the hollow, cylindrical piece possessing interior divisions corresponding to the said chambers in number and form, the said cylindrical piece being adjustable to cover and occupy more or less of the said set of chambers, a revoluble scraper having a plurality of blades, the gearing, the cam operated clutch sleeves whereby the said chambers and the said scraper are alternately rotated, substantially as and for the purposes shown and described.

6. In a dough dividing machine, the combination with the kneading and serving mechanism of a set of chambers arranged mouths outwardly about a central shaft suitably journaled, each of the said chambers having an open end, the hollow cylindrical piece possessing interior divisions corresponding to the said chambers in number and form, the said cylindrical piece being adjustable to cover and occupy more or less of the said set of chambers, the revoluble scraper having a plurality of blades and sleeves upon its operating shaft, devices affecting an engagement between the said scraper and the said cylindrical piece for preserving their relative positions, the cam operated clutch-sleeves and gearing whereby the said set of chambers and the said scraper are alternately rotated, the notched disk and spring catch adapted to insure agreement of the mouth of each chamber in turn with the vent of the dough box, and a positively driven belt so placed as to receive the portions of dough falling from the chambers, the whole substantially as and for the purposes shown and described.

545,637. TELETYPER. CHARLES SPIRO, New York, N. Y. Filed Dec. 18, 1894. Serial No. 532,279. (No model.)



Claim.—1. The combination of a key lever of a typewriting machine, a contact arm pivotally supported thereon and extended above and below said lever, a co-operating electric signal producing device located above the lever, a co-operative mechanical contact arm controlling device arranged below the lever, substantially as specified.

2. The combination with the key lever of a typewriting machine, of a contact arm pivotally carried thereby and provided with projections one near the pivot and the other at the lower extremity of the arm, and an arm-controlling device arranged below the key lever which, by contact therewith at the top of said projection moves said contact arm in one direction and by contact at the bottom moves said arm in the opposite direction, substantially as specified.

3. The combination with the key levers of a typewriting machine, of contact arms one upon each key lever, and an arm controlling device located below the lever and contact devices constructed and arranged to prevent the operation of all of said contact arms except that mounted upon the key lever of the system which is depressed, substantially as specified.

4. The combination with a key lever of a typewriting machine, of a contact arm pivotally mounted thereon, a stationary electrical signal device arranged normally in the path of the contact arm, and a contact arm controlling device adapted to throw the arm during a downward movement of the key lever out of contact with said signal producing device, substantially as specified.

5. The combination with the series of key levers of a typewriting machine each of which is provided with a contact arm, of a series of electrical contact devices arranged in the path of said contact arms so as to prevent a movement of the key levers carrying said arms after the depression of one of said key levers, substantially as specified.

6. The combination with a series of key levers of a typewriting machine and of a contact arm mounted on each of the same and of a series of cooperating contact devices arranged normally in the path of said arm to prevent the depression of any key of the series after one of the same has been depressed, of a contact arm controlling device having a broad face for retaining the locked locking contact arms with the signal producing devices, substantially as specified.

7. The combination with the key lever of a typewriting machine having a pivotally mounted contact arm terminating at each end with a hook or projection, of a relatively fixed cooperating contact device and of a relatively movable arm controlling device or bail co-operating with the opposite end of the contact arm, substantially as specified.

8. A key lever provided with a pivoted contact arm having a lateral extension and a stop adapted to impinge against the lever, in combination with an electrical signal device and with an arm controlling device, substantially as specified.

9. A key lever provided with a pivoted contact arm having a stop adapted to abut against the lever to limit the movement of the arm in one direction, in combination with a device co-acting with the lever below its pivot and limiting its movement in the opposite direction, substantially as specified.

10. A key lever and a contact arm pivotally mounted thereon and having an extension at its free end below the lever, in combination with a pivoted bail adapted to engage and operate said extension, substantially as specified.

11. A key lever and a contact arm pivotally mounted thereon and having an extension below its pivot terminating at its free end in an offset, in combination with a pivoted bail for operating said extension and offset, substantially as specified.

12. The combination of a series of key levers each provided with a contact arm pivotally mounted thereon and extended above and below the same, a series of signal devices one for each arm above the pivot and means below the pivot for preventing the simultaneous contact of more than one arm of the signal devices, substantially as specified.

13. The combination with a platen type bar and connecting rod, of a key lever provided with a contact arm, a cooperating contact device located to normally lock the arm and means for unlocking by changing the path of the contact arm during the printing movement of the key lever, substantially as specified.

14. A key lever provided with a contact arm and an electrical signal device for normally locking said arm, combined with a pivoted bail and cooperating devices for moving said arm away from and out of mechanical contact with said signal device upon the initial movement of the key lever and a contact device arranged in the path of said contact arm to prevent a movement of the other key levers after the depression of a single key, substantially as specified.

15. A key lever provided with a contact arm pivotally mounted on and extended below said lever and having projections in combination with a wide pivoted bail for engaging said projections and unlocking the contact arm and its key lever, substantially as specified.

16. A key lever provided with a contact arm pivotally mounted on and extended below said lever and having projections, a pivoted bail and a retarding device connected with said bail, substantially as specified.

17. The combination of a key lever carrying a contact arm and a bail and retarding device mounted in gimbal joints and connected with the bail, substantially as specified.

18. The combination with a series of key levers of a typewriting machine, of a series of contact arms mounted one upon each key lever, a removable signal-device-carrying-bar, and a series of electrical signal producing devices all carried by said bar one for each contact arm adjustably mounted with relation to the said arms whereby the required adjustment of the key levers and keys as to their levels is not interfered with in the adjustment of the signal producing devices, substantially as specified.

19. The combination of a typewriting machine, a key lever having a contact arm co-operating code signal devices, an oscillating bar carrying said devices, and means for locking said bar out of operative position, substantially as specified.

20. The combination with a key lever and its operatively connected printing characters, of a contact arm pivoted upon the key lever and a signal device arranged to automatically operate by said contact arm pivoted upon the key lever after an impression has been made by the printing character, said arm being automatically moved out of mechanical contact with the signal device by a downward movement of the key, substantially as specified.

21. The combination with a key lever provided with a pivoted contact arm mounted on the key lever and code signal devices and means constructed and arranged to automatically move said arm out of mechanical and electrical engagement with said signal device during the down stroke of the key lever and to automatically produce a mechanical and electrical connection with said device during the up stroke of said lever, substantially as specified.

22. The combination of a series of key levers each provided with a pivoted contact arm, a series of signal devices one for each arm and a pivoted bail engaging said arm for automatically preventing simultaneous contact of more than one arm with its co-acting device, substantially as specified.

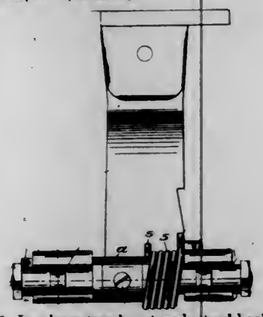
23. The combination with the key-board and type-bar systems of a typewriter and with its universal bail, of a series of contact arms mounted on the key lever a series of independently vertically adjustable signal devices and a rocking bar removably mounted and carrying said signal devices, substantially as specified.

24. The combination with the set of key levers of a typewriting machine and with their connected printing mechanism, of a system of contact arms carried by the key levers, a pivotally mounted bar carrying signal producing devices, a broad faced bail co-operating with the contact arm and means for tilting said bar and means for depressing said bail, substantially as specified.

25. The combination with a typewriter, of a pivotally mounted signal producing mechanism comprising a universal bail and a pivoted throw-off constructed and arranged to throw said mechanism out of operative position and said bail automatically beyond the limit of movement of the key levers of the typewriter, substantially as specified.

26. The combination of a typewriting machine, a signal producing mechanism comprising a pivoted bail arranged to be actuated by the movement of a key lever of the typewriting machine and a pivoted throw-off constructed and arranged to throw said mechanism out of electrical connection and at the same time to automatically throw the universal bail of said mechanism out of the path of the key lever, substantially as specified.

545,638. LOOM-TEMPLE. WALLACE I. STIMPSON, Milford, assignor to the Dutcher Temple Company, Hopedale, Mass. Filed May 20, 1895. Serial No. 549,915. (No model.)



Claim.—1. In a loom temple, a temple stand having an ear, and a fixed pivot pin extended from each side of said ear, combined with a shank having two longitudinally slotted hubs mounted on said pin, and a removable bearing in each hub surrounding the pin, access to the bearing to remove it being had through the slot in the hub, substantially as described.

2. In a loom temple, a temple stand having an ear, and a fixed pivot pin extended from each side of said ear, combined with a shank having two longitudinally slotted hubs mounted on said pin, a removable bearing or bushing in each hub, to which access may be had through the slots in the hubs, to remove the bearings, and retaining nuts therefor on the ends of the pivot pin, substantially as described.

3. In a loom temple, a temple stand having an ear, and a fixed pivot pin extended from each side of said ear, combined with a shank having two longitudinally slotted hubs mounted on said pin, and a removable bearing in each hub provided with an external lug to enter the longitudinal slot in the hub, substantially as described.

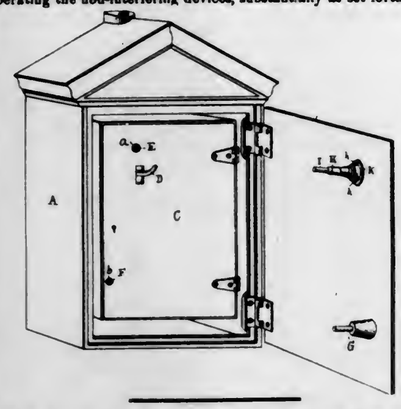
545,639. SIGNAL-BOX. NATHAN H. SUREN, New York, N. Y., assignor to the Gamewell Fire-Alarm Telegraph Company, same place. Filed Mar. 8, 1895. Serial No. 540,946. (No model.)

Claim.—1. In a signal box, the combination with the non-interference and cut-out devices of a stud carried on the box door, for operating the cut out devices, and a telescopic spring stud carried on the box door for operating the non-interference devices, substantially as and for the purposes set forth.

2. In a signal box, the combination with the non-interference and cut out devices, of a stud carried on the box door for operating the cut-out devices, and a telescopic spring stud carried on the box door for operating the non-interference devices, said stud having an oblique position when the door is open, substantially as and for the purposes set forth.

3. In a signal box, the combination with the non-interference device, of a stud carried on the box door for operating such devices, and comprising the plate K for attachment to the door, the sleeve H pivoted to the plate K, the pin I, spring c and spring i, substantially as and for the purposes set forth.

4. In a signal box, the combination of the inner and outer doors, the inner door having holes through which the non-interfering and cutout devices are operated by studs on the outer door, of a rigid stud for operating the cutout devices, and a telescopic swiveled stud for operating the non-interfering devices, substantially as set forth.



545,640. TRUSS. EDWIN O. WARE and JOSEPH B. WILLAMAN, Salem, Ohio. Filed Feb. 28, 1895. Serial No. 540,091. (No model.)



Claim.—1. The combination of a spring frame having a loop at one end, and a yielding pad around said loop of a spring support mounted on the frame near said end, and a pad carried by said spring support arranged within the pad on the loop, substantially as specified.

2. The combination of a spring frame having a loop at one end, a yielding rim around said loop, a spring support mounted on the frame and extended within said loop and carrying a pad, and a slide mounted on the frame to engage said spring support to regulate the pressure of said pad, as set forth.

3. A truss pad composed of a body portion of soft material and a yielding button having an enlarged head held within the body portion and having a portion protruding from the body portion and grooved circumferentially exteriorly of the body portion to receive a spring wire support, substantially as shown and described.

545,641. PENCIL-HOLDER. WILLIAM WILSON, Gloversville, N. Y. Filed May 15, 1895. Serial No. 549,460. (No model.)



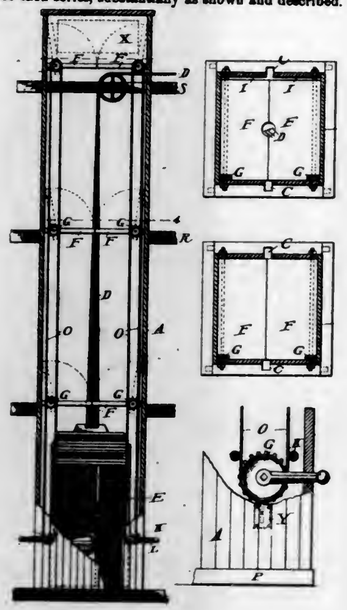
Claim.—A bracket comprising a plate having its upper end bent over, a guard and spring secured to the said plate as shown and the upper end of said plate being provided with a slotway.

545,642. ELEVATOR FIRE-GUARD. SEYMOUR D. BALL, Lock Haven, Pa. Filed Mar. 16, 1895. Serial No. 542,055. (No model.)

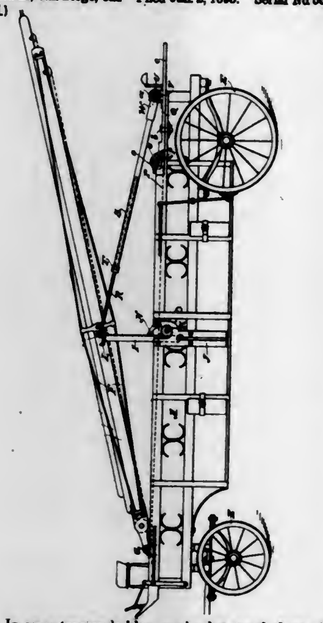
Claim.—1. The combination with the walls of an elevator shaft, of a pair of fire-guards hung in said shaft, above the course of the car, and all its machinery; a cog-wheel on the shaft of each guard, lower cog-wheels, each provided with a lever and handle, and endless chains, connecting the upper cog-wheels with the lower ones, all substantially as shown and described.

2. The combination with the walls of a tightly incased elevator shaft, of a tight top or cover, having ventilating openings; a pair of fire-guards hung therein above the machinery, a cog-wheel attached to each shaft, lower cog-wheels furnished with levers and handles; endless chains connecting said cog-wheels, and locks or fastenings for said chains, all substantially as shown and described.

3. The combination with the walls of an elevator shaft, of a tight top, or cover, provided with openings for ventilation; pairs of fire-guards hung in the shaft, one pair above all the machinery therein, and one at each floor of the building; a cog-wheel on the shaft of each fire-guard; a cog-wheel provided with a lever and handle below each set of cog-wheels and an endless chain connecting all the cog-wheels of each series, substantially as shown and described.



545,643. EXTENSION FIRE-LADDER AND TRUCK. ALEXANDER B. CAIRNS, San Diego, Cal. Filed Jan. 2, 1895. Serial No. 533,609. (No model.)



Claim.—1. In an extension ladder, a wheeled truck frame having guides extending horizontally along it, a ladder adapted to normally lie in a horizontal position on the truck frame, with its foot end provided with blocks or travelers adapted to engage and move upon the guides, vertical guides on the sides of the truck frame at a point between the opposite ends of the ladder, when the latter is in its normal position, rack bars movable in said guides and supporting the ladder upon their upper ends and pinions engaging the racks whereby the latter are moved in vertical planes to lift the ladder out of its normal horizontal position to an inclined position to permit its being subsequently moved into a vertical or approximately vertical position, substantially as described.

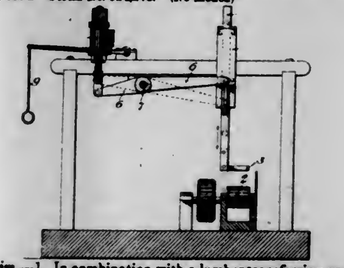
2. In an extension ladder, a frame mounted upon wheels having longitudinal guides upon it, a ladder having blocks or travelers connected with its foot and movable in said guides, a vertically moving rack by which the ladders are raised to an inclined position about said travelers, a drum shaft journaled across the turn-table, ropes adapted to coil upon the drum having their opposite arms connected with the foot of the ladder, and braces having the lower ends fulcrumed upon the turn-table, and the upper ends connected with the ladder at points above its base whereby the moving of the foot of the ladder along the guides will raise it into an approximately vertical position.

3. In an extension ladder, the truck frame having longitudinal guides, blocks or travelers upon the foot of the ladder movable on said guides, a means comprising vertically movable rack bars at the sides of the truck frame and engaging the ladder at points between its extremities for first raising the ladders to an angle, winding drums and cables extending therefrom to the foot of the ladders and braces connected with the ladder so as to raise it to a vertical position when the foot is drawn toward the braces, a turn-table pivoted upon the opposite portion of the truck frame having the winding drum shaft journaled across the front end of it, said table having tongues continuous with the guides upon the main frame whereby the foot of the ladder may be transferred from the main frame to the turn-table when it has been raised to the vertical position.

4. In an extension ladder, a truck frame having longitudinal guides, a ladder having blocks or travelers at its lower end movable upon said guides, a turn-table pivoted at the opposite end of the frame having tracks adapted to stand in line with the guides of the main frame, a drum shaft journaled across the turn-table, cables extending from the drums to the foot of the ladder, a mechanism comprising vertically movable rack bars engaging the ladder at points between its ends and pinions for actuating the bars by which the ladder is first raised about said blocks or travelers to an angle with the truck frame, means for rotating the drum shaft so that the foot of the ladder and its connected blocks or travelers are drawn along the guides and transferred therefrom to the turn-table, braces fulcrumed upon a shaft at one end, having the other ends connected with the ladder so as to raise it when the foot is moved toward the turn-table, said braces consisting of screw-shafts extending into tubular sleeves, with nuts which advance the screw shaft in either direction when the sleeves are rotated, means for rotating the sleeves consisting of bevel pinions fixed to their lower ends and corresponding bevel gears fixed upon the shaft journaled upon the turn-table, and engaging the pinions, so that the rotation of the shaft will turn the tubes, and thus advance the screw shafts in either direction to lengthen or shorten the braces and change the angle of the ladder.

5. In an extension ladder, a truck frame having longitudinal guides, travelers connected with the foot of the ladder and movable on the guides, a turn-table pivoted to the opposite end of the frame with braces attached thereto and connected with the ladders, winding drums upon the turn-table and ropes extending therefrom to the foot of the ladder, whereby the latter may be drawn upon the turn-table and raised by the braces into a vertical position, said turn-table being revoluble about its central king bolt so as to change the position of the ladders with reference to the truck after they have been transferred to the turn-table, and extension arms or braces extending from the turn-table to the ground as herein described.

545,644. SAWMILL MACHINERY. DENNIS R. DAWSON, Merrill, assignor to the Edward P. Allis Company, Milwaukee, Wis. Filed Sept. 27, 1894. Serial No. 534,278. (No model.)



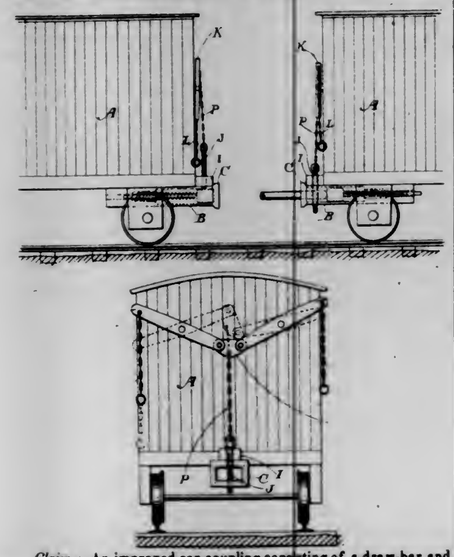
Claim.—1. In combination with a lumber transferring or conveying mechanism; devices substantially such as shown and described,

adapted to lift one piece of lumber from the conveying mechanism and hold it elevated while the said conveying mechanism transfers or carries away another piece, and then to replace upon the conveying mechanism the piece of lumber lifted; the said lifting device being so arranged relatively to the conveying mechanism, that the path in which the lumber travels is unobstructed by the said lifting device in whichever position to which it may be brought.

2. In a lumber handling plant; the combination with a transferring or conveying mechanism for the cant and slabs; of devices adapted to lift the slab off the conveying mechanism and hold it while the cant is being transferred or carried away by the conveying mechanism, and then replace the slab upon the conveying mechanism, all substantially as shown and described; the said lifting device being so arranged relatively to the conveying mechanism, that the path in which the lumber travels is unobstructed by the said lifting device in whichever position to which it may be brought.

3. In combination with the transferring or conveying rollers; the lifting arms 5, 3, normally inactive; and mechanism whereby said arms are adapted first to raise a piece of lumber off the rollers and hold it while another piece is carried away by the rollers, and then to replace the piece first raised.

545,645. CAR-COUPLING. REBECCA M. FORD, Oakland, Cal. Filed Feb. 5, 1895. Serial No. 537,386. (No model.)

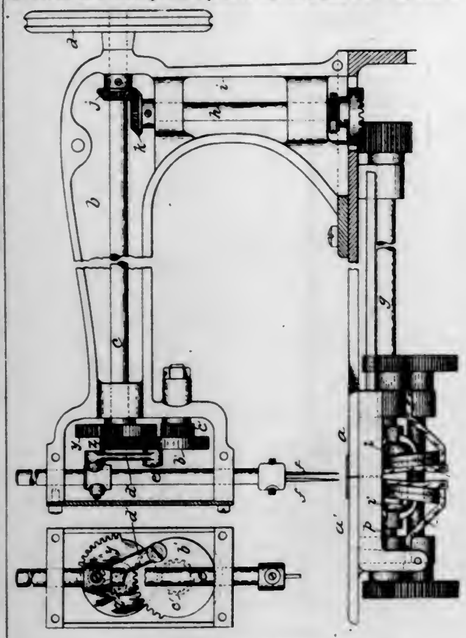


Claim.—An improved car coupling consisting of a draw-bar and bumper, a spring-actuated sliding block movable in the chamber within the draw-bar and normally held in line beneath the pin opening so that the pin is prevented from falling through the draw-bar, the inclined levers K fulcrumed at their central points upon the ends of the car above and to each side of the line of the pin, having their outer ends to receive a chain or connection by which the links are operated, a link O occupying the space between the separated inner ends of the levers and pivotally connected at its ends with said levers, and a chain extending from a point between the opposite ends of the link and connected with the coupling-pin, said link O being interposed between the inner ends of the levers K whereby one of the levers serves as a fulcrum about which the link is movable when the outer end of the other lever is moved downward, and the chain connecting the link with the coupling pin is moved in a vertical line to withdraw the pin.

545,646. SEWING-MACHINE. GEORGE L. HARLOW, Somerville, Mass. Filed Oct. 16, 1893. Serial No. 488,264. (No model.)

Claim.—1. In a sewing machine, the combination of a needle-bar carrying two needles, two shuttles for co-operation with said needles respectively, a bed-plate having a hinged section supporting one of said shuttles, a driving shaft applied to the other shuttle, a counter-shaft composed of sections detachably joined between the sections of the bed-plate, gearing connecting one section of said counter-shaft with the driving shaft, and gearing connecting the other section of the counter-shaft with the shuttle on the hinged section of the bed-plate, substantially as and for the purpose set forth.

2. In a sewing machine, a reciprocating needle-bar provided with needles, combined with a driving shaft, a gear and pinion having a portion of their teeth mutilated or cut away, a second gear and pinion having a portion of their teeth cut away, said gears and pinions being adapted to co-operate as explained, and a pitman connecting the second mentioned gear and pinion with the needle-bar, as set forth.



545,647. SYRINGE. JOHANNES F. HARTZ, Detroit, Mich., assignor to E. J. Hussey & Co., New York, N. Y. Filed Feb. 20, 1895. Serial No. 539,100. (No model.)



Claim.—1. A jointless, vaginal syringe of smooth, hard material comprising a shield, the hollow flexible edge on the shield a nozzle with jet-apertures, an inlet nipple communicating with the nozzle, and an outlet nipple for the waste-liquid, all rigidly and jointlessly connected, whereby the formation of crevices for the collection of filth and germs is avoided and cleansing facilitated, substantially as set forth.

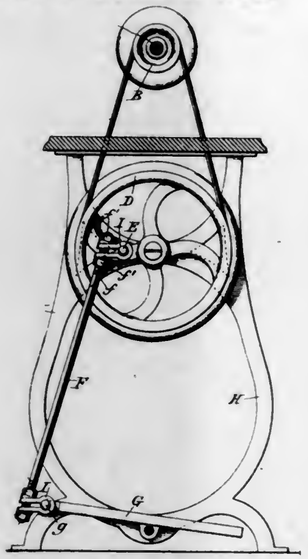
2. In a syringe, the combination with the shield, having an outlet for the waste-liquid, and a nozzle B, united in a rigid and jointless manner to the inner face of said shield, of the two flanges G, along the under side of the nozzle and adapted to hold back the adjacent parts so that they will not impede the outflow of the waste-liquid, substantially as set forth.

3. In a syringe, the tubular nozzle B, having its outer end formed of longitudinally extending ribs D, and having jet-apertures F, at the re-entering angles between said ribs, said apertures being inclined forward, substantially as set forth.

4. In a syringe, the combination with a smooth shield of hard material, of the nozzle B having ribs D at the end, separated by grooves E, and the jet-apertures D situated at the base of said grooves, the inlet nipple C, the flanges G on the under side of the nozzle and forming the channel leading to the discharge outlet, the outlet, or discharge nipple J, the lip L, forming the lower wall of the flaring mouth of the discharge outlet and the tubular ring of soft rubber detachably secured about the edge of the shield, substantially as set forth.

5. In a syringe, the combination with a smooth, oval shield of hard material, provided with a nozzle, an inlet nipple, an outlet nipple, a flared outlet passage I, connecting with the outlet nipple, a lip L, forming an extension of the lower wall of the passage I, and with a groove M, of the removable tubular, packing ring N, of soft rubber provided with a flap O, said flap embracing the edge of the shield all around and the tubular ring occupying the groove M, at the bottom of the shield, substantially as and for the purposes set forth.

545,648. PITMAN-ROD. GEORGE G. HASBROUCK, Nyack, N. Y. Filed Feb. 6, 1895. Serial No. 537,443. (No model.)



Claim.—1. A pitman rod comprising a rod having its ends threaded, an abutment secured on said rod, a bearing yoke formed to embrace the bearing pin or stud and having its ends perforated to receive the end of the rod, and a nut on said rod to press together the ends of the yoke, substantially as shown and described.

2. A pitman rod comprising a rod having its end threaded, two nuts on said rod and a bearing yoke formed to embrace the bearing pin or stud and having its ends perforated to receive the end of the rod and placed on said rod between the nuts, substantially as shown and described.

545,649. TROLLEY-ARRESTER. HENRY F. HILDEBRANDT, Rochester, N. Y., assignor of one-half to Martin C. Rutherford, same place. Filed May 6, 1895. Serial No. 548,333. (No model.)



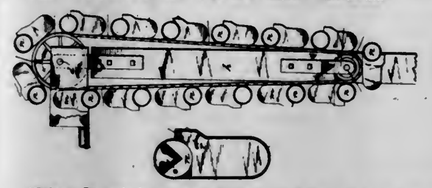
Claim.—1. The combination, with a trolley arrester, of a case, the top of which is provided with a rigid catch, a spring within the case, a cord connected with the spring at one end and adapted to be secured to the trolley arm at the other, and means upon the cord to engage with the catch of the case, substantially as set forth.

2. The combination, with a trolley arrester, of a case, the top of which is provided with an opening, a portion of the said opening being contracted, a spring within the case, a cord secured to the upper end of the spring, the upper end of which is adapted to be secured to the trolley arm, and a button upon the cord adapted to rest upon the top of the case above the contracted portion of the opening, substantially as set forth.

3. The combination, in a trolley arrester, of a perforated dash board, a case provided with projections for entering said perforations, a fastener for one of the projections, a spring within the case, a cord secured to the spring at one end and adapted to be secured to the trolley arm at the other end, and means for holding the spring in an expanded condition, substantially as set forth.

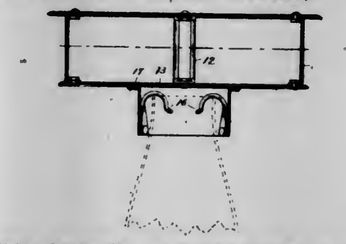
4. The combination, in a trolley arrester, of a cord adapted to be connected with the trolley arm at one end and with means for retracting it at the other end, rings and a snap hook intermediate the ends of the cord for varying the length of the cord, relatively to its ends, substantially as set forth.

545,650. WATER-ELEVATOR. ALEXANDER HOGELAND, Lincoln, Nebr. Filed Sept. 6, 1894. Serial No. 522,237. (No model.)



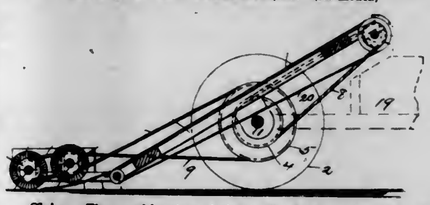
Claim.—In a chain pump a bucket consisting of a box closed at the top and bottom, and having two opposite discharge openings a cone shaped deflector in the center of said top, an air passage at one side of said box, and a screen or fender located in said air space, substantially as shown and described.

545,651. LAMP-HEATER. GEORGE C. HOWARD, Waltham, Mass. Filed Dec. 4, 1894. Serial No. 530,770. (No model.)



Claim.—In a lamp heater, the upper imperforate plate 10, the straps 12 connecting said plate to the lower plate 11, said plate 11 having the perforations 13 and 19, in combination with collar 15 provided with hooks 16 and the flange 17, said collar being secured to the plate 11 by means of lips 18 struck from the plate 11 and bent under the flange 17, substantially as described.

545,652. STREET-SWEEPER. GEORGE D. HUFFMAN, Pittsburg, Pa. Filed Aug. 13, 1894. Serial No. 520,122. (No model.)

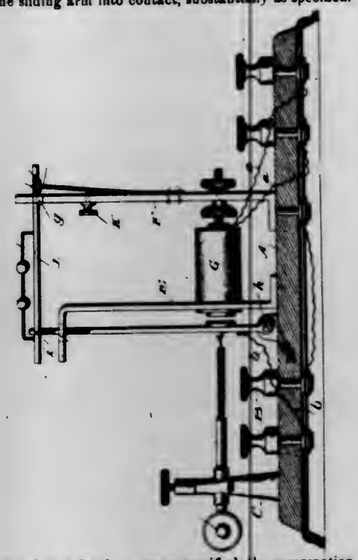


Claim.—The combination of the inclined elevating endless conveyer, the correspondingly disposed frame having rollers at its ends compassed by said conveyer, pulleys on the upper one of said rollers, transporting wheels for said frame, whose axle also carries a series of pulleys, belts compassing the pulleys on said upper roller and pulleys of said series, the parallel rotary sweepers and their carrying frame connected with the lower end of said inclined frame, one of said sweepers having a pulley on each end, and the other sweeper having a series of pulleys on each end, belts compassing the pulleys of one of said sweepers and one of each of the series of the pulleys of the other sweeper, belts compassing the other pulleys of said last referred to series of pulleys and the coincident pulleys of the series of pulleys on the axle of the transporting wheels, and the apron hinged at the lower end of said carrying frame and arranged below the inner one of the said sweepers, substantially as set forth.

545,653. ELECTRIC ALARM. WILLIAM S. HULL, Dallas, Tex. Filed Nov. 26, 1894. Serial No. 529,951. (No model.)

Claim.—1. In a device for the purpose specified, the combination of a magnet and its armature, a vertical and a horizontally-disposed contact point, and a sliding bar or arm carrying one of said contact points and an insulator normally resting upon the vertical contact point and adapted when moved in either direction to fall off of the

vertical contact and bring the vertical contact and the conducting part of the sliding arm into contact, substantially as specified.



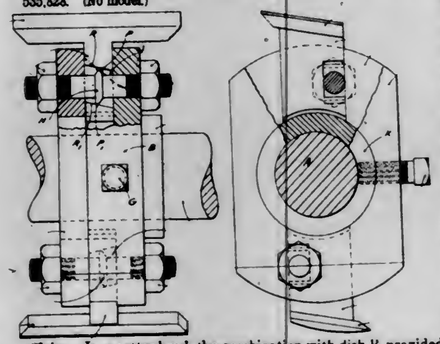
2. In a device for the purpose specified, the combination with a magnet, the pivoted armature and its pivoted portion, of a contact point, and a cooperating contact point and an insulator, in a different plane from and dividing said cooperating contact point, substantially as specified.

3. The combination with the magnet, the armature and the sliding arm thereon, of the contact point, the platina strip and the insulator in a different plane, substantially as and for the purpose specified.

4. The combination with the magnet, the pivoted armature, the alarm connections and the main line, of the sliding arm carried by the armature, the contact points the insulator dividing one of said points and the means for keeping them normally separated, said means being in a different plane from the contact on the arm, as set forth.

5. A magnet and a pivoted armature and sliding arm connected with said armature and provided with a contact point and an insulator dividing the same and arranged upon a different plane, combined with an adjustable pivotally-mounted vertical contact arm upon which the sliding arm normally rests as set forth.

545,654. CUTTER-HEAD FOR WOODWORKING-MACHINES. JOHN L. JOHNSON, Marquette, Mich. Filed Jan. 22, 1895. Serial No. 535,823. (No model.)



Claim.—In a cutter head, the combination with disk B, provided with hubs L and K, disk H and H', with edges P and P' held in position by clamping-plate C, by means of bolts F and F', and nuts I and I'; disk B being provided with grooves to accommodate shank N of cutter E, and with grooves to accommodate shank M of counterbalance D; together with cutter blade in which diagonal slots O, with edges R and R' are located; said mechanism being adjusted to arbor A by set screw G for use; all substantially as shown and described.

545,655. WINDOW-VENTILATOR. SARA F. JONES, Cartersville, Ga., assignor to Robert P. Griffin, same place. Filed Jan. 30, 1895. Serial No. 536,714. (No model.)



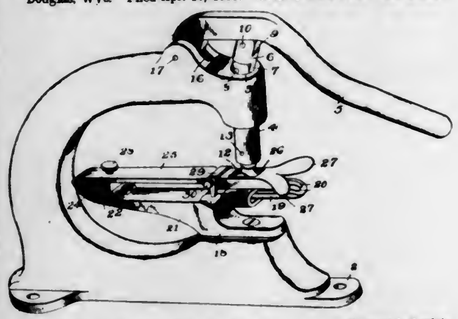
Claim.—A ventilating screen frame provided with double rolls on opposite sides, a continuous screen secured to and passing across back and forth around the rolls forming a plurality of screens with air-spaces between the same and adjusting devices for the rolls.

545,656. NOZZLE FOR GARDEN-HOSE. FRANK LEWIS, Pleasanton, Cal. Filed June 12, 1895. Serial No. 552,570. (No model.)



Claim.—As an improved article of manufacture, a spray nozzle for lawn and garden hose, comprising a nozzle body having a series of lateral discharge openings, and a flaring deflector fixedly attached to the nozzle body and formed of pliable sheet material which is adapted to be bent into a variety of forms and which will retain the shape imparted thereto, substantially as described for the purpose set forth.

545,657. MACHINE FOR MAKING LOOPS. HOWARD G. PETERS, Douglas, Wyo. Filed Apr. 17, 1895. Serial No. 546,066. (No model.)



Claim.—1. In a machine for making loops, an anvil provided with a forwardly extending grooved arm, a spring clamping arm located above said grooved arm, and the flaring extensions on said clamping arm for facilitating the elevation thereof, substantially as described.

2. In a machine for forming loops, an anvil provided with a grooved face, in combination with a spring clamping arm located opposite to said grooved face and provided with an aperture for the reception and passage of the die, and also provided with oppositely flaring wings or extensions for facilitating the lifting of the clamping arm, and means for adjusting the tension of said arm, substantially as described.

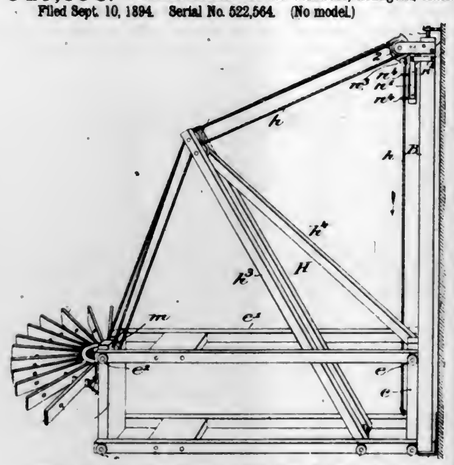
3. In a loop making machine, an anvil provided with a grooved arm, a spring clamping arm arranged adjacent thereto and provided with an aperture for the passage of the die, an adjustable gage for regulating the position of the material to be operated upon, means for adjusting the tension of the clamping arm, and means for regulating the distance between the anvil and said clamping arm, substantially as described.

4. In a machine for making loops, an anvil provided with an arm or rest having formed therein parallel grooves, a spring clamping arm arranged opposite to the grooved arm of the anvil and provided with an aperture for the passage of the die, an oppositely diverging pair of wings or extensions on said clamping arm for facilitating the raising thereof while inserting the material to be operated upon, an adjustable gage for regulating the position of the material with relation to the die, and means for adjusting the distance between the clamping arm and the grooved arm or rest on the anvil, and means for regulating the tension of the clamping arm, substantially as and for the purpose specified.

5. In a machine for making loops, the combination with a supporting frame, of an anvil having a horizontal grooved arm, a spring clamping arm located above said anvil and provided with an aperture for the passage of the machine die, the flaring wings or extensions at

the forward end of said clamping arm for facilitating the lifting thereof, the adjustable gage for regulating the position of the loop with relation to the die, and a set screw for adjusting and regulating the tension of said clamping arm, substantially as described.

545,658. CLOTHES-DRIER. EDWIN PRESCOTT, Arlington, Mass. Filed Sept. 10, 1894. Serial No. 522,564. (No model.)



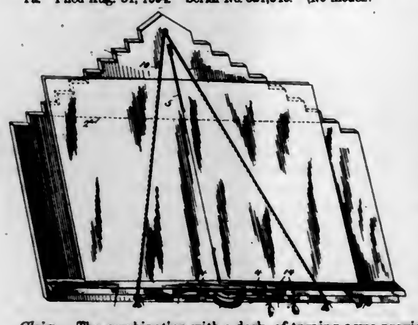
Claim.—1. In a clothes drier, a hub adapted to receive and support slats or bars, and a head to support said hub, parallel arms to sustain said head, a foot to which the opposite ends of said arms are jointed, and means to raise and lower said parallel arms, substantially as described.

2. In a clothes drier, a foot, parallel arms jointed to said foot one above the other, a head pivotally connected to the outer ends of the arms, and horizontal slats or bars supported in a part of the head, combined with an operating rope to raise and lower the head, the parallel arms during such movement maintaining the slats or bars horizontal, a boom to sustain the rope above the head, and means to move the sustaining portion of the boom at substantially one-half the speed of the head, substantially as described.

3. In a clothes drier, a pivoted post, a foot secured thereto, parallel arms jointed to said foot, a head carried by said arms, and a hub attached to said head and provided with slats or bars, combined with a rope, sheaves over which the same is passed to raise and lower said parallel arms, a ratchet wheel, and a locking device co-operating therewith and under the control of the rope, substantially as described.

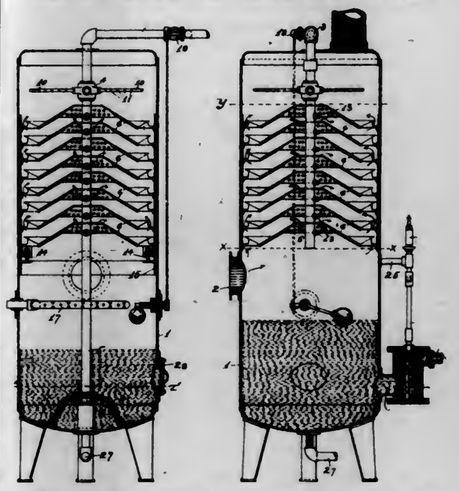
4. In a clothes drier, a hub adapted to receive and support slats or bars, and a head to support said hub, parallel arms to sustain said head, a foot to which the opposite ends of said arms are jointed, combined with means to raise and lower said parallel arms, and a locking device co-operating with said means, to maintain said arms at any desired angle, substantially as described.

545,659. MUSIC-LEAF TURNER. WILLIAM B. PURDY, Corsica, Pa. Filed Aug. 31, 1894. Serial No. 521,846. (No model.)



Claim.—The combination with a desk, of turning arms provided with partially rotatable co-axially mounted drums, rotatable tension pins spaced from said drums, springs attached at one end to the drums and at the other end to the tension pins, catches 12 to engage said turning-arms, respectively, and releasing keys having leaf-springs 14 arranged at their free ends in operative relation with the turning arms when the latter are engaged by said catches, and shanks connected to said leaf-springs and terminating in finger-holds, substantially as specified.

545,660. FEED-WATER HEATER. JOHN E. SCHLIEPER, Allegheny, Pa. Filed May 21, 1895. Serial No. 550,033. (No model.)



Claim.—1. In a feed water heater, the combination of a shell having a series of pans, every alternate one of which is provided with an opening or perforation in the center thereof; a spray, a water supply pipe connected therewith; a vertical pipe or rod revolubly secured to the lower end of said spray and rigidly connected with said pans, whereby said pans may be turned with said bar or pipe; and a chamber between said heater and a pump and connected therewith, the channel connecting the heater and said chamber being larger than that connecting said chamber and pump, and below the plane of the same, and below the low water line in said heater, substantially as described.

2. In a feed water heater, the combination of a shell having a series of pans, every alternate one of which is provided with an opening or perforation in the center thereof; a spray, a water supply pipe connected therewith; a vertical pipe or rod revolubly secured to the lower end of said spray and rigidly connected with said pans, whereby said pans may be turned with said bar or pipe; and a chamber between said heater and a pump and connected therewith, the channel connecting said heater and said chamber being larger than that connecting said chamber and pump, and below the plane of the same, and below the low water line in said heater; a strainer located at the high water level in said heater; and a swimmer connected with and adapted to control a valve in said water supply pipe, substantially as described.

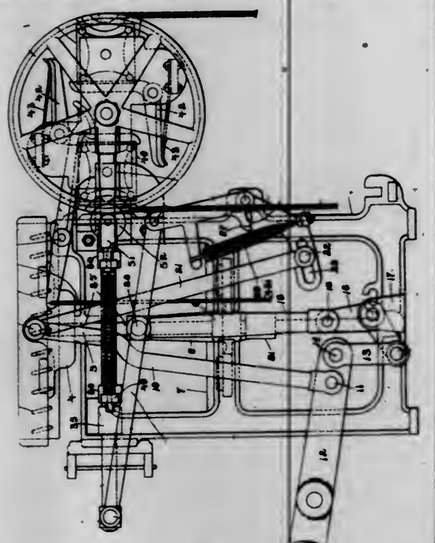
545,661. JACQUARD MACHINE. GEORGE W. STAFFORD, Providence, R. I., assignor to the Knowles Loom Works, Worcester, Mass. Filed Feb. 1, 1895. Serial No. 536,950. (No model.)

Brief.—Two or more card-cylinders are mounted upon a "fixture" or arms secured to a shaft extending across the line of needles, and each cylinder bears its own pattern-cards, whereby when it is desired to change the figure or pattern in the cloth being woven the shaft is rotated by the rope 56 to bring the idle cylinder into action and turn the previously-active cylinder out of operative position.

Claim.—1. The combination with the slide-rod 34, and means for reciprocating the same, of the cross-shaft 37 mounted in a bearing provided on the said slide-rod, the fixture 38 secured to the said cross-shaft and provided with a plurality of bearings, a plurality of cylinders or prisms having the journals thereof mounted in the bearings on the said fixture, separate checking devices for the said cylinders or prisms, means whereby the cross-shaft and its appurtenances may be rotated to present the desired cylinder or prism in position for action and for locking the same in such position, until it is again to be partially rotated, and means for actuating the cylinder or prism which for the time being is in working position, substantially as described.

2. The combination with the slide-rod 34, and means for reciprocating the same, of the cross-shaft 37 mounted in a bearing provided on the said slide-rod, the fixture 38 secured to the said cross-shaft and provided with a plurality of bearings, a plurality of cylin-

ders or prisms having the journals thereof mounted in the bearings on the said fixture, separate checking devices for the said cylinder or prisms, means whereby the cross-shaft and its appurtenances may be rotated to present the desired cylinder or prism in position for action and for locking the same in such position until it is again to be partially rotated, and the hook or pawl 44 pivoted to the machine framing for co-operation with the cylinder or prism which for the time being is in working position, substantially as described.



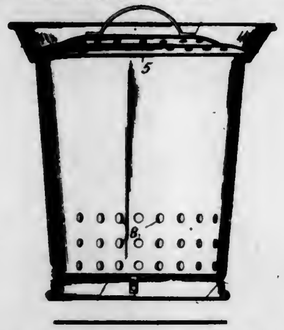
3. The combination with the slide-rod 34, and means for reciprocating the same, of the cross-shaft 37 mounted in a bearing provided on the said slide-rod, the fixture 38 secured to the said cross-shaft and provided with a plurality of bearings, a plurality of cylinders or prisms having the journals thereof mounted in the bearings on the said fixture, separate checking devices for the said cylinders or prisms, means for separately actuating the cylinder or prism which is presented in position for action, a wheel secured to the said cross-shaft, ropes connected with the said wheel for rotating it as may be required in order to present the desired cylinder in position for action, and checking devices co-acting with the said wheel to retain it and the cross-shaft with the parts carried by the latter in the desired position of adjustment, substantially as described.

4. The combination with the slide-rod 34, and means for reciprocating the same, of the cross-shaft 37, mounted in a bearing provided on the said slide-rod, the fixture 38 secured to the said cross-shaft and provided with a plurality of bearings, a plurality of card-cylinders or prisms having the journals thereof mounted in bearings on the said fixture, the checking levers 42 co-acting with the cylinders or prisms, the springs 43 acting upon the said checking levers, the pawl 44 pivoted to the machine-framing for engaging with the cylinder or prism which for the time being is presented in position for action, the wheel 46 secured to the said cross shaft, the rope or ropes connected with the said wheel for rotating it as may be required in order to present the desired cylinder in position for action, guides carried by the slide-rod, the rod 48 mounted in said guides, the spring 53 acting on said rod, and the roller 52 carried by the said rod and entering notches in the wheel 46 and acting to lock the cross-shaft in position after being partially rotated, substantially as described.

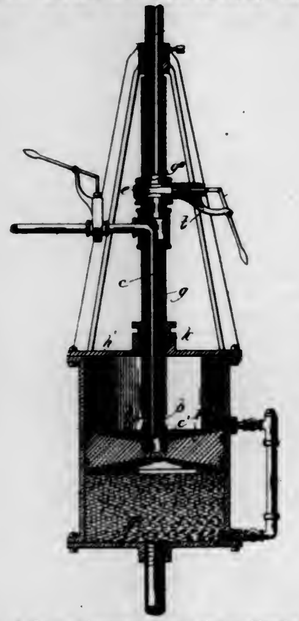
545,662. WASTE-PAPER BASKET. JOHN W. STEWART, York, Nebr. Filed May 23, 1895. Serial No. 550,382. (No model.)

Claim.—1. A receptacle to be used in connection with the ordinary waste paper basket for receiving the refuse, and in which the same is adapted to be burned, provided with an imperforate bottom and upper portion, and formed with an outwardly-flaring portion, and having its lower portion formed with perforate sides, clips secured to the said flaring portion, a cover provided near its outer edge with a series of perforations, and with projections to positively engage with the said clips, and a handle attached to the central portion of the cover and serving as a means for carrying the receptacle when the cover is positively secured thereto, substantially as set forth.

2. As an improved article of manufacture, a sheet-metal receptacle to be used in connection with waste-paper baskets, or like articles, for receiving the waste and in which the same is adapted to be consumed, an imperforate bottom provided with ears to receive the fastenings by means of which it is positively attached to the body of the receptacle, and which is supported upon an inwardly-spun bead, the lower portion of the receptacle being provided with a series of perforations and its upper portion being imperforate and formed with an outwardly-extending shoulder and an upwardly-flaring portion, clips secured to the said flaring portion, and a cover provided near its outer edge with a series of perforations, and with projections to engage with the said clips, and having a centrally-disposed handle, substantially as and for the purpose set forth



545,663. CAR-BRAKE APPARATUS. JOSEPH S. TROTT, Chicago, Ill., assignor of two-thirds to William K. Carlisle and William J. Strong, same place. Filed Apr. 5, 1894. Serial No. 506,436. (No model.)



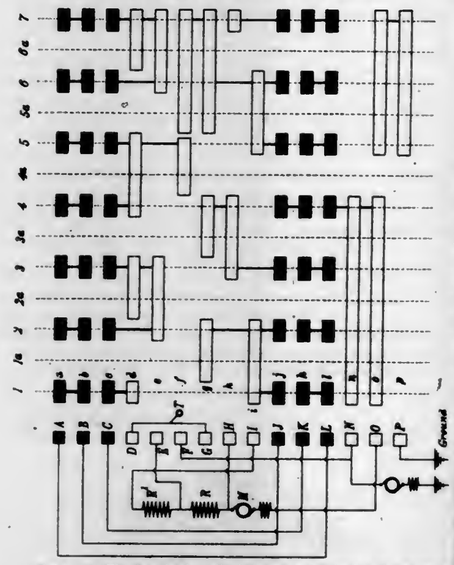
Claim.—1. In a car-brake apparatus, the combination of a brake-lever connected with the brake-beams, a fluid pump having its piston formed with a concave cushioning surface, and an outlet-pipe leading from the pump and provided with an extensible liquid operated connection with the brake-lever and containing the supply of liquid permanently confined between said extensible connection and the pump-piston to form a piston-rod, substantially as described.

2. In a car-brake apparatus, the combination of a brake-lever connected with the brake-beams, a steam-operated pump having an outlet-pipe provided with an extensible fluid-operated connection with the brake-lever, and a telescoping steam-supply pipe forming the stem of the pump piston and provided with steam-inlet and exhaust ports, and valve-mechanism for controlling the steam-supply and exhaust of the pump, substantially as described.

3. In a car-brake apparatus, the combination of a brake-lever connected with the brake-beams, a steam-operated pump E having a piston F formed with a concave cushioning surface, and an outlet-pipe *l* terminating in a telescoping brake-cylinder connected with the brake-lever, a liquid confined in the outlet-pipe between the pump-piston and brake-cylinder to actuate the latter by forcing the piston against the liquid, a telescoping steam supply pipe forming the stem of the pump-piston and provided with steam-inlet and exhaust ports, and valve-mechanism for controlling the steam supply and exhaust of the pump, substantially as described.

4. A car-brake apparatus comprising, in combination, the brake-lever C connected with the brake-beams and having the handle-extension *p*, a pump E having a piston F formed with a concave cushioning surface, a pipe *l* leading from the pump and terminating in a brake-cylinder D formed with telescoping sections *m* and *n*, the latter being connected with the handle-portion of the brake-lever, said pipe containing the operating liquid confined between the pump-piston and brake-cylinder, a steam-pipe forming the stem of the pump-piston and comprising the telescoping pipe-sections *g* and *g'*, ports *l* and *d* and a valve in the pipe-section *g* and a valve-controlled exhaust-pipe *o* therein, the whole being constructed and arranged to operate substantially as described.

545,664. METHOD OF AND APPARATUS FOR CONTROLLING CURRENT FOR ELECTRIC MOTORS. THORSTEN VON ZWEIGBERGK, Cleveland, assignor of one-half to George C. Worthington, Elyria, Ohio. Filed Nov. 1, 1894. Serial No. 527,617. (No model.)



Claim.—1. The herein described process of reducing the current for electric motors on street cars and the like, which consists in connecting in some part of the circuit then existing an arc spanning system which includes a plurality of separable contacts in series, then connecting up the reduced circuit in parallel with that part of first circuit which contains the arc spanning system, and then, after both of the above named steps have been performed in either order, simultaneously separating a plurality of said separable contacts, substantially as and for the purpose specified.

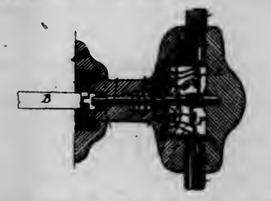
2. The herein described process of reducing the current for electric motors on street cars and the like by introducing resistance into the circuit, which consists in connecting said resistance, in series, in the circuit, forming around the resistance so connected a shunt which includes a plurality of separable contacts in series, and finally simultaneously breaking a plurality of contacts in said shunt, substantially as and for the purpose specified.

3. The combination of a switch having thereon controller strips, and arc spanning strips, with corresponding fingers adapted to engage with some of the controller strips in every position of the switch and with the arc spanning strips in alternate positions thereof, said strips and fingers being connected substantially as described whereby in every alternate position of the switch the arc spanning strips and corresponding fingers are connected, in series, in the circuit, for the purpose specified.

4. The combination of a switch having thereon controller strips some of which lie in every vertical row which corresponds to the several positions of the switch, and arc spanning strips which lie in every other of said vertical rows, with contact fingers which correspond and are adapted to engage with said strips, the fingers which form contacts with the arc spanning strips being connected with each other, the other fingers being connected with the resistances, motors, ground and trolley, and the strips being connected with each other substantially as described, whereby, in alternate positions of the switch the arc spanning strips and their fingers are connected, in series, in the circuit, substantially as and for the purpose specified.

5. The combination of a rotatable shaft, a controller cylinder loosely mounted thereon, a notched indicator wheel secured to said cylinder, and a spring arm adapted to engage with said indicator wheel, with a hub rigidly secured to said shaft and having a notched radial arm, an arm secured to the lower end of the cylinder and extending downward into the notch in said arm and fitting loosely therein, and a longitudinally expansible coil spring which is secured at its ends respectively to the hub and cylinder, substantially as and for the purpose specified.

545,665. DOOR-KNOB LOCK. GEORGE L. BARNEY, Indianapolis, Ind., assignor of one-half to John L. Clough, same place. Filed Feb. 26, 1894. Serial No. 501,571. (No model.)



Claim.—1. A knob, provided with keyless locking devices, a clutch member carried by the knob, means for automatically disengaging the said clutch member from its corresponding member, and springs acting in opposition to said disengaging means for engaging the clutch member when the proper keyless locking devices are operated, substantially as described.

2. A knob provided with keyless locking devices, a clutch member mounted on the knob, a spring for automatically disengaging the clutch member from its corresponding member and a spring or springs controlled by the keyless locking devices, for engaging the clutch members, substantially as described.

3. A knob provided with keyless locking devices a clutch, a plunger rod connected to the clutch, a spring for holding the plunger rod in normal position, a series of springs acting in opposition to the first and bearing on the plunger rod, and controlled by the keyless locking devices, substantially as described.

4. A knob provided with keyless locking devices embracing a series of push buttons, a clutch and rod for operating the same, and a series of springs, one end of each of which is connected to the rod, and the other end of each of which is connected to one of the push buttons, substantially as described.

5. A knob provided with a clutch and rod, a spring for holding the same in normal position, a series of push buttons, plates connected to the push buttons and engaging the rod and provided with openings, and a series of springs connected to the push buttons, a portion of which are also connected to the rod, substantially as described.

6. A knob, provided with a clutch device, a rod connected thereto, a spring for holding the clutch in normal position, a series of push-buttons, a series of plates connected to the push-buttons and having openings and controlling the movements of the rod, and springs connected to said plates, a portion of which springs are arranged to operate the clutch, substantially as described.

7. A knob, having a recess in its outer portion, provided with a removable box-like casing, a series of push-buttons, plates connected to the push-buttons and extending into the casing, and springs mounted in the casing and connected to the plates, substantially as described.

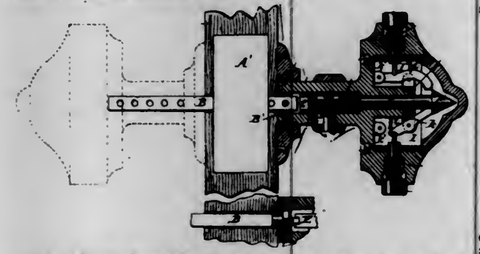
545,666. DOOR-KNOB LOCK. GEORGE L. BARNEY, Indianapolis, Ind., assignor of one-half to John L. Clough, same place. Filed Feb. 26, 1894. Serial No. 501,572. (No model.)

Claim.—1. A knob, adapted for attachment to an ordinary lock or latch operating spindle and to turn independent thereof, provided with keyless permutation locking devices embraced within the knob and arranged to control the operation of the knob, substantially as described.

2. A knob, adapted for attachment to an ordinary lock or latch operating spindle and to turn independent thereof provided with keyless permutation locking devices, and a clutch controlled by said devices, substantially as described.

3. A knob adapted for attachment to an ordinary lock or latch spindle and to turn independent thereof, provided with keyless lock-

ing devices embraced within the knob, a clutch, and means for moving the clutch automatically when the proper keyless devices have been operated, substantially as described.



4. A knob adapted for attachment to an ordinary lock or latch operating spindle and to turn independent thereof, provided with keyless permutation locking devices, a clutch member mounted in the knob and controlled by said keyless devices, in combination with a latch and means for operating it, and means for attaching the knob in position to engage the said latch operating device, substantially as described.

5. The combination with a door provided with an ordinary spindle projecting through the door, of a knob provided with keyless permutation locking devices, means for securing the knob to the door with relation to the spindle so that the knob can move without operating the spindle, and a clutch device within the knob arranged to engage the spindle so that it will be operated with the knob, the clutch being controlled by the keyless locking devices, substantially as described.

6. A knob provided with a series of push-buttons radially mounted in the knob, a clutch device and intermediate connections between the radial push-buttons and clutch device, for controlling the latter, substantially as described.

7. A knob provided with a series of push-buttons and a clutch device, a plunger connected to the clutch device and locking devices controlling the plunger and controlled by the push-buttons, substantially as described.

8. A knob provided with a series of push-buttons and with a clutch, a plunger connected to the clutch having an enlarged head, and a series of locking devices engaging the head and controlled by the push-buttons, substantially as described.

9. A knob provided with a series of push-buttons, and a plunger, a series of locking devices normally engaging the plunger and operated to be disengaged by the push-buttons, and another series of locking devices normally disengaging the plunger but operated by the push-buttons to engage therewith, substantially as described.

10. A knob provided with a series of spring-controlled push-buttons, a plunger provided with a head, a series of locking devices normally engaging the head and operated to be disengaged by the corresponding push-buttons, and a series of false locking devices normally disengaging the head and arranged to be operated to engage the head by the corresponding push-buttons, substantially as described.

11. A knob provided with a series of push-buttons, a plunger having a head, a ring provided with a series of bearings, a series of locking devices mounted in the ring, and bearings on the knob, and a series of locking devices connected to said bearings and extending through the bearings of the ring, substantially as described.

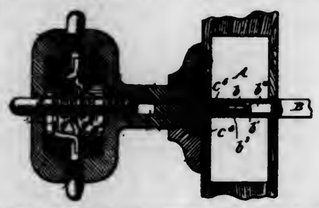
12. A knob provided with a series of spring controlled push-buttons, a stem, a clutch sliding in said stem, a collar surrounding the stem and connected to the clutch, a plunger connected to the clutch, locking devices controlling the plunger and controlled by the push-buttons, and a spring for moving the clutch when released by the locking devices, substantially as described.

13. A knob provided with true and false keyless locking devices, a clutch adapted to be moved into and out of operative position, and means controlling the position of the clutch and controlled by the keyless locking devices, the said means being constructed to permit the operation of the locking devices whether the clutch is in operative or inoperative position, substantially as described.

14. The combination with a knob provided with keyless permutation locking devices and provided with one member of a clutch device, of a spindle adapted to fit an ordinary lock or latch and having at one end the usual knob-attaching device, and at the other end a clutch member, substantially as described.

545,667. DOOR-KNOB LOCK. GEORGE L. BARNEY, Indianapolis, Ind., assignor of one-half to John L. Clough, same place. Filed Feb. 26, 1894. Serial No. 501,573. (No model.)

Claim.—1. A knob, provided with keyless locking devices, a plunger rod controlled by the locking devices, and a spring within the knob for normally holding the plunger rod in its extended position, the plunger rod being adapted to be moved manually when the proper keyless locking devices are operated, substantially as described



2. A knob, provided with keyless locking devices, a plunger rod controlled by the locking devices, a spring within the knob for holding the plunger rod in its extended position, and keyless locking devices embracing the rod and controlling its movements, substantially as described.

3 The combination with a lock or latch having a spindle for operating it, of a knob provided with keyless locking devices, a plunger controlled by said devices having an extended rod operating as a clutch to engage the spindle of the lock, substantially as described.

4. A knob provided with keyless locking devices, a rod having cut-away portions, and plates embracing said rod, the said plates having openings therein through which the rod moves, substantially as described.

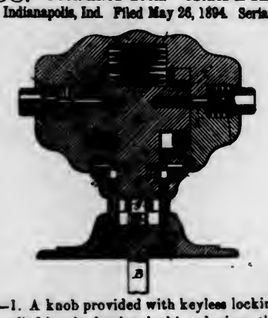
5. A knob, provided with a rod having cut-away portions, a series of plates each having a larger and a smaller opening embracing the rod, and a portion of which are arranged reversely to the others, and push-buttons controlling the plates, substantially as described.

6. A knob, provided with a rod having cut-away portions, a series of perforated plates embracing the rod, the plates being of various thicknesses, and means for operating the plates, substantially as described.

7. The combination with the spindle of an ordinary lock having perforations in its end, of a knob loosely connected thereto, the knob being provided with a rod to engage the spindle, and keyless locking devices controlling the rod, substantially as described.

8. The combination with the spindle of an ordinary lock or latch having openings in its end, of a knob loosely connected to said spindle, a plunger provided with an extension adapted to engage the openings in the spindle, plates embracing the rod, push-buttons controlling the plates, and a spring for holding the rod in its normal position out of engagement with the spindle, substantially as described.

545,668. DOOR-KNOB LOCK. GEORGE L. BARNEY and JOHN L. CLOUGH, Indianapolis, Ind. Filed May 26, 1894. Serial No. 512,530. (No model.)



Claim.—1. A knob provided with keyless locking devices, and a plunger controlled by the keyless locking devices, the plunger being provided with a series of recesses carrying pins, substantially as described.

2. A knob provided with keyless locking devices, a spring-controlled plunger, recesses in the periphery of the plunger, and spring-actuated pins mounted in the recesses, substantially as described.

3. A knob provided with keyless locking devices, a plunger, recesses in the periphery of the plunger, and spring-controlled pins mounted in the recesses, a portion of which normally project beyond the periphery of the plunger, and a portion normally within the periphery of the plunger, substantially as described.

4. A knob provided with keyless locking devices, and a plunger provided with a series of recesses carrying pins and provided with a second series of recesses adjacent the first series, substantially as described.

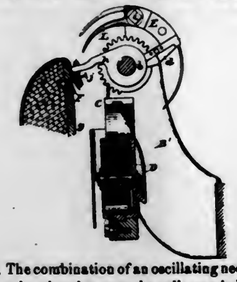
5. In a knob, the combination with push-buttons having spindles, a portion of which extend to the periphery of the recess in the knob, and a portion of which extend a less distance, of a plunger provided with a series of pins, a portion of which extend beyond the periphery of the plunger, and a portion of which are within the periphery of the plunger, substantially as described.

6. A knob, provided with a series of keyless locking devices, a shank, a plunger within the knob and projecting into the shank, and a collar embracing the shank and connected to the plunger, substantially as described.

7. In a knob, the combination with the spring-controlled push-buttons having spindles, of a spring-actuated plunger within the knob, the plunger being provided with recesses containing spring-actuated pins, and a collar connected to the plunger, substantially as described.

8. A knob, provided with keyless locking devices, a plunger having recesses supporting pins, and a spring comprising an annular portion having arms supporting the pins in the plunger, substantially as described.

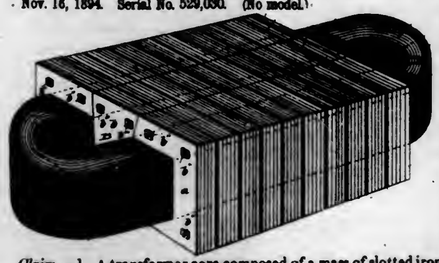
545,669. TACK-PULLING ATTACHMENT FOR SEWING-MACHINES. JOSEPH E. BERTRAND, Boston, assignor of one-half to Mellen Bray, Newton, Mass. Filed Feb. 18, 1895. Serial No. 538,810. (No model.)



Claim.—1. The combination of an oscillating needle and awl carrying arm; a curved awl and a curved needle carried thereby; a work support constructed and arranged to enter the channel of the sole; a presser foot to bear upon the upper or welt; a tack pulling blade carried by said needle and awl carrying arm; and means for oscillating said arm.

2. The combination of an oscillating needle and awl carrying arm; a needle and awl carried by said arm and curved to an arc of a circle concentric to the axis of said arm; a work support constructed and arranged to enter the channel of the sole; a looper; a thread carrier; a shuttle; a tack pulling blade carried by said needle and awl carrying arm and curved to an arc of a circle parallel to said awl or needle but of a somewhat less radius and having a series of teeth formed on its working end, and adapted to engage and withdraw any lasting tack that may be in its path when the awl descends to pierce the work.

545,670. ELECTRIC TRANSFORMER. WILLIAM F. BRITTIN, Allegan, assignor of one-half to Edwin N. Howe, Coldwater, Mich. Filed Nov. 16, 1894. Serial No. 529,080. (No model.)



Claim.—1. A transformer core composed of a mass of slotted iron plates or laminations which are superimposed one upon the other and arranged in groups, each group consisting of a series of plates in metallic contact with each other, and each group insulated from an adjacent group or groups by layers of asbestos as heat resisting insulations, said plates or laminations having one side cut away to produce the seat, and a removable section fitted in the seat formed by the slotted plates and composed of plates or laminations which are also disposed in groups, each consisting of a series of plates in metallic contact with each other and each group insulated from adjacent groups by layers of asbestos which are bound with the plates, in combination with the primary and secondary coils which are arranged within the slotted plates and around the removable section, substantially as and for the purposes described.

2. In an electric transformer, the primary and secondary coils each coated with a solution of gum shellac and logwood extract and with the secondary coil wound within and insulated from the primary coil, in combination with a core around which the coils are wound, substantially as and for the purposes described.

3. The method of preparing the primary and secondary of an electric transformer which consists in winding a layer *d* of the primary and coating the same with a solution of gum shellac and extract of logwood; then winding the secondary coil upon said primary coil layer *d*, and coating the same with the before mentioned solution; then winding another layer *d'* of the primary coil upon said coil of secondary winding and applying said solution to the primary coil winding *d'*; immersing the primary and secondary windings in a bath of the solution, and finally drying the structure, substantially as and for the purposes described.

4. The method of preparing the primary and secondary of an electric transformer which consists in winding the secondary within layers of the primary, coating the windings with a solution of gum shellac and extract of logwood, and finally drying the coatings, substantially as and for the purposes described.

5. In an electric transformer, the secondary coil wound within the primary coils and insulated therefrom by mica insulations, combined with a core around and within which the coils are arranged, and mica insulations between the layers of wire forming said coils and between the coils and the core, substantially as and for the purposes described.

6. In an electric transformer, the combination of a core composed of iron plates or laminations insulated in groups by heat resisting insulations, and each group consisting of a series of plates in electric contact with each other, and the primary and secondary coils insulated from each other and from the core by mica insulations, substantially as described.

7. The combination with binding posts, of a fuse block, the continuous plates at the ends of said fuse block and said plates having tongues which are electrically engaged with said binding posts, a series of fusible conductors attached to one of said plates, a series of independent plates attached to said fusible conductors and arranged close to the other continuous plate, and a removable plug, substantially as and for the purposes described.

8. The combination with spaced posts, of a channeled fuse block, a terminal plate on one side of the fuse block and in electrical contact with one of the posts, a continuous contact plate in electrical connection with the other post and arranged on the opposite side of the fuse block, a series of independent contact plates opposite to the continuous contact plate, a series of fusible conductors attached to the continuous terminal plate and to the independent contact plates, and a plug, substantially as and for the purposes described.

9. The combination with the spaced posts, of a fixed fuse block provided with the longitudinal channels and a series of transverse plug receiving apertures, a continuous terminal plate in electrical connection with one post, a continuous contact plate in electrical connection with the other post and fixed to the fuse block on one side of the plug receiving apertures, a series of independent contact plates fixed on the other side of said apertures, opposite to the continuous contact plate, a series of fusible conductors, and a plug, substantially as described.

10. The combination with spaced binding posts, of a fixed fuse block having the apertures, *k*, *k'* and the longitudinal channels on one face thereof, the continuous contact and terminal plates *n*, *l*, fastened to opposite sides of said block and in electrical connection with the respective binding posts, a series of independent contact plates fixed to the fuse block opposite to the continuous plate, a series of fusible conductors, and a plug, substantially as described.

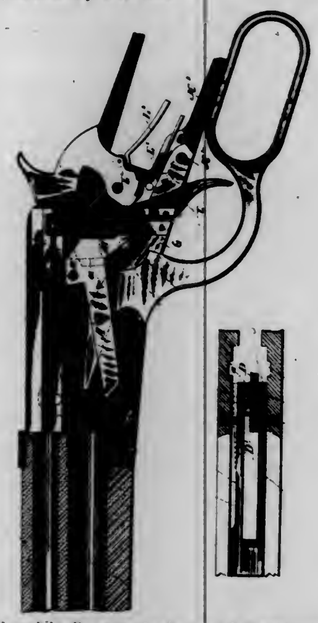
545,671. MAGAZINE-FIREARM. JOHN M. BROWNING, Ogden, Utah, assignor to the Winchester Repeating Arms Company, New Haven, Conn. Filed Apr. 29, 1895. Serial No. 547,518. (No model.)

Claim.—1. In a breech-loading magazine fire-arm, the combination with a pivotal bifurcated carrier having one of its members or legs adapted to be sprung laterally, and provided at its rear end with a cam, of a finger or operating-lever constructed at its inner end with a projection to co-operate with the said cam in positively raising the carrier into its discharging position and sustaining it therein temporarily when the said lever begins its closing or forward movement and co-operates with the said cam in pushing the said member laterally to one side at the end of the outward or opening movement of the lever for clearing the member and cam from the path of the lever, substantially as set forth.

2. In a breech-loading magazine fire arm, the combination with a pivotal, bifurcated carrier having one of its legs or members adapted to be sprung laterally and provided with a cam, of a finger or operating lever constructed at its inner end with a pin or projection co-acting with the said cam in positively lifting the carrier into its discharging position and temporarily sustaining it therein, substantially as set forth.

3. In a breech-loading magazine fire arm, the combination with a

carrier having a spring leg or member constructed with a cam having a beveled forward edge and also having a curved lifting and a straight sustaining edge; of a finger or operating lever, the inner end of which is constructed with a pin or projection coacting with the beveled edge of the cam to spring the same aside for the rearward passage of a pin, and coacting with the curved and straight edges of the cam for lifting the carrier into its discharging position and sustaining it therein temporarily, substantially as set forth



4. In a breech-loading magazine fire-arm, the combination with a pivotal bifurcated carrier having one of its legs adapted to swing laterally, provided with a cam, and constructed with an elongated pivot-opening and having its other leg also constructed with a correspondingly located pivot-opening, of a finger or operating lever constructed at its inner end with a pin or projection to coact with the said cam, and two screw-pivots respectively located in the opposite walls of the frame of the arm, and entering the pivot-openings in the respective ends of the legs or members of the carrier for supporting the same pivotally within the said frame, substantially as described, and whereby the elongated pivot-opening permits the elongated leg or head of the carrier to be sprung laterally.

5. In a breech-loading magazine fire-arm, the combination with a pivotal carrier, of a vertically movable recoil block, one of the said parts having an operating notch and the other a toe adapted to enter the notch when the block is in its closed position, whereby the block in the beginning of its downward movement is caused to lift the carrier into position to form a cartridge-stop, substantially as set forth.

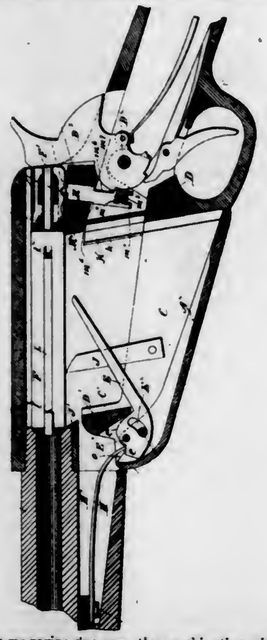
6. In a breech-loading magazine fire arm, the combination with a carrier, constructed at its rear end with a toe, of a vertically movable recoil-block, having an operating notch formed in its forward face to receive the said toe in position to effect the lifting of the carrier into position to form a cartridge stop at the beginning of the downward movement of the recoil-block, substantially as set forth.

7. In a breech-loading magazine fire arm, the combination with a chambered frame, having recoil-block grooves formed in the inner faces of its side walls and locking grooves leading forward out of the lower ends of the recoil-block grooves; of a cover or plate adapted to close the bottom of the chamber in the frame, and constructed at its rear end with lugs adapted to enter the said locking grooves, into which they are introduced through the clearance afforded by the recoil-block grooves, substantially as set forth.

545,672. BOX-MAGAZINE BOLT-GUN. JOHN M. BROWNING, Ogden, Utah, assignor to the Winchester Repeating Arms Company, New Haven, Conn. Filed Apr. 29, 1895. Serial No. 547,580. (No model.)

Claim.—1. In a box-magazine fire arm, the combination with a cover or plate, pivotally hung by its forward end and closing the bottom of the box-magazine, of a carrier pivotally mounted at its forward end in the forward end of the said cover or plate, and a spring for lifting the carrier to feed the cartridges upward in the box-magazine, substantially as set forth.

2. In a box-magazine fire arm, the combination with a cover or plate adapted to close the open bottom of the box-magazine and pivotally hung by its forward end, of a carrier pivoted at its forward end in the forward end of the cover or plate, and a spring arranged to coact with the carrier to lift it to feed the cartridges upward in the box-magazine, and to at the same time coact with the cover or plate to hold the same in its closed position, substantially as set forth.



3. In a box-magazine fire arm, the combination with a cover or plate, adapted to close the open bottom of the box-magazine and pivotally hung by its forward end, of a carrier pivoted in the forward end of the said cover or plate, and a spring arranged to coact with the said cover or plate to hold it in both its closed and open positions and with the carrier to lift the same, when the cover or plate is closed, for feeding the cartridges upward in the box-magazine, substantially as set forth.

4. In a box magazine fire-arm, the combination with a cover or plate adapted to close the open bottom of the box magazine, and pivotally hung by its forward end, which is constructed with a shoulder, of a carrier pivotally mounted in the forward end of the said cover or plate and constructed at its forward end with a shoulder, and a spring co-acting with the said shoulders, substantially as set forth.

5. In a box-magazine fire arm, the combination with a cover or plate adapted to close the open bottom of the box-magazine, pivotally hung by its forward end and constructed in its inner face with a longitudinal groove, of a carrier pivoted in the forward end of the said cover or plate and adapted to enter the said groove therein when the plate or cover is swung into its open position, substantially as set forth.

6. In a box magazine fire-arm, the combination with a box magazine having at its forward end a transverse web or tie, of a cover or plate adapted to close the open bottom of the box-magazine, and pivotally hung by its forward end, a carrier pivoted by its forward end in the forward end of the said cover or plate, and constructed at its forward end with a cam-surface which coacts with the said web or tie in forcing the carrier to follow the said cover or plate when swung into its open position, and a spring to hold the cover in its closed position and elevate the carrier to lift the cartridges upward in the box-magazine, substantially as described.

7. In a box-magazine fire arm, the combination with a box-magazine having at its forward end a transverse web or tie, of a cover or plate pivotally hung by its forward end in the forward end of the box-magazine, the open bottom of which it closes when in its closed position, a carrier pivoted at its forward end in the forward end of the said cover or plate at a point eccentric to the pivot thereof, and constructed with a cam surface arranged to engage with the said web or tie when the plate is swung into its open position for causing the carrier to positively swing open with the plate, and a spring coacting with the carrier in the closed position of the plate to feed the cartridges upward in the box-magazine, substantially as set forth.

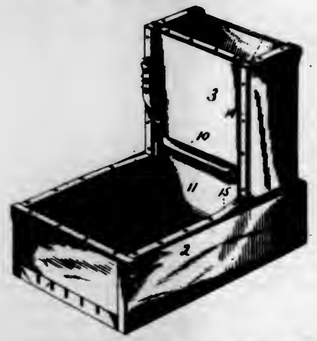
8. In a box-magazine fire arm, the combination with a box-magazine, combined with the lower tang of the arm and constructed with two spring fingers arranged to engage with the ball portions of the cartridges, and with a box-like, forwardly-inclined guideway to receive the heads of the cartridges; of a cover or plate pivotally hung by its forward end and adapted to close the open bottom of the box-magazine, a carrier pivoted at its forward end in the forward end of the plate or cover, and a carrier-spring coacting with the carrier to lift the cartridges upward in the box-magazine, substantially as set forth

9. In a fire arm, the combination with a breech-bolt, of a longitudinally and laterally movable ejector, mounted therein and furnished at its forward end with an inwardly projecting ejecting shoulder, and an outwardly projecting operating shoulder located in the rear of the ejecting shoulder, and at its rear end with an inwardly projecting lifting shoulder and an outwardly projecting retracting shoulder, substantially as set forth.

10. In a fire arm, the combination with a frame constructed with a locking abutment, of a breech-bolt adapted to have its rear end swung into engagement with the said abutment, whereby it is locked in its closed position, and constructed with a longitudinal groove terminating at its rear end in a recess, the forward wall of which is beveled, and an ejector located in the said groove and constructed at its forward end with an ejecting shoulder which engages with the heads of the cartridges, and with an operating shoulder which engages with the said abutment face, and at its rear end with a lifting shoulder which enters the recess of the breech-bolt and coacts with the beveled forward wall thereof, and with a retracting shoulder which temporarily engages with the frame of the arm during the forward movement of the breech, whereby the ejector is virtually retracted so as to bring its ejecting shoulder into substantial alignment with the forward face of the breech-bolt, substantially as set forth.

11. In a fire-arm, the combination with a breech-bolt, of a breech-bolt slide located at one side thereof and in the same horizontal plane therewith, a hammer, a spring-lifted sliding lock located below the rear end of the breech-bolt slide, and adapted to engage therewith and lock the same and hence the breech in its closed position, and engaged by the hammer for being depressed and retired into its unlocked position just before the hammer reaches its full down or fired position, substantially as described.

545,673. FEED-TROUGH. STEPHEN R. BURKE, Edon, Ohio. Filed Oct. 6, 1894. Serial No. 525,098. (No model.)



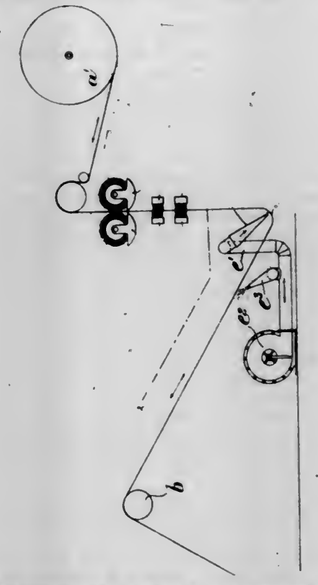
Claim.—1. The feed trough having the inside of its bottom protected by a series of metal strips set edgewise into the bottom of the trough, the sides of said strips being covered by the body forming the main portion of the bottom, substantially as and for the purposes described.

2. A feed trough having the inside of its bottom protected by a series of metal strips set edgewise in the bottom of the upper edges of the strips below the surface of the bottom, the sides of said strips being covered by the body forming the main portion of the bottom substantially as and for the purposes described.

3. A feed trough having grooves formed in the inside of its bottom and extending only partially through the bottom, and a series of metal strips set edgewise in said grooves, substantially as and for the purposes described.

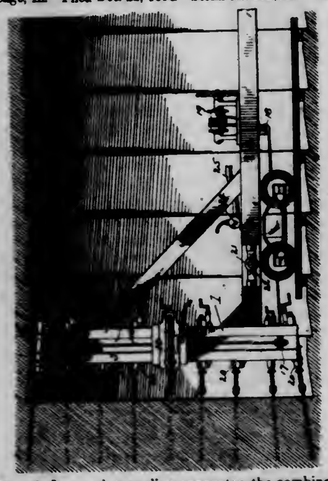
545,674. APPARATUS FOR COATING AND DRYING PAPER. GEORGE J. BURR, Ayer, Mass. Filed Sept. 8, 1894. Serial No. 522,453 (No model.)

Claim.—1. The combination with means for supporting and progressively moving a web of paper, said means including positive supports in contact with the web, of an intermediate pressure-maintaining apparatus located at one side of a direct line between said supports and comprising an air-forcing device and an air-guiding device arranged to apply a deflecting air pressure to the web.



2. The combination with means for supporting and progressively moving a web of paper, said means including positive supports in contact with the web of an air-directing nozzle located out of line with said supports and arranged to direct a blast of air against a portion of the web between said supports, and an air-forcing device communicating with said nozzle, the arrangement of the nozzle being such that the blast delivered thereby holds the web in the form of a bight or loop between said supports without contact with a solid object.

545,675. APPARATUS FOR TUNNELING ROCK. HARRY BURNS, Chicago, Ill. Filed Dec. 22, 1894. Serial No. 532,743. (No model.)



Claim.—1. In a rock tunneling apparatus, the combination of the upright supporting frame having a marginal formation corresponding with that of the tunnel, a series of traveling percussion channeling machines arranged to travel upon the outer surface of such frame, a flexible connection attaching the entire series of machines together to cause the same to travel in unison, and means for operating said flexible connection, substantially as set forth.

2. In a rock tunneling apparatus, the combination of the upright supporting frame, having a marginal formation corresponding with that of the tunnel, a series of traveling percussion channeling machines, arranged to travel upon the outer surface of such frame, a flexible connection attaching the entire series of machines together to cause the same to travel in unison, and an operating capstan, the drum of which is connected with said flexible connection so as to actuate the same, substantially as set forth.

3. In a rock tunneling apparatus, the combination of the upright supporting frame having a marginal formation corresponding with that of the tunnel, and consisting of an upright bow having an H shaped cross section, the outer lateral flanges of which constitute slideways, a series of traveling percussion channeling machines arranged to travel upon the outer surface of such frame, a flexible connection attaching such machines together so as to travel in unison, and means for operating said flexible connection, substantially as set forth.

4. In a rock tunneling apparatus, the combination of the upright supporting frame having a marginal formation corresponding with that of the tunnel, and consisting of an upright bow having an H shaped cross section, the outer lateral flanges of which constitute slideways, a series of traveling percussion channeling machines arranged to travel upon the outer surface of such frame, a flexible connection attaching such machines together so as to travel in unison, and an operating capstan, the drum of which is connected with said flexible connection so as to actuate the same, substantially as set forth.

5. In a rock tunneling apparatus, the combination of the upright supporting frame having a marginal formation corresponding with that of the tunnel, and provided with a vertical tier of horizontal members, a series of traveling percussion channeling machines arranged to travel upon the outer surface of such frame, a flexible connection attaching the entire series of machines together, to cause the same to travel in unison, and a series of percussion drilling machines mounted upon the horizontal members of the main supporting frame, substantially as set forth.

6. In a rock tunneling machine, the combination of a carrying car or truck, means for anchoring the same within the tunnel, an upright supporting frame rigidly attached to the end of the car, and having a marginal formation corresponding with that of the tunnel, a series of traveling percussion channeling machines, arranged to travel upon the outer surface of such frame, a flexible connection attaching such machines together so as to travel in unison, and means for operating said flexible connection, substantially as set forth.

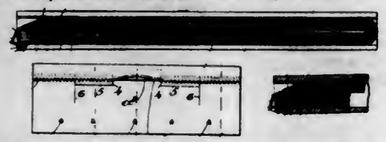
7. In a rock tunneling machine, the combination of a carrying car or truck, means for anchoring the same within the tunnel, an upright supporting frame rigidly attached to the end of the car, and having a marginal formation corresponding with that of the tunnel, a series of traveling percussion channeling machines arranged to travel upon the outer surface of such frame, a flexible connection attaching such machines together, so as to travel in unison, and an operating capstan, the drum of which is connected with said flexible connection so as to actuate the same, substantially as set forth.

8. In a rock tunneling apparatus, the combination of a carrying car or truck, means for anchoring the same within the tunnel, an upright supporting frame rigidly attached to the end of the car, and having a marginal formation corresponding with that of the tunnel, and consisting of an upright bow having an H shaped cross section, the outer lateral flanges of which constitute slideways, a series of traveling percussion channeling machines arranged to travel upon the outer surface of such frame, a flexible connection attaching such machines together so as to travel in unison, and means for operating said flexible connection, substantially as set forth.

9. In a rock tunneling apparatus, the combination of a carrying car or truck, means for anchoring the same within the tunnel, an upright supporting frame rigidly attached to the end of the car, and having a marginal formation corresponding with that of the tunnel, and consisting of an upright bow having an H shaped cross section, the outer lateral flanges of which constitute slideways, a series of traveling percussion channeling machines arranged to travel upon the outer surface of such frame, a flexible connection attaching such machines together so as to travel in unison, and an operating capstan, the drum of which is connected with said flexible connection, so as to actuate the same, substantially as set forth.

545,676. MANIFOLD SALES-BOOK. JOHN R. CARTER, Boston, Mass., assignor to the Carter-Crume Company, Niagara Falls, N. Y. Filed Apr. 18, 1894. Renewed July 5, 1895. Serial No. 555,027. (No model.)

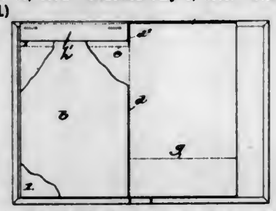
Claim.—1. The within described manifold sales-book comprising the cover, and a clamp constructed of the thin, flat, rectangular bottom plate adapted to be secured to said cover and provided with the spring and the hinge members at one of its edges, and the thin, flat, rectangular top plate bent down at right angles at one of its edges and provided at said edge with the tail-piece and the complemental hinge members, the said tail-piece engaged by the spring of the bottom plate, and the hinge members of said plates being connected to operate substantially as described, whereby said clamp is adapted to securely bind the sheets to said book in the cover without destroying the compactness of the book when folded, as set forth



2. The within described manifold sales-book comprising the cover, a clamp constructed of the thin, flat, rectangular bottom plate adapted to be secured to said cover and provided with the spring and the hinge members at one of its edges, and the thin, flat, rectangular top plate bent down at right angles at one of its edges and provided at said edge with the tail-piece and the complemental hinge members, the said tail-piece engaged by the spring of the bottom plate, and the hinge members of said plates being connected to operate substantially as described, combined with a pile of sheets having their stub ends united together and engaged by the clamp to securely bind them in the cover without destroying the compactness of the book when folded, the top plate of which clamp lies in substantial parallelism with said sheets, said sheets being also provided with suitable lines of perforations to aid in the separation of the duplicate and main bills from the stubs and from each other, substantially as shown and described.

3. The herein described manifold sales-book comprising the cover, a clamp constructed of the thin, flat, rectangular bottom plate adapted to be secured to said cover and provided with the spring and the hinge members at one of its edges, and the thin, flat, rectangular top plate bent down at right angles at one of its edges and provided at said edge with the tail-piece and the complemental hinge members, the said tail-piece engaged by the spring of the bottom plate, and the hinge members of said plates being connected to operate substantially as described, combined with a pile of sheets having their stub ends united together and engaged by the clamp to securely bind them in the cover without destroying the compactness of the book when folded, the top plate of which clamp lies in substantial parallelism with the sheets, said sheets being also provided with suitable lines of perforations to aid in the separation of the duplicate and main bills from the stubs and from each other, and a black leaf also engaged by said clamp, substantially as and for the purpose described.

545,677. MANIFOLD SALES-BOOK. JOHN R. CARTER, Boston, Mass., assignor to the Carter-Crume Company, Niagara Falls, N. Y. Filed Apr. 18, 1894. Renewed July 5, 1895. Serial No. 555,028. (No model.)



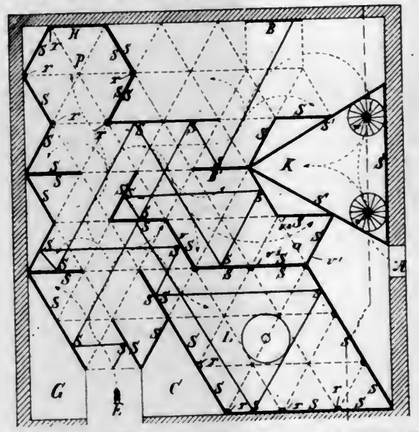
Claim.—1. A manifold salesbook comprising a series of unfolded sheets arranged in a pile, each of said sheets having the line of perforations *d* at or near the center, the line of perforations *c* extending at right angles from said central line of perforations to the edge of said sheets, and the slit *d'* extending from the junction of said lines of perforations to the nearest edge of the sheets, the perforations *c* and the slit *d'* forming binding stubs, a black leaf, and means to unite said black leaf and the unfolded sheets along the binding stubs only, substantially as described.

2. A manifold salesbook comprising a series of unfolded sheets arranged in a pile, each of said sheets having the line of perforations *d* at or near the center, the line of perforations *c* extending at right angles from said central line of perforations to one edge of said sheets, the slit *d'* extending from the junction of said lines of perforations to the nearest edge of the sheets, the perforations *c* and the slit *d'* forming binding stubs, and the line of perforations *g* extending at right angles from said central line of perforations to the other edge of said sheets to form cashier's vouchers, a black leaf, and means to unite said black leaf and the unfolded sheets along the binding stubs only, substantially as described.

3. A manifold salesbook comprising a series of unfolded sheets arranged in a pile, each of said sheets having the line of perforations *d* at or near the center, the line of perforations *c* extending at right angles from said central line of perforations to the edge of said sheets, the slit *d'* extending from the junction of said lines of perforations to the nearest edge of the sheets, the perforations *c* and the slit *d'* forming binding stubs, and the line of perforations *g* extending at right angles from said central line of perforations to the other edge of said sheets to form cashier's vouchers, a black leaf, means to unite said black leaf and the unfolded sheets along the binding stubs only, and the cover to which the said pile of sheets is attached, substantially as described.

4. A manifold salesbook comprising a series of unfolded sheets arranged in a pile, each of said sheets having the line of perforations *d* at or near the center, the line of perforations *c* extending at right angles from said central line of perforations to the edge of said sheets, the slit *d'* extending from the junction of said lines of perforations to the nearest edge of the sheets, the perforations *c* and the slit *d'* forming binding stubs, and the line of perforations *g* extending at right angles from said central line of perforations to the other edge of said sheets to form cashier's vouchers, a black leaf, means to unite said black leaf and the unfolded sheets along the binding stubs only, the cover, and a clamp secured to said cover and engaging the binding stubs of said sheets, substantially as described.

545,678. MIRROR-MAZE. GUSTAV CASTAN, Berlin, Germany. Filed Jan. 6, 1891. Serial No. 376,910. (No model.) Patented in France Sept. 8, 1888, No. 192,868; in Belgium Sept. 12, 1888, No. 83,240, and in England Oct. 21, 1889, No. 16,593.



Claim.—1. In a mirror-maze, the combination of mirrors and passages relatively disposed to produce, by reflection, the illusionary effect of a labyrinthian device, substantially as described.

2. In a mirror-maze, the combination of mirrors forming passages and partitions in a labyrinthian device, the individual mirrors and passages corresponding in width and height and in the shape, size and decoration of their frames or borders, and being arranged on lines forming equilateral triangles, substantially as described.

3. In a mirror-maze, the combination of mirrors S forming passages and partitions in a labyrinthian device, and arranged on lines forming equilateral triangles, and objects, such as the pictures B, B', stationarily arranged in said passages, to be reflected by the mirrors, substantially as described.

4. A mirror-maze comprising, in combination, mirrors S forming passages and partitions in a labyrinthian device, and arranged on lines forming equilateral triangles, and a chamber P formed in the maze of such mirrors and provided with a background H, substantially as described.

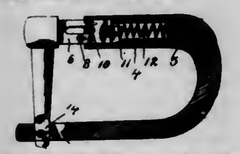
5. A kaleidoscope formed of a chamber K accessible from below and bounded by equilateral triangles forming a regular tetrahedron, the sides of which are mirrors fitted together, substantially as described.

545,679. REMEDIAL POWDER-APPLYING DEVICE. RICHARD S. CILLS, Philadelphia, Pa. Filed Apr. 17, 1895. Serial No. 545,988. (No model.)



Claim.—A remedial powder-applying device consisting of a plug, with a closed head and having a cavity in one end thereof, and a port in the side wall of said cavity, and above the bottom thereof whereby the latter is in communication with the atmosphere at both ends, said port extending obliquely inwardly and downwardly through said wall to the base of said cavity, substantially as described.

545,680. CLEVIS. JOHN L. COLBERT, Jr., Ogden, Kans. Filed May 21, 1895. Serial No. 550,105. (No model.)



Claim.—1. A clevis comprising a bow member, a hinged member pivoted thereto, a bolt having a sliding relation to the hinged member, and a spring for holding said bolt in engagement with the bow member, substantially as described.

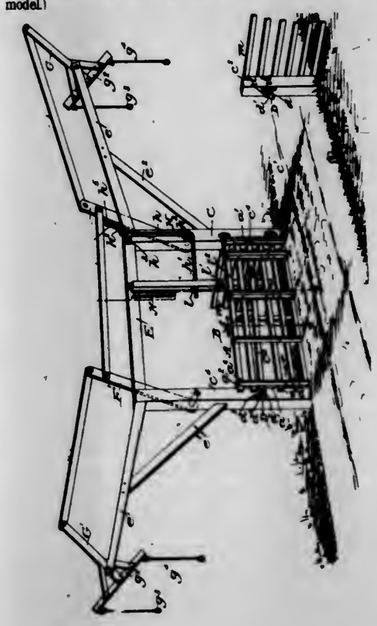
2. A clevis comprising a bow member, a hinged member pivoted thereto and formed with a socket therein, a bolt provided with a shank mounted to slide within the socket of the hinged member, and a spring for holding said bolt in engagement with the bow member and allowing the same to be disengaged therefrom, substantially as specified.

3. A clevis comprising a bow member, a hinged member having a socket therein, a bolt having a slotted shank mounted to slide within the socketed hinged member, a pin or rivet carried by the hinged member and engaging the slotted shank of the bolt, and a spring for holding said bolt in engagement with the bow member, substantially as described.

4. A clevis comprising a bow member, a hinged member provided with a rectangular socket, a bolt having a rectangular slotted shank, a pin carried by the hinged member and engaging said slotted shank, and a spiral spring arranged within the socketed member and operating to hold the bolt in engagement with the bow member, substantially as specified.

5. A clevis comprising a bow member having a keyhole slot therein, a hinged member pivoted to said bow member, a bolt having a sliding relation to the hinged member and provided with a head for engaging said keyhole slot, and a spring for holding the head of the bolt into engagement with the keyhole-slot in the bow member, substantially as specified.

545,681. MEANS FOR OPERATING SWINGING GATES. FRANK J. COLLINSON, Lynn, Ill. Filed Feb. 16, 1895. Serial No. 538,710. (No model.)



Claim.—1. In combination, a swinging gate, means for actuating the gate comprising two elevated systems for operating levers, a connection such as bar f between the levers of the systems, a multicrank between the gate and systems of operating levers, and a sliding connection between one end of the crank and the gate actuating means, substantially as described.

2. In combination, a gate, a system of elevated operating levers, a multicrank shaft between the gate and the system of operating levers, means for connecting one of the crank arms of the multicrank shaft with the operating levers, and a bar pivoted at one end to a gate latch lifting bar and pivotally connected with the other crank arm of the multicrank shaft, substantially as described.

3. In combination, a gate, a system of elevated operating levers, a multicrank shaft between the gate and the system of operating levers, means for connecting one of the crank arms of the multicrank shaft with the operating levers, an oscillating gate latch, a latch lifting bar, and a bar hinged at one end to said latch lifting bar, and provided with a slot through which the other crank arm passes, whereby it will raise the latch, swing the gate, and lock the latch and gate, substantially as described.

4. In combination, a gate, a system of elevated operating levers, a multicrank shaft between the gate and the system of operating levers, means for connecting one of the crank arms of the multicrank shaft with the operating levers, an oscillating gate latch, a latch lifting bar, a bar hinged at one end to said latch lifting bar and provided with a slot through which the other crank arm passes, and a bar or stop with which the upper end of said hinged bar engages when the gate is swung nearly to its open position, substantially as described.

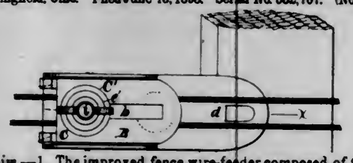
5. In combination, a swinging gate having an oscillating or rising and falling latch, a swinging catch, a latch lifting bar, a bar hinged to the upper end of the latch lifting bar and provided with a slot, and a multicrank shaft, one crank arm of which rests in said slot, substantially as described.

6. In combination, a swinging gate having an oscillating or rising and falling latch, a latch lifting bar, a bar hinged to the upper end of the latch lifting bar and provided with a slot, a multicrank shaft, one crank arm of which rests in said slot, and posts, as c^4 and c^5, each provided with a catch, substantially as and for the purpose specified

7. In combination, the gate A, having a swinging latch c^4, the bar B, the bar L hinged to the bar B and provided with a slot l, the post C, the multicrank shaft H, with an arm h' seated in the slot l, and having an arm h, and the lever F loosely hinged to the arm h, substantially as and for the purpose specified.

8. In combination, a swinging gate having a latch, a latch operating bar, a bar hinged to the latch operating bar, a multicrank shaft, one crank arm of which operates said bar hinged to the latch operating bar, and a lever connected with another crank arm of the multicrank shaft for operating it, substantially as described.

545,682. FENCE-WIRE TENSION DEVICE. JOHN J. CORAM, Springfield, Ohio. Filed June 13, 1895. Serial No. 552,707. (No model.)

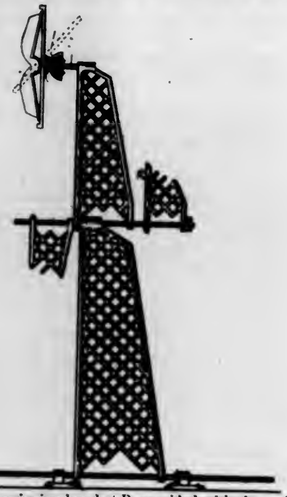


Claim.—1. The improved fence wire-feeder composed of the two separable interlocking plates described, the lower plate being provided with flanges; holes in transverse line in its forward end; a longitudinal slot terminating in a hole at one end of the latter; the top plate provided with lugs extending downward and forward therefrom, adapted to engage the holes in the forward end of said lower plate to interlock said plates; said upper plate being provided with a longitudinal slot registering with the slot in said lower plate, and the semi-elastic clamp described, having its connecting bolt engaging the slots in said plates, whereby said clamp may be shifted from point to point in the line of said slots, as and for the purpose hereinbefore set forth.

2. In a fence wire-feeder, the two longitudinally slotted interlocking-plates; the lower of said plates being provided with an enlarged hole at one end of its slot; a semi-elastic clamp having its connecting bolt engaging the slots in said plates, the latter being made separable by shifting said clamp to a point where its bolt-head registers with the enlarged hole in said lower plate, when it is drawn upward through the latter, without detaching said clamp from the upper plate, substantially as set forth.

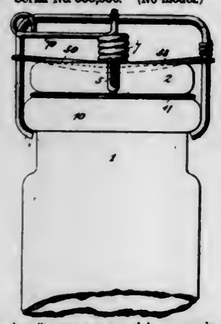
3. In a fence wire-feeder, the combination with the two coincidently slotted plates, provided with interlocking devices, of a semi-elastic clamp connecting said plates, and means for separating the latter without removing said clamp from the upper plate, as set forth.

545,683. SWING-BRACKET FOR BOOK-HOLDERS. WILLIS K. CROSBY, Jamestown, N. Y. Filed Apr. 7, 1894. Serial No. 506,676. (No model.)



Claim.—The swinging bracket D, provided with the socket r, in its outer end, combined with a socket head composed of the stem r' which revolves freely in the socket r, and the head s, having a curved upper face in which is formed a series of sockets s', which stand at different angles; the pin t to fit in the sockets, the plate t' secured to the pin, and the table v, secured to the plate for holding the book; the table being provided with flanges at its ends, substantially as shown.

545,684. JAR-FASTENER. MARK L. DEERING, Brooklyn, N. Y., assignor to the Barstow Fruit Jar Company, Jersey City, N. J. Filed June 21, 1895. Serial No. 553,550. (No model.)



Claim.—1. A jar fastener comprising a yoke having the main section 3 and arms 30 with inwardly bent portions 31 at their lower ends, a vertically movable cross-bar 4 spanning the yoke and secured by its ends to the arms thereof, and a cam or screw mounted on the yoke and adapted to depress the cross-bar, substantially as described.

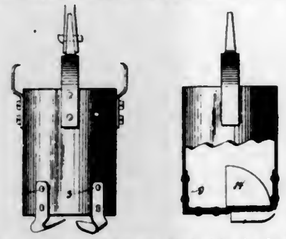
2. A jar fastener comprising a yoke having the main section 3 and arms 30 with inwardly bent portions 31 at their lower ends, a vertically movable cross-bar 4 spanning the yoke and secured by its ends to the arms thereof, a cam or screw mounted on the yoke and adapted to depress the cross-bar, and a stop 5 projecting laterally from the cross-bar and yoke and adapted to make contact with the edge of the jar cover, substantially as described.

3. A jar fastener comprising a yoke formed from wire and having the main section 3 and arms 30 with inwardly bent portions 31 at their lower ends, a vertically movable cross-bar 4, spanning the yoke and secured by eyes or coils at its ends to the arms of the yoke, and a cam or screw mounted on the yoke and adapted to depress the cross-bar, substantially as described.

4. A jar fastener comprising a yoke formed from wire and having the main section 3 and arms 30 with inwardly bent portions 31 at their lower ends, a vertically movable cross-bar 4 spanning the yoke and secured by eyes or coils at its ends to the arms of the yoke, a stop 5 formed from the same piece of wire as the cross-bar and projecting laterally from the cross-bar and yoke and adapted to make contact with the edge of the jar cover, substantially as described.

5. A jar fastener comprising a yoke having the main section 3 and arms 30 with inwardly bent portions 31 at their lower ends, a vertically movable cross-bar 4 spanning the yoke and secured by its ends to the arms thereof, and a device for depressing the cross-bar composed of an inner coil 6 fixed to the yoke, and an outer coil 7 provided with a handle 70 and adapted to bear against the cross-bar, substantially as described.

545,685. WELL OR POST AUGER. JAMES M. FISHBACK, Goldsmith, Ind. Filed Mar. 11, 1895. Serial No. 541,226. (No model.)



Claim.—A well or post auger provided with a bucket having cutters 2 extending downwardly and outwardly therefrom and then inwardly and upwardly and terminating at points approximately near the center of the bucket, and provided with rounded edges 4 in combination with reamers constructed and arranged substantially as shown and described, with a bottom having an opening extending from one side of the bucket to a point approximately near the center and provided with a downwardly flared edge and a hinged valve secured to the bottom of the bucket and adapted to close the opening, and adapted to operate substantially as and for the purposes set forth.

545,686. TROLLEY. ZACHRY T. FURBISH, Augusta, Me. Filed July 12, 1895. Serial No. 555,720. (No model.)



Claim.—1. A trolley comprising the forked rod, the depending arms secured thereto, and the trolley wheel journaled between said arms, and being adapted to incline laterally in relation to the same, substantially as described.

2. A trolley comprising the forked rod, the depending arms pivoted to the arms of the fork, the two part shaft having its outer ends pivotally connected with the lower ends of the depending arms, and the trolley-wheel mounted upon said two part shaft, substantially as described.

3. A trolley comprising the forked rod, the depending arms, the sockets formed in the end thereof, the two part shaft having the spherical or bulbous heads fitting said sockets, and the wheel journaled in said shaft and having a hub for confining the free end of the shaft.

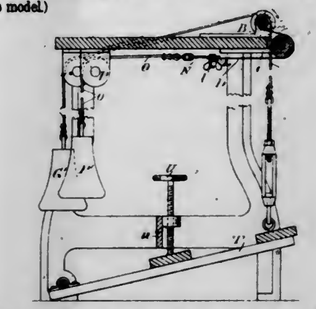
545,687. IRON RAILWAY-TIE. WILLIAM GARNER, America City, Kans. Filed Apr. 6, 1895. Serial No. 544,820. (No model.)



Claim.—1. The combination in a metallic railway tie, of two plates, united at each end by two piers, the uppermost plate being provided with a retaining groove adapted to receive the clasps for holding the rail in place, substantially as set forth.

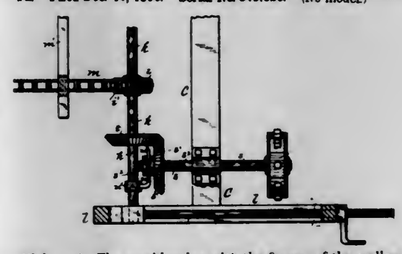
2. In a metallic railway tie, the combination with the plates united at each end by two piers, the upper plate being thicker than the lower and provided with a dove-tail groove, of, the clasps G, fitted in said groove, and adapted to hold the rail in place, and secured by bolts, to the said plates, as and for the purpose set forth.

545,688. MACHINE FOR ROLLING POINTS OF COLLARS. ALBERT E. GRANT, Troy, N. Y. Filed Nov. 17, 1894. Serial No. 529,169. (No model.)



Claim.—In a machine for rolling the points of collars, the combination of a shaft, brackets within which it is mounted, a table to which said brackets are secured, said shaft between said brackets constructed of two pieces, one of said pieces of said shaft provided with a tongue, the other portion of said shaft provided with a groove adapted to receive said tongue, an apron having one end thereof secured by said tongue within said groove in said shaft, rings adapted to hold the portions of said shaft together, a roller about which said apron is placed, brackets secured to said table within which said roller is mounted, a clamping device composed of a plate provided with a slot, a thumb nut and a screw at each end together with a strip provided with a tongue, which fits into said slot, for the purpose of holding the apron in position, a strap attached to said plate, a pulley about which said strap is placed, a weight attached to the end of said strap, a spool placed on each end of said shaft, straps passing over said spools, pulleys about which said straps pass, weights attached to the ends of said straps, straps secured to the shaft between the spools and the brackets passing over the shaft, a treadle to which said straps are attached, a brace attached to the table, a screw mounted therein which may be brought in contact with said treadle, for the purpose of limiting the upward movement of the treadle, all substantially as described and for the purpose set forth.

545,689. VEGETABLE-ASSORTER. JOHN H. HEINS, Sharpsburg, Pa. Filed Dec. 17, 1890. Serial No. 375,020. (No model.)



Claim.—1. The combination with the frame, of the endless chain belt m passing around the sprocket wheel i i', the said sprocket wheel i' being secured to the sliding shaft k journaled in guideways in the frame, a pinion l on said shaft k meshing with the sliding pinion s' mounted on the power shaft s, and connections between said sliding shaft k and pinion s' to preserve the engagement of the said pinion s' with the pinion l when the sliding shaft k is moved, substantially as and for the purposes set forth.

2. The combination with the frame of the endless chain belt m, the sprocket-wheels i i', the sliding shaft k journaled in the bearing blocks k' traveling in the guideways l, the pinion l meshing with the sliding pinion s' having the collar s^2 thereon, the power shaft s, and the arm u secured to the sliding shaft k and to the collar s^2 of the sliding pinion s', and the threaded bar v and crank arm v', substantially as and for the purposes set forth.

545,690. ICE-ELEVATOR CHAIN. LEMONT HUNTER, Chicago, Ill. Filed Apr. 10, 1895. Serial No. 545,157. (No model.)

Claim.—1. The cross bar for ice elevators, consisting of an angle iron bar having its ends slit, bent at right angles and pierced for attachment to the elevator chain, one of said parts being the short part and the other a long part, substantially as specified.

2. The ice elevator, consisting of a suitable frame work, two chains, and a series of angle iron cross bars having both ends slit and

bent into parts of unequal lengths and attached at each end at two points to a link of the chain at the connection between said link and the adjacent link, substantially as specified.

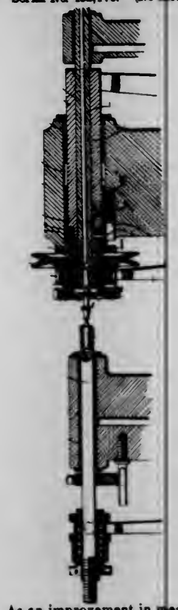


545,691. BRUSH. CHARLES E. HOWLAND, Providence, R. I., assignor, by direct and mesne assignments, to the Reversible Brush Company, of Rhode Island. Filed Mar. 20, 1893. Serial No. 466,870. (No model.)



Claim.—In a reversible brush, the combination of the back 10, the head 5 pivoted centrally to the back, the arc-shaped grooved plates set into the head, and the bolts carried by the back, and adapted to engage the grooves, substantially as and for the purposes set forth.

545,692. DEAD-CENTER LATHE. GEORGE E. HUNTER, Elgin, assignor to the Elgin National Watch Company, Chicago, Ill. Filed Aug. 2, 1893. Serial No. 482,170. (No model.)



Claim.—1. As an improvement in means for rotating blanks or work in lathes, the combination of suitable centers, a dog, a support for the dog which is disengaged therefrom when the dog is attached to the work, and means made separate from the dog for rotating the same, substantially as and for the purpose specified.

2. As an improvement in means for rotating blanks or work in lathes the combination of suitable centers, for the work, a dog, a support for the latter which is separated from it when the dog is attached to the work, and a whirl for rotating the dog made separate therefrom, substantially as and for the purpose shown.

3. As an improvement in means for rotating blanks or work in lathes, the combination with the work-holding device having a recess in one face, of the lathe part, movable into the recess to engage and support said device, and out of the same to release the device when it is attached to the work, substantially as and for the purpose set forth.

4. As an improvement in means for rotating blanks or work in lathes, the combination of the spring dog, the two-part clamping device, and the lathe part for detachably engaging and supporting said device, substantially as and for the purpose specified.

5. As an improvement in means for rotating blanks or work, the combination of the spring dog, having a tapering periphery and the clamping device comprising two parts, one of which is rotatable relative to the other part, and has an opening conforming to the tapering periphery of the dog, substantially as and for the purpose described.

6. As an improvement in means for rotating blanks or work, the combination of the spring dog and the clamping device comprising two parts, one of which is rotatable relative to the other part and said other part has provision for engagement by a support, substantially as and for the purpose shown.

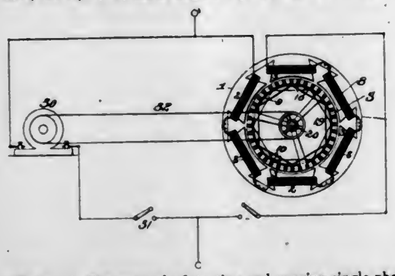
7. The combination of suitable work holding centers, an expansible sleeve to engage a dog, a plunger to expand said sleeve, and a whirl to engage and rotate such dog, when freed from the sleeve, substantially as and for the purpose shown and described.

8. As an improvement in means for rotating blanks or work, the combination with suitable work holding centers, a whirl for revolving the work having a projection adapted for engagement with and disengagement from a dog that is secured to the work held by the centers, and a support for the dog adapted for connection with and separation from the same substantially as and for the purpose specified.

9. As an improvement in means for rotating blanks or work, the combination with suitable work holding centers, of a whirl for revolving the work movable into and out of engagement with a dog that is secured to the work held by the centers, and a support for the dog adapted for connection with and separation from the same substantially as and for the purpose described.

10. As an improvement in means for rotating blanks or work, the combination with suitable work-holding centers, a dog for attachment to the work held by the centers, having a lug or projection, a support for the dog adapted for connection with and separation from the same, and a whirl movable toward and from the dog to place a part carried by and projecting from it into and out of engagement with the lug on the dog, substantially as and for the purpose shown.

545,693. ASYNCHRONOUS MOTOR. MAURICE HUTIN and MAURICE LEBLANC, Paris, France, assignors to the Societé Anonyme pour la Transmission de la Force par l'Électricité, same place. Filed Apr. 19, 1895. Serial No. 546,408. (No model.) Patented in France May 12, 1894 No. 238,502; in Germany May 26, 1894, No. 79,588; in Austria June 4, 1894, No. 44/5,477, and in Belgium Sept. 29, 1894. No. 112,045.



Claim.—1. The method of starting and running single phase alternating current motors in either direction, which consists in rotating in the direction to be given to the armature and between the same and a circular row of alternately wound field magnets, a flux screen containing circuits closed upon themselves, and passing single phase alternating currents through the field coils, substantially as described.

2. The method of starting and running single phase alternating current motors in either direction, which consists in first rotating by external power in the direction to be given to the armature and between the same and a circular row of alternately wound field magnets, a flux screen containing circuits closed upon themselves, then passing single phase alternating currents through the field coils and then withdrawing the external power, substantially as described.

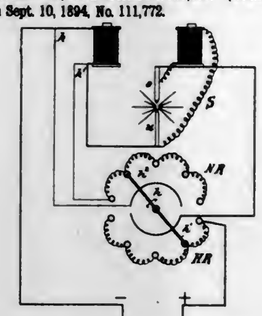
3. The method of producing a rotating field of force, which consists in rotating a flux screen containing circuits closed upon themselves in inductive proximity to a circular row of alternately wound magnets, and passing single phase alternating currents through the magnet coils, substantially as described.

4. The method of producing a rotating field of force, which consists in rotating by external power a flux screen containing circuits closed upon themselves, in inductive proximity to a circular row of alternately wound magnets, passing single phase alternating current through the magnet coils and then withdrawing the external power, substantially as described.

5. An asynchronous, single phase alternating current motor, consisting of a circular row of alternately wound field magnets, adapted to be energized by a single phase current, a rotating armature, a rotatable flux screen between the armature and field magnets containing circuits closed upon themselves, and means for starting the rotation of the flux screen by external power, substantially as described.

6. An asynchronous single phase alternating current motor, consisting of a circular row of alternately wound field magnets, the coils whereof are in a single series for the reception of a single phase alternating current, an armature, a flux screen situated between the armature and field magnets, composed of a laminated iron cylinder with circuits threading through the same, and means for starting the rotation of the flux screen by external power, substantially as described.

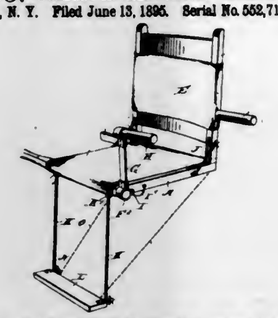
545,694. ELECTRIC-ARC LAMP. RUDOLF H. JAHR, Opladen, Germany. Filed Nov. 26, 1894. Serial No. 529,953. (No model.) Patented in Belgium Sept. 10, 1894, No. 111,772.



Claim.—1. In electric arc lamps the combination, with the upper and lower carbons, the regulating helix, and the main regulating resistance of the lamp, of an auxiliary resistance for changing the action of the said helix, and a connection between the said auxiliary resistance and the main regulating resistance, substantially as and for the purpose described.

2. In electric arc lamps the combination, with the upper and lower carbons, the regulating helix, and the main and regulating resistance of the lamp, of an adjustable auxiliary resistance for changing the action of the said helix, and a connection between the said auxiliary resistance and the main regulating resistance, substantially as and for the purpose described.

545,695. FOLDING INVALID-CHAIR. BERNARD E. JAMME, New Brighton, N. Y. Filed June 13, 1895. Serial No. 552,714. (No model.)



Claim.—1. A folding chair for invalids, comprising a seat frame, a back held thereon, a set of handles extending from the sides of the said frame, and a second set of handles in a different plane, one of the said handles of the second set being attached to the said back and the other supported from the seat frame, substantially as shown and described.

2. A folding chair for invalids, comprising a seat frame, a back held thereon, a set of handles extending from the front and rear bars of the said frame, an arm supported from the said frame on the opposite side of the said handles, and a second set of handles arranged in a different plane to the first named set of handles, one of the handles of the second set being attached to the said arm and the other to the said back, substantially as shown and described.

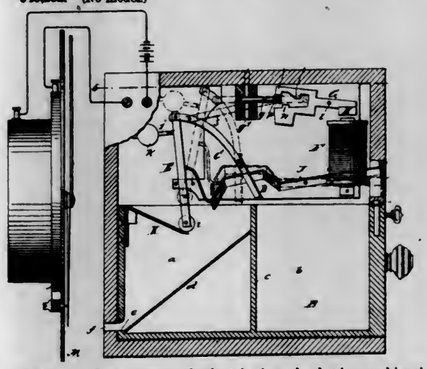
3. A folding chair for invalids, provided with a seat frame formed with a set of handles at one side thereof, a back pivoted on the said seat frame, an arm mounted to turn on a projection from the front bar of the said set of handles, a pin for connecting the said arm to the said projection, a handle held by the said arm, and a second handle held in the said back in alignment with the handle held by said arm, substantially as shown and described.

4. A folding seat for invalids, the same comprising a seat frame, a back pivotally mounted at the rear edge thereof, handles extended respectively to the back and seat frame and on the opposite side of the chair, rods projecting downwardly from the front edge of the seat frame, and a foot rest adjustable on said rods, substantially as described.

5. A folding chair for invalids, the same comprising a seat frame, a back pivotally mounted thereon, handles secured to the seat frame and back and arranged in two sets one above the other, and a foot rest held to the front edge of the seat frame, substantially as described.

6. In a folding chair for invalids, a seat frame, a back and foot rest connected thereto, a part of said frame being extended, an arm pivotally mounted on said projection, a pin for locking said arm, and a handle carried by the free end of the arm, substantially as described.

545,696. ELECTRIC TIME-CHECK RECEIVER. CHARLES K. JARDINE, Georgetown, British Guiana. Filed Mar. 26, 1895. Serial No. 543,232. (No model.)



Claim.—1. In an automatic electric time check, the combination of the box A provided with a slot *g*, the comparted drawer B, the chute *d*, the electro-magnet F, armature lever G carrying the armature H and provided with a slot having lugs *m*, *n*, *n'*, the bolt *q*, bar *p*, and means for moving the bar and bolt forward when released from the lugs of the armature lever, substantially as specified.

2. In an automatic electric time check, the combination of a comparted box, provided with a slot for receiving the check, an electro-magnet, an armature operating therewith, a lever connected to the armature and having a lug thereon, a bolt capable of locking with the lug on the lever and having a tendency to project across the opening for receiving the checks, and clock mechanism for closing the circuit of the electro magnet, substantially as described.

3. The combination of a comparted box having a slot for receiving a time check, a lever fulcrumed within the box, a weight connected to the lever, a bolt capable of projecting across the slot and closing the same, means for connecting the bolt and lever, an electro-magnet, an armature operating therewith, a lever fixed to the armature and having a lug thereon, capable of connection with the bolt and of holding it away from the slot, and clock mechanism capable of closing the circuit of the electro-magnet, substantially as described.

4. The combination with a comparted box having a slot for receiving a time check, of a bolt, a transverse bar fixed to the bolt, a lever provided at one end with an enlargement having a slot formed therein, the said slot having on its upper side a lug projecting downwardly and capable of engaging with the bar of the bolt, an electro-magnet, an armature operating therewith and fixed to the lever, and clock mechanism for closing the circuit of the electro-magnet, substantially as described.

5. The combination with a box or casing, of an electro-magnet, clock mechanism for periodically closing the circuit thereof, an armature operating with the magnet, a lever fixed to the armature and having two lugs thereon, a second lever provided at one end with a plate, the box or casing having a slot through which portions of the plate may be seen, the said second lever having a tendency to a certain position, and means connected to the second lever and controlled by the lugs of the armature lever, whereby upon the operation of said armature lever the second lever or that having the plate may move according to the engagement of the lugs on the armature lever, substantially as described.

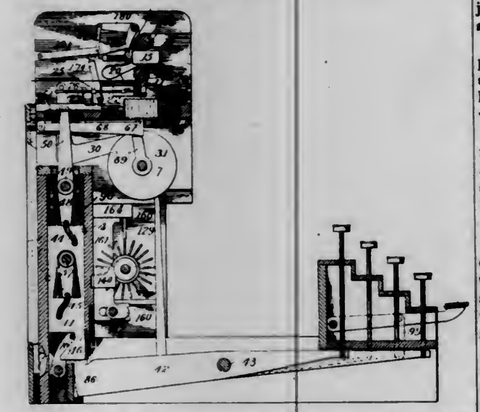
6. The combination with a box or casing, a lever fulcrumed within the box and having a plate on one end, the box or casing having an opening through which portions of the plate may be seen, a second lever connected to the first lever, a weight affixed to the second lever, a bar pivotally connected to the second lever, an electro magnet, an armature operating therewith, a lever fixed to the armature and having its free end enlarged and slotted and provided in the slot with two downwardly-projecting lugs capable of respectively engaging with the

bar and of holding the lever carrying the plate against its tendency, and clock mechanism for acting on the circuit of the electro-magnet, substantially as described.

7. The combination, of a box having a slot therein, a drawer located within the box and having an inclined surface thereon, a lever located below the slot, a deflector plate moved by the lever, a rod pivoted to the lever and capable of engagement with the inclined surface of the drawer, a weight actuating the rod, an electro magnet, means capable of holding the lever against the tendency of the weight and controlled by the magnet, and clock mechanism for acting on the circuit of the magnet, substantially as described.

8. The combination, of a box having a slot therein, a drawer in the box and having an inclined surface thereon, a lever in the box, a rod pivoted to the lever and capable of engaging with the inclined surface, a weight actuating the rod, a deflector plate moved by the lever, a transverse bar connected to the lever, an electro magnet, an armature therefor, a second lever actuated by the armature and having a lug thereon capable of locking with the transverse bar, and clock mechanism for acting on the circuit of the magnet, substantially as described.

545,697. MACHINE FOR MAKING CONTROLLERS FOR COMPOSING-MACHINES. FRANK A. JOHNSON, Philadelphia, Pa., assignor to the Tachytype Manufacturing Company, Minneapolis, Minn. Filed May 9, 1894. Serial No. 510,661. (No model.)



Claim.—1. The combination with character keys and with slides provided with several sets of cam surfaces, of mechanisms for making character selecting impressions and corresponding space impressions upon a controller strip, said mechanisms being controlled by different sets of the cam surfaces through intermediate connections, substantially as described.

2. The combination with character keys and with slides provided with cam surfaces, of two sets of punches for making character selecting impressions upon a controller strip, a striker for operating the punches, and interponents for selecting the punches, said interponents being controlled by the cam surfaces through intermediate connections, substantially as described.

3. The combination with character keys and with slides provided with several sets of cam surfaces, of punches for making character selecting impressions and corresponding character space impressions, mechanisms controlled by the cam surfaces for rendering selected punches operative, and a common striker for all of said punches, substantially as described.

4. The combination with character keys and with slides provided with cam surfaces, of punches for making character and character space selecting impressions, a striker for operating the punches, interponents for selecting the punches, said interponents being controlled by the cam surfaces through intermediate connections, an escape shaft and connections between said shaft and the striker, and means for releasing said shaft when a key is operated, substantially as described.

5. The combination with character keys and with slides provided with cam surfaces, of punches for making character and character space selecting impressions, interponents for selecting the punches, rock shafts having arms and bails operated by the cams, and connections between the rock shafts and the interponents, substantially as described.

6. The combination with a set of keys and key levers, and with slides provided with cam surfaces, of mechanism for making character selecting impressions upon a controller, and a typewriter for recording the characters upon the strip, said mechanism and typewriter being simultaneously controlled by the cam surfaces through intermediate connections, substantially as described.

7. The combination with a set of keys and key levers, and with slides provided with cam surfaces, of two sets of punches for making character selecting impressions upon a controller, a striker for operating the punches, interponents for selecting the punches, and a typewriter arranged to record the characters upon the strip, said interponents and typewriter being controlled by the cam surfaces through intermediate connections, substantially as described.

8. The combination of a set of keys and key levers, of two sets of punches for making character selecting impressions upon a controller strip, two interponents for selecting said punches, a set of type mounted in a sliding frame, and having a movement therein transverse to that of the frame, a rock shaft having a rocker arm connected with one interponent and the type case, and a second rock shaft connected with the second interponent and with the sliding frame, substantially as described.

9. The combination with a set of keys and key levers, and with slides provided with character selecting and spacing cam surfaces, of means controlled by the spacing cam for making space selecting impressions upon a cootroller, and a space counting dial and index also operated by the spacing cams, substantially as described.

10. The combination with a set of keys and key levers, and with slides provided with character selecting and spacing cam surfaces, of means controlled by the spacing cams for making space selecting impressions upon a controller, a space counting dial and index, and a justifier, said space counter and justifier being also controlled by said spacing cams, substantially as described.

11. The combination with the justifier shaft and the justifier key-piece arranged to slide upon and turn with said shaft, of the starting shaft and means operated by the starting shaft and constructed to lock the justifier key-piece to prevent movement in either direction while its setting is being transferred, substantially as described.

12. The combination with the justifier key-piece and mechanism for moving said key piece in two directions in accordance with the amount of character space and number of word spaces in a line respectively, of a justifying impression device, a movable holder therefor, and means for setting the holder in accordance with the setting of the key-piece, substantially as described.

13. The combination with the justifier key-piece movable in two directions, of the justifying impression device and movable carrier therefor, the stop for said carrier having a step or shoulder, a pair of slides connected respectively to said carrier and stop, and means for transferring the setting of the key-piece to said slides, substantially as described.

14. The combination with the justifier key-piece movable in two directions, of the justifying impression device and carrier therefor, the stop for said carrier having a step or shoulder, a pair of slides connected respectively to said carrier and stop, and a correspondiug pair of setting transfer-slides mounted in a movable frame and adapted to be set by the key-piece and transfer said setting to the slides connected with the carrier and stop, substantially as described.

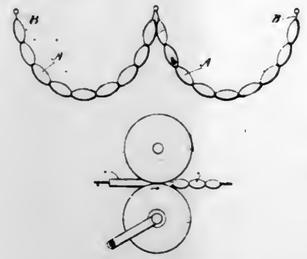
15. The combination with the justifying impression device and carrier therefor, and the stop for said carrier having a step or shoulder, of a pair of slides connected respectively to said carrier and stop, the slide for the stop being provided with ratchet teeth, an interponent arranged to bring the impression device into operation and a pawl connected to the interpotent and operating upon the teeth of the stop slide, whereby the latter is moved each time the impression device is operated, substantially as described.

16. The combination with means for making an impression in a controller to indicate word spaces, a justifying impression device and means for feeding the controller to said device, of a constantly moving striker in the rear of the impression device, a feeler having a yielding connection with said striker and arranged to vibrate in the path of said impressions and an interponent connected with the feeler and adapted to interpose between the striker and the impression device each time the feeler finds an impression, substantially as described.

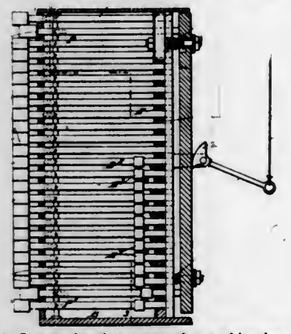
17. In a machine of the class described, the combination with means for feeding a strip of paper, punches for making character selecting impressions in the strip, and character keys and connections for selecting the punches, of an adjustable punch for making justifying impressions in said strip, and means for automatically adjusting said punch relatively to the strip, and operating the same at the completion of a line of character impressions, whereby the justifying impression or impressions for the line are automatically added to the strip, substantially as described.

545,698. METHOD OF MANUFACTURING FANCY CONFECTIONERY. SAMUEL A. JOHNSON, Penn Yan, N. Y. Filed Jan. 28, 1895. Serial No. 536,414. (No specimens.)

Claim.—The improved method of manufacturing candy adapted to be used for decorative purposes which consists in forming the same while in a plastic condition into a strip; then forming therein a groove or crease; then inserting in said groove or crease a tube inclosing a flexible thread; then folding said strip around said tube; then withdrawing said tube endwise and leaving the thread inclosed within said strip; then separating the candy into separate longitudinal sections and compressing each section around the thread by passing the same between dies, and then allowing the candy to harden, substantially as herein described



545,699. ELECTRICAL ANNUNCIATING-TARGET. OTTO KAUFFMANN, Sacramento, Cal. Filed Nov. 15, 1894. Serial No. 528,582. (No model.)



Claim.—1. In a registering target, the combination of a casing comprising front and back plates provided with aligned perforations, a bull's eye and concentric rings having on their rear faces rods which project through said perforations, a plate movably mounted behind the said rods and adapted to engage and move the same equal distances, and means for moving said plate forward, whereby said rods are engaged thereby and the bull's-eye and rings brought into alignment, substantially as set forth.

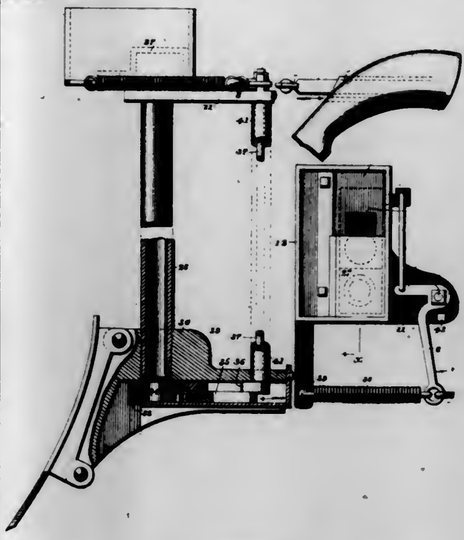
2. In a registering target, the combination of a casing having front and back plates provided with aligned perforations, a bull's-eye and target rings having on their rear faces projecting rods extending through the perforations in the casing bolts behind the casing extending parallel to the rods on the target rings, springs on the bolts, a plate movable on said bolts outside the springs adapted to engage said rods, and a cam lever pivotally mounted behind the casing and adapted to bear on said plate, whereby said rods are engaged thereby and the bull's-eye and rings brought into alignment, substantially as set forth.

545,700. CORN OR SEED PLANTER. BERNARD C. LANNEN, Amboy, Ill. Filed Jan. 31, 1895. Serial No. 536,800. (No model.)

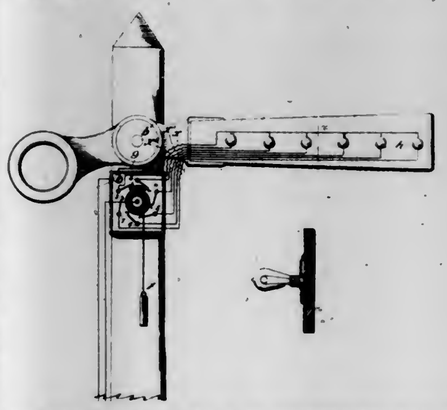
Claim.—1. In a corn or seed planter, a hopper, an upper dropper plate, a lower frame with a chamber therein, a lower dropper plate, a vertical shaft, mechanism connected with said shaft for operating said plates, a conduit connecting said hopper and chamber, an inclosing casing for said shaft, said parts being combined substantially as described.

2. In a corn or seed planter, the handle having the guide 3, on the side thereof, the bar 4 in said guide having the finger piece 5 at one end, the arm 6 extending from one end of said bar 4, a hopper with the shelf 11, the elbow 9 pivoted to said shelf, the dropper plate 16 with the hole 17 therein, and provided with the arm 15, the link 14 connected with said arm 15 and one limb of said lever, the chain 7 connecting said arm 6 and the other limb of said lever, and a spring connected with said latter mentioned limb and a stationary support, said parts being combined substantially as described.

3. In a corn or seed planter, the frame 29 consisting of the top portion 30, the sides 31, the chamber 32, the conduit 28 leading into said chamber, the dropper plate 33 with the hole 34 therein, means for reciprocating said plate, and the casing 40 attached to the under side of said frame, said parts being combined substantially as described.



545,701. SEMAPHORE-SIGNAL FOR RAILWAYS. JACOB W. LATTIG, West Bethlehem, Pa. Filed Jan. 5, 1895. Serial No. 533,934. (No model.)

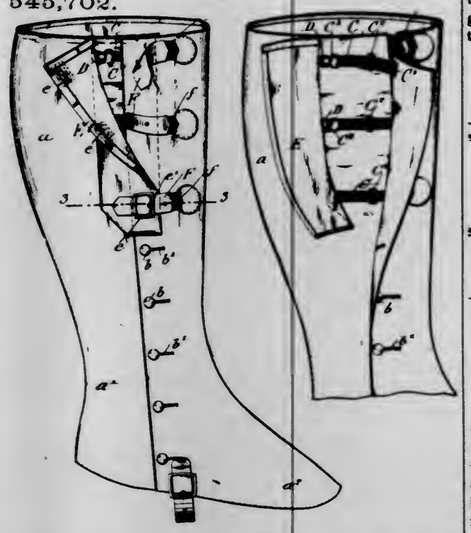


Claim.—The combination with a pivoted semaphore arm and its support, of a row of electric lamps attached to and extending lengthwise of the arm, a commutator, a motor for rapidly driving the movable member of said commutator, a source of electrical supply and electrical connections, substantially as described whereby whenever and so long as the commutator is in operation the lamps on the semaphore arm will be intermittently and successively put in circuit so as to produce upon the eye the effect of a continuously moving streak of light running lengthwise of the semaphore blade, substantially as hereinbefore set forth.

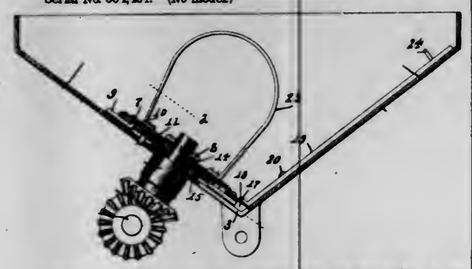
545,702. LEGGIN. LIONEL E. LEVY, New York, N. Y. Filed May 31, 1895. Serial No. 551,186. (No model.)

Claim.—The herein-described leggin, consisting of a body provided at the lower edges of its lapping parts with buttons and button-holes respectively, a series of elastic straps secured to the under side of the outer lapping part of the body and provided with rings at their outer ends, a series of hooks secured to the outer side of the inner lapping part of the body, a flap secured to the inner lapping part outside of said hooks, buckles arranged on said flap, and straps secured to the outer lapping part and adapted to be secured in said buckles, substantially as set forth.

545,702.



545,703. SEEDER. JOHN M. W. LOSE, Hamilton, Ohio, assignor to the Long & Allstatter Company, same place. Filed June 29, 1895. Serial No. 554,451. (No model.)



Claim.—1. In a seeder, the combination, substantially as set forth, with a hopper having a discharge opening, of a seed-wheel having a series of pivoted teeth projecting outwardly, a concentric stationary disk to maintain said teeth in position of outward projection and having a notch to permit their retreat as they pass the discharge opening, and an obstruction at the discharge opening in the path of said teeth and serving to clear the periphery of the seed-wheel at the discharge opening.

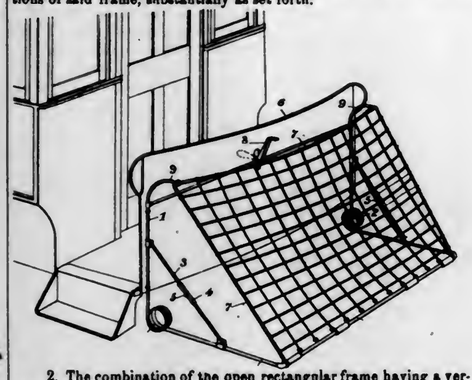
2. In a seeder, the combination, substantially as set forth, of a hopper having a discharge opening, a toothed seed-wheel arranged to carry seed between its teeth to said opening, and a shed-plate over said teeth at said discharge opening and pivoted for adjustment of its entry end to and from the upper side face of said teeth.

3. In a seeder, the combination, substantially as set forth, with a hopper having a discharge opening, a spindle mounted therein and projecting therein to turn a seed wheel, a disk removably secured to the inner end of said spindle, a series of teeth pivoted at the periphery of said disk, and a disk mounted on the hub of the first mentioned disk and doweled to the hopper so as to be incapable of rotation and having its periphery engaging said pivoted teeth and having a notch at said discharge opening to permit the retreat of the teeth as they pass the discharge opening.

4. In a seeder, the combination, substantially as set forth, of a hopper having a discharge opening, a spindle mounted therein to drive a seed-wheel, a toothed seed-wheel removably secured to the inner end of the spindle, and a bail secured to one face of the seed-wheel to serve as an agitator and as a handle.

545,704. SAFETY-FENDER FOR STREET-CARS. JAY R. LYFORD, Bridgeport, Conn., assignor to the Lyford Car Fender Company, Boston, Mass. Filed Aug. 29, 1894. Renewed July 20, 1895. Serial No. 556,629. (No model.)

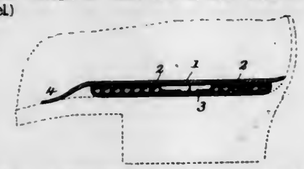
Claim.—1. A safety fender for street cars, comprising an open rectangular frame having its upper and lower portions connected at their angle of junction by coil springs, and the brace rods hinged together and pivoted at their extremities to the upper and lower portions of said frame, substantially as set forth.



2. The combination of the open rectangular frame having a vertical portion adapted to be secured to the dash-board of a street car and having a horizontally extending lower portion connected to the upper portion by coil springs, the brace rods pivoted at opposite sides of the frame to said upper and lower portions respectively, said rods hinged together at their inner ends, and a safety net carried by said frame, substantially as set forth

3. The combination of the open rectangular frame comprising an upper portion secured in vertical position to the dash-board of a street car and provided with outwardly curved portions, a lower portion extending in a horizontal plane and coil springs connecting said upper and lower portions, the hinged brace rods pivoted to said upper and lower portions of the frame at opposite sides thereof, and the safety net secured to the bottom of the frame and to said curved portions, substantially as set forth.

545,705. CUSHIONED SOLE FOR FOOTWEAR. CHARLES MACDONALD, Chicago, Ill. Filed Nov. 23, 1894. Serial No. 530,225. (No model.)



Claim.—1. A cushioned sole for footwear, comprising in combination, an upper bearing sheet 1, and a layer of pneumatic tubing 2, arranged beneath the same, substantially as set forth.

2. A cushioned sole for footwear, comprising in combination, an upper bearing sheet 1, a layer of pneumatic tubing 2, arranged beneath the same, and an inclosing covering 3 of flexible material, substantially as set forth.

3. A cushioned sole for footwear, comprising in combination, an upper bearing sheet 1, and a spirally arranged layer of pneumatic tubing 2, arranged beneath the same, substantially as set forth.

4. A cushioned sole for footwear, comprising in combination, an upper bearing sheet 1, a spirally arranged layer of pneumatic tubing 2, arranged beneath the same, and an inclosing covering 3, of flexible material, substantially as set forth.

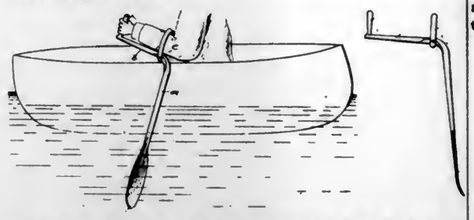
5. A cushioned sole for footwear, comprising in combination, an upper bearing sheet 1, a layer of pneumatic tubing 2, arranged beneath the same, and an inclosing covering 3, of flexible air tight material, adapted to contain air in a confined condition, substantially as set forth.

6. A cushioned sole for footwear, comprising in combination, an upper bearing sheet 1, having an attaching flap 4, at one end, and a layer of pneumatic tubing arranged beneath the sheet 1, substantially as set forth.

7. A cushioned sole for footwear, comprising in combination, an upper bearing sheet 1, having an attaching flap 4, at one end, a layer of pneumatic tubing arranged beneath the sheet 1, and an inclosing covering 3 of flexible material, substantially as set forth.

545,706. PADDLE. PEDER K. MANNES, St. Paul, Minn. Filed June 12, 1895. Serial No. 552,549. (No model.)

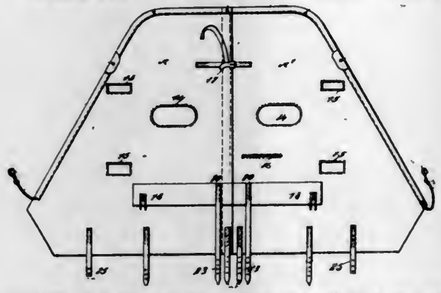
Claim.—1. A paddle having a bent shank or body portion, a hand grasp projecting perpendicularly from the end of the shank or body, and a ring or loop pivotally mounted at the bend in the shank or body, substantially as described



2. A paddle having a hand grasp projected from the body or shank thereof, and having a ring or loop capable of receiving the arm of the user, substantially as described.

3. A paddle having a bent shank or body portion provided with means for securing the inner arm alongside of and to the arm of the user, substantially as described.

545,707. STORM-CURTAIN FOR BUGGIES. BERNARD MARTIN, McPherson, Kans. Filed Jan. 21, 1895. Serial No. 535,667. (No model.)



Claim.—1. A storm curtain or apron constructed in two sections, each section being shaped to cover one-half of the vehicle front from top of hood to bottom of body and likewise a side portion of the body, each section being also provided with sight openings and one of them with a driving flap, each section being further provided with a cord extending along its side edge for attachment to a support within the vehicle body, as and for the purpose specified.

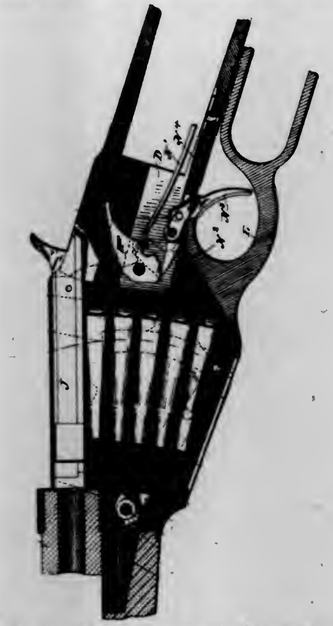
2. A storm apron or curtain, the same comprising two overlapping sections detachably secured together, each section comprising a front and a side sub-section, the side and front sub-sections being provided with means for attachment to the front and side of the hood, and each side sub-section having means of attachment to an interior fixed support upon the body, as and for the purpose specified.

3. A storm curtain or apron comprising two sections, each section consisting of a front and a side sub-section, the side and front sub-sections having means of attachment to the front and side portions of the hood of the vehicle, and means for attachment to the body of the vehicle, each front sub-section being also provided with a flap adapted to extend downward over the inner face of the dash-board, each flap having means for attachment to and support within the vehicle, as and for the purpose set forth.

4. A storm curtain or apron comprising two sections, each section consisting of a front and a side sub-section, the side and front sub-sections having means of attachment to the front and front side portions of the hood of the vehicle, each front sub-section being also provided with a flap adapted to extend downward over the inner face of the dash-board, each flap having means for attachment to and support within the vehicle, and clamps secured to the outer faces of the flaps, the said clamps being located between the flaps and main body of the front sub-sections, being adapted for engagement with the upper portion of the dash-board of the vehicle, as and for the purpose set forth.

545,708. BOX-MAGAZINE BOLT-GUN. WILLIAM MASON, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Mar. 15, 1895. Serial No. 541,881. (No model.)

Claim.—1. In a breech-loading, box-magazine fire arm, the combination with a chambered frame, having a feeding opening in its lower edge or bottom, of a box-magazine located within the chamber of the frame and having one of its side walls slotted, a pivotal carrier normally extending into the box-magazine through the slot thereof, and a carrier-arm, to the outer end of which the carrier is pivoted and which is located between the slotted side wall of the box-magazine and the adjacent side wall of the frame, whereby the carrier, by swinging on its pivot, may be cleared from the box-magazine to give clearance to the feeding of cartridges thereinto through the opening in the bottom of the frame, substantially as set forth.



2. In a breech-loading, box-magazine fire arm, the combination with a chambered frame, having a feeding opening located in its lower edge or bottom, of a box-magazine located within the chamber of the said frame and having one of its side walls slotted, a pivotal carrier, consisting of a finger and a stem, of which the former normally extends through the said slot into the magazine, a carrier-arm located between the magazine and the adjacent side wall of the frame, and having the stem of the carrier pivotally connected with it, a carrier spring coacting with the said arm to lift the carrier, and a carrier thumb-piece connected with the arm and arranged to be employed for depressing the same and the carrier against the tension of the carrier-spring, substantially as set forth.

3. In a breech-loading, box-magazine fire arm, the combination with a chambered frame having a clearance slot formed in it, of a stationary box-magazine located therein and having one of its side walls slotted, a pivotal carrier, normally extending into the magazine through the slot therein, a carrier-arm located between the magazine and the adjacent side wall of the frame and having the carrier pivotally attached to it, a carrier-spring coacting with the said arm, and a carrier thumb-piece connected with the arm for depressing the same and carrier against the tension of the carrier-spring to bring the carrier into line with the said clearance slot which is formed in the adjacent side wall of the frame, substantially as set forth, and whereby the carrier when so depressed may be swung entirely out of the box-magazine and into the said slot in the frame.

4. In a breech-loading, box magazine fire arm, the combination with a chambered frame, of a stationary box magazine located therein and having one of its side walls slotted, a pivotal carrier, normally extending into the magazine through the slot therein, a carrier-arm located between the magazine and the frame and having the carrier pivoted to it, a hub for the said arm, mounted in the said frame, a carrier-spring acting through the said hub, and a carrier thumb-piece arranged upon the outside of the frame, and having a shank entering the said hub whereby the carrier and arm are depressed by the thumb-piece against the tension of the carrier-spring, substantially as set forth.

5. In a breech-loading, box magazine fire arm, the combination with a chambered frame, of a stationary box-magazine, having one of its side walls slotted, a pivotal carrier extending through the said slot into the magazine, a carrier arm located outside of the magazine and between the same and one of the side walls of the frame, a carrier-spring, and means for limiting the upward and downward movement of the carrier-arm and hence the carrier, substantially as set forth.

6. In a breech-loading box-magazine fire-arm, the combination with a chambered frame, of a box-magazine located therein, a pivotal

carrier normally extending into the box-magazine, a carrier-arm to the outer end of which the carrier is pivoted, and which is located between the box-magazine and the frame, an indicator connected with the said carrier-arm and exposed upon the outer face of the frame which is provided with a scale to coact with the indicator to indicate the number of cartridges in the magazine, substantially as described.

7. In a breech-loading, box-magazine fire arm, the combination with a chambered frame, of a stationary box-magazine located therein and having a slot in one of its side walls, a pivotal carrier normally projecting into the box-magazine through the said slot, a carrier-arm to which the carrier is pivoted, a carrier-spring for pressing the carrier against the cartridges in the magazine, a thumb-piece connected with the carrier-arm and located upon the outside of the said frame, and a graduated scale located adjacent to the said thumb-piece, which coacts with it to indicate the position of the carrier in the magazine, and hence the number of cartridges therein, substantially as set forth.

8. In a breech-loading box-magazine fire arm, the combination with a box-magazine, of a vertically movable cut-off plate pivoted at its forward end and forming a rear cut-off, a cut-off finger forming a forward cut off, and means mounted in the frame of the arm for operating both of the said cut-offs, substantially as described.

9. In a breech-loading, box-magazine fire arm, the combination with a box-magazine, of a forward cut-off, consisting of a cut-off finger, and a slide in the forward end of which the finger is pivoted, and means for operating the slide forward and backward to change the position of the finger, which is normally in line with the slide but which is thrown inward at a right angle thereto and into the magazine in discharging its cut-off function, substantially as set forth.

10. In a breech-loading, box-magazine fire arm, the combination with a box-magazine, of a forward cut-off, consisting of a cut off finger, having its outer end constructed with a circular lug, which enters a slot in the adjacent side wall of the frame, and of a slide, in the forward end of which the said finger is pivotally mounted; and means for operating the slide back and forth to retire the finger or bring it into operation, substantially as set forth.

11. In a breech-loading, box-magazine fire arm, the combination with a box-magazine, of a forward cut-off, comprising a cut-off finger, having a flat upper face, a beveled lower face, and a circular outer end, and a horizontal slide, in the forward end of which the finger is mounted; and means for operating the slide back and forth to shift the position of the finger, the circular outer end of which forms a fulcrum for its operation and enters a slot in the frame of the receiver, substantially as set forth.

12. In a breech-loading, box-magazine fire arm, the combination with a box-magazine, of a vertically movable cut-off plate, pivotally connected at its forward end with one of the side walls of the magazine and adapted at its rear end to form a rear cut-off, a cut-off finger forming a forward cut-off, a horizontally arranged slide, in the forward end of which the said finger is pivotally mounted, and a cut-off thumb-piece located upon the outside of the frame and provided with an eccentric pin connected with the plate and slide for their simultaneous operation, substantially as set forth.

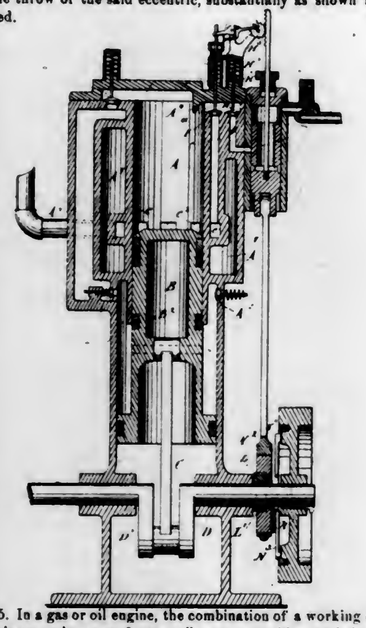
545,709. GAS-ENGINE. FRANK S. MEAD, Montreal, Canada. Filed Aug. 2, 1894. Serial No. 519,288. (No model.)

Claim.—1. In an explosive engine, the combination with the working cylinder of the pump for feeding the fuel to the cylinder, means for driving the pump, an exhaust valve for the escape of the products of explosion, and connections operated by the pump and extending therefrom to the exhaust valve to actuate the latter, substantially as described.

2. The combination, in an explosive engine, with the working cylinder, the piston and the drive shaft operated thereby, of a governor operatively connected with the said shaft, a pump for feeding the combustible agent to the cylinder, operative means, controlled by the said governor, for driving the said pump, and exhaust valve for the escape products of explosion, and connections operated by the pump and extending therefrom to the exhaust valve to actuate the latter, substantially as described.

3. The combination, in an explosive engine, with the working cylinder, the piston and the drive shaft operated thereby, of a governor operatively connected with the said shaft, a pump for feeding the combustible agent to the cylinder, operative means, controlled by the said governor, for driving the said pump, an extension on the plunger of the pump, an exhaust valve for the escape of the products of explosion, and means operated by the said extension to hold the exhaust valve temporarily open, as and for the purpose set forth.

4. In a gas or oil engine, a shifting eccentric operatively connected with a gas, vapor or oil pump, and a governor consisting of one or more weighted arms actuated by centrifugal force derived from the speed of the engine and arranged to both retard and diminish the throw of the said eccentric, substantially as shown and described.



5. In a gas or oil engine, the combination of a working cylinder and piston, and a pump for gas, oil or vapor, said pump being driven from an eccentric arranged to be rotated upon another eccentric as a center, substantially as shown and described.

6. In a gas or oil engine, the combination of a gas or vapor pump cylinder, a plunger or piston working therein, and an annular piston valve attached to and worked by said pump piston and controlling the exit port of said pump, substantially as shown and described.

7. In a gas or oil engine, an exhaust valve normally closed, and a gas, vapor or oil pump whose piston or piston rod or an attachment thereto is arranged to open and suddenly release the said exhaust valve, substantially as shown and described.

8. In a gas or oil engine, the mechanism for working the exhaust valve from an extension of the gas, vapor or oil pump piston or piston rod, consisting of a rack a rotating pin, a jointed lever, and a spring or equivalent for seating the valve when released, substantially as shown and described.

9. In a gas or oil engine, a pump for injecting oil or naphtha having its piston arranged to slide on the piston rod, substantially as shown and described.

10. In a gas or oil engine, a pump for injecting oil or naphtha, having its piston arranged to slide on the piston rod and the said piston rod arranged to operate the discharge port of the pump, substantially as shown and described.

11. In a gas or oil engine having concentric cylinders of different diameters, the extension or lip whereby the small cylinder is extended into the larger one, substantially as shown and described.

12. In a gas or oil engine having a working cylinder, an annular compression cylinder, and exhaust ports in the wall of the working cylinder, the combination of the extension or lip and the packing ring, as and for the purpose herein set forth.

13. In a gas or oil engine, the combination of a gas or oil inlet valve whose time of action is variable relative to the main crank of the engine, an exhaust valve, and a connecting mechanism operated by one of the valves and extending therefrom to the other valve to actuate the latter, said mechanism being so timed that the exhaust valve is closed before the inlet valve is opened, substantially as shown and described.

14. In a gas or oil engine, the combination of a gas, vapor or oil pump, an eccentric rod controlling the action of said pump, an eccentric revoluble on another eccentric as a center and a governor for turning the revoluble eccentric, substantially as shown and described.

15. In a gas or oil engine, the combination of an eccentric of variable circumferential position on the shaft which drives it, a pump, and a gas, vapor or oil inlet valve operating within the compression chamber of the pump, and controlled by said eccentric, substantially as shown and described.

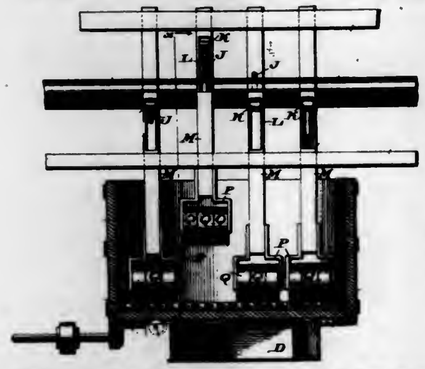
16. In a gas or oil engine, the combination of an eccentric of variable circumferential position on the shaft which drives it, an exhaust valve and an inlet valve both operated by said eccentric, and a passage, connecting the port of said inlet valve and the explosion chamber of the engine, substantially as shown and described.

17. In a gas or oil engine, an automatic governor consisting of one or more weighted arms actuated by centrifugal force derived from the speed of the engine, an eccentric mounted to turn upon another eccentric as a center and operatively connected to said governor, and a gas, vapor or oil pump whose plunger is provided with a cross passage for controlling the exhaust of the engine and is operated by said variable eccentric, substantially as shown and described.

18. In a gas or oil engine, an automatic governor having one or more weighted arms actuated by centrifugal force derived from the speed of the engine, and a gas, oil or vapor pump whose plunger is provided with a cross passage for controlling the exhaust, so arranged that the stroke of the pump plunger is advanced or retarded relative to the main crank, by the action of said governor, substantially as shown and described.

19. In a gas or oil engine, the combination of a movable eccentric whose circumferential position on its driving shaft is automatically controlled, a gas, oil or vapor pump and an exhaust valve both governed in their action by said eccentric, substantially as shown and described.

545,710. TOM-TOM. ROBERT MEYER and WILLIAM C. FOULDS, Philadelphia, Pa. Filed June 6, 1895. Serial No. 551,824. (No model.)



Claim.—1. In a device of the character described, a tub or vat, a bar suspended and guided therein and adapted to be reciprocated, said bar having journaled in the lower portion thereof a suitable roller, in combination with means for rotating said vat, substantially as described.

2. In a device of the character described, a suitable vat or receptacle, a false bottom therefor, means for rotating said vat, upright bars having rollers journaled in the lower portion thereof, means for supporting and guiding said bars, in combination with suitable means for imparting reciprocating movement to the same, substantially as described.

3. A foundation with rollers journaled therein, a vat supported on said rollers, slotted bars having rollers within said vat, guides for said bars, and a shaft with fingers working in said slots and operating said bars, said parts being combined substantially as described.

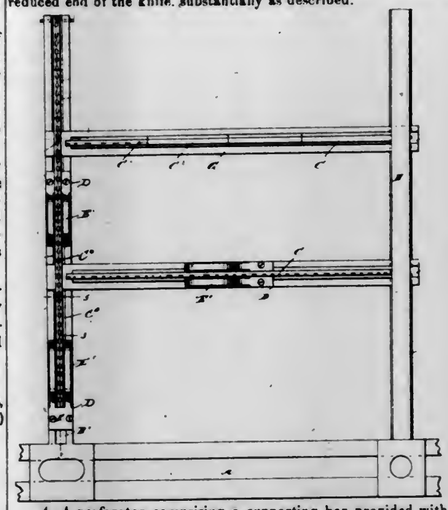
4. A vat, means for rotating the same, a rotatable shaft above said vat provided with a finger, and a slotted reciprocating bar movable in guides and having a roller at its lower end within said tank, said parts being combined substantially as described.

545,711. PERFORATOR. HORACE G. MILLER, Punxsatawney, Pa. Filed Apr. 23, 1895. Serial No. 546,933. (No model.)

Claim.—1. A perforator, comprising a supporting bar, a perforating knife extended lengthwise of the bar and mounted to slide thereon, and a paper-releasing spring likewise extended lengthwise of the bar and mounted to slide on the supporting bar, substantially as described.

2. A perforator, comprising a supporting bar provided with a longitudinal slideway, a perforating knife arranged to move upon the said slideway, and provided with an end portion spaced from the said slideway, and a paper-releasing spring provided with a slide fitting into the space between the supporting bar and the said spaced end of the knife, substantially as described.

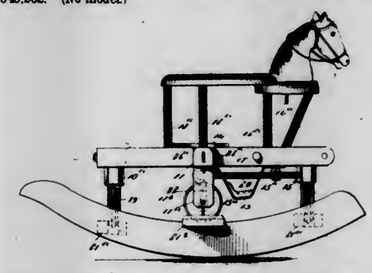
3. A perforator, comprising a supporting bar provided with a longitudinal groove forming a slideway, a perforating knife provided with a projection arranged to move upon the said slideway, and with a reduced end portion spaced from the slideway, and a paper-releasing spring provided with a slide fitting into the slideway under the reduced end of the knife, substantially as described.



4. A perforator, comprising a supporting bar provided with a longitudinal slideway, a perforating knife arranged to move upon the said slideway, and provided with an end portion spaced from the said slideway, and a side arm adapted to carry perforating knives and provided with a portion fitting into the space between the supporting bar and the said spaced end of the knife, substantially as described.

5. A perforator, comprising a supporting bar provided with a longitudinal groove forming a slideway, a perforating knife provided with a projection arranged to move upon the said slideway, and with a reduced end portion spaced from the slideway, and a side arm adapted to carry perforating knives and provided with a portion fitting into the groove under the reduced end of the knife, substantially as described.

545,712. CONVERTIBLE WAGON, PERAMBULATOR, ROCKER, AND SWING. ELLIS S. MORTON, Galena, Kans., assignor of one-half to Louis Koesuth Moeller, same place. Filed Apr. 10, 1895. Serial No. 545,202. (No model.)



Claim.—1. A convertible vehicle, comprising a frame, a seat thereon, a detachable foot rest hung from the frame, a transverse knee rest on the frame, forward of the foot rest, and wheels, two of which are adapted to swivel and rotate, which wheels are positioned in sequence on the frame, and the remaining wheels located at the sides of the frame between the swiveling wheels, substantially as described.

2. A convertible vehicle, comprising a cross-like frame, a seat at the junction of the frame members, a detachable foot rest hung from the frame in front of and below the seat, a knee rest on the frame above the foot rest and below the seat, a guard ring supported from the frame above and around the seat, a table forward of the guard ring, four wheels on depending portions of the frame, and a tongue hinged at the front of said frame, substantially as described.

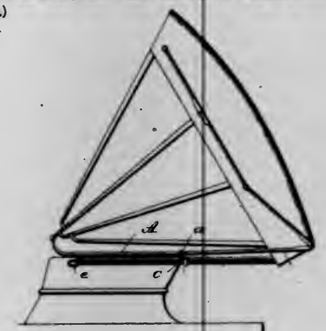
3. A convertible vehicle, comprising a cross-like frame, a seat, four wheels thereon, a rocker frame indented to receive the wheels at their peripheries, and a hooked connection between the rocker frame and cross-like frame, substantially as described.

4. A convertible vehicle, comprising two bars connected to form a cross like frame, a seat at the junction of the frame members, a detachable foot rest, wheels rotatable on the frame, a guard ring sup-

ported from the frame above and around the said seat, and means adapted to be connected with the said bars to hang the frame for conversion of the vehicle into a swing, substantially as described.

5. A convertible vehicle, comprising a cross like frame, a seat thereon, a detachable foot rest hung from the frame, a knee rest on the frame, a guard ring supported from the frame above and around the seat, a table forward of the guard ring, a head piece detachably secured to the said table, and wheels arranged on depending portions of the frame, substantially as described.

545,713. STORM-CURTAIN FOR BUGGIES. WHEELER M. MORRISON, West Union, Ohio. Filed June 27, 1895. Serial No. 554,231. (No model.)



Claim.—1. In combination with a buggy top of the ordinary type, a frame carrying a curtain-roller the frame being held in pivotal engagement with the rear bow of the buggy top and in sliding engagement with the stud carried by the seat or seat-rail, for the purpose set forth).

2. In combination with a buggy top, of a roller carrying frame pivotally connected thereto at its upper end and supported in sliding engagement with means carried by the seat or seat-rail, so that when the top is raised the roller carrying frame will be brought to a substantially vertical position and will automatically assume a horizontal position when the top is lowered.

3. A roller carrying frame for buggy tops consisting of a length of wire bent upon itself to provide eyes for supporting the roller and eyes at its upper end for attachment to the buggy top, together with a loop attached to the seat or seat-rail, so as to engage one of the members of the roller carrying frame, substantially as shown, whereby when the buggy top is raised the curtain carrying frame will be in a vertical position so that the curtain can be drawn across one side of the top.

4. In combination with a buggy top, of a roller carrying frame for supporting the side curtains thereof made of a single length of wire bent upon itself to present members E' and E^3 connected at their lower ends by a section of the wire formed into a bracket or support c having an eye which receives one end of the curtain roller, the upper portion of the member E' being formed into an eye d' to engage the other end of the curtain roller, and the free ends of both members being formed into eyes e^3 which engage a pin carried by the buggy top; together with means for holding the lower end of the frame in engagement with the seat or seat-rail, substantially as shown and for the purpose set forth.

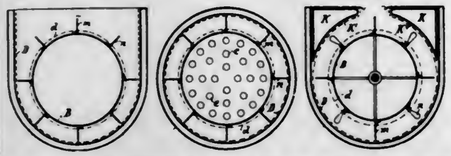
545,714. PRESSURE-REGULATOR. THOMAS C. MCGRATH, Bolivar, N. Y. Filed June 19, 1895. Serial No. 553,373. (No model.)



Claim.—1. In a gas-pressure regulator, the combination, with a hollow guide, having a gas inlet and an end slot constituting a gas exit, of a hollow, spring-pressed valve adapted to slide in said guide, and an attachment of the valve which works in the gas exit and opens or closes it as the gas pressure varies, substantially as shown and described.

2. In a gas pressure regulator, the combination, with the tubular body, 1, of the internal gas regulator proper, composed of the fixed guide cylinder, having a lateral gas inlet and end gas exit, a hollow valve adapted to slide in such cylinder, and having a lateral and end gas inlet and exit, an attachment of the valve that works in the gas exit of the cylinder, springs arranged at the ends of the valve, and means for regulating the tension of one of them, as shown and described.

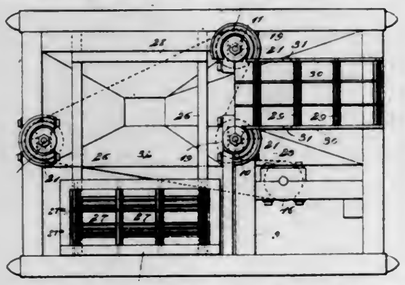
545,715. DRYING APPARATUS. FRIEDRICH E. OTTO, Dortmund, Germany. Filed June 30, 1894. Serial No. 516,185. (No model.) Patented in Belgium Apr. 19, 1894, No. 109,547, and in Austria Mar. 24, 1894, No. 44/634.



Claim.—In apparatus for drying beet root strips, spent grains or similar material, the combination of the heat emitting surface, with sieve-like protecting walls arranged as described and having openings of such width as to allow the dried particles to pass into the space between said heat emitting and protecting walls, for the purpose stated.

545,716. OIL-CAKE TRIMMER. JOHN S. OVENS, Buffalo Center, Iowa. Filed Nov. 13, 1894. Serial No. 528,636. (No model.)

Brief.—Three revolving cutter-heads. The oil-cake is shoved forward between the first and second, then at right angles between the other second and third, one cutter thus doing double duty.



Claim.—1. A machine for trimming oil cakes and the like, comprising three revoluble cutters, and a carrier adapted to be moved between the cutters triangularly arranged which are in longitudinal alignment to permit the ends of the cake to be trimmed and to be stopped opposite the cutters in transverse alignment, whereby the cake may be pushed from the carrier between the cutters in transverse alignment to permit the sides thereof to be trimmed, as set forth.

2. A machine for trimming oil cakes and the like, comprising a supporting frame, three revoluble cutter heads mounted triangularly in said frame, a transversely movable carrier on the frame and adapted to be moved between the cutter heads in longitudinal alignment to permit the ends of the cake carried by the carrier to be trimmed and to be stopped opposite the cutter heads in transverse alignment, whereby the cake may be pushed from the carrier between the cutter heads in transverse alignment to trim the sides thereof, and a roller bed in rear of the said cutter heads to receive the trimmed cake, substantially as described.

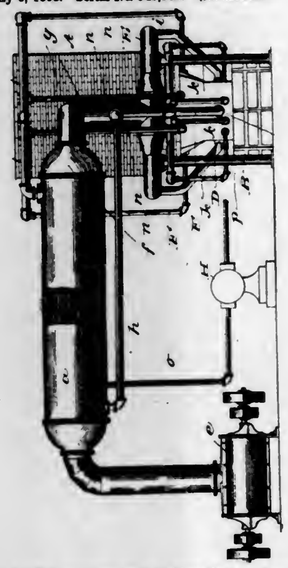
3. A machine for trimming oil cakes and the like, comprising a frame, the vertical shafts 10, 11 and 12 mounted in the frame, said shafts being triangularly arranged, cutter heads on the ends of said shafts, guards for the said cutter heads, the guards for the cutter heads of the shafts 11 and 12 extending about two-thirds of the way around the heads and the guard for the head of the shaft 10 about one-third of the way around the cutter head, a carrier adapted to move transversely of the frame between the cutter heads of the shafts 10 and 12, and a roller bed in rear of the cutter heads of the shafts 10 and 11, substantially as herein shown and described.

545,717. ILLUMINATED SIGN FOR STREET-CARS. HENRY PEARSON and ELIZABETH A. RICE, Springfield, Mass. Filed Dec. 12, 1894. Serial No. 531,591. (No model.)

Claim.—The combination with the hollow rotatable sign having openings through its ends, of a support at and for each end of the sign, consisting of a standard each having its upper portion constructed in the form of a shell with a socket or mouth for the engagement therewith of the circular end portions of the sign which are rotatably journaled therein, each of said shells being formed in two separable sections hinged together, and a lamp located in each of said shells opposite the end openings of the sign, whereby said shells may be thrown open to afford access to the lamps and to permit the removal and replacement of the sign, substantially as described.



545,718. BLAST-FURNACE. WILLIAM PENBERTHY, Denver, Colo. Filed May 6, 1895. Serial No. 548,305. (No model.)



Claim.—1. The combination of a blast furnace, a water-jacket, a receptacle separate from the jacket and provided with an air heating chamber and a water cooling chamber, means for supplying air to the air chamber of the receptacle and means for circulating the water of said jacket through the water chamber of said receptacle.

2. A blast furnace provided with a water-jacket, a receptacle separate from the jacket and provided with an air heating chamber and a water cooling chamber, in combination with means for supplying air to the air chamber of the receptacle and a system of pipes for conducting the hot water of the jacket to the water chamber of said receptacle and returning the cooled water to the jacket.

3. A blast furnace provided with a water-jacket, a distributing pipe communicating with the lower part thereof, a receiving pipe communicating with the upper part thereof, and a receptacle provided with separate air and water chambers and connected at opposite ends to said distributing and receiving pipes respectively, in combination with means for supplying air to the air chamber of said receptacle.

4. A blast furnace provided with a water-jacket, in combination with a receptacle provided with separate air heating and water cooling chambers, the air heating chamber comprising a plurality of tubes through which the air is conducted and the water cooling chamber surrounding said tubes, pipes for circulating the water of the jacket through the water chamber of the receptacle and means for supplying air to the air chamber of said receptacle.

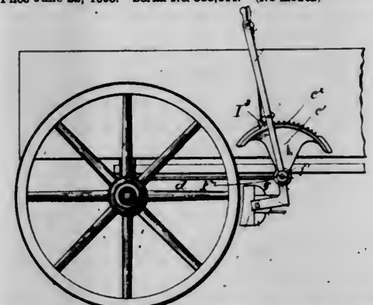
5. The combination of a blast furnace, a water jacket surrounding the furnace a multitubular receptacle separate from the water jacket and in which air is heated and water cooled, means for supplying air to the tubes of the receptacle and means for circulating the water of said jacket through said receptacle around said tubes.

6. The combination of a blast furnace, a water jacket surrounding the furnace a receptacle for heating air for blast and cooling the water of the jacket provided with a plurality of tubes and a water chamber surrounding the tubes means for supplying air to said receptacle and suitable pipe connections for circulating the water of the furnace jacket through the chamber surrounding the tubes of the receptacle.

7. The combination of a blast furnace a water jacket surrounding the furnace, a receptacle for heating air and cooling the water of the jacket, a bustle pipe connected to said receptacle, pipes connecting the bustle pipe to the tuyeres, means for supplying air to the receptacle and means for circulating the water of the jacket through said receptacle.

8. The combination with a blast furnace, a water jacket surrounding the furnace a multitubular receptacle separate from the jacket and having air chambers at both ends thereof, means for supplying air, and means for conducting the hot water from the jacket to one end of the water chamber of said receptacle and means for returning said water to said jacket.

545,719. WAGON-BRAKE. ASA N. PENDERGRASS, Cleveland, Tex. Filed June 22, 1895. Serial No. 553,681. (No model.)



Claim.—1. In a wagon brake of the character described, the combination with a support therefor removably bolted upon the rear hounds of the wagon, and brake shaft hangers rigidly mounted upon the ends of said support; of a brake shaft pivotally mounted in said hangers beneath said hounds, stops on said brake shaft abutting against said hangers, and squared portions on the ends of said brake shaft; rub block hangers keyed upon said squared portions of said brake shaft and adjustable laterally thereon; rub blocks pivotally mounted in the lower end of said rub block hangers; and a hand lever rigidly mounted upon one of said squared portions of the said brake shaft, substantially as and for the purposes described.

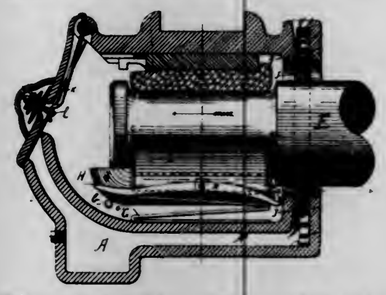
2. In a wagon brake of the character described, the combination with a support therefor removably bolted upon the rear hounds of the wagon, and brake shaft hangers rigidly mounted upon the ends of said support; of a brake shaft pivotally mounted in said hangers beneath said hounds, stops on said brake shaft; stay rods connecting said brake shaft with the rear axle; squared portions on the outer ends of said brake shaft; rub block hangers keyed upon said squared portions of said brake shaft and adjustable laterally thereon; and provided with forked arms at their lower ends; rub block holders pivotally mounted in said hangers between said forked arms, and rub blocks carried thereby; a hand lever adjustably mounted upon one of said squared portions of said brake shaft, and means for locking the said lever when thrown forward, substantially as and for the purposes described.

3. In a wagon brake of the character described, the combination with a support therefor removably bolted upon the rear hounds of the wagon, and brake shaft hangers rigidly mounted upon the ends of said support; of a brake shaft pivotally mounted in said hangers beneath said hounds, stay rods connecting said brake shaft with the rear axle; stops on said brake shaft outside said hangers, and squared portions on the outer ends of said brake shaft; rub block hangers keyed upon said squared portions of said brake shaft and adjustable laterally thereon, and provided with forked arms at their lower ends; rub block holders composed of two sections bolted together pivotally mounted in said hangers between said forked arms; rub blocks carried by said bolders; a hand lever adjustably mounted upon one of said squared portions of the said brake shaft, and a hand operated pawl carried thereby; and a segmental rack carried by one of said brake shaft hangers, for locking said lever in the forward position, substantially as and for the purposes described.

4. In a wagon brake of the character described, the combination with a support therefor removably bolted upon the rear hounds of the wagon, and brake shaft hangers rigidly mounted upon the ends of said support; of a brake shaft pivotally mounted in said hangers be-

neath said hounds, stay rods connecting said brake shaft with the rear axle; stops on said brake shaft outside said hangers, and squared portions on the outer ends of said brake shaft; rub block hangers keyed upon said squared portions of said brake shaft and adjustable laterally thereon, and provided with forked arms at their lower ends; rub block holders composed of two sections bolted together pivotally mounted in said hangers between said forked arms; stops on said holders for limiting the pivotal movement thereof; rub blocks carried by said holders; a hand lever adjustably mounted upon one of said squared portions of the said brake shaft, and a hand operated pawl carried thereby; and a segmental rack carried by one of said brake shaft hangers by means of which the said hand lever may be locked when thrown forward, substantially as and for the purposes described.

545,720. CAR-AXLE BOX. JOSEPH PETITHOMME, Oakland, Cal. Filed Nov. 23, 1888. Serial No. 291,680. (No model.)



Claim.—1. In a journal-box, a cellar composed of a single sheet bottom, compartments having double sides, the inner wall of each side being perforated end bearing-pieces, and bolts uniting the same, substantially as set forth.

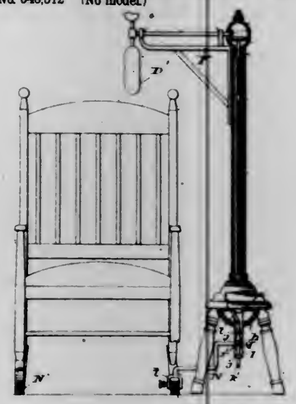
2. In a journal box, the combination of the axle, a cellar bearing thereon, said cellar recessed at the bottom, springs in the recesses of said bottom, side-pintles on said cellar, levers loosely hung on said pintles, stays for the rear ends of said levers, and inwardly-projecting pins adapted to keep down the front ends of the same when lowered, substantially as set forth.

3. In a journal-box, the combination of the axle, a spring supported cellar bearing thereon, side-pintles on said cellar, levers fulcrumed on said pintles, stays or bearings for the back end of said levers, and means adapted to keep down the front end of the same, when lowered, substantially as set forth.

4. The combination of a car-axle box, a dust-guard recess formed therethrough, and a cover or door for said recess, the said cover or door being hinged to one side of the box and adapted to be secured to the other side of the same by means of a spring-actuated locking-bolt, substantially as set forth.

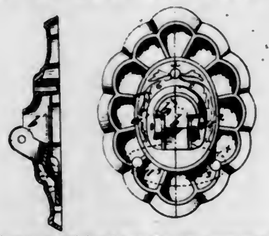
5. In a car-axle box, the combination of the axle, a dust-guard thereabound, and a spring acting upon said dust-guard, the contacting branch of said spring being in an inclined plane, substantially as set forth.

545,721. FAN ATTACHMENT FOR ROCKING-CHAIRS. JACOB PICKEL and WILLIAM SCHMALE, Baltimore, Md. Filed May 8, 1895. Serial No. 548,512. (No model.)



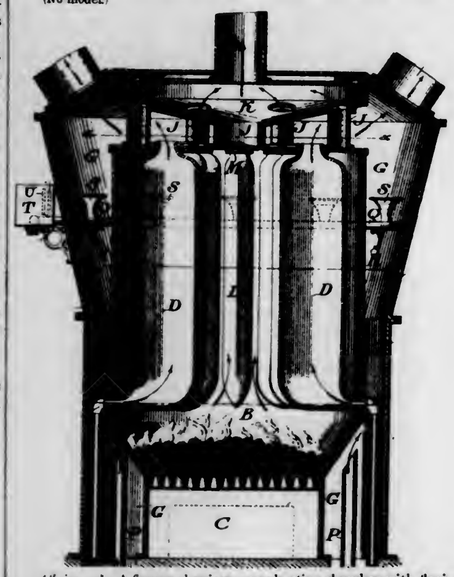
Claim.—The combination of a tubular standard; a vertical shaft extending through the standard; a revoluble fan mounted on the standard; a horizontal shaft, G, at the base of the standard and said parts geared so as to communicate motion from this shaft to the fan; two ratchet wheels on said horizontal shaft; two vertically-reciprocating rods, *k*, *k'*, each having a hook pawl connecting with one of the said ratchet wheels; a cross bar, *r*, having each end connected with a different one of said vertically-reciprocating rods; and a rod, N, connecting at one end with the center of said cross-bar and at the other end provided with a clamp to grip the rocker of a chair.

545,722. COFFIN-HANDLE. FREDERICK RATCLIFF, New Bedford, Mass., assignor to the Fairpoint Manufacturing Company, same place. Filed June 21, 1893. Serial No. 478,386. (No model.)



Claim.—As a new article of manufacture, a casket handle ear having perforated projections in combination with a loosely inserted interior reinforcing ear having perforated projections and an extended arm opposed to the bottom of the outer ear, each perforated projection of the reinforcing ear being opposed to a perforated projection of the outer ear, substantially as and for the purpose set forth.

545,723. FURNACE. D. DEAN READ, Hackensack, N. J., assignor to James E. Church, same place. Filed Dec. 27, 1893. Serial No. 494,925. (No model.)



Claim.—1. A furnace having a combustion chamber with flaring bottom walls, an ash pit, air flues in said chamber having horizontal necks passing through the wall of said chamber, an exterior casing forming a hot air chamber between it and the combustion chamber and ash pit, air inlet pipes connected with the necks of said flues, and air inlet pipes leading into said chamber and having their outlet adjacent to the flaring bottom wall of the combustion chamber, said parts being combined substantially as described.

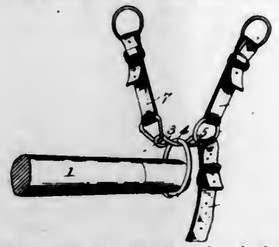
2. A furnace having a combustion chamber and an ash pit, an exterior casing forming a hot air chamber surrounding said combustion chamber and ash pit, air flues with contracted ends in said combustion chamber, having at their lower ends air inlet pipes communicating with the atmosphere, below said combustion chamber, air inlet pipes leading into said hot air chamber adjacent to the bottom walls of said combustion chamber, said air flues communicating at their upper ends with the hot air chamber, an upper chamber connected by pipes with the combustion chamber, a discharge flue for said upper chamber, and a damper in the central one of said pipes, said parts being combined substantially as described.

3. A furnace having a hot air chamber, a water pipe leading into said chamber, a cup in said chamber communicating with said pipe, a vertical glass pipe on said water pipe, outside of said chamber, and a vertical plate forming a dial adjacent to said glass pipe, said parts being combined substantially as described.

4. A furnace having a combustion chamber with flaring bottom walls, an ash pit, air flues in said chamber, having horizontal and also vertical necks passing through the walls of said chamber, an exterior casing forming a hot air chamber between it and the combustion chamber and ash pit, air inlet pipes connected with the necks of said flues and air inlet pipes leading into said chamber and having their outlets adjacent to a flaring bottom wall of the combustion chamber, all of said parts being combined together with the pipes for the escape of the products of combustion, substantially as described.

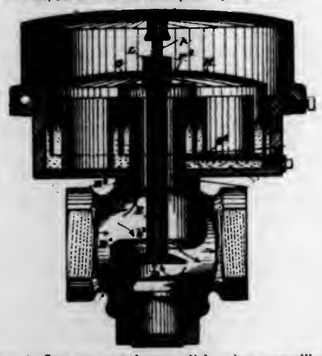
5. A furnace having a combustion chamber with flaring bottom walls, an ash pit, air flues in said chamber having horizontal and also vertical necks passing through the walls of said chamber, an exterior casing forming a hot air chamber, between it and the combustion chamber and ash pit, air inlet pipes leading into said chamber, and having their outlet adjacent to the flaring bottom wall of the combustion chamber, and outlet pipes for the articles of combustion, all of the parts being combined substantially as described.

545,724. BREAST-STRAP COUPLING. STEPHEN A. D. REYNOLDS, Girard, Ill. Filed Mar. 29, 1895. Serial No. 543,692. (No model.)



Claim.—The combination with the neck yoke bar 1, provided with the ring 2, of the metallic coupling herein shown and described, comprising the short intermediate curved rod or bar 3, having its ends bent into hooks 5, the triangle 6 connected with one of said hooks and with the strap 7, adapted to be connected with the inner section of a hame, the ring 9, connected with the other hook and with a strap adapted to be connected with the outer section of a hame, and the strap 13, connected with ring 9 and adapted to be connected with a pole or tongue, substantially as specified.

545,725. GAS-REGULATOR. JOHN L. RICHTER, Alameda, Cal. Filed Feb. 20, 1894. Serial No. 500,918. (No model.)

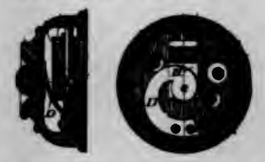


Claim.—1. In a gas-regulator a disk valve controlling the connecting passage between the inlet-side and the outlet side of the valve-chamber and acting against the pressure from the inlet-side to close the passage, and a float-chamber having a float composed of two inverted cylinders with closed heads of different diameters arranged concentrically and connected with the disk-valve by a tubular rigid stem, a passage connecting the inlet-side of the valve-chamber above the valve with the confined space under the smaller cylinder of the float, and the passage through the stem connecting the confined space under the larger cylinder of the float with the outlet side of the valve-chamber, at a point between the heads of the two cylinders, combined for operation as set forth.

2. In a gas-regulator, the combination with a valve-chamber having a gas passage, a valve closing said passage, a float-chamber having two concentric sealing troughs, a float composed of two inverted cups having heads of different diameters, arranged concentrically, and setting into the sealing troughs, and a passage connecting the inlet side of the valve chamber with the space within the float-basin beneath the smaller head; of a tubular valve stem opening at its lower end at the outlet side of the valve, exteriorly threaded at its upper end, and provided with a lateral aperture through said threads, the heads of the cup-shaped floats being mounted on said threads respectively above and below the aperture therein, as and for the purpose set forth.

3. In a gas-regulator, the combination with a valve-chamber having a gas-passage, a valve closing said passage, a float-chamber having two concentric sealing-troughs, a float composed of two inverted cups arranged concentrically with their edges setting into said troughs, and a passage leading from above the valve to the space beneath the smaller cup; of a tubular valve-stem opening at its lower end beneath the valve, exteriorly threaded at its upper end, and provided with a lateral aperture through said threads, the heads of the cups being mounted on the threads respectively above and beneath the aperture therein, a tubular piece screwed on the threads between said heads and provided with an aperture registering with that in the threads, a collar on the stem below the lower cup, and a nut screwed on to the threads above the upper cup, as and for the purpose set forth.

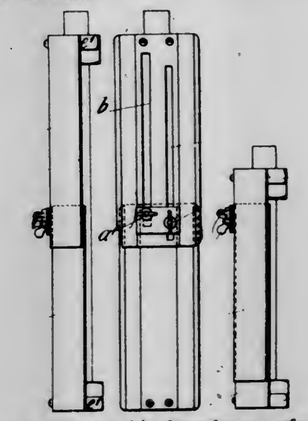
545,726. INDICATOR. BENJAMIN F. RITTENHOUSE, Philadelphia, Pa., assignor of one-half to Henry E. F. Borzell, same place. Filed Apr. 13, 1895. Serial No. 545,660. (No model.)



Claim.—1. In an indicator for electrical bell circuits, a tube, a coil surrounding said tube, a stationary core within the upper portion of said tube, a vibrator within the lower portion of said tube, a seat for said vibrator, and a push-button, substantially as described.

2. In an indicator for electrical bell circuits, a casing E, having the ends F, G, and the cover H, a coil, the tube supporting the same, the core L, and the vibrator M thereunder, in combination with a push button, and suitable contact devices, substantially as described.

545,727. WATER-GAGE. FRITZ ROCKSTROH, MAX TEPPIG, and HERMANN HERRIG, Goerlitz, Germany. Filed Oct. 5, 1894. Serial No. 524,962. (No model.)

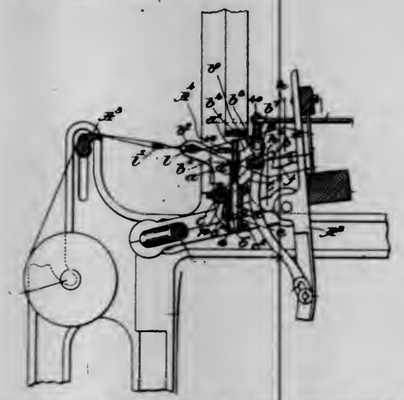


Claim.—1. As a new article of manufacture a reflector adapted to be mounted on water-gages of different length, comprising two channeled or hollow sections, one fitting within the other and partly surrounding the said water-gage, a spring holder on the outer ends of each section adapted to engage the end portion of the gage, one or

more screws on one of the said sections, said screws passing through slots of the other section to allow of lengthwise adjustment and clamping of the sections, substantially as and for the purposes set forth.

2. In a water-gage, a reflector capable of being mounted on water-gages of different length, comprising two channeled or hollow sections, one fitting within the other and partly surrounding the said water-gage, a spring holder on the outer ends of each section adapted to engage the end portion of the gage, one or more screws on one of the said sections passing through slots of the other sections to allow of lengthwise adjustment and clamping in place of the sections, in combination with a protecting jacket composed of two adjustable sections, which are hinged to the respective sections of the reflector, substantially as and for the purposes set forth.

545,728. WARP STOP-MOTION FOR LOOMS. CHARLES F. ROPER, Hopedale, Mass., assignor to Geo. Draper & Sons, same place. Filed Feb. 4, 1895. Serial No. 537,171. (No model.)



Claim.—1. A warp stop motion for looms containing the following instrumentalities, viz;—a series of slotted detectors each adapted to be moved into abnormal position by one thread at a time of a plurality of co-operating warp threads passing through the slot of each detector when the active thread is taut and unbroken and lifted in the formation of the shed, a support extended transversely through slots in the detectors, a feeler to engage a detector in normal position, and a stopping mechanism for the loom controlled by said feeler, substantially as described.

2. A warp stop motion for looms containing the following instrumentalities, viz;—lease rods, harnesses, a series of slotted detectors between the lease rods and harnesses, each adapted to be lifted by one thread at a time of a plurality of warp threads passed through its slot when the active thread is taut and unbroken and raised by the harnesses, a guide for the longitudinal edges of the detectors, a feeler to engage a detector if the latter is depressed when the shed is formed, and a stopping mechanism for the loom controlled by said feeler, substantially as described.

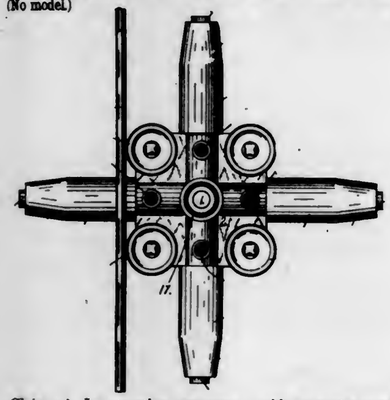
3. A warp stop motion for looms containing the following instrumentalities, viz;—harnesses, a series of slotted detectors adjacent thereto, each adapted to be moved into abnormal position by any one of a plurality of warp threads passed through its slot, a support extended transversely through slots in the detectors, a guide for the front and back edges of the detectors, in which the detectors are vertically movable, a stopping mechanism for the loom, and a feeler controlling said mechanism and adapted to engage a detector in normal position, substantially as described.

4. A warp stop motion for looms containing the following instrumentalities, viz;—a lay, a rock-shaft turned in one direction by a spring, a feeler and an arm vibrated by said shaft, a link connecting the arm and the lay, to turn the rock-shaft in opposition to the spring, a rocking arm, a dagger pivoted thereon and held inoperative when the spring is free to turn the rock-shaft, and a series of detectors moved out of the path of movement of the feeler while the warp threads are intact, engagement of a detector by the feeler permitting the dagger to move into operative position, a stopping mechanism for the loom, and connections between it and the dagger, substantially as described.

5. In a warp stop motion for looms the following instrumentalities, viz;—the lay, a series of slotted detectors controlled by the warp threads and moved into abnormal position by intact threads in the upper plane of the shed, a guide for the longitudinal edges of said detectors, a support extended transversely through the slots of the detectors, a vibrating feeler adapted to engage a detector in normal position due to slackening or breakage of its active warp thread, a dagger, an actuator on the lay to move the dagger when the feeler is engaged by a detector, stopping mechanism for the loom, and connections between it and the dagger, substantially as described.

6. In a warp stop motion for looms the following instrumentalities, viz;—the lay, a series of slotted detectors moved into abnormal position by intact warp threads in the upper plane of the shed, a rock-shaft, an attached feeler to engage a detector in normal position, an arm on said shaft, a link connecting said arm and the lay, to rock the shaft in one direction, a spring to rock it in the other direction, a dagger normally moved into inoperative position by the arm of the rock-shaft, stopping mechanism for the loom, controlled by the dagger, and an actuator on the lay to move said dagger and stop the loom when the feeler engages a detector, substantially as described.

545,729. TRACTION-CABLE SUPPORT. ELMER A. ROSS and FRANK E. BACHMAN, Buffalo, N. Y. Filed Sept. 20, 1894. Serial No. 523,565. (No model.)



Claim.—1. In a traction apparatus a cable supporter consisting of a revoluble hub mounted upon a vertical axle and provided with more than one horizontal radial arm, each having a friction roller revoluble on a horizontal axis thereon for supporting the moving endless cable, the outer ends of the rollers being tapered, and an additional friction roller supported on a vertical axis at the inner end of each horizontal roller, as and for the purpose set forth.

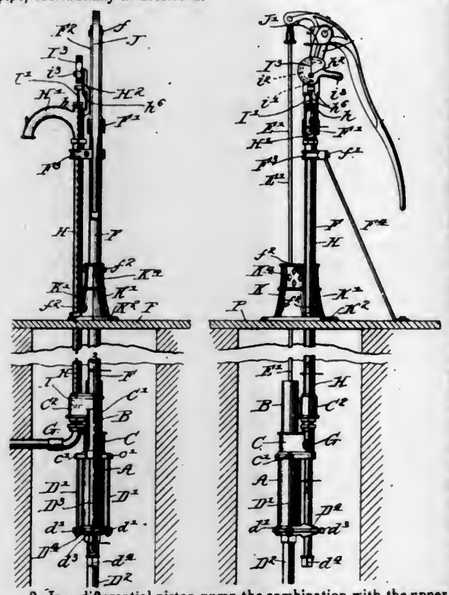
2. In a traction apparatus a cable supporter consisting of a revoluble hub mounted upon a vertical axle and provided with more than one horizontal radial arm, each having a friction roller revoluble thereon for supporting the moving endless cable, and one or more vertical friction rollers mounted on the hub and against which the supported cable has contact.

3. In a traction apparatus a cable supporter consisting of a revoluble hub mounted upon a vertical axle and provided with more than one horizontal radial arm, each having a friction roller, revoluble thereon for supporting the moving endless cable and one or more vertical friction rollers mounted on the hub and against which the supported cable has contact, the hub and its bearing having attached means for limiting each movement of the hub upon the vertical axle.

4. A support for cables carrying buckets, consisting of an upright axis, a hub journaled thereon, a number of horizontal shafts projecting therefrom and having enlargements near their outer ends beyond which they are threaded, and horizontal rollers journaled on said shafts; combined with an arm for each roller secured at its inner end to the hub, its body curving outward forward of the roller, and its outer end turned to the rear and provided with a slot passing over the threaded end of the shaft, and a nut on the latter adjustably holding the slotted end in position, as and for the purpose set forth.

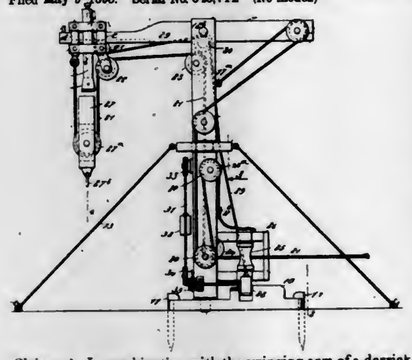
545,730. PUMP. SEYMOUR A. ROUSE, Chicago, Ill. Filed May 2, 1894. Serial No. 509,772. (No model.)

Claim.—1. In a differential piston pump the combination with the upper and lower cylinder, of the coupling piece connecting the adjacent ends of said cylinders and in open connection therewith, a vertical pipe opening out of the side of said coupling piece and cast integral with the same, said vertical pipe extending upwardly from the coupling piece at the side of the upper cylinder, an air pipe connected with the top of said vertical pipe in alignment with the latter, a three way valve chamber cast integral with the vertical pipe at the upper end and at one side thereof, a discharge pipe leading from the top of said valve chamber to the pump spout, a second discharge pipe leading from the bottom of said chamber, a valve within the chamber adapted to close communication with either of said pipes, and a valve operating rod leading out through the upper discharge pipe, substantially as described.



2. In a differential piston pump the combination with the upper and lower cylinders of the coupling piece connecting the adjacent ends of said cylinders and in open communication therewith a vertical pipe leading out of the side of said coupling piece and cast integral therewith, an air pipe leading from the top of said vertical pipe in alignment with the latter, a brace pipe rigidly connected at its upper end to the bottom of said vertical pipe and at its lower end to the lower cylinder, a three way valve chamber cast integral with the vertical pipe at the upper end and at one side thereof, a discharge pipe leading from the top of said valve chamber to the pump spout, a discharge pipe leading from the bottom of said chamber, a valve within the chamber adapted to close communication with either of said discharge pipes and a valve operating rod leading out through the upper discharge pipe, substantially as described.

545,731. PORTABLE DERRICK. JACOB SARVER, La Junta, Colo. Filed May 9, 1895. Serial No. 548,744. (No model.)



Claim.—1. In combination with the swinging arm of a derrick, a traveling carriage comprising a frame, anti-friction rollers carried by the frame to engage the upper and lower sides of the derrick-arm, the jack comprising bars movable with relation to the carriage, the buffer block between the lower ends of said bars, a sheave block adapted to engage said buffer, a latch for securing the derrick post and a flexible connection between said latch and jack substantially as specified.

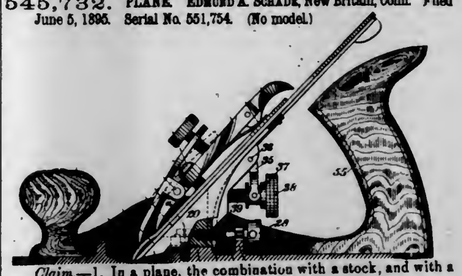
2. In a portable derrick, substantially as described, the combination with an upright rotatably supported post, of an automatically operated locking device for the post, a carrier arm pivoted on said post intermediate of the ends of said arm, a flexible connection adapted to change the inclination of the arm and hold it as adjusted, a traveling frame on the forward part of the arm which will change position as the arm is inclined, a hoisting rope on the said frame and post, and a sheave block engaging a bight of the hoisting rope below the traveling frame, as specified.

3. In a portable derrick, substantially as described, the combination with an upright rotatably supported post, a carrier arm pivoted on the upper end of the post between the ends of said arm, and a flexible connection between the rear end of the carrier arm and post, adapted to alter the inclination of the arm, of a traveling frame on the forward part of the arm, a jack slidable vertically on the said frame, a hoisting rope hung from the frame to produce a bight in said rope, and thence extended over pulleys on the frame and post, a sheave block in the bight of the hoisting rope, and a pulling rope extending from the top of the jack to a latching device at the base of the post, as specified.

4. In a portable derrick, substantially as described, the combination with an upright rotatable post, a pivoted arm thereon, and means to sustain the arm and incline it from a horizontal plane, of a latching device adapted to hold the arm on the post forwardly extended, and a device adapted to release the latching device, comprising an upwardly slidable jack on a traveling frame that is on the forward part of the arm, and a normally taut rope extending from said jack to the latching device, and adapted to release said latching device so that the arm may be swung laterally, as specified.

5. In a portable derrick, substantially as described, the combination with an upright rotatably supported post, a pivoted arm thereon, means to hold the arm forwardly extended, and a device adapted to release said arm and laterally swing it, of a device to automatically return the arm from a laterally swung position, comprising a pulley pivoted on the front side of the post, another pulley near the lower end of the post, an idler pulley at right angles to the lower pulley and also supported on the post, a flexible connection engaging said pulleys and fast at its lower end on a fixture at the base of the post, and a weight hung at the other end of the flexible connection, as specified.

545,732. PLANE. EDMUND A. SCHADE, New Britain, Conn. Filed June 5, 1895. Serial No. 551,754. (No model.)



Claim.—1. In a plane, the combination with a stock, and with a plane-iron supported thereon; of a clamping device for the plane-iron comprising two clamps, one of said clamps clamping the plane-iron at a point in advance of the clamping-point of the other clamp, substantially as described.

2. In a plane, the combination with a stock, and with a plane-iron supported thereon; of a clamping device for the plane-iron comprising two clamps, one of said clamps clamping the plane iron at a point in advance of the clamping-point of the other clamp; and means for separately operating the clamps, substantially as described.

3. In a plane, the combination with a stock; of a carrier-bracket supported thereon; a plane-iron adjustably supported on said bracket; a cap-plate adapted to rest on said plane-iron; and clamping means for said plane-iron comprising a main clamping-lever fulcrumed on the carrier-bracket and a supplemental clamping lever pivotally adjustable on said clamping-lever and adapted to clamp the cap-plate at a point beyond the clamping-point of the main-lever, substantially as described.

4. In a plane, the combination with a stock; of a plane-iron adjustably supported on said stock; and clamping means for said plane-iron comprising a main clamping-lever fulcrumed on the stock, and a supplemental clamping-lever pivotally adjustable on said main clamping-lever, and adapted to clamp the plane-iron at a point beyond the clamping-point of the main-lever, substantially as described.

5. In a plane, the combination with a stock; of a plane-iron adjustably supported on said stock; a cap-plate adapted to rest on said plane-iron; and clamping means for said plane-iron comprising a double-lever fulcrumed to the stock, one of said levers clamping the cap-plate at a point beyond the clamping-point of the other lever, substantially as described.

6. In a plane, the combination with a stock; of a plane-iron adjustably supported on said stock; a cap-plate adapted to rest on said plane-iron; and clamping means for said plane-iron comprising a main clamping-lever fulcrumed on the stock; and a supplemental clamping-lever pivotally adjustable on said main clamping-lever and adapted to clamp the cap-plate at a point beyond the clamping-point of the main-lever, substantially as described.

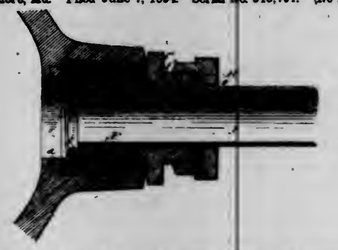
7. In a plane, the combination with a stock; of a plane-iron adjustably supported on said stock; a cap-plate adapted to rest on said plane-iron; and clamping means for said plane-iron comprising a double-lever, the main clamping lever thereof being fulcrumed to the stock and the supplemental clamping-lever being pivotally adjustable on said main-lever; and means for adjusting said double-lever, whereby the adjustable action of the combined levers extends to the clamping ends of both the main and supplemental clamping-levers, substantially as described.

8. In a plane, the combination with a stock; of a plane-iron adjustably supported on said stock; a cap-plate adapted to rest on said plane-iron; a main clamping-lever fulcrumed on said stock; means for adjusting said lever; a supplemental clamping-lever pivotally adjustable on said main-lever and adapted to clamp the cap-plate at a point beyond the clamping-point of the main clamping-lever; and means for adjusting said supplemental-lever relative to the main-lever and independently thereof, substantially as described.

9. In a plane, the combination with the stock having a transverse mouth; of a horizontal carrier-support disposed thereon; and a carrier-bracket having a bearing-face substantially parallel to the horizontal face of the support, and adapted to slide on said support, and also having a vertically-inclined side adapted to support a plane-iron, said inclined side extending below the bearing-face of the horizontal support to support the plane-iron adjacent to the mouth of the stock; a plane-iron adjustably supported on said bracket; means for longitudinally actuating said carrier-bracket relatively to its support; means for adjusting the plane-iron on its inclined support; a cap-plate resting on the plane-iron; and a clamping device for said plane-iron comprising a main clamping-lever fulcrumed to the carrier-bracket; an adjusting device for said main clamping-lever; a supplemental clamping-lever pivotally adjustable on said main-lever, and adapted to clamp the cap-plate at a point beyond the clamping-point of the main-lever; and means for adjusting said supplemental-lever independently of the main-lever, substantially as described.

10. In a plane-iron, the combination with a stock; of a plane-iron adjustably supported on said stock; a cap-plate adapted to rest on said plane-iron; a main clamping-lever fulcrumed on said stock and adapted to clamp said cap-plate and plane-iron; an adjusting device for said main-lever; a supplemental clamping-lever pivoted on the main-lever at a point below the fulcrum-point of said main-lever, and adapted to clamp the cap-plate and plane-iron at a point beyond the clamping-point of the main clamping-lever; and an adjusting device for said supplemental-lever, whereby said supplemental clamping-lever is adjustable independently of the main clamping-lever, substantially as described.

545,733. WATER-CLOSET CONNECTION. CHARLES R. SCHMIDT, Baltimore, Md. Filed June 7, 1894. Serial No. 513,791. (No model.)



Claim.—1. A bushing for water-closet connections consisting of a cylindrical section of elastic material formed with inwardly projecting flanges, substantially as described.

2. A bushing for water closet connections consisting of a tapered cylindrical section of elastic material having internal annular flanges, substantially as described.

3. A bushing for water closet connections consisting of a cylindrical section of elastic material formed with internal flanges of different widths, substantially as described.

4. The combination with a water closet bowl having a hollow boss or spud end of an elastic bushing adapted to fit in said boss and formed with internal annular flanges, substantially as described.

5. The combination with a water closet bowl having a hollow boss formed integral with the bowl and an elastic bushing fitting within said boss and formed with inwardly projecting annular flanges of a spud or union member fitting in said bushing, a nut screwing on the end of said spud and a washer between said nut and spud, substantially as described.

6. In a pipe connection for water closets, the combination with the bowl having boss B and flange D, with notches *d*, *d*, of the elastic bushing E having lugs *e*, *e*, entering the notches *d*, *d*, and inwardly projecting annular flanges adapted to be folded against the inside of the bushing by an entering pipe or union member, substantially as described.

7. In a connection for water closets, the combination with an elastic bushing having internal, parallel, annular flanges which overlap one another, of a cylindrical union member entering said bushing and compressing said overlapping flanges substantially as described.

8. A bushing for water closet connections consisting of an elastic section having internal annular flanges of such depth that they will overlap one another when pressed against the inner wall of the bushing by an entering union member.

9. In a connection for water closets, the combination with an elastic bushing having internal annular flanges of a pipe or union member entering said bushing and having an external bead engaging with one of said flanges, substantially as described.

10. A bushing for water closet connections consisting of a soft rubber cylinder having one or more inwardly projecting annular flanges or ridges, of less thickness than the length of the cylinder substantially as described.

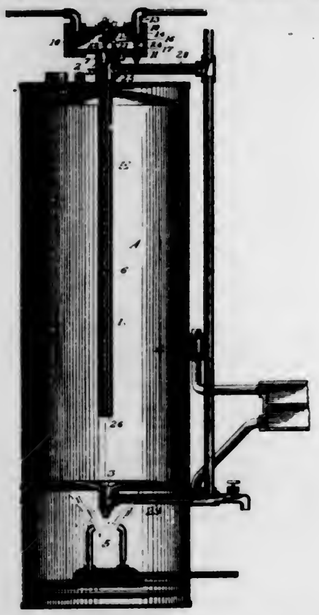
545,734. MANUFACTURE OF MARBLEIZED LEATHER. JOHN SCHOLL, Brooklyn, N. Y. Filed May 31, 1895. Serial No. 551,301. (Specimens.)

Claim.—1. The process of providing leather with a marbled surface which consists in providing a body of water, dissolving therein a quantity of common salt, floating coloring matter on the surface of this solution, and then exposing the leather to the action of the coloring matter, substantially as described.

2. The process of providing leather with a marbled surface, which process consists in providing a body of water, dissolving therein a quantity of common salt, floating coloring matter on the surface of the solution, agitating the coloring matter, and then exposing the leather to the action thereof, substantially as described.

3. The process of providing leather with a marbled surface which consists in providing a body of water, dissolving therein a quantity of common salt, floating coloring matter on the surface thereof, bringing carbonate of potassium into contact with said coloring matter, and then exposing the leather to the action of the coloring matter, substantially as described.

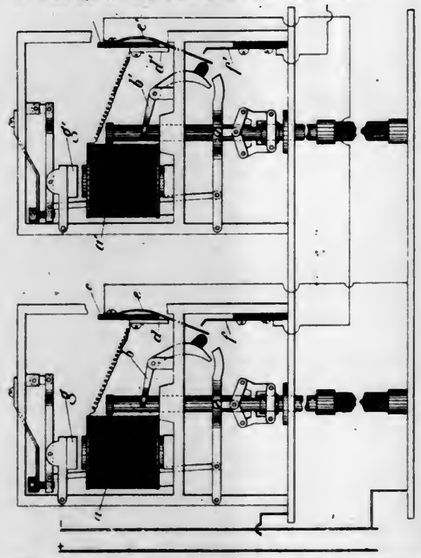
545,735. AUTOMATIC WATER-HEATER. IRVING M. SEAMANS Buffalo, N. Y. Filed Oct. 20, 1894. Serial No. 526,530. (No model.)



Claim.—1. In a device for automatically controlling the temperature of a hot water reservoir, the combination with the reservoir, of the cold water supply pipe having a prolongation projecting within the reservoir, a tube of expansible metal disposed within said prolongation, a rod of non-expansible material arranged within said tube, a valve chamber having a gas inlet and outlet, a valve arranged therein and operated by the expansion and contraction of said tube for controlling the flow of gas used for heating the reservoir, and a circulatory pipe leading from the supply pipe to the bottom of the boiler, substantially as described.

2. In a gas valve, the combination with a casing having a gas inlet and outlet, a lever having a rolling fulcrum near its center, and provided at one end with a valve face having a by-pass and adapted to control the outlet, an adjusting screw at its other end by which it is operated, and a spring for holding the valve face to its seat, substantially as described.

545,736. ELECTRIC-ARC LAMP. RUDOLPH SEGERDAHL, Chicago, Ill. Filed Apr. 26, 1894. Serial No. 509,134. (No model.)



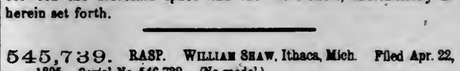
Claim.—1. In an electric light system, two or more arc lamps in parallel connection, each of said lamps being provided with means to maintain their respective carbons normally separated, derived circuits, and switching devices for said derived circuits arranged to operate as described, whereby after the carbons in the first lamp (king lamp) are consumed to a certain point the derived circuit in said lamp may be automatically broken and circuits through one of the other lamps in the group completed adapted to extinguish the arc in said first lamp and to cause the light service to be continued by the carbons thus brought into action.

2. In an arc lamp having more than one set of carbons, said carbons being intended to burn in succession and each provided with an independent regulating mechanism in derived circuit, means to cause said regulating mechanisms to be placed into action successively, consisting of switching devices for said derived circuits adapted to maintain one of the said regulating mechanisms normally in a closed circuit and all the other regulating mechanisms in open circuits until the feed action governed by said first mechanism ceases.

3. In an electric light system, the combination with two or more movable electrodes having each an independent regulating mechanism in derived circuit, of switching devices for said derived circuits substantially as described adapted to cause said regulating mechanisms to operate in a predetermined sequence, and circuits, whereby said electrodes may be caused to burn in succession.

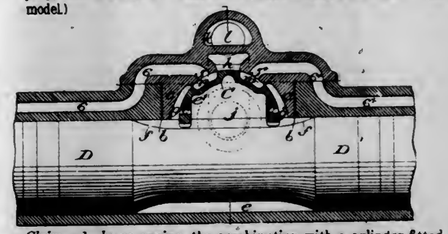
545,737. PILE-WIRE FOR LOOMS. GUSTAVE SIEGCHNEIDER, Yonkers, N. Y., assignor to John T. Waring, same place. Filed Apr. 3, 1895. Serial No. 544,247. (No model.)

Claim.—1. The combination, with a pile-wire provided with a longitudinal groove in its outer end and a stationary bridge at the outer end of the grooved portion, of a detachable cutting-blade provided with a curved guard, with a slot in the body of the blade and with a slit extending from the lower edge of the blade into the slot, and an abutment on the cutting-blade by which the guard of the blade is locked to the pile-wire, substantially as set forth.



2. The combination, with a pile-wire provided with a longitudinal groove in its outer end and a stationary bridge across the grooved portion, of a detachable cutting-blade provided with a curved end-portion or guard, with a slot in the body of the same and with a slit extending from the lower edge of the blade into the slot, and an abutment on the cutting-blade for the curved-end-portion or guard of the blade, said abutment projecting beyond the bridge of the pile-wire, substantially as set forth.

545,738. VALVE FOR DIRECT-ACTION ENGINES. HENRY C. SERGEANT, Westfield, N. J., assignor to the Ingersoll-Sergeant Drill Company, New York, N. Y. Filed Oct. 4, 1894. Serial No. 524,871. (No model.)

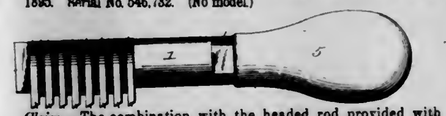


Claim.—1. In an engine, the combination with a cylinder fitted with a piston having inclines for operating a valve, and a valve-seat of arc form on said cylinder, of a valve of corresponding form fitted to said seat and having the end portions of its face normal or approximately at right angles to the line of motion of the piston whereby it is caused to stop against the piston approximately at a right angle thereto, substantially as and for the purpose herein set forth.

2. The combination with an engine cylinder having an opening in one side thereof, a valve-chest fitted to said cylinder and comprising an arc formed valve-seat and valve guiding cheeks projecting within said opening, and a valve fitted to said seat between said guiding cheeks, substantially as herein set forth.

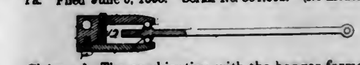
3. The combination with the engine cylinder and a piston in which is a cavity forming a steam space between the cylinder and piston, of a valve-chest upon said cylinder containing an arc-for ned valve-seat, and a hollow arc-formed valve having a cavity in its brck in communication with said steam space and having provided through it near its ends openings *o o* forming free communication at all times between the aforesaid space and the valve-chest, substantially as herein set forth.

545,739. RASP. WILLIAM SHAW, Ithaca, Mich. Filed Apr. 22, 1895. Serial No. 546,732. (No model.)



Claim.—The combination with the headed rod provided with screw-threads on its end opposite the head, of the toothed rasping-blades the teeth of which are provided with beveled edges, the alternating toothless rasping-blades having beveled edges, the rubber washers interposed between the toothed and plain rasping-blades, the tubular sleeve and the securing-nut and handle, substantially as specified.

545,740. TYPE-BAR SUPPORTER. ELMER S. SHIMER, Milton, Pa. Filed June 6, 1895. Serial No. 551,892. (No model.)

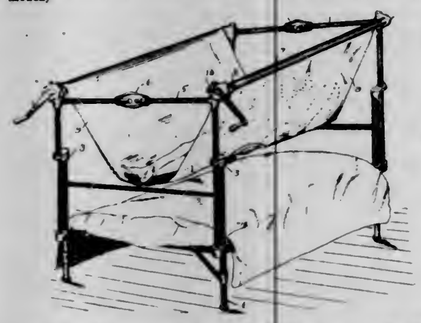


Claim.—1. The combination with the hanger formed with sockets near the free ends, of the type bar formed with corresponding sockets and the loose balls seated in said sockets; substantially as described.

2. The combination with the hanger comprising the cap having a groove in one side, the arm formed integral therewith having a socket near its free end, the arm seated in said groove having a socket near its free end, the set screw and the adjusting screw, of the type bar formed with sockets and the loose balls seated in said sockets; substantially as described.

3. The combination with the hanger comprising the cap having a groove in one side, the arm formed integral with said cap having a socket near its free end the set screw and the adjusting screw, of the type-bar provided with opposite bosses formed with sockets and the loose balls seated in said sockets; substantially as described.

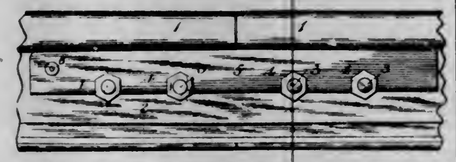
545,741. DEVICE FOR LIFTING INVALIDS. DAVID H. SHUTTERS, Greenwood, Ind. Filed Jan. 14, 1895. Serial No. 534,835. (No model.)



Claim.—1. The combination with a bedstead of a device for lifting a sick person which consists of supports slidably mounted on the uprights of the bedstead, means of holding such supports at any desired elevation, bearings secured to the upper end of such supports, lifting-bars loosely mounted in such bearings, a crank secured to each lifting bar whereby the same is rotated, means of locking such lifting bar in any certain position, and a sheet secured at its sides to such lifting bars, substantially as shown and described.

2. The combination with a bedstead of a device for lifting a sick person which consists of suitable supports slidably mounted on the uprights of the bedstead, means of securing such supports at any desired elevation, bearings mounted on the upper end of such supports one of which is a socket bearing and the other an open shoulder bearing, lifting bars on each side mounted in such bearings, means of rotating such lifting bars, and a sheet secured at its side to the lifting bars, substantially as shown and described.

545,742. NUT-LOCK. JOHN W. SPRIGGL, Magazine, W. Va. Filed May 9, 1895. Serial No. 548,743. (No model.)

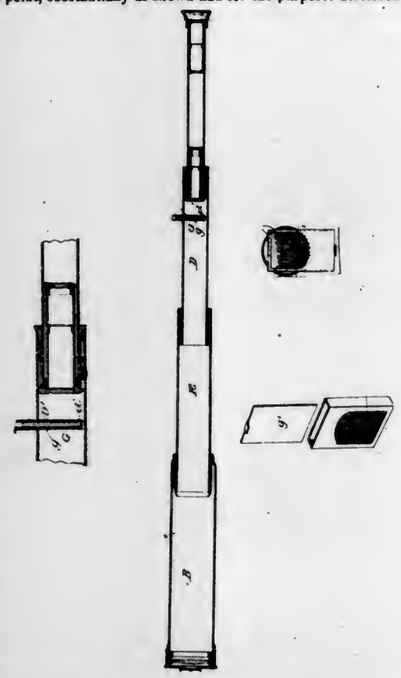


Claim.—The combination with the rails, the fish plates and the bolts and nuts, one of said fish plates having a recess formed in its inner face, of a spring locking bar, a bolt or rivet for pivoting said locking bar to one of the fish plates, the head of said bolt or rivet being seated in the aforesaid recess, and a washer upon said bolt or rivet interposed between the locking bar and fish plate, so as to allow the locking bar to swing upward past the rail tread, said locking bar being provided on one of its edges with notches to receive the nuts and having a laterally projected lug at its other end to spring under the tread of the rail and lock the bar against vertical movement, substantially as set forth.

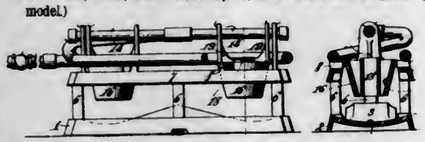
545,743. COMBINED TELESCOPE, MICROSCOPE, AND CAMERA. ROBERT I STEVENS, Vineland, N. J. Filed Oct. 30, 1894. Serial No. 527,430. (No model.)

Claim.—1. The improved instrument, comprising the telescopic sections, the outer one having an object glass, the inner one having the eye piece, and one of the intermediate ones having a pocket or slit for receiving a plate-holder when the inner or eye section is extended, said pocket or slit being arranged to receive a sensitized plate holder all arranged substantially as shown and for the purposes described.

2. A combined telescope and camera comprising an extensible body portion having an object glass at one end, a telescope connection therewith having an eye or microscope end piece, an intermediate section having a fixed focal point, and having its body portion provided with a plate receiving pocket or slit in line with such fixed focal point, substantially as shown and for the purposes described.



545,744. HYDROCARBON-BURNER. SIMEON STEWART and HOMER S. CARNES, Lima, Ohio. Filed Apr. 2, 1895. Serial No. 544,204. (No model.)



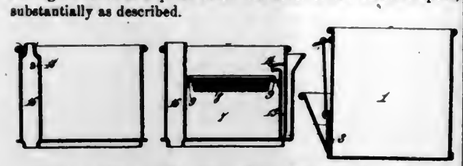
Claim.—1. A hydrocarbon burner, consisting of a deflector plate having an oil receptacle, a vaporizing coil supported above said plate, a superheating pipe connected therewith and provided upon its under side with a jet aperture and a mixer suspended from said superheating pipe over the oil receptacle and consisting of an inverted truncated-cone-shaped shell having centrally supported therein a tube arranged directly beneath the jet aperture, an air passage gradually diminishing in area from top to bottom being formed between the shell and tube, substantially as described.

2. A hydrocarbon burner, consisting of a deflector plate having oil receptacles, of a shell supported above the same and provided upon its upper side with inwardly projecting raised lugs, a vaporizing coil supported upon said lugs, superheating pipes connected with said coil and supported by uprights carried by said shelf, said pipes being provided upon the under side with jet apertures, mixers, one for each jet aperture, provided with perforated ears, said mixers being suspended from the superheating pipes by said ears and held in alignment with the jet orifices by the said lugs, substantially as described.

3. A hydrocarbon burner, consisting of a deflector plate raised at its center and inclined downwardly in opposite directions therefrom toward its ends, concaved oil receptacles formed in the ends of said deflector plate, channels connecting said oil receptacles, a vaporizing coil supported above said plate, superheating pipes connected with said coil and provided upon the under side with jet apertures arranged above said oil receptacles, and mixers arranged above said deflector plate and immediately beneath said jet apertures, substantially as described.

545,745. STEAM COOKING APPARATUS. ALACE STEWART, San Francisco, Cal. Filed May 10, 1895. Serial No. 548,841. (No model.)

Claim.—1. In a steam-cooking apparatus, a coffee leaching vessel having two spouts arranged respectively on the exterior and interior of the vertical side wall of the vessel and communicating at their lower ends by an aperture formed in said wall, the interior spout having an outlet at a point below the level of the exterior spout, substantially as described.

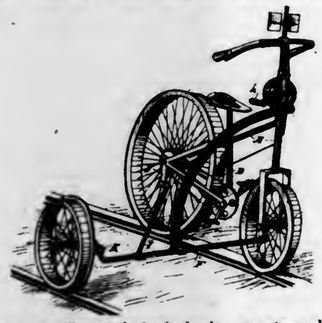


2. In a steam-cooking apparatus, a coffee-leaching vessel having a foraminous diaphragm and provided with two spouts arranged respectively on the exterior and interior of the vertical side wall of the vessel and communicating at the lower ends by an aperture formed in said wall, the interior spout having a curved outlet at its upper end which discharges onto said diaphragm at a point below the top of the exterior spout, substantially as described.

3. In a steam-cooking apparatus, the combination with a boiler of one or more cooking vessels, all having steam passages communicating with each other and with the boiler, said passages having openings to permit steam to enter the interior of said vessels, and a soup-pan provided with a steam passage closed save at its ends, the upper end being contracted to form a neck entering the lower end of the passage above and adapted to receive the condensed steam on its exterior and conduct it into the soup-pan, substantially as described.

4. In a steam-cooking apparatus, the combination with a boiler of one or more cooking vessels each having a perforated steam passage the upper end of which receives the lower end of the passage in the vessel next above, and a soup-pan arranged between the boiler and said vessels and provided with a steam passage which is closed save at its ends, the upper end being contracted to form a neck loosely entering the passage next above and lying wholly within the wall of the pan, whereby the water of condensation from above will be received upon the outside of the passage in said soup-pan and be collected in the latter, substantially as described.

545,746. RAILWAY-VELOCIPEDE. MAX STERNBERG, Crefeld, Germany. Filed May 27, 1895. Serial No. 550,841. (No model.)



Claim.—1. A railway velocipede, having an outer or balancing wheel connected with the main portion by a joint whereby said wheel may be turned from a horizontal or working position to a vertical position out of the way, a curved bar connected with the support of the wheel, and slidably mounted in the main frame of the machine, and means for engaging said bar to effect the change of position of the wheel.

2. In a railway velocipede and in combination with the main or bicycle portion thereof, an outer or balancing wheel, and a connection comprising a curved rack and engaging pinion between said wheel and the main portion enabling the wheel to be swung from a horizontal to a vertical position to be out of the way and permit the machine to occupy a limited space.

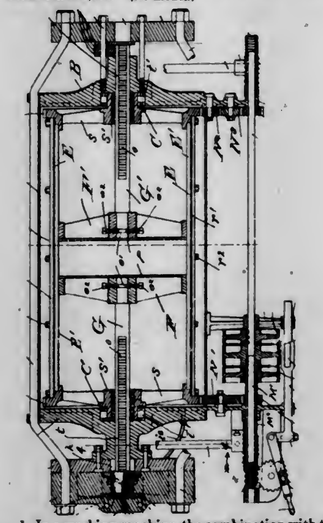
3. In a railway velocipede, the combination of a main wheeled frame, the outer or balancing wheel, the axle or shaft of said wheel free at its inner end, the curved or segment rack of said axle or shaft, and the pinion on the main frame engaging and operating said rack, whereby the outer or balancing wheel may be thrown to a vertical position out of the way, to permit the machine to occupy a limited space.

4. In a railway velocipede, the combination of a main wheeled frame, the outer or balancing wheel, the axle or shaft of said wheel free at its inner end, the curved or segment rack of said axle, the pinion on the main frame engaging and operating said rack whereby the outer or balancing wheel may be thrown to a vertical position out of the way to permit the machine to occupy a limited space, and the hinged brace of the axle or shaft connected with the rear of the frame of the machine.

5. In a railway velocipede, the combination, with the main wheeled frame, of an axle or shaft jointed thereto so that it may be moved from an approximately vertical to a horizontal position and vice versa, said axle or shaft having a tubular outer end, and a balancing wheel having a spindle slidably mounted in the outer end of the shaft whereby it automatically conforms to the changes of gage, and an alarm mechanism actuated by said wheel in its sliding movement.

6. In a railway velocipede, the combination with a wheeled frame, of an axle extending across the road-bed, and having a tubular outer end, a balancing wheel having a spindle telescoping in said tubular outer end, a spring to control the sliding movement of the wheel, a bell and electrodes in circuit therewith, and a means on the wheel spindle for operating the electrodes.

545,747. WASHING-MACHINE. JESSE W. SUNDERLAND, Chicago, Ill., assignor of one-half to A. J. McDuffee, same place. Filed Mar. 24, 1894. Serial No. 504,958. (No model.)



Claim.—1. In a washing-machine, the combination with the washing cylinder and a traveling plate therein, of a plunger rod carrying said plate and having rack teeth, a pinion engaging said rack teeth, a shaft carrying said pinion, a worm and worm gear driving said shaft, a pulley shaft and belt driving said worm, and means, substantially as described, for separating said worm and worm gear, at will, whereby movement of the plunger may be prevented, substantially as and for the purpose set forth.

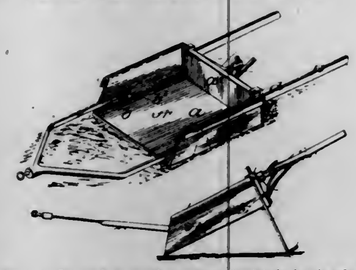
2. In a washing-machine, the combination with the cylinder and the traveling plates therein, each plate having outward projecting plunger rods having rack teeth, of pinions engaging the teeth on said rods respectively, a sectional shaft M M′, a sleeve M^3 loosely surrounding the shaft-section M′, belt pulleys on the shaft-section M and sleeve M^3 respectively, an intermediate pulley on the shaft-section M′, belt shipping mechanism connected with and operated by the shaft-section M′, a gear connection between the shaft-section M and one said pinion, a gear connection between the sleeve M^3 and the other said pinion, and gear connection, substantially as described, between the shaft section M and the sleeve M^3 respectively and the opposite ends of the rotatable cylinder, all substantially as and for the purpose set forth.

3. A washing-machine comprising, in combination, the following elements: a rotatable cylinder having peripheral gear at each end, traveling plates within said cylinder, rods G G′ carrying said plates and supported in the opposite heads of the washing machine, said rods provided with rack teeth, pinions engaging said rods respectively, a sectional shaft M M′, a sleeve M^3 on the shaft-section M′, belt pulleys O O′ on the sleeve M^3 and shaft-section M, respectively, an intermediate pulley O^3 on the shaft-section M′, gear between the sleeve M^3 and one end of the rotatable cylinder and meshing with the peripheral gear thereon, and gear in different number between the shaft-section M and the peripheral gear on the opposite end of the rotatable cylinder, and a belt shifting device comprising a belt engaging bar, a worm on the shaft-section M′ and a pinion engaging said worm and con-

nected eccentrically with the handle of said bar, all substantially as and for the purpose set forth.

4. In a washing-machine, the internal rotatable cylinder comprising in combination the spider heads *s*, semi-tubular brace rods E' having the lugs E^2 and perforated staves E supported on said brace rods through the medium of nuts and bolts entering said lugs, substantially as and for the purpose set forth.

545,748. ROAD-SCRAPER. SANDERS M. THAYER, Jamestown, N. Y. Filed Feb. 5, 1896. Serial No. 577,413. (No model.)

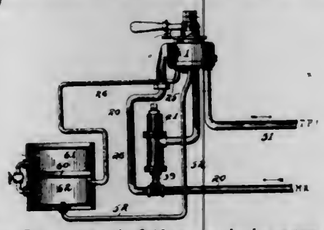


Claim.—1. In road or earth scrapers the blade having its upper line of sides (a little back from the lower edge) in a line parallel or nearly parallel to the lower line of said sides, the upper edge of the blade being turned over to stiffen the sides of the scraper substantially as shown and described and for the purpose set forth.

2. In earth or drag scrapers, the body of the scraper formed as shown, having a draw bail connected to the scraper on the inside, a dumping rod encircling the rear of the scraper, a throw off for said rod, so the front ends of the rod will engage the earth to dump the scraper, in combination with stops rigidly secured to the body of the scraper, to prevent the dumping rod moving too far back, substantially as shown and for the purpose set forth.

3. In road or earth scrapers the blade A. provided with sides *a*. and back *a'*. bail B. hinged inside the blade, the scraper being provided with handles D. D. in combination with dumping rod C. having loop F. and a suitable tripping device substantially as shown and described and for the purpose set forth.

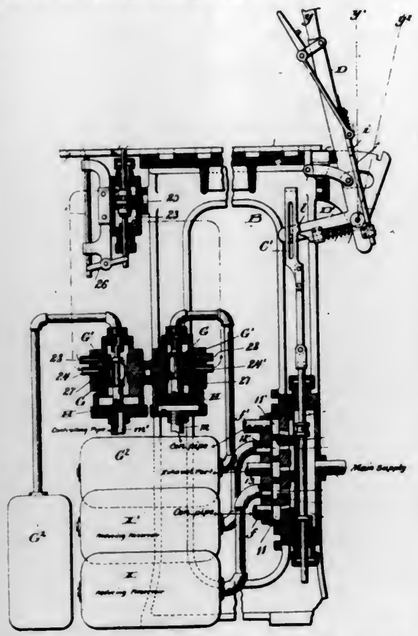
545,749. AIR-BRAKE-CONTROLLING MECHANISM. WALTER H. THOMPSON, St. Louis, Mo. Filed Mar. 6, 1893. Serial No. 464,807. (No model.)



Claim.—In an automatic fluid-pressure brake system, the combination of a closed drum divided into separate compartments, a main reservoir, a brake-cylinder, an engineer's valve connections for discharging air from the train-pipe of the system into all of said compartments, and connections for exhausting air from all of said compartments of the drum through the engineer's valve, substantially as and for the purpose herein specified.

545,750. PNEUMATIC APPARATUS FOR HANDLING RAILWAY-SWITCHES. JOHN W. THOMAS, Jr., Nashville, Tenn. Filed July 11, 1895. Serial No. 555,647. (No model.)

Claim.—1. The combination with the working cylinder for actuating the switch or other device, valve mechanism for admitting the working fluid to and exhausting it from said cylinder, the operating lever in the tower and a double valve actuated thereby, of two pneumatic pistons for controlling the valve mechanism of the working cylinder, controlling pipes one for each piston, two sets of ports (one for each controlling pipe) controlled by the double valve, and consisting each of an exhaust port; a port connected to a reducing reservoir, and a port connected to the controlling pipe to which the reservoir pertains, whereby when one controlling pipe is placed in communication with the source of compressed air supply, its reducing reservoir is put in communication with the exhaust, and the other controlling pipe is put in communication with its reducing reservoir, substantially as and for the purposes hereinbefore set forth.



2. The combination with the operating lever and its tappet, and the pressure regulating valve controlled thereby, of a projection or shoulder on the stem of the valve or some part moving in unison therewith, a spring retracted dog or latch mounted on and carried by the lever, and means also carried by the operating lever whereby said dog or latch may at will be moved against the stress of its retracting spring in a direction to engage said projection or shoulder, substantially as and for the purposes hereinbefore set forth.

3. The combination with the operating lever and its tappet, the pressure regulating valve and the latch projection, or shoulder on the valve stem or some part moving in unison therewith, of the spring retracted dog or latch mounted on the operating lever, and the latch lever also mounted on said operating lever and provided with a cam or incline to act against the heel of the latch or dog and press it inward against the stress of its retracting spring, substantially as and for the purposes hereinbefore set forth.

4. The bell crank and operating lever and its tappet, the pressure regulating valve, a bar pinned to the stem of said valve and having a pin and slot connection with the operating lever, and a latch projection or shoulder on said bar in combination with the spring retracted latch or dog on the operating lever, and the latch lever also mounted on the operating lever and provided with a cam or incline to act upon the heel of the said latch or dog, substantially as and for the purposes hereinbefore set forth.

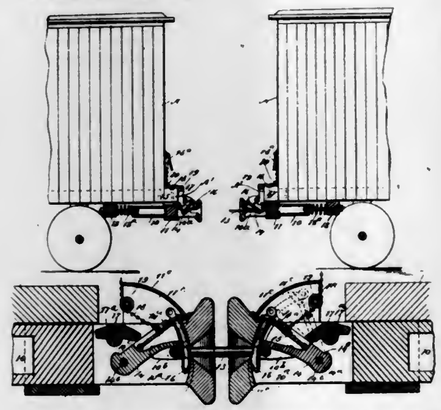
5. The combination with the working cylinder, the operating lever and its tappet, the indicator pins and indicator cylinder, of valve mechanism for admitting and exhausting air to and from said cylinder, an equalizing piston, mechanism for actuating said valve mechanism, and a controlling pipe for said equalizing piston mechanism, a reducing reservoir, and a slide valve mechanism connected to and operated by the piston of the working cylinder or some part moving therewith, and controlling ports comprising an exhaust port, a port connected to the controlling pipe, and a port connected to the reducing reservoir which is thrown into communication with either the exhaust or the controlling pipe according to the position of the slide valve, substantially as and for the purposes hereinbefore set forth.

6. The combination of the working cylinder, the operating lever and its tappet; the indicator pins and indicator cylinder; the two valves for controlling admission and exhaust of air to and from said cylinders; the two equalizing piston mechanisms one for each valve; two controlling pipes one for each piston; two reducing reservoirs one for each controlling pipe and a slide valve mechanism connected to and operated by the working piston or some part moving therewith and controlling two sets of ports one for each equalizing piston mechanism, consisting of a port connected to one of the controlling pipes, a port connected to the reducing reservoir pertaining to that

pipe and an exhaust port—these parts being combined and arranged together for joint operation, substantially in the manner hereinbefore set forth.

7. The combination with the controlling pipe lines the reducing reservoirs for the same and the valve controlled parts through which said lines are connected to their reservoirs at appropriate times, of feed ports *w* supplied with air at reduced pressure, from a suitable source of supply, arranged to communicate with the pipe line, at the time the latter are in communication with their reservoirs, substantially as and for the purposes hereinbefore set forth.

545,751. CAR-COUPLING. JOHN F. TINER, Sutherland Springs, Tex., assignor of three-fourths to Blanche J. Tiner, same place, and Wilson McNeill and Ella J. Newton, Austin, Tex. Filed May 13, 1895. Serial No. 549,161. (No model.)



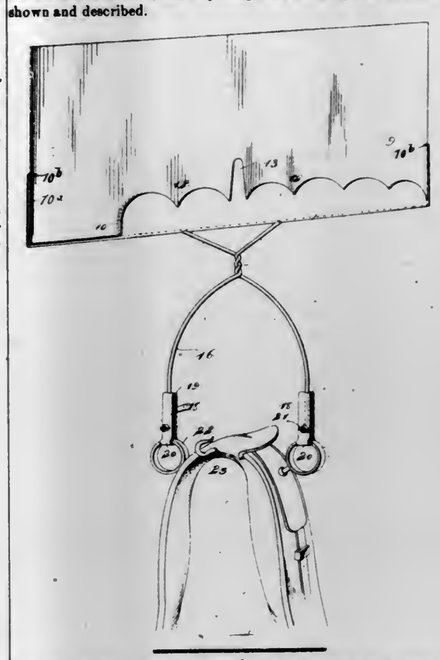
Claim.—1. In a car coupling, the combination with a vertically slotted drawhead, of a pivoted gravity block in said slot, a lifting plate loosely secured on the block, a curved pin on the front of the plate, means to lift the pin and plate, and an elongated link insertible in a horizontal slot of the drawhead which extends from the front end of said drawhead and intersects the vertical slot therein, substantially as described.

2. In a car coupling, the combination with a slidable, forwardly spring-pressed drawhead having a vertical slot longitudinally extending from near its front end and also horizontally slotted from the front to intersect the vertical slot, of a recessed gravity block pivoted near its rear end in the vertical slot, a lifting plate pivoted in the recess of the block near its rear end, and prevented from leaving said recess at the front by a cross bar, a headed curved coupling pin loosely engaging the front end of the lifting plate and lifted thereby, a locking dog pivoted in the vertical slot behind a shoulder on the upper side of said block and interlocking its lower end with said shoulder when the block is upwardly rocked, and means to lift the plate, pin and block from the side of the car, substantially as described.

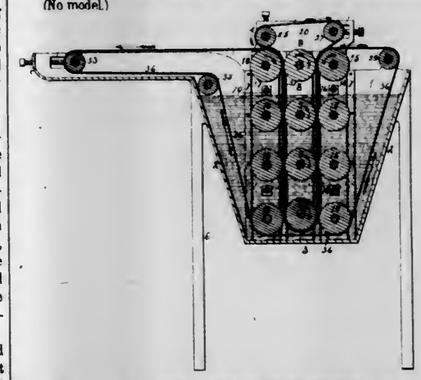
3. In a car coupling, the combination with a slidably supported and spring-pressed drawhead, having a vertical and a horizontal slot formed longitudinally therein, the vertical slot extending from behind a ribbed enlargement at the front, the horizontal seat being flared at the front end, of a recessed gravity block pivoted at its rear end in the vertical slot, and having a locking shoulder on its upper side near the rear end behind the pivot of the block, a lifting plate pivoted near its rear end in the recess of the gravity block, a curved and headed coupling pin engaging a perforation at the front of the lifting plate and lifted thereby, a locking dog pivoted in the vertical slot near its rear wall, said dog having a heavy portion behind its pivot adapted to project its lower end or toe forward to interlock with the shoulder on the block when said block is forwardly raised, a coupling link adapted to enter the horizontal slot and be supported by the weight of the gravity block, and a chain extended from the lifting plate to the side of the car for lifting the block, pin and plate, substantially as described.

545,752. ADVERTISING DEVICE. GEORGE M. UNDERWOOD, Orange, Mass. Filed June 25, 1894. Renewed July 17, 1895. Serial No. 556,253. (No model.)

Claim.—The improved advertising device composed of a card-holder, supporting arms attached to the latter, and terminal, rigidly-attached clamps, formed of opposing jaws, which are adapted to clasp harness-saddle terrets, and adjusting bolts working in said jaws, as shown and described.



545,753. STARCHING-MACHINE. RICHARD W. WELDON and SAMUEL T. STITES, Rockford, Ill. Filed Feb. 13, 1895. Serial No. 538,307. (No model.)



Claim.—1. In a collar and cuff starching machine, a starch receptacle, three series of vertically arranged rollers, each series held in guide ways in the receptacle, an endless apron carried by the center series, and an endless apron carried by the two outside series, each apron having a tightener therefor.

2. In a collar and cuff starching machine, a starch receptacle, three series of vertically arranged rollers, each series held in guide ways in the receptacle, an endless apron carried by the center series, and an endless apron carried by the two outside series having a horizontal section extending on either side of the center.

545,754. TOOTH-SEPARATOR. EDWARD WISHART, Philadelphia, Pa., assignor to the S. S. White Dental Manufacturing Company, same place. Filed Oct. 31, 1894. Serial No. 527,555. (No model.)



Claim.—1. In a tooth separator, a pair of duplicate different sized separator jaws one registering within the other and both having

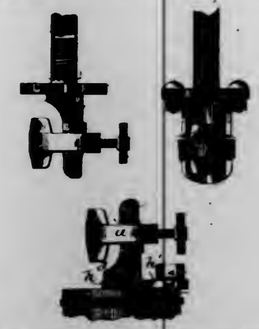
opposite reversely-disposed pointed arms adapted to engage between teeth, and means for adjusting the arms of the two jaws to and away from each other, substantially as set forth.

2. In a dental separator, a pair of duplicate different sized separator jaws working one within the other and provided with opposite reversely-disposed pointed arms, means for adjusting the width of both jaws, to vary the distance between the oppositely located points of said arms and separate means for adjusting the pointed arms of both jaws to and away from each other substantially as set forth.

3. In a dental separator, a pair of duplicate jaws having opposite reversely-disposed claw-arms adjustable to and away from each other, and means for adjusting the width of both jaws, to vary the distance between the oppositely located points of the floor arms, substantially as set forth.

4. In a dental separator, a pair of duplicate registering separator jaws working one within the other and having intermediate U-shaped body portions and opposite reversely-disposed semi-elliptical pointed claw arms projected from one side and the extremities of said U-shaped body portions at an obtuse angle to the latter, the U-shaped body portion of the outer jaw being provided in its closed end with an opening or perforation and in its ends or extremities with perforations, one of which is threaded, and the U-shaped body portion of the inner separator jaw being provided in its opposite sides with slots, a regulating screw engaged in the perforations in the ends of the U-shaped body portion of the outer jaw and passed through the slots of said other U-shaped body portion, and an adjusting thumb screw engaging the closed ends of both U-shaped body portions to provide for a separation of said claw-arms, substantially as set forth.

545,755. CARBON-HOLDER FOR ELECTRIC-ARC LAMPS. THOMAS E. ADAMS, Cleveland, Ohio. Filed Feb. 15, 1895. Serial No. 538,545. (No model.)



Claim.—1. In a carbon holder for electric arc lamps, the combination with a plate, of a normally fixed jaw having a lateral projection pivotally and adjustably connected with said plate out of line with the axis of the holder, a movable jaw, a yoke carrying the movable jaw and embracing the fixed jaw and a screw passing through said yoke and engaging the fixed jaw, substantially as set forth.

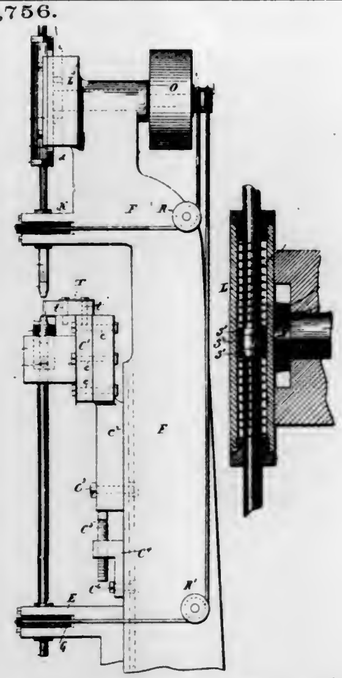
2. In a carbon holder, the combination with a fixed jaw having recesses in its sides, of a movable jaw, a yoke projecting from the movable jaw and extending through the recesses in the fixed jaw to a point in rear of said fixed jaw, and a thumb screw passing through said yoke and engaging said fixed jaw, substantially as set forth.

545,756. RIVETING-MACHINE. JOHN ADT, New Haven, Conn.; Elizabeth C. Adt executrix of said John Adt, deceased. Filed July 23, 1894. Serial No. 518,328. (No model.)

Claim.—1. In a riveting machine for simultaneously heading both ends of a rivet by striking blows upon one end thereof, the combination with a hammer, of means for simultaneously rotating and reciprocating the same, an anvil, an anvil-carrier in which the anvil is located, a table or support for the anvil-carrier, and means connected with the said anvil-carrier for rotating the same and hence the anvil, which is held against endwise movement by the carrier and the fixed table or support therefor, but rotates as well as the reciprocating hammer, substantially as set forth.

2. In a riveting machine, the combination, with a hammer and means for simultaneously rotating and reciprocating the same, of an anvil, an anvil-carrier in which the anvil is located, a table containing a socket in which the anvil-carrier is set, and a shaft entering the said chamber and connected with the anvil-carrier for rotating the same and hence the anvil, which is thus held against endwise movement, substantially as set forth.

545,756.



545,757. COMPOSITION FOR ENAMELING BRICKS, &c. MAURICE AHERN, London, England. Filed Apr. 6, 1895. Serial No. 544,811. (No specimens.) Patented in England June 26, 1894, No. 12,383; in Belgium Apr. 3, 1895, No. 114,900; in Luxemburg Apr. 3, 1895, No. 2,270, and in Canada June 5, 1895, No. 49,123.

Claim.—1. A composition for glazing or enameling brick, pottery and metals, consisting of arsenic glass, ceramic material, alkalies, tin, lead, and bizmuth prepared and applied substantially as described.

2. A composition for glazing or enameling brick, pottery and metals, consisting of arsenic glass, ceramic material, alkalies, tin, lead and bizmuth all mixed and fused, then pulverized, and reduced to a paint like consistency by a suitable vehicle, as gum or sugar, substantially as and for the purpose specified.

545,758. FRAME FOR FORGING PRESSES, &c. HENRY AIKEN, Pittsburg, Pa. Filed June 27, 1893. Serial No. 478,944. (No model.)

Claim.—1. The combination of a vertically movable frame for shears, forging presses, &c., a guide frame through which it moves, and a series of cylinders, and supports suspending the lowest cylinder from the guide-frame, the upper cylinder or cylinders being supported from the lowest cylinder; substantially as described.

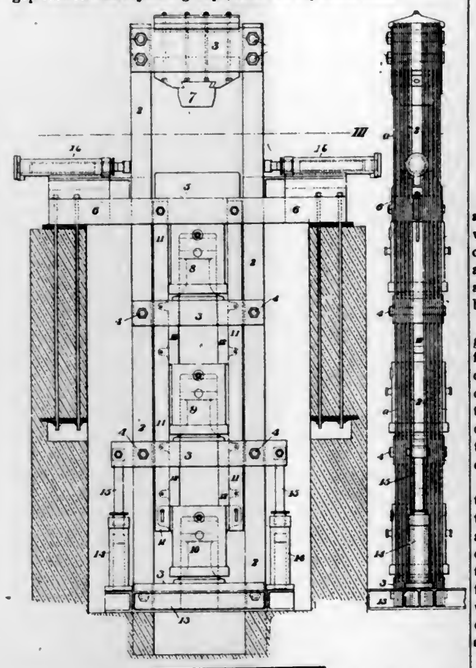
2. A frame for forging presses, shears, &c., composed of groups of parallel plates or bars, secured together and braced by cross-bars or plates which extend between the same; substantially as described.

3. A frame for shears, forging presses, &c., consisting of two opposite posts, each composed of two groups of parallel plates or bars, the plates or bars of the opposite groups being connected by interfitted cross bars or plates and pins; substantially as described.

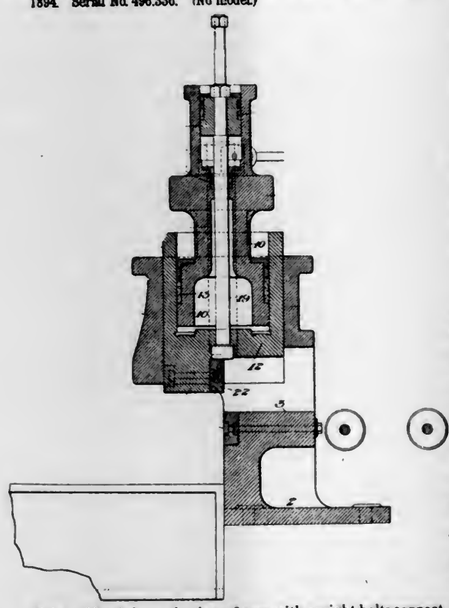
4. A frame for forging presses, shears, &c., composed of groups of parallel plates or bars, secured together and braced by cross-bars or plates which extend between the same, a guide-frame through which said frame is vertically movable, and a series of operating cylinders suspended serially from said guide-frame and having plungers which bear on the movable frame; substantially as described.

5. The combination of a vertically movable frame for shears, forging presses, &c., a guide frame through which it moves, a series of cylinders suspended serially from said guide-frame, and plungers which bear on the movable frame; substantially as described.

6. A frame for shears, forging presses, &c., consisting of two opposite posts, each composed of two groups of parallel plates or bars, the plates or bars of the opposite groups being connected by interfitted cross-bars or plates and pins, in combination with actuating cylinders and plungers, whose connecting mechanism extends through the gap between the adjacent groups; substantially as described.

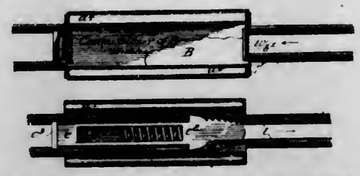


545,759. SHEARS. HENRY AIKEN, Pittsburg, Pa. Filed Jan. 10, 1894. Serial No. 496,336. (No model.)



Claim.—Metal shears, having a frame with upright bolts connecting the entablature with the base, a vertically acting motor comprising a cylinder and plunger, a knife fixed in the plane of said bolts to the middle part of the end of the moving part of the motor, an anvil-block forming part of said frame and terminating at a middle point at the plane of the knives and affording a laterally open gap under the rear part of the motor which overhangs said gap, and a stationary knife fixed to the anvil-block; substantially as described.

545,760. LINE-CLAMP. GEORGE K. ASHLEY, Washington, D. C. Filed Oct. 24, 1891. Serial No. 409,684. (No model.)

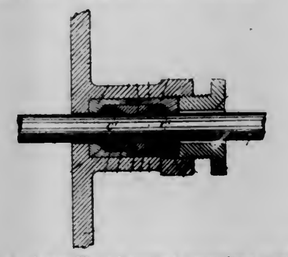


Claim.—1. A line-clamp which has fixed line-engaging surfaces and movable line-engaging surfaces; the body of which, in its side walls, near the upper extremity thereof, has opposite longitudinal recesses or ways; and the closing-plate or covering-slide of which is adapted to be inserted endwise within the opposite ways, and is adapted also to be bent downward, at either end, to engage the end of the body, and to be thereby secured in its covering position.

2. In a line-clamp, a containing-case which embraces a rectangular body the sides of which are at the top horizontally indrawn or flanged, and longitudinally recessed or grooved; a spring-bolt or clamping-slide, within the body; and a closing-plate or covering-slide of greater length than the containing-case, and insertible endwise therein, from either direction, and which is slitted at its ends to form downturned corner lugs, to engage the body of the case, and an intermediate tongue, to engage a superposed designating or address card.

3. A line-clamp which embraces an oblong open-ended, flat-bottomed box or casing the side walls of which are interiorly parallel in their main portion, but which at one end converge and are serrated; a central longitudinal bolt, the engaging end of which is tapered, and outwardly-serrated, to correspond with the converging side walls of the casing; a fixed central block or seat which projects upwardly from the bottom of the box or casing; and a spring which is received within the bolt, and is seated by its base, upon the block, and by its opposite extremity bears against the body of the bolt, to actuate the same and clamp the line between the coincident serrated surfaces.

545,761. METALLIC ROD-PACKING. JAMES L. BARKER, Minneapolis, Minn., assignor of one-third to James MacGowen, same place. Filed June 3, 1895. Serial No. 551,457. (No model.)



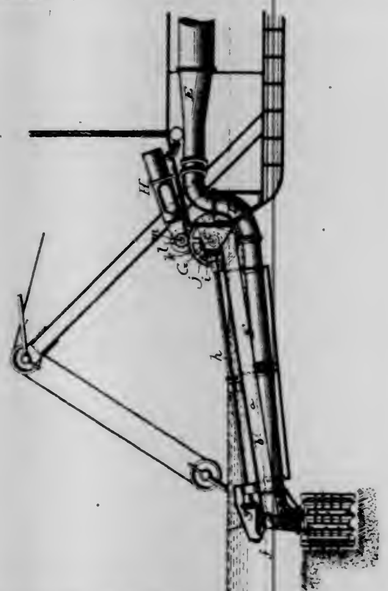
Claim.—1. A metallic rod packing, comprising a pair of annular metal rings, which in cross section form hollow double truncated cones, the central clamp or seat-piece having the conical seats flaring toward its opposite ends and engageable with the inner cone portions of said packing rings, the end clamp pieces having the conical seats engaging the outer cone portions of said packing rings and provided with the inwardly projecting annular flanges engaging around the ends of said central clamp piece, and means for clamping said parts together within the stuffing box, substantially as described.

2. A metallic rod packing, comprising the pair of two-part soft metal packing rings, which in cross section form hollow double truncated cones, the central clamp or seat-piece having the conical seats flaring toward its opposite ends and engageable with the inner cone portions of said packing rings, the end clamp pieces having the conical seats engaging the outer cone portions of said packing rings and provided with inwardly projecting annular flanges engaging around the ends of said central clamp piece, and means for clamping said parts together within the stuffing-box, substantially as described.

545,762. DREDGER. LINDON W. BATES, Chicago, Ill. Filed Mar. 4, 1895. Serial No. 540,525. (No model.)

Claim.—1. In a hydraulic dredger, the combination with a boat; of groups of two or more ladders and appurtenances arranged side by side and with the ladders of each group rigidly connected; and means for raising and lowering the groups of ladders.

2. In a hydraulic dredger, the combination with a boat; of two or more groups of ladders and appurtenances arranged side by side, and with the ladders of each group rigidly connected; means whereby the several groups may be raised and lowered simultaneously or independently; and a main discharge pipe for each group, provided with branches for connection with the respective suction pipes carried by the ladders.



3. In a hydraulic dredger, the combination with a boat; of two or more groups of ladders and appurtenances arranged side by side, and with the ladders of each group rigidly connected; means whereby the several groups may be raised and lowered simultaneously or independently; and a main discharge pipe for each group, provided with branches for connection with the respective suction pipes carried by the ladders, said branches each terminating in a curved elbow to receive the curved end of the suction-pipe.

4. In a hydraulic dredger, the combination with a boat provided with a discharge pipe terminating at one end with a curved elbow D,—the said elbow being located within the hull of the boat: of a pivoted suction pipe provided with a curved end to fit the curved elbow, substantially as shown and described.

5. In a hydraulic dredger, the combination with a boat, of a battery of suction pipes extending across the hull: means for raising or lowering said battery as a whole or in divisions of one or more pipes; each division of pipes being connected by a branch pipe with a main discharge pipe leading to a suitable pump.

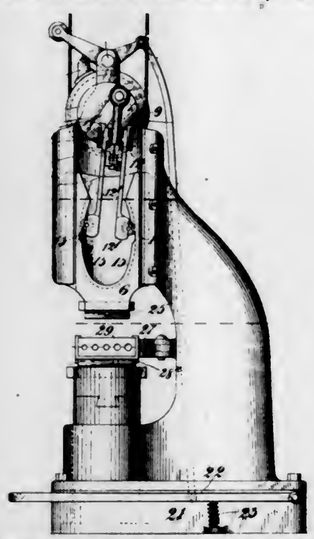
6. In a hydraulic dredger, the combination with a boat; of a series of ladders provided each with one or more cutters and suction pipes; curved elbows within the hull of the boat to receive the curved ends of the suction pipes; and means for raising and lowering the ladders.

7. In a hydraulic dredger, the combination with a boat; of two or more groups of ladders and appurtenances, arranged side by side, and with the ladders of each group rigidly connected with each other; and means for raising and lowering the respective groups independently or together.

545,763. POWER-HAMMER. ADOLPHE BEAUDRY, Somerville, Mass. Filed Sept. 25, 1894. Serial No. 524,005. (No model.)

Claim.—1. In a power hammer, the combination with a frame, a crank-shaft and a crank in the frame, and a guided, reciprocating hammer-head in the frame provided with tracks extending longitudinally thereof, of a crank-rod coupled at one end to the crank and carrying at its other end shoes which bear on the respective tracks on the hammer-head, the said shoes, and means for pressing said shoes elastically against the respective tracks, substantially as and for the purposes set forth.

2. In a power hammer, the combination with a frame, a crank-shaft and crank in the frame, and a guided, reciprocating hammer-head in the frame and provided with curved tracks, as set forth, of a crank-rod coupled at one end to the crank and carrying at its other end shoes which bear laterally on the respective curved tracks on the hammer-head, the said shoes, and means for pressing the said shoes elastically up to the respective tracks, substantially as set forth.



3. In a power hammer, the combination with a frame, a crank-shaft and crank in the frame, and a guided, reciprocating hammer-head in the frame and provided with curved tracks, which converge at their ends, of the crank-rod coupled at one end to the crank and carrying at its other end two shoes which bear outwardly on the respective curved tracks, the said shoes, and springs carried by the connecting-rod which press the said shoes up elastically to their respective tracks, substantially as set forth.

4. In a power hammer, the combination with a frame, a crank-shaft and crank in the frame, and a guided, reciprocating hammer-head in the frame and provided with curved tracks, as set forth, of a crank-rod connected at its upper end to said crank and provided at its lower end with shoes which bear on the respective curved tracks on the hammer-head, springs for pressing said shoes elastically up to the respective tracks and means for adjusting the tension of said springs, substantially as set forth.

5. In a power hammer, the combination with a crank-shaft and crank and a guided reciprocating hammer-head, of a crank-rod connected at its upper end to the crank, and spring-arms mounted on said crank-rod and provided with shoes which bear respectively with elastic pressure laterally on tracks on the hammer-head, whereby a grip is provided, substantially as and for the purposes set forth.

6. In a power hammer, the combination with a crank-shaft and crank and a guided reciprocating hammer-head provided with curved tracks, as set forth, of the crank-rod connected at its upper end to the crank, said rod having like spring-arms provided with shoes which bear with elastic pressure laterally on the respective tracks on the hammer-head, substantially as set forth.

7. In a power hammer, the combination with a crank-shaft and crank and a guided reciprocating hammer-head provided with curved tracks which converge at their ends, of a crank-rod, connected at its upper end to the crank, two spring-arms mounted on said crank-rod and each carrying a shoe which bears on one of said tracks, the elasticity of the branch serving to press the shoe laterally outward into firm contact with the track, as set forth.

8. In a power hammer, the combination with a crank-shaft and crank and a guided reciprocating hammer-head provided with curved tracks 15, of a crank-rod coupled to the crank, two spring-arms adjustably mounted on said crank-rod and provided with shoes which bear on the respective tracks on the hammer-head, and means for varying the tension of the spring-arms, substantially as set forth.

9. In a power hammer, the combination with a crank-shaft and crank and a reciprocating hammer-head provided with curved, converging tracks, of the crank-rod connected to the crank, said rod having two longitudinally adjustable spring-arms each carrying a roller which bears on one of said tracks, and a tension screw for spreading the spring-arms and increasing the tension of the same, substantially as set forth.

10. In a power hammer, the combination of the crank-shaft, crank and a reciprocating hammer-head provided with curved converging tracks, a crank-rod coupled to the crank, a connecting-block adjustably mounted on said crank-rod, spring-arms, carried by said connecting-block and rollers mounted on said spring-arms and adapted to engage the tracks in the hammer-head, substantially as set forth.

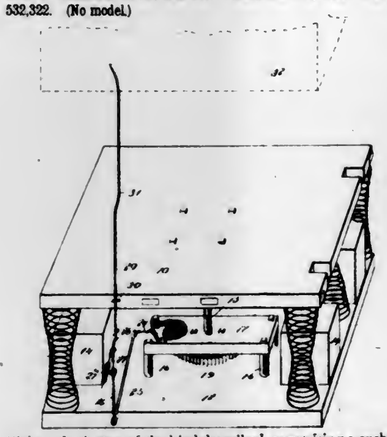
11. In a power hammer, the combination of a crank-shaft, crank and a reciprocating hammer-head provided with curved converging tracks, a crank-rod coupled to the crank, a connecting-block having a central bore to receive said crank-rod and having channels on opposite sides of said central bore, means for securing said connecting-block to the crank-rod, spring-arms each arranged with one end in one of the channels in the connecting-block, and having at its other end a roller arranged to engage the track in the hammer-head, and wedges arranged in said channels and adapted to hold said spring-arms in place, substantially as set forth.

12. In a power-hammer, the combination of a crank-shaft and a reciprocating hammer-head provided with curved, converging tracks, a connecting-block having a central bore to receive said crank-rod and having channels on opposite sides of said central bore, the walls of said channels being provided with recesses, means for securing said connecting-block to the crank-rod spring-arms each arranged with one end in one of the channels and having a projection to engage the recess in the wall thereof, wedges arranged in said channels and adapted to hold said spring-arms with their projections in engagement with the recesses in the walls of the channels, and rollers mounted on said spring-arms in position to engage the tracks in the hammer-head, substantially as set forth.

13. In a power hammer, the combination with the frame, the anvil and the guided, reciprocating hammer-head in the frame, of the arm 27, pivoted on the frame and adapted to swing horizontally, the die-carrier 28, borne by said arm, and the dies mounted on said carrier, the relative proportions of the parts being such that the dies are brought over the anvil by swinging said arm.

14. In a power hammer, the combination of a frame, an anvil, a reciprocating hammer-head guided in the frame, an arm pivoted to the frame and adapted to swing horizontally, a die-carrier mounted on said arm and adapted to be brought into position over the anvil when said arm is actuated, and a stop mounted on said die-carrier in position to engage said anvil, substantially as set forth.

545,764. STOP FOR ELEVATORS. THOMAS BELL, McAlester, and JOHN S. WILLIAMS, Krebs, Ind. Ter. Filed Dec. 19, 1894. Serial No. 532,322. (No model.)



Claim.—1. A stop of the kind described, comprising a cushioned striking plate, a locking device to hold the striking plate in its lower position, and means for automatically releasing the striking plate, substantially as described.

2. A stop of the kind described, comprising a cushioned striking plate, a ratchet mechanism for locking the striking plate in its depressed position, and a lever mechanism actuated by the rise of the cage from the striking plate to release the ratchet mechanism, substantially as described.

3. A stop of the kind described, comprising a cushioned striking plate, a screw on the under side of the striking plate, a ratchet wheel turned by the vertical movement of the screw, a pawl to engage the ratchet wheel, and a lever mechanism to release the pawl, substantially as described.

4. A stop of the kind described, comprising a cushioned striking plate, a screw on the under side of the striking plate, a ball joint connecting the screw and striking plate, a ratchet wheel turned by the vertical movement of the screw, a pawl to lock the ratchet wheel and a lever mechanism to release the pawl, substantially as described

5. A stop of the kind described, comprising a cushioned striking plate, a screw on the under side of the striking plate, a ratchet wheel turned by the screw, a bearing plate for the upper side of the ratchet wheel, a pawl to lock the ratchet wheel, and a lever mechanism to release the pawl, substantially as described.

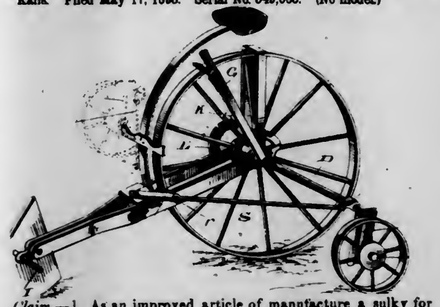
6. The combination, of the cushioned striking plate, the ratchet wheel turned by the rise and fall of the striking plate, a pawl for preventing said ratchet wheel from turning, a lever projecting above the striking plate to be engaged by a cage, and mechanism actuated by the lever to release the pawl, substantially as described.

7. The combination, with the cushioned striking plate and the stationary track rails adjacent thereto, of the swinging track rails hinged to the rigid rails and connected with the striking plate to rise and fall therewith, substantially as described.

8. A stop of the kind described, comprising a cushioned striking plate, a locking device to hold the striking plate in position when the cushion is compressed, and means for releasing the striking plate, substantially as described.

9. The combination of the cushioned striking plate, and the swinging floor section secured to a stationary support and also secured to the striking plate to rise and fall therewith, substantially as described.

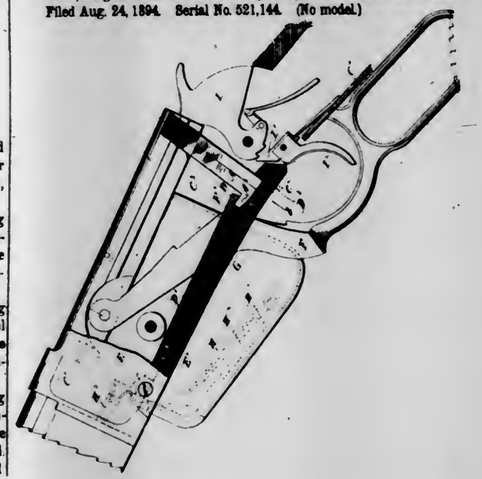
545,765. SULKY FOR PLOWS. JOHN W. BELLES, Cedar Vale, Kans. Filed May 17, 1895. Serial No. 549,685. (No model.)



Claim.—1. As an improved article of manufacture a sulky for walking plows, having an axle adapted to be reversed and an adjustable rod designed to hold said axle in its reversed position, whereby said sulky may be used in connection with a right and left handed plow, substantially as shown and described.

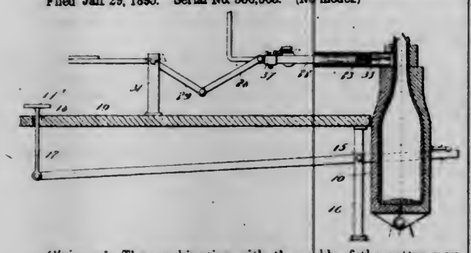
2. In a sulky for walking plows, the combination of the frame A, A, having journaled therein, a reversible axle, the plate R pivoted on said framework, the swiveled collar Q, the rod S connecting said collar and plate, of the slotted plate M secured to the outer end of said shaft, the wheel O carried on a stub shaft which works in said slot and means for raising and lowering the outer end of the shaft, substantially as shown and described.

545,766. MAGAZINE-GUN. THOMAS G. BENNETT, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Aug. 24, 1894. Serial No. 521,144. (No model.)



Claim.—In a box-magazine breech-loading fire-arm, the combination with the frame thereof, of a box-magazine located in the said frame, a horizontally arranged reciprocating breech-bolt, a recoil-block adapted at its upper end to take into one or more grooves formed in the breech-bolt, a finger-lever bifurcated to embrace the box-magazine, and connected at its upper end with the breech-bolt which it actuates back and forth, and a base-plate or link hung by its forward end, bifurcated to embrace the box-magazine, and having its rear end articulated with the finger-lever, and also articulated with the lower end of the recoil-block which it moves up and down, substantially as described.

545,767. BOTTLE-CUTTING APPARATUS. AUGUST BENSON, Streator, Ill., assignor of one-half to Gustav Samuelson, same place. Filed Jan. 29, 1895. Serial No. 536,603. (No model.)



Claim.—1. The combination with the mold, of the cutter movable in and out at the neck of the mold, a water supply pipe delivering into the mold near the cutter, a mechanism for moving the cutter, and a valve controlled by the movement of the cutter to regulate the water supply, substantially as described.

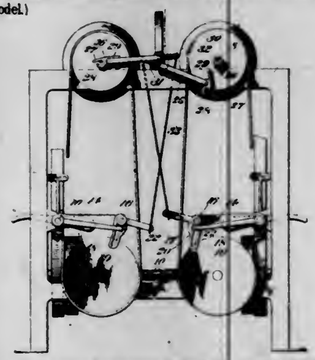
2. The combination, with the mold, of the spring-pressed revoluble cutter arranged to move transversely opposite the neck of the mold and adapted to enter it, and a lever mechanism for moving the cutter inward, substantially as described.

3. The combination, with the mold having a transversely disposed neck opening, of the spring-pressed cutter moving in and out in the said neck opening, substantially as described.

4. The combination, with the mold having a neck opening, of the cutter moving in and out in the said opening, and a water pipe delivering into the said opening, substantially as described.

5. The combination, with the mold having a neck opening, of the sliding shaft opposite the said opening, a cutter journaled on the shaft, a water supply pipe delivering into the said opening, a valve controlling the supply pipe, and means for opening and closing the valve by the movement of the shaft, substantially as described.

545,768. STOP MECHANISM FOR SPINNING-MACHINES. CLARENCE H. BLOSS, Miamisburg, Ohio. Filed Feb. 25, 1895. Serial No. 539,602 (No model.)



Claim.—1. In stop mechanism for spinning machines, the combination with driving mechanism, a belt shifter and belt shifter actuating mechanism, of trip mechanism to trip the belt shifter actuating mechanism, and mechanism to restore said trip mechanism to its initial position when displaced, substantially as specified.

2. In stop mechanism for spinning machines, the combination with driving mechanism and a belt shifter, of trip mechanism to trip the belt shifter actuating mechanism, and mechanism operatively connected with the trip mechanism and belt shifter actuating mechanism to restore said trip mechanism to its initial position simultaneously with the actuation of the belt shifter, substantially as specified.

3. In stop mechanism for spinning machines, the combination with driving mechanism and a belt shifter, of a lever supported normally by the yarn, a belt shifter and intermediate mechanism, and mechanism to restore said lever to its initial position when displaced, substantially as specified.

4. In stop mechanism for spinning machines, the combination with driving mechanism and a belt shifter, of a lever normally supported by the yarn, a trip lever operatively connected with said lever and provided with an elongated slot and catch, a counter-weighted shaft operatively connected with the belt shifter and provided with a lock lever co-operating with the catch and slot of the trip lever, substantially as specified.

5. In stop mechanism for spinning machines, the combination with driving mechanism and a belt shifter, of a counter-weighted shaft connected with the belt shifter and provided with a lock lever, a balance lever, and a trip lever actuated in one direction by the balance and in the opposite direction by the lock lever, substantially as specified.

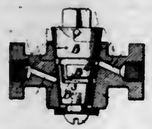
6. In stop mechanism for spinning machines, the combination with driving mechanism and a belt shifter, of a balance lever operatively connected with the belt shifter and provided with a pivoted tilt, substantially as specified.

7. In stop mechanism for spinning machines, the combination with a balance lever and connected mechanism, of a curved finger at the extremity of the balance lever and a projecting end above the finger, substantially as specified.

8. In stop mechanism for spinning machines, the combination with a balance lever and connected mechanism, of a pivoted tilt upon the extremity of the balance lever, and a stop upon the tilt, substantially as specified.

9. In stop mechanism for spinning machines, the combination with a balance lever and connected mechanism, of a tilt provided with a curved finger a superimposed spoon end, and a stop, substantially as specified.

545,769. PLUG-COCK. JOHN D. BOWMAN, Altoona, Pa. Filed May 24, 1895. Serial No. 550,501. (No model.)



Claim.—1. A plug cock casing having inlet and outlet ports at different levels in combination with a plug fitting therein having circumferential channels, one registering with each port and one or both of varying cross section, a channel connecting the circumferential channels at points where they are of full area, and one or more smooth surfaces in line with the circumferential channel or channels adapted to close the port or ports of the casing.

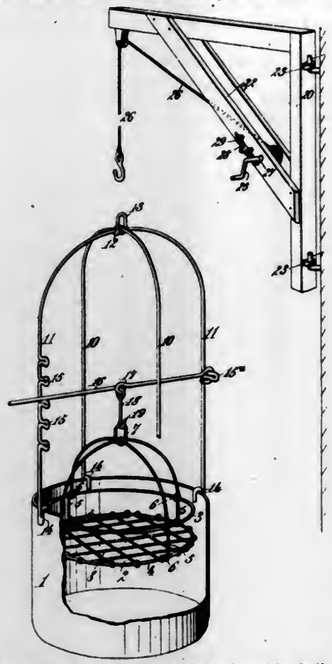
2. A plug cock casing having inlet and outlet ports at different levels in combination with a plug fitting therein having circumferential channels, one registering with each port and one of varying cross section and the other of substantially full cross sectional area throughout, a channel connecting the circumferential channels at points where they are of full cross sectional area and a smooth surface between the small and large ends of the tapered channel adapted to close the ports of the casing.

3. A plug cock casing having inlet and outlet ports at different levels in combination with a plug fitting therein having circumferential channels, one registering with each port and one of varying cross section and the other of substantially full cross sectional area throughout, a channel connecting the circumferential channels at points where they are of full cross sectional area and a smooth surface between the small and large ends of the tapered channel adapted to close the port of the casing, with which said channel registers and a smooth surface between the ends of the full sized channel arranged to close the port with which said channel registers.

545,770. APPARATUS FOR CANNING FRUITS OR VEGETABLES. JOHN W. BOWEN and LAVENA FLACK, Sharon, N. C. Filed June 3, 1895. Serial No. 551,549. (No model.)

Claim.—1. In a canning apparatus, the combination with a boiler, of a support 9 adapted to rest upon said boiler and provided with laterally projecting arms 15, a rod 16 pivotally secured at one end to said support and adapted at its free end to rest upon either of said arms, a link 18 suspended upon said rod, and a reticulated basket adapted to be hung upon said link, substantially as described.

2. In a canning apparatus, the combination with a boiler, of a support 9 adapted to be seated thereupon and provided with a series of laterally projecting arms 15, a rod 16 coiled intermediate its ends to form a loop 17 and at one end pivoted to said support and at its free end adapted to be supported upon the arms 15, a hooked link 18 suspended from the loop 17 and a reticulated basket adapted to be hung on said hooked link, substantially as described.



3. In a canning apparatus, the combination with a boiler, of a reticulated basket 2, a support 9 for said basket, consisting of U-shaped rods 10 and 11 united at their upper ends and provided at their lower ends with hooks adapted to fit over the edge of the boiler, and means for adjustably suspending said basket upon the said support, substantially as described.

4. In a canning apparatus, the combination with a boiler, of a reticulated basket 2, a support 9 for said basket consisting of two inverted U-shaped rods 10 and 11 arranged at right angles to one another and looped together at their upper ends, the lower ends of each of said rods being bent upward and then downward to form hooks adapted to engage the edge of the boiler, a rod 16 pivotally secured to one of said rods and adjustably and detachably secured to the opposite rod, and means for removably suspending said basket from said rod 16, substantially as described.

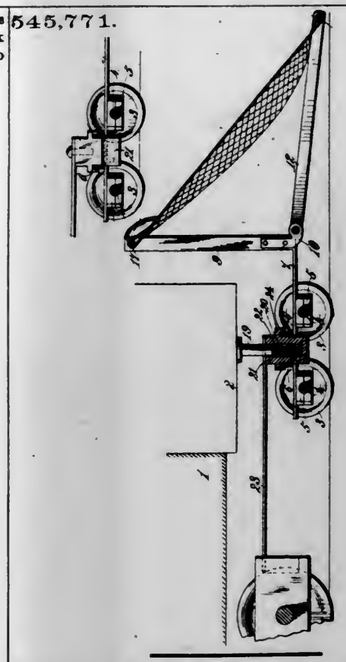
545,771. SAFETY ATTACHMENT OR FENDER FOR CABLE, ELECTRIC, OR OTHER CARS. ROBERT BUSTIN, Boston, Mass., assignor of two-thirds to Wesley Vanwart, Fredericton, and John R. McConnell, Marysville, Canada. Filed Feb. 9, 1895. Serial No. 537,767. (No model.)

Claim.—1. In a street-railway car, the combination with a fender carrying truck arranged beneath the car-platform, of hangers rigidly connected to said platform, housings on the frame of the truck having chambers entered by said hangers, and springs arranged in said chambers and pressing the hangers upward, substantially as described.

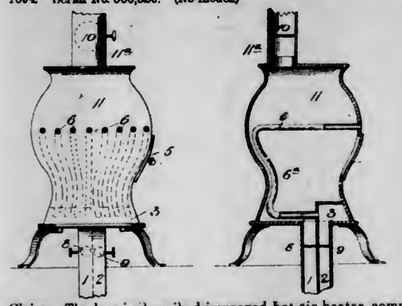
2. In a street railway car, the combination with a fender-carrying truck arranged beneath the car-platform, of hangers rigidly mounted on the under side of the platform, housings mounted on the frame of the fender-truck and having chambers entered by the hangers, springs arranged in said chambers and exerting their tension upon the hangers, and a fender frame wholly supported by the fender-truck, substantially as described.

3. In a street-railway car, the combination with a fender-carrying truck arranged beneath the car-platform, of hangers rigidly secured to the platform housings arranged between angle-plates forming part of the frame of said fender-truck, said housings being provided with clips engaging the edges of the vertical walls of the angle-plates, springs arranged in chambers in said housings and receiving the downward thrust of the hangers, which enter said chambers, and a fender frame wholly supported by said fender-truck, substantially as described.

545,771.



545,772. HOT-AIR HEATER. WESLEY F. CAMP, Rome, and BERRY G. CAMP, Nannie, assignor to Chas. C. Brown, Tilton, Ga. Filed Apr. 4, 1894. Serial No. 506,326. (No model.)



Claim.—The herein-described improved hot-air heater, comprising an outer casing having an opening therein, a door designed to close said opening, an air reservoir or receiving chamber formed in the bottom of said casing, an air supply-pipe communicating with said air reservoir, a valve or damper therein for regulating the supply of air to said reservoir, approximately U-shape heating pipes or flues arranged to form a grate, said tubes at their lower ends communicating with said air-reservoir and having their upper ends passed through said casing whereby heated air may be discharged therefrom, a second air-supply pipe communicating with the interior of said casing below said grate, and a valve or damper in said latter pipe for regulating the supply of air to said casing, substantially as set forth.

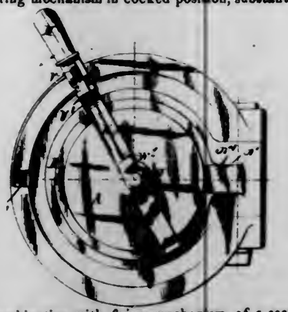
545,773. BREECH-LOADING ORDNANCE. JEAN B. G. A. CANET, Paris, France. Filed Apr. 11, 1894. Serial No. 507,117. (No model.) Patented in France Mar. 17, 1892, No. 220,209, and Jan. 16, 1894.

Claim.—1. The operating lever pivoted on the rear face of the breech block, and furnished at one of its extremities with a shoulder which at the termination of the rotation of the breech screw engages in a recess in the bracket and serves as the fulcrum during the extraction of the breech-block, substantially as described.

2. The combination with the breech-block, of the safety device consisting of a handle movable on the operating lever and furnished with a hook which engages in a notch in the end of the breech, substantially as described, and for the purpose specified.

3. The combination with the operating lever, of a hammer, spring and trigger inclosed within said lever, substantially as described.

4. The combination with a breech block or screw, containing a firing pin, of an operating lever containing a hammer, and a sear for holding the firing mechanism in cocked position, substantially as described.

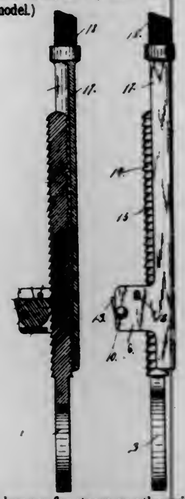


5. The combination with firing mechanism, of a sear engaging the firing mechanism, a movable rod *t* engaging said sear, a pivoted lever *v*, adapted to engage and operate said rod and provided with a perforation for attachment of a lanyard, and a rod *x* adapted to engage the lever *v* whereby the firing mechanism may be operated by the lanyard or rod *x*, substantially as described.

6. The combination of an operating lever containing a hammer provided with a projection, of a sear which engages said projection and cocks the hammer during the closing movement of the operating lever, substantially as described.

7. The combination with an operating lever, a hammer and a rod arranged therein, and a sear engaging said hammer and engaged by said rod, of a bent lever adapted to engage said rod and provided with means for attachment of a lanyard, and a lateral rod *x* adapted to engage said lever, substantially as described.

545,774. PIPE-HANGER. ROBERT W. CLARK, Buffalo, N. Y., assignor to Daniel Clark, same place. Filed Mar. 21, 1895. Serial No. 542,624. (No model.)

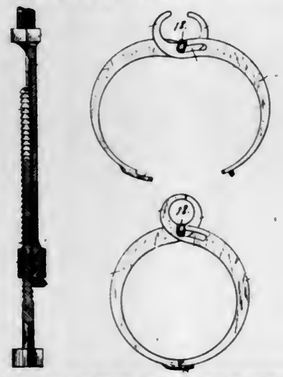


Claim.—1. A hanger for steam or other pipes consisting of a vertically channeled bracket adapted to be secured to the ceiling, a rack-bar adapted for sliding adjustment in the vertical channel of the bracket and carrying at its lower ends means for embracing the pipe wings formed on said bracket near its lower end, a gravity-pawl pivoted between said wings of the bracket outside of the vertical channel and adapted for adjustable engagement with the rack-bar and a pin removably passing through said wings above the operative end of the pawl and having one end provided with a head and its other end bent against the outer face of the adjacent wing, as and for the purpose set forth.

2. A hanger for steam or other pipes consisting of a vertically channeled bracket adapted to be secured to the ceiling a rack-bar adapted for sliding adjustment in the vertical channel of the bracket and carrying at its lower end means for embracing the pipe, a gravity-pawl pivoted to the bracket outside of the vertical channel and adapted for adjustable engagement with the rack-bar and means for locking the pawl in its engaged position with the rack-bar.

3. A hanger for steam or other pipes consisting of a vertically channeled bracket adapted to be secured to the ceiling, a cylindrical rack-bar provided with annular teeth and adapted for sliding and rotary adjustment in the vertical channel of the bracket and carrying at its lower end means for embracing the pipe, and means for keeping the rack-bar in locked engagement with the bracket at different heights.

545,775. PIPE-HANGER AND ATTACHMENT. ROBERT W. CLARK, Buffalo, N. Y., assignor to Daniel Clark, same place. Filed Mar. 21, 1895. Serial No. 542,625. (No model.)



Claim.—1. A hanger for steam or other pipes consisting of a vertically channeled bracket provided with an enlarged lower end and notches in the channel within the enlarged lower end, a notched rod adapted for adjustable engagement with the notches in the vertical channel, and a loose collar adapted for removable engagement with the enlarged lower end of the bracket to hold the notched rod in engagement with the bracket at any desired position.

2. A device for securing a pipe to the hanger consisting of twin parts removably pivoted to each other, each part composed of a long and short arm reversely bent the short arms adapted to overlap each other and the long arms having respectively a hole and a pin both radial to the pivot so as to interlock one with the other when the parts are closed, substantially as and for the purpose stated.

545,776. NUT-LOCK. FRANCIS W. COLEMAN, Rodney, Miss., assignor to the Chicago Grain Door Company, Chicago, Ill. Filed Mar. 26, 1895. Serial No. 543,256. (No model.)



Claim.—1. In a nut lock, the combination, with the threaded bolt, having a reduced non-circular terminal, of the threaded nut having a projecting jaw bent to engage with said bolt terminal, substantially as described.

2. A nut lock, comprising a U-shaped plate, one limb of which is adapted to engage the outer face of a nut, the other limb being provided with an angular opening to receive the correspondingly shaped end of a bolt, substantially as described.

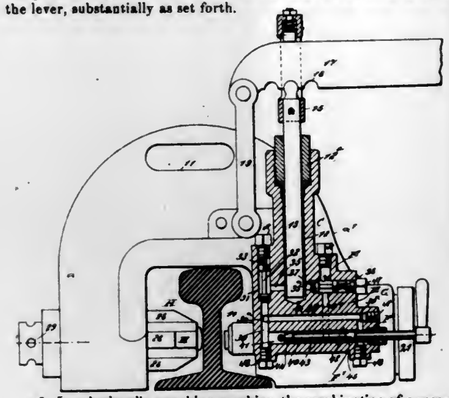
3. A nut lock, comprising a U-shaped plate, one limb being constructed to be secured to the face of a nut and its other limb provided with an angular opening to receive the correspondingly shaped end of a bolt, substantially as described.

4. A nut lock, comprising a nut and a U shaped elastic plate having one limb fixedly secured to the nut and its other limb provided with an angular opening to receive the correspondingly shaped end of a bolt, substantially as described.

5. In a nut lock, the combination with a threaded bolt and a screw nut thereon, of a locking device, comprising an elastic U shaped plate, one limb of which is seated and secured in a recess on the end of the nut, and the other limb of said plate polygonally apertured to fit on a polygonal-shaped end of the screw-bolt, substantially as described.

545,777. PORTABLE HYDRAULIC PUNCH. ELIJAH B. CORNELL, Philadelphia, Pa., assignor of five-sixths to Samuel T. Kerr, Smith Harper, and Francis Asbury, same place, and Wilson B. Solliday and Augustus H. R. Gulley, South Easton, Pa. Filed Dec. 3, 1894. Serial No. 530,686. (No model.)

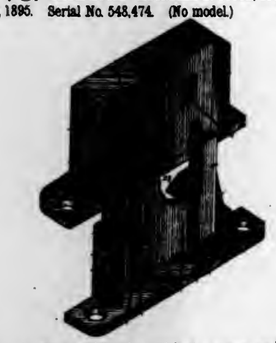
Claim.—1. In a hydraulic punching machine or the like, the combination of a main cylinder, a piston therein, a link pivoted adjacent to the piston, a lever pivoted to the free end of the link and having a series of apertures in its under side, and a yoke mounted on the piston below its upper end and embracing said lever, the extremity of the piston being adapted to enter the recesses in the under side of the lever, substantially as set forth.



2. In a hydraulic punching machine, the combination of a reservoir, a pump having inlet and outlet ports provided with valves, a plunger cylinder having inlet and outlet ports and having its inlet connected to the reservoir, a plunger therein adapted to carry a punch, a reversing cylinder having ports connecting with the inlet and outlet ports of the plunger cylinder, a valve having a chamber adapted to connect alternately with said ports, said chamber having a connection with the outlet of the pump, a connection between said reversing cylinder and the reservoir, and also between the reversing cylinder and the inlet of the pump, substantially as set forth.

3. In a hydraulic punching machine or the like, the combination of a main cylinder, a piston therein a lever adjustably pivoted adjacent to the cylinder and having apertures in its under side, a yoke mounted on the piston embracing the lever, the extremity of the piston being adapted to enter the apertures in the under side of the lever, and a spring bolt mounted on the yoke and adapted to engage the upper face of the lever whereby the end of the piston is held in engagement with the apertures on the under side thereof, substantially as set forth.

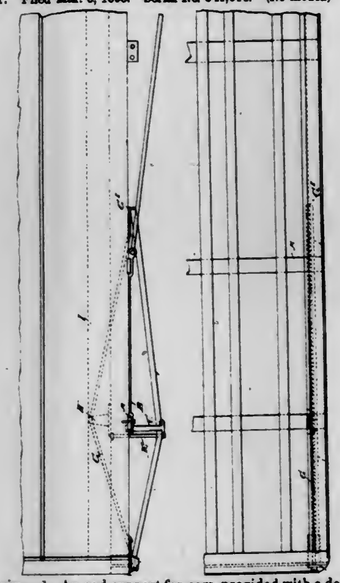
545,778. SASH-LOCK. ADONIRAM B. COUGH, Tremont, Me. Filed May 8, 1895. Serial No. 548,474. (No model.)



Claim.—1. The combination with the upper and lower sashes of a window, of a locking device therefor, made in two parts, one of which is secured to the upper rail of the lower sash and is provided with notches therein having shoulders at their lower edge, and the other part secured to the lower rail of the upper sash, the front face plate thereof being provided with slots, springs secured at their lower ends to the inner face of said face plate and dogs fitting the slots in said face plate secured to said spring and adapted to engage the notches in the other part of said lock, substantially as and for the purpose described.

2. The combination with the upper and lower sashes of a window, of a locking device therefor, made in two parts, one of which is secured to the upper rail of the lower sash and is provided with notches therein having shoulders at their lower edge, and the other part secured to the lower rail of the upper sash, the front face plate thereof being provided with slots, springs secured in elongated slots at their lower ends to the inner face of said face plate and dogs fitting the slots in said face plate secured to said springs and adapted to engage the notches in the other part of said lock, substantially as and for the purpose described.

545,779. END SUPPORT FOR CARS. SETH A. CRONK, New York, N. Y. Filed Mar. 8, 1895. Serial No. 541,011. (No model.)



Claim.—1. An end support for cars, provided with a double truss for each end of the end sill, the truss comprising a bottom knee brace made in sections, a bracket extending from the sill and forming an abutment for the lower ends of the knee brace members or sections, a socket engaging the forward end of the knee brace, and attached to the end sill, and a truss rod engaging the said socket and extending upwardly over a post in the car, to then extend downward and form at its rear end a socket engaged by the rear end of the knee brace, substantially as shown and described.

2. An end support for cars, provided with a double truss for each end of the end sill, the truss comprising a bottom knee brace made in sections, a bracket extending from the sill and forming an abutment for the lower ends of the knee brace members or sections, a socket engaging the forward end of the knee brace, and attached to the end sill, a truss rod engaging the said socket and extending upwardly over a post in the car, to then extend downward and form at its rear end a socket engaged by the rear end of the knee brace, and a bolt held on the end sill and engaging the lower end of the forward member of the knee brace, substantially as shown and described

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545,780. SAWING-MACHINE. WILLARD CURTIS, Grand Rapids, Mich. Filed Apr. 1, 1895. Serial No. 543,932. (No model.)

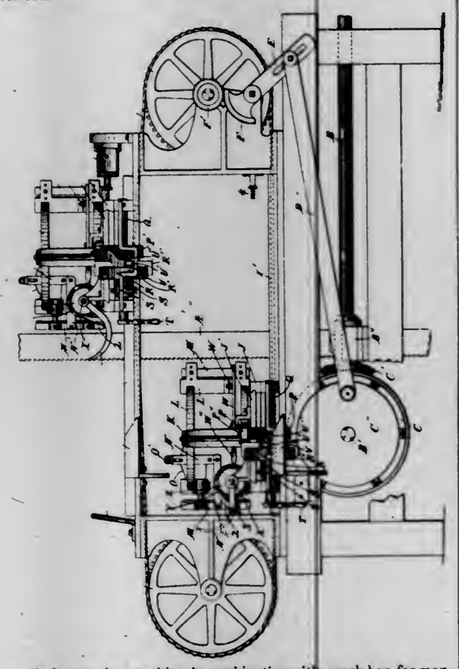
Claim.—1. In a sawing machine, a saw having a single rectilinear cutting edge, and two oppositely reciprocating carriages, alternately engaging the bolts with the edge of said saw, substantially as described.

2. In a sawing machine, a band saw, two carriages arranged one above the other, feed works upon said carriages and operating alternately at the end of the return stroke of said carriages and mechanism for oppositely reciprocating said carriages, substantially as described.

3. In a sawing machine, in combination with two oppositely moving reciprocating carriages having automatic feed mechanisms, an endless chain connected to said carriages, sprocket wheels engaging said chain, a gear connected to one of said wheels, a pivoted lever having a sector engaging said gear, a shaft having a crank wheel, and a pitman connecting said crank wheel and lever and means for rotating said shaft, substantially as described.

4. In a sawing machine in combination with two reciprocating carriages, an endless chain and sprocket wheels and a gear connected to one of said wheels and a pivoted lever, crank wheel shaft and pitman to reciprocate said gear, oppositely faced bevel friction wheels, a bevel friction pinion between said wheels and mounted on a driving shaft, a movable journal box for said shaft and a lever and connecting rods to move said box, substantially as described.

5. In a sawing machine in combination with a saw, and a reciprocating carriage having a transversely movable table and a rack bar attached, and a pinion engaging said bar, and a pawl and lever to operate said pinion, a spring latch and a hook to engage the same, said latch and hook connected to said table and lever, substantially as described.



6. In a sawing machine, in combination with a rack bar, for moving the stock forward to the saw, a shaft having a hand wheel attached, a pinion on said shaft engaging said rack bar, a feed wheel loosely mounted on said shaft, a clutch connecting said wheel and shaft, a lever to operate said clutch, a friction pawl engaging said feed wheel, a lever operating said pawl, a spring catch on said lever, and a hook on said rack bar to engage said catch, substantially as described.

7. In a sawing machine, in combination with a reciprocating carriage, having a transversely movable table, a frame mounted on said table to vibrate on a vertical axis, a lever attached to said frame, a serpentine cam wheel engaging said lever, and mechanism to periodically move said cam wheel, substantially as described.

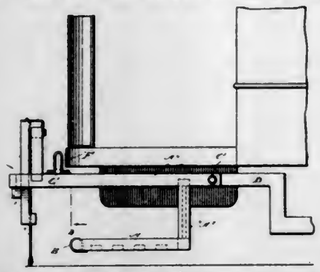
8. In a sawing machine, a reciprocating carriage, a transversely movable frame on said carriage and pivoted to vibrate on a vertical axis, a forked lever connected to said frame, a shaft having a serpentine cam wheel engaging the forked end of said lever, a ratchet wheel on said shaft, a lever having a pawl engaging said ratchet wheel, and a fixed bar to engage said lever, substantially as described.

9. In a sawing machine in combination with a reciprocating and transversely movable frame, pivoted to vibrate on a vertical axis, and provided with dogs to hold the stock, a lever connected to said frame, having a forked end, a serpentine cam wheel mounted on a shaft and engaging the forked end of said lever, a ratchet wheel having as many teeth as the inclined cam surfaces of said cam wheel, a pivoted lever having a pawl engaging said ratchet wheel, and a fixed bar to engage said lever, substantially as described.

10 In a sawing machine, a reciprocating carriage, a transversely movable table on said carriage, a vertical frame on said table pivoted to vibrate on a vertical axis, a rack bar attached to said table, a shaft having a pinion engaging said rack bar, a feed wheel on said shaft, a friction pawl engaging said feed wheel, a lever operating said friction pawl, and a fixed incline to operate said lever, a lever attached to said vertical vibrating frame, a serpentine cam wheel engaging said lever, a ratchet wheel connected to said cam wheel, a lever having a pawl engaging said ratchet wheel and a fixed bar to operate said lever, substantially as described.

11. In a sawing machine, a reciprocating frame, pivoted to vibrate on a vertical axis, a pivoted lever and means for periodically vibrating the same, a slot in said lever, and a bar pivoted at one end to said frame and at the other to a bolt adjustable in said slot, whereby the vibration of said frame may be varied, substantially as described.

545,781. CAR-FENDER. WILLIAM H. H. DIFFENBAUGH, New York, N. Y. Filed June 3, 1895. Serial No. 551,517. (No model.)

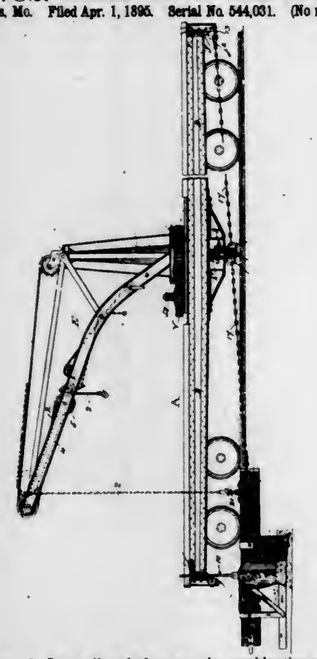


Claim.—1. In a car fender, the combination of a gate pivotally mounted in front of the car and having a transverse bar, a platform, and a rectangular frame pivoted to the car and connected to the platform, the said frame being arranged to be removably supported on the bar of the gate, substantially as described.

2. In a car fender, the combination of a U-shaped frame, a platform connected thereto, a gate pivotally mounted within the frame and having a bar removably supporting the frame, and a slotted guide connected to the frame and receiving a projection on the car, substantially as described.

3. In a car fender, the combination of a U-shaped frame pivotally mounted on the car, a platform fixed to the frame, a gate pivotally mounted at the front of the frame and provided with a bar upon which the frame is removably rested, a slotted guide carried by the frame and receiving a projection on the car, and vertically movable and flexible rods carried by the gate, substantially as described.

545,782. RAILROAD PLOW-CAR. WILLIAM R. DODDRIDGE, St. Louis, Mo. Filed Apr. 1, 1895. Serial No. 544,031. (No model.)



Claim.—1. In a railroad plow car, the combination of the plow, having an upright stem or shank, an arm projecting from the car, and means for adjustably securing the arm to the said stem substantially as described.

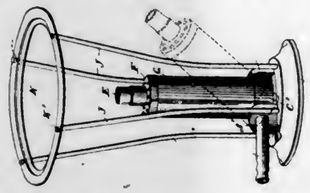
2. In a railroad plow car, the combination of the plow having an upright stem or shank, an arm projecting from the car, means for adjustably securing the arm to the said stem, a chain connecting the plow to the car, a crane or derrick and means for operating the crane, substantially as described.

3. In a railroad plow car, the combination of the plow, an arm for guiding the plow, the said arm being fixed to a piston contained in a cylinder, and means for moving the piston within the cylinder, substantially as described.

4. In a railroad plow car, the combination of an auxiliary compressed air reservoir carried by the car and provided with an inlet valve and pipe, a valve or valves communicating with the reservoir and with a cylinder containing a piston, a rod fixed to the piston and passing through the closed head of the cylinder, and an arm fixed to the said rod, substantially as described.

5. In a railroad car frame, an end sill integral throughout and formed, or provided at the end with a downwardly extended flange having one or more holes for holding a traction clevis, substantially as described.

545,783. GAS-BURNER. CHARLES E. DRESSLER, New York, N. Y. Filed Aug. 18, 1894. Serial No. 520,852. (No model.)



Claim.—1. A gas burner, comprising a base provided with opposite supports on its upper surface, one of the said supports being provided with an opening, and a cylindrical burner provided at its lower end with a supply pipe projecting at right angles therefrom, the burner being arranged between the supports with the supply pipe projecting through the opening of the said support and forming a pivot by which the burner is pivoted, whereby the burner can be held in a vertical or inclined position, substantially as described.

2. A gas burner, comprising a base provided with opposite supports on its upper surface, one of the said supports being provided with an opening, a cylindrical burner provided at its lower end with a supply pipe projecting at right angles therefrom, the burner being arranged between the supports with the supply pipe projecting through the opening of the support, and by which the burner is pivoted, and a tension device arranged in the opposite support and engaging the burner to hold it in the position into which it is moved, substantially as described.

3. A gas burner, comprising a base provided with opposite lugs, links pivoted to the lugs, and a burner having its lower end pivoted to and between the links, substantially as described.

4. A gas burner, comprising a base provided with opposite lugs, a pair of links pivoted to the lugs, a second pair of links pivoted to the first named links, and a burner having its lower end pivoted between the second pair of links, substantially as described.

5. A gas burner comprising a base provided with upwardly projecting and opposite lugs, a pair of links pivoted to the lugs, a second pair of links pivoted to the first pair of links, one of the second pair of links being provided with an opening, and a burner provided with a supply pipe projecting at right angles therefrom and working in the opening of the link and by which the burner is pivoted to and between the second pair of links, substantially as described.

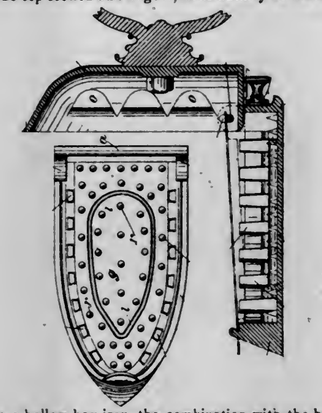
6. A gas burner, comprising spaced supports, a burner having a central burner tip, a supply pipe projecting from the lower end of the burner through an aperture in one of the supports, whereby the burner is pivoted between the supports, and a spring in recesses in the base of the burner and one of the said supports, substantially as shown and described.

7. A gas burner, comprising a casing provided with a bottom having a lateral opening, a tip secured in the center of the base and with which the lateral opening thereof communicates, a supply pipe secured in the lateral opening of the base of the casing, and a tube adjustable on the casing and projecting down into the casing and around the tip, substantially as described.

8. In a gas burner, a base, vertical rods secured to the base and having their upper ends recessed on one side, and a support provided with openings to receive the upper ends of the said rods the recesses of which engage the support, substantially as described.

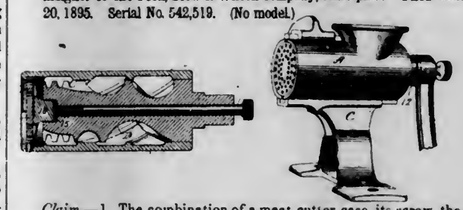
545,784. BOX-IRON. MAX ELB, Dresden, Germany. Filed Sept. 8, 1894. Serial No. 522,510. (No model.) Patented in Germany Nov. 1, 1893, No. 75,749; in England Dec. 1, 1893, No. 2,309; in France Feb. 20, 1894, No. 236,438; in Switzerland Feb. 22, 1894, No. 8,261; in Sweden Mar. 12, 1894, and in Austria-Hungary Mar. 26, 1894.

Claim.—1. In a hollow box iron, the combination with the movable cover or top section having the handle thereon, of the base section having the pressing surface on the bottom, the series of upwardly extending lugs or fingers upon the ends of which the edge of the top section rests and the upwardly extending imperforate walls outside of the projections or fingers of greater diameter than the diameter of the top section leaving a peripheral air space down around the edge of the top section and fingers; substantially as described.



2. In a hollow box iron, the combination with the hollow base section having the centrally located rim or projection in the bottom thereof to form a receptacle for spirits, and the removable perforated fuel plate supported on the top of the base section, of the hollow or domed top section hinged to the base section and overlying the perforated plate for covering the fuel on the perforated plate and a peripheral air inlet around the top section; substantially as described.

545,785. MEAT-CUTTER. ROBERT C. ELLRICH, Southington, Conn., assignor to the Peck, Stow & Wilcox Company, same place. Filed Mar. 20, 1895. Serial No. 542,519. (No model.)



Claim.—1. The combination of a meat cutter case, its screw, the knife fitted thereto by an engaging angular recess and projection, the perforated plate and the screw adjusting rod extended through said screw for forming a step or pivot upon which the knife may rock, substantially as described and for the purpose specified.

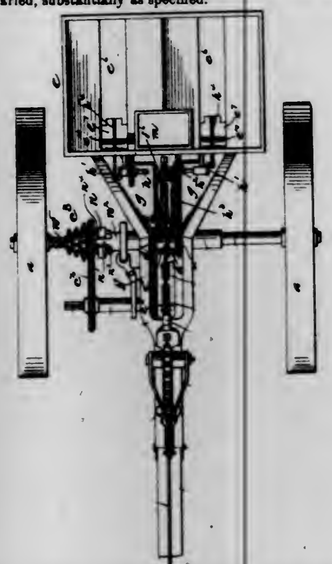
2. The combination of a two part longitudinally divided and separable case having cutting elevations near its delivery end, said case being extended beyond said elevations, a combined forcing and cutting screw having cutting elevations extended to and running out at its delivery end, said end being fitted to said cutting elevations and supported axially by means of the peripheral bearing contact therewith in contradistinction to being supported in plain bearings, and a perforated plate and knife made separately from said case and screw but attachable to and detachable from the same and confined within the case in the space between the delivery end of said screw and the delivery end of the case, substantially as described and for the purpose specified.

3. The combination of a longitudinally divided and separable case having a series of cutting elevations, a combined forcing and cutting screw having a series of peripheral grooves in bearing contact with said elevation, a perforated plate and knife, and an adjusting device for forcing said plate and knives against each other and at the same time forcing the cutting elevations and grooves of the screw and case into engagement, substantially as described and for the purpose specified.

545,786. POTATO-PLANTER. LOUIS C. EVANS, Springfield, Ohio. Filed Mar. 6, 1895. Serial No. 540,723. (No model.)

Claim.—1. In a potato planter, a main shaft and driving wheels, picker arms carried on a spider which is loose on said main shaft, a driving connection from said main shaft to a countershaft and from said countershaft to the spider having the picker arms, and means as described for varying the speed between the main shaft and the countershaft, substantially as specified.

2. In a potato planter, the combination with the main shaft, and the driving wheels thereon, picker arms on a hub or spider which is journaled on said shaft, a driving connection from said main shaft to said picker arms, said driving connection having variable parts by which the speed of the picker arms with relation to said main shaft may be varied, substantially as specified.



3. The combination with the main frame, a main driving shaft supported thereon, a countershaft also supported in said main frame, and picker arms on a hub or spider which is journaled on said main shaft and driven from said countershaft, and means, substantially as described, for varying the speed between said main shaft and said picker arms, substantially as specified.

4. A main frame and a main driving shaft journaled therein, driving wheels on said shaft, picker arms on a hub or spider which is also journaled on said shaft and adapted to turn independent thereof, a countershaft journaled in said main frame, a driving connection from said main shaft to said countershaft and from said countershaft to said picker arms, said driving connection including variable speed devices by means of which the speed of said picker arms with relation to said main shaft may be varied, substantially as specified.

5. The combination with a main frame, and a main driving shaft, picker arms on a hub or spider which is journaled thereon, and a countershaft connected to said picker arms, a driving connection from said main shaft to said countershaft consisting essentially of a cone sprocket and driving chain by means of which the speed may be varied, substantially as specified.

6. The combination with a main driving shaft, picker arms on a hub or spider which is journaled loosely thereon, a countershaft geared to said main shaft and also to said picker arms, a cone sprocket forming a part of the gearing between said main shaft and countershaft, a clutch between said main shaft and said cone sprocket, a spring for holding said sprocket in engagement with said clutch, and a shifting lever to disengage said clutch, substantially as specified.

7. In a potato planter, a main frame, picker arms therein, a main shaft on which said picker arms are supported, a concave having cam grooves with which said picker arms engage, and vibrating conduits at each side of said concave, substantially as and for the purpose specified.

8. In a potato planter, and in combination with the dropping devices thereof, a hopper, a trough or chute extending to the front of said hopper at the bottom, and a vibrating plate in said trough or chute and a connection from the driving mechanism to said vibrating plate to cause it to vibrate in said trough or chute, substantially as specified.

9. The combination with a hopper, and a trough or chute in the bottom thereof, an oscillating plate pivoted in said chute and a vibrating plate hinged to said oscillating plate, said oscillating plate being arranged in proximity to the front of the hopper, and a vibrating conduit from said oscillating plate to the dropping devices, substantially as specified.

10. The combination, in a potato planter, of a hopper, a trough in the bottom thereof, an oscillating plate journaled in said trough, said oscillating plate being hinged at one end to a vibrating plate in said hopper and at the other end to a vibrating conduit leading from said hopper, substantially as specified.

11. The combination with a hopper, and an oscillating plate therein, a vibrating plate hinged thereto, and an adjustable slide arranged in proximity to the pivotal center of said oscillating plate, substantially as specified.

12. The combination with a hopper having troughs or chutes in the bottom thereof, oscillating plates arranged in said troughs or chutes with the fronts of said oscillating plates substantially in line with the front of said hopper, vibrating plates hinged to said oscillating plates at the rear, and vibrating conduits hinged to said oscillating plates at the front, and dropping devices with which said conduits operate, substantially as specified.

13. The combination with the picker arms, a concave, a pivoted conduit on each side of said concave, and a hopper having oscillating plates connected to each of said conduits, and vibrating plates connected to said oscillating plates at the opposite ends from said conduits, and a connection from the driving mechanism to said oscillating plates, substantially as specified.

14. In a potato planter, a picker arm having at the outer end a vibrating plate with extending arms, one of which is bifurcated, a spike or impaling fork extending from said picker arms and passing through the bifurcated parts of said plate and in line with the other arm thereof, a concave with which said picker arm operates, said concave being provided with cam grooves, and cam projections on said plates to project into said grooves, substantially as specified.

15. The combination with a main frame having a chamber or conduit in the front thereof, and inwardly projecting wings at the rear of said chamber, a concave extending from said wings upwardly and backwardly, and a vibrating conduit on each side of said concave, and a hopper communicating with said conduits, substantially as specified.

16. The combination with a main frame having a chamber therein, a shoe hinged to said main frame by pivoted links as described, a lever joined to one or more of said pivoted links, and means for holding said lever in different positions of adjustment so as to vary the position of said shoe, substantially as specified.

17. The combination with a main frame having a chamber therein, and flaring sides in the rear, backwardly-extending bars from said frame, and a hopper secured to said frame and partially supported on said bars, side plates in said hopper parallel to said bars, an oscillating plate pivoted between said side plates and extended bars, and a vibrating plate hinged to said oscillating plate, and means for operating said oscillating plate from the driving mechanism of said planter, substantially as specified.

18. The combination with the picker arms, and a driving mechanism, a hopper arranged above said picker arms and having conduits extending thereto, vibrating plates in the bottom of said hopper hinged to said conduits, a countershaft having pitman connections to said vibrating plates, and a connection from said countershaft to the rotating picker arms, substantially as specified.

19. A main frame having a contracted chamber in the front thereof, and inwardly-projecting wings at the rear of said chamber, diverging sides from the wings backwardly, and a hopper in the rear of said frame, a concave pivoted at the bottom to said frame and supported yieldingly at the top, picker arms having movable plates adapted to travel in said concave, conduits on each side of said concave, said conduits being arranged within the diverging sides of the frame and pivoted thereto at or near their lower ends, and vibrating plates in said hopper hinged to said conduits, and means for imparting motion to said vibrating plates, substantially as specified.

20. The combination with a main frame and dropping devices therein, an adjustable shoe supported by pivoted links from said frame, said links in front being extended upwardly and united together to form a lifting lever, a quadrant on said frame, and an engaging device on said lifting lever to engage said quadrant, substantially as specified.

21. In a potato planter, the combination with dropping devices, of a hopper having a chute on each side thereof and vibrating feeding devices therein, and a fertilizer hopper having a distributing device arranged in said hopper between said chutes, substantially as specified.

22. The combination with a hopper, and an oscillating plate therein, a vibrating plate hinged thereto, and a pivoted conduit leading from said hopper, substantially as specified.

23. In a potato planter, the combination with the dropping devices, of a hopper and oscillating plate therein, a vibrating plate hinged to said oscillating plate, and means as described for vibrating said plates as said dropping devices are actuated to cause an automatic cutoff, substantially as specified.

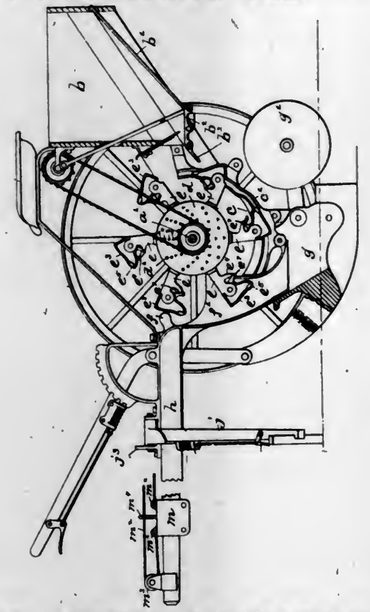
24. In a potato planter, a rotating picker arm having a movable plate and a stationary impaling fork, a concave through which said picker arm revolves, cam grooves in said concave, and cam projections on the movable plate, substantially as specified.

25. The combination with the revolving picker arms, and a main frame in which they are revolved, a concave hinged in said main frame, lateral grooves in said concave, movable parts on said picker arms having projections to engage with said grooves, and a spring connected with the top of said concave, substantially as specified.

26. In a potato planter, the combination with the dropping devices, of a hopper having feeding devices therein, said feeding devices consisting essentially of vibrating plates arranged in the bottom of said hopper on opposite sides thereof, and means as described for operating said feeding devices alternately, substantially as specified.

27. The combination with a hopper, and vibrating plates therein, conduits from the vibrating plates to the dropping devices, and means as described for alternately operating the vibrating plates on opposite sides of said hopper, substantially as specified.

545,787. POTATO-PLANTER. LOUIS C. EVANS, Springfield, Ohio. Filed June 15, 1895. Serial No. 552,889. (No model.)



Claim.—1. The combination with the picker arms, of a supporting plate having a number of concentric rows of openings therein, a series of openings in said picker arms corresponding in number to the concentric rows, and intermeshing devices on the respective parts arranged radially opposite the corresponding openings in said respective parts, substantially as specified.

2. In a potato planter, a supporting plate having a number of concentric rows of openings therein, picker arms, each having a series of openings, one for each concentric row in said plate, projections on said picker arms and depressions in said plate, one of said depressions being arranged radially opposite each of the openings in each of said concentric rows, and fastening devices adapted to extend through the corresponding openings in the arms and plate, substantially as specified.

3. In a potato planter, a series of picker arms, two oppositely-arranged plates, each having a number of concentric rows of openings, one of the openings in each row being arranged in a series in a radial line, and a series of openings in each of said picker arms corresponding to said radial series, intermeshing parts between said picker arms and the respective plates, and a fastening device adapted to extend through said plates and through one of the openings in said picker arms, substantially as specified.

4. In a potato planter, the combination with the picker arms having moving heads, as described, of a concave having a cam-shaped groove with which said picker arms engage, said groove being arranged at each end of said concave in a substantially concentric curve, an abrupt cam way between the concentric portions of said groove, and a pocket formed with inclined sides arranged over one of said concentric portions and extending to said abrupt cam way, substantially as specified.

5. In a potato planter, a series of picker arms each having an oscillating head, of an impaling fork, means for moving said head toward said fork, said head being provided with a series of serrations or teeth opposite said fork, substantially as specified.

6. The combination with the picker arm having an impaling fork, of an oscillating head having a projecting portion adjacent to said impaling fork, and teeth or serrations in said projecting portion, substantially as specified.

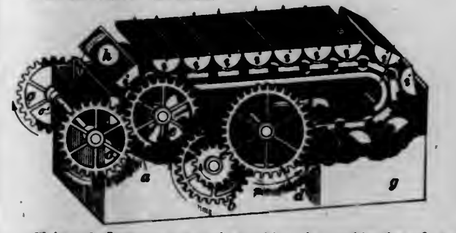
7. The combination with a concave having a cam groove therein, and a pocket having inclined sides above said cam groove, of a picker arm having an oscillating head with projections to engage in said cam groove, and an impaling fork arranged opposite said projections, said head being provided with teeth or serrations, substantially as specified.

8. The combination with the adjustable shoe as described, and means for securing said shoe in different positions of adjustment, a spring supported by said shoe and moving therewith, and a backwardly-extending arm adjustably supported on said spring so as to occupy different relative positions with said shoe, and an angularly-arranged disk journaled on said arm whereby said disk is supported wholly on said spring and moves with said shoe, substantially as specified.

9. The combination with a planter and its tongue, of a sliding weight arranged on said tongue, a connection from each end of said weight extending in opposite directions and over suitable supporting devices so as to be operated in either direction from the frame of said planter, substantially as specified.

10. The combination with a tongue, of a sliding weight arranged thereon, a flexible connection extending from each end of said weight and passing over a pulley arranged at or near the outer end of said tongue, thence backwardly through a guide on said weight and to a point adjacent to the operator on said planter, substantially as specified.

545,788. SUCTION DEVICE FOR PAPER-MAKING MACHINES. HENRY FAIRBANKS and HOWARD PARKER, St. Johnsbury, Vt., assignors to the Vacuum Wet Machine Company, of Vermont. Filed Jan. 28, 1895. Serial No. 536,396. (No model.)



Claim.—1. In a paper or pulp machine, the combination of an endless apron, adapted to carry wet pulp, with a series of traveling suction boxes, successively carried beneath, and in working contact under said apron, and with means for exhausting the same, substantially as and for the purpose herein specified.

2. In a paper or pulp machine, the combination of an endless apron adapted to carry wet pulp, with partially exhausted traveling suction boxes carried successively beneath and in supporting contact under said apron, and with the endless chains connecting them in series, and the tracks upon which they ride, directing their motion as herein described.

3. In a paper or pulp machine, the combination of an endless apron adapted to carry wet pulp, with partially exhausted traveling suction boxes carried successively beneath and in working contact under said apron, and with the endless chains connecting them in series, and the sprocket wheels and gear connections whereby they are carried forward with the same movement as the apron resting upon them, substantially as and for the purpose specified.

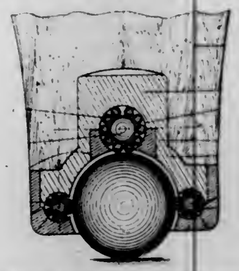
4. In a paper or pulp machine, the combination of an endless apron adapted to carry wet pulp, a series of open top boxes, means for moving them beneath and in contact with said apron, the exhaust chamber *v*, communicating with said boxes, and the exhaust conduit *s*, as herein fully described.

5. In a paper or pulp machine, the combination of the endless apron *y*, adapted to carry wet pulp upon one side, with the suction boxes *i*, *i*, in working contact with the other side of the said apron, the flexible hose pipes *k*, *k*, the disk *j*, on a shaft geared to move with the series of boxes, the exhaust chamber *v*, with which the flexible hose from the boxes communicates, and the exhaust conduit *s*, all constructed and arranged, substantially as set forth.

6. In a paper or pulp machine, the combination of the endless apron *y*, adapted to carry wet pulp, with the open top boxes *i*, *i*, upon which this apron rests, the flexible hose pipes *k*, *k*, connecting these boxes to the openings *n*, *n*, of the disk *j*, and the exhaust chamber *v*, and with the supporting track *q*, the links *l*, *l*, the sprocket wheel *e*,

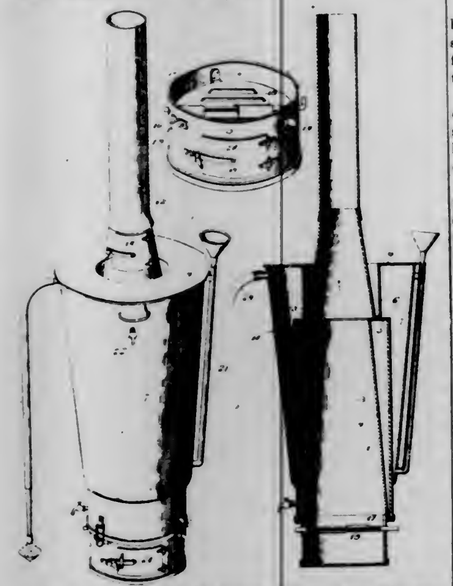
and the gear wheels *a*, *b*, *c*, and *d*, constructed and arranged for joint action substantially as and for the purpose herein described.

545,789. BALL CASTER. CHARLES H. GAFFNEY, Gloucester, Mass. Filed Mar. 20, 1895. Serial No. 542,553. (No model.)



Claim.—The herein described ball bearing caster, consisting of a semi spherical socket A having an upper spherical pocket G containing a central or core ball and peripheral antifriction bearing balls above the caster ball D and a series of spherical side pockets F containing each a central or core ball and peripheral anti-friction bearing balls adapted to roll against said caster ball, substantially as and for the purpose set forth.

545,790. STEAMER. ENOCH R. GARRETT, Appleton City, Mo., assignor of one-fourth to Fred A. Luchsinger, same place. Filed Apr. 2, 1895. Serial No. 544,181. (No model.)

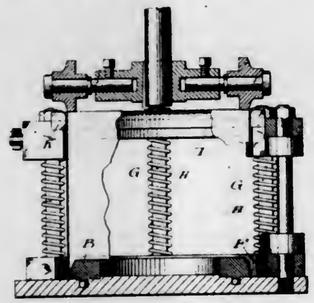


Claim.—1. In a steamer for heating or cooking food for stock, the combination with a tapering inner chamber surrounding the central smoke flue and having its lower end contracted, of a tapering outer chamber surrounding said inner chamber and having its lower end also contracted, the upper and lower apertures connecting said chambers for providing for the proper circulation of the water, a furnace located at the bottom of the inner chamber, and a steam pipe or outlet communicating with the steam space of the outer chamber, substantially as and for the purpose described.

2. In a steamer for preparing feed for live stock, a cylindrical and tapering inner chamber, in combination with a tapering and cylindrical outer chamber surrounding said inner chamber and extending upwardly beyond the upper edge thereof, the upper and lower communicating apertures between said chambers, a removable smoke pipe arranged within the outer chamber and resting upon the top of the inner chamber, and a detachable fire box or furnace connected to the lower end of the inner chamber, in the manner and substantially as described.

3. In a steamer for preparing feed for live stock, a tapering annular inner chamber, and a tapering annular outer chamber surrounding said inner chamber and extending above the same, and the upper and lower communicating apertures between said chamber, in combination with a detachable fire box secured thereto in the manner described, a detachable smoke pipe provided with a flanged base resting upon the upper end of the inner chamber, a supply pipe communicating with the lower end of the outer chamber, and a flexible steam pipe communicating with the steam space at the upper end of the outer chamber, substantially as specified.

545,791. FLANGING-MACHINE. HENRY L. GATES, Milwaukee, Wis., assignor to the Utility Manufacturing Company, same place. Filed Mar. 11, 1895. Serial No. 541,268. (No model.)



Claim.—1. In a machine for flanging sheet-metal bodies, the combination of a suitable body-receiving frame having a yielding flange-shaping portion, a rotary head movable longitudinally of its axis, and flanging rollers carried by the head in opposition to said yielding portion of the frame.

2. In a machine for flanging sheet-metal bodies, the combination of a body-receiving frame having a yielding portion, a flange-shaper seated in the yielding portion of the frame, a rotary head movable longitudinally of its axis, and flanging rollers carried by the head in opposition to said flange-shaper.

3. In a machine for flanging sheet-metal bodies, the combination of a separable body-receiving frame having yielding portions, flange-shaper sections seated in the yielding portions of the frame, a rotary head movable longitudinally of its axis, and flanging rollers carried by the head in opposition to the flange-shaper.

4. In a machine for flanging sheet-metal bodies, the combination of a body-receiving frame having a yielding portion provided with a flange-shaper, a stay-plate on the machine base within said frame, a rotary head movable longitudinally of its axis, and flanging-rollers carried by the head in opposition to the flange-shaper.

5. In a machine for flanging sheet-metal bodies, the combination of a separable body-receiving frame having yielding portions, a flange-shaper section seated in each yielding portion of the frame, a stay-plate on the machine-base within said frame, a rotary head movable longitudinally of its axis, and flanging rollers carried by the head in opposition to the flange-shaper.

6. In a machine for flanging sheet-metal bodies, the combination of a body-receiving frame comprising rods, springs surrounding the rods and a flange-shaper having its holder loose on the rods against the springs; a rotary head movable longitudinally of its axis, and flanging rollers carried by the head in opposition to the flange-shaper.

7. In a machine for flanging sheet-metal bodies the combination of a suitable body-receiving frame having a yielding flange shaping portion, a rotary head movable longitudinally of its axis, flanging rollers carried by the head in opposition to said yielding portion of the frame, and a disk operative within a vessel-body in the machine to prevent buckling of this body while a flanging operation is taking place.

545,792. CAR-TRUCK BOLSTER. EDWARD F. GOLTRA, St. Louis Mo., assignor to the American Steel Bolster Company, Madison County, Ill. Filed June 14, 1895. Serial No. 552,795. (No model.)

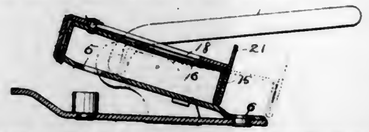


Claim.—1. A car-truck bolster having a longitudinally arranged box-girder perforated centrally and flanged along its side webs, at the top or thereabout, the said bolster having spring seats and provided with center and side bearings, substantially as described.

2. A car-truck bolster having a longitudinally arranged box-girder flanged along its side webs, at the top and bottom, or thereabout, respectively, the said bolster having spring seats and provided with center and side bearings, substantially as described.

3. A car-truck bolster having a longitudinally arranged box-girder flanged and provided with stiffening brackets, the said bolster having spring seats and carrying center and side bearings, substantially as described.

545,793. PERFORATOR. WILLIAM O. GOTTWALS, Ottawa, Canada. Filed Mar. 14, 1895. Serial No. 541,687. (No model.)



Claim.—1. In a perforator for bill files, the combination of a base plate provided with punches, a spring plate secured to said base plate along one edge, and formed at each side with matrix openings adapted to register with said punches and situated above the latter, and a pair of receptacles for punchings mounted upon the upper or outer side of the spring plate at each edge of the latter and over said openings and movable with the plate, and having doors adapted to retain the punchings or to permit the clearing of the receptacle substantially as set forth.

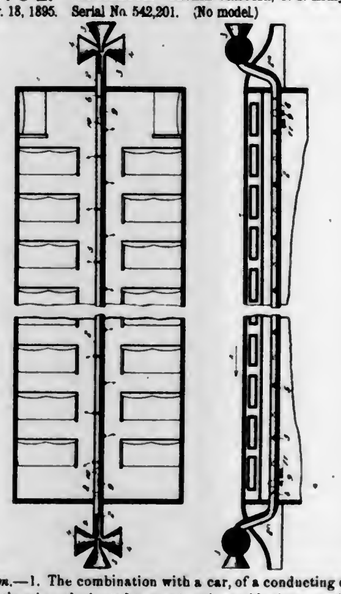
2. In a perforator the combination with a spring plate formed with a matrix opening, of a receptacle mounted upon said plate over the opening, a slide within the receptacle, a downward extension 20 at the inner end of the slide, and a door carried at the outer end of the slide, substantially as set forth.

3. In a perforator the combination with the spring plate 4 having a matrix opening 5, of a receptacle mounted upon and carried by the said spring plate at the outer side of the opening and formed with a slot 18, a slide within the receptacle provided with a door, and a pin connecting the slide with said slot, substantially as set forth.

4. In a perforator the combination with the spring plate 4 having a matrix opening, of a receptacle mounted on the outer side of the plate above the opening, a bent spring slide 16 within the receptacle, and a door carried by the slide, as set forth.

5. The combination with the spring plate of the perforator, of the receptacle provided with a slide the inner end of which is bent downward to form the extension 20, and the outer end of which is bent downward to form a door and upward to form a means for withdrawing the slide, substantially as set forth.

545,794. VENTILATOR. THOMAS GRIFFITH, U. S. Army. Filed Mar. 18, 1895. Serial No. 542,201. (No model.)



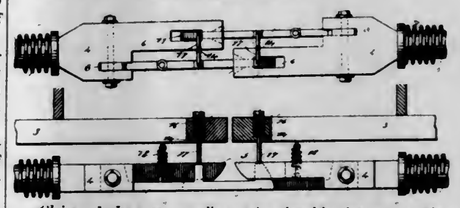
Claim.—1. The combination with a car, of a conducting channel mounted therein and adapted to receive air outside the car, said channel being provided at points inside the car with outlet tubes having their inner ends projecting interiorly beyond the inner wall of the channel, substantially as set forth.

2. The combination with a car, of a conducting channel mounted therein and adapted to receive air outside the car, said channel being provided at points inside the car with outlet tubes having their inner ends projecting beyond the inner wall of the channel, and deflecting plates pivoted to the outer side of the conducting channel and adapted to deflect the air issuing from said outlet tubes, substantially as set forth.

3. The combination with a car, of a conducting channel mounted therein and adapted to receive air outside the car, said channel being provided at points inside the car with outlet tubes having their inner ends projecting beyond the inner wall of the channel, and deflecting plates pivoted to the outer sides of the channel, said deflecting plates being inclined to the mouths of the outer tubes and being adapted to be moved on their pivots thereby deflecting the air issuing from said tubes, substantially as set forth.

4. In a ventilator, the combination of a conducting channel provided at its end with laterally-projecting funnel-shaped hoods having their outer ends open and their inner ends communicating with the interior of the said channel, said hoods being arranged at opposite sides of the channel and being provided at their points of communication therewith with valves adapted to open and close in opposite directions, said valves being adapted to be opened and closed respectively by the entry of air through one of the hoods, substantially as set forth.

545,795. CAR-COUPLING. THOMAS GRIFFITH, U. S. Army. Filed Apr. 16, 1895. Serial No. 545,978. (No model.)



Claim.—1. In a car coupling, a drawhead having at one side a perforation and at the other side a pivoted coupling bar provided with an upturned hook, said hook and perforation being adapted to be engaged by a correspondingly located perforation and hook on an opposing drawhead, and a spring connected to said hook and adapted to hold the same normally in operative position substantially as set forth.

2. In a car coupling, the combination of a drawhead having an aperture at one side, a coupling bar pivoted to the opposite side of the drawhead and having an upwardly projecting hook in advance of the aperture in the drawhead, said hook and aperture being adapted for engagement, respectively, with a correspondingly located aperture and hook on an opposing drawhead, and a spring connected to said coupling bar and adapted to hold the same normally in a raised position, substantially as set forth.

3. In a car coupling, the combination of a drawhead having an aperture extending through it at one side, a coupling bar pivoted at the opposite side of the drawhead and provided with an upwardly projecting hook, said hook and aperture being adapted for engagement with a correspondingly located aperture and hook on an opposing drawhead, a spring connected to the coupling bar and adapted to hold the same normally raised in its operative position, a vertically movable shaft mounted on the car platform and provided with forks at its lower end one of which is adapted when depressed to extend through the aperture in the drawhead in position to engage and depress the hook in engagement therewith, the other fork being adapted when depressed to engage the coupling bar and move the same down out of its operative position, and a spring connected to said shaft and adapted to hold it in an elevated position, substantially as set forth.

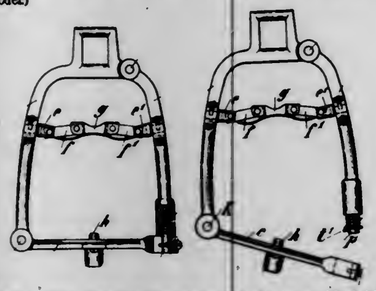
4. In a car coupling, the combination of a drawhead having at one side an aperture and at the other side a hook, said hook and aperture being adapted, respectively, for engagement with a correspondingly located aperture and hook on an opposing drawhead, a shaft mounted on the car platform and provided with forks, one of which is adapted to play through the aperture in the drawhead and the other of which is adapted to engage the said hook, a lever pivoted on the car platform and an arm on said lever adapted to engage and actuate said shaft, substantially as set forth.

5. In a car coupling, the combination of a truck frame, having a king bolt, a drawhead pivoted at its rear end on said king bolt and adapted for lateral movement, guide rods connected to said drawhead at opposite sides of its forward part and adapted to guide the same,

and springs on said guide rods adapted to hold said drawhead normally in a central position, substantially as set forth.

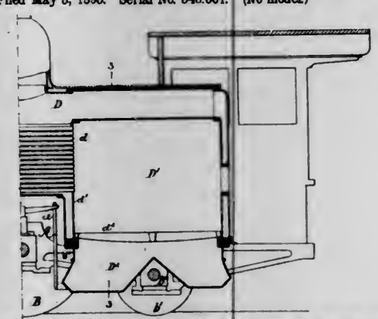
6. In a car coupling, the combination of a drawhead having at one side an aperture and at the other side a hook, said hook and aperture being adapted respectively for engagement with a correspondingly located aperture and hook on an opposing drawhead, a shaft vertically movable in the car platform and provided with forks, one of which is adapted to play through the aperture in the drawhead and the other of which engages the hook, a spring mounted on said shaft and adapted to hold the same in an elevated position, and a lever pivoted on the car platform and provided with an arm adapted to engage and depress said shaft, substantially as described.

545,796. STIRRUP. JOHANN M. L. HADDORF and HINRICH F. H. EGGERS, Lubeck, Germany. Filed Oct. 5, 1894. Serial No. 525,051. (No model.)



Claim.—In a safety stirrup, the part *a* having a side *b* hinged thereto near the top, and the tread c hinged at the bottom thereof, a horizontal bar connecting the parts *a* and *b*, and formed of the separate jointed links *e*, *e'*, *f*, *f'*, and *g*, the guard plate *d* bearing against these several parts and so arranged that upon pressure being applied upward upon the plate *d*, the parts *a* and *b* will be advanced together, and a catch *p* with a spring *l* arranged thereon for depressing the tread, substantially as described.

545,797. LOCOMOTIVE. WILLIAM P. HENSZEY, Philadelphia, Pa. Filed May 3, 1895. Serial No. 548,001. (No model.)

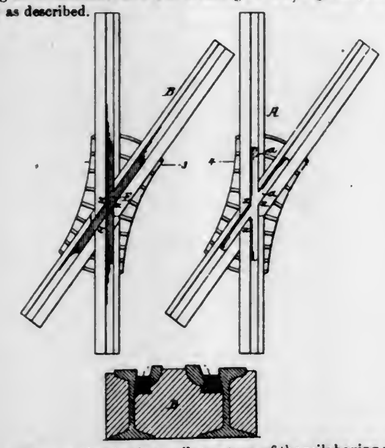


Claim.—1. The combination in a locomotive of the side frames depressed back of the drivers, the driving wheels and trailers, the boiler, the fire box, the sides of which are directly above the depressed portion of the frame and within the space between the oppositely arranged driving wheels and the trailing wheels so that a wide and uniformly deep fire box is obtained which extends forward between the driving wheels, substantially as described.

2. The combination of the frames A, A of a locomotive, depressed at *a* directly in front of the fire box, the boiler and the fire box of uniform depth, the side walls of the fire box being directly above the depressed portion of the side frames and within the space between the oppositely arranged driving wheels and trailers and having an ash pit extending between the frames and grate bars separating the ash pit from the fire box, substantially as described.

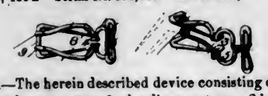
545,798. RAIL STRUCTURE. FRANK P. HOWE, Philadelphia, Pa., assignor to the William Wharton, Jr., & Company, Incorporated, same place. Filed Aug. 29, 1894. Serial No. 521,604. (No model.)

Claim.—1. The combination in a rail structure, of the intersecting rails, means for securing said rails together, each rail, being recessed at the intersecting point, with hard metal cast in the recess of the rails at the intersecting points forming a riser or wear plate and acting as an additional means of fastening the rails together, substantially as described.



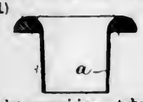
2. The combination in a rail structure, of the rails having undercut recesses at their intersecting points, said rails being secured together by cast metal having formed therein cavities which are continuations of the recesses in the rails, with a metal plate cast into the recess at the intersecting point of the rails, said plate filling the cavities formed in the rail and the securing casing and acting as a riser or wear plate as well as additional means for securing the rails together, substantially as described.

545,799. BUTTON. FLORIEN JONISH, Little Falls, Minn. Filed Dec. 15, 1894. Serial No. 531,913. (No model.)



Claim.—The herein described device consisting of a piece of wire bent to form loops or eyes 1, the divergent arms 2 bent inwardly and upwardly toward each other as at 3, forming a throat or passage 4 and said arms being again spread apart beyond the said passage, as at 5, and twisted together at 6, said twisted portion standing at right angles to the remaining portion of the arms and the loop or head 7 formed by spreading the arms laterally upon each side of the twisted portion 6, and spurs 8 integral with an angular portion 9, pivotally connected to the eyes 1, all as and for the purpose specified.

545,800. EYELET. ELEAZER KEMPSHALL, Sharon, assignor to Theophilus King, trustee, Boston, Mass. Filed Aug. 1, 1895. Serial No. 557,821. (No model.)

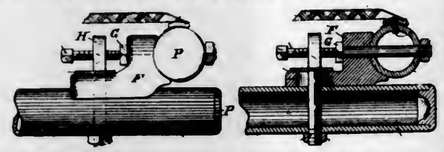


Claim.—1. An eyelet comprising a tubular body, a frusto-conical flange formed on one end of said body, the flange joining the body of the eyelet at an obtuse angle which forms a shoulder adapted to bear on a die plate, and an annular upwardly projecting cutting lip formed on the upper edge of said flange and standing at an angle therewith, as set forth.

2. An eyelet comprising a tubular body, a frusto-conical flange formed on one end of said body, the flange joining the body of the eyelet at an obtuse angle which forms a shoulder adapted to bear on a die plate, an annular upwardly projecting cutting lip formed on the upper edge of said flange and standing at an angle therewith, and an annular covering molded on said lip and flange, the lip being formed to cut the mass of covering composition while the latter is being forced down onto the flange, the angle at which said lip projects from the flange insuring the upward projection of the lip in the molded covering, as set forth.

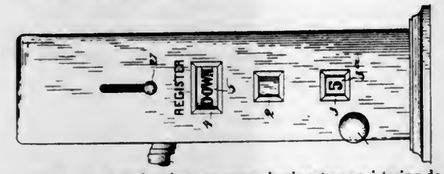
545,801. METALLIC MATTRESS-FRAME. ALPHONSO E. KENNEY, Somerville, Mass. Filed Mar. 16, 1894. Serial No. 503,903. (No model.)

Claim.—1. In a metallic mattress frame, tubular side rails and end rails united at the corners of the frame, each rail perforated near its end to receive a bolt, in combination with a metallic bracket having a longitudinal groove in its under surface, forming a seat for the side rail, a transverse groove in its outer face, forming a seat for the end rail, bolts passing through said bolt-holes and fixed therein, securing each rail separately to said bracket, a vertical longitudinal slot in said bracket, through which the bolt securing it to the side rail passes, and means for imparting to said bracket a sliding movement outwardly above the side rail, substantially as set forth.



2. In combination with the corner bracket of the character described and with bolts for connecting the side and end rails of a metallic mattress frame thereto, a saddle-piece L, interposed between the side rail and said bracket, and fixed on the side-rail by the same bolt that secures the bracket to said side-rail; also having a longitudinal groove in its under surface fitting the side rail, and shaped on its upper surface to fit the under side of the bracket, and also formed with a vertical arm, *l*, through which a screw, K, works against said bracket, substantially as and for the purpose set forth.

545,802. FARE-REGISTER. JOHN J. KENNELLY, New York, N. Y., assignor of one-half to John B Benton, same place. Filed Nov. 28, 1894 Serial No. 530,213. (No model.)



Claim.—1. A registering apparatus having two registering devices inclosed in a casing furnished with sight-apertures to disclose the numerals on the respective register wheels, an operating pull common to both registering devices, a shifting mechanism adapted to connect said operating pull with either registering mechanism, at will, and a movable screen for the said sight-apertures, the screen being connected to said shifting mechanism and adapted to be operated thereby, whereby, when a registering mechanism is disconnected from the pull, its sight-aperture will be closed by the screen, substantially as set forth.

2. A registering apparatus having two registering devices comprising each a numeral-bearing wheel and a pawl-and-ratchet mechanism, an operating pull common to both of said registering devices, connecting mechanism between said pull and the registering devices, a shifting mechanism for operating said connecting mechanism, whereby the pull may be coupled to either of said mechanisms at will, and a gravity operated locking device which automatically locks said shifting mechanism after the shift has been effected, substantially as set forth.

3. In a registering apparatus, the combination with the two registering devices comprising each a numeral-bearing wheel, a ratchet-wheel, a pawl-arm provided with a stud 16, and a pawl, of the notched arm 14, pivoted to a rocker, with its notches adapted to engage the studs 16, respectively, the said rocker, 11, a pull connected with the rocker, and a shifting mechanism for putting the arm 14 into connection with one or the other of said studs 16, substantially as set forth.

4. In a registering apparatus, the combination with two registering devices, an operating pull, and operative mechanism between said pull and the registering mechanisms, of a shifting mechanism for putting said pull into connection with one or the other of said registering mechanisms, said shifting mechanism consisting of a shaft 17, a gear 19 on said shaft, a rotatively mounted crank-wheel 20, in gear with and having twice the number of teeth of the wheel 19, and a link 22, coupled at one end to a stud in the crank-wheel and at the other end to the arm which operates the pawl-arms of the register devices, substantially as set forth.

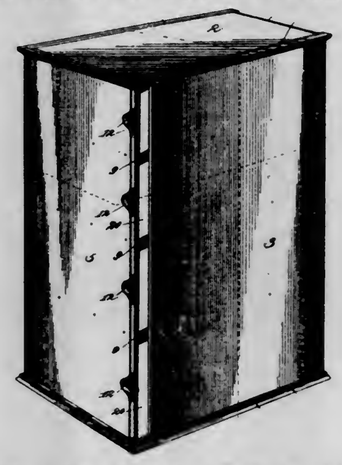
5. In a registering apparatus having two registering mechanisms operated by one pull, connecting mechanism between the pull and registering devices, and a casing having in it sight-apertures for exposing the numerals on the wheels of the registers, the combination with the shifting mechanism, of the movable locking-slide for the said mechanism adapted to screen the said sight-apertures when the shifting mechanism is unlocked, substantially as set forth.

6. In a registering apparatus, the combination with the casing, provided with sight-apertures 2 and 3, of the shaft 17, in the casing, the faceted disk, 24, on said shaft, and the locking slide, 26, provided with screens 26^b, adapted to screen the sight-apertures 2 and 3 when the slide is in its elevated and unlocking position, substantially as set forth.

7. In a registering apparatus having two registering devices, the combination with the casing, having in it sight-apertures, of the slide 5, adapted to screen said apertures, as set forth, and the shifting mechanism adapted to operate said slide, said mechanism comprising the shaft 17, the gear-wheel 19 thereon and the crank-wheel 20, in gear with the wheel 19, and the link 29, connecting said slide with a stud in the crank-wheel, substantially as set forth.

8. In a registering apparatus, the combination of two registering mechanisms, and a pull common to both for operating them, said pull having a projecting stop 10^a to limit its movement, of the shaft 17, the faceted disk 24 thereon, and the locking slide 26, provided with a guard 26^c, adapted to be interposed in front of the stop 10^a, when said slide is in its elevated or non-locking position, substantially as set forth.

545,803. PAPER-BAG AND ENVELOPE CABINET. JOHN P. KLUG, St. Louis, Mo., assignor to Mary Klug and Edward W. Braisted, same place. Filed Dec. 24, 1894. Serial No. 532,860. (No model.)



Claim.—1. A paper bag and envelope cabinet, comprising a rectangular box-like structure constructed with a vertical slot at one corner thereof, a series of compartments formed by horizontal partitions within said box-like structure, followers moving horizontally within the compartments, expansive springs interposed between the followers and the rear wall of the cabinet, eye-bolts secured to the rear sides of the followers, and rods having their forward ends looped in the eye-bolts and extending rearwardly through transverse slots in the rear wall of the cabinet, said rods being constructed with U-shaped bends at right angles to the body portions thereof for the purpose of engaging the outer face of the rear wall to lock and hold the followers from any forward movement.

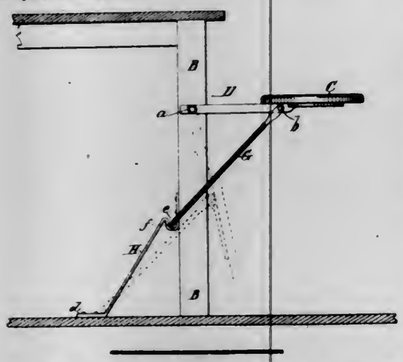
2. In a paper bag and envelope cabinet, the combination of a rectangular box-like structure constructed with a vertical slot at one corner thereof, horizontal partitions located within the box-like structure, spring-actuated followers horizontally moving within the compartments formed by the partitions, eye-bolts mounted in said followers, and a rod constructed with a U-shaped bend at right angles to the body portion thereof and near the rear end, said rear end of the rod being hooked in order to engage the eye-bolts of the followers.

545,804. COUNTER-SEAT. JOHN L. LORD, Medford, Mass. Filed Jan. 26, 1895. Serial No. 536,359. (No model.)

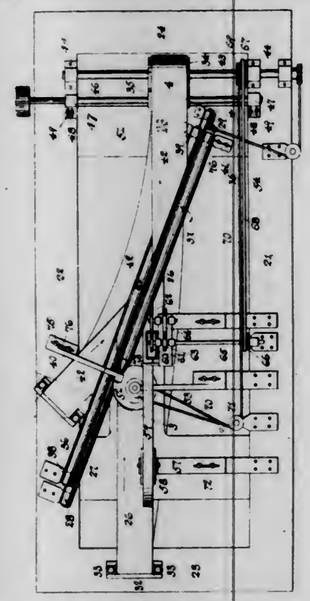
Claim.—1. In a store counter-seat, the combination with an upright or standard, of a seat having a pair of supporting arms rigidly secured to the under side of the same, and pivoted at their inner ends to opposite sides of said standard, a swinging bow-shaped brace pivoted beneath the seat, and embracing the standard, and an open U-shaped socket secured to the standard, and adapted to receive and hold the transverse bar of the bow-shaped brace when the seat is raised to a horizontal position, substantially as set forth.

2. In a store counter-seat, the combination with an upright or standard, of the seat C, having a pair of supporting arms D, D, rigidly secured to the under side of same, and pivoted at their inner ends to opposite sides of said post or standard to permit the seat to be

dropped down when not required for use, the swinging bow-shaped brace G, pivoted to the supporting arms D, D, and embracing the standard, and the stationary inclined angle brace H, extending from the said standard to the floor, and provided at its upper end with an open socket *e*, adapted to receive and hold the transverse bar *f*, of the brace G, to support the seat in a horizontal position, said brace G, sliding on the upper inclined side of the brace H, which serves as a guide to direct the bar *f*, into the socket *e*, as the seat is raised, substantially as set forth.



545,805. CIGARETTE-MACHINE. WILLIAM MAXFIELD, Brooklyn, N. Y. Filed Mar. 21, 1895. Serial No. 542,588. (No model.)



Claim.—1. In cigarette machines, the combination with a traveling apron suitably supported, a still bar fixedly mounted on proper supports, a belt wound on part of its surface, a roller, all in operative relation with one another, and means for conducting the tobacco into the space between the roller and said apron and belt, substantially as set forth.

2. In cigarette machines, the combination with two still bars fixedly mounted on proper supports, each having a belt wound on part of its surface, a roller, all in operative relation with one another, and means for conducting tobacco into the space between said belts at their point of contact with said still bars and the roller, substantially as set forth.

3. In cigarette machines, the combination with a traveling belt suitably supported, a still bar, a second belt wound on part of its surface, a roller provided with a conical forward end portion all in operative relation with one another, and means for introducing tobacco into the space between said conical end portion and said belts where so supported, substantially as set forth.

4. In cigarette machines, the combination with a traveling belt suitably supported, a still bar, a second belt wound on part of its surface, a roller provided with a conical forward end portion, all in operative relation with one another, and an inclined disk adjusted to conduct tobacco toward said conical end portion, substantially as set forth.

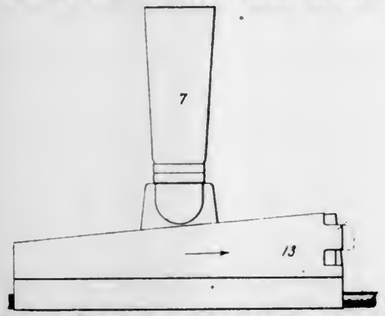
5. In cigarette machines, the combination with a traveling belt suitably supported, a still bar, a second belt wound on part of its surface, and a roller, all in operative relation with one another, of means for holding said belts in said frictional contact with each other, and mechanism for propelling said belts, substantially as set forth.

6. In cigarette machines, the combination with a traveling belt suitably supported, a still bar, a second belt wound on part of its surface, a roller, all in operative relation with one another, means for conducting tobacco into the space between said roller and the operative portions of said belts, and appliances for varying the relative position between said roller and said operative portions of the belts, substantially as set forth.

7. In cigarette machines, the combination with a roller and two still bars, each provided with a suitable belt, all in operative relation with one another, of mechanism for conducting tobacco into the space between roller and belts, and means for guiding the wrapping material toward the roller, obliquely, substantially as set forth.

8. In cigarette machines, the combination with a traveling apron suitably supported, a still bar, a belt wound spirally around part of its surface, and a roller all in operative relation with one another the roller being placed obliquely with reference to the direction in which the apron travels, of means for conducting the tobacco into the space between the roller and said apron and belt, substantially as set forth.

545,806. TROLLEY-WIRE SUPPORT. JOHN W. MEAKER, Evanston, Ill. Filed Nov. 17, 1894. Serial No. 529,209. (No model.)



Claim.—1. The combination with a hanger having an inclined upper edge, of a clip having also an inclined upper edge, said clip being adapted to receive said hanger and to be wedged thereupon, substantially as described.

2. The combination with a hanger, of a clip movable longitudinally on the hanger and acting to bind a trolley wire directly against said hanger, substantially as described.

3. The combination with a hanger, of a clip which binds a trolley wire directly against said hanger, and is movable longitudinally to either increase or diminish the binding action of the wire against said hanger, substantially as described.

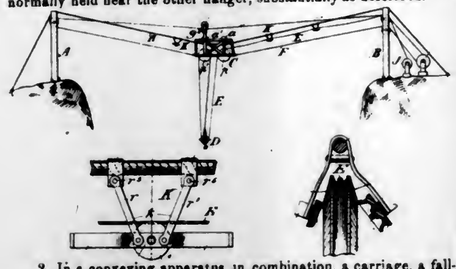
4. The combination with a hanger, of a clip adapted to be attached thereto for the purpose of gripping the trolley wire, said clip being movable longitudinally of the hanger in one direction or the other for the purpose of tightening or loosening the trolley wire, and means for locking the clip to the hanger when shifted thereupon to tighten the wire against said hanger, substantially as described.

5. The combination with a hanger, of a clip adapted to be attached thereto for the purpose of gripping the trolley wire, said clip being movable longitudinally of the hanger in one direction or the other for the purpose of tightening or loosening the trolley wire, and ears 15 carried by said clip, substantially as described.

6. The combination with a hanger having an inclined upper edge, of a clip having inclined flanges or hooks at its upper edges to engage the inclined edge of the hanger, said clip being movable longitudinally of the hanger, and acting to bind a trolley wire directly against the lower edge of the hanger, substantially as described.

545,807. CONVEYING APPARATUS. THOMAS S. MILLER, South Orange, N. J. Filed May 27, 1895. Serial No. 550,799. (No model.)

Claim.—1. In a conveying apparatus, in combination, a load carriage, a fall-rope-carrier, a support for said fall-rope-carrier, and deflecting mechanism whereby the hangers of said fall-rope-carrier are split apart as the carriage passes; said fall-rope-carrier consisting of hangers extending downward from said support on each side of the fall-rope and a fall-rope-rest connected with one of said hangers and normally held near the other hanger, substantially as described.



2. In a conveying apparatus, in combination, a carriage, a fall-rope-carrier, a support for said fall-rope-carrier, a fall-rope-sheave mounted upon said carriage, means mounted upon said carriage above said fall-rope-sheave whereby said carriage engages with said fall-rope-carrier-support, and deflecting mechanism whereby the hangers of said fall-rope-carrier are split apart as the carriage passes; said fall-rope-carrier consisting of hangers extending downward from said support on each side of the fall-rope below the top level of said fall-rope-sheave and a fall-rope-rest connected to one of said hangers and normally held near the other, substantially as described.

3. A fall-rope-carrier consisting of the hangers *k k'*, a loop whereby the same are adapted to be clamped to a supporting-rope, a roller *l* connected with one of said hangers and deflecting pieces *o* and *o'* connected with both of said hangers, substantially as described.

4. In a conveying apparatus, in combination, a load-carriage, a fall-rope-carrier, a support for said fall-rope-carrier, hangers for said fall-rope-carrier normally held toward each other by a spring tension, and deflecting mechanism whereby said hangers are split apart in antagonism to said spring tension as the carriage passes; said fall-rope-carrier being constructed of hangers extending downward from said support on each side of the fall-rope and a fall-rope-rest connected with one of said hangers, substantially as described.

5. In a conveying apparatus, the combination of a cable or track, a carriage depending therefrom, a fall-rope-sheave mounted thereon, two hangers suspended from a point above the level of the fall-rope-sheave extending downward on each side of the fall-rope, a fall-rope rest mounted upon one of said hangers below the level of the fall-rope and means whereby said hangers are split apart while the carriage passes, substantially as described.

6. In a conveying apparatus, in combination, the cable or track, a carriage depending therefrom, a fall-rope-sheave mounted thereon, two hangers suspended from a point above the level of the fall-rope-sheave and normally tending to approach each other, a fall-rope-rest mounted upon one of said hangers, and means whereby said hangers are deflected apart while the carriage passes, substantially as described.

545,808. BOX-STAYING MACHINE. JULIUS MOHR, Dresden, assignor to the Berliner Kunstdruck und Verlags-Anstalt, vormals A. & C. Kaufmann, Berlin, Germany. Filed Dec. 1, 1894. Serial No. 530,532. (No model.)

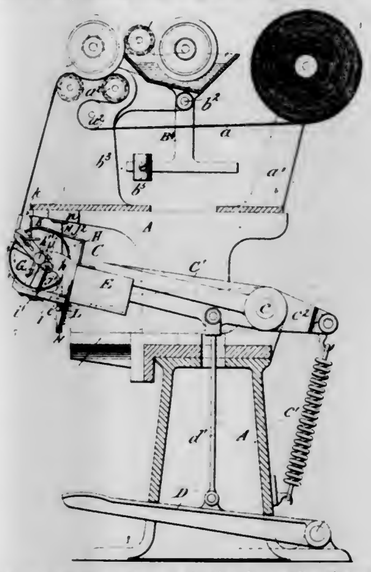
Claim.—1. In a box staying machine, a head, and a strip-feeding wheel journaled therein, in combination with a presser frame partially encircling the feeding roller and pivoted in the head, and means for yieldingly pressing the same against the feeding roller, substantially as set forth.

2. In a box-stay machine, a head, and a strip-feeding roller having a roughened periphery and journaled in the head, in combination with a presser frame partially encircling the feeding roller and pivoted in the head, and means for yieldingly holding the said frame against the feeding roller, substantially as set forth.

3. In a box-stay machine, a head and a strip-feeding roller having a roughened periphery and journaled in the head, in combination with a presser frame partially encircling the feeding roller and pivoted in the head, and means for yieldingly holding the said frame against the feeding roller, the inner surface of the presser frame being provided with a longitudinal rib or ribs, so as to come in contact with only a part of the strip to be fed, substantially as set forth.

4. In a box-stay machine, a paste-applying roller having a longitudinal paste-applying rib or ribs so as to apply the paste in a stripe or stripes on the stay strip, in combination with a strip-feeding roller and a presser frame partly encircling the feeding roller yieldingly bearing against the same and having a longitudinal rib or ribs arranged so as to bear only on the unpasted portions of the strip, substantially as set forth.

5. In a box-stay machine, a head and a strip-feeding roller journaled therein, in combination with a presser frame partially encircling the same and having inward-extending flanges to embrace the inner edges of the same, and means for yieldingly pressing the presser frame against the strip-feeding roller, substantially as set forth.



6. In a box-stay machine, a head and a roughened strip-feeding roller journaled therein, in combination with a presser frame partially encircling the same and having inwardly-extending flanges to embrace the inner edges of the same, and means for yieldingly pressing the presser frame against the strip-feeding roller, the inner surface of the presser frame being provided with a longitudinal ridge to bear only on a portion of the strip to be fed, substantially as set forth.

7. In a box-stay machine, a reciprocating head, a strip-feeding roller journaled therein and provided with a ratchet, in combination with a presser frame yieldingly held against the strip-feeding roller, a pawl lever carrying a pawl adapted to engage the ratchet, and a stop on the machine frame arranged in the path of the pawl lever, substantially as set forth.

8. In a box-stay machine, a reciprocating head, a pair of shear blades pivoted thereon, and means for normally and yieldingly holding the shear blades closed, a pair of cams arranged between the rear arms of the shear blades, swiveled on the head and provided with a lug or toe, in combination with a guide or cam rail mounted on the machine frame in the path of the lug or toe, substantially as set forth.

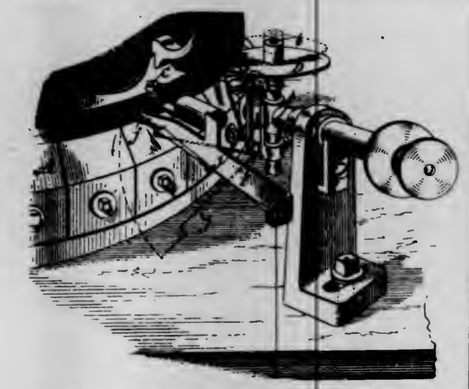
9. In a box-stay machine, the combination, of an anvil against which the corner of the box to be stayed is held, with a reciprocating head provided with the following parts: a strip-feeding roller journaled therein and a presser frame yieldingly bearing against the same, a ratchet connected to the same, and a pawl lever having a pawl engaging the ratchet, a plunger having guide ways for the stay strip, a cutting device, a cam device for actuating the cutting device, swiveled in the head and provided with a lug or toe, a stop or abutment on the machine frame, arranged in the path of the pawl lever, and a guide rail also on the machine frame arranged in the path of the toe on the cam device, all substantially as set forth.

545,809. KNITTING-MACHINE. CHARLES M. MUSGROVE and AUGUSTINE SMITH, Pittsfield, Mass.; said Smith assignor to said Musgrove. Filed July 23, 1894. Serial No. 518,295. (No model.)

Claim.—1. In a knitting machine, the rotary needle cylinder carrying hooked needles, the presser wheel mounted on a fixed vertical axis at one side of the needle cylinder and rotating with its edge in proximity to the beards of the needles, a spring actuated cam lever mounted on a support with its cam face in contact with the lower face of the presser wheel, said lever having an arm projecting therefrom, a wire trigger engaging said arm and resting on the yarn, whereby the breaking of the yarn effects the release of the pressure wheel elevating device, all combined substantially as described.

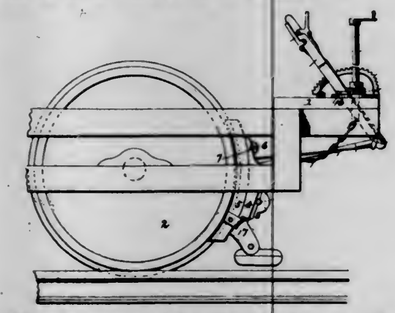
2. In a circular knitting machine, a carrier and bearded needles, a fixed vertical support near said carrier, the presser wheel on said support having its edge in proximity to the needles, a three-armed

lever supported on a pivot near said wheel, one of the arms being a cam and having a bearing against the under surface of the presser wheel, the second arm having a spring connected thereto and tending to rock the lever on its pivot, and the third arm in engagement with the trigger, said trigger bearing on the unbroken yarn and dropping on the breakage of the yarn, whereby the three-armed lever is swung and the presser wheel raised on its axis, all combined substantially as described.



3. In a knitting machine, the cylinder and needles, the vertically movable presser wheel, a cam mounted under said wheel and bearing thereon, a spring for actuating said cam to lift the presser wheel, and a detent acting normally to restrain the cam movement, said detent controlled by the unbroken yarn, all combined and relatively arranged substantially as described.

545,810. CAR-BRAKE. FRANK P. MINER, Beaver Falls, Pa. Filed Apr. 22, 1895. Serial No. 546,728. (No model.)



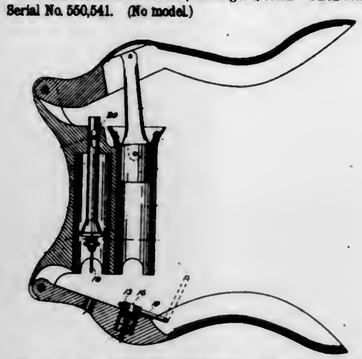
Claim.—1. In a brake mechanism, the combination with the brake bar, the clog or segment, the wheel brake shoe and mechanism for throwing the same into and out of contact with a car wheel, of the upwardly and downwardly movable brake arm having a pivoted brake shoe at its lower end and means for actuating the same independently of the wheel brake, substantially as described.

2. In a brake mechanism the combination with the brake-bar and the clog or segment recessed at the outer side, of the brake arms provided with rack teeth, the shoe pivoted to the lower end thereof, the transverse shaft provided with a pinion meshing with said rack arms and means for rotating said shaft; substantially as described.

3. In a brake mechanism, the combination with the brake-bar and the clog or segment having a recess in the outer side of the rack arm the shoe pivoted to the lower end thereof, the friction spring, the transverse shaft, the pinions at the ends thereof, the central rack pinion the lever journaled on said shaft and connected with a vertical operating lever, the double or reversible spring-actuated pawl, the bell cranks, the pivoted handle and connections; substantially as described.

4. In a brake mechanism, the combination with the brake-bar, the clog or segment, the brake shoe connected therewith, the inwardly extending lever secured to said bar, the arm to which said lever is fulcrumed and the rotatable rod connected therewith, of the upwardly and downwardly movable brake arms, the shoes pivoted to the lower ends thereof, and means for actuating said arms; substantially as described.

545,811. CARTRIDGE-LOADING IMPLEMENT. SOLOMON MCNEILL and OBADIAH H. DENISE, Burlington, Iowa. Filed May 24, 1895. Serial No. 550,541. (No model.)



Claim.—1. In a cartridge implement, the combination with the body part containing the decapping and loading chambers, the lever handles hinged thereto, the ram-rod hinged to one handle, and the capping device attached to the other handle, of the decapping device comprising the rod, the guide washer and the ejecting pin, the rod being movably attached to the body of the implement; and the capper guard movably attached to one handle of the implement in suitable proximity to the capping device, substantially as described.

2. In a cartridge implement of the character described, the combination with the capping devices attached to one handle of the implement, of the guard movably attached to said handle in suitable proximity to the decapping devices, substantially as described.

3. In an implement of the character described, the combination with the capping devices comprising a pin and a spring-actuated washer attached to one handle of the implement, of a capper guard hinged to said handle and adapted to surround the capping washer, substantially as described.

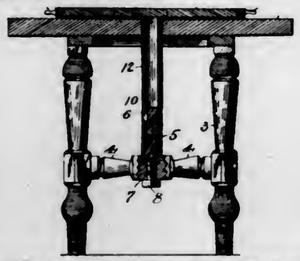
4. In a cartridge implement, the combination with the capping devices comprising the spring-actuated washer and the pin attached to one handle of the implement, of the guard comprising a wire ring having a lateral projection, and arms engaging apertures formed in the handle, said guard being adapted to surround the capping washer, substantially as described.

5. In a cartridge implement of the class described, the wad-guide adjustably inserted in the top of the loading chamber, and readily detachable therefrom, as and for the purpose set forth.

6. In a cartridge implement of the class described, the combination with the body of the implement, of the decapping device movably attached thereto and comprising the rod, the guide washer and the ejecting pin, substantially as described.

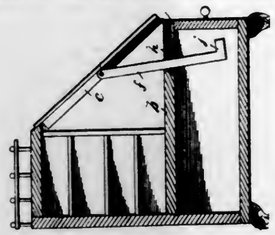
7. In a cartridge implement of the class described, the combination with the body of the implement having an aperture formed above the decapping chamber, of the decapping device comprising a rod, a guide-washer and an ejecting pin, the upper extremity of the rod being slotted and engaging the aperture formed above the chamber, and a pin passing through the slot in the rod and supporting the latter in operative relation with the body of the implement, substantially as described.

545,812. TABLE. VICTOR OAKES, Brule, Wis. Filed May 9, 1895. Serial No. 548,710. (No model.)



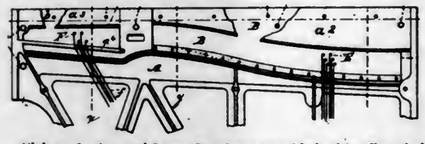
Claim.—The combination with a table having an aperture in its top, a stud secured to the leg braces and having a screw threaded portion and a rounded head, a sleeve having an interiorly screw threaded lower end which engages the threaded portion of the stud, the upper end of said sleeve being located in the aperture of the table top, of a supplementary top having a depending split tube which yieldingly engages the sleeve and the lower end of which is supported by the head of the stud, substantially as set forth.

545,813. LID-DESK. EDWARD F. POOLEY and FRANK D. POOLEY, Philadelphia, Pa. Filed Mar. 13, 1894. Serial No. 503,424. (No model.)



Claim.—In a desk, the combination of the desk top having side slots completely therethrough, a distance inwardly from its front edge, the desk lid hinged to the front edge of said top to swing as described, and the brace bars free and unsecured at their inner ends, and each at its outer end pivoted to the lid and extending over the lid and top with its inner end deflected to pass through a top slot, and at its inner extremity beneath the top provided with a lateral head arranged to bear up against the under side of the top when the lid is lowered and the intermediate portion of the bar bears down on the upper surface of the top between the slot and lid, and thereby supports the lid and equalizes the strain on the top, substantially as described.

545,814. PIANO-FRAME. GEORGE D. B. PRESCOTT and MELVIN A. NOWELL, Concord, N. H., assignors to the Prescott Piano Company, same place. Filed Feb. 13, 1895. Serial No. 538,226. (No model.)

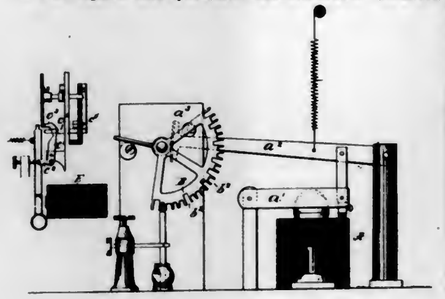


Claim.—1. A metal frame for pianos provided with offsets in its rear face, and openings in said offsets for the reception of the tuning pins, the rear face of one of said offsets being on a plane with the forward face of the other, substantially for the purpose set forth.

2. A metal frame for pianos provided with an opening for the tuning pins, of the treble strings the metal above said opening being set forward as shown, and an opening for the tuning pins of the bass strings, the metal above said opening for the bass strings being set forward sufficiently to cause its rear face to be on a plane with the forward face of that metal above the opening for the tuning pins of the treble strings, all substantially for the purpose set forth.

3. A metal frame for pianos having openings, one for all the tuning pins of the treble strings, and one for all those of the bass strings, and having the metal above said openings set forward sufficiently to cause the rear face of that above the openings for the bass strings to be on a plane with the forward face of that metal above the opening for the treble strings whereby the veneers of the pin block may extend their full thickness, back of the metal above said openings to the top of said frame.

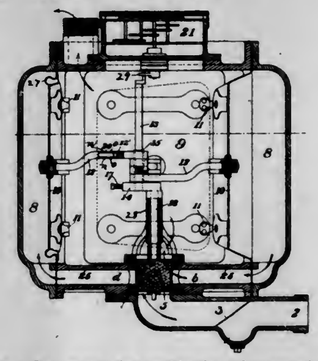
545,815. ELECTRIC SIGNALING APPARATUS. BENJAMIN PRICE, Baltimore, Md., assignor to the Electric Selector and Signal Company, of West Virginia. Filed Apr. 24, 1894. Serial No. 508,807. (No model.)



Claim.—1. In an electric signaling apparatus a wheel or sector having a normal progressive forward movement, and provided with a mechanical arrangement of solid keys representing a fixed combination of electrical impulses, in combination with the armature lever of an electro magnet, arranged to arrest and release the sector, and having a single finger provided with a roughened device to co-operate with the solid key-bars, and thereby arrest its movement by frictional pressure.

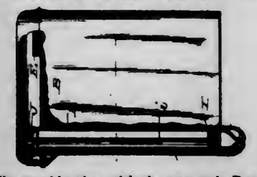
2. In an electric signaling apparatus, a wheel or sector, having a normal forward progressive movement, and provided with a mechanical arrangement of solid keys, formed in the shape of an inclined plane with a shoulder at the end of the plane, in combination with the armature lever of an electro magnet provided with a single finger to co-operate with the inclined plane and shoulder of the key-bars and thereby secure a fixed starting and stopping place with each movement of the finger.

545,816. GAS-METER. OLIVER C. PUDAN, Pittsburg, Pa., assignor to the Chaplin Fulton Manufacturing Company, same place. Filed Dec 5, 1892. Serial No. 454,045. (No model.)



Claim.—In a meter, the combination of a central discharging chamber and a series of outer gas receiving and measuring chambers, each having a movable partition separating it from the central chamber, an outlet port connected with the central chamber, and an inlet port, and a valve operated by said partitions and adapted to connect the inlet port successively with the several outer chambers for the inlet of gas to the latter, and the several outer chambers successively with the central chamber, for the passage of gas therethrough to the outlet port; substantially as described.

545,817. SYRINGE. JOSEPH L. PUTNAM, Brownsville, Tex. Filed July 26, 1894. Serial No. 518,682. (No model.)

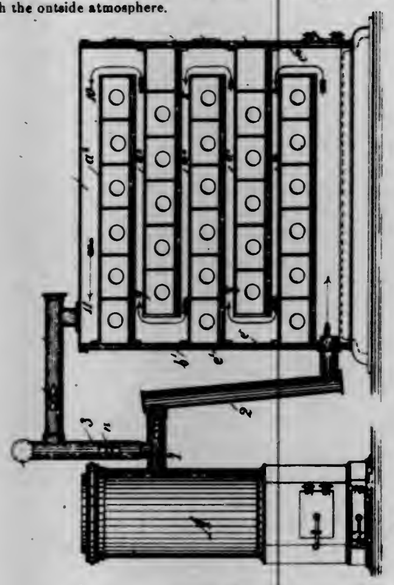


Claim.—The combination with the reservoir B having a filling opening in one end and a cap E closing the said opening, of a barrel C formed at one side of the reservoir and having an opening D adjacent to its upper or inner end, a cap J closing the barrel, a discharge nozzle for the barrel, a piston working in the barrel, a stem secured to said piston and projecting through the cap J, a protecting cap or cover A for the projecting stem, and the cap F, the whole forming a seat compact device adapted to be carried in the pocket, as specified.

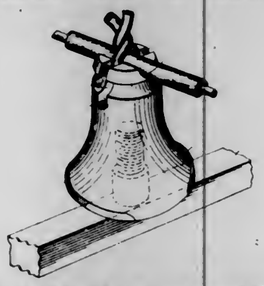
545,818. DRYING APPARATUS FOR SHOES. ALFRED RODDE, Lubeck, Germany. Filed Oct. 5, 1894. Serial No. 525,044. (No model.) Patented in Germany July 12, 1894, No. 79,153; in Belgium July 17, 1894, No. 111,026; in Luxemburg July 17, 1894, No. 2,072; in Sweden July 18, 1894, No. 5,771; in Norway July 19, 1894, No. 3,783; in Hungary Aug. 4, 1894, No. 870; in Portugal Aug. 4, 1894, No. 1,923; in Spain Aug. 28, 1894, No. 16,064; in Austria Sept. 19, 1894, No. 44/4,947; in France Sept. 19, 1894, No. 241,494; in England Sept. 24, 1894, No. 18,125; in Italy Sept. 30, 1894, No. 37,255, and in Canada Dec. 4, 1894, No. 48,319.

Claim.—A drying apparatus for shoes, comprising a casing B having drying chambers alternately arranged therein in relation to one

another, whereby the products of combustion will pass entirely around said drying chambers, means for supplying heat at the lower end of the casing to said drying chambers, doors g, g^2 and g^3, in the front wall of said casing, whereby said casing may be cleaned: doors d, d, for each drying chamber, a passage C in the rear of the drying chambers, openings 12, 13, 14, 15 and 16, in the rear of said drying chambers connected with said passage, and a pipe p connecting said passage C with the outside atmosphere.



545,819. ELECTRIC INSULATOR. DANIEL M. ROTHENBERGER, Lancaster, Pa., assignor of two-thirds to Charles A. Inglis and Edward D. Reilly, same place. Filed Mar. 8, 1895. Serial No. 540,991. (No model.)



Claim.—1. An insulator having a transverse opening, vertical or longitudinal side grooves or slots communicating with the said opening and forming a transverse web or ligament of a width approximately the same as the diameter of main wire, whereby the tie wire will have a side and top hold upon the main wire to prevent it from slipping, substantially as described.

2. An insulator having a groove in its end for the main wire, a transverse groove below the said end groove at right angles thereto, vertical or longitudinal slots or grooves communicating with the said transverse opening and forming a web extending longitudinal the main wire, whereby a tie wire may be passed around the said ligament and securely hold the main wire between its twisted ends, substantially as shown.

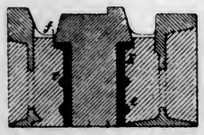
3. An insulator having a curved circumferential groove for the main wire, a transverse opening beneath the said groove, and vertical or side openings communicating with the said curved grooves, the parts adapted for the purpose shown and described.

4. An insulator having a groove in its end, an opening extending at right angles to the groove and beneath the same, vertical or longitudinal grooves or slots communicating with the said transverse opening, and a circumferential curved groove beneath the said end groove and above the said transverse opening, the same adapted for alternate use, substantially as shown and described.

5. A bell shaped insulator having at opposite sides circumferential lips F at its base for the purpose described.

6. A bell shaped insulator having at its lower edge and at opposite side thereof circumferential lips F for the purpose described, and a groove E in its end extending in a line between the ends of the said lips, whereby it is adapted to operate as described.

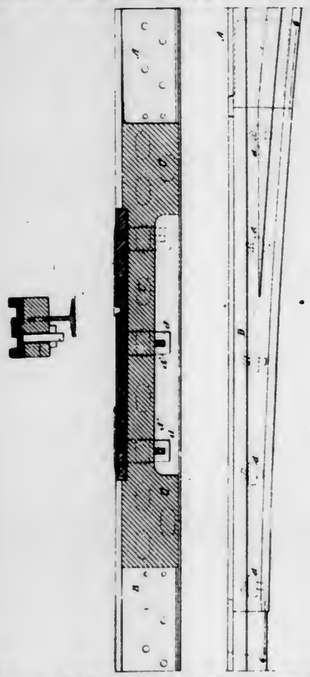
545,820. RAILWAY-SWITCH. EDWARD SAMUEL and VICTOR ANGERER, Philadelphia, Pa., assignors to the William Wharton, Jr., & Company, Incorporated, same place. Filed Apr. 18, 1894. Serial No. 508,035. (No model.)



Claim.—1. The combination of the switch structure, a pivot opening therein, a switch tongue wider at the base than at the top and having a pivot pin depending therefrom and adapted to snugly fit the opening in the switch structure and held in position simply by the weight of the tongue and by the snug fit of the pin, substantially as described.

2. The combination of the switch structure, an opening therein, a switch tongue having a pin, the opening in the switch structure being larger than the pin, with metal cast in the opening and around the tongue, said cast metal being locked to the switch structure so that the pin will turn within the cast metal bushing, substantially as described.

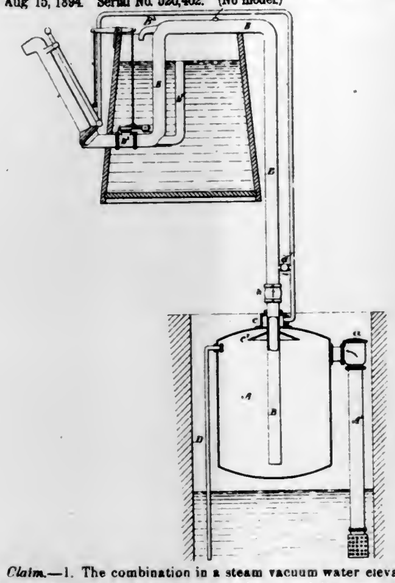
545,821. TRACK STRUCTURE. EDWARD SAMUEL, Philadelphia, Pa., assignor to the William Wharton, Jr., & Company, Incorporated, same place. Filed Nov. 3, 1894. Serial No. 527,809. (No model.)



Claim—1. A frog or other rail structure composed of two or more rails permanently secured together by a cast metal section forming a recess at the center or crossing point, with a hard metal plate secured to the cast metal section of the structure, the upper face of said plate forming a continuation of the rail sections, substantially as described.

2. The combination in a frog or other rail structure, of two or more rails permanently secured together by a cast metal section forming a recess at the center or crossing point, holes therein, with a hard metal plate adapted to the recess and having depending lugs passing through the holes in the cast metal section and securing devices adapted to the lugs, substantially as described.

545,822. STEAM-VACUUM WATER-ELEVATOR. PAUL SATTELKAU, Brooklyn, and HERMAN R. WINKELMANN, New York, N. Y., assignors to the Automatic Water Tank Company, Jersey City, N. J. Filed Aug. 15, 1894. Serial No. 520,402. (No model.)

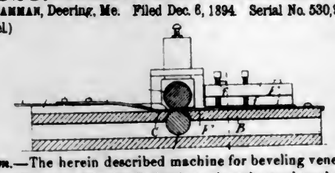


Claim.—1. The combination in a steam vacuum water elevator, of the vacuum tank having an air vent, the water inlet passage, the discharge pipe, the steam pipe, spray water reservoir, an overflow pipe for the vacuum tank, whereby the water in the tank is kept at a proper level, leaving an air space for the steam to expand, substantially as described.

2. The combination in a vacuum tank, of the outlet pipe opening into the tank near the bottom, a steam pipe connected to the tank near the top, a check valve in the discharge pipe, a valved passage communicating with the discharge pipe and a steam pipe and an air vent in the discharge pipe, said vacuum tank having an overflow opening, substantially as described.

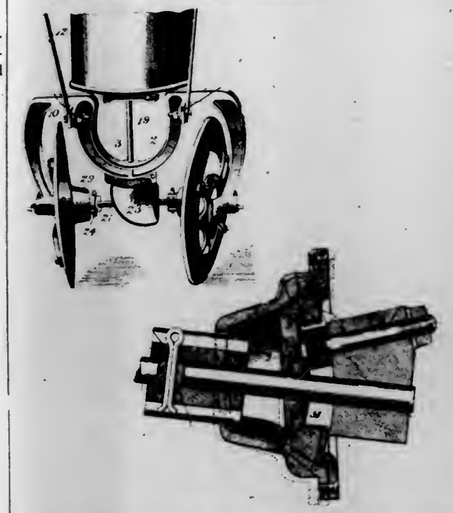
3. The combination in a vacuum water elevator, of the vacuum tank, inlet pipe therefor, an overflow pipe, discharge pipe extending from the vacuum tank and terminating in a goose neck and having a nozzle, an air vent for said discharge pipe, a storage reservoir into which the nozzle discharges thus allowing a portion of the discharged water to flow into the reservoir, a steam pipe coupled to the vacuum tank, a passage forming a communication between the discharge pipe and steam pipe, a valve in said passage, substantially as described.

545,823. MACHINE FOR BEVELING VENEER STRIPS. CHARLES F. SCAMMAN, Deering, Me. Filed Dec. 6, 1894. Serial No. 530,989. (No model.)



Claim.—The herein described machine for beveling veneer strips consisting of a pair of feed rolls having a length equal to the unbeveled portion of the veneer strip, a bed in which said rolls are journaled having raised flanges or guides extending along the sides thereof, the flanges in the rear of said feed rolls being recessed and overhanging said bed, a pair of flat springs in front of said feed rolls, the rear ends of which are adapted to press down on said veneer strip in front of said rolls, the front end of each of said springs having an offset resting on said flange and being secured thereto by screws, a bifurcated wedge between said spring and said flange for adjusting said spring vertically, a pair of knives held in position in rear of said feed rolls by set screws in said flanges, the sides of said bed in rear of said rolls being beveled to give the proper inclination to said knives and a pair of wedges beneath said knives to adjust the same vertically.

545,824. PLANTER. JAMES D. SCHOFIELD, Dallas, Tex. Filed May 25, 1895. Serial No. 550,629. (No model.)



Claim.—1. The combination with a main-frame, of a transverse axle journaled therein, of disks arranged on the axle and adapted to move therewith, and means for adjusting said disks at an angle to each other and to the axle and independent of said axle, substantially as specified.

2. The combination with the main-frame of a planter, a transverse axle journaled therein, means for conveying motion from the axle to the agitating mechanism of the planter, of furrow-covering disks arranged on the axle and adapted to move therewith, and means for adjusting said disks at an angle to each other and to the axle, substantially as specified.

3. The combination with the U-shaped main-frame of a planter, of hub-supporting disks secured for lateral adjustment to the ends of the frame, disks having hubs rotatably mounted on the hub-supporting disks, and means for conveying motion from said disks to the seed-dropping mechanism, substantially as specified.

4. The combination with the main-frame of a planter, an axle journaled therein and means for conveying motion from the axle to the agitating-mechanism, of a pair of opposite combined planter-supporting and furrow covering disks mounted upon the axle so as to move therewith and means for adjusting them laterally at an angle to the axle, substantially as specified.

5. The combination with the main frame of a planter, the same comprising a pair of depending bearing-standards, an axle journaled for rotation therein, a pair of hub-disks arranged on the axle slotted to receive the axle, and means for adjusting them at angles to the axle and upon the standards, of a pair of hollow hubs adapted for rotation and mounted upon and loosely connected with the hub-disks and positively and movably connected with the axle, covering and supporting-disks arranged on the hubs so as to move therewith, and means for conveying motion from the axle to the agitating-mechanism substantially as specified.

6. The combination with the main-frame of a planter, the same consisting of the central U-shaped portion 2 and the outwardly disposed and depending standards 4 having the bearings 5, the angularly disposed openings 6, concaved faces and grooves 40, of the transverse axle 21 arranged in the bearings 5, the seed driving-shaft 19 journaled vertically in an opening 3 formed in the yoke-portion 2, the intermeshing gears 20 and 22 arranged on the shaft and axle respectively, the gear-box 7 covering the same and depending from the yoke-portion and having the removable cover 23, the sleeves 24 having the ribs 25, pins 26 passing through the sleeves and axle, the hollow conical hubs 29 having at their inner ends the openings 33 for receiving the sleeves and the notches 34 for receiving the ribs thereof, and having at their outer sides the inclined bearing-surfaces 30, radial spoke-arms 31 and perforated ears 32, the disk-rims 34 bolted to the arms, the conical hub-disks 36 having the external inclined bearings 37 and the radial slots 38 provided at their edges with the superficial ribs 39 engaging the grooves 40 of the standards, the retaining-rings 46 having the inwardly disposed bearing-flanges 50, and perforated ears 48, the screws 49 connecting the same with the ears 32, the bolts 41 arranged in the openings 6 and having the squared-portions within the slots 38 and beyond the same having the T-heads 45 engaging the

edges of the slots, the nuts 43 on the outer ends of the bolts and the interposed washers 42, substantially as specified.

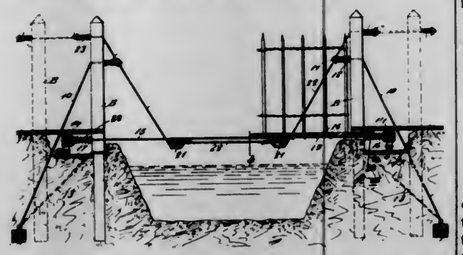
7. The combination with the main-frame of a planter, having depending standards and opposite aligning bearings, of a transverse rotatable axle-ribs arranged around the same, loose hubs engaging the ribs, disks supported loosely upon the axle and having their hub-portions loosely engaging the ribs, means for adjusting the disks at angles to themselves and axle, and means for conveying motion from the axle to the agitating-mechanism, substantially as specified.

8. The combination with a planter-frame comprising depending standards having bearings, an axle arranged loosely in the bearings and means for conveying motion from the same to the agitating-mechanism of the planter, of sleeves mounted rigidly on the axle and provided with ribs, hubs loosely engaging the ribs and capable of oscillation, means for adjusting the hubs at angles to the sleeves and disks carried by the hubs, substantially as specified.

9. The combination with the main-frame of a planter having depending standards provided with openings, an axle journaled in the openings, means for conveying motion from the axle to the agitating-mechanism, and ribbed-sleeves arranged on the axle, of hollow conical hubs loosely engaging the sleeves and ribs and provided at their outer sides with annular bearing-surfaces, disks carried by the hubs, slotted hub-disks arranged at the outer faces of the hubs and slidably mounted at the inner sides of the standards, means for adjusting the hub-disks at angles to the axle and for retaining them within the hubs, substantially as specified.

10. The combination with the main-frame of a planter, having depending standards provided with openings, an axle journaled in the openings, means for conveying motion from the axle to the agitating-mechanism, and ribbed-sleeves arranged on the axle, of hollow conical hubs loosely engaging the sleeves and ribs and provided at their outer sides with annular bearing-surfaces, disks carried by the hubs, slotted hub-disks arranged in the hubs and having surfaces for their bearings, bolts passed through the standards and slots of the hub-disks, nuts for the ends of the bolts, heads at the inner ends of the bolts and means for loosely and slidably connecting the bolts to the slots of the hub-disks, substantially as specified.

545,825. SUSPENSION-BRIDGE. ARTHUR SHERRY, Fayette, Miss. Filed Dec. 22, 1894. Serial No. 532,673. (No model.)



Claim.—1. In bridge construction, an anchoring device buried beneath the surface of the ground, piers or standards, and cables connecting the anchoring device with the piers or standards, the said cables being spring-controlled, whereby they are free to expand or contract without affecting the parts to which they are attached, as and for the purpose set forth.

2. In bridge construction, the combination, with anchoring devices buried beneath the surface of the ground, of piers or standards adapted as supports for a span of the bridge, cables connecting the anchoring devices with the said piers or standards, the said cables being passed through the piers, having stops at their upper outer ends, and springs interposed between the stops and piers, as and for the purpose set forth.

3 In the construction of bridges, a span having spring-controlled end movement, as and for the purpose set forth.

4. In the construction of bridges, a flooring having end movement springs controlling the end movement of said flooring, and a suspension support over which the flooring extends, as and for the purpose specified.

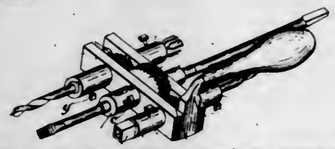
5 In the construction of bridges, the combination, with the piers, and a truss support connected with the piers and having spring cushions, of a flooring comprising end bars having wheels engaging with a support, cables connecting the said piers and carrying the flooring, and springs having bearing at their inner ends against fixed supports and at their outer ends against the end beams of the said flooring, substantially as shown and described, whereby the entire structure will adjust itself to the conditions of the weather, as and for the purpose specified.

545,826. LADLE FOR DIPPING GLASS. FRANK SHUMAN, Philadelphia, Pa. Filed May 3, 1894. Serial No. 509,889. (No model.)



Claim.—The combination in a ladle for pouring glass, of the perforated bowl, a handle secured thereto, a lining and an outer shell, said lining and shell being formed on the bowl by electro plating with a metal to which glass will not adhere, said metal passing through perforations in the bowl thus binding the shell and lining to the bowl, substantially as described.

545,827. SCREWING AND BORING HAND-TOOL. LOUDON SILCOTT, Mount Vernon, Ohio. Filed Dec. 22, 1894. Serial No. 532,669. (No model.)



Claim.—1. The combination in a reversible screwing and boring hand tool, the U shaped frame, the projection, for carrying a handle, formed in the same piece with the frame and extending therefrom at an angle on the same vertical plane of the opening of the frame, the spindles having a set of gears, and projecting beyond each side of the said frame to receive a suitable screwing or boring implement upon each end, as set forth.

2. In a reversible screwing and boring hand tool, the tool frame having parallel sides, the back piece C, and the projection E, all formed in one piece, the said projection extending out from the back at an angle in a vertical plane with the opening between the said sides, in combination with the spindles, having tool sockets at both ends, and gear wheels secured upon all of the spindles between the sides of the frame, substantially as shown and described and for the purpose set forth.

545,828. HORSE-DETACHER. WILLIAM H. SHOOT, Pleasant Home, Ky., assignor of one-half to Nancy Stonestreet, same place. Filed June 12, 1895. Serial No. 552,561. (No model.)



Claim.—In a horse-detacher, the combination with a whiffletree, of a horizontally-disposed hook pivotally mounted on the whiffletree, and projecting outward therefrom, and provided at its onter extremity with a rearwardly disposed portion for the reception of the trace, the shank of the hook being tapered and extending along the whiffletree, a sleeve sliding on the whiffletree and having its outer portion enlarged to receive the tapered shank of the hook, and provided at its side with an eye, a longitudinally disposed guide-rod mounted on the whiffletree and receiving the eye of the sliding sleeve, a spiral spring disposed on the guide-rod and engaging the eye of the sleeve and holding the latter in its engagement with the hook, and means for sliding the sleeve inward against the action of the spring to release the hook, substantially as described.

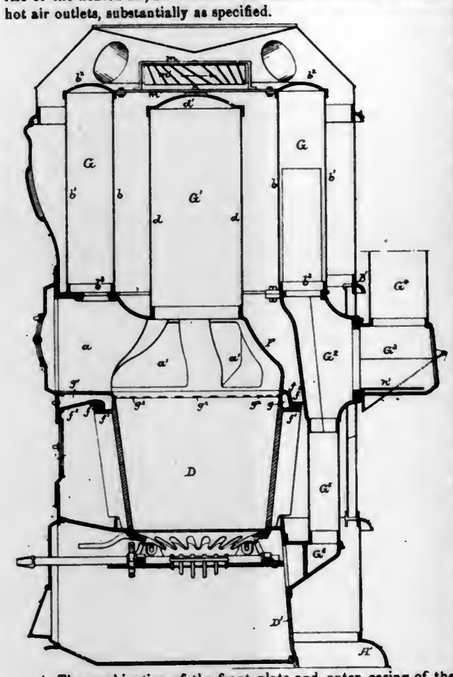
545,829. AIR-HEATING FURNACE. WALTER S. STEVENSON, CLARENCE V. ROBERTS, and JOHN K. MCLAUGHLIN, Philadelphia, Pa., assignors to the Thomas Roberts Stevenson Company, same place. Filed Feb. 21, 1895. Serial No. 539,253. (No model.)

Claim.—1. The combination in a heating furnace, of the dampered air inlet at the front of the casing, with the fire pot and the crab surmounting the same, and having their meeting portions constructed so as to form an air chamber, surrounding the upper portion of the fire pot and discharging into the same, a portion of the crab extending to the dampered air inlet, substantially as specified.

2. A heating furnace having a crab section with central drum, an annular drum surrounding the same and lateral discharge necks for the escape of the products of combustion, and a water pipe coiled in the central drum, the supply pipe therefor passing through one of said discharge necks, substantially as specified.

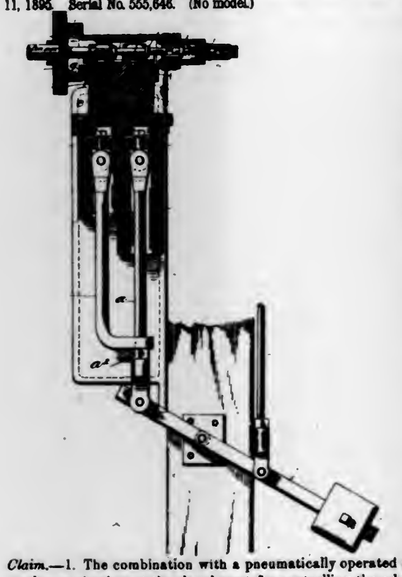
3. The combination of the internal combustion chamber casing and the outer hot air casing of a heating furnace, said outer casing having lateral hot air discharge openings, with a rotary fan located

in the upper portion of the hot air chamber between the combustion chamber casing and the hot air casing, whereby it is rotated by the rise of the heated air, and directs said heated air toward the lateral hot air outlets, substantially as specified.



4 The combination of the front plate and outer casing of the furnace, with the fire pot, the crab mounted thereon, and the feed door frame carried by said crab and free to move independently of the front plate, substantially as specified.

545,830. PNEUMATIC APPARATUS FOR HANDLING RAILWAY-SWITCHES. JOHN W. THOMAS, Jr., Nashville, Tenn. Filed July 11, 1895. Serial No. 555,646. (No model.)



Claim.—1. The combination with a pneumatically operated signal, a valve mechanism at the signal mast for controlling the admission and exhaust of the air by which said signal is worked, and an equalizing piston controlling said valve mechanism, of a controlling pipe connected at one end to the chest or cylinder in which said equalizing piston works, a signal valve at the tower or operator's cabin controlling air supply exhaust and reducing ports, the air supply port being connected to the controlling pipes, a reducing reservoir connected to the reducing port, and an operating lever for the signal valve under the arrangement and for joint operation, substantially as hereinbefore set forth.

2. In combination with the operating lever and its tappet; the two connected indicator pins; the indicator cylinder and piston for one of said pins; a spring or its equivalent for moving the pins in a direction opposed to that in which they are moved by the piston; valve mechanism for admitting air to and exhausting it from the indicator cylinder; an equalizing piston and cylinder and chest for controlling said valve mechanism; indicator valve mechanism at the signal mast comprising a slide valve operated by the signal or some part moving therewith, and air supply exhaust and reducing ports controlled by said valve; a controlling pipe leading from said air supply port to the head of the cylinder or chest of the equalizing piston, and a reducing reservoir connected to said reducing port, substantially as and for the purposes hereinbefore set forth.

3. In combination with the signal and its pneumatically actuated appliances for operating the same, and the indicator valve at the signal mast normally disconnected from said appliances, of means whereby the valve is connected to and caused to move by the said signal operating appliances during the first portion of their movement in either direction, and is free from further connection with said appliances during the remainder of their movement, substantially as hereinbefore set forth.

4. The indicator valve and its stem, in combination with the signal operating rod 50, the pin 53, and the crocodile jaw lever 52, substantially as and for the purposes hereinbefore set forth.

5. In a three position signal operating mechanism, the combination with the signal operating lever, its tappet, and indicator mechanism, and the pressure regulating valve controlled thereby of a projection or shoulder on the stem of the valve or some part moving in unison therewith, a notch or recess 9 below said shoulder, a spring retracted dog carried by the lever, and means also carried by said lever whereby the dog can at will be projected into engagement either with the said shoulder above or the notch 9 below, according to the position of the valve stem and the lever, substantially as and for the purposes hereinbefore set forth.

6. The combination with the operating lever, its tappet and the pressure regulating valve controlled thereby, of means substantially as described whereby said lever after having once been started from either one of its extreme positions and before it reaches its middle position is restrained from returning to its original or first position until after it has completed its full stroke in the direction in which it was started, substantially as hereinbefore set forth.

7. The combination with the valve mechanism for admitting air to and exhausting it from the working cylinders, the equalizing piston for controlling the same, and the primary valve mechanism, of an intermediate or relay valve mechanism, a controlling pipe leading therefrom to the equalizing piston at the working point, an equalizing piston for the relay valve, and a controlling pipe for said last named piston leading from the primary valve mechanism, under the arrangement and for operation, substantially as hereinbefore set forth.

8. The combination with the operating lever of the spring pressed reversible double pawl carried by and pivoted to the lever, the double ratchet on the supporting frame or table, and means substantially as described for reversing the pawl at the completion of the stroke of the lever in either direction.

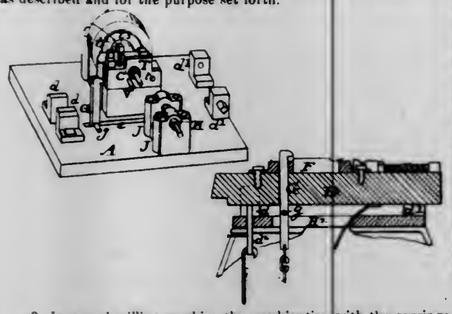
9. The combination with the operating lever of the double ratchet fixed to the supporting table or frame, the double reversible pawl pivoted to and carried by the lever, a pin pivoted at one end to the shank of the double pawl and at the other end entering a bearing block swiveled to the lever, a spring confined between the bearing block and the head of the pin, and a stop pin at each end of the double ratchet to engage and reverse the pawl at the end of the stroke of the lever in either direction, substantially as hereinbefore set forth.

545,831. ORGAN-REED-MILLING MACHINE. HENRY B TIBBITTS, Geneva, Ohio, assignor, by direct and mesne assignments, to Charles N. Rand, same place, and Emery Galen Wetherbee, Painesville, Ohio. Filed Dec. 19, 1894. Serial No. 532,379. (No model.)

Claim.—1. In a reed milling machine the combination with the spindle, spindle bearing and cutter head C^3 of the adjustable plate T, provided with pin V, mounted on the side of the bearing post on a screw f, and the screws f^2 and f^3 in the top flange of said plate, adapted for adjustment as a guide for the reed carriage relative to the cutting tool, as described.

2. In a reed milling machine the combination with spindle C cutter C^3 and the adjusting plate T having guide pin V and mounted on the post and bearing B, of the reed carriage, having the off-set D^2

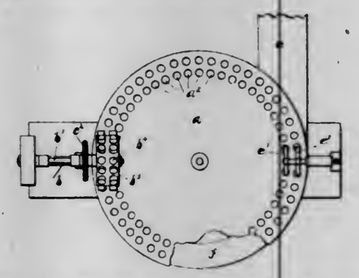
and the guide strip W, bearing against said guide pin V, the reed holder E mounted on said carriage, and slotted at *e*, the reed bed F held in said slot *e*, the rack bar I on side of the carriage and means for moving the carriage forward under said cutting tool, substantially as described and for the purpose set forth.



3. In a reed milling machine the combination with the carriage D mounted to ride on the lugs *d*, *d*, *d*', *d*', and having the off-set D^3 of the clamp hook G fixed in the vertical hole in the carriage D and holder E, the strap *h* having one end attached to said hook bar G, and the other end attached to the under side of the carriage, said strap depending through slot H^3 in the table, and carrying the weight H, adapted for clamping the hook upon the reed, and for drawing the carriage back for quick return, substantially as described.

4. In a reed milling machine, the combination with the table of the treadle O, fulcrumed to rear cross-rod P, the spring Q attached to under side of treadle and resting on front cross-rod P^2, the rod R connecting the treadle with the sliding plate d^2, the spring D^3 supporting said sliding plate, the reed carriage D, hook bar G held in a hole in said carriage, strap *h* having one end attached to the carriage, and the other end attached to the lower end of hook bar G, the weight H supported on said strap, the arrangement of the parts being such that when the treadle O is depressed, the carriage is released by the pulling down of the plate d^2, and the weight quickly draws the carriage backward for return of same substantially as described.

545,832. MACHINE FOR COMPRESSING AND MOLDING POP-CORN. WEBB W. TURNBULL, Bellefontaine, assignor of one-half to C. F. Cost, Springfield, Ohio. Filed June 6, 1894. Serial No. 513,712. (No model.)



Claim.—1. A revolving table having a series of perforations, a compressing wheel having projections to enter said perforations, a support adapted to form a bottom for the said perforations during a portion of the revolution of said table, and an opposing support on the opposite side of said table from said compressing wheel, and means for revolving said compressing wheel to cause said perforations to come respectively opposite to the projections thereon, substantially as, and for the purpose specified.

2. A revolving table having a series of perforations extending entirely through the same, a compressing wheel having a series of projections to correspond to said perforations, a supporting wheel arranged opposite said compressing wheel, means for revolving said compressing wheel, a stationary support at one side of said table adapted to form a bottom for said perforations while the same are passing over said support, and a star wheel having projections to enter said perforations at a point removed from said compressing wheel substantially as specified.

3. A revolving table having perforations extending through the same, a stationary support to close the bottom of said perforations, a compressing wheel having projections to enter said perforations, and a supporting wheel arranged on the opposite side of said table to said compressing wheel, means for driving said compressing and supporting wheels, substantially as and for the purpose specified.

4. A revolving table, perforations in said table, a stationary support, a compressing wheel having projections to enter said perforations, a supporting wheel arranged opposite to said compressing wheel, an endless carrier extending under said table, and a star wheel arranged above said table having projections to enter said perforations above said carrier, all arranged substantially as and for the purpose specified.

5. The combination with a revolving table having perforations, a stationary support, a compressing wheel having removable projections adapted to enter said perforations, and a supporting wheel also having removable projections in its periphery, substantially as specified.

545,833. BOND FOR ELECTRIC RAILWAYS. ELONZO S. WHEELER, Saugatuck, Conn., assignor of one-half to Clarence L. Wheeler, Marion, Ind. Filed Jan. 14, 1895. Serial No. 534,853. (No model.)

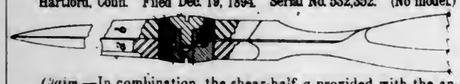


Claim.—1. A bond for electric railways, provided with inwardly extending projections taking into holes formed in the rail-ends which are thus made electrically continuous, in combination with a chair-joint consisting of a chair provided with a flange, between which and the rail-ends the bond is located, and also provided with a draw-bar engaging with the opposite faces of the webs of the rail-ends, substantially as described.

2. A bond for electric railways, provided with inwardly extending projections taking into holes formed in the rail-ends which are thus made electrically continuous, in combination with a chair-joint consisting of a chair provided with a flange which is recessed to receive the bond which is located between the flange and the rail-ends, and the said chair-joint also consisting of a draw-bar adapted to be inserted into the chair and engaging with the opposite faces of the webs of the rail-ends, substantially as described.

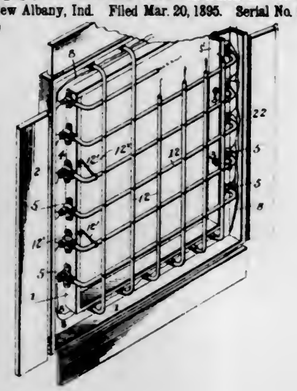
3. A bond for electric railways, provided with inwardly extending projections taking into holes formed in the rail-ends which are thus made electrically continuous, and bowed between its ends to adapt it to expand and contract to compensate for the expansion and contraction of the rails, in combination with a chair-joint consisting of a chair provided with a flange, and of a draw-bar adapted to be inserted into the chair the flange of which is recessed to receive the bond and the bowed portion thereof, while the flange and draw-bar combine to cover and protect the bond, substantially as described.

545,834. BALL-BEARING SHEARS. LEROY A. WILLIAMSON, Hartford, Conn. Filed Dec. 19, 1894. Serial No. 532,352. (No model.)



Claim.—In combination, the shear-half *a* provided with the annular ball-seat *g* and the pivot-boss *d*, the shear-half *b* provided with the annular ball-seats *h i*, the screw *e* provided with an annular ball-seat on the inner side of the head, and the two series of balls, all substantially as described and for the purposes set forth.

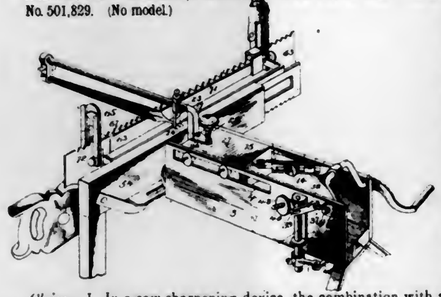
545,835. ELECTRICAL BURGLAR-ALARM. JOHN R. ALEXANDER, New Albany, Ind. Filed Mar. 20, 1895. Serial No. 542,562. (No model.)



Claim.—1. In an electric burglar alarm, the combination with a frame, of circuit wires carried thereby, a grating comprising tubes detachably connected with the frame, sockets carried by the frame, wires within the grating tubes, wires contained within the said sockets, contact pins and plungers carried at opposite ends of the wires in the grating tubes, and contacts carried by the wires in the sockets and normally out of contact with each other, said latter wires being in contact with the circuit wires at their outer ends, all adapted for operation as desired.

2. In an electric burglar alarm, the combination with a frame, of circuit wires carried thereby, a grating comprising tubes detachably connected with the frame, sockets carried by the frame, wires within the grating tubes, wires within the sockets, contact pins and plungers carried at opposite ends of the wires in the grating tubes, and contacts carried by the wires in the sockets and normally out of contact with each other, said latter wires being in contact with the circuit wires at their other ends, and doors or leaves hinged to the frame, and adapted to close over the circuit wires and sockets when the grating is removed, all as specified.

545,836. SAW-SHARPENING MACHINE. MATTHEW A. ANDREWS, Northborough, Iowa, assignor of one-half to W. H. Bullock, W. R. Andrews, and F. H. Andrews, Tarkio, Mo. Filed Feb. 28, 1894. Serial No. 501,829. (No model.)



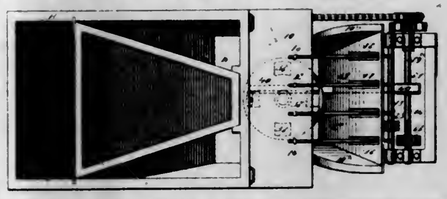
Claim.—1. In a saw sharpening device, the combination with a main frame, having a suitable base and side pieces, said side pieces being provided with elongated slots therein, a block mounted to reciprocate between said side pieces, and having pins moving in said slots, a file holder mounted in the forward part of said block, the same consisting of a bar having a vertical portion extending downwardly through a guide piece on the front face of said block, a lateral arm having an antifriction roller extending transversely from the lower end of said bar, a duplex rail mounted on the base of said frame, the lower rail having an inclined surface at its end and the upper rail secured to its rear end, and having a notch at an intermediate point and means for reciprocating said sliding block, whereby the file carrier is moved backward and forward and upward and downward at each end of a stroke, substantially as and for the purpose described.

2. In a saw sharpening device, the combination with a main frame consisting of a base and two side pieces, having elongated slots therein, a block mounted to reciprocate between said side pieces, a file holder connected to said reciprocating block, means for giving said file holder an upward and downward movement at each end of a stroke, a crank shaft mounted in said side pieces and connected to the rear end of said reciprocating block, a saw clamping frame connected to said main frame, a rack bar to which said saw clamping frame is attached, a pawl adapted to engage said rack bar for imparting a step by step movement to said frame, intermediate mechanism between said pawl and said crank shaft, a vertically disposed rock shaft mounted on one of said side pieces actuated by means of an eccentric on the outer end of said crank shaft, the said rock shaft having a rearwardly extending bar connected by means of a link to a lever pivoted on the under side of said main frame, said lever having bifurcated ends which surround a projection on the end of said pawl, substantially as and for the purpose described.

545,837. PLANTER. CYRUS N. BAKER, Crawfordsville, Ind. Filed Apr. 13, 1895. Serial No. 545,614. (No model.)

Claim.—1. In a planter, a hopper, a chute connected therewith, a seed wheel rotating partially within the hopper and partially within the chute, a spring controlled shaft operatively connected with the said wheel, and a drive shaft provided with mutilated gear and having intermittent driving connection with the spring controlled shaft, as and for the purpose set forth.

2. In a planter, a hopper, a chute connected therewith, a seed wheel mounted in a casing, said wheel being held to revolve partially within the hopper and partially within the chute, the casing being removable from the hopper, a rack, a pinion, dogs operated by the said pinion and operating to revolve the said wheel, a detent in connection with the wheel, and a driving mechanism, substantially as described, for the said rack and pinion, as and for the purpose specified.



3. In a planter, a hopper, a chute connected therewith, a seed wheel mounted in a casing, said wheel being held to revolve partially within the hopper and partially within the chute, the casing being removable from the hopper, a rack and pinion, dogs operated by the said pinion and operating to revolve the said wheel, a detent in engagement with the wheel, a spring controlled shaft, a driving wheel having intermittent driving connection with the said shaft, and a gear carried by the shaft and meshing with the said rack, as and for the purpose specified.

4. In a planter, a hopper, a drive shaft provided with segmental gear, a second segmental gear wheel intermittently operated by the gear wheel on the drive shaft, a shaft moved in one direction thereby, a spring for moving the said shaft in the opposite direction, and fingers carried by the said shaft entering the hopper and having their free ends sharpened to receive potato or similar seed, as and for the purpose specified.

5. In a planter, a hopper, a chute adjacent to the hopper, a drive shaft provided with a segmental gear, a shaft provided with fingers, the said fingers being carried through openings in the said chute, and extending at their free ends within the hopper, the free ends being sharpened to receive potato or similar seed, a segmental gear operated from the segmental gear on the drive shaft and intermittently moving the finger shaft in one direction, and means substantially as described for moving the shaft in the reverse direction, as and for the purpose set forth.

6. In a planter, a hopper, a drive shaft provided with segmental gear, two transversely extending shafts at the rear of the frame, one of said shafts being provided with a series of fingers, a gear held to slide on the other shaft and turn therewith, and adapted to engage with a gear on the finger shaft, a segmental gear carried by one of the said transversely extending shafts, and adapted to be intermittently engaged by the segmental gear on the drive shaft, whereby the finger shaft is intermittently moved in one direction, and a spring for moving the finger shaft in the opposite direction, the fingers carried by the said shaft being adapted to enter the hopper and having their free ends sharpened to receive potato or similar seed, as and for the purpose specified.

545,838. DEVICE FOR FILLING OR EMPTYING TUBES. HARLAN H. BALLARD, Pittsfield, Mass. Filed Jan. 8, 1895. Serial No. 534,277. (No model.)



Claim.—1. The combination with an outer rigid and an inner compressible tube of a traveling compressor actuated by a pin or pivot passing through it and through the outer tube, and connected with a sliding ring or band, substantially as hereinbefore described

2. The combination with an outer rigid and an inner compressible tube of a traveling compressor actuated by a pin or pivot passing through it and through the outer tube, and connected with a sliding ring or band, and a suitable nozzle.

3. The combination with an outer rigid and an inner compressible tube of a traveling compressor actuated by a pin or pivot passing through it and through the outer tube, and connected with a sliding ring or band, a suitable nozzle, a pen and suitable ink-feeding device therefor, and a cap to cover the exposed end.

545,839. CAR-COUPLING. GEORGE W. BARFIELD, Rome, Ga. Filed May 24, 1895. Serial No. 550,504. (No model.)

Claim.—1. In a car coupling, a drawbar having a chamber, a knuckle pivoted to said drawbar having its tongue movable in said chamber, the locking block located in said chamber and designed to be engaged by said tongue, the plunger engaging the under side of said block, and the operating shaft connected to said plunger, substantially as set forth.

2. In a car coupling, a drawbar having a chamber, a knuckle pivoted to said drawbar having its tongue movable in said chamber, and the locking block having a tapered groove or cut-away portion in one side and a forward extension designed to engage said tongue when the knuckle is unlocked, substantially as and for the purpose stated.



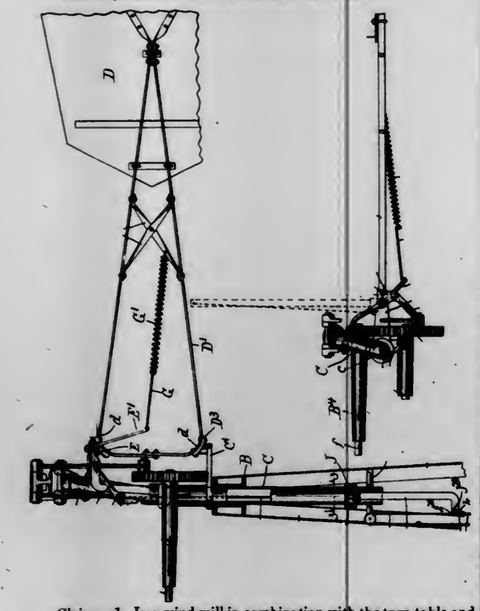
3. In a car coupling, a drawbar having a chamber, a knuckle pivoted to said drawbar having its tongue movable in said chamber, and the locking block having a tapered groove or cut-away portion in one side, a lower forward extension designed to rest on said tongue when the knuckle is unlocked, and the lug projecting from the side of said block, substantially as set forth.

4. In a car coupling, a drawbar having a chamber, a knuckle pivoted to said drawbar having its tongue movable in said chamber, the locking block designed to be engaged by said tongue, the plunger extended through the bottom of said draw-bar and engaging said block, and the operating shaft connected to the lower end of said plunger, substantially as set forth.

5. In a car coupling, a drawbar having a chamber, a knuckle pivoted to said drawbar having its tongue movable in said chamber, the locking block having a hole therein, the plunger extended through the bottom of said drawbar having an upper flared end or head provided with a lug designed to fit in said hole, and the crank-shaft connected to the lower end of said plunger, substantially as set forth.

6. The herein-described improved car coupler, comprising the drawbar having the curved guard-arm, a slot in its bottom, and an inner flange, the knuckle having its tongue curved on its front surface in the manner stated, and provided with a flange or hook at its rear end, the pivot bolt designed to be passed through coincident holes or openings in said flared end and also in said knuckle, the spring connected at its ends to said guard-arm and to said knuckle, the locking block, the plunger engaging the under side thereof and extended down through said slot in said drawbar, and the operating shaft connected to the lower end of said plunger, substantially as set forth.

545,840. WINDMILL. DE LONSON E. BARNARD, Chicago, Ill. Filed July 19, 1894. Serial No. 517,966. (No model.)



Claim.—1. In a wind mill in combination with the turn-table and a tail pivoted thereto and adapted to swing from a position substantially at right angles to the wheel to a position substantially parallel therewith, an arm supported on the turn-table and a spring connected thereto and to the tail-frame, and means for moving the arm to carry the point of connection of the spring thereto from one side of the angle through which the tail swings to the other side of the said angle, substantially as set forth.

2. In a wind mill in combination with the turn-table and a tail pivoted thereto and adapted to swing from a position substantially at right angles to the wheel to a position substantially parallel therewith, a lever arm pivoted on the turn-table and a spring connected thereto and to the tail-frame and means for swinging the arm about its pivot to carry the point of connection of the spring thereto from one side of the angle through which the tail swings to the other side of said angle, substantially as set forth.

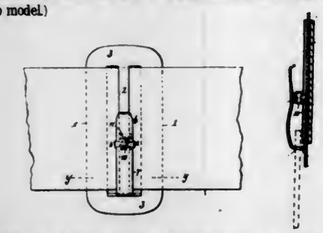
3. In a wind mill in combination with the turn table and a tail pivoted thereto and adapted to swing through a right angle from a position at right angles to the wheel to a position parallel therewith, a rock-shaft journaled on the turn-table oblique to both said positions of the tail and having the lever arm E', a spring connection from said lever arm to the tail frame, means for rocking the shaft to carry its arm E' from one side of the right angle through which the tail swings to the other side of said right angle, substantially as set forth.

4. In a wind mill in combination with the turn-table the tail pivoted thereto and adapted to swing through a right angle from a position parallel to the wheel axis to a position at right angles thereto, a rock-shaft journaled on the turn table oblique to both said positions of the tail, the tail frame being open and the rock-shaft having a lever arm E' adapted to swing through the open tail frame from a position at one side of the right angle through which the tail swings to a position at the other side of said right angle, and the spring which connects said lever arm to the tail frame, substantially as set forth.

5. In a wind mill in combination with the turn-table and the wheel supported thereon, tail pivoted thereto and adapted to swing toward a position parallel with the wheel, the wheel having a rim L and the tail having a spring arm adapted to come into contact with the wheel rim as the tail approaches a position parallel with the wheel whereby such spring arm operates as a brake upon the wheel, substantially as set forth.

6. In a wind mill in combination with the turn table and the wheel journaled thereon, and the tail pivoted thereto, a furling spring to hold the tail yieldingly toward the plane of the wheel, the wheel having a rim L and the tail having a spring arm M adapted to bear against the rim when the tail approaches a position parallel with the wheel whereby the furling spring operates as a brake spring also, substantially as set forth.

545,841. COMBINED SLIDE-BUCKLE AND SKIRT-RETAINER. DAVID BASCH, New York, N. Y. Filed June 12, 1895. Serial No. 552,580. (No model.)



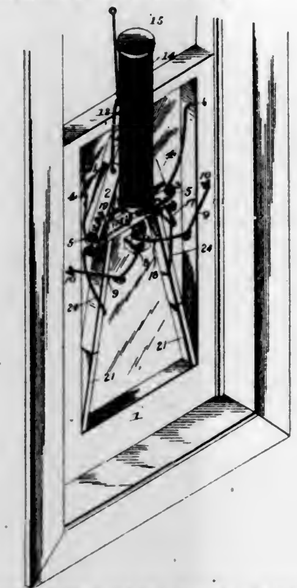
Claim.—As a new article of manufacture a belt slide having the side bars 1, cross bars 3, and central bar 2, constructed and arranged to provide the two parallel longitudinal slots 2^a and 3^a, and having teeth formed integral with a lower edge at each side of the central bar said teeth having a rearward inclination, and a spring controlled arm pivoted to the central bar and having one end formed as a handle portion and made to extend toward the top of the slide, the lower end of said arm being provided with a toothed jaw made to engage the teeth on the slide, substantially as described.

545,842. INSECT-TRAP. FRANCIS L. BLOCK, Sidney, Ill. Filed Apr. 23, 1895. Serial No. 546,952. (No model.)

Claim.—1. In an insect trap, a block having guide wings secured thereto and adapted to be held against a window pane, a cage into which the insects are directed by said wings and wings pivoted to said block and forming a continuation of the first named wings and adapted to bear against the window pane.

2. In an insect trap a cage, a supporting block provided with a set of guide wings, which are adapted to bear against a window pane and direct insects into the cage, and extensible wings secured to said block and forming continuations of the first named wings and adapted to bear against the window pane.

3. In an insect trap, a cage, a block provided with a set of guide wings, which are adapted to bear against a window pane, and direct the insects into said cage and extensible wings pivoted to the block to form continuations of the first named wings.



4. The combination with a block provided with guide wings and a spout, a cage communicating with said spout and laterally swinging lower wings forming a continuation of the first named wings, and means for holding the lower wings spread apart in the lower corners of the window sash.

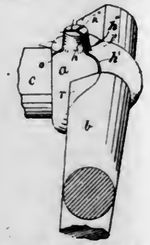
5. The combination with a block provided with guide wings, a spout and a cage communicating with the spout, of spring actuated lower wings forming a continuation of the first named wings and adapted to engage the side rails of the sash with their lower ends.

6. The combination with a block having guide wings and a spout, and a cage communicating therewith, of a spring having an arm to clamp the cage to the block, substantially as set forth.

7. The combination with a block having guide wings, a spout secured to the upper ends of said wings having a glass covered opening, and a cage communicating with the spout.

8. The combination with a window sash having holes in the inner sides of the side rails and hooks, of a block having guide wings and a spout, and a cage communicating with the spout, springs carried by said block, the arms of one spring adapted to engage the holes and the arms of the other spring having a link connection with the hooks.

545,843. ADJUSTABLE CRANK-CLAMP. FRED E. BRESLER, Bay City, Mich. Filed Sept. 15, 1894. Serial No. 523,148. (No model.)

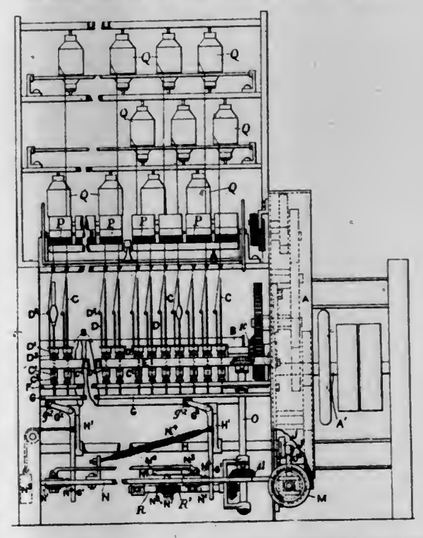


Claim.—1. A crank clamp consisting of a body portion with an opening extending through it for the crank arm, an opening into one side extending into said crank opening for the end of the shaft, and having on one side an outwardly projecting tapering nipple provided on its periphery with a screw-thread, and provided with three sections formed by radial slits, two of said slits extending into the body to the said crank opening and the other slit extending into the said shaft opening, and a cap provided with a tapering threaded opening fitted to pass over said nipple and draw said sections toward each other, substantially as set forth.

2. The combination of a shaft and a crank, of a clamp consisting of a body provided on its inner side with an opening passed over the end of the shaft, and having a transverse opening through its body passed over the end of the crank arm, and provided on one side with a projecting tapering nipple having on its periphery a screw thread and with radial slits extending into said body portion to said openings, and a screw cap provided with a tapering threaded opening passed over said nipple for the purpose set forth substantially as described.

3. The combination with a shaft having its end provided with a transverse V formed recess and with a screw thread of a clamping device having a body portion provided on its inner side with a threaded opening passed over the threaded end of the shaft, and having a transverse opening with its inner side of a V form coinciding to the V recess of the shaft end and provided on its upper side with the sections *n*, *o*, and *p*, substantially as described and with the adjacent ends of said sections projecting outwardly for forming a tapering threaded nipple *f*, a crank arm having one end portion passed into said transverse opening in the clamping device, and having on its inner side a V rib fitted to the V recess of said opening and a cap *e*, provided with a tapering threaded opening passed over said nipple, substantially as set forth.

545,844. SPINNING-FRAME. JOSEPH BRINDLE, Failsworth, assignor of two-thirds to John Taylor and Richard Lovett Reade, Sale, England. Filed May 22, 1893. Serial No. 475,153 (No model.)



Claim.—1. In a spinning machine, the combination of a reciprocating live spindle, a grooved pulley mounted on the said spindle, a collar connected to the spindle and adapted to drive the same through frictional contact with the pulley and a flier standing up vertically from a loosely mounted pulley driven independently of the spindle, and means for rotating the spindles and fliers, substantially as and for the purpose described.

2. In a spinning machine, the combination of the spindles C, pulleys C', mounted loosely on the said spindles, collars upon said spindles resting upon the said rollers, so as to transmit rotary motion by frictional contact, to the spindles the pulleys carrying fliers mounted loosely on the spindles above the said pulleys C' to allow of the rotation at high speed of the fliers independently of the spindles, to give the twisting or spinning action to the roving or sliver, substantially as herein described.

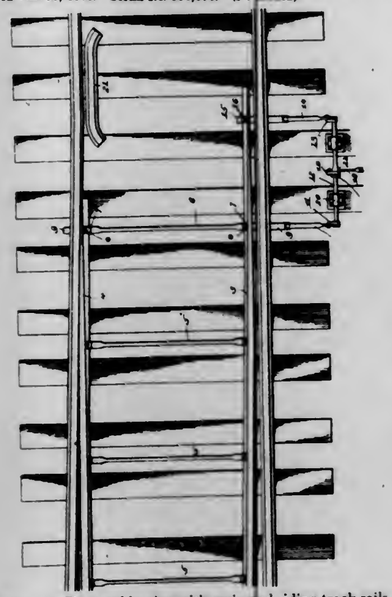
3. In a spinning machine, the combination of the spindles C, pulleys C', mounted loosely on the said spindles, collars upon the said spindles resting upon the said rollers, so as to transmit rotary motion by frictional contact, to the spindles the pulleys carrying fliers mounted loosely on the spindles above the said pulleys C' to allow of the rotation at high speed of the fliers independently of the spindles, to give the twisting or spinning action to the roving or sliver, and the copping rail G movably mounted in the frame and means for operating the several parts, substantially as described.

4. In a spinning machine, the combination with the fliers and spindles, and copping rail supporting the spindles, of the sliding plates J^3, the rock shafts H, having the arms J and H', to lower the copping rail, bell crank levers G^3, pivoted to the ends of the arms H', and bearing on the under side of the copping rail G, spring actuated sliding carriages N', bearing on a peripherical cam N^3, to give to the bell crank levers the requisite vibrating motion to form the cop during the falling motion of the spindles, and means for operating the several parts, substantially as described.

5. In a spinning machine, the combination with the frame, bars E and F secured in the frame, copping rails G movably mounted in the said frame, spindles C journaled in the said copping rails and passing through the bars E and F, pulleys C' loosely mounted on the said spindles, collars C^4 slidingly mounted upon the said spindles to rest on the pulleys C' and receive motion from the latter, and means for rotating the said pulleys, of the rock shafts H having the arms J and H', bell crank levers pivoted to the ends of the arms H' and supporting the copping rails G; sliding carriages N' to move against the lower ends of the bell crank levers, means for holding the bell crank levers against the said sliding carriages, cams N^3 bearing against the rollers on the said sliding carriages to reciprocate the latter and transmit motion through the bell crank levers to the copping rails G, the inclined sliding plates J^3 to raise and lower the arms J and rock the shafts H, to move the copping rails, and means for rotating the cams N^3, and for sliding the plates J^3, substantially as described.

6. In a spinning machine, the combination with the frame, bars E and F secured in the frame, copping rails G movably mounted in the said frame, spindles C journaled in the said copping rails and passing through the bars E and F, pulleys C' mounted loosely on the said spindles between the bars E and F, collars C^4 slidingly mounted upon the said spindles to rest on the pulleys C' and receive motion from the latter; pulleys D' carrying the fliers D, and loosely mounted upon the spindles C above the bars E, and means for rotating the said spindle and flier pulleys; of the rock shafts H having the arms J and H', bell crank levers pivoted to the end of the arms H' and supporting the copping rails G; sliding carriages N' to move against the lower ends of the bell crank levers, means for holding the bell crank levers against the said sliding carriages, cams N^3 bearing against rollers on the said sliding carriages to reciprocate the latter and transmit motion through the bell crank levers to the copping rails G, the inclined sliding plates J^3 to raise and lower the arms J and rock the shafts H, to move the copping rails, and means for rotating the cams N^3, and for sliding the plates J^3, substantially as described.

545,845. RAILROAD-SWITCH. RUFUS G. BURTON, Bluefield, W. Va. Filed Jan. 30, 1895. Serial No. 536,690. (No model.)

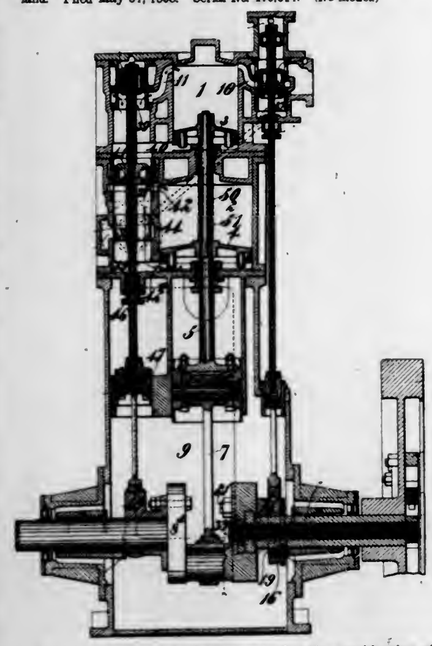


Claim.— 1. The combination with main and siding-track rails, of switch-rails, a switch-bar connecting said switch rails and provided with an integral terminal elastic tongue 9, a rock-shaft and means for operating the same, a crank carried by the rock-shaft, and a rod connecting the crank to the extremity of said tongue and adapted to deflect the tongue as the crank is moved from one position to the other to reverse the positions of the switch-rails, the resilience of the tongue locking the parts in either position substantially as specified.

2. The combination with main and siding track rails, of connected switch-rails, a switch-bar connected to the rails and having a terminal horizontally flattened elastic tongue, a horizontally disposed rock-shaft and means for operating the same, a crank carried by the extremity of the rock-shaft, and a connecting-rod between said crank and the extremity of the tongue on the switch-bar, said connecting rod being pivoted to the tongue to swing in a horizontal plane and avoid binding and straining of the parts, substantially as specified.

3. The combination with main and siding track rails, and inner and outer switch-rails, the outer switch-rail extending beyond the extremities of the inner switch-rail, of a switch-bar provided with clips to engage the inner flanges of said switch-rails and terminating beyond the outer switch-rail in an integral flat spring tongue, a clamp attached to the extremity of the outer switch-rail, a horizontal rock-shaft arranged parallel with the main track-rails and having terminal crank arms, connecting rods between the extremities of the crank arms and the ends of said tongue and clamp, the rock-shaft being provided at an intermediate point with an angular seat and a contiguous shoulder, a crank arm having an eye fitting upon said seat and held in contact with said shoulder by a nut threaded upon the shaft, and an operating rod connected to the crank, substantially as specified.

545,846. STEAM-ENGINE. NOEL CHANDLER, Hednesford, England. Filed May 31, 1893. Serial No. 476,017. (No model.)



Claim.—1. In a single acting steam engine, the combination of a cylinder, piston and piston rod, a cut-off valve for controlling the admission and cut-off of steam into the cylinder, a crank shaft connected to the piston rod, an eccentric journaled upon a pin, said pin being carried by the crank shaft and set eccentrically to its axis, and means for rotatively adjusting said eccentric on its journal pin, substantially as described.

2. In a steam engine, the combination of a cylinder, a piston and piston rod, a crank shaft, a cut-off valve controlling the admission and cut-off of steam to the cylinder, an eccentric connected to said cut-off valve, said eccentric being journaled eccentrically upon a pin mounted eccentrically to the axis of the crank shaft, a shaft extending axially through the crank shaft and carrying a lateral arm, and means connecting said lateral arm to the eccentric whereby said eccentric may be rotatively adjusted upon its pin, substantially as described.

3. In a single acting engine, the combination of a cylinder having separate admission and exhaust ports, a steam passage connecting the opposite ends of said cylinder, and an exhaust passage adapted to be placed in communication with said steam passage, a cut off valve and shifting eccentric for controlling said admission port, an exhaust valve and eccentric for controlling said exhaust port, and a valve arranged to control said exhaust passage substantially as herein described.

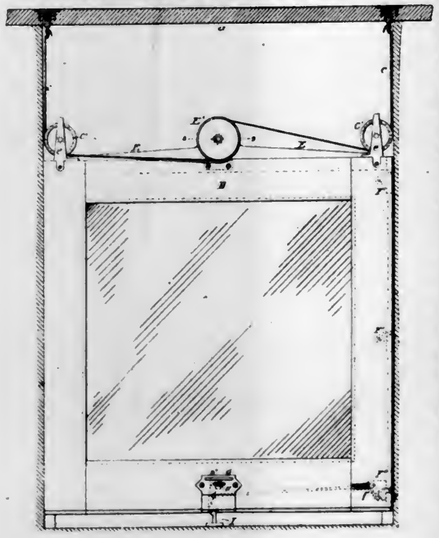
4. In a single acting engine, the combination of a cylinder having separate admission and exhaust ports, a steam passage connecting the opposite ends of said cylinder, an exhaust passage communicating with said steam passage, a cut off valve and shifting eccentric for controlling said admission port, an exhaust valve and eccentric for controlling said exhaust port, and a sleeve valve arranged to work in said steam passage and constructed to admit the passage of steam through itself while its periphery commands the exhaust passage substantially as herein described.

5. In a single acting engine the combination of a high pressure cylinder having separate admission and exhaust ports, a steam passage connecting the opposite ends of said cylinder, a low pressure cylinder, a steam passage connecting the lower end of the high pressure cylinder with the upper end of the low pressure cylinder and also the upper end of the low pressure cylinder with the lower end thereof, an exhaust passage leading from said last mentioned steam passage, a cut off valve and shifting eccentric for controlling the admission of steam to said high pressure cylinder, an exhaust valve and eccentric for controlling the exhaust port of said high pressure cylinder, a valve arranged to control the passage of steam to and from the upper end of the low pressure cylinder, and a valve arranged to control said exhaust passage substantially as herein described.

6. In a single acting engine, the combination of a high pressure cylinder having separate admission and exhaust ports, a low pressure cylinder arranged below said high pressure cylinder, a steam passage in communication with the upper and lower ends of each of said cylinders, an exhaust passage leading from said steam passage, a balanced cut off valve and shifting eccentric for controlling the admission of steam to said high pressure cylinder, an exhaust valve 13 for controlling the passage of exhaust steam from the upper to the lower end of said high pressure cylinder, a valve 41 arranged to control the passage of steam from the lower end of the high pressure cylinder to the upper end of the low pressure cylinder and thence to the lower end thereof, and a sleeve valve 43 the periphery of which controls said exhaust passage, a rod whereon said valves 13, 41 and 43 are mounted, and an eccentric for actuating said valve rod substantially as herein described.

7. In a single acting engine, the combination with the engine cylinder, of an imperforate cut off piston valve fixed to a rod passing through a stuffing box and fitted to work in a steam chamber, an imperforate balancing piston connected to said cut off valve and arranged to work in said steam chamber, a steam admission port to said chamber between said valve and piston, and a steam pipe or passage connecting the parts of said steam chamber at the outer sides of said cut off valve and balancing piston directly with the exhaust pipe or passage substantially as herein described for the purpose specified.

545,847. SASH BALANCE AND HOLDER. GEORGE F. CLAMER, Philadelphia, Pa. Filed Sept. 25, 1894. Serial No. 524,091. (No model.)



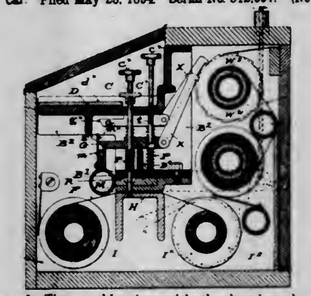
Claim.—1. The combination of the frame, the sash mounted therein, the frame E' secured to the upper portion of the sash, said frame carrying a central spring box and side bearings, wheels c' mounted in said side bearings, a stud on the frame, a flanged disk mounted on said stud, a spring within the flanged disk and secured thereto and to the frame, tapes c c secured to the periphery of the disk, and passing around wheels c' c' and secured to the upper portion of the window frame, substantially as described.

2. The combination of the window frame, the sash, the spring box attached to the upper portion of the sash, tapes extending from the spring box, adjustable holders B mounted in the upper portion of the frame, each holder consisting of an adjustable stud *b* to which the tapes are secured, a socket *b'* and an adjusting screw b^4, substantially as described.

3. The combination of the window frame, the sash mounted therein, a spring tending to raise the sash, a friction plate F at one side of the window sash and connected thereto, a bell crank lever pivoted to the sash and connected to the friction plate, an operating bar also connected to said bell crank lever, and a spring for forcing the friction plate against the window frame, to resist the elevating tendency of the lifting spring, substantially as described.

4. The combination of the window frame, the sash, the spring box mounted on the sash, tapes extending from the spring box to the upper portion of the window frame, a friction plate connected to the sash, a bell crank lever pivoted to the sash and connected to the plate, a spring for forcing the friction plate against the frame, a locking dog, lever for operating the same, said locking dog being connected to the bell crank lever, substantially as described.

545,848. VOTING-MACHINE. HERSEY A. CLIFFORD, San Francisco, Cal. Filed May 28, 1894. Serial No. 512,697. (No model.)



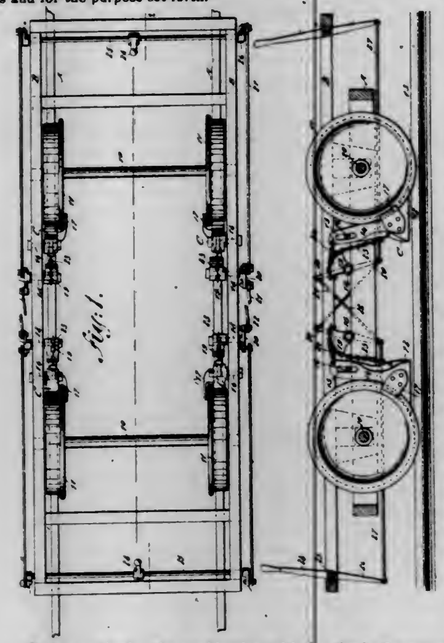
Claim.—1. The combination, with the key-board consisting of push-rods provided with punches or marking devices on their lower ends, and stationary guide plates through which the said rods are fitted to move, of the rollers, the register-sheet carried thereby, the cross-bars connected with and actuated by the push-rods, the rock-shaft and the spring-catches thereon adapted to hold down the push-rods by engaging the catches, the pawl and the arm on the rock-shaft, the ratchet-wheel on one of the register-sheet rollers and a pawl on the said arm engaging the ratchet-wheel, for operation as set forth.

2. The combination, with the key-board consisting of the push-rods and the stationary guide-plates through which the said rods move; of the cross-bars connected to the push-rods, the pivoted pawls on said cross-bars, an individual register-tape and carrying spools to every push-rod, a ratchet-wheel on one of said spools with which the pawl of the cross-bar engages, a locking means to hold down the push-rod when it is depressed, a means to release it, and a spring to throw up the push-rod at such release, for operation as set forth.

3. The combination, with a key-board composed of push-rods arranged in two or more rows, and carrying punches or marking devices on their lower ends; of the stationary guide-plate B' having holes in which the lower ends of the push-rods are held, the stationary plate B^3 beneath said guide-plate having holes through which the ends of the push-rods pass when said rods are depressed, the stationary die-plate H, the guide-strips *p*, and the set of separately movable slide-plates R having counter-sunk holes in rows corresponding with the rows of push-rods in the key-board, said holes in each slide-plate being so spaced that when one hole is set in line with the hole in the stationary guide-plate B' to allow the push-rod to pass through all the remaining holes in said slide-plate are out of line with the holes in the stationary plate, for operation as set forth.

545,849. CAR-BRAKE. JAMES H. CORE, Etna, Pa. Filed Apr. 29, 1895. Serial No. 547,505. (No model.)

Claim.—1. The combination, with the wheels of a car, of a brake mechanism, the same consisting of brake shoes adapted for contact with the wheels and having their faces opposed to the wheels concaved to receive the peripheries of the same, each brake shoe being provided with a link shaft, guides passing through the links of the brake shoe shanks, shafts located between the brake shoes, lifting chains connected with the said shoes and with said shafts, levers fulcrumed upon the said shafts, opposing levers having crossed link connections, rock shafts adapted to be located at the ends of the car, and link connections between the said rock shafts and the said levers, as and for the purpose set forth.

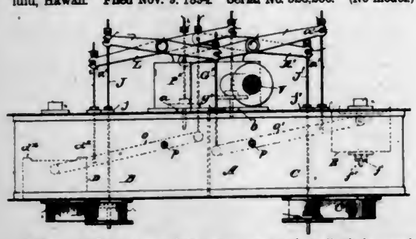


2. In a car brake, the combination, with the wheels of a car and the supports for the said wheels, of brake shoes adapted for engagement with the inner peripheral surfaces of the wheels and for engagement with the track, the said shoes being provided with link shanks and guides passing through the shanks, shafts located between the link shanks of the brake shoes, segments secured to the said shafts, lifting chains attached to the said shoes and to the said segments, extending over their cylindrical surfaces, levers attached to the shafts carrying the segments and extending both above and below the shafts, a crossed link connection between opposing levers, rock shafts adapted to be journaled at the ends of the car, terminating in crank arms, and link connections between the said crank arms and the lower ends of the said levers, as and for the purpose specified.

3. In a brake, the combination, with the wheels of a car and supports for the same, of brake shoes provided with link shanks, the said shoes being adapted to engage with the track and having one of their faces concaved to fit to the periphery of the wheel, guides secured to the said shoes, receiving the flanges of the wheels, rods passed through the links of the shoe shanks, and shafts journaled between the shoe shanks, lifting chains attached to the said shafts, extending both above and below the same, a crossed link connection between opposing levers, and means, substantially as described, for operating the said levers from the ends of the car, as and for the purpose set forth.

4. In a brake, the combination, with the wheels of a car and supports for the same, brake shoes provided with link shafts, the said shoes being adapted to engage with the track and having one of their faces concaved to fit to the periphery of the wheel, guides secured to the said shoes, receiving the flanges of the wheels, and rods passed through the links of the shoe shanks, of shafts journaled between the shoe shanks, lifting chains attached to the said brake shoes and to the said shafts, levers attached to the said shafts, extending both above and below the same, a crossed link connection between opposing levers, means, substantially as described, for operating the said levers from the ends of the car, hand levers adapted to be fulcrumed at the ends of the car, shafts operated by the said hand levers, link connections between the said shafts and the lower extremities of the levers of the lifting shafts of the brakes, and guide chains connected with the lifting chains and with the upper ends of the shoe shanks, as and for the purpose set forth.

545,850. AUTOMATIC LIQUID-MEASURE. JAMES COWAN, Honolulu, Hawaii. Filed Nov. 9, 1894. Serial No. 528,286. (No model.)

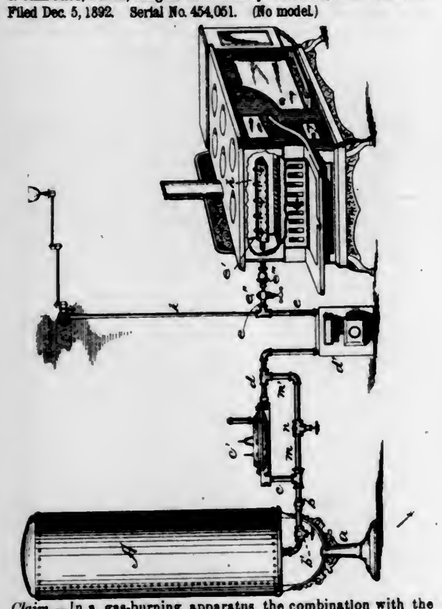


Claim.—1. In a measuring apparatus as described, in combination a tank having two compartments each having a valved inlet and a valved outlet opening lever mechanism for alternately shifting such valves, and floats held in the compartments connected to such mechanism for operating it in reverse directions said floats being constructed to rise with the rising liquor in the tank and to fill as they reach the top and sink by gravity as set forth.

2. In a measuring apparatus as described, the combination with a tank having two equal compartments, each having an inlet and an outlet having valves held to close by gravity and a feed chamber common to both inlets of a pair of oscillating levers for each compartment floats in such compartments for operating the levers, and connections between each set of levers for one compartment and the valves of the opposite compartment, arranged substantially as shown whereby the inlet and outlet valves will be operated simultaneously and alternately and the outlet valves to close in advance of the openings of the inlet valves as and for the purposes described.

3. The combination with the tank having two compartments each having a jacket or pendent supplemental compartment valved outlets in each supplemental compartment and valved inlets at the top of the tank, of floats open at the top and having openings in the bottom, having float valves adapted to project into the supplemental compartments when the floats are at their lowermost position, said floats having cut away portions at the top, and lever mechanism connecting the float of one compartment with the valves of the other compartment all arranged substantially as shown and described.

545,851. GAS HEATING AND LIGHTING APPARATUS. LUCIEN S. CRANDALL, Parish, assignor to C. Godfrey Patterson, New York, N. Y. Filed Dec. 5, 1892. Serial No. 454,051. (No model.)

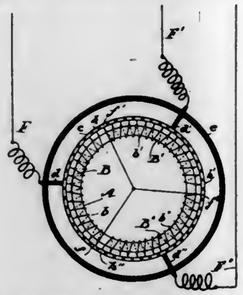


Claim.—In a gas-burning apparatus, the combination with the gas-burner proper, of a portable gas-storage tank for containing gas under high pressure, a pressure-reducing device, a pipe detachably connected to said tank and also connected to said pressure-reducing device, a pipe connecting the reducing device and the burner, and a by-pass switch pipe and valve connected with the tank and with the burner for passing the gas by or around the pressure-reducing device, whereby, when the gas in the tank becomes reduced in pressure, the attendant will be notified and given time to provide a full tank, as set forth.

545,852. METHOD OF EXTRACTING GOLD. PROSPER DE WILDE, Brussels, Belgium. Filed Nov. 17, 1894. Serial No. 529,089. (No model.) Patented in Belgium June 25, 1894, No. 110,684, and in England Oct. 31, 1894, No. 20,872.

Claim.—The precipitation of gold in the form of a mixture of aurous cyanide and cuprous cyanide by acidulating a cyanide solution containing the gold with an acid sulphurous compound and afterward adding a solution of copper salt, all substantially as described.

545,853. ROTARY FIELD-MOTOR. ALARD E. DU BOIS-REYMOND, Berlin, Germany, assignor, by mesne assignments, to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed Dec. 26, 1893. Serial No. 494,688. (No model.) Patented in Germany May 27, 1893, No. 68,411.



Claim.—1. In a rotary current motor the combination with a number of coils each connected at intermediate points with a number of contact terminals, said contact terminals being arranged in a circle, of a number of brushes, one for each coil, mounted to be moved over said terminals and adapted to make contact with corresponding terminals of the several coils whereby the effective lengths of the several coils may be varied at will, substantially as described.

2. In a rotary current motor, the combination with a ring member wound with a number of coils, of a series of contact terminals connected with each of said coils at intermediate points, said contact terminals being arranged in a circle, and brushes or contact devices mounted in fixed relative positions and adapted to be moved over said terminals to make contact with the corresponding terminals of the several coils whereby the lengths of the respective terminals may be varied, substantially as described.

545,854. WIRE-FENCE MACHINE. JOHN W. DWIGGINS, Frankton, Ind., assignor, by direct and mesne assignments, of two-thirds to Leroy Urmston and John D. Gooding, same place. Filed Nov. 12, 1894. Serial No. 528,540. (No model.)

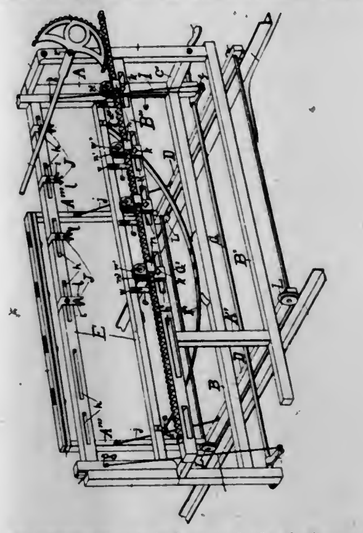
Claim.—1. In a wire fence machine of the class described, the combination of the lifting frame E, adapted to be slid downwardly in the grooves *c* of the uprights A of the machine-frame by means of the treadle H attached to a journal G having arms *f* connected with the frame by rods I; and adapted to be raised upwardly by means of the spring F beneath said frame; and having the adjustable slotted wire holders J provided with the wire retaining pins *l*, substantially as set forth.

2. In a wire fence machine having rotary twister-wheels actuated by means of a rack-bar, the cogs of which mesh with the cogs of the twister-wheels, the combination of the rectangular lifting frame supported by the curved spring and having slotted wire holders provided with the wire retaining pins; the slotted adjustable gages for limiting the twist of the wires, and the supplemental rack-bar rigidly attached to the end of a main rack-bar, substantially as set forth.

3. The combination in a wire fence machine having rotary twister-wheels adapted to be actuated by means of a rack-bar, the cogs of which mesh with the cogs of the twister-wheels, of the rectangular lifting frame having adjustable slotted wire holders and supported by a curved spring, for the purpose of lifting a series of wires out of contact with the twister-wheels and gages, substantially as set forth.

4. The combination in a wire fence machine having rotary twister-wheels adapted to be actuated by means of a rack-bar, the cogs of which mesh with the cogs of the twister-wheels, of the adjustable slotted gages for the purpose of limiting the twist of the wire, substantially as set forth.

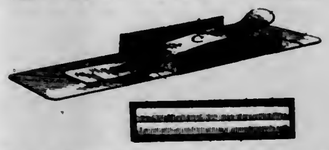
5. The combination in a wire fence machine having rotary twister-wheels adapted to be actuated by means of a rack-bar, the cogs of which mesh with the cogs of the twister-wheels, of the supplemental rack-bar connected with and parallel to the main rack-bar for the purpose of producing a weave or twist intermediate of the weaves or twists produced by the main rack-bar, substantially as described.



6. The combination with the framework of a wire fence machine, of a rectangular lifting frame having laterally adjustable slotted wire holders bolted thereto, and adapted to be raised and lowered at the will of the operator, substantially as set forth.

7. The combination in a wire fence machine having a frame and means for operating wire twisting devices, of a vertically movable wire lifting frame, whereby a series of wires may be brought into contact with said twisting devices and withdrawn without moving said twisting devices, substantially as set forth.

545,855. CIGARETTE-BOX. ANDREW L. ELLETT, Jr., Richmond, Va. Filed Jan. 23, 1895. Serial No. 535,846. (No model.)



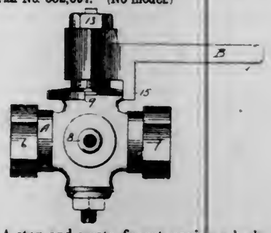
Claim.—1. The combination, with an open-end box, of a slidable holder, or interior box, having an end flap which folds upon the pack of cigarettes as specified, of a flexible strip, or pull-piece, whose inner end is attached to the inner side of said flap, and extends free along the body of the holder and beyond the point where the outer ends of the cigarettes, normally lie, as shown and described.

2. The combination, with the slidable, interior box, or holder, of the flexible strip which is attached to the inner side of the folding end flap of the holder, and extends beyond the outer ends of the cigarettes when in normal position, said strip being of less width than the holder, so that, when pulled, it will come into contact with and cause the projection of but a portion of the cigarettes, as specified.

3. A cigarette-box, or holder, having a flexible strip, or pull-piece, which is attached at one end to said holder and extends across the inner end of the latter and is provided with a slot adapted to allow the passage of cigarettes through it, when the strip is pulled, substantially as set forth.

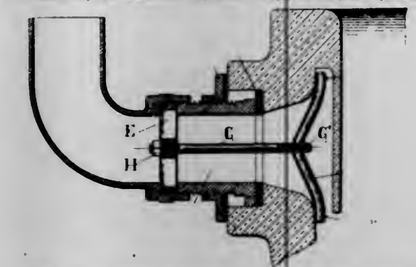
4. The combination, with a cigarette-box or holder of a flexible strip, or pull-piece which is attached at its inner end to the holder, interiorly, and projects beyond the end of the same, said strip being made of less width than the holder and provided with a slot at the point where it extends across the inner end of the same, substantially as shown and described, whereby, when the pull-piece is drawn, it forces out the cigarettes that lie on either side of the middle ones, leaving the latter stationary, as specified.

545,856. RIGHT AND LEFT HAND STOP AND WASTE COCK. FREDRICK H. FRANK, New Britain, Conn. Original application filed Feb 28, 1894, Serial No. 501,884. Divided and this application filed June 8, 1895. Serial No. 552,091. (No model.)



Claim.—A stop and waste faucet having a body provided with stop shoulders, a plug provided with a handle receiving neck, and a reversible handle provided with a stop projecting from one of its sides and with another stop projecting from its opposite side, whereby turning the handle over and changing its position half a revolution on the plug, converts the faucet from a right to left hand and vice versa, substantially as described.

545,857. WATER-CLOSET CONNECTION. CHARLES A. FRITZ, Johnstown, Pa. Filed Dec. 13, 1894. Serial No. 531,706. (No model.)



Claim.—1. An improved water closet connection comprising a bowl provided with flush opening, a flush pipe, a spud connecting the pipe with the opening, said spud having oppositely arranged notches, a cross-bar adapted to be confined at its ends in said notches, and an adjustable bolt adapted to extend through said cross-bar and to be connected to the bowl, substantially as shown and described.

2. An improved water closet connection comprising a bowl having a flush opening, a flush pipe, a spud for connecting the pipe with the opening, and a clamping bolt connected at one end to the spud, and a spring metal yoke connecting the opposite end of the bolt with the bowl, substantially as shown and described.

3. An improved water closet connection comprising a bowl having a flush opening, a flush pipe a spud connecting the pipe with the opening, a clamping device connected at one end to the spud, and a spring metal yoke bowed between its ends where it is connected to the said clamping device, substantially as shown and described.

4. An improved water closet connection comprising a bowl having a flush opening, a flush pipe, a spud for connecting the pipe with the opening, a clamping device secured at one end to the spud and an inwardly bowed spring metal yoke engaging with the said clamping device and provided at its respective ends with the lugs for the purpose substantially as shown and described.

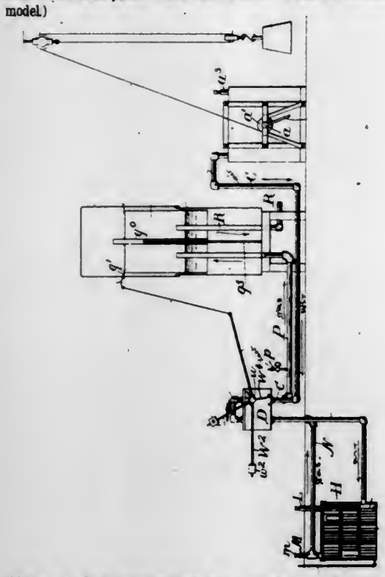
5. The combination of a receptacle having an opening, a pipe leading thereto, a securing device extending inward from the pipe through the receptacle opening and a bar of spring metal within the receptacle for holding the said securing device, substantially as shown and described.

545,858. BALL CASTER. CHARLES H. GAFFNEY, Gloucester, Mass., assignor, by direct and mesne assignments, to the Crescent Automatic Caster Company, of Maine. Filed Sept. 25, 1894. Serial No. 524,074. (No model.)



Claim.—The herein described anti-friction roller bearing consisting of a substantially semi spherical bracket having a spindle at its upper portion, and a socket at its lower portion, a caster-ball loosely retained in said socket, a plurality of circular pockets arranged in the bracket concentric with the caster-ball, a curved or rounded ball-bearing projection formed integral with and projecting from the bracket at the center of each pocket, and a series of balls loosely arranged in each of said pockets, said ball bearing projections acting on one of the balls in each pocket, substantially as described.

545,859. APPARATUS FOR CARBURETING AIR. FRANKLIN J. GUSTINE, New Orleans, La., assignor, by mesne assignments, to Anna A. R. Bullin, same place. Filed Jan. 11, 1895. Serial No. 534,551. (No model.)



Claim.—1. In an apparatus for the manufacture of gas, the combination with an air pump, and means for operating said air pump, of an air chamber connected to said air pump, a carburetor connected to said air chamber, a gas chamber connected to said carburetor, a shunt air pipe connecting said air chamber and said gas chamber, and means for regulating the proportion of air passing through said shunt pipe, a gas receiver connected to said gas chamber, and means operated by said gas receiver for automatically cutting off the supply of gas from said gas chamber to said receiver, and the supply of air from said pump to said air chamber, substantially as described.

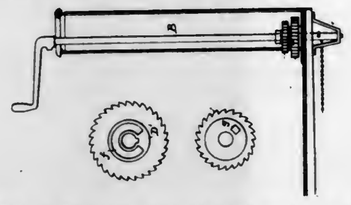
2. In an apparatus for the manufacture of gas, the combination with an air pump, of a carburetor connected to said pump, a gas and air receiver connected to said carburetor, a slide valve controlling the flow of air through the apparatus, a rock shaft, an arm connecting said rock shaft and said sliding valve, a weighted lever revolubly mounted on said rock shaft and having a limited motion on either side of the perpendicular arms projecting from said rock shaft and adapted to be struck by said weighted lever, an arm projecting from said rock shaft and connected by a cord to the float of the gas receiver, whereby the said weighted lever is brought first to one side of the vertical line and then to the other; a lever arm on the opposite side of said rock-shaft, and a counterpoise weight attached thereto, substantially as and for the purposes described.

3. In an apparatus for the manufacture of gas the combination with an air pump, and means for operating said air pump, of an air chamber connected to said air pump, a carburetor connected to said air chamber, a gas chamber connected to said carburetor, a shunt air pipe connecting said air chamber and said gas chamber, and means for regulating the proportion of air passing through said shunt pipe, a gas receiver connected to said gas chamber, a rock shaft journaled in said air chamber and in said gas chamber, valves for controlling the admission of air and the discharge of gas operated by said rock shaft, a weighted lever revolubly mounted on said rock shaft and having a limited motion on either side of the perpendicular, arms projecting from said rock shaft and adapted to be struck by said weighted lever, and means operated by the gas in the receiver whereby the said weighted lever is brought first to one side of the vertical line and then to the other, substantially as and for the purposes described.

4. In an apparatus for the manufacture of gas, the combination with an air pump, and a suspended weight adapted to run said air pump at the normal pressure, but to be arrested when the pressure of the air in the pump becomes excessive, of an air chamber connected to said air pump, a carburetor connected to said air chamber, a gas chamber connected to said carburetor, a shunt air pipe connecting said air chamber and said gas chamber, and means for regulating the proportion of air passing through said shunt pipe, a gas receiver connected to said gas chamber, a rock shaft journaled in said air chamber and in said gas chamber, valves for controlling the admission of air and the discharge of gas operated by said rock shaft, a weighted lever revolubly mounted on said rock shaft and having a limited motion on either side of the perpendicular, arms projecting from said rock shaft and adapted to be struck by said weighted lever, and means operated by the gas in the receiver whereby the said weighted lever is brought first to one side of the vertical line and then to the other, substantially as and for the purposes described.

5. In an apparatus for the manufacture of gas, the combination with an air pump and a weight operating said air pump, of an air chamber connected to said air pump, a carburetor connected to said air chamber, a gas chamber connected to said carburetor, a shunt air pipe connecting said air chamber and said gas chamber, and means for regulating the proportion of air passing through said shunt pipe, a gas receiver connected to said gas chamber, valves mounted in both said air chamber and said gas chamber, and controlling the influx of air and the efflux of gas, respectively, and means for simultaneously opening or closing both of said valves, substantially as described.

545,860. SLACK-ADJUSTER. CHARLES LINDSTRÖM, Altoona, assignor of one-half to Mary R. Loughridge, Philadelphia, Pa. Filed June 10, 1895. Serial No. 552,250. (No model.)



Claim.—1. The combination of the shaft upon which the brake chain or other connection is wound to apply the brake, a stop adjustable around the axis of the shaft and serving to limit the backward movement of said shaft, and provision for engaging the shaft with said stop, but permitting a certain amount of forward motion of the shaft independently of the stop.

2. The combination of the shaft upon which the brake chain or other connection is wound to apply the brakes, a ratchet wheel free to move forward with the shaft and carrying a stop lug, a pawl for preventing back movement of said ratchet, and provision whereby the brake shaft is caused to engage with said stop lug, but has a certain amount of forward movement independently thereof.

3. The combination of the shaft upon which the brake chain or other connection is wound to apply the brake, a retaining ratchet and pawl to hold said shaft in position when the brakes are set, an adjustable stop for limiting the backward movement of said brake shaft and a lug whereby the brake shaft is caused to engage said stop so as to permit a certain amount of independent forward movement, substantially as specified.

4. The combination of the shaft upon which the brake chain or other connection is wound to apply the brakes, a ratchet and pawl for retaining the brake shaft in position when the brakes are set, said ratchet wheel having a shoulder, a ratchet wheel loosely mounted on the brake shaft and having a lug engaging with said shoulder, and a pawl for preventing back movement of said loose ratchet wheel, substantially as specified.

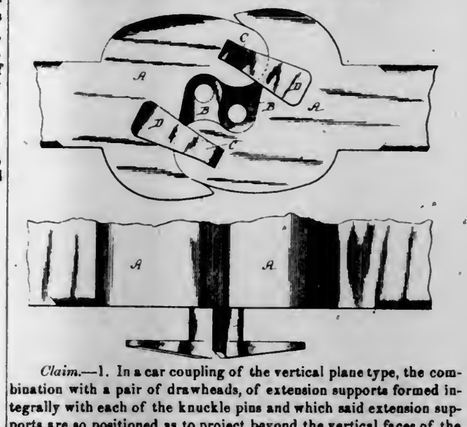
5. The combination of the brake shaft and its fixed and loose ratchet wheels having portions adapted to engage with each other as described, whereby a forward movement of the brake winch and fixed ratchet to a limited extent independently of the loose ratchet is permitted with the engaging pawl for said loose wheel, and a box or casing carrying said pawl and having oppositely projecting brackets, one near each end, substantially as specified.

545,861. HAME-FASTENER. THOMAS N. MARTIN, Cheyenne, Wyo., assignor of one-third to William F. Dalber, same place. Filed Oct. 11, 1894. Serial No. 525,621. (No model.)

Claim.—A hame fastener consisting of two sections each adapted to be respectively connected to the hames, one of the sections having a series of openings therein, the remaining section having its outer end bent first to form an eye for permitting the device to be attached to the hames, and finally to form a lip overhanging the main portion of the section, a bolt passing through said bent portion between the eye and lip and through the main portion of the section and operating to brace the bent portion, and an eccentric lever fulcrumed to the inner end of the section having the lip and adapted to pass through the openings of the remaining section and arranged to have its onter end inserted under and held in place by said lip, substantially as described.



545,862. CAR-COUPLING. JAMES M. SCURR and SCOTT R. COTTON, Creston, Iowa, assignors to the Simplex Car Coupler Company, St. Joseph, Mo. Filed Oct. 8, 1892. Serial No. 448,265. (No model.)

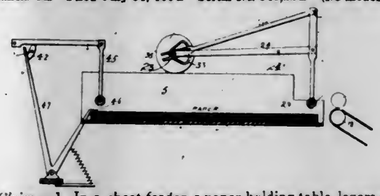


Claim.—1. In a car coupling of the vertical plane type, the combination with a pair of drawheads, of extension supports formed integrally with each of the knuckle pins and which said extension supports are so positioned as to project beyond the vertical faces of the drawheads so that when a coupling is effected each of the supports overlaps its respectively opposite drawhead for the purpose set forth.

2. The combination with a drawhead having a notch or recess in proximity to the point of adjustment of the knuckle pin, of a knuckle pin having an extension support secured thereto and a shoulder, which latter when seated in the notch or recess serves to hold the extension support in position.

3. The combination with the drawhead, of a knuckle pin having an extension support formed integrally therewith, said knuckle pin extending to a point beyond the face or side of the drawhead, whereby cars of differing heights may be coupled without interfering with the extension support.

545,863. PAPER-FEEDING MACHINE. LINTON C. HOPKINS, Atlanta, Ga. Filed July 31, 1894. Serial No. 519,224. (No model.)

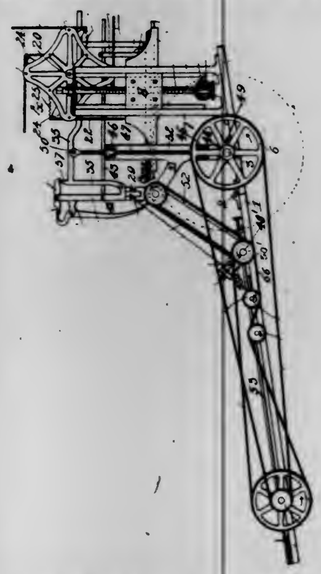


Claim.—1. In a sheet-feeder, a paper-holding table, levers pivotally mounted thereover, a rod extending between and pivotally secured to the free ends of said levers, bars secured to said rod between said levers and carrying freely revoluble on their lower ends wheels, adhesive bands secured to the periphery of each of said wheels, means for causing said levers to move upwardly and downwardly on their pivotal points and for causing said bars to move pendulously.

2. In a sheet-feeder, the paper-table, a revoluble shaft journaled thereover, carrying wheels provided with cam-grooves on one side of each, bars pivoted upon said shaft, a rod pivoted in and extending between their free ends, bars pendent from about their middles from and secured to said rod, means for engaging a sheet on their lower ends, a pitman connected with the upper ends of the end members of the series of the pendent bars, bifurcated and straddling the shaft, a pin in each of said pitmen engaging the cam-groove in the correlative wheel, and means for lifting the free ends of the first named bars substantially as and for the purpose specified.

3. In a sheet feeder, the combination of a paper-table and means for feeding paper therefrom, with the lever pivoted and carrying a presser-foot over said table in a position to contact with the back edge of the paper thereon, a spring adapted to hold said presser foot in contact, a second pivoted lever carrying on its free end a pendent arm provided with a sticker on its lower end, a shaft, a cam thereon adapted to be revolved in contact with and vibrate the latter named lever vertically and a striker cam adapted to be revolved and vibrate the first named lever from contact with the paper upon the depression of the sticker, all combined arranged and operating substantially as and for the purpose specified.

545,864. PAPER-FEEDING MACHINE. LINTON C. HOPKINS, Atlanta, Ga. Filed Nov. 24, 1894. Serial No. 529,838. (No model.)



Claim.—1. In a sheet-feeder, a paper-separating wheel consisting of a web, fingers pivoted near their one end thereon and extending substantially tangentially, lugs whereon their inner ends may rest, pulling-springs secured to said inner ends and to the web, and means for adjusting said springs.

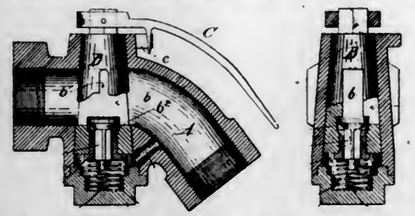
2. In a sheet-feeder, a paper-table, means for feeding off the top sheet therefrom, and an arm suspended over the back edge of the paper and adapted to contact with the paper, mechanism whereby same is elevated just before the initial movement of the top sheet, caught when elevated, and released after the initial movement of said top sheet, said means for catching and releasing consisting of a trip-lever adapted to engage said arm when same is elevated, a trigger lying across the line of movement of the paper and adapted to engage said trip-lever when same is in engagement with the said arm.

3. In a sheet-feeder, a paper-table, means for separating and feeding sheets therefrom, sheet carrying mechanism, an upright secured to the frame, a lever pivoted thereto and extending to near the back edge of the paper-table and adapted to contact with the paper thereon, means for lifting said lever, a lug on said lever, a tilting lever pivoted on said upright having a notch to engage said lug a cam-surface thereon, a lever having its long arm extending into a position to be struck and moved by the moving sheet and pivoted so that, in moving, its opposite end traverses the said cam-surface in opposition thereto and thereby actuates the said tilting-lever, substantially as and for the purpose specified.

4. In a sheet-feeder, a feed-table, tapes mounted so as to run their forwardly running halves above said table, and tape guards consisting of longitudinally channeled bars each having its side flanges rounded to a thin edge on top and its ends beveled on top, said tape guards being placed under said tapes upon the table, for the purpose specified.

5. In a sheet-feeder, a table having transverse slots therein, laterally adjustable sheaves mounted so as to revolve in said slots, tapes carried on said sheaves and channeled bars laid on said table under said tapes so as to be freely movable laterally thereon, and means for delivering sheets of paper on said tapes, substantially as specified.

545,865. ANGLE-COCK. WILLIAM R. HOWDON, Anniston, Ala. Filed July 27, 1894. Serial No. 518,722. (No model.)

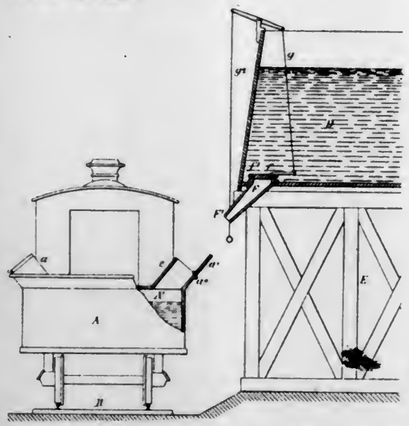


Claim.—1. In an angle-cock, the valve-casing, a valve therein, a passage in said casing around said valve, and a check valve governing said passage and held normally open and adapted to be closed by a preponderance of pressure on top of the said valve.

2. In an angle-cock, a valve-casing, and a plug-valve therein, provided with a passage adapted to register with the passage in the casing, a second passage in said valve one end of which may be brought into registry with the passage in said casing and extending through said valve, a by-pass in the casing extending from the said last named passage in the valve to a point where it will enter the passage in the casing ahead of the plug-valve, and a check-valve adapted to be closed on a preponderance of air pressure on top of said plug-valve.

3. In an angle-cock, a casing perforated longitudinally, a plug-valve governing said perforation, and provided with a transverse passage, a second passage opening from said first named passage outwardly through the side of said plug-valve, a third passage opening downwardly from the first-named passage through the end of the plug valve, a check-valve seated therein normally pressed upwardly to an open position and a passage in the casing leading from the embouchure of said third passage into the perforation in the casing at a point ahead of said plug-valve.

545,866. LOCOMOTIVE-TENDER. PAUL SATTELKAU and HERMAN R. WINKELMANN, Philadelphia, Pa. Filed Feb. 20, 1894. Serial No. 500,885. (No model.)



Claim.—1. The combination in a tender, of the tank, necks at each side of the tender and connected to the tank and through one of which water is discharged from a nozzle into the tank, substantially as described.

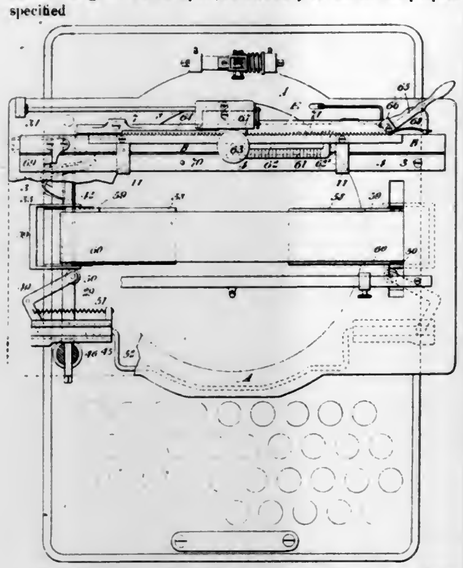
2. The combination in a tender, of the tank, an inclined neck at each side of the tender, a cover pivoted to the outer edge of each neck and a stop to limit the movement of the cover so that it will act as a drip catcher, substantially as described.

REISSUES.

11,506. TYPE-WRITING MACHINE. ELMER S. SHIMER, Milton, Pa. Filed Aug. 12, 1895. Serial No. 558,979. Original No. 539,651, dated May 21, 1895.

Claim.—1. The combination of the spool-carrying shaft formed with a longitudinal groove, a ribbon-spool mounted on the shaft and formed with a groove in the bore of the spool, a ball-bearing in the

grooves, and a spool shifter frame having depending arms at the ends of the spool with the shaft projected through them and closing the ends of the groove in the spool, substantially as and for the purpose specified



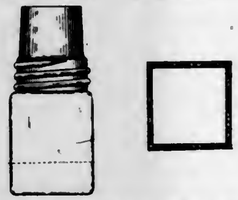
2. The combination with a mechanism for shifting the spools laterally, of a bell-crank lever mounted to bear with one arm against the shifting-frame of the spool, a slide connected to one arm of the bell-crank lever, a pawl on the slide, a ratchet wheel on the spool-shaft, and a spring to hold one arm of the lever against the shifting frame of the spool, substantially as and for the purpose specified.

3. The combination with the bell-crank lever, the slides and the pawls, to engage the ratchet-wheels on the spool-shafts, of a shifting-bail having its ends connected to the ends of the slides, and means to hold the bail in a shifted position whereby one of the pawls may be thrown out of engagement with one of the ratchet-wheels and the longitudinal movement of the ribbon reversed.

4. The combination of the carriage-bar, the space-bar mounted on the carriage-bar, the spacing mechanism, a plate E, on the carriage-bar formed with a longitudinal slot, a clamping-screw to hold the plate on the carriage-bar, a lever on the end of the plate E, a pendant on the end of the plate, and the bell-mechanism, as and for the purpose described.

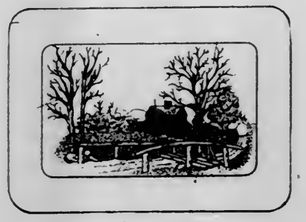
DESIGNS.

24,655. BOTTLE. ANDREW P. PRESTON, Portsmouth, N. H. Filed July 5, 1894. Serial No. 516,690. Term of patent 14 years.



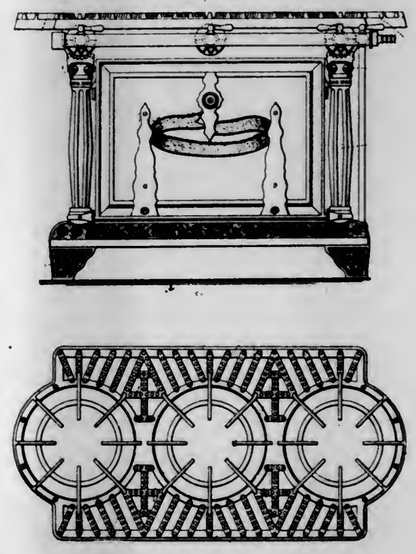
Claim.—The design for a bottle herein shown and described.

24,656. TRAY. GEORGE BROOKS, Haverhill, Mass. Filed Oct. 8, 1894. Serial No. 525,298. Term of patent 3½ years.



Claim.—The design for a tray, substantially as shown and described.

24,657. GAS-STOVE. AARON H. WOLFF, New York, N. Y. Filed Apr. 8, 1895. Serial No. 544,999. Term of patent 7 years.



Claim.—1. The design for a gas stove, substantially as herein shown and described.

2. In the design for a gas stove herein shown and described, the design of the ornamental front column at either side of the door, substantially as described.

3. In the design for a gas stove herein shown and described, the design of the ornamental base and legs, substantially as herein shown and described.

4. In the design for a gas stove as herein shown and described, the design of the ornamental top, substantially as herein shown and described.

TRADE-MARKS

REGISTERED SEPTEMBER 3, 1895.

27,015. TOILET SOAP. SEELY MANUFACTURING Co., Detroit, Mich. Filed May 13, 1895



Essential feature.—The words "ALMOND MILK" projected across the representation of a leaved branch. Used since January 15, 1895.

27,016. MOUTH-HARMONICAS. C. BRUNO & SON, New York, N. Y. Filed June 27, 1895.



Essential feature.—A fac-simile of the signature "JOHN PHILIP SOUSA." Used since May 1, 1895.

27,017. PUZZLE. HARRY H. BAKER, Chicago, Ill. Filed July 30, 1895.

16 TO 1

Essential feature.—The figures and word "16 TO 1." Used since July 1, 1895.

27,018. HOOKS AND EYES. THE H. DAVIDSON COMPANY, Union City, Conn., and New York, N. Y. Filed July 29, 1895.

No So

Essential feature.—The words "No So." Used since April 1, 1895.

27,019. VELVET RIBBONS. GUILLAUME BALAY & CIE., St. Etienne, France. Filed Aug. 3, 1895.



Essential feature.—The words "VELOURS DUCHESSE." Used since 1860.

27,020. CERTAIN NAMED KNITTED GOODS. KNOXVILLE KNITTING MILLS COMPANY, Knoxville, Tenn. Filed July 10, 1895.

KNOX KNIT

Essential feature.—The initial letter "K," with the straight line line between the syllables "NOX" and "NIT." Used since April 1, 1893.

27,021. MOHAIR, WOOL, WOOL SHODDY, TOPS, NOILS, AND YARN. HOLMSTROM, TOLSON & Co., Boston, Mass. Filed Mar. 4, 1895.



Essential feature.—The conventional representation of a heart. Used since January 1, 1893.

27,022. KID AND LAMBSKIN GLOVES. EGGEBRECHT & BERNHARDT, New York, N. Y. Filed June 15, 1895.



Essential feature.—The word "BERNHARDT," appearing as a fac-simile of the signature of Siegmund Bernhardt. Used since 1890.

27,023. SADDLERY AND HARNESS, BAGS, AND OTHER LEATHER GOODS. THOMAS MIDDLEMORE, Birmingham and Coventry, England. Filed June 4, 1895.



Essential feature.—The figure of a horse with wings, representing Pegasus, standing upon a globe, and the letter "M" disposed upon the globe. Used since 1863.

27,024. LEATHER. ERNST L. C. SCHULZ, Boston, Mass. Filed Aug. 5, 1895.

PALACE

Essential feature.—The word "PALACE." Used since August 3, 1895.

27,025. CHEWING-TOBACCO. BENJAMIN F. WEYMAN, Pittsburg, Pa., and New York, N. Y. Filed Aug. 8, 1895.

WEYMAN & BRO.

Essential feature.—The word, character, and abbreviation "WEYMAN & BRO." Used since May 1, 1866.

27,026. SMOKING-TOBACCO. BENJAMIN F. WEYMAN, Pittsburg Pa., and New York, N. Y. Filed Aug. 8, 1895.

WEYMAN & BRO.

Essential feature.—The word, character, and abbreviation "WEYMAN & BRO." Used since April 1, 1866.

27,027. SMOKING-TOBACCO. BENJAMIN F. WEYMAN, Pittsburg, Pa., and New York, N. Y. Filed Aug. 8, 1895.



Essential feature.—A pictorial representation of a pair of scales held up by a hand, one tray of the scales containing a crown and the other a pipe. Used since February 1, 1876.

27,028. SMOKING-PIPES. THE AKRON SMOKING PIPE COMPANY, Akron, Ohio. Filed Aug. 2, 1895.

Essential feature.—The word "ANCHOR." Used since July 25, 1895.

27,029. WHISKY. CHARROT & HENRY, Brooklyn, N. Y. Filed July 26, 1895.

MONTAUK



Essential feature.—The word "MONTAUK," with the representation of the head of an Indian brave in red color. Used since June 12, 1895.

27,030. WHISKY. MOSES RISK & SONS, LIMITED, Glasgow, Scotland. Filed Aug. 1, 1895.



Essential feature.—The representation of a party of curlers playing the game and the words "THE CURLER." Used since June 15, 1889.

27,031. CONFECTIONERY. W. F. SCHRAFFT & SONS, Boston, Mass. Filed July 15, 1895.



Essential feature.—The word "SCHRAFFT" printed in white upon a red seal. Used since February 1, 1894.

27,032. PICKLED OLIVES. CLARENCE JESSE WETMORE, San Francisco, Cal. Filed June 21, 1895.

CRESTA BLANCA

Essential feature.—The words "CRESTA BLANCA." Used since November, 1886.

27,033. NOODLES. GEORGE A. PFAFFMANN, Cleveland, Ohio. Filed July 16, 1895.



Essential feature.—A classically-draped female figure, seated, and holding a pair of scales in one outstretched hand and resting with the other hand upon the shield. Used since July 1, 1895.

27,034. CONDENSED MILK. MOHAWK CONDENSED MILK COMPANY, Rochester, N. Y. Filed July 30, 1895.

puritan

Essential feature.—The word "PURITAN." Used since February 1, 1892.

27,035. FLOUR. CHARLES TORRES, New York, N. Y. Filed Apr. 1, 1895.



Essential feature.—The representation of a sheaf of wheat surmounted by a star and the words "FARINAHA PATENTE." Used since May 1, 1893.

27,036. GRAHAM FLOUR AND PREPARED OATS. R. C. WILLIAMS & Co., New York, N. Y. Filed Nov. 27, 1894.

Essential feature.—The representation of a dial with outstretched pinions. Used since January, 1883.

27,037. REMEDY FOR RHEUMATISM AND DIPHTHERIA. FREDERICK R. BOSTMAN, Boston, Mass. Filed June 25, 1895.

ALPHA

Essential feature.—The word "ALPHA." Used since January 1, 1888.

27,038. REMEDY FOR FEVERS. LAURA MANTECON VDA. DE GONZALEZ, Mexico, Mexico. Filed July 16, 1895.

BENDICION DEL CIELO.

Essential feature.—The words "BENDICION DEL CIELO, TOMAD Y SANARIS" and the conventional representation of an angel. Used since October 18, 1894.

27,039. REMEDY FOR WOMEN'S DISEASES. THE "A. M. C." MEDICINE CO., Montreal, Canada. Filed July 5, 1895.

MILES'

Essential feature.—The word "MILES'" and the representation of the head and shoulders of a man having hair brushed back, wearing a mustache, and dressed in high collar, four-in-hand tie, and business coat. Used since February 15, 1895.

27,040. WORM-POWDERS. ALLEN S. OLMSTED, Le Roy, N. Y. Filed July 15, 1895.

MOTHER GRAY'S SWEET WORM POWDERS.

Essential feature.—A bust figure of a woman, wearing a cap and having side curls, and the words, "MOTHER GRAY'S SWEET WORM POWDERS." Used since January, 1892.

ANDREW B. GRAHAM PHOTO-LITHOGRAPHER. WASH. D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

SCRIBNER *v.* KELLOGG.

Decided July 25, 1895.

1. INTERFERENCE—PRIORITY—CONCEPTION—DATE OF APPLICATION.

Where it appears that S. produced a sketch and described the invention to others on September 9, 1887, made and tried a model in April, 1888, and applied for a patent on June 19, 1888, and that K. was not engaged upon the invention until December 1, 1887, but applied for a patent March 3, 1888, *Held* that S. was the first inventor.

2. SAME—DILIGENCE—EXPERIMENTS BETWEEN CONCEPTION AND APPLICATION.

Where it appears that S. was the first to conceive the invention, but he forbore to apply for a patent during the progress of his experiments and until he had perfected his invention and tested its value and sought and devised means of overcoming objections, *Held* that he was using reasonable diligence in adapting and perfecting the invention from the date of conception to the date of filing his application.

ON rehearing.

MULTIPLE SWITCHBOARD.

Application of Charles E. Scribner filed June 19, 1888, No. 277,557. Application of Milo G. Kellogg filed March 3, 1888, No. 266,081.

Messrs. Barton & Brown for Scribner.

Messrs. Baldwin, Davidson & Wight for Kellogg.

SEYMOUR, *Commissioner:*

This is a rehearing of the Commissioner's decision rendered March 2, 1895, awarding priority of invention to Scribner on the following issue:

The combination, with several telephone-lines connected with multiple switchboards, each being provided with an individual annunciator, of a coil of a different converter included in each line between the switch of the line of the last board and its individual annunciator, the different converters being energized by pulsatory or undulatory currents sent through the circuit of their primaries and means for automatically opening the portion of the circuit of the line which includes the converter when a connection is made therewith at any of the switchboards.

In small telephone-exchanges all the lines may be connected to a single switchboard, where the operator can tell at a glance whether a line that is wanted is busy. No test is required. Where, however, the number of subscribers' lines is large, the calls sent in cannot all be answered at a single board.

Hence a number of separate boards, each with an operator, is provided, and each line of the exchange is connected to a switch on each board, but part of the lines are assigned to have their calls answered at one board and part at another's.

Annunciators for all the lines to be answered by one operator are placed upon the section of the board under his care, where any line having an annunciator upon his section of the board may be connected upon call with any other line coming in at that station, wherever its annunciator may be, and similarly of other sections of the switchboard; but in such exchanges a test is necessary which will show to the operator whether the line called for by the subscriber, if its annunciator is not upon his section of the board, is busy, for obviously it may have been connected with another line at another section of the board.

A patent for a test system for multiple switchboards was granted to Kellogg November 18, 1884, No. 308,315. Its essential apparatus was a spring-jack on each board for each line, a pair of contacts for each jack, open so long as no connection was made at that jack, but closed by the insertion of a connecting-plug into the jack, a test-battery, and a test-instrument—for example, a bell for each board, a test-contact for each jack, all the test-contacts of each line being permanently electrically connected, and a plug or other device for making the test. Its operation was as follows: The insertion of a connecting-plug into a socket for making the connection of any two lines for conversation besides making such connection also closes a pair of contacts at that jack, which connect one side of the test-battery at each board with the test-contacts of that line at each board. An operator at another board in testing this line applies his test-plug to the test-contact, thereby connecting the other side of his test-battery to this contact. This completes the circuit and the bell responds. Thus the test-circuits forming no part of the talking-circuit are normally open at two points, one of which is closed at the jack when a connecting-plug is inserted, the other when the test-plug touches the test-contact. The test was not a test of the talking-lines, but of the local test-circuit only, and this was automatically connected for the test by the same changes that connected two talking-circuits together for use by subscribers.

An early patent was granted to Scribner, No. 305,021, on September 9, 1884, for a test system the essential features of which were a spring-jack for each line on each board, a test-contact on each jack, all test-contacts for each line being permanently electrically connected, a test-plug, and a test-instrument—for example, a telephone—for each board. In circuit with each test-plug was the test-instrument, and there might be a battery, though this is not essential. The jacks were so connected that the insertion of a plug into any one of them connected all the test-contacts of that line to the line-wire. When an operator at another section of the board applied his test-plug to the test-contact of such a line, he heard a click in his telephone, because the current from his battery found circuit through the test plug and contact to line and to ground at the subscriber's station. In case no test-battery were used an induced current or earth-current usually present on grounded lines found circuit

through the operator's telephone to ground. The test was a click for busy lines and silence for free lines, the click being made when the test-plug touched the test-contact and another click when the test-plug was brought away.

Another patent was granted to Scribner, No. 330,061, November 10, 1885, for a multiple switchboard and the means of testing for free and busy lines, in which the circuits were so arranged that any two lines might be connected together upon any one of the boards without including in their circuit the resistance of the contact-points of the switches.

In his earlier patent, just described, the contact-points of the switches were included in the circuit of every two lines when connected together, except those connected at the first board. The essential features of the improvement in his last-mentioned patent, now to be described, were a spring-jack on each board for each line, a test-contact for each jack, all those for each line being permanently electrically connected with one another and with the line, a pair of contacts for each jack, normally closed, but opened by the insertion of a connecting-plug into any jack, the pairs of contacts being connected in series with the test-circuit. In one form there was provided an induction-coil having its secondary in the test-circuit and its primary in a local circuit containing a battery and circuit-breaker. There was also provided a test-plug and test-instrument—as, for example, a telephone. The test-circuit was so connected that it was normally open at one point only—that between the test-plug and the test-contact. When an operator made the test, he heard a buzz in the telephone if the line was free, since the induced current from the induction-coil found circuit through the spring-jacks and telephone to ground. If, however, the lines were in use, the test-circuit was broken at that jack where the connecting-plug was inserted and he heard no sound. An alternative means for producing a sound, a mere click instead of the buzz on free lines, is also described, but may be neglected for the purposes of the present discussion.

The things to be noted are that Scribner had in 1885, and earlier, the means of producing a characteristic noise upon telephone-lines that were free and had subscribers' lines so connected on a multiple switchboard that this characteristic sound was the test for free lines and silence for busy lines. It is also to be noted that Scribner produced this characteristic noise by a converter whose secondary was in a circuit common to several lines joined together after passing through their individual annunciators.

Scribner calls the invention of this interference an improvement upon that of his Patent No. 330,061, of November 10, 1885, and between the two the chief difference is that this issue calls for a coil of a different converter included in each line between the switch of the line on the last board and its individual annunciator, whereas his patent of November 10, 1885, describes a common circuit for several lines, made by bringing several lines together after they have passed through their respective annunciators, leading them thence in one circuit through the secondary to ground. The separate coil of a different converter of the issue is upon the other side of the individual annunciator as a consequnce of the use of separate coils for each subscriber's line. However, the lines when free are affected by induced currents originating in a converter, and when a connection is made at any spring-jack between two lines that part of the line forming the test-circuit which extends from the contact-points through the annunciator, through the converter, and to ground is cut off automatically by the insertion of the connecting-plug.

Another patent to Scribner for a test-circuit for multiple switchboards, No. 427,120, was granted May 6, 1890, upon an application filed December 27, 1886. Its essential apparatus was a spring-jack on each board for each line, a test-contact for each jack, a pair of normally-closed contacts for each jack, those of each line being connected in series, a continuously-operative circuit-breaker for each line, a ground test-circuit, including a telephone, battery, and test-plug. The apparatus is illustrated and described as applied in a mixed exchange, including metallic circuits and grounded circuits. The continuously-operated circuit-breaker is normally in circuit with the line and the pairs of normally-closed contacts in the spring-jack; but as there is no battery in the circuit the line is not affected. When the free line is tested, circuit is made from ground through the test-instrument, battery, test-plug, test-contact, circuit-breaker, and the closed contacts of each jack in series to ground. The operator hears the characteristic noise of the circuit-breaker, the line being free. When a plug is inserted in a jack, thus making connection between two subscribers' lines, the contacts of that particular jack are thereby opened, and this cuts off that part of the test-circuit containing the circuit-breaker, and there is silence on testing.

Another patent was granted to Scribner upon the same date, No. 427,121, for a multiple-switchboard testing apparatus, upon an application filed December 27, 1886, the essential apparatus for which was the the same as that in Patent No. 427,120, just described, except that a buzzer was substituted for the continuously-operated circuit-breaker, and the operation is the same, except that the buzzer operates only when a test is made on a free line. It is set in vibration by the test-battery when the test-circuit is complete and causes a characteristic noise in the telephone when the line tested is free, and the test is silence for busy lines.

After the applications for the last two patents had been pending in the Office for more than eight months there was, on September 9, 1887, a telephone conference in the city of New York, at which Scribner, E. J. Hall, Jr., of New York, W. W. Jacques, of Boston, W. D. Sargent, of Brooklyn, J. P. Davis, of New York, W. R. Patterson, of Chicago, and Angus S. Hibbard, of Morristown, N. J., were present. Stenographic notes were taken, and that portion claimed to concern the present invention was, under objection, inserted in this record. The objection, however, was not insisted upon in argument and it was admitted by counsel for Kellogg that the stenographer's notes are a true statement of what occurred at the meeting. Scribner produced a sketch and described to the con-

ference a test system the essential features of which were spring-jacks upon each board for each subscriber's line, a pair of contacts for each jack, through which the circuit was conducted, an annunciator beyond the last board, a mechanically-operated circuit-breaker beyond the annunciator, through which the circuit was conducted back to the frame of each spring-jack and to ground. There was a test-plug, telephone, and battery in a test-circuit to ground. The insertion of connecting-plugs at any two spring-jacks on different lines not only connected the two subscribers' lines together, but automatically cut off the vibrator from both the lines connected.

The recital of Scribner's patents and applications then pending is useful in order to know Scribner's mental equipment at the time at which he claims to have disclosed the invention of this issue to Patterson and others. All such matters were accessible also to Kellogg, except the contents of Scribner's pending applications; but they have not the same bearing upon Kellogg's case, because it is shown that Kellogg was not engaged upon the special problem in controversy until December 1, 1887.

It is claimed by Scribner that this conference system was the precursor of the improvement embodied in the issue. It is claimed by Kellogg that this is not so; that the issue is exceedingly narrow and consists precisely in the coil of a different converter included in each line between the switch of the line on the last board and its individual annunciator, the different converters being energized by pulsatory or undulatory currents sent through the circuit of their primaries; that the circuit-breaker is essentially different from the converter as an element in the issue; that the circuit-breaker system was recognized by Scribner as different from the issue in that he had applications for the circuit-breaker system pending in the Office, upon which he subsequently took out patents—the last two hereinbefore described—and that after this conference of September 9, 1887, he worked out the system now under consideration and applied separately for a patent for it on June 19, 1888.

In conducting this improvement to successful reality it must be borne in mind that there was sought a better means of producing a characteristic noise as the test for busy lines than any shown in the patents hereinbefore described, or in Scribner's applications then on file, and that the difficulty met with was from the induced currents on busy lines arising from the pulsating current on free lines. This difficulty would not present itself in telephone systems consisting wholly of metallic circuits, where the induction on each limb would neutralize that of its companion. Scribner tried in turn producing the conditions of a pulsatory current on each free line, yet leaving the line free from current except at the moment of the test. To avoid the vast multitude of circuit-breakers he had tried the converter with a number of subscribers' lines connected together before they reached the converter. He had tried the buzzer on each line so arranged as to be at rest except at the moment of the test and to be excited to action by the battery in the operator's test-circuit. As before stated, he had every element in mind in combinations analogous to that of this issue, if not identical with it, including the converter, broadly speaking, as a substitute for the circuit-breaker and including the converter upon lines so connected that one converter would answer for several lines, and he had such combinations constructively reduced to practice in his patents or in his allowable applications before Kellogg had taken up this particular problem.

Taking up the subordinate points of controversy for decision, it is thought that while the circuit-breaker and the converter were not strictly mechanical equivalents in the relation prescribed by this issue the circuit-breaker system was the precursor of the system described in this issue in the sense that to work over it was not to abandon the improvement of this issue nor to suspend work upon it. It is thought, too, that Scribner described the mechanism of the test system in issue to Patterson as early as September, 1887, on their way home from the telephone convention in Pittsburg. It is objected to this conversation between Scribner and Patterson that it does not disclose the invention; that it is so general that it might apply equally well to the circuit-breaker system of the conference of September 9, 1887, or to considerable variations from that in issue, and it must be confessed that the first testimony of Scribner leaves that matter vague, and that the direct examination of Patterson is not sufficiently full; but Patterson was cross-examined with ability and skill, and states that he did not give all the conversation upon this point between Scribner and himself, and remembers that a part of that conversation was with reference to the extra cost of an induction-coil for each line, and that there was discussion as to how many primary circuits could be connected together. There the Examiner dropped the subject. But Scribner was further questioned at page 11 upon the subject of his disclosure to Patterson and more fully recounts what was said.

Since Patterson and Scribner were both skilled electricians, the conversation appears to be full enough for Patterson's comprehension of the improvement and to enable him to identify that which was disclosed as the same as that of this issue, and he does identify it as the same. It is not a subject about which Scribner and Patterson could be honestly mistaken. They knew whether the conversation on the way home from Pittsburg in September, 1887, concerned the improvement of this issue, or the circuit-breaker system, or some other. Since the conversation developed in the record is sufficiently explicit to identify the invention and is as explicit as opposing counsel at the time desired, it must be found that the conversation took place at the time testified to. Nor is the fact of importance, if it be so, that the conference system was the circuit-breaker system for which Scribner had applications then on file in the Patent Office. Whether he sought to patent that system—the circuit-breaker system—or not, it might in either case equally well be that he treated it as a stepping-stone to reach the full invention of this issue.

Angus Hibbard, also an electrician, who was present at the conference of September 9, 1887, considered that the substitution of the converter with the separate coil for each one of several subscribers' lines

was different in detail, but not in principle, from what Scribner had developed in earlier conversations with him; and both Hibbard and Haskins consider, and considered at the day and time of the event, that Scribner was the originator of the idea of employing a converter with separate secondary coils for each of several subscribers' lines, located as called for by this issue, and that the partial test and the model soon afterward constructed were the embodiment of Scribner's idea.

The telegraphic communication between Scribner, in Chicago, and E. M. Barton on December 14, 1887, while not affirmative proof of any conception of Scribner prior to that time, is yet wholly consistent with such prior conception and induces a belief in its probability. In the evolution of this invention in Scribner's mind the characteristic noise was at one time to be produced by a vibrator always in motion with current sent over the line only at the time of the test, at another by a vibrator or a converter in action only at the time of the test, at another by a vibrator always in action, with a current always over the free lines, and in each case the vibrator or circuit-breaker was cut off by connection with any two lines for conversation, no matter at what board the connection was made. If these are not the embodiment of the gist of the invention, they are the legitimate antecedents of it and show progress toward the complete invention, as well as recognition of defects that go far to leave it impracticable.

As thought out by Scribner in September, 1887, it was applicable to metallic circuits. His connection with telephone-exchanges, then consisting in this country almost wholly of grounded lines, in his estimation required him to provide against objectionable induction developed in such lines. It is unnecessary to recount his experiments which convinced him that without the perfection of details the improvement would be practically useless, because the whole system would be, as he expresses it, "on a buzz." It is enough that he anticipated this difficulty and that in view of it his further tests were temporarily suspended. The difficulty was met and perhaps overcome by him by the employment of a generator which should transmit inaudible pulsations to all of the lines through the converters and by employing a vibrator in connection with the operator's test-circuit which should render the pulsations audible to the switchboard operator that would be inaudible to subscribers. Scribner worked out the details, tested the invention, and perhaps overcame the difficulty arising from induced current on grounded lines, although this is not certain, nor is it necessary to decide that point. Under his direction a model was made and tried in the latter part of April, 1888. His application for a patent followed in due course on June 19, 1888.

On December 3, 1887, Kellogg, in Chicago, having conceived this invention, disclosed it to Blanchard. This disclosure has been much criticised by counsel for Scribner; but in the absence of cross-examination of Blanchard sufficient to disclose his want of comprehension of the invention it ought to be found, and is found, from the fact that Blanchard made drawings from notes and directions given by Kellogg, and from the fact that Blanchard testifies that he understood the invention at the time, and in the absence of any answer from him tending to show that this was untrue, that the disclosure to Blanchard is proved and is sufficient. It is thought, also, that the invention as formulated by Kellogg is not impractical, as Scribner's counsel contends, although it appears to be in a form inapplicable to grounded lines.

Upon the whole record it is found that Scribner was the first to conceive this invention; that he forebore to apply for a patent during the progress of his experiments and until he had perfected his invention and tested its value to the fullest extent possible, except in a complete telephone-exchange; that he patiently elaborated it in its working details and sought for and devised subsidiary means of overcoming the induction in grounded lines, and thus that Scribner was using reasonable diligence in adapting and perfecting his invention from the date of his conception to the date of filing his application.

It is claimed by Kellogg that when, on the 14th day of December, 1887, Scribner, in Chicago, was informed by telegram from New York by E. M. Barton, the president of his company, that Angus S. Hibbard had a new test for the Courtland-street exchange, then building, which Haskins, the electrical engineer of the Western Electric Company, had examined, and which turned out to be in substance the same as Scribner's September conception, and when Scribner replied that he was afraid it would not work, that he had made a diagram of the same thing and had given it up because the constant buzz of not-busy lines would induce a buzz on busy lines and make them test busy and the whole system would be on a buzz and it would be impossible to keep it off from busy lines, Scribner thereby abandoned his earlier conception and so much of this invention as had been conceived of by him at that time. Nevertheless he directed that a test be made, and suggested that it should be tried on pretty long cables. The test resulted in verifying Scribner's anticipations of its deficiencies, hereinbefore discussed, and yet proved the general merit of the invention and that it might be further developed into a successful thing. It would seem to be a harsh construction to put upon this language of Scribner's to the chief officer of his own company to hold it as conclusively showing an abandonment of his invention as thus far developed, and such construction should not be put upon it unless the inexorable rules of evidence require it. Rights are not ordinarily shown to be abandoned except by proof of acts indicating it upon which opposing rights are built up. Had Scribner used this language to Kellogg it might justify Kellogg in assuming and acting upon the assumption that the field of invention was open to him for all that Scribner had done. Under the circumstances of this case, and with other language in the same conversation directing further tests to be made, I cannot find in the mere words "I gave it up" ground for holding that Scribner left the field.

The decision of the Examiners-in-Chief in awarding priority to Scribner is affirmed.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Western District of Michigan, Southern Division.

UNITED STATES PRINTING COMPANY *v.* AMERICAN PLAYING CARD COMPANY.

Decided July 26, 1895.

1. MURRAY—MACHINE FOR PRINTING CARDS—VALID AND INFRINGED.

Letters Patent No 381,716, granted April 24, 1888, to Samuel J. Murray, for an improvement in a machine for printing cards, considered and *Held* valid and infringed.

2. INVENTION—COMBINATION OF OLD ELEMENTS.

Where it appears that all the elements of the combination claimed in the patent are old, but a new and valuable result has been obtained, the safety and efficiency of the machine greatly enhanced, and the profits resulting from its operation greatly increased, *Held* that the combination itself displays invention.

3. DOUBLE DAMAGES—MANUFACTURER AND USER.

Damages can be collected from the manufacturer of a machine, and further damages from a subsequent purchaser and user of the same machine. The payment of damages for making an infringing machine does not give any right to the future use of the machine; but this may be restrained by injunction, and when the whole machine is an infringement it may be ordered to be delivered up and destroyed. (*Birdsell* v. *Shaliol*, 39 O. G., 261; 112 U. S., 485.)

4. SAME—DECREE FOR PROFITS.

Where a patentee takes a decree for profits against a manufacturing infringer, he sets the manufactured machine free. The profits of the infringer are full compensation to the complainant for the wrong done him; but a judgment for damages covers only damages in the past and has no relation to the future.

5. FAILURE TO MARK PATENTED MACHINE—MUST BE PLEADED.

Where it was objected that defendant was not liable because the patented machine was not marked with notice of the patent, *Held* that such defense to be available must be set up in the answer and established by proof. (Rob. on Pat., sec. 1046; *Goodyear* v. *Allyn*, 6 Blatchf., 88.)

Mr. Arthur v. Briesen for the complainant.
Messrs. Boudeman & Adams for the defendant.

SAGE, *J.*:

This suit is for infringement of Patent No. 381,716, issued April 24, 1888, to the Russell & Morgan Printing Company, as assignee of Samuel J. Murray, for an improvement in a machine for printing cards.

The present complainant, the United States Printing Company, is the Russell & Morgan Printing Company, under a name adopted under due process of law on February 20, 1891.

The patented improvement is a contrivance for punching playing-cards. The fifty-two prints for a complete pack of cards are printed on a single strip of paper, which is then cut into strips, which are fed to the machine to be punched one at a time. This is a work requiring great accuracy, that perfect cards, not distinguishable one from another by the appearance of their backs or by the sense of touch, may be produced. To this end they must not only be of uniform size, but the design for the back must have an even margin on all sides and exactly the same on every card. The complainant's machine is an improvement on the Bliss single-feed machine, referred to also in the record as the "Bliss & Williams single-feed machine." In that machine the strip of card-prints was fed by the hands of the operator directly under the punch, so that on its every downward movement a card was cut out. The punch was held suspended by a spring during the insertion of the strip. The push of the operator's foot upon a treadle threw into action a clutch, and the punch then descended by the action of the main shaft. While in its upward position, a clamp to the left of the die was held open by suitable mechanism, and the strip was inserted under the clamp and between the jaws of a feeding device, which were opened and closed mechanically. When the operator started the machine, the clamp pressed on the strip and held it firmly during the process of punching. Simultaneously with the lifting of the punch the clamp was raised and the jaws of the feeding device closed on the strip and moved to the right in the direction of the punch far enough to bring the next card-slip into position. The clamp then closed on the strip, the feeding device returned to its starting-point, and the punch was brought down. When all the cards were punched out from the strip, the operator stopped the machine, the clamp and feeding-jaws were again automatically held open, a fresh strip was inserted with its first card under the punch, and the machine again set in operation. A suitable gage was provided to enable the operator to adjust the strip so that the separate cards would be punched out uniformly and with even margins.

Among the chief disadvantages of this machine were the danger to the operator's fingers in feeding the strips and the lessened punching capacity resulting from the frequent stoppage of the machine to insert new strips and adjust the gage. In placing the strip in position the hand was brought into close proximity to the punch, so that the pressure of the treadle by the foot an instant too soon was liable to result in cutting off the operator's fingers. It is in testimony that in the course of a few years' operation of these machines in the complainant's manufactory fifteen or eighteen girls lost portions of their fingers in this way.

The complainant's patent shows an additional, supplementary, or auxiliary feeding mechanism to carry the card-strip to the feed which had been used in the Bliss & Williams machines, at the same time providing an adjustable gage in such relation to this auxiliary feed mechanism as to effect the essential requisites of indicating the correct placing of the strip in order to insure the accurate punching out of the card-slips. This was accomplished by adding to the single feed a second feed, which took the material from the operator and fed it to the single feed, which thereby became the main feed. By this means the strip was placed in position in the auxiliary feed at such a distance from the punch that the danger of maiming the operator was entirely avoided. There was the additional advantage that a new strip could be placed in the auxiliary feed and adjusted by gage to its correct position while the machine was still at work upon the preceding strip, and the necessity for stopping the punch whenever a new strip was to be used was obviated. The gage was so contrived and adjusted that instead of being in connection with the main feed it was in connection with the auxiliary

feed, making it practicable to operate the punch continuously and without intermission.

The defense is that there is no invention nor patentable combination in this new mechanism, but only an aggregation of old elements. I am not able to concur in this view. A careful examination of the testimony and of the machine itself has satisfied me that although the elements of the combination claimed in the patent are old the combination itself displays invention. A new and valuable result has been obtained. The safety and efficiency of the machine have been greatly enhanced and the profits resulting from its operation greatly increased. The opinion of the court is that the complainant's patent is valid and that the defendant infringes.

It was argued upon the hearing that the defendants' machines were freed from the patent by reason of the fact that they were made by the Bliss Manufacturing Company, with whom complainant had previously settled for its damages for infringement. Whether damages can be collected from the manufacturer of the machine and further damages from a subsequent purchaser and user of the same machine was fully considered in *Birdsell* v. *Shaliol* (30 O. G., 261; 112 U. S., 485) by the Supreme Court, which held that an infringer does not, by paying the damages for making and using a machine in infringement of a patent, acquire any right to the future use of the machine, and that, on the contrary, he might, in addition to the payment of damages for past infringement, be restrained by injunction from further use and, when the whole machine is an infringement of the patent, be ordered to deliver it up to be destroyed. That case has been cited with approval in *Callaghan* v. *Myers*, (46 O. G., 565; 128 U. S , 617, 665;) *Tuttle* v. *Matthews*, (36 O. G., 694; 28 Fed. Rep., 98;) *Bragg* v. *City of Stockton*, (27 Fed. Rep., 509, 510;) *New York Filter Co.* v. *Schwarzwalder*, (58 Fed. Rep , 577, 579;) *Kelly* v. *Ypsilanti Dress Stay Co.*, (54 O. G., 659; 44 Fed. Rep., 19;) *Consolidated Roller Mill Co.* v. *Coombs*, (48 O. G., 255; 39 Fed. Rep., 803,) and *Thompson* v. *American Bank Note Co.*, (45 O. G., 347; 35 Fed. Rep., 203–205.) The cases to the contrary cited by defendant were decided prior to *Birdsell* v. *Shaliol* and are virtually overruled by that case. Where a patentee takes a decree for profits against a manufacturing infringer, he thereby sets the manufactured machine free. The distinction is obvious. In such cases the profits of the infringer are full compensation to the complainant for the wrong done him by the unauthorized manufacture and sale of the infringing machine; but where there is merely a settlement or judgment for damages it is only for damages in the past and has no relation to the future.

It was also objected upon the hearing that defendant was not liable in view of the alleged failure to mark the patented machine with notice of the patent. That is a matter of defense which was not pleaded and which to be available must be set up in the answer and established by proof. (Rob. on Pat., sec. 1046; *Goodyear* v. *Allyn*, 6 Blatchf., 38.) In that case Judge Blatchford said that there were several answers to this objection, which was first made there, as it is here, on the hearing: First, that it did not appear by the bill that the plaintiffs, or either of them, had ever made or vended any articles under the patent, and that that fact was not shown by the defendants; second, if that fact had appeared either by bill or otherwise it would be for the defendants to show a failure by the plaintiffs to mark, as required, the articles made or vended, and then the burden of proof would be on the plaintiffs to show that, before suit was brought, the defendants were duly notified that they were infringing that patent and that they continued, after such notice, to make or vend the article patented; third, that the failure to mark would only have the effect to prevent the recovery of damages. It would not affect the right to an injunction.

Judge Blatchford also held that it was questionable whether the statute would apply to a suit in equity, because damages could not be recovered in equity. That ruling, however, was under the patent act of 1836, which did not provide for damages in causes in equity, as the statute now in force does provide. This defense was not pleaded, and it appears in evidence that the defendant company was, before they procured their infringing machines, notified of the complainant's patent, a copy of which was shown to them, and that they were warned that they must steer clear of it. That defense is, therefore, not well taken.

The decree will be for the complainant, for an injunction and an account.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 72.—No. 11. TUESDAY, SEPTEMBER 10, 1895. PRICE—$5 per year.

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Names of Applicants.

When the full first name of the applicant does not appear either in his signature or in the preamble to the specification, the Examiner will, in his first official letter, require an amendment supplying the omission, and he will not pass the application to issue until the omission has been supplied, unless an affidavit shall have been filed setting forth that the full first name of the applicant is the one originally given by him.

Withdrawal of Cases from Issue.

Hereafter all amendments proposed to allowed applications which involve a withdrawal from issue, and all petitions and requests relating thereto, shall be filed with the docket clerk, Mr. J. M. Emory, and transmitted by him to the Primary Examiner for report. If the Examiner shall report favorably to the admission of such amendment, the matter will be laid before the Commissioner for immediate determination. If the Examiner shall report unfavorably, the case will be docketed and will be heard and decided by the Commissioner in regular course, unless good reasons shall appear for immediate action.

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below:

INDEX TO FRENCH PATENTS, 1791 to 1879, inclusive, (subject-matter,) one volume, 935 pages, bound in cloth	$10 00
INDEX TO ITALIAN PATENTS, 1848 to May 1, 1892, (subject-matter,) one volume, 120 pages—	
Bound half-turkey	2 50
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Publishers' Catalogues.

This Office would be pleased to receive from manufacturers and publishers such catalogues, circulars, price-lists, or other advertisements relating to the sciences and mechanical arts as are published by them for gratuitous distribution; but notice is hereby given such manufacturers or dealers who feel disposed to send their publications that not less than three copies should be forwarded in order that the subjects may be properly indexed, classified, and subclassified in the Scientific Library for convenient and ready reference.

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It is hereby directed that oaths accompanying applications for patents made within the following-named foreign countries must be taken before a minister, chargé d'affaires, consul, or commercial agent holding commission under the Government of the United States:

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Argentine Republic.	Norway.
Belgium.	Peru.
Brazil.	Portugal.
Costa Rica.	Russia.
Denmark.	San Salvador.
Haiti.	Servia.
Honduras.	Sweden.
Italy.,	Switzerland.
Mexico.	

Applications filed in this Office presenting oaths not executed in compliance with this order will be treated as incomplete.

Amendment to the Rules of Practice

The following regulations for the conduct of proceedings in the Patent Office are established:

65. An applicant will be considered to persist in his claim for a patent without altering his specification in case he fail to act in prosecution of the same for six months after the Office action thereon, and thereupon the Examiner will make a re-examination of the case.

134. In appealable cases in which no limit of appeal is fixed, no appeal will be entertained by any tribunal in the Office unless taken within six months from the action which puts the case in condition for appeal, unless it be shown to the satisfaction of the Commissioner that such delay was unavoidable.

68. In every case pending before the Office more than five years, in which the record raises the presumption that there have been intentional delays in prosecution, the Examiner may require the applicant to show cause why the case was not more rapidly prosecuted, and at the hearing thereon, or upon failure of the applicant to appear, the Examiner will determine, under all the circumstances of the case, whether there have been intentional and unreasonable delays in prosecution, and upon finding the fact to be so, he will reject the case for that reason. Present Rules 65, 69, and 134 are repealed, and present Rule 68 is renumbered 69.

The foregoing rules will be in effect on and after April 15, 1895, and will affect pending cases as though the last Office action were upon said date.

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Issue of September 10, 1895.

Patents	420	No. 545,867 to No. 546,286, inclusive.
Designs	19	No. 24,658 to No. 24,676, inclusive.
Trade-Marks	25	No 27,041 to No. 27,065, inclusive.
Labels	None.	
Prints	None.	
Reissues	1	No. 11,507.
Total issue	465	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Prints.	States.	Patents and Designs.	Trade-Marks and Prints.
Alabama	1	.....	New Hampshire	4	.....
Arizona Territory	.....	.....	New Jersey	13	...
Arkansas	2	.....	New Mexico Territ'y	.....	.....
California	15	1	New York	80	7
Colorado	4	.....	North Carolina	2	3
Connecticut	9	.....	North Dakota	2	.....
Delaware	2	1	Ohio	27	1
District of Columbia	1	.....	Oklahoma Territory	.....	.....
Florida	3	.....	Oregon	2	.....
Georgia	2	.....	Pennsylvania	38	2
Idaho	1	.....	Rhode Island	8	....
Illinois	29	.....	South Carolina	1	.....
Indian Territory	.....	.....	South Dakota	.....	.....
Indiana	15	.....	Tennessee	16	.....
Iowa	4	...	Texas	4	1
Kansas	3	.....	Utah Territory	.....	.....
Kentucky	3	....	Vermont	.....	.....
Louisiana	2	.....	Virginia	5	.....
Maine	2	.....	Washington	1	.....
Maryland	3	...	West Virginia	.....	.....
Massachusetts	35	3	Wisconsin	8	.....
Michigan	27	....	Wyoming	.....	.....
Minnesota	7	....	U. S. Army	.....	.....
Mississippi	.....	.....	U. S. Navy	.....	.....
Missouri	15	2			
Montana	2	.....	Total to citizens of the United States	400	21
Nebraska	2	.....			
Nevada	.....	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Algeria	.....	.....	Mexico	.....	.....
Australia	.....	.....	Netherlands	.....	.....
Austria-Hungary	1	..	Newfoundland	.....	.....
Barbadoes	.....	.....	New South Wales	.....	.....
Belgium	.....	1	New Zealand	.....	.....
Bermuda	.....	.....	Norway	1	.....
Brazil	.....	.....	Portugal	.....	.....
Canada	6	2	Queensland	.....	.....
Chile, Republic of	.....	.....	Roumania	.....	.....
Colombia	.....	.....	Russia	1	.....
Cuba	.....	.....	Scotland	1	.....
Denmark	.....	.....	South African Republic	.....	.....
Ecuador	.....	.....	South Australia	.....	.....
Egypt	.....	.....	Spain	.....	.....
England	8	.....	Sweden	1	.....
Finland	1	.....	Switzerland	1	.....
France	2	.....	Victoria	.....	.....
Germany	16	1	West Australia	.....	.....
Guatemala	.....	.....			
Ireland	.....	.....			
Isle of Jersey	.....	.....	Total to citizens of foreign countries	39	4
Italy	.....	.....			

APPLICATIONS UNDER EXAMINATION.

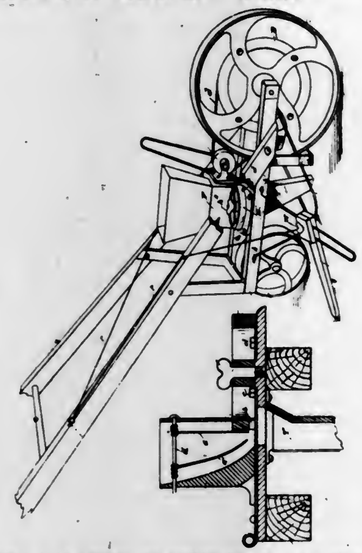
Condition at Close of Business September 3, 1895.

Division No.	Subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears.—Under one month.			
15	Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Aug. 5	Aug. 31	75
31	Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	Aug. 3	Aug. 30	66
11	Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather Working Machinery.	Aug. 3	Aug. 28	133
4	Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Aug. 24	Aug. 27	44
12	Mechanical Engineering, Store-Service, etc.	Aug. 9	Aug. 26	141
5	Fine Arts, Stationery, Book-Binding, Music, etc.	Aug. 7	Aug. 24	127
23	Instruments of Precision, Acoustics, etc.	Aug. 3	Aug. 22	115
2	Farm Stock, Products, etc	Aug. 5	Aug. 21	157
16	Telegraphy, Telephony, Electric Lighting and Signaling.	Aug. 6	Aug. 20	124
27	Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Aug. 5	Aug. 19	125
34	Railway Brakes, Draft Appliances, and Rolling-Stock.	Aug. 3	Aug. 19	129
17	Paper-Manufactures and Printing	Aug. 5	Aug. 17	103
20	Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	Aug. 5	Aug. 17	124
25	Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone Working, Vegetable Cutters and Crushers.	Aug. 4	Aug. 17	100
13	Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Aug. 10	Aug. 16	82
29	Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Aug. 6	Aug. 15	110
8	Furniture, Beds, Store Furniture, etc.	Aug. 3	Aug. 15	267
18	Steam-Engineering, etc	Aug. 8	Aug. 14	83
6	Chemistry, Explosives, Medicines, Fertilizers, Preserving, Photography, Sugar and Salt, Surgery	Aug. 9	Aug. 13	170
1	Tillage and Fences	Aug. 7	Aug. 5	208
22	Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Aug. 5	Aug. 5	138
30	Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, Optics.	Aug. 5	Aug. 5	240
28	Pneumatics, Refrigeration, Air and Gas Engines, etc.	Aug. 3	Aug. 3	191
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3	Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	Aug. 3	July 23	94
	Between one and two months.			
14	Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	July 29	Aug. 19	87
21	Textiles, etc.	July 31	Aug. 16	74
10	Carriages and Wagons	July 29	Aug. 15	172
32	Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels, etc.	July 26	Aug. 9	293
26	Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Aug. 1	Aug. 5	147
7	Harvesters, Games and Toys, and Velocipedes.	July 20	Aug. 5	556
9	Hydraulics, Fire-Extinguishers, etc.	July 5	Aug. 5	335
24	Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	July 19	July 19	250
	Total number of applications awaiting action			5,358
	Under one month in arrears.			
	Designs	Aug. 22	Aug. 24	63
	Trade-Marks	Aug. 29	Aug. 28	67

PATENTS

GRANTED SEPTEMBER 10, 1895.

545,867. SEED-PLANTER. HIRAM A. BACON, Pontiac, Mich. Filed Nov. 16, 1894. Serial No. 529,017. (No model.)



Claim.—1. In a seeder, the combination of a rotary block provided with a vertically disposed rim, and openings of various sizes through said rim, a hopper into which a segment of the rim projects, a plurality of vibrating stirring fingers arranged to vibrate in front of the opening through said rim, and means for producing such vibratory motion, substantially as described.

2. In a seeder, the combination of a hopper, a rotary block projecting thereinto provided with a vertically disposed rim, holes through said rim of various sizes for the exit of seed, vibratory fingers adapted to vibrate in front of said opening, and a sliding valve arranged to graduate the size of the opening through which the seed passes, substantially as described.

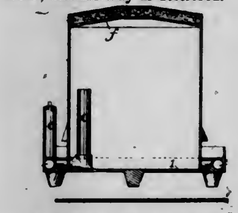
3. In a seeder, in combination a rotary block provided with a vertically disposed rim, and openings of various sizes through said rim, a hopper into which a segment of the rim projects, means for forcing the seed from said hopper through the spout, and a looped drag adapted to cover the seed dropping from said spout, substantially as described.

4. In a seeder, in combination a rotary block provided with a vertically disposed rim, and openings of various sizes through said rim, a hopper through which a segment of said rim projects, a plurality of vibrating stirring fingers arranged to vibrate in front of the opening through said block, a pair of marking guides, one located on each side of the seeder frame, a flexible shifting cord, the ends of which are secured to the markers and the bight of which passes back to and engages with a series of pins located on the frame of the seeder, substantially as described.

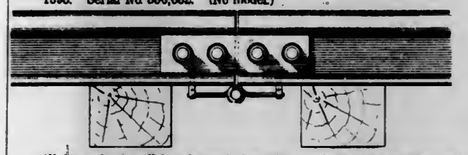
545,868. ANNEALING BOX AND PAN. REGINALD BAILEY, Cumberland, Md. Filed Apr. 2, 1895. Serial No. 544,135. (No model.)

Claim.—1. The combination of an annealing box, and an air-vent pipe or flue cast in the base or pan of the box exteriorly of the body of said box, said pipe having one end extending into the box and the other open to the atmosphere outside the box; substantially as described.

2. The combination of an annealing box, and an air-vent pipe or flue cast in the base or pan of the box exteriorly to the body of said box, said pipe having one end extending into the box and the other open to the atmosphere outside the box and provided with an automatic safety valve; substantially as described.



545,869. RAIL-BOND. ROLLIN A. BALDWIN, South Norwalk, Conn., assignor to himself and Heavlon Rowland, same place. Filed Jan. 24, 1895. Serial No. 536,032. (No model.)

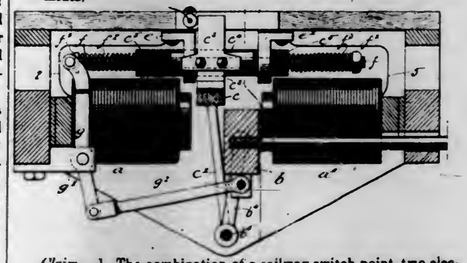


Claim.—1. A rail bond consisting of two plug supports adapted to be attached to the rails by screw threads, in combination with a connecting conductor consisting of a stiff rod or wire threaded at both ends into the respective plugs, substantially as described.

2. A rail bond consisting of two plug supports adapted to be attached to the rails, in combination with a connecting conductor consisting of a stiff rod or wire threaded at both ends into the respective plugs and provided with a bend or loop which, when the connector is detached, throws the ends out of line, and necessitates distorting the connector to properly connect it with the plugs.

3. A rail bond consisting of two plug supports adapted to be attached to the rails, in combination with a connecting conductor consisting of a stiff rod or wire threaded at both ends, the two threads being in the same direction and one cut longer than the other, for the purpose set forth.

545,870. ELECTRIC-RAILWAY SWITCH. ROLLIN A. BALDWIN, South Norwalk, Conn. Filed Jan. 4, 1895. Serial No. 533,793. (No model.)



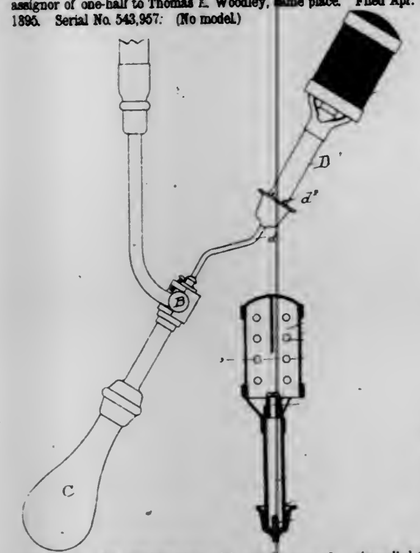
Claim.—1. The combination of a railway switch-point, two electro-magnets adapted to move the same in opposite directions, a circuit changer acting to change the path of the current from one magnet to the other, and an armature common to both magnets and controlling the circuit changer to hold it in a given position until the flow of current ceases and then to permit it to operate, substantially as described.

2. The combination of a railway switch-point, two electro-magnets, an armature connected with the switch point and adapted to move the same in opposite directions, a second armature common to both magnets, a contact device carried by said second armature, two contact points in circuit respectively with said magnets and adapted

to be engaged alternately by the contact device on the armature and means for moving the second armature when the flow of current ceases.

3. The combination of the two electro-magnets, armature c, a tube attached thereto, a contact device carried by the tube, two contact points with which said device is adapted to engage and which are in circuit respectively with said electro-magnets, a rod passing loosely through the tube and projecting from both ends thereof, springs interposed between the ends of the tube and the ends of the rod respectively, and a second armature and connections between the same and the rod, whereby movements of the rod will compress one of the springs, for the purpose set forth.

545,871. CIGAR-LIGHTER. WILLIAM A. BLODGETT, Chicago, Ill., assignor of one-half to Thomas E. Woodley, same place. Filed Apr. 1, 1895. Serial No. 543,957. (No model.)



Claim.—1. The combination with the burner of a cigar-lighter of a gauze surface arranged adjacent to the exterior of the flame and close enough thereto so that when the end of a cigar is placed against the gauze and the suction applied, the heat will be drawn thereby to the gauze and the cigar thus lighted evenly and exactly at the end, substantially as specified.

2. In a cigar-lighter, the combination of the Bunsen burner attached to a flexible tube, and a gauze surface arranged adjacent to the exterior of the flame and close enough thereto so that when the end of the cigar is placed against the gauze and the suction applied the heat will be drawn thereby through the gauze and the cigar lighted evenly and exactly at the end, substantially as specified.

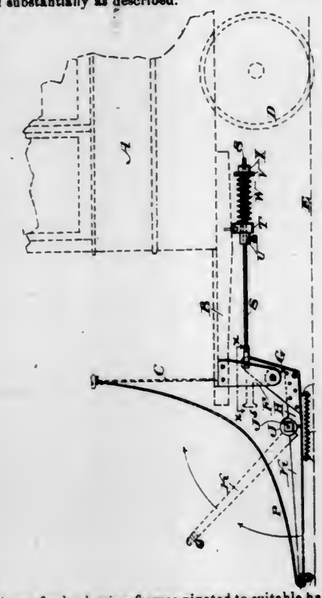
545,872. CAR-FENDER. JAMES BOWEN, Philadelphia, Pa. Filed June 22, 1895. Serial No. 553,638. (No model.)

Claim.—1. A car fender consisting of frames mounted in suitable hangers on a car, arms pivotally attached to and extending forward from the lower part of said frames, springs connected to said arms and frame, and a spring controlled rod connected with the upper portion of said frames, said parts being combined substantially as described.

2. In a car fender, frames suitably supported in hangers attached to the car, arms extending forwardly from said hangers, other arms pivoted thereto, also extending forwardly, means for limiting the downward movement of said arms, rollers mounted thereon, a buffer, a netting, a rod extending rearwardly from the upper portion of said frames, said rod being suitably supported and guided, and having a projection on the end thereof, a spring intermediate the support of said rod and projection, and a collar attached to said rod and located on the other side of said support, substantially as described.

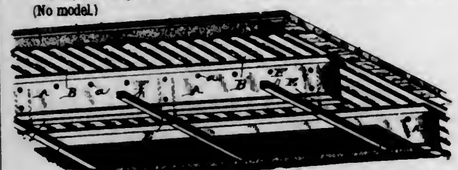
3. In a car fender, frames mounted in suitable supports, arms extending forwardly therefrom, other arms pivoted thereto, and having rollers journaled on the forward portion thereof, a buffer, netting, a spring adjacent the pivotal point of said arms, a rearwardly extending rod attached to said frames, a collar on said rod, a guide for the latter, a washer on said rod and a spring intermediate said washer and guide, substantially as described.

4. A car fender having depending frames, each of said frames having the ears J^3 and the shoulders J^3 thereon, the arms K with tongues J' and shoulders J^4, bolts connecting said tongues and ears, and springs connected with said frames and arms, said parts being combined substantially as described.



5. A car fender having frames pivoted to suitable hangers, arms extending forwardly from said frames and pivotally connected therewith, springs connecting said arms and frames, and shoulders on said frames forming stops for said arms, said parts being combined substantially as described.

545,873. FIREPROOF FLOOR AND CEILING. WILLIAM H. BROWN, Indianapolis, Ind. Filed May 31, 1895. Serial No. 551,175. (No model.)



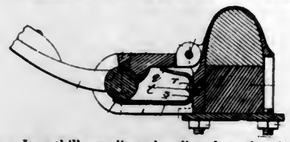
Claim.—1. The combination, in a floor structure, of the floor beams, metallic plates secured to the tops of said floor beams and having their edges turned vertically upward, the vertical portions of the respective plates being laid close to each other, a concrete filling on said metallic plates between said upturned edges, and flooring secured above said edges and said concrete, by nails driven between said upturned edges of said plates, substantially as shown and described.

2. The combination, in a floor structure, of floor beams composed of two members riveted together, with spikes held between the members and projecting upwardly from the tops of the floor beams, and metallic plates placed on said floor beams and held thereon by said spikes, which are forced therethrough and then bent over thereon, substantially as shown and described.

3. The combination, in a floor structure, of floor beams composed of two channel bars riveted together back to back, loop-like hangers secured between said bars and there held by the squeeze of the rivets, lathing strips inserted in said hangers, and lathing and plastering secured to said lathing strips, substantially as set forth.

4. The combination of the beams A composed of two channel bars riveted together back to back, with the hangers E and spikes a' held between them, the metallic corrugated sheets secured to the tops of said beams by said spikes and having upturned edges, concrete placed on said sheets, flooring secured to the top by means of nails driven between said edges, lathing strips secured in said hangers, lathing supported by said lathing strips, and plastering applied to said lathing, the whole forming a composite fire-proof floor-and-ceiling structure, substantially as shown and described.

545,874. THILL-COUPLING. CHARLES F. BUCHANAN, Alpena, Mich. Filed May 9, 1895. Serial No. 548,661. (No model.)



Claim.—In a thill coupling, the clip adapted to be secured to an axle and having the parallel arms c, provided with bearings and lug journals *d*, a thill iron having journal ends *f*, arranged in the bearings of arms c, the cover D, adapted to bear upon and hold the thill iron in position and having perforated ears *g*, a hinge rod taking through and connecting the lug journals *d*, and ears *g*, the spring catch E, secured to one of the arms c, and having its upper end beveled and also having a shoulder adapted to retain the cover D, upon the thill iron, and the anti-rattler spring F, secured at an intermediate point of its length to the clip and having the long branch *l*, bearing against the under side of the thill iron and a short branch *n*, bearing against the under side of the cover D, at a point in advance of the pivot point of the same whereby when said cover is released from the catch E, it will be forced upwardly to permit of a ready removal of the thill iron, substantially as specified.

545,875. MITTEN. AUGUSTUS R. BURPEE, Lakeport, N. H. Filed Jan. 2, 1895. Serial No. 533,666. (No model.)



Claim.—A double knit mitten formed from a single length of cut goods and having seams along the tips and inner sides of the thumb portions and along the tips and sides of the hand portions adjacent to the thumbs, the edges of the goods of the inner doubled part or portion along the seam of the thumb and side of the hand facing outward and opposite the inner surface of the outer doubled part or portion, and the edges of the goods along the seams of the latter part or portion facing inward and opposite the outer surface of the former part or portion.

545,876. NECKTIE-RETAINER. ROBERT S. BUSHNELL, New York, N. Y. Filed June 7, 1895. Serial No. 551,979. (No model.)



Claim.—As a new article of manufacture, a device for retaining neckties, constructed of wire, comprising two upwardly extending loops adapted to be introduced under the collar and to embrace the collar button, and a loop extending substantially at right angles thereto through which the necktie may be passed while the knot is being made, substantially as described.

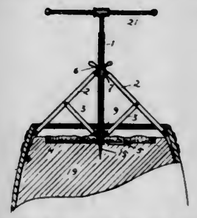
545,877. PIPE-COUPLING. WILLIAM CURLETT, San Francisco, Cal. Filed Dec. 21, 1894. Serial No. 532,546. (No model.)



Claim.—1. The herein described pipe coupling comprising a soft metal pipe section having its end flared, an exteriorly threaded hard metal pipe section inserted in the end of the soft metal section, the hard metal thimble mounted on the soft metal pipe section and having its outer end contracted and provided at its opposite end with exterior threads, and the coupling sleeve having interior threads engaging the exterior threads of the thimble and also having a threaded annular flange engaging the exteriorly threaded hard metal pipe section, substantially as and for the purpose set forth.

2. The herein described pipe coupling comprising two soft metal pipe sections having their contiguous ends flared, an exteriorly threaded hard metal pipe section mounted in the ends of the soft metal sections and interposed between the same, the hard metal thimbles mounted on the soft metal pipe sections and having their outer ends contracted and provided at their opposite ends with exterior threads and the coupling sleeve having interior threads engaging the exterior threads of the thimbles and also having a threaded annular flange engaging the exteriorly threaded hard metal pipe section, substantially as and for the purpose set forth.

545,878. DISINTEGRATING-TOOL FOR SUGAR IN BARRELS. JOHN DENNISON, Fort Wayne, Ind. Filed Mar. 21, 1895. Serial No. 542,578. (No model.)

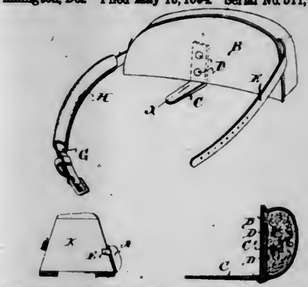


Claim.—1. A disintegrating tool for the purpose specified, comprising a screw threaded rotary shaft having upon its lower end the rigid cutting blades 4 and 5, a pair of pivotally mounted oblique arms, mounted as shown, for the purpose described, and provided with the toggle levers 3 pivotally mounted in the screw-threaded collar 9, all substantially as described.

2. In a disintegrating tool for sugar in barrels, the combination of the screw threaded shaft 1 having an operating handle in the top thereof, the cutting blades 4 and 5 removably fixed upon the lower end of said shaft, the oblique arms 2 pivotally mounted in the slidable collar 7 on said shaft, the toggle levers 3 pivotally mounted in the screw-threaded collar 9 and having their upper end pivotally connected to the said arms, and the screw-threaded thumb-nut 6 adapted to vertically adjust the said collar 7 on said shaft all substantially as described.

3. In a disintegrating tool for the purpose specified, the oblique arms 2 pivotally mounted at their upper end in the slidable collar 7, and pivotally supported at their central portion by the levers 3, and having at their free end a claw shaped termination to secure a holding grip upon the sides of the barrel in which it is placed, the toggle levers 3 pivotally mounted in the screw threaded and vertically adjustable collar 9, and having their outer ends pivotally connected to the arms 2 as shown, and the screw threaded thumb-nut 6 adapted to adjust and secure the said collar 7 in position on said shaft 1, all substantially as described.

545,879. INTERFERING-PAD FOR HORSES. ERIC ERICSSON, Wilmington, Del. Filed May 18, 1894. Serial No. 511,730. (No model.)

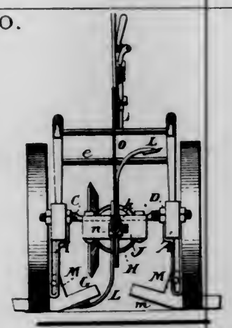


Claim.—An interfering pad, adapted to be attached to the side of the animal's hoof, comprising a pad having an angular attached tongue, connected with the interior portion of the pad and constructed to extend between the hoof and shoe, and the attaching straps, one connected to the pad near the upper inner corner and the other near the opposite lower inner corner, and a rubber tube surrounding one of the straps, substantially as described.

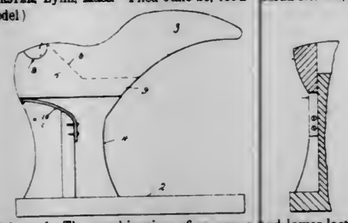
545,880. COTTON CHOPPER AND CULTIVATOR. HENRY C. EZELL, Twilight, and BERRY A. GEORGE, Iron City, Ga. Filed Mar. 14, 1894. Serial No. 503,603. (No model.)

Claim.—The scraper M obtuse-angled on its bottom face to allow the face of one arm to run in the furrow while the other scrapes the inclined side of the cotton row, and provided with a median vertical arm or shank adjustable by a pin or clamp screw in a vertical slot of its holder as shown.

545,880.



545,881. LAST FOR LEVELING-MACHINES. WILLIAM E. FORSTER, Lynn, Mass. Filed June 28, 1894. Serial No. 515,936. (No model.)



Claim.—1. The combination of an upper and lower last member divided at or near the instep, transversely extending interlocking connections between the members, an instep rest upon the lower member projecting toward the instep, and a bearing for said rest upon the upper member adjacent to the instep, substantially as described.

2. The combination of an upper and lower last member, a vertical tongue formed upon the lower member, an instep rest forwardly projected from the lower member, a groove at the back of the upper member to receive the tongue on the lower member, and a bearing for the instep rest adjacent to the instep of the upper member, substantially as described.

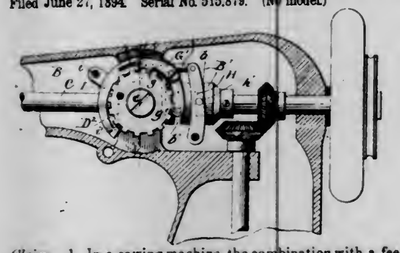
3. The combination of an upper and lower last member, a vertical tongue on the lower member, a forwardly projected tongue upon the lower member extending toward the instep of the upper member, and vertical and longitudinal grooves upon the upper member to receive the tongues on the lower member, substantially as described.

4. The combination of an upper and lower last member, a vertical tongue on the lower member, a lateral tongue formed upon the vertical tongue, and vertical and lateral grooves upon the upper member to receive said tongues, substantially as described.

5. The combination of an upper and lower last member divided at or near the instep, transversely extending interlocking connections between the members, an instep rest upon the lower member projecting toward the instep of the upper member, and a suitably placed string for preventing the displacement of the upper member, substantially as described.

6. The combination of an upper and lower last member, a fulcrum for the upper member upon the lower member, and a spring secured to the lower member and arranged to bear upon the upper member back of its fulcrum, substantially as described.

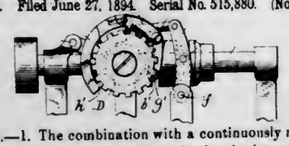
545,882. SEWING-MACHINE. CHRISTIAN FRIEDERICH, Elizabeth, N. J., assignor to The Singer Manufacturing Company, of New Jersey. Filed June 27, 1894. Serial No. 515,879. (No model.)



Claim.—1. In a sewing machine, the combination with a feeding mechanism, of a needle bar, a swinging frame in which said needle bar has its vertical movements, a cam wheel connected to said needle bar to impart lateral movements thereto, a toothed wheel by which said cam wheel is operated, a swinging sector or lever, a pivoted operating dog carried thereby and having a tooth for engagement with the teeth of the said wheel, two rotating cams one of which serves to vibrate said operating dog on its pivot to cause its tooth to be engaged with and disengaged from the teeth of said wheel and the other of which is connected with said swinging sector to move the latter and the operating dog carried thereby back and forth to intermittingly rotate said wheel, a continuously rotating shaft on which said cams are mounted, a holding dog having a tooth for engagement with the teeth of said wheel, and means for operating said holding dog so that its tooth will be in engagement with the teeth of the wheel when the tooth of the operating dog is disengaged therefrom, and vice versa.

2. The combination with the shaft C, of the needle bar operatively connected with the forward end of said shaft to be reciprocated vertically, a swinging frame in which said needle-bar has its vertical bearings, the toothed wheel D^2, the pattern cam-wheel D^3 operated by said toothed wheel and connected with said needle-bar frame to move the latter horizontally, the cam cylinder B' carried by said shaft C and having the grooved cams *b* and *b'*, the swinging sector or lever G, the lever H operated by the grooved cam *b*, the link *h* connecting said lever H with said sector or lever G, the dog G' pivoted to said sector or lever and vibrated on its pivot by the grooved cam *b*, and the pivoted holding dog I having a slot and pin connection with said dog G', to be reversely operated thereby.

545,883. MECHANICAL MOVEMENT. CHRISTIAN FRIEDERICH, Elizabeth, N. J., assignor to The Singer Manufacturing Company, of New Jersey. Filed June 27, 1894. Serial No. 515,880. (No model.)



Claim.—1. The combination with a continuously rotating shaft, as A, provided with two cams, of a wheel to be intermittingly rotated, and which is provided with square or rectangular teeth, a moving device or lever, a pivoted operating dog carried thereby, connections between said cams and said moving device or lever and the said pivoted operating dog, whereby said device or lever may be moved to rotate said wheel in either direction and said dog will be vibrated on its pivotal point by positive movements in both directions to cause its tooth to be alternately engaged with and disengaged from the teeth of the said wheel, a holding dog having a tooth for engagement with the teeth of the said wheel, and means for positively operating said holding dog in both directions and so that its tooth will be in engagement with the wheel when the tooth of the operating dog is disengaged, and vice versa.

2. The combination with the rotating shaft A provided with the cylinder B having the cam grooves *b* and *b'*, of the toothed wheel D, the swinging sector or lever E, the lever F operated by the cam groove *b*, the link *e* connecting said lever with the said swinging sector or lever E, the pivoted operating dog G having at one end a tooth for engagement with the teeth of said wheel, and having at its opposite end a pin for engagement with the said cam groove *b'*, the holding dog H having a tooth for engagement with the teeth of said wheel, and means for operating said holding dog so that its tooth will be in engagement with the said wheel when the tooth of the operating dog is disengaged, and vice versa.

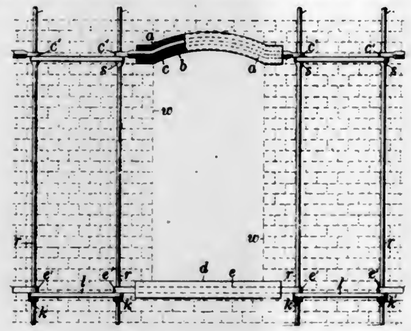
3. The combination with the shaft A provided with the cylinder B having the cam grooves *b* and *b'*, of the toothed wheel D, the swinging sector or lever E, the lever F operated by the cam groove *b*, the link *e* connecting said lever with the said swinging sector or lever, E, the pivoted operating dog G having at one end a tooth for engagement with the teeth of said wheel, and on the opposite side of its pivot a pin for engagement with the cam groove *b'*, and the holding dog having a tooth for engagement with the teeth of the said wheel, and having a slot and pin connection with the said operating dog.

545,884. ARTIFICIAL-STONE LINTEL AND SILL. FRANK L. FRY and WILLIAM J. FISHER, Philadelphia, Pa. Filed Mar. 14, 1895. Serial No. 541,655. (No model.)

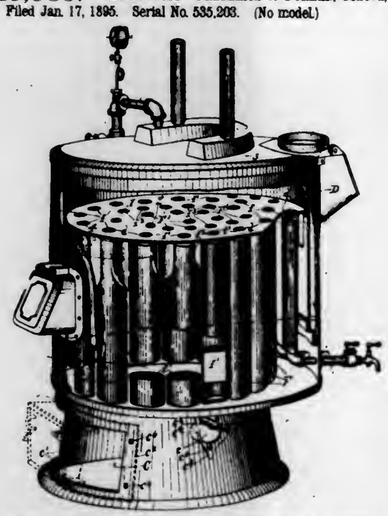
Claim.—1. As a new article of manufacture, a lintel or similar building member constructed of artificial stone molded to the required form with a metal strengthening and stiffening bar embedded therein of greater length than the said member and having its projecting ends formed with means for anchoring the same in the surrounding stone- or brick work, as and for the purpose set forth.

2. A building provided with a series of lintels and sills of artificial stone with metal strengthening and stiffening bars embedded therein having their outer ends connected to the ends of the similar bars of the adjacent members, as and for the purpose set forth.

3. A building provided with artificial stone lintels *a* and sills *d* formed each with a strengthening and stiffening bar embedded therein with its ends formed with eyes, links *l* having eyes at the ends interposed between the extremities of each of such bars and those adjacent thereto at the same level, and vertical rods *r* passed through the eyes in the said bars and links, as and for the purpose set forth.



545,885. GENERATOR. FREDERICK J. FURMAN, Geneva, N. Y. Filed Jan. 17, 1895. Serial No. 535,203. (No model.)



Claim.—1. In a generator, the combination of a dome, and a series of upright water tubes connected to the dome and arranged outside of the combustion chamber, a number of said tubes having cut-outs in their side edges of unequal size for permitting passage of the products of combustion, substantially as and for the purpose set forth.

2. In a generator, the combination of a shell for receiving the products of combustion provided with an outlet, a dome, and a series of depending water tubes within the shell opening from the dome and arranged outside of the combustion chamber, the tubes substantially opposite the outlet being formed with cut-outs in their side edges for permitting passage of the products of combustion, and the next adjacent tubes being formed with cut-outs of less size than the former cut-outs for permitting the passage of a less amount of the products of combustion, substantially as and for the purpose described.

3. In a generator, the combination of a dome, and a series of upright water tubes connected to the dome and arranged outside of the combustion chamber, said tubes having their side edges unequally separated for permitting passage of the products of combustion between said edges, substantially as and for the purpose specified.

4. In a generator, the combination of a shell for receiving the products of combustion provided with an outlet, a dome, and a series of depending water tubes within the shell opening from the dome and arranged outside of the combustion chamber, the water tubes substantially opposite to the outlet being separated a greater distance than the tubes nearest to the outlet for permitting passage of the products of combustion, and the tubes adjacent to said opposite tubes being separated a less distance than the same for permitting the passage of a less amount of the products of combustion, substantially as and for the purpose set forth.

5. In a generator, the combination of a shell for receiving the products of combustion provided with an outlet, a dome, and a series of depending water tubes within the shell opening from the dome and arranged outside of the combustion chamber, the water tubes substantially opposite to the outlet being separated a greater distance than the tubes nearest to the outlet and formed with cut-outs in their adjacent side edges for permitting passage of the products of combustion, and the tubes adjacent to said opposite tubes being separated a less distance than the same, and formed with cut-outs in their side edges of less size than the former cut-outs for permitting the passage of a less amount of the products of combustion, substantially as and for the purpose described.

6. In a generator, the combination of a dome, a series of upright water tubes connected to the dome and arranged outside of the combustion chamber, a number of said tubes having cut-outs in their side edges of unequal size for permitting passage of the products of combustion, and an additional series of tubes at the outside of the tubes substantially opposite to the former tubes for deflecting the products of combustion, substantially as and for the purpose specified.

7. In a generator, the combination of a dome, a series of water tubes connected to the dome and arranged outside of the combustion chamber, a number of said tubes having cut-outs in their side edges of unequal size for regulating the passage of the products of combustion, an additional series of tubes for deflecting the products of combustion arranged at the outside of the former tubes and substantially opposite to the tubes, provided with said cut-outs, and a shell inclosing the water tubes and the additional series of tubes, and arranged with its inner face substantially in contact with the outermost tubes of said additional series for preventing the passage of the products of combustion between the shell and said outermost tubes, substantially as and for the purpose set forth.

8. In a generator, the combination of a dome, a series of upright water tubes connected to the dome and arranged outside of the combustion chamber, and a supplementary dome connected to the former dome, substantially as and for the purpose specified.

9. In a generator, the combination of a dome, a series of upright water tubes connected to the dome and arranged outside of the combustion chamber, and a supplemental dome arranged above the former dome and formed integral therewith, substantially as and for the purpose set forth.

10. In a generator, the combination of a dome provided with an opening in its top wall and a bar extending crosswise of said opening, a series of upright water tubes connected to the dome and arranged outside of the combustion chamber, and a supplemental dome arranged above the former dome and communicating with said opening, substantially as and for the purpose described.

11. In a generator, the combination of a dome provided with an opening in its top wall, a series of upright water tubes connected to the dome and arranged outside of the combustion chamber, and a supplemental dome arranged above the former dome and formed integral therewith and communicating with said opening, and a cross bar arranged in one of said domes beneath the uptake pipe and formed of greater diameter than the uptake pipe, substantially as and for the purpose specified.

12. In a generator, the combination of a dome, a series of upright water tubes connected to the dome and arranged outside of the combustion chamber, a number of said tubes having cut-outs in their side edges of unequal size for permitting passage of the products of combustion, and a supplemental dome arranged above the former dome and formed integral therewith, substantially as and for the purpose set forth.

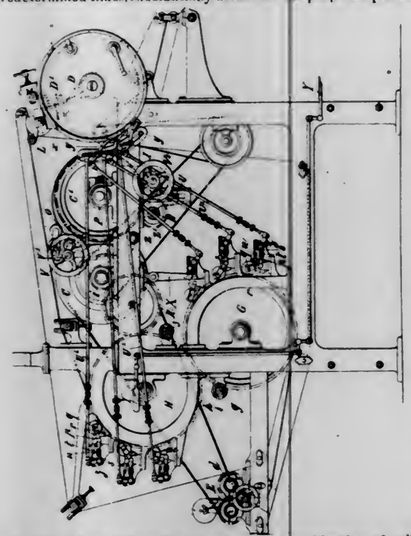
13. In a generator, the combination of a dome provided with an opening in its top wall, a series of unequally separated water tubes connected to the dome and arranged outside of the combustion chamber, and a supplemental dome arranged above the former dome and formed integral therewith, and a cross bar arranged in one of said domes beneath the uptake pipe and formed of greater diameter than the uptake pipe, substantially as and for the purpose described.

545,886. MACHINE FOR RULING PAPER. GABRIEL L. GEISLER, Paris, France. Filed Jan. 10, 1894. Serial No. 496,378. (No model.)

Claim.—1. In a machine of the character described, the combination of a rotary cutter, means for operating the same, ruling devices and connections between the rotary cutter and the ruling devices, for throwing the latter into and out of operation, substantially as described.

2. In a machine of the character described, the combination of a rotary cutter, means for driving the cutter at different rates of speed, ruling devices, a tappet or cam wheel operated by the cutter and links connected to the ruling devices and operated by the tappet wheel,

whereby the ruling devices can be thrown into and out of operation at predetermined times, substantially as and for the purposes specified.

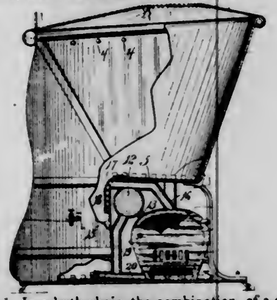


3. In the herein described machine, the combination of ruling disks carried by shafts mounted to oscillate as described about their inking rollers, a transverse cutter, tappet wheels operated by, or in relation to, the transverse cutter, and lever and link connections between the tappet wheels and ruling disk shafts whereby the latter are oscillated at the proper moments for producing the stops in the ruling, substantially as specified.

4. The combination of adjustable circular cutters, a rotary transverse cutter, driven through variable speed gear, tappet wheels having adjustable tappets and driven from, or in relation to, the transverse cutter, ruling disks inked by rollers and founts and carried by shafts adapted to be oscillated by the tappet motion so as to stop the ruling uniformly for each size of sheet, all substantially as hereinbefore described and illustrated in the accompanying drawings.

5. In a machine for continuously and simultaneously ruling and cutting paper into sheets of various sizes, the combination of adjustable circular cutters, a rotary transverse cutter, variable speed gear for driving the same, tappet wheels having adjustable tappets and driven from, or in relation to, the transverse cutter, ruling disks, means for inking the same, said ruling disks being carried by shafts adapted to be oscillated, tappets, and connections between the shafts of the ruling disks and the tappets, so as to stop the ruling uniformly for each size of sheet, all substantially as hereinbefore described and illustrated in the accompanying drawings.

545,887. BATH-CHAIR. GUSTAV C. GOETHEL, Milwaukee, Wis. Filed Feb. 9, 1894. Serial No. 499,617. (No model.)



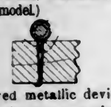
Claim.—1. In a bath chair, the combination, of a casing having an inwardly-extending portion constituting a seat, a bottom extension beneath said seat, and a vertical wall or partition extending downwardly from the inner end of the seat to the bottom of the chair, of a heater supported by the bottom extension, said heater having a water jacket surrounding the same, a pipe for supplying water to the water jacket, and a pipe extending from the water jacket through the vertical wall or partition, and adapted to conduct the water from the water jacket and discharge the same into the casing, substantially as set forth.

2. In a bath chair, the combination, with a casing having an inwardly-extending portion constituting a seat, a bottom extension beneath said seat, and a vertical wall or partition extending downwardly from the inner end of the seat to the bottom of the chair, of a heater supported by the bottom extension, said heater having a water jacket surrounding the same, a cylinder supported beneath the seat, a pipe for supplying water to the cylinder, a pipe leading from the cylinder to the water jacket, and a pipe extending from the water jacket through the vertical wall or partition, substantially as set forth.

3. In a bath chair, the combination, with a casing having an inwardly-extending portion constituting a seat, a bottom extension beneath said seat, and a vertical wall or partition extending downwardly from the inner end of the seat to the bottom of the chair, of a heater supported by the bottom extension, said heater having a water jacket surrounding the same, a pipe leading from the water jacket and extending through the vertical wall or partition, another pipe in communication at one end with the first-named pipe, and having at its other end two branches, one leading to the casing, and the other to the water jacket, means for supplying water to the system of pipes, and a plug adapted for adjustment to and removal from the end of the branch pipe leading to the casing, substantially as set forth.

4. In a bath chair, the combination, of a casing having an inwardly turned portion constituting the seat of the chair, with a wall or partition extending down from the inner end of said seat, a casing for discharging into the inner space of the chair, said casing extending down from the seat portion to and in front of the wall or partition, and provided with perforated ends and bottom, and means for supplying hot water or steam to the perforated casing, substantially as set forth.

545,888. OCTAVE-COUPLER. HUDSON W. HAKES, Millbury, assignor to Andrew H. Hammond, Worcester, Mass. Filed Apr. 24, 1894. Serial No. 508,896. (No model.)



Claim.—1. An improved metallic device for attaching coupler wires to the coupler table of octave couplers, comprising a circular head through which the coupler wire, and the felt bushing encircling said wire are adapted to extend, and two legs, between which the ends of the felt bushing are adapted to be pinched and held, substantially as set forth.

2. An improved metallic device for attaching coupler wires to the coupler table of octave couplers, comprising a circular head through which the coupler wire, and the felt bushing encircling said wire are adapted to extend, said head forming a complete bearing for the coupler wire, independent of the coupler table, and two legs between which the ends of the felt bushing are adapted to be pinched and held, substantially as set forth.

3. The combination with the coupler table, coupler wires, and felt bushings around said wires, of metallic attaching devices, comprising a cylindrical head encircling the felt bushing and coupler wire, and forming a complete bearing for said wire independent of the coupler table, and two legs adapted to be pressed together to pinch the ends of the felt between them, and to be inserted in one hole in the coupler board, substantially as set forth.

545,889. MANHOLE-COVER. PETER J. HICKEY and CHARLES F. NORRIS, New York, N. Y. Filed Aug. 3, 1894. Serial No. 519,400. (No model.)



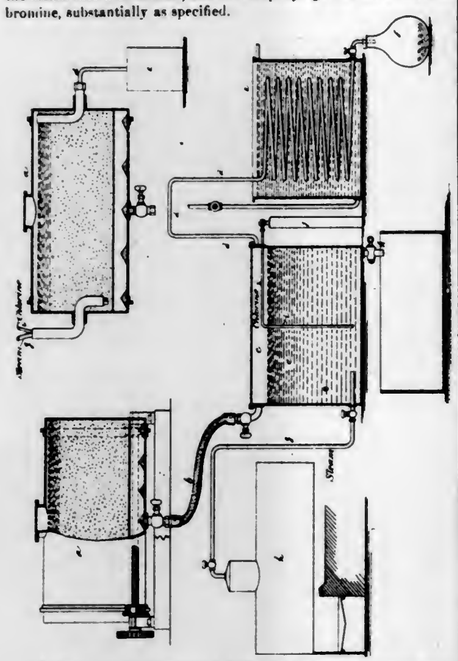
Claim.—1. The combination with a collar having a seat formed thereon, of a cover having an annular flange projecting from the inner face thereof on an incline, the free end of said flange fitting the inside of the collar, substantially as set forth.

2. The combination with a collar having a seat formed at the upper edge thereof, of a cover fitted to the seat and provided with an annular flange which inclines outwardly from its point of engagement with the cover, its free end fitting the inner wall of the collar, and ribs extending across inside of the flange.

3. The combination with a collar, of a cover having an outwardly inclining flange on its lower face, the lower edge of the flange engaging and fitting the inner wall of the collar, and the cover having perforations therethrough inside of the flange, substantially as set forth.

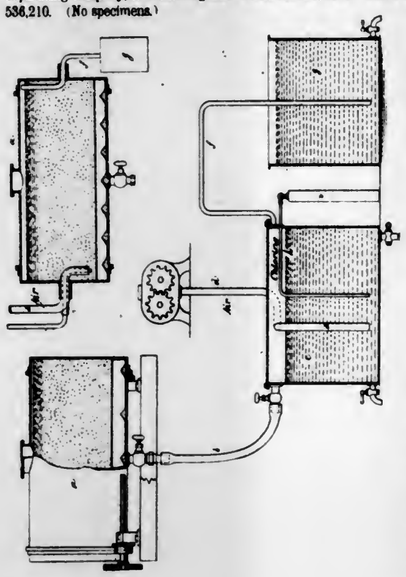
545,890. PROCESS OF EXTRACTING GOLD. BERTRAND C. HINMAN, Brooklyn, N. Y., assignor to the Gold and Bromine Separating Company, of West Virginia. Filed Jan. 25, 1895. Serial No. 536,209. (No specimens.)

Claim.—1. The process of extracting gold from ores and other auriferous substances and regaining the solvent, which consists in dissolving the gold by an excess of bromine, forcing steam into the solution beneath the surface thereof, to vaporize the bromine and charge the ebullient steam with such vapors, drawing the bromine vapors by the steam into a condenser, and there liquefying both the steam and bromine, substantially as specified.



2. The process of extracting gold from ores and other auriferous substances which consists in dissolving the gold by bromine, adding chlorine to the solution and separating the liberated bromine by distillation, substantially as specified.

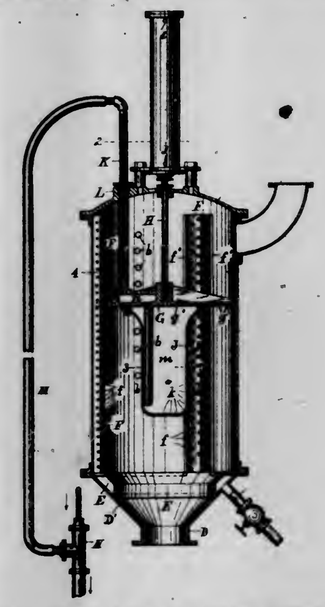
545,891. PROCESS OF EXTRACTING GOLD FROM ORES. BERTRAND C. HINMAN, Brooklyn, N. Y., assignor to the Gold and Bromine Separating Company, of West Virginia. Filed Jan. 25, 1895. Serial No. 536,210. (No specimens.)



Claim.—1. The process of extracting gold from ores and other auriferous substances and regaining the solvent which consists in dissolving the gold by an excess of bromine, driving the free bromine in the form of vapors out of the body of the solution by the action of compressed air and into an alkaline solution to form a salt, and regenerating the bromine from such salt, substantially as specified.

2. The process of extracting gold from ores and other auriferous substances which consists in dissolving the gold by bromine, separating the free bromine from the solution by compressed air, adding chlorine to the solution, and subjecting the liberated bromine vapors to the action of an absorbent, substantially as specified.

545,892. RENDERING APPARATUS. EMIL HOLTHAUS, Canarsie, N. Y., assignor to Cyrus C. Currier, Newark, N. J. Filed Mar. 28, 1895. Serial No. 543,465. (No model.)



Claim.—1. In a rendering apparatus, the combination, with a vertical cylinder having inlet at the top and outlet at the bottom, of a piston and means for forcing the same downward therein, a perforated trunk projected downward from the piston and a pipe connection extended from the interior of the trunk through the cover of the cylinder, substantially as herein set forth.

2. In a rendering apparatus, the combination, with a vertical cylinder having inlet at the top and outlet at the bottom, of a piston having a trunk projected downward therefrom, with small perforations outside the line of the trunk and larger apertures opening into the top of the same, a stuffing box upon the cover of the cylinder, and suitable pipe connection extended from the interior of the trunk through the stuffing box upon the cover, substantially as herein set forth.

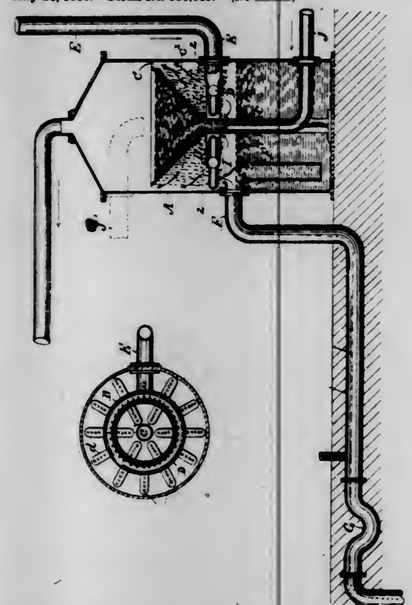
3. In a rendering tank, the combination, with the vertical cylinder A having an inlet at or near the top for the material, of the funnel D' at the bottom provided with the outlet D, the perforated segmental shells F attached vertically by their flanges f' to the walls of the tank, an annular chamber connecting to the bottoms of the shells, and the pipe e projected into such annular connection and provided with the cock e', to connect such shells, in common, with a steam or water supply, substantially as herein set forth.

4. In a rendering apparatus, the combination, with the rendering tank having one or more perforated shells with steam and water connections at the bottom, of a perforated piston with perforated trunk from its lower side, a stuffing box upon the cover of the tank, and a pipe connection extended from the interior of the trunk through the stuffing box, substantially as herein set forth.

5. In a rendering apparatus, the combination, with an upright rendering tank having a perforated movable piston with perforated trunk projected from its under side, and a stuffing box in the cover of the tank, of a pipe extended from the interior of the trunk through the stuffing box, and connected with a steam siphon to draw the liquid from the trunk, substantially as set forth.

6. In a rendering apparatus, the combination, with the rendering tank having perforated segmental shells attached to its inner wall, of a piston fitted movably to the tank with means for reciprocating the piston, the said piston being notched adjacent to the shells and guided thereby in its reciprocations, substantially as herein set forth.

545,893. GAS-EXTRACTOR FOR TANK WATER, &c. EMIL HOLTHAUS, Canarsie, N. Y., assignor to Cyrus C. Currier, Newark, N. J. Filed May 21, 1895. Serial No. 550,065. (No model.)



Claim.—1. The gas extractor, consisting of the chamber A having exhaust pipe B connected to the upper part of the same, the perforated sprinkler C sustained in the upper part of the same and supplied at the bottom with the impure water, pipes supplied with fresh air, and perforated upon their lower sides, arranged beneath the sprinkler, and an overflow pipe arranged to discharge the water above a given level, as set forth.

2. The gas extractor for tank water, comprising the chamber A exhaust pipe B, the funnel shaped sprinkler C supplied with the impure water, air pipes, perforated upon their lower sides, arranged beneath the sprinkler, and supplied with fresh air, and an overflow pipe of greater capacity than the water supply pipe, extended horizontally, and supplied with the air inlet H and gas outlet I, the whole arranged and operated as set forth.

3. The gas extractor for tank water, comprising the chamber A, exhaust pipe B, the funnel shaped sprinkler C supplied with the impure water, the annular air pipe D perforated upon the under side and supplied with air by pipe E, and the overflow pipe F having elbow F', the whole arranged and operated substantially as herein set forth.

4. In a gas extractor, the combination, with the exhausted chamber having a circular perforated hopper supported in the upper part of the same and supplied with the impure water, of the annular pipe D supplied with air as described, and provided with the radial pipes *d*, the pipes D and *d* being arranged beneath the hopper and perforated upon their lower sides, as set forth, and means for drawing the water from the chamber at the desired level, as herein set forth.

545,894. CLUTCH MECHANISM. THOMAS JOHNSTON, Newburg, N. Y. Filed Jan. 10, 1895. Serial No. 534,423. (No model.)

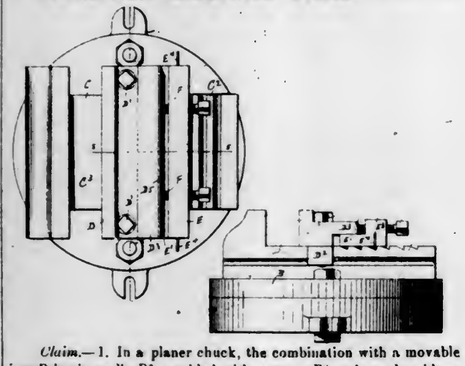


Claim.—1. In a clutch mechanism, the combination with a rotary shaft, of a cup keyed on the same, forming a housing for the clutch mechanism and formed with an oblong cavity, a rigid oblong yoke of a length less than the length of the cavity and seated therein, having an open center, and diametrically opposite inwardly extending teeth, a cam having a plurality of teeth, located in the yoke and loosely mounted on the shaft, the distance between the teeth of the cam and the points directly opposite being substantially the distance between the teeth of the yoke, whereby the yoke is positively shifted in opposite directions as the teeth of the cam leave the teeth of the yoke, and means for driving the cam, substantially as described.

2. In a clutch mechanism, the combination with a rotary shaft, of a cup rigid thereon constituting a housing for the clutch mechanism having an oblong cavity therein formed with straight sides and curved end walls, a yoke in the cavity formed in a single rigid piece and having straight outer sides engaging and of a length less than the length of the side walls of the cavity and having diametrically opposite teeth on its inner edge, a cam loosely mounted on the shaft and located in the yoke between the sides and having a plurality of teeth adapted to successively engage the opposite teeth of the yoke, and a pinion on which the cam is secured and to which the driving power is applied, substantially as described.

3. In a clutch mechanism for lawn mowers, the combination with a rotary shaft, of a cup keyed thereon having an oblong cavity therein, an oblong single-piece yoke in the cavity of a length less than the length of the cavity and having its outer side walls engaging the side walls of the cavity, teeth on the inner wall of the yoke, arranged diametrically opposite each other and formed with tapering curved inner edges and abrupt shoulders, a cam loosely mounted on the shaft having a plurality of teeth arranged to successively engage the yoke teeth and formed with curved tapering edges and abrupt shoulders, and a pinion for driving the cam, substantially as described.

545,895. PLANER-CHUCK. GEORGE W. JORDAN, Worcester, Mass. Filed Jan. 28, 1893. Serial No. 460,143. (No model.)



Claim.—1. In a planer chuck, the combination with a movable jaw D having a lip D^3 provided with grooves D^4 on its under side, a plate D^2 attached to the edge of said lip and closing the ends of said grooves, a holding block E provided with a lip E' extending beneath said lip D^3 and pins E^2 held in said lip E' and having their ends projecting into said grooves D^4, substantially as described.

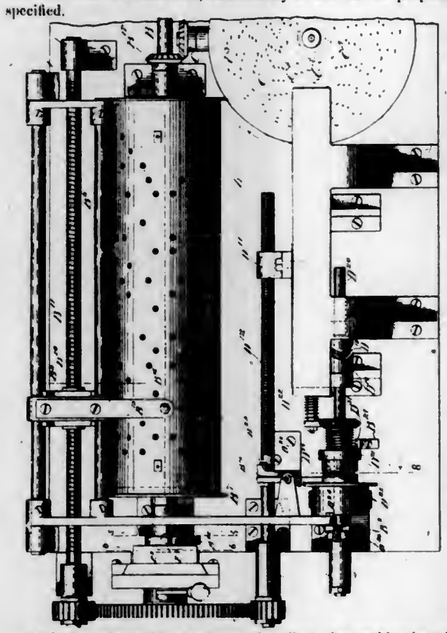
2. In a planer chuck, the combination with the bar C, provided with teeth C^2 and a movable jaw D, adapted to slide along said bar, of a holding block E provided with slots E^3 and E^5, locking blade E^4 held in the slot E^5, pin E^6 projecting from said locking blade and entering the slot E^3 and a retaining screw E^7, substantially as described.

545,896. MACHINE FOR PUNCHING NOTE-PLATES OR NOTE-BARRELS. PATRICK KENNEDY, Brooklyn, N. Y., assignor to F. G. Otto & Sons, Jersey City, N. J. Filed Sept. 25, 1894. Serial No. 524,052. (No model.)

Claim.—1. In a machine of the character described, the combination of a pattern, means for rotating the pattern, a pattern-tracer, a punch actuated from the pattern-tracer, feed mechanism for producing relative movement between the pattern tracer and pattern, and means for effecting the feeding only upon the completion of a rotation of the pattern leaving the feed mechanism inactive during the remainder of the rotation of the pattern, as and for the purposes specified.

2. In a machine of the character described, the combination of a pattern, means for rotating the same, a pattern-tracer, a punch actuated from the pattern-tracer, and a feed mechanism for producing relative movement between the pattern-tracer and the pattern upon the completion of each rotation of the pattern, and means for automatically operating the same from the rotating mechanism for the pattern, as and for the purposes specified.

3. In a machine of the character described, the combination of a pattern, a main shaft therefor constituting the means for rotating the pattern, a pattern-tracer, a punch actuated from the pattern-tracer, and a feed mechanism for producing relative movement between the pattern-tracer and the pattern upon the completion of each rotation of the pattern, and means for automatically operating the same from the main shaft, substantially as and for the purposes specified.



4. In a machine of the character described, the combination of a pattern, means for rotating the same, a pattern-tracer, a punch actuated from the pattern-tracer, an automatic feed mechanism for moving the pattern-tracer relatively to the pattern, and means for actuating the feed-mechanism upon the completion of each rotation of the pattern, as and for the purposes specified.

5. In a machine of the character described, the combination of a cylindrical pattern, means for rotating the same, a pattern-tracer, feed mechanism for moving the pattern-tracer longitudinally of the pattern, and means for automatically operating the said feed-mechanism upon the completion of each rotation of the pattern, as and for the purposes specified.

6. In a machine of the character described, the combination of a shaft B, a cylindrical pattern carried thereby, a carriage carrying a pattern-tracer, a punch actuated from the pattern-tracer, a cam on the shaft B and mechanism intervening between the carriage and cam for moving the carriage longitudinally of the pattern, as and for the purposes specified.

7. In a machine of the character described, the combination of a rotating pattern, a pattern-tracer, a punch actuated from the pattern-tracer, feed mechanism for effecting relative movement between the pattern-tracer and pattern, means for actuating the feed mechanism only upon the completion of each rotation of the pattern leaving the said feed mechanism inactive during the remainder of the rotation of the pattern, and means for shifting the punch, as and for the purposes specified.

8. In a machine of the character described, the combination of a main shaft, a pattern carried thereby, a pattern-tracer, a carriage therefor, a screw shaft for moving the carriage relatively to the pattern, a screw shaft for shifting the punch, a shaft E rotated from the main shaft, and connections between the shaft E and the screw shafts, whereby the carriage and punch may be shifted, substantially as described.

9. The combination of a pattern, a movable carriage carrying a pattern-tracer, a punch, mechanism for actuating the punch, a clutch for engaging the mechanism for actuating the punch with a suitable source of power, an arm carried by the carriage for effecting the engagement of the clutch, and a cam upon the clutch shaft for engaging with the arm to allow the clutch members to come together, substantially as described.

10. In a machine of the character described, the combination of a pattern, a pattern tracer, a punch, a shaft for actuating the punch, a clutch on the said shaft, an arm actuated from the pattern-tracer for effecting the shifting of the clutch, and a cam upon the punch-shaft for restoring the arm to its initial position to release the clutch, substantially as described.

11. In a machine of the character described, the combination of a pattern-tracer, a punch, a shaft for actuating the punch, a clutch on the shaft, an arm as D^{26} for holding the members of the clutch apart, a connection between the arm D^{26} and pattern tracer, whereby the clutch is controlled from the pattern-tracer, and a cam upon the punch-shaft for restoring the arm D^{26} to its initial position, substantially as described.

12. In a machine of the character described, feeding mechanism for producing relative movement between a pattern-tracer and its pattern, the same consisting of a cam controlled sliding-block, a ratchet, a pawl carried by the sliding-block, and a connection between the ratchet and pattern-tracer, substantially as described.

13. A reversible feeding mechanism, the same consisting of a ratchet, a sliding-block, a cam for moving the sliding-block, a pair of pawls carried by the sliding-block, and mechanism for shifting the pawls to engage one or the other of the pawls with the ratchet, substantially as described.

14. The combination of pivoted levers D^2 D^2 carrying two members of a punch, a longitudinally movable rod connected to the levers D^2 D^2 by the links D^{13} D^{13} constituting a toggle mechanism, a pin upon the rod, a shaft adjacent to the rod, a cam mounted upon the shaft, a clutch member carried by the shaft, a spring-bearing connected with the clutch member, another clutch member with which the first mentioned clutch member is adapted to co-operate, a pattern tracer and a connection between the pattern tracer and the first mentioned clutch member, whereby the clutch members will be held apart for predetermined times, substantially as described.

15. The combination of the arms D^2 D^2 carrying the members of a punch, toggles D^{13} connected to the arms and to a longitudinally movable rod having a projection, a shaft as D^{20} upon which is mounted a cam engaging with the projection on the rod, a clutch carried by the shaft, and means for engaging and disengaging the members of the clutch, substantially as described.

16. The combination of a suitable support as G' provided with a rod as G^2, of a ring as G^4 hung upon the support and provided with a toothed ring as G^5, of a cap as G^{11}, and means for securing the cap to the support, whereby a note-barrel may be held between the cap and ring, substantially as described.

17. The combination of a pattern, a pattern tracer, a movable carriage upon which the pattern-tracer is carried, a punch, a shaft for actuating the same, a laterally movable clutch member carried upon the shaft, an arm for effecting the engagement and disengagement of the clutch member with its mate, the said arm being carried upon the carriage, and a cam for restoring the arm to its initial position, substantially as described.

18. The combination of a pattern-tracer, a punch, a rotating shaft for actuating the punch and clutch member carried upon the shaft, means for shifting the clutch member from the pattern-tracer to actuate the punch, and a stop for arresting the shaft at a predetermined point, substantially as described.

19. The combination of a punch, a shaft for actuating the punch, a movable clutch member on the shaft, a pattern-tracer, an arm actuated from the pattern-tracer for effecting the movement of the clutch member, a cam on the shaft for restoring the arm to its initial position, and a stop for arresting the punch shaft at a predetermined point in its rotation, substantially as described.

20. The combination of a punch, a punch shaft actuating the punch, a movable clutch upon the punch shaft, a spring bearing for moving the same laterally, a pattern-tracer, an arm for holding the clutch against the tension of its spring bearing, mechanism intervening between the arm and the pattern-tracer for actuating the said arm from the pattern-tracer, means actuated from the punch shaft for moving the arm to effect the arrest of the punch shaft, and means for arresting the punch shaft at a predetermined point in its rotation, substantially as described.

21. The combination of a pattern-tracer, a punch, a punch shaft for actuating the said punch, a movable clutch member upon the punch shaft, a pin upon the clutch, mechanism for moving the clutch controlled by the pattern-tracer, and a fixed stop for co-operating with the pin on the clutch to arrest the shaft at a predetermined point in its rotation, substantially as described.

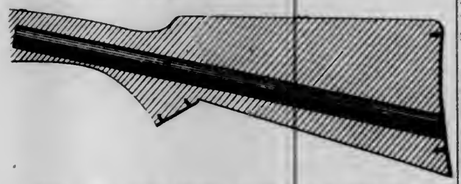
545,897. BOTTLE-STOPPER. KARL KIEFER, Cincinnati, Ohio. Filed Dec. 4, 1894. Serial No. 530,836. (No model.)

Claim.—1. The combination of a cap, a gasket, and two or more symmetrical sets of self-locking levers, and consisting of the bars c and the side *d*, and pivotally connected to the cap, which exert on opposite sides of the bottle-neck a pressure upon the cap, under an angle to the axis of the bottle, sufficiently large to prevent their slipping from a ring-shaped projection of the bottle.

2. The combination of a cap, a gasket and two or more symmetrical sets of self-locking levers, and consisting of the bars c and the side *d*, and pivotally connected to the cap, which exert on opposite sides of the bottle-neck a pressure upon the cap, under an angle to the axis of the bottle, sufficiently large to prevent their slipping from a ring-shaped projection of the bottle with means allowing the further tightening of the gasket, after the same has been locked to the bottle mouth.

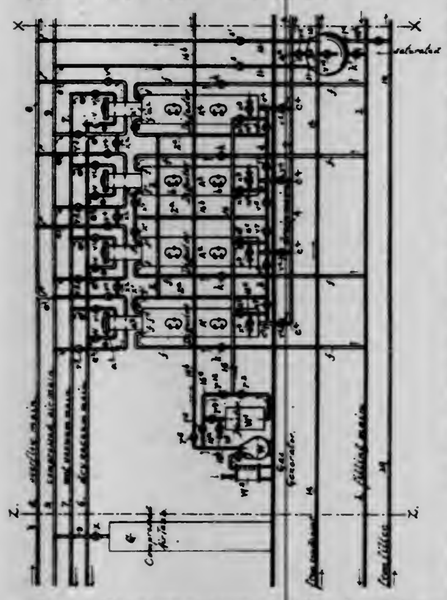


545,898. GUNSTOCK. CHARLES A. KING, Meriden, Conn. Filed June 29, 1895. Serial No. 554,437. (No model.)



Claim.—The wooden gunstock having a rod of tough and elastic wood inserted lengthwise in the butt piece and extended lengthwise into the neck, all substantially as described and for the purposes set forth.

545,899. PROCESS OF AND APPARATUS FOR REMOVING FATTY MATTERS FROM WOOL. EMILE MAERTENS, Providence, R. I. Filed July 14, 1894. Serial No. 517,573. (No model.)



Claim.—1. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in subjecting said fibers while retained in a closed digester to the action of solvents for such impurities, then removing said solvent from the digester, then expelling, in liquid form, the bulk of the solvent still adhering to the fibers by the action of a compressed gas forced through them, and then freeing the fibers from the remaining adhering solvent, substantially as described and for the purpose set forth.

2. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in subjecting said fibers while retained in a closed digester to the action of solvents for such impurities, then removing said solvent from the digester, then expelling, in liquid form, the bulk of the solvent still adhering to the fibers by the action of a compressed gas forced through them, and then freeing the fibers from the remaining adhering solvent by distillation under the influence of heat and vacuum while contained in said digester, substantially as described and for the purpose set forth.

3. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in subjecting said fibers while retained in a closed digester to the action of solvents for such impurities, then removing said solvent from the digester, then expelling, in liquid form, the bulk of the solvent still adhering to the fibers by the action of a compressed gas forced through them, then freeing the fibers from the remaining adhering solvent, and then deodorizing said fibers by drawing air or steam or both through them, substantially as described and for the purpose set forth.

4. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in subjecting said fibers while retained in a closed digester to the action of solvents for such impurities, then expelling the solvent in liquid form from the contents of the digester by the action of compressed gas, then freeing said fibers from any adhering solvent by distillation under the influence of heat and vacuum while contained in said digester, and then deodorizing said fibers, substantially as described and for the purpose set forth.

5. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in making the first impregnation of said fibers with solvents for such impurities *in vacuo*, then continuing the subsequent treatments with solvents at atmospheric or higher pressure, and then freeing said fibers from any adhering solvent by distillation while contained in a closed digester, substantially as described and for the purpose set forth.

6. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in making the first impregnation of said fibers with solvents for such impurities *in vacuo*, then continuing the subsequent treatments with solvents at atmospheric or higher pressure, and then freeing said treated fibers from any adhering solvent by distillation under the influence of heat and vacuum, substantially as described and for the purpose set forth.

7. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in making the first impregnation of said fibers with solvents for such impurities *in vacuo*, then continuing the subsequent treatments with solvents at atmospheric or higher pressure, then freeing said fibers from any adhering solvent by distillation while contained in a closed digester, and then deodorizing said fibers by drawing air or steam or both through them, substantially as described and for the purpose set forth.

8. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in making the first impregnation of said fibers with solvents for such impurities *in vacuo*, then continuing the subsequent treatments with solvents at atmospheric or higher pressure, then freeing said fibers from any adhering solvent by distillation under the influence of heat and vacuum, and then deodorizing said fibers by drawing air or steam or both through them, substantially as described and for the purpose set forth.

9. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in subjecting said fibers while retained in a closed digester to alternate contacts, first with solvents for such impurities each of a different degree of saturation and then with compressed gas, the function of which is to remove the bulk of the solvent in liquid form, and then freeing said fibers from any adhering solvent, substantially as described and for the purpose set forth.

10. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in subjecting said fibers while retained in a closed digester to alternate contacts, first with solvents for such impurities each of a different degree of saturation and then with compressed gas, the function of which is to remove the bulk of the solvent in liquid form, and then freeing said fibers from any adhering solvent by distillation under the influence of heat and vacuum while contained in said digester, substantially as described and for the purpose set forth.

11. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in subjecting said fibers while retained in a closed digester to alternate contacts, first with solvents for such impurities each of a different degree of saturation and then with compressed gas, the function of which is to remove the bulk of the solvent in liquid form, then freeing said fibers from any adhering solvent, and then deodorizing said fibers, substantially as described and for the purpose set forth.

12. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in subjecting said fibers while retained in a closed digester to alternate contacts, first with solvents for such impurities each of a different degree of saturation and then with compressed gas, the function of which is to remove the bulk of the solvent in liquid form, then freeing said fibers from any adhering solvent by distillation under the influence of heat and vacuum while contained in said digester, and then deodorizing said fibers by drawing air or steam or both through them, substantially as described and for the purpose set forth.

13. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in drying said fibers while contained in a closed digester by aspirating air through them, then subjecting said fibers to the action of solvents for such impurities, then freeing said fibers from any adhering solvent by distillation while contained in said digester, and then deodorizing said fibers by drawing air or steam or both through them, substantially as described and for the purpose set forth.

14. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in drying said fibers while contained in a closed digester by aspirating air through them, then subjecting said fibers to the action of solvents for such impurities, then freeing said fibers from any adhering solvent by distillation while contained in said digester under the influence of heat and vacuum, and then deodorizing said fibers by drawing air or steam or both through them, substantially as described and for the purpose set forth.

15. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in drying said fibers while contained in a closed digester by drawing air through them and submitting said fibers to the combined action of heat and vacuum, then treating said fibers with solvents for such impurities, and then freeing said fibers from any adhering solvent by distillation while contained in said digester, substantially as described and for the purpose set forth.

16. The process of freeing animal fibers from their fatty and resinous inpurities, the same consisting in drying said fibers while contained in a closed digester by drawing air through them and submitting said fibers to the combined action of heat and vacuum, then treating said fibers with solvents for such impurities, and then freeing said fibers from any adhering solvent by distillation while contained in said digester under the influence of heat and vacuum, substantially as described and for the purpose set forth.

17. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in drying said fibers while contained in a closed digester by drawing air through them and submitting said fibers to the combined action of heat and vacuum, then treating said fibers with solvents for such impurities, then freeing said fibers from any adhering solvent by distillation while contained in said digester, and then deodorizing said fibers by drawing air or steam or both through them, substantially as described and for the purpose set forth.

18. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in drying said fibers while contained in a closed digester by drawing air through them and submitting said fibers to the combined action of heat and vacuum, then treating said fibers with solvents for such impurities, then freeing said fibers from any adhering solvent by distillation under the influence of heat and vacuum while contained in said digester, and then deodorizing said fibers by drawing air or steam or both through them, substantially as described and for the purpose set forth.

19. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in drying said fibers while contained in a closed digester by aspirating air through them, then subjecting said fibers to alternate contacts, first with solvents for such impurities each of a different degree of saturation and then with compressed gas, the function of which is to remove the bulk of the solvent in liquid form, and then freeing said fibers from any adhering solvent by distillation while contained in said digester, substantially as described and for the purpose set forth.

20. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in drying said fibers while contained in a closed digester by aspirating air through them, then subjecting said fibers to alternate contacts, first with solvents for such impurities each of a different degree of saturation and then with compressed gas, and then freeing said fibers from any adhering solvent by distillation under the influence of heat and vacuum while contained in said digester, substantially as described and for the purpose set forth.

21. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in drying said fibers while contained in a closed digester by aspirating air through them, then subjecting said fibers to alternate contacts, first with solvents for such impurities each of a different degree of saturation and then with compressed gas, then freeing said fibers from any adhering solvent by distillation while contained in said digester, and then deodorizing said fibers by drawing air or steam or both through them, substantially as described and for the purpose set forth.

22. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in drying said fibers while contained in a closed digester by aspirating air through them, then subjecting said fibers to alternate contacts, first with solvents for such impurities each of a different degree of saturation and then with compressed gas, the function of which is to remove the bulk of the solvent in liquid form, then freeing said fibers from any adhering solvent by distillation under the influence of heat and vacuum while contained in said digester, and then deodorizing said fibers by drawing air or steam or both through them, substantially as described and for the purpose set forth.

23. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in drying said fibers while contained in a closed digester by drawing air through them, then submitting said fibers to the combined action of heat and vacuum, then to alternate contacts, first with solvents for such impurities each of a different degree of saturation and then with compressed gas, and afterward freeing said fibers from any adhering solvent by distillation while contained in said digester, substantially as described and for the purpose set forth.

24. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in drying said fibers while contained in a closed digester by drawing air through them, then submitting said fibers to the combined action of heat and vacuum, then subjecting said fibers to alternate contacts, first with solvents for such impurities each of a different degree of saturation and then with compressed gas, and afterward freeing said fibers from any adhering solvent by distillation under the influence of heat and vacuum and while contained in said digester, substantially as described and for the purpose set forth.

25. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in drying said fibers while contained in a closed digester by drawing air through them, then submitting said fibers to the combined action of heat and vacuum, then subjecting said fibers to alternate contacts, first with solvents for such impurities each of a different degree of saturation and then with compressed gas, then freeing said fibers from any adhering solvent by distillation while contained in said digester, and then deodorizing said fibers by drawing air or steam or both through them, substantially as described and for the purpose set forth.

26. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in drying said fibers while contained in a closed digester by drawing air through them, then submitting said fibers to the combined action of heat and vacuum, then subjecting said fibers to alternate contacts, first with solvents for such impurities each of a different degree of saturation and then with compressed gas, then freeing said fibers from any adhering solvent by distillation under the influence of heat and vacuum while contained in said digester, and then deodorizing said fibers by drawing air or steam or both through them, substantially as described and for the purpose set forth.

27. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in treating said fibers with solvents for such impurities while contained in a closed digester, then replacing said solvents by compressed gas, and subjecting said fibers to alternate contacts with compressed gas and solvents of different degrees of saturation, then rinsing said fibers with pure solvent and then freeing them from any adhering solvent by distillation while contained in said digester, substantially as described and for the purpose set forth.

28. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in treating said fibers with solvents for such impurities while contained in a closed digester, then replacing said solvent by compressed gas and subjecting said fibers to alternate contacts with compressed gas and solvents of different degrees of saturation, then rinsing said fibers with pure solvent and then freeing them from any adhering solvent by distillation while contained in said digester under the combined action of heat and vacuum, substantially as described and for the purpose set forth.

29. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in treating said fibers with solvents for such impurities while contained in a closed digester, then replacing said solvent by compressed gas and subjecting said fibers to alternate contacts with compressed gas and solvents of different degrees of saturation, then rinsing said fibers with pure solvent and freeing them from any adhering solvent by distillation while contained in said digester, and then deodorizing them by drawing either air or steam or both through them, substantially as described and for the purpose set forth.

30. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in treating said fibers with solvents for such impurities while contained in a closed digester, then replacing said solvent by compressed gas and subjecting said fibers to alternate contacts with compressed gas and solvents of different degrees of saturation, then rinsing said fibers with pure solvent and then freeing them from any adhering solvent by distillation while contained in said digester under the combined action of heat and vacuum, substantially as described and for the purpose set forth.

31. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in drying said fibers while con-

tained in a closed digester by drawing air through them, then subjecting said fibers to the combined action of heat and vacuum, then making the first impregnation of said fibers with solvents while *in vacuo*, then replacing said solvent with compressed gas, then subjecting said fibers to alternate contacts with compressed gas and solvents of different degrees of saturation, then rinsing said fibers with pure solvent, and then freeing them from any adhering solvent by distillation while contained in said digester, substantially as described and for the purpose set forth.

32. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in drying said fibers while contained in a closed digester by drawing air through them and subjecting said fibers to the combined action of heat and vacuum, then making the first impregnation of said fibers with solvent while *in vacuo*, then replacing said solvent with compressed gas, then subjecting said fibers to alternate contacts with compressed gas and solvents of different degrees of saturation, then rinsing said fibers with pure solvent, and then freeing them from adhering solvent by distillation under the influence of heat and vacuum while contained in said digester, substantially as described and for the purpose set forth.

33. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in drying said fibers while contained in a closed digester by drawing air through them and subjecting said fibers to the combined action of heat and vacuum, then making the first impregnation of said fibers with solvent while *in vacuo*, then replacing said solvent with compressed gas, then subjecting said fibers to alternate contacts with compressed gas and solvents of different degrees of saturation, then rinsing said fibers with pure solvent, then freeing them from any adhering solvent by distillation while contained in said digester, and then deodorizing said fibers by drawing air or steam or both through them, substantially as described and for the purpose set forth.

34. The process of freeing animal fibers from their fatty and resinous impurities, the same consisting in drying said fibers while contained in a closed digester by drawing air through them and subjecting said fibers to the combined action of heat and vacuum, then making the first impregnation of said fibers with solvent while *in vacuo*, then replacing said solvent with compressed gas, then subjecting said fibers to alternate contacts with compressed gas and solvents of different degrees of saturation, then rinsing said fibers with pure solvent, then freeing them from any adhering solvent by distillation while contained in said digester under the combined action of heat and vacuum, and then deodorizing said fibers by drawing air or steam or both through them, substantially as described and for the purpose set forth.

35. In apparatus for freeing animal fibers from their fatty and resinous impurities, by volatile solvent, the combination of a closed digester, two or more solvent tanks for holding solvents of different degrees of saturation communicating at their tops through valved piping with the bottom of said digester and at their bottoms with the top of said digester, substantially as described.

36. In apparatus for freeing animal fibers from their fatty and resinous impurities, by volatile solvent, the combination of a series of digesters arranged in battery and in independent intercommunication at their tops and bottoms, a series of storage tanks for holding solvent of different degrees of saturation and pure solvent also independently intercommunicating, and valved piping connecting said digesters and tanks, arranged whereby any one or more of the said digesters and tanks are adapted for independent intercommunication at top and bottom, substantially as described.

37. In apparatus for freeing animal fibers from their fatty and resinous impurities, by volatile solvent, the combination of a closed digester, two or more storage tanks for solvent arranged to communicate with the top and bottom of the digester, valved inlet and outlet passages for said solvents, and valved piping communicating with said digester and tanks and with a source of compressed gas, substantially as described.

38. In apparatus for freeing animal fibers from their fatty and resinous impurities, by volatile solvent, the combination of a plurality of closed digesters arranged in battery and in independent intercommunication at their tops and bottoms, a series of storage tanks for solvents also independently intercommunicating with each other and with said digesters, and a source of compressed gas in communication with the digesters and tanks, substantially as described.

39. In apparatus for freeing animal fibers from their fatty and resinous impurities, by volatile solvent, one or more closed digesters, in combination with exhausting and condensing devices for solvent vapors connected therewith, a source of compressed gas, one or more reservoirs for solvents and a trap-tank or water-seal, substantially as described.

40. In apparatus for freeing animal fibers from their fatty and resinous impurities, by volatile solvent, one or more closed digesters, in combination with exhausting and condensing devices for solvent vapors connected therewith, a source of compressed gas, one or more reservoirs for solvents, a trap-tank or water-seal and an overflow tank, substantially as described.

41. In apparatus for freeing animal fibers from their fatty and resinous impurities, by volatile solvent, one or more closed digesters, in combination with exhausting and condensing devices for solvent vapors connected therewith, a source of compressed gas, one or more reservoirs for solvents, a trap-tank or water-seal, an overflow tank and a settling tank, substantially as described.

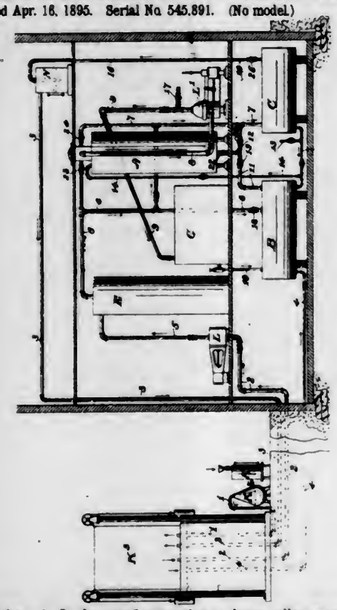
42. In apparatus for freeing animal fibers from their fatty and resinous impurities, by volatile solvent, one or more closed digesters, in combination with exhausting and condensing devices for solvent vapors connected therewith, a source of compressed gas, one or more reservoirs for solvents, a trap tank or water seal, an overflow tank and a still, substantially as described.

43. In apparatus for freeing animal fibers from their fatty and resinous impurities, by volatile solvent, one or more closed digesters, in combination with exhausting and condensing devices for solvent vapors connected therewith, a source of compressed gas, one or more reservoirs for solvents, a trap tank or water seal, an overflow tank and a grease tank, substantially as described.

44. In apparatus for freeing animal fibers from their fatty and resinous impurities, by volatile solvent, one or more closed digesters, in combination with exhausting and condensing devices for solvent vapors connected therewith, a source of compressed gas, one or more reservoirs for solvents, a trap tank or water seal, an overflow tank and a filter, substantially as described.

45. In apparatus for freeing animal fibers from their fatty and resinous impurities, by volatile solvent, one or more closed digesters, in combination with exhausting and condensing devices for solvent vapors connected therewith, a source of compressed gas, one or more reservoirs for solvents, a trap tank or water seal, an overflow tank and a gas generator, substantially as described.

545,900. PROCESS OF AND APPARATUS FOR EXTRACTING WITH VOLATILE SOLVENTS. EMILE MAERTENS, Providence, R. I. Filed Apr. 16, 1895. Serial No. 545,891. (No model.)



Claim.—1. In the art of extracting resinous, oily, essential, fatty or other matters from materials containing them, by means of volatile solvents, the improvement which consists in conducting the extracting operation in a confined atmosphere of gas or mixture of gases, replacing, removing or circulating the solvents in or by means of said confined atmosphere, then conducting such gas or mixture of gases free from the bulk of the solvent to a holder in order that it may be adapted for re-use substantially as described.

2. In the art of extracting resinous, oily, essential, fatty or other matters from materials containing them by means of volatile solvents, the improvement which consists in conducting the extracting operation in a confined atmosphere of an inert gas or mixture of such gases, removing or circulating the solvents by means of said confined atmosphere, then conducting such gas free from the bulk of the solvent to a holder in order that it may be adapted for re-use, substantially as described.

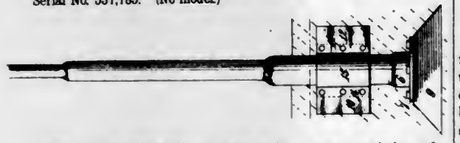
3. In the art of extracting resinous, oily, fatty, essential or other matters from materials containing them by means of volatile solvents, the improvement which consists in conducting the extracting operation in a confined atmosphere of nitrogen gas removing, replacing or circulating the solvent by means of said confined atmosphere, then conducting such gas or mixture of gases free from the bulk of the solvent to a holder in order that it may be adapted for re-use, substantially as described.

4. In apparatus for extracting resinous, oily, essential, fatty or other matters from materials, with volatile solvents, the combination of a digester, reservoirs or tanks containing the solvents employed, a gas holder, a vacuum pump and valved piping or connections, whereby the gas in the holder is carried to the said digesters and reservoirs and returned to the holder, substantially as described and for the purpose set forth.

5. In apparatus for extracting resinous, oily, essential, fatty or other matters from materials, with volatile solvents, the combination of one or more digesters, reservoirs or tanks for the solvents employed, a holder for gas, a gas compressor, a reservoir for compressed gas, a vacuum pump, a condenser and suitably arranged valved piping communicating with said instrumentalities, whereby the gas is returned to the holder after it has circulated through the system, substantially as described and for the purpose set forth.

6. In apparatus for extracting resinous, oily, essential, fatty or other matters from materials, with volatile solvents, the combination of one or more digesters, reservoirs or tanks for the solvents employed, means for generating gas, a holder for the gas, a gas compressor, a reservoir for the compressed gas, a vacuum pump, a condenser and suitable arranged valved piping, whereby the gas in the holder is carried to the digester, reservoirs, compressor, &c., and then back to the holder, substantially as described and for the purpose set forth.

545,901. TUBULAR POLE FOR TELEGRAPH OR OTHER PURPOSES. REINHARD MANNESMANN, New York, N. Y., assignor to the Mannesmann Tube Company, Jersey City, N. J. Filed Feb. 9, 1895. Serial No. 537,785. (No model.)



Claim.—1. A telegraph, or other pole or post, consisting of a seamless tube of steel, or other metal, having its shell formed integral with sections which successively decrease in diameter and thickness of tube-shell from the base to the opposite end thereof.

2. A telegraph, or other pole or post, consisting of a rolled, seamless, elastic tube of metal, having integral shell sections successively decreasing in diameter.

3. A telegraph, or other pole, consisting of a seamless, weldless, tube of metal, having its shell rolled integral with sections which successively decrease in diameter and thickness of tube shell, each section being of uniform thickness from end to end thereof.

4. The combination with a cylindrical telegraph, or other pole, of the metallic wings or plates, connected by a semi-cylindrical portion lying against one side of the pole or post, and a clip lying against the opposite side of the pole or post and firmly secured to the wings for preventing axial displacement, or movement of the pole or post.

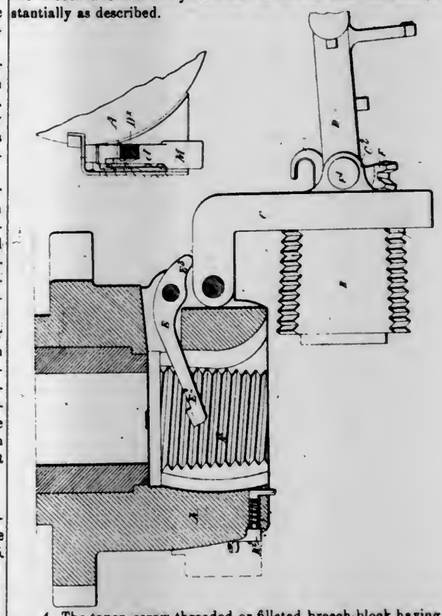
5. The combination with a pole or post, of corrugated wing plates formed integral with a central semi-circular portion to fit one side of the pole or post, and adapted to be buried in the ground, and a clip lying against the opposite side of the pole or post and firmly secured to the corrugated wing plates.

545,902. BREECH MECHANISM FOR ORDNANCE. CHARLES G. MELLSTROM, London, England. Filed Dec. 12, 1893. Serial No. 493,458. (No model.)

Claim.—1. The combination with the breech end of a gun, of a taper, screw threaded or filleted breech-block having its smaller end at the rear, substantially as described.

2. The taper, screw-threaded or filleted breech-block having its forward end larger than its rear end and each convolution of screw thread of uniform radius but of greater diameter than the adjoining convolution nearer the outer end of the block, portions of the block being removed at the sides, in combination with a breech similarly shaped and screw-threaded substantially as described.

3. The taper, screw-threaded or filleted breech-block having its forward end larger than its rear end and each convolution of screw thread of uniform radius but of greater diameter than the adjoining convolution nearer the outer end of the block, portions of the block being removed at the sides, in combination with a breech similarly shaped and screw-threaded, but curved laterally to admit of the withdrawal of the block when unlocked, and a carrier connected with the block by a continuous screw-threaded part and hinged to the side of the breech about midway between the two ends of the block, substantially as described.



4. The taper, screw-threaded or filleted breech-block having its forward end larger than its rear end and each convolution of screw thread of uniform radius but of greater diameter than the adjoining convolution nearer the outer end of the block, portions of the block being removed at the sides, in combination with a breech similarly shaped and screw-threaded but curved laterally to admit of the withdrawal of the block when unlocked, and a carrier connected with the block by a continuous screw-threaded part and hinged to the side of the breech about midway between the two ends of the block an operating lever formed with a slightly eccentric segment wheel hinged to the carrier and faced with a toothed segment formed on the breech-block, whereby the breech can be opened or closed without moving the block endwise, through the carrier by a continuous movement of the operating lever in one direction, substantially as described.

5. The taper, screw-threaded or filleted breech-block having its forward end larger than its rear end and each convolution of screw thread of uniform radius but of greater diameter than the adjoining convolution nearer the outer end of the block, portions of the block being removed at the sides in combination with a breech similarly shaped and screw-threaded, but curved laterally to admit of the withdrawal of the block when unlocked, and a carrier connected with the block by a continuous screw-threaded part and hinged to the side of the breech about midway between the two ends of the block, the inclined surface B^3 on the block and the firing pin formed with the inclined surface G^3 for cocking the said pin when the breech-block is turned about its axis, substantially as described.

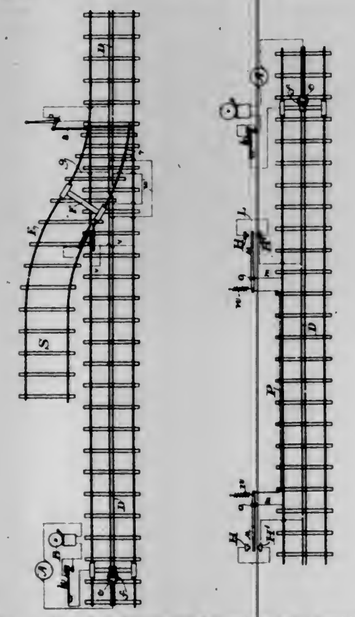
6. The taper, screw-threaded or filleted breech-block having its forward end larger than its rear end and each convolution of screw thread of uniform radius but of greater diameter than the adjoining convolution nearer the outer end of the block, portions of the block being removed at the sides, in combination with a breech similarly shaped and screw-threaded but curved laterally to admit of the withdrawal of the block when unlocked, and a carrier connected with the block by a continuous screw-threaded part and hinged to the side of the breech about midway between the two ends of the block, the catch or sear I, releasing trigger K, and spring controlled retaining lever R which latter is turned out of engagement with the sear by the operating lever D when the breech is closed, substantially as described.

7. The combination with the breech end of a gun, of the taper, screw-threaded or filleted breech block having its smaller end at the rear, the operating lever thereof, and means whereby the lever is locked until the termination of the recoil and is then automatically unlocked, substantially as described.

8. The combination with the breech end of a gun, of the taper-screw-threaded or filleted breech-block having its smaller end at the rear, the operating lever thereof, a hooked finger D^2 on the operating lever, a weighted lever M^2 engaging said finger D^2 until the termination of the recoil and then acting by its momentum to liberate the finger D^2, substantially as described.

9. The combination with the breech end of a gun, of the taper, screw-threaded or filleted breech-block having its smaller end at the rear, the operating lever thereof, a hooked finger D^2 on the operating lever, a weighted lever M^2 engaging said finger D^2 until the termination of the recoil and then acting by its momentum to liberate the finger D^2, and a spring catch N to maintain said lever M^2 in its raised position when the latter has moved to liberate the finger D^2 substantially as described.

545,903. ELECTRIC SIGNALING APPARATUS. GEORGE E. MILLER, Boston, Mass., assignor to the American Electric Train and Switch Signal Company, same place. Filed Aug. 1, 1894. Serial No. 519,164. (No model.)



Claim.—1. In a signaling system for railways the combination with the main line having a continuous insulated sectional conductor extending along the track and electrically continuous track rails of a siding, an insulated rail in said siding, a generator having one terminal constantly connected to said conductor and the other to said rail, and electrical connections attached to said rail, whereby the circuit will not be closed through said rail until a car rests upon it.

2. In a signaling system for railways provided with a continuous sectional conductor extending along the track and electrically continuous track rails, the combination with a generator carried by a train supplying current to said conductor, the circuit being closed through said conductor the rails and the car wheels, of a siding and an insulated rail therein electrically connected to said conductor and adapted to invariably close the circuit when a car on the siding overhangs the main track.

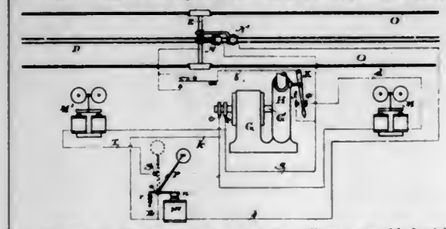
3. In a signaling system for railways, the combination with the main line, of a continuous sectional insulated conductor extending along the track, electrically continuous track rails, a siding having its rails in electrical connection with those of the main track, but having a sectional rail adjacent to the switch point insulated from all other rails, and connected to said conductor, a generator carried by a train upon the main line supplying current to the conductor and electrical connections between the siding and main track rails, whereby a car on the siding resting upon said insulated rail will invariably close the circuit, substantially as set forth.

4. In a signaling system for railways, the combination with the main line, of a continuous sectional insulated conductor extending along the track, electrically continuous track rails, a generator carried by a train on the main line supplying current to said conductor, a siding, an insulated rail in said siding connected to said conductor and normally open-circuited, and electrical connections between rails of main track and siding whereby a car on the siding overhanging the main track will serve to invariably close the circuit through the insulated rail.

5. In a signaling system for railways provided with an insulated sectional conductor extending along the track, the combination with a generator, one terminal of which is connected to the track rails and the other to said conductor, of a tell-tale for bridges, culverts and the like, consisting of contacts in sets of two adjacent to each end of the bridge, the contacts being electrically connected with said conductor and normally in open circuit, a pivoted lever for each set of contacts adapted to make connection respectively with either one of said contacts in the set, said levers and contacts being respectively connected to opposite main line terminals, and connections attached to the bridge for operating said levers when the bridge sags or breaks, substantially as described.

6. In a signaling system for railways provided with a sectional insulated conductor extending along the track, the combination with a generator on a train supplying current to said conductor, the circuit being closed through said conductor the rails and the car wheels, of a tell-tale for bridges, culverts and the like consisting of a set of normally open-circuited electrical contacts at each end of the bridge, a pivoted lever for each set of contacts, a cable attached to the bridge connecting said levers and holding them between the contacts, said levers and contacts respectively being connected to opposite main line terminals, whereby the sagging or breaking of the bridge will throw said levers and contacts in the main line circuit, substantially as described.

545,904. ELECTRIC SIGNALING. GEORGE E. MILLER, Stoneham, assignor to the American Electric Train and Switch Signal Company, Boston, Mass. Filed Sept. 6, 1894. Serial No. 522,255. (No model.)



Claim.—1. In a signaling system for railways provided with a sectional conductor extending along the track, the combination with a train, of signaling apparatus in a main circuit operated by alternating currents, and means for automatically indicating the condition of said main circuit, comprising electrical apparatus in an open shunt circuit adapted to be closed when the main circuit is broken.

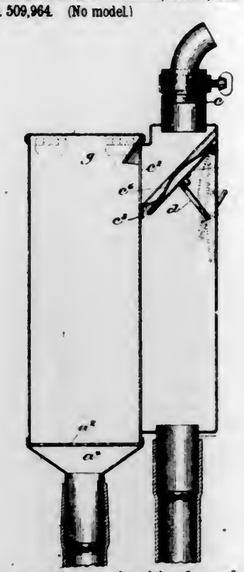
2. In a signaling system for railways provided with a sectional conductor extending along the track, the combination with an alternating current dynamo, carried by a train, supplying current to said conductor, the main circuit being closed through said conductor, rails, and the car wheels, of automatic means of testing the condition of the main circuit comprising a second circuit and electrical apparatus therein, and means for closing said second circuit when the main circuit is broken.

3. In a signaling system for railways provided with a sectional conductor extending along the track, the combination with an alternating current dynamo, carried by a train, supplying current to said conductor, the main circuit being closed through said conductor, the rails, and the car wheels, of automatic means for testing the condition of the main circuit, comprising a second circuit one terminal of which is constantly in contact with said conductor, and normally inoperative electrical apparatus in said second circuit for indicating a break in the main circuit.

4. In a signaling system for railways provided with a sectional conductor extending along the track, the combination with an alternating current dynamo carried by a train supplying current to said conductor, the main circuit being closed through said conductor, the rails and the car wheels, of electrical apparatus for automatically indicating the condition of said circuit, comprising a second circuit from the brushes of said dynamo and including said conductor, a magnet in said circuit provided with a pivoted armature and a third circuit closed through a bell by the movement of said armature when the main circuit is broken.

5. In a signaling system for railways, the combination of a sectional conductor extending along the track, an alternating current generator in the circuit of said conductor, a train, signaling apparatus in the main circuit located on the train and operated by alternating currents, a second circuit on the train, and means in said second circuit for automatically indicating the condition of the main circuit.

545,905. SOAP-HOLDING ATTACHMENT FOR FAUCETS. JAMES H. MOULDER and SAMUEL E. HICKMAN, Boston, Mass. Filed May 3, 1894. Serial No. 509,964. (No model.)



Claim.—1. As an improved article of manufacture, a soap-holding attachment for faucets comprising a tube provided with means for attaching it to a faucet, an outlet therefor, a valve arranged within said tube between its inlet and outlet, means arranged outside said tube and connected with said valve to open and close it a soap receiver arranged next and parallel to the tube and communicating with it through an opening above the valve and controlled by it, and an outlet for said soap receiver, substantially as described.

2. As an improved article of manufacture, a soap-holding attachment for faucets comprising a tube provided with means for attaching it to a faucet, an outlet therefor, a valve-seat arranged obliquely in said tube, a valve hinged within the tube below the seat, means arranged outside said tube and connected with said valve to open and close it, a soap receiver arranged next and parallel to the tube and communicating with it through an opening above the valve and controlled by it, and an outlet for said soap-receiver, substantially as described.

3. As an improved article of manufacture, a soap-holding attachment for faucets comprising a tube provided with means for attaching it to a faucet, an outlet therefor, a valve-seat arranged obliquely in said tube, a valve hinged within the tube below the seat, means arranged outside said tube and connected with said valve to open and close it, a soap receiver arranged next and parallel to the tube and communicating with it through an opening above the valve and controlled by it, a perforated false bottom, and an outlet for said soap-receiver, substanially as described.

4. The herein described soap-holding attachment for faucets, the same consisting of a soap-receiver having a conical bottom, and a flexible conducting tube connected to the outlet in said bottom, a filling opening and a closure therefor, a perforated support at the bottom of said receiver and separated from the conical bottom thereof to leave a collecting chamber for the water before the latter issues from the said bottom, a clear water passage also communicating with said receiver, and means to direct the course of the water through the receiver or the clear water passage at will, substantially as described.

545,906. FASTENING DEVICE FOR GLOVES. WILLIAM B. MURPHY, Brooklyn, assignor to Lucius N. Littauer, New York, N. Y. Filed May 20, 1895. Serial No. 549,954. (No model.)



Claim.—1. In a fastening for gloves and other articles, the combination of a cap piece, an annulus held within said cap piece and having its upper edge turned inward, downward and outward and the flanged eyelet adapted to be forced into and turned over inwardly at its upper edge by said annulus, thus holding the fastening together and to the fabric, substantially as set forth.

2. In a fastening for gloves and other articles, the combination of a cap piece, the annulus of S-shape in cross section having the tubular part, the lower out-turned lip 7 and the upper in and downwardly turned lip 8 and the flanged eyelet, all arranged and adapted to operate substantially as set forth.

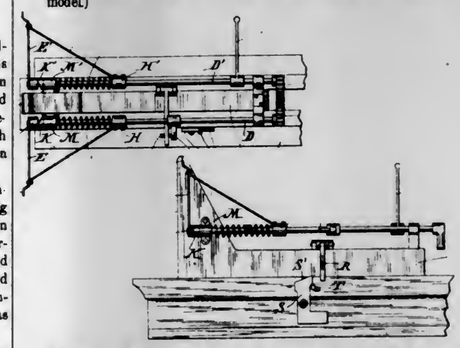
3. In a fastening for gloves and other articles, the combination of the cap piece, the annulus having the out-turned lower lip, the tapering body and the inturned upper lip and the eyelet adapted to co-operate therewith, substantially as set forth.

4. In a fastening for gloves and other articles, the socket member consisting of the cap 1, the annulus 2 having lower lip 7 adapted to be engaged by the lower edges of said cap and the inturned lip 8 turned so as to provide an opening 9 between its edge and the body of the annulus and the eyelet 3 having flange 10, and a tubular part whose edge is adapted to engage the inturned lip 8 of the annulus 2 and be turned over inwardly thereby, all arranged and adapted to operate substantially as set forth.

5. In a fastening for gloves and other articles, the stud member consisting of the spring cap 4, the annulus 5 having cylindrical body, the flange 12 and inturned lip 13 and the flanged eyelet 6, having a tubular body whose edge is adapted to meet and be turned over by the said lip 13 thus holding the parts together and to the fabric, substantially as set forth.

6. In a fastening for gloves and other articles, the stud member consisting of the split cap 4, the annulus 5, having dished flange 12 and a suitable lip adapted to act as an anvil and the cylindrical flanged eyelet 6, substantially as set forth.

545,907. HEAD-BLOCK FOR SAWMILL-CARRIAGES. JOHN NOONAN, Oconto, Wis. Filed Mar. 4, 1895. Serial No. 540,409. (No model.)



Claim.—1. The combination with the head-block of a saw mill carriage, and a knee thereon, of timber-supporting arms fixed on and projecting radially from horizontal rock-shafts journaled one at each side on the knee, cams for moving the rock-shafts forward endwise when the arms are thrown down, springs adapted to withdraw the shafts rearwardly when the arms are thrown up, means connecting the rock-shafts operatively adapted to compel concurrent and corresponding oscillation thereof, and means for oscillating one of said shafts to throw the arms down, substantially as described.

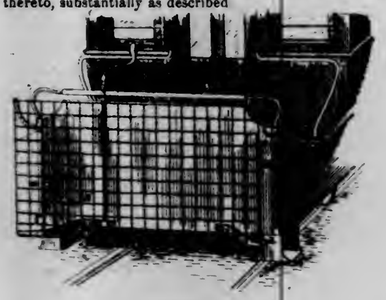
2. The combination with a head-block of a saw-mill carriage, and a knee thereon, of log or timber-supporting arms fixed on and projecting radially from rock-shafts journaled one at each side on the knee, gears on the rock-shafts meshing with each other, and a lever and a spring or springs for oscillating one of said rock-shafts, substantially as described.

3. The combination with a head-block of a saw-mill carriage and a movable knee thereon, of a log or timber-supporting arm having a bearing face at its extremity, said arm being fixed on and projecting radially from a rock-shaft journaled on the knee, a torsional spring acting on the rock-shaft adapted to fold up the arm when not held down, a radial arm on the rock-shaft, a swinging latch hinged on the knee adapted to engage the radial arm releasably and hold the timber-supporting arm to its work, and a detaching cam-faced lever pivoted on the head-block in the path of said latch adapted to lift the latch as it passes in one direction and to be tilted and allow the latch to pass freely in the other direction, substantially as described.

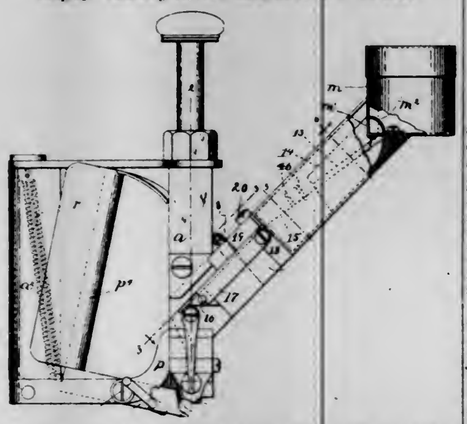
545,908. STREET-CAR BUFFER. GEORGE A. PARMENTER, Cambridge, Mass. Filed Oct. 26, 1894. Serial No. 527,029. (No model.)

Claim.—The combination of the flexible net work C., having flexible edges entirely around it, the quarter-elliptic springs *d*, *d*, having their inner ends secured to the body of the car and their outer ends

to the lower corners of the net work C., the quarter-elliptic springs c, c, having their inner ends secured to the dash board of the car and their outer ends to the upper corners of said net work C., all so arranged that the net work C. is tightly stretched between the ends of said springs, without other support than that at the points of attachment thereto, substantially as described.



545,909. HAND TACKING-MACHINE. ALBERT F. PRESTON, Boston, Mass., assignor, by mesne assignments, to the Preston Lasting Company. Filed Aug. 30, 1894. Serial No. 521,977. (No model.)



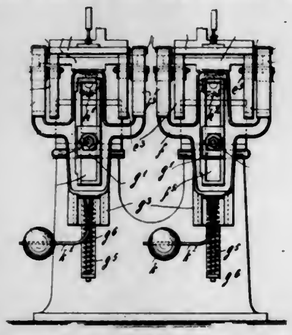
Claim.—1. In a tack-driving machine, the combination with a tack-chute and a driver, of a tack clamp normally pressed yieldingly into the chute and provided with a clamping face on its inner end adapted to press a tack against one side of the chute, and mechanism operated by the driver for displacing the clamp from its operative position when the driver is depressed and releasing it when the driver is raised.

2. In a tacking machine having a tack-delivering and driving mechanism comprising the head having a tack-delivering throat, the spring-raised driver movable in said head, and the inclined chute affixed to the head and communicating with said throat: the combination with said mechanism, of the tack let-off mechanism composed of the arm or carrier pivoted to the chute and having a tack detent, a spring which normally holds the detent away from the chute, a tack clamp adapted to bear on a tack in the chute, a spring whereby said clamp is normally held in the chute, an operating device such as the shoulder 25 on the driver adapted to displace the carrier when the driver is depressed and thereby move the detent to its tack-arresting position over the chute and a projection on the carrier arranged to displace the clamp after the detent has reached its tack-arresting position and to permit the return of the clamp to its tack-clamping position before the withdrawal of the carrier and the release of the tack arrested thereby, as set forth.

3. In a hand-tacking mechanism comprising a head having a tack-delivering throat and a fixed jaw, a driver movable in said head, means carried by the head for delivering tacks to said throat, and a handle affixed to the head: and separated therefrom by a hand receiving space, the combination with said mechanism of a lever pivoted to the handle and having at one end a movable jaw arranged to co-operate with said fixed jaw in grasping a shoe upper and a handle affixed to the opposite end of the lever and projecting into the space between the fixed handle and the head so that the pull exerted by the operator in stretching the upper also closes and holds the movable jaw.

4. In a hand-tacking mechanism comprising a head having a tack-delivering throat and a fixed jaw, a driver movable in said head, a handle affixed to the head, a lever pivoted to said handle and provided at one end with a movable jaw and at the other end with an operating handle projecting upwardly from the lever and arranged beside the handle of the head: the combination with said mechanism of a sole-engaging dog pivoted to said lever and provided with a handle whereby the dog may be moved to supplement the pull on the jaws, said dog and lever acting as toggle-links or members, as set forth.

545,910. BRUSH-MAKING MACHINE. CARL REHSE, Striegau, Germany. Filed Jan. 2, 1895. Serial No. 533,608. (No model.)



Claim.—1. In a brush-making machine having a working table adapted to be inclined to any plane, the combination with the frame carrying said table, of another frame supporting the former by means of exchangeable bearing-pieces secured to one of said frames, and of projections secured to the other of said frames, and adapted to co-operate with said bearing-pieces; said former frame having gudgeons adapted to be moved vertically within the second frame; the latter being also supported by means of an exchangeable bearing-piece, and having a gudgeon adapted to be moved vertically within a suitable guide piece of the frame proper of the machine, for the purpose as described.

2. In a brush-making machine having a working table adapted to be inclined to any plane, the combination with the frame carrying said table, of another frame supporting the former by means of projections secured to one of said frames, and taking into curved slots of bearing pieces secured to the other of said frames; said former frame having gudgeons adapted to be moved vertically within the second frame; the latter being also supported by means of an exchangeable bearing-piece, and having a gudgeon adapted to be moved vertically within a suitable guide-piece of the frame proper of the machine, for the purpose as described.

3. In a brush-making machine, having a working table adapted to be inclined to any plane, the combination with the frame carrying said table, of another frame supporting the former by means of exchangeable bearing-pieces secured to one of said frames, and of projections secured to the other of said frames, and adapted to co-operate with said bearing-pieces; said former frame having gudgeons adapted to be moved vertically within the second frame; the latter being supported by means of an exchangeable curved rack gearing with a cog-wheel, and having a gudgeon adapted to be moved vertically within a suitable guide-piece of the frame proper of the machine, for the purpose as described.

4. In a brush-making machine having a working table adapted to be inclined to any plane, the combination with the frame carrying said table, of another frame supporting the former by means of exchangeable bearing-pieces secured to one of said frames, and of projections secured to the other of said frames, and adapted to co-operate with said bearing-pieces; said former frame having gudgeons adapted to be adjusted in height within legs of said frame, and to be moved vertically within arms of the second frame; the latter being also supported by means of an exchangeable bearing-piece, and having a gudgeon adapted to be adjusted in height within said second frame, and to be moved vertically within a suitable guide-piece of the frame proper of the machine, for the purpose as described.

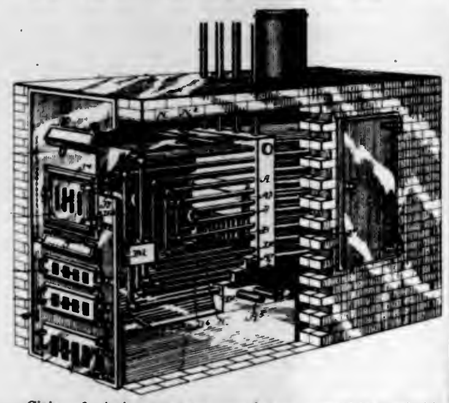
5. In a brush-making machine having a working table adapted to be inclined to any plane, the combination with the table frame e, of another frame f supporting the former by means of bolts f^4 secured to said frame f, and taking into curved slots e^6 of bearing-pieces e^7 secured to said frame e; the latter having gudgeons e^8 furnished with slides e^9 adapted to be adjusted in height within slotted legs e^5 of frame e, and with slides f^5 adapted to be vertically displaced within slotted arms f^3 of frame f; the latter being supported by means of an exchangeable curved rack h gearing with a cog-wheel h', and having a gudgeon g furnished with a slide g' adapted to be adjusted in height within a slot f^6 of said frame f, and with a slide g^3 adapted to be moved vertically within a guide-piece g^2 of the frame proper of the machine, for the purpose as described.

545,911. DETACHABLE BROOM-HANDLE. MICHAEL E. REILLY, Wallace, Idaho. Filed Apr. 19, 1895. Serial No. 546,376. (No model.)



Claim.—A coupling for a detachable broom handle consisting of an open sheet metal sleeve having a portion thereof bent transversely through its center to form a longitudinal partition through the same, and a series of bands surrounding said sleeve and adapted to compress it, in combination with the stem and the handle, each of which has one of its ends provided with a longitudinal slit that engages the partition through the sleeve, substantially as described.

545,912. HOT-WATER FURNACE. JOSEPH T. ROBBINS, Newton, Iowa. Filed Dec. 11, 1894. Serial No. 531,530. (No model.)



Claim.—1. An improved hot water furnace, comprising a suitable casing, a vertical water chamber extended transversely of the central part of the furnace and having a draft passage in its lower end, a draft passage leading from the furnace in front of the vertical water chamber to the flue, means for closing said passage and a draft passage from the furnace in the rear of the water chamber to the flue, a grate made of water pipes connected with said water chamber, above the draft passage in said chamber and a grate beneath the said draft passage, for the purposes stated.

2. In a hot water furnace, a central chamber, adapted to be extended transversely of a furnace to divide the same into two compartments and having a draft passage in its under central portion, an outward projection on its front face above the central portion having a horizontal under surface, and a series of pipes adapted to form a grate screwed into said horizontal under surface, and extended downwardly and then forwardly, for the purposes stated.

3. In an improved furnace the combination of a hollow water front adapted to be extended transversely of the furnace and having a horizontal bottom, a central water chamber having a draft passage in its lower end, a part of its front face extending outwardly and provided with a horizontal under surface and a grate composed of a number of pipes screwed into the bottom of the front chamber then extended horizontally and then upwardly and screwed into the bottom of said projection on the central water chamber, for the purposes stated.

4. The combination in a hot water furnace of a central chamber adapted to extend transversely of a furnace to divide the same into two parts and having a draft passage formed in its under central portion, notches or steps formed in the lower side portions of its front face, an outward projection formed on its front face and having a horizontal bottom, a water front adapted to extend transversely of the furnace, a grate composed of a plurality of water pipes connected with the horizontal bottom of the projection on the front face of the central water chamber extended downwardly therefrom and then forwardly and finally upward into the said water front, for the purposes stated.

5. The combination in a hot water furnace of a central chamber adapted to extend transversely of a furnace to divide the same into two parts and having a draft passage formed in its under central portion, notches or steps formed in the lower side portions of its front face, an outward projection formed on its front face, and having a horizontal bottom, a water front adapted to extend transversely of the furnace, a grate composed of a plurality of water pipes connected with the horizontal bottom of the projection on the front face of the central water chamber extended downwardly therefrom and then forwardly and finally upward into the said water front, a plurality of pipes connected with the side portions of the central water chamber extended forwardly therefrom and curved backwardly again into the said chamber in the same vertical plane, a plurality of pipes connected with the aforesaid notches or steps in the central water chamber passed forwardly and then upwardly into the water front, and a plurality of pipes connected with the sides of the central water chamber extended forwardly and then downwardly into the water front, all in the same vertical plane, and a plurality of pipes connected with the top and forward surface of the central water chamber projecting forwardly then transversely of the furnace and backward into the central water chamber in the same horizontal plane, for the purposes stated.

6. The combination in a hot water furnace of a central chamber adapted to extend transversely of a furnace to divide the same into two parts and having a draft passage formed in its under central portion, notches or steps formed in the lower side portions of its front face, an outward projection formed on its front face and having a horizontal bottom, a water front adapted to extend transversely of the furnace, a grate composed of a plurality of water pipes connected with a horizontal bottom of the projection on the front face of the central water chamber extended downwardly therefrom and then forwardly and finally upward into the said water pipes, a plurality of pipes connected with the side portions of the central water chamber extended forwardly therefrom and curved backwardly again into the said chamber in the same vertical plane, a plurality of pipes connected with the aforesaid notches or steps in the central water chamber passed forwardly and then rearwardly into the water front, and a plurality of pipes connected with the sides of the forward face of the central water chamber, extended forwardly and then downwardly into the water front, all in the same vertical plane and a plurality of pipes connected with the top and forward surface of the central water chamber projecting forwardly then transversely of the furnace and backward into the central water chamber all in the same horizontal plane, a plurality of pipes connecting with the central chamber below the grate and a series of rows of pipes having horizontal partitions in their central portions extending to a point near their rear ends in a staggered manner, and a row of pipes extending from the bottom of the central water chamber rearwardly, then upwardly and into the central water chamber at its top, all arranged and combined substantially in the manner set forth for the purposes stated.

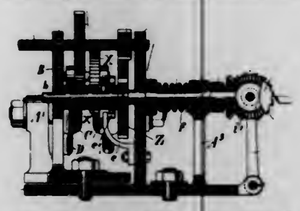
7. An improved furnace comprising a suitable casing, a central water chamber having notches or steps in its lower side portions, a projection at its front as set forth, a water front having an inclined central top portion as shown and described, the grate composed of a plurality of pipes, elbowed into the central water chamber and the water front as set forth, the pipes at the sides and top of the chamber in the front of the central water chamber, and pipes below the grates connected with the water chamber substantially as shown, the rows of pipes in the back of said central water chamber, substantially as shown and described, the air-feeding pipes below the grate as set forth, the air tubes at the sides of the upper fuel door, the door for feeding air to said tube as set forth, a fuel door above the grate, a second grate below the grate proper, a fuel door above said second grate, a door beneath said grate, a plate at the top of the chamber in the front of the central water chamber, a damper on said plate, and a flue connected with the chamber in the rear of the central water chamber, all arranged and combined to operate in the manner set forth and for the purposes stated.

545,913. GEAR-CUTTING APPARATUS. ADOLF RÖGLE, Heidenheim, Germany. Filed Nov. 19, 1894. Serial No. 529,308. (No model.)

Claim.—1. The combination, with a spindle, a gear wheel fixed thereon, a pair of cams loose on the spindle, and a gear pinion attached to one of said cams, of means for driving the gear wheel and pinion, substantially as set forth.

2. The combination, with a longitudinally-movable spindle, a gear wheel fixed thereon, a pair of cams loose on the spindle, a gear pinion attached to one of the cams, and a spring tending to hold the cams in contact, of means for driving the gear wheel and pinion, substantially as set forth.

3. The combination, with a spindle, a gear wheel fixed thereon, a pair of cams loose on the spindle, a gear pinion attached to one of the cams, and means for holding the other cam stationary, of mechanism for driving the gear wheel and pinion, substantially as set forth.

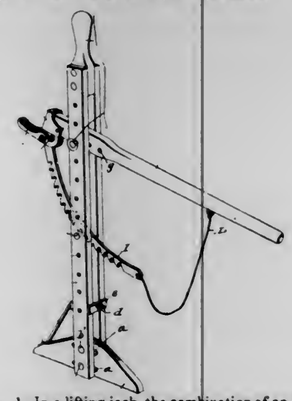


4. The combination, with a spindle, a gear wheel fixed thereon, a pair of cams loose on the spindle, and a gear pinion attached to one of the cams, of a driving shaft, a driving pinion mounted thereon and meshing with the gear wheel, a driving wheel also mounted thereon, and a change gearing intermediate the driving wheel and the gear pinion attached to the cam, substantially as set forth.

5. The combination, with a revoluble spindle, a yoke mounted on the spindle, a cross shaft journaled in the yoke, and a pair of bevel gears, one on the spindle, and the other on the cross shaft, of means for reciprocating the spindle, in the direction of its length substantially as set forth.

6. The combination, with a revoluble spindle, a yoke mounted on the spindle, a cross shaft journaled in the yoke, a pair of bevel gears, one on the spindle, and the other on the cross-shaft, and means for reciprocating the spindle, of a swinging lever attached to the yoke, substantially as set forth.

545,914. LIFTING-JACK. GEORGE C. RUE, Harrodsburg, Ky. Filed Apr. 25, 1895. Serial No. 547,164. (No model.)



Claim.—1. In a lifting jack, the combination of an upright, bolts E, F, arranged in said upright, the hand lever fulcrumed at an intermediate point of its length on the bolt F, a lever J, arranged beneath the forward portion of the hand lever and fulcrumed at an intermediate point of its length on a bolt carried by a lug depending from the hand lever, said lever J extending in advance of the said hand lever and having the upwardly extending branch at its rear end adapted to bear against the under side of the hand lever and the toothed bar pivotally connected to the fulcrum bolt of the lever J, and adapted to engage the bolt E, substantially as specified.

2. The lifting jack described comprising the base block having the slot *a*, the uprights arranged on opposite sides of said block, bolts *b*, *b'*, taking through the uprights and the blocks, the brace connected to the base block and extending between the uprights and having threads at its end and at an intermediate point of its length, plates arranged on said brace and engaging the uprights, nuts engaging the threads of the brace and securing the plates in position, the bolts E, F, arranged in the uprights, the hand lever fulcrumed on the bolt F, and the toothed bar pivotally connected with the lever and adapted to engage the bolt E, all substantially as specified.

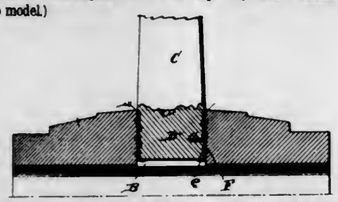
3. In a lifting jack, the combination of an upright, bolts E, F, arranged in said upright, the hand lever fulcrumed on the bolt F, the clip arranged on the forward end of the hand lever and having the depending lug, the curvilinear toothed bar pivotally connected by a transverse bolt with said lug and adapted to engage the bolt E, and the lever I, of loop form straddling the lug and the toothed bar and fulcrumed on the transverse connecting bolt of the toothed bar and having its rear end adapted to bear against the under side of the hand lever, substantially as specified.

545,915. FUNNEL-HOLDER. IRA M. RUSSELL, Lewiston, Me. Filed May 13, 1895. Serial No. 549,152. (No model.)



Claim.—In combination with a funnel having a wire K, the vertical rod B carrying said funnel, a measure L, a ring N on said measure adapted to work on the said rod, and the opening of the said measure designed to rest upon the said wire, substantially as shown and described.

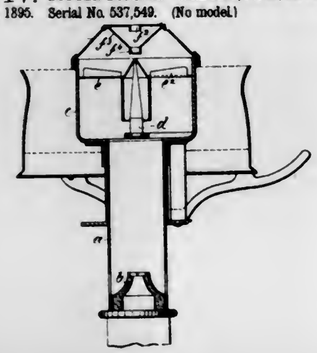
545,916. SPOKE-FASTENER FOR WHEELS. CHARLES L. SCHWARZ, Philadelphia, Pa. Filed Sept. 11, 1894. Serial No. 522,685. (No model.)



Claim.—1. In a vehicle wheel, the combination with the socketed hub and spokes having their tenons fitted in said socket, of an interposed metal locking plate between the hub socket and spoke tenon provided upon its two faces with oppositely inclining projections, those of one face entering the wood of the tenon, and those on the other face entering the wood of the hub socket.

2. A locking plate for securing a spoke tenon to a hub consisting of a flat plate having teeth projecting from the faces thereof and pointing in opposite directions, the said teeth on one face being inclined upward and at the other face inclined downward, and a shoulder formed at one end of said plate adapted to receive the end of the spoke tenon.

545,917. BUNSEN BURNER. CARL SEXL, Berlin, Germany. Filed Feb. 6, 1895. Serial No. 537,549. (No model.)

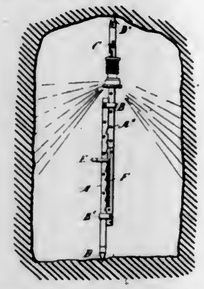


Claim.—1. In a Bunsen burner, the combination with the tube leading the gas and air to the burner proper, of a mixing wheel arranged below the latter, and adapted to be rotated by the gas and air; said burner proper having in its center an inverted cone extending downward and adapted to deflect the mixture of gas and air to the other portions of said burner, for the purpose as described.

2. In a Bunsen burner, the combination with the tube leading the gas and air to the burner proper, of a mixing-wheel arranged below the latter, and adapted to be rotated by the gas and air; said mixing wheel having in its center an inverted cone extending upward and adapted to deflect the mixture of gas and air to the side-portions of said burner, for the purpose as described.

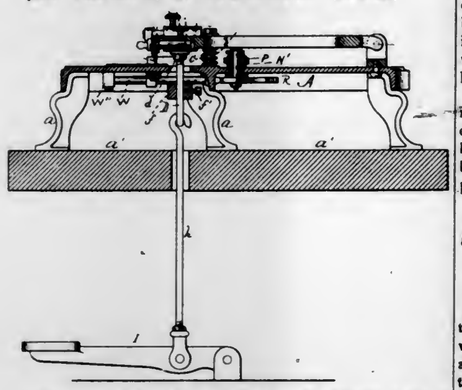
3. In a Bunsen burner, the combination with the tube leading the gas and air to the burner proper, of a mixing-wheel arranged below the latter, and adapted to be rotated by the gas and air; said mixing-wheel being formed by a hollow truncated cone secured to an inverted cone adapted to rotate upon a pointed pivot, for the purpose as described.

545,918. HOLDER FOR MINERS' SAFETY-LAMPS. PHILIP G. SMITH and ABRAHAM L. RUFF, Dickerson Run, Pa. Filed Aug. 24, 1894. Serial No. 521,187. (No model.)



Claim.—A miner's lamp holder, consisting of a post made in two sections mounted to slide one upon the other, one section being provided with a series of notches on its inner face, a locking plate adapted to engage the said notches but movable independently of the other section, and provided with a projection for manual operation, and a spring located between the inner faces of the sections and connected to the said locking plate and to the section not engaged by the locking plate, substantially as described.

545,919. MACHINE FOR MARKING LEATHER. WINFIELD S. SOULE, Brockton, Mass., assignor of one-half to Edward E. Goodwin, same place. Filed June 10, 1895. Serial No. 552,200. (No model.)



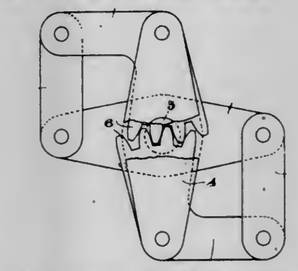
Claim.—1. In a machine of the character described, a bed or table, the vertically swinging arm B supported by said bed and provided with the rearwardly extending horizontal bores B', said bores containing the adjustable pins J which extend forward therefrom, the marker H hung on said pins, the horizontal pin L secured to the arm between and above the pins J and adjustable horizontally with relation to said arm, and the gage-button L swiveled on the outer end of said pin L and adapted to swing down in front of the marker, substantially as set forth.

2. In a machine of the character described, a bed or table provided with the slots 3, the arm B swinging vertically with relation to said bed, the marker H adjustably secured to said arm, the gage 4 lying on said bed, the horizontally sliding frame U' U'' provided with the slideways or slots U, the screws or pins extending through the slots U and 3 and the gage, the guide-rods W for directing the movement of said frame, the rack R' rigid with said frame, the vertical shaft P supported by the bed and provided with a segment gear R engaging with said rack, a gage or dial N swinging from said shaft and marked to indicate sizes and widths, a size-indicating pointer S fast on said shaft, and a width-indicating pointer T pivotally connected with the gage or dial, substantially as described.

3. In a machine of the character described, a bed or table provided with the pairs of slots 3, the slots in each pair extending toward each other at forward angles as described, the gages 4 lying on the bed, the frame U' U'' sliding horizontally forward and back with relation to the machine and provided with the slideways or slots U converging at a forward angle as described, the screws or pins 1 each extending through and playing in the slots U and 3, and the link 7, elbow-lever 5 pivoted to the frame and link 8, said links pivotally connecting the opposite ends of said elbow-lever with the pins 1 which slide in the two slots 3 constituting a pair, substantially as set forth

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545,920. POWER-TRANSMITTING DEVICE. ELMER A. SPERRY, Cleveland, Ohio, assignor to the General Electric Company, of New York. Filed July 5, 1895. Serial No. 554,942. (No model.)



Claim.—1. A power-transmitting device consisting of a power shaft having a double-ended member fixed at one end thereof at a right angle thereto, a second power shaft having a double-ended member fixed at one end thereof at a right angle thereto and to the member fixed to the first shaft, and pivoted links intervening between the said fixed members and connecting the same together, a portion of said links having abutting ends forming a rocking joint substantially in alignment with the two shafts and governing the movement of the links and the alignment of the shafts.

2. A power-transmitting device consisting of a power shaft having a cross-bar at one end thereof, a second power shaft having a cross-bar at one end thereof at a right angle to the first cross-bar, bell-crank levers pivoted to the ends of the second cross-bar and having abutting ends forming a rocking joint, substantially in alignment with the two shafts and links pivoted at one end to the bell-crank levers and at the other to the first cross-bar, as set forth.

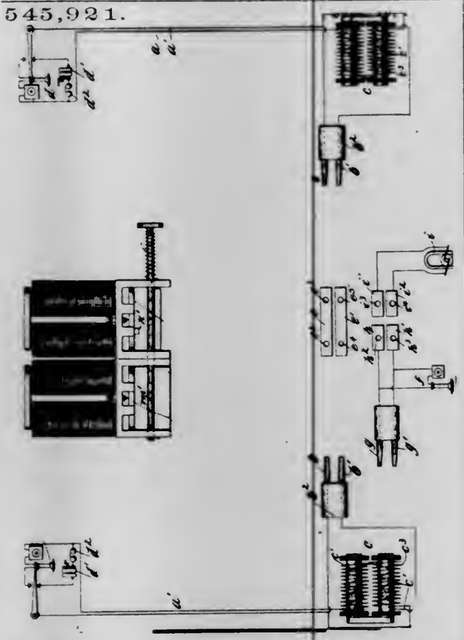
3. A power-transmitting device consisting of a power shaft having a cross-bar at one end thereof, a second power shaft having a cross-bar at one end thereof and at a right angle to the first cross-bar, bell-crank levers pivoted to the ends of the second cross-bar and having two adjacent ends formed with meshing gear teeth, and links pivoted to the bell-crank levers and to the first cross-bar, as set forth.

545,921. TELEPHONE-EXCHANGE APPARATUS. ALFRED STROMBERG, ANDROV CARLSON, and HERBERT L. KNIGHT, Chicago, Ill.; said Knight assignor to said Stromberg and Carlson. Filed Feb. 28, 1895. Serial No. 540,037. (No model.)

Claim.—1. The combination with two telephone lines connected together for conversation, of an individual annunciator in connection with each of said lines, each of said annunciators being provided with a winding included in a bridge or shunt between the two sides of the telephone circuit, each of said annunciators being also provided with a winding included in series with the telephone circuit, said series windings being included in circuit between the two bridges containing the shunt windings; whereby the individual annunciators may serve as clearing out annunciators, substantially as described.

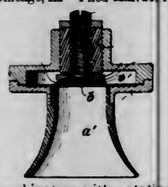
2. The combination with a telephone line extending to the central station and terminating thereat in a connecting or switching device, of an individual annunciator at the central station having two windings, one included in a bridge or shunt between the two sides of the telephone circuit, the other included in series with one side of the telephone circuit and situated between said switching device and the bridge containing the shunt winding, substantially as described.

545,921.



6. The combination with a microphone transmitter, of a rotatable shaft upon which said transmitter is mounted, a hook for the telephone receiver provided upon said shaft, contact points forming the terminals of the local transmitter circuit adapted to be controlled by the rotation of said shaft, contact points forming terminals of the main telephone line, and means for controlling said last mentioned contact points by the placing of the telephone upon or removing the same from its hook; substantially as described.

545,922. TELEPHONE APPARATUS. ALFRED STROMBERG and ANDROV CARLSON, Chicago, Ill. Filed Mar. 29, 1895. Serial No. 543,660. (No model.)



Claim.—1. The combination with a stationary block of carbon, of a diaphragm supported in front of the same and secured by its edges, a ring of plush or other yielding substance mounted between the diaphragm and the stationary block of carbon, and offering no substantial resistance to the movement of the diaphragm, a space being thus left between the surface of the carbon block and the diaphragm granular carbon interposed between the diaphragm and the carbon block; whereby the ring of plush holds the granular carbon in position without affecting the vibration of the diaphragm; substantially as described.

2. The combination with the casing a^3, of the cap a, the diaphragm b, clamped between said cap a and said casing a^3, carbon plate b' mounted upon said diaphragm b, the ring b^3 of plush or similar material, the block of insulating material c supported by casing a^3, the screw c' engaging threads in said block, the carbon block c^3 mounted upon the end of screw c', and the granular material interposed between the surface of the carbon plate b' and the carbon block c^3; substantially as described.

3. The combination with a microphone transmitter, of a rotatable shaft upon which said transmitter is mounted, a hook for the telephone receiver provided at one end of said shaft, a handle for rotating said shaft provided at the other end, and contact points forming the terminals of the local transmitter circuit, adapted to be controlled by the rotation of said shaft; substantially as described.

4. The combination with a microphone transmitter of a rotatable shaft, upon which said transmitter is mounted, a telephone hook provided upon said shaft upon one end, upon which the receiver is adapted to normally rest, a spring for automatically rotating the shaft when the receiver is removed from the hook, a handle for returning the shaft to its original position, and contact points controlled by the rotation of said shaft for opening and closing the local circuit of the transmitter; substantially as described.

5. The combination with a microphone transmitter, of a rotatable shaft upon which said transmitter is mounted, a hook for the telephone receiver provided upon the said shaft, and contact points forming the terminals of the local transmitter circuit adapted to be controlled by the rotation of said shaft; substantially as described.

545,923. SHIP-CLEANING APPARATUS. EDDY T. THOMAS, New York, N. Y., assignor, by direct and mesne assignments, of two-thirds to R. J. Campbell, same place, and Francis Larkin, Jr., Sing Sing, N. Y. Filed Jan. 3, 1895. Serial No. 533,778. (No model.)



Claim.—1. In a ship cleaning device, the supporting frame A. provided with a drum C. to support the motor cable C^2. and the motor I. operating a cleaning device, in combination with the drum D. for supporting the conducting wires F. and F'., trolley wires E. and E'. as and for the purpose described.

2. In a ship cleaning device, the supporting frame A. provided with the wheel A'. the drum C. to support the motor cable C^2., and the motor I. in combination with the drum D. for supporting the conducting wires F. and F'., trolley wires E. and E'. as and for the purpose described.

3. In a ship cleaning device the supporting frame A provided with the wheel A'. the drum C. to support the motor cable C^2., and the motor I. operating a cleaning device, supported by the cable B. in combination with the drum D. for holding the conducting wires F. and F'., trolley wires E and E'. as and for the purpose described.

4. In a ship cleaning device the supporting frame A. provided with the drum C. to support the motor cable C^2., and the motor I. operating a cleaning device, a spring in connection with the cable drum to rewind the cable C^2. in combination with the conducting wires F. and F'., trolley wires E. and E'. as and for the purpose described.

5. In a cleaning device the supporting frame A. provided with the arbor C. to operate the drums C'. and D., the motor cable C^2., and the motor operating a cleaning device, in combination with the drum D. for supporting the conducting wires F. and F'., trolley wires E. and E'. as and for the purpose described.

6. In a cleaning device the supporting frame A'. provided with the drum C'. to support the motor cable C^2., and the motor I, operating a cleaning device, in combination with the drum D having grooved flanges D^3. and D^4. the said drum D. supporting the conducting wires F. and F'., and the trolley wires E and E'. as and for the purpose described.

7. In a cleaning device the supporting frame A. provided with the drum C'. to support the motor cable C^2., and the motor I. operating a cleaning device. the said motor I. driving the gears J. and J^3., in combination with the drum D. for supporting the conducting wires F. and F'., trolley wires E. and E'. as and for the purpose described.

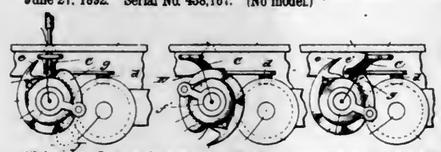
8. In a cleaning device, the supporting frame A. provided with the drum C'. to support the motor cable C^2., the motor I. for operating the brush K., in combination with the drum D. for supporting the conducting wires F. and F'., trolley wires E. and E'. as and for the purpose described.

9. In a cleaning device the supporting frame A. provided with the drum C'. to support the motor cable C^2., the motor I. for driving the gear J^3. which is provided with an eccentric pin J^5. for operating the reciprocating brush K. in combination with the drum D. for supporting the conducting wires F. and F'., trolley wires E. and E'. as and for the purpose described.

10. In a ship cleaning device the supporting frame A. provided with the drum C'. to support the motor cable C^2., and the motor I. for driving the reciprocating brush K. having an adjustable head K^6. supported by the flange K^{11}., in combination with the conducting wires F. and F'., trolley wires E. and E'. as and for the purpose described.

11. In a cleaning device the supporting frame A. provided with the drum C'. to support the motor cable C^2., and the motor I. for operating a cleaning device, in combination with the conducting wires F. and F'. as and for the purpose described.

545,924. SEWING-MACHINE. JASPER VANNETTE, Tiffin, Ohio assignor to The Singer Manufacturing Company, of New Jersey. Filed June 27, 1892. Serial No. 438,167. (No model.)

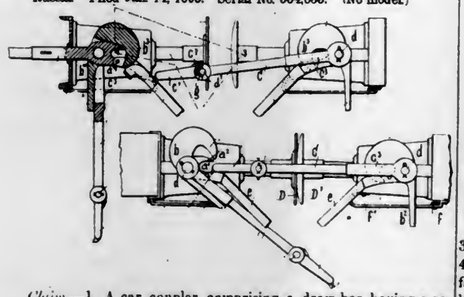


Claim.—1. In a sewing machine, the combination with the needle, of an oscillating hook having a bobbin case for containing a bobbin and which bobbin case is supported and carried by said hook, the latter being provided with an opening or mouth between its beak and heel, and a horizontally placed thread controller arranged beneath the work plate of the machine and having an opening through which the said needle descends and the outer arm of which controller is vibrated across the vertical path of the needle in a direction transversely of the machine or approximately in the line of the feed of the work.

2. In a sewing machine, the combination with the needle, of the thread controller C having a slot or opening arranged to cross the vertical path of the said needle, the rotating cam by which said controller is operated, and the oscillating hook E having a beak e and a mouth or thread escape passage e' between said beak and the heel of the hook, the body of the hook being provided with the peripheral flange or guard g to hold the slackened bobbin thread away from the beak of the said shank.

3. In a sewing machine, the combination with the needle, of the thread controller C having a slot or opening arranged to cross the vertical path of the said needle, the rotating cam by which said controller is operated, and the oscillating hook E having a beak e and an opening or mouth or thread escape passage e' between said beak and the heel of the hook, the body of the hook being provided with the peripheral flange or guard g to hold the slackened bobbin thread away from the beak of the said hook, and the end of said flange, adjacent to said mouth or thread escape passage, being curved inwardly and tapered to a blunt point, substantially as shown and described.

545,925. CAR-COUPLING. MAXYMILJAN WALICKI, Koluszki, Russia. Filed Jan. 14, 1895. Serial No. 534,833. (No model.)



Claim.—1. A car coupler, comprising a draw-bar having a recessed crooked-head and projecting arms supporting an inclined guideway, a crooked-hook with an extension and a connecting bar provided with a link with an engaging nose, substantially as and for the purposes described.

2. A car coupler, comprising a draw-bar having a crooked head and supporting therefrom an inclined guide-way, a crooked hook pivotally connected with said bar, a connecting bar provided with an arched link having an end projecting nose, substantially as and for the purposes described.

3. A car coupler, comprising a draw-bar having a recessed head and arms, an inclined divided spring guide way, a pivotal hook with a depending arm, a spring controlled connecting bar and an inverted U-shaped link connected therewith, substantially as and for the purposes described.

4. A car coupler provided with a draw-bar, a pivotal crooked hook connected with said draw-bar and provided with an arm, a connecting bar provided with a link, an inclined guide-way and means for uncoupling one car from another from either side thereof, substantially as and for the purposes described.

5. A car coupler provided with a draw-bar supporting thereto a crooked hook having a depending arm, a guide-way connected with the head of the draw-bar, a connecting bar provided with a pivotal link, a lever located beneath each of the buffers of the car and movable in slotted guides and adapted to actuate the arm of said hook, substantially as and for the purposes described.

6. A car coupler provided with a draw-bar having a head provided with a nose and with forked ends supporting an inclined guideway, a connecting rod provided with a link and with a nose, lug or projection, substantially as and for the purposes described.

7. A car coupler provided with a draw-bar having a recessed head and inclined projecting arms, a guideway, a hook with a projecting arm, a connecting bar having a link adapted to engage said hook and with a nose, lug or projection and a forked extremity in pivotal connection with said hook and the latter with said draw-bar, substantially as and for the purposes described.

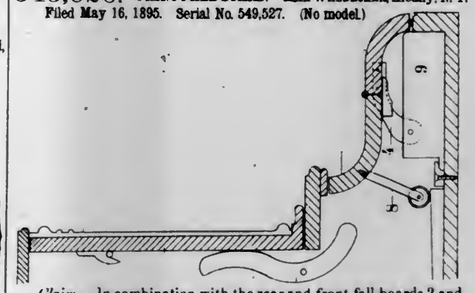
8. A car coupler provided with a draw-bar having a hooked-head and arms supporting a guide-way adapted to assume an inclined position, a crooked-hook in pivotal connection with said draw-bar and with the U-shaped link of a connecting-rod, the latter having at its opposite extremity a similar pivoted link with a nose, lug or projection adapted to engage said guideway, a pin or screw extending through the pivot of said last mentioned link and a spring engaging therewith for permitting said link to be held in a certain position, substantially as and for the purposes described.

9. A car coupler, comprising a draw-bar provided with a recessed head and supporting an inclined yielding or spring guideway, a crooked-hook pivotally connected with said bar, a connecting-rod provided with end links, whereof one is pivotally attached to said draw bar and whereof the other is provided with a nose, lug or projection, substantially as and for the purposes described.

10. A car coupler, comprising a draw-bar provided with a divided head and with a projection supporting to position an inclined guideway, a crooked-hook, a connecting rod with links, a lever movable in guides or ways for permitting of the uncoupling of the cars, substantially as and for the purposes described.

11. A car coupler provided with a crooked-hook in pivotal connection with a draw-bar provided with an inclined guide-way, a connecting-rod with links and whereof one is provided with a lug, nose or projection, a lever located on the side of each car and movable in slotted ways to control the release of said hook, substantially as and for the purposes described.

545,926. PIANO FALL-BOARD. MAX WALDECKER, Albany, N. Y. Filed May 16, 1895. Serial No. 549,527. (No model.)



Claim.—In combination with the rear and front fall-boards 2 and 3, hinged together as shown, and the frame of the instrument, an arm 4 pivoted at its lower end to the said frame rigidly but detachably fastened at and near its upper end to the said front fall-board, overlapping the joint of the said fall-boards and provided with a lateral offset to brace them on each side of the same, the rear fall board being provided with a downwardly extending arm or bar having a wheel mounted thereon, for running back over the piano frame or casing substantially as set forth.

545,927. CUFF-HOLDER. GEORGE W. WAY, Portland, Me. Filed July 15, 1895. Serial No 555,991. (No model.)



Claim.—1. The herein described cuff-holder consisting of a strip, one end of which is adapted to be secured to the button hole of the cuff, the opposite end having on one or both sides a laterally projecting wing, a clamp pivoted over said wing and having a clamping edge adapted to act eccentrically against the said wing to confine the cloth of the sleeve.

2. The herein described cuff-holder consisting of a strip, one end of which is adapted to be secured to the button hole of the cuff, the opposite end having on one or both sides a laterally projecting wing, a clamp pivoted over said wing and having a clamping edge adapted to act eccentrically against the said wing, the end of said strip being turned up and back to provide a bearing for said clamp.

3. The herein described cuff-holder consisting of a strip, one end of which is adapted to be secured to the button hole of the cuff, the opposite end having on one or both sides a laterally projecting wing, the end of the strip being turned up and back over the said wing, a clamp composed of a flat piece having its lower edge adapted to act eccentrically against the said wing and having an opening through which the turned back portion of said strip passes, projections on said strip for holding and pivoting said clamp, said clamp being provided with a handle which rests on the upper surface of the strip when the clamp is set.

4. The herein described cuff-holder consisting of a strip, one end of which is adapted to be secured to the button hole of the cuff, the opposite end having on one or both sides a laterally projecting wing, the end of the strip being turned up and back over the said wing, a clamp composed of a flat piece having a lower edge adapted to act eccentrically against said wing and having an opening through which the turned back portion of said strip passes, projections on the edges of said strip for holding and pivoting said clamp, the lower edge of said opening being provided with a recess at each end to allow said projections when turned down to pass through.

5. The herein described cuff-holder consisting of a strip, bent or folded at or near its center to form parallel upper and lower limbs, the free ends of which are adapted to engage with each other through the button hole of the cuff, the lower limb being provided at or near its bent end with a laterally projecting wing on one or both sides, a clamp composed of a flat piece having its lower edge adapted to act eccentrically against the said wing or wings to confine the cloth of the sleeve and having an opening through which the said upper limb passes, the said clamp having formed on it a handle adapted to lie flat against the upper surface of the upper limb when the clamp is engaged, the said upper limb having lateral projections at each side of said opening whereby the said clamp is confined and pivoted.

545,928. LEAD-PIPE COUPLING. ERWIN W. WHITMORE, Lynn, Mass. Filed May 4, 1895. Serial No. 548,134. (No model.)

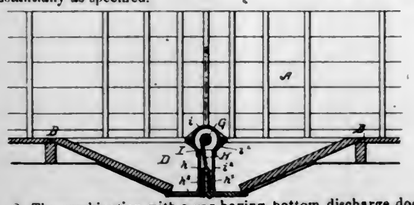


Claim.—1. In a pipe coupling of the character described, the coupling tube E provided with the tapered end E' and integral ring E'' formed on its face which is next the lead pipe with the annular rib e, and the connecting pipe C provided on its inner surface with the steps C' C'', the end of the pipe A being forced against said annular rib and crowded between said tapered end of the coupling tube and the stepped inner surface of the connecting pipe C, substantially as described.

2. In a pipe coupling of the character described, the coupling tube E provided with the tapered end E' and integral ring E'' formed on its face which is next the lead pipe with the annular rib e, the connecting pipe C provided on its inner surface with the steps C' C'' and on its outer surface with the annular shoulder C''', and the collar D provided on its inner surface with the annular ledge D' for engagement with said shoulder, substantially as set forth.

545,929. CAR. JOHN F. WILLIAMS, Harrisburg, Pa. Filed July 20, 1895. Serial No. 556,568. (No model.)

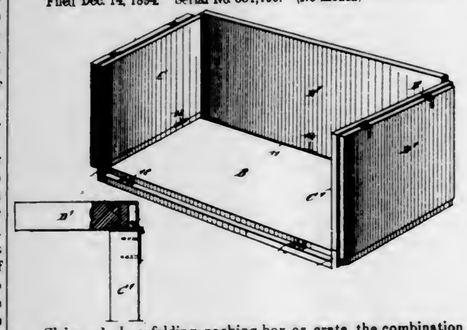
Claim.—1. The combination with a car having bottom discharge doors, of a chain winding shaft or drum, chains connecting such shaft or drum to the discharge doors, a chain guard comprising two connected or integral main portions carried loosely by the shaft, one of such main portions covering the chain wound on the shaft and the other main portion surrounding the depending portion of the chain, substantially as specified.



2. The combination with a car having bottom discharge doors, of a shaft, chains connecting the shaft to such discharge doors, and a protecting guard or casing carried loosely on the shaft and extending over and protecting the chain from contact with the contents of the car.

3. The combination of the car, a transversely arranged chain winding shaft, G, thereon, downwardly opening doors, E, E', hinged to the lower portion of the car and closing discharge openings therein, chains connecting such doors to said chain winding shaft and a protecting guard fitted loosely to the shaft and comprising sections, i, i', adapted to be bolted around said shaft and a depending tubular portion, i^3, extending therefrom to a point immediately over the discharge doors, E, E', substantially as specified.

545,930. FOLDING CRATE. JULIUS WOLFF, New York, N. Y. Filed Dec. 14, 1894. Serial No. 531,799. (No model.)



Claim.—1. In a folding packing box or crate, the combination with two of the panels, of a hinge connecting the said panels, the said hinge, comprising a yoke member having a hinge connection with one of the panels, and a staple member secured to the other panel, the plane of the staple member being at right angles to that of the yoke member and passing loosely therethrough, substantially as described.

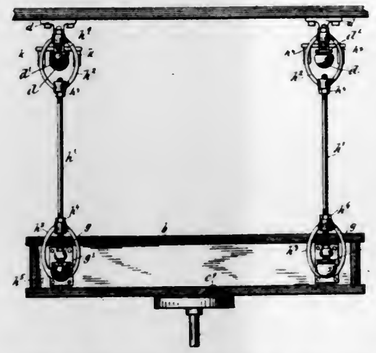
2. In a folding box or crate, the combination with a body panel, and a cover panel, of hinges connecting the said panels, each hinge consisting of a yoke member having a hinge connection with the body panel, and a staple member secured to the edge of the cover panel, the plane of the staple member being at right angles to that of the yoke member and passing loosely therethrough, substantially as described.

3. A folding crate, comprising a bottom panel having upwardly projecting extensions at its ends and one side, side panels, one hinged to the edge of the bottom panel and the other to the side extension thereof, and panels hinged to the end extensions of the bottom panel, cover panels, and hinges connecting the cover panels to the end panels, each hinge consisting of a plate secured to the end panels, a yoke hinged to the plate, and a staple secured to the cover panel, the plane of the staple being at right angles to that of the yoke and passing loosely therethrough, substantially as herein shown and described.

545,931. BALL-AND-SOCKET HANGER FOR SIEVES, &c. JACOB WORNER, Buda-Pesth, Austria-Hungary, assignor to Carl Haggenmacher, same place. Filed Jan. 9, 1894. Serial No. 496,277. (No model.)

Claim.—1. A hanger, for suspending a movable body, comprising an upper hanger-bracket securable to an overhead support, a lower hanger-bracket securable to the movable body, and a hanger-rod connected with both of said brackets by ball and socket joints, with both of said brackets and said rod projected out of the direct line of strain, to secure unbroken bearing surfaces, in the direct line of strain, at said ball and socket joints, substantially as described.

2. A hanger, for suspending a movable body, comprising a hanger-bracket and a hanger-rod connected with each other by a ball and socket joint, with the bracket and the rod both projected out of the direct line of strain, to secure unbroken bearing surfaces, in the direct line of strain, at said joint, and with the socket arranged to form the under member of said joint for holding oil, substantially as described.



3. A hanger, for movable bodies, comprising a hanger-bracket and a hanger-rod connected by a ball and socket joint, with both the bracket and the rod projected out of the direct line of strain, to secure unbroken bearing surfaces in the direct line of strain, at said joint, and with the socket half bearing arranged underneath the ball half bearing and enlarged to form an oil cup, substantially as described.

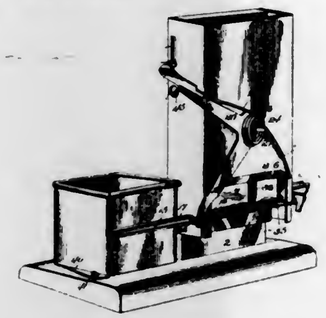
4. A hanger, comprising a socket bracket securable to the overhead support, a ball bracket securable to the suspended body, and a hanger rod having at its upper end a ball engaging the socket of the upper bracket and having, at its lower end, a socket engaging the ball of the lower bracket, with said brackets and said rod projected out of the direct line of strain, to secure unbroken bearing surfaces in the direct line of strain, at both of said joints, substantially as described.

5. A series of hangers, for suspending a movable body, comprising each a socket bracket securable to an overhead support, a ball bracket securable to said movable body, and a hanger rod provided above with a ball engaging the socket of the upper bracket and provided below with a socket engaging the ball of the lower bracket, with said sockets enlarged to form oil cups, and both the brackets and the rod projected out of the direct line of strain, to secure unbroken bearing surfaces, in the direct line of strain, at said joints, substantially as described.

6. The combination with a hanger-rod and hanger-bracket, of springs interposed between the rod and the bracket to prevent the rod from turning on its axis.

7. The combination with the bracket *d* secured to support *a* and having the socket *d'* and lower bracket *g* secured to the movable body *b* and having the ball *g'*, of the hanger rod h' h^3 h^4, as described, having the ball h^4 engaging the socket *d'* from above and having the socket h^3, engaging the ball *g'* from below, and the pair of springs *k* carried by the upper bracket *d* and bearing against the inner faces of the rod section h^3, all substantially as described.

545,932. COMBINED MATCH-IGNITING SAFE AND CIGAR-CUTTER. JOHN F. ZIMMERMAN, Washington Centre, Mo. Filed Nov. 30, 1894. Serial No. 530,433. (No model.)



Claim.—1. In a match box, the combination of a standard, a casing slidingly mounted on the standard and having a limited vertical movement a sliding ejector mounted at the bottom of the casing, a bell-crank lever fulcrumed on the casing and having one arm connected to the ejector, and having its other arm forming a handle, the yieldingly mounted igniting lever carried by the casing and arranged to engage the head of a match, and a spring connected with the igniting lever and the standard and holding the casing normally elevated substantially as described.

2. The combination in a match box, of a standard, a casing having a limited vertical movement on the standard, a contracted chute or guide located at the bottom of the casing to receive and arrange matches, a spring for holding the casing normally elevated a sliding ejector mounted at the bottom of the casing, and consisting of a bar arranged in suitable ways and an inner parallel portion located at the bottom of the chute or guide and arranged to reciprocate over the same, and a bell-crank lever fulcrumed on the casing and having one arm connected with the ejector, and having its other arm serving as a handle, substantially as described.

3. In a match box, the combination of a casing, a guide or chute located at the bottom thereof and comprising parallel vertically disposed inner and outer sides, and a bottom, one of the sides being provided at its top with an inclined extension, and the other having a horizontal flange contracting the space at the top of the guide or chute and provided at its ends with recesses, an ejector, and means for operating the same, substantially as described.

4. In a match box, the combination of a standard, a vertically movable casing slidingly mounted thereon, an ejector carried by the casing, an igniting lever pivoted intermediate of its ends on the casing and having one end arranged to engage the heads of the matches, and a spring connected to the other end of the lever and to the standard and holding the casing normally in an elevated position, substantially as described.

5. In a match box, the combination of a casing, an ejector, means for operating the same, an igniting lever pivotally mounted on the casing and provided at one end with notches, and having a slotted flange at the other end, said igniting lever being provided with parallel igniting blades having inclined lower edges provided with teeth, and constructed of a single piece of sheet metal bent into an approximately T-shaped form with the head arranged on the flange of the lever, the blades being passed through the slot of the flange and spread, and a spring engaging one of the notches of the lever, substantially as described.

6. In a match box, the combination of a casing, a yieldingly mounted igniting lever arranged at the discharge outlet of the casing and adapted to engage the heads of matches, a sliding ejector mounted on the casing and provided with a double wedge-shaped lug arranged to engage the igniting lever, and means for operating the ejector, substantially as described.

7 In a match box, the combination of a base, an upright rising therefrom, a casing slidingly mounted on the upright, and having a match outlet at its bottom, an ejector slidingly mounted on the casing, a bell crank lever fulcrumed on the casing and connected with the ejector, an igniting lever mounted on the casing at the outlet opening and arranged to engage the heads of matches, and a spring connected with the igniting lever and with the upright, and holding the casing normally elevated substantially as described.

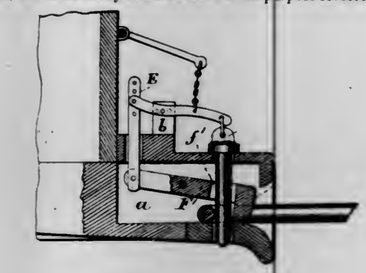
8. In a match box, the combination of a vertically movable casing, a contracted match arranging chute or guide located at the bottom thereof and provided with an outward extension, an ejector slidingly mounted on the casing and having a portion arranged to reciprocate over the bottom of the guide or chute, an igniting lever fulcrumed on the casing and provided with depending blades located above the extension of the guide or chute, a spring connected with the igniting lever and holding the casing normally elevated and a bell-crank lever fulcrumed on the casing and connected with and operating the ejector, substantially as described.

9. In a match box, the combination of a vertically movable casing provided with an extension at its outlet opening, and having opposite recesses forming ways, a sliding ejector mounted in the ways and provided with a notch, an igniting lever located above the extension of the casing and provided with a depending lug engaging the outer edge of the ejector, and a bell-crank lever fulcrumed on the casing and engaging the recess of the ejector, substantially as described.

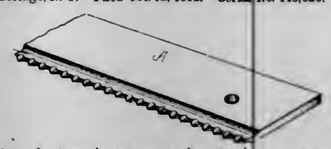
10. In a match box, the combination of a casing, a match ejector, a bell-crank lever fulcrumed on the casing and connected with the ejector, a disk located at the fulcrum point of the lever and provided with an annular series of outward extending arms, a spring having a coil arranged on and supported by said arms and connected with the casing and with the bell crank lever, substantially as described.

545,933. CAR-COUPLING. JOHN K. ADAMS and JOHN H. SIDDEN, Albany, Mo. Filed May 2, 1895. Serial No. 547,866. (No model.)

Claim.—In a car coupler, the pin C, the lever D flexibly connected with its head, and the vertical rod E pivoted at the upper end to said lever, in combination with a lever F having the front-curved head *f*, the pin slot *f'*, and its rear end pivoted to the lower end of rod E, all substantially as shown and for the purpose set forth.



545,934. CUTTER-BAR FOR LAWN-MOWERS. WM. C. ALLEN, Cambridge, N. Y. Filed Oct. 12, 1892. Serial No. 448,620. (No model.)



Claim.—1. A stationary cutter-bar for lawn-mowers consisting of a flat steel bar serrated on its front edge by alternate teeth and notches extending obliquely backward from the upper to the lower surface of such edge, and formed with a longitudinal groove or recess in its upper surface adjacent to the bases of said teeth, substantially as set forth.

2. A stationary cutter-bar for lawn-mowers, consisting of a flat steel bar serrated on its front edge by alternate teeth and notches extending obliquely backward from the upper to the lower surface of such edge, the upper surfaces of such teeth being beveled outwardly and downwardly parallel with the arc of rotation of the rotary cutters, substantially as set forth.

3. A stationary cutter-bar for lawn-mowers, consisting of a flat steel bar serrated on its front edge by alternate teeth and notches extending obliquely backward from the upper to the lower surface of such edge, the upper faces of such teeth being beveled outwardly and downwardly parallel with the path of rotation of the rotary cutters, and the upper surface of said bar having a longitudinal groove or recess formed therein adjacent to the bases of said teeth, substantially as set forth.

4. A stationary cutter-bar for lawn-mowers, consisting of a flat steel bar serrated on its front edge by alternate teeth and notches extending obliquely backward from the upper to the lower surface of such edge, the upper faces of such teeth being beveled outwardly and downwardly parallel with the path of rotation of the rotary cutters, the upper surface of said bar containing a longitudinal groove adjacent to the bases of said teeth, and the upper faces of said teeth having recesses or excavations formed therein adjacent to an opening into said groove, substantially as set forth.

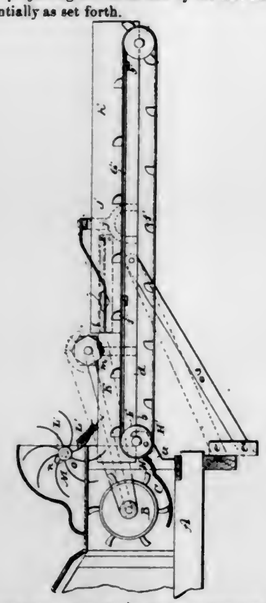
545,935. BAND-CUTTER AND FEEDER. JOHN L. BARKER, Racine, Wis. Filed Aug. 4, 1892. Serial No. 442,176. (No model.)

Claim.—1. In a band cutter and feeder, the combination with rollers and an endless apron passing over said rollers and provided with slots, of a series of brackets secured to said apron, hooks or plates having curved under edges adapted to conform to said rollers, hinged to said brackets, and a floor or platform located under and in close proximity to the upper portion of said apron, substantially as set forth.

2. In a band cutter and feeder, the combination with an endless carrier, and a curved feed board at one end thereof and adapted to rest in close proximity to said apron, of hinged hooks or plates carried by said carrier, and rollers over which said carrier passes, one of said rollers being made with annular recesses for the accommodation of said hooks so that the latter will not conflict with said feed board, substantially as set forth.

3. The combination with the carrier of a band cutter and feeder, of a curved feed board in proximity to one end thereof, and a brush secured to one end of said feed board and adapted to bear against said carrier to clean the latter and serve as a valve to prevent the passage of the material between the concave and the carrier, substantially as set forth.

4. In a band cutter and feeder, the combination with an endless carrier and its frame, of spring arms secured to the sides of the frame, and inwardly projecting knives carried by the free ends of said spring arms, substantially as set forth.



5. In a band cutter and feeder, the combination with an endless carrier, of knives arranged over said endless carrier, said knives projecting downwardly toward the carrier and inwardly toward each other, substantially as set forth.

6. In a band cutter and feeder, the combination with an endless apron, of a series of knives supported over the same, spring devices for supporting said knives, said knives being secured approximately centrally to their holding devices so that a portion of said supporting devices will project at both sides and ends of the knives, substantially as and for the purpose set forth.

7. In a band cutter and feeder, the combination with a carrier, of arms having plates connected therewith between which a knife blade is held, and means for securing them together to clamp the blade, substantially as set forth.

8. In a band cutter and feeder, the combination with a carrier, of arms hinged above said carrier, and adapted to rest on the material passing over the same, weights on said arms, and knives carried by said arms, substantially as set forth.

9. In a band cutter and feeder, the combination with a carrier and its frame, of brackets secured to the sides of the frame and extending above the same, a cross bar secured at its ends to said brackets brackets secured to said cross bar, arms hinged to the last mentioned brackets, knives carried by said arms and weights also carried by said arms, substantially as set forth.

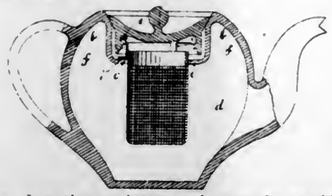
10. In a band cutter and feeder, the combination with an arm, of a clamp secured thereto, said clamp comprising a base plate, a plate extending perpendicularly thereto and having recesses in its free edge, and a clamping plate having lugs to enter said recesses, a clamping screw passing through the clamping plate and the plate adjacent thereto, a spring tending to force said plates apart, and a knife held between the clamping plate and the adjacent plate and extending through a slot in the base plate so as to leave flat faces on both sides and ends of said knife, substantially as set forth.

11. The combination with a feed apron, having hooks pivotally connected therewith, and roller-carrying the apron and having annular recesses in position to receive the hooks on their return, of a brush operating in connection with said feed apron and adapted to brush the latter just prior to its return and serve as a valve to prevent the passage of material at that point, substantially as set forth.

12. The combination with a cylinder, a concave concentric with the cylinder feed-board, and a feed apparatus, of a governor located in proximity to the cylinder feed board and feed apparatus, and a beater, substantially as set forth.

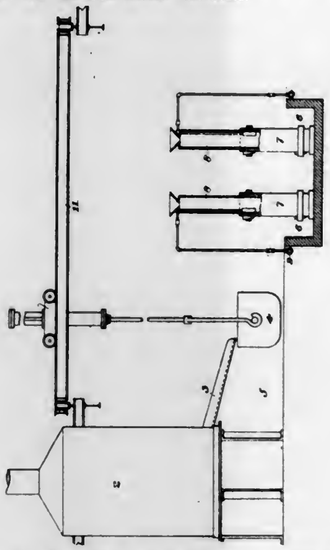
13. The combination with a frame, a cylinder and feed apron, of a governor yieldingly supported and capable of adjusting itself to admit the passage of any required volume of grain, and a many sided rotary beater capable of rising and falling as large or small bundles of grain pass beneath it, substantially as set forth.

545,936. TEAPOT AND STRAINER. FRANK W. BENTALL, London, England. Filed Jan. 21, 1895. Serial No. 535,678. (No model.) Patented in England Dec. 3, 1894. No. 23,479.



Claim.—In strainers or infusers and teapots for use with same in combination; an elastic band having clips or projections; the strainer or infuser being attached to said band, a rim upon which said projections engage attached to the teapot; an inclined surface and annular recess formed in the lid; the clips engaging in the annular space when the lid is pressed upon the same, substantially as described and shown herein.

545,937. PROCESS OF AND APPARATUS FOR MANUFACTURING IRON OR STEEL. THOMAS S. BLAIR, Jr., Allegheny, Pa. Filed Apr. 23, 1892. Serial No. 430,442. (No model.)



Claim.—1. The process of producing iron ingots direct from the oxide of iron by pouring the oxide in a fluid state into a mold, there dissociating the oxygen from the iron by subjecting the fluid mass to a blast of reducing-gas introduced thereinto, and permitting the metal to solidify in the mold; substantially as and for the purposes described.

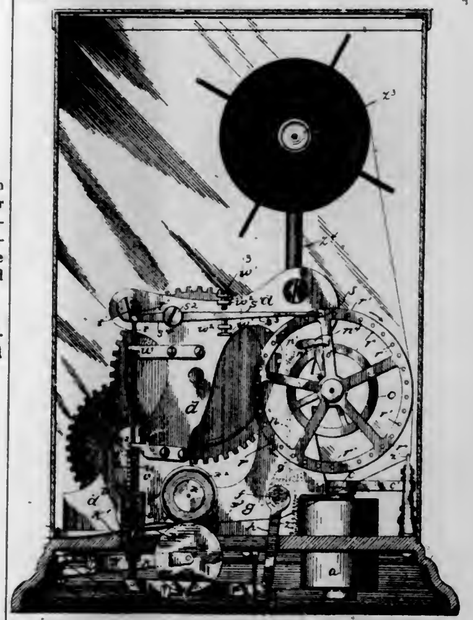
2. The process of producing ingots of steel direct from the oxide of iron by pouring the oxide in a fluid state into a mold and there dissociating the oxygen from the iron by subjecting the fluid mass to a blast of reducing-gas introduced thereinto, causing the incorporation of carbon into the metal, by subjecting it to contact with solid carbonaceous matter and permitting the metal to solidify in the mold; substantially as and for the purposes described.

3. The process of producing ingots of wrought-iron or of steel direct from the oxide of iron by pouring the oxide in a fluid state into the ingot-mold and there dissociating the oxygen from the iron by subjecting it to a blast of mingled reducing-gas and pulverized carbonaceous matter and permitting the metal to solidify in the mold; substantially as and for the purposes described.

4. In apparatus for the reduction of metallic oxide, the combination of a mold adapted to receive the molten oxide, a pipe adapted to discharge reducing gas thereinto, and a removable extension, extending upwardly from the mold, and adapted to permit ebullition without waste of metal; substantially as described

545,938. TELEGRAPH-RECEIVER. ORLANDO P. BRIGGS and WILLIAM R. PATTERSON, Chicago, Ill., assignors to the Western Electric Company, same place. Filed Oct. 11, 1893. Serial No. 487,834. (No model.)

Claim.—1. In a telegraphic register, the combination with a continuously operating punch, of a die adapted to be brought in engagement with said punch only upon the transmission of a signal, substantially as described.



2. In a telegraphic register, the combination with a continuously operating punch, of a die adapted to be brought in engagement therewith whenever a signal is transmitted, and means for bringing the paper tape between said die and said punch, whereby perforations in said paper tape are made to correspond with messages to be received, substantially as described.

3. In a telegraph instrument, the combination of a wheel adapted to vibrate a lever, a punch adapted to be actuated by said lever, and a movable die adapted to operate in connection with said punch to perforate paper tape upon the transmission of each telegraphic signal, substantially as described.

4. In a telegraph instrument, a lever adapted to be vibrated, a punch adapted to be operated by said lever, and a die adapted to be brought in engagement with said punch upon the transmission of each signal, substantially as described.

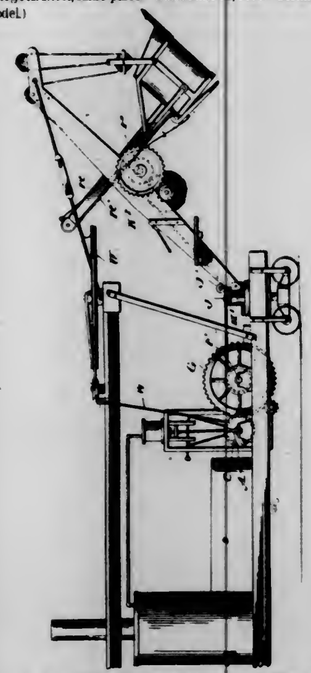
5. In a telegraph instrument, the combination with a single motor mechanism, of a punch adapted to be actuated thereby, a movable die adapted to be brought in engagement with said punch by said single motor mechanism and means for feeding paper tape between said die and said punch, and for bringing said die and said punch in engagement when a signal is transmitted, whereby a record is made in said paper tape, substantially as described.

6. In a telegraph instrument, electro magnets *a*, an armature *c* adapted to be actuated thereby, an armature lever *c'* supporting said armature, rod *f*, lever *h*, lever *i*, die *k*, retractile spring *m*, guide block *k'*, a rod *n*, guide block *n'*, tongue n^2, rod n^3, dog n^4, pin *o'* normally in engagement with said dog, a repellent spring *q*, a wheel *r*, pins *r' r' r'* supported thereon, lever *s* adapted to make successive engagement with said pins as said wheel is rotated, rod *t* adapted to be actuated by said lever, punch *u* adapted to be operated by rod *t*, spring *v* adapted to restore punch *u* to its elevated position after each successive engagement of lever *s* with pins *r' r' r'*, feed rolls *x x'* adapted to feed the paper tape between the punch and die, substantially as and for the purposes set forth.

7. In a telegraph register, the combination with a continuously acting punch, of an electro-magnet, a lever adapted to be moved by said electro-magnet and to bring the die in engagement with said punch, whereby a record of the message sent is made by the perforations in paper tape, substantially as described.

8. In a telegraph register, the combination with a die adapted to rest against the paper tape upon the transmission of a signal, of a punch actuated by the lever, and a wheel provided with projections, said wheel being adapted to rotate while a message is being transmitted and to bring said projections against said lever, whereby said punch is made to vibrate continuously during the transmission of a message, substantially as described.

545,939. STEAM SHOVEL AND DREDGE. JAMES C. BRINDLE, Ashland, Ohio, assignor of one-half to Perry Westman, James Myers, and George A. Nicol, same place. Filed June 15, 1895. Serial No. 552,951. (No model.)



Claim.—1. In combination in a dredge a winding drum and a friction wheel keyed to a shaft mounted in suitable boxes on the dredge frame, a driving wheel loosely journaled on said shaft, friction shoes mounted on said driving wheel, a sliding beveled wheel on said shaft and lever connection with said brake shoes, means for operating same, and the main crank shaft carrying a pinion designed to mesh with the peripheral teeth of said driving wheel, substantially as shown and described.

2. In combination with the driving mechanism as described, a swinging crane, the shaft K' journaled on said crane, pulley K loosely turning thereon, the friction wheel M keyed to said shaft, the friction shoes carried by said pulley K and having connection with a beveled sliding member L^3, means for operating the same, the shaft P having keyed thereto the drum Q, pinion wheels Q and O meshing with each other, the cables R', secured to a dipper handle and winding about said drums Q, and the main driving cable connecting the driving drum with the dipper, all substantially as shown and described.

545,940. GRAFTING-WAX AND PROCESS OF MAKING SAME. SILAS M. BROOKS, Burlington, assignor, by direct and mesne assignments, to Charles A. Hart and Phelps F. Smith, Canton, Conn., and William E. Simonds. Filed Sept. 13, 1893. Serial No. 485,406. (No specimens.)

Claim.—1. A compound of styrax and vegetable drying oil substantially as described.

2. A compound composed of a vegetable oil reduced by heat to a "thready condition" with styrax added thereto at a suitable heat substantially as described.

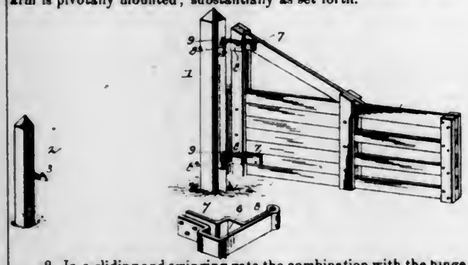
3. The process of preparing a compound of a vegetable oil and styrax which consists in first reducing the oil by heat to a "thready condition" and thereafter adding the styrax at a suitable heat, substantially as described.

545,941. GRAFTING-WAX. SILAS M. BROOKS, Burlington, assignor, by direct and mesne assignments, to Charles A. Hart and Phelps F. Smith, Canton, Conn., and William E. Simonds. Filed Sept. 13, 1893. Serial No. 485,405. (No specimens.)

Claim.—A grafting wax consisting of a compound of styrax, rosin and tallow substantially as described.

545,942. GATE. PHILEMON A. BRYANT, Sonora, N. Y. Filed June 18, 1895. Serial No. 553,212. (No model.)

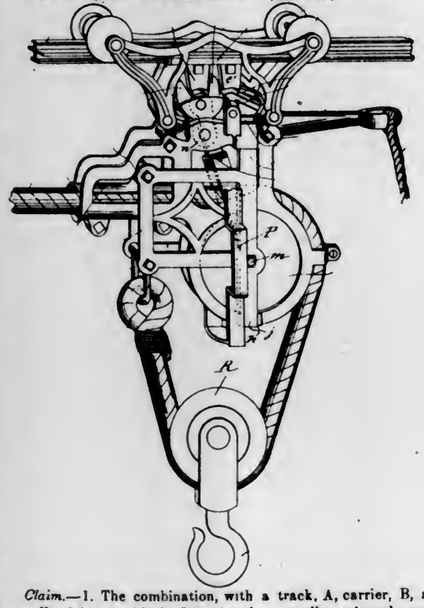
Claim.—1. In a sliding and swinging gate a hanging device consisting of a body portion adapted to be secured to the gate frame and having an arm projecting out at right-angles to the line of the gate, in combination with a hook support on which the extremity of said arm is pivotally mounted; substantially as set forth.



2. In a sliding and swinging gate the combination with the hinge section of the gate of the hanging devices consisting each of the rectangular body portion 6 having the projecting ends 7, the arm 8 projecting at right-angles to the line of the gate and having the end socket, and a supporting hook engaging with said socket and secured in the side of the hinge-post; substantially as set forth.

3. The herein-described combined sliding and swinging gate comprising the gate section 5, the gate proper mounted and sliding therein, the hanging devices inclosing and secured to the rear upright of the gate-section 5 and formed with the arms 8 projecting at right-angles to the line of the gate, and the hook supports secured in the side of the hinge-post and upon which the extremities of said arms are pivotally mounted; substantially as set forth.

545,943. HAY-CARRIER. JOHN H. BURKHOLDER, Ashland, Ohio. Filed Mar. 4, 1895. Serial No. 540,424. (No model.)



Claim.—1. The combination, with a track, A, carrier, B, and frame, F, of the stop block, J, having downwardly projected prongs, $c\,c'$, secured to the track, a locking block, H, having prongs, $b\,b'$, pivotally secured to the frame, F, a lock lever, N, adapted to hold the block, H, in engagement with the block, J, a drop frame, K, a link, M, connecting the block, H, with frame, K, a brake shoe, d, carried by the frame, K, and a rope, G, substantially as described and for the purposes set forth.

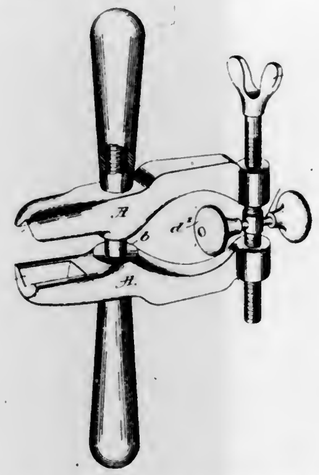
2. The combination, with a track and a stop block, of a carrier having a non-vertically movable frame, another frame adapted to move vertically thereon, devices adapted to lock said latter frame in connection with said stop block, a brake, a draft rope, a pulley journaled in said vertically movable frame, and devices for releasing the last mentioned frame from said stop block, whereby said brake is closed and the draft rope is made fast to the carrier, substantially as and for the purposes set forth.

3. In a hay carrier, a fixed and a movable frame, devices for locking said movable frame in position, and devices for releasing it, a pulley mounted in said movable frame, a draft rope passed over said pulley, a rope brake, one part of which is carried by the fixed frame, the other part being carried by said movable frame, whereby, when the latter frame is released from the locking devices, it will sink a distance, so as to actuate the brake to grasp the draft rope, substantially as and for the purposes described.

4. In a hay carrier, the combination with two parts of a frame, one of which is fixed and the other is movable, of a locking block, pivotally connected with said fixed part of the frame, and a link connecting said locking block with said movable frame, whereby the latter, with the parts supported thereon, may be raised and held in its elevated position by the engagement of said locking block with a stop block, substantially as and for the purposes described.

5. The combination with a track, of a carrier, having a relatively fixed frame depending from said track, and a frame adapted to move vertically on said fixed frame, devices for raising and locking said movable frame in its elevated position, a rope brake made in two parts, one of which is carried by the fixed frame and the other by the movable frame, a pulley journaled in the movable frame, a draft cord passed over said pulley, a tripping device adapted to be raised by said draft cord and to release said movable frame, whereby the latter is allowed to sink so that the draft rope is grasped by the said brake, substantially as set forth for the purposes specified.

545,944. WRENCH. EDMUND CHAMPANE, Whitefield, N. H., assignor of one-half to Alexander F. Stoughton, Peter T. Stoughton, and James C. Stoughton, same place. Filed Mar 2, 1895. Serial No. 540,315 (No model.)



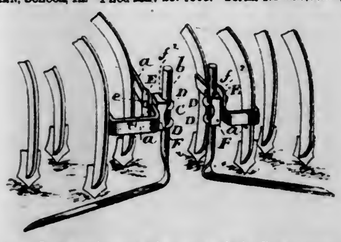
Claim.—1. A wrench containing two jaws, a main threaded adjusting device extended through said jaws and provided at its opposite ends and at the outer sides of the said jaws with handles, rotation of which effects adjustment of the said device, said handles also furnishing means for rotating the wrench, and a right and left threaded auxiliary adjusting device, substantially as described.

2. A wrench containing two jaws, a handle at the outer side of one of said jaws, and having a threaded shank extended through both jaws and receiving upon its threaded end outside the other jaw a second handle, said handles furnishing means by which to adjust the jaws through said device, and also furnishing means for rotation of the wrench, a right and left threaded auxiliary device fitted in said jaws at that side of the main adjusting device opposite the acting ends of the jaws, and a radially extended operating handle for said auxiliary adjusting device and between the said jaws, substantially as described.

3. The combination with two jaws, and a main and a right and left threaded auxiliary adjusting device, of a swivel handle carried by the said auxiliary adjusting device between the said jaws, substantially as described.

4. The combination with two jaws, and a main and a right and left threaded auxiliary adjusting device carried thereby, of the oppositely arranged swivel handles applied to the said auxiliary adjusting device between the said jaws to operate substantially as described.

545,945. WEED-CUTTER FOR CULTIVATORS. PATRICK W. CORCORAN, Seneca, Ill. Filed May 25, 1895. Serial No. 550,685. (No model.)



Claim.—In a weed-cutter the two eyebolts D provided with nuts: the plate E having cross slots $e\,e$ and cross-grooves $e'\,e'$; and the plate F having holes f, sockets f', and half-circle grooves f^2; all combined and arranged to form a clamp C as and for the purpose specified.

545,946. HUB-ATTACHING DEVICE. HENRY M. CROMER, Moscow, S. C. Filed Jan. 29, 1895. Serial No. 536,572. (No model.)



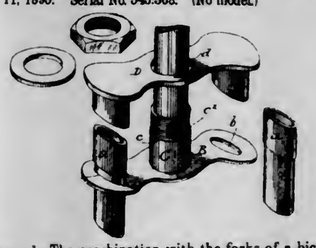
Claim.—The combination with a spindle having an inner cone, of a box provided at its inner and outer ends with conical or flared seats 9 and 10, the outer end of the spindle being reduced and threaded as at 6, an outer cone 7 threaded upon said reduced portion of the spindle and having an abrupt inner end arranged at an interval from a shoulder 12 formed by the reduction of the spindle, an abrupt parallel-sided ring 13 integral with the box at the inner end of the seat 10 and disposed between the inner end of the outer cone and the contiguous shoulder of the spindle, packing rings interposed between the sides of said ring and the contiguous extremity of the cone and the shoulder of the spindle, and means for limiting the inward adjustment of the cone, said seat 10 extending beyond and overhanging the outer packing ring to prevent displacement, substantially as specified.

545,947. DAMPER. CHARLES A. DANIELS, Waterville, N. Y. Filed Nov. 30, 1894. Serial No. 530,408. (No model.)



Claim.—A damper comprising a horizontal central portion or web extending for a distance equal to the diameter of the flue in which it is arranged, and having a vertical opening centrally located therein two reversely disposed substantially semi-circular wings or vanes rigidly secured one to each side of the central portion or web and extending in opposite directions, the said wings or vanes being narrower than the length of the central portion or web, thereby forming open spaces at the opposite sides of the damper, and the journals extending from the opposite ends of said central portion or web and arranged in parallel relation to the wings or vanes, substantially as described.

545,948. BICYCLE. WILLIAM DE LANY, Cobourg, Canada. Filed Apr. 11, 1895. Serial No. 545,368. (No model.)



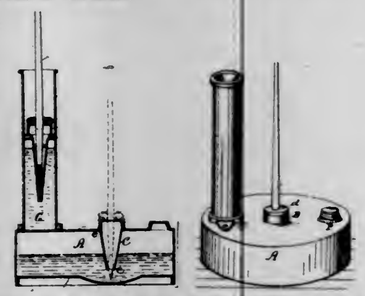
Claim.—1. The combination with the forks of a bicycle, of the fork stem, the connecting plate B, perforated at opposite ends and through which the forks extend, the crown plate D with which the forks have a sliding connection, and devices for detachably connecting the two plates together, substantially as described.

2. The combination with the forks of a bicycle, of the fork stem, plates connecting the fork stem with the upper ends of the forks, and a nut on the fork stem for tightening the connection between the forks and the plates.

3. The combination of the forks having headed upper ends, the fork stem, plates separated from each other as described by the heads of the fork, and a nut on the fork stem for tightly connecting the two plates and holding the forks rigidly in position.

1. The combination of the headed forks, the fork stem, the lower plate arranged under the shoulders of the heads of the forks, the crown plate having socket pieces extending over the heads of the forks, the handle standard secured to the lower plate and passing through the crown plate, and a nut on the fork stem for tightening the connection between it and the plates.

545,949. MARKING-KIT. CARROLL W. DODGE, Worcester, Mass., assignor to William R. Albertson, same place. Filed May 2, 1895. Serial No. 547,838. (No model.)



Claim.—1. In a marking kit, in combination with the ink-container consisting of the closed metal can having the flat top-plate, the dip-funnel rigidly fixed in said top-plate with an upwardly projecting exterior portion, having its top edge turned over and forming an inwardly directed lip about the mouth, substantially as set forth.

2. In a marking kit, the hollow stem or hand-tube fixed to the ink-container and provided with an annular ledge or supporting shelf about its interior, said shelf disposed at some distance below the top of said hand-tube, as shown, and with a chamber beneath said ledge, for the purpose set forth.

3. In a marking kit, the hollow-stem having the annular inwardly directed ledge therein, with a chamber for liquid below, and the removable pointing-tube having the flared or open flanged end supported on said ledge, with its smaller end depending within said chamber, for the purpose set forth.

4. In a marking kit, the brush provided with a finger-guard adapted as a cap for the dip-funnel of the container; in combination with the dip funnel fixed in the ink container, and having the projecting top, and the hollow stem having, in its interior, means for supporting said cap with the brush suspended within the chamber below said point of support, for the purpose set forth.

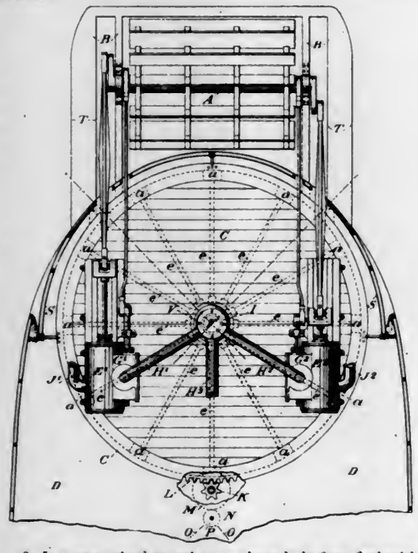
5. The ink-container, composed of the sheet-metal top-plate and rim, and the bottom plate formed with the downward peripheral flange secured within said rim, and having the depression therein; in combination with the dip-funnel secured in the top-plate with its lower end opening to the interior adjacent to the bottom above said depression, the removable cap fitting over the top of said dip-funnel, and the brush supported in said cap, as shown and described.

6. In combination with the ink-container having the dip-funnel arranged therein, its upper portion projecting above the top-plate, the upright stem or hand-tube fixed to said container, and having the open top, and the inward offset or ledge about its interior, with a chamber for containing liquid below said ledge, the cap adapted for covering said dip-funnel and for sustension upon said ledge within the hand-tube, and the marking-brush, its handle passing through and supported in said cap, substantially as set forth.

545,950. PROPELLING AND STEERING STEAMBOATS. CHARLES EVANS, San Francisco, Cal. Filed Sept. 23, 1894. Serial No. 523,772. (No model.)

Claim.—1. In a stern-wheel steamboat, a pair of steam engines and a propelling wheel, mounted on a swiveling platform in the manner described, this platform extending across the main deck and surrounded at the rear side by a bulkhead that extends around and moves with the platform, so as to inclose the engines and engine room, substantially as and in the manner described.

2. In a stern-wheel steamboat, a swiveling platform pivoted concentrically with the run or stern curves of the vessel, provided with a movable bulkhead inclosing the rear of the engine room, so the latter with the engines and propelling wheel can be turned to different angles by means of steering gearing, in the manner substantially as described.



3. In a stern-wheel steamboat, a pivoted platform flush with the main deck at the stern of the boat, a paddle wheel mounted on girders extending out from the platform; the latter made wide enough to receive the impelling engines outside or beyond the girders on which the wheel is supported, in the manner substantially and for the purposes specified.

4. In a stern-wheel steamboat, a swiveling circular platform mounted on the rear of a vessel flush with the main deck, and provided with out-board girders, the propelling wheel supported in said girders, the bulkhead inclosing the rear of the engine room, and a runway around the wheel placed outside the girders, substantially as described.

5. In a stern-wheel steamboat, the combination of a revoluble platform, set flush with and forming a part of the main deck, a propelling wheel supported on girders extending out-board from the platform; steam engines mounted on this platform at the sides thereof and outside the girders or wheel supports, constructed and operating substantially as described.

545,951. STOVE-GRATE. GEORGE L. FARWELL, St. Paul, Minn. Filed Apr. 30, 1894. Serial No. 509,529. (No model.)



Claim.—1. In a stove, the combination with the fire box, of the main fuel supporting grate arranged beneath the same, and the centrally arranged air conduit for admitting the air from the ash pit through the secondary grate and distributing the same laterally between said grates.

2. In a stove, the combination with its fire box, of the main fuel supporting grate, the secondary grate arranged underneath the same, and the tubular air conduit arranged between said grates having a closed top and communicating with the ash pit, and having lateral openings between said grates.

3. In a stove, the combination with its fire box and ash pit, of the main fuel supporting grate, the secondary grate having relatively smaller openings than said first named grate, and arranged intemediate of it and said ash pit, the vertical, centrally arranged air conduit between said grates communicating with the ash pit through an opening in said secondary grate, and having a closed top and lateral vents.

4. In a stove, the combination with the fire-box, of the fuel supporting grate, the secondary grate arranged underneath the same, the stationary dome or hood supported upon the secondary grate and projecting slightly into but not filling an opening in the fuel supporting grate, said dome having a bottom air inlet and lateral air outlets.

5. In a stove, the combination with the fire box, of the fuel supporting grate, and underneath the same with intermediate space the double grate consisting of two similar superposed grates having an opening therethrough, and the dome or hood covering said grate opening having lateral openings in its supporting walls adapted to admit air directly therethrough to the under side of said fuel supporting grate.

6. In a stove, the combination with the fire box, of the fuel supporting grate, and underneath the same with intermediate space the double grate, consisting of series of parallel overlapping bars with intermediate spaces and having an opening through both of said series of bars and the dome or hood covering said grate opening and having lateral openings in its supporting walls adapted to admit air directly therethrough to the under side of said fuel supporting grate.

7. In a stove, the combination with the fire box, of the fuel supporting grate, and underneath the same with intermediate space the double grate, consisting of series of parallel bars arranged in step by step position with intermediate spaces and having an opening through both of said series, and the dome or hood covering said grate opening with lateral openings underneath it adapted to admit air directly therethrough to the under side of said fuel supporting grate.

8. In a stove, the combination with the fire box, of the main grate, the secondary grate arranged underneath the same with intermediate space and having an opening therethrough, and constructed of step by step series of parallel bars with intermediate spaces and connecting lugs, and the imperforate dome or hood supported above and covering said opening and having lateral openings in its supporting walls.

9. In a stove, the combination with the fire box, of the fuel supporting grate, the secondary grate arranged underneath the same with intermediate space and having an opening therethrough, and the dome or hood covering said opening and having lateral openings underneath it adapted to admit air directly to the under side of said fuel supporting grate.

10. In a stove, the combination with the fire box, of the fuel supporting grate, the secondary grate arranged underneath the same with intermediate space and consisting of step by step series of bars with intermediate spaces, said grate having an opening therethrough, and the dome or hood covering said opening provided with lateral openings underneath it adapted to admit air directly to the under side of said fuel supporting grate.

11. In a stove, the combination with the fire box, of the main grate, the secondary grate arranged underneath the same with intermediate space, the relatively large registering openings in both said grates, the imperforate dome or hood entering but not filling the opening in the main grate and the perforate support for said dome or hood.

12. In a stove, the combination with the main and secondary grates, of projections rigidly fixed to one grate and loosely engaging the other, whereby the movement of one grate beyond fixed limits imparts similar movement to the other grate.

13. In a stove, the combination with the fire-box, of the upper and lower grates arranged therein with intermediate space, and the loose connection between said grates whereby the oscillating or sliding movement of one grate beyond certain limits imparts a like motion to the other grate.

14. In a fire-box, the combination with the upper and lower grates having intermediate combustion space, of the handle secured to one, the bifurcated arm secured to the other with its members passing upon opposite sides of said handle, whereby the lateral movement of said handle imparts motion to the other grate.

545,952. HANGING FERNERY. ALICE FITZ-GERALD, Duarte, Cal. Filed May 27, 1895. Serial No. 550,789. (No model.)

Claim.—1. A fernery composed of a water-containing porous vessel through which the water will seep, and an outer mat of fern root containing material fastened around the outside of the vessel and adapted for holding moisture and sustaining the growth of the ferns.

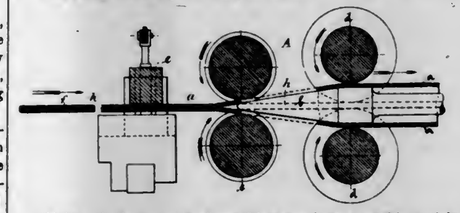
2. The combination of the suspended water-containing porous vessel through which the water will seep; the outer covering of moss with fern roots embedded therein applied to and surrounding the outside of the vessel, and the netting surrounding the outside of the covering of moss and fastened at the mouth of the vessel.

3. The combination of the open mouthed porous water-containing vessel through which water will seep; the outer covering of moss with the fern roots embedded therein applied to and surrounding the outside of the vessel; the netting surrounding the moss covering; and the stitching through the netting and over the mouth of the vessel.



4. The mat for a fernery composed as set forth of the netting, the moss covering on the netting, the fern roots embedded in the moss opposite the netting, and the stitching which passes through the netting and is arranged to secure the fern roots and the moss to the netting.

545,953. APPARATUS FOR MAKING METAL TUBES. OSCAR FRIEDRICH and WILHELM SCHULTE, Duisburg, Germany, assignors to the Duisburger Eisen- und Stahlwerke, same place. Filed Mar. 9, 1894. Serial No. 502,968. (No model.) Patented in England Feb. 12, 1894, No. 3,038; in Austria Mar. 14, 1894, No. 44/468; in Spain Mar. 15, 1894, No. 15,528; in Italy Mar. 31, 1894, No. 35,745/130; in Hungary Apr. 19, 1894, No. 279, and in Canada Apr. 20, 1894, No. 45,848.



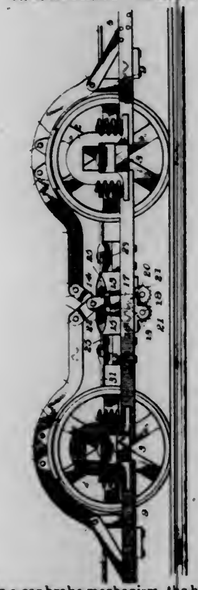
Claim.—1. In apparatus for making metal tubes and like articles from tube blanks having edges and an incision between the edges, a fixed mandrel having a tapering opening part and a smooth finishing part, in combination with two rollers opposite said mandrel, spaced apart equally distant therefrom, and having axes at right angles to the axis of the mandrel, said rollers driven in the direction of travel of the tube to be rolled, each having a shaping groove opposite the mandrel and gripping portions at the sides of said groove, said grooves each having the shape to be given to the corresponding part between the edges of the tube, and engaging, pressing and shaping such part against the mandrel, and said gripping portions on each roller disposed at the sides of the mandrel, opposite the like portions of the other roller, and beyond said grooves, engaging, shaping and gripping the sides of the edges of the blank, propelling the latter thereby over the mandrel, and said mandrel and rollers having between their adjacent peripheries at the plane of the axes of the rollers an annular space corresponding to the desired cross-section of the tube and its edges, substantially as and for the purpose set forth.

2. In apparatus for making metal tubes or like articles from tube blanks having edges and an incision between the edges, a fixed mandrel having an opening point entering and separating the blank, and a subsequent finishing portion finishing the interior of the tube, and two pairs of driving rollers opposite said mandrel, the one pair opposite the opening end of the mandrel and the other pair opposite the finishing portion thereof, the first pair having shallow grooves rolling the tube against the mandrel, and having the shape of the sides between its edges as it enters the mandrel, and the second pair having deep shaping grooves finishing and shaping the outside of the tube opposite the finishing portion of the mandrel, and having the shape of the exterior of the finished tube between its edges, and each of said rollers having gripping portions at the opposite sides of and beyond said grooves, spaced apart and receiving and gripping the edges of the tube between them, said rollers turning in the direction of travel of the tube, driving it over the mandrel, and simultaneously shaping it, substantially as and for the purpose set forth.

3. In apparatus for making metal tubes or like articles from tube blanks having edges and an incision between the edges, a fixed mandrel *b* having a conical point and a cylindrical finishing part, in combination with two driven rollers *c* opposite said mandrel, having concave grooves parallel with the axis thereof, and cylindrical gripping portions at the sides of said grooves, said rollers and mandrel dis-

posed with a space between them corresponding to the cross sectional shape of the blank as it passes on the mandrel, and said gripping portions separated with a space between them corresponding to the thickness of the edges of the blank, gripping these flanges and thereby propelling the blank over the mandrel, and a second pair of driver rollers *d* having substantially semicylindrical grooves parallel with and opposite the cylindrical part of the mandrel, separated therefrom a distance equal to the thickness of the tube to be rolled, shaping, finishing and pressing the tube against the cylindrical part of the mandrel between the flanges of the tube, and said second rollers having cylindrical gripping portions at each side of said grooves spaced apart a distance equal to the thickness of the flanges of the tube to be rolled and gripping these flanges and thereby propelling the tube.

545,954. CAR-BRAKE. ALFRED W. GARRIO, Hazleton, Pa. Filed Mar. 14, 1895. Serial No. 541,784. (No model.)



Claim.—1. In a car brake mechanism, the brake beams arranged horizontally above the wheel and pivoted outside thereof, the brake shoes attached thereto and adapted to engage the tops of the wheels, a rock shaft extending transversely of the truck, a pivoted yoke capable of being extended or contracted longitudinally, links pivotally connected with said yoke, said yoke and links being interposed between the brake beams and said rock shaft, and suitable brake connections for operating said rock shaft, substantially as specified.

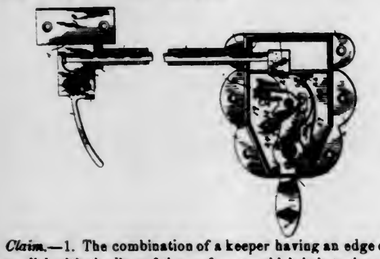
2. In a car brake mechanism, a series of brake beams pivotally connected with the truck and extending horizontally above the wheels, and in line with the wheel pieces, the pivoted links secured to the inner adjacent ends of said brake beams, the yokes pivoted thereto, a pair of rock shafts arranged transversely of the truck and provided with crank arms to which said yokes are pivoted, the intermeshing gears on said rock-shafts, and suitable brake connections for operating one of said rock-shafts, substantially as specified.

3. In a brake mechanism for car trucks, a series of horizontally arranged brake beams pivoted to the truck frame and extending over and above the car wheels, in combination with a pair of transversely arranged horizontal rock-shafts, the intermeshing gears thereon for communicating motion from one to the other of said rock-shafts, the crank arms on the outer ends of said rock-shafts, a pivoted and adjustable yoke interposed between the inner ends of the brake beams and said crank arms, and suitable brake connections for operating one or the other of said rock-shafts, substantially as described.

4. In a brake mechanism for car trucks, a series of pivoted brake beams extending horizontally over the car wheels and in the direction of the line of travel, in combination with a pair of horizontal rock-shafts arranged transversely of the truck, the intermeshing gears on said rock-shafts, the crank arms on the outer ends of said rock shafts, the pivoted and adjustable yokes interposed between the adjacent ends of the brake beams, the pivoted links interposed between and connecting the yokes and brake beams, the operating crank arms or levers secured to said rock-shafts intermediate the ends thereof, and the links 25, levers 28, and brake rods 30 adapting the brakes to be operated from either end of the car, all arranged for joint operation substantially as specified.

5. In a car brake mechanism, a transversely extending divided rock-shaft, the sections of which are geared together at their inner adjacent ends for communicating motion from one to the other, in combination with brake rods operatively connected with said rock-shaft sections and extending oppositely in different directions or toward opposite ends of the truck or car, a series of brake shoes, and suitable connections between said brake shoes and the rock-shaft sections, substantially as and for the purpose set forth.

545,955. REFRIGERATOR-LOCK. GEORGE GANDERTON, HUGH J. O'DONNELL, and JAMES A. TURNBULL, Cleveland, Ohio. Filed Jan. 31, 1895. Serial No. 536,878. (No model.)



Claim.—1. The combination of a keeper having an edge extending parallel with the line of the surface to which it is to be secured, a lock casing comprising a main part having an outer side face, and upper and lower edge portions, the upper edge portion being wider than the lower so as to throw the outer side of the casing obliquely, the casing also comprising a cap plate secured to the inner side of the casing so as to extend parallel with the outer side of the said main portion and having at its ends inclined flanges, the outer edges of which extend parallel with the plane of the surface to which the casing is to be secured, and a swinging bolt mounted between the cap plate and the outer side of the main part of the casing and swinging in a line parallel with the oblique disposition of the cap plate and outer face, substantially as described.

2. The combination of a swinging bolt, a keeper engaged by the same and operating to hold the bolt in place, an arm adapted to be rigidly secured to the same surface to which the keeper is secured, a tube having one end connected to the arm and one end to the keeper and held in place thereby, a rod movable longitudinally in the tube and capable of engaging the bolt and of pushing the same out of connection with the keeper, and a bell-crank lever fulcrumed to the arm and capable of engaging the rod and of operating the same, substantially as described.

3. The combination of a keeper, a swinging bolt capable of engagement with the same, an arm adapted to be rigidly secured to that surface to which the keeper is secured and having two parallel lugs thereon, a tube having one end secured between the lugs of the arm and the other end secured to the keeper so that the tube will be in communication with the interior of the latter, a plunger-rod reciprocally mounted in the tube and capable of engaging the bolt and of disconnecting the same with the keeper, and a bell-crank lever fulcrumed between the lugs of the arm and capable of engaging with the reciprocating rod, the bell-crank lever having a lug thereon which swings with the bell-crank and engages one of the lugs of the arm so as to restrict the movements of the bell-crank lever, substantially as described.

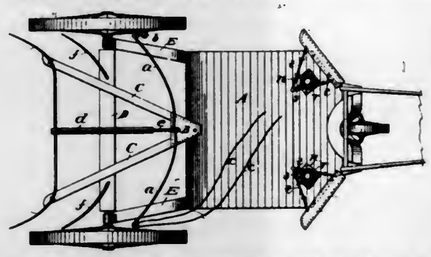
4. In a lock, the combination of a casing, a swinging bolt mounted therein, a spring for giving the bolt a normal tendency, the casing having formed thereon and adjacent to the bolt two end projections and an intermediate projection located between the end projections, and a swinging plate mounted within the casing and having a rounded arm carrying a stud, the stud being capable of engaging and locking the bolt and of disengaging and releasing the same, while the rounded arm is capable of riding over the intermediate projection of the casing and of lying adjacent to each of the end projections, whereby the swinging plate is held in place, substantially as described.

5. The combination of a swinging bolt, a keeper for engaging the same, a reciprocating plunger rod operating through and having its bearing in an opening in the keeper and capable of engaging the bolt and of moving the same out of engagement with the keeper, and an independent lever operating in the path of and against the opposite end of said rod for reciprocating the latter, substantially as described and for the purpose set forth.

6. The combination with a keeper, of a casing a swinging bolt therein having an arc shaped depression and a rib lying adjacent thereto, a spring for giving the bolt a normal tendency, and a locking plate mounted within the casing so as to be capable of swinging

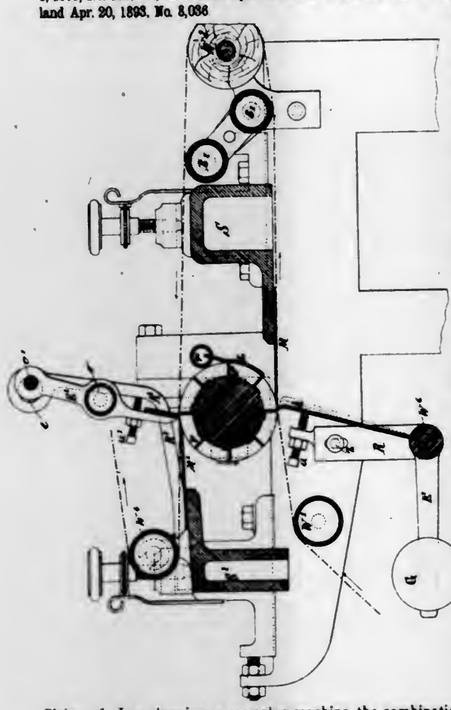
therein and having a lug thereon, said lug being adapted to operate within the depression in the bolt and to engage the rib thereof for locking said bolt, substantially as described.

545,956. CORN-CUTTER. WILLIAM F. L. GENTRY, Chapman, Ottawa County, assignor of one-half to T. C. Bond, Miltonvale, Kans. Filed Oct. 25, 1894. Serial No. 526,906. (No model.)



Claim.—In a corn-cutter provided with a tilting binding rack, the arms pivotally attached to a rod playing loosely in a hollow pipe or tube rigidly affixed to the framework of said rack, substantially as and for the purpose set forth.

545,957. CLOTH SHEARING OR CROPPING MACHINE. ERNST GESSNER, Aue, Germany. Filed Mar. 27, 1894. Serial No. 505,249. (No model.) Patented in Germany Apr. 5, 1893, No. 71,718; in Belgium Apr. 8, 1893, No. 104,221; in France Apr. 10, 1893, No. 229,256, and in England Apr. 20, 1893, No. 3,036

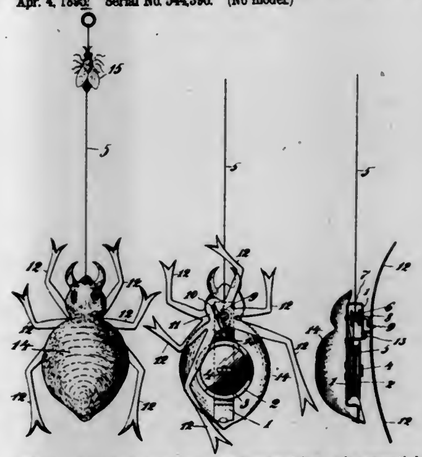


Claim.—1. In a shearing or cropping machine, the combination of a cutting cylinder, a stationary cutter blade, adapted to act in conjunction therewith, and a beam or horse pivoted upon an axis parallel to said cylinder, as and for the purpose specified.

2. In a shearing or cropping machine, the combination of a cutting cylinder, stationary cutting blade adapted to act in conjunction therewith to crop the cloth and a pivoted, counter-balanced, beam or horse adapted to guide the cloth to the cutters and be forced out of its normal position when a knot or the like is reached, substantially as described.

3. In a shearing or cropping machine, the combination of a cutting cylinder, stationary cutting blade adapted to act in conjunction therewith to crop the cloth, a pivoted, radially adjustable beam or horse adapted to guide the cloth to the cutters and be forced out of its normal position when a knot or the like is reached, substantially as described.

545,958. TOY. WILLIAM A. HOFFMANN, New York, N. Y. Filed Apr. 4, 1895. Serial No. 544,390. (No model.)



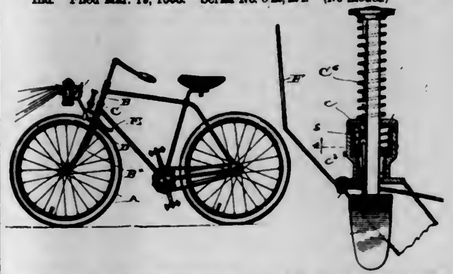
Claim.—1. A toy insect or animal comprising as its essentials, a frame, a spring-barrel and spring mounted in the frame, a thread or cord attached to and adapted to be wound upon the spring-barrel by the unwinding of the spring, a guide on the frame through which the thread plays, a sheave about which the thread plays, said sheave being secured on a crank-shaft rotatively mounted in the frame, a slotted plate pivotally mounted on the frame, the pin on the crank-shaft engaging the slot in the plate, and legs, simulating those of the insect or animal represented, attached to said slotted plate, substantially as set forth.

2. In a toy simulating a climbing insect or animal, the combination with the body and frame, a spring-barrel and spring connected therewith, and a slotted plate 11, pivotally mounted on the frame and carrying the legs 12, of the crank-shaft mounted in the frame, the pin of the crank engaging the slot in the plate, the sheave 6, fixed on the crank-shaft, and the thread 5, attached to and adapted to be wound upon the spring-barrel, said thread playing about the sheave and through a guide in the frame, substantially as set forth.

3. The combination with the frame, body and movable legs simulating an insect or animal, of the spring-barrel and spring carried by the frame, the thread adapted to be wound on the spring barrel when the spring unwinds, and means, substantially as described, operated by the moving thread and adapted to impart a vibrating movement to the legs, as set forth.

4. In a toy, the combination with the device in imitation of a spider, comprising the frame, body and movable legs, of the spring-barrel and spring carried by said device, the thread adapted to be wound upon the spring-barrel by the unwinding of the spring, the mechanism for vibrating the legs adapted to be operated by the thread, and the device 15, secured to the thread and simulating a smaller insect, substantially as set forth.

545,959. BICYCLE LOCK AND BRAKE. CHARLES E. JOHNSON, Mount Jackson, assignor to the Johnson Novelty Company, Indianapolis, Ind. Filed Mar. 19, 1895. Serial No. 542,424. (No model.)



Claim.—1. The combination, in a bicycle lock, of a body portion adapted to be secured to the bicycle frame, a stem passing through the

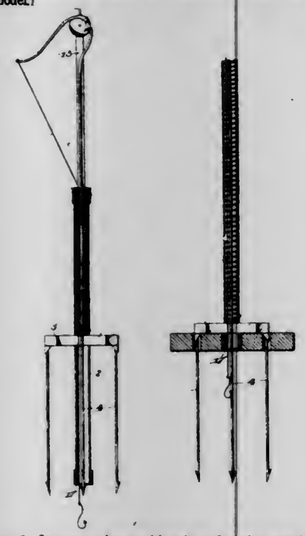
same and provided with notches, a spring catch secured to the lock body and adapted to engage with said notches in the stem, tumblers within said body portion having irregular perforations therein which surround said stem and said spring catch whereby said spring catch may be operated, a dial on said body, and arms on the tumblers for operating and determining the positions of said tumblers, substantially as set forth.

2. The combination, in a bicycle lock, of a reciprocating stem having a friction plate adapted to come in contact with the wheel tire and also having hook-shaped notches therein, a lock-body having suitable perforations through which said stem passes and provided with a spring catch adapted upon occasion to engage with notches in the stem, tumblers within the lock-body adapted to force the spring catch into engagement with the notches in the stem and having recesses which when in registry will permit the disengagement thereof, and a spring which supports the stem in raised position, and also when the spring catch and notches are in engagement maintains said engagement until said spring is compressed, leaving the tumblers meanwhile free, substantially as set forth.

3. The combination, with a bicycle, of a combined lock, foot brake, and coasters, which combined structure is connected to the bicycle frame above the wheel, the frame of the lock extending out and embracing the forks of the frame, and the coasters being arranged to embrace the projecting ends of the portions of said lock frame which surround said forks and thus be united to said forks by a single clamp bolt at each side, and the foot-brake being secured to the lock-body, all substantially as shown and described.

4. The combination, in a single structure, of a bicycle lock provided with arms, and loops on the ends of said arms adapted to surround the forks of the frame, coasters adapted to be secured to the other ends of said loops, a foot brake and a lamp bracket secured to the lock structure, the whole being attachable and removable to the frame forks of a bicycle, substantially as shown and described.

545,960. FISH OR MOLE TRAP. JOSIAH W. LANGFORD and WILLIAM M. WASHBURN, Gibeland, La. Filed July 13, 1895. Serial No. 555,570. (No model.)



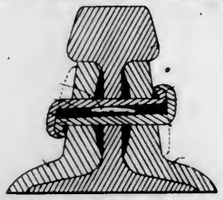
Claim.—1. In a trap, the combination of a tube, a spring arranged within the tube, a stem connected with and actuated by the spring and provided at its upper end with a tooth or projection, a spear connected with the lower end of the stem, a casing arranged above the tube and connected with the same and provided with a shoulder to be engaged by the stem, a lever fulcrumed on the casing and provided with a projection located adjacent to the shoulder and adapted to swing outward to disengage the stem, and means for operating the lever, substantially as described.

2. In a trap, the combination of a tube, provided with a longitudinal slot, a transverse bar passing through the slot and designed to carry spears, a spring arranged within the tube and engaging the transverse bar, a casing connected with the top of the tube and provided with a shoulder, a stem connected with the transverse bar and having at its upper end a tooth or projection for engaging the shoulder, a lever fulcrumed on the casing and provided with a projection arranged adjacent to the shoulder to disengage the stem, and a bait receiving device connected with the lever, substantially as and for the purpose described.

3. In a trap, the combination of a tube, provided with a longitudinal slot, a transverse bar passing through the slot, a spiral spring arranged within the tube and engaging a transverse bar, the supporting bars extending from the tube, a casing secured to the supporting bar and provided with a shoulder, a stem connected with the transverse bar and engaging the shoulder of the casing, a lever fulcrumed on the casing and provided with a projection for releasing the stem, and opposite spear supports carried by the transverse bar, substantially as described.

4. In a trap, the combination of a tube, a transverse bar provided with spears, a removable base having an opening to receive the lower end of the tube and provided with perforations for the spears, a spring for actuating the transverse bar, and setting and tripping devices, substantially as described.

545,961. BOLT OR RIVET. GEORGE F. LEMMON, Canton, Ohio. Filed Feb. 25, 1895. Serial No. 539,534. (No model.)

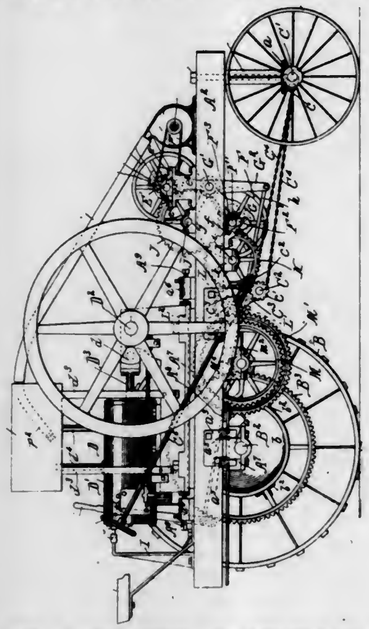


Claim.—1. The combination of the bolt or rivet sections C, formed tapering from head to point and provided with faces located at an angle to each other longitudinally with the sections, and having beveled portions at their pointed ends, substantially as and for the purpose set forth.

2. The combination of the sections C, provided with the grooves *e*, and the inclined faces *f*, and the expanding bar D, substantially as and for the purpose specified.

3. In a bolt or rivet the combination of the sections C, provided with grooves and inclined faces *f* extending outward from the grooves substantially as and for the purpose specified.

545,962. MOTOR FOR TRACTION-ENGINES. GEORGE W. LEWIS Chicago, Ill. Filed June 20, 1894. Serial No. 515,181. (No model.)



Claim.—1. The combination, with a prime mover and a part to be driven, of driving connections between the same, comprising a driving pulley actuated by the prime mover, two friction pulleys arranged in proximity to the driving pulley, said pulleys being movable toward and from the driving pulley, a spur gearing connecting both of said pulleys with the part to be driven, said spur gearing being constantly engaged with both friction pulleys and embracing a gear wheel intermeshing with another gear wheel which is engaged with one of the friction pulleys, said gear wheel first mentioned being engaged with the other friction pulley and acting to reverse the direction of motion of the second gear wheel when driven by such other pulley, substantially as described.

2. The combination, with a prime mover and a part to be driven, of driving connections between the same, comprising a driving pulley, two bodily movable friction pulleys arranged in proximity to the driving pulley, gearing connecting both friction pulleys with the part to be driven, embracing a gear wheel which is actuated by one of the pulleys, and which gives reverse movement to the gearing when the latter is driven by the pulley, and a spur gear, speed changing device interposed between said spur gearing and the part to be driven, substantially as described.

3. The combination, with a prime mover and a part to be driven, of driving connections between the same, comprising a driving pulley which is actuated by the prime mover, two friction pulleys arranged in proximity to the driving pulley, spur gearing connecting both friction pulleys with the part to be driven, said spur gearing embracing a gear wheel which is driven by one friction pulley, and a second spur wheel which intermeshes with the first spur wheel and is driven by the second friction pulley, and a spur gear, speed changing device interposed between the first spur gear mentioned and the part to be driven, substantially as described

4. The combination, with a prime mover and a part to be driven, of driving connections between the same, embracing a driving pulley, two friction pulleys adapted for contact with the same, an oscillating arm carrying said friction pulleys, a gear wheel between one of the friction pulleys and the part to be driven by which the latter is turned in opposite directions by the two friction pulleys, and means connected with said oscillating arm for shifting the friction pulleys toward or from the driving pulley, substantially as described.

5. The combination, with a prime mover and a part to be driven, of driving connections between the same, comprising a driving pulley, two friction pulleys adapted for contact with the driving pulley, two shafts for said friction pulleys which are journaled in bearings permitting a slight oscillatory movement in the shafts, an oscillatory arm in which said shafts are supported at one end, gearing connecting said shafts with the part to be driven, embracing a spur gear which is actuated by one of the shafts, and a second spur gear intermeshing with the first spur gear and driven by the other shaft, and means for giving oscillatory movement to said arm, substantially as described.

6. The combination, with a driving pulley, two friction pulleys arranged adjacent to the driving pulley, driving shafts supporting said friction pulleys, a pivoted arm supporting the ends of said shafts adjacent to the pulleys, bearings for the shafts in said oscillatory arm comprising anti-friction rollers mounted in the oscillatory arm and bearing on the shafts at the sides thereof opposite the driving pulley, and caps attached to the arm and confining the shafts in contact with said anti-friction rollers, substantially as described.

7. A traction engine, comprising a prime mover, driving wheels, and driving connections between said prime mover and the driving wheels, comprising a driving pulley which is actuated by the prime mover, two bodily movable friction pulleys arranged in proximity to the driving pulley, means for shifting or moving said pulleys to bring either of the same into contact with the driving pulley, gearing connecting both friction pulleys with the driving wheels, the gearing which connects one friction pulley with the driving wheels embracing a spur wheel in excess of those embraced in the gearing which connects the other friction pulley with the driving wheels, whereby said driving wheels will be turned backwardly by one pulley and forwardly by the other pulley, and a speed changing device interposed between the said friction pulleys and the driving wheels, substantially as described.

8. A traction engine, comprising a prime mover, driving wheels, and driving connections between said prime mover and the driving wheels, embracing a friction reversing gear having a driving pulley driven by the prime mover, two friction pulleys, gearing connecting said friction pulleys with the driving wheels, embracing a reversing gear wheel between one of the pulleys and the driving wheels, and a spur gear, speed changing device interposed between the gears which are immediately driven by the friction pulleys and the driving wheels, substantially as described.

9. A traction engine comprising a frame provided with driving and supporting wheels, a motor mounted on said frame and having a driving pulley, friction pulleys adapted for contact with the driving pulley, shafts carrying said friction pulleys journaled at one end on the vehicle frame in bearings permitting a slight oscillatory motion of said shafts, a pivoted arm in which the opposite ends of said shafts are mounted, intermediate gearing between said shafts and the driving wheels, and means for oscillating the said arm to throw either friction pulley into engagement with the motor pulley, substantially as described.

10. The combination, with a prime mover, of driving connections between said prime mover and a part to be driven, comprising a driving pulley actuated by the prime mover, two friction pulleys either of which may be brought into contact with the driving pulley, a gear wheel intermeshing with a pinion on the shaft of one of the friction pulleys, a second gear wheel intermeshing with said gear wheel first mentioned and also with a pinion on the shaft of the second friction pulley, and a speed changing mechanism comprising a shaft which is driven by the gear wheel first mentioned, large and small pinions rigidly attached to said shaft, a second shaft provided with small and large gear wheels and having driving connection with the part to be driven, said large and small gears on one of the shafts being adapted for endwise movement thereon, substantially as described.

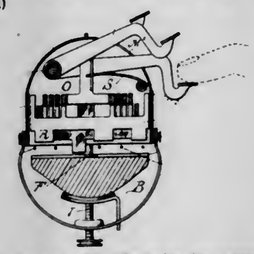
11. A traction engine, comprising a frame provided with driving wheels, a motor mounted on said frame, and gearing between said motor and driving wheels comprising a driving pulley actuated by the motor, two friction pulleys which are movable toward and from the driving pulley, a gear wheel which intermeshes with a pinion on the shaft of one of the friction pulleys, a second gear wheel which intermeshes with the first mentioned gear wheel and with a pinion on the shaft of the other driving pulley, a shaft having operative connection with the first named gear wheel, a second shaft parallel to the same and having driving connection with the driving wheels of the vehicle, and a change speed gearing comprising large and small pinions on both of said shafts, those on one of the shafts being movable endwise thereon, substantially as described.

12. The combination with a prime mover, of a driving pulley actuated by the prime mover, a frame supporting the prime mover and the driving pulley, friction pulleys arranged with their peripheries in proximity to the driving pulley, and gearing connecting both of said pulleys with the part to be driven, the said frame which carries the prime mover and the driving pulley being adjustably supported on its base whereby the driving pulley may be moved toward and from the friction pulleys, substantially as described.

13. The combination with a main frame carrying a revolving part to be driven, of a motor mounted on said frame comprising a power cylinder or other prime mover and a driving pulley which is actuated by the same, friction pulleys which are mounted on the main frame and which are movable toward and from the driving pulley, and gearing on the main frame connecting both of said pulleys with the part to be driven, the said motor frame having sliding connection with the main frame whereby the driving pulley thereon may be adjusted relatively to the said friction pulleys, substantially as described.

14. In a traction engine, the combination with a main frame provided with driving wheels, of a motor mounted on said frame provided with a driving pulley, friction pulleys adapted for contact with the driving pulley, an oscillatory arm mounted on the main frame and supporting said friction pulleys, gearing connecting said friction pulleys with the driving wheels, means for oscillating said arm to throw either friction pulley into engagement with the motor pulley, and means for adjusting the motor pulley with relation to the friction pulley comprising adjusting screws acting on the base of the motor frame to shift the same on the main frame, substantially as described.

545,963. KEY ATTACHMENT FOR STRINGED INSTRUMENTS. JACOB H. LING, Detroit, Mich. Filed Sept. 1, 1894. Serial No. 521,889. (No model.)



Claim.—1. An attachment for string instruments comprising a case, a detachable yoke encircling the neck of the instrument having a clamping screw bearing against the under face of the neck, legs F extending from the case resting upon the upper face of the neck, a series of spring-actuated damper plates in the case, and a series of keys for actuating the damper plates, substantially as described.

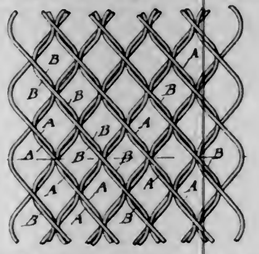
2. An attachment for stringed instruments comprising a case, means for attaching it to the neck of the instrument, a series of keys pivoted on one side of the case and projecting over the other side, the

damper plates Q, having wards R, the connecting bars Q' and a post, one for each key, substantially as described.

3. An attachment for string instruments comprising a case, means for attaching it to the neck of the instrument, a series of keys, a series of spring actuated damper plates having wards R, the connecting bars Q', and a post one for each key, substantially as described.

4. An attachment for stringed musical instruments comprising a suitable casing, a series of presser bars mounted therein, fingers on the presser bars for bearing on the strings, teeth which project up from the presser bars, and cross bars arranged in line with the teeth, which cross bars when actuated operate those presser bars, the teeth of which are in the path of movement of the actuated presser bars, substantially as described.

545,964. WOVEN-WIRE FABRIC. MARSHALL B. LLOYD, Minneapolis, Minn., assignor to the White Manufacturing Company, same place. Filed Jan. 24, 1895. Serial No. 536,012. (No model.)



Claim.—1. The coiled wire fabric, consisting of a series of helical coils interlocked with one another, and a second series interlocked with one another and with the first series, all of said coils running in the same direction, and the coils of one series alternating in longitudinal position with the coils of the other series, substantially as described.

2. A coiled wire fabric consisting of pairs or sets of concentric coils, said pairs or sets interlocking one another successively, and alternate pairs abutting one another within intermediate pairs or sets, substantially as described.

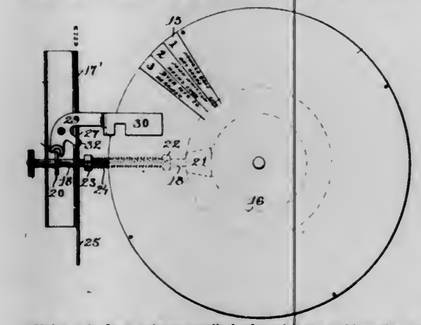
3. In a coiled wire fabric, the combination, of a series of interlocking pairs or sets of concentric coils, each of said pairs or sets being made up of coils varied in longitudinal position, and alternate pairs abutting one another within intermediate pairs or sets, whereby the fabric is rendered non-collapsible under lateral pressure.

4 A coiled wire fabric, consisting of two series of coils all running in the same direction, each series being made up of abutting pairs or sets of concentric coils, the pairs of each series interlocking those of the other series, substantially as described.

5. A woven-wire fabric, consisting of a series of helical coils, all running in the same direction, said coils interlocking and abutting to form a non-collapsible fabric, substantially as described.

6. As a new article of manufacture, a laterally non-collapsible fabric comprising a number of helical coils of wire, all coiled and running in the same direction and interlocking successively, substantially as described.

545,965. COIN-CONTROLLED ADVERTISING-MACHINE. HORACE A. MANLEY, Boston, assignor to William N. Osgood, Malden, Mass. Filed May 17, 1894. Serial No. 511,580. (No model.)



Claim.—1. In a coin controlled advertising machine, the combination with an incased device adapted to carry a series of addresses and to be operated by a rotatable shaft, of a reciprocating shaft rotatable in bearings, a collar on the shaft, means carried by the shaft for engaging the address device, and a plate, pivotally supported above the shaft, having a locking-step for engaging the collar thereon and a downwardly-extending coin-lever having a tripping engagement with the said plate.

2. In a coin-controlled advertising mechanism, the combination with a casing, a door thereto having a slot, and a series of numbered advertisements displayed on the door, of a rotatable device contained within the casing, a series of numbered addresses carried thereby, a shaft journaled within the casing and having a knob extending therefrom, and a friction gear mounted on said shaft and adapted to engage the rotatable address device.

3. In a coin-controlled advertising mechanism, the combination with a case having a door furnished with a name slot, of a disk rotatably mounted within the case, a beveled ring secured to the disk, a shaft journaled in the case having an end extending therefrom and provided with a knob, a beveled gear mounted on the shaft and adapted to engage the beveled ring of the disk, a spring for holding the same in engagement, and a shutter adapted to be operated by the inward movement of the shaft.

4. In a coin-controlled advertising mechanism, the combination with a case, a door therefor having a coin slot and name slot, and a coin-chute formed in the edge of the door, of a shaft rotatably mounted within the casing and extending therefrom being capable of reciprocation in its bearings, a coin lever, pivoted on said shaft and extending within the chute, having a counter-weight, and a jaw furnished with an inclined entrance, a shutter, pivoted transversely to the coin lever, having an inclined finger for engaging the jaw of the same, and means for engaging a portion of the shaft whereby the reciprocation of the shaft tends to elevate the shutter.

5. The combination with a casing having a name-slot and a coin-slot, and the disk 14 rotatably mounted within the case and having the beveled-ring 16, of the shaft 18 journaled in the casing and reciprocal in its bearings, the beveled-gear 21 on the inner end of the shaft, the disk 20 mounted on the shaft, a spring for exerting an outward pressure on the shaft, the coin-lever 25, pivoted on said shaft, having the weight 26 and the jaw 27, and the shutter arm 29, pivoted in a line with the shaft, having the U shaped yoke 31 for engaging the disk 20 and the shutter 32 for closing the name-slot, as and for the purpose described.

6. The combination, in a coin-controlled advertising mechanism, with the shaft 18 journaled in bearings in which the shaft may be reciprocated, the disk 20 mounted on the shaft, and the lever 25 pivotally supported transversely to the shaft and having the jaw 27 and the weight 26, of the shutter-arm 29 pivoted above the shaft and having the U-shaped yoke 31 for engaging the disk 20 and the shutter 32, as described.

545,966. SNAP-HOOK. EPHRAIM MANES, Sherman Heights, assignor of one-half to Thomas W. Fritts, Chattanooga, Tenn. Filed May 24, 1895. Serial No. 550,558. (No model.)



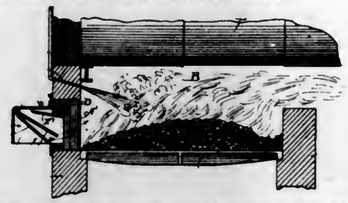
Claim.—1. A snap hook comprising a hook member, a hinged member pivotally connected therewith and provided with teeth for engaging a strap or rope, a sliding bolt carried by said hinged member and adapted to engage the hook member, and a spring for actuating said bolt and holding the same normally in engagement with the point of the hook, substantially as specified.

2. A snap hook comprising a hook member, a hinged member pivotally connected therewith and provided with teeth for engaging a strap or rope, and a sliding bolt carried by said hinged member and adapted to engage the hook member, substantially in the manner and for the purpose specified.

3. A snap hook comprising a hook member, a perforated lug formed integrally therewith and arranged in longitudinal alignment with the point of the hook, a hinged member connected with said hook member and provided with teeth for engaging a strap or rope, and a sliding bolt carried by said hinged member and adapted to be projected through said perforated lug and toward the point of the hook, substantially as specified.

4. In a snap hook, the hook member having an integral lug perforated in alignment with the point of the hook, in combination with a hinged member pivotally connected with the hook member and provided with teeth for engaging a strap or rope and formed with a U-shaped socket, a sliding bolt arranged within said socket, a spiral spring interposed between said bolt and the base of the socket, and a stud or button connected with said bolt and operating through a longitudinally elongated slot in the hinged member, substantially as and for the purpose specified.

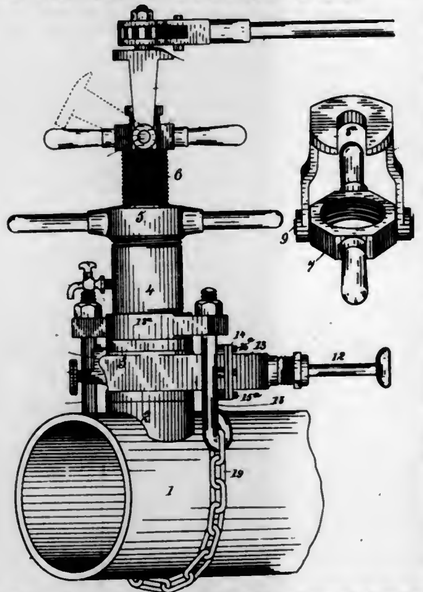
545,967. SMOKE-PREVENTER. WILLIAM R. MILLS, Chicago, Ill. Filed June 12, 1895. Serial No. 552,523. (No model.)



Claim.—1. The combination with a furnace door, having an opening therein and through its guard lining, with a box secured to the door around said opening, and having an opening and a door to close the same in its upper portion, a deflecting and adjustable plate within the box, said plate being secured to a rod or bar located at the outer upper portion of said box, the said rod or bar having its bearings in the sides of the box, and a spring-lever secured to one end thereof and adapted to engage suitable ratchet-teeth and to regulate the angle of the deflection and to lock the plate at said angle, substantially as described.

2. The combination with the door D, having the guard lining D', and central opening *d*, through both, the box F, secured to the door around said opening, the partition or floor F', within the box, the openings *g*, and the sliding-door *g'*, in the top of the box, the bar or rod G, having its bearings in the sides of the box and provided with means to turn the same, and the plate H, fixed on the bar or rod G, and normally resting on the lower edge of the bottom of the opening in the door, substantially as described.

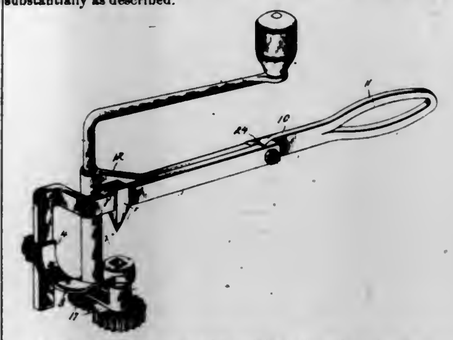
545,968. TAPPING-MACHINE. HIERONYMUS MUELLER, Decatur, Ill. Filed May 28, 1894. Serial No. 512,647. (No model.)



Claim.—In a main tapping machine the combination of the saddle 2, the cylinder 4 and feed screw therein, and between the saddle and said cylinder a valve chamber, and an oblique closing valve having an elastic contact surface, a central metal disk 29 and a raised metallic nosing on the valve plate in front of the contact surface, substantially as described.

545,969. COMBINED CLAMP AND WRENCH FOR TIRE-BOLTS. WALTER MCCOY, Conway, Kans. Filed Mar. 13, 1895. Serial No. 541,597 (No model.)

Claim.—1. The combination of a stock or bar provided with a fulcrum for engaging the head of a bolt and having an arm or jaw for engaging under a felly, and a lever pivoted to the stock or bar and provided with a rotary wrench arranged to engage the nut of a bolt, substantially as described.



2. The combination of a substantially L-shaped stock or bar provided on its main portion with a fulcrum and having its other portion extending downward and offset to clear a wheel, an adjustable arm or jaw mounted on the offset portion and arranged to engage under a felly, and a lever fulcrumed on the stock or bar and provided with a rotary wrench arranged to engage the nut of a bolt, substantially as described.

3. The combination of a substantially L-shaped stock or bar having a depending laterally offset portion, a block provided with a tapering point and having an opening receiving the main portion of the stock or bar, said block being provided with a spring frictionally engaging the stock or bar, an arm or jaw mounted on the offset portion for engaging under a felly, and a lever fulcrumed on the stock or bar and carrying a rotary wrench, substantially as described.

4 The combination of a substantially L-shaped stock or bar, having one of its arms depending and laterally offset, an adjustable block mounted on the main portion of the stock or bar and depending therefrom, a jaw or arm provided with a socket to receive the depending portion of the stock or bar and provided with a clamping screw for engaging the same, and a lever fulcrumed on the stock or bar and provided with a rotary wrench, substantially as described.

5. The combination of a clamp provided with a fulcrum for engaging the head of a bolt and having an arm for interlocking under a felly, a lever pivoted to the clamp and having a depending bearing, a wrench shaft mounted in said bearing and provided with a socket having an opening at the base for the passage of a nut, a removable block mounted in a socket and having a nut-receiving opening, and gearing for rotating the wrench shaft, substantially as described.

6. The combination of a stock or bar provided with a fulcrum for engaging the head of a bolt and having an arm for engaging under a felly, a lever pivoted to the inner end of the stock or bar and provided with lugs projecting laterally from its edges and limiting the movements of the stock or bar and the lever, and a rotary wrench mounted on the lever, substantially as described.

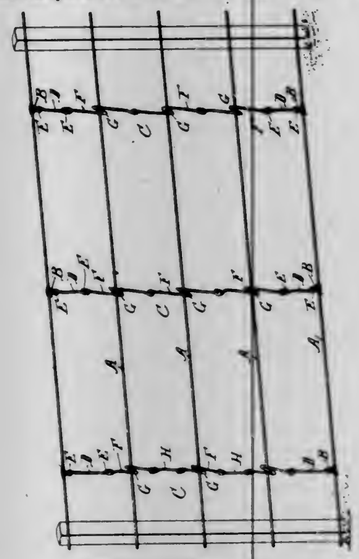
545,970. WIRE FENCE. MATHIAS F. MCNELLY, Sterling, Ill. Filed Aug 27, 1894. Serial No. 521,381. (No model.)

Claim.—1. A looped wire for fences comprising a single piece of material, each end of which is provided with an eye and the central portion is provided with an oblong or elongated coil, the portions of the ends which pass each other being removed from contact with each other whereby it may be attached to or removed from a fence wire without change, substantially as set forth.

2. In a wire fence, the combination, with a series of runners, of a looped wire upon each of the runners, the ends of the looped wires being each provided with an eye which is connected with the eye of the adjacent looped wire and the central portion is provided with an oblong or elongated coil, of a greater length than the diameter of the runner, the portions of the loop on one side which pass each other being removed from each other a sufficient distance to pass over the runner when being secured to or removed therefrom, substantially as set forth.

3. In a wire fence, the combination, with a series of runners, the exterior ones of which are provided with eyelets rigidly secured thereto, and the interior runners are provided with looped wires, each end of each of the looped wires being provided with an eye and the central portion being provided with an oblong or elongated coil, of a greater length than the diameter of the runner, the portions of the loop on one side which pass each other being removed from each other a sufficient distance to pass over the runner when being secured to or re-

moved therefrom, and short wires connecting the ends of the looped wires with the eyelets and with each other, substantially as set forth.



545,971. IRONING-TABLE. JOHN W. FINNER, Cherry Creek, N. Y. Filed Feb. 28, 1895. Serial No. 540,043. (No model.)



Claim.—1. In an ironing table, the combination with a supporting structure, a cross bar hinged to one end of the supporting structure, and a cross head pivotally attached to the cross bar and having an approximately dove-tail-shaped notch in its upper edge, of an ironing board provided on its under side with a longitudinally-disposed guide to interlock with the said notch in the cross head, and adapted to be swung vertically and laterally and to be readily detached from its supporting structure, substantially as set forth.

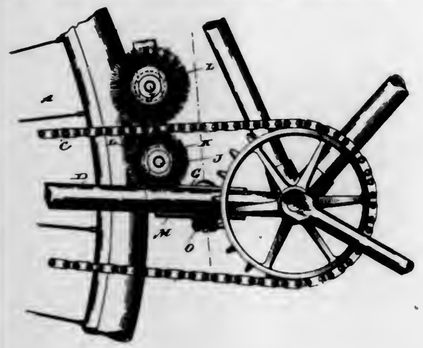
2. In combination, end standards, or leg sections, a connecting rail hinged at its ends to the said leg sections, braces pivotally connected with the said rail and adapted to be detachably connected with the said leg sections, a cross bar hinged to the upper end of one of the leg sections, a cross head pivoted midway of its ends to the said cross bar and having an approximately dove-tail-shaped notch in its upper edge, and an ironing board having a longitudinally-disposed guide on its under side to interlock with the notch in the said cross head, and unobstructed at one end to permit the ready detachment of the said ironing board from its supporting structure, substantially as and for the purpose set forth.

545,972. DEVICE FOR CLEANING BICYCLE-CHAINS. CHARLES G. POLLEYS, Newport, R. I., assignor of one-half to John T. Reagan, same place. Filed June 10, 1895. Serial No. 552,331. (No model.)

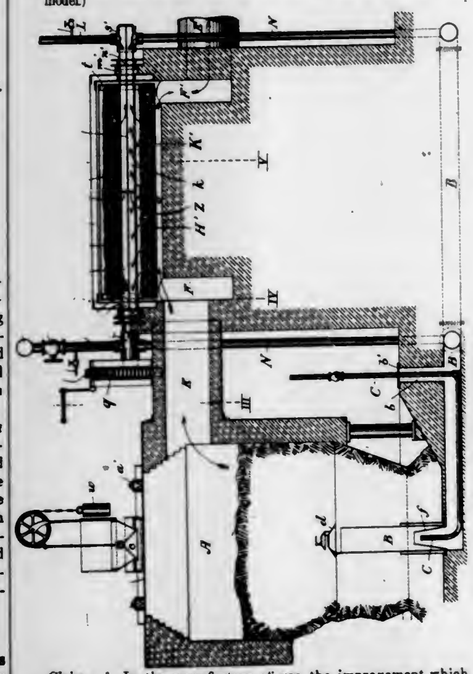
Claim.—1. A sprocket chain cleaner for bicycles consisting of spindles designed to have contact with the tire of a bicycle wheel, combined with rotary brushes secured to said spindles and adapted to bear against the sprocket chain in their revolutions.

2. A rotary brush for cleaning sprocket wheel chains of bicycles, consisting of two spindles having raised friction bands, a rack, for holding said spindles, secured to the frame of the bicycle, rotary brushes secured at corresponding ends of said spindles, one below the other above the chain and adapted to bear against the said chain, combined with the tire of the wheel adapted to frictionally contact with the said raised portions of the spindles, substantially as shown and described.

3. In combination with the tire of a bicycle wheel, the rack F secured by clamps to the forks D, D, of a bicycle, the spindles J carried by said rack, the raised bands L, on said spindles adapted to frictionally contact with the said tire, the rotary brushes K, K, secured to corresponding ends of said spindles and designed to bear against an upper and lower side of the chain, whereby when the machine is in motion, the brushes will make more rapid revolutions than the sprocket chain, substantially as and for the purpose set forth.



545,973. PROCESS OF MAKING GAS AND APPARATUS THEREFOR. JAMES PURVES, Pittsburg, Pa., assignor of three-tenths to Henry L. W. Hyde, same place. Filed Mar. 29, 1895. Serial No. 543,643. (No model.)



Claim.—1. In the manufacture of gas, the improvement which consists in generating gas in a producer, conducting such gas into contact with a retort containing a higher oxid, and by the sensible heat of the gas, splitting such oxid into the lower oxid and oxygen, and conducting the oxygen so formed to the producer; substantially as described.

2. The process of subjecting the oxid of barium or other suitable oxid contained in separate chambers of a retort simultaneously to different temperatures for the purpose of raising the oxid in one chamber to a higher degree of oxidation by the application of heat and atmospheric air, and at the same time raising the heat of the higher oxid in the other chamber, from which atmospheric air is excluded, for the purpose of the partial deoxidation of the higher oxid to liberate oxygen, and carrying on this operation by alternately exposing the oxid to such conditions, and thus obtaining a constant, as distinguished from an intermittent supply of oxygen, substantially as described

3. The process of making fuel gas by the decomposition of carbonaceous fuel by means of heat and oxygen gas as the supporter of combustion, to the exclusion of nitrogen or atmospheric air, consisting of the following steps,—subjecting the fuel to incandescent heat in a substantially gas-tight producer, exposing to the heat of gas thus produced one or more retorts, each containing in separate and non-connecting chambers a suitable metallic oxid capable of absorbing oxygen when heated in contact with a current of air or oxygen, and of liberating the oxygen so absorbed when raised to a higher temperature, one chamber of each retort containing the lower oxid being supplied with atmospheric air and exposed to a heat sufficient to cause the absorption of oxygen by such oxid contained therein, and the other chamber containing the higher oxid, with exclusion of atmospheric air, being simultaneously exposed to a heat sufficient to cause the reduction of the higher oxid to the condition of a lower oxid by the liberation of the previously absorbed oxygen, and passing the oxygen thus obtained to the producer for the support of the necessary heat therein, and alternately shifting the position of the retort so as change the temperature to which the separate chambers are exposed and thus securing a continuous production of fuel gas by means of a constant supply of oxygen obtained by the action of heat and air on metallic oxids of the class described, substantially as and for the purpose set forth.

4. Apparatus, substantially such as hereinbefore described, for the continuous generation of oxygen gas, consisting of a horizontal retort divided into two separate non-communicating compartments for holding separate charges of the metallic oxid, to be used for extracting oxygen from atmospheric air, said retort having a water-cooled jacket on top and a flue from a furnace, or other means of heating, below, together with means, substantially such as described, for passing atmospheric air through the contents of the cooler compartment, and the escape therefrom of the liberated nitrogen; and the other and hotter compartment provided with means for the exit of oxygen, liberated from the contents of said compartment, to a suitable receiver, or place of consumption; said retort being adapted to be shifted from time to time so as to agitate or shake up the contents of its compartments and expose these compartments alternately to the heat of the furnace or the influence of the cooling device, substantially as and for the purpose described.

5. The combination of the gas producer A, one or more retorts each divided into two separate non-communicating chambers H H' and having two separate non-communicating gas passages i and *k*, or pipes R R', means of heating one of said chambers and of simultaneously cooling the other, means of agitating contents of said retort and of shifting said retort so as to expose the chambers to the heating and cooling devices alternately, means for the supply of atmospheric air to and escape of nitrogen from the cooler chamber, and means for carrying the oxygen liberated in the more highly heated chamber to the producer A, substantially as and for the purpose described.

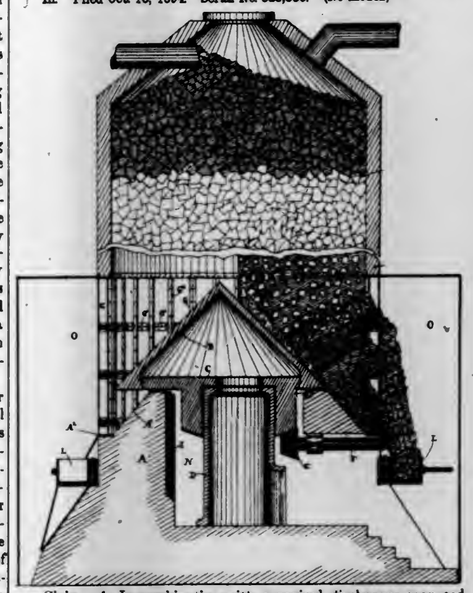
6. Apparatus for the continuous generation of oxygen from atmospheric air by alternate changes of temperature of a metallic oxid, consisting of a cylindrical retort divided into two separate non-communicating chambers, by means of a central imperforate diaphragm, a perforate plate or pipe on each side of said diaphragm forming gas passages through the retort for permitting the passage of air and gas (as the case may be) through each chamber, means for supplying atmospheric air at one end of one of said passages and through its chamber, and for the escape of nitrogen gas from said chamber at the other end of its passage; and means for the escape of oxygen gas from the passage communicating with the other chamber, means for applying heat to one of the chambers of the retort and simultaneously applying cold to the other chamber, and means for shifting said retort on its axis so as alternately to expose either of said chambers to the action of heat to raise its temperature, while the other chamber is exposed to the action of cold to lower its temperature, substantially as and for the purpose described.

545,974. MOLD. ERNEST L. RANSOME, Oakland, Cal. Filed Nov. 6, 1893. Serial No. 490,181. (No model.)



Claim.—In the combination of a traveling earth shaper and an internal core mold an opening through the body of the shaper for feeding earth from the interior to the exterior and an opening between the core mold and the shaper for feeding concrete in a similar manner.

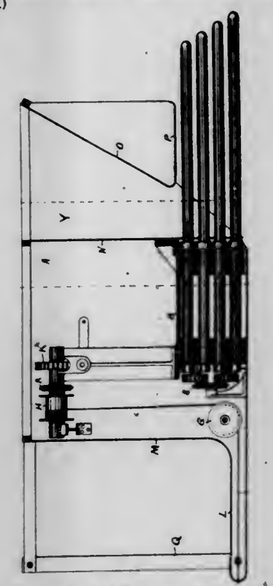
545,975. REFUSE-DESTRUCTOR. ERNEST L. RANSOME, Chicago, Ill. Filed Oct. 10, 1894. Serial No. 525,530. (No model.)



Claim.—1. In combination with a conical discharger mounted upon and operated by an eccentric, a surrounding cage consisting of vertical and horizontal bars against which the said discharger crushes large clinkers and between which it forces smaller pieces and ashes.

2. In a refuse burning furnace, a hearth over the top of which clinkers are crushed and discharged from said furnace, a central chamber within said hearth for providing space within which is placed the supporting and driving mechanism for the crusher, a channel in the upper face of said hearth and surrounding said central opening for catching dust and ashes, and a sweep operated by the driving mechanism for discharging accumulations from said channel into a subway beneath.

545,976. MANUFACTURE OF ELECTRIC OR OTHER CONDUITS. ERNEST L. RANSOME, Chicago, Ill. Filed Nov. 23, 1894. Serial No. 529,739. (No model.)



Claim.—1 The method of forming multiperforated monolithic subway structures, which consists in packing concrete into the spaces

between a group of cores, in giving said cores a rotary movement the quality of which is that adjacent core surfaces move in opposite direction and in simultaneously with such rotary movement causing the said cores to advance axially along the trench in which the mooolithic structure is being formed.

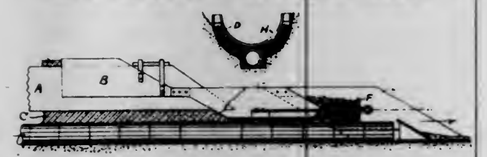
2. In a continuous subway molding machine a group of rotating cores the common rear end of which slopes downward.

3. In combination with a group of rotating cores and core support, the auxiliary guard plate N, substantially as described.

4. In combination with a group of rotating cores the core block B, having an outlet under its rear end substantially as described.

5. In a molding machine the recessed rotating core C, Fig. 10, substantially as described.

545,977. SUBWAY CONSTRUCTION. ERNEST L. RANSOME, Chicago, Ill. Filed Jan. 24, 1895. Serial No. 536,123. (No model.)

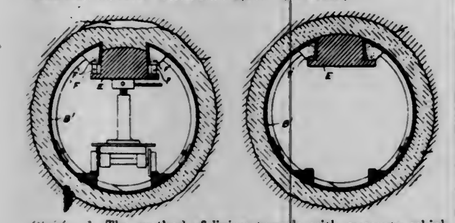


Claim.—1. In combination with a traveling mold for forming monolithic pipe *in situ*, a drainer for enlarging the channel beneath the location at which the pipe is deposited for the purpose of forming a drainage space below said pipe.

2. In combination with a mold for forming monolithic pipe, *in situ*, a drainer for enlarging the excavation to a size greater than that of the monolithic pipe to be deposited, and means for filling the extra space with a stratum of broken rock to form a bed for such pipe and furnish a drainage space beneath.

3. In combination with the front end of a mold for forming monolithic pipe *in situ*, a drainer for shaping the excavation to a required form and of a size larger than that necessary for the reception of the pipe, one or more openings through the bottom of said drainer for depositing a continuous line of tiling along the bottom of the excavation, and a second opening to the rear of the first mentioned opening for depositing a continuous bed of broken rock over said tiling and of the proper form and size for the reception of the pipe.

545,978. LINING TUNNELS. ERNEST L. RANSOME, Chicago, Ill. Filed Mar. 18, 1895. Serial No. 542,247. (No model.)



Claim.—1. The method of lining tunnels with concrete which consists in introducing the concrete between the mold and the wall of the tunnel and in compacting the same against the wall by pressure from within the mold.

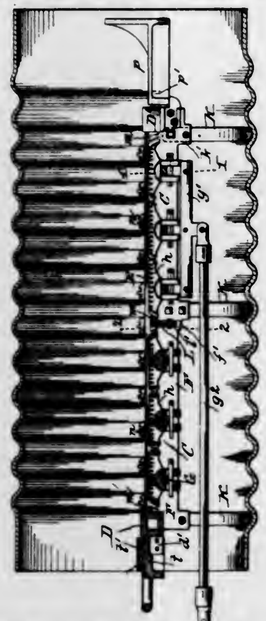
2. The method of lining tunnels with concrete which consists in introducing the concrete between the mold and the wall of the tunnel and in forcing the concrete into contact with the upper portion of said wall by an upward pressure from within the mold.

545,979. CIRCULATING WATER-BAR AND SHAKING GRATE. JAMES REAGAN, Philadelphia, Pa. Filed Sept. 10, 1894. Serial No. 522,547. (No model.)

Claim.—1. A boiler having a longitudinal flue, a self contained grate structure therein, consisting of front and rear bearing bars, suitably connected and supported, water bars connecting the latter, shaking grates intermediate said water bars connections from said water circulating grate to the upper and lower portions of the boiler, and a feed device whereby an effective circulation is caused in the bottom of the boiler, substantially as described.

2. A boiler having separate parallel furnaces of substantially circular form in cross section, and a self-contained grate structure in said furnaces, comprising front and rear bearing bars, suitably connected and supported, water bars therebetween, shaking grate sections and feet or equivalent devices for supporting said grate structure within the boiler, substantially as described.

3. A boiler having separate parallel furnaces of circular form in cross-section, a self contained grate water bar and shaking grate having hoop shaped feet or supports, substantially as set forth.



4. A boiler having separate parallel furnaces with laterally corrugated walls, and a grate in said furnaces supported upon semi-circular shaped feet or supports fitting said corrugations, substantially as set forth.

5. A boiler having a circular fire box with laterally corrugated walls, a grate in said fire-box and semi-circular feet or supports for said grate, fitting the depressions of said corrugations, substantially as set forth.

6. A boiler having parallel separate furnaces, a water-bar grate in said furnaces having its side water bars extending beyond and above the side bars of the grate, and loosely supported plates between said side bars and the wall of the furnace, said plates being inclined upwardly and outwardly from the grates, substantially as set forth.

7. A boiler having parallel separate furnaces of a circular form in cross-section, water-bar circulating and shaking grates in said furnaces, pipe connection with cut-off valves and check valves between the inlet ends of said grate and the bottom of the boiler and between said pipe connection and the feed devices for the boiler, pipe connection with cut-offs between the outlet end of said grates and the top of the boiler, and branches with cut-offs and checks leading to the atmosphere for said last named pipe connections, substantially as set forth.

8. A boiler having separate adjacent furnaces, a grate structure therein comprising front and rear bearing bars, suitably connected and supported, water bars therebetween shaking grates between said water bars, connections from the water grate to the top and bottom of the boiler, and a single feed water device for the boiler, substantially as described.

9. A boiler having adjacent separate furnaces, a grate structure in each comprising front and rear bearing bars, suitably connected and supported, water bars, shakers therebetween, and delivery connections from each water grate, into the boiler juxtaposed to each other, and means for supporting the latter within the boiler, substantially as described.

10. A water bar grate composed of sectional end bearing bars, and side bearing bars located below the water bars of the grate, the above parts being suitably connected and supported substantially as set forth.

11. A water-bar grate composed of sectional end bearing bars side bearing bars located below the water bars and loosely supported plates *n* for the sides of the grate, substantially as set forth.

12. A water bar grate composed of side bearing bars, having at one end integral water bar bearing supports and sectional end bearing bars, substantially as set forth.

13. A water bar grate composed of side bearing bars having at one end integral water-bar bearing supports, sectional end bearing bars and the outer side water bars extending laterally beyond the side bearing bars, substantially as set forth.

14. A water-bar grate composed of sectional end bearing bars, side bearing bars located below the water-bars and U shaped feet or supports secured to said side bearing bars, substantially as set forth.

15. A water-bar grate having side bearing bars intervening between and below the outer water-bars and integral supports on one end of said side bearing bars for one end of said water-bars, substantially as set forth.

16. A water bar grate having side bearing bars with outer corrugated or serrated surfaces and located below the plane of the water-bars, substantially as set forth.

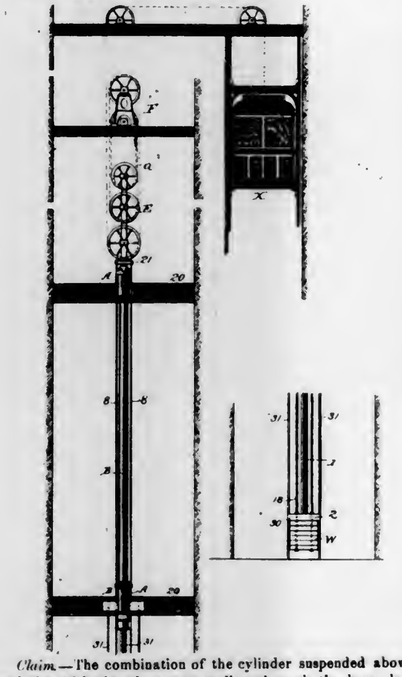
17. A water bar grate having top-most water bars, suitable connections therefor, shakers or choppers, the upper surfaces of which are in a plane below that of the top of the water bars, side bearing bars below the bottom of said water bars, in combination with hoop-shaped feet or supports for sustaining said grate in position, substantially as described.

18. A self-contained water bar and shaking grate, the extreme outer sides of which are water bars, shakers or choppers between the latter, actuating mechanism therefor, in combination with hoop-shaped feet or supports adapted to sustain said grate within a furnace, substantially as described.

19. In a water-bar grate having side bearing bars vertical recesses on the inner sides of said bearing bars, a bridge bar the ends of which fit in said recesses and a transverse bolt bar securing said bridge bar in position and supporting its under side, substantially as set forth.

20. A self contained water-bar and shaking grate having outer side water-bars, shakers or choppers between the water bars, side bearing bars below said outer water bars and feet or supports secured to said side bearing bars, substantially as set forth.

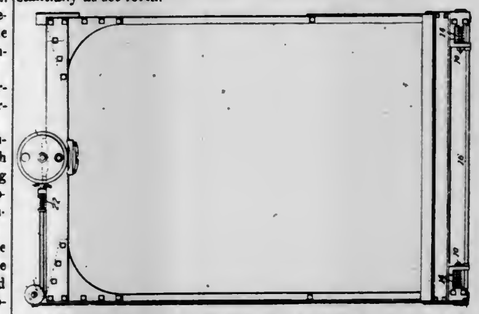
545,980. ELEVATOR. GEORGE H. REYNOLDS, New York, N. Y., assignor to The Crane Elevator Company, Chicago, Ill. Filed Dec. 22, 1892. Serial No. 456,093. (No model.)



Claim.—The combination of the cylinder suspended above the foundation with the plunger extending through the lower head of said cylinder, and movable sheaves carrying the suspensory attached to the cage, of a cross head at the lower end of the plunger, tie rods extending from the lower end of the cylinder to the foundation and serving as guides for the cross heads, substantially as set forth.

545,981. SAFETY DEVICE FOR ELEVATORS. GEORGE H. REYNOLDS, New York, N. Y., assignor to The Crane Elevator Company, Chicago, Ill. Filed Mar. 11, 1893. Serial No. 465,611. (No model.)

Claim.—1. The combination of a cage, guides, a clamp block for engaging each guide, means for forcing the block toward the guide as it moves longitudinally, and a rack and pinion, and means for turning the pinion to impart the longitudinal movement to the block, substantially as set forth.



2. The combination with the clamp block, having a rack of a shaft having a pinion for engagiug the rack and a cam for engaging the block adjacent to the rack, substantially as set forth.

3. The combination of a clamp block, a rack and pinion for lifting the block and a cam arranged to bear against and force inward the block, substantially as set forth.

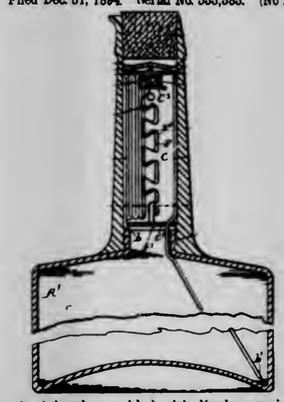
4. The combination in an elevator cage and guides of a clamp block and a shaft having two portions, one arranged to engage the block to lift the same and the other, to engage the block and force it inward, substantially as set forth.

5. The combination in a clamping device for an elevator cage, of a block provided with a rack, and a shaft provided with a cam and a pinion, substantially as set forth.

6. The combination of a cage, clamping blocks, independent shafts and connections whereby each block is moved longitudinally and inward on the turning of its shaft, a spring arranged to turn each shaft, a detent for holding each shaft in its position and means for disengaging the detents substantially as set forth.

7. The combination with the cage, guides, clamping blocks and actuating devices, and detents, of a governor consisting of a rotating disk provided with a radially moving finger, a shoe arranged in position to be struck by said finger when the latter moves outward, and connections between the shoe and the detents, substantially as set forth.

545,982. SELF-SEALING BOTTLE. ERNEST SCHORR, Detroit, Mich. Filed Dec. 31, 1894. Serial No. 533,383. (No model.)



Claim.—1. A bottle provided with diaphragms in its neck forming an air tight chamber therewithin, and an indicator tube or channel within said chamber, substantially as set forth.

2. A bottle provided with indicator tubes or channels in its neck, one of said channels open at the top and closed at the base, the other of said channels closed at the top and open at the base, substantially as set forth.

3. A bottle provided with diaphragms in its neck toward the top and bottom thereof forming an air tight chamber therebetween, indicator tubes or channels within said chamber, one of said channels opening through the upper diaphragm and closed at its base, the other of said channels opening through the lower diaphragm and closed at its upper end, substantially as set forth.

4. A bottle having an air tight chamber in its neck and provided with an indicator tube located in said chamber made of fragile material whereby expansion of the air within the air chamber will break said tube, substantially as set forth.

5. A bottle provided with two sets of loops B, B′ in the neck thereof, each set opening at the upper end thereof within the upper end of the neck of the bottle, the lower extremity of one of said sets lead downward within the body of the bottle toward the base of the bottle and opening thereinto, the lower extremity of the other of said sets opening into the body of the bottle toward the top thereof at the base of the neck, substantially as set forth.

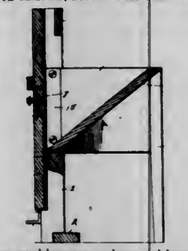
6. A bottle having diaphragms C′ C² in the neck thereof, and two sets of loops B B′ located within the neck between said diaphragms, the upper ends of each of said sets of loops opening through the upper diaphragm, and the opposite ends of said sets of loops opening through the lower diaphragm, the lower end of one of said sets carried downward adjacent to the base of the bottle, substantially as set forth.

7. A bottle having in combination with the neck thereof a counter-sunk diaphragm C² and two sets of loops B B′, the upper ends of each of said sets of loops opening upward through the counter-sunk portion of the diaphragm and below the upper surface of the diaphragm, substantially as set forth.

8. A bottle provided with diaphragms in the neck thereof forming an air tight chamber C, two sets of loops B B′ located within said chamber, the upper extremities of said loops opening through the upper diaphragm and the lower ends of said loops opening into the body of the bottle through the lower diaphragm, indicator tubes located within said chamber, one of said indicator tubes opening through the upper end of said chamber and closed at its opposite end and the lower end of the other indicator tube opening through the lower end of said chamber, and closed at its upper end, and diaphragms to protect the upper ends of said loops and of the corresponding indicator tube, substantially as set forth.

9. A bottle having an air tight chamber C in the neck thereof, two sets of loops B B′ located within said chamber, the upper extremities of said loops opening through the upper end of the chamber and the lower ends of said loops opening into the body of the bottle through the lower end of said chamber, indicator tubes located within said chamber, one of said indicator tubes opening through the upper end of said chamber and closed at its opposite end and the lower end of the other indicator tube opening through the lower end of said chamber, and closed at its upper end, and diaphragms to protect the upper ends of said loops and of the corresponding indicator tube, substantially as set forth.

545,983. VEGETABLE-CUTTING MACHINE. SAMUEL J. SMITH, Franklin, Pa. Filed Mar. 30, 1895. Serial No. 543,922. (No model.)



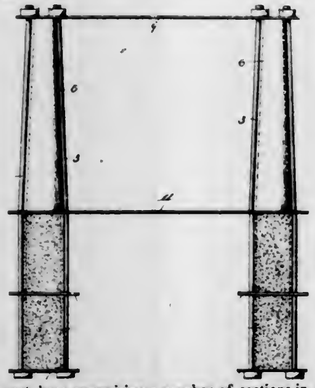
Claim.—1. In a vegetable cutter, the combination with an upright frame, and a reciprocating knife carrier traveling therein, of a hopper or chute projecting laterally from said frame, and a yoke comprising a strip of metal having its central portion disposed beneath the bottom of the hopper or chute and its terminal portions secured to the inner adjacent faces of the side boards of said hopper or chute, said yoke serving to support the bottom of the hopper or chute and constituting vertical guides for the reciprocating knife and also a stationary ledger blade, substantially as and for the purpose specified.

2. In a vegetable cutter, the combination with the frame in which the knife carrier slides, of the oppositely disposed metal guiding strips secured to said frame and engaging grooves in said knife carrier, one of said guiding strips being deflected at its lower end to engage with the laterally projecting handle of the knife carrier so as to form a stop for limiting the downward movement of said carrier, substantially as set forth.

545,984. HITCHING-POST. SETH H. SMITH, Hillsdale, Mich. Filed Apr. 20, 1895. Serial No. 546,509. (No model.)

Claim.—1. A post base formed from alternate sections of brick, stone, cement or other plastic material and interposed metallic plates projecting laterally beyond said sections, in combination with oppositely disposed tie-rods or bolts arranged upon opposite sides of said sections, substantially as described.

2. An improved post, having its base or that portion which enters the ground formed from a vertical series of blocks or sections composed of brick, stone, cement or other plastic material, between which are interposed metallic plates perforated to receive and in combination with a pair of tie-rods or bolts arranged upon opposite sides of said sections, an upright or standard of wood arranged above said sections, and a perforated cap plate located at the upper end of said post or standard and embracing said tie-rods or bolts, substantially as described.



3. A post base comprising a number of sections in the form of blocks made of brick, stone, cement or other plastic material and provided with grooves or depressions at opposite sides, and perforated metallic plates interposed between and located above and beneath said sections, in combination with an upright or standard located above said base and in vertical line with said sections, and an oppositely disposed pair of tie-rods or bolts passing through said perforated metallic plates and resting within or partially within the grooves or depressions in said base sections and also lying within corresponding grooves in the opposite sides or edges of said post or standard, the upper ends of said tie-rod or bolts passing through a perforated cap plate and being secured substantially in the manner specified.

4. The combination with a pair of posts made up of sections arranged in vertical alignment, of one or more anchoring plates or bars interposed between adjacent sections of said posts or secured to the upper ends of said posts and connecting the same, said anchoring plates being perforated to receive the tie-bolts or rods which secure the several sections of said posts together, substantially as specified.

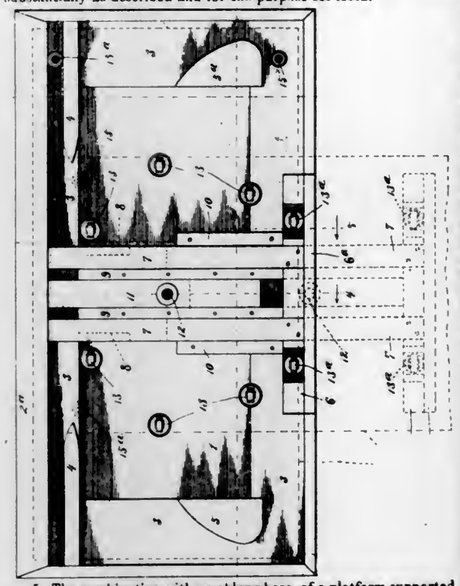
545,985. REVOLVING FURNITURE. WILLIAM D. SNYDER, Chicago, Ill. Filed Jan. 21, 1895. Serial No. 535,672. (No model.)

Claim.—1. The combination with an oblong base, of a platform supported by the base and having a central pivotal connection therewith, the pivot pin being capable of transverse movement as to the base, of a guide pin projecting downwardly from each of the corners at one end of the platform, and ways and cams on the base for engaging such pins, substantially as described and for the purpose set forth.

2. The combination with an oblong base, of a platform supported by the base and having central pivotal connection therewith, the pivot pin being capable of transverse movement as to the base, of a guide way extending from each end of the base along its rearward side and terminating before reaching the middle thereof, a cam located near each of the front corners of the base and having its face toward the end of the base inclined inwardly from front to rear, a guide pin projecting downwardly from each of the corners at one end of the platform and being constructed and arranged to engage the ways and cams, substantially as described and for the purpose set forth.

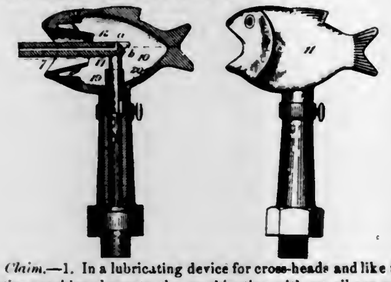
3. The combination with an oblong base having guide ways 4ª, 4ᵇ, extending from its ends along its rearward side and terminating before reaching the middle thereof, and cam blocks 5, 5ª, located near its front corners and having their faces adjacent to the ends of the base inclined inwardly from front to rear, and a transverse way along its median line, of a block 11, adapted to run in such transverse way, a platform supported by the base and having central pivotal attachment to the block 11, guide pins 15, 15ª, fixed in the corners at one end of the platform and projecting downwardly and being arranged to engage the ways 4ª, 4ᵇ, and the cams 5, 5ª, substantially as described and for the purpose set forth.

4. The combination with an oblong base, of a platform supported by and adapted to be turned upon the base and to advance and recede in turning, a slide block 11, moving in a transverse way in the base, pivotal connection between the center of the platform and the block 11, a block 6, normally lying along the front of the base and across the path of the block 11, and adapted to be pushed forward by the latter as it advances and to support the platform as it turns, substantially as described and for the purpose set forth.



5. The combination with an oblong base, of a platform supported by and adapted to be turned upon the base and to advance and recede in turning, a slide block 11, moving in a transverse way in the base, pivotal connection between the center of the platform and the block 11, a block 6, normally lying along the front of the base and across the path of the block 11, and adapted to be pushed forward by the latter as it advances and to support the platform as it turns, the front end of the block 11, being normally spaced apart from the block 6, whereby the movement of the latter is less than the former, substantially as described and for the purpose set forth.

545,986. LUBRICATOR. THEODORE F. TIMBY, Alma, Mich. Filed May 13, 1893. Serial No. 474,128. (No model.)



Claim.—1. In a lubricating device for cross-heads and like reciprocating machine-elements, the combination with an oil-cup and its discharge tube, which is the feed-tube of the lubricating-device, of a traveling drip-receiver having inwardly extending openings which freely admit the air during its respective strokes, whereby a practically continuous air pressure is maintained within the receiver for facilitating the flow of the oil and assisting to keep the bearing cool.

2. In a lubricating device for cross-heads and like reciprocating machine-elements, a traveling drip-receiver having a mouth which admits the air during its forward strokes, and lateral gill-like openings, with deflecting projections in front of them, to admit the air during each backward stroke, substantially as hereinbefore specified.

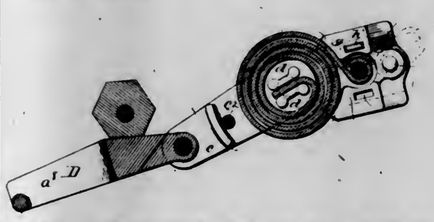
3. In a lubricating device for cross-heads and like reciprocating machine-elements, a traveling drip-receiver having a wedge-shaped body with an air-admitting mouth in front, gill-like air-admitting openings in its sides at its front end, and laterally projecting deflectors immediately in front of the openings last named, substantially as hereinbefore specified.

4. In a lubricating device for cross-heads and like reciprocating machine-elements, a traveling drip-receiver having a hollow body, a mouth which admits the air during its forward strokes, lateral gill-like openings to admit the air during each backward stroke, and laterally swinging flap-valves within the body to obstruct the respective air-admitting openings during the respective strokes, substantially as hereinbefore specified.

5. In a lubricating device attached in part to a reciprocating machine-element and partly to its relatively fixed frame, the combination with a relatively fixed feed-tube and a wiper to coact therewith of a traveling drip-receiver having a hollow body, an air-admitting mouth which admits the relatively fixed feed-tube, lateral gill-like openings to admit air during its backward strokes, a hollow downwardly projecting stem, and a wiper-holder at the upper end of said stem within said body, substantially as hereinbefore specified.

6. In a lubricating device attached in part to a reciprocating machine-element and partly to its relatively fixed frame, the combination of a traveling drip-receiver, a wiper carried by said drip-receiver, and a relatively fixed feed-tube having the extremity of its outlet end closed against the inrush of air and constructed with an imperforate surface to coact with said wiper, substantially as hereinbefore specified, for preventing the spattering of oil in the manner set forth.

545,987. CULTIVATOR OR GRAIN-DRILL TOOTH. WILLARD A. VAN BRUNT, Horicon, Wis., assignor to the Van Brunt & Wilkins Manufacturing Company, same place. Filed June 13, 1895. Serial No. 552,697. (No model.)



Claim.—1. The combination with a drag bar, a shank pivoted between its ends thereto and a tooth secured to said shank, of a jointed brace pivoted at one end to the drag bar and pivoted adjustably at its other end to the shank, an eccentric block adapted to bear against one member of the jointed brace and maintain the pivotal connection between the members of the brace more or less out of line with their common longitudinal axis, and a spring secured at its respective ends to the drag bar and the member of the jointed brace pivoted thereto, substantially as set forth.

2. The combination with a drag bar, a shank pivoted between its ends thereto and having a toothed segment at its upper end, and a tooth secured to said shank, of a jointed brace comprising two members pivotally connected together, one of said members being pivoted to the drag bar and the other pivotally connected in one of the notches of said toothed segment, an eccentric block adapted to bear against the member of the jointed brace which is connected with the toothed segment of the shank, and a spring secured at its respective ends to the drag bar and the member of the jointed brace pivoted thereto, said spring serving to retain the other member of said jointed brace in engagement with said eccentric block substantially as set forth.

3. The combination with a shank having a recess near its free end and a hole communicating with said recess, of a tooth adapted to lie against the forward face of said shank, a block on the back of said tooth adapted to enter said recess, and a screw removable from the shank and block, said screw passing through said hole in the shank and its threaded end entering a screw-threaded recess in said block, substantially as set forth.

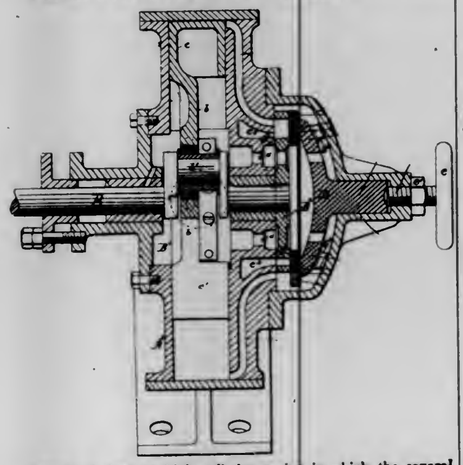
4. The combination with a drag bar, a shank pivoted between its ends thereto, and a tooth carried by said shank, of a jointed brace pivotally connected at its respective ends to the drag bar and the shank, one of the members of said brace comprising two parts secured together and having lugs on their inner faces, a coiled spring having its inner end inserted between said lugs, a block secured to the drag bar against which said spring is adapted to bear, a bolt passing through said block to which the outer end of the spring is secured, and an eccentric block revolubly connected with the drag bar and adapted to bear against one member of the jointed brace at the side of the pivotal connection between said members nearest the shank, substantially as set forth.

5. The combination with a drag bar, a shank pivoted between its ends thereto and a tooth carried by said shank, of a toothed segment at the upper end of said shank, a jointed brace comprising two members pivoted together, one end of said jointed brace being pivotally connected with said toothed segment and the other member

being pivoted to the drag bar, one of the members of said jointed brace comprising two bars secured together, lugs projecting from the inner faces of said bars, a spring disposed between said bars and having its inner end inserted between said lugs, a block secured to the drag bar, a bolt passing through said block to which the outer end of said spring is secured, and an eccentric block revolubly connected with the drag bar and adapted to bear on the member of the jointed brace nearest the drag bar, substantially as set forth.

6. The combination with a drag bar, a shank pivoted between its ends thereto and a tooth secured to said shank, of a jointed brace pivoted at its respective ends to the drag bar and shank, an eccentric block bearing against one of the members of said jointed brace, a sectional, interlocking block secured to the drag bar, a bolt passing through the drag bar and said sectional, interlocking block, shoulders on said block, and a coiled spring secured to said bolt and to one of the members of the jointed brace and bearing against said shoulders, substantially as set forth.

545,988. MULTIPLE-CYLINDER ENGINE. OSCAR VERIN, New York, N. Y., assignor to the Cross Engine Company, of West Virginia. Filed Feb. 5, 1895. Serial No. 537,344. (No model.)



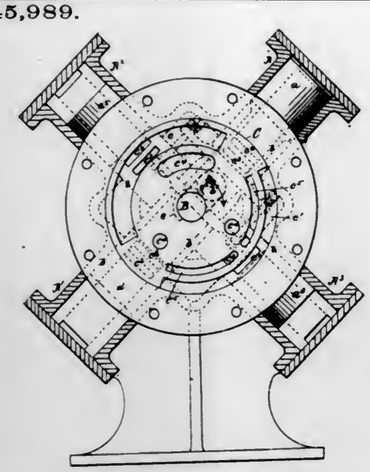
Claim.—1. In a multiple-cylinder engine in which the several cylinder-ports are governed by a disk-valve keyed to and rotating with the crank-shaft common to the pistons of the several cylinders, the combination with said disk-valve of an annular plate, between which and its seat on the engine-body said valve works, a frame carrying said plate, a shank on said frame, a sleeve on the valve-chest head in which said shank seats and has longitudinal play, and a set-screw working in the wall of said sleeve and bearing upon the face of the seated end of said shank, substantially as and for the purpose set forth.

2. In a multiple cylinder engine in which the several cylinder-ports are governed by a disk-valve keyed to and rotating with the crank-shaft common to the pistons of the several cylinders, the combination with said disk-valve of an annular plate, between which and its seat on the engine-body said valve works, a frame having an annular perimetal face upon which said plate is loosely or movably mounted, a shank on said frame, a sleeve on the valve-chest head in which said shank seats and has longitudinal play, and a set-screw working in the wall of said sleeve and bearing upon the face of the seated end of said shank, substantially as and for the purpose set forth.

545,989. MULTIPLE-CYLINDER ENGINE. OSCAR VERIN, New York, N. Y., assignor to the Cross Engine Company, of West Virginia. Filed Feb. 5, 1895. Serial No. 537,345. (No model.)

Claim.—In a multiple cylinder engine in which the several cylinders are radially arranged about a common crank-shaft to which the respective pistons of said cylinders are connected, the combination with said cylinders and their ports and pistons, of a rotary disk-valve which governs the cylinder-ports in lead, cut-off and exhaust, provided in the bearing-face of its axial aperture with a channel that is coincident in length or duration with that of the steam-port in said valve, and a slot leading from said channel to a side of the valve, together with the common crank-shaft provided at its bearing for said disk-valve with a feather adapted to pass said slot and to enter and have play in said channel in said bearing-face of the valve-disk; substantially as and for the purposes set forth.

545,989.



545,990. MULTIPLE-CYLINDER ENGINE. OSCAR VERIN, New York, N. Y., assignor to the Cross Engine Company, of West Virginia. Filed Feb. 5, 1895. Serial No. 537,346. (No model.)

Claim.—In a multiple cylinder engine in which the several cylinders are radially arranged about a common crank-shaft with their respective pistons connected to the crank of said shaft, and in which the said several cylinders are successively governed in a steam inlet, cut-off and exhaust by a disk-valve mounted on and rotated by said shaft, the combination with said cylinders and their pistons and ports of the said rotary disk-valve having steam-inlet, exhaust and balanced ports, and provided with a web between the inlet-end of the steam-port, and the exhaust-port thereof having a balance port therein adapted to successively communicate with each cylinder-port, said web being of a length or duration adapting said web to successively interrupt the exhaust from said cylinders during a portion of the return-stroke of each of the respective pistons therein, substantially as and for the purpose set forth.

545,991. FASTENING FOR GARMENTS. HENRY B. WALBRIDGE, Washington, D. C. Filed Dec. 17, 1894. Serial No. 532,092. (No model.)

Claim.—1. A fastening for the fly of trousers comprising two members, which are constructed of thin metal or other resilient material, one of which is secured at its upper and lower ends to the upper surface of the under lap of the trousers to form a receiving and retaining pocket, and the other member to the under side of the overflap of the fly at its inner vertical edge with a hinge like connection, and left free at its upper and lower ends and at its other vertical edge, so that it can be brought over and turned under the first member and be held in position thereby without any auxiliary fastening means, substantially as described.

2. A fastening for the fly of trousers comprising two members which are constructed of thin metal or other resilient material, one of which members is secured at its upper and lower ends to the upper surface of the under lap of the trousers to form a receiving and retaining pocket, and the engaging member covered with cloth which extends beyond the resilient portion and is connected by said extended portion to the under side of the overflap of the fly in a hinge like manner and left free at its upper and lower ends and its outer vertical edge so that it can be brought over and turned under the receiving member and be held in position thereby without any auxiliary fastening means, substantially as described.

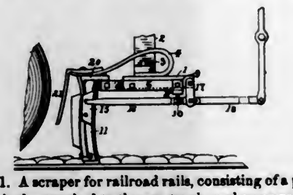


545,992. TIE-HOOK. DAVALT F. WEISS, Bloomsburg, Pa. Filed Jan. 19, 1895. Serial No. 535,535. (No model.)



Claim.—A tie hook composed of an integral piece of wire bent to comprise an eye 1, a coil 2 formed directly adjacent to the eye, a coil 3 directly contiguous to the coil 2, and a hook 5 formed at the remaining terminal of the wire and directly contiguous to the coil 3, one of the coils being passed at its lower side under the corresponding side of the remaining coil, so that one-half of the first coil will lie on one side of the remaining coil and the other half on the opposite of the remaining coil, substantially as described.

545,993. TRACK-CLEANER FOR STREET-RAILWAYS. WILLIAM H. WELTON, Akron, Ohio. Filed Feb. 16, 1895. Serial No. 538,705. (No model.)



Claim.—1. A scraper for railroad rails, consisting of a pair of bars pivoted on a block, attached to the car truck, and arranged in unison to rock with the irregularities of the track, said bars carrying between them a pivoted scraper blade, adapted to be normally swung down and rest on the said rail, and to be swung upward when not in use, substantially as shown and described.

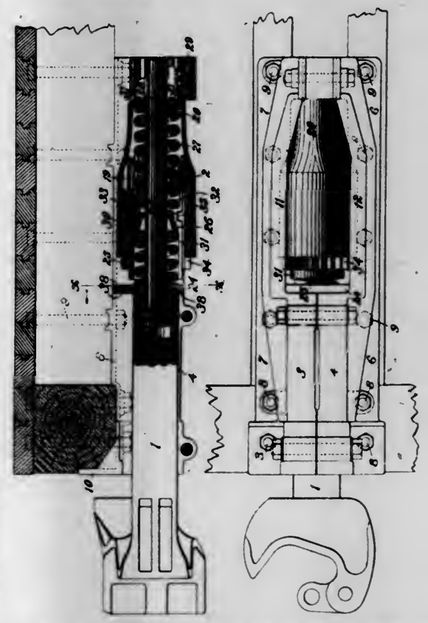
2. A track cleaner for railroads, consisting of a pivoted blade hung between a pair of bars pivoted on a block attached to the car truck, said scraper blade arranged to be swung downward and upward by a lever attached to said blade, substantially as shown and described.

3. A cleaner for railroad rails, consisting of a block bearing a spring, a pair of bars pivoted to said block and arranged to swing in unison, and having hung between their ends a pivoted scraper blade, and a lever attached to said blade, and adapted to swing said blade downward and upward, said spring arranged to bear against the upper part of said scraper blade and hold it normally in place, substantially as shown and described.

4. In a track scraper having a pair of bars pivoted on a block attached to the car truck, a scraper blade hung between the ends of said bars, a spring attached to said block arranged to normally hold said blade in a fixed position, the combination of a lever attached to said blade and arranged to rock said blade downward and upward as desired, substantially as shown and described.

5. The combination in a track cleaner of a pair of bars pivoted to a block, attached to the car truck, the ends of said bars being connected by a strap, bearing an adjusting set screw, arranged to bear against said block and regulate the vertical motion of said bars, a pivoted scraper blade hung between the other ends of said bars, a spring fastened to said block arranged to normally press upon the upper part of said blade and retain it in a determined position, an angle plate attached to the upper and back faces of said blades, adapted to receive the thrust of said spring, a lever attached to said blade and arranged to rock said blade upward and downward as desired, substantially as shown and described.

545,994. DRAW-GEAR AND BUFFING APPARATUS. GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa. Filed July 17, 1895. Serial No. 556,232. (No model.)



Claim.—1. The combination, in a draw gear or buffing apparatus, of an integral housing, intercalated frictional devices within the housing, and means for pressing the frictional devices together, substantially as set forth.

2. The combination, in a draw gear or buffing apparatus, of an internally tapered housing formed of a single casting, intercalated frictional devices within the housing, and means for pressing the frictional devices together, substantially as set forth.

3. The combination, in a draw gear or buffing apparatus, of a series of rigidly connected frictional devices, relatively movable frictional devices adapted to engage therewith, and means for pressing the frictional devices together, substantially as set forth.

4. The combination, in a draw gear or buffing apparatus, of a series of rigidly connected frictional devices, relatively movable frictional devices adapted to engage therewith, means for pressing the frictional devices together, and means whereby either set of frictional devices may be moved relatively to the other, substantially as set forth.

5. The combination, in a draw gear or buffing apparatus, of a housing, frictional devices formed on the housing and adapted to engage with other frictional devices which are movable relatively to the housing, and means for pressing the frictional devices together, substantially as set forth.

6. The combination, in a draw gear or buffing apparatus, of an integral housing, frictional devices formed on and integral with the housing, and adapted to engage frictional devices which are movable relatively to the housing, and means for pressing the movable friction devices into contact with the frictional devices on the housing, substantially as set forth.

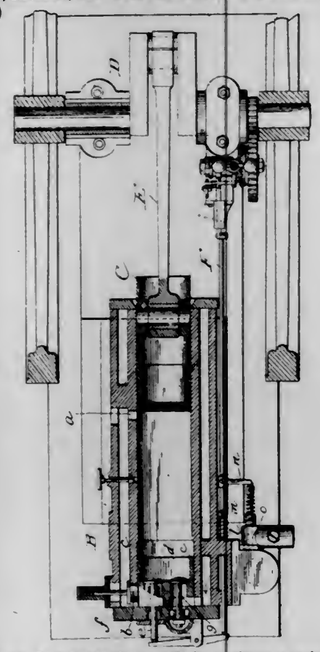
7. The combination, in a draw gear or buffing apparatus, of a single integral casting comprising a movable housing with frictional

surfaces formed thereon, frictional devices inside of the housing which are adapted to engage with the frictional surfaces on the housing, means for pressing the inner frictional devices outwardly against the surfaces on the housing, and means whereby the housing, the inner frictional devices, or both may be moved longitudinally, substantially as set forth.

8. The combination, in a friction mechanism of an outer series of wedge bars, an inner series of wedge bars, carriers for the inner series of wedge bars, integral wedge bars formed on the carriers, integral sets or groups of wedge bars loosely connected to the carriers, and means for pressing the inner and outer series of wedge bars together, substantially as set forth.

9. The combination, in a draw gear and buffing apparatus, of a housing, longitudinally tapered wedge bars formed on the housing, longitudinally tapered wedge bars within the housing which are adapted to engage the wedge bars which are formed on the housing, and means for pressing the wedge bars together, substantially as set forth.

545,995. GAS-ENGINE. CHARLES WHITE and ARTHUR R. MIDDLETON, Baltimore, Md. Filed Jan. 10, 1894. Serial No. 496,431. (No model.)



Claim.—1. In a gas engine, a cylinder, a piston, a main exhaust, a supplemental exhaust, a gas supply, a valve controlling the gas supply, a valve controlling the supplemental exhaust a single rod for opening both of said valves and a governor for automatically controlling the operation of said rod, substantially as described.

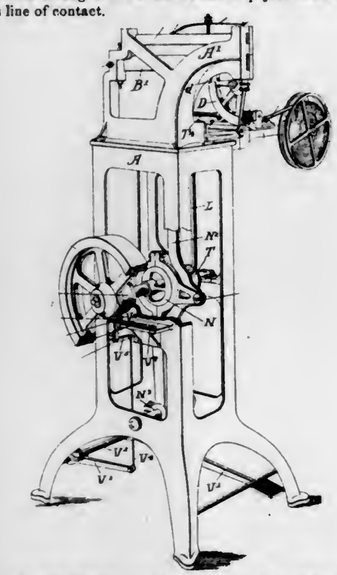
2. In a gas engine, a cylinder, a piston, a main exhaust, a supplemental exhaust, a gas supply, a valve controlling the supplemental exhaust, a valve controlling the gas supply, a single rod for opening both of said valves, a crank shaft, and a governor for controlling the operation of the rod interposed between the rod and crank shaft, substantially as described.

3. In combination with a governor mechanism, a bell crank lever, terminating in fingers, one of which is a spring, a cam and a disk engaged by said fingers, substantially as described.

545,996. MACHINE FOR APPLYING STAYING-STRIPS TO BOX-CORNERS. MERRICK F. WILSON, Chicago, Ill., assignor to Edgar H. Johnson, Marion, Ind. Filed Feb. 6, 1894. Serial No. 499,311. (No model.)

Claim.—1. The combination with mechanism for supporting a box and for pressing a stay strip upon the same, of means for feeding the end of a continuous strip across the corner of the box, means for severing a piece from the end of said strip by a cut beginning at one edge and advancing across the strip, and means for pressing the piece upon the box as fast as it is severed, whereby the uncut portion holds the piece until the partial affixing prevents displacement.

2. The combination with a horn and devices for feeding a continuous stay strip over a box supported thereon, of a roller arranged to roll along the box transversely to the line of direction of said strip, and devices arranged to cut across the strip just in advance of the roller's line of contact.



3. The combination with a roller and a horn constructed to co-operate in pressing a stay strip upon an interposed box corner, of a fixed knife located adjacent to the horn, and a knife fixed to the roller and adapted, in conjunction with the fixed knife, to sever a length of the continuous strip as the roller advances, substantially as set forth.

4. The combination with a horn and a roller arranged to co-operate in pressing a stay strip upon an interposed box corner, of devices for feeding a stay strip between said horn and roller, and means for imparting to said horn a positive downward movement at the beginning of the feed and for returning the same to position when the feeding is completed.

5. The combination with a roller and a horn constructed to co-operate in pressing a stay strip upon an interposed box corner, of mechanism for feeding said stay strip over said box corner, a tilting guideway directing said strip in its advance and a flange upon said roller for engaging and depressing the guideway during the roller's movement, substantially as set forth.

6. The combination with a horn and a roller arranged to co-operate in pressing a strip upon a box corner, of positive mechanism for carrying the roller back and forth along said corner and for imparting to the roller during said movement positive rotation.

7. The combination with a horn and a roller arranged to co-operate in pressing a strip upon a box corner, of positive mechanism for carrying said roller bodily along the box, and means for imparting to the roller during said movement positive rotation exactly corresponding to the bodily advance, whereby the roller exerts pressure without traction.

8. The combination with a horn and a guideway approximately parallel to the same, of a carriage arranged to move along said guideway, and a roller borne by the carriage in position to press a stay strip upon the corner of a box resting upon said horn.

9. The combination with a roller and a horn constructed to co-operate in pressing a stay strip upon an interposed box corner, of mechanism for positively revolving said roller, which mechanism consists in part of a fixed rack in combination with suitable gearing borne by the roller, substantially as shown.

10. The combination with a horn and a guideway approximately parallel thereto, of a carriage arranged to move along said guideway, means for imparting a reciprocating movement to the carriage, a roller borne in position to press a stay strip upon a box resting upon said horn, and means for at will varying the distance of the guideway from the horn.

545,997. DRAFT ATTACHMENT. JONATHAN E. WOLF, Welda, Kans. Filed Nov. 5, 1894. Serial No. 527,941. (No model.)

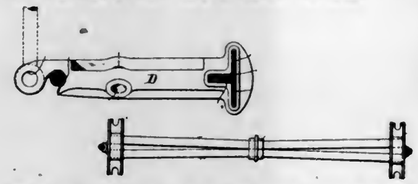
Claim.—1. A draft attachment, comprising a base-plate attachable to a tongue or cross-bar of a vehicle, having a pair of perforations

arranged on the same longitudinal line, and a groove or channel at its front end, and also in the longitudinal line of said perforations, a pair of elongated enlargements at the upper side of the plate at opposite sides of said groove or channel, provided with forwardly-disposed shoulders, a sliding bar upon the said base-plate between the enlargements thereof, and provided with a cross-head at its rear end and a rib at its front end depending within the groove or channel of the said base-plate, a pair of buffer-springs interposed between the said cross-head and the said enlargements of the base-plate, and bolts extending through the perforations of the base-plate, registering perforations of the sliding bar and the double or single-tree of the vehicle, substantially as set forth.



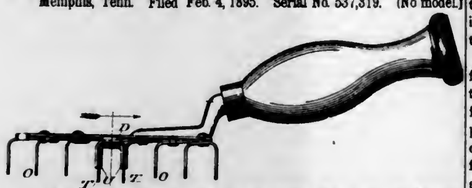
2. A draft attachment comprising a base plate attachable to a tongue or cross-bar of a vehicle, having a pair of perforations arranged on the same longitudinal line, and a groove or channel at its front end, and also in the longitudinal line of said perforations, a pair of elongated enlargements at the upper side of the plate at opposite sides of said groove or channel, provided with forwardly-disposed shoulders, a sliding bar upon the said base-plate between the enlargements thereof, and provided with a cross-head at its rear end and a rib at its front end depending within the groove or channel of the said base-plate, a pair of buffer-springs interposed between the said cross-head and the said enlargements of the base-plate, bolts extending through the perforations of the base-plate, registering perforations of the sliding bar and the double or single-tree of the vehicle, and a boxing overlying the base plate, the springs and the sliding bar, and provided with a flange at its front end which depends into the path of the cross-head of the sliding bar, substantially as set forth.

545,998. BRAKE-BEAM. WILLIAM W. ATTERBURY, Fort Wayne, Ind. Filed May 20, 1895. Serial No. 549,853. (No model.)



Claim.—A truss brake beam having in combination a compression member made up of two angle irons, shoe holding cast metal terminals B B each having recesses B' B' to receive and conform to the shape of the ends of the angle irons and a channel B^3 passing between said recesses for the tie rod, a strut D having an opening D' adapted to pass over both angle irons and clamp them together at the center and a tie rod E secured to the terminals B B and passing through or over the end of the strut D.

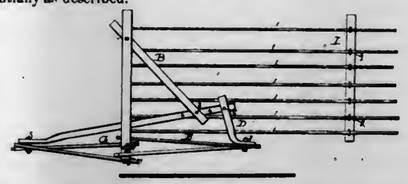
545,999. CURRYCOMB. MATTHEW L. BACON and JOHN E. FINLEY, Memphis, Tenn. Filed Feb. 4, 1895. Serial No. 537,319. (No model.)



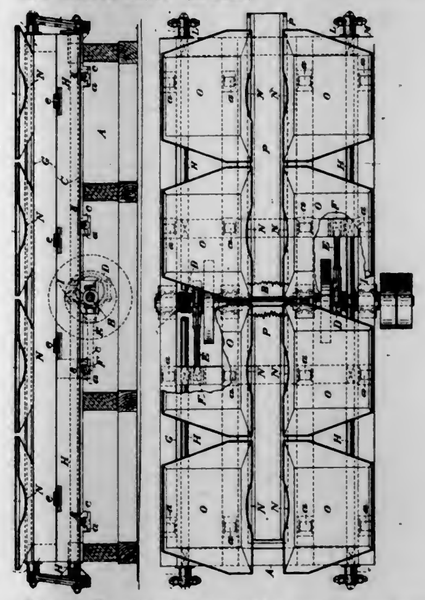
Claim.—The combination with the comb bars O, of the flexible shedder T, and the U shaped bar with projecting ends D, D, adapted to rigidly bind the shedder against the comb bars.

546,000. POST FOR WIRE FENCES. WARREN J. BAKER, Salem, Ohio, assignor of one-half to Ananias Frantz, same place. Filed May 13, 1895. Serial No. 549,035. (No model.)

Claim.—In a wire fence post, the combination of the vertical post A, the cross-bar J attached to the lower end of said post, the horizontal base bars G and H; and the bars E and F forming acute angles, and joined at their inner ends to said cross-bar to complete the base, the diagonal braces C and D attached to the outer angles of said base, and the brace B attached to the post near the top and to the brace C near the junction of the former two, to hold both ends of the base down as the result of the tension on the runners, substantially as described.



546,001. CONCENTRATING OR SEPARATING MACHINE FOR MINERALS. CHARLES E. BARLING, San Francisco, Cal. Filed Nov. 8, 1894. Serial No. 528,212. (No model.)



Claim.—1. In a mineral concentrating machine, the combination of a fixed frame, a superposed reciprocating frame, a second frame mounted on the reciprocating frame and hinged at one edge, said frame having a canting motion, the pans carried by the hinged frame, and mechanism for imparting motion to the two frames so that the pans may have an undulating motion, substantially as described.

2. In a mineral concentrating machine, the combination of a fixed frame, a superposed reciprocating frame, a second frame mounted on the reciprocating frame, said frame being hinged at one edge and occupying an inclined position, vertically movable links for imparting to it a canting motion, a series of pans on the latter frame, a trough into which the pans discharge, and a spout for supplying material to the pans, substantially as described.

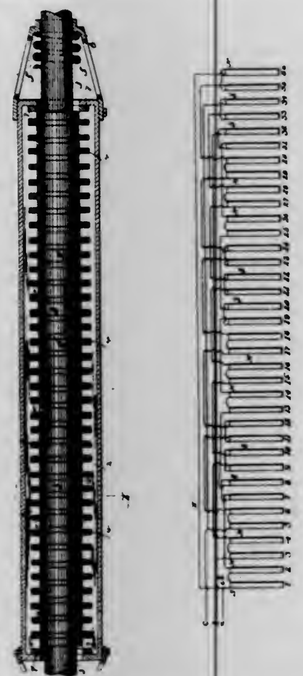
3. In a mineral concentrating machine, the combination of a fixed frame, a superposed reciprocating frame, a main driving shaft, eccentrics thereon which actuate the reciprocating frame, a hinged inclined frame on the reciprocating frame having a canting motion, a shaft parallel to the hinged frame and geared to the main shaft, eccentrics on the ends of the parallel shaft, and links pivoted to the hinged frame and actuated by said eccentrics, and pans on the hinged frame, substantially as described.

546,002. ELECTRIC DRILL. CHARLES S. BRADLEY, Avon, N. Y. Filed Aug. 20, 1892. Serial No. 443,599. (No model.)

Claim.—1. The combination with a differential phase alternating current generator adapted to periodically reverse the order of phase delivery, of a reciprocatory motor comprising a series of coils grouped to develop a series of consequent poles and connected with the differential circuits supplied by the generator, whereby a progression of the poles to and fro along the axis of the coils is maintained.

2. The combination of a multipolar differential phase generator of a commutator for changing the order of delivery of the phases at

every half revolution of the generator shaft, an electric drill comprising a series of coils grouped to develop a series of consequent poles equal in number to half the number of poles in the generator, and a plunger reciprocated by the shifting of said poles to and fro by the differential phase currents.



3 The combination of a tubular iron frame laminated axially and provided with a series of transverse grooves, a series of coils in said grooves, said coils being connected in closed circuit and tapped at three or more points for connection with a differential phase alternating current circuit, the several coils being grouped to develop a series of consequent magnetic poles along their axis, means at the generator for periodically changing the order of delivery of the alternating currents to the line conductors and an iron plunger actuated by said poles.

4. The combination of a series of coils grouped to develop a series of consequent poles along their axis and connected with a differential phase circuit to produce a progressive movement of the poles, with a plunger surrounded by a series of closed bands or circuits in inductive relation to the coils, said closed bands or circuits being unsymmetrically spaced with reference to the coils.

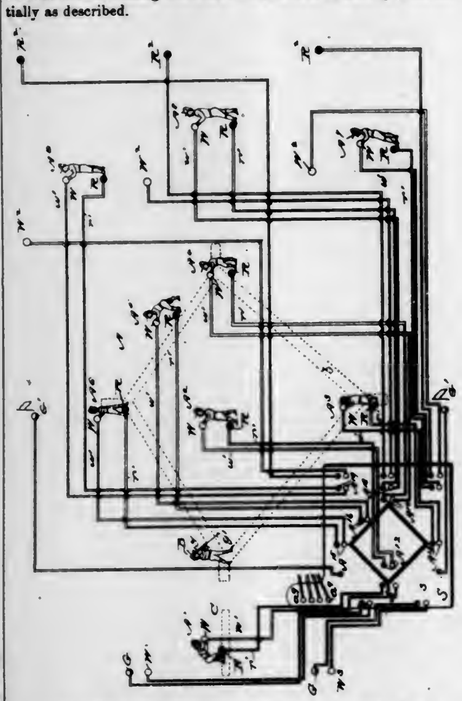
546,003. BASE-BALL-INDICATING APPARATUS. FRANK M. CHAPMAN, New York, N. Y., assignor to Stella F. Chapman, Joseph W. Jefferson, and Thomas Jefferson, same place. Filed May 23, 1895. Serial No. 550,378. (No model.)

Claim.—1. In a ball game display apparatus, the combination of the platform having a diagram of the field represented thereon, the differently colored lamps mounted thereon to indicate the positions and play of the players, the variously colored lamps suspended above the platform to indicate the course of the ball, the electric circuits leading to the said lamps, and means for controlling the said circuits, substantially as described.

2. In a ball game display apparatus, the combination of the platform having a diagram of the field indicated thereon, the differently colored lamps mounted on the said platform to designate the positions and plays of the players, the switch board having the field and positions of the players diagrammed thereon, and the electric circuits leading from the switch board to the lamps, substantially as described.

3. In a ball game display apparatus, the combination of the platform having a diagram of the field indicated thereon, the automatons mounted on the same to represent players, the differently colored lamps supported by the said automatons, the electric circuits leading to the said lamps, and means for controlling the said circuits, substantially as described.

4. In a ball game display apparatus, the combination of the platform having a diagram of the field indicated thereon, the automatons mounted on the same to represent the players, the differently colored lamps attached to the said automatons to designate the plays made by the players, the differently colored lamps suspended above the platform to indicate the course of the ball, the switch-board having the field and the positions of the players diagrammed thereon, and the electric circuits leading from the switch board to the lamps, substantially as described.



5. In a ball game display apparatus, the combination of the platform having a diagram of the field indicated thereon, the different colored lamps mounted on the said platform to designate the positions and plays of the players, the switch board having the field and positions of the players designated thereon by the push buttons, and the electric circuits leading from the push buttons to the lamps, substantially as described.

6. In a ball game display apparatus, the combination of the platform having the diagram of the field indicated thereon, the stationary automatons mounted thereon to designate the players in the field, the differently colored lamps supported by each of the automatons to indicate the different plays made by the same, the movable automatons designating the runners, the variously colored lamps suspended above the field to indicate the course of the ball, and the electric circuits leading from a central point to the said lamps, substantially as described.

7. In a ball game display apparatus, the combination of the platform, the ways formed therein, the carriage mounted in the said ways, the arm and the sleeve rotatably mounted on the said arm and connected with the said sleeve, substantially as described.

8. In a ball game display apparatus, the combination of the platform, the ways formed therein, the arm, and the carriage, rotatably mounted on the said arm and moving in the said ways, substantially as described.

9. In a ball game display apparatus, the combination of the platform having a portion thereof formed in the shape of a diamond, the carriage riding on the edge of the said portion, the automaton mounted on said carriage, and the automatic mechanism for moving the carriage away from the edge of the platform, substantially as described.

10. In a ball game display apparatus, the combination of the platform having a portion thereof formed in the shape of a diamond, the carriage riding on the edge of the said diamond, the moving arm connected with the said carriage, the latter having play longitudinally on the said arm, and the spring connecting the carriage with the arm to cause said carriage to bind on the said edge, substantially as described.

11. In a ball game display apparatus, the combination of the platform, the ways formed therein, the arm, the spring pressed sleeve mounted thereon, the sleeve splined on the first mentioned sleeve, and the carriage secured to the said last mentioned sleeve and adapted to be moved in the ways, substantially as described.

12. In a ball game display apparatus, the combination of the platform, the ways formed therein, the arm, the spring pressed sleeve mounted thereon, the mechanism locking the sleeve to compress the spring, the sleeve splined on the first mentioned sleeve, the carriage attached to the second sleeve and adapted to be moved in the said ways, the spring connecting the two sleeves, and the automatically operated mechanism adapted to unlock the first mentioned sleeve, substantially as described.

13. In a ball game display apparatus, the combination of the moving arm, the pin projecting from the periphery thereof, the sleeve mounted on the said arm and having grooves formed in the same adapted to register with the said pin to lock the sleeve relatively to the arm, the spring pressing the sleeve outwardly on the said arm, the sleeve splined on the first mentioned sleeve, and the carriage secured to the second sleeve, substantially as described.

14. In a ball game display apparatus, the combination of the moving arm, the pin projecting from the periphery thereof, the spring pressed sleeve mounted on the said arm and having grooves formed in the same adapted to register with the said pin and thereby lock the sleeve relatively to the arm, the lever projecting from the end of the said sleeve, and the catch adapted to engage with said lever and thereby turn the said sleeve and unlock the same relatively to the arm, substantially as described.

15. In a game display apparatus, the combination of the platform, the ways formed therein, the arm, the sleeve mounted on the said arm, the frame pivoted to the said sleeve, and the wheels mounted in the said frame and adapted to ride in the said ways, substantially as described.

16. In a game display apparatus, the combination of the platform, the ways formed therein, the sleeves mounted on each other and on a common spindle, the independent mechanism driving the said sleeves, the arms attached to the said sleeves, and the carriages pivoted to the said arms and moving in the said ways, substantially as described.

17. In a game display apparatus, the combination of the platform, the moving arm, the sleeve mounted on the said arm, the framework pivoted to the said sleeve, the vertical wheel journaled in the said framework having cranks formed in the ends of its shaft, and the automaton supported on the said framework having its legs hinged at the knees and hips and pivoted at the feet to the said cranks, substantially as described.

18. In a game display apparatus, the combination of the automaton, the cap having the reversible cover mounted thereon, and mechanism for operating the said cover to change the color of the headwear of the automaton, substantially as and for the purposes specified.

19. In a base-ball game display apparatus, the combination of the platform, the lamps mounted thereon in positions to designate the directions taken by the ball in play and flashed to indicate the course of the ball, the electric circuits leading to the said lamps, and means for controlling said circuits, substantially as described.

20. In a base-ball game display apparatus, the combination of the platform having a diagram of the field indicated thereon, the differently colored lamps mounted on the said platform in positions to designate the directions taken by the ball in play and flashed to indicate the course of the ball, the electric circuits leading to the said lamps, and means for controlling said circuits, substantially as described.

546,004. BICYCLE. LUCIEN S. CRANDALL, Pariah, N. Y. Filed Mar. 27, 1893. Renewed Mar. 13, 1895. Serial No. 541,589. (No model.)

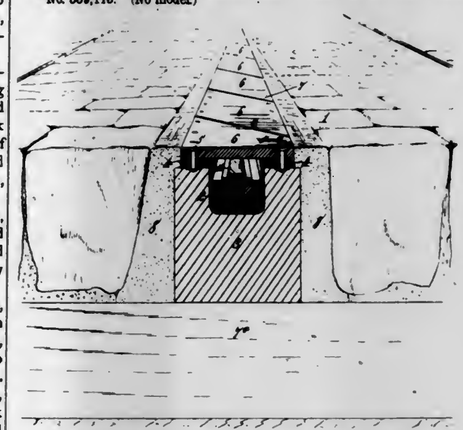


Claim.—1. The combination with a bicycle frame, of a clip secured thereto having cam-edged projections, angle-bars pivoted upon said clip and having their outward arms slotted as shown a treadle secured to the vertical arms of said angle bars, and legs hinged to said vertical arms and passing down through said slots and engaging with said cam edges.

2. The combination with a bicycle frame, of a clip secured thereto having cam-edged, projections, swinging angle-bars, slotted in their horizontal projections, a treadle secured to said angle-bars and adapted to swing them, and legs secured thereto engaging with said cam edges and passing through said slots and adapted to traverse them longitudinally when the angle-bars are swung, and means to automatically retract said legs when the pressure is removed from the treadle.

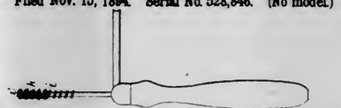
3. The combination with a bicycle frame, of a clip secured thereto, a lever pivoted upon said clip, legs hinged to said lever, and a lock-bar adapted to engage with one of said legs.

546,005. FLEXIBLE CONDUCTOR AND INCLOSED CONDUIT THEREFOR. LEON DION, Natick, Mass. Filed Feb. 20, 1895. Serial No. 539,113. (No model.)



Claim.—In an electrical railway, having a closed conduit, or subway, the combination with a series of conducting surface-plates, forming the top of said conduit, said sections being insulated one from another, of an auxiliary conductor formed of interbraided strands of iron wire and copper wire, and a main conductor inclosed within and insulated from the lower portion of said conduit and adapted to supply current to the auxiliary conductor, the latter being drawn by magnetic attraction against the lower faces of the surface plates, substantially as described.

546,006. SHUTTLE-THREADER. JOHN E. DOLBER, Manchester, N. H. Filed Nov. 15, 1894. Serial No. 528,846. (No model.)



Claim.—1. A shuttle threader comprising a holder and a shank secured thereto, said shank having an open-work receptacle at its free end, and a removable brush portion held within said open-work and extending through and beyond the same, whereby said brush is adapted to be brought into frictional scraping contact with the end and side walls of the side eye of the shuttle and to engage and withdraw the thread therefrom, substantially as described.

2. A shuttle threader comprising a holder and a shank secured thereto, said shank being provided with a receptacle having a plurality of interstices, and a removable brush portion held within said receptacle, and having the bristles extending through and beyond said interstices for the purpose set forth.

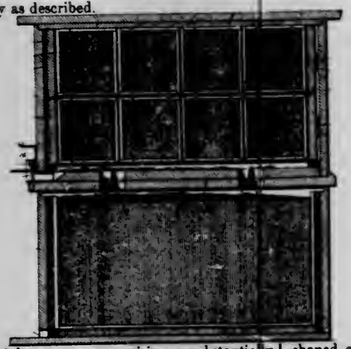
3. In combination with a holder, a brush and a spiral coil adapted to receive said brush and removably secured to said holder.

4. A shuttle threader comprising a handle, a shank, a brush cylindrical in shape, and a spiral coil adapted to receive said brush and removably secured to said shank.

546,007. BEEHIVE. GEORGE C. FERGUSON, Odell, Nebr., assignor of one-half to Mathias Oswald, same place. Filed Feb. 28, 1895. Serial No. 540,093. (No model.)

Claim.—1. A bee escape comprising a casing substantially L-shaped, having an inner reduced portion and an outer enlarged portion, an upwardly swinging door hinged in the enlarged portion of the casing at the top thereof, and having its inward swing limited by the reduced inner portion of the casing and composed of a series of

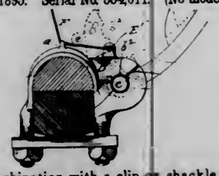
independent sections, combined with means for simultaneously raising the sections and for holding them elevated to open the door, substantially as described.



2. A bee escape, comprising a substantially L-shaped casing, a door hinged at its top at the outer portion of the casing and composed of separate independently swinging sections, a hinged loop mounted in rear of the sections and arranged to swing upward to hold the door open, and provided with an arm, and a catch for engaging the arm for holding the door open, substantially as described.

3. A super, having a bottom provided with an opening, and composed of two boards having opposite grooves at their inner faces located at opposite ends of the openings, and a pivoted cutoff arranged in said opening and having beveled cutting edges, and provided with a stem located between said boards and fitting in the grooves thereof, substantially as described.

546,008. THILL-COUPLING. WILLIAM K. FERGUSON, Little Rock, Ark. Filed July 1, 1895. Serial No. 554,611. (No model.)



Claim.—1. The combination with a clip or shackle and a thill iron having a cross pin, of a recessed boss carried by the shackle and having a movable filling block or cover, a groove formed in the meeting faces of said boss and cover, and an ejector pivoted at one end of the boss and at its other end to the cover, substantially as described.

2. The combination with a clip or shackle and a thill iron having a cross pin or bolt, of a recessed boss carried by the shackle and having a hinged cover, a groove formed in the meeting faces of said boss and cover, and an ejector pivoted at one end to the boss and at the other end to the cover, substantially as described.

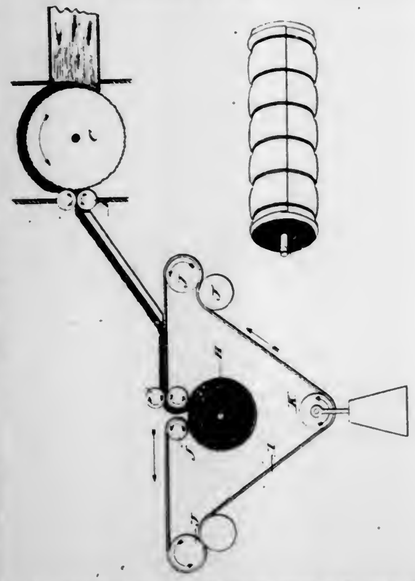
3. The combination with a clip or shackle and a thill iron having a cross pin or bolt, of a recessed boss carried by the shackle, a hinged cover adapted to fit the recess of the boss, the meeting faces of the recess and cover having a groove formed therein, an ejector pivoted at one end to the boss and at the other to the cover, and a locking bolt to secure the cover within the recess of the boss, substantially as described.

4. The combination with a clip or shackle and a thill iron having a cross pin or bolt, of a boss carried by the shackle and having a transverse groove, a cover also provided with a transverse groove, and an ejector comprising hinged links seated within channels formed through the groove of the boss, the ends of said ejector being pivoted to the boss and cover, and a spring pressed locking bolt to secure the cover to the boss, substantially as described.

5. The combination with a clip or shackle and a thill iron having a cross pin or bolt, of a recessed boss carried by said shackle and having a movable filling block or cover, a groove formed in the meeting faces of said recess and a cover, an ejector pivoted at one end to the boss and at the other to the cover, a bolt to secure the cover within the recess and a cord or chain connecting at one end to the bolt and leading through the eye of the shackle to the vehicle, substantially as described.

546,009. CYLINDRICAL COTTON-BALE AND METHOD OF MAKING SAME. JOHN W. GRAVES, Little Rock, Ark., assignor to James K. Jones, same place, Jane Lanigan, Fort Smith, Ark., (executrix of Thomas Lanigan, deceased,) and William E. Anderson, Washington, D. C. Filed Jan. 24, 1895. Serial No. 536,129. (No model.)

Claim.—1. The method of making cylindrical cotton bales, which consists in first forming a continuous sheet or bat of cotton, then in forming said sheet or bat into a roll which is continuously rotated so as to wind the sheet or bat spirally thereon layer upon layer, and in subjecting the sheet or bat to heavy pressure as each layer is wound in place on the roll, whereby a bale of cotton will be produced which will be in a tightly compressed condition throughout, and from which the said sheet or bat may be entirely unwound in a continuous unbroken condition, substantially as set forth.



2. The method of making cylindrical cotton bales, which consists in first forming a continuous sheet or bat of cotton, then in forming said sheet or bat into a roll which is continuously rotated so as to wind the sheet or bat spirally thereon layer upon layer, the sheet or bat being subjected to heavy pressure as each layer is wound in place on the roll, and finally, and when the roll is subjected to pressure, in applying and securing a covering to the completed bale to prevent expansion thereof, whereby a bale of cotton will be produced which will be in a tightly compressed condition throughout and from which the sheet or bat may be entirely unwound in a continuous unbroken condition, substantially as set forth.

3. The method of making cylindrical cotton bales, which consists in first forming a continuous sheet or bat of cotton, then in forming said sheet or bat into a roll which is continuously rotated so as to wind the sheet or bat spirally thereon layer upon layer, and in subjecting said sheet or bat to heavy pressure as it is wound in place on the roll so as to expel all air out of the same, whereby a bale of cotton will be produced which will be substantially fire proof, substantially as set forth.

4. The method of making cylindrical cotton bales, which consists in first forming a continuous sheet or bat of cotton, then in subjecting said sheet or bat to a preliminary compression, whereby air is expelled out of the same, and strength and smoothness imparted to the sheet or bat, then in forming said compressed sheet or bat into a roll which is continuously rotated so as to wind the compressed sheet or bat spirally thereon layer upon layer, and in subjecting the said sheet or bat to a second and final compression as it is wound in place on the roll, so as to expel any air from the bat or sheet not expelled by the preliminary compression, whereby a bale of cotton will be produced which will be substantially fire proof, substantially as set forth.

5. As a new article of manufacture, an improved cotton bale composed of a continuous sheet or bat of cotton wound in spiral form, and with each layer in a tightly pressed condition, whereby a bale will be produced which will be of an approximately uniform density throughout, and from which the said sheet or bat may be entirely unwound in a continuous unbroken condition, substantially as set forth.

6. As a new article of manufacture, an improved cotton bale composed of a continuous sheet or bat of cotton from which all air has been expelled, wound in spiral form, and subjected to pressure, whereby a bale will be produced which will be in a tightly compressed condition throughout, and from which the said sheet or bat may be entirely unwound in a continuous unbroken condition, substantially as set forth.

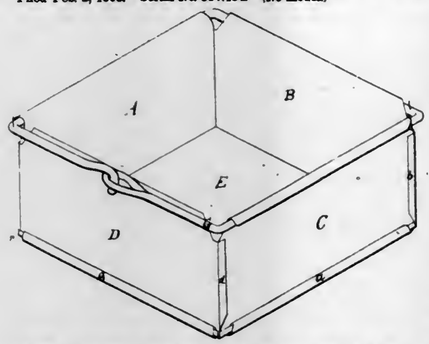
7. As a new article of manufacture, an improved cotton bale composed of a continuous sheet or bat of cotton from which all air has been expelled, wound in spiral form, and with each layer in a tightly pressed condition, whereby a bale will be produced which will be of an approximately uniform density throughout, which will be substantially fire-proof, and from which the said sheet or bat may be entirely unwound in a continuous unbroken condition, substantially as set forth.

8. As a new article of manufacture, an improved cotton bale composed of a continuous sheet or bat of cotton wound in spiral form, and with each layer in a tightly pressed condition, whereby a bale will be produced which will be of an approximately uniform density throughout, and from which the said sheet or bat may be entirely unwound in a continuous unbroken condition, the bale being covered or wrapped with a covering or wrapping applied under pressure, substantially as set forth.

9. As a new article of manufacture, an improved cotton bale composed of a continuous sheet or bat of cotton wound in spiral form, and with each layer in a tightly pressed condition whereby a bale will be produced which will be of an approximately uniform density throughout, and from which the said sheet or bat may be entirely unwound in a continuous unbroken condition, the bale being covered or wrapped with a covering or wrapping and tied or bound with ties or bands applied under pressure, substantially as set forth.

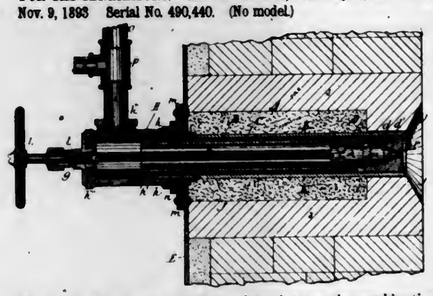
10. As a new article of manufacture, an improved cotton bale composed of a spindle or core, with a continuous sheet or bat of cotton wound thereon in spiral form, and with each layer in a tightly pressed condition, whereby a bale will be produced which will be of an approximately uniform density throughout, and from which the said sheet or bat may be entirely unwound in a continuous unbroken condition, substantially as set forth.

546,010. FEED-BOX. WILLIAM E. GREATHOUSE, Mason, Ohio. Filed Feb. 2, 1895. Serial No. 537,134. (No model.)



Claim.—In knock down feed-boxes the two opposite sides A. C. having hinged stiff wires F G in their upper edges and being joined to the bottom E with loose seams *a* in combination with two opposite sides B and D having their sides extended a little above the stiff wires F and G and all being joined to the bottom E with loose seams, substantially as and for the purpose set forth.

546,011. OIL ATOMIZING AND CARBURETING APPARATUS FOR GAS-GENERATORS. OLAF N. GULDLIN, Fort Wayne, Ind. Filed Nov. 9, 1893. Serial No. 490,440. (No model.)

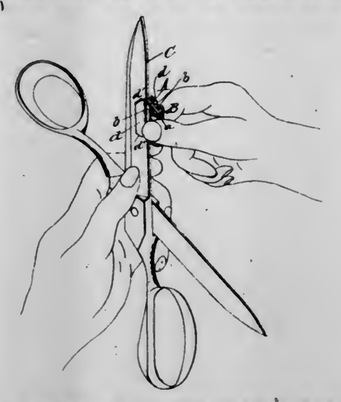


Claim.—1. In an apparatus for carbureting gas, the combination with a casing having a nozzle and valve-seat, of an atomizing plug inclosed within said casing and provided with a valve-end and adapted to close on said seat and series of circumferential lugs arranged to break joints, longitudinally, one with another, and form intermediate passages for atomizing the oil, an operating stem connecting with said plug, and an oil supply pipe connecting with the casing, substantially as described.

2. In an apparatus for carbureting gas, the combination with a casing of an atomizing plug inclosed therein and provided with a series of circumferential lugs having passages parallel with the axis between them, and a series of lugs disposed diagonally to the longitudinal axle of the plug and having diagonal passages between them for atomizing the oil and giving it a whirling motion, and the oil supply pipe connecting with the casing, substantially as described.

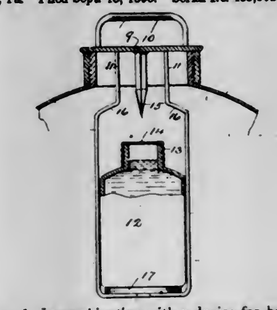
3. In combination with the carbureting chamber of a superheater, a casing and nozzle having a valve seat, a cylindrical atomizing plug having a solid valve end adapted to close on said valve seat, and the body of said plug, also provided with circumferential lugs, so disposed as to break joints one with another, longitudinally, and part of said lugs being disposed diagonally to the axis and having diagonal or spiral passages between them for atomizing the oil and giving it a whirling motion, a stem connecting with said plug, and an oil supply pipe connecting with the casing, substantially as described.

546,012. SHEARS OR SCISSORS SHARPENER. ALBERT H. HALL, Weston, Mich. Filed Oct. 23, 1894. Serial No. 526,738. (No model.)



Claim.—As an improved article, the pocket device for sharpening bevel edge cutting tools, herein shown and described, consisting of the spring metal holder B, comprising the spring loop *a*, clamping jaws *b*, *b*, and the guide flanges *d*, *d*, bent outwardly in opposite directions, and inclined at an angle to the clamping jaws, forming bearings for the article to be sharpened, in combination with the adjustable and reversible file, substantially as and for the purpose specified.

546,013. FIRE-EXTINGUISHER. THOMAS F. HANDLY, Allegheny, Pa. Filed Sept. 13, 1893. Serial No. 485,392. (No model.)



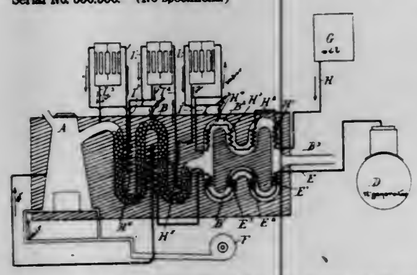
Claim.—1. In combination with a device for breaking the seal of the acid bottle substantially as described, a heavy weight or washer arranged beneath the said bottle to increase the velocity when dropped by gravity, as described.

2. In a fire extinguisher the combination with the receptacle, of a cap having secured thereto a barb, a cage extending downwardly from the cap, and having shoulders to limit the movement of the bottle, the mouth of said bottle having a breakable disk covering and a weight arranged beneath the bottle increasing the velocity of the drop of the bottle.

3. In combination with a receptacle, of a wire cage suspended therein, open at the sides and bottom, a bottle resting in the cage having a breakable disk cover, a barb arranged above and in alignment with the mouth of the bottle, and a shoulder on the cage for limiting the movement of the bottle, and a weight on the bottom of the bottle for increasing the velocity of the drop, as and for the purpose specified.

546,014. PROCESS OF MANUFACTURING GAS.

ERA S. HOYT, Detroit, Mich., assignor, by direct and mesne assignments, to the Hoyt-Speer Compound Gas Company, Limited, same place. Filed Dec. 1, 1894. Serial No. 530,530. (No specimens.)



Claim.—1. In the manufacture of gas, the method of enriching gas obtained from other sources with petroleum oil, which consists in separately and continuously generating vapors from petroleum oil by heating a current of oil at increasing temperatures, separating from the heated current vapors generated from the oil at such temperatures at which the constituents of the oil are converted into fixed vapors, in separating the fixed vapors from the oil and condensable vapors by cooling and then combining the fixed vapors with the gas to be enriched at substantially the temperature at which such vapors became fixed, substantially as described.

2. In the manufacture of gas the method of enriching the hot gases from the generator with petroleum oil, which consists in continuously generating from petroleum the fixed vapors of the constituents of the oil by subjecting a current of oil to vaporization in a series of heaters at increasing temperatures, corresponding to the temperatures at which the constituents of the oil are successively converted into fixed vapors, in separating the fixed vapors of such constituents from the oil and other vapors and then introducing and combining such fixed vapors separately with the hot gases at specified temperatures approximating respectively the same as that at which such vapors became fixed, substantially as described.

3. In the manufacture of gas, the method of enriching the hot gases from a generator with the fuel oil, which consists in conducting the hot gases from the generator through a conduit in contact with refractory material, in passing a current of oil through a series of heaters in suitable contact with the hot gases from the generator to heat the oil successively in the heaters to the temperatures at which the constituents of the oil are separately converted into fixed vapors, in separating the fixed vapors generated in each heater from the oil and other vapors, and in introducing such fixed vapors into the conduit in contact with the hot gases respectively where the temperature is approximately that at which such vapors became fixed, substantially as described.

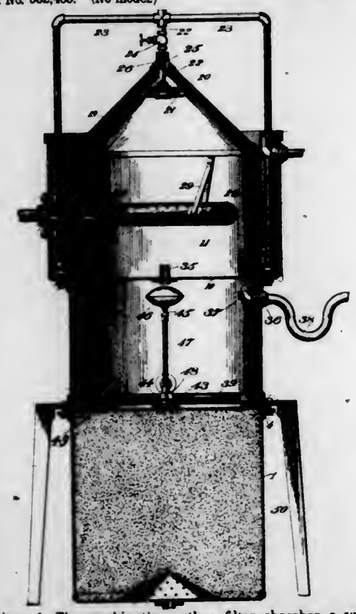
4. In the manufacture of gas, the method of enriching the hot gases from the generator, which consists in conducting the same through a conduit in contact with refractory material and thereby storing the heat, in passing a current of oil in opposite directions to the flow of the hot gases through a series of heaters and heating it with the stored heat successively in the different heaters to the temperatures at which the constituents of the oil are converted into permanent vapors in cooling the vapors from each heater and carrying the products of condensation into the next heater and in introducing the remaining vapors into the heated conduit and combining them with the hot gases at points where the temperatures are substantially that at which such vapors became fixed, substantially as described.

5. The continuous process of manufacturing gas, which consists in blasting bituminous coal to incandescence, introducing air and superheated steam, storing the heat of the hot products in a regenerating chamber containing refractory materials, in subjecting a current of petroleum oil alternately to the heat of the hot products at temperatures at which the constituents of the oil are separately converted into fixed vapors and to cooling in a condenser, and in introducing the fixed vapors attained after each cooling into the hot products at approximately the temperature at which the vapors became fixed, substantially as described.

6. The continuous process of manufacturing gas which consists in blasting coal in a single generating chamber and storing the heat of the hot products in a regenerating chamber containing refractory material in subjecting a current of steam and one of petroleum oil to the heat of the hot products at gradually increasing temperatures and thereby superheating steam and generating vapors of petroleum, in introducing the superheated steam into the generator and decomposing it in contact with the fuel, in separating from the petroleum oil the fixed vapors generated at a temperature at which the constituents of the oil are successively converted into fixed vapors, in introducing said vapors into the regenerating chamber and combining them with the products from the generator at temperatures substantially that by which the vapors became fixed and in subjecting the residuum of the oil directly to the action of the hot products from the generator, substantially as described.

546,015. APPARATUS FOR STERILIZING AND PURIFYING LIQUIDS.

LEICESTER P. KING, Cincinnati, Ohio. Filed Dec. 20, 1894. Serial No. 532,485. (No model.)



Claim.—1. The combination with a filter chamber, a superimposed reboiler and superimposed steam condensing chamber communicating with a source of steam supply, the filter chamber, reboiler and steam condensing chamber communicating in consecutive order from the condensing chamber down, substantially as set forth.

2. The combination with a steam condensing chamber and steam supply pipe, of a reboiler and an over-flow trap communicating therewith, a filter chamber, and an intermediate, automatic valve mechanism, substantially as set forth.

3. The combination with a filter chamber, superimposed reboiler, and superimposed steam condensing chamber, of a water tank surrounding the same, a steam supply pipe communicating with the steam condensing chamber, a spray head within the steam condensing chamber, and a water supply pipe communicating with the spray head through the water tank, substantially as and for the purpose specified.

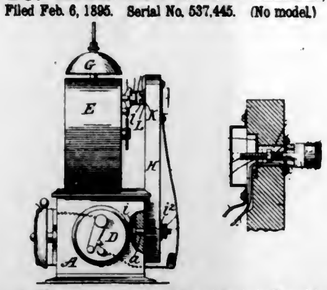
4. The combination with legs, a filter chamber and a reboiler and means for uniting them, of a partition plate and a steam condensing chamber, and means for uniting it to the reboiler, all substantially as set forth.

5. The combination with a reboiler and a superimposed steam condensing chamber, of a partition plate extending beyond the flanges, means for securing the flanges and partition plate in a tight joint, and a water tank wall secured to the periphery of the partition plate around the outside of the steam condensing chamber, substantially as and for the purpose specified.

6. As a new article of manufacture, a structure comprising the combination with legs, a sheet metal filter chamber and flanges thereon, a reboiler and flanges thereon, a bottom in the reboiler and means for uniting the flanges and the legs to form a tight joint, of a steam condensing chamber, flanges thereon, a flange on the upper end of the reboiler, a partition plate adapted to be secured in a tight joint between the said flanges, and means for uniting the parts together, substantially as set forth.

546,016. ELECTRIC ALARM-CLOCK.

WILLIAM KIST, Hoboken, N.J. Filed Feb. 6, 1895. Serial No. 537,445. (No model.)



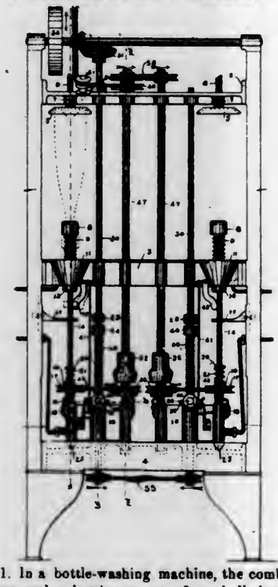
Claim.—1. The combination with an electric bell and battery, of a rod adapted to be engaged by the alarm key of a clock and rotatable and movable longitudinally in its bearings, a spring to act upon said rod, pins upon which the head of said rod may rest and from which it may be dislodged by a partial rotation, a contact plate with which said rod is brought in contact by said spring, and electrical connections from said rod and plate to said bell and battery, substantially as shown and described.

2. The combination with a box adapted to receive a battery and to support a clock and an electric bell, a standard secured to said box, a circuit closer supported to said box, a circuit closer supported by said standard and having an operating rod with a slotted head to engage the alarm mechanism of a clock, and connections from said circuit closer to said bell and battery, substantially as shown and described.

3. The combination with a box adapted to receive a battery and to support a clock and an electric bell, of a standard having a vertical slot, said box having in its rear side a horizontal slot, a headed screw provided with a nut passed through said slots and securing the standard adjustably to the box, a circuit closer carried by said standard and adapted for engagement with and operation by the alarm key of a clock, and electrical connections from said circuit closer to said bell and battery, substantially as shown and as described.

546,017. BOTTLE-WASHER.

HENRY LA CASSE, Rochester, N. Y. Filed Oct. 23, 1894. Serial No. 526,716. (No model.)



Claim.—1. In a bottle-washing machine, the combination with the main frame, and a bottle-support, of a spindle having a brush thereon, a carriage on which said spindle is mounted, a reversely threaded screw, a switch on the carriage engaging the screw, and a spring on the carriage for holding it, substantially as described.

2. In a bottle-washing machine, the combination with the main frame, and a bottle-support, of a brush carrying spindle, a carriage on which it is mounted, a reversely threaded screw having the concentric groove at one end and the reversing projection at the other, a switch on the carriage engaging the screw, and a spring for holding it in engagement with either of the threads, substantially as described.

3. In a bottle-washing machine, the combination with the main frame, and a bottle-support, of a brush carrying spindle, a carriage on which it is mounted, a reversely threaded screw having the concentric groove at one end, a switch on the carriage engaging the screw, a spring for holding it in engagement with either of the threads, and a handle controlled by the operator for engaging the switch with one of the threads, substantially as described.

4. In a bottle-washing machine, the combination with the main frame, and bottle-holding devices embodying a movable part, of a brush carrying spindle, a carriage on which it is mounted, actuating devices for reciprocating the carriage and connections between the actuating devices and the movable part of the bottle-holder, whereby when a bottle is inserted the carriage is automatically moved, substantially as described.

5. In a bottle-washing machine, the combination with the main frame and the bottle-holder having a movable member, of a movable carriage, a brush carrying spindle thereon, and actuating devices for reciprocating the carriage, and connections between said devices and the movable member of the bottle-holder for causing the movement of the carriage when a bottle is inserted, substantially as described.

6. In a bottle-washing machine, the combination with the frame, a movable carriage and a rotary spindle thereon carrying a brush, and actuating devices for reciprocating the carriage, of the movable sleeve for cooperating with the mouth of the bottle, the lever cooperating with the sleeve and the rod connected thereto for engaging the carriage-reciprocating devices, substantially as described.

7. In a bottle-washing machine, the combination with the frame, the movable carriage, and the rotary brush-carrying spindle thereon, the reversely threaded screw, and the switch on the carriage engaging it, of the bottle-holder embodying the movable sleeve, the lever, and the rod connected to the switch for turning it, substantially as described.

8. The combination with the reciprocating carriage, the spindle thereon having the pulley, and the clutch section connected to the latter, of the rotary shaft and the clutch section splined thereto and longitudinally movable thereon, substantially as described.

9. The combination with the reciprocating carriage, the spindle thereon having the pulley, the clutch section connected to the latter, of the rotary shaft, the clutch section splined thereto, and the stop for limiting the movement of the said section in one direction, substantially as described.

10. The combination with the main frame, the rotary shaft, the clutch section splined thereon, and the reversely threaded screw, of the reciprocating carriage and the rotary spindle thereon, the clutch section cooperating with the one on the shaft and connected with the spindle, and the switch cooperating with the screw, substantially as described.

11. The combination with the reversely threaded screw, and the collar at one end thereof having the inclined face, the concentric groove at the other end of the screw, of the reciprocating carriage, the rotary spindle thereon, the switch plate and the pintle in the carriage, and the spring engaging the switch and holding it in adjusted position, substantially as described.

12. The combination with the reversely threaded screw, and the collar thereon, of the reciprocating carriage, and the rotary brush spindle thereon, the switch cooperating with the screw, the spring for holding it, the bottle-holder having the movable member, the rod having the projection beneath the switch, and the lever connected to the rod and operated by the bottle-holder, substantially as described.

546,018. APPARATUS FOR DISTILLING TAR AND REFINING TURPENTINE.

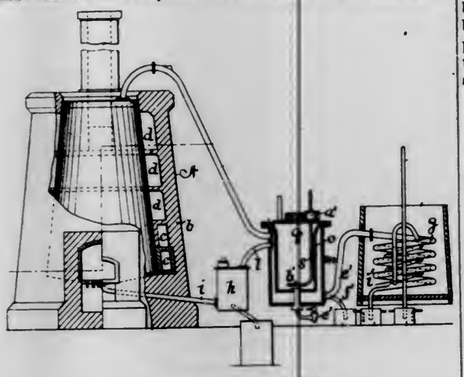
KARL LOFSJELM, Uleaborg, Finland. Filed Oct. 11, 1894. Serial No. 525,650. (No model.) Patented in Finland Aug. 10, 1892, No. 429, and Feb. 7, 1893, No. 446, and in Sweden Dec. 19, 1893, No. 5,052.

Claim.—1. The combination of the tar still, the turpentine still consisting of the jacketed turpentine holding tank, the tar receiver connected with the tar still by the pipe descending from the tar still thereto, and the condenser for the wood gases, said tar still and tar receiver connected with the jacket of the turpentine still for conducting the wood gases thereto, and said condenser connected with said jacket of the turpentine still for receiving the gases therefrom substantially as described.

2. The combination of the tar still as A, the turpentine still consisting of the turpentine holding tank *o*, and the inclosing jacket *m*; condenser for the wood gases as *g*, tar receiver as *h*, the pipe as *n*, connecting the tar still and turpentine still; the pipe *e* connecting the jacket of the turpentine still with the condenser *g*, and the branch pipe *f*" for discharging the condensed vapors from the said jacket of the turpentine still substantially as described.

3. The combination with the condensing worm for the wood gases of the branch worm connected with the lower part of said worm and

returning upward and thence downward along said condensing worm, and connected with a separate receiver substantially as described.



546,019. EAVES-TROUGH HANGER. JOHN R. LOGAN, Manchester, N. H. Filed Feb. 2, 1895. Serial No. 537,093. (No model.)



Claim.—In an eaves trough hanger the combination with the vertical bar, of the securing-plate having its inner edge bent over at a right angle and its upper end bent over on a diagonal line forming an inclined angle extension and means for adjustably securing said plate to the bar, substantially as described.

546,020. CULTIVATOR. JOHN M. W. LONG, Hamilton, Ohio, assignor to the Long & Allstatter Company, same place. Filed July 11, 1895. Serial No. 555,650. (No model.)



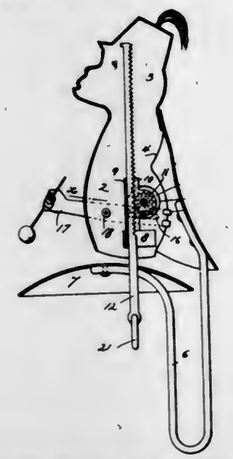
Claim.—In a cultivator the combination, substantially as set forth, of an arch, spindles journaled therein, gangs coupled to the spindles, wheel-axles coupled to the spindles, and having forwardly projecting hitch-levers, bars connected intermediately to the spindles, guide-loops carried by the forward ends of the bars, and shoes carried by the rear ends of the bars.

546,021. TOY. ROYER LUCKENBACH, Philadelphia, Pa., assignor, by direct and mesne assignments, to the Waterbury Button Company, Waterbury, Conn. Filed Mar. 2, 1895. Serial No. 540,283. (No model.)

Claim.—1. In a toy drum-beater, the combination, with the body of the drum-beater, the arms of which are pivotally connected therewith, of a drum, a pinion supported in the body and in operating connection with said arms, and a rack bar connected with said pinion, and extending from the body for operating the device, substantially as shown and described.

2. In a toy drum-beater, the combination, with the body of the drum-beater, the arms of which are pivotally connected with the body, a pinion supported within the body and having angular or crank levers connected with the opposite ends of its shaft, said levers being also in operative connection with the arms of the figure, and a rack-bar for operating the pinion, extending from the body, substantially as shown and described.

3. A toy drum-beater, consisting of a figure having arms pivoted near their middles to the figure, and each being provided with a slot back of the pivoted connection, a pinion supported on a shaft in the body and provided at each side with an angular or crank lever, one part of which is secured to the shaft and the other passed through the slot in one of the arms, and a rack-bar for operating the pinion, substantially as shown and described.



4. A toy drum-beater, consisting of a figure having arms pivotally connected near their middles to the body of the figure, a pinion supported within the body and provided with crank-levers, one of which is connected with each arm by means of a slot formed therein, and a rack-bar for operating the pinion, substantially as shown and described.

5. A toy drum-beater, consisting of a figure, having arms pivotally connected with the body of the figure, a pinion supported within the body of the figure and in operative connection with the pivoted arms, and a rack-bar for operating the pinion, substantially as shown and described.

6. The combination, in a toy, of a figure, having arms pivotally connected with the body thereof, a pinion within the body in operative connection with the pivoted arms, a rack-bar for operating the pinion, and a drum, supported in proximity to the pivoted arms by a handle secured to the figure, substantially as shown and described.

7. In a toy drum-beater, the combination of a figure, the body of which is open longitudinally, rearwardly and curved, as shown and described, of arms pivotally connected near their middles with the sides of the figure, and the rear ends being each provided with a longitudinal slot and carried back and curved around the edge of the curved body portion, a pinion supported on a shaft within the figure, and provided on each side with an angular or crank lever, one part of which is secured to the shaft and the other passed outwardly and through the slot in one of the arms, a rack-bar for operating the pinion, and a drum, supported in proximity to the pivoted arms by a handle secured to the figure, substantially as shown and described.

546,022. BALL-BEARING FOR SPINNING AND TWISTING MACHINE SPINDLES. EMILE MARTENS, Providence, R. I. Filed Mar. 7, 1895. Serial No. 540,855. (No model.)



Claim.—1. As an improved article of manufacture, the hereinbefore described ball-bearing for spindles of cop spinning and twisting machines, the same consisting essentially of a base member, a series of anti-friction balls arranged therein, a suitable cover or cap-plate resting upon said balls and capable of being independently rotatable with respect to the base member, and a removable central bushing or sleeve arranged to be out of contact with the live spindle and fixed to said base and having its head portion arranged to maintain said cap-plate in position, and being also arranged to receive a dead-spindle.

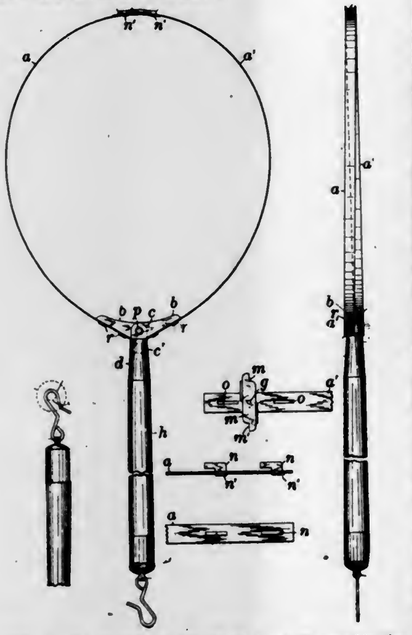
2. In a ball-bearing of the class described, the combination with a circular base having a groove formed in its upper face and a series of anti-friction balls arranged in said groove, of the rotatable cap-plate resting upon said balls and having its outer portion extending downwardly and around the sides of the base, and a removable shouldered bushing or sleeve arranged to be out of contact with the live spindle and screwed into said base and engaging the cap-plate to hold the latter in position, substantially as set forth.

3. In a ball-bearing of the class described, the combination with the grooved base, balls mounted therein, and a central bushing or sleeve screwed into the base, of the rotatable cap-plate arranged to engage with the head of said bushing to hold the plate in position, and a removable washer or cover forming a part of said cap-plate, substantially as hereinbefore described.

4. The combination with a suitably mounted non-rotatable or dead-spindle, and a rotatable or live-spindle mounted thereon, of the ball-bearing device substantially as hereinbefore described, the same consisting of the supported base member *a*, a removable central bushing *b* out of contact with the said live spindle and fixed into the base and having said dead-spindle passing therethrough, a cover or cap-plate interengaging with the head of said bushing and supporting the live-spindle and capable of being rotated by the latter, and a series of movable anti-friction balls interposed between the base member and cap-plate, said balls supporting the latter and the load resting thereon.

5. In a spinning or twisting machine, the combination with a dead-spindle, a rotatable or live-spindle mounted thereon and a lifter-plate, of a ball-bearing device supported by the lifter-plate through which parts said dead-spindle passes, said ball-bearing having a cap-plate extending downwardly around the bearing-base and capable of being rotated by the live-spindle, a removable bushing screwed into the bearing base member, and a lubricating-disk let into the upper face of the lifter plate and in engagement with the under side of the said bearing, substantially as described.

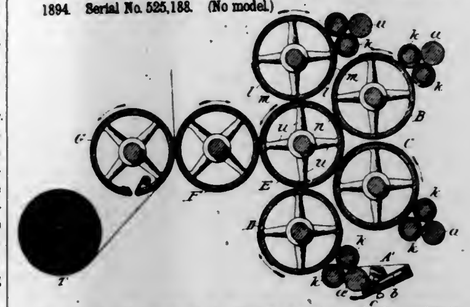
546,023. COLLAPSIBLE LANDING-NET FRAME. AUGUST F. MEISSELBACH and WILLIAM MEISSELBACH, Newark, N. J. Filed Feb. 26, 1895. Serial No. 539,722. (No model.)



Claim.—1. In a collapsible landing-net frame, the combination, with a handle *h*, of the bows *a a'* having their butt ends secured to the said handle by suitable means and provided at their outer ends, the one with one or more shouldered rivets having hooked heads, and the other with one or more slots to admit the heads of such rivets and with a catch plate *m* pivoted upon its outer face adjacent to the said slot or slots and engaging the shouldered rivets, substantially as shown and described.

2. In a collapsible landing-net frame, the combination, with a handle *h*, of the bows *a a'* having their butt ends secured to the said handle by suitable means and provided at their outer ends, the one with one or more shouldered rivets having hooked heads, and the other with one or more slots to admit the heads of such rivets and with a catch plate *m* having stop shoulders *m'* pivoted upon its outer face adjacent to the said slot or slots and engaging the shouldered rivets, substantially as shown and described.

546,024. METHOD OF AND APPARATUS FOR PRINTING IN COLORS. THOMAS W. MORRISON, North Plainfield, N. J. Filed Oct. 8, 1894. Serial No. 525,188. (No model.)



Claim.—1. The method of printing in colors, which consists in setting and adjusting type and design blocks in a form, taking a proof or proofs of the form, preparing masks from said proof or proofs whose cut-away portions correspond to the corresponding portions of the form that are to be inked in the several colors, casting from each of said masks a stereotype shell having a raised active surface conforming to the cut-away portion of the mask, and mounting each of said shells upon an inking roller stock so as to supply to the corresponding parts of the printing surface the several colors intended and printing from said printing surface; substantially as described.

2. In a printing press, the combination with the form, of a form-inking cylinder, sets of inking mechanisms, each set supplying its individual color or colors and the sets being arranged in series about the form-inking cylinder, and the roller which supplies ink to the form-inking cylinder from one of the sets, having an inking projection or active surface, overlapping, in its location, an inking projection on an active surface upon the like roller of another set, whereby the first projection will deposit a portion of its ink upon the ink already deposited on the form-inking roller by the second projection, and means for varying the amount of ink supplied to each inking set; substantially as described.

3. The method of printing a design, which consists in producing the same upon an inking surface in patches of ink of varying thickness corresponding to the tones and shadings to be printed, the thickest portions of said patches being upon the highest projections of the inking surface and the thinner portions being upon the lower depressions thereof, transferring said ink design, as thus received by the inking surface, to the printing surface and printing from the printing surface; substantially as described.

4. The method of printing a design, which consists in producing the same upon an inking surface in patches of ink of varying thickness corresponding to the tones and shadings to be printed, inking the printing surface from said inking surface, and printing from the printing surface, said printing surface bearing the negative configuration of the design to be printed; substantially as described.

5. The method of printing a design, which consists in producing the same upon an inking surface in patches of ink of varying thickness corresponding to the tones and shadings to be printed, inking the printing surface from said inking surface, and printing from the printing surface, said printing surface bearing the bulged or swelled negative configuration of the design to be printed; substantially as described.

6. The method of inking a printing surface with patches of ink of varying thickness corresponding to the tones or shadings of a design to be printed, which consists in casting a fac-simile of a swelled negative of the design, inking said fac-simile, transferring said ink to an inking surface and then transferring it to the printing surface; substantially as described.

7. The method of inking a printing surface with patches of ink of varying thickness corresponding to the tones or shadings of a design to be printed, which consists in casting a fac-simile of a swelled negative of the design, inking said fac-simile, transferring said ink to an inking surface and then transferring it to the printing surface, said printing surface bearing a cast fac-simile of the swelled negative; substantially as described.

8. The method of printing a design in colors, which consists in preparing cast fac-similes of fractional portions of a swelled negative of the design, inking said fac-similes in various colors, transferring said colors to an inking surface, transferring them therefrom to the printing surface, and finally printing from the latter, substantially as described.

9. The method of producing the shell of an inking roller, which consists in taking a proof from the printing form, preparing a mask from said proof, superimposing the mask upon a matrix and thereupon casting upon said matrix; substantially as described.

10. In molding apparatus for stereotyping the surfaces of inking rollers, a mask made from a proof of the form, and having a flexible backing or matrix; substantially as described.

11. In molding apparatus for stereotyping surfaces in relief, a combined mask and matrix having no fixed or established curvature, but freely flexible from a plane surface to a curved surface and back again, whereby it is at once adapted to cast one plate flat, and the next one curved, and so on, as desired; substantially as described.

12. In a press for printing a design from a printing surface or form, an inking mechanism having an active surface provided with a fac-simile of the whole or a portion of a swelled gelatine negative of the design to be printed; substantially as described.

13. In a press for printing in blended colors, the combination with the form, of a form-inking cylinder, sets of inking mechanisms, each set supplying its individual color or colors and the sets being arranged in series about the form inking cylinder, and the roller which supplies ink to the form-inking cylinder from one of the sets, having an inking projection or active surface, overlapping, in its location, an inking projection or active surface upon the like roller of another set, whereby the first projection will deposit a portion of its ink upon the ink already deposited on the form inking roller by the second projection; substantially as described.

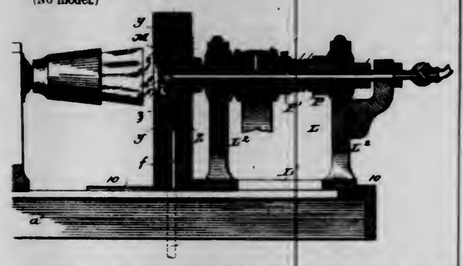
14. In a press for printing in blended colors, the combination with the form, of a form-inking cylinder, sets of inking mechanisms, each set having a fountain supplying a number of different colors to the fountain roller side by side, the sets being arranged in series about the form-inking cylinder and the arrangement or succession of the colors varying in the fountains of the different sets, whereby any particular part of the form-inking cylinder may receive any one of a number of blends; substantially as described.

15. In a printing press, the combination with the form having a picture plate consisting of a fac-simile of the swelled gelatine negative of the design to be printed, a form-inking roller, and inking mechanism supplying ink to the latter, said inking mechanism having active surfaces which constitute a fac-simile of the swelled gelatine negative of the design; substantially as described.

16. In a press for printing in colors, an ink fountain or trough having a number of ink supply reservoirs side by side and having a fountain roller and mechanism for laterally reciprocating the one with relation to the other; substantially as described.

17. In a press for printing in colors, an inking fountain provided with a number of ink supply reservoirs arranged side by side, and means for closing or opening the outlet of each reservoir, said reservoirs being telescopic so as to be lengthened or shortened as desired; substantially as described.

546,025. GLASS-POLISHING MACHINE. GEORGE W. MCKIM and AMOS R. WILSON, Martin's Ferry, Ohio, assignors of one-third to Martin Huonker, same place. Filed Mar. 23, 1894. Serial No. 505,484. (No model.)



Claim.—1. In a machine, as described, in combination with the glass holding chuck, of a rotary mandrel having a grinding wheel connected therewith arranged to face the glass body and having a series of yielding bearing faces, whereby it is adapted to yield laterally and longitudinally, relatively to the said mandrel, substantially as shown and described.

2. In a machine for the purpose described, a rotary grinding wheel shaft or mandrel, having a socket like portion at the front end, provided with a series of cushion members, and a grinding wheel held in such socket, and connected thereto to rotate therewith but longitudinally movable therein against the cushions, all substantially as shown and described.

3. In a machine for the purposes described, the combination with the glass holding devices, a carriage movable longitudinally toward the said devices, a mandrel journaled on such carriage, a socket member carried thereby and a grinding wheel held therein for a universal yielding rocking motion, as set forth.

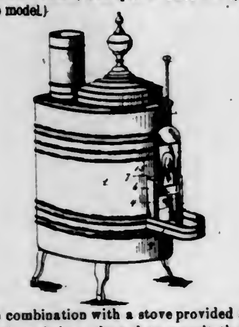
4. In a machine for the purpose described, the combination with the movable carriage, the rotary grinding wheel held on such carriage, a water supply, adapted to lead the water to the front face of the wheel, and cut-off valves in such supply operated by the reverse movements of the carriage, substantially in the manner and for the purpose described.

5. In a machine for the purpose described, the combination with a supporting frame, a hollow mandrel mounted thereon, a grinding wheel having a central aperture held on one end thereof, a water feed pipe held in such pipe, having a detachable discharge nozzle projected through the grinding wheel aperture, and longitudinally adjustable therein, all arranged substantially as shown and described.

6. In a machine for the purposes described, the combination with the main frame, the longitudinally movable carriage having a housing or trough like member at the front end, and the mandrel journaled therein, of the chuck N detachably held on the end of such mandrel the centrally apertured grindstone detachably held on the chuck N, and the water feed pipe projected through the grindstone mandrel and having radially projected perforations in its front end, all arranged substantially as shown and described.

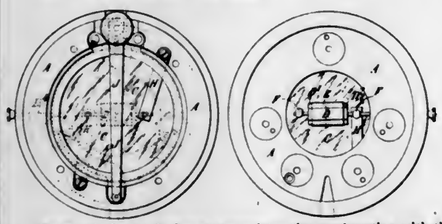
7. The combination of the main frame, the longitudinally movable carriage L, the mandrel, the chuck N detachably held thereon, having yielding bearings or cushions W, the grindstone held against the cushions within the chuck N, and means for preventing the stone moving outward, from the chuck, all substantially as shown and described.

546,026. STOVE. LEONARD NUTZ, Springfield, Mo., assignor of one-half to W. W. Donham, same place. Filed Oct. 8, 1894. Serial No. 525,274. (No model.)



Claim.—The combination with a stove provided at its front with openings, one of them being enlarged to permit the insertion of a shovel, and a guide arm extending horizontally from the top of the stove and provided with a perforation, of a casing mounted on the stove and covering the openings, and comprising vertical sides provided with ways, a top connecting the upper ends of the sides, and a bottom, and a vertically movable damper mounted in said ways and closing the front of the casing and provided with an upward extending operating rod arranged in the perforation of the guide arm and frictionally engaging the latter, whereby it is secured at the desired adjustment, substantially as described.

546,027. TELEPHONE. EDGAR C. PARKER, London, England, assignor of one-half to James Ronald Watson, same place. Filed Feb. 14, 1895. Serial No. 538,431. (No model.)



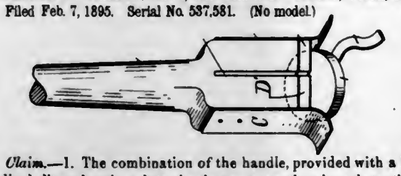
Claim.—1. In a telephone transmitter the combination with the vibrating diaphragm of a rotatable carbon holder carried in bearings thereon, and carbon in said holder, substantially as and for the purpose specified.

2. In a telephone transmitter the combination with a vibrating diaphragm of a rotatable carbon holder mounted in bearings thereon and filled or partially filled with carbon fibers substantially as, and for the purpose, specified.

3. In a telephone transmitter the combination with the vibrating diaphragm of a rotatable carbon holder, mounted in bearings thereon, the said holder being constructed in two parts joined together by insulating material, and carbon fibers in said holdor, substantially as, and for the purposes, specified.

4. In a telephone transmitter the combination with the vibrating diaphragm of a rotatable carbon holder mounted in bearings thereon, the said holder being constructed in two parts joined together by gold beater's skin placed aronnd the two parts, and carbon fibers in said holder, substantially as, and for the purposes, specified.

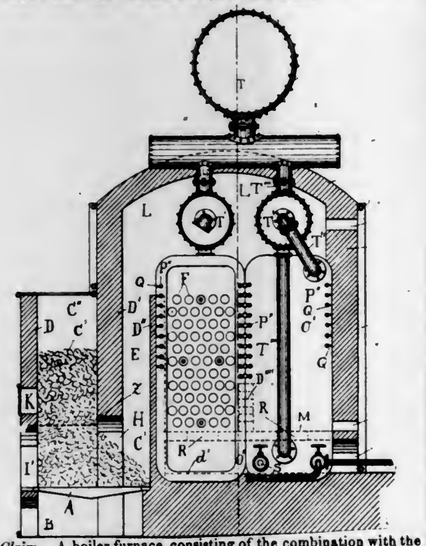
546,028. APPARATUS FOR PLACING TORPEDOES ON RAILS. CHARLES W. PEARSALL, Union, and HIRAM B. PEABODY, Vestal, N. Y. Filed Feb. 7, 1895. Serial No. 537,581. (No model.)



Claim.—1. The combination of the handle, provided with a longitudinal slit and spring-plates having a recess therein, substantially as illustrated and described.

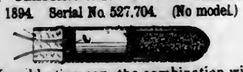
2. The combination of a handle provided with a longitudinal slit, and spring-plates, and cushion substantially as illustrated and described.

546,029. BOILER FURNACE. CALEB C. PRUDEN, Elizabeth, N. J. Filed Feb. 9, 1895. Serial No. 537,759. (No model.)



Claim.—A boiler furnace, consisting of the combination with the grate, of a first outside wall rising from one end of the grate and provided with a variable opening at its lower portion, a second, or middle, wall rising between the ends of the grate and having a permanent opening at its lower portion, a third, or inner, wall rising from the other end of the grate several times higher than the top of the opening in the second wall and located in a heating chamber of which the said second wall forms one side, sets of boiler tubes on the opposite side of the said third wall from the second wall and parallel to the third wall, a fourth wall located between the sets of tubes, a horizontal perforated partition M, below the tubes and above the base of the heating chamber and above the entrance to the chimney, wall boilers forming a portion of the opposite side walls of the furnace connected by tubes and having boiler heads flush with the outside surfaces of the side walls of the furnace retained by two sets of bolts, one set passing through the tubes and the other set passing through slotted flanges upon the wall boilers, said wall boilers extending below the partition M, to the base of the heating chamber.

546,030. BLASTING-CAP. GEORGE H. SAMPSON, Medford, Mass. Filed Nov. 2, 1894. Serial No. 527,704. (No model.)



Claim.—1. In a blasting-cap, the combination with a main-shell constituting the body of the cap, of a supplemental, charge-holding shell adapted in length and diameter to seat within said main shell with its lower end resting upon the bottom of said shell, said supplemental shell being in frictional engagement with said main shell to hold it to its seat therein, substantially as and for the purpose set forth.

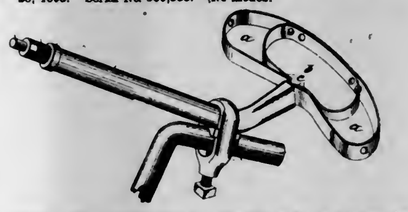
2. In a blasting-cap, the combination with the main shell constituting the body of the cap, of a supplemental, charge-holding shell adapted in length and diameter to seat within said main shell and provided with a lip or flange adapted to frictionally engage the inward surface of said main shell, substantially as and for the purposes specified.

546,031. CURLING-IRON. JOHN D. SCHOONMAKER, Chicago, Ill., assignor to Charles B. Gourlay, same place. Filed Aug. 4, 1894. Serial No. 519,451. (Model.)



Claim.—A curling iron comprising a mandrel with a clamp pivoted thereto, provided with a spring, said mandrel provided, with a shank on which is secured a pinion, said shank being inserted in a handle, the pinion on said shank engaging an idler, which in turn engages, with the cogs of an operating cap-like ring, and all being held in place by a retaining plate, secured to the end of the handle by screws, substantially as described for the purposes set forth in the specification.

546,032. BICYCLE-SADDLE. BENJAMIN S. SEAMAN, Canton, Ohio, assignor to the Gilliam Manufacturing Company, same place. Filed Feb. 25, 1895. Serial No. 539,535. (No model.)



Claim.—The combination in a bicycle saddle, of a frame, having an open trussed frame portion or cantle support, a pommel support H, an intermediate tubular section, having at its under side a V shaped groove *d*, a saddle piece R, having an upper V portion Q, adapted to the groove *d* of the tube, a circular under side adapted to the post D, and side recesses *e*, substantially as described and for the purpose set forth.

546,033. BOTTLE-HOLDER. JERRY W. SHEPARD, Aurora, Ill. Filed Apr. 6, 1895. Serial No. 544,786. (No model.)

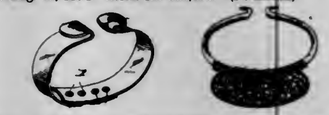


Claim.—1. A flexible holder for nursing bottles, the same being composed entirely of textile material and comprising an open loop shaped pocket which is divided transversely, elastic webbing introduced between and connecting the adjacent edges of the pocket formed by such transverse division thereof, and a lateral extension of said pocket formed with a loop hem for the reception of a securing device by means of which the bottle holder may be attached to a pillow or other support, substantially as specified.

2. A holding device for nursing bottles comprising a main body portion provided at one end with a loop hem for the reception of a safety pin adapting the device to be applied to a pillow or other support, a lower overturned or folded portion, a flap or extension piece

stitched to the main body portion intermediate the ends thereof, and two oppositely disposed pieces of elastic webbing interposed between and connected to the inner adjacent edges of the flap or extension piece and the lower folded or turned over portion of the main body portion, substantially as and for the purpose described.

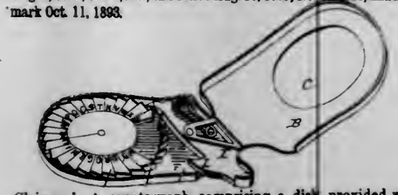
546,034. HARNESS-PAD HOOK. CHARLES W. SONE, Terrell, Tex. Filed Aug. 14, 1894. Serial No. 520,293. (No model.)



Claim.—1. A harness pad hook comprising two similar sections of substantially semi-elliptical shape which unitedly form a device, for the purpose described, of elliptical form, the inner or lower ends of the sections overlapping and being adjustably secured together, whereby the width of the pad hook can be varied to adapt it to different sizes of harness saddles, and the outer or upper ends curving to form finger grips for the purpose described.

2. The herein shown and described harness pad hook, comprising two similar sections of spring metal and of substantially semi-elliptical shape which unitedly form a pad hook of elliptical shape, said sections being convexed between their edges on the inner side and having their inner or lower ends overlapping and provided with a series of registering openings through which extend the fastenings by means of which the sections are held in an adjusted position and to the pad, the outer ends of the said sections terminating in finger grips, substantially as described for the purpose set forth.

546,035. CRYPTOGRAPH. GEORG STRÖMDAL, Christiania, Norway. Filed Dec. 18, 1894. Serial No. 532,250. (No model.) Patented in Norway Feb. 21, 1893, No. 3,121; in Germany Mar. 9, 1893, No. 72,239; in Austria-Hungary July 4, 1893, No. 25,544 and No. 143,731; in Sweden Aug. 5, 1893, No. 4,878; in France Aug. 18, 1893, No. 232,236, and in Denmark Oct. 11, 1893.



Claim.—1. A cryptograph comprising a disk provided with a fixed circular alphabet, and a concentric rotary disk also provided with an alphabet, said alphabet being made up of letters on interchangeable blocks, the said rotary disk having seats or sockets for the said blocks, whereby the relation between the letters of the fixed disk and the letters of the rotary disk may be altered at pleasure and maintained in such relation, substantially as described.

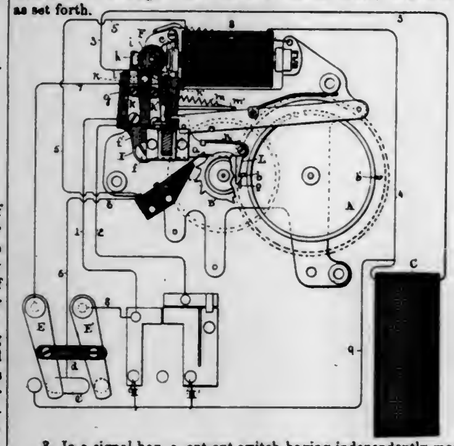
2. A cryptograph comprising a disk provided with a fixed circular alphabet, a concentric rotary disk also provided with an alphabet, said alphabet being made up of letters on interchangeable blocks, the said rotary disk having seats for the said removable blocks, and having also lips F forming teeth and serving to hold the removable blocks on their seats, and means for engaging the teeth and moving the disk step by step, substantially as described.

3. A cryptograph comprising a fixed circular alphabet, a concentric rotary disk also provided with an alphabet, said rotary disk having a series of teeth corresponding to the number of letters used and means for giving said movable disk a step by step movement comprising a lever pivoted within the case and having a push pawl and detent for engaging the teeth, said lever extending to the outside of the case to be operated directly by the hand of the user.

546,036. SIGNAL-BOX. NATHAN H. SURES, New York, N. Y., assignor to the Gamewell Fire-Alarm Telegraph Company, same place. Filed Aug. 22, 1893. Serial No. 483,739. (No model.)

Claim.—1. In a signal box, a cut-out switch composed of two mechanically co-acting movable parts, in combination with means for moving one of such parts by the stopping of the wheel movement of the box and means for moving the other of such parts by the closing of the box door, whereby the switch is controlled by the combined action of the wheel movement and the door substantially as set forth.

2. In a signal box, a cut-out switch having as one element a movable base-piece carrying contacts and having as its second element movable switch arms which play over such contacts, in combination with a device on the wheel movement for moving one of such switch elements as the wheel movement approaches the point of stopping and holding such switch element while the wheel movement is at rest, and a device operated by closing the door for moving the other switch element and holding it while the door remains closed, substantially as set forth.



3. In a signal box, a cut-out switch having independently movable and mechanically co-acting contacts and switch arms, comprising the two elements of the switch devices operated by the door and wheel movement engaging the two elements of the switch, and a spring moving the switch arms in one direction relative to the contacts, substantially as set forth.

4. In a signal box, the combination with the contact pens and the non-interfering magnet having an armature adapted to fall out of the field of the magnet, of a cut-out switch, and a stud moved in one direction by closing the box door and in the other direction by a spring, such stud having wedge surfaces which control the switch and the non-interfering armature, substantially as set forth.

5. In a signal box, the combination with the contact pens and the non-interfering magnet having an armature adapted to fall out of the field of the magnet, of a cut-out switch, a stud moved in one direction by closing the box door and in the other direction by a spring, such stud having wedge surfaces which control the switch and the non-interfering armature, and a connection between the switch and wheel movement also controlling the switch, substantially as set forth.

6. In a signal box, a cut-out switch having a pivoted base-piece carrying the local-circuit and short-circuit contacts, and provided with switch arms pivoted upon the base-piece and connected with the line terminals, in combination with a spring connecting the switch arms and base-piece and acting to move the switch arms onto the local-circuit contacts, a wedge surface moved by the door and engaging the switch arms, and pins on the wheel movement engaging the base piece, substantially as set forth.

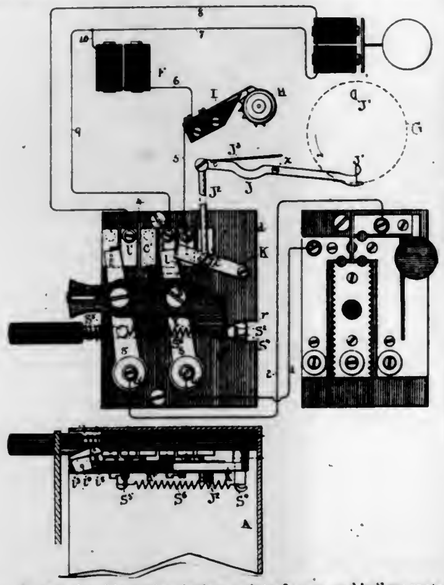
7. In a signal box, the combination with the cut-out switch, having a pawl with beveled end for engaging the wheel movement, of a stationary beveled pin moving the pawl out of engagement with the wheel movement when the latter is running, substantially as set forth.

8. In a signal box, the combination with the pivoted L-shaped base-piece, carrying contacts, the switch arms pivoted on the base-piece, the pawl on the base-piece engaging pins on the wheel movement, the stationary pin releasing the pawl from the wheel movement, the spring connecting the switch arms and base-piece, and the door-stud engaging the switch arms, substantially as set forth.

546,037. SIGNAL-BOX. NATHAN H. SURES, New York, N. Y., assignor to The Gamewell Fire-Alarm Telegraph Company, same place. Filed Jan. 25, 1894. Serial No. 498,006. (No model.)

Claim.—1. In a signal box wherein the non-interference and bell magnets and contact pens are included in a local circuit, the combination of a double pole switch, two of the contacts of which are connected with the terminals of said local circuit, two other of said contacts being short circuited, a spring pressed plunger released by the opening of the box door for moving the switch arms of said switch into contact with the former contacts, a detent for locking said switch arms in such position upon the starting of the signaling mechanism and being withdrawn from engagement with the switch arms upon the stopping of the signaling mechanism, and a yielding connection between said spring pressed plunger and said switch arms, whereby the outer box door can be closed during the operation of the signal mechanism without shifting the switch arms, substantially as set forth.

2. In a signal box wherein the non-interference and bell magnets and contact pens are included in a local circuit, the combination of a double pole switch, two of the contacts of which are connected with the terminals of said local circuit, two other of said contacts being short circuited, a spring pressed plunger released by the opening of the box door, a stop on said plunger engaging with said switch arms for moving them into contact with the former contacts, a detent for locking said switch arms in such position upon the starting of the signaling mechanism and being withdrawn from engagement with the switch arms upon the stopping of the signaling mechanism, and a spring connecting said spring pressed plunger with said switch arms, whereby when the outer door is closed during the operation of the signaling mechanism said spring pressed plunger will be forced inwardly so as to put said spring under tension, so that when said detent is withdrawn said spring will retract the switch arms, substantially as set forth.



3. In a signal box wherein the non-interference and bell magnets and contact pens are included in a local circuit, a switch normally cutting the local circuit out of the line, a spring pressed plunger released by the opening of the box door, a stop on said plunger engaging with said switch for throwing the local circuit into the line, a detent for locking said switch in such position upon the starting of the signaling mechanism and being withdrawn from engagement therewith upon the stopping of the signaling mechanism, and a spring connecting said spring pressed plunger with said switch, whereby when the outer door is closed during the operation of the signaling mechanism, said spring pressed plunger will be forced inwardly so as to put said spring under tension, so that when said detent is withdrawn, said spring will operate the switch to cut out the local circuit, substantially as set forth.

4. In a signal box, the combination with the break wheel, non-interfering magnet, and a door operated plunger controlling the armature of the non-interfering magnet, of a switch having independent short circuit and local circuit contacts, a door operated plunger controlling the movement of said switch independently of the non-interfering plunger, and a detent moved into the path of the switch when the box is started and withdrawn by the wheel movement as it stops, substantially as set forth.

5. The combination with a signal box, of a switch having local-circuit, short-circuit and test-circuit contacts, and switch arms for making contact with said contacts, said arms being moved onto the local-circuit contacts upon the opening of the door, onto the test-circuit contacts by hand, and onto the short-circuit contacts upon the closing of the door, substantially as set forth.

6. In a signal box, the combination with the inclosed signal mechanism, of a switch located in the box, external to the case of the signal mechanism, local and short-circuit contacts carried by said switch, and a movable element to said switch operated jointly by the closing of the door and by the signal mechanism, which acts upon said switch by a connection extending through the case of the signal mechanism substantially as set forth.

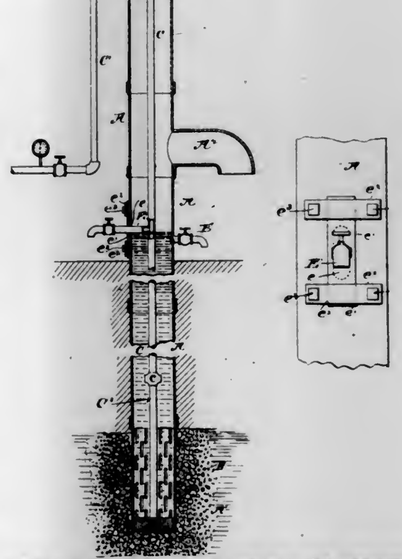
7. The combination of a signal box, of a switch having local-circuit, short-circuit and test-circuit contacts, switch arms for making contact with said contacts, a spring-pressed stud connected with said switch arms and adapted to be engaged by the door to move the switch arms onto the short-circuit contacts, said spring-pressed stud adapted to move the switch arms onto the local-circuit contacts upon opening the door, and a handle connected with said switch arms for moving them onto the test-circuit contacts, substantially as set forth.

8. The combination of a signal box, of a switch having local-circuit, short-circuit and test-circuit contacts, switch arms for making contact with said contacts, a spring-pressed stud connected with said switch arms and adapted to be engaged by the door to move the switch arms onto the short-circuit contacts, said spring-pressed stud moving the switch arms onto the local circuit contacts upon opening the door, a handle connected with said switch arms for moving them onto the test-circuit contacts, a detent for retaining said switch arms on the test-circuit contacts, and a spring for returning said switch arms to the local-circuit contacts upon disengaging said detent, substantially as set forth.

9. In a signal box, the combination with a switch having independent local-circuit, short-circuit and test-circuit contacts and switch arms for making contact with said contacts, of a detent, means for moving said detent in the path of said switch arms after they are moved onto the local-circuit contacts and maintaining the switch arms in that position during the transmission of a signal, and means operated by the wheel-movement for withdrawing said detent, as the wheel-movement comes to rest permitting the shifting of the switch arms from the local-circuit contacts, substantially as set forth.

10. The combination with a signal box, of a switch D having local-circuit, short-circuit and test-circuit contacts, switch arms, spring-pressed stud S and spring S^2, and detent K connected with lever J, substantially as set forth.

546,038. COMPRESSED-AIR WATER-ELEVATOR. SILAS W. TITUS, Brooklyn, N. Y. Filed Jan. 25, 1895. Serial No. 536,213. (No model.)

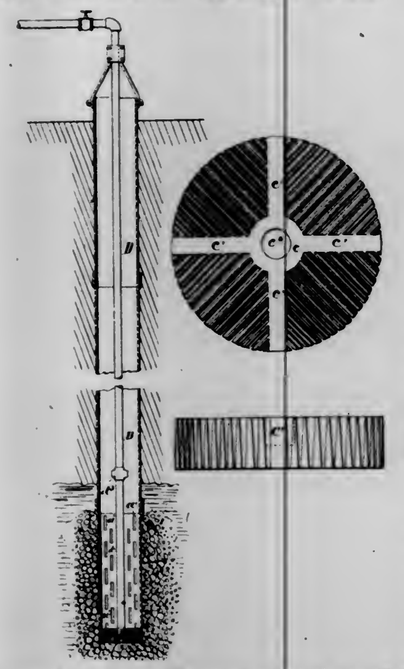


Claim.—1. In a compressed-air water-elevating apparatus, the combination with the well-tube or casing and its intake and discharge-outlet and the compressed-air supply-pipe having a rigid extension below its outlet in the casing, adapted in length to extend to the open lower end of said intake and having a screen or strainer, adapted to fit loosely within said casing and its intake and to stand within the said open end of said intake, attached to the extremity of said rigid extension, of an extension-section of said well-tubing mounted on and communicating with the discharge-end of said casing above the outlet therefrom, an apertured plug in the upward end of said extension-section in which said air-pipe has longitudinal play, a stuffing-box on said plug and a clamp-collar on the gland of said box adapted to engage said air-pipe; substantially as and for the purpose set forth.

2. In a compressed-air water-elevating apparatus, the combination with the well-tube having a valved vent which taps said tube at a

point immediately below the natural water-level therein, of a compressed-air pipe, which extends and is longitudinally adjustable within and removable from said well-tube, provided with a removable, valved vent-pipe which taps said air-pipe at said natural water-level and extends, adjustably therein longitudinally of the well-tube, through the wall of said well-tube, substantially as and for the purpose set forth.

546,039. STRAINER FOR WELL-TUBES. SILAS W. TITUS, Brooklyn, N. Y. Filed Jan. 25, 1895. Serial No. 536,215. (No model.)

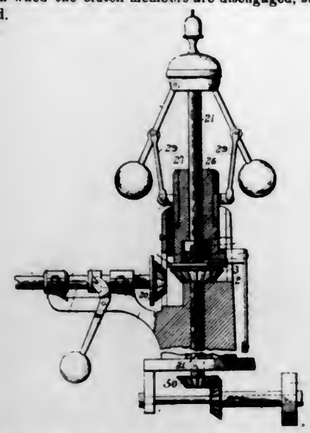


Claim.—1. In a driven-well apparatus, the combination with the well-tube or casing having an open-end intake adapted to be sunk in the water-bearing strata, of a slotted or perforated plate adapted in diameter and area to fit freely within and pass through said tube or casing and into and lie within the open end of said intake thereof, together with a rigid support, adapted in length to extend longitudinally throughout said tube and intake, and having said plate fixedly attached to its end within said intake, and removably sustained in position in said tube or casing, substantially as and for the purpose set forth.

2. In a driven-well apparatus, the combination with the well-tube or casing having an open-end intake adapted to be sunk in the water-bearing strata, of a slotted or perforated plate adapted in diameter and area to fit freely within and pass through said tube or casing and into and lie within the open end of said intake thereof, of a pipe adapted in length to extend longitudinally within said tube or casing and adjustably and removably sustained in position therein, and an extension below said outlet adapted to reach into the open end of said intake, with said plate fixedly attached to the end of said extension within said intake, substantially as and for the purpose set forth.

546,040. GOVERNOR. WILLIAM H. TOWLE, Minneapolis, Minn., assignor of one-fourth to Albert Cornell, same place. Filed Feb. 15, 1895. Serial No. 538,563. (No model.)

Claim.—1. The combination with a governor stem, a sliding sleeve connected to the cut-off valve of an engine, and centrifugal connections between the sleeve and stem, of a shaft mounted for rotation and having a longitudinally slidable member normally arranged in operative relation with the stem and having an intermeshing connection therewith to communicate rotary motion from the stem to the shaft, a clutch connection between the shaft members for holding the slidable member in operative relation with the stem, connections between the shaft and a moving part of the engine for communicating rotary motion to the shaft independently of the governor stem, when the movement of the latter is checked, to alter the relative positions of the shaft members and disengage the clutch members, and means for moving the slidable shaft member out of operative relation with the stem when the clutch members are disengaged, substantially as specified.



2. The combination with a governor stem, a sliding sleeve adapted to be connected to a cut-off valve, and centrifugal connections between the sleeve and stem, of a gear slidably mounted upon the stem and supporting said sleeve, a second gear meshing with the first mentioned gear and supporting the same, said second gear having rotary and axial or longitudinal movement, and means for withdrawing the second gear axially or longitudinally from engagement with the first named gear when the motion of the stem is impeded, whereby said first-named gear and sleeve are allowed to drop substantially as specified.

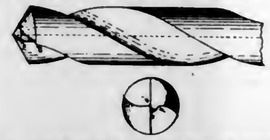
3. The combination with a governor stem, a sliding sleeve adapted to be connected to a cut-off valve, and centrifugal connections between the sleeve and stem, of a gear slidably mounted upon said stem to support the sleeve, a second or supporting gear meshing with said slidable gear and supporting the same, a longitudinally movable shaft member supporting the second gear, and means for moving the shaft member longitudinally to withdraw the supporting gear from engagement with the slidable gear when the rotary motion of the governor stem is impeded, substantially as specified.

4. The combination with a governor stem, a sliding sleeve adapted to be connected to a cut-off valve, and centrifugal connections between the sleeve and stem, of a gear mounted to slide upon the stem, a second or supporting gear meshing with and supporting the first or slidable gear, a shaft having a longitudinally slidable member carrying the second or supporting gear, a clutch connecting the members of the shaft, means for adjusting the clutch members to allow longitudinal movement of the slidable shaft member when the movement of the governor stem is impeded, and a shifting lever connected to the slidable shaft member to move the second gear out of engagement with the gear on the stem, substantially as specified.

5. The combination with a governor stem, a sliding sleeve adapted to be connected to a cut-off valve, and centrifugal connections between the sleeve and stem, of a gear slidable upon the stem, a second or supporting gear meshing with and supporting the first or slidable gear, a shaft having a longitudinally slidable member carrying the second or supporting gear, clutch members carried, respectively, by the shaft members and adapted when aligned to allow longitudinal movement of the slidable clutch member and when out of alignment to connect the shaft members for rotary movement, a shifting lever operatively connected with the slidable shaft member, an oscillating arm adapted to be connected with the eccentric of the engine from which the governor receives motion, and a clutch connection between said arm and the said shaft, whereby when the rotation of the governor stem is impeded motion is communicated by said arm to the shaft and the said clutch members are aligned to allow longitudinal movement of the slidable shaft member, whereby the second or supporting gear is withdrawn from engagement with the gear which is mounted upon the governor stem, substantially as specified.

6. The combination with a governor stem, a sliding sleeve adapted to be connected to a cut-off valve, and centrifugal connections between the sleeve and stem, of a gear slidable upon the stem, a second or supporting gear meshing with and supporting the first or slidable gear, a shaft comprising stationary and slidable shaft members of which the latter carries said second or supporting gear, clutch members 18 and 19 secured, respectively, to the contiguous ends of the shaft members and adapted when in alignment to connect said members, whereby motion may be communicated from the slidable to the stationary shaft member, a weighted shifting lever operatively connected to the slidable shaft member, a swinging arm fulcrumed upon the stationary shaft member and adapted to be connected to and receive an oscillatory movement from the engine which imparts motion to the governor stem, and a clutch connection between said swinging arm and the stationary shaft member, whereby when the rotary movement of the governor stem is impeded said swinging arm imparts a partial rotary movement to the stationary shaft member and thereby aligns the clutch members connecting the shaft members and allows the slidable shaft member to be moved longitudinally by the shifting lever to disengage the intermeshing gears, substantially as specified.

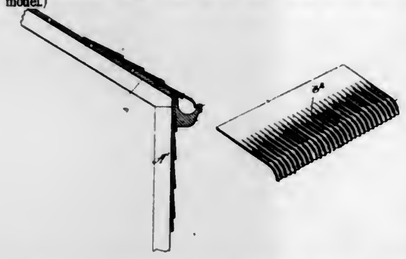
546,041. TWIST-DRILL. OLUF TYBERG, Brooklyn, N. Y. Filed Oct. 2, 1894. Serial No. 524,748. (No model.)



Claim.—1. A twist drill having two grooves opposite each other, one groove being V-shaped and having its apex in the axis of the drill.

2. A twist drill having one groove shaped so as to form an angle with its apex in the axis of the drill, while another is so shaped as to leave a substantial connection between the two sides of the drill.

546,042. EAVES TROUGH OR GUTTER SHIELD. JAMES M. VAN HORN, Cambridge, Mass. Filed Jan. 19, 1895. Serial No. 535,492. (No model.)



Claim.—1. A protective shield for open eaves- or roof-troughs, consisting of a metallic plate having a plane base to be secured to the roof of a building, and a rigid outer portion to project over the trough and within its outer wall, substantially as described.

2. A protective shield for open eaves- or roof-troughs, consisting of a metallic plate having a plane base to be secured to the roof of a building, and a transversely corrugated rigid outer portion to project over the trough and within its outer wall, substantially as described.

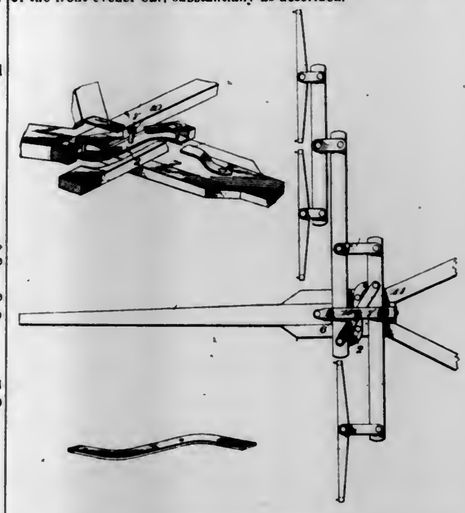
3. A protective shield for open eaves- or roof-troughs, consisting of a metallic plate having a plane base adapted to be inserted and secured between contiguous rows of slates or shingles, and a transversely corrugated convex outer portion to project over the trough and within its outer wall, the corrugations increasing in depth from the base to the outer edge of the shield, substantially as described.

4. A protective shield for open eaves- or roof-troughs, consisting of a metallic plate having a plane base to be secured to the roof of a building, and a convex outer portion to project over the trough and within its outer wall, substantially as described.

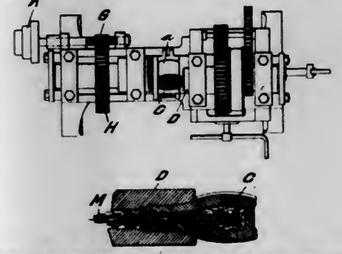
5. A protective shield for open eaves- or roof-troughs, consisting of a metallic plate having a plane base to be secured to the roof of a building, and a transversely corrugated convex outer portion to project over the trough and within its outer wall, substantially as described.

546,043. DRAFT-EQUALIZER. JOHN F. WALBORN, Winfield, Pa. Filed May 28, 1895. Serial No. 551,012. (No model.)

Claim.—The combination of a draft pole, a substantially S-shaped bracket-plate disposed transversely of the pole and secured thereto, and having its arms extending forward and rearward at the sides of the pole, and located beyond the same and the hounds, the forwardly extending arm being disposed at the left hand side of the pole and the rearwardly extending arm at the right hand side a front evener bar fulcrumed at its inner end on the forward extending arm of the bracket plate and projecting laterally from the opposite side of the pole, a rear evener bar extending from the opposite side of the pole and fulcrumed adjacent to its inner end on the rearwardly extending arm of the bracket plate, and having its inner end connected to the front evener bar at a point intermediate of the ends of the same, a keeper disposed longitudinally of the pole and receiving the evener bars, the diagonally disposed tie-plate connecting the pivots of the evener bars, and crossing the guide, a bolt passing through the pole, the tie-plate and the guide, and provided at its ends with nuts, and having an intermediate flange bearing against the bracket plate, a singletree connected with the outer end of the rear evener bar, and a doubletree carrying singletrees and connected with the outer end of the front evener bar, substantially as described.

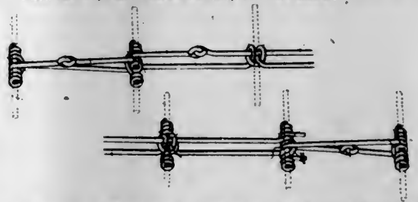


546,044. MACHINE FOR FINISHING CAST HOLLOW WARE. STEPHEN W. CHALLEN, Birmingham, England. Filed May 21, 1895. Serial No. 550,031. (No model.) Patented in England Jan. 25, 1893, No. 1,619.



Claim.—In a machine for finishing cast hollow ware, the combination with the chuck holder carried upon a slowly revolving spindle, of the hollow spindle D, the hollow cutter C having a tapered shank threaded into said spindle, and an enlarged head and the pipe M extending axially through the spindle and into the hollow cutter for supplying cooling liquid thereto, substantially as described.

546,045. WIRE-FENCE STAY. LEANDER CLARK, Greenville, Ohio. Filed Jan. 31, 1895. Serial No. 536,870. (No model.)



Claim.—1. A fence stay having an intermediate rigid section intersecting and connected to a plurality of fence wires or runners, an upper terminal section connected to the upper end of the main or intermediate section and capable of vertical and lateral movement, and a terminal lower section connected to the lower end of the main or intermediate section and capable of lateral movement at its lower end, substantially as specified.

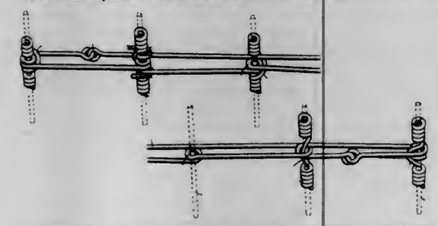
2. A fence stay having a main section comprising approximately parallel sides, one of which is provided at intervals with twin spaced horizontal eyes arranged respectively above and below the wires or runners intersected by the stay, and the other side of which is straight and engages said eyes to lock the wires or runners in the spaces between the twin eyes, and terminal upper and lower sections jointed to the extremities of the main sections and capable of independent relative movement, substantially as specified.

3. A fence stay having a main section constructed to form approximately parallel sides, one of which is provided with a series of integral twin spaced eyes arranged at intervals corresponding with the fence wires or runners and occupying positions respectively above and below the same, and the other side of which is provided with a detachable portion forming a locking pin to engage said eyes, and upper and lower terminal sections loosely connected with the extremities of the main section and capable of independent movement, substantially as described.

4. A fence stay having a main inflexible section constructed to form approximately parallel sides 2 and 3, the side 2 being provided at intervals corresponding with the intervals between the fence wires or runners with twin spaced horizontal eyes, which lie above and below the planes of the wires or runners, and the side 3 having a removable straight portion forming a locking pin which engages said eyes, the upper extremity of said removable portion being connected to the body portion of the section by means of interlocking loops, and the lower extremities of the sides of the section being connected to the contiguous wire or runner by means of hooks, tie-wires connecting the stay with the wires or runners at the points of intersection therewith, an upper terminal section provided at its extremities with coils to engage contiguous wires or runners, a tie-wire connecting the lower end of said terminal section with the upper end of the main section to form a sliding joint, and a lower terminal section provided at its extremities with coils engaging the lowermost and a contiguous wire or runner, substantially as specified.

5. A fence stay having a main rigid section intersecting and connected to a plurality of fence wires or runners, and a terminal lower section connected to the lower end of the main or intermediate section and capable of lateral movement at its lower end, substantially as specified.

546,046. WIRE-FENCE STAY. LEANDER CLARK, Greenville, Ohio. Filed Jan. 31, 1895. Serial No. 536,871. (No model.)

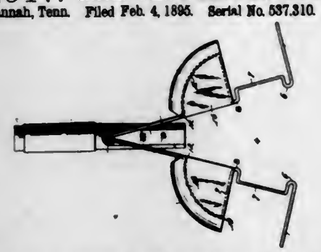


Claim.—1. A fence stay having a main or intermediate inflexible section constructed of a continuous wire blank and having approximately parallel sides, with their extremities provided with hooks to engage the contiguous fence wire or runner, one of said sides being provided with a series of spaced integral eyes arranged approximately in the plane of the section to receive the fence wires or runners intersected thereby, and the other side of the section being straight and being secured to the wires or runners at the points of intersection therewith by means of tie-wires, and terminal upper and lower sections loosely connected to the extremities of the main or intermediate section, substantially as described.

2. A fence stay having a main or intermediate inflexible section constructed of a continuous wire blank bent upon itself to form a loop having approximately parallel sides, the lower extremities of said sides being bent to form hooks, and one of the sides being provided with a series of spaced eyes to receive fence wires or runners, a tie-wire connecting the looped end of said intermediate section with a contiguous fence wire or runner, said tie-wire having an eye to engage the loop, an upper terminal section provided at its upper end with an eye to engage the uppermost fence wire or runner and at its lower end with a loop to engage the looped upper end of the intermediate section, and the eye of said tie-wire, and a lower terminal section loosely connected to the lower end of the main section, as set forth.

3. A fence stay having a main or intermediate inflexible section constructed of a continuous wire blank bent upon itself to form a loop having approximately parallel sides, the lower extremities of said sides being bent to form hooks, and one of the sides being provided with a series of spaced eyes to receive fence wires or runners, a tie-wire connecting the looped end of said intermediate section with a contiguous fence wire or runner, said tie-wire having an eye to engage the loop, and a lower terminal section loosely connected to the lower end of the main section, as set forth.

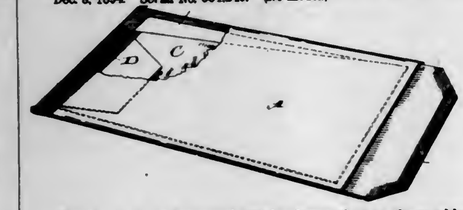
546,047. BROOM. ISAAC G. HARDIN and THOMAS T. WATSON, Savannah, Tenn. Filed Feb. 4, 1895. Serial No. 537,310. (No model.)



Claim.—1. An elastic frame for embracing the heads of brooms, the same comprising a handle or stick having its lower end partially cut away upon opposite sides to form flattened portions, a pair of pivoted members hinged thereto and having their journal portions inserted in a transverse perforation extending between such flattened portions and having their longitudinally extending arms resting against said flattened portions, and a longitudinally sliding boot or sleeve disposed around said handle and also embracing the longitudinal arms of said pivoted members, substantially as and for the purpose described.

2. A clasping frame for the heads of brooms, the same comprising a handle, an oppositely disposed pair of looped wire frames hinged to said handle and adapted to embrace the side edges of the head of the broom, quadrant plates united to and forming part of said frames, supplemental segmental sheaths also united to said frames and adapted to surround and protect the upper curved portion of the broom head, and means for holding the swinging ends of said frames together and in engagement with the head of the broom, substantially as and for the purpose specified.

546,048. ENVELOPE. CHARLES KELLEY, Toronto, Canada. Filed Dec. 8, 1894. Serial No. 531,249. (No model.)

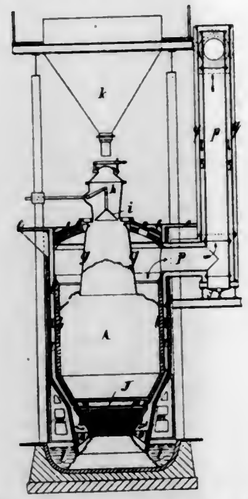


Claim.—1. As an improved article of manufacture the combination of the inner envelope, having a ridged strip at one end, the said end designed to be coated with an insoluble mucilage, and an outer envelope into which said inner envelope is adapted to be inserted and sealed to the inner end of the outside envelope, substantially as and for the purpose set forth.

2. In combination an inner envelope having one end coated with an insoluble mucilage, and designed to be stuck to the inner end of an outer envelope, and means for preventing the said mucilaged ends being crumpled, substantially as shown and described.

546,049. APPARATUS FOR PRODUCING GAS. LUDWIG MOND, London, England. Filed Aug. 23, 1894. Serial No. 521,110. (No model.) Patented in England June 22, 1893, No. 12,440.

Claim.—1. In an apparatus for producing combustible gases, ammonia and other by-products from fuel, the combination of substantially the following three parts or combinations: (A) a circular gas producer combustion chamber having a cylindrical iron shell, a dome-shaped top, a truncated conical bottom, a thin brick lining in the part exposed to the combustion, a metallic ring carrying the above, a grate of the shape of a truncated cone having the apex downward and constructed of wedge-shaped movable bars, two rings supporting said bars in such position as to give the bars a slope of about forty degrees, said bars ending a considerable distance from the vertical center line, leaving a sufficient opening in the center for the clinker to pass through and approximately parallel spaces between the bars for the air and steam to pass, a feed hopper above the combustion chamber and a cast iron cone reaching from below the hopper to a certain depth into the combustion chamber, whereby the fuel can gradually descend from the same into the combustion chamber; (B) an outside metallic shell (forming an annular chamber round the combustion chamber) drawn together at its lower part to a truncated cone nearly parallel to the conical part of the inside shell, and at a steeper angle round the conical grate, a water-lute below into which it extends, said shell having an expansion joint connecting it air tight at its top with the shell of the combustion chamber, whereby unequal expansion is allowed for, said expansion joint forming a platform round the top of the combustion chamber; (C) a series of iron exit pipes for the hot gases arranged vertically in zigzag (for conveying the gases to where they are separated or utilized) connected at one end with the combustion chamber and having a series of wider pipes surrounding them forming an annular space, said outside pipes being connected to the chamber surrounding the combustion chamber at one end and at the other to the air and steam supply, so that the air and steam for maintaining combustion can be passed through the outer pipes in the reverse direction to the course of the hot gases in the inner pipes and subsequently through the annular space around the combustion chamber to the space around the conical grate, and thus the air and steam become heated to the required temperature and the escaping gases cooled.



2. The combination of an inner cylindrical shell forming a combustion chamber, having an inverted truncated conical lower part, an inverted truncated conical grate below, an outer shell inclosing said chamber and grate, and forming a nearly uniform concentric space surrounding them, but said outer shell extending below the grate at bottom, a water-lute into which the outer shell dips, supports for both shells, above this lute, and an expansion joint connecting the two shells at top in an air-tight manner forming a platform.

3. The combination of the combustion chamber A, having exit pipes *p* and conical grate J, legs *m*, water-lute *l* and a heating chamber *s* surrounding the pipes *p* and the chamber A and grate J and having entrance for air and steam at its farther end, and its end nearest the grate bars dipping down below the grate bars into the water-lute, whereby the heat radiating from the chamber *s* and that of the effluent gases are given up to the feed air and steam, and the latter can enter the combustion chamber nearly all round and the clinker and ashes can be removed through the water seal.

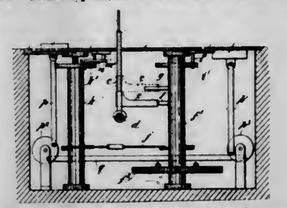
546,050. GRATE FOR CIRCULAR GAS-PRODUCERS. LUDWIG MOND, London, England. Filed Apr. 27, 1895. Serial No. 547,392. (No model.) Patented in England June 22, 1893, No. 12,440.



Claim.—1. In a circular gas producer the combination with a combustion chamber of a grate in the form of an inverted truncated cone formed of loose wedge shaped bars resting on rings, said bars being formed thicker at their outer end than at their inner and lower ends whereby the air spaces between them are approximately even all around, and the air is consequently nearly evenly distributed over the area of the combustion chamber and the bars can be readily moved about substantially, as described.

2. The combination of a truncated cone of fire bars, each of them hooked at the top with a circular ridge *v* interlocking with said hook and a circular bearer *o* carrying the lower ends of the bars, whereby the bars can be oscillated on the ridge *v* and can be easily withdrawn without disturbing the fire.

546,051. AUTOMATIC RAILWAY-SWITCH. WILLIAM J. MCFARLAND, New York, N. Y., assignor to himself and Thomas H. Baskerville, same place. Filed May 23, 1894. Serial No. 512,174. (No model.)



Claim.—1. In a railway switch mechanism the combination of a rail switch point and a slot switch point and two directly connected oscillating shafts and means connecting each of said shafts with one of said switch points whereby the oscillation of said shafts actuates said switch points, and two movable operating arms mounted upon two oscillating shafts, said latter shafts being directly connected together to move in opposite directions and connecting means joining one of said latter shafts to one of the switch point actuating shafts, and a striker arm carried by a car and adapted to be set into one position to engage with one of said operating arms and into another and different position to engage with the other of said operating arms when the car passes by said arms, substantially as set forth.

2. In a railway switch mechanism, the combination with one or more switch points of movable platforms adapted to be operated by the weight of horses drawing a car and connected to said switch point or points, and one or more movable operating arms adapted to be operated by a striker arm carried by a car, said operating arm or arms being also connected to said switch point or points, whereby the switch may be set in desired position by either the platforms or striker arm, substantially as set forth.

3. In a railway switch mechanism, the combination with a pivoted switch point and a pin or stud projecting therefrom, of a vertical oscillating shaft and a plate on said shaft having a cam surface radially inclosing said pin at varying distances from the center of said shaft, and said cam surface arranged so as to work against said pin or stud and set the switch point when the shaft is oscillated, whereby the switch point is locked in desired position substantially as set forth.

4. In a railway switch mechanism, the combination of one or more switch points and two movable operating arms, said arms being mounted upon separate vertical oscillating shafts, and said shafts being connected together so that the operation of one arm throws the other arm into position to be operated, and connecting mechanism joining one of said oscillating arms and said switch point or points, and a vertically movable striker arm carried by a car and adapted to be set into position to engage with either one of said operating arms, substantially as set forth.

5. In a railway switch mechanism, the combination of a rail switch point and a slot switch point, and mechanism connecting the same so that the movement of one causes a corresponding movement of the other, two movable operating arms so connected that the operation of one throws the other into position to be operated, and connecting mechanism joining said operating arms and switch points, and a striker arm carried by a car and adapted to be set into position to engage with either one of said operating arms, and two movable platforms adapted to be operated by the weight of horses drawing a car and connected to said switch points, substantially as set forth.

6. In a railway switch mechanism, the combination of a pivoted switch point and a pin or stud projecting therefrom, a vertical oscillating shaft and a plate on said shaft having a cam surface radially inclosing said pin at varying distances from the center of said shaft, and said cam surface arranged so as to work against said pin or stud and set the switch point when the shaft is oscillated, whereby the switch point is locked in desired position, two movable platforms, two oscillating disks connected respectively thereto, and a connecting rod joining said disks, said rod being connected to or engaging with said oscillating shaft, substantially as set forth.

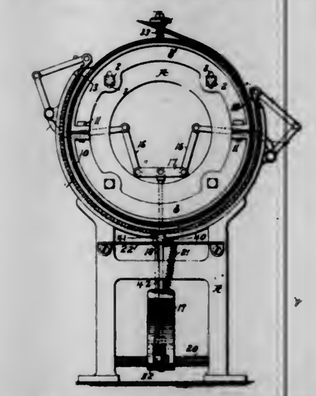
7. In a railway switch mechanism, the combination of a pivoted rail switch point and a pin or stud projecting therefrom, an oscillating shaft and a plate on said shaft having a cam surface arranged so as to work against said pin or stud and set the switch point when the

shaft is oscillated, a pivoted slot switch point and an oscillating shaft and means for actuating the slot point from said shaft, said rail point operating shaft and slot point operating shaft being connected so as to move together, two movable operating arms mounted upon separate oscillating shafts, said latter shafts being connected together so as to move together in opposite directions, and being also connected to the rail point operating shaft, and a striker arm carried by a car and adapted to be set into position to engage with either one of said operating arms, substantially as set forth.

8. In a railway switch mechanism, the combination of a rail switch point, an oscillating shaft and means for actuating said switch point from said shaft, a slot switch point and an oscillating shaft and means for actuating said slot point from said shaft, said rail point operating shaft and slot point operating shaft being connected so as to move together, two movable platforms, two oscillating disks connected respectively thereto, and a connecting rod joining said disks said rod being connected to or engaging with said rail point operating shaft, two movable operating arms mounted upon separate oscillating shafts, said latter shafts being connected together so as to move together in opposite directions and being also connected to the rail point operating shaft, and a striker arm carried by a car and adapted to be set into position to engage either one of said operative arms, substantially as set forth.

9. In a railway switch mechanism the combination with a rail switch point and a slot switch point, of two movable operating arms mounted on separate oscillating shafts, said shafts being directly connected together so as to move in opposite directions and said arms being so located that a projection from a car in one position will operate one of said arms and a projection from a car in another position will operate the other of said arms, and two oscillating shafts each adapted to actuate one of said switch points, said two shafts being directly connected together, and connecting means joining one of said shafts to one of the shafts provided with operating arms, substantially as set forth.

546,052. HOOP-MAKING MACHINE. HENRY U. PALMER, Brooklyn, N. Y. Filed June 29, 1894. Serial No. 516,069. (No model.)



Claim.—1. The combination in a hoop making machine, of a form, a clamping strap extending part way around the form, a clamp constructed and arranged to press the overlapping ends of the hoop together against the form between the ends of the clamping strap and to hold them in position while they are being secured together, and an operating lever and connections for actuating both said clamping strap and said clamp, substantially as described.

2. The combination with a form, of a clamping strap, and a guide flange exterior to and extending forward of the form, substantially as described.

3. The combination with a form, of a clamping strap, and a guide flange exterior to and extending forward of the form and recessed to form a pocket for said strap when it is in its normal position, substantially as described.

4. The combination with a form, of a clamping strap extending part way around the form, a guide flange exterior to and extending forward of the form, a clamp adapted to act in connection with the form between the ends of the strap, and means for tightening said strap and for actuating said clamp, substantially as described.

5. The combination with an adjustable form, of a clamping strap extending part way around the form, a guide flange exterior to and extending forward of the form, a clamp adapted to act in connection with the form between the ends of the strap, and means for tightening said strap and for actuating said clamp, substantially as described.

6. The combination with a form having a beveled periphery, of a clamping strap extending part way around the form, a clamp adapted to act in connection with the form between the ends of the clamping strap, a lever for forcing the hoops into proper position, and an operating lever and connections for actuating said clamping strap, clamp, and lever for forcing the hoops into position, substantially as described.

7. The combination with a form, of a clamping strap extending part way around the form, levers 15 connected to the ends of the clamping strap by links 14, a clamp adapted to act in connection with the form between the ends of the clamping strap, an operating lever, and connections between the operating lever and said levers 15 and said clamp, substantially as described.

8. The combination with a form, of a strap 13, levers 15 connected to the ends of the strap 13 by links 14, and means for throwing said levers, substantially as described.

9. The combination with a form, of a strap 13, levers 15 connected to the ends of the strap by links 14, treadle 19, connecting rod 18, links connecting said levers with said rod, and means for returning the parts to normal position, substantially as described.

10. The combination with a form, of a strap 13, levers 15 connected to the ends of the strap 13, rod 18 by which said levers are thrown, clamp 30 carried by a rod 31, treadle 19 by which said rods 18 and 31 are actuated, and means for returning said parts to normal position, substantially as described.

11. The combination with a form, of a strap 13, levers 15 connected to the ends of the strap by links 14, clamp 30, lever 40, treadle 19 by which the levers 15, clamp 30, and lever 40 are actuated, and means for returning said parts to normal position, substantially as described.

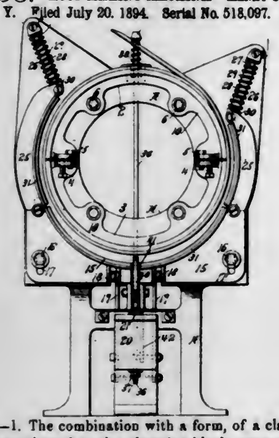
12. The combination with a form having a beveled periphery, of a strap 13, and lever 40 for forcing the hoops into proper position, substantially as described.

13. The combination with form 10, of strap 13, means for tightening said strap about the form, and flange 25 having a beveled guiding face 27 and recess 26, substantially as described.

14. The combination with adjustable form 10, of strap 13, clamp 30 and guide flange 25 extending part way around the form to guide the hoops into position about the form, substantially as described.

15. The combination with form 10, of strap 13, clamp 30, and guide flange 25 extending part way around the form to guide the hoops into position about the form, substantially as described.

546,053. HOOP-MAKING MACHINE. HENRY U. PALMER, Brooklyn, N. Y. Filed July 20, 1894. Serial No. 518,097. (No model.)



Claim.—1. The combination with a form, of a clamping block, clamping arms pivoted to the clamping block, connections between the clamping arms and frame arranged to rock the arms toward the form as the clamping block moves toward the latter, and means for actuating the clamping block, substantially as described.

2. The combination with a form, of a clamping block having a clamping face extending partially about the form, clamping arms at the ends of the block and pivoted thereto, connections between the clamping arms and frame arranged to rock the arms toward the form as the clamping block moves toward the latter, and means for actuating the clamping block, substantially as described.

3. The combination with a form, of a clamping block having a clamping face extending partially about the form, clamping arms at the ends of the block and pivoted thereto, yielding connections between the clamping arms and frame arranged to rock the arms toward the form as the clamping block moves toward the latter, and means for actuating the clamping block, substantially as described.

4. The combination with a form, of a clamping block having a clamping face extending partially about the form, clamping arms at the ends of the block and pivoted thereto, spring rods pivoted to the clamping arms and to the frame and arranged to rock the arms toward the form as the clamping block moves toward the latter, and means for actuating the clamping block, substantially as described.

5. The combination with a form, of a clamping block having a clamping face extending partially about the form, clamping arms at the ends of the block and pivoted thereto, rods pivoted to the clamping arms and to the frame and arranged to rock the arms toward the form as the clamping block moves toward the latter, a clamp adapted to act in connection with the form between the ends of the clamping arms, an operating lever, and connections between said operating lever and said clamping block and clamp, substantially as described.

6. The combination with a form, of a clamping block having a clamping face extending partially about the form, clamping arms at the ends of the clamping block and pivoted thereto, yielding connections between the clamping arms and frame arranged to rock the arms toward the form as the clamping block moves toward the latter, a clamp adapted to act in connection with the form between the clamping arms, a lever for forcing the hoops into proper position, an operating lever, and connections between the operating lever and said clamping block, clamp, and lever, substantially as described.

7. The combination with an adjustable form, of a clamping block having a clamping face extending partially about the form, clamping arms at the ends of the clamping block and pivoted thereto, and yielding connections between said clamping arms and frame arranged to rock the arms toward the form as the clamping block moves toward the form, substantially as described.

8. The combination with a form, of a clamping block having a clamping face extending partially about the form and having a guide flange extending forward of the form, substantially as described.

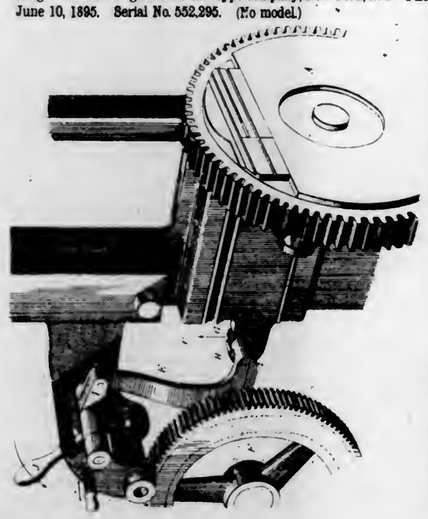
9. The combination with frame A, of a form mounted on said frame, a clamping block mounted to slide in said frame, clamping arms 25 pivoted to the ends of said clamping block, spring rods 26 pivoted to said arms and the frame, and means for moving said clamping block on the frame, substantially as described.

10. The combination with a form, of a clamping block, clamping arms 25 pivoted to the ends of the block, spring rods 26 pivoted to said arms and to the frame, and means for actuating said block, substantially as described.

11. The combination with a form, of a clamping block, clamping arms 25 pivoted to the ends of the block, spring rods 26 pivoted to said arms and to the frame, clamp 35 acting between the ends of the arms, an actuating lever, as 20, and connections between said lever and clamping block and clamp, substantially as described.

12. The combination with a form, of a clamping block, clamping arms 25 pivoted to the ends of the block, spring rods 26 pivoted to said arms and to the frame, clamp 35 acting between the ends of the arms, lever 40 for forcing the hoop into proper position, an operating lever, as 20, and connections between said operating lever and said clamping block, clamp, and lever 40, substantially as described.

546,054. LINOTYPE-MACHINE. ALBERT D. PENTZ, Brooklyn, assignor to The Mergenthaler Linotype Company, New York, N. Y. Filed June 10, 1895. Serial No. 552,295. (No model.)

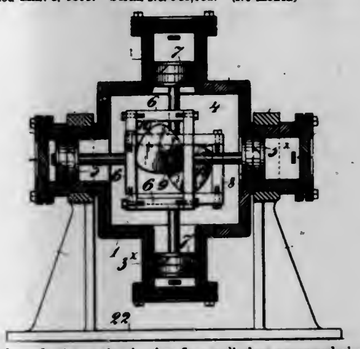


Claim.—1. In a linotype machine, the combination of the mold slide, its actuating cam, the intermediate connecting lever detachably engaged with the slide and a movable fulcrum for said lever substantially as described whereby the lever may be engaged with and disengaged from the slide.

2. In combination with the mold slide, its acting cam and the intermediate lever provided with projections to engage said slide and lever, the hand lever jointed to and serving as a support to the lever E, substantially as described.

3. In a linotype machine in combination with a movable mold support and its actuating cam, a detachable connection between said parts provided with a member extending upward above the operative parts adapted to be operated by hand whereby the connection and disconnection may be effected without delay or injury to the attendant.

546,055. STEAM-ENGINE. WILLIAM A. PITT, Manhasset, N. Y. Filed Mar. 8, 1895. Serial No. 540,952. (No model.)



Claim.—1. An engine having four cylinders arranged about the shaft in pairs with the axes of the respective pairs at right-angles to each other, the piston-rods of each pair of cylinders being connected rigidly to a cam-yoke which embraces an equilateral, triangular cam on the main shaft, whereby substantially the full effective pressure is obtained throughout the stroke of the piston and valves, operated by the main shaft, and controlling the induction and eduction-ports of the cylinders, substantially as set forth.

2. In an engine, the combination, with the engine-body, the two pairs of cylinders, their pistons and piston-rods, the main shaft, mounted in the engine-body, the equilateral, triangular cams 10 and 11, set oppositely on said shaft, and the yokes embracing said cams and rigidly fixed to the respective piston-rods, as described, of the steam-chest, furnished with induction and eduction-ports for the respective cylinders, the equilateral, triangular cam 21, the square yoke 19, embracing said cam, the fixed guide-frame 20, in the steam-chest and about the yoke 19, and the valves, connected with said yoke and adapted to control the several induction and eduction ports, substantially as set forth.

3. In a four-cylinder engine, the combination with the engine-body, the said cylinders, their pistons and piston-rods, the main shaft, and mechanism intermediate the piston-rods and said shaft whereby the former impart rotary motion to the latter, of the steam-chest provided with induction and eduction ports for the several cylinders, the equilateral, triangular cam, 21, on the shaft within the steam-chest, the square yoke embracing said cam, its guide, fixed in the steam-chest, the valves controlling the induction and eduction-ports, their guides, and the links connecting the several valves with the said square yoke, substantially as set forth.

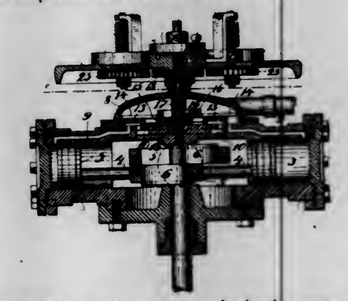
4. The combination with a bed-plate having pillow-blocks thereon, as described, of an engine having a body, four cylinders arranged about said body in pairs, the cylinders of one pair being mounted as trunnions in said pillow-blocks, and a main shaft having bearings in said engine-body, substantially as set forth.

546,056. VALVE-GEAR FOR STEAM-ENGINES. WILLIAM A. PITT, Manhasset, N. Y. Filed May 7, 1895. Serial No. 548,407. (No model.)

Claim.—1. In an engine having cam-operated valves in a steam-chest and controlling the induction and eduction ports of the cylinders, the combination with the main engine-shaft, of the valve-operating cam, mounted rotatively on said shaft within the steam-chest and provided with a sleeve embracing the shaft and projecting therewith from said chest, and means for detachably connecting said sleeve and shaft exterior to the chest, substantially as set forth.

2. In an engine having cam-operated valves in a steam-chest and controlling the induction and eduction ports of the cylinders, the com-

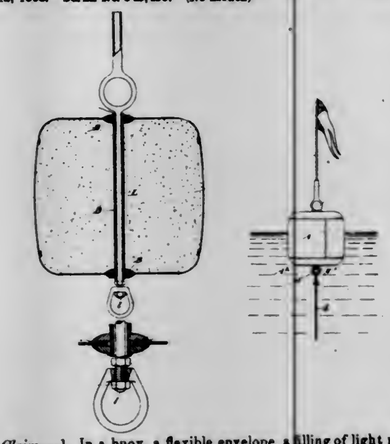
bination with the main engine-shaft, of the valve-operating cam, mounted rotatively on said shaft within the steam-chest and provided with a sleeve embracing the shaft and projecting therewith from said chest, a flanged disk 20, fixed on the main shaft exterior to the steam-chest, a disk carried by said sleeve, adjacent to the disk 20, and a pin 21, to engage co-inciding holes in said disks and lock them together in the position set, substantially as set forth.



3. In an engine having cam-operated valves in a steam-chest and controlling the induction and eduction ports of the cylinders, the combination with the main engine-shaft, of the valve-operating cam, mounted rotatively on said shaft within the steam-chest and provided with a sleeve embracing the shaft and projecting therewith from said chest, a carrier-disk, on and fixed to the main shaft exterior to the steam-chest, an arbor 23×, mounted rotatively in said carrier-disk, a gear-wheel 23, fixed on the said arbor, a weighted arm 25, also fixed on said arbor, a gear-wheel 18, fixed on the valve-sleeve adjacent to the carrier-disk, an intermediate wheel, 24, in gear with both wheels 18 and 23, and a spring adapted to act centripetally on the said weighted arm, substantially as and for the purposes set forth.

4. In an engine having four cylinders arranged about the main shaft, the combination with the steam-chest, the main shaft extending out through the same, the four valves in said chest, said valves controlling the induction and eduction ports of the several cylinders, the cam-yokes coupled to the respective valves, the two equilateral, triangular cams 16, connected together and mounted rotatively on the main shaft, said valves having a sleeve 17, which embraces the shaft and extends out of the steam-chest, a gear-wheel 18, secured to the sleeve 17, exterior to the steam-chest, a carrier-disk 19, secured to the main shaft adjacent to the gear-wheel 18, two arbors 23×, rotatively mounted in said carrier-disk, gear-wheels 23, and weighted arms 25, fixed on the respective arbors 23×, wheels 24, gearing with the respective wheels 18 and 23, as set forth, and springs adapted to act centripetally on the said weighted arms, substantially as set forth.

546,057. BUOY. FRANK RICHARD, New York, N. Y. Filed Apr. 12, 1895. Serial No. 545,455. (No model.)

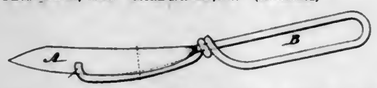


Claim.—1. In a buoy, a flexible envelope, a filling of light resilient material as granulated cork, and a stiff tube extending axially through the envelope and filling, in combination with the pairs of grommets engaging the edges of the envelope at each end of the tube, the latter adapted to loosely inclose a rod extending therethrough carrying a swivel and eye to which the anchoring rope and hawser may be attached, all substantially as herein specified.

2. In a buoy, a flexible envelope, a filling of light material, as granulated cork, a tube D extending through the envelope and filling, grommets B, C, carried on each end of the tube in pairs, engaging the envelope between each pair, and the rod L extending loosely through said tube and carrying an eye L′ and swivel M, all combined and arranged to serve substantially as herein specified.

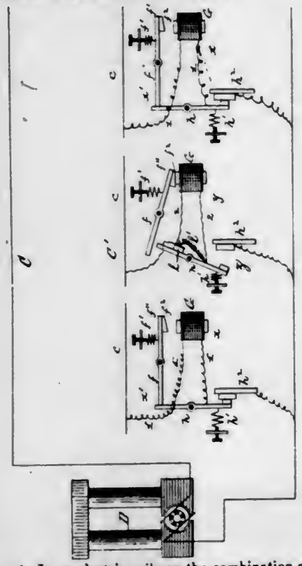
3. The belt A, and cap pieces A′, A^3, forming an envelope, the filling G of granulated cork, the tube D extending through the filling and cap pieces, grommets B carried on the screw-threaded ends of the tube within the envelope, grommets C applied to the said ends from the exterior, the cement E between the grommets and envelope, and the solder F securing the grommet C to the tube, in combination with each other, and with the rod L extending loosely through said tube, the eye L′ formed on one end of the rod and the swivel M carried on the other end, all arranged to serve substantially as herein specified.

546,058. GAGE-KNIFE. SAMUEL F. ROBBINS, Langhorne, Pa. Filed Oct. 24, 1892. Serial No. 449,878. (No model.)



Claim.—A knife formed of a single piece of wire, having its blade forged out therefrom, and the wire bent to form a looped handle, the wire being bent around the main limb of the loop and its free end extended along and adjacent to the edge of the blade, and secured thereto, substantially as and for the purpose described.

546,059. ELECTRIC RAILWAY. WILLIAM M. SCHLESINGER, Philadelphia, Pa., assignor to John I. McDuffee, trustee, same place. Filed Nov. 24, 1885. Serial No. 183,871. (No model.)



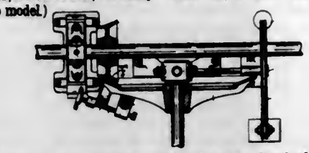
Claim.—1. In an electric railway the combination of, a series of separate feeding conductors extending in multiple arc relation from one generator pole or terminal to points along the line of way, safety devices for said separate feeding conductors, a working conductor comprising a series of insulated or disconnected sections disposed along the line of way and supplied by said separate feeding conductors, and return circuit connections opposed to said sections and leading to the other generator pole, or terminal, substantially as described.

2. In an electric circuit, a working conductor composed of insulated or disconnected sections in normally closed multiple arc relation with a feeding conductor by way of magnets G, right angle levers h and f and contact points, and one of said levers carrying or having affixed thereto an armature for said magnets which act by excess of current passing through them to cut the sections out of the feeding conductor, substantially as set forth.

3. In combination with conductor sections c, and feeding conductor F of contact plates A^3, pivoted levers h having retracting springs and in contact with plates A^3, pivoted levers f at right angle to and in locking engagement with levers h and having retracting springs

and armatures, magnets G and circuit connections between sections c and conductor F substantially as set forth.

546,060. VARIABLE-SPEED FRICTION-GEAR. CHRISTIAN SEYBOLD, Zweibrücken, Germany. Filed May 3, 1895. Serial No. 548,566. (No model.)



Claim.—1. A variable speed friction gear for shafts placed at an angle, consisting of two pulleys, the conical, co-operating faces of which are respectively convex and concave, a belt placed between said co-operating convex and concave faces, and means for forcing one pulley toward the other, substantially as described.

2. A variable speed friction gear for shafts placed at an angle, consisting of two pulleys, the conical, co-operating faces of which are respectively convex and concave, an adjustable belt placed between said co-operating convex and concave faces, and operative means for forcing one pulley toward the other, substantially as described.

3. A variable speed friction gear for shafts placed at an angle, consisting of two pulleys, the conical, co-operating faces of which are respectively convex and concave, one or more guide pulleys, a belt passing over the same and between said co-operating convex and concave faces of the driving and driven pulleys, and means for forcing the driving and driven pulleys together, substantially as described.

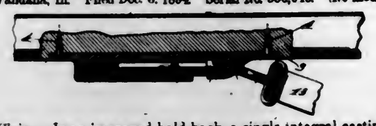
4. A variable speed friction gear for shafts placed at an angle, consisting of two pulleys, the conical, co-operating faces of which are respectively convex and concave, one or more guide pulleys, a belt passing over the same and between said co-operating convex and concave faces of the driving and driven pulleys, an adjustable guide, and means for forcing the driving and driven pulleys together, substantially as described.

5. A variable speed friction gear for shafts placed at an angle, consisting of two pulleys, the conical, co-operating faces of which are respectively convex and concave, one or more guide pulleys, a belt passing over the same and between said co-operating convex and concave faces of the driving and driven pulleys, a guide for the belt, operative means for moving the guide pulleys and the guide in the direction of the faces of the driving and driven pulleys, and means for forcing the driving and driven pulleys together, substantially as described.

6. A variable speed friction gear for shafts placed at an angle, consisting of a concave faced pulley on one of the shafts, a convex faced pulley on the other shaft, guide pulleys adjustable in the direction of the faces of the driving and driven pulleys, a belt passing over the same and between the driving and driven pulleys, a thrust bearing for one of the pulley shafts, a weighted shaft, and an operative connection between the latter and the bearing, substantially as described.

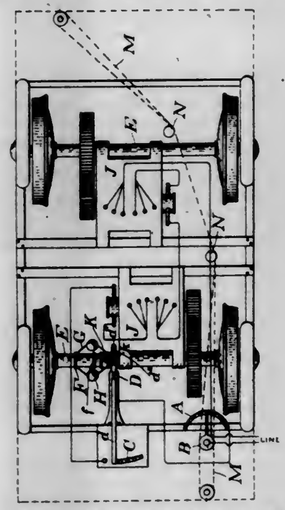
7. A variable speed friction gear for shafts placed at an angle, consisting of a concave faced pulley on one of the shafts, a convex faced pulley on the other shaft, guide pulleys adjustable in the direction of the faces of the driving and driven pulleys, a belt passing over the same and between the driving and driven pulleys, a thrust bearing for one of the pulley shafts longitudinally guided, a rack on said bearing, a weighted shaft, and a pinion on said shaft engaging the rack on the thrust bearing, substantially as described.

546,061. SELF-DETACHING HOLDBACK FOR VEHICLES. WILLIAM T. TAYLOR, St. Louis, Mo., assignor, by direct and mesne assignments, to M. G. Taylor and J. W. Overstreet, same place, and Louisa Guest, Vandalia, Ill. Filed Dec. 3, 1894. Serial No. 530,640. (No model.)



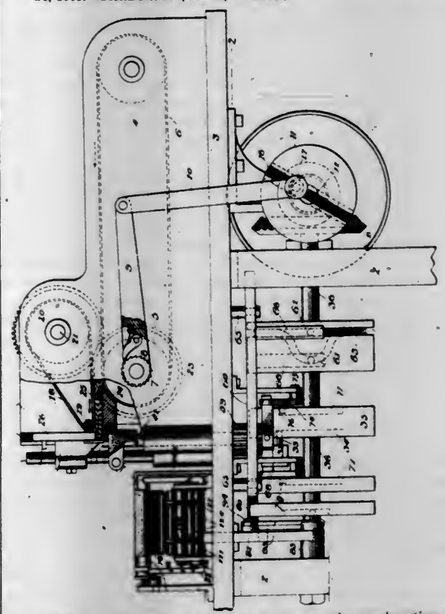
Claim.—In an improved hold-back, a single integral casting 2, a hook 5 extending a distance parallel with said casting and having its front end cut off square at a right angle, a spring-actuated bolt 9 having its rear end cut off square at a right angle, with one-half of its forward end in close contact with the squared end of the said hook, the other half of said squared end being directly in the path of travel of the ring carried by the end of the hold-back strap, whereby the parallel surfaces of said casting and said extending hook will guide said ring directly against said squared end of said bolt, to positively retract the bolt without binding of the parts, as set forth.

546,062. SPEED-REGULATOR FOR ELECTRIC CARS. ISAAC D. AIKIN, New York, N. Y. Filed May 4, 1895. Serial No. 548,063. (No model.)



Claim.—A speed regulator for electric cars having in combination with the propelling motors, main rheostat and hand-operating devices, an independent box of resistance coils supporting, pivotally, the piece, D, provided with the insulated arm, d, forming a part of the motor circuit and adapted to be brought into contact with each of the said coils, the said pivoted piece possessing a second arm, d', slotted near its outer end to engage the pin, k, projecting from the sleeve, K, the said sleeve movable upon the axle of the car, and the centrifugal governor substantially as and for the purposes shown and described.

546,063. CIGARETTE-MACHINE. GEORGE F. CARLIN, New York, N. Y., assignor of three-fifths to David Buchner, same place. Filed Feb. 28, 1895. Serial No. 539,959. (No model.)



Claim.—1. In a cigarette-making machine, the combination of feeding-mechanism, a plurality of suitably-spaced rolling-devices, and a plurality of swinging carriers each adapted to swing at intervals through arcs of intersecting circles back and forth between said feeding-mechanism and one of said rolling-devices.

2. In a cigarette-making machine, the combination of feeding-mechanism, a plurality of suitably-spaced rolling-devices, a plurality of horizontally-swinging carriers for the filler-tobacco each adapted to swing back and forth through the arc of a circle between said feeding-mechanism and one of said rolling-devices for depositing the filler-tobacco thereon.

3. In a cigarette machine, tobacco supplying or feeding means or mechanism, a plurality of rolling-mechanisms and means for operating the latter, and a plurality of horizontally-swinging or vibrating carriers each provided with means for swinging them back and forth between said feeding-mechanism and its respective rolling-mechanism.

4. In a cigarette-making machine, the combination of a tobacco feeder, a pair of rolling-devices, a pair of carriers mounted one near each side of the delivery end of the feeder, each of the said carriers being mounted to swing through the arc of a circle on a vertical axis back and forth between the feeder and its rolling-device and swinging automatically in alternation with the other carrier and suitable means for producing said movements.

5. In a cigarette-making machine, the combination of a tobacco feeder, a rolling-device provided with a rolling-apron for placing a wrapper about a charge of filler-tobacco, a carrier constructed to swing through an arc about a vertical axis back and forth between said feeder and rolling-device for conveying a charge of filler-tobacco from the former to the latter and depositing it thereon, said carrier and rolling-device having a relative vertical movement so that as the carrier deposits its charge upon the apron of the rolling device the same may be depressed to form the rolling-pocket and suitable means for producing said movements.

6. In a cigarette-making machine, the combination of a tobacco feeder adapted to deliver at intervals a charge of filler-tobacco, a rolling-device provided with a rolling-apron for placing the wrapper about a charge of filler-tobacco, a carrier constructed to swing in an arc about a vertical axis back and forth between said feeder and rolling-device for conveying a charge of filler-tobacco from the former to the latter and depositing it thereon, said carrier adapted to move vertically and to descend when over the rolling-apron to depress the same to form a rolling-pocket and suitable means for producing said movements.

7. In a cigarette-making machine, a rolling-device for placing a wrapper around a charge of filler-tobacco, and a carrier for receiving a charge of the tobacco and depositing it on the rolling-device, and means for operating the same said carrier comprising a receptacle having a bottom formed of overlapping movable sections adapted to open simultaneously when brought over the rolling-device to deposit its contents upon the same in compact form and means for opening and closing said sections.

8. In a cigarette-making machine, a rolling-device for placing a wrapper around a charge of filler-tobacco, and a carrier for receiving a charge of the tobacco and depositing it on the rolling-device, and means for operating the same, said carrier comprising a receptacle having a bottom formed of swinging overlapping movable sections adapted to open simultaneously when brought over the rolling-device to deposit its contents upon the same in compact form, and means for opening and closing said sections.

9. In a cigarette-making machine, a rolling-device for placing a wrapper around a charge of filler-tobacco, and a carrier for receiving a charge of the tobacco and depositing it on the rolling-device, and means for operating the same said carrier comprising a receptacle having a bottom formed with two depending sections, one fixed and the other hinged, and adapted to be brought together at an angle to each other, and a section or flap hinged to the lower edge of said fixed section and adapted to overlap the hinged section when closed up, so that when the sections are swung open the contents may be deposited thereby in a compact form and means for opening and closing said sections and flap.

10. In a cigarette-making machine, the combination of a feeder for supplying filler tobacco and a rolling-device for placing the wrapper around the filler-tobacco, a carrier traveling to and fro between said feeder and rolling-device for conveying the charge of filler-tobacco from the former to the latter and comprising a receptacle having a fixed bottom section provided with a hinged flap, a hinged section upon which the flap overlaps when folded up, a trip-device for raising up the flap and then closing the hinged section as the carrier moves under the feeder to receive a charge of filler-tobacco therefrom, and means for automatically swinging the section and flap open to deposit the charge upon the rolling-device.

11. In a cigarette machine, tobacco feeding and rolling mechanisms, a carrier traveling between said feeding and rolling mechanisms and means for moving the same, said carrier comprising a receptacle having the bottom provided with a swinging section, a horizontally-disposed shaft upon which said section is mounted, said shaft being provided with a spring latch, and means for keeping the latch locked as the carrier moves from the feeder to the rolling-mechanism and then releasing the latch to open said section.

12. The combination of a rolling-device for placing a wrapper around a charge of filler-tobacco, a rotary step-by-step actuated drum or frame arranged with its axis horizontal and provided with peripheral recesses or racks for receiving a rolled cigarette, a knife arranged near each end of said drum or frame for cutting the ends of the rolled cigarette when deposited on the drum or frame, and means for pushing the cigarette from its recess or rack after being cut by the knives.

13. The combination of a paste-tank, a swinging arm or member and mechanism for freely swinging the arm back and forth on a horizontal axis, a brush loosely mounted on said arm or member and hanging with its bristles projecting downwardly when free to swing, and means for permitting the brush to swing free and turning it aside and holding it in the latter position as it is returned to the paste-tank.

14. A pasting-device comprising a paste-tank, a swinging arm or member and a pinion moving in fixed relation therewith for swinging said arm, a rack for periodically turning said pinion and means for moving said rack, a paste-brush loosely mounted on said swinging-arm and means for permitting it to swing free after it moves away from the paste-tank and then turning it aside and holding it in such position as it returns to the paste-tank.

15. The combination of a paste-tank, a rest or support for the cigarette-wrapper, a paste-brush traveling between the paste-tank and the support for applying the paste to the wrapper, said brush being adapted to be turned on its axis and locked in such position while being returned to the paste-tank and then released, and means for producing such movements.

16. The combination of a paste-tank, a rest or support for the cigarette-wrapper, a paste-brush traveling between the paste-tank and the support for applying the paste to the wrapper, a swinging arm or member having a fixed-rod mounted thereon provided with a locking-pin, a paste-brush having a handle formed with a locking-notch for receiving said pin and loosely mounted on said rod, the said brush tending normally to swing into a position in which its bristles project downwardly, and means for turning the brush on the rod after it has applied the paste to the wrapper and moving it endwise thereon to lock it in such position while being returned to the paste-tank and then releasing it.

17. The combination of a paste-tank, a rest or support for the cigarette-wrapper, a paste-brush traveling between the paste-tank and the support for applying the paste to the wrapper, a swinging arm or member provided with a fixed-rod loosely attached to said brush, and means for locking the brush to the rod when the brush is turned aside after applying the paste to the wrapper, a counter-weight mounted upon said brush and tending to swing it into the position in which its bristles project downwardly, a cam-like projection extending from said counter-weight, and means for engaging and swinging the weight to one side to turn the brush and then engaging said cam-like projection to push it to one side and lock the brush to the rod.

18. In a cigarette-making machine, the combination of a rolling-table, and a rolling-apron extending over the same, a vibrating rolling-lever provided with a roller for looping the apron, a rest or support extending above said apron for partially supporting the cigarette-wrapper when placed in position to be rolled up by the apron, a paste-tank, a paste-brush, means for moving the brush from the tank over to the wrapper-support to supply the wrapper with paste and then back again, said means being tripped and actuated by said rolling-lever upon each stroke of the latter.

19. In a cigarette-making machine, the combination of a rolling-table, and a rolling-apron extending over the same, a vibrating rolling-lever provided with a roller for looping the apron, a rest or support extending above said apron for partially supporting the cigarette-wrapper when placed in position to be rolled up by the apron, a paste-tank, a swinging arm or member having a paste-brush mounted thereon, a pinion for rocking said arm or member, a swinging-rack mounted upon said rolling-lever adapted to engage the pinion and turn it in one direction as the rolling-lever moves outwardly and then to engage it and turn it in the reverse direction as the rolling-lever moves inwardly for effecting the movement of the paste-brush from the paste-tank to the wrapper and back again.

20. In a cigarette-making machine, the combination of a rolling-table, and a rolling-apron extending over the same, a vibrating rolling-lever provided with a roller for looping the apron, a rest or support extending above said apron for partially supporting the cigarette-wrapper when placed in position to be rolled up by the apron, a paste-tank, a swinging arm provided with a fixed-rod, a paste-brush swinging upon said rod and having endwise movement thereon and adapted to be swung on the rod and locked thereto, a counter-weight mounted upon said brush and tending to swing the brush in the position in which the bristles project downwardly, said rolling-lever being adapted to engage the counter-weight and swing it to turn the brush and then move it sidewise to shift the brush on the rod and lock it while being returned to the paste-tank, and connections intermediate said rolling-lever and said swinging-arm for swinging the arm to and fro as the lever moves out and in.

21. The combination of a feeding-mechanism, a vertically-reciprocating knife for cutting off the tobacco delivered by said mechanism, means for actuating the knife a vertically-moving gravity presser arranged intermediate said mechanism and knife for bearing upon the tobacco while being cut by the knife, said knife adapted to engage and lift the presser in its upward movement, substantially as and for the purpose set forth.

22. In a cigarette-making machine, the combination of feeding-mechanism, the vertical rock-shafts 40 and 41 placed adjacent said mechanism and each provided with a receptacle adapted to be swung horizontally through arcs of intersecting circles alternately back and forth between the said feeding-mechanism and a rolling-device, and a rolling-device for each of said receptacles.

23. In a cigarette-making machine, the combination of feeding-mechanism, a pair of rolling devices arranged near said mechanism a suitable distance apart, the rock-shafts 40 and 41 each provided with a horizontally-projecting frame 42 carrying the receptacle 43 formed with a folding-bottom for emptying the contents thereof upon its rolling-device when brought over the same, said receptacles swinging through arcs of intersecting circles in alternation back and forth between said feeding-mechanism and one of the rolling-devices.

24. In a cigarette-making machine, the combination of feeding-mechanism, a pair of suitably-spaced cigarette rolling devices arranged near said mechanism, the rock-shafts 40 and 41, each provided with a receptacle for receiving a charge of filler-tobacco from said feeding-mechanism, means for rocking and vertically-moving each of said shafts, said receptacles swinging back and forth between said feeding-mechanism and their respective rolling-devices.

25. In a cigarette machine, tobacco supplying or feeding mechanism, a plurality of rolling-mechanisms and means for operating the latter, a plurality of traveling-carriers each receiving the tobacco from the feeding-mechanism and conveying it to its respective rolling mechanism, and means for moving the said carriers in opposite directions between said feeding-mechanism and said rolling-mechanisms.

26. In a cigarette machine, tobacco supplying or feeding mechanism, a plurality of rolling-mechanisms and means for operating the latter, and a plurality of horizontally-swinging carriers provided with means for moving them in opposite directions between said feeding-mechanism and said rolling-mechanisms.

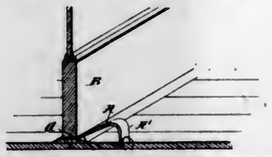
27. In a cigarette machine, tobacco supplying or feeding mechanism, a plurality of rolling-mechanisms and means for operating the latter, a plurality of swinging-carriers for receiving the tobacco from the feeding-mechanism and conveying it to the rolling-mechanisms, and means for alternately swinging said carriers in opposite directions between said feeding-mechanism and said rolling-mechanisms.

28. In a cigarette machine, tobacco supplying or feeding mechanism, a plurality of rolling-mechanisms and means for operating the latter, oppositely moving carriers each traveling between said feeding-mechanism and its respective rolling-mechanism for receiving the tobacco from the one and delivering it to the other, said carriers being provided with shafts for effecting the said movements.

29. In a cigarette machine, tobacco supplying or feeding mechanism, a plurality of rolling-mechanisms and means for operating the latter, and a plurality of traveling-carriers each moving back and forth between said feeding-mechanism and its respective rolling-mechanism in alternation and means for causing said carriers to move alternately between said feeding and rolling mechanisms.

30. In a cigarette machine, tobacco feeding-mechanism, a plurality of rolling-mechanisms and means for operating the latter, a plurality of traveling-carriers each receiving the tobacco from the feeding-mechanism, and conveying it to its respective rolling-mechanism, and means for moving the said carriers between said feeding-mechanism and said rolling-mechanisms.

546,064. DOOR-FASTENER. CHARLES P. COOPER, New York, N. Y. Filed Mar. 27, 1895. Serial No. 543,434. (No model.)



Claim.—1. A door fastener having the branches A, A′, the door branch A being beveled to form edge *a* and having side bevels 2 on its opposite edges, substantially as described.

2. A door fastener having the branches A, A′, the door branch A having the bevel 1 on its under side forming edge *a* and a straight surface on its opposite side and having side edge bevels 2, substantially as described.

3. A door fastener having the branches A, A′, the door branch A forming an angle of at least twenty degrees with a level surface and having the bevel 1 on its under side forming edge *a* and a straight surface on its opposite side and having side edge bevels 2, substantially as described.

546,065. OVERSHOE-RETAINER FOR FELT BOOTS. JAMES CRAVEN, Hastings, Mich. Filed Mar. 5, 1894. Serial No. 502,468. (No model.)



Claim.—1. A foot-gear, comprising a felt-boot, a strip of leather attached to the ankle portion of said boot, an elastic metal plate having one end passed through said leather strip, located between said boot and leather strip and attached thereto, the other end of said plate being free and provided with a catch, and an overshoe provided with a catch adapted to interlock with the catch of the plate on the boot, substantially as set forth.

2. A foot-gear, comprising an over-shoe having the catch, a felt boot, an elongated elastic metal plate attached at its upper end to the ankle portion of said boot, the lower end being free from all attachments, provided with an integral catch, and extending downward between the over-shoe and boot, and adapted to hold itself with a spring resistance away from the boot and against the over-shoe catch, whereby the detachment of the over-shoe when the boot is on the foot is facilitated, substantially as set forth.

546,066. VALVE-SEAT. RICHARD T. CRANE, Chicago, Ill., assignor to the Crane Company, same place. Filed Dec. 3, 1894. Serial No. 530,703. (No model.)

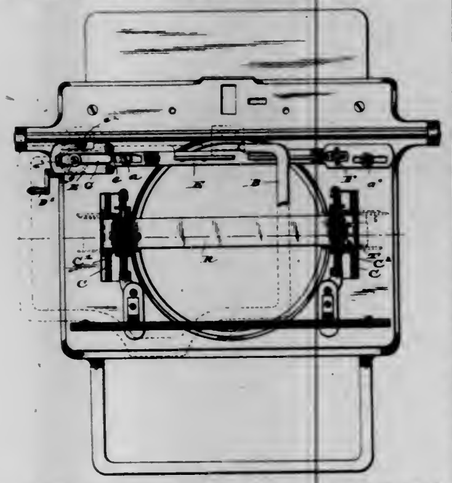


Claim.—In a valve seat or disk, the combination of, a seat ring case; a reversible seat ring, having a soft metal bearing face combined with a hard metal body, and adapted to rest in said case; and a nut for holding the seat ring in place, substantially as described.

546,067. RIBBON-FEED-REVERSING MECHANISM. CHARLES E JOHNSON, Mount Jackson, assignor to the Johnson Novelty Company, Indianapolis, Ind. Filed Nov. 6, 1894. Serial No. 528,038. (No model.)

Claim.—1. The combination, in a ribbon feed reversing mechanism for typewriting machines, of the ribbon spools, the ribbon running between said spools, tapes immediately connected to said spools of a less width than the winding surface thereof, pawls mounted in said spools just inside the heads thereof and provided with projections which extend out over that portion of the winding surface of

said spools left uncovered when the ribbon is unwound alongside the narrow tape thereon, and mechanism for shifting the ribbon feed adapted to be operated by said pawls when extended, whereby said mechanism is adapted to be operated when the ribbon is unwound at each end respectively, and prevented from being operated so long as any ribbon remains on said spools, substantially as set forth.



2. The combination, in a ribbon feed reversing mechanism for typewriting machines, of the ribbon-spool shafts, the ribbon spools thereon, a shaft extending between said ribbon-spool shafts and adapted to drive one or the other alternatively, a spring adapted to throw said ribbon spool shaft in one direction, a lever engaging with a hub or collar on said shaft and extending up into the path of an operating device on the traveling carriage, a sliding contact point on said lever, a second lever adapted to operate said sliding contact-point, and a pawl on the corresponding ribbon spool adapted to automatically move into position to operate said lever when the ribbon is unwound, substantially as set forth.

3. The combination, in a ribbon feed reversing mechanism for typewriting machines, of a lever for moving the shaft which operates the ribbon spools, a sliding contact point on said lever, mechanism for operating said sliding contact-point, and a spring detent K′ for supporting said sliding contact-point until moved by an appropriate operating device, and said operating device.

4. The combination, in an automatic ribbon feed reversing mechanism for typewriting machines, of the ribbon spools, the shaft extending between said ribbon spools and serving to operate them to run alternatively in opposite directions, a lever for moving said shaft in one direction, a spring for moving said shaft in the other direction, a bar extending longitudinally of the machine and adapted to be moved by said lever, a detent G at the other end of the machine from said lever, another lever positioned below said detent, and a pawl held out of engagement by the ribbon and released and permitted to drop into operative position when the ribbon is unwound for operating said lever and through it said detent, substantially as set forth.

5. The combination, in a ribbon feed reversing mechanism for typewriting machines, of the shaft which extends between the ribbon spool shafts and by which they are alternatively driven, a lever engaging with said shaft and extending up toward the path of the carriage, a movable contact point on said lever adapted to be thrown into the path of the carriage when the ribbon is unwound by which the first named shaft is moved longitudinally in one direction, a spring by which said shaft is moved longitudinally in the other direction, a sliding bar with which said lever is engaged, and a detent engaging with said bar whereby the mechanism will be held in the direction to which it has been operated by said lever until said detent is released.

6. The combination, with an automatic ribbon feed reversing mechanism for typewriting machines, and the mechanism for moving the ribbon spools transversely; of a reciprocating sliding bar operated from said ribbon feed reversing mechanism, a crank shaft mounted in the frame-work of the machine below one end of said bar and provided with a ratchet wheel on the upper end and a crank or wrist on the lower end, a pawl on said reciprocating bar, and a pitman connecting said crank to said mechanism for moving the ribbon spools transversely, said parts being arranged and operating substantially as set forth.

7. The combination, with an automatic ribbon feed reversing mechanism for typewriting machines, and the mechanism for moving the ribbon spools transversely; of the reciprocating bar E provided with the spring pawl e^3, the shaft N′ having the ratchet wheel N^3 on its upper end with which said pawl engages, and the crank or crank wheel N on its lower end, and the bar or pitman O^3 extending from said crank to said mechanism for moving the spools transversely, substantially as shown and described.

546,068. BLUE-BLACK DISAZO DYE. FRIEDRICH KRECKE and IGNAZ ROSENBERG, Biebrich, Germany, assignors to Kalle & Co., same place. Filed June 20, 1895. Serial No. 553,476. (Specimens.) Patented in Germany Sept. 10, 1891, No. 73,901.

Claim.—1. The process of manufacturing dis-azo-dyestuffs by reacting upon alpha$_1$ naphthylamin-beta$_4$ monosulfoacid, which may be obtained by nitration and reduction of naphthalene-beta monosulfoacid with the diazo-compound of sulfo- and carboxy acids of the aromatic series, such as naphthylamin-disulfoacid and amido-salicylic acid, rediazotizing the thus produced amido-azo-body and combining again with substances which are used for the manufacture of azo-dyestuffs in the manner well known in the arts, such as alpha-, beta-naphthol, their sulfoacids, alpha-, beta-naphthylamin, their alkylated derivatives, dioxynaphthalenes, amidonaphthols and their sulfoacids, substantially as described.

2. As new articles of manufacture the class of disazodyestuffs containing the alpha$_1$ alpha$_2$ disazonaphthalene beta$_4$ sulfo-acid group in the center position forming after drying and pulverizing grayish-black to dark greenish-black amorphous powders, and dyeing wool in an acid bath violet to bluish black shades, easily soluble in water and almost insoluble in absolute alcohol, soluble in concentrated sulfuric acid with greenish-blue to green color, the violet or bluish aqueous solution turning more greenish on addition of ammonia.

3. As a new article of manufacture the specific disazo dyestuff with the formula

$$C_{10}H_3\begin{cases}(1)N{=}N{-}(4)C_{10}H_5{-}(1)N{=}N{-}(1)C_{10}H_4\begin{cases}(2)OH\\(3)SO_3Na\\(6)SO_3Na,\end{cases}\\(3)SO_3Na\\(6)SO_3Na\end{cases}\qquad (7)SO_3Na$$

which forms after drying and pulverizing a brownish-black amorphous powder with metallic luster, soluble in water, nearly insoluble in strong alcohol, soluble in strong sulfuric acid with green coloration, the bluish-violet solution in water turning greenish blue on addition of ammonia,—forming when treated with strong reducing agents, alpha$_1$ alpha$_2$ naphthylene diamine beta$_4$ mono sulfo acid besides a naphthylamin and amido-naphtholdisulfo-acid,—dyeing wool in an acid bath a very even blue black shade fast against milling, which dyestuff may be produced from alpha$_1$ naphthylamin beta$_2$ beta$_4$ disulfoacid and alpha$_1$ naphthylamin beta$_4$ monosulfo-acid and beta-naphthol beta disulfoacid, substantially as described.

546,069. BLUE-BLACK DISAZO DYE. FRIEDRICH KRECKE and IGNAZ ROSENBERG, Biebrich, Germany, assignors to Kalle & Co., same place. Filed June 20, 1895. Serial No. 553,477. (Specimens.) Patented in Germany Sept. 10, 1891, No. 73,901.

Claim.—As a new article of manufacture the new coloring matter of the formula

$$C_{10}H_5(SO_3Na)_2N{=}N{-}C_{10}H_3SO_3Na{-}N{=}NC_{10}H_4NH_2,$$

which forms after drying and pulverizing a blackish-green amorphous powder with metallic luster, and dyes wool in an acid bath a bluish-black shade; soluble in water, with violet blue color, which changes into a greenish-blue on the addition of ammonia; in concentrated sulfuric acid it gives a green solution; nearly insoluble in spirits and producible from alpha$_1$ naphthylamine beta$_3$ beta$_4$ disulfonate of sodium, alpha$_1$ naphthylamine beta$_4$ monosulfonate of sodium and alphanaphthylamin.

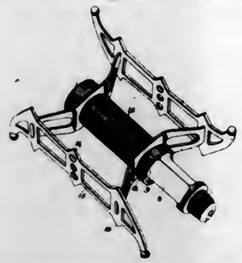
546,070. BLUE-BLACK DYE. FRIEDRICH KRECKE and IGNAZ ROSENBERG, Biebrich, Germany, assignors to Kalle & Co., same place. Filed June 20, 1895. Serial No. 553,478. (Specimens.) Patented in Germany Sept. 10, 1891, No. 73,901.

Claim.—As a new product of manufacture the new coloring matter of the formula:

$$\begin{matrix}COONa\\OH\end{matrix}\Big\rangle C_6H_3{-}N{=}N{-}C_{10}H_5\begin{cases}SO_3Na\\N{=}N{-}C_{10}H_4{-}\begin{cases}OH\\SO_3Na\\SO_3Na,\end{cases}\end{cases}$$

which forms after drying and pulverizing a brownish-black amorphous powder, dyeing a bluish-black on chromed wool which is fast to milling and light; soluble in water, insoluble in spirits, moderately soluble in dilute alcohol, the violet solution in water turning blue on the addition of ammonia, and red on the addition of mineral acids; the solution of the color in strong sulfuric acid is greenish-blue; and which is producible from amido-salicylic acid, alpha naphthylamine beta monosulfonate of sodium and naphthol disulfoacid R.

546,071. BICYCLE-PEDAL. CHARLES H. METZ, Waltham, Mass. Filed Mar. 27, 1895. Serial No. 543,364. (No model.)



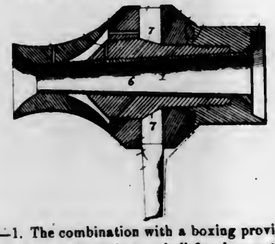
Claim.—1. In a bicycle pedal, the combination with a hub, arms extending laterally from the hub, and parallel foot-plates secured to the arms, the end portions of which form horns or stops extending beyond the length of the hub, of a shaft or pintle having a screw-threaded end and a wrench shoulder adjacent to the end, and a crank arm having a screw-threaded opening into which the threaded end of the shaft may be screwed.

2. In a bicycle pedal, the combination with a hub, of upwardly extending stops located out of the vertical plane of the hub, and rigidly connected with the hub.

3. In a bicycle pedal having a hub, a foot-supporting plate back of the hub and having inverted stops and an upper supporting portion shorter than the distance between the stops.

4. The combination with the pintle 5 having the threaded portion 6, the abutment 7 and the wrench shoulder 8, and furnished with cone bearings, of the hub 10 surrounding the pintle, the raceways 12—12 embracing the cone bearings and having the sleeves 13—13 secured in the hub, balls located in the raceways, the arms 11—11 secured to the hub, and parallel foot-plates 14 and 15 secured to the ends of the arms and extending beyond the length of the hub.

546,072. HUB. CHARLES O. METZLER, Holden, Mo. Filed May 19, 1894. Serial No. 511,846. (No model.)



Claim.—1. The combination with a boxing provided at its inner end with projections, of a casing or shell fitted upon the inner end of the boxing, provided with a socket-ring, and having depressions to receive the projections on the boxing, an expanding-cone fitted upon the boxing, threaded at its inner end into the bore of the casing or shell, and provided at the outer end of its bore with threads to engage threads upon the boxing, the pitch of the threads in the bore of the cone and the corresponding threads upon the boxing with which they engage being greater than that of the threads upon the inner end of the cone which engage the bore of the casing, spokes fitted in the sockets of the socket-ring, and a washer threaded upon the enlarged portion of the cone and closing the outer sides of the sockets, substantially as specified.

2. The combination of a boxing provided at its inner end with projections 2 and at its outer end with exterior screw threads, a sectional shell or casing comprising a guard section 4 and a socket ring 8 connected at their contiguous ends by interlocking projections and depressions, said guard section being interiorly threaded from its outer toward its inner end, and being provided at its inner end with sockets for the reception of said projections on the boxing, an expanding cone reduced toward its inner end and having an exteriorly threaded extremity to fit in the threaded bore of the guard section, said expanding cone having its bore threaded near its outer end to engage the threads upon the exterior surface of the boxing, said threads in the bore of the cone being arranged upon a more abrupt pitch than those upon the exterior surface of its inner end, whereby when the cone is turned independently of the boxing and the guard section the boxing is drawn outward more rapidly than the cone is fed into the guard section, whereby the projections at the inner end of the boxing are drawn firmly into the sockets in the inner end of the guard section, spokes fitted in the sockets of the socket ring, a ring 17 threaded exteriorly upon the enlarged portion of the cone to close the outer sides of the spoke sockets, and a guard threaded upon the extremity of the boxing and bearing at its inner end upon the outer surface of said ring, substantially as specified.

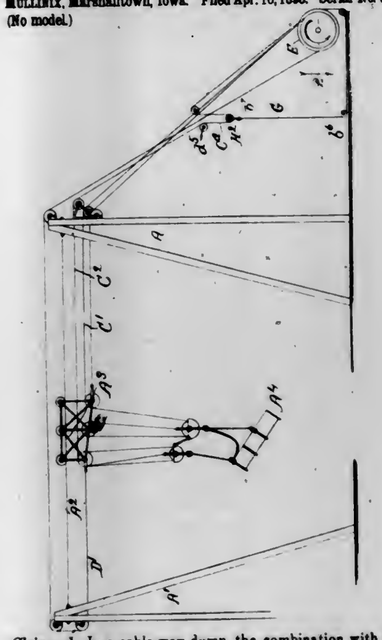
546,073. COMBINED LIQUID-CEMENT RECEPTACLE AND SCRAPER. JUDD W. MIX, Byron, Ill. Filed May 13, 1895. Serial No. 549,112. (No model.)



Claim.—1. A device for holding liquid adhesive consisting of a shell, a movable piston located therein, means for moving the piston, the end of the receptacle having a foot extending transversely thereof, the discharge opening for the adhesive extending through the heel portion of the foot.

2. A device for holding liquid adhesive consisting of a shell having a discharge opening at one end, its other end provided with lengthwise slits, a piston located within the shell, a screw threaded shaft having a screw thread connection with the piston, one end seated against the discharge opening, a head or knob secured to the shaft and a ring located outside of the shell adapted to compress the slotted end of the shell.

546,074. ATTACHMENT FOR CABLEWAY-DUMPS. ARTHUR M. MULLINIX, Marshalltown, Iowa. Filed Apr. 10, 1895. Serial No. 545,139. (No model.)



Claim.—1. In a cable-way dump, the combination with the enlarged rotatable drum-part, of a bolt inserted therein and presenting a hook projection, a lever, provided with a forked-end and having a suitable pivotal connection, a second or hand-lever, pivotally supported, and a link connecting said levers, whereby a forward movement of the hand-lever brings an object supported by the forked-lever into position to be engaged by the hook-projection on said drum, substantially as described.

2. In a cable-way dump, the combination with a hoisting and dumping-drum, having parts of different diameters, the main dumping-cable, an auxiliary dumping-cable, having one end in position to engage with and be coiled on the larger part of said drum, a tripping-carriage, connected to the opposite end of said cable and located in the path of and bearing on the upper side of the main dumping-cable, a frame-support, in which said carriage is adapted to have a vertical movement, and means for returning said carriage to its normal position during the time that the auxiliary cable is being unwound from the drum, substantially as described.

3. In a cable way dump, the combination with a main dumping-cable, of an auxiliary dumping-cable, adapted to be wound on the

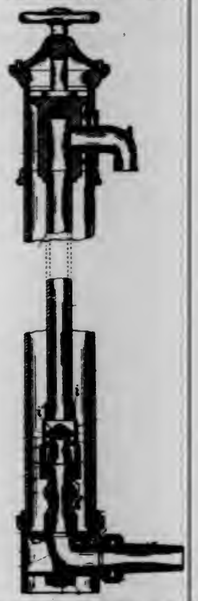
dumping-drum, a tripping-carriage, connected to one end of the auxiliary cable, a frame-support, in which the carriage has a vertical movement, a sheave, mounted in said carriage and having frictional contact with the upper side of the main cable, and a weight-attachment, connected to and automatically returning said carriage to its normal position when the strain of the auxiliary-cable is relaxed, substantially as described.

4. In a cable-way dump, the combination with a rotatable drum, a hook-bolt projecting therefrom, an auxiliary dumping-cable, having a loop formed on one end thereof, a lever, having a bifurcated end and loosely retaining said loop in place, a hand shifting-lever, connected with the first lever, whereby a forward movement of the hand-lever throws said loop into the path of said hook-bolt to be engaged thereby, substantially as described.

5. In a cable-way dump, the combination with a rotatable drum, of an auxiliary dumping-cable, having one end in position to be coiled on said drum, a tripping-carriage, an eye-bolt, connecting the opposite end of the auxiliary-cable with said carriage, and a spring coiled on said bolt, substantially as described.

6. In a cable-way dump, the combination of the main dumping-cable, the auxiliary dumping-cable, the tripping-carriage, the supporting-frame, and the guide-sheaves, mounted on opposite sides of said frame, substantially as described.

546,075. HYDRANT. JOHN G. MURDOCK, Cincinnati, Ohio. Filed Mar. 11, 1895. Serial No. 541,263. (No model.)



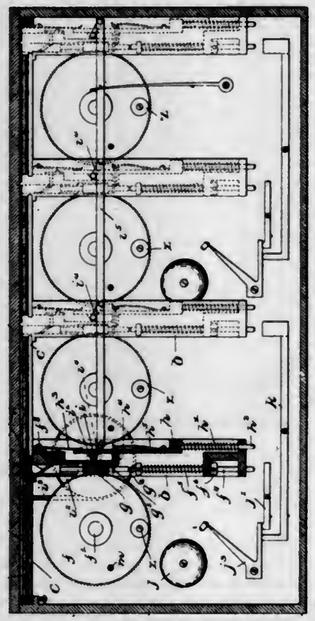
Claim.—1. The combination of the stock, the water way within the stock having a spout extending through the head of the stock, the base fitted to turn upon the lower end of the stock and having a centrally perforated dividing partition, the elbow leading from the main passing through the rim of the stock and having a downwardly extending screw threaded projection to pass through the dividing partition of the base and connected to the water-way of the stock, and a nut fitted to the downwardly extending screw threaded end of the elbow, whereby the supply port for the water to the stock may be adjusted relative to the discharge spout and locked in the desired position, substantially as and for the purpose set forth.

2. The combination of the stock, the base, the water supply elbow in the base and lower end of the stock, the nipple secured in the supply elbow and projecting centrally up into the stock, having its upper end finished and tapering to form a slip joint with the movable water way, the movable water way, the plunger secured to the lower end thereof to pass over the nipple projecting up from the water way, the packing ring to form a joint with said nipple, the loose valve seat within the plunger, having downwardly extending tapered end to form a joint with the upper end of the nipple, a valve carried by the plunger, and means such as shown to elevate the valve from its seat and close it thereon, substantially as shown and described.

3. In a valve mechanism for hydrants, the combination of the supply nipple projecting centrally from the lower end of the stock and tapered exteriorly at its upper end, the chambered plunger fitted to slide over the tapered portion of the nipple, a packing within the plunger to form a water joint with the nipple, a loose valve seat within the chamber, having a cylindrical, tapered downward extension to fit in the nipple and the valve carried by the plunger to close upon the seat when the plunger is forced downwardly, and open the water way when the plunger is elevated, substantially as shown and described.

4. The combination of the hydrant stock, the movable water way fitted to slide vertically in said stock, means for elevating and lowering said water way, the ring, D, having a reduced lower neck, *d*, and inwardly extending flange, *d'*, secured to the lower end of the stock, the base, E, to receive the reduced neck, *d*, of the ring, D, and support the stock, the elbow or union, F, having an annular flange, *f*, resting upon the inwardly projecting flange, *d'*, of the ring, D, the nipple, G, secured in the vertical branch of the union, F, and having a tapered upward extension, *g'*, the chambered plunger carrying the valve mechanism within it and adapted to slide over the tapered end of the nipple and secured to the lower end of the movable water way, substantially as shown and described.

546,076. VOTING-MACHINE. JOHN MCTAMMANY, Spencer, Mass. Filed Nov. 25, 1893. Serial No. 491,969. (No model.)



Claim.—1. In a voting machine, the combination of a suitably constructed inclosing casing having provisions for supporting an elongated ballot sheet; registering wheels within the casing said wheels having a common axis which extends in the direction of longitudinal extent of the ballot-sheet support, and each wheel being rotatively independent of all the others; and actuating pieces, one for each wheel, and arranged in line at one side of the ballot-sheet support so as to register with the names in the ballot-sheet.

2. In a voting machine, the combination of a suitable inclosing box or casing, registering-mechanism on suitable supports therein and having actuating means accessible at the top of the casing, and a transparent cover extending over the registering-mechanism and supporting a ballot-sheet adjacent to the actuating devices of the registering-mechanism, the latter being visible through the transparent cover when the ballot-sheet is removed.

3. In a voting machine, the combination of a suitable inclosing box or casing, registering-mechanism on suitable supports therein and having actuating means accessible at the top of the casing, a transparent cover held by the supports of the registering-mechanism and carrying a ballot, and a transparent cover extending over the ballot.

4. In a voting machine, the combination of an inclosing box or casing having a number of transversely-extending supports on the interior, registering-mechanism whose actuating devices extend through said supports at the top, transparent plates resting on said supports and confined laterally thereby, ballot-sheets on said plates, and a cover having transparencies extending over the said ballot-sheets between

the transverse supports, said cover conning the ballot-supporting plates longitudinally.

5. In a voting machine, the combination with an inclosing box or casing having a transversely-extending interior support, of a plurality of registering-wheels loosely mounted on a common shaft and each rotatively independent of the others, and headless push-pieces operatively connected with said wheels respectively and extending through the transverse support, in which they are countersunk.

6. In a voting machine, the combination of a plurality of registering mechanisms, push-pieces operatively connected therewith respectively, a carriage having locking pieces for engagement with each push-piece when in its outermost or normal position, said carriage adapted to be moved to its locking position by an inward movement of any one of said push-pieces, and means for releasing the carriage, substantially as described.

7. In a voting machine, the combination of a plurality of registering wheels, spring-pressed push-pieces operatively connected therewith respectively and each having a driving shoulder and a locking shoulder, a spring-pressed carriage having spring-pressed pins projecting behind the driving shoulders of the push-pieces and adapted for engagement with the locking-shoulders thereof, and means for releasing the carriage from its locking adjustment.

8. In a voting machine, the combination of a plurality of registering-wheels, push-pieces operatively connected therewith respectively, a carriage having locking-pieces for engagement with each push-piece when in its outermost or normal position, said carriage adapted to be moved to its locking position by an inward movement of any one of said push-pieces, and means for releasing the carriage, which means control access to the ballot.

9. In a voting machine, the combination of a plurality of registering-wheels, spring-pressed push-pieces operatively connected therewith respectively and each having a driving-shoulder and a locking-shoulder, a spring-pressed carriage having spring-pressed pins projecting behind the driving-shoulders of the push-pieces and adapted for engagement with the locking-shoulders thereof, and means for releasing the carriage from its locking adjustment, which means control access to the ballot.

10. In a voting machine, the combination of a plurality of registering-wheels, spring-pressed push-pieces operatively connected therewith respectively and each having a driving-shoulder and a locking-shoulder, a spring-actuated longitudinally and laterally-movable carriage having spring-pressed pins projecting behind the driving shoulders of the push-pieces and adapted for engagement with the locking-shoulders thereof under longitudinal movement of the carriage, and means for moving the carriage laterally to disengage the pins from said locking-shoulders, said means controlling access to the ballot.

11. In a voting machine, the combination of a plurality of registering-wheels, spring-pressed push-pieces operatively connected therewith respectively and each having a driving-shoulder and a locking-shoulder, a spring-actuated longitudinally and laterally-movable carriage having spring-pressed pins projecting behind the driving-shoulders of the push-pieces and adapted for engagement with the locking-shoulders thereof under longitudinal movement of the carriage, a spindle carrying a cam to act on the carriage and move it laterally to release its pins from the locking-shoulders of the push-pieces, a drum on said spindle, and means for operating said drum, which means control access to the ballot.

12. In a voting machine, the combination with an inclosing box or casing having a hinged lid, of a plurality of registering-wheels within the box, push-pieces operatively connected therewith respectively and each having a driving-shoulder and a locking-shoulder, a spring-actuated longitudinally and laterally-movable carriage having spring-pressed locking-pins projecting behind the driving-shoulders of the push-pieces and adapted for engagement with the locking-shoulders thereof under longitudinal movement of the carriage, and suitable connections between the carriage and the box-lid whereby the raising of the lid moves the carriage laterally and releases its locking-pins from the shoulders of the push-pins.

13. In a voting machine, the combination with an inclosing box or casing having a hinged lid, of a plurality of registering-wheels within the box, push-pieces operatively connected therewith respectively and each having a driving-shoulder and a locking-shoulder, a spring-actuated longitudinally and laterally-movable carriage having spring-pressed locking-pins projecting behind the driving-shoulders of the push-pieces and adapted for engagement with the locking-shoulders thereof under longitudinal movement of the carriage, a spindle having a cam to act against the carriage and move it laterally, a drum on said spindle, and a flexible connection between the drum and the hinged box-lid.

14. In a voting machine, the combination of a registering-wheel, a spring-pressed longitudinally-movable and rotatable spindle having a spiral groove, a fixed pin engaging said groove, and a worm on the spindle and in gear with the registering-wheel, said worm being rotatively engaged with the spindle but held from longitudinal movement.

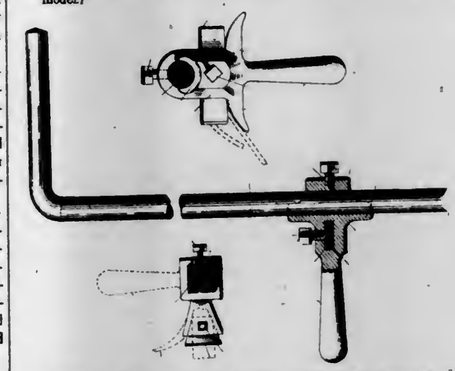
15. In a voting machine, the combination of two or more sets or rows of push-pieces longitudinally movable to operate on the registering mechanism, a bell, a pivoted striker, and bars extending across the rows of push-pieces respectively, and each having an arm engaging an arm of the striker.

16. A voting machine, comprising in its construction a series of countersunk push-pieces movable in orifices or guides in the casing of the machine, and a single independent pusher insertible in and removable from either orifice for operating said push-pieces.

17. A voting machine comprising in its construction a series of countersunk push-pieces movable in orifices or guides in the casing of the machine and socketed in their outer ends, and a single pusher having a tapering end for engagement with the sockets of the push-pieces and insertible in and removable from any one of the orifices, substantially as and for the purpose described.

18. In a voting machine, the combination with registering mechanism, and a rotatable and longitudinally movable push-piece for operating the same, with provisions for converting longitudinal into rotary movement thereof; of a push-piece comprising a handle to be grasped by the operator, and a spindle rotatable in said handle and adapted to act on the push-piece, substantially as described.

546,077. DEVICE FOR SHARPENING DISK HARROWS. PETER A. NELSON, Wyanet, Ill. Filed Feb. 4, 1895. Serial No. 537,265. (No model.)



Claim.—1. The combination with a vertically disposed rod adapted to be supported at one end upon the ground, and at the other end formed with a handle extended substantially at a right angle thereto, of a tool holder sleeved upon said rod and having a transverse aperture for the reception of a tool and an integral curved horn convex upon the side nearest the rod, substantially as and for the purpose specified.

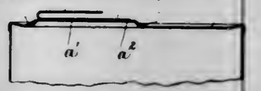
2. An improved disk harrow sharpener consisting of a vertically disposed rod having at its upper end a handle extended substantially at a right angle to the length thereof, said rod being adapted to be supported at its lower end upon a suitable support, as the ground, a holder slidingly mounted upon the rod and having a handle and a horn convex upon the side nearest the rod, a tool mounted in said holder, means on the holder for engaging the rod, and means parallel with the rod for holding the tool adjustably in the holder, substantially as and for the purpose specified.

3. The improved disk sharpener described, comprising the rod with handle at one end, the holder sleeved upon said rod and having vertical extension, lateral handle and horns convex upon the side nearest the vertical extension and a transverse passage for a tool, a set screw for holding a tool in said passage, and a set screw at right angles thereto for holding the holder in its adjusted position upon the rod, substantially as shown and described.

546,078. CAN-CLOSING DEVICE. CHARLES E. PIERCE, Cambridge, Mass. Filed May 13, 1895. Serial No. 549,094. (No model.)

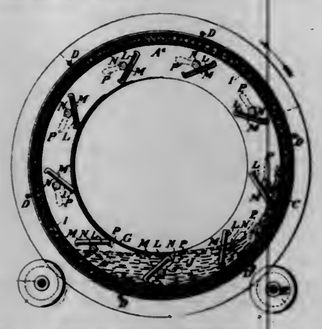
Claim.—1. A can comprising a body having an enlarged opening surrounded by a seat or bearing surface, and a two-part closing device comprising, first, a bushing formed to bear at its outer portion on said bearing surface and adapted to be united thereto by a sealing medium during the operation of sealing the can, said bushing having a smaller opening surrounded by a seat projecting inwardly from the margin of the opening in the can body; and secondly, a cover formed to close the opening in the bushing and to bear on the seat on the bushing, said cover being secured to the bushing by a rupturable film of solder interposed between the bushing and cover and provided with an outwardly projecting tongue whereby it may be rolled back

to separate it from the bushing, said bushing and cover constituting a closing device adapted to be secured to the can by the operation of sealing the latter, and to be easily ruptured to afford access to the interior of the can.



2. A can comprising a body having an enlarged opening, a bushing secured to the body around said opening, said bushing having a screw-threaded offset and a seat at the outer portion of said offset surrounding a discharge opening in the offset, a flexible sheet-metal cover soldered to said seat and provided with a flexible tongue, and a screw-threaded cap adapted to inclose said offset and cover the tongue.

546,079. AMALGAMATING APPARATUS FOR EXTRACTING GOLD. THOMAS PILKINGTON, San Francisco, Cal. Filed Dec. 20, 1894. Serial No. 532,476. (No model.)



Claim.—1. In gold-extracting apparatus, a rotary open-ended amalgamating cylinder, in the manner described, its interior lined with plates and provided with a series of removable vanes, set diagonally to the face of the plates and at some distance therefrom, the main cylinder open at its ends to permit access and observation while the process is going on, in the manner substantially as described.

2. In gold-extracting apparatus, a rotary amalgamating cylinder lined with and containing plates for the deposit of amalgam or gold, its ends formed of annular rings or plates, and its barrel of staves held by through bolts, so the whole can be separated or assembled to facilitate cleaning or repairing, and the removable vanes or plates set diagonally to the face of the lining plates and away therefrom, in the manner substantially as described.

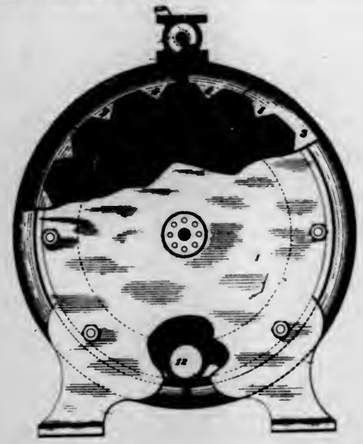
3. In gold-extracting apparatus, a revoluble amalgamating cylinder lined on its interior side with a continuous catch plate or plates, in the manner described; a series of removable vanes or plates set parallel to the axis, and oblique to the radius of the cylinder and away from the catch plates, so as to cause the contained pulp to be directed toward the plates and to pass between these and the vanes to secure impingement upon and constant action of the plates, substantially as described.

4. In gold-extracting apparatus, a revoluble amalgamating cylinder mounted on and impelled by friction rollers, in the manner described, its interior lined with a plate or plates, and a series of parallel plates fixed therein, the latter held by cams, and removable by means of handles on the outside of the cylinder, substantially as described.

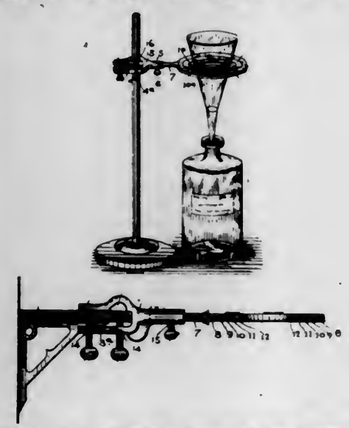
5. In gold-extracting apparatus, a revoluble amalgamating cylinder mounted and revolved by rollers, in the manner described; annular ends held by through bolts, and one end formed with a discharge nozzle or spout; a series of removable baffling or diffusing plates set clear of the plates and held by an adjusting device operated from the exterior of the cylinder, substantially as described.

546,080. ROTARY STEAM-MOTOR. RICHARD POWHAY, Portland, Oreg., assignor of one-half to Horace G. Campbell, same place. Filed July 3, 1894. Serial No. 516,444. (No model.)

Claim.—The combination in a rotary steam motor of a removable housing mounted on standards, an annular steam chamber, between the outer housing and cylindrical casing 2', divided into two compartments, said casing being supported within the housing, angular recesses on the outer surface of said casing, steam tubes secured in the angular recesses, passing through said casing and oppositely arranged therein with respect to the two compartments, reduced apertures in the inner ends of the tubes, a journal mounted in boxes in the side walls of the housing, a wheel mounted on the journal to revolve within said casing, a series of boxes forming an endless series of paddles on the periphery of the wheel, a steam valve mounted on top the housing to admit steam into either compartment, an exhaust chamber at the bottom of the housing connected with the inner chamber, substantially as described and set forth.



546,081. FUNNEL-HOLDING BRACKET. EMIL REYER, South Bend, Ind. Filed May 27, 1895. Serial No. 550,791. (No model.)



Claim.—1. A bracket for supporting funnels, percolators and similar laboratory apparatus comprising a body having parallel jaws, one of which is recessed to receive a bracket standard and the other of which has set screws, one of which is disposed opposite said recess, substantially as described.

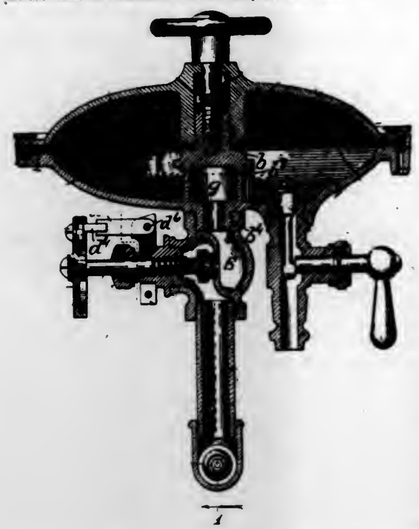
2. A bracket for supporting funnels and percolators, comprising a bracket body having clamping jaws, a sleeve and set screw, and a series of rings, one of which has a shank projecting exteriorly therefrom to be held within the sleeve by the set screw, substantially as described.

546,082. FILTER. HARRY J. RICHTER, Chicago, Ill., assignor, by mesne assignments, to the International Filter Company, of Illinois. Filed Nov. 30, 1894. Serial No. 530,385. (No model.)

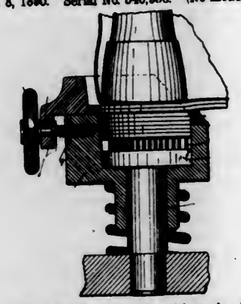
Claim.—1. In a filter, the combination with the inlet valve, of a disk hand grasp mounted on the stem thereof and provided with a slot, a screw inserted therethrough, a gage finger secured to said screw, and a stop lying in the pathway of said gage finger, substantially as described.

2. In a filter, the body consisting of two separate parts, one part provided with a hub and the other with a central sleeve which embraces said hub, the clamping bolt passing through the sleeve and engaging a screw thread in the hub, said bolt having a shoulder engaging the body section to which the sleeve is attached and being provided with a hand grasp, and the pad having a central perforation to surround the hub, all combined substantially as described.

3. The filter body in sections and means for clamping these sections together, the diaphragm or pad having its edges clamped between the sections, and a drip trough connected to the edge of one of the sections, all combined substantially as described.



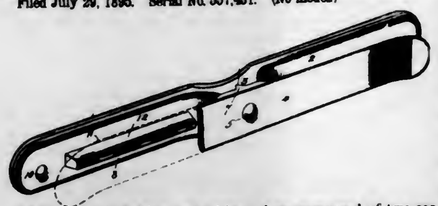
546,083. HEEL-CUP. WALTER E. SEARLES, Marlborough, Mass. Filed Mar. 8, 1895. Serial No. 540,938. (No model.)



Claim.—1. In a machine for attaching the heels to shoes, the herein described heel-cup comprising a main cup-portion adapted to fit the heel, and an adjustable gage-portion comprising an extension of the rear and side walls thereof, said extension being movable with relation to the said main cup-portion, substantially as described.

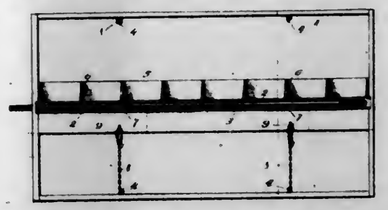
2. In a machine for attaching the heels to shoes, the herein described heel-cup comprising a main cup-portion adapted to fit the heel, an adjustable gage-portion comprising an extension of the rear and side walls thereof, and a threaded spindle secured thereto and cooperating with an internally threaded opening in said main cup-portion, substantially as described.

546,084. REIN-HOLDER. EDWIN D. WEBB, Ypsilanti, Mich. Filed July 29, 1895. Serial No. 557,431. (No model.)



Claim.—A rein holder, comprising a base composed of two sections or plates and provided with a central fulcrum or support, the front plate or section being provided at opposite sides of the fulcrum with longitudinal openings, the longitudinal strips of elastic material detachably secured in the openings of the base by the sections or plates and projecting through the openings, and the springs centrally secured to the fulcrum or support and extending over the elastic strips and forming rein receiving recesses, substantially as described.

546,085. FREEZING-PLATE FOR ICE-MACHINES. JOHN R. WOOD. Danville, Va. Filed Sept. 7, 1894. Serial No. 522,395. (No model.)



Claim.—1. The combination with the congealing plate of an ice freezing tank, of a removable frame provided with longitudinal and lateral partitions and adapted to be placed upon the freezing surface of said plate so that kerfs are molded in the ice as it is frozen, substantially as described.

2. The combination with the congealing plate of an ice-freezing tank, of a removable frame provided with partitions having tapering sides, for molding kerfs into the ice as it is frozen, and clamps for securing said frame to said plate, substantially as and for the purposes described.

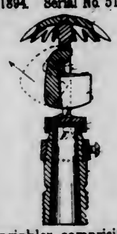
3. The combination with the congealing plate of an ice-freezing tank, of a removable frame provided with partitions having tapering sides, for molding kerfs into the ice as it is frozen, clamps for securing said frame to said plate, and chains attached to the lower part of said frame, their free ends passing down around the bottom thereof and in turn attached to the upper part of said frame, substantially as and for the purposes described.

546,086. ARTIFICIAL MUSK AND PROCESS OF MAKING SAME. AUGUST BISCHLER, Zurich, Switzerland, assignor to Fabriques des Produits Chimiques de Thann et de Mulhouse. Filed Dec. 18, 1894. Serial No. 532,241. (Specimens.)

Claim.—1. The herein described process of making artificial musk by first forming a cyanid derivative of an aromatic butylic hydrocarbon (such as cyanid of butyl toluene), introducing said cyanid compound into a mixture of fuming nitric and sulfuric acid, heating, and after cooling precipitating the resulting dinitro derivative from a suitable solvent, as set forth.

2. The artificial musk herein described, being a white crystalline body insoluble in water, soluble in alcohol and ethers, having a strong musky odor, and characterized by the presence in the aromatic butylic hydrocarbons of one cyanid, and two nitro groups, as set forth.

546,087. AUTOMATIC FIRE-SPRINKLER. ALBERT F. CARPENTER, St. Louis, Mo., assignor of two-thirds to Benjamin Kimball, same place, and the Manufacturers' Automatic Sprinkler Company, Syracuse, N. Y. Filed May 28, 1894. Serial No. 512,668. (No model.)



Claim.—1. A fire sprinkler comprising a deflector, a yoke, a capped nozzle and an interposed strut consisting of two pieces: a plate piece bearing on the nozzle cap in the plane of the yoke but tipped ont of said plane at its upper end, having a vertical wing at right angles to said plane and yoke, and the other piece mounted on the first and bearing against the yoke, and having a plate wing fusibly joined to the matching wing of the plate piece.

2. A fire sprinkler comprising a capped nozzle, a yoke, a deflector thereon, and an interposed strut formed of two pieces:—the one being a double-legged piece standing on the nozzle cap and having a wing in a vertical central plane at right angles to the plane of said legs,—the other being mounted on the first piece and bearing on the under side of the yoke and provided with a wing portion also at right angles to the plane of the yoke, with its matching surface in the same con-

tral vertical plane and fusibly joined to the wing portion of the first piece, substantially as described.

3. A fire sprinkler comprising a strut provided with wings fusibly joined, the matching surfaces thus joined lying in a perpendicular plane passing through the vertical axis of the sprinkler and at right angles to the vertical plane of the yoke, the base of the strut and the horizontal axis of engagement of the two pieces on which they rotate when said fusible wings are separated by the melting of the joining material under fire heat.

4. A fire sprinkler comprising a strut consisting of a supporting member and a rider therefor,—the latter composed of a body located on one side of said member and an overhanging hook-head and wing extension located on the other side of said member, with a fusible solder joint between said wing extension and a matching surface on the supporting member.

5. A strut consisting of two members, the one a plate adapted to receive compression at its ends, and having an intermediate vertical slot and a wing at one edge of the slot at right angles to the plate; the other, a rider hooking over the end of said plate and forming a head projecting to the front of said plate, and having at the other end a wing extension forward through said slot parallel to the matching plate wing, and a fusible solder connecting the wings.

6. In a fire sprinkler, the herein described strut composed of two members,—one being a plate piece having a slot or opening and an adjacent wing, the other being a rider consisting of an over-hanging head forming the other end of the strut, having a notch or shoulder to receive one end of the plate piece, and provided with a wing extension adapted to pass through the opening in the plate piece, the adjacent surfaces of said wings lying in substantially the same plane perpendicular to the said notch or shoulder and matching end of the plate piece, and a fusible material joining said wings.

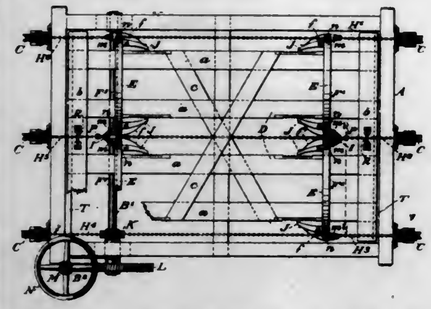
546,088. LOADING APPARATUS. CHARLES A. CLANCY and JOHN E. CROSLEY, Hubbard, Iowa. Filed Dec. 10, 1894. Serial No. 531,381. (No model.)



Claim.—1. The combination with a truck, of a standard rising therefrom, a beam fulcrumed upon the upper end of the standard, a yoke secured to one end of the beam, jaws pivotally connected to said yoke and having upwardly extending arms, a ratchet-latch pivotally connected to one of said arms and adapted to engage a pin on the other arm, a trip for disengaging the latch and provided with a cord which extends to the opposite end of the beam, a hand-lever fulcrumed to the upper end of one arm, and a link connecting the other end of the arm with an intermediate point of said hand-lever, substantially as specified.

2. The combination with a truck, of a standard rising therefrom and comprising telescoping members, the lower tubular member being secured to the truck and the upper adjustable member being provided with an adjustable collar which rests upon the upper end of the tubular member, whereby said upper member is capable of rotary movement, a T-coupling fixed to the upper end of the adjustable member, a beam comprising duplicate members secured together at their extremities and sprung apart at an intermediate point to bear against the ends of the horizontal arms of said T-coupling, a bolt extending through said members of the beam and through the horizontal arms of the T-coupling, a truss-brace comprising a rod attached at its extremities to the ends of the beam and a bridge arranged at the center thereof, a fork attached to one end of the beam for engaging an article to be elevated, and means for operating said fork, substantially specified.

546,089. LEATHER-STRETCHING MACHINE. MILTON H. COOK and JOHN HOUSTON, San Francisco, Cal. Filed Nov. 8, 1894. Serial No. 528,215. (No model.)



Claim.—1. In a leather-stretching machine, a main frame and removable stretching frames adapted thereto; a cross-winding shaft, with chains extending therefrom to the ends of the machine; stationary deflecting pulleys to reverse or return the chains and clamps to hold and stretch the leather, in the manner substantially as described.

2. In a leather-stretching machine, a main-supporting frame and removable stretching frames fitting thereon; tension chains or ropes at the middle and sides of the main frame; a winding shaft, around which these chains pass, and a tangent wheel to revolve the winding shaft, in the manner substantially as and for the purposes described.

3. In a leather-stretching machine, a supporting main frame and detachable stretching frames adapted thereto; a winding shaft, with chains or ropes passing over pulleys at the end of the machine, and connected to clamps attached to the hides to be stretched, the clamps provided with spring pawls and racks at each end to prevent recession of the clamps and hide when the chains are slackened, in the manner substantially as described.

4. In a leather-stretching machine, a main-supporting frame and detachable stretching frames, insertible and removable from the main frame; independent clamps for the two sides of the hide, moving on the detachable frame; springs pawls at both ends of the clamps and winding chains or ropes arranged to pull on both ends of both clamps, and at both ends of the machine, in the manner substantially as described.

5. In a leather-stretching machine, removable frames provided with pairs of clamps at each end of the frames, arranged with pawls and racks at each end of the four clamps, in the manner described; a main frame provided with winding gearing and chains or ropes to draw the clamp and stretch the hide at the middle and sides together or independently, in the manner substantially as described.

6. In a leather-stretching machine, a main frame and detachable stretching frames adapted thereto; winding gearing, with three or more ropes or chains passing around the ends of the main frame, and attachable to clamps moving on the detachable stretching frames, so connected as to be all operated together, two at a time, or either one single, and thus stretch a hide uniformly, in the middle only, at the two sides, or at either side independently, in the manner substantially as described.

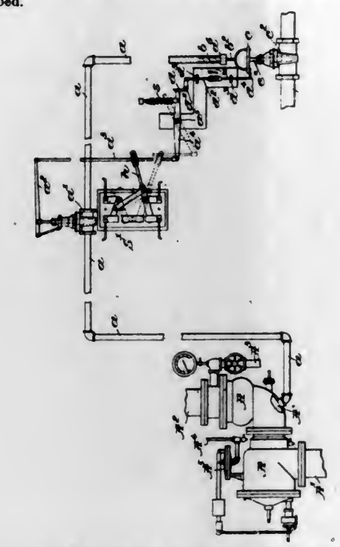
7. In a leather-stretching machine, a main-supporting frame, detachable stretching frames adapted thereto; double clamps arranged to move independently of each other, and at either end, by means of chains or ropes detachably connected to the clamps, and operated by winding gearing on the main frame, in the manner substantially as described.

546,090. CUT-OFF-ACTUATING MECHANISM FOR GAS OR ELECTRIC LIGHT SYSTEMS. FREDERICK W. COTTON, Dedham, assignor of one-half to Charles M. Reed, Boston, Mass. Filed Nov. 12, 1894. Serial No. 528,595. (No model.)

Claim.—1. In a cut-off actuating mechanism for building light systems, a main gas valve, a water motor to close it, a supply pipe for the motor having a normally open shut-off therein, a normally locked actuator connected to and to close the shut-off, and means operative by the closure of the gas valve to release said actuator, whereby the shut-off is closed and the motor stopped, substantially as described.

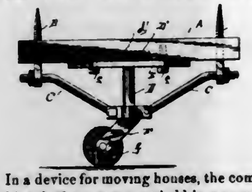
2. In a cut-off actuating mechanism for building light-systems, a main gas valve, a water motor to close it, a supply pipe for the motor having a normally open shut-off therein, an electric switch, a normally locked actuator connected to and to operate said shut-off and switch, and means operative by the closure of the gas valve to release the actuator, whereby the switch is thrown, and the shut-off closed to stop the motor, substantially as described.

3. In a cut-off actuating mechanism for building light systems, a main gas valve, a water motor to close it, a supply pipe for the motor having a normally open shut-off, and an electric switch, combined with a spring controlled normally locked actuating lever connected to said shut-off and electric switch, and means to unlock said lever by the closure of the gas valve, whereby the lever is rapidly swung to instantly throw the switch and close the shut-off, substantially as described.



4. In a cut-off actuating mechanism for building light systems, a main gas valve, a water motor to close it, a supply pipe connecting said motor with the controlling valve of a dry pipe sprinkler system, and a normally open shut-off in said supply pipe, a normally locked actuator for the shut-off, and means operated by closure of the gas valve to release the actuator and close the shut-off, the sprinkler controlling valve automatically supplying the motor with water, substantially as described.

546,091. HOUSE-MOVING TRUCK. MACE DAVIS, Robert Lee, Tex. Filed Mar. 19, 1895. Serial No. 542,435. (No model.)

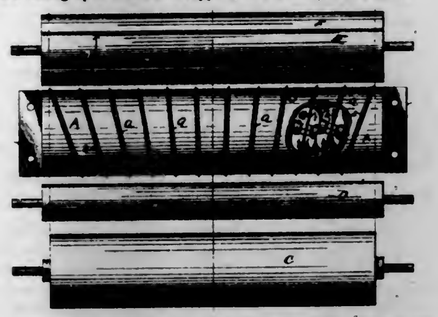


Claim.—1. In a device for moving houses, the combination of the plate A, a swivel head of a caster post held in a recess on the under side of the said plate, of the screws B having perforated heads and designed to hold said plate to a sill of a building, of the rods C screw threaded at their outer ends and adapted to be held in the perforations of the screws B, of the plates K, forming a bearing for the post D and carrying between their ends the perforated ends of the rods C, and means for tightening said braces or rods, substantially as shown and described.

2. In a device for moving houses, the combination of the plate A, the screws B having perforated heads and shouldered, designed to engage apertures of the said plate A, of the post D having a swivel head D' and an apex *d* adapted to be seated in a recess on the under surface of the said plate A, and its lower face to be flush with the under surface of the said plate, of the complemental plates E, E, adapted to hold said swivel head in place, of the plates K forming a bearing in a recess *d* of the post D, the caster G journaled in the bifurcated end of the said post of the rods C having its perforated ends held between the ends of the plates K, and its screw threaded ends held in the perforated ends of the screws B, and tightening nuts on the outer ends of said rods, all substantially as shown and for the purpose set forth.

546,092. CLOTH-STRETCHING MACHINE. OTIS E. BROWN, Pawtucket, R. I. Filed June 6, 1894. Serial No. 513,675. (No model.)

Claim.—1. In a cloth stretching device, a series of disks adapted to be engaged with and rotated by the traveling fabric, and arranged at progressively increasing inclinations to the direction of travel of the fabric, said disks being rotatively mounted on separate or independent standards extending beyond the peripheries of the disks and there resting upon a common support, substantially as described.



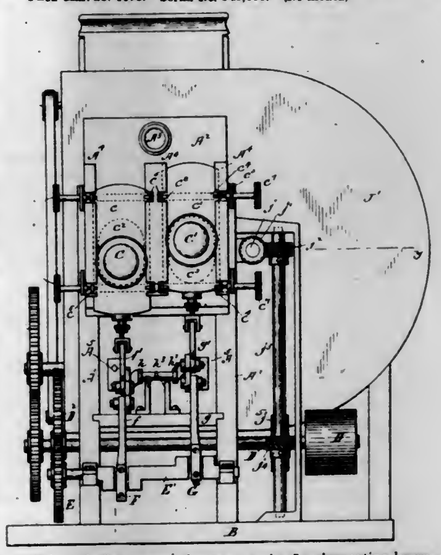
2. In a cloth stretching device, a series of vertical disks adapted to be engaged with and rotated by the traveling fabric, and arranged at progressively increasing inclinations to the direction of travel of the fabric, said disks being rotatively mounted on separate or independent standards extending beyond the peripheries of the disks and there resting upon a common support, substantially as described.

3. In a cloth stretching device, a series of disks adapted to be engaged with and rotated by the traveling fabric, the axes of said disks being all horizontal but at successively lower elevations, substantially as described.

4. In a cloth stretching machine, a series of disks of progressively increasing obliquity adapted to be engaged with and rotated by the traveling fabric, the tops of said disks being disposed at the same height but their axes at different heights, substantially as described.

5. In a cloth-stretching machine, the combination with a fixed cloth-supporting shell or casing having straight parallel sides, of a series of independently mounted rotatable disks varying in diameter and extending outwardly through the walls of the shell; said disks being disposed at different angles and converging toward a common point located exteriorly of said shell, substantially as described.

546,093. CAMERA-LANTERN. OWEN A. EAMES, Boston, Mass. Filed Mar. 25, 1895. Serial No. 543,039. (No model.)



Claim.—1. In a camera lantern, a pair of reciprocating lenses, a film feed located to feed a film in rear of said lenses, a shutter adapted to expose said lenses alternately and a pair of reciprocating diaphragms provided with openings and located to screen all of the film except that portion which is to form the field, all as and for the purposes set forth.

2. In a camera lantern, in combination with a [pair of reciprocating lenses and means whereby they are reciprocated, a pair of reciprocating diaphragms located one in rear of each lens, each provided with an opening the size of the negative to be taken, and means whereby they are reciprocated in unison with said lenses, in combination with a film feed, all as and for the purposes set forth.

3. In combination with a pair of lenses adapted to be reciprocated and a pair of diaphragms also adapted to be reciprocated, the levers f^3, g^3 connected with suitable rocking mechanism and to said lenses in substantially the manner described, and the levers h h' suitably supported and connected to said levers f^3 g^3, and said diaphragm, all as and for the purposes set forth.

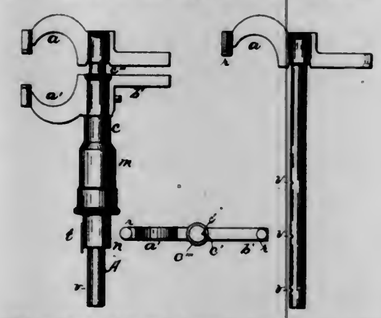
4. In a camera lantern, in combination with mechanism for feeding a film, a lens adapted to be reciprocated in a plane parallel to the plane of the traveling film and mechanism whereby said lens is alternately opened and closed all as and for the purposes set forth.

5. A film having a series of fields arranged in rows as shown, the fields in each row overlapping the fields of the next row, as set forth.

6. That method of taking negatives on a constantly traveling film which consists in causing a lens to be moved in relation to the film in the same direction therewith and in a plane parallel to the plane of that portion of the traveling film which is in the field of the lens, whereby the image received upon the film through the moving lens retains a stationary position upon the film during exposure, as described.

7. That method of exhibiting an indefinite number of consecutive pictures of objects in motion which consists in causing a picture bearing film to be passed continuously behind a pair of lenses which are given an alternate reciprocating movement in directions with and contrary to the motion of the film and exposing at any one time only so much of the film as lies in the field of the lens moving in the direction with the film, whereby a portion of the film is continuously exposed and a series of pictures, without break, is projected, as described.

546,094. MICROMETER-CALIPERS. FERRAND F. ELLIS, Oneida, N. Y. Filed Apr. 22, 1895. Serial No. 546,590. (No model.)



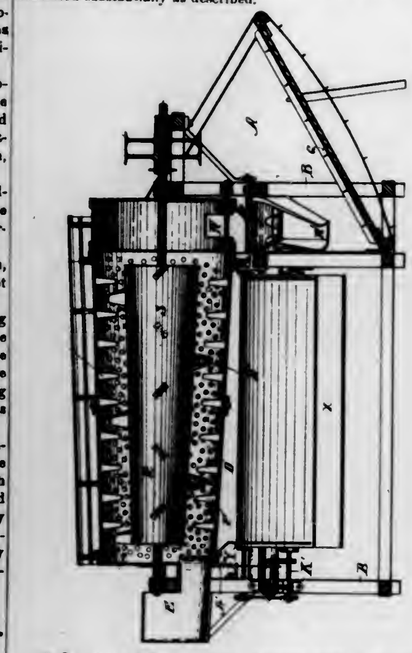
Claim.—In an inside and an outside caliper, a pair of stationary jaws upon a shaft, a pair of movable jaws upon a split sleeve adapted to be reciprocated upon the shaft, a guide in said sleeve engaging with said shaft and means to secure it; an expansion nut screwed into said sleeve, a micrometer-nut screwed onto said sleeve, a collar upon said shaft connected to said micrometer-nut, and means to adjustably lock said collar upon said shaft, in combination.

546,095. PEA-SHELLING MACHINE. JOHN H. EMPSON, Longmont, Colo. Filed July 19, 1894. Serial No. 517,967. (No model.)

Claim.—1. In a pea shelling machine, a frame, the rollers Y, Y', the piece Z having the segmental slot Z' and the longitudinal slot Z^3, the movable block Z^2 having a boss Z^4 forming a bearing for the roller Y', the screw bolt Z^5 working in lugs on said piece and block, the clamping bolt Z^6 and the bolt Z^7, and an endless apron mounted on said rollers, said parts being combined substantially as described.

2. In a pea shelling machine, a hollow blade having a cushion on its sides and tip, the cushion on its tip being thicker than that on its sides and said blade having an opening in its side, substantially as and for the purpose set forth.

3. In a pea shelling machine, an agitator for an endless belt thereof, consisting of the shaft B', suitably journaled, the arms C connected with said shaft, the cross bar E' secured to said arms parallel with said shaft, the forked arm F' connected with said shaft, a rotatable shaft with a cam thereon adapted to contact with a limb of said forked arm, a headed rod secured to the other limb of said forked arm, a bracket having an opening in which said rod works, and a spring between said bracket and a nut on said rod, said parts being combined substantially as described.



4. In a pea shelling machine a rotatable drum, a thrasher blade consisting of a hollow shell having an opening in its side and a bolt inserted in said opening and securing said blade to said drum, substantially as and for the purpose set forth.

5 In a pea shelling machine a rotatable perforated shell, an inner drum, intercurrent blades on said shell and drum, an extension projecting from the discharge end of said shell with an opening in the bottom thereof, a conveyer below said opening, an endless apron below said shell, and a trough with spiral conveyer therein, said apron discharging into said trough, and said trough emptying into said first mentioned conveyer, said parts being combined substantially as described.

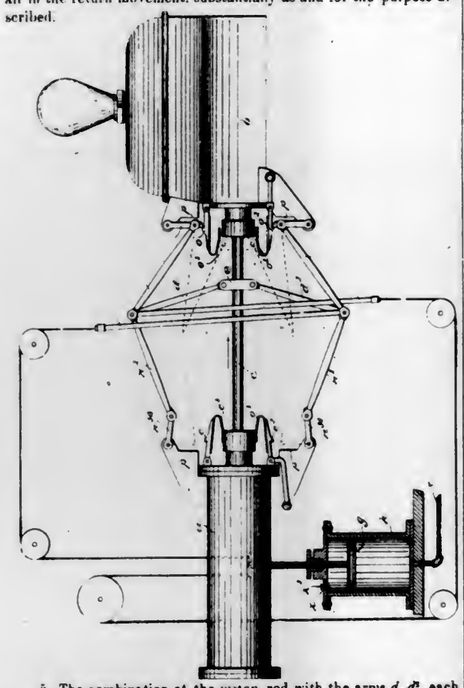
546,096. COMPENSATING MECHANISM FOR DIRECT-ACTING STEAM-PUMPS. JOSEPH P. FRISELL, Boston, Mass. Filed Oct. 29, 1894. Serial No. 527,141. (No model.)

Claim.—1. The combination with the piston rod of a direct acting engine and an arm connected at its inner end with the said piston rod, and a compensator for applying a compensating force to the outer end of said arm; with shifting guides for the outer end of said arm, whereby the latter transmits pressure from the piston to the compensator during less than the first half stroke of the piston and transmits pressure from the compensator to the piston during the remainder of the piston stroke, substantially as and for the purpose described.

2. The combination with the piston rod of a direct acting engine of an arm connected at its inner end with the piston rod, and at its outer end guided in a path transverse to the line of movement of the piston rod, and a compensator comprising a cylinder and piston therein, said cylinder being connected at one end with a vacuum pipe and provided at its other end with a passage to the external atmosphere, and an inwardly opening check valve in said passage and means for connecting said piston with the outer end of said arm, substantially as and for the purpose described.

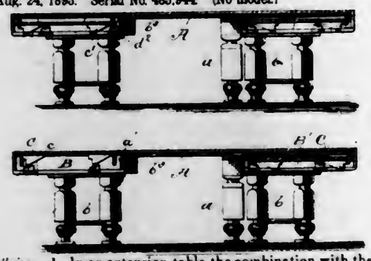
3. The combination with the piston rod of a direct acting engine of an arm connected at its inner end with the piston rod, and means for applying a compensating force to the outer end of said arm, a radius bar connected with the other end of said arm; an arm pivotally connected with said radius bar, and with the frame work, and means for locking and releasing said arm, substantially as and for the purpose described.

4. The combination with the piston rod of a direct acting engine of an arm connected at one end with the piston rod and means for guiding the outer end of said arm in a path transverse to that of the piston rod, and a stationary compensating cylinder and piston therein, and connections between said piston and the outer end of said arm, said cylinder being provided at one end with a passage to the external atmosphere and an inwardly opening check valve therein, and otherwise completely closed, said piston thus operating to compress the air confined in said cylinder during the movement of said piston in one direction, and being actuated by the expansion of said compressed air in the return movement, substantially as and for the purpose described.



5. The combination of the piston rod with the arms d, d^2, each connected at its inner end with said piston rod and means for applying a compensating force to the outer ends of said arms, the radius bars n^2, n^3, connected with the outer ends of said arms, arms n^{30}, n^{30}, pivotally connected with said radius bars, and with the frame work; and the pawls o, o^2, co-operating with said arms n^{30}, n^{30}, and controlled by the piston rod, substantially as and for the purpose described.

546,097. EXTENSION-TABLE. BURTON L. GALE, Warren, Pa., assignor to the Warren Extension Table Company, same place. Filed Aug. 24, 1893. Serial No. 483,944. (No model.)



Claim.—1. In an extension table the combination with the table-top, of a sliding extension-frame, carrying a supplemental leaf provided with depending portions having inclined surfaces, of a sliding rack, supported upon said extension frame, provided with friction rolls in position to engage said inclined surfaces, said rack being adapted to be moved by hand to raise and lower said leaf, substantially as described.

2. In an extension table the combination with the table top, of a sliding extension frame, a supplemental leaf mounted to move vertically in said frame and provided with depending lugs in different longitudinal and transverse planes, provided with inclined lower faces, a rack carried by said frame and having a longitudinal sliding movement with respect thereto, a series of friction rolls on said rack engaging said inclined faces of said lugs, each of said lugs being provided with faces parallel with the plane of movement of said rack, adjacent to said inclined faces, substantially as described.

546,098. MINING-DRILL. JOSEPH E. HART, Briceville, Tenn., assignor of six-sevenths to John E. Hart and David D. Jones, same place, H. M. Madden, Coal Creek, Tenn., and W. E. Thompson, Ironton, Ohio. Filed June 1, 1895. Serial No. 551,384. (No model.)



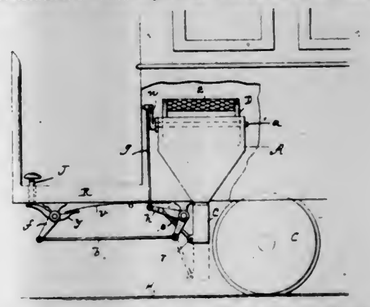
Claim.—1. The drill-bracket composed of two parts separably connected and having hollow sleeves on the respective ends of the bracket arranged at right angles to each other and formed with angular exterior end-portions of equal size, and bevel gear-wheels formed with hollow hubs journaled in the hollow sleeves of the bracket, substantially as and for the purpose specified.

2. The drill-bracket composed of two parts separably connected formed with hollow sleeves on the ends thereof arranged at right angles to each other and having bearings in the ends thereof, and formed with angular exterior end-portions of equal size, bevel gear-wheels having hollow hubs journaled in the bearings of the hollow sleeves and formed with splines in the bores of the hubs a crank having an arm to interchangeably fit in the hubs of the gear-wheels, and a threaded feed-bar to operatively and interchangeably engage in either of the hollow sleeves and hubs, substantially as and for the purpose specified.

3. In a mining machine, the combination of a bracket having hollow sleeves arranged at right angles to each other, and formed with end portions having identical exterior conformations, bevel gear-wheels having hollow hubs of the same diameter as the bore of the sleeves and provided with splines, a coupling-box adapted to fit on either end of the bracket, a clamping-box having interior screw-threads and an end formed to fit in the clamping box and lateral arms having tapering ends arranged at right angles to the arms, a crank having an arm formed with a groove to engage with the splines in either of the hollow sleeves and the hubs of the bevel gear-wheels, and a threaded feed-bar formed with a longitudinal groove to engage the spline of either of the hollow sleeves and hubs, substantially as and for the purpose specified.

4. In combination, the separable bracket composed of two parts 1, 2, formed with sleeves 5, $5^\times$, arranged at right angles to each other and formed with bearings 6, and hub-bearings 7, $7^\times$, and angular end-portions 8, the bevel gear-wheels having hollow hubs journaled in the bearings 7, $7^\times$, and formed with splines, the interchangeable coupling-box adapted to fit on either of the end portions 8, the two-part clamping-box having interior screw-threads and lateral arms having tapering ends arranged at right angles to the arms, and an exterior conformation to fit in the coupling box, a screw-threaded feed-bar removably and interchangeably fitted in either hub and sleeves and held to rotate with the gear through which it is projected and to engage the threads of the clamping-box, and a crank having an arm to engage in the bore of either sleeve and hub, substantially as and for the purpose specified.

546,099. SANDING APPARATUS FOR CARS. JAMES H. HOLLEN, Providence, R. I. Filed July 26, 1895. Serial No. 557,220. (No model.)



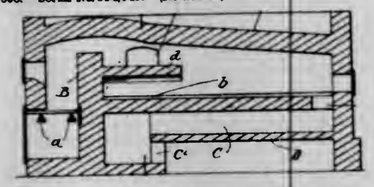
Claim.—1. In a sanding apparatus for cars the combination of a cylinder to hold the sand having an opening to discharge the sand a stationary rack inside to stir the sand with means for moving said cylinder, substantially as described.

2. In a sanding apparatus for cars, the combination of a cylinder held in bearings in a hopper and having a stationary rack on its inside

to stir the sand and a telescoping tube for delivering the sand to the rails with means for operating said cylinder and tube substantially as described.

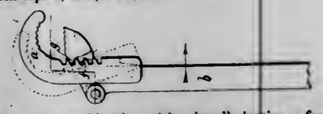
3. In a sanding apparatus for cars, the combination of a cylinder held in bearings in a hopper, said cylinder having a stationary rack inside, a telescoping delivery tube to said hopper, an arm fast on the shaft of said cylinder and connected by a rod with one arm of a knee-lever connected by a rod from its other arm with another knee-lever in position to be operated by the brakeman on the car, substantially as described.

546,100. COMBINED PLATE, PLATINUM, AND SHEET HEATING FURNACE. JOHANNES IMMEL, Geisweid, Germany. Filed Jan. 15, 1895. Serial No. 534,949. (No model.)



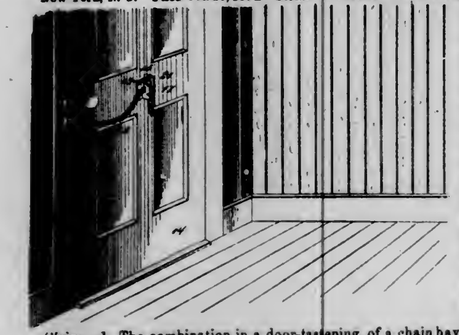
Claim.—A furnace having a grate at the front, a perpendicular wall behind the same, a vertically central main hearth rearward of said wall, a parallel partition beneath said hearth at the rear to form a chamber, an auxiliary hearth or dome projecting horizontally from the perpendicular wall near the top and rearwardly to overlap the main hearth, a longitudinally aligning door at the rear of the furnace to communicate with the main hearth, transversely aligning doors in each side of the furnace communicating with the auxiliary hearth, a passage at the rear connecting the hearth chamber with the chamber beneath the same, whereby the gases enter the said lower chamber and heat the hearth-sill, and a passage leading from the front of said lower chamber to carry off said gases, substantially as shown and described.

546,101. PIPE-TONGS. AUGUST W. INGELSON, Torshælla, Sweden. Filed July 25, 1894. Serial No. 518,559. (No model.) Patented in Sweden Sept. 2, 1893, No. 5,030.



Claim.—The combination with a handle having a fixed jaw and a pair of teeth or projections arranged at the inner end of said jaw on opposite sides of the handle, of an adjustable jaw co-operating with the fixed jaw and having a bifurcated shank straddling the handle and provided on opposite sides of the handle with a series of notches which interlock with the opposing teeth or projections of the fixed jaw, a fixed pivot secured to the handle of the fixed jaw in rear of the bifurcated shank of the movable jaw and anti-friction rollers mounted on said pivot on opposite sides of the handle and bearing against the rear side of the members of said bifurcated shank, substantially as set forth.

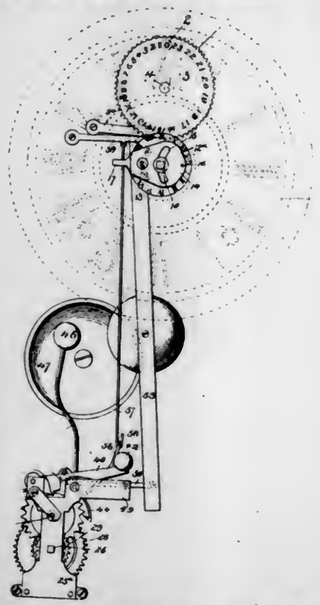
546,102. CHAIN FASTENER FOR DOORS. HENRY C. JENKINS, New York, N. Y. Filed Oct. 23, 1894. Serial No. 526,686. (No model.)



Claim.—1. The combination in a door-fastening, of a chain having a projecting portion of greater width than its remaining portion, a bracket having a notch to receive the narrower portion of the chain, said notch being of less width than the wider portion of the chain, and a fastening latch adapted to close the open end of said notch over said chain, whereby the chain, when inserted in the notch, is held against unauthorized removal, substantially as set forth.

2. The combination in a door fastening, of a chain having a projecting portion of greater width than its remaining portion, a bracket having a notch to receive the narrower portion of the chain, a fastening latch having a recess to receive the said bracket, the said latch being pivoted to the bracket and adapted to close the notch over the chain, whereby the chain, when inserted in the notch, is held against removal, and a spring secured in the recess of the latch and adapted to engage the bracket, substantially as set forth.

546,103. ALARM-CLOCK. EDMUND E. KATZ, San Bernardino, Cal. Filed Oct. 25, 1894. Serial No. 526,913. (No model.)



Claim.—1. The combination with a clock, of alarm mechanism therefor adapted to ring a first alarm at a time set once in every twenty-four hours and a second alarm louder than the first at a short fixed period thereafter, mechanism for setting the first alarm to ring at the desired time, and mechanism for setting the second alarm to ring at the desired interval after the first.

2. In alarm mechanism for clocks of the character described, the combination with the hour hand shaft of the clock, of a controlling disk for the first alarm adjustably secured to said shaft and provided with two peripheral grooves or tracks thereon, one of the grooves being provided with a drop therein and the grooves being provided with a switch leading from one to the other, and the first alarm releasing mechanism moving in said grooves, a controlling disk for the second alarm also adjustably mounted on said hour hand shaft and having a drop in its periphery and second alarm releasing mechanism moving on said disk, substantially as and for the purpose described.

3. In alarm mechanism for clocks of the character described, the combination with the hour hand shaft of the clock, of a controlling disk for the first alarm adjustably secured to said shaft and provided with peripheral grooves or tracks thereon, one of said grooves being provided with a drop therein and the grooves being provided with a switch leading from one to the other, the alarm actuating mechanism, the striker rod connected therewith, a rod connected with said striker rod carrying a swiveled follower at its upper end which moves in said grooves whereby upon the drop of said swiveled follower into the drop of said disk its connecting rod is thrown down and the striker rod is released, a controlling disk for the second alarm also adjustably mounted on said hour hand shaft having a drop in its periphery, a lever having a dog thereon engaging and holding the alarm actuating mechanism a releasing lever therefor actuated by a bar carrying a yoked lever at the upper end thereof which engages the periphery of the disk for controlling the second alarm, substantially as and for the purpose described.

4. In alarm mechanism for clocks, means for regulating the duration of the alarm, consisting of the combination of two notched disks actuated at different speeds, a dog adapted to engage one or the other of said disks, and releasing mechanism for said dog, substantially as described.

5. In alarm mechanism for clocks, the combination of two notched disks rotated at different speeds from the main shaft of said alarm mechanism, a dog adapted to engage one or the other of said disks, means for throwing the said notched disks separately into engagement with said dog and releasing mechanism for said dog, substantially as described.

6. In alarm mechanism for clocks, the combination of two notched disks mounted on the said stop and rotated at different speeds thereon, a dog adapted to engage the notch on one or the other of said disks, means for raising or lowering said shaft in its bearings for bringing one or the other of said disks into engagement with said dog, a clamp for holding the shaft in its raised or lowered position, and releasing mechanism for said dog operated by the clock mechanism, substantially as described.

7. In a double alarm for clocks, the combination with the hour hand shaft of the clock and controlling disks for the first and second alarms mounted on said shaft, of setting mechanism therefor consisting of an indicating dial or disk having peripheral teeth thereon which mesh with a pinion secured to the controlling disk for the first alarm, for adjusting the position of said disk on said shaft and an indicating disk for the second alarm pivoted to the face of the controlling disk for the first alarm, and carrying a pinion at the inner end of its pivotal shaft which meshes with a segmental rack secured to the upper face of the controlling disk for the second alarm, whereby by moving said indicating disk an adjustment of said controlling disks relative to one another is secured, substantially as and for the purpose described.

8. In double alarm mechanism for clocks having suitable controlling and actuating mechanism for each alarm, the combination of a striker rod adapted to be thrown into operation upon the release of the said alarm controlling mechanisms, and two gongs, one of which is carried by the second alarm controlling mechanism and is adapted to be thrown within the range of movement of said striker upon the release of the second alarm controlling mechanism, whereby a single gong will be struck at the first alarm and two will be struck at the second alarm, substantially as and for the purpose described.

546,104. CANOPY FOR BICYCLES. GEORGE C. MATHEWS, Jacksonville, Fla. Filed Sept. 27, 1894. Serial No. 524,286. (No model.)



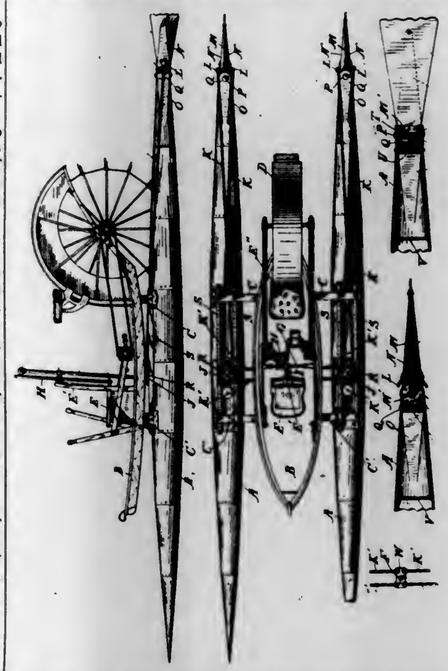
Claim.—1. A bicycle canopy comprising a covering, parallel side bars having the covering secured to them, a centrally arranged folding cross-bar composed of sections hinged together and pivotally connected at their outer ends to the side bars, a stem designed to be secured to a bicycle, and folding supporting-bars extending from the stem and connected with the side-bars, substantially as described.

2. A bicycle canopy comprising a covering, side bars having the covering secured to them, a cross-bar connecting the side-bars and composed of folding sections, a stem designed to be secured to a bicycle, and the upwardly-diverging folding supporting-bars having their lower ends pivoted to the stem and having their upper ends adjustably connected to the side bars, substantially as described.

3. A bicycle canopy comprising a covering, side bars secured to the same, a folding cross-bar, a stem designed to be secured to a bicycle, links adjustably pivoted to the side bars, and the supporting-bars pivotally connected to the links and to the upper end of the stem, substantially as described.

4. A bicycle canopy comprising a covering, side bars secured to the same and provided intermediate of their ends with recesses, a folding cross-bar composed of sections hingedly connected at their inner ends and having their outer terminals laterally offset to form shoulders and pivoted in said recesses, links pivoted to the side bars and adjustably secured to the same and provided with tongues, a stem having a bifurcated upper end, and diverging supporting-bars having their lower ends pivoted in the bifurcation of the stem, and provided at their upper ends with bifurcations and having said tongues pivoted therein, substantially as described.

546,105. MARINE VELOCIPEDE. LUTHER V. MOULTON, Grand Rapids, Mich. Filed May 6, 1893. Serial No. 473,319. (No model.)



Claim.—1. The combination with parallel floats, of rudders pivoted to the same, a body supported between said floats, a post, journaled on said body and having a T-head, crosses pivoted on said floats, and cables or wires extending oppositely from said T-head to the respective crosses and rudders on each float, substantially as described.

2. The combination of two parallel floats having rudders with cylindrical heads, parallel sills on said floats, a body between said floats supported on said sills, a substantially vertical steering post journaled on said body and provided at its lower end with a T head and at its upper end with a handle, crosses journaled on plates attached to said sills, cables or wires extending oppositely from said T-head to the longitudinal arms of said crosses, and cables or wires extending from the transverse arms of the respective crosses to the sides of the respective rudders and in contact with said floats, substantially as described.

3. In a marine velocipede, a cylindrical float tapered rearwardly and flattened on four sides, and provided with a transverse diaphragm to form a rectangular chamber at the end of said float, and a rudder having a cylindrical head and pivoted to turn partially within said chamber, substantially as described.

4. In a marine velocipede, in combination with a substantially cylindrical, or cigar shaped float terminating in a box shaped end, a rudder having a substantially semi-cylindrical head pivoted within said end and means for turning said rudder upon its pivot; and prolongations of said head forming tapered chambers at each side of said rudders, substantially as described.

5. In a marine velocipede, a substantially cigar shaped float terminating at the rear in a substantially square end, having projecting upper and lower sides, a cylindrical rudder head pivoted to said projecting sides, said head prolonged at each side of the rudder to strengthen the same and prolong the lines of the cylinder to a point and disks to close the ends of said rudder head, substantially as described.

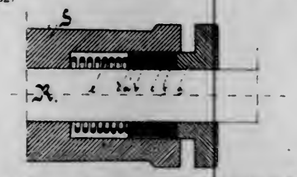
6. The combination of two substantially cigar shaped floats, having bulk heads near the rear and terminating in box shaped ends, rudders having substantially cylindrical heads pivoted in said ends, cords or wires attached to the respective sides of said rudder heads, and extending forward and inward and attached to a T head on a steering post having handles, substantially as described.

7. The combination of two cigar shaped floats, terminating in box shaped rear ends, rudders having substantially semi-cylindrical heads pivoted within said ends, and prolonged at each side of said rudders, a body supported by and between said floats, a post journaled upon said body, a T head at the bottom, and handles at the

top of the same, crosses pivoted upon said floats, and cords or wires extending from the respective sides of said rudders to said crosses and other wires or cords extending from said crosses to said T head, substantially as described.

8. The combination with a boat having a stern wheel, and a rudder at each side thereof, of a vertical steering post having a T head and a handle, crosses pivoted in the plane of said T head, and cables or wires oppositely extending from said T head to the longitudinal arms of said crosses, and cables or wires extending from the transverse arms of said crosses to the respective sides of said rudders, substantially as described.

546,106. STUFFING-BOX FOR ROTARY SHAFTS. PAUL S. SCHMALTZ, New York, N. Y. Filed Dec 21, 1894. Serial No. 532,602. (No model.)



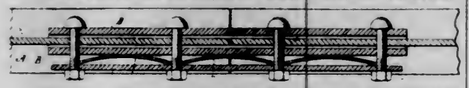
Claim.—1. The combination with the body of a stuffing box and a shaft therein revolving, of a collar, containing flexible packing, and revolving with the shaft, for the purpose set forth.

2. The combination with the body of a stuffing box and a shaft therein revolving of a collar, containing flexible packing and revolving with the shaft, another collar or washer, and suitable means by which the adjoining faces of said collars are kept in contact with each other, substantially as specified and for the purpose set forth.

3. In combination with the body of a stuffing box and a shaft therein revolving, of a collar, containing flexible packing and revolving with the shaft, said collar being constructed in parts, for the purpose set forth

4. In combination, stuffing box S, shaft R, collar *a*, packing *b*, washer *c*, collar or washer *d*, spiral spring *e*, packing-ring *f*, gland *g*, substantially as described and for the purpose set forth.

546,107. NUT-LOCK AND RAIL-JOINT. JASPER P. WARNER, Decatur, Mich. Filed Dec. 3, 1894. Serial No. 530,687. (No model.)



Claim.—1. The combination with the rails, A, of the splice bars B, B, to each side of the web thereof, the bolts, E, extending therethrough; the plates, C; the curved springs, D, between the plate, C, and the splice bar, B, substantially as described and for the purpose specified.

2. The combination with the rails, A, of the spliced bars, B, B, to each side of the web thereof; the bolts, E, extending therethrough; the plate, C; the curved springs, D, notched at the ends to accommodate the ends of the bolts and be retained in position thereby between the plate, C, and the splice bar, B, substantially as described for the purpose specified.

3. The combination of the rails, A, the splice bars, B, B to each side of the web thereof; the bolts, E, extending therethrough; the plate, C the curved springs, D, with the convex side toward the splice bar and between the said plate, C, and the splice bar, B, substantially as described.

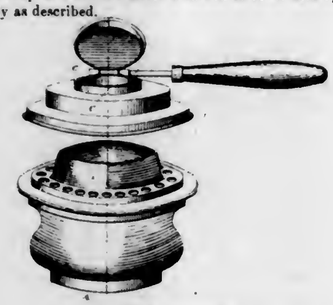
4. The combination of the rails, A; the splice bars, B, to each side of the web thereof; the bolts, E, extending therethrough; and the springs, D, extending from one bolt to the next the convex side toward the splice bar and the notched ends engaging to each side of adjacent bolts to be compressed by the nuts thereof, for the purpose specified.

546,108. LID FOR ALCOHOL-LAMPS. LOUIS WOJIDKOW, Brooklyn, N. Y. Filed Apr. 17, 1895. Serial No. 546,033. (No model.)

Claim.—1. A lid for an alcohol lamp consisting of a lid proper, having a central opening therein, and provided with a handle, and an auxiliary lid immovably secured to said handle, and adapted to be raised or lowered when said handle is revolved, substantially as described.

2. A lid for an alcohol lamp consisting of a lid proper, having an opening therein and provided with a handle fitting in bearings secured to said lid, and an auxiliary lid secured to said handle between said bearings and adapted to be raised or lowered when said handle is turned.

3. A lid for an alcohol lamp consisting of a lid B having an opening therein, and provided with the bearings *c*, a bar *d* forming a handle and turning in said bearings and an auxiliary lid D secured to said handle and adapted when the latter is turned to cover said opening, substantially as described.

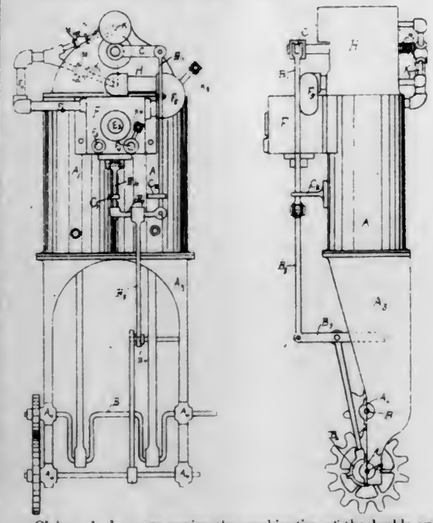


546,109. HAIR-PIN. ESTELLE YOUNG, Brooklyn, N. Y. Filed Sept. 19, 1892. Renewed Dec. 4, 1894. Serial No. 530,825. (No model.)



Claim.—A hair-pin consisting of a head portion, a prong fixedly connected to said head portion, and a prong composed of a short socket fixedly connected to the head, and a portion detachably secured in the socket substantially as described.

546,110. GAS-ENGINE. EDWARD E. BUTLER, Atlanta, Ga., assignor of one-half to Robt. P. Horton, same place. Filed Aug. 18, 1894. Serial No. 520,736. (No model.)



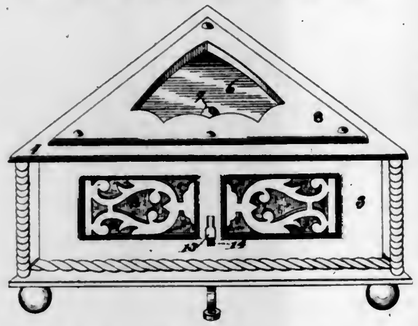
Claim.—1. In a gas engine the combination of the double cylinders, with the head H, containing ports H^4, H^5 explosion chambers H^2, H^3, gas ports K^2 and light chamber F^6, the rotary admission valve G and the reciprocating exhaust valve, means for operating the valves substantially as herein described.

2. The combination, in a gas engine, of double cylinders, the head H the gas generator and exhaust valve seat, the geared eccentric shaft and eccentric for operating valves with the reciprocating exhaust valve and rotary admission valve, substantially as herein described.

3. In a gas engine, having two cylinders and two pistons, the cranked shaft to which the piston rods are connected, and a gear on its end, combined with an endwise moving valve, a rotary valve, an operating rod or rods which operate the two valves simultaneously, a shaft for operating an eccentric, and which revolves but once while the crank shaft revolves twice, and a rocking rod to which both the eccentric and the valve rods are connected, substantially as specified.

4. In a gas engine, the casting provided with the two cylinders, and a cylinder head, having the two passages connecting with the ends of the two cylinders, a chamber F^6, and a seat for a rotary valve, combined with a rotary valve, provided with suitable passages for the passage of both air and gas; a reciprocating valve provided with transverse grooves for connecting with the discharge passages of the cylinders; the pistons, a crank shaft, operated by the pistons, and a separate eccentric shaft for operating the valves simultaneously; the two shafts being geared together and the crank shaft made to revolve twice as fast as the eccentric shaft, substantially as set forth.

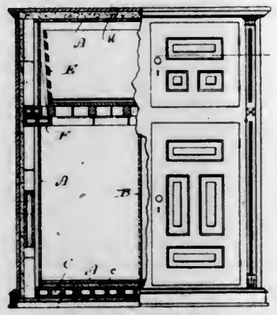
546,111. PARLIAMENTARY GONG. JAMES A. COCHRANE, Ironton, Ohio. Filed Apr. 2, 1895. Serial No. 544,215. (No model.)



Claim.—1. The combination with the box having openings in its sides, and the top having an opening therein, of the standard, the gong or vibrator secured at one edge thereto and flush with but not contacting with said top, substantially as described.

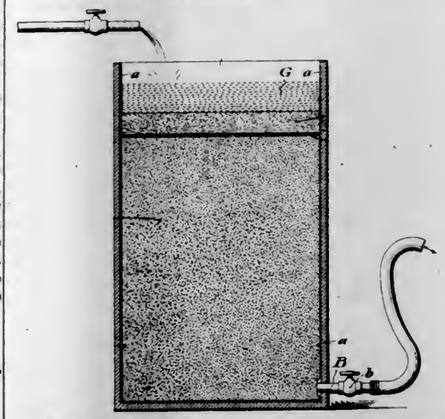
2. In a gong mechanism the open sided box, the open cover, the triangular frame secured thereto, the standard and the gong or vibrator secured thereto at one edge, the bell therein, its standard, the pivoted arms attached thereto, the outwardly extending arms secured to the pivoted arms and projecting through a slot in the box, the pivoted plate connected with said pivoted arms, the swinging hammer and the spring, substantially as described.

546,112. REFRIGERATOR. EDWARD A. CORNILLIE and CHARLES P. CORNILLIE, Milwaukee, Wis. Filed Mar. 21, 1894. Serial No. 504,525. (No model.)



Claim.—A refrigerator having hollow brick walls provided with jogged inner ledges for the support of an ice-tray and glass lining plates, these and similar plates in the provision chamber being set in from the walls, a stay-casing outside the walls, and a non-conductive filling between said walls and casing.

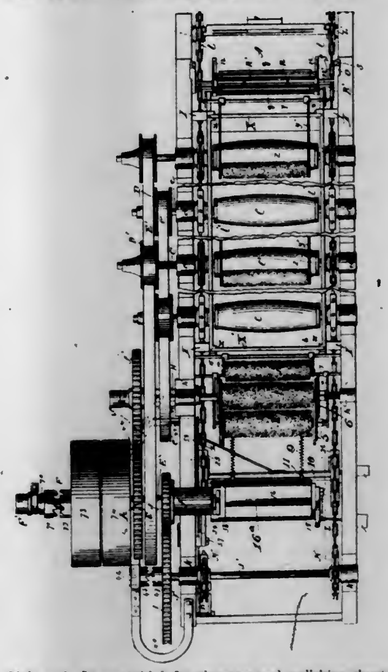
546,113. PROCESS OF DEPOSITING GOLD FROM ITS AQUEOUS SOLUTIONS. HENRY K. B. DAVIS, Philadelphia, Pa. Filed Apr. 25, 1895. Serial No. 547,116. (No specimens.)



Claim.—1. As an improvement in the process of depositing gold from the aqueous solution of its chloride, the hereinbefore described process of diffusing hydrogen gas through said solution and passing said solution through carbon, substantially as described.

2. The hereinbefore described process of depositing gold from the aqueous solution of its chloride, which consists in forming an acid excess in said solution; passing said solution over a metal, such as zinc, and thereby generating hydrogen gas in said solution, and then passing said solution through carbon, substantially as described.

546,114. MACHINE FOR CLEANING OR POLISHING SHEET-BRASS OR OTHER SHEET METAL. JAMES M. CHATFIELD, Thomaston, Conn. Filed Oct. 7, 1893. Serial No. 487,496. (No model.)



Claim.—1. In a machine for cleaning and polishing sheet-brass or other sheet-metal, the combination with cleaning or polishing rolls, of mechanism including a carrier and a carrier-bar independent of the said carrier, but adapted to be engaged therewith for drawing the metallic strips between the rolls, substantially as and for the purpose set forth.

2. In a machine for cleaning and polishing sheet brass or other sheet-metal, the combination with cleaning or polishing devices, of a carrier provided with coupling pieces, and a carrier-bar independent of said carrier, but adapted to be detachably connected with the coupling pieces of the carrier, and also adapted to be connected to one end of the strips of metal, and whereby said strips are drawn into the machine, substantially as described.

3. In a machine for cleaning and polishing sheet-brass or other sheet-metal, the combination with cleaning or polishing devices, of a carrier, a carrier bar and a winding drum, substantially as set forth.

4. In a machine for cleaning and polishing sheet-brass or other sheet-metal, the combination with cleaning or polishing devices, of an intermittently moving carrier, and an automatically operated winding drum, the movement of the latter being controlled by the carrier, substantially as set forth.

5. In a machine for cleaning and polishing sheet-brass or other sheet-metal, the combination with an endless carrier provided with a pair of coupling-pieces at each end and a coupling-bar adapted to be inserted in the said pieces, of mechanism for automatically and intermittently stopping the motion of the carrier, and whereby a pair of coupling-pieces is always brought to the front end of the machine, substantially as set forth.

6. In a machine for cleaning and polishing sheet-brass or other sheet-metal, the combination with a wiper, of mechanism for cleaning and polishing the strips, a carrier and a carrier-bar independent of said carrier but detachably connected thereto, said carrier-bar being adapted to be connected to one end of the strip, whereby the said strip is drawn through the wiper, substantially as set forth.

7. In a machine for cleaning and polishing sheet brass or other sheet-metal, the combination of cleaning and polishing-rolls, and a rotary cleaning brush, of an endless carrier, a carrier-bar independent of the carrier but adapted to be detachably connected thereto, said bar also adapted for connection to the end of the strip for drawing the same into the machine, substantially as set forth.

8. In a machine for cleaning and polishing sheet brass or other sheet-metal, the combination with a box having a slot or way extending from end to end, and cleaning and polishing devices therein, of an endless carrier and a carrier-bar independent of said carrier, but adapted to be detachably connected thereto, and also adapted to be attached to the end of the strip and to travel through said slot, substantially as described.

9. In a machine for cleaning and polishing sheet-brass or other sheet-metal, the combination with cleaning and polishing rolls, and a pair of positively-rotated brushes at the rear of the rolls, of a carrier, and a carrier-bar substantially as and for the purpose set forth.

10. In a machine for cleaning and polishing sheet-brass or other sheet-metal, the combination with a cleaning brush and means for rotating it positively, of a brush-cleaning brush in contact with the aforesaid brush, and a carrier, substantially as and for the purpose set forth.

11. In a machine for cleaning and polishing sheet-brass or other sheet-metal, the combination with a carrier having a detachable carrier-bar, of a winding drum provided with a centrifugal catch or gripper, substantially as and for the purpose set forth.

12. In a machine for cleaning and polishing sheet-brass or other sheet-metal, the combination with a carrier having a detachable carrier-bar and lifting devices or heads for the carrier, of a winding drum provided with a catch or gripper, substantially as and for the purpose set forth.

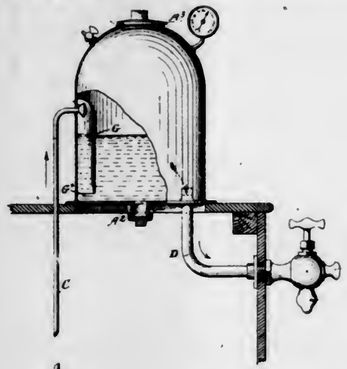
13. In a machine for cleaning and polishing sheet-brass or other sheet-metal, the combination with a carrier having a detachable carrier-bar and a winding-drum provided with means for grasping the bar, of lifting devices or heads over which the carrier passes, and mechanism actuated by the lifting devices or heads for automatically throwing the winding drum into action, substantially as and for the purpose set forth.

14. In a machine for cleaning and polishing sheet-brass or other sheet-metal, the combination with a carrier having a detachable-carrier-bar, and a winding-drum provided with means for grasping the bar, of lifting devices or heads provided with dogs or lugs, adapted to be engaged by the carrier-bar, and over which the carrier passes, and mechanism actuated by the lifting devices or heads for automatically throwing the winding-drum into action, substantially as and for the purpose set forth.

15. In a machine for cleaning and polishing sheet-brass or other sheet-metal, the combination with a carrier and cleaning and polishing devices, of mechanism for starting the carrier, and mechanism for automatically stopping the carrier, the latter being provided with means for actuating the last-named mechanism, substantially as and for the purpose set forth.

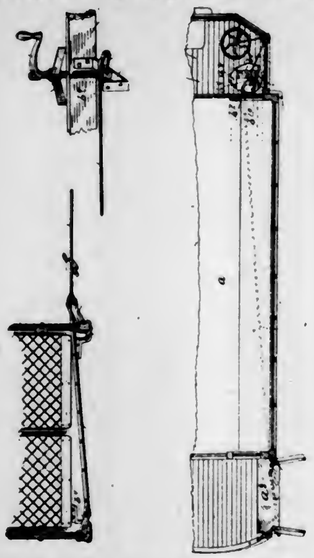
546,115. APPARATUS FOR DRAWING AND SERVING STEAM-BEER. GEORGE A. FRIEDRICH, San Francisco, Cal. Filed May 9, 1895. Serial No. 548,726. (No model.)

Claim.—1. The hercin described apparatus for drawing and serving steam beer, consisting of the receiver having an opening in the top and a removable plug closing the same; a waste-aperture in the bottom; a feeder-pipe connecting the receiver with the cask and having a check-valve therein; a perforated nozzle on the outlet-end of said pipe; a shield within the receiver covering said nozzle and extending downwardly over the same to within a short distance of the bottom of the receiver; a service-pipe coupled to an outlet-aperture in the receiver; and a faucet on the end of said pipe having a longitudinally movable plug provided with recesses in its surface, combined for operation as set forth.



2. In an apparatus for drawing steam-beer, the combination, with the receiver to which the cask is connected, of the service-pipe and a faucet thereon having a longitudinally movable plug provided with recesses or cavities in its body, substantially as described.

546,116. STREET-CAR GATE. WILLARD J. HIELD, Minneapolis, Minn. Filed Dec. 31, 1894. Serial No. 533,442. (No model.)



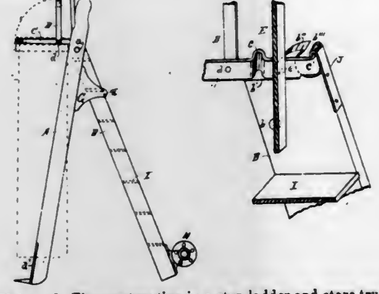
Claim.—1. The combination with a car body, of a gate controlling the entrance thereto, and lever connections for operating said gate, arranged automatically and positively to lock the same in one of its extreme positions, under the action of moving the gate, substantially as described.

2. The combination with a car body, having a rear end passenger entrance and a front end platform for the motorneer, or car operator, of a two-winged gate controlling said rear end entrance, and lever connections for operating said gate, extending to the motorneer's platform, said operating connections being arranged automatically and positively to lock the wings of said gate both in their open and closed positions, under the action of moving the same, substantially as described.

3. The combination with the car-body, of a gate controlling the entrance thereto, a draw-bar having connections to said gate, at one end, and a hand operated crank-shaft at the other end of the said draw-bar, having a crank-arm connection thereto, which crank-arm is arranged to be thrown, in the act of moving the gate, to and from a dead center, whereby said gate when moved to its closed position will be automatically locked, substantially as described.

4. The combination with a car body, having a rear end platform, for the entrance or exit of passengers, and a front end platform for the car operator, of a two-wing gate closing the entrance to said rear platform, a draw-bar connected to crank arms on the pivot-posts of said gate-wings, a draw-bar extending forward from said connecting bar to a hand shaft on the operator's platform, and a crank arm on said shaft connected to said draw-bar, which crank arm is of less length than the crank arms on said gate-wing posts, whereby the hand-shaft crank will be thrown by the dead center either to open or to close the gate-wings, and will thereby lock the gate-wings in their open or closed positions, substantially as described.

546,117. STORE-TRUCK. ARTHUR S. HITCHINGS, Grand Rapids, Mich., assignor to Frank L. Stewart and Allen P. Collar, same place. Filed May 7, 1894. Renewed July 13, 1895. Serial No. 555,930. (No model.)



Claim.—1. The combination in a step ladder and store truck, of a bag holder pivoted to the top of the ladder stiles by a hinge consisting of hooks secured to the back edges of the stiles with a space between their ends and the tops of the stiles for the introduction of corresponding hooks projecting out at right angles from the back ends of the bow that supports the bag, a guard and bearing surface on the stile, and supporting offsets on the arm of the bow, substantially as and for the purpose set forth.

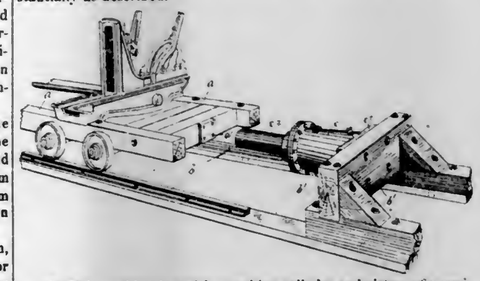
2. The combination with a store truck having a step ladder pivoted to its upper end, of an adjustable bag-holder and shelf consisting of two hooks secured to the stop of the step-ladder stiles in position to receive the bow that supports the bag, a bow made U form with a hook on the end of each side bar in position to engage with the hooks on the step-ladder stiles, and offsets on the side bars in position to rest on the top of the ladder stiles, a second bow pivoted to the side bars of the first in position to shut down over the outside of the first, and a shelf pivoted to close inside of the first bow and be supported thereby, substantially as and for the purpose set forth.

3. In combination, a store truck, a step ladder pivoted to the upper end of the truck so that the lower ends may be thrown apart to complete the step ladder, a bag support, hooks secured to the back edges of the ladder stiles, arms projecting out at right angles with the arms of the bow to engage with the hooks on the ladder stiles, and offsets on the arms of the bow to rest on the tops of the stiles to support the bag holder, substantially as and for the purpose set forth

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546,118. LOG-CARRIAGE CUSHION. FREDERICK O. KILGORE, Minneapolis, Minn. Filed Feb. 5, 1895. Serial No. 537,341. (No model.)

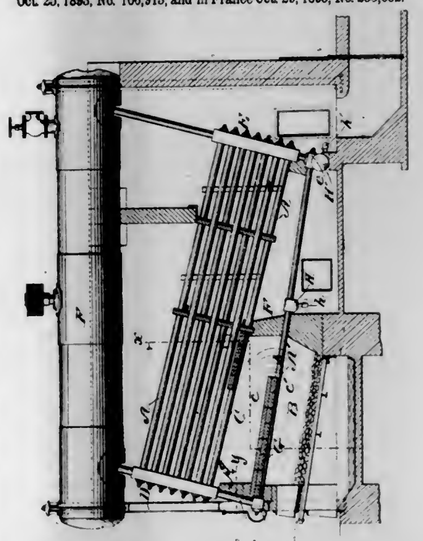
Claim.—1. An elastic fluid cushion for log carriages or other moving bodies, comprising a closed cylinder, fitted with a piston having a projecting bumper stem, and provided with an inwardly closing check-valve, at or near its forward end, and with an outwardly closing check-valve, at or near its rear end, whereby the confined fluid behind the piston and the vacuum in front of the piston are made to co-operate, for cushioning the carriage in the bumping action, substantially as described.



2. The combination with a cushion cylinder and piston, of a conical helix spring within said cylinder, applied with its base or large end bearing against the rear end of the cylinder and its tip or small end bearing against the back of the piston, whereby the spring may be compressed by the piston into a perfect coil, without crushing, breakage or undue strain on the spring, under the bumping action, substantially as described.

3. The combination with the closed cylinder *c*, of the piston *c'* having the projecting bumper-stem *c²* working through the cylinder head with a close joint, the inwardly closing check valve *c⁴*, at or near the forward end of the cylinder, the outwardly closing check-valve *c⁵*, at or near the rear end of the cylinder, the vent valve *c⁶*, at or near the rear end of the cylinder, and the spring *d*, in the form of a conical helix, applied with its large end bearing against the rear end of the cylinder, and its tip or small end bearing against the back of the piston, all operating substantially as and for the purposes set forth.

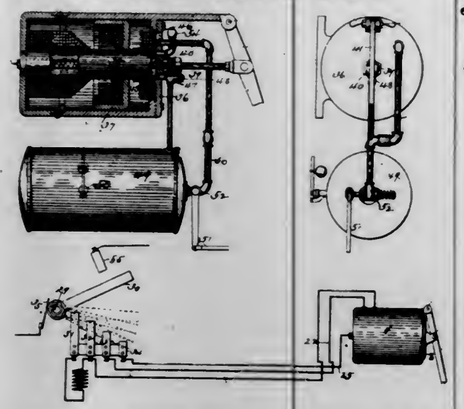
546,119. STEAM GENERATOR. CHARLES A. KNIGHT and GEORGE W. THODE, Glasgow, Scotland. Filed Aug. 3, 1894. Serial No. 519,330. (No model.) Patented in England Feb. 16, 1893, No. 3,456; in Belgium Oct. 25, 1893, No. 106,913, and in France Oct. 29, 1893, No. 233,632.



Claim.—1. In a steam-generator, a main boiler or stack of tubes; a series of auxiliary tubes in circulatory connection therewith located beneath the same and in direct contact with the flames in the furnace; and a roof partially overlying those portions of said auxiliary tubes that are within the furnace and dividing the furnace into two vertically-connected parts, substantially as set forth.

2. In a steam-generator, a main boiler or stack of tubes; a series of auxiliary tubes in circulatory connection therewith, located within the furnace; and a roof partially overlying and partially supported by those portions of said auxiliary tubes that are within the furnace, and dividing the furnace into two vertically-connected parts, substantially as set forth.

546,120. ELECTRIC BRAKE. WILLIAM KOEDDING, St. Louis, Mo. Filed June 13, 1894. Serial No. 514,439. (No model.)



Claim.—1. An improved electric brake having a coil or series of coils, fixed within a stationary metallic cylinder, and around an internal core, a coil around the internal core of a second cylinder and moving within the first cylinder, the core facing end of the stationary coil being preferably cone shaped, and the corresponding core facing end of the movable coil funnel shaped, substantially as shown and described.

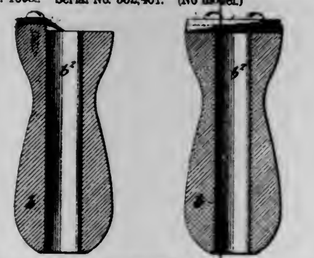
2. An improved electric brake comprising two concentric metallic cylinders, with internal cores, energizing coils within said cylinders and around said cores, means to connect the moving and stationary coils electrically, a brake lever secured to said stationary cylinder, and operated by the movable cylinder and pivoted to the braking mechanism, substantially as set forth.

3. An improved electric brake having a cylinder provided interiorly with coils adapted to be magnetized, said coils arranged in a series with the inner coil in the form of a truncated cone, at its inner extremity, and a plunger, to which is connected a brake rod, provided with a coil the one of which is provided with a depression adapted to receive the coil carried by the cylinder when the same are energized substantially as set forth.

4. An improved electrical brake comprising concentric cylinders with internal cores, coils 20, 21, and 24 within said cylinders to operate the brake electrically, a coil 46 within the same cylinder to assist the back pressure of the brake in storing up compressed air, a cylinder or sleeve surrounded by said coil 46 to serve as a compression chamber, and the surrounding space within the concentric cylinders and around the compressing chambers to serve as an actuating air chamber, substantially as shown and described.

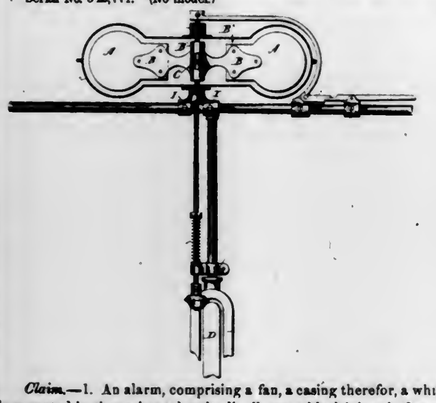
5. An improved electric brake provided with a plunger, adapted to be reciprocated in a cylinder, a brake rod secured to said plunger, the backward movement of the plunger in said cylinder adapted to compress and force air into a storage tank located in connection therewith and a series of valves, controlling pipes leading from said storage tank to said cylinder to enable the use of the compressed air for operating the brake when the electric power is shut off for any reason as set forth.

546,121. CUE-TRIMMER. JACOB N. MCINTIRE, New York, N. Y., assignor to the Brunswick-Balke-Collender Company, Chicago, Ill. Filed June 11, 1895. Serial No. 552,401. (No model.)



Claim.—A cue trimmer composed wholly of the tubular holder *b* formed with a projection *e*, wholly to one side of the bore; a cutter *a*, formed with a bent and tapered portion, having its edge transverse, or at right angles, to the axis of the bore b^3, and crossing the end of said bore diametrically and with a body portion resting on the projection *e*; and the securing bolts, or screws *c*, operating to fasten the knife directly to the tubular holder; the whole constructed and operating in the manner and for the purpose hereinbefore set forth.

546,122. BICYCLE-WHISTLE. EDWIN S. PIPER, Bristol, Conn., assignor of one-half to Frank Clayton, same place. Filed Mar. 22, 1895. Serial No. 542,771. (No model.)



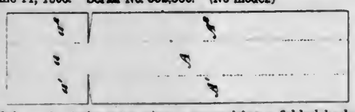
Claim.—1. An alarm, comprising a fan, a casing therefor, a whistle mounted in the casing, a longitudinally movable driving shaft connected to the said fan, a wheel located at the opposite end of the said shaft and adapted to be set in motion by its engagement with a revolving wheel, and operating connections applied to the shaft for moving the same longitudinally, substantially as set forth.

2. An alarm, comprising a fan, a casing therefor, a whistle mounted in the casing, a longitudinally movable shaft connected to the said fan, a driving wheel located at the lower end of the shaft, and adapted to be engaged with a wheel of a vehicle for being actuated thereby, an operating-lever connected with the upper end of the shaft, and a handle-lever connected with the operating-lever, substantially as set forth.

3. A bicycle alarm, comprising a fan, a casing therefor, a whistle mounted in the casing, a vertically movable shaft connected with the fan, a driving wheel located at the lower end of the shaft and adapted to be engaged by the wheel of the vehicle, and a spring connected with the shaft and arranged to exert a constant effort to raise the same and disengage the driving wheel from the wheel of the vehicle, and operating connections for moving the shaft longitudinally against the tension of the said spring, substantially as set forth.

4. A bicycle alarm, comprising a fan, a casing therefor, a whistle mounted in the casing, a vertically movable shaft connected with the fan and extending upward through the casing, in which its upper end has bearing, a driving wheel connected with the lower end of the shaft and adapted to engage with a wheel of the vehicle, a bracket for supporting the lower end of the shaft, a spring for moving the shaft longitudinally in one direction, and operating connections connected with the projecting upper end of the shaft for moving it in opposition to the spring, substantially as set forth.

546,123. THREAD-PACKAGE. WILLIAM C. SCHROEDER, La Porte, Ind., assignor to Benjamin L. Armstrong, New London, Conn. Filed June 11, 1895. Serial No. 552,386. (No model.)

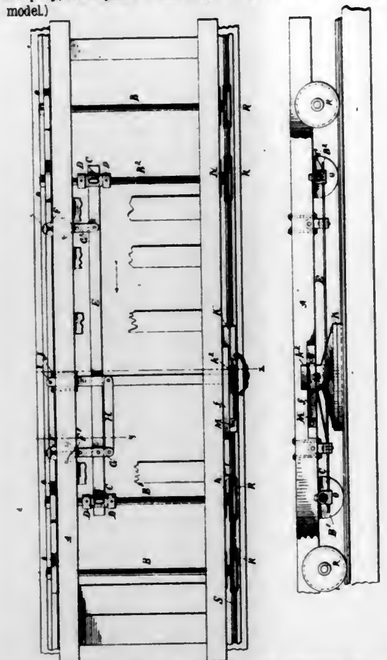


Claim.—1. A thread package, comprising a folded body portion, an end portion reinforced by folded flaps and further folded within the end of the casing, forming a bearing over which the threads of the skein may be withdrawn from the package, substantially as set forth.

2. The thread package, comprising the folded body portion and the end portion formed integral with the body portion and reinforced by folded flaps, the said end portion being further folded within the end of the casing to form a bearing over which the threads of the skein may be withdrawn, substantially as set forth.

3. The thread package, comprising the folded body portion, and the end portion reinforced by folded flaps, the said end portion having a fold within the end of the body of the casing as the bearing for the end of the skein and a further fold over the end of one side of the body portion, substantially as set forth.

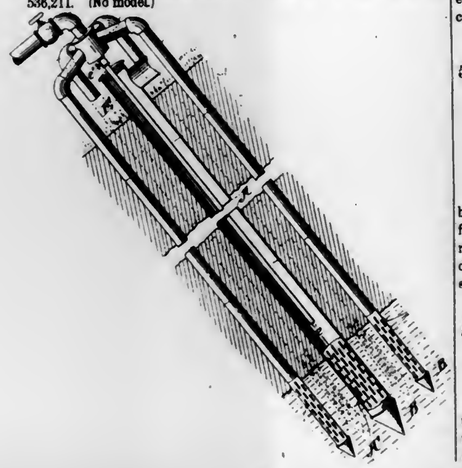
546,124. OFFSETTING MECHANISM FOR SAWMILL-CARRIAGES. EDWIN E. THOMAS, Bay City, Mich., assignor to the M. Garland Company, same place. Filed May 2, 1895. Serial No. 547,848. (No model.)



Claim.—1. In a saw mill carriage, the combination, with the truck; and the offsetting mechanism, of a weight operating solely by its inertia, when at rest, and during the initial movement of the carriage, to cause the necessary movements of the working parts of said mechanism; substantially as hereinbefore set forth.

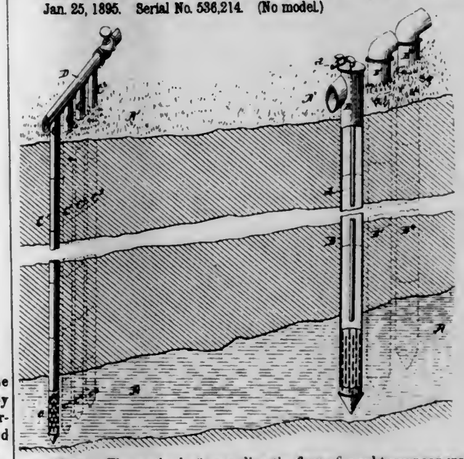
2. In a saw mill carriage, the combination with the truck; the laterally adjustable frame; and a weight arranged to be drawn along by the carriage, but to have intervals of rest at the end of each stroke of the carriage, of the bar E, arranged to slide endwise, in stirrup-like devices on the truck-axles; the links G, G'; and the actuating lever I, pivoted at one end to the truck frame, coupled by the connecting rod H to one of the said links, and coupled at its other end to the said weight; the whole constructed to operate as and for the purposes set forth.

546,125. METHOD OF ELEVATING WATER BY COMPRESSED AIR. SILAS W. TITUS, Brooklyn, N. Y. Filed Jan. 25, 1895. Serial No. 536,211. (No model.)



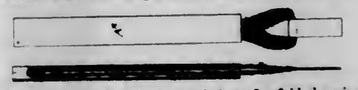
Claim.—The method of elevating water in or through a well-tube, or tubes, the intake, or respective intakes, of which are sunk into and have uninterrupted communication with the body of a water-bearing stratum, and in which the water has rise by static pressure, which consists in continuously injecting air directly into and within the body of said stratum through a pipe, or pipes, sunk therein through an earth-bore, or bores, which are in the vicinity of, but independent from, the earth bore, or bores, for said well-tube, or tubes, and the outlet, or respective outlets, of which pipe, or pipes, lie within the body of said stratum, at a pressure adequate to be exerted through said stratum upon, and to overcome the weight of, the water-column, or columns, created by said static pressure in said well-tube, or tubes; whereby the injected air will pass with, and induce the movement of, the water in said stratum to, and upward in, said well-tube, or tubes; substantially as and for the purpose specified.

546,126. METHOD OF RETARDING THE FLOW OF SUBTERRANEAN WATER-COURSES. SILAS W. TITUS, Brooklyn, N. Y. Filed Jan. 25, 1895. Serial No. 536,214. (No model.)



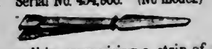
Claim.—The method of retarding the flow of a subterranean water-course, which consists in injecting air, under pressure, into such a water-course, having movement or flow in a determinate direction, at a series of points or places which are located in succession in the direction transverse of said water-course, in conjunction with the establishment of communication from the surface of the ground with said water-course at a point, or points therein above the places whereat the said air-injection is effected relatively to the direction of the flow of said water-course; whereby the velocity of the movement of the water-course in passing the intakes of the well-tubes which establish the aforesaid communication between said water-course and the surface of the ground, may be checked or impeded and the water surrounding said intakes be in a condition favorable to its efficient elevation in said well-tubes by the natural pressure of said water-course; substantially as and for the purpose set forth.

546,127. THREAD-PACKAGE. BENJAMIN L. ARMSTRONG, New London, Conn. Filed Aug. 4, 1894. Serial No. 519,502. (No model.)



Claim.—A thread package consisting of a folded casing for embracing the skein, a portion of one of the folded parts being further folded in the longitudinal direction of the skein and provided with a reinforcing rod or stem at the bight of such additional fold, said additional fold forming a partition between the sides of the skein, substantially as set forth.

546,128. BODKIN. FRANK D. ARTHUR, Scarborough, N. Y. Filed Dec. 10, 1892. Serial No. 454,800. (No model.)



Claim.—The bodkin, comprising a strip of spring metal folded upon itself, the folded parts being provided with correspondingly narrowed portions for the reception of a sliding clasp and the free ends of the folded parts being provided with holding jaws turned

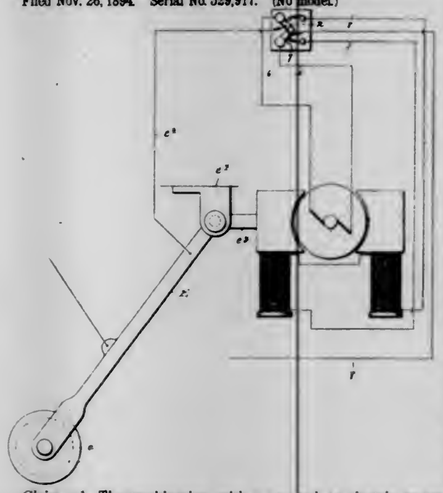
inwardly and arranged to lap past each other when the jaws are closed and a clasp surrounding the narrowed portions and adapted to slide toward and away from the holding jaws to lock and release them, substantially as set forth.

546,129. STOOL. LEONORA E. BAUER, Baltimore, Md. Filed June 11, 1895. Serial No. 552,373. (No model.)



Claim.—In a stool, the combination of a column, a hinged seat, a bolt having a movement in common with the seat, a chain attached to the bolt, a spring with adjusting devices connected to the lower end of the chain, means to hold the spring in position, and a stop to prevent the seat from passing below a horizontal position, substantially as specified.

546,130. CLOSED-CONDUIT ELECTRIC RAILWAY. JOHN M. DEAL, Fernwood, assignor, by direct and mesne assignments, to himself, and Samuel Wadworth, Clifton, and William Bartram, Lansdowne, Pa. Filed Nov. 26, 1894. Serial No. 529,917. (No model.)



Claim.—1. The combination, with a car, and an electric motor thereon, of a magnetic trolley arm directly connected with the pole-piece of the motor, and electrical connections between said arm and the motor, substantially as described.

2. In an electric railway, a conduit, comprising a trough, two converging side plates thereon, and a longitudinally disposed bar of conducting metal fastened to and between the converging edges of said plates, substantially as described.

3. The combination, with a car and an electric motor thereon, of a depending magnetic arm magnetically and electrically connected with the motor, and means for raising and lowering said arm, substantially as described.

546,131. GAS-REGULATOR. WILLIAM C. DOWNWARD, Wilmington, Del., assignor of one-half to Alfred Downward, same place. Filed July 13, 1895. Serial No. 555,876. (No model.)

Claim.—1. In a gas regulator, the combination of a substantially cylindrical casing having a receiving chamber in its lower portion provided with an outlet on its side, internal annular flanges at the upper and lower ends of the receiving chamber, a pipe rising from the lower flange within the receiving chamber and extending beyond the outlet, a pipe rising from the upper flange, a valve stem passing through the said pipes and provided at its lower end with a valve adapted to close the lower end of the lower pipe, and a float adjustably secured to the valve stem, extending over the upper end of the upper pipe and having its lower end immersed in a liquid seal between the said pipe and the casing



2. In a gas regulator, having upper and lower chambers, the upper chamber accommodating the gas reservoir or float and being provided with a liquid seal around the lower end of the float, a pipe projecting from the lower to the upper chamber a guard secured aroond said pipe just below its upper end, said pipe and guard fitting within the gas reservoir or float, the float secured to the valve rod, and means for retaining the valve rod centrally within the gas regulator.

3. In a gas regulator, the casing having an annular flange at its lower end, and an inner annular flange about midway its length, a receiving chamber between said flanges, an outlet in the side of the casing, a pipe projecting upwardly from the lower flange, a pipe projecting upwardly from the upper flange and provided at its upper end with a concave guard, said pipe and guard fitting within a gas reservoir float, the lower portion of which is seated on the upper flange and surrounded by a liquid seal, and a valve rod adjustably secured to the reservoir float and having a valve at its lower end, and means for retaining the valve rod centrally within the regulator when operated by the pressure of gas.

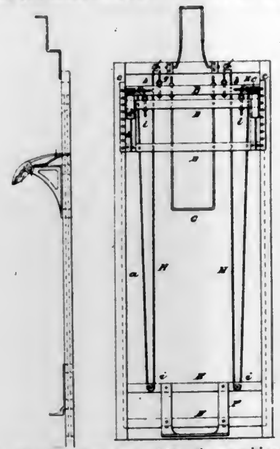
4. The combination of the casing having an internal annular flange at its upper end, supporting arms resting on and rising from said flange, a cup secured to the upper ends of the said arms, a guiding float in said cup, a rod secured to and depending from said guiding float and provided at its lower end with a valve adapted to close the inlet to the casing, and a reservoir float adjustably secured to an intermediate point of said rod.

5. In a gas regulator the combination with a casing having upper and lower chambers, a pipe projecting into the lower chamber, an outlet pipe, a pipe projecting upwardly from an annular flange midway the casing into the upper chamber and having an annular concavo-convex guard near its upper end, said pipe fitting within a gas reservoir float, a valve rod having a valve at its lower end, the reservoir float adjustably secured to said rod and a governor float secured to the upper end of said rod and floating a cup supported by braces projecting from an annular shoulder at the upper end of the casing.

546,132. APPARATUS FOR ADJUSTING GARMENTS. LEE H. DEANER, Muskegon, Mich. Filed Dec. 26, 1894. Serial No. 532,953. (No model.)

Claim.—1. In a garment-adjusting machine, the combination of a main frame, a rigid slide bar at the upper end thereof having pivoted locking levers which permit it to have a vertical adjustment, a vertically-movable frame below said bar, and the pairs of grippers carried thereby and operative to engage a garment, said grippers being arranged to strike the upper bar when they are lifted so as to release the garment, substantially as described.

2. In a garment adjusting machine, the combination of the main frame, the stationary bar at the upper end which is capable of adjustment, the pairs of spring-provided gripping fingers, a vertically-movable slide carrying said fingers, a foot-operated slide at the base of the main frame and connections between it and the finger-carrying slide.



3. In a garment-adjusting machine, the combination with the main frame, of a vertically-movable slide, automatically-operating grippers carried thereby for engaging the garment, an adjustable upper bar against which the grippers strike and open a foot-operated slide at the base of the machine and connections between it and the gripper-carrying slide, substantially as specified.

4. In a garment-adjusting machine, the combination with a main frame, of a stationary bar situated near the top of the frame, a movable frame sliding on the main frame, automatically-movable fingers carried by said movable frame, said fingers being closed by springs and opened by striking against the upper bar, a movable foot-operated frame at the base of the machine and cords or cables connecting the several frames, substantially as described.

5. The combination of the main frame, a normally stationary bar at the upper end thereof, locking levers carried thereby for adjusting the position of said bar, a movable frame which slides in ways in the main frame, a stop rod attached to the stationary bar and passing through the movable frame so as to limit its movement, automatically-operatiug fingers carried by the movable frame, a foot-operated frame at the base of the machine, cables or cords connectiug the movable frame with the foot-operated frame, substantially as described.

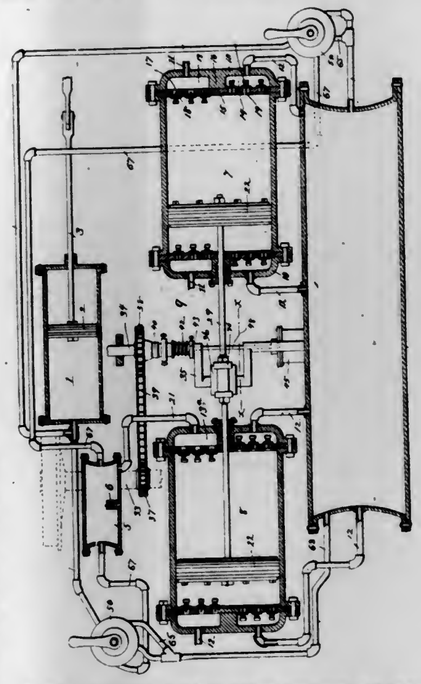
546,133. MUSIC-SHEET FOR MECHANICAL INSTRUMENTS. PAUL EHRLICH, Gohlis, Germany. Filed Apr. 13, 1895. Serial No. 545,623. (No model.) Patented in Germany Nov. 8, 1892, No. 79,765; in England May 29, 1893, No. 10,518, and in Austria-Hungary Aug. 1, 1893, No. 22,849 and No. 38,065.

Claim.—A music sheet of sheet-metal, having projections formed by cutting the sheet and turning or coiling over the cut portions, the ears produced thereby being filled with solder or other like material and means provided, to strengthen, if desired, the side corners *m*, substantially as and for the purpose specified.

546,134. FLUID-PRESSURE BRAKE MECHANISM. THOMAS W EVANS, New Orleans, La. Filed May 28, 1895. Serial No. 550,935. (No model.)

Claim.—1. The combination in a fluid pressure brake system, of a brake cylinder, a reservoir, a vacuum chamber, and a valve connected with the brake cylinder, reservoir and vacuum chamber and adapted to effect communication between the reservoir and brake cylinder to apply the brakes, communication between the brake cylinder and the open air to release the brakes and communication between the brake cylinder and the vacuum cylinder to return the piston in the brake cylinder to its released piston, substantially as specified.

2. The combination in a fluid pressure brake system, of a brake cylinder, a reservoir, a vacuum chamber, an air compressor having an induction port connected with the vacuum chamber and a discharge port connected with the reservoir, a valve connected with the brake cylinder, reservoir, and vacuum chamber and adapted to effect communication between the reservoir and brake cylinder to apply the brakes, communication between the brake cylinder and the open air to release the brakes and communication between the brake cylinder and the vacuum chamber to return the piston in the brake cylinder to its released position, substantially as specified.



3. The combination in a fluid pressure apparatus, of a reservoir, two compressor cylinders arranged in alignment and connected with the reservoir and having pistons provided with rods, the frame 32, connected to the contignous ends of the piston rods, a slide arranged in said frame, a rotary shaft having a crank connected to said slide, a car wheel, a wheel loosely mounted on the crank shaft, gearing intermediate of the car wheel and said loosely mounted wheel, a spring pressed clutch fixed to turn with the shaft and adapted to engage the loose wheel, a cylinder connected with the reservoir and a piston arranged in said cylinder and connected with the spring pressed clutch, substantially as and for the purpose set forth.

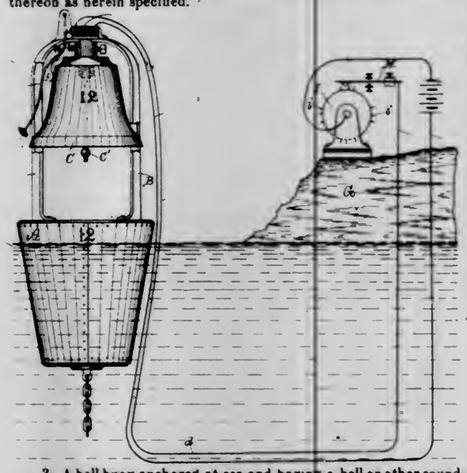
4. In a fluid pressure brake apparatus, a valve comprising the casing having the central chamber 74, provided in its bottom with a passage 73, adapted to be connected with a brake cylinder, the chamber 58, having the port 62, in its bottom adapted to be connected with a reservoir and also having the port 69, in its inner side wall, the check valve arranged in said chamber 58, the chamber 59, having the port 66, in its bottom adapted to be connected with a vacuum chamber and also having the port 70 in its inner side wall, the chamber 60, having the exhaust port in its bottom and also having the port 71, in its inner side wall, and the chamber 61, having the port 64, in its bottom and adapted to be connected with a reservoir, and the rotary hollow-valve plug arranged in the central chamber of the casing and having the ports 77, 78, 79, and 80, in its bottom adapted to register with the casing passage 73, and also having the ports 81, 82, 83, and 84, in its side wall adapted to register with the casing ports 69, 70, 71, and 72, respectively, substantially as and for the purpose set forth.

546,135. BELL-BUOY. JOHN A. FAIRBANKS, Cambridge, Mass. Filed Apr. 15, 1895. Serial No. 545,686. (No model.)

Claim.—1. A bell buoy anchored at sea and having a bell or other sounding instrument arranged thereon, in combination with an electrically operated striking or sounding device arranged on said buoy, wires leading from said sounding device to a battery or electric current generator located at a distance from such buoy and an automatic circuit closer and breaker adapted to close and break the circuit to produce sounds corresponding with the chart number of the buoy, substantially as described.

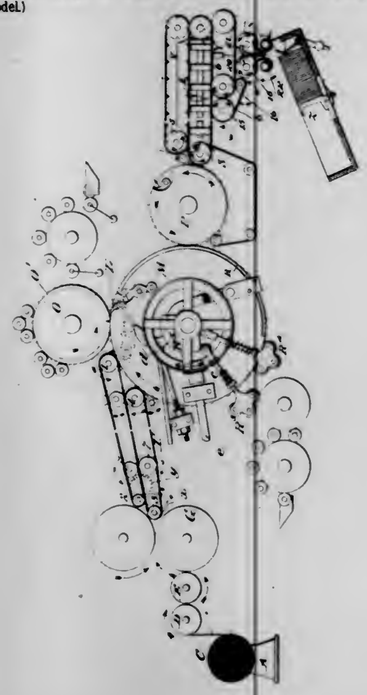
2. A bell buoy anchored at sea and having a bell or other sounding instrument arranged thereon provided with a hammer or sounding device, adapted to be sounded by the motion of the sea, combined

with a positive electric device located at a station in the vicinity of, or away from the bell buoy and electrically connected to a striking mechanism on said bell buoy, for the purpose of causing the bell on the buoy to be positively sounded at any and all times when the sea is so calm as to prevent the rocking of the buoy to sound the bell thereon as herein specified.



3. A bell buoy anchored at sea and having a bell or other sounding instrument arranged thereon and having a number corresponding to its chart location combined with an electrically operated striking or sounding device arranged on said bell buoy and electrically connected to a battery or electric current generator and a circuit closer located at a station in the vicinity of or away from said bell buoy, said circuit closer being arranged to intermittently close and open the circuit and produce sounds on the bell buoy sounding device corresponding to the chart number of the buoy, substantially as and for the purpose set forth.

546,136. PRINTING-PRESS AND FOLDING MECHANISM. JOSEPH L. FIRM, Jersey City, N. J., assignor to the Goss Printing Press Company, Chicago, Ill. Filed Apr. 10, 1886. Serial No. 198,443. (No model.)



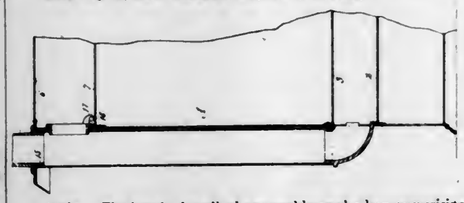
Claim.—1. A curved-form printing cylinder, and an impression cylinder that make two revolutions, in combination with inking rollers, substantially as set forth, and an intermediate impression and form cylinder making one revolution whereby the curved form cylinder is double inked, and the intermediate impression and form cylinder is single inked, substantially as set forth.

2. A form cylinder holding forms imposed in the manner described, gripper-cylinders and bands T for advancing the printed sheet, and a splitting knife, in combination with folding knives U and V, and wheels 11 and 12, and 13 and 14 for folding a sheet by a positive motion in two signatures as hereinbefore specified.

3. In a paper folding mechanism, the curved guides 20 and 21, in combination with the sickle cams 22 and 23, substantially as and for the purpose set forth.

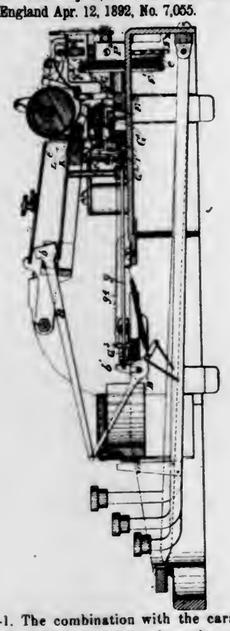
4. In a printing press, the combination substantially as set forth, of a curved-form cylinder, and an impression cylinder, of substantially equal diameter, with an intermediate combined curved-form and impression cylinder, of substantially twice the diameter of each of the other cylinders, to print both sides of a sheet, substantially as described.

546,137. SMOKE-BOX. CALEB V. FLEETWOOD, Cincinnati, Ohio. Filed May 13, 1895. Serial No. 549,179. (No model.)



Claim.—The herein described removable smoke box comprising a main body or trunk, an elbow joint adapted (conjointly with the upturned edge of the rear plate of the range) to support the trunk and form a communication with the outlet flue, the depending flange and sectional side flanges connecting the elbow joint with the body of the range, the damper frame extending through the rear wall of the range and into the smoke box and the pipe collar provided with a downward extension to engage the upper end of the smoke box, all constructed and arranged substantially as and for the purpose herein specified.

546,138. TYPE-WRITING MACHINE. EUGENE A. FORD, New York, N. Y. Filed May 19, 1894. Serial No. 511,829. (No model.) Patented in England Apr. 12, 1892, No. 7,055.



Claim.—1. The combination with the carriage and means for moving the same, of a perforated rack on the carriage, a spring actuated holding dog pivoted on one side of the rack, a releasing dog

pivoted on the other side of the rack and having its tooth opposite to and adapted to displace that of the holding dog, an escapement bail in position to be struck by each type-lever just as the latter reaches the end of its movement, and connections between the escapement bail and releasing dog, substantially as described.

2. The combination with the carriage and means for moving it, of a rack on the carriage, a spring-actuated holding dog and a pivoted releasing dog extending forward from its pivot in the direction of movement of the carriage, so that the pressure of the carriage tends to throw the release-dog out of engagement with the rack, substantially as described.

3. The combination with the platen of a pinion thereon, a pawl having a slot through which its pivot pin passes, so that the pawl has freedom of motion into and out of engagement with said pinion, a spring normally holding the pawl out of engagement with said pinion, an operating handle and connections for bringing said pawl into engagement with said pinion and turning it on its pivot, and a fixed stop for arresting the movement of the pawl always at the same spot, substantially as described.

4. The combination of the platen, the pinion thereon, the slotted pawl through which the arbor of the platen passes acting as a pivot for said pawl which is normally held clear of said pinion, means for moving said pawl into engagement with said pinion and turning the latter thereby, a stop for arresting the pawl, and an adjusting lever for varying the point at which the pawl engages the pinion, substantially as described.

5. The combination with the platen, of a pinion thereon, a pawl having a slot, through which its pivot pin passes, and an extension or tail, said pawl being normally out of engagement with said pinion, means for moving said pawl into engagement with said pinion and turning the latter thereby, and an adjusting lever acting on the extension or tail of said pawl for varying the point at which it engages said pinion, substantially as described.

6. The combination of the platen, its sliding carriage, a pinion on the platen, a slotted pawl on the arbor of the platen normally held out of engagement with the pinion, and an operating handle connected with said pawl and pivoted at the end of the carriage, so as to actuate said pawl and to move the carriage in the direction of its starting point, substantially as described.

7. The combination with the sliding carriage of a motor-spring a rotatable plate to which one end of said spring is attached for the purpose of adjusting its tension, and a detent spring engaging notches in said plate for holding the same in its adjusted position, substantially as described.

8. The combination with the sliding carriage, of ball bearings for the same at one side thereof, a supporting roller upon which the opposite side of the carriage rests, and means for adjusting said roller to tilt the carriage, substantially as described.

9. The combination with the type-bars, and the guide therefor, of the impression cylinder, its carriage, a rail upon which said carriage slides, ball-bearings for said carriage, and a yielding plate thereon constituting one of the bearing surfaces, so that the carriage can be tilted on its longitudinal axis to regulate the distance between the type-guide and impression cylinder, substantially as described.

10. The combination with the platen and the horizontally moving type-bars, of the hollow guide common to all the type-bars, said guide being beveled or curved downward at the end adjacent to the platen, substantially as described.

11. The combination with the platen and type-bars, of the hollow guide common to all the bars, said guide being of triangular shape, curved downward at its forward end adjacent to the platen and provided with a rib or pointer, substantially as described.

12. The combination with the guide and the longitudinally moving type-bars of type-heads of approximately triangular outline, tapering gradually backward to the thickness of the type-bars, substantially as described.

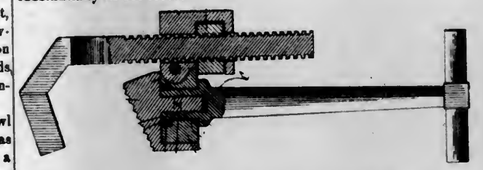
546,139. WRENCH. JOSEPH FORD, Grafton, N. D. Filed July 6, 1895. Serial No. 555,127. (No model.)

Claim.—1. An implement substantially as described comprising the head, the handle journaled to said head, the jaw face applicable to said head and having a portion overlapping the same and a screw stud having a threaded engagement with the handle whereby the turning of the latter may seat or unseat the jaw face, substantially as described.

2. An implement substantially as described comprising the head, the handle journaled thereto and having a threaded socket in its end, and the jaw face having its under side fitted to the head and provided with a threaded stud projecting from said side and engaging in the socket of the handle, substantially as set forth.

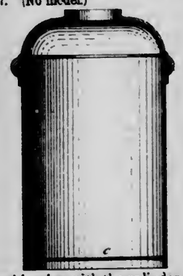
3. The combination with the head and the shaft journaled therein and having an end socket, of the jaw face having a depending flange-like portion lapping alongside the head and a stud threaded in the socket of the handle, substantially as set forth.

4. The combination with the head having the opening rabbeted at its upper end, of the handle journaled in said opening and having its upper end threaded and socketed, the nut turned on said upper end within the rabbet in the head, and the jaw face held to said head, substantially as set forth.



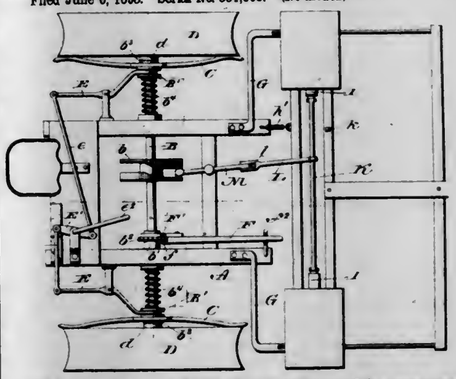
5. The improved wrench herein described consisting of the head, the handle journaled thereto and having its upper end socketed, the jaw face fitted to said head having a depending flange lapping alongside the head and a stud threaded into the socket of the head, the block jointed to said head and having an opening for the jaw shank, the jaw having its shank movable through said block, and the adjusting nut held to the block and engaging the shank, substantially as and for the purposes set forth.

546,140. MILK-CAN. THOMAS W. FORSTER, Detroit, Mich., assignor to the Buhl Stamping Company, same place. Filed Sept. 4, 1894. Serial No. 522,007. (No model.)



Claim.—The combination with the cylinder of a milk can, a breast having a flange which overlaps and fits said cylinder, and outwardly projecting bead formed in said breast, an external hoop encircling said breast and provided with an internal groove which is engaged by the projecting bead of said breast, substantially as described.

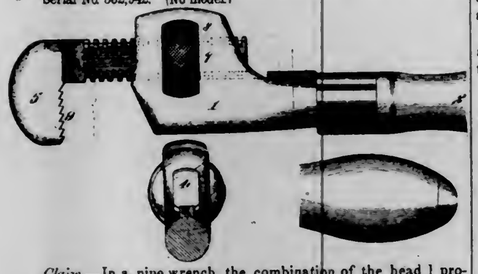
546,141. CORN-PLANTER. WILLIAM H. FREEMAN, Hemlock, Ind. Filed June 6, 1895. Serial No. 551,893. (No model.)



Claim.—1. In a corn-planter, the combination, of the supporting wheels D loosely mounted on the axle of the wheel-frame and provided with clutch faces, sliding collars B' mounted on the axle to rotate therewith and having clutch faces which engage the clutch faces on the hubs of the supporting-wheels, markers C rigidly secured to the sliding collars, said markers being bowed so that their ends will be held in frictional contact with the rims of the wheels, and operating levers connected to the sliding collars, together with a ratchet-disk b^3 rigidly mounted on the axle and provided with a hub on one side, and a lever F having a portion F' which encircles the hub, the lever F being pivoted to the portion F' so that it will engage the teeth of the ratchet-disk, substantially as shown and for the purpose set forth.

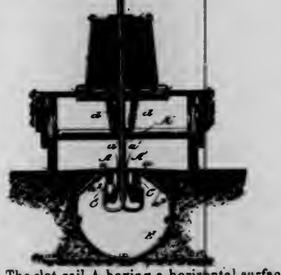
2. In a corn-planter, the combination with the wheel-frame and runner-frame, of bars G G connecting the frames to each other said bars being rigidly secured to the wheel-frame and pivotally connected to the lower ends of the runner-frame, an arched bar K pivoted at its ends to the seed slides of the runner-frame, an arm or lever pivoted on the wheel-frame and connected at its outer end to the arched bar, and a stud or projection on the runner-frame adjacent to the arched bar, substantially as shown and for the purpose set forth.

546,142. PIPE-WRENCH. SAMUEL M. FRIEDE, St. Louis, Mo., assignor of one-third to John W. Donnell, same place. Filed Dec. 26, 1894. Serial No. 532,942. (No model.)



Claim.—In a pipe wrench, the combination of the head 1 provided with a handle 2, an opening 3 and a jaw 10, a movable jaw 5 provided with a threaded shank 4 which is adapted to pass through the opening 3, a nut 7 working on said shank 4, a groove or cut-away portion 12 in the shank 4, and a projection or ledge 11 formed on the head 1 back of the opening 3, substantially as and for the purpose set forth.

546,143. ELECTRIC-RAILWAY SYSTEM. HENRY A. FRY, Portland, Oreg. Filed June 13, 1894. Renewed May 9, 1895. Serial No. 548,751. (No model.)



Claim.—1. The slot rail A having a horizontal surface flange, a vertical pendent slot flange, and an inclined outer flange joining on to the horizontal surface flange, and forming a housing or inclosure for an electric conductor substantially as shown and described.

2. The slot rail A having a horizontal surface flange, a vertical pendent slot flange, and an inclined outer flange joining on to the horizontal surface flange, in combination with an electric conductor arranged between the vertical and inclined flanges, and connected to said rail by insulated supports substantially as shown and described.

3. The combination with the two track rails D D, and the two slot rails having inclined outer flanges; of the compound yoke consisting of the circular section E connected to the inclined flanges of the slot rails the base E, and the bent or knee section E^3 connected at the bottom to the base, at its side to the circular section, and at the top to the track rails, substantially as and for the purpose described.

4. The combination with a slot rail having a pendent vertical flange extending down into the conduit; of a conductor located beside said flange, and a trolley having a wheel running against said conductor and provided with an insulated wearing face adapted to abrade against said flange, substantially as and for the purpose described.

5. The trolley composed of a central bark *k* having steel face plates *k' k'* with insulation beneath them, and a curved lower end bearing a trolley wheel with an insulated face plate, substantially as and for the purpose described.

6. The combination with the trolley shank; of a housing having a guide for the trolley shank, spiral springs connecting the trolley shank to the housing, a laterally adjustable frame supporting the housing, and a support fixed to the car for carrying the laterally adjustable frame substantially as and for the purpose described.

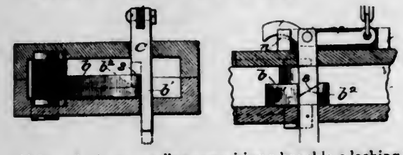
7. A trolley shank, combined with a trolley shank guide constructed as a housing fixed upon and carried above a laterally adjustable frame, and springs arranged within a housing and connecting the latter to the trolley shank substantially as and for the purpose described.

8. The insulating conductor hanger consisting of a pair of hinged clamp hooks or jaws having a screw stem, a flanged or headed sleeve turning thereon and compressing the jaws, a casing inclosing the headed or flanged sleeve and insulation arranged between the same and the casing substantially as shown and described.

9. The connection for the main and branch conductors consisting of wire R, pipe R' with a filling of oil surrounding the wire, and an insulating stuffing box at the ends of the pipe R' substantially as shown and described.

10. The crossing rail C^4 C^5 having its two sections made at right angles and provided with flanges $a' a^2$ notched at 1, 2, 3, substantially as and for the purpose described.

546,144. CAR-COUPLING. THOMAS GASKINS, Arcadia, Fla. Filed June 26, 1895. Serial No. 554,112. (No model.)



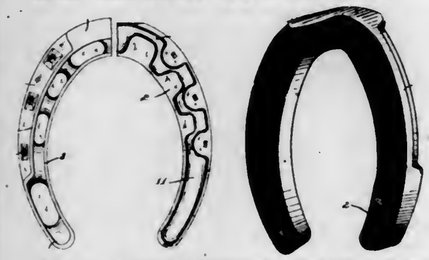
Claim.—1. A car coupling comprising a knuckle, a locking lever, a pin holding the locking lever to position, said locking lever having an intermediate locking position between its normal locking position and its open position, substantially as and for the purpose described.

2. A car coupling having a knuckle, a locking lever, and a pin engaging with the locking lever, said locking lever being formed with a segmental head having an intermediate notch between its front and rear sides for engagement with the pin to couple the cars when standing on a curve substantially as and for the purpose described.

3. The locking lever *b* having segmental head *b'* with notch b^3 having inclined side; in combination with the locking pin C having an inclined shoulder *s* and the coupling knuckle substantially as and for the purpose described.

4. The combination with the vertically adjustable pin C; and the draw bar having a notched box or housing N, of the pin lever A fulcrumed to the pin in the middle, and having one end bent to form a curved neck adapted to bear on the inclosing box, and the other end provided with means for operating it substantially as shown and described.

546,145. CUSHIONED HORSESHOE. HIRAM H. GIBBS, Indianapolis, Ind. Filed Dec. 3, 1894. Serial No. 530,756. (Model.)



Claim.—1. A horse shoe comprising a metal lower member provided with recesses on its upper side, some extending substantially lateral and others longitudinal therewith but not through the shoe, and an elastic upper member provided with extensions adapted to fit snugly in such recesses.

2. A horse shoe comprising a lower metallic member having on its upper side recesses which do not extend through the shoe and are surrounded by peripheral walls and walls extending partially across the same, and an elastic member above provided with extensions adapted to fit in such recesses.

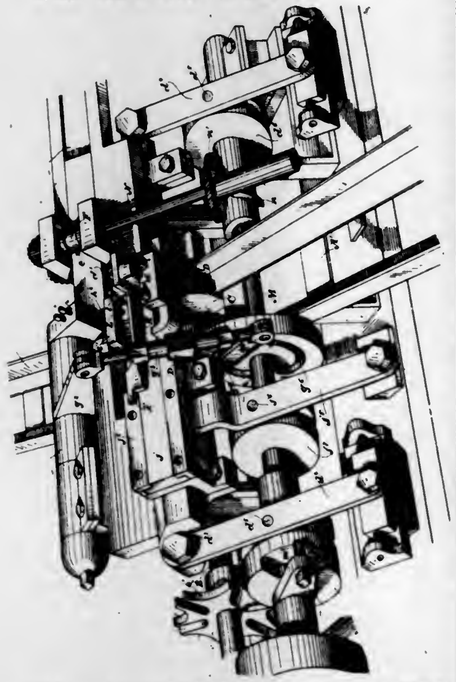
3. A horse shoe comprising a lower metallic member having on its upper side recesses formed by walls, some extending substantially laterally and others longitudinally therewith, the angles of such recesses and the corners of such walls being curved, and an elastic upper member provided with extensions adapted to fit in such recesses.

4. A horse shoe comprising a lower metallic member having on its upper side a continuous recess formed by peripheral walls, a series of extensions extending alternately from the outer and inner peripheral walls partly across the shoe, and an elastic member above provided with an extension adapted to fit in such continuous recess.

5. A horse shoe provided on its under side with downwardly extending flanges continuously about its outer and inner periphery between which there is a series of recesses which do not extend through the shoe, and reinforcements or ribs between such recesses, substantially as shown and described.

6. A horse shoe comprising a lower metallic member provided on the under side with downwardly extending flanges continuously about its outer and inner periphery with recesses between them, and provided on the upper side with recesses, such recesses not extending through the shoe, and an elastic member provided with extensions adapted to fit in such upper recesses.

546,146. MACHINE FOR MAKING AND FITTING TONGUES OF KEY-OPENING CANS. JAMES GOULD, Jr., Berkeley, Cal. Filed May 10, 1895. Serial No. 548,824. (No model.)



Claim.—1. In a machine for fitting the tongues to the head flanges of key opening cans, the combination of means for placing the tongue in a plane intersecting the plane of the head flange, and means for forcing said tongue to intersect said flange.

2. In a machine for fitting the tongues to the head flanges of key opening cans, the combination of means for placing the tongue flatwise in a plane intersecting the plane of the head flange, and means for forcing said tongue edgewise to intersect said flange.

3. In a machine for fitting the tongues to the head flanges of key opening cans, the combination of means for holding the can against end thrust, means for placing the tongue in a plane intersecting the plane of the head flange, and means for forcing said tongue to intersect said flange.

4. In a machine for fitting the tongues to the head flanges of key opening cans, the combination of means for placing the tongue flatwise beyond the edge of the head flange, one portion lying on the body and the other portion held above it, pressers acting on the body between the tongue and head flange edge, and means for forcing said tongue edge-wise between the pressers and body and to intersect said flange.

5. In a machine for fitting the tongues to the head flanges of key opening cans, the combination of means for supporting the can and holding it against end thrust, means for placing the tongue flat-wise beyond the edge of the head flange, one portion lying on the body and the other portion held above it, pressers acting on the body between the tongue and head flange edge, and means for forcing said tongue edge-wise between the pressers and body and to intersect said flange.

6. In a machine for fitting the tongues to the head flanges of key opening cans, the combination of means for supporting the can and holding it against end thrust, guides for directing the tongue to place, means for holding said tongue with one portion on the can body, and the other portion raised above it, pressers acting on the body between the tongue and head flange edge, and means for forcing said tongue edge-wise between the pressers and body and to intersect said flange.

7. In a machine for making and fitting the tongues to the head flanges of key opening cans, the combination of means for supporting and holding the can, means for feeding a sheet of tin and cutting it into tongues, means for directing the tongue to place, means for holding said tongue with one portion on the can body, and the other portion raised above it, pressers acting on the body between the tongue and head flange edge, and means for forcing said tongue edge-wise between the pressers and body and to intersect said flange.

8. In a machine for fitting the tongues to the head flanges of key opening cans, the combination of means for receiving and conveying them successively to position, means for holding them in position against end thrust, guides for directing the tongue to place, means for holding said tongue with one portion on the can body and the other portion raised above it, pressers acting on the body between the tongue and head flange edge, and means for forcing said tongue edge-wise between the presser and body and to intersect said flange.

9. A machine for making and fitting the tongues to the head flanges of key opening cans, comprising a means for feeding the headed cans, means for receiving and conveying them successively to position, means for holding them in position against end thrust, means for feeding a sheet of tin and cutting it into tongues, means for directing the tongue to place, means for holding said tongue with one portion on the can body and the other portion raised above it, pressers acting on the body between the tongue and head flange edge, and means for forcing said tongue edge-wise between the pressers and body and to intersect said flange.

10. In a machine for fitting the tongues to the head flanges of key-opening cans, the combination with means for holding the can, of the guide track for holding one end of the tongue above the can body, an arm for holding the head flange against outward pressure, and a reciprocating pusher for operating against the edge of the tongue to force it to intersect the can head flange where relieved of the holding arm.

11. In a machine for fitting the tongues to the head flanges of key-opening cans, the combination with means for holding the can, of the guide track for holding one end of the tongue above the can body, an arm for holding the head flange against outward pressure, a presser acting upon the can body near the head flange, and a reciprocating pusher for operating against the edge of the tongue to force it between the presser and can body and to intersect the can head flange where relieved of the holding arm.

12. In a machine for fitting the tongues to the head flanges of key opening cans, the combination of the sliding pusher arm, the swinging presser plate through which the pusher arms play, the reciprocating can holding plungers, and a connection between the presser plate and one of the plungers adapted by the reciprocation of the plunger to depress and elevate the presser foot-plate.

13. In a machine for fitting the tongues to the head flanges of key opening cans, the combination of the sliding pusher arm, the swinging presser plate through which the pusher arms play, the reciprocating can holding plungers, and a connection between the presser plate and one of the plungers adapted by the reciprocation of the plunger to depress and elevate the presser plate, consisting of the swinging arm with its inclined slot in which a pin of the said plunger plays, the link connecting the two plates and the contact screw thereof.

14. In a machine for fitting the tongues to the head flanges of key-opening cans, the combination of the opposing holder plungers, one of which has an arm for holding the head flange against outward pressure, a guide track for holding one end of the tongue above the can body, a presser acting on the can body between the tongue and head flange and a pusher operating against the edge of the tongue to force it between the presser and can body and to intersect the can head flange where relieved of the holding arm.

15. In a machine for making and fitting the tongues to the head flanges of key-opening cans, the combination of a passage-way for the tin sheet, a shear for cutting off the tongues from the projecting sheet, and the curved die by which the tongues are bent preparatory to being directed to place on the can.

16. In a machine for making and fitting the tongues to the head flanges of key opening cans, the combination of the rocking head, the shear carried thereby, for cutting the tongues from the sheet and the arm carried by the head for starting the tongues on their track.

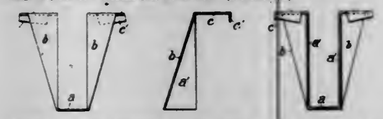
17. In a machine for fitting the tongues to the head flanges of key-opening cans, the combination of a presser adapted to bear down on the can body along the line of the edge of the can head flange, and a pusher adapted to force the tongue between said presser and the

can body, whereby a portion or part of said tongue enters under the head flange.

18. In a machine for fitting the tongues to the head flanges of key-opening cans, the combination of a presser adapted to bear down on the can body along the line of the edge of the can head flange, a pusher adapted to force the tongue between said presser and the can body, whereby a portion or part of said tongue enters under the head flange, and means for feeding and guiding the tongue to and under the presser.

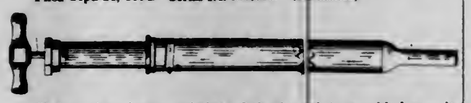
19. In a machine for fitting the tongues to the head flanges of key-opening cans, the combination of a presser adapted to bear down on the can body along the line of the edge of the can head flange, a pusher adapted to force the tongue between said presser and the can body, whereby a portion or part of said tongue enters under the head flange, means for feeding and guiding the tongue to and under the presser, and means for holding the can against end thrust.

546,147. **JOIST AND WALL HANGER.** VINCENT E. GREGG, Cleveland, Ohio, assignor of one-half to Edward F. Bohm, same place. Filed May 24, 1895. Serial No. 550,483. (No model.)



Claim.—A joist hanger having a seat for the joist, side-pieces extending therefrom to the supporting parts, and decreasing in width from the seat to the top, supporting wings extending from the toe of the seat to the top and increasing in width to an extent proportionate to the decrease in width of the side pieces, and a supporting part in continuation at right angles of each wing and adapted to rest on the supporting beam, substantially as described.

546,148. **SYRINGE.** JOHN R. HALL, Jr., Fort Recovery, Ohio. Filed Sept. 20, 1894. Serial No. 523,616. (No model.)



Claim.—A syringe consisting of the barrel A, provided near its upper end with a stud *f*, and having a cylindrical nozzle A′ provided with an orifice in its point end at one side of the center of said point end, the piston, piston-rod and handle, and the exterior cut-off barrel E, having a transverse slot F into which the stud *f* projects, and a nozzle E′ having an orifice in the horizontal portion of its tapered end at one side of the central longitudinal line of said syringe, and a nozzle A′ having an orifice in the horizontal portion of its tapered end which may be turned in and out of alignment or register with the orifice in the nozzle A′, substantially as specified.

546,149. **EGG-CRATE.** MILES E. HAMILTON, Auburn, N. Y., assignor of one-half to John Crouse, same place. Filed Mar. 29, 1895. Serial No. 543,681. (No model.)

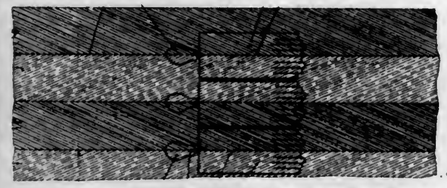


Claim.—1. In an egg crate, the combination with the two sections hinged together and provided with slats on the top and bottom, of the sheets or plates of wire gauze or cloth secured to said sections and formed with pockets and alternating transverse and horizontal projections and depressions, and the inwardly extending spring arms secured to opposite ends of each section and bearing against the outer surfaces of the sheets or plates, substantially as described.

2. The combination with the two sections hinged together and provided with wire-gauze sheets or plates formed with pockets, the inwardly extending spring arms and the slats secured to said sections, of the spring-catch consisting of the transverse wire secured to one of said sections near the outer end thereof, the loop, the vertical bent portion and the bends at the upper end for engaging with a slot in the other section and the finger-hold, substantially as described.

546,150. **MANUFACTURE OF GLOVES.** JOHANN HEINIG, Chemnitz, Germany, assignor to Carl Friedrich Weber, same place. Filed May 16, 1895. Serial No. 549,493. (Model.) Patented in England Mar. 29, 1895, No. 6,511.

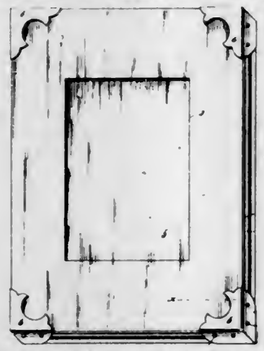
Claim.—1. A method of making gloves which consists in first forming a warp fabric with parallel bands of equal width, one band being composed of finer threads, and the adjacent band of more durable threads, then cutting from the fabric glove blanks, the demarcation line of the adjacent bands being the median line of the blank, substantially as described.



2. A glove comprising a back composed of fine fabric, and a palm composed of coarse fabric, said back and palm being integrally united at one edge of the glove and seamed at the other edge.

3. A glove comprising a back composed of fine fabric, and a palm composed of coarse fabric, said back and palm being integrally united at one edge of the glove and seamed at the other edge, said glove having finger pockets the backs and fronts thereof being also composed respectively of coarse and fine material.

546,151. **PICTURE-FRAME.** CHARLES F. HERBERT, Brooklyn, N. Y. Filed Jan. 24, 1895. Serial No. 536,078. (No model.)



Claim.—1. A picture-frame, consisting of a center part 1, a glass 4, superposed on the center part, and coextensive with the dimensions thereof, corner holders 6 lapping over the corners of the glass and secured to the said center part, and a back 8 secured to the center part and disconnected from the holders, substantially as described.

2. A frame comprising a center part covered by linen and combined with a glass, holders made to engage the corners of the glass and secured to the center part, and a back secured to the center part, said holders being extended over the edge of the frame and made to terminate flush with the back substantially as described.

546,152. **FASTENER FOR WOOD-JOINTS.** JASPER N. HIERONYMUS, Fairbury, Ill. Filed Feb. 13, 1895. Serial No. 538,211. (No model.)

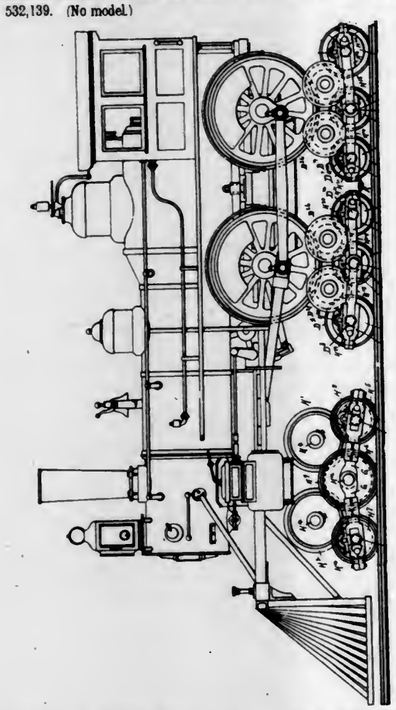


Claim.—1. The herein described metallic fastener for wood-joints, the same consisting of the right angularly disposed branches 5 and 6, the former having the series of inclined transverse teeth 8, terminating short of its rear end, and its front end beveled as at 9, and the branch 6 reduced to form the chisel-edge driving-point 7, substantially as specified.

2. The combination with the member 1, having the mortise 3, and the member 2, having the tenon 4, of the right angularly shaped metal fastener having the branches 5 and 7, the former provided upon its upper side with a series of transverse teeth inclined toward the outer angle of the device, and the member 7 engaging permanently with the tenon, substantially as specified.

3. The combination with the member 1 having the mortise 3 and the member 2 having the tenon 4, of the upper and lower metallic fasteners applied to the upper and lower sides of the tenon in a permanent manner and consisting each of the right angularly disposed branches 5 and 6, the former having the series of inclined transverse teeth 8, and at its front end beveled as at 9 and the branch 6 reduced to form the driving point 7, said teeth 8 engaging with the opposing walls of the mortise 3, substantially as specified.

546,153. **ATTACHMENT FOR LOCOMOTIVE-ENGINES.** WILLIAM J. HOLMAN, Minneapolis, Minn. Filed Dec. 18, 1894. Serial No. 532,139. (No model.)



Claim.—1. The combination with a locomotive of a speeding truck consisting of reversely flanged wheels having inwardly extended hubs running in contact with the treads of the locomotive drivers, and flanged traction wheels coupled by their axles and running upon the track and having outwardly extended hubs supporting the treads of said reversely flanged wheels, whereby the speed of the locomotive may be increased without altering its running gear or increasing the speed of the moving parts, substantially as and for the purpose hereinbefore set forth.

2. The combination with a locomotive of a speeding truck consisting of reversely flanged wheels having inwardly extended hubs running in contact with the treads of the locomotive drivers, and flanged traction wheels having outwardly extended hubs supporting the treads of said reversely flanged wheels, and with the axles of said traction wheels coupled by independent side rods adapted to oscillate about the central axles whereby the speed of the locomotive may be increased without altering its running gear or increasing the speed of the moving parts and the requisite flexibility secured, substantially as and for the purpose set forth.

3. An attachment for locomotives consisting of flanged wheels running upon the track and with extended hubs, reversely flanged wheels supported upon said extended hubs, and with extended hubs supporting the treads of the traction wheels of the locomotive, and coupling binder rods connecting the axles of said flanged wheels, and with anti-friction rollers therein adapted to carry the end thrust and support said coupling binder rods, substantially as shown and described.

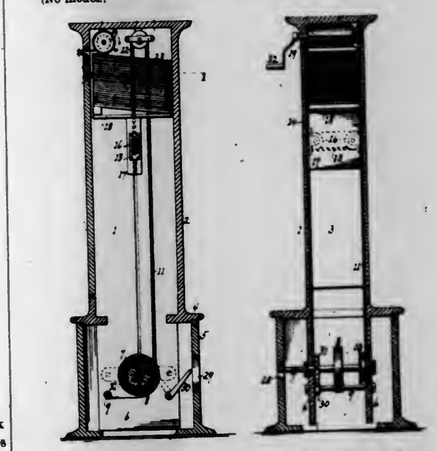
4. In an attachment to a locomotive, flanged wheels running upon the track and having extended hubs and coupled by their axles, flanged wheels running by their treads upon said extended hubs, and with hangers upon their axles, anti-friction rollers within said hangers, and supporting them upon said axles, and equalizing bars carried by said hangers and supporting the forward end of said locomotive, substantially as shown and described.

5. In an attachment to a locomotive, three sets of flanged wheels running upon the track, the central set being the largest in diameter, and with extended hubs and coupled by their axles, two sets of flanged wheels supported by their treads upon said extended hubs and with hangers upon their axles, anti-friction rollers within said hangers and supporting them upon said axles, and equalizing bars carried by said hangers and supporting the forward end of said locomotive, substantially as shown and described.

6. In an attachment to locomotives, a series of flanged wheels mounted upon axles and running upon the track and with extended hubs, coupling rods connecting the axles of said flanged wheels, reversely flanged wheels supported by their treads upon said extended hubs, and with extended hubs adapted to support the traction wheels of said locomotive, and safety rods or chains connecting the several axles loosely, substantially as shown and described.

7. In an attachment to locomotives, a series of sets of flanged wheels running upon the track and with extended hubs, one set of said wheels being larger in diameter than the others, coupling rods connecting the axles of said flanged wheels, reversely flanged wheels supported by their treads upon said extended hubs, and with reversely extended hubs supporting the traction wheels of the locomotive, substantially as shown and described.

546,154. **DEVICE FOR DISTRIBUTING PAPER, CIRCULARS, &c.** JAMES T. HOYT, New York, N. Y. Filed Apr. 25, 1895. Serial No. 547,193. (No model.)



Claim.—1. A delivery apparatus comprising a base and a receptacle, combined with a spring housed in the base, a rotary shaft and pulley actuated by said spring, a feeder or pressure plate arranged in said receptacle, a cord or flexible connection wound by the pulley and made to engage the feeder for actuating the latter, and an ejector placed in the path of the feeder and made to arrest the latter with its charge so that the feeder is successively advanced as each portion of the charge is successively removed by the ejector, substantially as described.

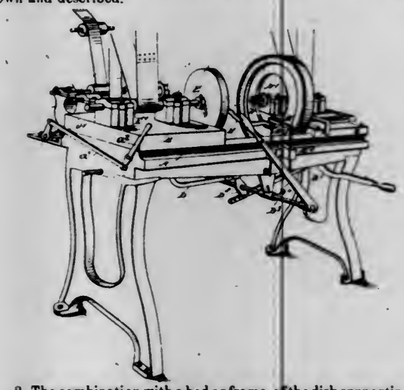
2. A delivery apparatus provided with a coiled spring, a rotary shaft and pulley actuated by said spring, a feeder or pressure plate, a connection interposed between the pulley and feeder for actuating the latter, an ejector, a ratchet fixed to the rotary shaft, and a pawl or lock for engaging the ratchet to hold the spring out of action at any desired point of the travel of the feeder while charging the latter, substantially as described.

3. A delivery apparatus comprising a base and a receptacle mounted on the base and having extensions projecting into said base, a spring actuated pulley journaled in said extensions, a feeder in the receptacle a connection between the pulley and feeder for actuating the latter, and an ejector substantially as described.

546,155. **MACHINE FOR CHAMFERING AND CROZING TUBS.** THEODORE F. HUMMEL and WILLIAM S. MORSE, Fremont, Nebr. Filed May 6, 1895. Serial No. 548,336. (No model.)

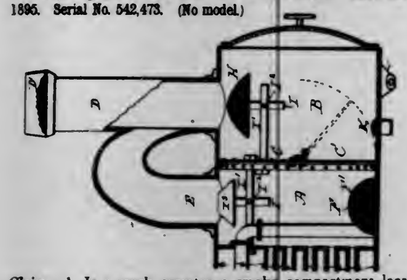
Claim.—1. In a machine for chamfering and crozing tubs the combination with a bed frame of the disk supporting carriage, the rotary disk on said carriage adapted to engage within the large end of a tub, the chuck supporting carriage, means for imparting motion to

said carriages, a cutter supporting carriage, movable transversely of the chuck supporting carriage, a swinging frame supporting cutters, a rock shaft on which said frame is mounted, and means for moving the swinging frame and transverse frame in unison, substantially as shown and described.



2. The combination with a bed or frame, of the disk supporting carriage, the chuck supporting carriage, means for imparting movement to said carriages in unison, a cutter supporting carriage, movable transversely on the chuck supporting carriage, a swinging frame supporting cutters, a rock shaft on which the swinging frame is mounted, a lever for moving the transverse carriage, and a link extended from said lever to the rock shaft whereby the swinging frame may be moved in unison with said transverse carriage, substantially as shown and described.

546,156. SPARK-ARRESTER. EDWIN C. R. HUMPHRIES, Lexington, Va., assignor of one-half to William H. Garnett. Filed Mar. 20, 1895. Serial No. 542,473. (No model.)



Claim.—1. In a spark arrester, a smoke compartment located adjacent to the tube or flue head, a spark or cinder compartment stacks communicating with said compartments and with each other, an adjustable deflector or conical pipe located at the base of the stack communicating with the smoke compartment, and a steam outlet located in the smoke compartment, substantially as and for the purpose set forth.

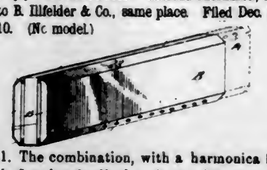
2. In a spark arrester, a smoke compartment and a spark or cinder compartment formed at the end of the boiler, a smoke stack communicating with the cinder or spark compartment, a curved discharge stack leading from the smoke compartment into the smoke stack, a conical pipe located at the base of the discharge stack, a hood located at the base of the smoke stack, and a steam outlet located in the smoke compartment, substantially as and for the purpose set forth.

3. In a spark arrester, the smoke and spark or cinder compartments, a smoke stack located over the spark or cinder compartment, a discharge stack communicating with the smoke compartment, an adjustable conical pipe located at the base of the discharge stack, and an adjustable hood located at the base of the smoke stack, and a steam outlet communicating with the smoke compartment, substantially as and for the purpose set forth.

4. In a spark arrester, the spark and cinder compartments, the stacks communicating therewith in combination with the adjustable conical pipe located in the smoke box and the adjustable hood located at the base of the smoke stack, substantially as set forth.

5. In a spark arrester, the smoke and spark or cinder compartments, the stacks constructed and arranged substantially as described communicating with said compartments and with each other, a steam outlet located in the smoke compartment, and an air valve located in the spark and cinder compartment, substantially as and for the purpose set forth.

546,157. HARMONICA. SAMUEL JESSELSON, New York, N. Y., assignor to B. Illfelder & Co., same place. Filed Dec. 27, 1894. Serial No. 533,110. (No model.)



Claim.—1. The combination, with a harmonica having grooves or slide-ways in four longitudinal surfaces, of a protective casing having a longitudinal opening in one side and perforations in the opposite side, the casing being provided with slides adapted to enter sundry of the slide-ways of the harmonica, substantially as and for the purpose specified.

2. The combination, with a harmonica having slide-ways extending longitudinally at top and bottom thereof, of a reversible protective casing having a longitudinal opening and slides near the margin of the opening, as and for the purpose specified.

3. The combination, with a harmonica having slide-ways extending longitudinally at the top and bottom thereof, of a reversible protective casing having a longitudinal opening and slides near the margin of the opening, the said casing being provided with apertures adapted to register with the exhaust openings of the harmonica when the blow holes of the said harmonica are at the longitudinal opening of the casing, substantially as described.

4. A reversible casing for harmonicas, comprising two side panels, a bottom panel, two upwardly and outwardly inclined panels connecting the bottom panel with the side panels, the said inclined panels being apertured, and two inclined panels extending upwardly and inwardly from the side panels, the edges of the said inclined panels being spaced apart a distance about equal to that of the bottom panel and forming a longitudinal opening for disclosing the blow openings of the instrument, substantially as shown and described.

546,158. COMBINED HAY AND STOCK RACK. KINSEY JONES, Galesville, Wis. Filed Jan. 31, 1895. Serial No. 536,841. (No model.)



Claim.—1. In a combined hay and stock rack, the combination with a wagon body and a side of a rack, of a triangular bracket secured to the body and arranged on the exterior of the side of the same and provided at its top at the upper edge of the body with an eye and having at its base a perforated lug or eye, a leaf bar secured to the side of the rack and provided at its lower end at the lower edge of the side of the rack with an eye hinged to the eye at the top of the bracket, and hinging the side of the rack to the upper edge of the side of the body, said leaf bar being provided with an enlargement and having a longitudinal slot therein, and an adjustable brace having its lower portion bifurcated and straddling the triangular bracket and hinged to the eye or lug at the bottom thereof, said brace having its upper portion bifurcated and provided with a pintle arranged in the longitudinal slot of the leaf bar, substantially as described.

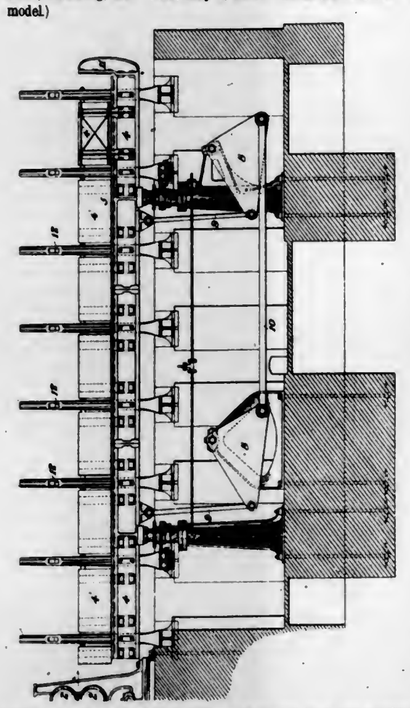
2. In a combined hay and stock rack, the combination with a wagon body and a side of a rack, of a triangular bracket arranged vertically on the exterior of the side of the body and provided at the upper edge thereof with an eye and having at its bottom in its angle a perforated lug or eye, a leaf bar disposed transversely of the side of the rack and provided at the lower edge thereof with an eye hinged to the eye at the top of the bracket, and hinging the rack to the body said leaf bar being secured to the side of the rack and provided with an enlargement and having a longitudinal slot therein and provided adjacent to the slot with an eye, and an adjustable brace having its lower portion bifurcated and straddling the bracket and detachably hinged to the perforated lug or eye at the bottom thereof, said brace having its upper portion bifurcated and provided with a removable pintle arranged in the slot and adapted to fit the eye of the leaf bar, substantially as described.

3. In a combined hay and stock rack, the combination of a wagon body, hingedly mounted sides, the front end of the rack rigidly secured to the body and provided on its inner face with a way, a vertically movable standard mounted in said way and adapted to be raised when the parts are to be used as a hay rack, and to be lowered when the same is to be employed as a stock rack, and means for securing the standard in its elevated position, substantially as described.

4. In a combined hay and stock rack, the combination of a wagon body, the hingedly mounted sides, the front end of the rack rigidly secured to the body and provided with a way, the vertically movable standard slidingly mounted in said way, means for securing the standard in its elevated position and the rear end of the rack hinged to one side thereof and detachably secured to the other side, and adapted to fold against the side to which it is hinged, substantially as described.

5. In a combined hay and stock rack, the combination of a wagon body, the hingedly mounted sides, the rear end of the rack, hinges connecting the rear end of the rack with one of the sides and having their pintles and eyes offset from the leaves, whereby the rear end of the rack is adapted to swing forward, as well as rearward, and adapted to fold against the side to which it is hinged and means for securing the rear end of the rack to the other side of the same, substantially as described.

546,159. APPARATUS FOR PILING METAL BARS. JULIAN KENNEDY, Pittsburg, Pa. Filed May 9, 1895. Serial No. 548,639. (No model.)



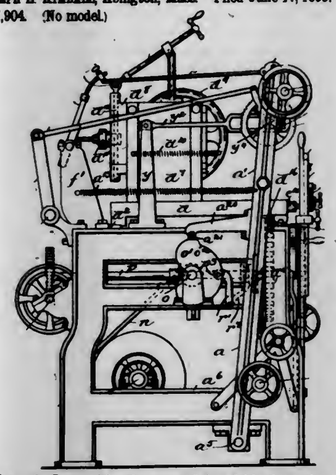
Claim.—1. In apparatus for piling plates and bars, the combination with a pair of rolls, of a vertically movable receiver in front of the rolls and in line with a pass thereof, and means independent of the rolls for positively moving the receiver downwardly after each piece is delivered thereinto; substantially as described.

2. In apparatus for piling plates and bars, the combination with a pair of rolls, of a vertically movable receiver in front of the rolls and in line with a pass thereof, posts or guides between which the receiver moves, and means independent of the rolls for positively moving the receiver downwardly after each piece is delivered thereinto; substantially as described..

3. In apparatus for piling metal bars and plates, the combination with the rolls, of a vertically movable receiver set in front of the rolls, and adapted to receive the metal therefrom and to be moved successively downward as the metal is piled thereon, and an elevated support to which the pile may be delivered by elevation of the receiver; substantially as described.

4. In apparatus for piling metal bars and plates, the combination with the rolls, of a vertically movable receiver set in front of the rolls, and adapted to receive the metal therefrom and to be moved successively downward as the metal is piled thereon, posts or guides between which the receiver moves, and dogs on the posts or guides constituting an elevated support for the pile; substantially as described.

546,160. MACHINE FOR TURNING IRREGULAR FORMS. JOSEPH E. KIMBALL, Abington, Mass. Filed June 17, 1893. Serial No. 477,904. (No model.)



Claim.—1. In combination a model and block on the same axial line; a guide and cutter; a carriage for giving the relative motions endwise; a frame for giving the relative motions sidewise; and automatic mechanism for moving the carriage, stopping the motion of the carriage in one direction, separating the model and block from the guide and cutter, and stopping the rotary motion of the model and block with the model always in the required position, all combined and operating substantially as and for the purposes specified.

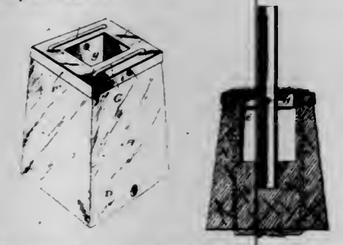
2. In a machine for turning irregular forms a carriage, a rack and pinion, direct and reverse motion devices for the pinion, a cam normally out of action, a clutch controlling that cam, a tripper carried by the carriage to operate the clutch controlling the cam, a second clutch operated by the cam and when in gear reversing the motion of the pinion and a second tripper carried by the carriage to open the second clutch, when the carriage reaches the end of its return stroke, all combined and operating to move the carriage in one direction, automatically stop its motion at a desired point, connect the pinion with its reverse motion devices, and stop the carriage at the end of its return stroke, substantially as set forth.

3 In a machine for turning irregular forms the combination of the model, its driving gear c', pinions c^9 and c^8, lever c^8 and connections c^{10} c^{11}, to reverse the motion of gear c' by a single motion of lever c^8, all substantially as described.

4. In combination a model and block on the same axial line; a guide and cutter; a carriage for giving the relative motions endwise; a frame for giving the relative motions sidewise; automatic stop mechanism for controlling the carriage and governing the last block; and automatic mechanism for moving the carriage endwise in both directions, and separating the model and block from the guide and cutter; all combined and operating to make the automatic machine above described.

546,161. FENCE-POST. WILLIAM H. KIMBALL, Jonesville, Mich. Filed Mar. 19, 1895. Serial No. 542,369. (No model.)

Claim.—1. A plastic fence-post base having a post socket, a flat plate permanently united to the top of the base by longitudinal rods or wires which extend through and are embedded in said base, and said plate having a post-opening *f*, the edges of which are flush with the walls of said post-socket in the base, combined with a post which is fitted in the socket and opening of the base and permanent plate, respectively, and a horizontal bolt or pin which passes through the base and the post below said permanent plate, substantially as and for the purposes described.



2. The combination with a base having a post-socket and a permanent cap having an opening, of a removable plate fitted to the opening in the permanent cap and provided with a post-receiving opening, a post fitted in the opening of the removable plate and in the socket of the base, and means for detachably fastening the plate and the post to the base, substantially as and for the purposes described.

3. The base provided with a permanent cap or plate which has an opening flush with the walls of the post-socket, in combination with a removable plate which is fitted to the permanent plate and provided with a post-opening, a post, and means for securing the removable plate and said post to the base, substantially as and for the purposes described.

4. A post-base adapted for use in connection with posts of different diameters, provided with a socket, in combination with a removable plate having a flange adapted to fit in the socket in said base, a post, and a single fastener-pin which passes through said flanged plate and the post, substantially as and for the purposes described.

5. A post-base having a closed lower end and a contracted cavity *b* extending below the post-socket, and a permanent plate having the inner edges of its opening *f* substantially flush with the walls of the post-socket, combined with a removable plate fitted to the permanent plate and provided with a vertical opening which is in line with the cavity *b* in the base, a post passing through the opening in the removable plate and having its lower end fitted in the cavity *b* of the base, and means for fastening the removable plate and the post to the base, substantially as and for the purposes described.

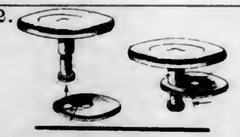
6. The combination of a plastic base provided with a socket and with a transverse passage which intersects with the socket, a plate having a pendent perforated flange which is fitted within the socket of the base to have its perforations in line with the transverse passage in said base, a post passing through the plate and fitted in the socket of the base, and a single pin fitted in the passage of the base, the post, and in the perforated flange of the plate, substantially as described.

7. A plastic base for fence posts provided with a socket B, a permanent plate F having an opening *f*, the edges of which are substantially flush with the walls of the socket B, and the fastening wires or rods passed through the plate F and the base, and embedded in the latter, the free ends of the wires or rods being clinched or otherwise held at the bottom end of the base, combined with a removable flanged plate fitted in the opening *f* of the permanent plate, a post passing through the removable flanged plate, and means for fastening the removable plate and the post to the base, substantially as described.

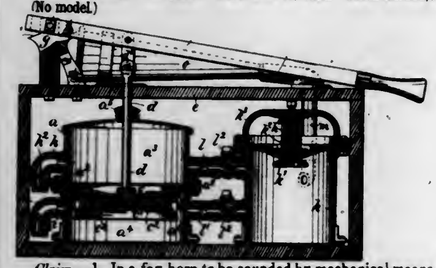
546,162. SEPARABLE BUTTON. WILLIAM L. KING, Winston, N. C., assignor of one-half to the Phœnix Manufacturing Company, Newark, N. J. Filed Aug. 14, 1894. Serial No. 520,070. (No model.)

Claim.—The improved separable button herein described, consisting of a button head having permanently attached thereto a shank having at its outer end a head, a reduced portion adjacent to said head with a portion of larger diameter adjacent to the button head and an annular groove between the reduced and larger portion of the shank and of a length substantially equal to the thickness of the fastening plate, and a fastening plate having a central opening of a diameter substantially that of the reduced portion of the shank, a larger opening substantially the diameter of the larger portion and head of the shank and a passage connecting said openings and of a dimension substantially that of the shank opposite the annular groove, whereby the fastening plate is held at right angles to the shank, substantially as shown and described.

546,162.



546,163. FOG SIGNALING APPARATUS. DE WITT C. KING and ROBERT A. BOUTILIER, Boston, Mass., assignors to the Edson Manufacturing Company, same place. Filed Nov. 30, 1894. Serial No. 530,366. (No model.)



Claim.—1. In a fog horn to be sounded by mechanical means, an air pump having an upper flanged casing, a lower flanged casing, valved inlet and outlet for each casing, a flexible diaphragm held between the flanges on said casings forming upper and lower chambers therein, an operating rod attached to said diaphragm and projecting upward through the upper casing, and an operating lever attached to said rod to operate said diaphragm to cause air to enter said chambers and to be forced therefrom, combined with an air receiving cylinder in communication with the outlets from the pump chambers having a spring pressed flexible diaphragm, and a horn connected to and in open communication with the air receiving cylinder, for the purpose set forth.

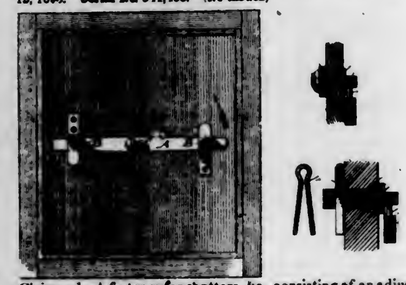
2. In a fog horn to be sounded by mechanical means, an air pump, a horn and connections between the pump and horn combined with an air storage chamber within said connections having a flexible diaphragm, a yoke above said diaphragm, a slotted tubular projection on the diaphragm extending on either side of the yoke and a spring interposed between the diaphragm and yoke for the purpose set forth.

3. An air storage cylinder having inlet and outlet, an air supply communicating with the inlet, a flexible diaphragm, a yoke above said diaphragm, a slotted projection on the diaphragm extending on either side of the yoke and a spring interposed between the diaphragm and yoke, for the purpose set forth.

4. In a fog horn to be sounded by mechanical means, an air storage cylinder having a flexible diaphragm, a yoke above said diaphragm, a slotted tubular projection on the diaphragm extending on either side of the yoke and a spring interposed between the diaphragm and yoke, combined with an air supply, a horn and connections between the air storage cylinder and the horn and air supply for the purpose set forth.

5. In a fog horn to be sounded by mechanical means, an air storage cylinder having a flexible diaphragm, a yoke above said diaphragm, a slotted tubular projection on the diaphragm extending on either side of the yoke, a spring interposed between the diaphragm and yoke and a screw adjustable within a perforation in the yoke and acting upon said spring to vary the amount of pressure exerted on the diaphragm by said spring, for the purpose set forth.

546,164. SHUTTER-FASTENER. OSWALD KNIGHT, Richmond, Va., assignor of one-half to George B. McAdams, same place. Filed Mar. 12, 1895. Serial No. 541,483. (No model.)



Claim.—1. A fastener for shutters, &c., consisting of an adjustable cross bar for fastening said shutter, a bolt pivotally connected to said cross bar and having a perforated outer end, and a padlock arranged outside of the building and having its locking bar normally retained in the hole in the end of the bolt, whereby the shutter may be easily opened by the occupant from the inside in the usual manipulation thereof, or be opened from the outside in the contingency of fire by the holder of the key substantially as shown and described.

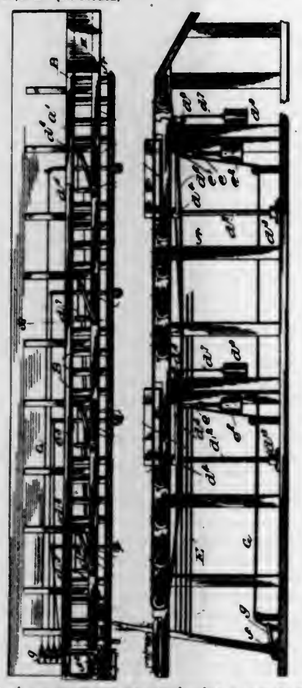
2. A fastening for shutters, &c., consisting of a bar fulcrumed about its center and provided with bar staples adapted to receive its ends, a fulcrumed bolt passing through said bar and having outside the shutter an opening through the same, and a pad-lock having its locking bar secured in the hole of the fulcrum bolt substantially as and for the purpose described.

546,165. INDOXYLIC ACID AND PROCESS OF MAKING IT. RUDOLPH KNIETSCH and PAUL SEIDEL, Ludwigshafen, Germany, assignors to the Badische Anilin and Soda Fabrik, same place. Filed May 17, 1895. Serial No. 549,709. (No specimens.) Patented in France Nov. 12, 1894, No. 236,982; in Belgium Nov. 17, 1894, No. 112,744; in Italy Dec. 6, 1894, XXIX, 37,665, and LXXIII, 498, and in Austria Dec. 24, 1894, No. 44/6,512.

Claim.—1. As a new product the indoxylic acid which can be produced by the reaction of phenyl glycocoll-ortho-carboxylic acid with caustic soda, and which is a gray powder but slightly soluble in cold water, soluble in alcohol and ether, soluble in alkaline water, being readily oxidizable in alkaline solution to indigotin and which is entirely free from combined halogen and on heating gives off carbonic acid gas, all substantially as described.

2. The herein described process of producing a new indoxylic acid which consists in treating phenyl-glycocoll-ortho-carboxylic acid with caustic soda at about 240° to 265° centigrade, then treating the melt with ice cold dilute acid, then filtering and washing the precipitate, substantially as described.

546,166. CONVEYER AND ASSORTER. WILLIAM A. LEARY, Norfolk, and JOHN F. HOSTETTER, Suffolk, Va. Filed Jan. 31, 1895. Serial No. 536,874. (No model.)



Claim.—1. A conveyer and assorter having a passage-way, conveying means in said passage-way, a shunt capable of being extended across said passage-way, operating means connected to said shunt, and a trip therefor designed to be operated by the discharge effected by said shunt whereby the latter is automatically released and returned to its normal position, substantially as set forth.

2. A conveyer or assorter having a passage-way, conveying means in said passage-way, a series of periodically arranged shunts normally in line with one side of said passage way, means for positioning said shunts across said passage-way, means for locking the same, and means for tripping said locking means, both said tripping means and means for operating said shunts being under the control of a single operator at one end of the conveyer, substantially as set forth.

3. A conveyer and assorter having a passage-way, a series of rollers therein, means for rotating all of said rollers, a series of shunts normally in line with one side of said passage-way, means connected to said shunts for positioning the same across said passage-way, means for locking said shunts, and a series of levers with which said means for positioning said shunts are connected, substantially as set forth, each of said locking means being capable of being operated or unlocked by the discharge effected by the respective shunts, as stated.

4. A conveyer and assorter having a passage-way, a series of rollers therein, means for rotating all of said rollers, a series of shunts consisting of arms normally in line with one side of said passage-way, a shaft to which each of said shunt-arms is connected, an arm extending from said shaft, a locking lever for holding said arm when the shunt-arm is positioned across said passage-way, and an operating rope and lever for each of said shunts, whereby the shafts of the latter may be turned and the shunt-arms positioned across said passage-way, substantially as set forth.

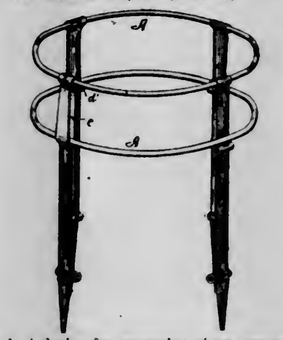
5. A conveyer and assorter having a passage-way, a series of rollers therein, means for rotating all of said rollers, a series of shunt-arms pivoted each at one end, a shaft therefor, a bell-crank lever on said shaft, a pivoted locking lever, means for returning said shunt arms to their normal positions when unlocked, and means for operating each of said shunt-arms independently from a single point, substantially as set forth.

6. The combination with the frame having a series of revolving rollers, of a series of independent shunts, shafts carrying said shunts, and a series of independent operating ropes and levers connected to said shafts, whereby each of said shunts may be operated independently of the other, all of said levers being at one end of said frame, substantially as set forth.

7. The combination with the frame having a series of revolving rollers, of a series of independent shunts, shafts carrying said shunts, bell-crank levers also carried by said shafts, locking levers provided with upper shoulders and having each one end extended beyond one side of the frame in the line of discharge, operating ropes connected to said bell-crank levers, operating levers to which said ropes are connected, and means for normally holding said shunt-arms in line with one side of said frame, substantially as set forth, said locking levers being designed to be disengaged from said bell-crank levers by the discharge effected by the respective shunt-arms, as stated.

8. The combination with the frame having an upper passage-way, and a series of revolving rollers, of a series of independent arms pivoted each at one end and normally on a line with one side of said passage-way, means for locking each of said arms across said passage-way, a rope and lever for operating each of said arms independently of the other, and means connected to each of said locking means for freeing said arms said means comprising ropes and treadles arranged at one end of the frame adjacent to said operating levers, said arms and said treadles being in corresponding series, substantially as set forth.

546,167. PLANT-SUPPORT. NEWTON LEONARD, Washington Mills, N. Y., assignor of one-half to Don S. Prentice, same place. Filed Dec. 31, 1894. Serial No. 533,382. (No model.)

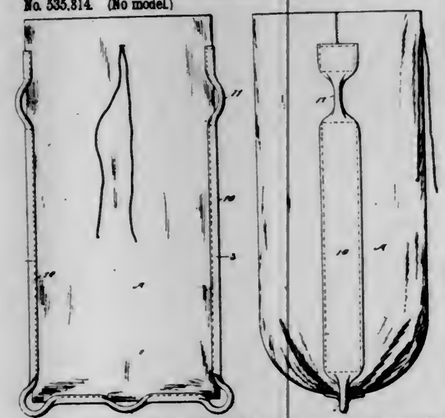


Claim.—1. A device for supporting plants, comprising a hoop, supporting legs constructed from pieces of metal first bent at points adjacent to their ends and folded back onto the bodies, the extreme ends bent to form shoulders, and the upper ends of the legs thus formed, bent to form eyes and the bodies of the said legs rolled up, substantially as described.

2. The herein described supporting leg constructed from a piece of sheet metal, first bent at points adjacent to its ends and folded back onto the body, the extreme ends of the metal bent to form shoulders, the upper end of the leg thus formed bent to form an eye and the body of said leg rolled up laterally, as set forth.

3. A plant support, consisting of two rings, and a suitable number of supporting legs, all of which legs are provided with eyes or loops at their upper ends to receive the upper ring, while one of the legs is provided with a loop *c'* in which the lower ring is held, and the remaining legs with supporting shoulders *d'* formed by turning up the ends of the downwardly turned portions of the sheet metal upon which the lower ring is supported, substantially as set forth.

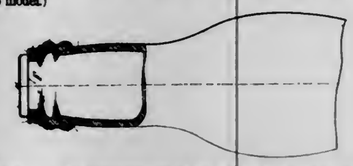
546,168. SACK. EMONS H. LOBDELL, Mecosta, Mich., assignor of one-half to Andrew J. Acker, same place. Filed Jan. 22, 1895. Serial No. 535,314. (No model.)



Claim.—1. A sack provided with a reinforcing strap secured to opposite sides and extending around the lower edges and across the bottom, the said strap being unattached to the sack at various points in its length and rendered full at its unattached points, forming a series of handles, whereby the strap in addition to forming handles for manipulating the sack reinforces the same, as set forth.

2. The combination, with a sack, of a strap extending along opposite sides and across the bottom, the strap being bowed at intervals in its length and secured to the body of the sack except at its bowed sections, the said bowed sections being located diagonally at the bottom corners, near the center of the bottom and along the sides of the sack, substantially as set forth.

546,169. CORKING BOTTLES. LOUIS MATHIEU GUSTAVE JEAN LOUSTALOT, Paris, France. Filed Jan. 10, 1895. Serial No. 534,470. (No model.)

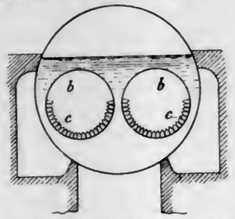


Claim.—1. The combination of the neck of a bottle or other vessel, a circumferentially-flanged concave disk composed of thin expansible and contractible metal and having a small apertured teat integral therewith and adapted to be closed by compression, and means for firmly securing the disk to the neck, whereby when heat is applied to the bottle and the disk bulged or expanded the same is retained, said teat being contained in the concavity of the contracted disk, substantially as set forth.

2. The process herein described of sealing bottles, jars, boxes, or other suitable vessels hermetically, which consists in tightly applying a disk, provided with a suitable aperture, to the mouth of the vessel, expelling the air from the contents of the vessel by subjecting the same to a gradually heated water-bath, then closing the air-aperture, next increasing the temperature of the bath to or above the boiling-point, and then slowly cooling off the water-bath, by drawing off the hot water at a high level and admitting cold water at a low level whereby the closing-disk is forced by the atmospheric pressure tightly on the mouth of the vessel and the same hermetically sealed thereby, substantially as set forth.

3. The process herein described of hermetically sealing bottles and other vessels, which consists in filling the same with the substance to be preserved up to a certain distance from the mouth of the vessel, applying tightly to the mouth of the vessel a disk provided with an air-aperture, disoxygenizing the contents of the vessel by slowly heating the same, closing the air-aperture in the disk, heating the contents of the vessel to a temperature at or above the boiling-point, piercing an air-aperture into the closing-disk, while keeping the head of the vessel submerged in a similar liquid which is contained in the vessel, filling the space left above the contained liquid by drawing in the superposed liquid, and closing the hole pierced into the disk, and gradually reducing the temperature in the vessel, substantially as set forth.

546,170. STEAM-GENERATOR. EDWARD MAKIN, Jr., Manchester, England. Filed June 24, 1895. Serial No. 553,797. (No model.) Patented in England Oct. 13, 1893, No. 19,249.



Claim.—1. In combination in a boiler, the horizontal flues and a series of independent metallic bricks forming a lining to said flues projecting inwardly therefrom and supported one against the other about the lower part of the flues and up the sides thereof, substantially as described.

2. In combination, the flues and the metallic bricks projecting inwardly from the walls of the flue and from opposite sides radially and independently removable, said bricks being of wedge shape in cross section with their points projecting inwardly.

546,171. COMBINED PUZZLE AND TOY. FLORIAN J. MANTEL, Syracuse, N. Y. Filed Feb. 8, 1895. Serial No. 537,697. (No model.)



Claim.—1. A toy consisting of a case, a diaphragm of non-magnetic material in said case, a magnet movable in proximity to the under side of said diaphragm, an armature mounted movably upon the top of the diaphragm and having a convex lower face, and a miniature figure secured to said armature and sustained in upright position by gravity of the armature as set forth.

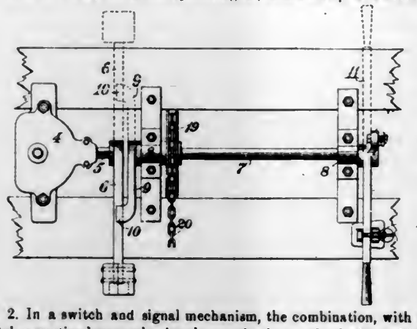
2. A toy consisting of a case, a diaphragm of non-magnetic material in said case, a raised disk secured upon the diaphragm and having notches in its edges, a magnet movable in proximity to the under side of the diaphragm, armatures provided with convex bearing surfaces and riding thereby upon the diaphragm, and miniature figures attached to said armatures as set forth.

3. A combined puzzle and toy consisting of a case, a diaphragm of non magnetic material in said case, a magnet pivoted in the center of the case and moving in proximity to the diaphragm, stalls upon the top of the diaphragm having openings in diametrically opposite sides, armatures having convex bearing faces mounted movably upon said diaphragm and miniature figures attached to said armatures as set forth.

4. The combination of the annular case —C— formed with the bottom plate —C— and rabbet —*a*— in the upper part of its interior, the spindle —*b*— pivoted in the center of said bottom plate and provided with a handle on its lower end, the non-magnetic disk —*c*— attached to the inner end of said spindle, the segmental magnet —*d*— attached to said disk, the diaphragm —*e*— seated upon the shoulder of the rabbet, the ring —*r*— seated in the rabbet and projecting above the sides of the case, and the cover —*f*— applied to the projecting portion of said ring substantially as described and shown.

546,172. SWITCH AND SIGNAL APPARATUS. ALBERT K. MANSFIELD, Salem, assignor of one-half to Samuel M. Felton, Cincinnati, Ohio. Filed May 9, 1895. Serial No. 548,704. (No model.)

Claim.—1. In a switch and signal mechanism, the combination, with a switch operating lever and a signal operating lever, of a shaft on which the signal operating lever is secured, an arm on the shaft which is provided with a lug or projection extending into the path of the switch operating lever, an arm on the signal operating lever, and a rod which is connected at one end to the arm on said lever and at the other end to a pivoted semaphore signal, substantially as set forth.



2. In a switch and signal mechanism, the combination, with a switch operating lever and a signal operating lever, of a shaft on which the signal operating lever is secured, an arm on the shaft which is provided with a lug or projection extending into the path of the switch operating lever, a pulley or its equivalent mounted on the shaft and provided with connections to a distant signal, an arm on the signal operating lever, and a rod which is connected at one end to the arm on said lever and at the other end to a pivoted semaphore signal, substantially as set forth.

3. In a signal operating mechanism, the combination, with a signal operating lever and a pivoted semaphore signal, of a rod pivotally connected at one end to the semaphore and at the other end to an arm on the signal operating lever, the angular position of the arm relative to the lever and the rod being such that in shifting the signal from the safety position to the danger position, the arm will move the signal to the danger position before the lever has made its full movement, substantially as set forth.

4. In a switch and signal mechanism, the combination, with a switch operating lever and a signal operating lever, of a shaft on which the signal operating lever is secured, an arm on the shaft which is provided with a lug or projection extending into the path of the switch operating lever, an arm on the signal operating lever, and a rod which is connected at one end to the arm on said lever and at the other end to a pivoted semaphore signal, the position of the arm on the signal operating lever being such that when the signal is at danger the axis of the shaft and the connection between the arm and the rod are in substantially the same vertical plane with the rod, substantially as set forth.

5. In a signal operating mechanism, the combination, with a signal operating lever and a pivoted semaphore signal, of a rod pivotally connected at one end to the semaphore signal and at the other end to an arm on the signal operating lever, the lever being adapted to move through an angle of one hundred and eighty degrees in shifting the signal from the safety position to the danger position, or, from the danger position to the safety position, substantially as set forth.

6. In a signal operating mechanism, the combination, with a pivoted semaphore signal and a signal operating lever which occupies a substantially horizontal position when the signal is at safety or danger, of an arm on the lever which is in a vertical, or approximately vertical, position when the signal is at safety or danger, and a rod pivotally connected at one end to the semaphore signal and at the other end to the arm on the signal operating lever, whereby the lever is adapted to move through an angle of one hundred and eighty degrees in shifting the signal from one position to the other, substantially as set forth.

7. In a signal operating mechanism for railroads, the combination, with a semaphore signal, of an operating lever which is adapted to move through an angle of one hundred and eighty degrees in a vertical plane parallel to the track, an arm on the lever which is in a vertical, or approximately vertical, position when the lever is at either extremity of its movement, and a rod connected at one end to the semaphore signal and at the other end to the arm on the lever, substantially as set forth.

8. In a switch and signal mechanism, the combination, with a signal operating lever and a switch operating lever, of a semaphore signal, an arm secured to the signal operating lever, a rod connected at one end to the semaphore signal and at the other end to the arm on the signal operating lever, a locking device for directly locking the signal operating lever, and means whereby the locking of the signal operating lever indirectly effects the locking of the switch lever, substantially as set forth.

9. In a switch and signal mechanism, the combination, with an automatically operated split switch, of a signal mechanism, and means between the switch mechanism and the signal mechanism whereby the signal may be shifted from the safety position to the danger position by the automatic movement of the switch and which permits the automatic setting of the switch for the main line without moving the signal from the danger position, substantially as set forth.

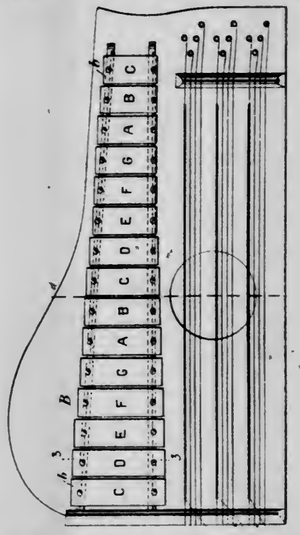
10. In a signal operating mechanism, the combination, with a switch and signal operating lever and a pivoted semaphore signal, of a rod pivotally connected at one end to the semaphore signal and at the other end to an arm on the operating lever, the lever being adapted to move through an angle of one hundred and eighty degrees in shifting the switch and signal, substantially as set forth.

546,173. NUT-LOCK. JOHN M. MARTIN, Jr., Martin, Fla. Filed Apr. 16, 1895. Serial No. 545,932. (No model.)



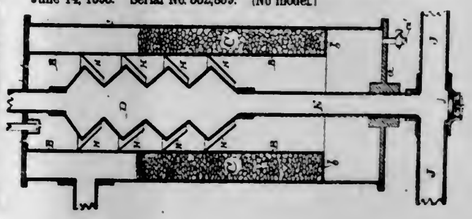
Claim.—In a nut-lock, the combination with a screw-threaded bolt and a groove or grooves therein across the screw-threads, of a nut screwed on to said screw-threads, and a plurality of wires lying in said groove or grooves and cut into by said nut and twisted together in rear of said nut, substantially as described.

546,174. METALLOPHONE-ZITHER. FREDRICK MENZENBAUER, Jersey City, N. J. Filed Nov. 24, 1894. Serial No. 529,836. (No model.)



Claim.—A musical-instrument or metallophone-zither, consisting of a sounding-board having a longitudinal opening, raised portions each side of said opening and metallic bars or plates supported on the raised portions of the sounding-board, and a number of groups of strings on the sounding-board extending transversely of the metallic-bars, in juxtaposition to the ends of the same, the strings of each group being tuned to the intervals of separate harmonic chords of the bars or plates of the metallophone, substantially as set forth.

546,175. GAS-GENERATOR. MICHAEL L. MERY, Chico, Cal. Filed June 14, 1895. Serial No. 552,839. (No model.)



Claim.—1. A gas generator for explosive engines, consisting of a casing or shell having an exit pipe, hollow double or reversed cones mounted within the casing or shell, and having an exit pipe, funnels parallel with and separated from the inverted or lower surface of the cones, whereby the oil flowing from the upper surfaces is caught and directed down between the funnels and the inverted or lower surfaces, and an oil feed pipe entering the shell and adapted to direct the oil to the cones, said casing or shell having a circumscribing space in open communication with its interior, to form a passage for the escape of the gas to the engine.

2. A gas generator for explosive engines, comprising an outer casing or shell, an inner wall concentric with the outer casing or shell and separated therefrom to leave an annular space which said space has a communication with the engine and with the interior of the generator, absorbent material in said space, double or reversed cones mounted within the casing or shell, and having a communication with the exhaust of the engine, funnels parallel with and separated from the inverted or lower surface of the cones whereby the oil flowing from the upper surfaces is caught and directed down between the funnels and the inverted or lower surfaces, and an oil feed pipe entering the shell and adapted to direct the oil to the cones.

546,176. **HUB-ATTACHING DEVICE.** CONRAD MILLER, Leadville, Colo. Filed July 15, 1895. Serial No. 555,960. (No model.)



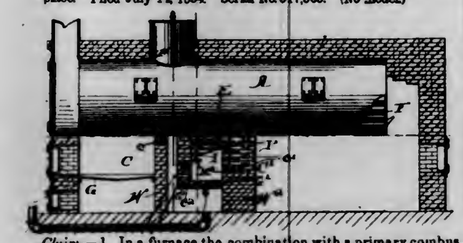
Claim.—The combination of the axle provided with the two wide longitudinal grooves B, and the two cross grooves C, with the locking plate which is placed upon the end of the axle, and provided with the grooved flanges upon its outer side, the flanged partially rotating locking nut provided with flanges upon its inner side, and the spring actuated locking bolt which is adapted to engage with the stop plate, substantially as set forth.

546,177. **BROWN-YELLOW DYE.** CARL L. MÜLLER, Ludwigshafen, Germany, assignor to the Badische Anilin and Soda Fabrik, same place. Filed Apr. 11, 1895. Serial No. 545,383. (Specimens.)

Claim.—1. The process for the manufacture of basic coloring matter which consists in heating the hydrochlorate of a substituted auramine such as meta-amido-phenyl-auramine, then allowing the melt to cool, then dissolving the same in water acidulated with hydrochloric acid, then precipitating the coloring matter by the addition of common salt and chloride of zinc substantially as described.

2. As a new article of manufacture the new basic coloring matter which can be obtained by heating the hydrochlorate of a substituted auramine and which occurs as a dark brownish powder readily soluble in water and in spirits of wine giving brownish yellow solutions possessing a green fluorescence, soluble in concentrated hydrochloric acid yielding an orange brown solution possessing a yellowish fluorescence, and which on treatment with nitrous acid in aqueous solution yields a dark greenish or discolored solution from which a brown precipitate separates substantially as described.

546,178. **FURNACE.** ALEXANDER K. MURRAY, Chicago, Ill., assignor to the Economic Smoke Preventing Furnace Company, same place. Filed July 14, 1894. Serial No. 517,565. (No model.)



Claim.—1. In a furnace the combination with a primary combustion chamber and a secondary combustion chamber provided with grate bars adapted to support solid fuel, of a passage from said primary chamber to the lower surface of said grate bars, means substantially as shown and described for introducing a forced draft beneath said grate bars and a conveyer entering said secondary chamber and adapted to supply it with fuel.

2. The combination with the casing and the primary and secondary combustion chambers, C, C′, and grate bars, G′, arranged substantially as described, of the hopper, H, having the spout, H′, the ledge, H^3, and the conveyer shaft I, having blades, I′; substantially as shown and described.

3. In a furnace, the combination with a primary combustion chamber, and a secondary combustion chamber provided with a grate, of a passage from the primary chamber to the exterior of the secondary chamber, an opening from said passage to the space below the grate of the secondary chamber, a second opening from the passage to the space above the grate of the secondary chamber, and a damper adapted to close said second opening or to leave it open, whereby the products of combustion from the primary chamber in their passage to the smoke stack may be passed through the grate of said secondary chamber or through the space above the grate.

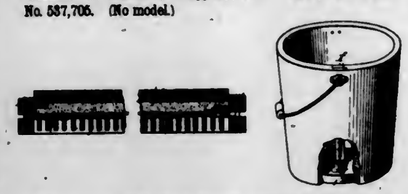
4. The combination with the primary chamber, C, and the secondary chamber, C′, having the grate bars, G′, of the transverse bar, *g*, supporting the ends of the grate bars and connected with the alternate grate bars substantially as shown and described, the arm, *g′*, depending from the transverse bar, *g*, and means for rocking said arm and the bar to which it is attached and thereby reciprocating the alternate grate bars, substantially as shown and described.

5. The combination with the boiler and its casing, of the bridge walls, W, W′, W^3, forming the chambers, C, C′, and the passage way between them, the walls, W^2, being formed with off-set openings for the escape of the products of combustion from the chamber, C′, whereby the products of combustion from the chamber, C, pass through the chamber C′, and the products of combustion of both chambers pass through the openings, *c′*, and the heated surfaces of the walls of said openings.

6. The combination with the boiler and its casing of the walls, W, W′, W^2, forming the chambers, C, C′, and the passage way between them the chamber, C′, being provided with the arch, E, and the wall, W^3, being provided with the offset openings, *c′*, the heat received and radiated by the arch, E, and the walls of the openings, *c′*, being adapted to assist in the combustion of the gases from the chamber, C, substantially as shown and described.

7. The combination with a boiler and its casing, of bridge walls forming two combustion chambers, C, C′, provided with grate bars, the rear wall of the chamber, C′, being formed with offset openings, *c′*, and the two chambers being in communication, whereby the products of combustion from the chamber, C, must pass through the chamber, C′, and the products of combustion from both chambers must pass through the offset openings, *c′*, in their passage to the smoke stack.

546,179. **PAPER VESSEL AND METHOD OF MAKING SAME.** WILLIAM W. MCEWAN, Whippany, N. J. Filed Feb. 8, 1895. Serial No. 537,705. (No model.)



Claim.—1. A pulp vessel having a molded body joined at its end and having formed at its lower end an inner peripheral recess with an upper shoulder and a base tapering downwardly and inwardly relatively to the inner wall of the vessel and having a bottom peripherally fitting that recess in the body all constructed as and for the purpose set forth.

2. A pail or other vessel of pulp, having a body molded and lapped end upon end forming a lap-joint from top to bottom with a metal strip corrugated or roughened on both sides fitting between the overlapping portions, and a suitable bottom secured to the body portion of the pail; substantially as described.

3. A pail or other vessel of wood or other suitable pulp, having a body molded and lapped end upon end forming a lap joint from top to bottom, and the ear riveted to said body portion at the joint, whereby the rivets which hold the ear in place serve to secure the lap portions together, a bail attached at one end to the ear, and a suitable bottom secured to the body portion; substantially as described.

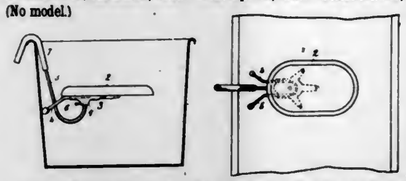
4. A pail or other vessel, having the body portion formed with a lap joint, and having an internal peripheral beveled recess at its lower end, a bottom of peripheral thickness equal to the height of said recess, and having its external periphery beveled to correspond to the bevel of the recess to fit therein, whereby vertical separation of the body portion from the bottom is prevented, and a metallic roughened piece engaging the tongues or lap portions of the body; substantially as described.

5. A pail or other vessel having its body portion provided with an internal, peripheral recess at its lower end, said recess being of greatest width at its upper portion and beveled downwardly to the bottom of the body portion, so that the body portion is of the same thickness at the upper and lower ends of the recess, a bottom of peripheral thickness equal to the height of the recess and having its external periphery beveled to correspond to the bevel of the recess to fit therein whereby vertical separation of the body portion from the body is prevented, and means for securing the ends of the body portion together; substantially as described.

6. The process of making vessels from molded pulp, which consists in molding a sectoral body with its ends provided with tongues of less thickness than the thickness of the body portion, and the shorter side provided with an internal peripheral beveled recess, and molding a bottom with an external peripheral bevel to fit the recess in the body portion, then curving the body and lapping its tongues one upon the other, and applying the beveled internal recess to the beveled external periphery of the bottom, and, finally, compressing the vessel thus assembled to integrality at the joints; substantially as described.

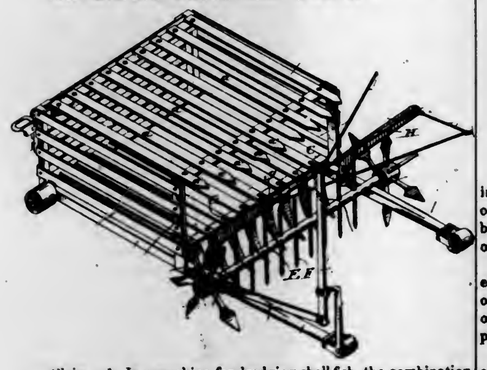
7. The process of making vessels from molded pulp, which consists in first placing in the mold a strip of linen or other cloth conforming in shape to the blank to be molded, then pouring in the pulp, then laying upon the top thereof another similar strip of linen or other cloth, then removing the blank with the linen strips, and, while the blank is so held, bending the same to proper shape around the bottom of the vessel, then removing the interior linen cloth, then compressing the ends of the blank together and upon the bottom, and then removing the outside linen strip, all substantially as described.

546,180. **SEAT FOR BATH-TUBS.** SAMUEL NEWMAN and HENRY R. BOTHWELL, Cincinnati, Ohio. Filed Apr. 15, 1895. Serial No. 545,759. (No model.)



Claim.—The combination with a bath-tub of the herein described seat, provided on its under side with a clamp having on its upper side a cavity lateral braces or feet 8, means for adjusting and retaining the lateral braces 8 within the cavity, hanger 5 the depending socket 4 to receive the lower end of the hanger 5, the self-adjusting hook formed on the upper end of the hanger and the protecting sleeve inclosing the shank of the hanger all constructed and arranged substantially as and for the purposes herein specified.

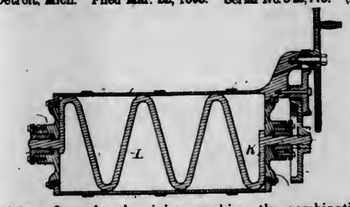
546,181. **OYSTER-DREDGE.** MADS NIELSEN, New York, N. Y. Filed June 3, 1895. Serial No. 551,471. (No model.)



Claim.—1. In a machine for dredging shell fish, the combination of the open work receptacle A provided with the hinged door B and side-bars C C having rollers D D; the row of teeth L L fastened removably and separately to the front end of the receptacle on the under side; and the revolving-shaft E provided with rows of teeth F F intersecting and alternating with the stationary teeth L L, and having at opposite ends the "star" wheels K K; substantially as and for the purpose set forth.

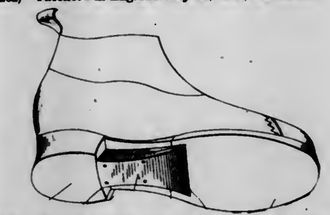
2. In a machine for dredging shell-fish, of the type described, the combination with the receptacle A having stationary teeth L L, and revolving shaft E having teeth F F and provided with the "star" wheels K K, arranged as described, of the oscillatiag indicator arm N having a cord or wire attached to its free end, and connecting rod M, connecting the lower end of said arm to one of the arms of one of the "star" wheels; substantially as and for the purpose herein shown and described.

546,182. **MACHINE FOR MIXING DOUGH.** CURT E. OELMAN, Detroit, Mich. Filed Mar. 22, 1895. Serial No. 542,775. (No model.)



Claim.—In a dough mixing machine, the combination with a trough or receptacle, having a removable closure, shafts projecting through the ends of the receptacle, a mixing frame connecting the shafts, and consisting of a bar having a series of parallel loops extending in opposite directions laterally beyond the shafts and having sharpened edges arranged on the same plane throughout the respective loops, and means for revolving the frame, substantially as described.

546,183. **BOOT OR SHOE.** WILLIAM OWEN and THOMAS HILTON, Birmingham, England. Filed June 19, 1894. Serial No. 515,066. (No model.) Patented in England May 23, 1894, No. 10,010.



Claim.—In combination with a boot or shoe, the piece B secured under the instep, said piece tapering in depth from the front face of the heel to the sole and tapering in breadth from the sole to the heel and of less width than the sole the lower face of the piece B being flush with the bottom of the heel and sole and adapted to bear on the ground, substantially as described.

546,184. **NUT-LOCK.** HARRY V. PADFIELD, St. Louis, Mo., assignor, by direct and mesne assignments, to the Padfield Wood and Iron Nut Lock Company, same place. Filed Apr. 22, 1895. Serial No. 546,802. (No model.)



Claim.—1. In a nut lock, a plate having a bolt aperture and having a slit extending inwardly from one edge of the plate, the material on one side of the slit being bent downwardly forming a point, and back of said point being bent or raised upwardly above the surface of the plate, substantially as set forth.

2. In a nut lock, a plate having a bolt aperture, and having a slit extending from the aperture to one edge of the plate, the material on one side of the plate being bent downwardly forming a point and back of said point being bent or raised upwardly above the surface of the plate, substantially as and for the purpose set forth.

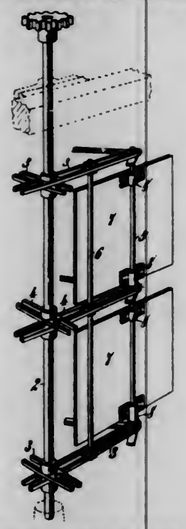
3. In a nut-lock, a plate having a bolt aperture and formed with a slit extending from the bolt aperture to the edge of the plate, the material on one side of the slit being left unbent and in a plane with the surface of the plate, and the material on the other side of the plate being bent downwardly forming a point and back of said point

being bent upwardly above the plane of the plate, substantially as and for the purpose set forth.

4. In a nut lock, a plate having a bolt aperture and formed with a slit extending in a diagonal direction from the aperture to the edge of the plate, the material on one side of the slit being left unbent and in a plane with the surface on the plate, and the material on the other side of the plate being bent downwardly forming a point and back of said point being bent upwardly above the plane of the plate, substantially as and for the purpose set forth.

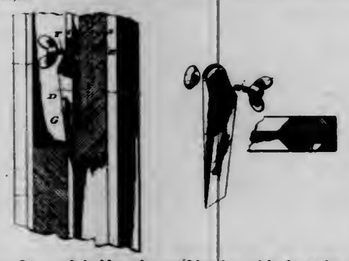
5. In a nut lock, the plate having a bolt aperture and formed with a slit extending from said aperture to one edge of the plate, the material on one side of said slit being bent downwardly forming a point, and back of said point being bent upwardly above the surface of the plate, thereby forming a frictional spring bearing upon the nut, and said plate being provided on the other side of said aperture with a diagonal slit extending to one side of the aperture, and the material beyond the slit from the aperture being bent up into a plane above the surface of the plate, thereby forming a positive stop for the nut, substantially as set forth.

546,185. CURRENT-WHEEL. WILLIAM PARR, Fredonia, N. Y. Filed Mar. 7, 1895. Serial No. 540,851. (No model.)



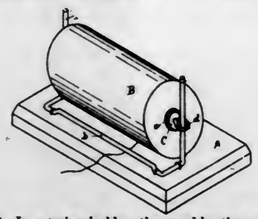
Claim.—A current-wheel composed of a shaft, radial arms formed by parallel bars one upon each side of the shaft, said bars being rigidly connected at their ends and between the latter and shaft, braces parallel with the shaft and attached to the radial arms at the points where the parallel bars are connected together, and flat wings having pivotal non-central support upon the braces connecting the ends of the radial arms and adapted to lie against and be supported by the braces between the shaft and the ends of said radial arms, substantially as described.

546,186. SASH-HOLDER. CHARLES W. PIERCE and CLARENCE S. PIERCE, Union City, Ind. Filed Feb. 15, 1895. Serial No. 538,495. (No model.)



Claim.—In a sash holder, the combination with the sashes, of a wedge shaped plate adjustably connected to one of the sashes, and a screw carried by the plate for holding the same at any place and causing the plate to wedge and hold the other sash.

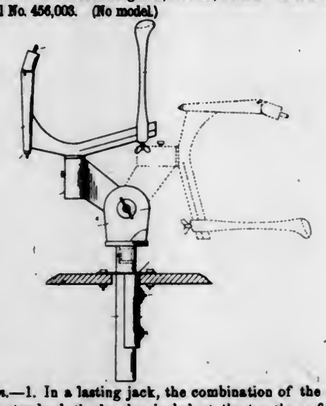
546,187. TWINE-HOLDER. BENJAMIN W. PUTNAM and JAMES J. HOOKER, Cincinnati, Ohio. Filed Jan. 5, 1895. Serial No. 533,963. (No model.)



Claim.—1. In a twine holder, the combination of a base, of two arms carried thereby and formed with an intermediate elevated bail *b* forming a raceway for the free end of the twine, a roll of twine wound upon a hollow sleeve, and an axis detachably fitted within said sleeve and provided with eyes at each end loosely fitting over the arms, substantially as described.

2. In combination with the base of a twine holder, supporting arms D rigidly secured thereto, an axis loosely and detachably secured to said arms and free to rise and fall thereon, a roll of twine transversely wound upon a sleeve detachably supported upon said axis and having its periphery in contact with the base, an elevated race-way *b* forming a delivery space for the free end of the twine which is relatively movable longitudinally to the bail as the twine roll revolves under the strain imparted in unwinding, substantially as described.

546,188. LASTING-JACK. CHARLES F. PYM, Windsor, assignor of one-half to John Finch Sedgwick, Cottam, Canada. Filed Dec. 22, 1892. Serial No. 456,003. (No model.)



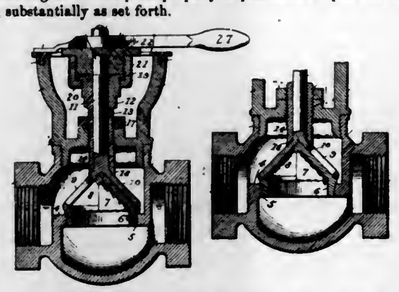
Claim.—1. In a lasting jack, the combination of the vertically adjustable standard, the head swiveled at the top thereof and provided with a pivot extending across the standard, a bracket journaled on that pivot and adapted to swing over the standard, and a lasting jack frame pivoted in the end of that bracket, substantially as described.

2. In a lasting jack, the combination of the tubular standard, the head G at the upper end thereof, the pin F on said head entering the upper end of the standard and having a groove H and a semi-circular block I engaging in said groove, the set screw I' for locking the said block in position, the bracket pivoted to the head and the lasting frame supported on the bracket, substantially as described.

3. In a lasting jack, the combination of the standard, the head G swiveled at the upper end thereof and comprising the plate J, the laterally extending apertured lug J', the plate K^3, the bracket K journaled on the lug J' and having a semi-circular groove in its outer face and a lug N on the plate J, engaging in said groove, substantially as described.

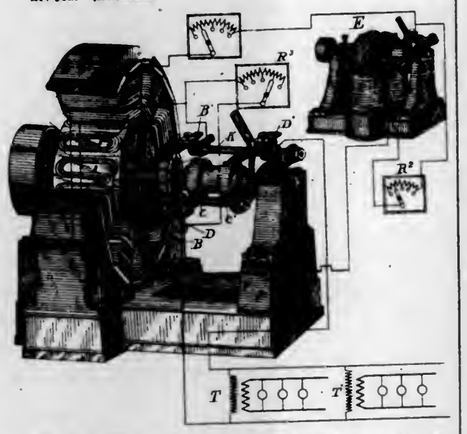
546,189. STOP-VALVE. JOHN M. REESE, Blakeslee, assignor of one-half to Reuben Edwards, Miners Mills, Pa. Filed Oct. 26, 1894. Serial No. 527,049. (No model.)

Claim.—1. In a stop valve, the casing having an interior valve opening, a conical valve seat fitted within the valve opening and having its pointed apex disposed above the valve opening, a bonnet or cap arranged at the top of the casing above the valve seat and provided with a central threaded opening, an exteriorly threaded bearing sleeve mounted for vertical adjustment in said central threaded opening and provided with a lower beveled end, and a turning valve stem mounted in the bearing sleeve and provided at its lower end with a conical valve plate snugly fitting the exterior conical surface of the valve seat, said lower beveled end of the bearing sleeve registering with the exterior portion of the valve plate at the apex thereof and holding said valve plate properly in position on top of the valve seat, substantially as set forth.



2. In a stop valve, the casing provided with an interior valve opening and a top neck arranged above the valve opening, a conical valve seat fitted within said valve opening, a bonnet or cap removably fitted in said top neck and provided with a central threaded opening and with a pair of diametrically opposite supporting posts or arms projected from the top thereof, a vertically adjustable and exteriorly threaded bearing sleeve mounted in said central threaded opening and provided with a lower beveled end and an upper flanged end, the turning valve stem mounted in said sleeve and provided at its lower end with a conical valve plate working on the valve seat, and with an upper squared end, an exteriorly threaded socket cap provided with a squared socket fitting the upper end of the valve stem, a flanged interiorly threaded coupling nut engaging the upper flanged end of the sleeve and said socket cap, an operating lever attached on top of said socket cap and provided at one end with a pointer, and a semi-circular indicator plate fitted on the upper ends of said supporting posts or arms under said pointer, substantially as set forth.

546,190. REGULATOR FOR ALTERNATING-CURRENT DYNAMOS. EDWIN W. RICE, Jr., Lynn, Mass., assignor to the Thomson-Houston Electric Company, of Connecticut. Filed Mar. 16, 1888. Serial No. 267,352. (No model.)



Claim.—1. The combination in an alternating current dynamo, of two field sustaining coils, one supplied from an armature coil connected directly therewith through a commutator, and the other forming a path for the main alternating currents passing to the work from an independent armature coil or coils, a commutator placed in the main circuit for locally commuting currents to said latter coil, a branch from the commutator terminals which are connected to said coil, and an artificial resistance in said branch.

2. In an alternating dynamo electric machine, the combination of a continuous current field exciting coil placed in the circuit to the alternating current work, and provided with a rectifying commutator for locally commuting the work current in said coil, a variable resistance branch around said coil in a commuted portion of the circuit and of low self-induction, in combination with a field magnet coil through which a current flows of a strength independent of variations in the work, as and for the purpose described.

3. The combination in an alternating current machine, of a field magnet produced by two independent sources, one practically constant and the other variable, of a branch having practically no self-induction around the coil forming the variable source, and means for varying the resistance in said branch.

4. In an alternating current machine, the combination of a commutator, an armature coil one pole of which connects directly with the work so as to supply alternating currents thereto while the other pole connects with the opposite main through the commutator, and a field magnet coil in which the varying main line currents are locally straightened by means of said commutator, in combination with a variable resistance in a branch across the terminals of said field coil between the same and the commutator, and a field sustaining coil in which a practically constant current flows, as and for the purpose described.

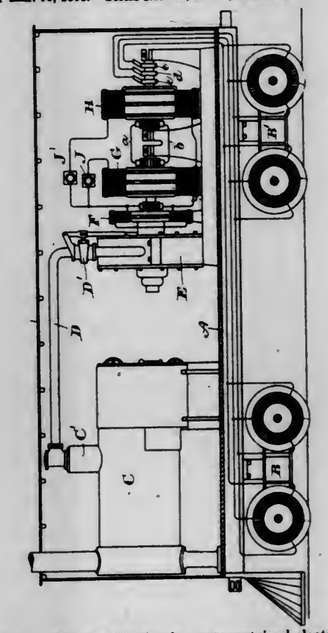
5. In an alternating generator the combination with the field magnet coil and commutator placed in the alternating current main, of a branch around said coil taken from a commuted portion of the circuit, and a field sustaining coil of practically constant effect, as and for the purpose described.

6. In an alternating generator the combination with the field sustaining coil of practically constant effect, and a field magnet coil and commutator therefor placed in the alternating current main, of a variable resistance placed in a branch of the main around said coil and connected to the circuit at points between the coil and commutator, as and for the purpose described.

7. In an alternating generator, the combination with the field magnet coil and the pole changing commutator therefor placed in the alternating current main, of a branch of the main from the commutator around said coil, and a field sustaining coil of practically constant effect, as and for the purpose described.

8. In an alternating generator, the combination with a field sustaining coil of practically constant effect and a field magnet coil and pole changing commutator therefor placed in the alternating current main, of a variable resistance in a branch of the main around said coil, as and for the purpose described.

546,191. ELECTRIC LOCOMOTIVE. EDWIN W. RICE, Jr., Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Mar. 16, 1895. Serial No. 542,017. (No model.)



Claim.—1. The combination in a self-contained electric locomotive, of a prime mover, direct-current generator and separately excited rotary transformer, with alternating motors mounted on or geared to the axles of the said locomotive, and means for varying the periodicity of the current supplied to the motors from the rotary transformer.

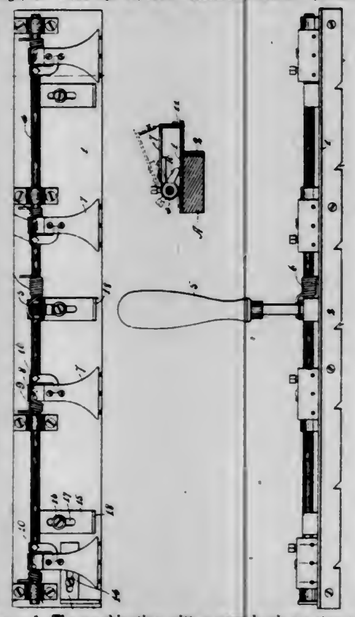
2. The combination in a self-contained electric locomotive, of a prime mover, a generator and rotary transformer, both separately

excited, with alternating current motors mounted on the trucks of said locomotive, and means for regulating the fields of both generator and transformer and thus varying the periodicity of the supply current.

3. The combination in a self-contained electric locomotive, of a prime mover and separately excited generator and rotary transformer, with alternating current motors mounted on the trucks of said locomotive, and means for varying the speed of the prime mover, and regulating the field excitation of generator and transformer.

4 The combination in a self-contained electric locomotive, of a prime mover, a generator and rotary transformer, both separately excited, with an alternating current motor mounted on the trucks of said locomotive, and means for regulating by varying the field strength of the generator.

546,192. PAPER-HOLDING CLAMP. MAURICE R. SCHNAUDER, Chicago, Ill. Filed Apr. 30, 1894. Serial No. 509,616. (No model.)



Claim.—1. The combination with a press having a stop to limit the lateral movement of a clamp and guide it longitudinally and a stop to limit the longitudinal movement of same, of a clamp provided with clamping jaws on its upper face, and stops adapted to coact with said stops on said press to adjust the position of the material held by said clamp with reference to the die so that the same will be cut at certain predetermined intervals, substantially as described.

2. The combination with a press having stops to limit the movement of a clamp in its lateral and longitudinal movement and to guide it longitudinally, of a clamp provided with clamping jaws on its upper face, and stops adapted to coact with said stops on said press to adjust the material held by said clamp with reference to the die, so that the same will be cut at certain predetermined intervals, substantially as described.

3. A clamp comprising a body portion, having adjustable guides or stops secured thereto, a shaft pivoted in bearings on said body portion and carrying a plurality of yielding jaws, and devices for turning said shaft and retracting said jaws, substantially as described.

4. A clamp comprising a body portion provided with stops on its lower face, stops or guides on its upper face to limit the inward extension of the material held in said clamp, and a stop or guide to limit the longitudinal movement of the same, substantially as described.

5. A clamp comprising a body portion provided with stops on its lower face, adjustable stops or guides on its upper face to limit the inward extension of the material held in said clamp and an adjustable stop or guide to limit the longitudinal movement of the same, substantially as described.

6. A clamp comprising a body portion A having stops on its lower face, a shaft 4 pivoted upon said body portion, clamping jaws pivotally mounted upon said shaft, means for holding said jaws normally against said body portion, arms 10 secured to said shaft 4 and adapted to engage said jaws, means for holding said arms 10 normally out of engagement with said jaws, and means for turning said shaft, substantially as described.

7. A clamp comprising a body portion A having stops on its lower face, a shaft 4 pivoted in bearings on said body portion, jaws 7 pivoted upon said shaft, means for holding said jaws normally against said body portion, a handle-bar 5 secured to said shaft, arms 10 secured to said shaft adjacent said jaws 7 and adapted to engage the same, and a spring engaging said shaft and adapted to hold said arms 10 at the lower limit of their movement, substantially as described.

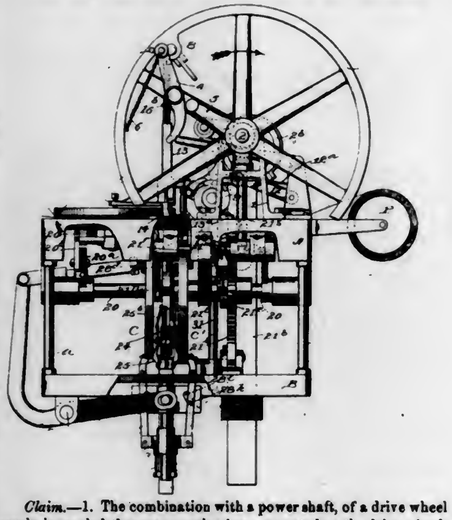
8. A clamp comprising a body portion having stops on its lower face, a shaft 4 pivoted in bearings secured to said body jaws pivoted upon said shaft 4, devices for raising and lowering said jaws, and adjustable stops or guides secured to said body portion, substantially as described.

9. A clamp comprising a body portion having stops on its lower face, a shaft 4 pivoted in bearings secured to said body portion, jaws provided with pins or projections at their forward ends pivoted upon said shaft 4, and devices for raising and lowering said jaws, substantially as described.

10. A clamp comprising a body portion having stops on its lower face, a shaft 4 pivoted in bearings secured to said body portion, jaws pivoted upon said shaft 4, devices for raising and lowering said jaws, and guides or stops 12 and 15 adjustably secured to said body portion, substantially as described.

11. A clamp comprising a body portion having stops on its lower face, a shaft 4 pivoted in bearings secured to said body portion, jaws 7 pivotally secured upon said shaft 4, arms 10 secured to said shaft 4 adjacent said jaws 7 and adapted to engage the same, a handle-bar 5 secured to said shaft and adapted to raise said arms 10, a spring 6 encircling said shaft adjacent said handle-bar 5 and engaging the same and adapted to keep said arms 10 at the lower limit of their movement, springs 9 encircling said shaft adjacent said jaws 7 adapted to engage the same and keep them at the lower limit of their movement, and guides or stops 12 and 15 adjustably secured to said plate 1 and provided with upwardly extending flanges, substantially as described.

546,193. WRAPPING-MACHINE. CHARLES R. SCHILLING, St. Louis, Mo. Filed Aug. 31, 1894. Serial No. 521,821. (No model.)



Claim.—1. The combination with a power shaft, of a drive wheel loosely journaled thereon, a spring lever mounted on the drive wheel, and an arm secured to the power shaft with which the spring lever of the drive wheel engages for transmitting the power from the wheel to the shaft, substantially as and for the purposes specified.

2. The combination with a power shaft, of a drive-wheel loosely journaled thereon, a yielding lever for transmitting the power from the drive-wheel to the shaft, and an automatic stop mechanism to arrest and retain the pivoted lever when it has passed its normal position; substantially as and for the purposes specified.

3. In a machine for feeding coated or waxed paper, the combination of spirally milled feed rolls, and means for actuating the same; substantially as and for the purposes specified.

4. In a machine for feeding waxed or coated paper, the combination of spirally milled feed rollers, set at an inclination to each other, and means for actuating said rolls; substantially as and for the purposes specified.

5. In a machine for severing coated or waxed paper, the combination with a reciprocating dull-edge crusher disk, of a yieldingly supported presser plate, and means for bringing the yieldingly supported presser plate into action with the dull-edge crusher disk, substantially as and for the purposes specified.

6. The combination in a paper severing mechanism, of a spring supported presser plate, a cam mechanism for bringing the presser plate into action, a reciprocating rotary crushing disk arranged in line and coacting with the face of the presser plate, and means for actuating the crushing disk; substantially as and for the purposes specified.

7. The combination with a rotary crushing disk, of a reciprocating slide on which said disk is mounted, a pivoted arm for actuating the slide, a cam, and a vibrating tappet finger for actuating the arm, a yielding presser plate for co-acting with the crushing disk, and means for bringing the presser plate and crushing disk into operative contact; substantially as and for the purposes specified.

8. The combination in a paper feeding and severing mechanism, of spirally milled feed rolls for feeding the paper flat, a reciprocating crushing disk, a yielding presser plate to co-act with the disk, and means for actuating the rolls, disk and presser plate, substantially as and for the purposes specified.

9. The combination in a paper feeding and severing mechanism, of milled feed rolls arranged at an inclination to each other, for keeping the paper spread as it passes to the crushing disk, a reciprocating crushing disk, a yielding presser plate to co-act with the disk, and means for actuating said rolls, disk and presser plate; substantially as and for the purposes specified.

10. The combination in a paper feeding and severing mechanism, of spirally milled feed rolls, for spreading the paper and feeding it flat, a leaf tongue which rests upon the paper and prevents it from shifting under the operation of the crushing disk, a reciprocating crushing disk, a yielding presser plate which co-acts with the disk, and means for actuating the feed-rolls, presser plate and disk; substantially as and for the purposes specified.

11. The combination with a wrapping cylinder having wrapping pockets in its periphery, and a rock shaft on which the wrapping cylinder is mounted, of a rotary feed wheel having a series of pockets and adjacent pin holes, a spring actuated locking pin arranged to engage in the pin holes of the feed-wheel, a slide for retracting the spring actuated pin, and means on the rock shaft of the wrapping cylinder for actuating the slide, substantially as and for the purposes specified.

12. The combination with a wrapping cylinder having pockets in its periphery and a rock shaft on which the wrapping cylinder is loosely mounted, of means for imparting an intermittent rotary movement to the wrapping cylinder, a feed wheel having a series of pockets and pin holes concentrically arranged therein, a spring actuated locking pin arranged to engage in said pin holes, a slide for retracting the spring actuated pin, and a tappet arm on the rock shaft of the wrapping cylinder for actuating said slide; substantially as and for the purposes specified.

13. In a wrapping machine, the combination with a wrapping cylinder of a rotary feed table having concentrically arranged pockets, pin holes, and ratchet wheel, of a spring actuated locking pin arranged to engage in the pin holes of the feed table, a slide arranged to retract the locking pin and provided with a pawl which engages the ratchet wheel of the feed table, and means for actuating the slide from the shaft of the wrapping cylinder; substantially as and for the purposes specified.

14. In a machine for feeding waxed or coated paper, the combination of a plurality of spirally milled feed rolls arranged to engage, some of said feed rolls having a yielding support, and means for actuating said rolls, substantially as and for the purposes specified.

15. In a wrapping machine, the combination with a wrapping cylinder having a pocket in its periphery, of reciprocating slides mounted on the periphery of said cylinder one on each side of said pocket, tuckers mounted on and movable with said reciprocating slides, two pairs of pivoted folding fingers one pair on each side of said cylinder and adjacent to the pocket, and means for successively actuating the slides tuckers, and folding fingers, substantially as and for the purposes specified.

16. In a wrapping machine, the combination with a wrapping cylinder having a pocket in its periphery to receive the wrapper and the article to be wrapped, of a reciprocating folding slide on the periphery of the cylinder adjacent to said pocket, tuckers or third fold fingers mounted on the reciprocating slide, and means for actuating the slide and fingers; substantially as and for the purposes specified.

17. In a wrapping machine, the combination with a wrapping cylinder having a pocket in its periphery for the reception of a wrapper and article to be wrapped, of a movable bottom arranged in said pocket and provided with a stem or rod, a friction spring which bears on the said stem, and a tappet arranged to act on the end of said stem; substantially as and for the purposes specified.

18. In a wrapping machine, the combination with a wrapping cylinder having a pocket in its periphery, of a movable bottom arranged in said pocket and provided with a stem or rod, a lateral projection on said stem or rod, a tappet arranged to act on the end of said stem, a cam arranged to act on the lateral projection on said stem, and a friction spring which bears on said stem; substantially as and for the purposes specified.

19. In a wrapping machine, the combination with a wrapping cylinder having a pocket in its periphery, of the peripheral slides 23 and 24, duplicate spring actuated fingers 25 pivoted on one of said slides, the duplicate fingers 26, 26, and 27, 27, pivoted near the inner corners of the pockets, and the cam disk, C, C', having the cam tracks 23^b, 27^b and 24^b, 26^b; substantially as and for the purposes specified.

20. In a wrapping machine, the combination of a plunger or feed ram, a wrapping cylinder having a pocket provided with a movable bottom, an interposed feed-wheel, and means for projecting the movable bottom of the wrapping pocket beyond the periphery of the wrapping cylinder and close to the feed-wheel to secure the wrapper and article to be wrapped and prevent the wrapper from shifting, substantially as specified.

21. In a wrapping machine, the combination of a feed-plunger or ram, a wrapping cylinder having notches in its periphery, an interposed feed-wheel having holes for a locking pin, a locking pin, a pawl or dog arranged to engage the notches in the periphery of the wrapping cylinder, and means for actuating said locking pin and pawl or dog; substantially as and for the purposes specified.

22. In a wrapping machine the combination of a feed plunger or ram, a wrapping cylinder having pawl notches in its periphery, a spring controlled rock shaft provided with a dog or pawl to engage the notches in the periphery of the cylinder, and a shaft provided with cams for actuating the feed plunger or ram and the rock shaft which carries the pawl, substantially as and for the purposes specified.

23. In a wrapping machine, the combination with a rock-shaft, of a wrapping cylinder loosely mounted thereon, a slide, a rock-arm which connects the slide and rock-shaft, a pivoted rack, and interposed pinion and ratchet mechanism for actuating the wrapping cylinder; substantially as and for the purposes specified.

24. In a wrapping machine, a wrapping cylinder provided with a pocket having a movable bottom, a rock-shaft on which the wrapping cylinder is loosely mounted said rock shaft having tappets to actuate the movable bottom of the wrapping cylinder, a slide, a rock-arm which connects the slide and rock-shaft, a pivoted rack, and an interposed pinion and pawl and ratchet mechanisms for actuating the wrapping cylinder; substantially as and for the purposes specified.

25. In a wrapping machine, the combination with a rock-shaft and the crank arm by which it is actuated, of a pivoted rack, a pinion carried by the crank arm of the rock-shaft, a gear wheel on the rock-shaft, a wrapping cylinder loosely mounted on the rock-shaft, and intermediate pawl and ratchet mechanism for actuating the wrapping cylinder; substantially as and for the purposes specified.

26. In a wrapping machine, the combination with a wrapping cylinder, of a movable receiving chute, and independently vibrating folding blades arranged to operate between the wrapping cylinder and chute, substantially as and for the purposes specified.

27. In a wrapping machine, the combination with a wrapping cylinder, of a yieldingly supported or rebounding chute and means for moving the chute to and from the wrapping cylinder; substantially as and for the purposes specified.

28. In a wrapping machine, the combination with a wrapping cylinder, of a movable receiving chute, folding blades arranged to operate between said chute and the wrapping cylinder, a holding blade for controlling the final folds of the wrapper, and means for advancing and retracting the folding blades and holding blade; substantially as and for the purposes specified.

29. In a wrapping machine, the combination with a wrapping cylinder, of a receiving chute, a cross-head, guides on which said cross-head has a frictional bearing, levers pivoted on said frictionally held cross-head, said levers having folding blades arranged to operate between the chute and wrapping cylinder, a cross-head loosely movable on the chute and on said guides and provided with means to actuate the levers of the folding blades, and means for reciprocating the loose cross-head and the chute, substantially as and for the purposes specified.

30. In a wrapping machine, the combination with a reciprocating chute, of a cross-head, guides on which said cross-head has a frictional bearing, a yielding spring connection between said cross-head and chute, a cross-head loosely movable on the chute and guides, levers having folding blades said levers pivoted on the first named or frictional cross-head, and actuated by the loose cross-head, and means for reciprocating the loose cross-head; substantially as and for the purposes specified.

31. In a wrapping machine, the combination with pivoted reciprocating levers having folding blades and feathers, of feather slots for controlling the movements of the levers, and means for reciprocating said levers; substantially as and for the purposes specified.

32. In a wrapping machine, the combination with a receiving chute, of a flexible blade, a rock shaft and arm for retracting said

blade, a spring for projecting said blade across the chute, and means for actuating the rock shaft intermittently; substantially as and for the purposes specified.

33. In a wrapping machine, the combination of a receiving chute, a blade arranged to move across the mouth of the chute, a rock-shaft and arm for retracting the blade, a pin for locking the blade in its retracted position, a spring for projecting the blade across the chute, and means for releasing the blade and allowing the spring to operate, substantially as and for the purposes specified.

34. In a wrapping machine, the combination with a movable receiving chute, of an independent reciprocating flexible blade arranged to open and close the receiving end of said chute, and means for actuating the chute and blade; substantially as and for the purposes specified.

35. In a wrapping machine, the combination with a receiving chute, of a reciprocating blade, a slide therefor, a rock-shaft having an arm to retract the slide and a pin adapted to lock the slide and arm, a spring to project the slide, a cam and a collar on the rock-shaft, and a slide bar having a projection arranged to alternately engage the cam and collar of the rock-shaft; substantially as and for the purposes specified.

546,194. LAND-ROLLER. CHARLES J. SHAW, Owosso, Mich. Filed June 3, 1895. Serial No. 551,561. (No model.)

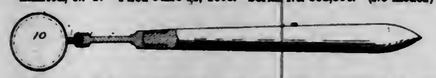


Claim.—1. In a land roller, the combination, with a plurality of standards having bearings, of a hollow shaft revolubly mounted in said bearings and provided with outlet holes opposite said bearings, a rod movable within the shaft, a series of washers on the rod and adapted to close the outlet holes means for closing the ends of said shaft, and a roller mounted on the shaft, substantially as described.

2. In a land roller, the combination, with two end standards having bearings and a central standard or stay-brace having a downward and forward projecting draft-piece, of a hollow shaft revolubly mounted in said bearings and provided with outlet holes, a rod movable within the shaft and projecting through the bearing at one end, a series of washers fixed on the rod whereby the outlet holes may be closed or opened by moving said rod, and a plurality of rollers mounted on the shaft, as described.

3. In a land roller, the combination, with a pair of standards having bearings, a frame connecting the standards and a central stay brace secured to the frame, said brace having a downward and forward projecting draft piece and a tongue holder adapted to be supported by the central brace, of a hollow shaft revolubly mounted in said bearings and provided with outlet holes, a rod movable within the shaft and projecting through the bearing at one end, a series of washers fixed on the rod whereby the outlet holes may be closed or opened, and a series of rollers mounted on the shaft, substantially as described.

546,195. DENTAL MOUTH-GLASS. WARREN M. SHARP, Binghamton, N. Y. Filed June 11, 1895. Serial No. 552,398. (No model.)



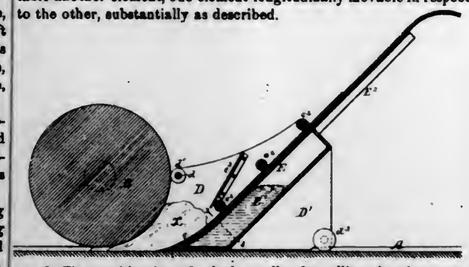
Claim.—1. The combination with the bezel consisting of the grooved semi-cylindrical split ring formed with screw-threaded lugs, of the ball bearing having a central screw-threaded aperture engaging therewith, the screw-threaded sleeve and the shank formed with a screw-threaded head engaging therewith; substantially as described.

2. The combination with the bezel consisting of a grooved semi-cylindrical split ring formed with screw-threaded lugs, and the ball bearing formed with a screw-threaded aperture engaging therewith, of the screw-threaded sleeve having a flange at the outer end and formed with notches, and the shank having a screw-threaded head formed with a socket with which the ball engages; substantially as described.

3. The combination with the bezel consisting of the grooved semi-circular ring formed with an annular central septum, and with screw-threaded lugs, and the mirror, of the sleeve engaging with said lugs and the handle connected therewith; substantially as described.

546,196. APPARATUS FOR EMBEDDING WIRE IN GLASS. FRANK SHUMAN, Philadelphia, Pa. Filed May 28, 1894. Serial No. 512,654. (No model.)

Claim.—1. The combination in a machine for embedding wire in glass, of a table, a roller, a hopper having an inclined side forming a chute for the wire, the roller and hopper forming one element and the table another element, one element longitudinally movable in respect to the other, substantially as described.



2. The combination of a bed, a roller for rolling the glass upon the bed, a hopper in front of said roller, a chute having a rib or ribs or other projections for the wire, with means for traversing the roller and hopper over the bed, substantially as described.

3. The combination in a machine for rolling wire glass, a bed, a roller for rolling out the glass, a hopper formed of two sides and an inclined chute, ribs on said chute, with a water jacket back of the chute, substantially as described.

4. The combination of a bed, a roller for rolling the glass upon the bed, an inclined chute in front of the roller forming with the roller a hopper, ribs on said chute, said chute terminating in advance of the pressing point of the roller so that the glass will enter the meshes of the wire by its own weight, while the wire is on the chute, substantially as described.

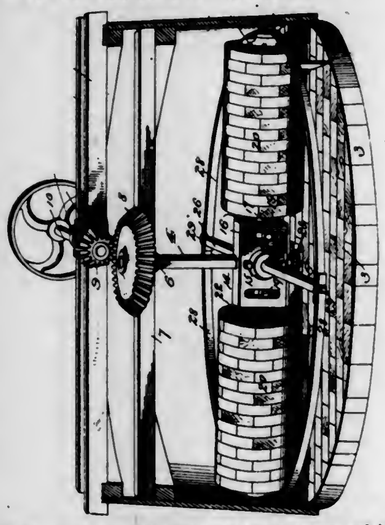
5. The combination of a bed, a roller for rolling the glass upon the bed, an inclined ribbed chute for the wire, side plates forming with the chute and roller a hopper for the glass, with guides for the wire as it passes over the ribbed chute, substantially as described.

6. The combination of a bed, a roller, an inclined ribbed chute, a water jacket at the back of the chute, said chute being independent of the roll and pushed forward by it, substantially as described.

7. The combination of a bed, a roller for rolling out the glass, a chute having ribs at its lower end to support the wire, a water jacket back of the ribbed portion of the chute, rollers for supporting the outer end of the chute, and antifriction rollers against which the pressure roller bears to move the chute forward, substantially as described.

8. The combination of a bed, a roller, a chute for the wire, with a hopper for the glass situated between the chute and the roller, substantially as described.

546,197. MILL FOR GRINDING MICA. JOHN G. SKELTON, Richmond, Va., assignor to the Richmond Mica Company, same place. Filed May 20, 1895. Serial No. 549,946. (No model.)

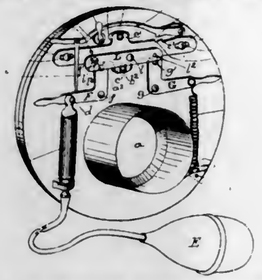


Claim.—1. A mica mill comprising in its structure a tub having a fixed bottom formed of blocks of wood with the grain perpendicular to the surface of the bottom, a revoluble roll formed of a series of wooden blocks "end on," and means for moving said roll around the tub, whereby the mica is ground between the hard unyielding non-metallic surfaces, one of which is stationary and the other rotatable, and discoloration of the mica is prevented and its luster preserved, substantially as and for the purposes described.

2. A mica mill comprising in its structure a tub having a fixed bottom formed of blocks of wood with the grain perpendicular to the surface of the bottom, a revoluble roll formed of blocks of wood "end on," means for clamping together the blocks of the roll, a rotatable vertical shaft, a spider arm extending laterally from said shaft, means connecting the inner end of the roll with the vertical shaft, a strap connecting the outer end of the roll with the spider arm, and means for rotating the vertical shaft, substantially as and for the purposes described.

3. In a mica-mill, the combination with the tub, of a rotatable vertical shaft provided with a hub, spider arms projecting laterally from the hub, the rotatable grinding rolls, each formed of a series of wooden-blocks "end on," non-rotatable shafts for said rolls connected with the hub so as to have a vertical play, and straps connected at one end with the outer ends of the grinding rolls and at the other end having a hinged connection with the outer ends of the spider arms, substantially as and for the purposes described.

546,198. PHOTOGRAPHIC SHUTTER. SAMUEL SLAYTON, San Francisco, Cal. Filed Dec. 27, 1894. Serial No. 533,068. (No model.)



Claim.—1. In combination with pivoted apertured leaves of a photographic camera shutter, the means for operating said leaves to open and close the shutter, consisting of a sliding bar connected with the shutter leaves, and a pivoted lever connected with said bar and adapted by its movement to effect the sliding thereof.

2. In combination with pivoted apertured leaves of a photographic camera shutter, the means for operating said leaves to open and close the shutter, consisting of a sliding bar connected with the shutter leaves, a pivoted lever connected with said bar and adapted by its movement to effect the sliding thereof, and an air pump for effecting the movement of the lever.

3. In combination with the pivoted apertured leaves of the photographic camera shutter, said leaves being mounted upon a common pivot, the means for operating the leaves, consisting of a sliding bar connected with said leaves, with one above and with one below the pivotal point common to both said leaves, and a pivoted lever connected with said sliding bar and adapted to effect the sliding thereof.

4. In combination with the pivoted apertured leaves of the photographic camera shutter, said leaves being mounted upon a common pivot, the means for operating the leaves, consisting of a sliding bar connected with said leaves, with one above and with one below the pivotal point common to both said leaves, a pivoted lever connected with said sliding bar adapted to effect the sliding thereof, and an air pump for effecting the movement of the lever.

5. In combination with the pivoted apertured leaves of a photographic camera shutter, the means for operating the leaves consisting of a sliding bar connected therewith, a trigger for holding said bar, means for tripping the trigger to release the bar, a lever connected with said bar and a spring controlling the lever, whereby the bar is thrown over when released from the trigger.

6. In combination with the pivoted apertured leaves of a photographic camera shutter, the means for operating the leaves consisting of a sliding bar connected therewith, a trigger for holding said bar, means for tripping the trigger to release the bar, a lever connected with said bar, a spring controlling the lever whereby the bar is thrown over when released from the trigger, and the pivoted lever arm to which the other end of the spring is attached, said arm having the pin adapted to engage any of a series of indentations whereby the tension of the spring is varied.

7. In combination with the pivoted apertured leaves of a photographic camera shutter, the means for operating them, consisting of a sliding bar connected with said leaves, a pivoted lever connected with the bar and adapted by its movement to actuate the same, means for operating the lever and a stop to limit the movement of said lever.

8. In combination with the pivoted apertured leaves of a photographic camera shutter, the means for operating them consisting of a sliding bar connected with said leaves, a pivoted lever connected with the bar and adapted to actuate the same by its movement, an air pump for operating the lever and a stop in the path of the lever to limit the movement of said lever.

9. In combination with the pivoted apertured leaves of a photographic camera shutter, the means for operating them, consisting of a sliding bar connected with said leaves, a trigger adapted to engage and hold said bar, a lever with pump connection adapted to trip said trigger to release the bar, and a lever and spring connected with said bar for throwing it over when released.

10. In combination with pivoted apertured leaves of a photographic camera shutter, a means for operating them consisting of a sliding bar connected with said leaves, a pivoted trigger engaging said bar and adapted to hold it, an arm extending from said trigger, a lever connected with the sliding bar and having a pump connection for operating it, said lever being adapted to come in contact with the arm of the trigger to release said trigger, and a spring connection with the bar for throwing it over when released.

11. In a photographic camera shutter and in combination with the sliding bar for operating the shutter, the trigger adapted to engage said bar and the handled cam for lifting the trigger out of the way when not needed or allowing it to return to operative position.

12. In a photographic camera shutter having pivoted apertured leaves, the sliding bar engaging and operating the leaves, separate lever connections with said bar for operating it and means for connecting and disconnecting either of said lever connections at will.

13. In a photographic camera shutter having pivoted apertured leaves, the sliding bar engaging and operating the leaves, separate lever connections with said bar for operating it, and means on the bar adapted to be thrown into engagement with either of said connections, whereby the bar is connected or disconnected with either at will.

14. In a photographic camera shutter having pivoted apertured leaves, the sliding bar engaging and operating the leaves, separate lever connections with said bar for operating it, and a rocking arm pivoted to the bar and having at each end a pin or stud adapted to engage alternately with said separate lever connections, whereby either may be connected or disconnected at will.

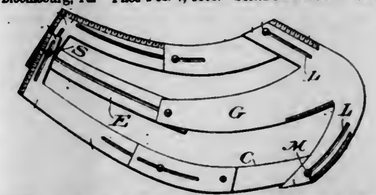
15. In a photographic camera shutter having pivoted apertured leaves, a sliding bar connected with said leaves, a lever F and pump connection, a lever G and spring connection and a swinging arm pivoted to the bar C and adapted to engage alternately said levers, whereby either may be connected or disconnected with said bar at will.

16. In a photographic camera shutter having pivoted apertured leaves, a sliding bar connected with said leaves, a lever F and pump connection, a lever G and spring connection, and a rocking arm having a stud at each end adapted to alternately engage with a groove or notch in said levers, whereby either may be connected or disconnected at will.

17. In a photographic camera shutter having pivoted apertured leaves, a sliding bar connected with said leaves, a lever F and pump connection, a lever G and spring connection, a rocking arm having a stud at each end adapted to alternately engage with a groove or notch in said levers, and means for holding said arm in position adjusted, consisting of the stud or pin adapted to engage different depressions in the bar.

18. A photographic camera shutter comprising the apertured pivoted leaves mounted upon a common pivot within a suitable chambered shell, a sliding bar mounted upon said shell and having a connection with said leaves, one above and the other below their common pivotal center, a trigger adapted to engage said bar, a lever F and pump connection adapted to operate the trigger, a lever G and a spring connection therewith, and an arm pivoted to the bar C and adapted to be alternately thrown into and out of engagement with said levers F and G.

546,199. ADJUSTABLE PATTERN. CHARLES W. SNYDER, Bloomsburg, Pa. Filed Feb. 7, 1895. Serial No. 537,557. (No model.)



Claim.—1. In an adjustable dress pattern, a sleeve pattern consisting of the templet A having the central portion G, with the side

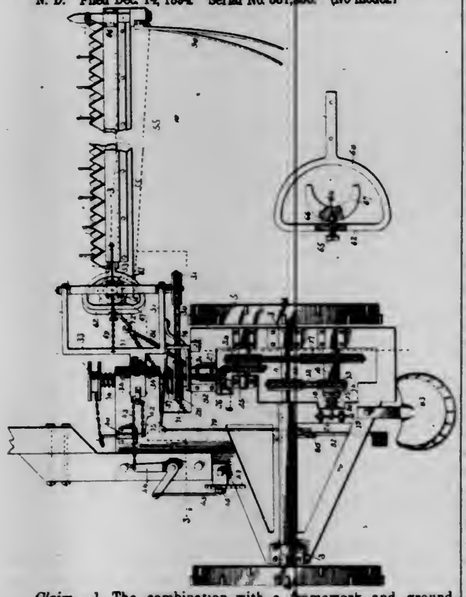
arms H and J at an acute angle thereto, the curved templets B and C adjustably connected with said side arms, the templet D having the arms N and R, and adjustably connected with the templet B, the templet F having the arms P and Q, and adjustably connected with the templet C, and the templet E adjustably connected with said central portion G, and said arms R and Q respectively, said parts being combined substantially as described.

2. In an adjustable dress pattern, the adjustable front waist and under arm pattern, consisting of the central templet T having substantially parallel sides, and a slot therein, the curved portions C', D' joined by the inclined straight portion E', the templet U having its top coinciding with the junction of a side A' and curve D', the templet V, the templet W having the curved edge K', the curved bar L' provided with a scale, and the templet X with scales thereon, said templets U, V, W and X being adjustable on the templet T, and said bar L' being pivoted to the templet X and adjustable on the templet W, said parts being combined substantially as described.

3. In an adjustable dress pattern, the adjustable front waist and under arm pattern, consisting of the central templet T, having substantially parallel sides, and a slot therein, the curved portions C', D', joined by the inclined straight portion E', the templet U having its top coinciding with the junction of a side A', and curve D', the templet V, the templet W having the curved edge K', the curved bar L, provided with a scale, and the templet X with scales thereon, said templets U, V, W and X being adjustable on the templet T, the templets Z and Y having scales thereon, and adjustable relative to each other and to the templet T, said bar L' being pivoted to said templet X and adjustable on said templet W, said parts being combined substantially as described.

4. In an adjustable dress pattern, a back pattern consisting of the templets D^2, E^2 adjustably connected at one end, the templets H^2 and J^2 adjustable on the same end of said templet D^2 at the said adjustable connection with the templet E^2, and the templet F^2, G^2, having a transverse and lengthwise adjustment on the other ends of said templets D^2 and E^2, said templets having scales thereon as described, said parts being combined substantially as described.

546,200. MOWING-MACHINE. EDWIN G. STAUDE, Kempton, N. D. Filed Dec. 14, 1894. Serial No. 531,830. (No model.)



Claim.—1. The combination with a framework and ground-wheels, of a cutting apparatus pivoted to swing backward in a horizontal plane, a pivotal frame supporting the cutting apparatus, whereby the latter may be elevated, a drum operatively connected with said pivotal frame, a clutch having one of its members operatively connected with the ground-wheels and the other member secured to the spindle of the drum, and means controlled by the cutting apparatus for operating one member of the clutch to throw the members into and out of engagement, substantially as specified.

2. The combination with a framework and ground-wheels, of a spider frame pivotally mounted upon the framework, cutting apparatus having a pivotal finger-bar carried by the spider frame and adapted to swing horizontally rearward, a drum, connections between the drum and the spider-frame whereby the outer end of the latter with the finger-bar may be elevated, a clutch having one member operatively connected with the ground-wheels, and the other member fixed to the spindle of the drum, a lever connected with one member of the clutch to throw the same into and out of engagement with the other member, a pivotal cross-head having one arm connected with said lever, and a yielding connection between the other arm of the cross-head and the finger-bar, whereby when the finger-bar is swung rearwardly the said lever is operated to cause the engagement of the clutch members, substantially as specified.

3. The combination with a framework and ground-wheels, of a pivotal spider frame, cutting apparatus having a finger-bar carried by the spider frame and mounted to swing horizontally rearward, a drum, connections between the drum and spider frame whereby the outer end of the latter with the finger-bar may be elevated when the drum is rotated, a contractile spring for holding the finger-bar normally in operative position, a clutch having one member operatively connected with the ground-wheels and the other member operatively connected with the drum, a lever connected to one of the members of the clutch and adapted to throw the members into and out of engagement, a pivotal cross head having one arm connected with said lever, and a contractile connection between the other arm of the cross-head and the finger-bar whereby when the finger-bar is repressed horizontally the lever is operated to throw the clutch members into engagement and communicate motion to the drum, substantially as specified.

4. The combination with a supporting framework and ground-wheels, of a spider frame pivotally mounted upon the framework, cutting apparatus having a finger-bar carried by the spider-frame and mounted to swing horizontally rearward, yielding means for holding the finger-bar in its operative position, a drum having its core mounted to slide longitudinally, connections between the drum and the spider-frame, whereby when the drum is rotated said frame and finger-bar are elevated, a friction clutch having one member operatively connected with the ground-wheels and the other member fixed to the spindle of the drum, a spring for holding the drum spindle in position to maintain the clutch member carried thereby out of engagement with the other clutch member, and connections between the finger-bar and the drum spindle whereby when the former is repressed the clutch members are thrown into engagement, substantially as specified.

5. The combination with a supporting framework and ground-wheels, of a pivotal spider-frame having front and rear arms, a swiveled frame mounted in the spider-frame, a vertical spindle mounted in the swiveled frame, cutting apparatus having a finger-bar fulcrumed upon said spindle, driving connections between the spindle and the ground-wheels, means for communicating motion from the spindle to the knives of the cutting apparatus, a flexible limiting device connecting the swiveled frame to the spider-frame for limiting the downward movement of the finger-bar, resilient means for holding the cutting apparatus in its normal position and means for elevating the outer end of the spider-frame and the finger-bar, substantially as specified.

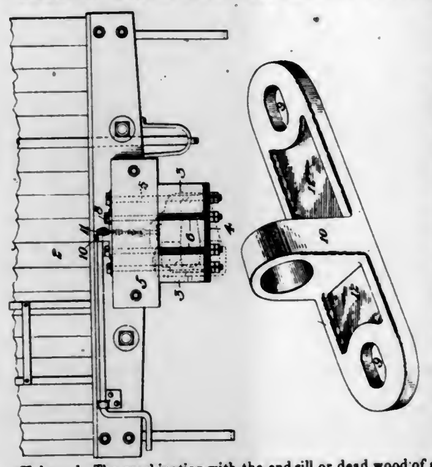
6. The combination with a supporting framework and ground-wheels, of a pivotal spider-frame, a swiveled frame mounted upon the spider-frame, a vertical spindle mounted in the swiveled frame, a horizontal shaft connected by gearing with said spindle, operating connections between said shaft and the ground-wheels, cutting mechanism having a finger-bar swiveled upon the spindle and including a sickle or knife, resilient means for holding the apparatus in operative position, an eccentric on said spindle, an eccentric yoke embracing the eccentric and connected to the sickle or knife, and means for elevating the spider-frame and finger-bar, substantially as specified.

7. The combination with a supporting framework and ground-wheels, of a pivotal spider-frame, a swiveled frame mounted upon the spider-frame, a vertical spindle mounted in the swiveled frame, operating connections between said spindle and the ground-wheels, an eccentric carried by said spindle, a yoke attached to a knife or sickle forming a part of the cutting apparatus, said yoke having an oscillatory seat mounted for pivotal movement by means of an adjusting screw carrying a ball which engages a socket in said seat, the portion of the yoke adjacent to the open side of said seat being concentric with the pivotal point of the seat, and means for elevating the outer end of the spider-frame and the finger-bar, substantially as specified.

8. The combination with a supporting framework and ground-wheels, of a pivotal spider-frame having parallel front and rear arms, an elliptical swiveled frame having front and rear trunnions mounted in bearings in the arms of the spider-frame, a spindle mounted in bearings in the upper and lower sides of the swiveled frame, a shaft mounted concentric with the trunnions of the swiveled frame and connected by gearing with the spindle, a finger-bar swiveled to the said spindle, upper and lower parallel knives or sickles, eccentrics carried by the spindle, connections between the eccentrics and said knives or sickles, a limiting-chain connecting the upper side of the swiveled frame to the spider frame, a finger attached to the finger-bar and projecting inward beyond the fulcrum point thereof, a return-spring connected to said finger to hold the finger-bar in its operative position, connections between the said shaft and ground-wheels, and means for elevating the outer end of the spider-frame and the finger-bar, substantially as specified.

9. The combination with a supporting framework and ground-wheels of a pivotal spider-frame, a tubular shaft forming the fulcrum of said frame, a core mounted to slide in said tubular-shaft, a pivotal finger-bar mounted upon and carried by the spider-frame, said finger-bar being capable of universal movement, a shaft 32 operatively connected with the knives or sickles, a gear operatively connected with the ground-wheels and mounted co-axially with said core, said gear being provided in one side with a cavity, a friction-block fixed to the core and adapted to engage the cavity in the said gear, operating connections between said gear and the shaft 32, a drum fixed to the core, a lever having one arm connected to an arm of the spider-frame, a flexible connection between the drum and the other arm of said lever, and means for throwing the friction-block into and out of engagement with the cavity of the gear, substantially as specified.

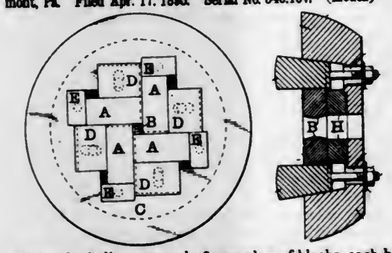
546,201. UNCOUPLING LEVER-BRACKET. CHARLES L. SULLIVAN, Chicago, Ill., assignor to the National Malleable Castings Company, Cleveland, Ohio. Filed May 18, 1895. Serial No. 549,779. (No model.)



Claim.—1. The combination with the end sill or dead wood of a car, of two through bolts, one on each side of the center line of the car, and a bracket for an uncoupling rod having bolt holes suitably spaced to receive said through bolts and provided with a lug forming a bearing for the uncoupling rod, said lug being at one side of the center of the bracket; substantially as described.

2. A bracket for an uncoupling rod having in its end portion oblong bolt holes suitably spaced to receive the through bolts of a car, and provided with a lug arranged to give a bearing for the uncoupling rod, said lug being at one side of the center of the bracket, whereby the bracket is made reversible for a right or left hand uncoupling rod; substantially as described.

546,202. METAL-DRAWING DIE. GEORGE E. THACKRAY, Westmont, Pa. Filed Apr. 17, 1895. Serial No. 546,107. (Model.)



Claim.—1. A die composed of a number of blocks, each having a convex working face and a concave face immediately adjoining the same; said concave face being made to conform to and fitting the convexity of the adjoining block, all being so grouped as to form a draw hole, substantially as set forth.

2. A die composed of a number of blocks, each having a convex working face and a concave face immediately adjoining the same; said concave face being made to conform to and fitting the convexity of the adjoining block, in combination with a die plate and means for securing said die blocks therein, substantially as set forth.

3. A die composed of a number of blocks, each having a convex working face and a concave face immediately adjoining the same; said concave face being made to conform to and fitting the convexity of the adjoining block, in combination with a die plate, wedges bearing against the outer edges of the die blocks, and means for adjusting said wedges, substantially as set forth.

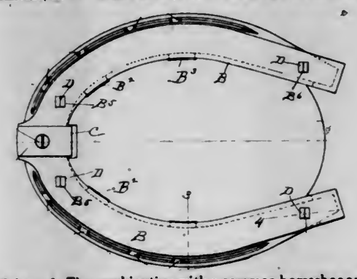
4. A die composed of a number of blocks, each having a convex working face and a concave face immediately adjoining the same; said concave face being made to conform to and fitting the convexity of the adjoining block, in combination with a die plate, and wedges bearing against the outer edges of the die blocks, said wedges being adjustable by means of threaded bolts, the nuts of which bear against said die plate, substantially as set forth.

5. A die composed of a number of blocks, each having a convex working face and a concave face immediately adjoining the same; said concave face being made to conform to and fitting the convexity of the adjoining block, in combination with a die plate, wedges bearing against those edges of the die blocks, opposite their convex working faces, other wedges bearing against those edges of the die blocks opposite their concave faces, and means for adjusting said wedges, substantially as set forth.

6. A die composed of a number of blocks, each having a convex working face and a concave face immediately adjoining the same; said concave face being made to conform to and fitting the convexity of the adjoining block, in combination with a die plate and a backing plate interposed between the die plate and the die blocks, said backing plate being provided with a hole registering with that formed by the die block, substantially as set forth.

7. A die composed of a number of blocks each having the general form of a prism, one of whose sides however is convex and one of whose ends is concave to conform to and fit the convexity of the adjoining block, said die blocks being grouped symmetrically about a common center, in combination, with a die plate having an opening therein, wedges fitted between the outer surfaces of the die blocks and the surfaces of said opening, and provided with screw ends and nuts; said screw ends passing through slotted holes in said die plate, and secured to said plate by nuts, substantially as set forth.

546,203. DETACHABLE HORSESHOE. LEONARD C. THORNE, Granville, N. Y. Filed Jan. 30, 1895. Serial No. 536,658. (No model.)



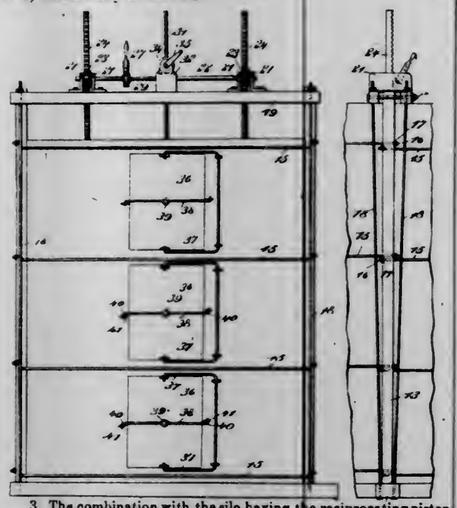
Claim.—1. The combination with a common horseshoe and means for permanently securing the same upon the hoof; of a temporary shoe applied thereto and provided with heel-sockets adapted to receive the respective heel-ends of the permanent shoe; inner side-lugs and an outer toe-lug on the temporary shoe adapted to engage the permanent shoe; calks supported by the temporary shoe; a clip embracing both shoes at the toe; and a detachable connection between the clip and temporary shoe, substantially as described.

2. The combination with a common horseshoe, and means for permanently securing the same upon the hoof; of a temporary shoe applied thereto and having countersunk calk-apertures, a pair of heel-sockets adapted to receive the respective heel-ends of the permanent shoe, and inner side-lugs, and an outer toe-lug adapted to engage the permanent shoe; calks keyed in the respective countersunk apertures; a clip embracing both shoes at the toe; and a screw-connection between the clip and temporary shoe, substantially as described.

546,204. SILO. WILLIAM A. VAN DEUSEN, Sprout Brook, N. Y. Filed Jan. 23, 1895. Serial No. 535,868. (No model.)

Claim.—1. A silo having double walls, hoops to strengthen the walls, a piston reciprocating within the silo and a revoluble rake arranged on the under side of the piston, substantially as described.

2. The combination with a silo provided with a series of doors arranged one above the other for the removal and insertion of the ensilage, of the reciprocating piston within the silo, and the revoluble rake arranged on the under side of the piston to keep the ensilage level, substantially as described.



3. The combination with the silo having the reciprocating piston and the revoluble rake arranged on the under side of the piston, of the cross bars arranged above the top of the silo, the driving shaft on the cross bars, and a gear connection between the driving shaft and piston, substantially as described.

4. The combination with the silo and the reciprocating piston therein, of the revoluble rake arranged on the under side of the piston, to keep the ensilage level, substantially as described.

5. The combination with the silo and the reciprocating piston therein, of the revoluble rake arranged on the under side of the piston to keep the ensilage level, the shaft secured to the rake and extending upward through the piston and a crank and gear mechanism for turning the shaft, substantially as described.

6. The combination with the silo, and the reciprocating piston, of the cross bars arranged above the top of the silo, a support carried by said cross bars, a rake provided with a shaft extending upward through the piston and the said support, a pinion keyed to the rake shaft and through which the said shaft is adapted to slide, and a second pinion meshing with the first pinion and provided with a crank, substantially as described.

546,205. CAN-WASHING MACHINE. LINCOLN VAN GILDER, Philadelphia, Pa., assignor to himself and James B. Anderson, same place, and Thompson E. Van Gilder and Volney Van Gilder, Ocean View, N. J. Filed Sept. 25, 1894. Serial No. 524,092. (No model.)

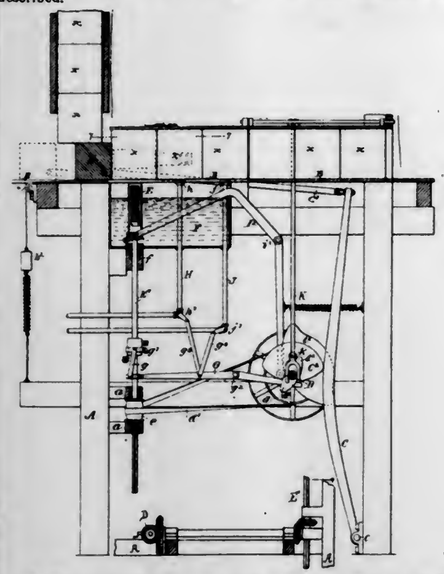
Claim.—1. The combination in a machine for washing cans, of the feeding mechanism for the can, brush, mechanism for inserting the brush into the can, mechanism for projecting the brush when within the same and mechanism for revolving the brush, substantially as described.

2. The combination in a machine for washing cans, of the feeding mechanism for the cans, the brush, mechanism for revolving the same, and mechanism for elevating and mechanism for laterally projecting the brush, when within the can, and a spray pipe adapted to spray water into the can after it has been operated upon by the brush, substantially as set forth.

3. The combination in a can washing machine, of the mechanism for feeding the cans, a revolving brush, mechanism for elevating the brush, and mechanism for laterally projecting the brush when within the can, a spray water pipe and a steam spray pipe, by which water and steam are sprayed into the can after it is cleaned by the brush, substantially as set forth.

4. The combination in a can washing machine, of the platform on which the cans are mounted, a slide, mechanism for operating said slide to feed the cans forward, a tank, a brush mounted within the tank, a vertical shaft on which the brush is secured, mechanism for revolving said shaft, and mechanism for elevating the shaft and brush, so as to project the brush into the can, vertically operated slides, acting to project the brush laterally, and mechanism for operating the said slides, with steam and water pipes, valves therefor, actuated by the mechanism that elevates the shaft, substantially as described.

5. The combination in a can washing machine of a brush head, a brush box mounted in said head, said brush box having inclined slots, vertical slides having pins adapted to the slots, mechanism for elevating the slides so as to retract the brush box, and mechanism for raising and mechanism for revolving the brush head, substantially as described.



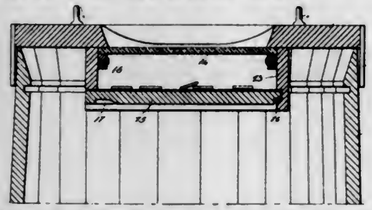
6. The combination in a can washing machine, of the platform for the cans, the brush, mechanism for revolving the brush, mechanism for elevating the same and mechanism for laterally projecting the brush, with a shaker mounted beyond the brush and adapted to receive the cans and means for operating the shaker, substantially as described.

7. The combination in a can washing machine, of a platform, a brush, the shaft E' on which the brush is mounted, cam shaft D, means for revolving the shaft E', the pivoted lever G, connected to the shaft E', a cam c^2 on the shaft D, slides I acting to project the brush laterally, a lever I^3 connected to the slide, and a cam i^3 on the shaft D acting upon the lever, substantially as described.

546,206. BLEACHING AND CLEANING COMPOSITION. HENRY WÄCHTER, Bielefeld, Germany. Filed May 15, 1894. Serial No. 511,351. (No specimens.)

Claim.—A bleaching and cleansing composition, consisting of a pulverulent mixture of a caustic alkali, zincate of sodium and soap, substantially as set forth.

546,207. BARREL-COVER. WILLIAM L. WALSH, Easton, Pa. Filed Apr. 19, 1895. Serial No. 546,323. (No model.)

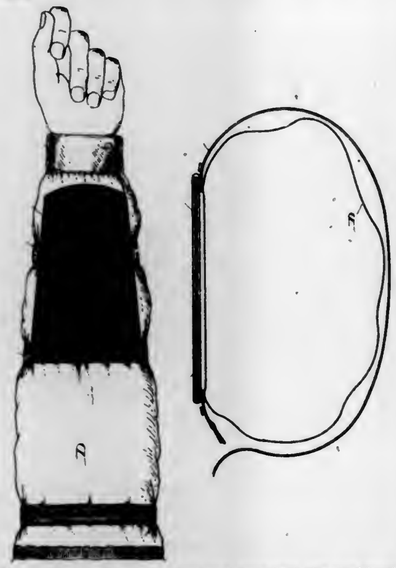


Claim.—1. The herein-described cover, provided with a flange projecting on one side thereof, and an opening in the cover, a box projecting from the cover on the same side as the said flange and beyond the free edge of the flange, the box having a transparent top for closing the opening of the cover, and a slide forming a bottom for the box and arranged to move in a plane below the free edge of the flange, substantially as set forth.

2. The herein-described cover, provided with an opening, a box on the lower or inner side of the cover and surrounding the said opening, a transparent top fitted against the lower side of the cover at the opening thereof, said top being smaller than the box so that it can be inserted and removed therethrough, means for normally holding the top in position, and a movable bottom for the box, substantially as set forth.

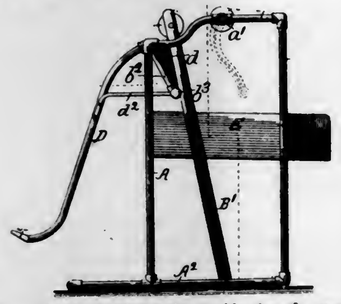
3. The herein-described cover, provided with an opening and a flange projecting on the inner or lower side of the cover, a transparent top fitted against the lower side of the cover at the opening thereof, a box whose sides are permanently connected at their upper ends to the lower side of the cover, said sides surrounding the transparent top so that the interior of the box is of sufficient length and width to permit the top to be inserted and removed therethrough, the lower ends of the said sides projecting beyond the lower edge of the flange of the cover, cleats located within the box to hold the transparent top in position against the cover, and a slide forming a bottom for the box and arranged to move in a plane below the free edge of the flange, substantially as described.

546,208. DEVICE FOR CARRYING DISHES, &c. FRANK P. WEST, Carroll, Mont. Filed Apr. 23, 1895. Serial No. 546,940. (No model.)



Claim.—In a device of the character described, the combination, of a pocket made of textile fabric, a protecting sleeve to which the pocket is secured, bands or straps attached to one side of the pocket, and buckles attached to the other side of the pocket together with a metal plate positioned within the pocket, said metal plate having a recessed end, substantially as shown and for the purpose set forth.

546,209. MOP-WRINGER. CHARLES WILSON, Chicago, Ill., assignor of one-half to Lars Christensen, same place. Filed Dec. 29, 1894. Serial No. 533,331. (No model.)



Claim.—1. In a mop-wringer, the combination of a supporting frame, companion levers, pivoted at their lower ends to the frame and loose at their upper ends, a rotatable roll, journaled in the loose ends of said levers and moving therewith, a stationary cross-bar, a movable cross-bar, the respective ends of which bear against the companion levers, a link, connecting said cross-bars, a foot-treadle-lever, having a pivotal connection with the stationary cross-bar, and a rotatable roll, occupying a fixed position, substantially as described.

2. In a mop-wringer, the combination with the supporting-frame, of companion levers, pivoted at their lower ends, a cam-plate, secured to each of said levers, a rotatable roll, journaled in said levers and reciprocating therewith, a stationary cross-bar, an elbow-sleeve loosely mounted thereon, a movable cross-bar, a link, connecting said bars, a foot-lever, having one end inserted in said sleeve, and a rotatable roll, journaled in the frame substantially as described.

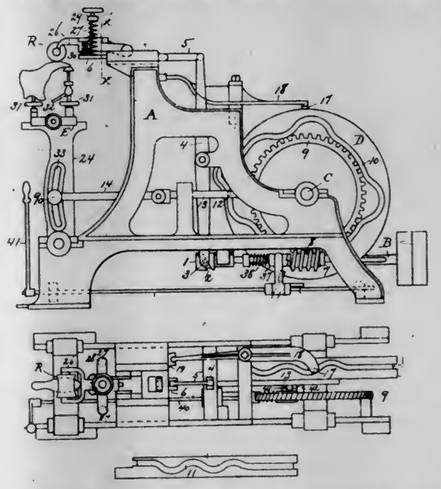
546,210. SCARF-PIN GUARD. ALFRED WILKEN, Bremen, Germany. Filed Dec. 19, 1894. Serial No. 532,283. (No model.)



Claim.—A locking device for scarf pins comprising the plate *a*, having a perforate bottom flange *c*, and a slot *d* in the upper end; the spring plate *b* secured at its lower end to the plate *a*, and having a bent upper end passing through the slot of the plate *a* and perforated correspondingly with the flange of said plate and a cam lever *g* inserted between the said plates *a* and *b* to hold the pin in variable positions and at two points to the locking device, substantially as described

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546,211. SOLE-LEVELING MACHINE. ERASTUS E. WINKLEY and BENJAMIN PHILLIPS, Lynn, assignors to Elmer P. Howe, Boston, Mass. Original application filed Mar. 8, 1893, Serial No. 465,176. Divided and this application filed Apr. 16, 1894. Serial No. 507,760. (No model.)



Claim.—1. In a sole leveling machine, the combination with a vibrating leveling roll and a shoe supporting jack, of connected mechanism operating automatically to change the relative lateral inclination and longitudinal position of the roll and jack, and means for adjusting said mechanism to regulate the extent of the change in the relative longitudinal position of the roll and jack effected thereby, substantially as described.

2. In a leveling machine the combination with the leveling roll and its vibrating mechanism of a laterally rocking vertically adjustable bearing for said roll, and suitably placed springs for controlling the lateral and vertical movement thereof, substantially as described.

3. In a sole leveling machine, the combination of a movable shoe supporting jack, a vibrating leveling roll mounted above and transversely thereto, connecting mechanisms timed with reference to each other operating automatically to change the relative inclination of

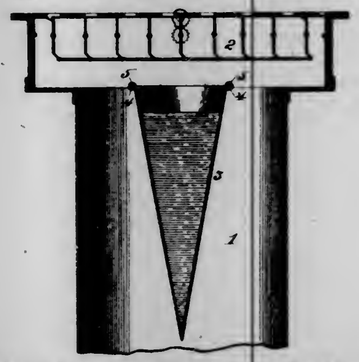
the jack and roll, and impart a series of varying longitudinal oscillations to the jack under the roll, and means for proportionately adjusting the length of said oscillations, substantially as described.

4. A sole leveling machine combining in its structure the following elements, to wit: a jack which rocks only in one direction, a pivoted roll-frame or holder, a reciprocating leveling roll mounted on the roll-frame or holder and tilted by the rocking motion thereof, a single power shaft, and independent mechanisms all driven by said power shaft and respectively in operative connection with the said jack, the reciprocating leveling roll, and the roll frame or holder, for automatically reciprocating the leveling roll and rocking the jack and roll frame or holder, substantially as described.

5. In a sole leveling machine, the combination of a leveling roll movable to and fro, a shoe supporting jack, mechanism separate from that for moving the roll to and fro and operating automatically to change the relative longitudinal position of the roll and jack, and separate connections to change the lateral inclination of said roll with respect to said jack, substantially as described.

6. In a sole leveling machine the combination with the leveling roll and its vibrating mechanism, of a laterally rocking vertically adjustable bearing for said roll, and suitably placed springs for controlling the lateral and vertical movement thereof, and a movable shoe supporting jack, and mechanism for automatically oscillating the jack under the roll substantially as described.

546,212. EVAPORATOR FOR HOT-AIR PIPES. FRANK WYMAN, St. Louis, Mo. Filed Dec. 7, 1894. Serial No. 531,106. (No model.)



Claim.—1. In combination with a hot air pipe having a register box that is larger than the diameter of said pipe, an evaporator and dust collector formed of an imperforate open-mouthed tapering vessel that is smaller at its larger end than the diameter of said pipe, and means for removably suspending said vessel within the mouth of said pipe, with the upper open end of the vessel substantially on a line with the bottom of said box; whereby an annular unobstructed space is provided between the inner wall of said pipe and said vessel, and whereby the vessel is adapted to receive dust carried by the air as the latter expands into said box, substantially as and for the purpose set forth.

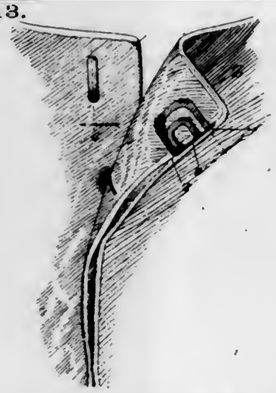
2. In combination with a hot air pipe having a flat bottomed register box that is larger than the diameter of said pipe, an evaporator and dust collector formed of an imperforate open-mouthed cone that is smaller at its larger end than the diameter of said pipe, and rods secured to the upper open end of said cone and adapted to rest on the flat bottom of said box to removably suspend the cone centrally within the mouth of said pipe, with the open end of the cone approximately on a level with the bottom of said box, whereby an unobstructed annular space is formed between the cone and the pipe, and whereby the dust is allowed to settle into the open mouth of the cone as the air expands into said box; substantially as set forth.

546,213. FASTENER FOR TROUSERS. RUDOLPH L. ZARETSKY, Chicago, Ill. Filed Apr. 16, 1895. Serial No. 545,943. (No model.)

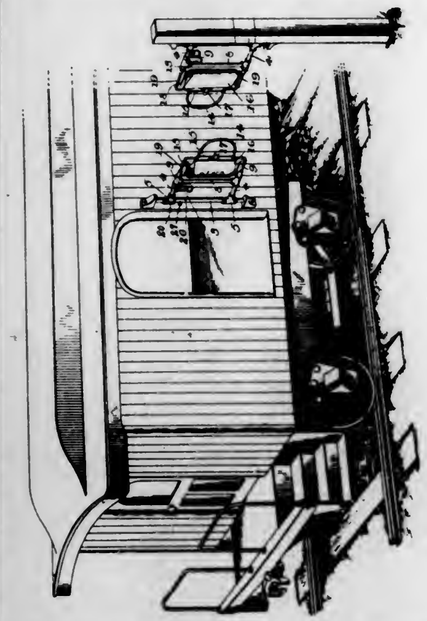
Claim.—1. A fastener for trousers-flaps, comprising, in combination, a hook-piece formed with a front-plate provided with a tongue and a pliable cloth-penetrating point, and a back-plate, parallel with the front plate, and provided with a shoulder to engage the upset point, and a loop-piece, substantially as described.

2. A fastener for trousers-flaps, comprising, in combination, a hook-piece A formed with an opening r, a front-plate A′, provided with a tongue s, and pliable cloth-penetrating points t, and a back-plate A^3 having point-receiving slots q, and a loop-piece, substantially as described.

546,213.



546,214. MAIL-BAG CATCHER. HARRY ALBERT, New Albany Ind. Filed July 16, 1895. Serial No. 556,158. (No model.)



Claim.—1. In a mail bag catcher, the combination of a post, a tubular standard mounted upon the post so as to turn thereon, and a crane having adjustable connection with the tubular standard so as to have its elevation changed and movable with the standard when the latter turns upon the post, substantially as set forth.

2. In a mail bag catcher, the combination of a post, a tubular standard mounted upon the post so as to turn thereon, the post and standard having registering openings which are disposed relatively at an angle to one another, a crane carried by the tubular standard, and a pin adapted to be thrust through the registering openings in the post and standard to hold the latter and the crane carried thereby in the required position, substantially as set forth.

3. In a mail bag catcher, the combination of a standard, a crane mounted upon the standard so as to turn thereon, pairs of collars placed upon the standard and lying adjacent to the parts of the crane mounted thereon, and oppositely-disposed springs attached to the pairs of collars and engaging with the crane so as to hold the latter in the required position, substantially as set forth for the purpose described.

4. In a mail bag catcher, the combination of a standard, a crane loosely mounted upon the standard so as to turn thereon, pairs of collars adjustably mounted upon the standard and lying adjacent to the parts of the crane mounted thereon, binding screws for securing the collars in the adjusted position, oppositely-disposed springs attached to the collars and engaging with the crane so as to hold the latter in working position, and means for holding the crane out of the way when not required for use, substantially as described.

5. The combination with the crane of a mail bag catcher, of a double hook having a cross bar, and latches having pivotal connection with the cross bar and adapted to have their free ends engage with the ends of the hooks, substantially as set forth for the purpose described.

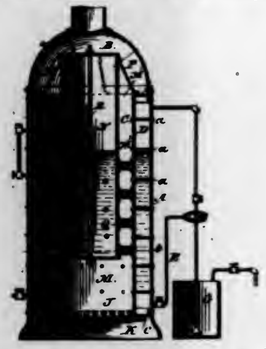
6. In a mail bag catcher, the combination with the crane, of a mail pouch supporting frame having parallel members which are adapted to telescope with and be supported by the crane, substantially as set forth for the purpose described.

7. In a mail bag catcher, the combination with the crane, of a mail pouch supporting frame of substantially U form and having its closed end deflected outwardly to form a bail, and having its parallel members constructed to telescope with and be supported by the said crane, substantially specified.

8. In a mail bag catcher, the combination with the crane, of a mail pouch supporting frame of substantially U shape having its closed end outwardly deflected to form a bail, and having its parallel members elastic and adapted to telescope and be supported by the said crane, a wire connecting the ends of the bail portion, and a second wire of substantially U form having the extremities of its bent end portions attached to the parallel members of the main frame, substantially as described for the purpose set forth.

9. A mail bag catcher comprising a post, a standard mounted upon the post so as to turn thereon, means for securing the standard in any required position upon the post, a crane comprising tubular arms and a connecting brace and having sleeves at the inner ends of the arms so as to be loosely mounted upon the tubular standard, pairs of collars placed upon the standard and located at the ends of the sleeves, a double hook supported upon the upper arm and having pivoted latches, and a mail pouch supporting frame of substantially U form having its closed end outwardly deflected to form a bail and having its parallel members constructed to telescope with the aforesaid tubular arms, a wire connecting the end portions of the bail, and a second wire having its end portions bent and secured to the parallel members of the said frame, substantially as set forth for the purpose described.

546,215. BOILER. GEORGE A. ALBRIGHT, Burlington, N. C. Filed June 25, 1895. Serial No. 553,993. (No model.)

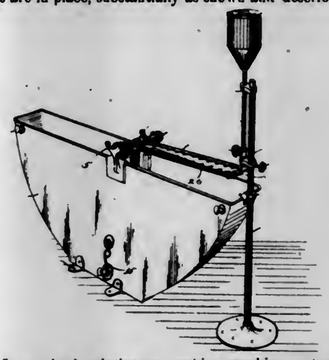


Claim.—The hereinbefore described boiler comprising an outer casing having an annular water jacket on its internal face, a dome member extended over the water jacket, a grate disposed over the lower end of the internal space formed by the annular water jacket, an internal cylinder N, having the lower end held in the fire pot and its upper end extended above the outer water jacket and into the dome space, the horizontal tubular braces Q connecting the outer water jacket and cylinder N, the braces P, the steam pipe S, and the feed devices all arranged substantially as shown and for the purposes described.

546,216. WHEEL-PAINTING MACHINE. MATTHEW ARBUCKLE, Indianapolis, Ind. Filed Aug. 30, 1894. Serial No. 521,764. (No model.)

Claim.—1. A wheel painting machine comprising a tank, means of supporting the wheel so it will rotate in the tank, brushes removably mounted on the sides of the tank close enough to the wheel to engage it, a paint can placed higher than the tank, and tubes leading from the paint can alongside the parts of the wheel and provided with apertures through which the paint is deposited on the wheel.

2. In a wheel painting or washing machine, a tank, guideways on the sides of the tank, and L-shaped brushes with the long ends fitting in such guideways and the short ends extending laterally outward at the top, the fibers of the brushes being on one side of the center of the long ends whereby the ends of the fibers will pass each other when the brushes are in place, substantially as shown and described.

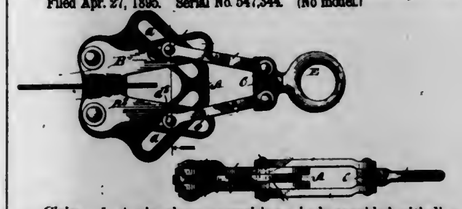


3. In a wheel painting or washing machine, a tank, a set of L-shaped brushes adjustably mounted on the sides of the tank with their short ends upward and extending outward, and a set of small brushes on the sides of the tank near the bottom and set so as to engage the felly and outer ends of the spokes of the wheel, substantially as shown and described.

4. In a wheel painting or washing machine, a tank, an adjustable jack on one side, and a support on the other side whereby the wheel is supported, guideways on the sides of the tank, brushes movable in such guideways, the brush on one side fastened to the jack, and a catch adapted to hold the other brush in any desired elevation, substantially as shown and described.

5. In a wheel painting machine, a suitable frame, means for supporting the wheels on such frame, a paint can placed higher than the wheel hub, tubes leading from the paint can alongside the wheel, and laterally adjustable rods mounted on the frame to whose inner ends the inner ends of the paint tubes are attached whereby the closeness of such tubes to the wheel may be adjusted, substantially as shown and described.

546,217. WIRE-CLAMP. AMASA A. ARMSTRONG, Ionia, Mich. Filed Apr. 27, 1895. Serial No. 547,344. (No model.)



Claim.—1. A wire clamp comprising a body provided with diagonal slots converging toward each other, cam levers pivoted on the body and provided with longitudinal slots, a block, and links pivoted to the block and provided with pins working in the slots of the levers and body, substantially as described.

2. A wire clamp, comprising a body provided with diagonal slots converging toward each other, cam levers pivoted on the body and provided with longitudinal slots, a block, two pairs of links pivoted to the block, each pair having their upper ends connected by pins working in the slots of the levers and the slots of the body, substantially as described.

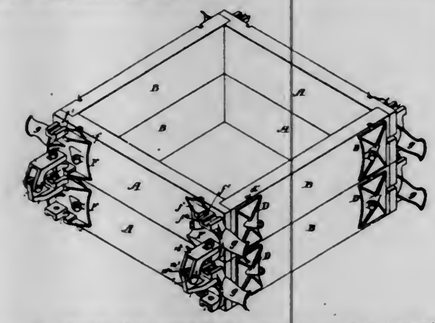
3. A wire clamp, comprising a body having diagonal slots in opposite sides, said slots converging toward each other at the lower end of the body, a pair of cam levers pivoted on each side of the body at its upper end, a block carrying a swivel ring, two pairs of links pivoted to the block, each pair having their upper ends connected by pins working in the slots of the lever and in the slots of the body, and rollers mounted on the pins connecting the said links, substantially as described.

546,218. MOLDER'S FLASK. JAMES BARKER, Philadelphia, Pa. Filed Apr. 29, 1895. Serial No. 547,434. (No model.)

Claim.—1. A molder's flask comprising wooden bars or strips connected at the corners by means of diagonal bolts passing through the strips, and metallic plates bearing upon the outer sides of the strips

at the corners of the flask, upon which plates the said bolts have their bearings, substantially as specified.

2. A molder's flask consisting of wooden bars or strips, each grooved in its outer face near the corners of the flask, metal plates bearing upon the outside of the strips near the corners and having abrupt lugs engaging with the grooves in the strips and diagonal bolts passing through the strips and plates and having their bearing upon the latter, substantially as specified.



3. A molder's flask consisting of wooden bars or strips connected at the corners by diagonal bolts passing through said strips and metal plates on the outer sides of the same through which said bolts pass, one of said plates having a projecting web serving as a handle, substantially as specified.

4. The combination of the two parts of a molder's flask, each connected at the corners by means of a bolt passing diagonally through the wooden strips of the flask and outer metal bearing plates thereon through which the bolt passes, plates of one part of the flask having projecting flanges with tapered notches, and the corresponding plates of the other part of the flask having projecting flanges to which are secured plates having pins adapted to said notches, substantially as specified.

5. The combination of the two parts of a molder's flask each connected at the corners by means of bolts passing diagonally through the wooden strips of the flask and outer metal bearing plates thereon through which the bolts pass, plates of one part of the flask having secured thereto projecting plates with notched ribs and plates of the other part of the flask having secured thereto projecting plates with ears connected by transverse pivot pins adapted to said notched ribs, substantially as specified.

6. The combination of the two parts of a molder's flask, plates on one part of the flask having projecting flanges with tapered notches, plates on the other part of the flask having projecting flanges and pins adapted to the notches of the plates of one part of the flask, said pins having right angled heads pivoted to the projecting flanges of the plates on the other part of the flask, substantially as specified.

7. The within described bearing plate for a molder's flask, said plate having a central bearing with inclined face for a securing bolt and upper and lower flanges each having a tapered notch in it, substantially as specified.

8. The within described bearing plate for a molder's flask, said plate having a central bearing with inclined face for a securing bolt, and upper and lower flanges each having a tapered notch and a groove formed in it, substantially as specified.

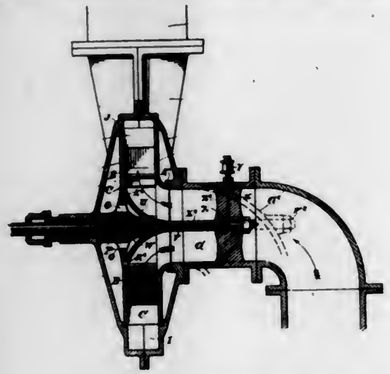
9. The within described bearing plate for a molder's flask, the same having a central bearing with inclined face for a securing bolt, and projecting lugs with abrupt faces for engagement with a groove in the wooden strip or bar of the flask, substantially as specified.

10. The within described bearing plate for a molder's flask, said plate having a central bearing with inclined face for a securing bolt, and a central projecting web serving as a handle, substantially as specified.

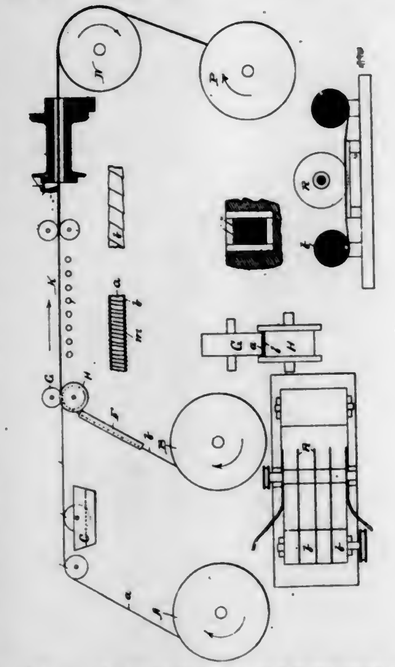
11. The combination of the wooden strip of a molder's flask, with a metal bar rigidly secured thereto adjacent to the lower outer corner and projecting beyond the outer face of the strip, substantially as specified.

546,219. CENTRIFUGAL PUMP. HANS C. BEHR, San Francisco Cal. Filed Dec. 3, 1894. Serial No. 530,738. (No model.)

Claim.—In a centrifugal pump, the combination, of a casing having one side A′ with a central inlet opening, and curved outwardly at its center to meet and join the inlet pipe of the pump, and having its opposite side A^3 extended to the center where it is formed with a hub, with holes in said side near the hub to equalize the pressure on the central part of the said casing side A^3, a conoidal shield of a diameter approximating the same as the inlet opening in the side A′, covering the central part of the side A^3 and its holes, and with its periphery in proximity with said side, alternating long and short radial vanes connecting said sides, a stationary rod for supporting the shield axially, a web or bridge formed with or secured in the inlet of the pump, said rod having an enlarged extension which enters the hub of the impeller whereby the shield is maintained in a central position, a flaring discharge nozzle and a discharge pipe communicating therewith.



546,220. ART OF MANUFACTURING ELECTROMAGNETS. HAROLD P. BROWN, New York, N. Y., assignor to the Edison General Electric Company, same place. Filed Jan. 26, 1893. Serial No. 459,823. (No model.)



Claim.—1. The improvement in the art of manufacturing electromagnet coils of metal tape and insulating tape comprising the following successive steps: first, coating one surface of the metal tape with shellac; second, imposing the asbestos tape on the shellac-coated surface of the metal tape and winding or turning or folding the edges of the former about the latter; third, compressing the two together and partially drying the shellac; fourth, wrapping the two with binding thread in open spirals; fifth, spooling the combined insulating and metal tape; sixth, winding the combined tape in the permanent coil of the magnet and applying shellac to the upper surface of each turn and hammering or pressing the outer face of each turn snugly home or in place against the preceding turns; seventh, compressing the coil and squeezing out the surplus shellac and holding the same so compressed until the shellac becomes partially dried or set; eighth, applying permanent holding devices; ninth, gradually heating the coil by application of current thereto to a sufficient degree to slowly evaporate the alcohol and moisture from the shellac and drive the same off without forming an incrustation of the shellac on the outer surface of the coil; and tenth, heating the coil by increase of current to a high degree to solidify and carbonize to a greater or less extent the shellac and thus make the coil one rigid solid mass and cement the same together and to the core or spool, and to make the insulation fire-proof and water-proof, substantially as specified.

2. The process of making electro-magnet coils of metal tape and insulating tape comprising the following steps:—first, coating one surface of the metal tape with shellac; second, imposing the asbestos tape on the shellac coated surface of the metal tape and turning or folding the edges of the former about the latter; third, wrapping the two with binding thread in open spirals; fourth, winding the combined tape in the permanent coil of the magnet and applying shellac to the outer surface of each turn; fifth, gradually heating the magnet coil thus formed by application of current thereto to a sufficient degree to slowly evaporate and drive off the alcohol and moisture from the shellac; and finally heating the coil by increase of current to a high temperature to solidify and carbonize the shellac, substantially as specified.

3. In the manufacture of electro-magnet coils composed of metal tape and insulating tape coated or impregnated with liquid shellac, the process consisting in first, gradually heating the coil by application of current thereto to a sufficient degree to slowly evaporate the alcohol and moisture from the shellac, and then heating the coil by increase of current to a high temperature to solidify and carbonize the shellac to a greater or less extent and cement the coils together in one rigid solid mass, substantially as specified.

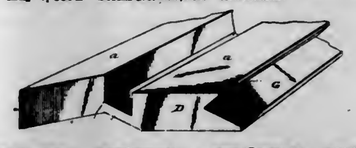
4. The process herein described of gradually heating a magnet coil having an insulating material coated or impregnated with liquid shellac by application of current thereto to a sufficient degree to slowly evaporate the alcohol and moisture from the shellac without forming an incrustation of the shellac on the outer surface of the coil, and then heating the coil by increase of current to a high degree to solidify and carbonize the shellac to a greater or less extent and cement the coils together, substantially as specified.

5. In the manufacture of electro-magnet coils of metal tape and insulating tape, the process consisting in the combination of the following steps, first, coating one surface of the metal tape with shellac, second, imposing the asbestos tape on the shellac-coated surface of the metal tape and turning or folding the edges of the former about the latter; third, wrapping the two with binding thread in open spirals, and then winding the combined tape in the permanent coil of the magnet, and applying shellac to the outer surface of each turn, substantially as specified.

6. The improvement in the art of manufacturing electro-magnet coils of metal tape and insulating tape comprising the following successive steps: first, coating one surface of the metal tape with shellac; second, imposing the asbestos tape on the shellac coated surface of the metal tape and turning or folding the edges of the former about the latter; third, compressing the two together and partially drying the shellac; fourth, wrapping the two with binding thread; fifth, winding the combined tape in the permanent coil of the magnet and applying shellac to the surface of each turn and hammering or pressing the outer face of each turn snugly home or in place against the preceding turns; sixth, compressing the coil and squeezing out the surplus shellac and holding the same so compressed until the shellac becomes partially dried or set; seventh, gradually heating the coil by application of current thereto to a sufficient degree to slowly evaporate the alcohol and moisture from the shellac and drive the same off without forming an incrustation of the shellac on the outer surface of the coil; and finally heating the coil by increase of current to a high degree to solidify and carbonize to a greater or less extent the shellac and thus make the coil one rigid solid mass and cement the same together and to the core or spool, substantially as specified.

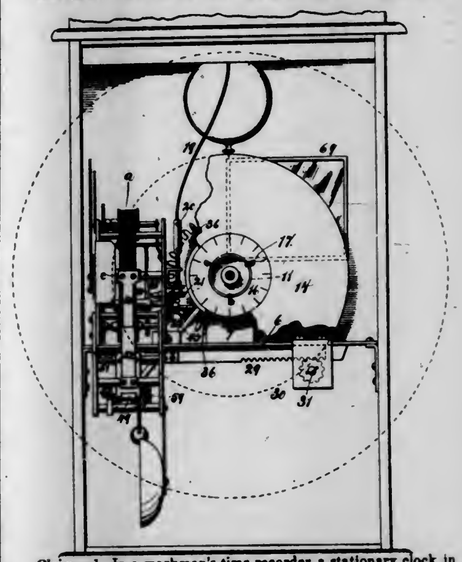
7. The process of making electro-magnet coils of metal tape and insulating tape comprising the following steps: first, coating the metal tape with shellac; second, imposing the asbestos tape on the shellac-coated surface of the metal tape and turning or folding the edges of the former about the latter; third, wrapping the two with binding thread in open spirals; fourth, winding the combined tape in the permanent coil of the magnet, and applying shellac to each turn; fifth, gradually heating the magnet coil thus formed, by application of current thereto to a sufficient degree to slowly evaporate and drive off the alcohol and moisture from the shellac; and finally heating the coil by increase of current to a high temperature to solidify and carbonize the shellac, in said steps or operations the asbestos insulating tape being maintained upon the inner side and the metal tape on the outer side in bending or winding the same to prevent any tendency of stretching or injuring the insulating tape, substantially as specified.

546,221. SHEATHING-LATH. THEODORE H. BROWN, Viroqua, Wis., assignor to Mary Brown and W. E. Casson, same place. Filed May 7, 1894. Serial No. 510,349. (No model.)



Claim.—As an improved article, a sheathing lath comprising the inclined section E, having perpendicular sides, the section D, inclined at an angle to section E, and connected therewith by the inclined strips, the beveled tongue F at the outer upper edge of the section D, and the beveled tongue G, projecting beyond tongue F, at the lower outer edge of said section, substantially as described.

546,222. WORKMAN'S TIME-RECORDER. WILLARD L. BUNDY, Binghamton, N. Y., assignor to the Bundy Manufacturing Company, same place. Filed Feb. 28, 1895. Serial No. 539,960. (No model.)



Claim.—1. In a workman's time recorder, a stationary clock, in combination with a traversing frame, time-wheels mounted therein and connected to, actuated by and synchronous with said clock, and an impression mechanism whereby records are printed from said time-wheels onto a disk and in radial lines thereon and means to carry said disk independent of said frame and contiguous to said time-wheels.

2. In a workman's time recorder, a shaft carrying a workman's record-disk, a workman's numeral dial concentric therewith and means to rotate said shaft to set said disk according to any numeral upon said dial, in combination with a traversing frame, time-wheels carried thereby and synchronous with a stationary clock movement and an impression mechanism carried by said frame and means to operate it to print records from said time-wheels onto said disk at any point to which it is rotated.

3. In a workman's time recorder, a traversing frame, time-wheels mounted therein and a flexible shaft connecting them synchronously to a clock-movement, in combination with a shaft carrying a record disk provided with marginal numerals designating workmen, and means to imprint the numerals of said time-wheels upon said disk at the point to which it is manually rotated and in radial alignment with a marginal numeral for each workman.

4. In a workman's time recorder, the combination with a suitable frame, time-wheels journaled therein, a flexible shaft connecting them synchronously to a clock-movement, and an impression mechanism carried by said frame, and means to traverse said frame, adjacent to a suitably supported and rotatable disk, whereby the time-record of the entrances and departures of workmen are printed upon said disk in radial lines and concentric circular alignment.

5. In a workman's time-recorder, a dial provided with a series of workmen-designating numerals, a central shaft and pointer thereon carrying a record-disk provided with like designating numerals and concentric with said dial, in combination with a frame, time-wheels mounted therein and synchronously connected to a clock-movement, an impression mechanism and means to shift said frame and impression mechanism and set them to print time-records from said time wheels in a radial line upon said disk.

6. In a workman's time-recorder, a dial provided with workmen-designating numerals, a rotatable central shaft and pointer thereon carrying a record-disk provided with like designating numerals whereby the rotation of said shaft sets said disk to correspond with any given numeral upon said dial, in combination with a frame, time-wheels synchronously connected to a clock-movement, an impression mechanism carried by said frame and suitable to print the numerals of the time-wheels in circular alignment, and means to shift said frame, time-wheels and impression mechanism into proper position relative to said disk to imprint time-numeral records from said time-wheels, in concentric circular alignment upon said disk.

7. In a workman's time-recorder a traversing frame, time-wheels mounted therein synchronous with a clock-movement and flexibly connected thereto and an impression mechanism and means to shift them simultaneously to imprint the time indicated by said wheels in concentric circular alignment upon a record-disk, in combination with a manually rotated shaft carrying said record-disk.

8. In a workman's time-recorder a traversing frame, time-wheels mounted therein synchronous with a clock-movement and flexibly connected thereto, and an impression mechanism and means to shift them simultaneously to imprint the time indicated by said wheels in concentric circular alignment upon a suitable rotatable record-disk to record the entrances and departures of all the workmen and in radial alignment thereon to record the individual record of each workman upon a single line.

9. In a workman's time recorder, a minute-wheel, a flexible shaft actuating it through a shaft —22— synchronously with a clock, in combination with a perforated disk upon said shaft —22—, a locking bolt, and means to intermittently actuate said bolt to engage with and set said minute wheel for the purposes set forth.

10. In a workman's time recorder, a workman's numeral-dial, in combination with a shaft central thereto, a pointer upon said shaft turned by the rotation thereof to any numeral upon said dial, a gear upon said shaft and a wedge with which it engages when said shaft is pulled out, whereby the pointer is locked accurately at any numeral.

11. In a workman's time recorder, a workman's numeral-dial, a shaft central thereto, and carrying and rotating a record-disk, a pointer thereon in combination with a gear upon said shaft and a wedge with which it engages when said shaft is pulled out, whereby said record-disk and pointer are accurately set and locked in unison with the numeral upon said dial to which the pointer is turned by the rotation of said shaft.

12. In a workman's time recorder, a workman's numeral-dial, a shaft central thereto, a pointer upon said shaft, and means to support a workman's time-record-disk provided with like workman's numerals, time wheels synchronous with a clock movement, and an impression mechanism, in combination with a gear upon said shaft and means to lock it and said record-disk when said shaft is pulled out at any numeral to which the pointer is turned.

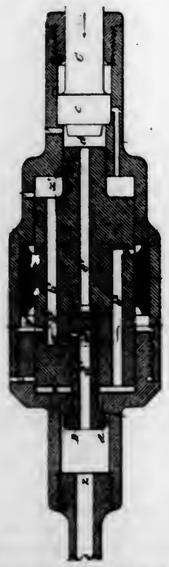
13. In a workman's time recorder, a traversing frame, time-wheels mounted therein and synchronous with a clock-movement, a workman's designating dial, a shaft, a pointer thereon, a lever actuated by the longitudinal movement of said shaft, a bar actuated by said movement, a platen arm swung by the movement of said bar to bring an impression platen into position to print and means to impel said platen to make an impression upon a suitable mounted record-disk.

14. In a workman's time recorder, the combination with a dial, a shaft central thereto and a pointer thereon, of tilting buttons each bearing a workman's designating numeral with one of which said pointer engages when said shaft is pulled out, to tilt it and display the numeral.

15. In a workman's time recorder the combination with a workman's numeral dial and a workman's record-disk concentric therewith and having marginal numerals and adapted to be rotated so that any numeral of said disk will coincide with the like numeral of said dial of an impression mechanism mounted upon a traversing frame whereby records are printed upon said disk, in concentric circles, and in radial alignment with the marginal numerals thereon.

16. In a workman's time recorder, the combination with a suitable track-way and a frame mounted thereon, of a rack-bar upon said frame, a pinion engaging therewith, time wheels mounted in said frame, an impression mechanism also mounted therein and means to rotate said pinion and shift said frame upon said track-way to bring the time-wheels to a predetermined point, with reference to a record-disk suitably mounted to be rotated to a predetermined point.

546,223. PNEUMATIC TOOL. JOHN G. CARLINET, Philadelphia, Pa. Filed May 27, 1895. Serial No. 550,812. (No model.)



Claim.—1. The combination of the casing, a tool carrier, hammer within the casing adapted to strike the tool carrier, a valve adapted to a seat in the casing and having a port, a port in the hammer communicating with the forward end of the casing, with exhaust ports in each end of the casing, the whole so constructed, that as the hammer moves forward, the valve will be off its seat so as to admit fluid under pressure to the rear of the hammer and when the hammer is moved to a certain position the ports of the valve will be uncovered forming communication with the forward end of the casing, the valve in the meantime being seated, substantially as described.

2. The combination in a pneumatic tool, of the casing, the hammer therein, a channel a' in the casing, a tool carrier adapted to said channel and a projection on the hammer resting at all times within the channel and a valve for admitting fluid under pressure first to one end of the cylinder and then to the other, substantially as described.

3. The combination of the casing, the channel a' therein open to the atmosphere at all times, a hammer adapted to reciprocate within the casing and having a projecting end extending into the passage a', a valve having a port, the hammer also having a port, said valve being so constructed as to admit fluid under pressure to either end of the casing, the tool carrier being free to move forward to such an extent that when the tool is relieved of pressure the hammer will have an increased throw so as to throw its ports out of line with the valve automatically and stop the reciprocation of the hammer, substantially as described.

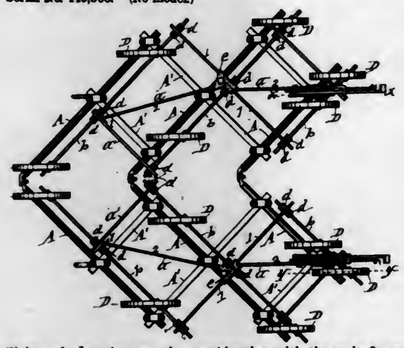
4. The combination of the casing, the tool carrier, the plunger hammer adapted to reciprocate within the casing and act upon the tool carrier, a fluid passage in the casing communicating with the space at each end of the hammer, with a valve adapted to a seat in the casing and arranged to cover or uncover a port in the hammer and to be acted upon by the hammer on its return stroke so as to move it off its seat, with outlet ports communicating with the space at each end of the casing and to be covered and uncovered by the hammer in its reciprocation, substantially as described.

5. The combination of the casing, the hammer within the casing, a tool carrier acted upon by the hammer, a valve adapted to the casing and to the hammer, inlet and outlet ports, an annular piston adapted to reciprocate in the casing, spaces at each end of the piston communicating with the outlet and inlet ports, the ports being so arranged that the piston will travel in a direction opposite to that of the hammer, substantially as described.

6. The combination of the casing having a reduced portion, a tool carrier adapted to reciprocate in the said reduced portion, a cap attached to the casing and having an extension to which the fluid pressure pipe is connected, the fluid passage z in said cap, a seat communicating with the space x in the rear end of the casing, said cap having a valve seat a^3, a plunger B adapted to reciprocate in the casing and having a projection b adapted to reciprocate in the channel a', and to strike the tool carrier on its forward movement, a port b^3 and a passage b' extending to the forward end of the hammer, a valve D having a head adapted to the seat a^3 and adapted to a valve way in the hammer B, a passage d' and a port d^3 in the valve, said port d^3 aligning with the port b on the forward movement of the hammer and on the return movement of the hammer the valve will be moved by the hammer off its seat, with exhaust ports i i' one communicating with the one end of the casing and the other with the opposite end of the casing and so arranged that the hammer will cut off communication with the ports and the spaces at the end of the casing, substantially as described.

7. The combination of the casing, the hammer therefor, mechanism for reciprocating the hammer, a channel a' within the casing, a tool carrier adapted to said channel, the hammer having a part b also adapted to the channel, with a passage a^4 forming communication with the space in front of the hammer and the channel a', said passage being closed by the tool carrier except when the tool carrier is out of use and moved to its extreme forward position, the said channel being opened to the atmosphere at all times, substantially as described.

546,224. HARROW. ORLANDO J. CHILDS, Utica, N. Y., assignor to the National Harrow Company, of New Jersey. Filed Oct. 19, 1892. Serial No. 449,306. (No model.)



Claim.—1. In a harrow the combination with the main frame of a spring harrow tooth having a curved runner portion forward of its point, a shoe secured to said runner portion a tooth holding clip engaging the tooth and pivotally connected to the harrow frame, in rear of said shoe, said clip having a part extending upward in rear of said pivotal connection and adjusting mechanism connected to said upwardly extending part, whereby when the point of the tooth is elevated the shoe will be lowered into contact with the ground substantially as described.

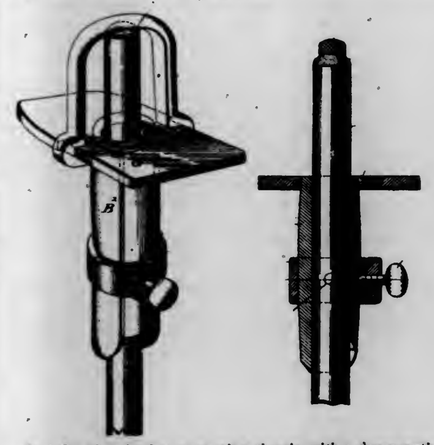
2. In a harrow the combination with the frame bars, of a spring tooth having a curved runner portion forward of its point, a tooth clip pivotally connected with the frame and engaging the tooth in rear of said runner portion, a shoe engaging said runner portion, a securing device for clamping said shoe, tooth and clip, together, said clip having an upwardly extending arm in rear of its point of pivoting and adjusting devices connected with said arm, whereby when the point of the tooth is elevated the shoe will be lowered into contact with the ground, substantially as described.

3. In combination with the teeth-carrying arms —*c*—*c*— and rods —*b*—*b*— connecting said arms transversely in sets, the longitudinal bars —*a*—*a*— formed with corresponding central and end-portions at right angles to the aforesaid rods and with intermediate portions disposed diagonally in relation to said rod, said longitudinal bars having their central portions contiguous to each other and perforated for the reception of the rods through them, and the tie-plates —*e*—*e*— placed on the tops and bottoms of the central portions of the longitudinal bars and formed with the flaring end —*e'*—, and with flanges —*e'*—*e''*— engaging the sides of said bars and perforations —*e''*— in the flaring end —*e'*—, and the bolt —*f*— passing through said perforations and clamping the plates on the longitudinal bars, substantially as set forth and shown.

4. In combination with the teeth carrying arms —*c*—*c*—, rods —*b*—*b*— connecting said arms transversely in sets, and the longitudinal bars —*a*—*a*—, perforated and receiving the aforesaid rods through them, the clamps —*d*—*d*— each formed of diametrically divided sections interlocked with each other at one end and provided with perforated ears at the opposite end, and a clamping bolt passing through said ears, substantially as described and shown.

546,225. HOLDER FOR BILLIARD OR OTHER CUES. THOMAS CLARK, Philadelphia, Pa. Filed Mar. 29, 1895. Serial No. 543,776. (No model.)

Claim.—1. A cue tip fastener consisting of a flat plate, a sleeve having a depending section with slots in its sides, and a loose section with horizontally extending pins in said slots, a clamping collar with screw bearing against said loose section, and a yoke with limbs having grooves at its lower ends connecting it with said plate, said parts being combined substantially as described.



2. A flat plate having an opening therein, with a sleeve section depending therefrom and secured thereto, a loose sleeve section having pins entering slots in the side of said first mentioned section, a clamping collar encircling said sections and having a screw bearing against said loose sleeve section, and a yoke rising from said plate, said parts being combined substantially as described.

546,226. SNAP-HOOK. LEWIS M. COOK, Neenah, Wis. Filed Feb. 19, 1895. Serial No. 538,949. (No model.)



Claim.—1. A snap hook, the upper surface of the body of which is provided with a pocket, and the hook portion extends up over and forms a cover for the same, a spring within the pocket, and a spider pivotally secured within the pocket above the spring, said spider having three similar arms equi-distant from each other and of the same length, two of said arms being adapted to bear against the spring and the remaining one projects above the upper surface of the body adjacent to the hook, substantially as set forth.

2. A snap hook, the body of which is provided with a slot and the hook portion extends up over the slot and forms a cover for the same, a removable piece over the pocket upon the opposite side of the body, a spring within the slot, one end of which is located between the body and one end of the removable piece, and a three armed spider pivotally secured within the slot above the free end of the spring, said arms being equidistant from each other and of the same length, two arms of which are adapted to rest against the spring and the other arm is adapted to project beyond the surface of the body adjacent the hook, substantially as set forth.

546,227. HORSESHOE. GEORGE CUSTER, Bremond, Tex. Filed Dec. 4, 1894. Serial No. 530,820. (No model.)



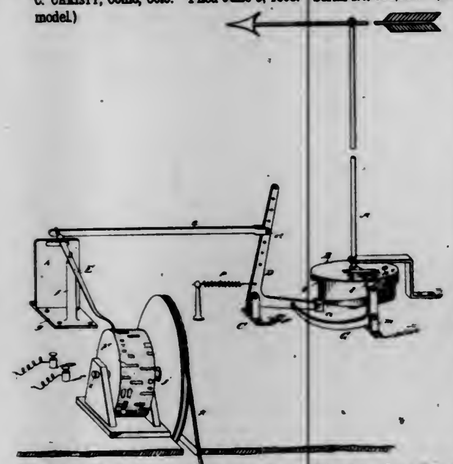
Claim.—1. As a new article of manufacture, a horse shoe wrought in a single piece from a bar of appropriate cross sectional form, and

provided, on its lower or ground surface, with the transverse tapered toe-calk E which is united with its thin edge flush with the front convex of the shoe, said toe-calk having a thickened convex edge projecting beyond the concave back edge of the toe-portion of the shoe, substantially as and for the purposes described.

2. A toe-calk for horse shoes wrought in a single piece of metal which tapers in cross section, and which is thinner at its convex front edge than at its convex rear edge, the width of the calk at its middle portion, between the convex edges thereof, being greater than the width of the toe of the shoe to which the calk is to be united, substantially as and for the purposes described.

3. As a new article of manufacture, a horse shoe having its upper hoof-surface provided with corrugations B, B, and C arranged substantially at right angles to each other, the transverse corrugated heel calks D, D on the lower ground surface, and the tapered corrugated toe-calk E united rigidly to the ground surface of the shoe, the width of said calk E exceeding the width of the toe, its thin convex edge being flush with the toe of the shoe, and its thick convex edge protruding beyond the inner concave edge of the shoe, substantially as and for the purposes described.

546,228. SIGNAL-TRANSMITTER. WILLIS H. DAVIS and HUGH C. CHRISTY, Como, Colo. Filed June 3, 1895. Serial No. 551,514. (No model.)



Claim.—1. In a signal apparatus, the combination of a cam, an angle lever actuated thereby, a toe on the cam, an angle lever connected to the first angle lever and actuated by the toe, a revolving drum, a contact arm connected to the angle levers, and electrical connections, substantially as described.

2. The combination of a cam, a toe thereon, an angle lever operating on the face of the cam, a second angle lever having one arm pivotally connected to the first angle lever and having its remaining arm actuated by the toe of the cam, a revolving drum, a contact arm, a link connecting the drum and angle levers, and electrical connections, substantially as described.

3. The combination of a helical cam, a toe thereon, a lever actuated by the cam, a second lever connected to the first lever and actuated by the toe, a drum, a contact arm, and electrical connections, substantially as described.

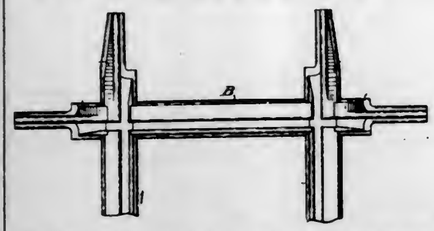
4. The combination with an electrical circuit having means for opening and closing the same, of a cam, a lever engaging said cam and connected to the means for opening and closing the circuit, a toe on the cam, and a second lever connected to the first lever and operating with the toe, substantially as described.

5. The combination with an electrical circuit having means for opening and closing the same, of a cam actuating said means, a toe on the cam, and a lever actuated by said toe and connected with the means for opening and closing the circuit, substantially as described.

6. The combination with an electrical circuit and means for opening and closing the same, of a helical cam having an abrupt shoulder at the contiguous ends of its face, the said face being engaged with the means for opening and closing the circuit, a toe on the cam, and an angle lever having one end pivotally connected to the means for opening and closing the circuit and having the remaining end periodically engaged by the toe, substantially as described.

7. The combination of a cam, an angle lever, a link connected to the angle lever, a pivoted contact arm connected with the link, a continuously revolving drum engaging the contact arm, and electrical connections, substantially as described.

546,229. RAILWAY-CROSSING. THOMAS C. DU PONT, Johnstown, Pa. Filed July 1, 1895. Serial No. 554,564. (No model.)



Claim.—1. In a railway crossing in combination, two rails, one having a dove-tailed recess across it and the other having a groove adapted to receive the remaining portion of the first named rail and a beveled portion fitting the dove-tailed recess in said rail.

2. In a railway crossing in combination, two rails, each having at the crossing point of the other rail a dove-tailed recess and a beveled portion, the dove tailed recess of each being adapted to receive the beveled portion of the other.

3. In a railway crossing in combination, a rail having a recess across it, said recess having curved and beveled sides, and a rail crossing the first mentioned rail and having a portion lying in and fitting within said recess.

546,230. WIRE-FENCE STAY. ALEXANDER FRENCH, Elizabethtown, Ky. Filed Apr. 11, 1895. Serial No. 545,350. (No model.)

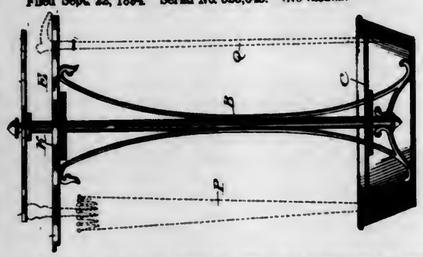


Claim.—1. In a wire fence, the combination with the horizontal wires, of a link member hung pendent from the uppermost of said wires and a hook member engaging two of the horizontal wires, its upper end terminating in an eye portion which embraces one of the said horizontal wires and whose terminal is coiled about the wire and separated from the eye by a space which allows lateral play of the link, substantially as described.

2. In combination with the horizontal strands of a wire fence, of a vertical stay device formed of independent sections, each consisting of a body portion terminating at the top in an outwardly projecting eye, and a coil portion wrapped about the wire, and at the lower end in a turned up or hook member, the body portion of one section being held to play in the eye portion of the other all arranged substantially as shown and described.

3. The combination with the wire strands of two or more slide hook members having each a loop portion at the lower end adapted to slip over a lower strand, a body portion extended up to the next upper strand an outwardly bent eye projected over the said upper strand and having the upper end terminating in a coil wrapped about such upper strand, the body portion of one hook member being passed through the eye of the other member all arranged substantially as shown and for the purposes described.

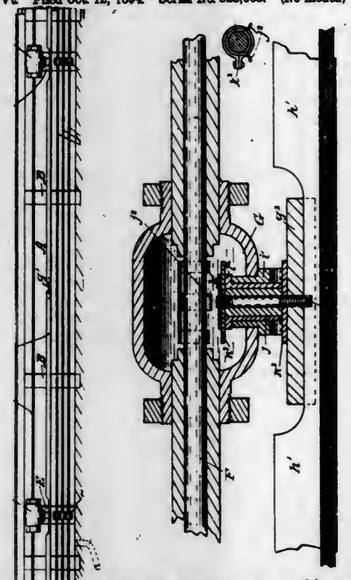
546,231. LOCKING-STAND FOR UMBRELLAS. HORACE FRONEFIELD, Clifton, Pa., and STACY K. MAXWELL and JOSEPH F. MAXWELL, Merchantville, N. J.; said Stacy K. Maxwell assignor to said Fronefield. Filed Sept. 22, 1894. Serial No. 523,845. (No model.)



Claim.—1. A locking stand for umbrellas, consisting of a central standard, a lower spider secured thereon having rings on its periphery, an upper spider with pivoted shackles having openings for keys, and a plate with guards above said shackles, said parts being combined substantially as described.

2. The standard B, the bottom spider C, and the upper spider E with the locking shackles K thereon, in combination with the stationary top plate M, said spiders and plate being parallel and secured centrally to said standard, said plate having the peripheral guards N and said shackles having key holes therein receiving keys as handles for moving the shackles in opposite directions, substantially as described.

546,232. INSULATOR, CONDUCTOR, AND CONDUIT FOR ELECTRICAL WIRES AND CABLES. WILBER R. HITCHCOCK, Cornwall, Canada, assignor of one-half to A. W. Andrews and John D. Miller, Wallingford, Vt. Filed Oct. 12, 1894. Serial No. 525,685. (No model.)



Claim.—1. A sectional working conductor, comprising suitable insulating blocks, and sections joined together by said insulating blocks, each of said sections comprising a wire and a strip of conducting material incasing said wire, the two edges of the strip being brought together and turned upwardly to form a stiff rib, whereby the said section is made rigid vertically, substantially as set forth.

2. The combination with the insulated feeder F and conducting pin I, of the spring clip f^3 held by the bolted clasp k^3, the disk k' secured to the pin I, and the mica insulators n^3, substantially as set forth.

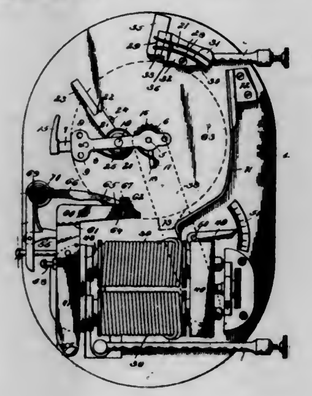
3. In combination with an electrical railway conduit containing wires and cables, an arm connected with a car and carrying a trolley inside said conduit, a slotted body attached to the car through which the arm slides vertically, a cap piece covering a gap in the side of said body and a spring for holding in place said cap piece, substantially as set forth.

546,233. AUTOMATIC ELECTRICAL CUT-OUT. CHARLES C. KRITZER, Grand Rapids, assignor to the Automatic Circuit Breaker Company, Newaygo, Mich. Filed Oct. 31, 1894. Serial No. 527,573. (No model.)

Claim.—1. In an automatic cut out, the combination of a fixed contact having a circuit connection therewith, a suitably arranged stationary pivot post having a circuit connection therewith, an automatically released circularly swinging switch bar pivotally mounted on said post and having a contact to engage the fixed contact, and a circular insulator wall encircling the stationary post and interposed between the fixed contact and said stationary pivot post to obviate a short circuiting of the current between these parts when the contacts are broken, substantially as set forth.

2. In an automatic cut-out, the combination of a fixed contact, a stationary pivot post, a revolving insulator drum supported to rotate on said post adjacent to the fixed contact, the flange or rim of said drum lying between the fixed contact and pivot post, a switch bar arranged within and carried by said drum, said switch bar having at one end outside of the drum a contact adapted to contact with said fixed contact, means for automatically swinging the switch bar and turning the drum connected therewith, and magnet controlled means for locking the drum against rotation, substantially as set forth.

3. In an automatic cut-out, the combination of a fixed contact having a circuit connection, a stationary pivot post having a circuit connection, a spring actuated circularly swinging switch bar pivotally supported on said post and having at its outer end a contact adapted to contact with said fixed contact, a revolving hollow insulator drum loosely mounted on said pivot post over the switch bar and attached to the latter, and magnet controlled means for locking the drum against rotation when the contacts are engaged to close the circuit, substantially as set forth.



4. In an automatic cut-out, the combination of separate adjacent fixed contacts having a common circuit connection, a revolving hollow insulator drum supported for rotation adjacent to the fixed contacts, a circularly swinging switch bar fitted within the drum and provided at its outer end outside of the drum with a contact adapted to engage one of the fixed contacts, a supplemental contact connected to the switch bar and normally projected therefrom beyond the rim of the drum out of alignment with the switch bar and adapted to engage the other fixed contact, and a magnet controlled lock for said switch bar to maintain the connection between the contacts, substantially as set forth.

5. In an automatic cut-out, the combination of separate adjacent fixed contacts having a common circuit connection, a revolving hollow insulator drum supported for rotation adjacent to the fixed contact and provided with a slotted rim, a spring actuated circularly moving switch bar fitted within said drum and provided at its outer end beyond the drum with a contact to engage one of the fixed contacts, a supplemental spring projected contact connected with said switch bar and projected beyond the rim of the drum normally at an angle to the switch bar to engage the other of said fixed contacts, and a magnet controlled lock for the switch bar to hold the contacts together, substantially as set forth.

6. In an automatic cut-out, the combination with adjacent fixed metallic and carbon contacts; of a suitably arranged stationary pivot post having a reduced spindle, a circularly swinging switch bar pivotally mounted at one end on said spindle and provided at its other end with an enlarged contact plug adapted to contact with the fixed metallic contact, an acteating spring connected at one end to the switch bar and at its other end to the pivot post to provide for moving the switch bar normally in one direction, a supplemental switch arm pivotally connected to one side of the switch bar and provided with an integral squared socket, a carbon contact block fitted in said socket and adapted to contact with the fixed carbon contact, a spring connected with the pivoted end of the supplemental switch arm and to said switch bar to provide for normally disposing said switch arm at an angle to the switch bar, and a magnet controlled lock for the switch bar to hold the contacts together, substantially as set forth.

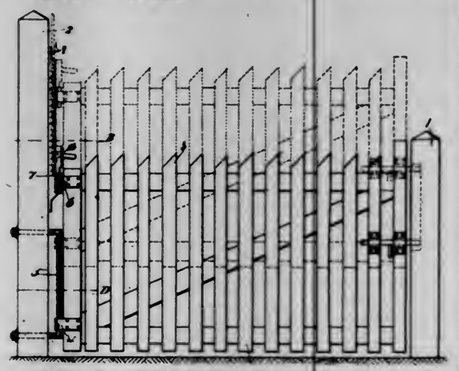
7. In an automatic cut-out, the combination of a base, a metallic attachment plate fitted to said base and provided with a binding post connection, an offstanding supporting post, and a right angularly disposed U-shaped clamp plate portion having inturned flanges, a fixed carbon contact block removably fitted in said U-shaped clamp plate portion, a metallic socket-contact fitted to said offstanding supporting post at one side of the U-shaped clamp plate portion and consisting of a pair of spaced longitudinally slitted metal plates, a suitably arranged stationary pivot post having a circuit connection therewith, a spring actuated circularly swinging switch bar pivotally mounted on said pivot post and having at its moving end a curved and tapered contact plug adapted to fit in said metallic socket-contact, a spring projected supplemental switch arm attached to the switch bar and carrying a carbon contact block adapted to contact with the fixed carbon contact block, a revolving insulator drum mounted to turn on the pivot

post and carried by the switch bar, and a magnet controlled lock for the switch bar to hold the contacts together, substantially as set forth.

8. In an automatic cut-out, the combination of a fixed contact having a circuit connection therewith, a suitably arranged stationary pivot post having a circuit connection therewith, a circularly swinging switch bar mounted on said pivot post and provided at its outer end with a contact, a revolving insulator drum mounted to turn on the pivot post and connected with the switch bar to turn therewith, said drum being provided on its rim with a beveled strike block, a curved recoil spring arranged in a fixed position at one side of the rim of the drum and adapted to be engaged by said strike block, means for turning the drum and switch bar in one direction, and a magnet controlled lock for the switch bar to hold the contacts together, substantially as set forth.

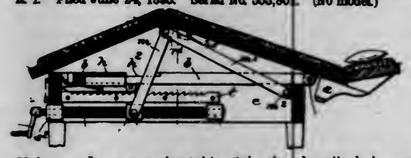
9. In an automatic cut-out, the combination of the base, a fixed contact arranged on the base, a circularly swinging switch bar having a contact adapted to engage the fixed contact, an insulator drum attached to and carried by the switch bar and provided on its outer side with a projected catch pin, a suitably arranged supporting post, a normally spring depressed lock lever pivotally secured at one end on said post and provided at its pivoted end with a notch, said lock lever being provided at its unpivoted end with a catch shoulder adapted to engage said catch pin and with a double inclined lower edge, a stop pin arranged on the outer end of the supporting post to engage in the notch of the lock lever, a pair of electro magnets included in a circuit with said contacts, the swinging armature arranged at one end of the magnets, and an L-shaped armature lever attached at one end to the swinging end of the armature and provided at its other end with a curved contact edge adapted to be engaged by said catch pin of the drum, and an inwardly disposed lifting pin adjacent to said curved edge and adapted to ride against the double inclined lower edge of the lock lever, substantially as set forth.

546,234. GATE-HINGE. JOSEPH T. LUDLEY, BENJAMIN F. KERNODLE, and ISAAC SHELLEY, Jamestown, Ind. Filed Mar. 23, 1895. Serial No. 542,941. (No model.)



Claim.—In a swinging gate hinge, the combination with a swinging gate and its post, of a lower hinge composed of a rod member vertically secured on said post and a plate member secured on said gate and adapted to slide and to turn or pivot on said rod, and an upper hinge composed of a guide vertically secured on said post and having interior rack teeth, a bar adapted to slide in said guide piece and having an engaging dog pivoted thereon, and vertically projecting pins formed integral thereon, one of which is in vertical alignment with said lower vertical rod and a plate member secured on said gate and adapted to pivot only on one of said pins, all substantially as and for the purpose set forth.

546,235. SURGICAL TABLE. WILLIAM T. LUTHER, Providence, R. I. Filed June 24, 1895. Serial No. 553,801. (No model.)



Claim.—1. In an operating table of the class described, the combination, with the fixed frame or body, of an upper table composed of a plurality of sections jointed together and hinged to said frame, a movable frame hinged to the fixed frame interposed between the latter and the upper table and capable of supporting the said table member, an operating screw, a nut adapted to traverse said screw, and suitable connections controlled by the nut through which the table and movable frame, jointly or independently, are elevated upon turning the screw, substantially as described.

2. In an operating table, the combination, with the suitably supported body or base, of the top table member hinged to the base, the movable frame *b* located below the table member and hinged to said base, a slidable plate mounted in the frame *b*, a jointed connection or links hinged to the base adapted to be brought into engagement with the under side of the said table and plate, an operating screw, and a nut mounted to travel on said screw having said jointed connection hinged thereto, substantially as described and for the purpose set forth.

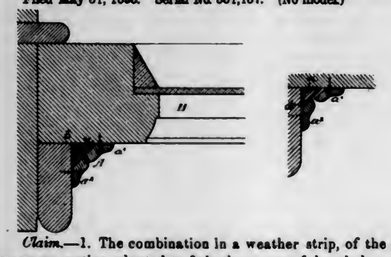
3. In an operating table, the combination, with the body or base portion and upper and lower table members, as *a*, *b*, capable of being attached together, hinged to the base, of an operating screw, a movable nut mounted thereon, a jointed connection hinged both to said base and nut, a slidable plate, and suitable supporting pawls, all constructed and arranged for operation substantially as hereinbefore described and for the purpose set forth.

4. In an operating table, the combination, with the movable upper and lower table members, of a slidable plate interposed between and mounted on one of said table members, and lifting mechanism arranged to bear upon said plate in one position for elevating both tables simultaneously, substantially as described.

5. In an operating table, the combination, with the body or frame, the movable upper table member, a screw and a traveling nut mounted thereon, of a jointed connection hinged to said nut and frame and having the joint portion of said connection provided with a sleeve or roll in frictional engagement with the under side of the table, substantially as described.

6. In an operating table, the combination of an upper table, a lower table or frame adapted to support said upper table and both being hinged to the table body or base, a working screw and nut and connections for elevating one or both tables at will, and pawls and ratchets capable of supporting the tables in position after adjustment, substantially as described.

546,236. WEATHER-STRIP. JACOB M. MARCH, Narberth, Pa. Filed May 31, 1895. Serial No. 551,137. (No model.)



Claim.—1. The combination in a weather strip, of the triangular corner section adapted to fit in the corner of the window and having a tapered back, with a bearing strip adapted to rest against the back of the corner strip and to force it into the corner when the window is closed, substantially as described.

2. The combination of a weather strip made of three sections, the angular corner section adapted to the corner of the window and tapered at the back, with side strips adapted to rest against the back of the corner strip, one side strip and the corner strip being secured to the frame or sash and the other side strip being secured to the other part, substantially as described.

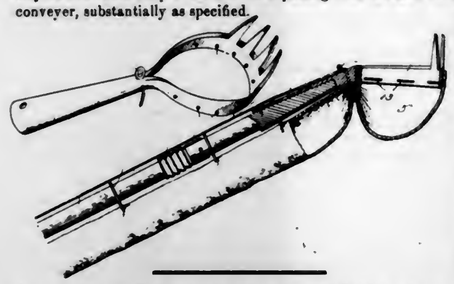
3. The combination of the triangular corner strip having a tapered back and side strips adapted to the back, one side strip being movable independent of the corner strip, substantially as described.

4. The combination of the three strips, the central strip having the tapered back against which the side strips rest, with tapes binding the said strips together, substantially as described.

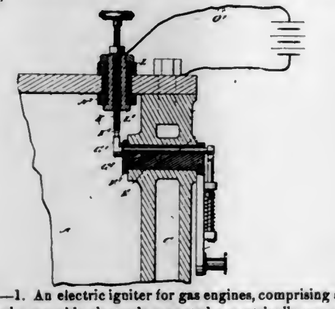
546,237. FRUIT-PICKER. JOHN J. MATHIS, Portageville, Mo. Filed Apr. 29, 1895. Serial No. 547,551. (No model.)

Claim.—1. A fruit picker having an integral head comprising a hollow shank, an oval frame, and detaching fingers rising from the outer or remote end of the frame, a sectional handle having its uppermost section secured in the hollow shank of the head, and couplings between the sections whereby they may be detached, a flexible sack secured to the frame and extended to form a conveyer, guide-rings for the conveyer, and a draw-string arranged at the bottom of the sack whereby communication between the sack and the conveyer may be closed to retain fruit in the former, substantially as specified.

2. In a fruit picker, the combination with a head having an open frame provided with detaching fingers, and a handle connected to the head, of a flexible sack secured to the frame to receive fruit dropped therethrough, said sack being extended to form a conveyer, a guide-eye carried by the head, and a draw-string secured at one end to the head extending around the sack contiguous to the upper end of the conveyer and passed through said guide-eye, whereby the throat of the sack, or the part thereof in communication with the conveyer, may be contracted to prevent fruit from passing from the sack to the conveyer, substantially as specified.



546,238. ELECTRIC IGNITER FOR GAS-ENGINES. FRANK S. MEAD, Montreal, Canada. Filed Feb. 26, 1895. Serial No. 539,761. (No model.)



Claim.—1. An electric igniter for gas engines, comprising a fixed electrode and a movable electrode mounted eccentrically on an oscillating or revoluble shaft or journal, substantially as shown and described.

2. An electric igniter for gas engines, provided with a movable electrode mounted eccentrically on an oscillating or revoluble shaft or journal, substantially as shown and described.

3. In an electric igniter for gas engines, a revoluble rocking shaft or journal, bored eccentrically for carrying an electrode, substantially as shown and described.

4. In an electric igniter for gas engines, an electrode having a cross bar, and a spring-pressed head in engagement with the said cross bar and serving to normally hold the said electrode in one position relative to the axis of the said head, substantially as shown and described.

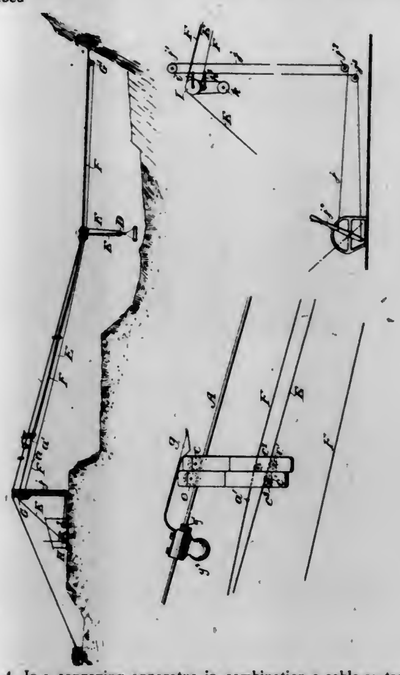
5. In an electric igniter for gas engines, an eccentrically mounted movable electrode, a shaft eccentrically carrying the said electrode, and a spring arranged to hold the said electrode normally in one position relative to the means for rotating or oscillating the said shaft, substantially as shown and described.

546,239. HOISTING AND CONVEYING APPARATUS. THOMAS S. MILLER, South Orange, N. J. Filed Apr. 17, 1894. Serial No. 507,890. (No model.)

Claim.—1. In a conveying apparatus, in combination, a cable or trackway, a load carriage to travel thereon, a series of stops of substantially similar size, a rope carrying the same, a series of rope carriers and means whereby the position of the stop carrying rope is varied with respect to various rope carriers of the series, whereby only one of the series of stops will occupy the proper position with respect to each rope carrier to engage the same, substantially as described.

2. In a conveying apparatus, in combination, a cable or trackway, a load carriage to travel thereon, a plurality of series of stops in each of which series the individual stops are substantially similar in size, a stop carrying rope, a series of rope carriers and means whereby the position of the stop carrying rope is varied with respect to various rope carriers of each series, whereby only one of each series of stops will occupy the proper position with respect to each rope carrier to engage the same, substantially as described.

3. In a conveying apparatus, in combination a cable or trackway, a load carriage to travel thereon, a rope carrier, a clamp attached to the cable or trackway near one end of the span, an arm projecting from said clamp toward the middle of the span and a projection on said arm extending into the path of the rope carrier; the contact surfaces between said projection and said rope carrier on both sides being inclined to the line of travel of the rope carrier, substantially as described



4. In a conveying apparatus, in combination a cable or trackway, a load carriage to travel thereon, a rope carrier containing a wheel c to run upon the cable or trackway, a retainer adapted to bear down on said rope carrier above said wheel and means engaging with said rope carrier, whereby the same is caused to run upon said wheel out of engagement with said retainer, substantially as described.

5. In a conveying apparatus in combination, a cable or trackway, a load carriage to travel thereon, a series of rope carriers each provided with a wheel c running on the cable or trackway, a projection and means whereby the same is yieldingly held in the path of the rope carriers, the surfaces of contact between said projection and each of said rope carriers on both sides being inclined to the line of travel of said rope carriers, substantially as described.

6. In a conveying apparatus, in combination, a cable or trackway, a load carriage to travel thereon, a series of stops, a stop supporting rope, a series of rope carriers provided with rests for the said rope at different elevations and each having adjacent to its rest a constricted opening expanding into a larger opening; whereby when the rope lies on the rest it will be within the constricted opening adapted to engage a stop but otherwise the stop may pass by, substantially as described.

7. In a conveying apparatus in combination, a cable or trackway, a load carriage to travel thereon, a fall rope, a traveler-rope and means whereby the motions of the fall rope may be communicated to said traveler-rope, substantially as described.

8. In a conveying apparatus, in combination, a cable or trackway, a load carriage to travel thereon, a fall rope, a traveler-rope, a sheave whereon said traveler rope is supported, a sheave over which said fall rope passes and a clutch mechanism interposed between said sheaves whereby the motion of one may be communicated to the other, substantially as described.

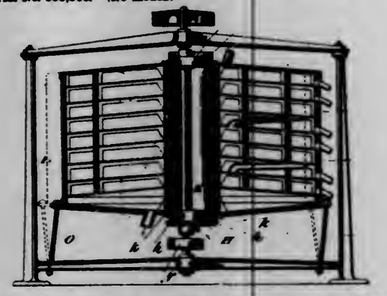
9. In a conveying apparatus, in combination, a cable or trackway, a load carriage to travel thereon, a traveler rope, a fall rope, sheaves whereon said ropes are respectively supported, clutch mechanism interposed between said sheaves and a brake mechanism whereby said traveler-rope sheave may be held, substantially as described.

10. In a rope carrier for a conveying apparatus in combination, the side pieces, means, as the check-pieces d^3 and d^3, whereby the pas-

sage between the side pieces is partially closed and a spring mechanism, as the cheek-pieces *c* and *c'*, whereby the passage is also partially closed, substantially as described.

11. In a rope carrier for a conveying apparatus, in combination, the side pieces having a slotted opening between them, an obstruction, as the cheek-pieces *f* and *f''*, whereby said slotted opening is divided horizontally, an obstruction, as the cheek-pieces d^3 and d^3, whereby said slotted opening is partially closed at one end below said obstruction, *f f''*, substantially as described.

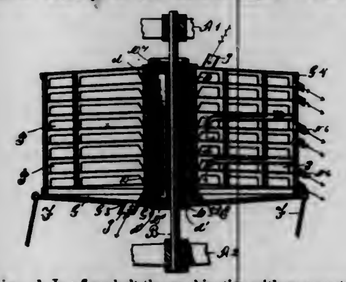
546,240. ACTUATING MECHANISM FOR FLOUR-BOLTS. JOHN A. MCANULTY, Manheim, Pa., assignor to John A. McAnulty, same place, and J. Hamilton Small and W. T. Nelson, York, Pa. Filed Jan. 18, 1895. Serial No. 535,388. (No model.)



Claim.—In a flour bolt the combination of an eccentric shaft for giving gyratory motion to the sieve; a sieve supporting frame sleeved centrally upon and supported by said shaft; means whereby said frame is held against rotation while permitted gyratory movement; and a counter balance on said eccentric shaft, all substantially as and for the purposes hereinbefore set forth

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546,241. FLOUR-BOLT. JOHN A. MCANULTY, Manheim, Pa., assignor to John A. McAnulty, same place, and J. Hamilton Small and W. T. Nelson, York, Pa. Filed Sept. 10, 1894. Serial No. 522,673. (No model.)



Claim.—1. In a flour bolt the combination with an eccentric shaft for giving gyratory motion to the sieves, of a sieve supporting frame sleeved centrally upon and supported by the eccentric shaft and means whereby said frame is held against rotation while permitting gyratory movement, substantially as and for the purposes hereinbefore set forth.

2. In a flour bolt, an eccentric shaft for giving gyratory motion to the sieve or sieves provided with a sieve supporting flange or shelf, in combination with a sieve structure sleeved centrally upon the eccentric shaft and supported by the flange or shelf thereon, and means for holding said structure against rotation, substantially as and for the purposes hereinbefore set forth.

3. In a flour bolt the combination with an eccentric shaft for giving gyratory motion to the sieve or sieves; the sieve structure sleeved centrally thereon, and controlling spring bars attached to the frame of the machine and connected to said structure for restraining the latter from rotation while permitting it to gyrate, substantially as set forth.

4. In a flour bolt, the combination with serrated ribs extending spirally from the center to the circumference of the sieve, and netting forming the bottom of the sieve, of racks attached to said ribs, and balls placed on the netting and between the racks, substantially as set forth.

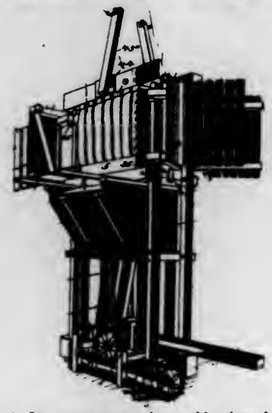
5. In a flour bolt the combination with serrated ribs extending from the center to the circumference of the sieve, and netting forming the bottom of the sieve, of swiveled combs J substantially as and for the purposes hereinbefore set forth.

6. In a flour bolt, a cant board provided with spirally arranged serrated ribs, an outer discharge opening, a feed opening in its bottom, and the conveyer N^4, substantially as set forth.

7. In a flour bolt, the combination of the cant board G the sieves mounted thereon, and provided with spiral serrated ribs as described, the interposed cant board I, and the conveyer N^4 extending from immediately under the discharge opening of the sieve above through the cant board I to the inlet or feed point of the sieve below, substantially as set forth.

8. In a flour bolt, a cant board having spirally arranged serrated ribs, valves S, discharge openings in the ribs back of the valves, and external conveyer T with which said openings communicate, substantially as and for the purposes hereinbefore set forth.

546,242. COTTON-PRESS. JAMES C. NELSON and FERDINAND E. SMITH, Birmingham, Ala., assignors to the Smith Sons Gin and Machine Company, same place. Filed June 14, 1894. Serial No. 514,589. (No model.)



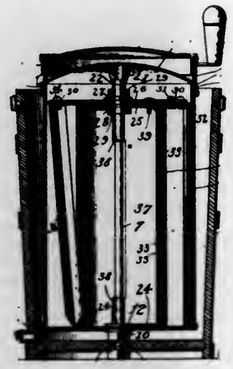
Claim.—1. In a cotton press, the combination with the sill frame, the upright press box, and the vertically moving follower working within said box, of an upright guide frame or housing, a rack bar lever supported to work horizontally in said guide frame or housing below the press box, and having a rack bar on its under side, an operating pinion mounted in said guide frame or housing and meshing with the teeth of said rack bar lever, worm gearing for rotating said pinion, a retaining roller mounted in the guide frame or housing above the rack bar lever, two toggle levers pivotally connected at one end to one end of the rack bar lever, and at their other ends to the under side of said follower, stationary open bearing shoes or sockets secured on the sill frame, said bearing shoes or sockets having socket inclosing rims or flanges open at one end, and a pair of toggle legs pivoted at their upper ends to the toggle lever and provided with lower rounded ends working loosely in said shoes or sockets and adapted to slide in and out of the same through the open ends thereof, substantially as set forth.

2. In a cotton press, the combination with the upright box frame, and the press box open on all sides at its upper end; of opposite pairs of swinging side doors hinged at their ends to the corner posts of said box frame, opposite pairs of end doors pivoted at one end to the side doors, and means for securing the unpivoted ends of the side and end doors when closed, substantially as set forth.

3. In a cotton press, the combination with the upright box frame and the press box open on all sides at its upper end; of opposite pairs of swinging side doors hinged at one end to the corners of said box frame, and adapted to have their free ends meet when closed at the centers of the opposite sides of the press box, opposite pairs of end doors pivoted at one end to the side doors near the hinged points of the latter, said end doors being provided with upper and lower beveled engagement lugs at the free ends thereof, upper and lower retaining plates secured to the upright box frame and provided with inner beveled sides adapted to receive in registering contact said engagement lugs when the end doors are closed, and means for securing the side doors closed, substantially as set forth.

4. In a cotton press, the combination with the upright box frame, the press box open on all of its sides at its upper end, and the follower; of opposite pairs of swinging side doors, swinging lock bars hinged at their upper ends to the upright frame at its upper end and on opposite sides, said lock bars being adapted to be swung down over the meeting ends of the side doors to hold the same closed, L-shaped hooks pivoted at one extremity to the unpivoted ends of said lock bars, and horizontal rotatable releasing rods mounted in a fixed position at opposite sides of the upright frame and provided at both ends with handles, said rods being adapted to be frictionally engaged at an intermediate point by the unpivoted end of the hooks of said lock bars, whereby said unpivoted ends of the hooks can be automatically raised and disengaged from said releasing rods by turning the latter in one direction, substantially as set forth.

546,243. ICE-CREAM FREEZER. ABRAHAM B. OPPY, Payne, Ohio. Filed July 21, 1894. Serial No. 518,233. (No model.)



Claim.—1. In a freezer, the combination of the ice-tub, a stationary center post secured at its lower end to the bottom of the tub, a revolving freezing cylinder mounted to rotate on said center post, an inner ice cylinder fitted within the freezing cylinder, a cap plate fitted on the center post and arranged in the upper open end of the ice cylinder, and a hollow ice-holding cover detachably locked to the upper open end of the freezing cylinder and having a pivotal connection with the upper extremity of the center post, said hollow ice-holding cover being provided with a handle, a convexed bottom and a side drain spout for discharging the drain water into the ice tub outside of the freezing cylinder, substantially as set forth.

2. In a freezer, the combination of the ice tub, a stationary center post secured at its lower end to the bottom of the tub and extended at its upper end into a pivot stud the freezing cylinder, and a hollow ice holding cover removably locked to the upper end of said freezing cylinder and provided on its under side with a pivot step loosely turning on the pivot stud of said center post, substantially as set forth.

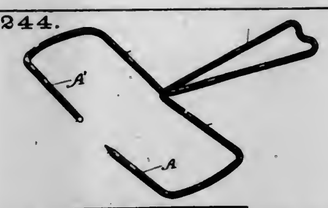
3. In a freezer, the combination of the ice tub, a stationary center post arranged within said tub, a revolving freezing cylinder mounted to rotate on said center post, an inner ice cylinder fitted within said freezing cylinder, a stationary cross bar removably clamped onto the upper end of said center post above the freezing cylinder, a pair of depending scraper blades adjustably attached at their upper ends to one end of said cross bar and twisted at an angle to dispose their scraping edges against the sides of the freezing and ice cylinders between which the blades are arranged, a V-shaped mixer bar adjustably attached at its upper end to the opposite end of said cross bar and extended rearwardly at an angle therefrom in the direction of the rotation of the freezing cylinder, and a cap plate attached to the under side of said cross bar and loosely fitting in the upper end of said ice cylinder, substantially as set forth.

4. In a freezer, the ice tub, a stationary center post arranged within the tub, a revolving freezing cylinder mounted to rotate on said center post, an inner ice cylinder fitted within said freezing cylinder, a stationary vertical abutment plate arranged within said ice cylinder and connected to said center post, a stationary cross bar fitted onto the upper end of the center post above the ice cylinder and provided with a depending shoulder pin adapted to engage at one side of the upper end of said abutment plate, and the scrapers and mixer attached to opposite ends of said cross bar, substantially as set forth.

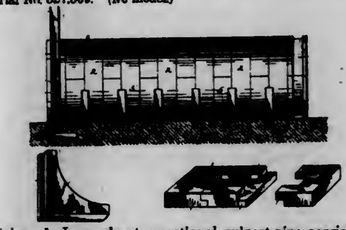
546,244. BILL-FILE. FREDERICK W. OWEN, Toronto, Canada. Filed Apr. 20, 1895. Serial No. 546,553. (No model.)

Claim.—A bill file consisting of oblong shaped arched receiving wires, an oblong shaped handle in one continuous piece with the arched receiving wires, the compression of the opposite sides of which is adapted to render asunder the arched receiving wires, and perforating points for the arched receiving wires to puncture the document or paper filed, substantially as specified.

546,244.



546,245. CULVERT. WILLIAM S. PARKER, Austin, Tex., assignor of one-half to Charles A. Newning, same place. Filed Oct. 31, 1894. Serial No. 527,569. (No model.)

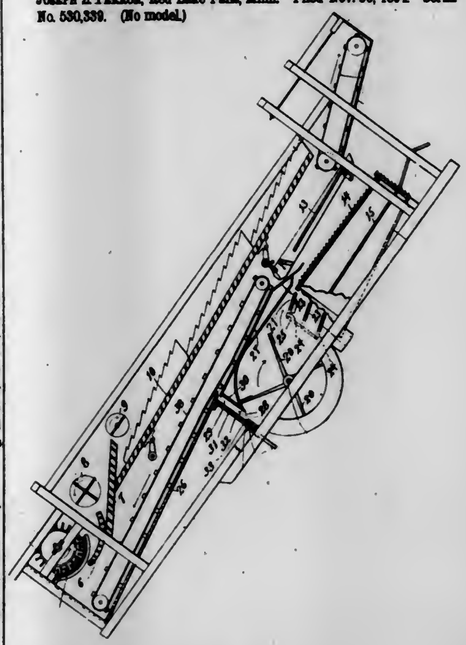


Claim.—1. In a culvert, a sectional culvert pipe consisting of a series of jointed segmental blocks or bricks, and sectional retaining walls separately built on the opposite ends of the culvert pipe and consisting of a series of jointed blocks or bricks, certain of said latter blocks or bricks being provided with segmental or curved sides to fit the exterior surface of the culvert pipe, substantially as set forth.

2. In a culvert, the sectional culvert pipe provided at its opposite ends with exterior circular fastening grooves, and sectional end retaining walls consisting of a series of jointed blocks or bricks, certain of which are triangular in shape and are provided with segmental or curved sides registering in the circular grooves of the pipe, substantially as set forth.

3. In a culvert, the combination of a sectional culvert pipe arch, and opposite sectional foundation stones consisting of a series of jointed blocks or bricks provided at their meeting edges with overlapping joint flanges, said foundation stones having longitudinal top grooves to receive the opposite lower sides of the pipe arch, substantially as set forth.

546,246. GRAIN-SEPARATOR FOR THRASHING-MACHINES. JOSEPH Z. PERRON, Red Lake Falls, Minn. Filed Nov. 30, 1894. Serial No. 530,339. (No model.)

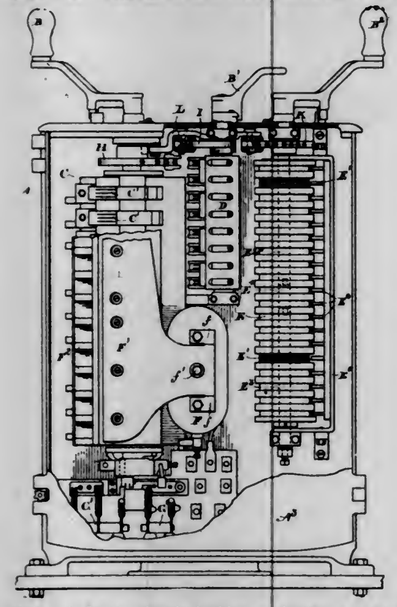


Claim.—1. In a grain separator for thrashing machines, the combination, of a frame having a grain-pan within which the chaff and dirt are separated from the grain, the bottom of said grain-pan composed of a movable section and a non-movable section, a chain carrier running longitudinally of this pan, a fan casing provided at its front and rear, respectively, with openings, the front opening having communication with the opening in the bottom of the grain-pan formed between the contiguous edges of the movable and non-movable sections, and means for raising and lowering the end of the movable section of the grain-pan bottom, substantially as set forth.

2. In a grain separator for thrashing machines, the combination, of a frame having a grain-pan within which the chaff and dirt are separated from the grain, the bottom of said grain-pan composed of a movable and a non-movable section, a chain carrier running longitudinally of this pan, a fan casing provided in its front portion with an opening, a rear rigid partition extending upwardly from this opening to the rigid section of the bottom of the grain-pan, a front board removed from the rear rigid partition to form a vertical passage, said board having its lower edge loose, and its upper edge secured to the movable section of the bottom of the grain-pan, means for raising and lowering this board, and a fan within the casing, substantially as set forth.

3. In a grain separator for thrashing machines, the combination of a frame having a grain-pan within which the chaff and dirt are separated from the grain, the bottom of said pan composed of a movable and a non movable section, a chain carrier running longitudinally of this pan, a fan easing provided in its front portion with an opening, a rear rigid partition extending upwardly from this opening to the rigid section of the bottom of the grain-pan, a front board removed from the rear rigid partition to form a vertical passage, said board having its lower edge loose and its upper edge secured to the movable section of the bottom of the grain-pan, an annular bracket secured to the board, and having the edge of its horizontal portion provided with a recess, a lever having its upper end formed into a toothed segment, a pin adapted to be passed into the space between any of the teeth of the segment, and into the registering recess of the annular bracket, and a fan within the casing, substantially as set forth.

546,247. **ELECTRIC BRAKE.** WILLIAM B. POTTER, Schenectady, N. Y., assignor, by mesne assignments, to the General Electric Company, of New York. Filed Jan. 19, 1895. Serial No. 535,430. (No model.)



Claim.—1. In an electric braking mechanism, a controlling switch for the electric motors, a brake switch, a reversing switch, and means adapted to prevent a simultaneous operation of any two of the switches.

2. In an electric braking mechanism, a controlling switch, a reversing switch, a brake switch, and means adapted to prevent the operation of the reversing switch and the brake switch while the controlling switch is being operated.

3. In an electric braking mechanism, a controlling switch, a reversing switch, and a brake switch, and means adapted to prevent the operation of the controlling switch and the brake switch while the reversing switch is being operated.

4. In an electric braking mechanism, a controlling switch, a reversing switch, and a brake switch, and means adapted to prevent the operation of the reversing switch and the controlling switch while the brake switch is in operation.

5. In an electric braking mechanism, a reversing switch, a controlling switch and a brake switch, and interlocking mechanism between the reversing switch and one of the other switches, the other switches being connected.

6. In an electric brake, a controlling switch and a brake switch, and means connecting the switches arranged to cause the operation of one of them to always bring the other to the off position before the actuated switch is brought into operative position.

7. In an electric brake, a controlling switch, a brake switch, and gearing connecting the two switches and arranged to always bring one of them to an off position by the operation of the other before the operated switch affects the motor circuits.

8. In an electric brake, a brake switch, fixed contacts co-operating therewith, an idle portion and operative contacts upon the brake switch, a controlling switch similarly provided with fixed contacts, operative contacts, and an idle portion, and connecting mechanism between the two switches; whereby the fixed contacts of one switch are upon the idle portion of that switch while the fixed contacts of the other switch are upon the operative contacts of that switch, and vice versa.

9. In an electric brake, a cylindrical controlling switch having operative contacts and a blank portion upon the cylinder, fixed contacts co-operating with the controlling switch cylinder, a cylindrical brake switch similarly arranged, fixed contacts co-operating therewith, and mechanism adapted to bring the fixed contacts upon one switch over the blank portion of the cylinder when the fixed contacts of the other switch are upon the operative contacts upon its cylinder, and vice versa.

10. In combination, a plurality of switches, and mechanism connecting them adapted to bring part of them to the off position while permitting the further movement of the remainder.

11. In an electric brake, a controlling switch, a brake switch, and co-operating mechanism adapted to bring the controlling switch to rest at its off position while permitting the further rotation of the brake switch.

12. In an electric brake, a controlling switch, a brake switch, and co-operating mechanism adapted to retard the movement of the controlling switch as it approaches the off position while permitting the further movement of the brake switch.

13. In an electric brake, a controlling switch, a brake switch, and co-operating mechanism adapted to progressively retard the movement of the controlling switch as it approaches the off position while permitting the further movement of the brake switch.

14. In an electric brake, a brake switch, a controlling switch, mechanism connecting the two switches, a reversing switch having a handle removable in one position only, and an interlocking mechanism adapted to lock the brake switch and controller by the movement of the reversing switch to the position in which its handle may be removed.

15. In combination, a motor gear-casing, a brake shoe, and means for supporting the brake shoe upon the gear-casing.

16. In combination, a motor gear-casing, a brake shoe, lugs upon the gear-casing, and co-operating parts upon the brake shoe adapted to engage with the lugs.

17. In combination, a motor gear-casing, a brake shoe upon the gear-casing, and springs between the casing and the brake shoe.

18. In combination, a motor gear-casing, a brake shoe, means for supporting the brake shoe upon the casing, and springs connecting the casing and brake shoe at an angle to the plane of the shoe.

19. As a new article of manufacture, a brake shoe for an electric braking mechanism, composed of an iron frame and segmental blocks supported therein provided with coil chambers; the frame being made in portions spaced apart and adapted to engage with supporting means for the shoe.

20. In a braking apparatus and in combination, a rotating disk affixed to the axle of the car, a brake shoe co-operating therewith, and a mechanical clamp or clutch adapted to hold the two in engagement, substantially as described.

21. In combination, a rotating disk affixed to the car axle, an electro-magnetically operated brake shoe, and a clamp or clutch co-operating therewith, arranged to hold the two parts in engagement after the cessation of current.

22. In a braking mechanism and in combination, a rotating disk affixed to the car axle, a brake shoe co-operating therewith, and a clutch comprising a bar having a lug at a right angle thereto, and means adapted to take up the play between the lug and the side of the disk or to release the lug, substantially as described.

23. In combination, a rotating disk affixed to the car axle, a brake shoe, a clamp comprising a bar having a lug at a right angle thereto, means for taking up the play between the lug and the disk or for releasing the lug, a braking switch upon the car, and a connection between the clutch and the switch, whereby the clutch is operated in the last position only of the switch.

24. As a means of providing a magnetic field adapted to extinguish arcs at the contacts of a switch cylinder, a coil connected between two of such contacts, and adapted to polarize the shaft of the cylinder.

25. As a means of providing a magnetic field adapted to extinguish arcs at the contacts of a switch cylinder, a plurality of coils respectively connected between contacts near the ends of the switch cylinder.

26. As a means of providing a magnetic field adapted to extinguish arcs at the contacts of a switch cylinder, a shaft composed of two pieces of iron divided by a piece of non-magnetic metal, and a plurality of coils connected between the contacts on the switch cylinder.

27. As a means of providing a magnetic field adapted to extinguish arcs at the contacts of a switch cylinder, a shaft consisting of two pieces of iron united by a piece of non-magnetic metal, and a coil connected between the contacts of the switch cylinder adapted to magnetize the shaft, thus forming a magnet adapted to extinguish any arc that may be formed.

28. As a means of forming a magnetic field adapted to extinguish arcs at the contacts of a switching mechanism, a magnetic circuit of iron or steel consisting in part of the shaft of the switching mechanism interrupted by a piece of non-magnetic metal, and a coil energizing such circuit.

29. In an electric braking mechanism, the combination of two electric motors, separate retarding means for the wheels, operated by the motors, and means for cutting out either one of the motors while still maintaining the operativeness of the retarding means for the wheels.

30. In combination, in an electric braking mechanism, a plurality of braking-magnets and two electric motors with cut-out switches adapted to cut out either one of the motors and leave all of the brake magnets in circuit with the other motor.

31. In an electric braking mechanism, a plurality of electric motors and a plurality of brake-magnets; in combination with cut-out switches adapted to remove a part of the motors from the circuit, leaving the rest of the motors in circuit with the brake-magnets.

32. In an electric braking mechanism, electric motors, brake-magnets, and connections between the two; in combination with switching mechanism provided with a frame, such frame forming part of the circuit between the motors, the switch, and the brake magnets.

33. In combination, a controlling switch having an off position, a brake switch having an off position, a reversing switch having an intermediate position in which position only its handle is removable, and interlocking mechanism between the three switches whereby the brake switch and controlling switch are locked in their off positions when the reversing switch is in the position in which its handle may be removed.

34. In a locking mechanism for an electric brake, a rotating disk fast to the axle of the car, a brake-shoe co-operating therewith, a bar spanning the two and having a removable lug adapted to engage the outer surface of disk, and means for taking up the play between the lug and the disk when the shoe and the disk are in engagement.

35. The means for locking a braking mechanism herein set out, consisting of a bar provided with a lug, means arranged to take up the play of the lug, and springs adapted to restore the lug to its central position when released.

36. The means for locking a braking mechanism herein set out, consisting of a bar provided with a lug at right angles thereto, an eccentric arranged to take up the play of the lug, and springs adapted to restore the lug to its central position when released.

37. The means, herein set out, for locking two opposing surfaces together, consisting of a bar provided with a lug at an angle thereto, an eccentric adapted to take up the play between the bar and one of the opposing surfaces when they are brought into contact, and leaf springs attached to the bar, bearing against suitable abutments or pins and adapted to return the bar to a central position upon its release, substantially as described.

38. In combination, an electric motor, a car axle geared to the motor, a disk fast to the car axle, and a brake-shoe co-operating with the disk, the brake-shoe being suspended upon a part of the motor.

39. In combination, an electric motor, a car axle geared thereto, a disk fast to the car axle, a brake-shoe co-operating with the disk, and a locking mechanism adapted to maintain the engagement of the brake-shoe and disk after the cessation of current.

40. In combination, an electric braking apparatus, and a mechanical lock for such apparatus controlled by the last movement only of the brake switch.

41. In combination, an electric braking apparatus and a mechanical lock for such apparatus controlled by the last normal movement only of the brake switch.

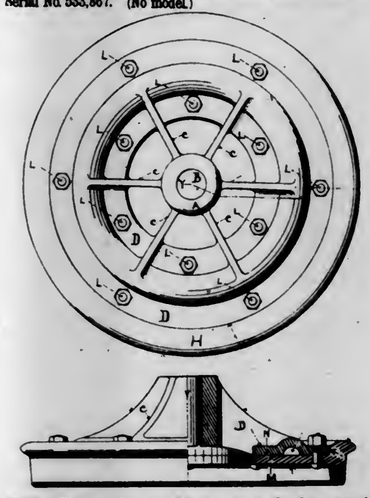
42. In combination, an electric motor, a car axle geared thereto, a disk fast to the car axle, a brake-shoe co-operating with the disk, a controlling mechanism for the brake, and a lock or clamp adapted to be put on by the last motion of the controlling mechanism after the shoe and disk are in engagement.

43. In combination, a series-parallel controller, a reversing switch and a brake switch, and interlocking mechanism preventing the simultaneous operation of any two of the switches.

44. In an electric braking apparatus, a rotary cylindrical switch having a shaft of magnetic material, and coils adapted to energize the shaft.

45. An interlocking mechanism for electric switches, substantially as described, comprising a bolt, as L, registering with a notch upon one of the switches, pawls, as i^2, K^2, connected to the bolt by pins and slots, and cams upon two of the switches co-operating with the pawls, one of the cams having a projection adapted to prevent the motion of the pawl upon the other cam when the first cam is rotated.

546,248. **CAR-WHEEL.** WALTER C. PYOTT, Philadelphia, Pa., assignor to himself and Otto J. Haegler, same place. Filed Jan. 4, 1895. Serial No. 533,867. (No model.)



Claim.—The combination in a car wheel, of a central portion composed of a hub, spokes therefrom connecting the hub to an outer circular plate, said outer circular plate having two flat surfaces with the single pocket formed between them, and an outer integral rim portion having an annular web, the flat surfaces of the circular plate being bolted to the inside of the annular web by a line of bolts each side of the single pocket metal to metal, and diametral contact being made between the two parts of the wheel only at the periphery of the outer circular plate on a seat formed under the flange of the integral rim portion, and back of the annular web, substantially as described.

546,249. **POWER-TRANSMITTER.** DANIEL S. REGAN, San Francisco, Cal., assignor of two-thirds to Belle W. Birrell, same place, and Michael J. Egan, Brooklyn, N. Y. Filed June 7, 1894. Serial No. 513,739. (No model.)



Claim.—1. The combination with a driving shaft and an eccentric fixed thereon and revolving therewith, of a combined external and

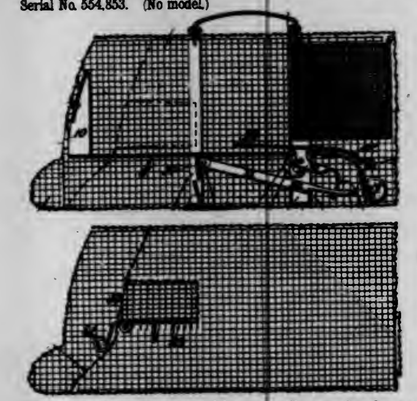
internal gear wheel revolving loosely upon and driven by the eccentric, and the internal and external gear wheels respectively engaging said external and internal gear.

2. The combination with an electric motor and its driving shafts of an eccentric fixed thereon and revolving therewith, a combined external and internal gear wheel revolving loosely upon and driven by the eccentric, and internal and external gear wheels respectively engaging said external and internal gear, substantially as described.

3. The combination with a driving shaft and an eccentric fixed thereon and revolving therewith, of a combined external and internal gear wheel revolving loosely upon and driven by the eccentric, the internal and external gear wheels respectively engaging said external and internal gear and a balance on the shaft for counterbalancing the eccentric and the gearing supported thereon, substantially as described.

4. The combination of a driving shaft, an eccentric fixed thereon and revolving therewith, a combined external and internal gear wheel revolving loosely upon and driven by the eccentric, an internal gear on the shaft engaging the aforesaid external gear and having a greater diameter and a greater number of teeth, and an external gear likewise on the shaft and engaging the internal gear of the combined gear wheel and having a less number of teeth than the internal gear, together with a balance on the shaft for counterbalancing the eccentric and the gearing supported on the eccentric, substantially as described.

546,250. RAT-TRAP. WILLIAM H. SALLEE, Columbia, Ky., assignor of one-half to Charles M. Sallee, same place. Filed July 3, 1895. Serial No. 554,853. (No model.)



Claim.—1. A rat-trap comprising two adjacent chambers, separated by a longitudinal partition, one chamber having a floor pivoted and suitably weighted, its vibrating end provided with a gate adapted to close an entrance-opening, a trigger-bar pivotally connected at one end to said floor and having a shoulder near the other end to engage a transverse rib, or plate, a tripping-bar having an eye, or loop, to receive the reduced prolongation of the tripping bar, and a tripping-plate rigid with the tripping-bar and pivotally supported above and by the floor, the separating partition having an opening which is disclosed by the drop of the pivoted floor, substantially as described.

2. A rat-trap, consisting of two adjacent chambers, a pivoted and weighted floor in one chamber, its vibrating end having a gate adapted to close an entrance to the trap, a trigger-bar pivotally connected to lugs on the lower face of the floor and provided with a shoulder to engage a transverse rib, or plate, and a tripping-plate lying above the floor, and having a tripping-bar rigid therewith, its end having an eye or loop to receive a prolongation of the trigger-bar, substantially as described.

3. In a rat-trap, having two adjacent chambers communicating by an opening in a separating partition at the forward, or entrance end of the trap, a floor pivoted and weighted in one chamber and having a gate normally standing above the entrance opening, the floor being normally above the opening in the partition, and a trigger-bar pivoted at one end to the lower face of the floor forward of its pivotal point, said bar having a shoulder to engage a transverse rib and support the floor, a tripping-bar having an eye or loop to loosely receive a prolongation of the tripping bar, a tripping plate arranged above the floor and rigid with the tripping-bar, said tripping bar being pivoted between lugs dropped from the floor, substantially as described.

4. In a rat-trap, the combination with two adjacent chambers of a floor pivoted in one and having a gate normally lying above an entrance opening, a trigger-bar, a tripping-bar and plate the bar being loosely connected to the trigger-bar, and the tripping plate being operated by the weight of the rat to trip the trigger-bar, drop the floor, close the entrance and disclose an opening in the partition between the chambers, a trap-hole being provided in the adjacent chamber and a pivoted, normally closed floor for said trap-hole, substantially as described.

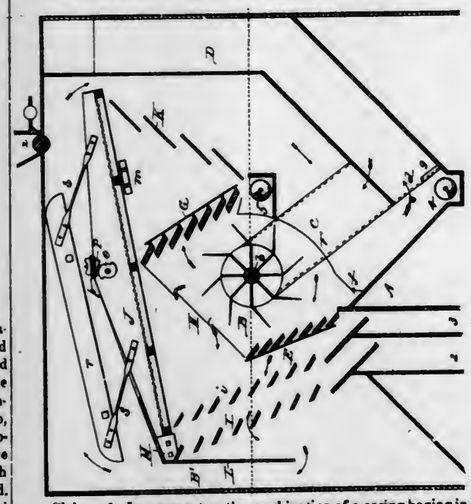
546,251. SKEIN-THREAD HOLDER. WILLIAM C. SCHROEDER, La Porte, Ind. Filed June 22, 1894. Serial No. 515,384. (No model.)



Claim.—1. A thread package, consisting of a folded casing embracing the skein, the said casing being provided with a bearing piece, folded upon itself, the bight of the fold forming a bearing for the skein and a partition between the sides of the skein, the said folded bearing piece being permanently attached to one only of the opposite sides of the casing, substantially as set forth.

2. A thread package, consisting of a folded casing for embracing the skein, one of the folded parts of the casing located between the walls of the casing being further folded, the bearing edge of the fold extending transversely to the longitudinal direction of the skein and forming a partition between the sides of the skein, substantially as set forth.

546,252. SEPARATOR. DELOS SEWELL, Buffalo, N. Y., assignor to the Grand Rapids Scalper, Grader and Purifier Company, Grand Rapids, Mich. Filed Feb. 16, 1891. Serial No. 381,719. (No model.)



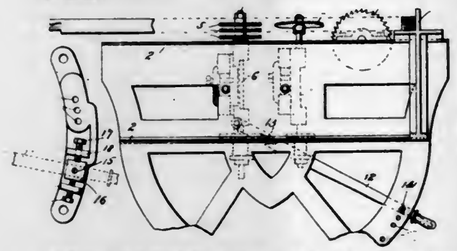
Claim.—1. In a separator, the combination of a casing having inlet and outlet openings; a fan revolving freely within said casing, a housing for said fan, having openings through the walls thereof and the described slat valves to regulate the flow of air through said openings from within outward, and an air flue, leading from without said housing into the eye of the fan, substantially as and for the purpose described.

2. In a separator, the combination of a casing having inlet and outlet openings, a fan revolving freely within said casing, a housing for said fan having openings through the walls thereof, and the described slatted valves to regulate the flow of air through said openings from within outward, an air flue leading from without said housing into the eye of the fan, and a scalper sieve located within said casing, adapted to be vibrated, substantially as and for the purpose described.

3. In a separator, the combination of an outer casing having a feed opening and outlet openings; a fan freely revolving within said casing, a system of diaphragms and slat valves forming a housing around said fan; a scalper sieve arranged to receive material from the feed opening and distribute it across the interior of said casing into the moving bodies of air, a slat valve having numerous openings and arranged to direct the air from said fan upward toward the tail of said sieve and a dip-board L arranged at the tail of said sieve as described to produce an eddy in the air current, and more thoroughly aspirate the material passing over the tail of the sieve as described.

4. In a separator, the combination of a casing, a fan revolving therein, a housing for said fan composed of diaphragms and valve closed openings as described; a flue leading from without said housing into the eye of said fan and valves arranged to permit the escape of dust improperly collecting within said housing, substantially as and for the purpose described.

546,253. SASH-STILE-DOVETAILING MACHINE. DANIEL A. SHOLLENBERGER, Montgomery, Pa. Filed July 3, 1895. Serial No. 554,860. (No model.)

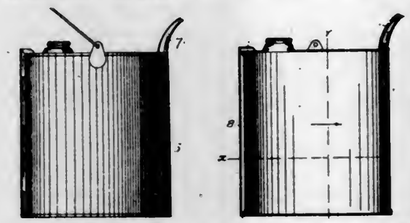


Claim.—1. In a machine for dovetailing stiles &c., the combination of a frame, a carriage, an inclined cutter head 4 vertically adjustable, a vertically adjustable mandrel carrying a series of three or more cutters differently spaced with reference to each other, a lever for vertically adjusting said mandrel, a stationary part carrying a series of holes adapted to be engaged by said lever, the lower hole being adjustable with reference to the other holes, substantially as described.

2. In a machine for dovetailing stiles &c., the combination of a frame, a carriage, an inclined cutter head, a vertically adjustable mandrel carrying a series of cutters differently spaced with reference to each other, and means for adjusting and locking the maudrel, substantially as described.

3. In a machine for dovetailing stiles &c., the combination of a frame, a carriage slidable thereon, a horizontally inclined cutter supported in the frame, a vertical mandrel supported in the frame to the rear of the inclined cutter, three cutters secured on the mandrel, the intermediate cutter being nearer to one of its adjacent cutters than the other, and means for vertically adjusting the mandrel to bring either the upper cutter or the lower cutter approximately in line with the horizontally-inclined cutter, substantially as described.

546,254. OIL-CAN. ALBERT C. SMITH, Denver, Colo., assignor of one-fourth to William C. Ghost, same place. Filed Mar. 25, 1895. Serial No. 543,091. (No model.)

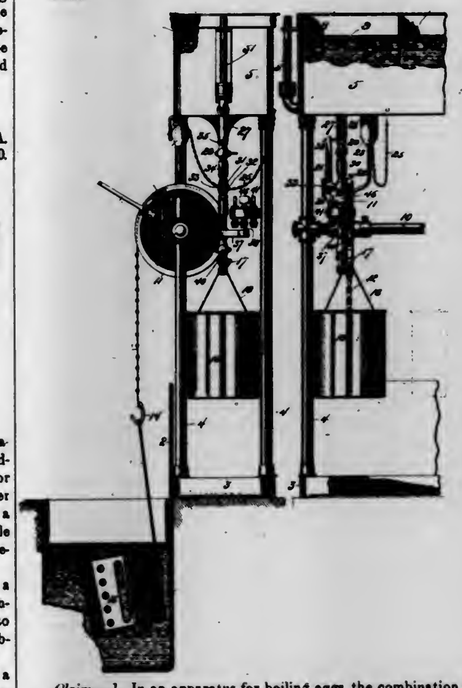


Claim.—1. The combination with a can or receptacle of the character described, of a bent tube or trap attached to the interior surface of the wall of the can on the side lowermost when the can is tipped to the pouring position, one limb of the tube being open on the inside of the can, while the other protrudes through an aperture in the top thereof, and a nozzle slipped over the protruding extremity of the discharge limb of the trap and fastened to the top of the can, substantially as described.

2. An oil can having an exteriorly located vent-channel communicating with the interior of the can through an orifice formed in the top thereof, its opposite extremity being flush with the bottom of the can, substantially as described.

3. As an improved article of manufacture, an oil can having an interiorly located trap through which the liquid passes to the nozzle, and an exteriorly located vent channel communicating with the interior of the can through an orifice formed on the top thereof, its opposite extremity being flush with the bottom of the can, substantially as described.

546,255. AUTOMATIC EGG-BOILING APPARATUS. JACOB R. SPRAGUE, St. Louis, Mo. Filed June 29, 1895. Serial No. 554,405. (No model.)



Claim.—1. In an apparatus for boiling eggs, the combination of a boiler, an egg receptacle, a water receptacle, a connection between said receptacles, a source of water supply, a pipe leading from said source of supply, a cock or valve in said pipe, and means carried by said receptacles and connection arranged to operate said cock or valve, substantially as described.

2. In an apparatus for boiling eggs, the combination of a boiler, an egg receptacle, a water receptacle, a flexible connection between said receptacles, a source of water supply, a pipe leading from said source of supply, a cock or valve in said pipe, and means carried by said receptacles and their connection arranged to operate said cock or valve, substantially as described.

3. In an apparatus for boiling eggs, the combination of a boiler, an egg receptacle, a water receptacle, a flexible connection between said receptacles, a pulley on which said connection travels, a source of water supply, a pipe leading from said source of supply, a cock or valve in said pipe, and means carried by said pulley arranged to operate said cock or valve, substantially as described.

4. In an apparatus for boiling eggs, the combination of a boiler, an egg receptacle, a water receptacle, a flexible connection between said receptacles, a pulley on which said connection travels, a source of water supply, a pipe leading from said source of supply, a cock or valve in said pipe, and an arm on said pulley arranged to operate said cock or valve, substantially as described.

5. In an apparatus for boiling eggs, the combination of a boiler, an egg receptacle, a water receptacle, a flexible connection between said receptacles, a pulley on which said connection travels, a weight at one side of said pulley, a source of water supply, a pipe leading from said source of supply, a cock valve in said pipe, and an arm on said pulley arranged to operate said cock or valve, substantially as described.

6. In an apparatus for boiling eggs, the combination of a boiler, an egg receptacle, a water receptacle, a flexible connection between said receptacles, a pulley on which said connection travels, a source of water supply, a pipe leading from said source of supply, a cock or valve in said pipe, an arm secured to said cock or valve, and an arm on said pulley arranged to operate said cock or valve by contact with the arm thereon, substantially as described.

7. In an apparatus for boiling eggs, the combination of a boiler, an egg receptacle, a connection between said receptacles, a source of water supply, a pipe leading from said source of supply, means operated by said receptacles and connection to control the passage of water through said pipe, and one or more cocks

or valves provided with nipples, through which water is permitted to discharge into said water receptacle, substantially as described.

8. In an apparatus for boiling eggs, the combination of a boiler, an egg receptacle, a water receptacle, a connection between said receptacles, a source of water supply, a pipe leading from said source of supply, means operated by said receptacles and connection to control the passage of water through said pipe, a cock or valve through which water may discharge into said water receptacle, and a nipple applied to said cock or valve, substantially as described.

9. In an apparatus for boiling eggs, the combination of a boiler, an egg receptacle, a water receptacle, a connection between said receptacles, a source of water supply, a pipe leading from said source of supply, means operated by said receptacles and connection arranged to control the passage of water through said pipe, and a multiple valve provided with plugs which are supplied with nipples, substantially as described.

10. In an apparatus for boiling eggs, the combination of a boiler, an egg receptacle, a water receptacle, a connection between said receptacles, a source of water supply, a pipe leading from said source of supply, and means operated by said receptacles and connection to control the passage of water through said pipe, an arm provided with a passageway secured to said pipe, a multiple valve mounted on said arm, said multiple valve consisting of a disk containing ducts or channels and plugs arranged to control the passage of water through said ducts or channels, and nipples through which the water discharges from said plugs to said water receptacle, substantially as described.

11. In an apparatus for boiling eggs, the combination of a boiler, an egg receptacle, a water receptacle, a connection between said receptacles, a pulley on which said connection travels, a weight on said pulley, an arm on said pulley, a source of water supply, a pipe leading from said source of supply, a cock or valve in said pipe arranged to be operated by the arm on said pulley, a cock or valve through which the water is discharged from said pipe, and one or more nipples applied to said cock or valve, substantially as described.

12. In an apparatus for boiling eggs, the combination of a boiler, an egg receptacle, a water receptacle, a connection between said receptacles, a source of water supply, a strainer through which the water of said source of supply passes, a pipe leading from said source of supply, a cock or valve in said pipe, a means carried by said receptacles arranged to operate said cock or valve, substantially as described.

13. In an apparatus for boiling eggs, the combination of a boiler, an egg receptacle, a water receptacle, a connection between said receptacles, a water tank, a strainer located in said water tank, a pipe leading from said tank, a cock or valve in said pipe, and means carried by said receptacle and connection arranged to operate said cock and valve, substantially as described.

14. In an apparatus for boiling eggs, the combination of a boiler, an egg receptacle, a water receptacle, a connection between said receptacles, a water tank, partitions in said tank, a strainer located in said tank, partitions in said strainer, a pipe leading from said tank, a cock or valve in said pipe, a means carried by said receptacles and connection arranged to operate said cock or valve, substantially as described.

15. In an apparatus for boiling eggs, the combination of a boiler, an egg receptacle, a water receptacle, a connection between said receptacles, a pulley on which said connection travels, an arm on said pulley, a water tank, a strainer in said tank, a pipe leading from said tank, a cock or valve in said pipe arranged to be operated by the arm on said pulley, a cock or valve through which the water is discharged from said pipe, and a nipple applied to said last mentioned cock or valve, substantially as described.

546,256. COMBINED SASH-LOCK AND VENTILATOR. DUNCAN D. STEWART, Manistique, Mich. Filed Dec. 15, 1894. Renewed Aug. 9, 1895. Serial No. 558,793. (No model.)

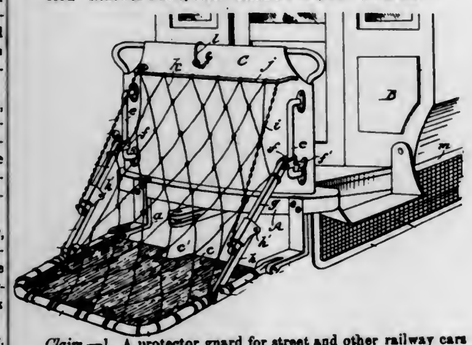


Claim.—1. In a combined sash lock and ventilator, the combination of a stationary air-conducting tube secured in the window-sash and extending through the same, a locking-bolt extending into the window-frame and into the said tube and capable of being withdrawn from the frame, and a second tube revolubly arranged within the first and connected to the locking-bolt, said second tube being capable of closing or opening the air passage of the stationary tube, substantially as described.

2. A combined sash-lock and ventilator consisting of a stationary tube extending through the window-sash and having one end projected beyond the same and formed with perforations in the sides directly adjacent to the said end, a casing arranged in a passage in the sash, a spring-actuated bolt therein and projecting into the window-frame and into the stationary tube at its respective ends, and a second tube revolubly seated in the stationary tube and having a slot receiving the inner end of the bolt, said slot being arranged to have its ends bind with and move the bolt, the second tube having formed therein perforations registering with those of the first tube and capable of being moved out of alignment therewith, substantially as described.

3. In a combined sash-lock and ventilator, the combination of a stationary air-conducting tube secured within the sash, a spring-actuated bolt in the sash and having one end projected into the window-frame and the remaining end into the interior of the stationary tube, and a second tube revolubly arranged within the first tube and having a slot therein receiving the inner end of the bolt, the said second tube being capable of closing the air orifices of the stationary tube, substantially as described.

546,257. PROTECTOR-GUARD FOR STREET-RAILWAY CARS. MICHAEL SULLIVAN and THOMAS J. BOND, Newport, R. I. Filed Mar. 17, 1894. Renewed Feb. 9, 1895. Serial No. 537,757. (No model.)



Claim.—1. A protector guard for street and other railway cars comprising a fender formed of a rigid frame and a yielding body, supported in front of the car by toggle-joints slidably connected to the dash board, means for raising or lowering the fender, for holding the same in either position, and for adjusting the height of the same, substantially as shown and described.

2. A protector guard for street and other railway cars comprising a fender formed of a rigid frame and an intervening yielding body, the said frame being pivotally supported from the platform of the car and by toggle-joints, slidably connected with the dash board by loops having set screws therein, means for raising or lowering the fender, and for holding the same in either position, substantially as shown and described.

3. A protector guard for street and other railway cars comprising a fender, formed of a rigid frame and a yielding body, supported from the platform of the car and by toggle-joints slidably connected to the dash board, means for raising or lowering the fender, for holding the same in either position, and for adjusting the height of the same, and a netting secured to the front of the fender and to the dash board of the car at the top, substantially as shown and described.

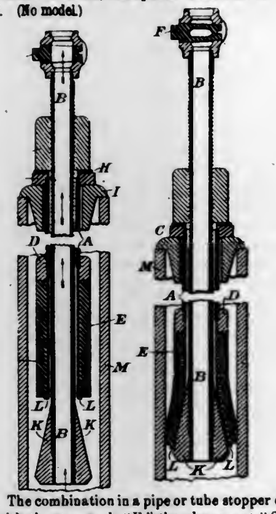
4. A protector guard for street and other railway cars comprising a fender formed of a rigid frame and an intervening yielding body, the said frame being pivotally supported from the platform of the car and by toggle-joints sliding by means of loops on vertical rods secured to the dash-board, set screws in the said loops, means for raising or lowering the fender, and a fastening at the top of the dash-board to hold the same when raised, substantially as shown and described.

5. A protector guard for street and other railway cars comprising a fender formed of a rigid frame and an intervening semi-flexible body, the said frame being journaled in braces depending from the car platform, toggle-joints pivoted to the fender at each side, and to loops sliding on vertical rods secured to the dash board, set screws in the said loops, chains secured to the toggle-joints and to the dash board at the top, and a fastening on the dash board to hold the fender when raised, substantially as shown and described.

6. A protector guard for street and other railway cars comprising a fender formed of a rigid frame and an intervening yielding body, the said frame being pivotally supported from the platform of the car, toggle-joints pivoted to the fender and to loops sliding on vertical rods secured to the dash board, set screws in said loops, means for raising the fender, a fastening on the dash board to hold the same when raised, and a netting secured to the front of the fender and to the dash board of the car at the top, substantially as shown and described.

7. A protector guard for street and other railway cars comprising a fender formed of a rigid cushioned frame and an intervening semi-flexible body, the said frame being journaled in braces depending from the car platform, toggle-joints pivoted to the fender at each side and to loops sliding on vertical rods upon the dash board, set screws in said loops, chains secured to the toggle-joints and to a horizontal bar at the top of the dash board, a netting secured to the front of the fender and to the horizontal bar, and a fastening on the dash board to hold the fender when raised, substantially as shown and described.

546,258. TUBE OR PIPE STOPPER FOR ARTESIAN OR DRIVEN WELLS. JOHN P. SUVERKROP, Boston, Mass., assignor to Benjamin F. Smith and Charles G. Smith, same place. Filed Mar. 14, 1895. Serial No. 541,817. (No model.)

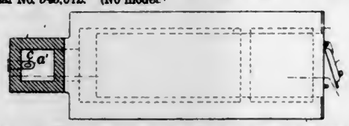


Claim.—1. The combination in a pipe or tube stopper of the pipes "A" and "B" with the stop-cock "F," the sleeve nut "G," the split cap "I," the elastic sleeve "E" and the cone "K," all of less diameter than the pipe or tube to be stopped—substantially as set forth.

2. In a pipe or tube stopper the combination of a pipe "A" with the collar "C," the collar "D" and the split sleeve "L," substantially as described.

3. The combination in a tube or pipe stopper of a conical plug "I" with the longitudinally split sleeve "L" and the elastic sleeve "E," all substantially as set forth.

546,259. METHOD OF AND APPARATUS FOR PROMOTING COMBUSTION. BENJAMIN F. TAYLOR, Newark, N. J., assignor to the Taylor Improved Draught Company, of New Jersey. Filed Mar. 30, 1895. Serial No. 543,812. (No model.)



Claim.—1. The method of promoting combustion which consists in removing products of combustion so as to relieve gases which are within the region of igniferous temperatures of the weight of said products, and in supplying to the combustible elements a measured or restricted supply of air, substantially as described.

2. The method of promoting combustion which consists in positively removing products of combustion which have passed beyond the region of igniferous temperatures, so as to relieve gases still remaining within said region of the weight of said products, and in supplying to the combustible elements a measured or restricted quantity of air, substantially as described.

3. The method of promoting combustion which consists in removing products of combustion which have passed beyond the region of igniferous temperatures by means of a blast, so as to relieve gases still remaining within said region of the weight of said products, and in supplying to the combustible elements a measured or restricted quantity of air, substantially as described.

4. The method of promoting combustion which consists in removing products of combustion which have passed beyond the region of igniferous temperatures by means of a blast of air, so as to relieve gases still remaining within said region of the weight of said products, and in supplying to the combustible elements a measured or restricted quantity of air, substantially as described.

5. The method of promoting combustion which consists in removing products of combustion which have passed beyond the region of igniferous temperatures by means of a blast of air produced by preponderating atmospheric pressure, so as to relieve gases still remaining within said region of the weight of said products, and in supplying to the combustible elements a measured or restricted quantity of air, substantially as described.

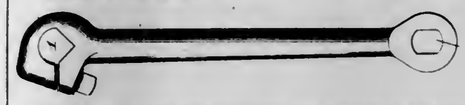
6. The combination with a natural draft furnace and stack of means for lifting or removing products from the top thereof, and means for restricting or measuring the supply of air to the combustion chamber of the furnace, substantially as described.

7. The combination with a natural draft furnace and stack of an injector for lifting or removing products from the top thereof, and means for restricting or measuring the supply of air to the combustion chamber of the furnace, substantially as described.

8. The combination with a natural draft furnace and stack of an atmospheric injector for lifting or removing products from the top thereof, and means for restricting or measuring the supply of air to the combustion chamber of the furnace, substantially as described.

9. The combination with a natural draft furnace and stack of an atmospheric injector and smoke and air mixer for lifting or removing products from the top thereof, and means for restricting or measuring the supply of air to the combustion chamber of the furnace, substantially as described.

546,260. BICYCLE-CRANK. CHARLES TIMM, Chicago, Ill., assignor to the Sterling Cycle Works, same place. Filed June 6, 1894. Serial No. 513,718. (No model.)



Claim.—In a bicycle, the combination with the crank-axle, of the crank-arm A provided at one end with a pedal and having its opposite end provided with the axle-collar B formed with a polygonal opening for the crank-axle, an offset 2 arranged at an obtuse angle to the crank-arm, a transversely split-side portion C, and a threaded socket formed and terminating within the side portion C and intersected by the split and having its outer end arranged at the offset, and a screw-bolt engaging in the threaded socket and arranged with its head toward the pedal, said bolt being oblique to the crank-arm and having a portion of its periphery extending within the opening in the axle-collar and engaging the crank-axle, substantially as described.

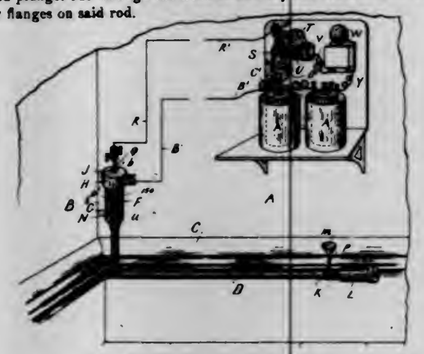
546,261. AUTOMATIC ELECTRIC FIRE-ALARM. CHARLES D. TISDALE, Boston, Mass., assignor, by direct and mesne assignments, of two-thirds to John D. Gould, Brooklyn, and Charles A. Hanson, New York, N. Y. Filed Feb. 12, 1895. Serial No. 538,121. (No model.)

Claim.—1. In an electric fire alarm device, a tube extended along and around the side or sides of a room or other place, an upward extension of said tube, a wire connected with one pole of an electric battery arranged in said tube extension insulated therefrom, a chamber at the other end of said first tube, a plunger or piston therein, and operated from the outside, and mercury in said tubes and chamber and connected electrically with the other pole of the electric battery.

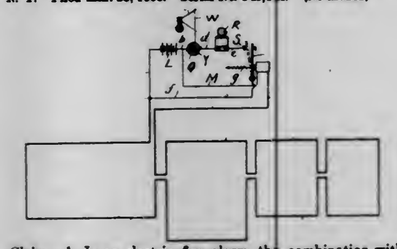
2. In an electric fire alarm device, a tube arranged along and around the side or sides of a room or other place, an upward extension of said tube, a glass tube within said extension, a cap screwing onto said tube extension having insulating material therein, a wire extending through the insulating material and into the glass tube connected with one pole of an electric battery, and mercury in said first tube and glass tube connected electrically with the other pole of the electric battery.

3. In an electric fire alarm device, a tube arranged along and around the side or sides of a room or other place, an upward extension of said tube, a wire connected with one pole of an electric bat-

tery, arranged in said tube extension insulated therefrom, mercury in said tube, connected electrically with the other pole of the electric battery, a tube of larger diameter secured to the other end of said first tube, a chamber therein, a cap screwing onto the end of said latter tube, a plunger or piston in said chamber, a rod extending from said plunger out through the head of said cap and connected thereto by flanges on said rod.



546,262. AUTOMATIC ELECTRIC FIRE-ALARM. CHARLES D. TISDALE, Boston, Mass., assignor, by direct and mesne assignments, of two-thirds to John D. Gould, Brooklyn, and Charles A. Hanson, New York, N. Y. Filed Mar. 25, 1895. Serial No. 543,141. (No model.)



Claim.—1. In an electric fire alarm, the combination with an electric motor, electric battery and electric magnet, of a continuous wire C of uniformly fusible material connected at one end to said magnet, a wire K connecting one end of said fusible wire to one pole of the battery, a wire M connecting said magnet with the other pole of the battery, a wire *b* from the battery to the motor, a sounding device, a wire *d* connecting said sounding device to the motor, a terminal or block S, and a wire *e* running from said sounding device to said block, substantially as described.

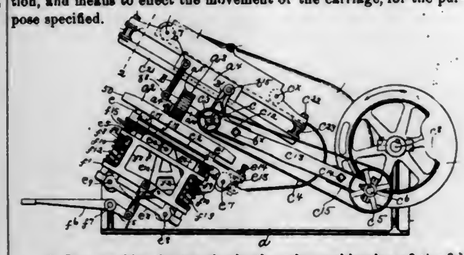
2. In an electric fire alarm, the combination with an electric motor, electric battery and electric magnet, of a continuous wire C of uniformly fusible material connected at one end to said magnet, a wire K connecting one end of said fusible wire to one pole of the battery, a wire M connecting said magnet with the other pole of the battery, a wire *b* from the battery to the motor, a sounding device, a wire *d* connecting said sounding device to the motor, a terminal or block S, a wire *e* running from said sounding device to said block, an incandescent lamp provided with a crank arm V, and a cord W connecting said crank arm with the shaft Y of the motor, substantially as described.

546,263. BUFFING AND WHITENING MACHINE. IRA VAUGHN, Salem, Mass., assignor to the Vaughn Machine Company, Portland, Me. Filed May 27, 1895. Serial No. 550,754. (No model.)

Claim.—1. In a machine for treating leather, the combination of the following instrumentalities, viz:—a table or support for the leather, yieldingly supported while the leather is being acted upon, a tool or instrument to act on the leather and movable simultaneously in two directions over the table while operating upon the leather supported thereon, the said tool moving longitudinally over the table and at the same time transversely thereof, and mechanism to effect the simultaneous movement of the said stool, substantially as described.

2. In a machine for treating leather, the combination of the following instrumentalities, viz:—a table or support for the leather secured against longitudinal and transverse movement with relation to an operating tool, the said operating tool movable simultaneously over the table in two directions at an angle to each other, while operating upon the leather, the said tool moving longitudinally over the table and at the same time transversely thereof, and mechanism to effect the simultaneous movements of the said tool, substantially as described.

3. In a machine for treating leather, the combination of the following instrumentalities, viz:—a table or support for the leather, a belt knife movable in one direction with relation to the table, a carriage for said belt knife movable in another direction with relation to the table to produce a movement of the belt knife in the same direction, and means to effect the movement of the carriage, for the purpose specified.



4. In a machine for treating leather, the combination of the following instrumentalities, viz:—a table or support for the leather, a belt knife, pulleys about which the said belt knife is passed, shaft for said pulleys, a frame to support said shafts, a movable carriage, hangers pivotally connected to said frame and carriage, a main shaft, a disk or wheel on said main shaft, an eccentric stud or pin on said wheel, a rod or bar having one end connected to said stud or pin and its other end to one of said hangers, a shaft *c* supported by the pulley-carrying frame and extended through one of said hangers, gears connecting the shaft *c* with the pulley shaft, a pulley on the shaft *c*, a pulley on the eccentric stud or pin, and a belt connecting said pulleys, substantially as described.

5. In a machine for treating leather, the combination of the following instrumentalities, viz:—a table or support for the leather, a belt knife movable in one direction with relation to the table, a carriage for said belt knife movable in another direction with relation to the table to produce movement of the belt knife in the same direction, a guide for the active portion of the belt knife, and means to effect the movement of the carriage, substantially as described.

6. In a machine for treating leather, the combination of the following instrumentalities, viz:—a table or support for the leather, a belt knife movable in one direction with relation to the table, a carriage for said belt knive movable in another direction with relation to the table, sharpening instruments movable with the carriage and engaging the belt knife as described, and means to effect the movement of the carriage, substantially as described.

7. A main frame provided with a guideway, a carriage movable in said guideway, hangers pivotally connected to said carriage, a frame pivotally supported by said hangers, a belt knife carried by said frame, means to produce travel of said belt knife in one direction, and means to move said carriage in its guideway to produce movement of the belt knife in another direction, substantially as and for the purpose specified.

8. A main frame provided with a guideway, a carriage movable in said guideway, hangers pivotally connected to said carriage, a frame pivotally supported by said hangers, pulleys mounted on shafts having bearings in said frame, a belt knife passed about said pulleys, a shaft *c* supported by said pulley-carrying frame, gears connecting the shaft *c* with a pulley shaft, a pulley on the shaft *c*, a main shaft, a fly wheel mounted thereon, an eccentric stud or pin carried by said fly wheel, a pulley mounted on said eccentric stud, and a belt connecting the pulley on the said stud with the pulley on the shaft *c*, substantially as described.

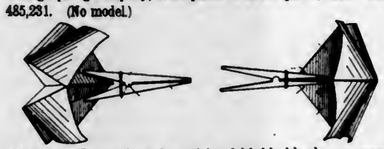
9. In a machine for treating leather, the combination of the following instrumentalities, viz:—a table provided with legs, an adjustable table-supporting frame through which said legs are extended, a treadle-operated frame mounted to move on said legs, and springs encircling the said legs and acted upon by the treadle-operated frame to move the table in one direction, substantially as described.

10. In a machine, for treating leather, the combination of the following instrumentalities, viz:—a table provided with legs, an adjustable table-supporting frame through which said legs are extended, a treadle-operated frame mounted to move on said legs, and springs encircling the said legs and acted upon by the treadle-operated frame to move the table in one direction, and means to adjust the table with relation to its supporting frame, substantially as described.

11. In a machine for treating leather, the combination of the following instrumeutalities, viz:—a table provided with legs screw-threaded for a portion of their length, a table-supporting frame through which said legs are extended, toothed nuts or collars located on the screw-threaded legs below the table-supporting frame, a link chain connecting said collars, and means to turn one of the said collars to effect simultaneous movement of the other collar and adjustment of the table with relation to its supporting frame, substantially as described.

12. In a machine for treating leather, the combination of the following instrumentalities, viz:—a main frame provided with a guideway, a carriage movable in said guideway, hangers pivotally connected to said carriage, a frame pivotally connecting said hangers, pulleys mounted on shafts having bearings in said frame, the bearings for one pulley shaft being adjustable, a belt knife passed about said pulleys, a main shaft, and intermediate mechanism connecting the hangers with the main shaft to produce movement of the said carriage, and mechanism operatively connecting one of the pulley shafts with the main shaft to produce travel of the belt knife about the pulleys, substantially as described.

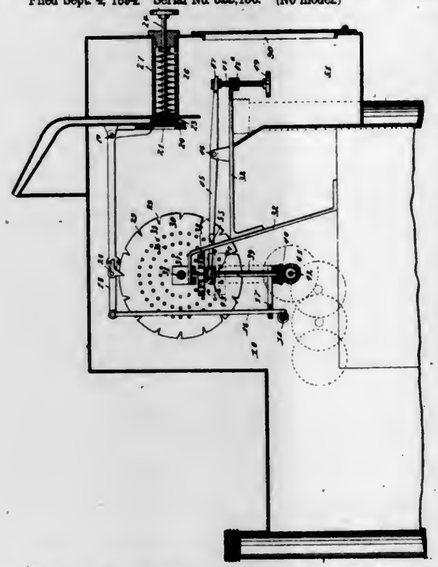
546,264. DEVICE FOR AMUSEMENT AND ADVERTISING. JAMES S. VINE, Cincinnati, Ohio, assignor of one-half to the Strobridge Lithographing Company, same place. Filed Sept. 11, 1893. Serial No. 485,231. (No model.)



Claim.—1. In combination with a foldable blank ornamented as described, a spring clip embodying two pivotal members slotted at their front ends and adapted to engage the folded blank substantially as set forth.

2. In a device of the character indicated, a clip embodying in combination the members, *g*, *h*, constructed and slotted as described with a rubber band or other spring holding them together in position as shown, substantially as set forth.

546,265. PREPAYMENT ATTACHMENT FOR METERS. HUGH W. WILLIAMS, Seattle, Wash., assignor to Seattle Meter Co., same place. Filed Sept. 4, 1894. Serial No. 522,130. (No model.)



Claim.—1. The combination with a meter, and a coin chute leading into the same, of a wheel geared with the meter mechanism, a tilting lever for holding the wheel stationary, having one end extending adjacent to the coin chute, a perforated coin plate on the end of the lever adjacent to the coin chute, and a push rod for forcing a coin against the coin plate, substantially as described.

2. The combination with a meter, and a coin chute leading into the same, of a wheel geared with the meter mechanism, a tilting lever for locking the wheel having one end extending adjacent to the coin chute, a perforated coin plate secured to the end of the lever adjacent to the coin chute, means for holding coins of different values in the coin chute, and a push rod projecting into the coin chute for forcing the coin out of the same to operate the tilting lever, substantially as described.

3. The combination with a meter, and a coin chute leading into the same, of a notched wheel in the meter, gearing between the wheel and the meter mechanism, a tilting lever provided with a pawl engaging the notched wheel and having one end extending adjacent to the coin chute, and a push rod projecting into the coin chute for forcing a coin out of the same to operate the tilting lever, substantially as described.

4. The combination with a meter, and a coin chute leading into the same, of a notched wheel, gearing between the said wheel and the meter mechanism, a tilting lever having one end extending adjacent to the coin chute and provided with a coin plate thereon, a pawl carried by the lever and engaging the notched wheel, a stop rod carried by the said lever and adapted to control the supply of the meter, and a push rod projecting into the coin chute, substantially as described.

5. The combination, with the meter, the notched wheel and the adjustable gear connection between the wheel and the meter mechanism, of the tilting lever provided with a pawl to engage the notched wheel, a stop rod carried by the lever and adapted to control the meter supply, a coin chute, a coin plate near the chute and on one end of the lever, a push rod oposite the coin plate, and devices for holding coins of different sizes between the push rod and the coin plate, substantially as described.

6. The combination, with the meter controlling mechanism, the tilting lever regulating said mechanism and the coin plate on the lever, of the coin chute arranged opposite the coin plate, the push rod near the plate, and the removable pins arranged in the chute near the plate and rod, substantially as described.

7. The combination, with the meter, of the peripherally notched wheel having concentric rows of pins on one side, the cog wheel having a gear connection with the meter mechanism, means for throwing the cog wheel into gear with either row of pins, a tilting lever carrying a pawl to engage the pin-wheel, a stop rod to control the commodity supply of the meter, and a coin-governed push rod to tilt the lever, substantially as described.

8. The combination, with the pin-wheel having concentric rows of pins therein, and the coin-controlled mechanism to lock and release the pin-wheel, of the cog wheel geared to the meter mechanism and adapted to engage either set of pins, the lever for moving the cog wheel, and a price indicator actuated by the lever, substantially as described.

9. The combination, with the pin-wheel having concentric rows of pins thereon, the meter mechanism, and the coin-controlled mechanism for locking and releasing the pin-wheel, of the cog wheel geared to the meter mechanism and adapted to engage either row of pin-wheels, the pivoted lever for moving the cog wheel, and the screw for working the pivoted lever, substantially as described.

10. The combination with a meter, and a coin chute leading into the same, of a wheel in the meter, differential gearing between the wheel and the meter mechanism, a tilting lever for locking said wheel, having one end extending adjacent to the coin chute, and means for forcing the coin out of the chute to operate the tilting lever, substantially as described.

11. The combination with a meter, having a coin chute leading into the same, of a notched wheel, differential gearing between the notched wheel and the meter mechanism, a tilting lever extending adjacent to the coin chute, a pawl carried by the lever and engaging the notched wheel, a perforated coin plate on the end of the lever adjacent to the coin chute, and a push rod for forcing a coin against the coin plate to operate the tilting lever, substantially as described.

546,266. STEAM-ENGINE. TAYLER BALLEW, Arlington, Mo. Filed June 20, 1895. Serial No. 553,480. (No model.)

Claim.—1. An engine comprising a cylinder having a centrally-disposed ingress port and end exhaust ports, a reciprocating piston within the cylinder comprising heads which have passages therethrough and which inclose a space which is in communication with the ingress port, and a cut-off valve adapted to operate between the piston heads and close the passages therein, substantially as described for the purpose set forth.

2. An engine comprising a cylinder having a centrally-disposed ingress port and having end exhaust ports, a piston adapted to operate in the cylinder and provided with two heads which are located a distance apart and inclose a space which is in communication with the said ingress port, said heads having passages therethrough and connected by a casing, and a cut-off valve adapted to operate in the said casing to close the passages in the piston heads, substantially as described for the purpose set forth.

3. An engine comprising a cylinder having a centrally-disposed ingress port and having end exhaust ports, means for controlling the said exhaust ports, a piston adapted to operate in the cylinder and comprising two heads which are provided with passages, and which inclose a space that is in communication with the ingress port, and a cut-off valve adapted to operate between the piston heads and close the passages therethrough, substantially as described for the purpose set forth.

4. The combination with a cylinder having a centrally-disposed ingress port and end exhaust ports, a valve for controlling the said exhaust ports and actuating mechanism therefor, of a piston comprising two heads located a distance apart and inclosing a space which is in communication with the said ingress port, and which have passages therethrough, a casing connecting the piston heads and having openings in its sides, and a cut-off valve adapted to operate in the said casing and close the passages in the piston heads, substantially as set forth.



5. An engine comprising a cylinder having a centrally-disposed ingress port and having lateral flanges by means of which it is secured upon its bed, and having the lower portion thickened and provided with exhaust passages which communicate with the opposite ends of the cylinder and with an exhaust pipe, a valve at the junction of the exhaust passages and adapted to establish communication with one of the said exhaust passages and the exhaust pipe at a time, said valve being mounted in the thickened portion of the cylinder, a piston located in the cylinder and comprising two heads which inclose a space in communication with the ingress port, and which have passages therethrough, a casing connecting the piston heads and having openings in its sides, and a cut-off valve adapted to operate in the casing, substantially as described for the purpose set forth.

546,267. BAILER FOR OIL OR LIKE WELLS. JOHN B. BRADEN, McDonald, Pa., assignor of one-half to David Lamb, same place. Filed Sept. 1, 1894. Serial No. 521,973. (No model.)

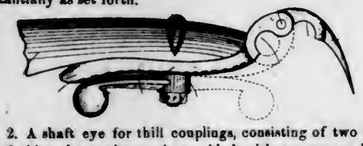


Claim.—1. A bailer for oil or like wells having a tubular body portion, a valve seat hinged to the base of said tubular body portion, a clack valve hinged to said valve seat and seating itself thereon, and a supporting leg extending below the valve seat and in such position as to permit the valve seat to swing down when released, substantially as and for the purposes set forth.

2. A bailer for oil or like wells having a tubular body portion, a portion of said tubular body at the lower end thereof being cut away, a valve-seat hinged to the base of the solid portion of said tubular body on the side thereof cut away, a fastening device for holding said valve seat in place, said valve seat being entirely within the circumference of the tubular body, and a clack-valve hinged to the valve-seat and seating itself thereon, substantially as set forth.

546,268. THILL-COUPLING. PETER BROADBOOKS, Batavia, N. Y., assignor to himself and Lemuel L. Tozier, same place. Filed Dec. 15, 1894. Serial No. 531,919. (No model.)

Claim.—1. A shaft eye for thill couplings, consisting of the part 1, adapted to be secured to a vehicle shaft or pole, having a semi-circular depression 10, extending transversely across it, in combination with a hinged clip having a corresponding semicircular depression extending entirely across it, a slight longitudinal depression 6, on the back of the hinged clip, and a locking lever having a sharp ridge adapted to fit into said depression, and secure the clip when closed, substantially as set forth.



2. A shaft eye for thill couplings, consisting of two portions 1 and 3, hinged together and provided with transverse depressions forming a circular opening when closed, for receiving a draw-bolt, means for rigidly securing portion 1, to a vehicle shaft, a longitudinal depression 6, on the back of the portion of clip 3, and a locking lever 5, provided with a ridge 9, adapted to fit into the depression 6, when the device is closed, substantially as described.

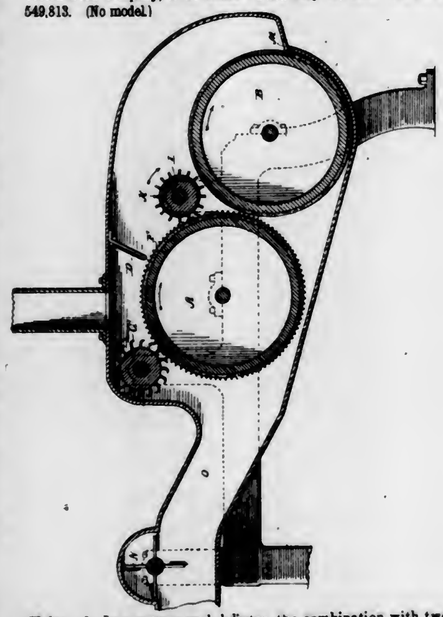
3. A shaft eye for thill couplings, consisting of two portions 1 and 3, hinged together and provided with transverse depressions forming a circular opening when closed, for receiving a draw-bolt, means for rigidly securing portion 1, to a vehicle shaft, a longitudinal depression 6, on the back of the portion or clip 3, and a locking lever 5, pivoted to the shaft by the shaft bolt, 7, a ridge 9, centrally located on said lever, and adapted to fit into the depression 6, when the clip is closed over the draw bolt, and the locking lever turned laterally over the clip, substantially as and for the purposes described.

546,269. RAILWAY-SPIKE. OSCAR Z. COUTANT, Chicago, Ill. Filed Mar. 26, 1894. Serial No. 505,151. (No model.)



Claim.—A railway spike V-shaped in cross section provided with the head herein described and having on its inner and outer surfaces upwardly pointing teeth or serrations extending entirely across and inclining from the angles outward and upward, substantially as shown and described.

546,270. COTTON-SEED DELINTER. JAMES J. FAULKNER, Memphis, Tenn., assignor, by direct and mesne assignments, to the Standard Cotton Seed Company, of Arkansas. Filed May 18, 1895. Serial No. 549,813. (No model.)



Claim.—1. In a cotton seed delinter, the combination with two parallel abrading surfaces, journaled with their meeting faces in such close proximity that seed will not pass between the same, and so that an angled inclosure is formed thereby, and means for causing said surfaces to rotate in the same direction, of seed inlet and discharge openings, and means for removing the lint separated by the action of the machine, substantially as described.

2. In a cotton seed delinter, the combination with a plurality of parallel abrading rolls, placed with their meeting faces in such close proximity that seed will not pass between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, and means for removing the lint separated by the action of the machine, substantially as described.

3. In a cotton seed delinter, the combination with two parallel abrading rolls having spiral formations thereon, said rolls being placed with their meeting faces in such close proximity that seed will not pass between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, and means for removing the lint separated by the action of the machine, substantially as described.

4. In a cotton seed delinter, the combination with two parallel abrading rolls having oppositely sloping spiral formations on opposite ends of the same, said rolls being placed with their meeting faces in such close proximity that seed will not pass between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, and means for removing the lint separated by the action of the machine, substantially as described.

5. In a cotton seed delinter, the combination with two parallel abrading surfaces journaled with their meeting faces in such close proximity that seed will not pass between the same, and so that an angled inclosure is formed thereby, and means for causing said surfaces to rotate in the same direction, of seed inlet and discharge openings, means for keeping the seed under treatment in close contact with the abrading surfaces, and means for removing the lint separated by the action of the machine, substantially as described.

6. In a cotton seed delinter, the combination with a plurality of abrading rolls journaled with their meeting faces in such close proximity that seed will not pass between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, means for keeping the seed under treatment in close contact with the abrading surfaces, and means for removing the lint separated by the action of the machine, substantially as described.

7. In a cotton seed delinter, the combination with two parallel abrading rolls, journaled with their meeting faces in such close proximity that seed will not pass between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, an agitator journaled above said meeting surfaces, and means for removing the lint separated by the action of the machine, substantially as described.

8. In a cotton seed delinter, the combination with a plurality of parallel abrading rolls, placed with their meeting surfaces in such close proximity that seed will not pass between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, and means for causing an air current to sweep over the abrading rolls, substantially as described.

9. In a cotton seed delinter, the combination with an abrading roll, and means for preventing uncleansed seed from falling out of the range of action of said roll, of a roller operating in connection with said abrading roll, said roller having spikes, set closer together than the length of the seed, formed on a portion of its surface, substantially as described.

10. In a cotton seed delinter, the combination with an abrading roll, of means for preventing the uncleaned seed from falling out of the range of action of said roll, and a spiked agitator operating in connection with said roll, said spikes being set closer together than the length of the cotton seed, substantially as described.

11. In a cotton seed delinter, the combination with an abrading roll, and means for preventing the seed under treatment from falling out of the range of action thereof, of a check plate having an irregular inner surface arranged in close proximity to said roll, whereby dirt will be permitted to escape, but seed will be retained, substantially as described.

12. In a cotton seed delinter, the combination with an abrading roll, and means for preventing the seed under treatment from falling out of the range of action thereof, of a check plate arranged in close proximity to said roll, said plate having an irregular inner surface to retain the seed but permit the escape of the dirt, and provided with means for permitting the escape of the seed, substantially as described.

13. In a cotton seed delinter, the combination with an abrading roll, and means for preventing the seed under treatment from falling out of the range of action thereof, of a check plate arranged in close proximity to said roll, said plate having an irregular inner surface over part of its length to retain the seed but permit the escape of the dirt, and larger irregularities over the rest of its length to permit the discharge of the cleansed seed, substantially as described.

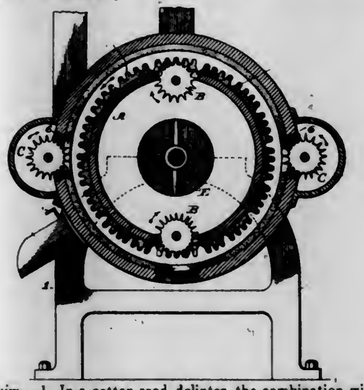
14. In a cotton seed delinter, the combination with an abrading roll, and a casing forming a compartment above said roll, of a spiked roll stationed between the cylinder and the casing at one end of said compartment, and forming a closure for that end of said compartment said spikes being curved so as to prevent the seed under treatment being carried out of the compartment, substantially as described.

15. In a cotton seed delinter, the combination with an abrading roll, and a casing forming a compartment over the same, of a check plate extending lengthwise of said roll to prevent the seed under treatment from falling out of the range of action thereof, and an agitator having spikes set thereon, curved so as to prevent the seed under treatment being carried out of the compartment, forming a closure for one end of said compartment, substantially as described.

16. In a cotton seed delinter, the combination with two parallel abrading rolls, journaled on different levels but so that their meeting surfaces come in close proximity, means for causing said rolls to rotate in the same direction, and a check plate extending lengthwise of the rolls for preventing seed carried along the upper roll from at once falling onto the lower roll, of means for feeding seed to said upper roll, conveyer devices for carrying the seed along the top roll and back between the meeting surfaces of the two rolls, a seed discharge outlet, and means for removing the lint separated by the action of the machine, substantially as described.

17. In a cotton seed delinter, the combination with two parallel abrading rolls journaled on different levels but so that their meeting surfaces come in close proximity to each other, means for causing said rolls to rotate in the same direction, and a check plate extending nearly the whole length of the upper cylinder for preventing seed carried along the upper roll from falling onto the lower roll, of means for feeding seed to the upper roll and back between the meeting surfaces of the two rolls, a seed discharge outlet, and means for removing the lint separated by the action of the machine, substantially as described.

546,271. COTTON-SEED DELINTER. JAMES J. FAULKNER, Memphis, Tenn., assignor, by direct and mesne assignments, to the Standard Cotton Seed Company, of Arkansas. Filed June 3, 1895. Serial No. 551,558. (No model.)



Claim.—1. In a cotton seed delinter, the combination with two opposing abrading surfaces, one of which has a movement relative to the other, of seed inlet and discharge openings, and means, actuated by the movement of the moving abrading surfaces relative to the seed under treatment, for removing the lint separated by the action of the abrading surfaces, substantially as described.

2. In a cotton seed delinter, the combination with a delinting cylinder having apertures formed therein, and a casing therefor, of seed inlet and discharge openings, and automatically operating means, stationed in said aperture, for removing the lint separated by the action of the machine interiorly through the delinting-cylinder, substantially as described.

3. In a cotton seed delinter, the combination with a delinting cylinder having an aperture therein, and means for preventing the seed under treatment from falling out of the range of action thereof, of seed inlet and discharge openings and a moving lint removing device, stationed in said aperture substantially as described.

4. In a cotton seed delinter, the combination with a delinting cylinder having a series of apertures therein, and means for preventing the seed under treatment from falling out of the range of action thereof, of seed inlet and discharge openings, and disks, stationed in said apertures, for removing the lint separated by the action of the machine, substantially as described.

5. In a cotton seed delinter, the combination with a delinting cylinder, and means for preventing the seed under treatment from fall-

ing out of the range of action thereof, of a seed inlet and discharge openings, openings in the delinting cylinder, and toothed disks journaled within said cylinder and having their peripheries projecting through said openings for removing the lint separated by the action of the machine, substantially as described.

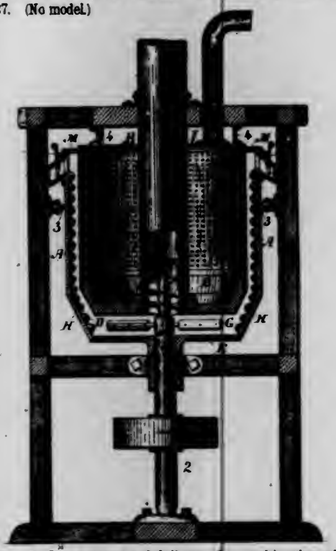
6. In a cotton seed delinter, the combination with a delinting cylinder, and means for preventing the seed under treatment from falling out of the range of action thereof, of seed inlet and discharge openings, a series of parallel openings in delinting cylinder, and toothed disks journaled within said cylinder, and having their peripheries projecting through said openings, for removing the lint separated by the action of the machine, substantially as described.

7. In a cotton seed delinter, the combination with a delinting cylinder having an aperture therein, and means for preventing the seed under treatment from falling out of the range of action thereof, of seed inlet and discharge openings, an air flume in connection with the interior of the delinting cylinder, and a moving lint removing device stationed in said aperture formed to permit free access of air to the abrading surface therethrough, substantially as described.

8. In a cotton seed delinter, the combination with a delinting cylinder, and means for preventing the seed under treatment from falling out of the range of action thereof, of seed inlet and discharge openings, openings in the delinting cylinder, toothed disks journaled within said cylinder, and having their peripheries projecting through said openings, for removing the lint separated by the action of the machine, and means for producing a central air current for freeing the interior of the delinting cylinder from the lint so removed, substantially as described.

9. In a cotton seed delinter, the combination with a delinting cylinder having an aperture therein, and a casing therefor likewise formed with an aperture, of seed inlet and discharge openings, means for rotating said cylinder, means for causing an air current to issue outwardly through the aperture in the casing, and also for causing an air current to issue inwardly through the aperture in the delinting cylinder, substantially as described.

546,272. COTTON-SEED DELINTER. JAMES J. FAULKNER, Memphis, Tenn., assignor, by direct and mesne assignments, to the Standard Cotton Seed Company, of Arkansas. Filed June 4, 1895. Serial No. 551,627. (No model.)



Claim.—1. In a cotton seed delinter, the combination with a vertically arranged delinting cylinder having abrading material secured to its inner surface, means for rotating the same, and means for preventing the seed under treatment falling out of the range of action thereof, of a feed pipe extending down through the center of the cylinder to the lower end thereof, means for transferring the seed from said pipe to the abrading surface, means for removing the lint separated by the action of the machine, and a seed discharge outlet, substantially as described.

2. In a cotton seed delinter, the combination with a vertically arranged delinting cylinder having abrading material secured to its inner surface, an inner cylinder for preventing the seed under treatment falling out of the range of action thereof, and means for giving one of said cylinders motion relative to the other, of a feed pipe extending downward through the center of the inner cylinder, means for transferring the seed from said pipe to the abrading surface, means for removing the lint separated by the action of the machine, and a seed discharge outlet, substantially as described.

3. In a cotton seed delinter, the combination with a vertically arranged delinting cylinder having abrading material secured to its inner surface, and having a closed bottom, an inner cylinder for keeping the seed under treatment from falling out of the range of action therof, and means for giving one of said cylinders motion relative to the other, of a feed pipe extending downward through the center of the inner cylinder, means for transferring seed from said pipe to the abrading surface, means for removing the lint separated by the action of the machine, and a seed discharge outlet, substantially as described.

4. In a cotton seed delinter, the combination with a vertically arranged delinting cylinder having abrading material secured to its inner surface, and having a closed perforated bottom, an inner cylinder for keeping the seed under treatment from falling out of the range of action thereof, and means for giving one of said cylinders motion relative to the other, of a feed pipe extending downward through the center of the inner cylinder, means for transferring seed from said pipe to the abrading surface, means for removing the lint separated by the action of the machine, and a seed discharge outlet, substantially as described.

5. In a cotton seed delinter, the combination with a vertically arranged delinting cylinder, having abrading material secured to its inner surface, the lower end of said cylinder being bent inwardly, an inner cylinder also having its lower end bent inwardly for preventing the seed falling out of the range of action thereof, and means for giving one of said cylinders motion relative to the other, of a feed pipe extending downward through the center of the inner cylinder, means for transferring seed from said pipe to the abrading surface, means for removing the lint separated by the action of the machine, and a seed discharge outlet, substantially as described.

6. In a cotton seed delinter, the combination with a vertically arranged delinting cylinder having abrading material secured to its inner surface, an inner perforated cylinder for preventing the seed under treatment falling out of the range of action thereof, and means for giving one of said cylinders motion relative to the other, of a feed pipe extending downward through the center of the inner cylinder, means for transferring the seed from said pipe to the abrading surface, means for causing an air current to sweep over the inner surface of the inner cylinder, and a seed discharge outlet, substantially as described.

7. In a cotton seed delinter, the combination with a vertically arranged delinting cylinder having abrading material secured to its inner surface, and having a closed perforated bottom, an inner perforated cylinder for preventing the seed under treatment falling out of the range of action thereof, and means for giving one of said cylinders motion relative to the other, of a feed pipe extending downward through the center of the inner cylinder, means for transferring seed from said pipe to the abrading surface, means for causing an air current to sweep over the inner surface of the inner cylinder, and a seed discharge outlet stationed at the top of the delinting cylinder, substantially as described.

546,273. COTTON-SEED DELINTER. JAMES J. FAULKNER, Memphis, Tenn., assignor, by direct and mesne assignments, to the Standard Cotton Seed Company, of Arkansas. Filed June 13, 1895. Serial No. 552,686. (No model.)



Claim.—1. In a cotton seed delinter, the combination with a series of positively-actuated rotating surfaces, placed with their meeting faces in such close proximity that seed will not pass between the same, and arranged to form a complete inclosure for the body of seed under treatment, and means for causing said surfaces to rotate in the same direction, of seed inlet and discharge openings, and means for removing the lint separated by the action of the machine, substantially as described.

2. In a cotton seed delinter, the combination with a series of positively-actuated rotating surfaces placed with their meeting faces in such close proximity that seed will not pass between the same, and arranged to form a complete inclosure for the body of seed under treatment, and means for causing said surfaces to rotate in the same direction, of seed inlet and discharge openings, and means for causing an air current to sweep over the outer faces of the surfaces, substantially as described.

3. In a cotton seed delinter, the combination with a series of positively-actuated rolls, placed with their meeting faces in such close proximity that seed will not pass between the same, and arranged to form a complete inclosure for the seed under treatment, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, and means for removing the lint separated by the action of the machine, substantially as described.

4. In a cotton seed delinter, the combination with a series of positively actuated rolls, placed with their meeting faces in such close proximity that seed will not pass between the same, and arranged to form an irregularly shaped complete inclosure for the seed under treatment, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, and means for removing the lint separated by the action of the machine, substantially as described.

5. In a cotton seed delinter, the combination with a series of positively-actuated rolls, placed with their meeting faces in such close proximity that seed will not pass between the same, and arranged to form a complete inclosure for the seed under treatment, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, means for forcing the seed under treatment in close contact with the abrading surfaces, and means for removing the lint separated by the action of the machine, substantially as described.

6. In a cotton seed delinter, the combination with a series of positively-actuated rolls, placed with their meeting faces in such close proximity that seed will not pass between the same, and arranged to form a complete inclosure for the seed under treatment, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, an agitator operating within the inclosure, and means for removing the lint separated by the action of the machine, substantially as described.

7. In a cotton seed delinter, the combination with a series of positively-actuated rolls, arranged in an arc of a circle, and placed with their meeting faces in such close proximity that seed will not pass between the same, an abrading cylinder mounted so as to prevent discharge of seed through the opening formed by the end rolls, and means for causing said rolls and said cylinder to rotate in the same direction, of seed inlet and discharge openings, and means for removing the lint separated by the action of the machine, substantially as described.

8. In a cotton seed delinter, the combination with a series of positively actuated rolls, arranged in an arc of a circle, and placed with their meeting faces in such close proximity that seed will not pass between the same, an abrading cylinder mounted so as to prevent discharge of seed through the opening formed by the end rolls, and means for causing said rolls and said cylinder to rotate in the same direction, of seed inlet and discharge openings, means for removing the lint separated by the action of the machine, and means for forcing the seed into intimate contact with the abrading surfaces, substantially as described.

9. In a cotton seed delinter, the combination with a series of positively actuated rolls, arranged in an arc of a circle, and placed with their meeting faces in such close proximity that seed will not pass between the same, an abrading cylinder mounted so as to prevent discharge of seed through the opening formed by the end rolls, and means for causing said rolls and said cylinder to rotate in the same direction, of seed inlet and discharge openings, means for removing the lint separated by the action of the machine, and an agitator stationed within the inclosure formed by the rolls and cylinder, substantially as described.

10. In a cotton seed delinter, the combination with a series of positively-actuated, vertically arranged abrading rolls, arranged in an arc of a circle, and placed with their meeting faces in such close proximity that seed will not pass between the same, an abrading cylinder mounted so as to prevent discharge of seed through the opening formed by the end rolls, and means for causing said rolls and said cylinder to rotate in the same direction, of seed inlet and discharge openings, means for removing the lint separated by the action of the machine, and an agitator stationed within the inclosure formed by the rolls and cylinder, substantially as described.

11. In a cotton seed delinter, the combination with a series of positively-actuated, vertically-arranged abrading rolls, placed with their surfaces in such close proximity that seed will not pass between the same, and arranged to form a complete inclosure, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, means for removing the lint separated by the action of the machine, and a perforated plate forming the bottom of said inclosure, the perforations thereof being too small to permit the passage of seed therethrough, substantially as described.

12. In a cotton seed delinter, the combination with a series of positively-actuated rotating abrading rolls, placed with their surfaces in such close proximity that seed will not pass between the same, and arranged in the form of an inclosure, the diameter of a portion of one of said rolls being reduced, of means for causing said rolls to rotate in the same direction, substantially as described.

13. In a cotton seed delinter, the combination with a series of positively-actuated rotating abrading rolls, placed with their surfaces in such close proximity that seed will not pass between the same, and arranged in the form of an inclosure, the diameter of a portion of one of said rolls being reduced, of a seed inlet opening, means for governing the discharge around the reduced portion of said roll, and means for removing the lint separated by the action of the machine, substantially as described.

14. In a cotton seed delinter, the combination with a series of positively-actuated, rotating abrading rolls, placed with their surfaces in such close proximity that seed will not pass between the same, and arranged in the form of an inclosure, the diameter of a portion of one of said rolls being reduced, of a seed inlet opening, a valve for controlling the discharge around the reduced portion of said roll, and means for removing the lint separated by the action of the machine, substantially as described.

15. In a cotton seed delinter, the combination with a series of positively-actuated rolls, arranged in an arc of a circle and placed with their meeting faces in such close proximity that seed will not pass between the same, an abrading cylinder mounted so as to prevent discharge of seed through the opening formed by the end rolls, and means for causing said rolls and said cylinder to rotate in the same direction, of seed inlet and discharge openings, and means for causing an air current to sweep over the outer faces of the moving surfaces, substantially as described.

16. In a cotton seed delinter, the combination with a series of positively-actuated rolls, arranged in an arc of a circle, and placed with their meeting faces in such close proximity that seed will not pass between the same, an abrading cylinder mounted so as to prevent discharge of seed through the opening formed by the end rolls, and means for causing said rolls and said cylinder to rotate in the same direction, of seed inlet and discharge openings, means for causing an air current to sweep over the outer faces of the moving surfaces, and a doffing brush acting upon the periphery of the abrading cylinder, substantially as described.

17. In a cotton seed delinter, the combination with a series of positively-actuated rolls, arranged in an arc of a circle, and placed with their meeting faces in such close proximity that seed will not pass between the same, an abrading cylinder mounted so as to prevent discharge of seed through the opening formed by the end rolls, and means for causing said rolls and said cylinder to rotate in the same direction, of seed inlet and discharge openings, means for removing the lint separated by the action of the machine, and means for permitting the rolls to be released from their engagement with the cylinder, substantially as described.

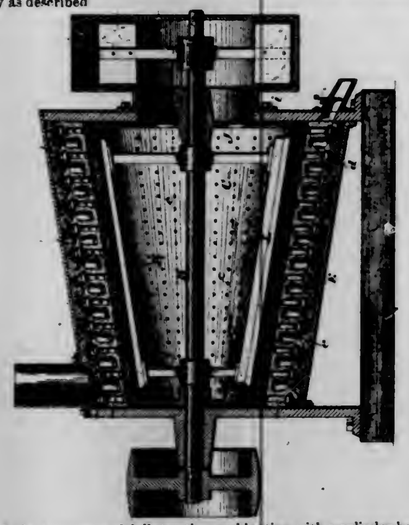
18. In a cotton seed delinter, the combination with a series of positively-actuated abrading rolls, placed with their surfaces in such close proximity as to prevent passage of seed therethrough, and arranged in the arc of a circle, one of said rolls being mounted in fixed bearings, and the remainder of said rolls being pivotally connected thereto, means for locking said rolls in position, an abrading cylinder mounted so as to prevent the discharge of seed through the opening formed by the end rolls, and means for causing said rolls and said cylinder to rotate in the same direction, of seed inlet and discharge openings, and means for removing the lint separated by the action of the machine, substantially as described.

546,274. COTTON-SEED DELINTER. JAMES J. FAULKNER, Memphis, Tenn., assignor, by direct and mesne assignments, to the Standard Cotton Seed Company, of Arkansas. Filed June 17, 1895. Serial No. 553,116. (No model.)

Claim.—1. In a cotton seed delinter, the combination with a cylinder having perforations formed therein, and a casing therefor, between which casing and cylinder the abrading action takes place, or means for rotating said cylinder, seed inlet and discharge openings means for producing an interior air current for removing the lint separated by the action of the machine through the perforations in the cylinder, and means for freeing the interior surface of said cylinder from lint, substantially as described.

2. In a cotton seed delinter, the combination with a cylinder having perforations formed therein, and a casing therefor, between which

casing and cylinder the abrading action takes place, of means for rotating said cylinder, seed inlet and discharge openings, means for producing an interior air current for removing the lint separated by the action of the machine through the perforations in the cylinder, and a brush for freeing the inner surface of said cylinder from lint, substantially as described



3. In a cotton seed delinter, the combination with a cylinder having perforations formed therein, and a casing therefor, between which casing and cylinder the abrading action takes place, of means for rotating said cylinder, seed inlet and discharge openings, means for producing an interior air current for removing the lint separated by the action of the machine through the perforations in the cylinder, and a brush, mounted on a central shaft, and provided with a counterbalanced arm, for freeing the inner surface of said cylinder from lint substantially as described.

4. In a cotton seed delinter, the combination with a cylinder having perforations formed therein, and a casing therefor, between which casing and cylinder the abrading action takes place, of means for rotating said cylinder, seed inlet and discharge openings, means for producing an interior air current for removing the lint separated by the action of the machine through the perforations in the cylinder, and a brush, mounted on a central shaft, and provided with two diametrically opposite brush surfaces, one of which is heavier than the other, for freeing the inner surface of said cylinder from lint, substantially as described.

5. In a cotton seed delinter, the combination with a perforated cylinder having abrading surfaces secured thereto, and a casing therefor, between which casing and cylinder the abrading action takes place, of means for rotating said cylinder, seed inlet and discharge openings, means for producing an interior air current for removing the lint separated by the action of the machine, and means for freeing the inner surface of said cylinder from lint, substantially as described.

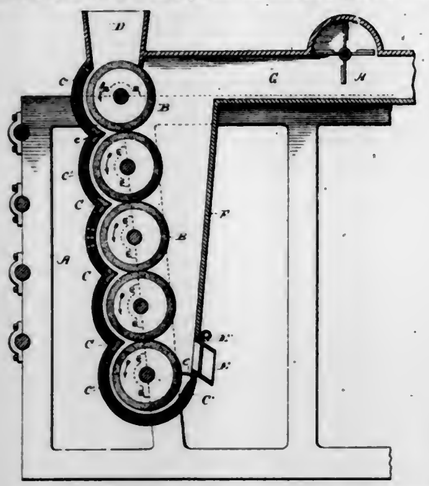
6. In a cotton seed delinter, the combination with a perforated cylinder, arms bearing abrading blocks secured thereto, and a casing therefor, between which casing and cylinder the abrading action takes place, of means for rotating said cylinder, seed inlet and discharge openings, means for producing an interior air current for removing the lint separated by the action of the machine, and means for freeing the inner surface of said cylinder from lint, substantially as described.

7. In a cotton seed delinter, the combination with a perforated cylinder, having abrading blocks secured thereto, and a casing therefor, between which casing and cylinder the abrading action takes place, of means for rotating said cylinder, seed inlet and discharge openings, means for producing an interior air current for removing the lint separated by the action of the machine, and means for freeing the inner surface of said cylinder from lint, substantially as described.

546,275. COTTON-SEED DELINTER. JAMES J. FAULKNER, Memphis, Tenn., assignor, by direct and mesne assignments, to the Standard Cotton Seed Company, of Arkansas. Filed June 17, 1895. Serial No. 553,117. (No model.)

Claim.—1. In a cotton seed delinter, the combination with a series of positively-actuated abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, and means for causing air currents to issue between adjacent rolls, substantially as described.

2. In a cotton seed delinter, the combination with a series of positively-actuated abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of means for keeping the seed under treatment in contact with one side of said rolls, seed inlet and discharge openings, and means for causing air currents to issue between adjacent rolls, substantially as described.



3. In a cotton seed delinter, the combination with a series of positively-actuated rotating abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of a casing for one side of said rolls, seed inlet and discharge openings, and means for causing air currents to issue between adjacent rolls, substantially as described.

4. In a cotton seed delinter, the combination with a series of positively-actuated abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of a perforated casing for one side of said rolls, seed inlet and discharge openings, and means for causing air currents to issue between adjacent rolls, substantially as described.

5. In a cotton seed delinter, the combination with a series of positively-actuated abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of a casing for one side of said rolls, conforming with the contour thereof, seed inlet and discharge openings, and means for removing the lint separated by the action of the machine, substantially as described.

6. In a cotton seed delinter, the combination with a series of positively-actuated abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of a casing for one side of said rolls conforming to the contour thereof, seed inlet and discharge openings, and means for causing air currents to issue between adjacent rolls, substantially as described.

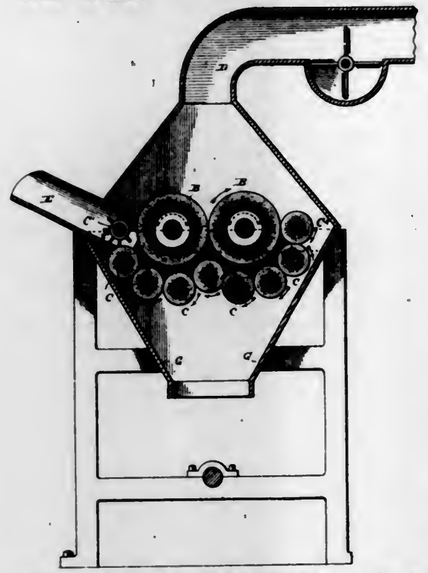
7. In a cotton seed delinter, the combination with a vertical series of positively-actuated abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of a casing for one side of said rolls, a feed inlet opening at the top of the casing, a discharge opening at the bottom thereof, and means for removing the lint separated by the action of the machine, substantially as described.

8. In a cotton seed delinter, the combination with a vertical series of positively-actuated abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of a casing for one side of said rolls, said casing extending at the discharge end nearly around the bottom roll, seed inlet and discharge openings, and means for removing the lint separated by the action of the machine, substantially as described.

9. In a cotton seed delinter, the combination with a vertical series of positively-actuated abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of a casing for one side of said rolls, said casing extending at the discharge end nearly around the bottom roll, seed inlet and discharge openings, means for removing the lint separated by the action of the machine, and pins projecting on the end of the bent portion of the casing toward the surface of the bottom roll, substantially as described.

10. In a cotton seed delinter, the combination with a series of corrugated positively-actuated abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, means for removing the lint separated by the action of the machine, and means for keeping the seed under treatment in contact with the abrading surfaces, substantially as described.

546,276. COTTON-SEED DELINTER. JAMES J. FAULKNER, Memphis, Tenn., assignor, by direct and mesne assignments, to the Standard Cotton Seed Company, of Arkansas. Filed June 24, 1895. Serial No. 553,888. (No model.)



Claim.—1. In a cotton seed delinter, the combination with a series of positively-actuated abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of a series of rolls, also placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, arranged to form a casing for said abrading rolls, means for causing said second series of rolls to rotate in the same direction, seed inlet and discharge openings, and means for removing the lint separated by the action of the machine, substantially as described.

2. In a cotton seed delinter, the combination with a series of positively-actuated abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of a series of rolls, also placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, arranged to form a casing for said abrading rolls, means for causing said second series of rolls to rotate in the same direction, and means for causing an air current to sweep over the surface of said rolls, substantially as described.

3. In a cotton seed delinter, the combination with a series of positively-actuated abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of a series of rolls, also placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, arranged to form a casing for said abrading rolls, means for causing said second series of rolls to rotate in the same direction, and at a different rate of speed than said abrading rolls, seed inlet and discharge openings, and means for removing the lint separated by the action of the machine, substantially as described.

4. In a cotton seed delinter, the combination with a series of positively-actuated abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of a series of rolls, also placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, arranged to form a casing for said abrading rolls, means for causing said second series of rolls to rotate in the same direction as said abrading rolls and at a higher rate of speed, seed inlet and discharge openings, and means for removing the lint separated by the action of the machine, substantially as described.

5. In a cotton seed delinter, the combination with a series of positively-actuated abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of a series of rolls, smaller in diameter than the said abrading rolls, also placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, arranged to form a casing for said abrading rolls conforming to the contour thereof, means for rotating said casing rolls at a higher rate of speed than said abrading rolls, seed inlet and discharge openings, and means for causing an air current to sweep over the surface of said rolls, substantially as described.

6. In a cotton seed delinter, the combination with a plurality of horizontally-arranged, positively-actuated abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of a series of rolls, smaller in diameter than said abrading rolls, also placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and arranged to form a casing for the lower face of said abrading rolls conforming to the contour thereof, means for causing said casing rolls to rotate at a higher rate of speed than said abrading rolls, seed inlet and discharge openings, and means for causing an upward air current to sweep over said rolls, substantially as described.

7. In a cotton seed delinter, the combination with a plurality of horizontally-arranged, positively-actuated abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, of a series of rolls, smaller in diameter than said abrading rolls, also placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and arranged to form a casing for said abrading rolls conforming to the contour thereof, the end rolls of said casing rolls being placed sufficiently close to the abrading rolls to prevent discharge of seed, means for causing said abrading and casing rolls to rotate in the same direction, but at different speeds, seed inlet and discharge openings, and means for causing an upward air current to sweep over said rolls, substantially as described.

8. In a cotton seed delinter, the combination with a plurality of horizontally-arranged, positively-actuated abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, of a series of rolls, smaller in diameter than said abrading rolls, also placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and arranged to form a casing for said abrading rolls conforming to the contour thereof, the end rolls of said casing rolls being placed sufficiently close to the abrading rolls to prevent discharge of seed, and portions of said rolls at opposite ends of the machine being reduced in diameter to form inlet and discharge openings, means for causing said abrading and casing rolls to rotate in the same direction, but at different speeds, and means for causing an upward air current to sweep over said rolls, substantially as described.

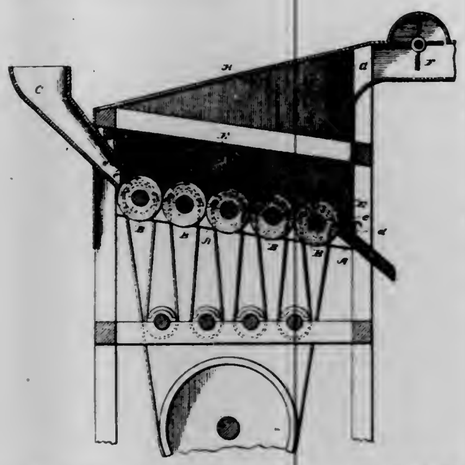
9. In a cotton seed delinter, the combination with a plurality of horizontally-arranged, positively-actuated abrading rolls, placed with their surfaces in sufficiently close proximity to prevent discharge of seed between the same, said rolls being journaled so that one end thereof is higher than the other, of a series of rolls, smaller in diameter than said abrading rolls, also placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and arranged to form a casing for said abrading rolls conforming to the contour thereof, the end rolls of said casing rolls being placed sufficiently close to the abrading rolls to prevent discharge of seed, and portions of said rolls at opposite ends of the machine being reduced in diameter to form inlet and discharge openings, means for causing said abrading and casing rolls to rotate in the same direction, but at different speeds, and means for causing an upward air current to sweep over said rolls, substantially as described.

546,277. COTTON-SEED DELINTER. JAMES J. FAULKNER, Memphis, Tenn., assignor, by direct and mesne assignments, to the Standard Cotton Seed Company, of Arkansas. Filed June 26, 1895. Serial No. 554,128. (No model.)

Claim.—1. In a cotton seed delinter, the combination with a series of positively-actuated abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to move in the same direction, of seed inlet and discharge openings, independent casings for the sev-

eral rolls, and means for removing the lint separated by the action of the machine, substantially as described.

2. In a cotton seed delinter, the combination with a series of positively-actuated rotating abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, independent casings for the several rolls, and means for causing air currents to issue between adjacent rolls, substantially as described.



3. In a cotton seed delinter, the combination with a series of positively-actuated rotating abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, independent casings for one face of the several rolls, and means for removing the lint separated by the action of the machine, substantially as described.

4. In a cotton seed delinter, the combination with a series of horizontally-arranged, positively-actuated rotating abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, independent segmental casings for the upper surface of said rolls, and means for causing air currents to issue between adjacent rolls, substantially as described.

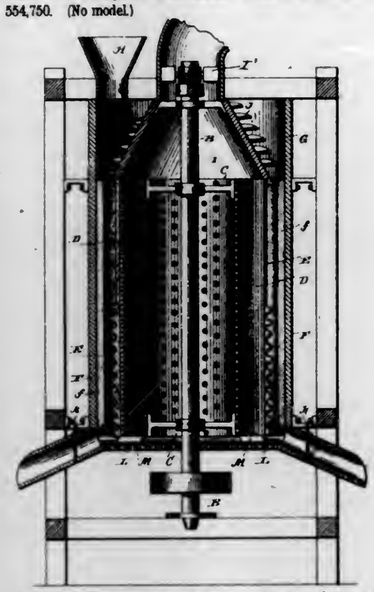
5. In a cotton seed delinter, the combination with a series of horizontally-arranged, positively-actuated rotating abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, independent perforated segmental casings for the upper surface of said rolls, and means for causing upward air currents to issue between adjacent rolls, substantially as described.

6. In a cotton seed delinter, the combination with a series of horizontally-arranged, positively-actuated rotating abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, independent segmental casings for the upper surface of said rolls, said casings being lined with an abrading substance, and means for causing upward air currents to issue between adjacent rolls, substantially as described.

7. In a cotton seed delinter, the combination with a series of horizontally-arranged, positively-actuated rotating abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, independent segmental perforated casings having an abrading lining for the upper surface of said rolls, and means for causing upward air currents to issue between adjacent rolls, substantially as described.

8. In a cotton seed delinter, the combination with a series of horizontally-arranged positively-actuated rotating abrading rolls, placed with their surfaces in sufficiently close proximity to prevent passage of seed between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, independent segmental abrading-surfaced casings for the upper surfaces of said rolls, said casings being formed with an upward bend at the entrance thereof, and means for causing upward air currents to issue between adjacent rolls, substantially as described.

546,278. COTTON-SEED DELINTER. JAMES J. FAULKNER, Memphis, Tenn., assignor, by direct and mesne assignments, to the Standard Cotton Seed Company, of Arkansas. Filed July 2, 1895. Serial No. 554,750. (No model.)



Claim.—1. In a cotton seed delinter, the combination with a cylindrical casing, of a perforated cylinder having an open end journaled within the same, said cylinder having secured thereto arms bearing abrading surfaces, means for rotating said cylinder, seed inlet and discharge openings, an air flume capping the open end of said cylinder and the space between the same and the abrading surfaces, and means for causing an outward air current to exist in the air flume, substantially as described.

2. In a cotton seed delinter, the combination with a perforated cylinder having abrading surfaces supported thereby, and a casing therefor, of a feed opening at one end of said cylinder, an air flume capping the feed end of said cylinder, conveyer devices formed on said air flume, and a seed discharge opening, substantially as described.

3. In a cotton seed delinter, the combination with a perforated cylinder having abrading surfaces supported thereby, and a casing therefor, of a feed opening at one end of said cylinder, a revoluble air flume capping the feed end of said cylinder, a spiral conveyer, secured to said air flume, and a seed discharge opening, substantially as described.

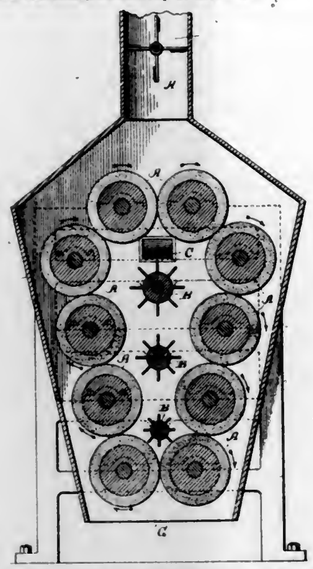
4. In a cotton seed delinter, the combination with a perforated cylinder having arms bearing abrading surfaces secured thereto, and a casing therefor, of an air flume capping the feed end of said cylinder and the space between the same and the abrading surfaces, conveyer devices formed on said air flume, and seed inlet and discharge openings, substantially as described.

5. In a cotton seed delinter, the combination with a vertically arranged perforated cylinder having arms bearing abrading surfaces secured thereto, and a casing therefor, of an air flume capping the upper end of said cylinder and the space between the same and the abrading surfaces, conveyer devices formed on said air flume, and seed inlet and discharge openings, substantially as described.

6. In a cotton seed delinter, the combination with a vertically arranged cylinder having abrading surfaces secured thereto, and a casing therefor, of seed inlet and discharge openings, means for removing the lint separated by the action of the machine, a perforated plate supported below the cylinder, and arms, carried by said cylinder, which move across the surface of said plate, substantially as described.

546,279. COTTON-SEED DELINTER. JAMES J. FAULKNER, Memphis, Tenn., assignor, by direct and mesne assignments, to the Standard Cotton Seed Company, of Arkansas. Filed July 9, 1895. Serial No. 555,433. (No model.)

Claim.—1. In a cotton seed delinter, the combination with a series of positively actuated abrading rolls, arranged so that they form a V-shaped inclosure, and placed with their surfaces in such close proximity that seed will not pass between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, and means for removing the lint separated by the action of the machine, substantially as described.



2. In a cotton seed delinter, the combination with a series of positively actuated abrading rolls, arranged so that they form a V-shaped inclosure, and placed with their meeting surfaces in such close proximity that seed will not pass between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, and means for causing an air current to sweep over the outer surface of said rolls, substantially as described.

3 In a cotton seed delinter, the combination with a series of positively-actuated abrading rolls, arranged so that they form a V-shaped inclosure, and placed with their meeting surfaces in such close proximity that seed will not pass between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, means for causing an air current to sweep over the outer surface of said rolls, and agitators stationed within the inclosure formed, substantially as described.

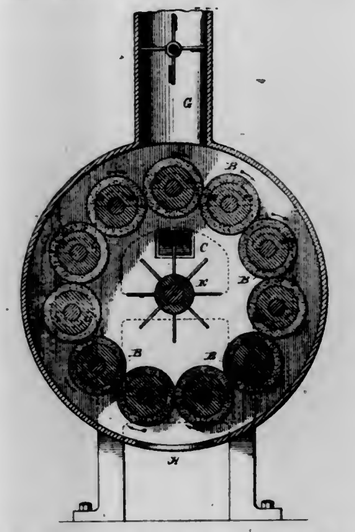
4. In a cotton seed delinter, the combination with a series of horizontally-arranged, positively-actuated abrading rolls, arranged to form a V-shaped inclosure, and placed with their meeting surfaces in such close proximity that seed will not pass between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, agitators, graded in size according to the size of the space in which they operate, stationed within said inclosure, and means for causing an air current to sweep over the outer surface of said rolls, substantially as described.

5. In a cotton seed delinter, the combination with a series of horizontally-arranged positively-actuated abrading rolls, arranged to form a V-shaped inclosure, and placed with their meeting surfaces in such close proximity that seed will not pass between the same, and means for causing said rolls to rotate in the same direction, of a seed inlet opening at one end of the inclosure at the top thereof, a seed discharge opening at the opposite end of the inclosure near the bottom thereof, agitators, graded in size according to the size of the space in which they operate, stationed within said inclosure, and means for causing an air current to sweep over the outer surface of said rolls, substantially as described.

546,280. COTTON-SEED DELINTER. JAMES J. FAULKNER, Memphis, Tenn., assignor, by direct and mesne assignments, to the Standard Cotton Seed Company, of Arkansas. Filed July 9, 1895. Serial No. 555,434. (No model.)

Claim.—1. In a cotton seed delinter, the combination with a series of positively actuated abrading rolls, arranged in the form of a circle to form an inclosure within which the delinting operation takes place, and placed with their meeting surfaces in such close proximity that seed will not pass between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, means for removing the lint separated by the action of the machine, and means for conveying the seed under treatment through the inclosure formed, substantially as described

2. In a cotton seed delinter, the combination with a series of positively-actuated abrading rolls, arranged in the form of a circle to form an inclosure within which the delinting operation takes place, and placed with their meeting faces in such close proximity that seed will not pass between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings means for causing an air current to sweep over the outer surface or said rolls, and means for conveying the seed under treatment through the inclosure, substantially as described.



3. In a cotton seed delinter, the combination with a series of positively-actuated abrading rolls, arranged in the form of a circle, and placed with their meeting faces in such close proximity that seed will not pass between the same, and means for causing said rolls to rotate in the same direction, of seed inlet and discharge openings, means for causing an air current to sweep over the outer faces of said rolls, and a spiral seed conveyer stationed within the inclosure formed by the rolls, substantially as described.

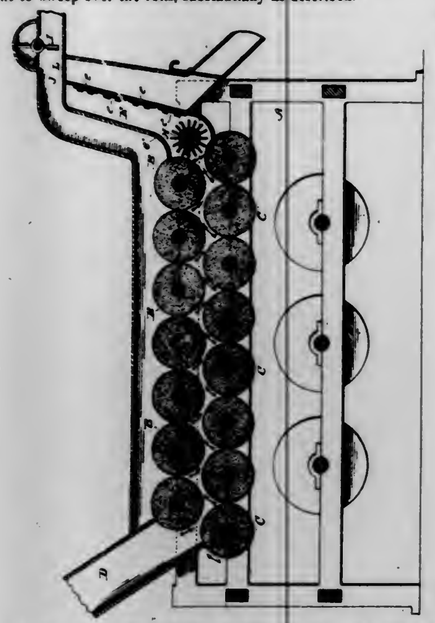
4. In a cotton seed delinter, the combination with a series of horizontally-arranged positively-actuated abrading rolls, arranged in the form of a circle, and placed with their meeting faces in such close proximity that seed will not pass between the same, and means for causing said rolls to rotate in the same direction, of a seed inlet opening at one end of the inclosure, a seed discharge opening at the other end thereof, means for causing an air current to sweep over the outer surface of said rolls, and a spiral conveyer stationed within the inclosure, substantially as described.

546,281. COTTON-SEED DELINTER. JAMES J. FAULKNER, Memphis, Tenn., assignor to the Standard Cotton Seed Company, of Arkansas. Filed Aug. 16, 1895. Serial No. 559,509. (No model.)

Claim.—1. In a cotton seed delinter, the combination with a series of abrading rolls, placed with their meeting faces in sufficiently close proximity to prevent passage of seed between the same, and means for rotating said rolls in the same direction, of a second series of rolls of the same diameter as those constituting the first series, and also placed with their meeting faces in sufficiently close proximity to prevent passage of seed between the same, said rolls being arranged so as to form a casing for one side of the first series of rolls, and each being journaled with its center equidistant from the centers of the two adjacent rolls of the first series, means for rotating said second series of rolls in the same direction, and means for causing an air current to sweep over the rolls, substantially as described.

2. In a cotton seed delinter, the combination with a series of abrading rolls, placed with their meeting faces in sufficiently close proximity to prevent passage of seed between the same, and means for rotating said rolls in the same direction, of a second series of rolls of the same diameter as those constituting the first series, and also placed with their meeting faces in sufficiently close proximity to prevent passage of seed between the same, said rolls being arranged so as to form a casing for one side of the first series of rolls, and each being journaled with its center equidistant from the centers of the two adjacent rolls of the first series, means for rotating said second series of rolls in the same direction, and opposite to the direction of the rotation

of the rolls formir g the first series, and means for causing an air current to sweep over the rolls, substantially as described.



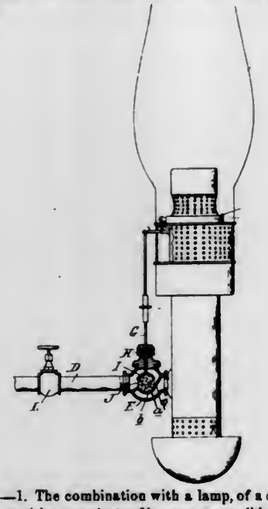
3. In a cotton seed delinter, the combination with a series of abrading rolls, placed with their meeting faces in sufficiently close proximity to prevent passage of seed between the same, and means for rotating said rolls in the same direction, of a second series of rolls of the same diameter as those constituting the first series, and also placed with their meeting faces in sufficiently close proximity to pre vent passage of seed between the same, said rolls being arranged so as to form a casing for one side of the first series of rolls, and each being journaled with its center equidistant from the centers of the two adjacent rolls of the first series, means for rotating said second series of rolls in the same direction, oppositely to the direction of rotation of the rolls forming the first series and at a different rate of speed, and means for causing an air current to sweep over the rolls, substantially as described.

4. In a cotton seed delinter, the combination with a series of abrading rolls, placed with their meeting faces in sufficiently close proximity to prevent passage of seed between the same, and means for rotating said rolls in the same direction, of a second series of rolls of the same diameter as those constituting the first series, and also placed with their meeting faces in sufficiently close proximity to prevent passage of seed between the same, said rolls being arranged so as to form a casing for one side of the first series of rolls, and each being journaled with its center equidistant from the centers of the two adjacent rolls of the first series, means for rotating said second series of rolls in the same direction, and opposite to the direction of rotation of the rolls forming the first series, a spiked roll operating in connection with the two end rolls, and means for causing an air current to sweep over the rolls, substantially as described.

5. In a cotton seed delinter, the combination with a series of abrading rolls, placed with their meeting faces in sufficiently close proximity to prevent passage of seed between the same, and means for rotating said rolls in the same direction, of a second series of rolls of the same diameter as those forming the first series, and also placed with their meeting faces in sufficiently close proximity to prevent passage of seed between the same, said rolls being arranged so as to form a casing for one side of the first series of rolls, and each being journaled with its center equidistant from the centers of the two adjacent rolls of the first series, means for rotating said second series of rolls in the same direction, and opposite to the direction of rotation of the rolls forming the first series, an upright pipe arranged in connection with the end rolls so that the seed will bank up therein, a discharge opening in the same, and means for causing an air current to sweep over the rolls, substantially as described.

6. In a cotton seed delinter, the combination with a series of abrading rolls, placed with their meeting faces in sufficiently close proximity to prevent passage of seed between the same, and means for rotating said rolls in the same direction, of a second series of rolls of the same diameter as those constituting the first series, and also placed with their meeting faces in sufficiently close proximity to prevent passage of seed between the same, said rolls being arranged so as to form a casing for one side of the first series of rolls, and each being journaled with its center equidistant from the center of the two adjacent rolls of the first series, means for rotating said second series of rolls in the same direction, and opposite to the direction of rotation of the rolls forming the first series, a spiked roll operating in connection with the two end rolls, an upright pipe arranged in connection with the end rolls so that seed will bank up therein, a discharge opening in the same, and means for causing an air current to sweep over the rolls, substantially as described.

546,282. REGULATING DEVICE FOR LAMPS. ROBERT L. DORAN, Bay City, Mich. Filed Apr. 29, 1895. Serial No. 547,528. (No model.)



Claim.—1. The combination with a lamp, of a controlling device therefor, comprising a casing, a fibrous compressible packing therein, through which oil is adapted to flow continuously, and a stem for compressing the packing to regulate the flow of oil therethrough, substantially as described.

2. A controlling device for lamps comprising a casing having a ported diaphragm, a fibrous valve or packing thereon through which oil is adapted to flow continuously, and a stem for compacting said valve to control the flow of oil therethrough.

3. The combination of the lamp fount, the oil supply pipe, the valve casing therein, the diaphragm F in the casing, having the concave ported seat *a*, the valve stem, the curved head I above the seat and the fibrous compressible valve or packing J between the head and seat, as and for the purpose described.

4. The combination with a lamp, of the fibrous valve through which oil is adapted to flow continuously, the stem for compressing the same to regulate the flow of the oil through the valve, the thermostatic ring M around the flame, and an operative connection therefrom to the stem, substantially as described.

546,283. ICE-CUTTING MACHINE. GEORGE E. MILLIKEN, Mentone, Cal. Filed Feb. 11, 1895. Serial No. 537,863. (No model.)

Claim.—1. In an ice cutting machine the combination of a series of vertically movable manifolds substantially such as set forth, in which the main limb of the discharge pipe of one manifold is above the main limb of the feed pipe of the manifold which precedes it and means for separately moving the manifolds vertically.

2. An ice cutter comprising a swinging tubular manifold; means for moving the same vertically; means for moving it horizontally; a suitable fluid; and means for forcing the fluid through the manifold.

3. An ice cutter comprising a tubular manifold; suspending pulleys; an axle; suspending cords fastened to the manifold and passed over the suspending pulleys, respectively, and wound around and fastened to the axle; means for stopping the rotation of the axle at a desired point; a suitable fluid; means for forcing such fluid through the manifold; and means for moving the manifold horizontally.

4. An ice cutter comprising a tubular manifold; suspending pulleys; an axle; suspending cords fastened to the manifold and passed over the suspending pulleys, respectively, and wound around and fastened to the axle; means for retarding the rotation of the axle; means for stopping the rotation of the axle at a desired point; a suitable fluid; means for forcing such fluid through the manifold; and means for moving the manifold horizontally.

5. An ice cutter comprising a tubular manifold; suspending pulleys; an axle; suspending cords fastened to the manifold and passed over the suspending pulleys respectively, and wound around and fastened to the axle: a cord fastened to the axle and arranged to be wound thereupon and arranged depending therefrom; a weight fastened to such cord; means for stopping the rotation of the axle at a desired point; a suitable fluid; means for forcing the fluid through the manifold; and means for moving the manifold horizontally.



6. The combination of the manifold; the suspending pulleys; an axle; suspending cords fastened to the manifold and passed over the suspending pulleys respectively and wound around and fastened to the axle; a cord fastened to the axle and arranged to be wound thereupon and arranged depending therefrom; a weight fastened to such cord and means for stopping the rotation of the axle at a desired point.

7. An ice cutting machine comprising a tubular manifold the cutting tubes of which cross each other and are all arranged in substantially one horizontal plane; a suitable fluid; means for forcing the fluid through the manifold; means for moving the manifold vertically; means for sustaining the manifold on different planes successively and means for moving the manifold horizontally.

8. The combination of a tubular manifold suspended so as to swing; a suitable fluid; means for forcing the fluid through such manifold; cords fastened to such manifold and led therefrom laterally on one side to and over suitable pulleys, respectively; such pulleys; and suitable weights attached respectively to such cords.

9. An ice cutting machine comprising a tubular manifold; suspending pulleys; an axle; suspending cords fastened to the manifold and passed over the suspending pulleys respectively, and wound around and fastened to the axle; a cord fastened to the axle and arranged to wind thereupon and arranged depending therefrom; a weight fastened to such cord; means for stopping the rotation of the axle at a desired point; a suitable fluid; means for forcing the fluid through the manifold; cords fastened to the manifold and led therefrom laterally on one side and over suitable pulleys respectively; such pulleys and suitable weights attached respectively to such cords.

10. An ice cutter comprising a tubular manifold containing a flowing fluid; means for suspending such manifold; and means for lowering the manifold and stopping it successively at stated points.

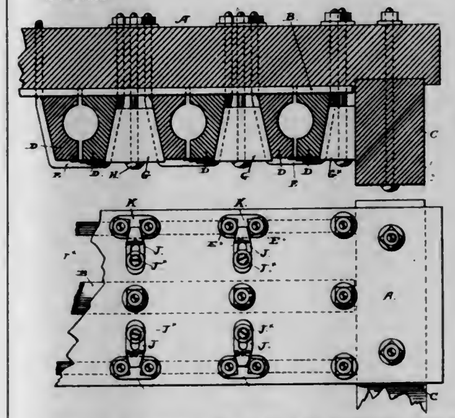
11. An ice cutter comprising a tubular manifold containing a flowing fluid; means for suspending such manifold; and allowing it to swing; means for lowering the manifold and stopping it successively at stated points; and means for swinging the manifold.

12. An ice cutter comprising a tubular manifold containing a flowing fluid; means for suspending such manifold and allowing it to swing; means for lowering the manifold and stopping it successively at stated points; pulleys adjustable as to height arranged at one side of the manifold; cords fastened to the manifold and led to and over said pulleys, respectively; weights attached to such pulleys respectively, and means for adjusting the pulleys as to height.

13. In an ice cutter the tubular manifold set forth comprising the feed pipe extending along two sides of a parallelogram; the discharge pipe extending along the other two sides of the parallelogram and communicating at its ends with the feed pipe through contracted ports; the cross-cutting tubes connecting between one limb of the feed pipe and one limb of the discharge pipe; and cross cutting tubes communicating between the other limb of the feed pipe and the other limb of the discharge pipe.

14. In an ice cutter, a movable tubular manifold comprising feed and discharge pipes arranged in substantially one plane and cross cutting tubes connecting between the feed and discharge pipes and all arranged substantially in the same plane with such pipes.

546,284. STAMP-STEM GUIDE FOR STAMP-MILLS. CORYDON A. FARGO, Bald Butte, Mont. Filed Sept. 4, 1893. Serial No. 484,771. (No model.)



Claim.—1. In a stamp mill or battery, the combination with the main frame, and the longitudinal strengthening plate standing against one face thereof; of the stamp stem guides made in two parts with beveled outer faces, the rear faces of the parts having a rabbet fitting over said plate, stirrups surrounding said parts at their upper and lower ends with their arms passing through the frame, wedges interposed between the beveled faces of said guides, and bolts passing through said wedges and through said plate independent of the guides and their stirrups, as and for the purpose set forth.

2. In a stamp mill or battery, the combination with the main frame, a horizontal series of stamp stem guides arranged in pairs adjacent to said frame, and stirrups embracing said guides with their arms passing through the frame adjacent each other; of double washers embracing said arms in pairs, nuts on the arms, and for every pair a plate having a beveled point passing between the nuts, and means for holding said plate removably in position, as and for the purpose set forth.

3. In a stamp mill or battery, the combination with the main frame, a horizontal series of stamp stem gnides arranged in pairs adjacent to said frame, and stirrups embracing said guides with their arms passing through the frame adjacent each other; of double washers embracing said arms in pairs, nuts on the arms, and for every pair a slotted plate having a beveled point passing between the nuts, and a set screw passing through its slot and into the frame, as and for the purpose set forth.

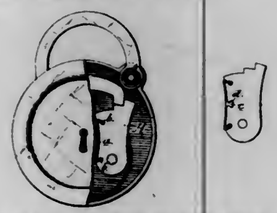
546,285. ADVERTISING-SIGN. JOHN H. KELLY, Detroit, Mich. Filed Aug. 14, 1894. Renewed Aug. 19, 1895. Serial No. 559,875. (No model.)

Claim.—The combination of a card bearing the representation of a face having apertures at the points where the eyes would appear and a curved aperture for the mouth, the disk having thereon the representation of eye-balls and provided with an integral tongue bent outward from the lower arc thereof, said disk being pivoted in the rear of the face on said card and adapted to swing in either direction, the point of pivot of said disk being so placed that the eye-balls thereon shall normally register with the eye openings in said card and the tongue on said disk shall project into the mouth opening thereof, which opening is curved concentric with the point of pivot of said

disk, whereby the tongue travels back and forth in the mouth opening and the eye-balls before the eye apertures in the card, as said disk swings on its pivot.



546,286. LOCK. RADOLPHUS D. S. TYLER, Detroit, Mich. Filed July 10, 1895. Serial No. 555,459. (No model.)



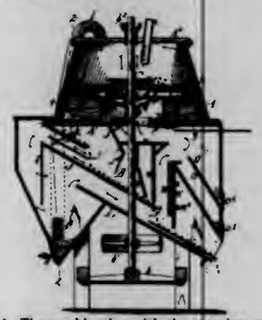
Claim.—1. In a lock, a tumbler the outer face or wall of which adjacent to the key hole is provided with a separate thin flat plate of relatively harder material, which extends lengthwise of the tumbler whereby the bits of the key sweep across the plate in the direction of the length thereof when the key is turned about its axis.

2. In a lock, a tumbler the wearing face of which is provided with a plate or wearing surface relatively harder than the body of the tumbler and sprung into engagement therewith.

3. In a lock, a tumbler the wearing face of which is provided with a thin flat plate or surface relatively harder than the body of the tumbler, said plate having a projection on its rear side adapted to fit a corresponding recess in the tumbler and having its opposite ends secured to the tumbler.

REISSUES.

11,507. SEPARATING-MACHINE. ORVILLE M. MORSE, Jackson, Mich. Filed Mar. 26, 1894. Serial No. 505,194. Original No. 499,795, dated June 20. 1893.



Claim.—1. The combination with the scouring and dust separating chamber having a dust outlet at one end, an outlet for grain and air at the other end and an internal air propelling device, of a chamber which is connected with the grain outlet and in which the grain is separated from the air current, and a return passage whereby the air current is conducted back to the scouring chamber, substantially as described.

2. The combination with the scouring and dust separating chamber having a dust outlet at one end, an outlet for grain and air at the other end and an internal air propelling device, of a chamber which is connected with the grain outlet and in which the grain is separated from the air current, a hopper through which the air current passes after having left the grain and in which the heavy impurities are deposited, and a return air passage leading to the scouring chamber, substantially as set forth.

3. The combination with the scouring and dust separating chamber having a dust outlet at one end, an outlet for the grain and air at the other end and an internal air propelling device, of a chamber which is connected with the grain outlet and in which the grain is separated from the air current, a hopper through which the air current passes after having left the grain and in which the heavy impurities are deposited, an ascending air passage leading to a secondary hopper in which the light impurities are deposited, and a return air passage leading to the scouring chamber, substantially as set forth.

4. The combination with the scouring and dust separating chamber having a dust outlet at one end, an outlet for grain and air at the other end, and an internal air propelling device, of a chamber which is connected with said grain outlet and in which the grain is separated from the air current, a chamber in which the grain is afterward caused to descend through the same air current, and a return air passage leading to the scouring chamber, substantially as set forth.

5. The combination with the scouring and dust separating chamber having a dust outlet at one end, an outlet for grain and air at the other end, and an internal air propelling device, of a chamber which is connected with said grain outlet and in which the grain is separated from the air current, a hopper in which the air current drops the heavy impurities, a chamber in which the grain is caused to descend through the same air current after the latter has passed through said hopper, and a return air passage leading to the scouring chamber, substantially as set forth.

6. The combination with the scouring and dust separating chamber having a dust outlet at one end, an outlet for grain and air at the other end and an internal air propelling device, of a chamber which is connected with said grain outlet and in which the grain is separated from the air current, a hopper in which the air current drops the heavy impurities, a chamber in which the grain is caused to descend through the same air current after the latter has passed through said hopper, a hopper in which the air current drops the light impurities, and a return air passage leading to the scouring chamber, substantially as set forth.

7. The combination with the scouring and dust separating chamber having a dust outlet at its upper end, an outlet for grain and air at its lower end and an internal air propelling device, of a gravity separator arranged underneath said scouring mechanism and composed of a chamber arranged underneath the grain outlet, in which the grain is separated from the air current, a chaff hopper arranged underneath said chamber, an inclined grain passage leading from said chamber an air passage leading from said hopper and intersecting said grain passage, a secondary hopper arranged above said grain passage on the opposite side of the machine, and a return air passage leading to the scouring chamber, substantially as set forth.

8. The combination with the scouring and dust separating chamber having a dust outlet at one end, an outlet for grain and air at the other end, and an internal air propelling device, of a chamber which is connected with said grain outlet and in which the grain is separated from the air current, a grain passage leading from said chamber an air passage also leading from said chamber and intersecting said grain passage, and a return air passage leading to the scouring chamber, substantially as set forth.

9. The combination with the scouring and dust separating chamber having a dust outlet at one end, a grain outlet at the other end and an internal air propelling device, of ribs or deflectors arranged on the inner side of the peripheral wall of the scouring chamber opposite the air propelling device and inclined to deflect the grain from the grain outlet toward the dust outlet, substantially as set forth.

10. The combination with the scouring and dust separating chamber having a dust outlet at one end, a grain outlet at the other end and an internal air propelling device, of ribs arranged on the head of the chamber adjacent to the grain outlet and extending from the periphery toward the center of the head in the direction in which the air propelling device rotates, substantially as set forth.

11. The combination with the scouring and dust separating chamber having a dust outlet at one end, an outlet for grain and air at the other end and an internal air propelling device, of a gravity separator connected with the grain outlet and having a hopper in which the impurities are deposited and a return passage, and a dust spout connecting said dust outlet with said hopper and provided with a valve which can be adjusted to deliver the dust into said hopper or discharge it outside thereof, substantially as set forth.

12. In a grain separator, the combination with the casing, of a dust separating and air circulating fan, an endless air passage to and from the fan, separating means in the passage, and oppositely arranged dust and air outlets from the fan and an air inlet opposite the dust outlet, substantially as described.

13. The combination of a casing, having an endless air passage therein, separating means in the passage, a tapering fan casing in the air circuit, having an axial air inlet and an air outlet connecting into the air circuit, an oppositely arranged dust outlet, and a fan in the casing, substantially as described.

14. In a grain separator, the combination with a casing, of a combined scouring and dust separating chamber, an endless air passage leading to and from the chamber, separating means in the passage, a separate dust passage from the chamber, an air circulating and dust separating fan in the chamber, and scouring means in the chamber, substantially as described.

DESIGNS.

24,658. CHOCOLATE CAKE. LOUIS RUNKEL, New York, N. Y. Filed Aug. 7, 1895. Serial No. 558,553. Term of patent 3½ years.



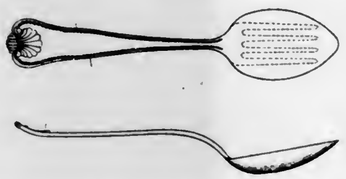
Claim.—The design for a chocolate cake substantially as herein shown and described.

24,659. SPOON. CORA A. GOODING, Brookline, Mass. Filed Dec. 24, 1894. Serial No. 532,887. Term of patent 7 years.



Claim.—The design for a spoon substantially as shown and described.

24,660. SPOON. FRANK W. SMITH, Gardner, Mass. Filed Apr. 27, 1895. Serial No. 547,422. Term of patent 3½ years.



Claim.—The herein described design for the handle of a spoon, fork or other similar article, substantially as shown and described.

24,661. RAZOR-HANDLE. CHARLES H. THURBER, East Orange, N. J., assignor to the Wiebusch & Hilger, Limited, New York, N. Y. Filed Aug. 6, 1895. Serial No. 558,427. Term of patent 7 years.



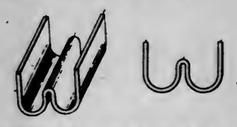
Claim.—The design for handles for razors and the like, substantially as herein shown and described.

24,662. PAPER-WEIGHT. MAY DIKE, Boston, Mass. Filed Sept. 13, 1894. Serial No. 522,944. Term of patent 3½ years.



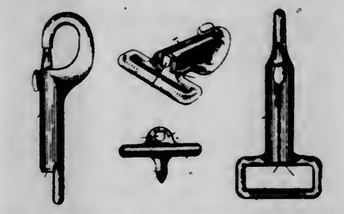
Claim.—The design for a paper weight, herein described and shown.

24,663. CLIP. JOHN DEVLIN, Detroit, Mich. Filed June 10, 1895. Serial No. 552,345. Term of patent 7 years.



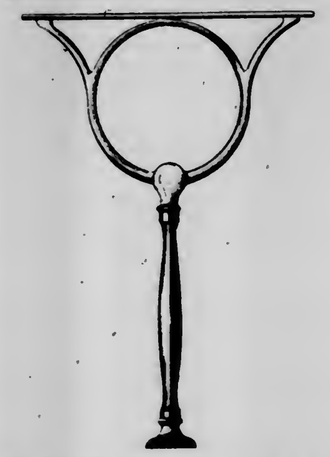
Claim.—The design for a clip herein shown and described.

24,664. HOOK. JAMES C. COVERT, West Troy, N. Y. Filed May 23, 1895. Serial No. 560,445. Term of patent 14 years.



Claim.—The design for a hook, substantially as herein shown and described.

24,665. BRACKET FOR WASHSTANDS. WILLIAM H. GRAHAM, St. Louis, Mo. Filed Aug. 1, 1895. Serial No. 557,908. Term of patent 14 years.



Claim.—The design for a bracket, substantially as herein shown and described.

24,666. SHOE. LEBBEUS HILL, Lynn, Mass. Filed Aug. 5, 1895. Serial No. 558,330. Term of patent 7 years.



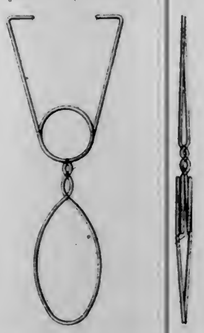
Claim.—The design for shoes herein shown and described.

24,667. SHOE-TIP. GUSTAV KINNER, Paterson, N. J. Filed May 4, 1895. Serial No. 548,167. Term of patent 3½ years.



Claim.—The design for a shoe tip substantially as herein shown and described.

24,668. HOLDER FOR EARS OF CORN. AMOS CALLESON, Brooklyn, N. Y. Filed June 6, 1895. Serial No. 551,911. Term of patent 3½ years.



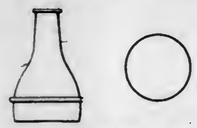
Claim.—The design for corn holders, herein shown and described.

24,669. SCOURING-BOX. HANS NICOLAUS CLAUSEN and FRED CLAUSEN, Stacyville, Iowa. Filed May 27, 1895. Serial No. 550,869. Term of patent 14 years.



Claim.—The design for a scouring box as herein shown and described.

24,670. BODY FOR OIL-CANS. MARK L. SPERRY, Waterbury, Conn., assignor to the Scovill Manufacturing Company, same place. Filed July 22, 1895. Serial No. 556,833. Term of patent 7 years.



Claim.—The design for the bodies of oil-cans, as herein described and shown in the accompanying illustrations.

24,671. STOVE. JOSEPH LEON GOBEILLE, Cleveland, Ohio, assignor to the Joliet Stove Works, Joliet, Ill. Filed Aug. 2, 1895. Serial No. 558,025. Term of patent 3½ years.



Claim.—1. In a design for a stove, the base substantially as shown and described.

2. In a design for a stove, the body substantially as shown and described.

3. In a design for a stove, the top substantially as shown and described.

4. The design for a stove substantially as shown and described.

24,672. CARPET. EMIL G. SAUER, Brooklyn, N. Y., assignor to the Lowell Manufacturing Company, of Massachusetts. Filed Aug. 3, 1895. Serial No. 558,165. Term of patent 3½ years.



Claim.—1. In a design for a carpet, the body A, substantially as shown.

2. In a design for a carpet, the border B, substantially as shown.

3. In a design for a carpet, the body A and the border B, substantially as shown.

24,673. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed Aug. 3, 1895. Serial No. 558,166. Term of patent 3½ years.

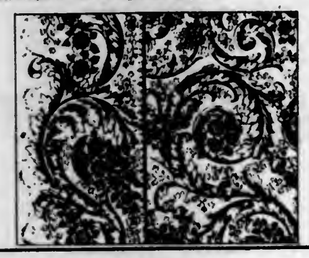


Claim.—1. In a design for a carpet, the body A, substantially as shown.

2. In a design for a carpet, the border B, substantially as shown.

3. The design for carpets, consisting of the body A, and the border B, substantially as shown.

24,674. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed Aug. 3, 1895. Serial No. 558,167. Term of patent 3½ years.



Claim.—1. In a design for a carpet, the body A, substantially as shown.

2. In a design for a carpet, the border B, substantially as shown.

3. The design for carpets, consisting of the body A, and the border B, substantially as shown.

24,675. CARPET. JOHN B. NEIL, New York, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed Aug. 3, 1895. Serial No. 558,168. Term of patent 3½ years.



Claim.—1. In a design for a carpet, the body A, substantially as shown.

2. In a design for a carpet, the border B, substantially as shown.

3. The design for carpets, consisting of the body A, and the border B, substantially as shown.

24,676. CARPET. JOHN B. NEIL, New York, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed Aug. 3, 1895. Serial No. 558,169. Term of patent 3½ years.



Claim.—1. In a design for a carpet the body A, substantially as shown.

2. In a design for a carpet the border B, substantially as shown.

3. The design for carpets, consisting of the body A, and the border B, substantially as shown.

TRADE-MARKS

REGISTERED SEPTEMBER 10, 1895.

27,041. BOOTS AND SHOES. ISAAC PROUTY & Co, INCORPORATED, Spencer and Boston, Mass. Filed Aug. 14, 1895.

Matchless-
Match-lace.

Essential feature.—The words "MATCHLESS-MATCH-LACE." Used since December 3, 1894.

27,042. LEAD-PENCILS. THE FIRM OF EBERHARD FABER, New York, N. Y. Filed July 10, 1895.

REMBRANDT

Essential feature.—The word "REMBRANDT." Used since May 1, 1895.

27,043. WRITING-PENS. ABRAM L. SALOMON, New York, N. Y. Filed Apr. 13, 1895.

ALUMINOID

Essential feature.—The word "ALUMINOID." Used since April 1, 1895.

27,044. PLUG CHEWING-TOBACCO. CHARLES JAMES SEARLES, St. Louis, Mo. Filed July 15, 1895.

DICE.

Essential feature.—The word "DICE." Used since July 1, 1895

27,045. EVERY FORM OF TOBACCO FOR SMOKING OR CHEWING. A. H. MOTLEY COMPANY, Reidsville, N. C. Filed July 29, 1895

DIXIE QUEEN



Essential feature.—The words "DIXIE QUEEN" and the picture of a lady dressed décolleté and wearing a broad hat. Used since January, 1880.

27,046. EVERY FORM OF TOBACCO FOR SMOKING OR CHEWING. A. H. MOTLEY COMPANY, Reidsville, N. C. Filed July 29, 1895.

ALCALDE

Essential feature.—The word "ALCALDE." Used since January, 1890.

27,047. EVERY FORM OF TOBACCO FOR SMOKING OR CHEWING. A. H. MOTLEY COMPANY, Reidsville, N. C. Filed July 29, 1895.



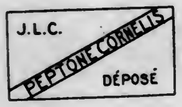
Essential feature.—The words "MOTLEY'S HIGH GRADE" and the picture of the head and shoulders of a lady wearing an opera-cloak. Used since December, 1892.

27,048. REMEDY FOR CATARRH. JESU R. SMITH, Bartlett, Tex. Filed June 21, 1895.



Essential feature.—The representation of a triangle bearing the letters "J R S" within its respective corners, associated with the words "WORLD'S WONDER." Used since September, 1893.

27,049. PROPRIETARY MEDICINE FOR INDIGESTION AND SIMILAR DISEASES. THE NATIONAL PHARMACY Co., Montreal, Canada. Filed July 20, 1895.



Essential feature.—The words "PEPTONE CORNÉLIS" and "DÉPOSÉ," the letters "J. L. C.," and the rectangular inclosing border. Used since May 1, 1895.

27,050. REMEDY FOR STOMACH, LIVER, AND BOWEL TROUBLES. KLINGHEIL, BARTELT & SCHROTER, New York, N. Y. Filed Aug. 16, 1895

FRANCISCAN

Essential feature.—The word "FRANCISCAN." Used since December 21, 1893.

27,051. SPECIFIC FOR RHEUMATISM. LUCY A. BROWNE, Oakland, Cal. Filed May 22, 1895.



Essential feature.—The pictorial representation of a mountain, inclosed by a circular border, with a ribbon crossing the field, on which are the words "SIERRA BARK." Used since July 1, 1894.

27,052. EFFERVESCING POWDER TO BE USED AS A TONIC. MYERS & Co., Toronto, Canada, and Buffalo, N. Y. Filed Jan. 17, 1895.



Essential feature.—The words "GOLDEN FRUIT SALINE" and the representation of a young woman leaning against a wall with a fruit-laden tree for a background. Used since June 2, 1894.

27,053. CREAM OF PETROLEUM FOR THE TOILET. AUGUSTUS P. STEVENS, Brooklyn, N. Y. Filed July 19, 1895.

EVANOLA

Essential feature.—The word "EVANOLA." Used since February 15, 1895.

27,054. PERFUMERY. AMEEN F. HADDAD, New York, N. Y. Filed July 17, 1895.

NAPOLEON'S
COLOGNE

Essential feature.—The words "NAPOLEON'S COLOGNE" and a bouquet of violets. Used since April 1, 1895.

27,055. CONDENSED MILK. MOHAWK CONDENSED MILK COMPANY, Rochester, N. Y. Filed July 29, 1895.



Essential feature.—The representation of a Maltese cross. Used since February 1, 1892.

27,056. CHOCOLATE, COCOA, AND PREPARATIONS THEREOF. HENRY L. PIERCE, Boston, Mass. Filed June 1, 1895.

PILGRIM

Essential feature.—The word "PILGRIM." Used since February, 1895.

27,057. CHOCOLATE, COCOA, AND PREPARATIONS THEREOF. HENRY L. PIERCE, Boston, Mass. Filed June 1, 1895.

PURITAN

Essential feature.—The word "PURITAN." Used since February, 1895.

27,058. CANNED TOMATOES. CAROLINE ELIZABETH SPEAKMAN, Smyrna, Del. Filed Aug. 15, 1895.

BELMONT HALL

Essential feature.—The words "BELMONT HALL." Used since June 1, 1895.

27,059. TIN OR LEAD FOIL. THE JOHNSTON TIN FOIL AND METAL COMPANY, St. Louis, Mo. Filed Aug. 12, 1895.



Essential feature.—The words "LION BRAND" and the pictorial representation of a lion. Used since August 1, 1895.

27,060. CORKS. JOHN M. MARIS & Co., Philadelphia, Pa. Filed July 19, 1894.



Essential feature.—A diamond-shaped figure. Used since January 1, 1885.

27,061. POLISHING COMPOUND FOR METAL GOODS. LUBSYNSKI & Co., Berlin, Germany. Filed May 24, 1895.

AMOR

Essential feature.—The word "AMOR." Used since October 1, 1894.

27,062. PORTLAND CEMENT. Dumez & Co., Brumels and Courray, Belgium. Filed July 17, 1895.



Essential feature.—The representation of a dagger. Used since August 9, 1889.

27,063. CHIMNEYS, LANTERN-GLOBES, AND REFLECTORS. GILL BROTHERS & Co., Steubenville, Ohio. Filed May 18, 1895.

GRANITE

Essential feature.—The word "GRANITE." Used since July 1, 1890.

27,064. BICYCLE-SIGNALS. PERCY E. MATTHES, Newark, N. J. Filed Sept. 1, 1894.

SURE ALARM

Percy E. Matthes

Essential feature.—The words "SURE ALARM" and the facsimile signature, of "PERCY E. MATTHES." Used since August 1, 1894.

27,065. BICYCLES. R. H. MACY & Co., New York, N. Y. Filed Aug. 15, 1895.

L.A.W.

Essential feature.—The letters "L. A. W." Used since August 1, 1895.

ANDREW B. GRAHAM
PHOTO-LITHOGRAPHER.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

RUDDICK *v.* MILLIKEN.

Decided May 24, 1895.

PUBLIC USE AND SALE—ON SALE—EXECUTORY CONTRACT.

Where it appears that a fire-alarm box was offered for sale in no other manner than as a part of a fire-alarm system to be installed by the seller and nothing was done evincing an intention on his part to transfer to the buyer a fire-alarm box except upon an executory contract containing conditions and requiring of the buyer much to be done precedent to the transfer of title, *Held* that the fire-alarm box was not on sale within the meaning of section 4886, Revised Statutes, although the box was completed, tested, and ready for immediate use at the date of the contract. (*Burton v. The Town of Greenville*, 18 O. G., 411; 3 Fed. Rep., 642, and other cases referred to.)

APPEAL from the Examiners-in-Chief.

SIGNAL-BOX.

Application of John J. Ruddick filed June 28, 1890, No. 357,094. Application of George F. Milliken filed April 20, 1891, No. 389,578.

Mr. B. J. Noyes for Ruddick.

Messrs. Bentley & Knight and *Messrs. Bentley & Blodgett* for Milliken.

SEYMOUR, *Commissioner:*

This is an interference between the application of John J. Ruddick, Serial No. 357,094, filed June 28, 1890, and an application of George F. Milliken, Serial No. 389,578, filed April 20, 1891, on the following issue:

1. In an electric signaling apparatus, the combination, with a signal-wheel and contacts therefor, of an actuating-train for said wheel, a releasing-lever for the train adapted to be moved two steps, one manually controlled to release the train and the other controlled by the train in running to enable the signaling-contacts to operate the signaling-circuit *r*.

2. The combination, with a signal-wheel and actuating-train therefor, of a manual starting or releasing device, a retarded operative device for allowing the train to run for a time longer than the longest closure in any one signal before the apparatus is brought into signaling condition, and a determining device acting during such lapse of time to prevent an interfering signal being sent.

3. The combination, in an electric signaling apparatus, of a signal-wheel and contacts therefor, an actuating-train for said wheel, a non-interference magnet in the circuit, a shunt-circuit around the signal-wheel, and contacts therefor controlled by said magnet, a releasing device for the said train, a restoring device for the armature-lever of said magnet, connected to said releasing device, and a locking device, also connected to the releasing device, adapted to hold the armature-lever in one or the other position according as the circuit through the magnet is opened or closed.

4. The combination, with a signal-wheel and actuating-train therefor, of a non-interference magnet in circuit therewith, a mechanical stop normally holding the armature of said magnet in its attracted position, and means for releasing said armature automatically on the starting of the train, to allow the armature freedom of action during a time longer than the longest closure in any signal.

The Examiner of Interferences adjudicated priority in favor of Ruddick on this issue, whereupon Milliken appealed to the Examiners-in-Chief on the following grounds:

First. The Examiner of Interferences erred in holding that the subject-matter of the interference is disclosed in Ruddick's original application.

Second. The Examiner of Interferences erred in holding that the subject-matter of the interference is not disclosed in Ruddick's prior application.

Third. The Examiner of Interferences erred in holding that the subject-matter of the interference had not been on sale for two years prior to the filing of Ruddick's original application and in public use and on sale for two years prior to the injection of the matter into Ruddick's case.

Fourth. The Examiner of Interferences erred in refusing to act under Rule 126, and refer the case to the Commissioner before rendering judgment on priority.

At the hearing before the Examiners-in-Chief Milliken made no contention respecting counts 1 and 3 of the issue. The Examiners-in-Chief declined to call the Commissioner's attention to any matter not relating to priority and rendered a decision affirming the decision of the Examiner of Interferences.

On October 22, 1894, Milliken appealed to the Commissioner from the decision of the Examiners-in-Chief. Before the date of hearing, however, he filed a motion to dissolve the interference as to issues 2 and 4 on the ground that—

there is no interference in fact; or that a statutory bar exists to the grant of a patent to either party; or that the inventions stated by said issues are not patentable to either party; or that neither party is entitled to claim the inventions covered by said issues, because the said inventions are disclosed and claimed in Patent No. 401,438, granted to the said Ruddick June 4, 1889, and that the said Milliken does not assert any date of invention as early as this patent, and the said Ruddick is barred from securing a second patent upon the same subject-matter, under the authority of the Supreme Court in the case of *Miller* v. *Eagle Manufacturing Co.*, (66 O. G., 845; 151 U. S., 186.)

Milliken also moved that the proceedings in the said interference be suspended until this motion is finally decided. He also petitioned praying, first, that an inquiry be instituted by the Commissioner of Patents to determine whether the said inventions were in public use or on sale for more than two years prior to Ruddick's application and that times be regularly fixed for the taking of testimony and for the hearing thereon; second, that an order be issued returnable on a day to be fixed by the Commissioner and directing that the said Ruddick show cause why such an inquiry should not be instituted; third, that the interference between the said applications of Ruddick and Milliken be suspended until said inquiry is made and the question raised thereby is finally decided. He also incorporates these points in his appeal.

Milliken made no contention before me respecting counts 1 and 3 and conceded priority to Ruddick as to counts 2 and 4. The principal contention in the interference case proper requires, therefore, no more than the formal affirmance of the decision of the Examiners-in-Chief in awarding priority to Ruddick. There remain, however, two other questions addressed to the discretion of the Commissioner, both argued before me. First, was Ruddick's invention, as ex-

pressed in counts 2 and 4 of the issue, in public use or on sale more than two years prior to his application for a patent? Second, was Ruddick's said invention disclosed and claimed in his prior patent?

Ruddick, in November, 1887, made two fire-alarm boxes embodying this invention to demonstrate its working. These models were taken by Mr. Polglase to Greenville, Ohio, in January, 1888, and exhibited there, where he attempted to secure a contract for putting in a fire-alarm system. They were taken to Wausau, Wis., in February, 1888, and exhibited by the Richmond Company, assignees of Ruddick, in competition for a fire-alarm system in that city.

On February 13, 1888, the Richmond Company made a contract with the city of Wausau obligating the company to install a fire-alarm telegraph system in that city for the sum of $2.995, payable in ninety days from the acceptance of the system. The company was to furnish an automatic electromechanical repeater with two independent circuits, two galvanometers, a test-galvanometer, a sufficient number of cells, wire lightning-arresters, alarm-bells, engine-house gongs, poles, fourteen fire-alarm signal-boxes, wherever located by the representatives of the city, a bell-striker upon a bell to be selected by the representatives of the city, gongs, and the accessories necessary for a fire-alarm system, and in addition was to furnish material and to do the work, so that the entire system should be complete and ready for operation within ninety days after the signing of the contract. The company further contracted as follows:

The city of Wausau, represented by its authorized representatives, shall furnish a suitable room for the central or battery station when required by the undersigned and shall secure the right of way through the public highway for the wire circuits and the use of such church or other bell as may be selected for giving alarms. Finally within ten days after a written notice from us to the authorized representatives of said city that the said telegraph system is completed ready for inspection, said city of Wausau, Wis., represented by its authorized representatives, shall examine the said telegraph system and if found to be constructed and completed in faithful compliance with the specifications herein set forth, the said representatives, acting in behalf of the said city of Wausau, shall immediately accept the same and deliver to the undersigned a certificate to that effect, which certificate shall constitute an order upon the proper disbursing officer of said city for the payment of the aforesaid sum of twenty-nine hundred and ninety-five dollars to the undersigned in ninety days from such acceptance.

On July 7, 1888, the city agreed to accept the system as complete under this contract, with the exception of the tower-striker, which the company agreed to place upon the new engine-house when ready for occupation. The system was actually turned over to the city in August, 1888. The two boxes which were exhibited at Greenville and at Wausau became a part of the system at Wausau and were finally accepted by the city. The remaining boxes were of the same character, and all of them embodied the invention in controversy.

It is this transaction that is claimed by Milliken to be of such legal effect that the boxes were thereby on sale when the contract was made, and if this be so it would follow that the boxes were on sale more than two years before Ruddick's application for a patent was filed in the Patent Office. It is claimed, too, that when the boxes were taken to Wausau and exhibited for the purpose of securing this contract, and likewise when they were taken to Greenville, Ohio, in January, 1888, and there exhibited, they were by such acts of Ruddick's representatives offered for sale, and were on sale within the meaning of section 4886 of the Revised Statutes, and as this was more than two years before Ruddick's filing date it is claimed that it must follow that no patent can issue to him.

It is necessary to consider the nature of this contract and what its effect—whether when made it amounted to an actual sale or whether, on the other hand, it was a mere executory agreement. It will be recalled that the city of Wausau was to do in the future a number of things—furnish a suitable room for the central station when required by the company, secure the right of way through the highway for the wire circuits, and procure a bell or designate one of the church-bells for giving the alarm. They were also to inspect this system when complete, and, if found to be constructed in compliance with the contract, to accept and pay for the system. The company on its part was to procure materials, and to do the work, and to furnish other materials, among them these boxes, many of which were thereafter to be made. It was the intention of the parties, gathered from the instrument itself and the surrounding circumstances, that no property was to pass to the city except upon conditions, and under all the authorities neither the boxes nor any other thing constituting a part of the system was to be treated as sold until all these conditions had been fulfilled.

Where the buyer is by the contract bound to do anything as a consideration, either precedent or concurrent, on which the passing of the property depends, the property will not pass until the condition be fulfilled, even though the goods may have been actually delivered into the possession of the buyer. (*The Elgee Cotton Cases*, 22 Wall., 180, 188.)

Nothing was required at common law to give validity to a sale of personal property except the mutual assent of the parties to the contract. As soon as it was shown by competent evidence that it was agreed by mutual assent that the one should transfer the absolute property in the thing to the other for a money price, the contract was considered as completely proven and binding on both parties. If the property by the terms of the agreement passed immediately to the buyer, the contract was deemed a bargain and sale; but if the property in the thing sold was to remain for a time in the seller, and only to pass to the buyer at a future time or on certain conditions inconsistent with its immediate transfer, the contract was deemed an executory agreement. Contracts of the kind are made in both forms, and both are equally legal and valid; but the rights which the parties acquire under the one are very different from those secured under the other. Ambiguity or incompleteness of language in the one or the other frequently leads to litigation; but it is ordinarily correct to say, that whenever a controversy arises in such a case as to the true character of the agreement, the question is rather one of intention than of strict law, the general rule being that the agreement is just what the parties intended to make it, if the intent can be collected from the language employed, the subject matter, and the attendant circumstances.

* * * * * * *

Standard authorities also show that where there is no manifestation of intention, except what arises from the terms of sale, the presumption is, if the thing to be sold is specified and it is ready for the immediate delivery, that the contract is an actual sale, unless there is something in the subject-matter or attendant circumstances to indicate a different intention. Well-founded doubt upon that subject cannot be entertained if the terms of bargain and sale, including the price, are explicit; but when the thing to be sold is not specified, or if when specified something remains to be done to the same by the vender, either to put it into a deliverable state, or to ascertain the price, the contract is only executory. In the former case there is no reason for imputing to the parties any intention to suspend the transfer, inasmuch as the thing to be sold and the price have been specified and agreed by mutual consent, and nothing remains to be done. Quite unlike that, something material remains to be done by the seller in the latter case before delivery, from which it may be presumed that the parties intended to make the transfer dependent upon the performance of the things yet to be done. (*Hatch* v. *Oil Company*, 100 U. S., 124, 130.)

Was the exhibition of these boxes at Greenville and Wausau under the circumstances an offer to sell them such that by such offer they were on sale within the meaning of section 4886 of the Revised Statutes? Neither the town of Greenville nor the city of Wausau had a fire-alarm system at the times under consideration. Ruddick's agent did not offer to the city, so far as appears by this record, a fire-alarm box in any other manner than as a part of a fire-alarm system to be installed by Ruddick or by his company. Nothing was done evincing an intention on his part to transfer to either of the municipalities a fire-alarm box except upon a contract such as that which he afterward made with the city of Wausau—that is, upon an executory contract containing conditions and requiring of the buyer much to be done precedent to the transfer of title.

I have considered the evidence tending to show that the boxes were completed, tested, and ready for immediate use; but it is thought that these boxes, whatever their condition, were at no time offered for immediate sale and that they were not made the subject of an absolute contract of sale. Milliken, however, has referred to several cases to show that the boxes were on sale when they were shown to the city of Wausau in February, 1888. The cases having the most direct bearing on this point are that of *Burton* v. *The Town of Greenville*, (18 O. G., 411; 3 Fed. Rep., 642,) where a drawing was shown to the city committee with an offer of sale of a lamp-post which was ready for sale and use, and in which the court held that this was an offer for sale; that of *Plimpton* v. *Winslow*, (22 O. G., 1207; 14 Fed. Rep., 919,) where it was held from a price-list of skates published more than two years prior to the filing date of the application that the article was on sale, and that of *Kells* v. *McKenzie*, (9 Fed. Rep., 284,) where a machine sent by a patentee to a user was held to be sent for sale, if satisfactory. In each of these cases the thing found by the court to be on sale was an article or machine actually existing in a complete and merchantable form, ready for the market and for use. All of these cases differ from that of Ruddick, whose company simply contracted with the city of Wausau to do work and supply materials, among which were to be commercial boxes not then made, but based upon the idea of devices embodied in the two models which were there exhibited.

It is obvious that a fire-alarm system is not like a machine or article. In a fire alarm system the operation of the devices is most important. The test of the two model boxes did not show that the boxes would work in actual practice, and the only thing that could demonstate the operation of Ruddick's boxes would be the test of actual trial in a fire-alarm system.

In the case of *Graham* v. *McCormick*, (21 O. G., 1533; 11 Fed. Rep., 859,) even where a machine was sold and delivered on trial, the court said:

This should be regarded rather in the light of a use of the invention for such practical tests as the law permits an inventor to make than as such a public sale or use as is contemplated by the statute. At that stage of the inventor's work his invention was largely in experiment and trial. It could only be tested by practical use in the field, and it was essential that it should be so tested. * * *

Again, in *Harmon* v. *Struthers* (57 Fed. Rep., 637) the court held that a patent for a reversed gear for steam-engines was not invalidated by the fact that the engine equipped with the patented device had been sold more than two years prior to the filing of the application for the patent, upon the ground that the device had to be tested by practical work in the oil-field. The court, in referring to *Graham* v. *McCormick*, *supra*, said:

* * * If necessary in making tests, an inventor may sell a machine on trial so as to get it fully and fairly tested by practical use by the class of persons for whose use it is intended and such sale or use, even for more than two years if made for the purpose of practical test, will not invalidate the patent.

But in the case at bar, although the invention was being tested, no sale or offer for sale was made. The whole time the system was being installed and during the practical tests the boxes and all other material remained in the possession of the constructors and did not become the property of the city of Wausau until the system was completed, tested under the supervision of the city committee, and the system accepted and finally turned over to the city in August, 1888.

In *Campbell* v. *Mayor of New York* (45 O. G., 345; 36 Fed. Rep., 260) the court said:

An order for the construction of an engine, accepted, would not make a sale of it. If the terms of the order were such that the construction, as it progressed, was for the city, and the maker merely furnished the labor and materials which became the property of the city when used, the city itself would construct the engine, and there would be no purchase of it by, or sale of it to, the city, and nothing, in the view now taken of the effect of construction, to affect the right of the inventor to a patent until there was use of the engine by the city. And if the terms were such that the engine remained all the while the property of the maker as it was being built, a passing of the title afterward would be necessary to make a sale to the city * * * It would be the property of the maker when forwarded, and delivery to and acceptance by the city would be necessary to make it the property of the city.

Walker, section 96, page 77, cites this as a case in which—

where a specimen of an invention is built or made to order, it is not "on sale" till it is completed, delivered, and accepted.

Had there been a fire-alarm system in Greenville or Wausau and had Ruddick or his assignees gone to either place and offered the boxes in place of other boxes already in the system, or had they offered a complete box or boxes for sale to the city, with the intention that the city should install the plant and use said boxes in the system, I should have no hesitancy in deciding that there had been an offer for sale of the invention, and that it was on sale; but such was not the case, and as Ruddick only offered to do certain work and furnish materials in installing a system I cannot regard this as putting on sale one part of the system—the boxes.

Upon the suggestion that other evidence would be produced in case public-use proceedings were instituted it sufficiently appears that such testimony would be of the same nature as that found in the record and would tend to show merely that Ruddick negotiated in another place for the installation of a fire-alarm system making use of his boxes, which, if proved, would nevertheless leave the case, upon the view of the law herein set forth, in the same condition as now. It is considered, therefore, that the petition of Milliken that an inquiry be instituted to determine whether Ruddick's inventions were in public use or on sale for more than two years prior to Ruddick's application and praying that an order be issued directing that Ruddick show cause why such an inquiry should not be instituted and that the interference should be suspended pending the inquiry must be denied, and the petition is accordingly dismissed.

The decision of the Examiners-in-Chief in awarding priority to Ruddick is affirmed. The Examiner is di-

rected, however, before passing the case to issue, to consider whether Ruddick's prior patent, No. 404,438, is a bar to the issue of a patent covering counts 2 and 4 of the issue in this interference.

EX PARTE INDIANA BICYCLE COMPANY.

Decided August 23, 1895

TRADE-MARK—GEOGRAPHICAL NAME—"WAVERLEY"—REGISTRABLE.

The word "Waverley," while it is used to designate localities, yet it is not "merely a geographical name" in the sense employed by the Supreme Court in *Columbia Mill Co.* v. *Alcorn*, (65 O. G., 1916,) and may be registered.

APPEAL from the Examiner of Trade-Marks.

TRADE MARK FOR BICYCLES.

Application for registration filed by the Indiana Bicycle Company June 6, 1895.

Mr. Chester Bradford and *Mr. E. W. Bradford* for the applicant.

FISHER, *Acting Commissioner:*

This is an appeal from the decision of the Examiner of Trade-Marks refusing registration of the word "Waverley" on the ground that it is a geographical term.

It is undoubtedly true that "Waverley" is in use to designate localities; but I do not think it is a "merely geographical name" in the sense employed by the Supreme Court in *Columbia Mill Co.* v. *Alcorn*, (65 O. G., 1916.) The word has a primary meaning or signification other than geographical—the name of a famous series of novels. It does not appear that the word was a clearly-recognized geographical name prior to the publication of the novels, and at any rate its romantic signification overshadows any other.

I think, then, that the name may be held to form an exception to the general rule, and the decision of the Examiner is overruled.

EX PARTE HENDLEY.

Decided August 27, 1895.

1. TRADE-MARK—GEOGRAPHICAL NAME—"CLOVERDALE"—NOT REGISTRABLE.

The word "Cloverdale" primarily has a geographical meaning and should not be registered. (*Columbia Mill Co.* v. *Alcorn*, 65 O. G., 1916, followed.)

2. SAME—SAME.

The classes of geographical names which may and may not be registered as trade-marks indicated.

APPEAL from the Examiner of Trade-Marks.

TRADE-MARK FOR CANNED GOODS.

Application for registration of Frank P. Hendley filed April 19, 1895.

Messrs. A. H. Evans & Co. for the applicant.

FISHER, *Acting Commissioner:*

This is an appeal from the decision of the Examiner of Trade-Marks refusing to register the word "Cloverdale" as a trade-mark for canned fruits and vegetables. The refusal of the Examiner was based upon the holding of the Supreme Court in *Columbia Mill Co.* v. *Alcorn*, (65 O. G., 1916; C. D., 1893, 672,) to the effect that—

merely geographical names cannot be appropriated and made the subject of an exclusive property.

Geographical names may for convenience be divided into three classes: first, those that are well known and in common use—such, for example, as "United States," "New York," "San Francisco," etc. The law is settled that words coming under this class ought not to be registered. The second class includes words which in their primary significance are not geographical, even though they may appear in the *Postal Guide* or similar publications. Such words as "Trilby," "Creole," "Puritan," and "Volunteer" are good examples of this class. These words, it seems to me, ought not to be refused registration on the ground that they are geographical, since it cannot fairly be said that they are "words *in common use* as designating locality or section of a country." The third class would logically occupy a position between the two classes mentioned above, and it consists of words which primarily have a geographical meaning—for example, terms ending or compounded with such words as "city," "town," "shire," "mount," or "mont." This class would include such words as "Lake City," "Charlestown," "Hampshire," and "Vermont." Such words, I think, should not be registered, for the reason that they are clearly geographical in their primary significance, even if it cannot be said that they are widely enough known to come strictly under the first class.

It seems to me that the word in question, "Cloverdale," clearly comes under the third class, and the decision of the Examiner refusing registration is therefore affirmed.

DECISIONS OF THE U. S. COURTS

U. S. Circuit Court of Appeals—Second Circuit.

BONSACK MACHINE COMPANY *v.* ELLIOTT. BONSACK MACHINE COMPANY AND THE AMERICAN TOBACCO COMPANY *v.* NATIONAL CIGARETTE AND TOBACCO COMPANY *et al.*

Decided June 28, 1895.

1. HOOK—CIGARETTE-MACHINE—PRIMARY INVENTION—INFRINGED.

Claim 2 of Letters Patent No. 184,207, to A. H. Hook, for a cigarette-machine, issued November 7, 1876, examined and *Held* to be for a patentable and primary invention, notwithstanding that in diverse and non-analogous arts an envelope had been wrapped around a core, and infringed.

2. EMERY—SAME—NON-INFRINGEMENT.

Claims 10 and 12 of Letters Patent No. 216,164, to Charles G. and William H. Emery, for a cigarette-machine, issued June 3, 1879, are not entitled to a broad construction, and, as construed, not infringed.

3. SAME—SAME—NON-PATENTABILITY.

Claims 14 and 15 of same patent are for minor details of mechanism, and *Held* not to contain patentable improvements.

4. BONSACK—SAME—NON-INFRINGEMENT.

Claims 6 and 7 of Letters Patent No. 238,640, to James A. Bonsack, for a cigarette-machine, issued March 8, 1881, construed to contain the principle of operation of the "Emery belt-machine," with improvements, but *Held* not infringed.

5. EMERY—SAME—INFRINGED.

Claims 1 and 2 of Letters Patent No. 308,556, to Charles G. Emery, for a cigarette-machine, issued November 25, 1884, *Held* to be infringed.

Mr. Samuel A. Duncan and Mr. M. B. Philipp for the complainants.

Mr. Edwin H. Brown for the defendants.

SHIPMAN, *J.:*

The Bonsack Machine Company brought a bill in equity in the Circuit Court for the Southern District of New York against Henry C. Elliott, which charged infringement of four Letters Patent for cigarette-machines—viz., No. 184,207, granted to the assignees of Albert H. Hook on November 7, 1876; No. 216,164, granted to Charles G. Emery and William H. Emery on June 3, 1879, and known as the "Emery belt patent;" No. 238,640, granted to James A. Bonsack on March 8, 1881, and No. 308,556, granted to Charles G. Emery on November 25, 1884, and known as the "packing-bar" patent. Upon proofs taken for final hearing the circuit court granted an injunction against the infringement of the second claim of the Hook patent; of the tenth, twelfth, fourteenth, and fifteenth claims of the Emery belt patent; of the sixth and seventh claims of the Bonsack patent, and of the first and second claims of the packing-bar patent.

After this interlocutory decree the circuit court for the same district, in the bill of equity of the Bonsack Machine Company and the American Tobacco Company, its licensee, against the National Cigarette and Tobacco Company and others, enjoined the defendants, *pendente lite*, against the infringement of the same claim of the Emery belt and the Bonsack patents by the use of the machine known as the "Baron machine."

The defendants in each case appealed from the respective decrees.

The Hook invention, which was made in the early part of 1872, was for the manufacture of a "continuous" cigarette of indefinite length, to be cut up, as it left the machine, into separate cigarettes of the ordinary length. Previously cigarettes had been made singly, by hand, and machines existed which were designed to manufacture them automatically in the same way. Hook's machine embodied the result of the first known attempt to manufacture a rolled and wrapped cigarette of indefinite length. It was never used to manufacture for sale, and probably never could have been a commercial success; but as a wrapping device it contained the rudimental mechanism which has reappeared in each of its successors.

In this machine a ribbon of paper, as it was unwound from a spool, passed over a gum-wheel, which placed a narrow streak of paste upon one edge of the ower side of the ribbon. Thence the paper passed into a trough, which, starting from a flat surface, gradually curved more and more upward until it terminated in a tube-former, and thus a paper was formed into a tube, which passed into and through a hollow cylinder, in which the two edges of the tube were made to adhere together. Before the ribbon was formed into a tube a bucket-wheel delivered tobacco upon the flat surface of the paper. The filler was thus made and the wrapper was rolled about the filler simultaneously in the same trough or tube-forming die.

The French patent of Abadie & Co., antedated July 10, 1874, was issued on October 5, 1874, and describes a mechanism which, like the Hook machine, was a commercial failure. The French machine contained a pump-plunger by means of which loose tobacco was compressed and moved onward through a metallic molding-tube, which had an interior diameter equal to the thickness of the cigarette which was to be manufactured and molded the tobacco in cylindrical form. It also contained a—

helicoidal mold, which incloses the orifice of the molding-tube, supports the paper in trough form, and also bends the paper into tubular form with one edge of the band of paper overlapping the other so that the paper incloses the tobacco-filler delivered by the forming-tube.

The operation of the various elements of the machine was described in another case by Mr. Edward S. Renwick as follows:

The said principal members of the Abadie machine are so combined that the band or strip of paper is drawn from the spool past the gum-wheel and past the hopper and through the helicoidal mold, by whose action the ribbon partially bent against the rounded side of the hopper is formed into a tube with one edge overlapping the other, and simultaneously with these drawing and tube-forming operations, the tobacco is delivered in a regulated quantity, is compressed into a cylindrical filler, and is fed upon the band of paper during its formation into a continuous tube, the said band being gummed previously and having its edges finally pasted together, and the continuous cigarette being wound on the reel.

The paper is gradually folded into a tube around the previously-compressed filler and, the edges of the wrapper having been gummed, the filler is enveloped and the wrapper is pasted in the helicoidal mold.

The Emery belt patent was an advance upon the Hook machine. It adopted the principle of forming the filler before beginning the wrapping operation. The filler was continuously formed before it reached the wrapper in an endless traveling belt curved around the tobacco by the walls of a chamber through which the belt passes.

This endless belt separates from the tobacco filler as it delivers it to the paper wrapper and disappears beneath the table, but after the paper strip has been wrapped around the filler and the overlapping edge pasted down, the belt reappearing above the table, comes into action again and is caused to encircle the sealed cigarette-rod with a close frictional contact, by passing with it through a hollow cylinder or guide-tube.

In the movement through this tube the cemented edges of the wrapper are pressed together until the paste has set.

It was contended in the circuit court, and the court found, that a third and unpatented Hook machine, made prior to the date of the Emery invention, contained an endless ribbon, which was drawn through the machine under the paper ribbon to support it and relieve it from strain. The circuit court therefore found the thirteenth claim of the Emery patent, which was for "an endless belt and a guide-tube, whereby a continuous filler in a sealed wrapper is inclosed and carried forward," to be invalid. Upon this appeal it is not necessary to determine the question of the existence of the third Hook machine as a completed mechanism.

The Bonsack machine is a commercially-successful improvement upon the Emery belt-machine, its main difference being that the belt, which underlies paper and filler, passes with both through the wrapping mechanism. The minor particulars, which are described in the claims which are in controversy, are improvements in the specific rolling and wrapping devices. An open trough having side guides for the belt receives the filler, and belt and tobacco and paper are conveyed into a former, which is a tapering tube having a spiral groove extending from one of the side guides to the end of the tube, when the edges of the

tube lap past each other, so as to form a flange continuous with the spiral groove. The object of these particular devices is to perfect the folding and wrapping mechanism, so that the edges of the tube and the tube itself, while being pasted and folded, may be controlled and kept in place.

The invention described in the packing-bar patent consists, in the language of the specification—

In the combination, with the traveling tape or filler-forming belt, of a tamping and compressing bar having vertical adjustment and acting intermittently upon the tobacco, to tamp, compress, and pack the same within the upwardly-curving belt at the point where it passes through the packing-chamber and previous to its entering the filler-forming tube.

The Elliott machine, which is the device alleged to be an infringement, is described in reissued Letters Patent No. 11,104, dated August 19, 1890, and issued to Robert Hardie, assignor to Elliott. It is a complex machine and is described by Judge Wheeler, in his opinion in the circuit court, as follows:

The stock for the filler is first deposited in the thin layer upon a feed-table provided with a traveling feed-belt. A blade then carries a row of the stock along the table toward jaws, between which the mass is clamped. A tongue then compresses the material between the jaws into a solid block or rod against a support, the material being thus molded in a four-part mold, so that it forms a rod or section of the filler in its fully compressed state before the application of the wrapper, thereby rendering unnecessary any further compressing after the application of the wrapper. Meanwhile, the wrapper in the form of a continuous strip, is bent to a U shape transversely, and is then conducted with a traveling belt through a grooved support-guide or receiving-chamber, and the jaws then convey the rod to a position above the curved wrapper, and the tongue descends and moves the rod from between the jaws, discharging it into the wrapper, where, in some cases, it will expand slightly, the end of the rod overlapping that previously deposited, and the tongue pressing the overlapped portions together to form a continuous filler. The belt travels continuously, so that while the tongue is in contact with the rod the tongue and the receiving chamber travel longitudinally, together with the belt, wrapper, and rod; but as soon as the tongue rises the chamber and tongue move longitudinally back to their former positions. The wrapper and filler are then carried by the belt from the reciprocating chamber to a folding-chamber, where one edge of the paper is turned in, the paste applied to the standing edge, and the latter is then turned down and secured, the belt conducting the wrapper and rod until these operations are accomplished, after which it is deflected and the filled wrapper passes through a holder, which serves as a support and as an edge against which a revolving cutter shears the same into short sections or cigarettes. The tongue is given two principal motions, an up-and-down reciprocating motion between the jaws and a longitudinal reciprocating motion with the receiving channel. The up-and-down motion serves to compress the tobacco into a rod, to clean the jaws, and force or deliver the rod of tobacco-stock down into the receiving-channel. The longitudinal motion is applied, and the tongue carried forward simultaneously with the receiving channel at the same time that such tongue is being forced between the grippers down into the receiving channel, "giving it sufficient pressure at the lapping end to form with that portion which has passed forward in the channel a continuous cigarette-rod."

The peculiar shape and arrangement of the former in relation to the receiving-channel and the paper ribbon as it is fed off from the reel and passes below an adjustable roller, causes the paper ribbon to be evenly and neatly folded up in the U-shaped form shown in the receiving-channel. It travels through the receiving-channel with its edges under hooks or turned-down flanges of guides, and the ribbon is maintained in such shape with the tobacco rod resting in it throughout the length of the receiving-channel and until it is acted upon by beveled folding-rollers above the folding-channel. The tape is also folded into a U shape by the former and travels through the receiving channel below the paper ribbon, so as to protect it and to assist in carrying it forward. After leaving the receiving-channel the paper ribbon is folded over first at one edge, while the other edge is pasted, and then the pasted edge is folded over to form a complete wrapper for the filler-rod, as heretofore described with reference to the folding-channel and its beveled rollers. As the wrapped and completed rod passes forward through a tubular holder in the cutter-carriage, it is cut into cigarette-lengths by a rotating cutter-blade.

The only claim of the Hook patent which is in issue upon this appeal is the second, which is as follows:

2. The combination of spool A, gumming-wheel B trough C, cylinder D, with a mechanism for charging with tobacco and drawing the ribbon *a* through the trough and cylinder, as set forth.

The elaborate effort of the defendant to show that the different elements of the Hook machine existed in scattered form in mechanism relating to arts remote from that of the formation of a continuous cigarette-rod was superfluous. It is admitted by the complainants that each element *per se* was old, and it is practically admitted by the defendants that the combination of the several elements was new.

The question of the existence in the Hook machine of patentable invention was also raised; but time was wasted in attempting to show that machines relating to diverse and non-analogous arts in which some sort of an envelope was wrapped around some sort of a core prevented the exercise of invention in the formation of a previously-unknown machine which could wrap loose tobacco in thin delicate paper and by various molding and pasting devices produce a continuous and usable cigarette-rod.

The Hook machine was a patentable and primary invention, and its wrapping mechanism exists, with many improvements, in the machine of the present day, and is found in the Elliott machine, which folds the paper ribbon in the general way which Hook crudely pointed out. But it is said that Hook's invention was a combination of means whereby the tobacco was deposited upon a slip of paper and drawn through a trough adapted to perform simultaneously the office of forming the filler and wrapping it in the paper, while the principle of Elliott's machine consists in forming the filler and wrapping it by separate operations. This is true; but the conclusion does not follow that Hook's trough, or any trough having its functions, has been dispensed with. Elliott does not use the original trough for both making and wrapping the filler simultaneously. He uses it simply for wrapping, and Hook's invention being a primary one it is not vital upon the question of infringement that Elliott does not scatter the tobacco loosely upon the paper, but presents it to the paper in the form of a compressed filler. He uses the Hook wrapping device, although experience has taught the wisdom of not attempting to use it as a filler-forming device.

We concur in the opinion of the circuit court that the second claim of the Hook patent was, during its lifetime, infringed. The tenth, twelfth, fourteenth, and fifteenth claims of the Emery belt patent are as follows:

10. In combination with an endless belt, a filler-forming chamber, and a guide for applying a wrapper around a filler, a conductor or chamber through which the continuous filler and wrapper are conveyed to a suitable pasting device, whereby the swelling of the filler is prevented, and the wrapper is held in form while the edges are secured by pasting, substantially as described.

12. The combination of a gage or former for uniting the edges of the wrapper with a paste supplying and distributing disk, and mechanism for operating the same, a guide for wrapping a wrapper around the filler, a filler-forming chamber, and an endless flexible belt, all to operate in a manner substantially as described.

14. In combination with devices for forming a continuous cigarette of any desired size an endless belt, a guide-tube, and a delivery tube, whereby a continuous cigarette is presented to the action of suitable cutting mechanism for division into desired lengths, substantially as described.

15. The combination of an endless belt and guide-tube with a delivery-tube and suitable cutting devices, whereby a continuous cigarette of any desired diameter can be advanced and severed into desired lengths, substantially as described.

The question of infringement of the Emery belt patent is the one of most importance in the case and depends upon the construction which shall be given to the tenth and twelfth claims. The complainant considers that the essence of the combinations of these four claims is that the filler of the cigarette is formed

in one set of devices and wrapped with the wrapper in another set of devices and that the endless belt, as a carrier or conveyer, connects the two sets together, and therefore that the particular kind of filler-forming chamber is unimportant. If a machine has a filler-forming chamber and a guide for wrapping the filler, but has an endless belt connecting the two sets of devices and a chamber which prevents the swelling of the filler, through which the filler, however formed, and wrapper are conveyed to a pasting device, the tenth claim is, in the opinion of the complainant, infringed.

This construction, as we understand, was substantially acceded to by the circuit court, and would seem to have strength, unless account is taken of the Abadie invention.

The French machine had separate devices for filler forming and wrapping, and the formed filler was fed upon the paper strip during its formation into a continuous tube, after it had been gummed, but before its edges had been pasted together. The essence of the Emery belt invention was disclosed by Abadie & Co. in an imperfect form, the main defect being in the set of devices which formed and delivered the filler; but in view of this machine the Emery patent is not entitled to a broad construction, so as to include within its terms machines in which a filler, however formed, is delivered by an endless belt to a paper strip to be wrapped by the aid of a guide and then passed through a pressure-tube while being pasted. The Emery belt was not a mere carrier. It was continually a forming and encircling tube. An endless belt to serve simply as a carrier has a different character and performs a different office from the belt of the Emerys. The complainants' construction gives to its belts a scope wide enough to include a support which should do the simple work which the ribbon of the third Hook machine is said to have done. Such a construction gives to the patent a priority which it did not historically possess, improperly broadens the patentable character of the belt, and extends the control of the patent over all subsequently-developed devices for the formation of a filler.

The endless belt of the tenth and twelfth claims is curved, so as to compress the tobacco and form the filler, and the filler forming chamber is one in which the filler is molded by the curved belt.

The two claims are to be limited to the endless belt, which is curved transversely into tubular form to constitute a mold, which compresses or molds the tobacco into a filler, and to the filler-forming chamber, which operates to bend or curve the belt into the tubular form, not merely to enable it to receive or carry, but to enable it to form a filler by the power conveyed by it. Neither the belt nor the filler chamber of the Elliott machine possesses these characteristics. The tobacco is clamped between jaws and then compressed against a support into a compact block or rod. The jaws then convey the rod to a position above the previously curved wrapper, into which the filler is discharged.

The fourteenth and fifteenth claims are for the minor details of mechanism by which the completed cigarette-rod is presented to the cutting mechanism. That it was to be drawn along and to be presented to cutting devices was shown in the Hook patent, and therefore the need of some sort of guide or delivery tube or conveying mechanism was obvious. If the claims for these minor and indispensable details disclose any patentable invention, they must receive a narrow construction and be limited to the mechanism which is shown. In this event the Elliott machine is not an infringement, for the grooved rollers are not the delivery-tube of the Emerys; but we think that the claims do not contain any patentable improvement.

The Bonsack machine contained both the principle and the general method of construction of the Emery belt-machine, but with improvements in detail which make it capable of producing a large and accurately-made product, and it is, therefore, a commercially-valuable machine. The sixth and seventh claims are as follows:

6. In a cigarette-machine which rolls a continuous cigarette in an endless belt by passing through a tapering tube, the combination of an open trough having side guides for the belt, a tapering tube having a spiral groove extending from one of said guides, and a terminal section to the tapering tube, having its edges lapped past each other, but not united, so as to form a flange continuous with the spiral groove, substantially as and for the purpose described.

7. In a cigarette-machine which rolls a continuous cigarette in an endless belt by passing through a tapering tube, the combination of an open trough having side guides for the belt, a tapering tube having a spiral groove extending from one of the side guides of the trough, and a terminal section having its edges separated to form a flange, *b'*, to give access to the paste wheel and then closed again, as and for the purpose described.

In the Bonsack wrapping mechanism the filler, paper, and belt pass from an open trough with overlapping edges, called "side guides," and which can hold down the edges of the belt, into a tapering tube, in which a spiral groove extends from one of these side guides, and as the edges of the end of the tapering tube lap over each other the spiral groove terminates in what the sixth claim calls a "flange." The operation of this part of the mechanism is described in the patent as follows:

Now, as the tobacco roll and paper strip pass on the belt into the trough the curved edges of the latter give the incipient curve to the paper, and after they have entered the tapering tube the curving and wrapping of the paper around the rod proceed upon one side only, by reason of the spiral guide groove *a'*, Fig. 8, for the edge of the belt. As soon as the complete circumference is made the guide-groove *a'* opens in the form of a longitudinal flange or lip, *b'*, which allows the upper or lapping edge of the paper to be exposed long enough to receive paste on its underneath edge from a paste wheel or brush, (shown in Fig. 10,) after which the tube closes again, as in Fig. 9, to force the pasted and lapping edge down upon the body of the cigarette

The Elliott machine has no tapering tube having a spiral groove extending from one of the side guides of the open trough. It has an open trough with side guides for the belt, which is continued into a tube, which is not tapering and contains no spiral groove.

The first and second claims of the packing-bar patent are as follows:

1. In a cigarette-machine, the combination, with a traveling filler-carrying belt and a packing-chamber, of a tamping, packing, and compressing bar, and mechanism, substantially as described, for giving said bar intermittent action upon the tobacco, substantially as and for the purpose set forth.

2. In a cigarette-machine, the combination, with a filler carrying belt and a packing chamber, of a tamping, packing, and compressing bar, and mechanism, substantially as described, for giving said bar motion toward and with the belt at intervals, substantially as and for the purpose set forth.

The molding device of the Elliott machine, consisting of a tongue which compresses the tobacco clamped between jaws into a compact rod, which is then conveyed above the curved wrapper and discharged into it, is an infringement of these claims.

The bill in equity against the National Cigarette and Tobacco Company was brought after the expira-

tion of the Hook patent and did not allege an infringement of the packing-bar patent.

The following description, in outline, of so much of the Baron machine as is important with reference to the tenth and twelfth claims of the Emery belt patent and the sixth and seventh claims of the Bonsack patent is condensed from the affidavit of Mr. Hannan, a former machinist of the defendant corporation:

Directly beneath the hopper is placed a trough, in the bottom of which runs an endless conveyer-belt over pulleys. In front of the hopper are two pairs of horizontal grooved compressing-wheels, one pair being set so that their peripheries are nearer together than those of the other pair. The conveyer-belt runs beneath these wheels in contact with the under sides thereof, resting upon the upper side of the supporting table or bed. Immediately above these compressing-wheels is located a short endless compressor-belt, which passes over pulleys. The under portion of this belt runs in contact with the upper surface of the compressing-wheels. The endless conveyer-belt which runs through the trough receives the tobacco as it is discharged from the bottom of the hopper and conveys it between the two pairs of grooved compressing-wheels underneath the short belt and then delivers it, fully shaped by the compressing-wheels into the form of a rod, to the strip of paper to be wrapped.

The folding and wrapping devices are as follows: The paper strip which is used for wrapping the filler is taken from a reel below the bed of the machine and is brought up through a guide-slot and then led into an open trough, so as to overlie a belt. The slots through which the belt and the paper strip thus pass are formed in small pieces of metal, which, by means of screws seated in the bed of the machine, are made laterally adjustable independently of each other. These slots serve as side guides for the paper and belt, respectively. The trough, starting from nearly a flat form, has its sides gradually bent up and drawn in until it takes on a **U** shape in cross-section. The first end of the tubular channel, which lies just beyond the trough, is provided with an overhanging hood, which is concave on its under side. One end of this hood is in contact with the grooved periphery of the guide-wheel, the function of this guide-wheel being to insure the proper introduction of the filler-rod beneath this hood. This channel is tapering vertically. A portion of the channel-piece is gradually curved over, so as to overhang the channel in which the belt, the paper, and the tobacco are moving, so as to fold one edge of the belt and paper over until they are taken by a wheel, which folds them over still further. Beyond the folding-wheel lies the paste-wheel, which delivers a film of paste upon the standing edge of the paper. The overhanging part of the channel-piece continues to hold the first edge of the paper down in position on the filler while the paste is being applied to the standing edge. Beyond the paste-wheel the standing edge of the paper and belt encounter a folding-wheel and are gradually turned over thereby, so as to overlap the first edge of the paper, which has previously been folded down into contact with the filler.

As the Emery belt patent has been construed, this machine does not infringe either of its claims. While it has the tapering tube and may be considered to have the side guides of the sixth and seventh claims of the Bonsack patent, it does not have the tapering tube having a spiral groove extending from one of the guides, or a flange continuous with a spiral groove, and does not infringe either of these claims.

The defendant in the Elliott case moved the circuit court to strike out questions ten, twelve, and sixty-eight to seventy-two in the second deposition of Mr. H. F. Newbury and the answers thereto, these questions and answers having been seasonably objected to before the examiner when the deposition was taken. The circuit court did not make any formal ruling upon the motion, but received the whole deposition. One of the assignments of error is that the court therein erred. The last paragraph of the answer to question twelve, the second paragraph of the answer to question sixty-nine, the entire answers to questions seventy-one and seventy-two are inadmissible, because they are statements admittedly made from hearsay and not from the knowledge of the witness. The attention of the bar of this circuit is again called to the inexpediency of allowing irrelevant matter in depositions in patent causes.

The interlocutory decree of the circuit court in the case against Henry C. Elliott is directed to be modified, without costs of this court to either party, so as to decree against an infringement only of the first and second claims of Patent No. 308,556, and to direct an accounting with respect to the infringement of said claims and of the second claim of the Hook patent, and to find that said three claims only have been infringed. The interlocutory order of the circuit court, *pendente lite*, in the case against the National Cigarette and Machine Company is reversed, with costs of this court.

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The Official Gazette.

THE OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $10; single copies, 10 cents, if mailed to foreign countries 10 cents additional for postage; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $3.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Women Inventors.

The Patent Office has published and has for sale a volume containing a list of women inventors to whom patents have been granted by the United States from 1790 to July 1, 1888. 44 pages. Paper covers, 50 cents.

An Appendix to the above, covering the period from July 1, 1888, to October 1, 1892, has been published, and is now for sale. 18 pages. Paper covers, 25 cents.

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When the full first name of the applicant does not appear either in his signature or in the preamble to the specification, the Examiner will, in his first official letter, require an amendment supplying the omission, and he will not pass the application to issue until the omission has been supplied, unless an affidavit shall have been filed setting forth that the full first name of the applicant is the one originally given by him.

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Issue of September 17, 1895.

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Prints	None.	
Reissue	None.	
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Guatemala			Victoria		
Hawaii			West Australia		
India					
Ireland	1		Total to citizens of foreign countries	30	2
Italy					

APPLICATIONS UNDER EXAMINATION.

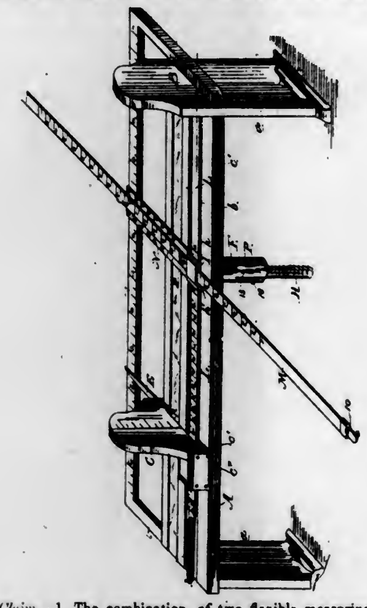
Condition at Close of Business September 10, 1895.

Division No.	Subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears.—Under one month.			
15	Plastics, Paper-Making, Paving Glass, Fuel, Bread-Making, etc.	Aug. 18	Sept. 9	68
31	Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	Aug. 10	Sept. 7	76
11	Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather Working Machinery.	Aug. 12	Sept. 6	170
4	Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Aug. 30	Sept. 3	50
12	Mechanical Engineering, Store Service, etc.	Aug. 19	Sept. 3	110
3	Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	Aug. 10	Sept. 3	110
5	Fine Arts, Stationery, Book-Binding, Music, etc.	Aug. 12	Aug. 28	118
13	Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Aug. 15	Aug. 27	80
17	Paper-Manufactures and Printing	Aug. 13	Aug. 27	96
16	Telegraphy, Telephony, Electric Lighting and Signaling.	Aug. 10	Aug. 27	116
34	Railway Brakes, Draft Appliances, and Rolling-Stock.	Aug. 10	Aug. 27	123
27	Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Aug. 12	Aug. 26	156
8	Furniture, Beds, Store Furniture, etc.	Aug. 12	Aug. 26	267
20	Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	Aug. 12	Aug. 24	121
25	Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone-Working, Vegetable Cutters and Crushers.	Aug. 11	Aug. 24	100
23	Instruments of Precision, Acoustics, etc.	Aug. 10	Aug. 23	114
21	Textiles, etc.	Aug. 12	Aug. 22	78
2	Farm Stock, Products, etc	Aug. 14	Aug. 21	167
29	Wood Working Machines, Carpentry, Coopering and Roofing, etc.	Aug. 10	Aug. 21	129
18	Steam-Engineering, etc	Aug. 14	Aug. 19	94
14	Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	Aug. 12	Aug. 19	108
6	Chemistry, Explosives, Medicines, Fertilizers, Preserving, Photography, Sugar and Salt, Surgery.	Aug. 12	Aug. 19	207
1	Tillage and Fences	Aug. 13	Aug. 13	221
26	Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Aug. 10	Aug. 10	157
28	Pneumatics, Refrigeration, Air and Gas Engines, etc.	Aug. 10	Aug. 10	180
22	Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Aug. 10	Aug. 7	125
	Between one and two months.			
9	Hydraulics, Fire-Extinguishers, etc	July 11	Aug 19	320
10	Carriages and Wagons	Aug. 7	Aug. 17	216
32	Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels, etc.	Aug. 2	Aug. 16	287
7	Harvesters, Games and Toys, and Velocipedes.	July 30	Aug. 12	590
19	Stoves and Furnaces	Aug. 3	Aug. 10	296
30	Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, Optics.	Aug. 7	Aug. 7	287
24	Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	July 20	July 24	240
	Total number of applications awaiting action			5,577
	Under one month in arrears.			
	Designs	Aug. 26	Sept. 3	68
	Trade-Marks	Aug. 23	Sept. 7	46

PATENTS

GRANTED SEPTEMBER 17, 1895.

546,287. SHOEMAKER'S MEASURE. ABRAHAM S. ADLER, Baltimore, Md. Filed Jan. 16, 1895. Serial No. 535,144. (No model.)



Claim.—1. The combination, of two flexible measuring straps one of which is arranged at approximately right angles with the other and a slotted head in which both straps are slidably mounted, one of said straps being bendable in a plane at right angles with its own width and adapted to inclose a foot or other inserted object, and a plate or bar projecting in the direction of the length of the inclosing straps and having a scale of series of graduations over which the free end of the said strap passes to disclose the circumferential measurement of the object inclosed by the strap.

2. The combination, with a support having a heel and toe piece, of a vertically spring-actuated device slidable longitudinally on said support, and a measuring strap slidable through said device.

3. The combination, with a suitable base having a heel and toe piece, of a support, and a strap slidable through said support having one end fixed and the opposite end yieldingly corrected.

4. The combination, with a suitable base having a heel and toe piece, of a support, and a strap slidable through said support having one end fixed, and a spring connecting the opposite or free end with a fixed point whereby said end is free to move and the strap is kept normally under tension.

5. The combination, with a suitable support having a heel and toe piece, of a vertically movable device slidable horizontally on said support, and a measuring strap slidable on the device in planes at about right angles to the horizontal sliding movement thereof and bendable in planes at right angles to its own width.

6. The combination, with a suitable support having a heel and toe piece, of a device slidable horizontally and vertically on said support, and a measuring strap slidable on the device in planes at about right angles to the horizontal sliding movement thereof, said strap being bendable at right angles to its own width having one end adapted to fixed and its opposite end free.

7. The combination, with a base or support having a longitudinal slot or guide, a heel and toe piece on said base one of which is fixed and the other adjustable, a tube or sleeve slidably mounted in said slot, a spring-actuated rod in said tube or sleeve, having guides or slots in its upper portion or head arranged one at right angles to the other, and flexible measuring straps slidably mounted in said guides.

8. The combination, with a base or support having a heel and toe piece one of which is fixed and the other adjustable, of a flexible measuring strap traversing the base, having one end fixed and the opposite end free to move, and a spring-actuated device through which the strap passes whereby the strap may be caused to conform to a curved or irregular outline and disclose the length thereof.

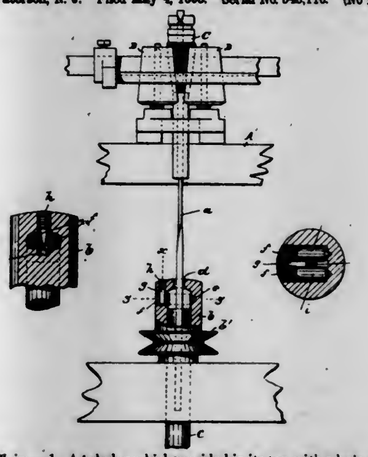
9. The combination, with a slotted base or support having a heel and toe piece, a flexible measuring strap extending along said base, a slide on said strap having a depending rod, a sleeve or tube for the rod having a spring to act thereon to project it upward, and means for holding the rod depressed.

10. The combination, with a slotted base having a heel and toe piece, a flexible measuring strap extending along said base, a slide on said strap having a depending rod, a sleeve or tube for the rod having a spring for projecting the rod upwardly, means for holding the rod depressed and means for indicating the amount of movement of the rod.

11. The combination, with a slotted base having a heel and toe piece, a measuring strap on said base having one end fixed and the opposite end free to move, a tube or sleeve slidable in said base, a spring-actuated rod in the sleeve having a head or plate provided with slots or guides arranged at right angles, and measuring straps adapted to slide in said guides, one of said straps being at right angles to the other and bendable in planes at right angles to its own width, and adapted to embrace the foot to obtain the circumferential measurement thereof.

12. The combination, with a base or support having a heel and toe piece one of which is fixed and the other adjustable, a measuring strap extending longitudinally along the base having one end fixed and the opposite connected with a spring, a flexible measuring strap extending transversely across said base, a slidable carrier for said straps, and a plate fixed to and extending transversely from the carrier having a series of graduations adapted to be read with the guaduations of the measuring straps.

546,288. WHIRL FOR FILLER-FRAMES. ROBERT ATHERTON, Paterson, N. J. Filed May 4, 1895. Serial No. 548,116. (No model.)

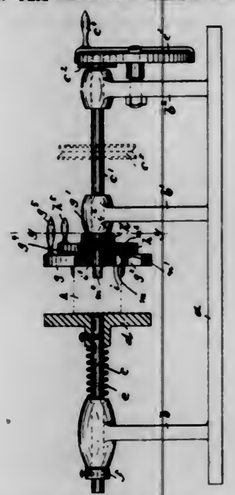


Claim.—1. A tubular whirl provided in its top with a hole or passageway, and in its inner side with conical shaped bearings, a series of bushings forming bearings removably arranged in the wall of the whirl and opposite the conical shaped bearings, a series of rollers hav-

ing conical shaped ends resting in said bearings, and means for adjustably securing said bushings, substantially as and for the purposes described.

2. A tubular whirl provided at its top with a hole or passageway, and on its inner side with fixed conical shaped bearings, a series of bushings forming bearings removably arranged in the wall of the whirl and opposite said fixed bearings, a series of rollers having conical shaped ends resting in said bearings, a wedge shaped pin between said bushings, and a screw controlling said wedge shaped pin, all said parts, substantially as and for the purposes described.

546,289. RIBBON-BLOCKING MACHINE. ROBERT ATHERTON, Paterson, N. J. Filed June 20, 1895. Serial No. 553,413. (No model.)



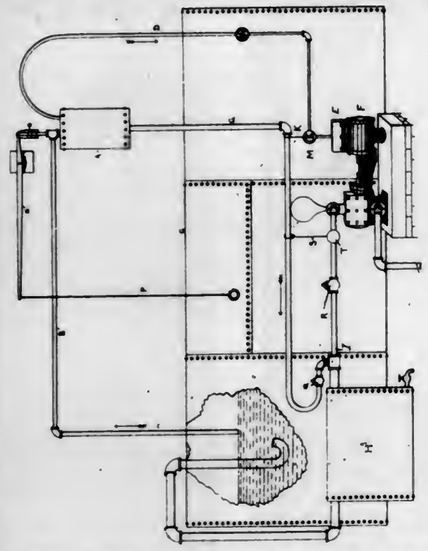
Claim.—1. In a ribbon blocking machine, the combination with the shaft, of an outer disk secured to said shaft and provided with a series of slots, a sleeve having an annular shoulder surrounding the shaft and integral with the disk, a finger carrying block in each of said slots, an inner disk loosely mounted on said shaft and adapted to control the sliding movement of said finger carrying blocks, said inner disk being provided with a sleeve of an inner diameter about equal to the diameter of the annular shoulder of the sleeve of the outer disk and forming in connection with said sleeve of the outer disk an annular chamber, and a spiral spring surrounding said shaft and arranged in said annular chamber and secured to the inner and outer disk respectively, all said parts, substantially as and for the purposes described.

2. In a ribbon blocking machine, the combination with the shaft, of an outer disk secured to said shaft and provided with a series of slots, a sleeve having an annular shoulder surrounding the shaft and projecting from the disk, a finger carrying block in each of said slots and having a projecting pin, an inner disk loosely mounted on said shaft and provided with a series of curved slots adapted to engage the pins of said blocks, said disk being provided with a sleeve bearing on the annular shoulder of the sleeve of the outer disk and forming therewith an annular chamber, and a spiral spring surrounding the shaft and arranged in said annular chamber and secured with one end to the outer disk and with its other end to the inner disk, all said parts, substantially as and for the purposes described.

3. In a ribbon blocking machine, the combination with the shaft, of an outer disk secured to said shaft and provided with a series of slots and inwardly arranged grooves or recesses, a sleeve having an annular shoulder surrounding the shaft and projecting from the disk, a finger carrying block provided with a shoulder arranged in each of said slots and their respective recesses, a pin projecting from each of said blocks, an inner disk loosely mounted on said shaft and having a series of curved slots engaging said projecting pins, said disk being provided with a sleeve bearing on the annular shoulder of the sleeve of the outer disk, and forming therewith an annular chamber, and a spiral spring arranged in said annular chamber, surrounding the shaft and secured to the inner and outer disk respectively, all said parts, substantially as and for the purposes described.

4. In a ribbon blocking machine, the combination with the shaft, of an outer disk provided with a series of curved slots, a sleeve having an annular shoulder integral with said disk and secured to the shaft, an inner disk loosely mounted on said shaft and having a series of slots curved in an opposite direction to the slots of the outer disk, said inner disk being provided with the sleeve bearing on the annular shoulder of the sleeve of the outer disk and forming therewith an annular chambes, a series of finger carrying blocks arranged in the slots of the outer and inner disks and controlled thereby, and a spiral spring arranged in the annular chamber surrounding the shaft and secured to the inner and outer disk respectively, all said parts, substantially as and for the purposes described.

546,290. AUTOMATIC BOILER SKIMMER AND THROTTLER. JOSIAH AUSTIN, Marion, Ohio. Filed Mar. 23, 1894. Serial No. 504,814. (No model.)



Claim.—1. In an automatic skimmer and throttler, the combination of a pump, having a pipe connection with a steam boiler, a chamber having a pipe connection with the boiler and pump, suitable means for movably supporting said chamber, and suitable connections for controlling the movement of valves located in the pipe connections between the pump and boiler, and chamber and pump substantially as and for the purpose set forth.

2. In an automatic skimmer and throttler, the combination of a pump, a suitable pipe connection between said pump and boiler, a settling drum located in said pipe connection and a chamber connected by pipes with the boiler, and also with the settling drum and pump substantially as and for the purpose set forth.

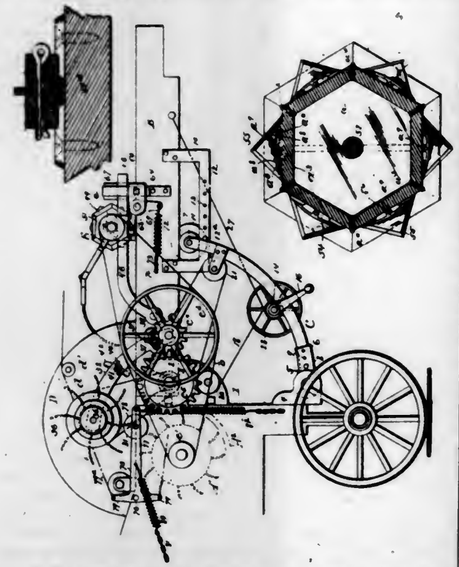
3. In an automatic skimmer and throttler, the combination of a suitable water supply, having a pipe connection with a boiler, a settling drum and valve located in said pipe connection, a suitable chamber in communication with said boiler and movably supported by means of a pipe which also forms a communication between the chamber and pump, and having a valve located therein, and suitable connections between the valves located in the water supply pipe and pipe connection between the chamber and pump, with the pipe connecting the chamber and settling drum, substantially as and for the purpose set forth.

4. In an automatic skimmer and throttler, the combination of a suitable pump F, having a suitable pipe connection I with a boiler, a chamber A having a pipe connection B with the boiler, and a pipe connection D with the pump, a flexible pipe connection G between said chamber A and a waste exit, valves located in said pipe connections I and D and suitable connections between said valves and the flexible pipe connection G, substantially as set forth.

546,291. BAND-CUTTER AND FEEDER. JOHN L. BARKER, Racine, Wis. Filed May 1, 1894. Serial No. 509,702. (No model.)

Claim.—1. The combination with a machine frame, of a feeder attachment supported at its outer end upon and pivotally connected with a support pivoted to and carried by said frame, and a windlass journaled on said support, to move with it and connected with the machine frame and feeder attachment for moving the latter longitudinally.

2. The combination with the frame of a separator, a feeder and elongated brackets secured to said feeder, of legs or supports pivotally connected to said separator frame, rollers at the upper ends of said legs or supports and adapted to run on said elongated bracket, flanges on said rollers projecting within the brackets and feeder frame, and removable pins adapted to enter holes in the brackets to limit the extent of sliding connection between the legs and the feeder frame substantially as set forth.



3. The combination with a machine frame, and supports pivotally connected therewith, of a feeder attachment detachably connected with the machine frame and adapted to be supported at its inner end thereon, of elongated brackets having holes therein, said supports connected with the feeder through these brackets, of means for raising and lowering and loading the feeder, and removable pins adapted to enter one of the holes at one side of the supports to limit the movement of the upper ends of the supports to the space between the pins and the end of the brackets, substantially as set forth.

4. The combination with a separator, legs or supports extending therefrom, and a feeder adjustably connected with the outer ends of these legs or supports, of a pair of concentric shafts, and pairs of ropes and cables, one rope or cable connected with each end of the feeder and one extending therefrom to one of the concentric shafts and the other having connection with the legs and the separator and connected with the other concentric shaft, substantially as set forth.

5. The combination with a separator and legs or supports pivotally connected at their lower ends thereto, of a feeder pivotally mounted between its ends on said legs or supports, concentric shafts mounted on said legs or supports, ratchet wheels carried by said shafts, adjustable dogs adapted to engage said ratchet wheels, and ropes attached at two points to the feeder, one of said ropes being connected with the feeder or separator and one of the shafts, and the other extending directly to the other shaft, substantially as set forth.

6. The combination with a separator, and legs or supports pivotally connected at their lower ends thereto, of a feeder pivotally supported between its ends on said legs or supports, concentric shafts mounted on said legs or supports, means for turning said shafts independently of each other, drums carried by said shafts, a pulley mounted in proximity to the upper end of each leg or support, pulleys mounted on the separator and ropes adapted to pass over said pulleys, the ends of said ropes being secured respectively to the drums on the two shafts and the feeder in proximity to its two ends, substantially as set forth.

7. The combination with a separator and legs or supports pivotally connected at their lower ends thereto, of a feeder mounted between its ends on said legs or supports, two concentric shafts mounted on said legs or supports between their ends, a rope secured at its ends to the free end of the feeder and wound on one of said shafts, pulleys carried by the upper ends of the legs or supports, pulleys carried by the separator, and ropes secured at one end to the inner end of the feeder, passing over said pulleys, and at their other ends secured to the other shaft on the legs or supports, substantially as set forth.

8. The combination with a separator and legs or supports pivotally connected at their lower ends thereto, of a feeder pivotally supported between its ends on said legs or supports, a shaft mounted on said legs or supports, pulleys mounted at the upper ends of said arms, pulleys mounted on the separator, ropes secured at one end to the separator, passing over said pulleys and connected at their other ends to said shaft, a hollow shaft mounted loosely on said first-mentioned shaft, a rope secured at its ends to the free end of the feeder and wound on said hollow shaft, devices for rotating said shafts, and adjustable devices for preventing the retrograde rotation of said shafts, substantially as set forth.

9. The combination with a separator having brackets thereon with open sockets in them, of legs hinged to the separator, a band cutter and feeder frame connected with the free ends of the legs and capable of adjustment relative thereto, a pair of concentric winding drums, and cables one of which extends from the feeder directly to one of the winding drums, and the other extending from the feeder to the other drum and having sliding connection with the separator, substantially as set forth.

10. The combination with a feeder attachment, arms having pivotal connection with the attachment, said arms having transverse slots therein, and clamping device extending through said slots for adjustably securing them in place, of a governor revolubly supported in the upper end of the adjustable arms, a hood inclosing the governor and pivotally mounted on the governor shaft, said hood having slots therein substantially concentric with the governor shaft and clamping means extending through these slots and connected with the arms for adjusting the hood, substantially as set forth.

11. The combination with a separator and a feeder, of arms secured at one end to the feeder and terminating above the separator, a governor or regulator mounted at the free end of said arms, a hood pivotally mounted on the shaft of said governor or regulator and inclosing the governor or regulator and means for retaining said hood in position, substantially as set forth.

12. The combination with a feeder for a separator, of arms pivotally connected at one end thereto, a band cutter mounted on said arms, brackets secured to the feeder and extending above said arms, blocks secured to said brackets and arms projecting from said blocks above said pivoted arms and at the opposite sides thereof from the upper ends of said brackets, substantially as set forth.

13. The combination with a feeder for a separator, of arms pivotally connected at one end thereto, a band cutter mounted on said arms, brackets secured to said feeder, and blocks adjustably secured to said brackets under the free ends of said arms between which and the brackets the free ends of the arms rest, substantially as set forth.

14. The combination with a feeder for a separator, of arms pivotally connected at one end thereto, a band cutter mounted on said arms, and spring actuated levers bearing against the under faces of said pivoted arms, substantially as set forth.

15. The combination with a feeder for a separator, of arms pivotally connected at one end thereto, a band cutter mounted on said arms, bell-crank levers pivoted below the pivoted arms, one arm of each lever bearing on the under face of said pivoted arms, and springs attached at one end to the other arms of said bell-crank levers and at their other ends to the feeder, substantially as set forth.

16. The combination with a feeder for a separator, of arms pivotally connected at one end thereto, a band cutter mounted on said arms, and adjustable yielding devices bearing against the under face of said pivoted arms, substantially as set forth.

17. The combination with a feeder for a separator, of arms pivotally connected at one end thereto, a band cutter mounted on said arms, brackets secured to the feeder, blocks secured to said brackets under the free ends of said arms, a bell-crank lever pivoted to each block, lateral fingers projecting from one arm of said levers, under said pivoted arms, and a spring secured to the other arm of each bell crank lever and to the feeder, substantially as set forth.

18. The combination with a band cutter comprising a frame and a series of knives, of boxes mounted loosely on the shaft of said cutter, arms projecting from said boxes, and a guard secured to said arms and having fingers entering between the knives of the band cutter, substantially as set forth.

19. The combination with a feeder frame, of arms pivotally connected at one end thereto, clamps carried by said arms, boxes mounted in said clamps, a band cutter having its shaft mounted in said boxes, arms projecting from said boxes and a guard secured to said arms, said guard having fingers entering between the knives of the band cutter, substantially as set forth.

20. The combination with a feeder frame and arms pivotally connected at one end thereto, of clamps mounted on said arms and having recesses therein, boxes in said clamps, hollow projections on said boxes and extending into said recesses in the clamps, a band cutter having its shaft mounted in said boxes, arms extending from said boxes, and a guard secured to said arms, said guard having fingers

adapted to enter between the knives of said band cutter, substantially as set forth.

21. The combination with a feeder and clamps carried thereby, of journal boxes mounted in said clamps, a band cutter having its shaft mounted in said boxes, arms projecting from said boxes, a guard secured to said arms, and spring fingers carried by said guard, said fingers extending toward the outlet of the feeder and terminating over the carrier of said feeder, substantially as set forth.

22. The combination with a feeder, a band cutter and a guard, of bars connected to said guard by means of spring hinges, and curved fingers secured to said bars and terminating over the carrier of said feeder, substantially as set forth.

23. The combination with a feeder attachment, arms pivoted thereto, and means for yieldingly supporting the free ends of the arms, of clamps secured on the arms, journal boxes held between said clamps, a band cutter revolubly supported in the journal boxes, arms extending laterally from these journal boxes, a guard connected to these arms, and a bar hinged to the guard and carrying fingers, substantially as set forth.

24. The combination with a feeder attachment, arms pivoted thereto, and guides for the free ends of these arms, of clamps secured to the arms and having journal-boxes therein, a band cutter revolubly supported in the journal-boxes, arms projecting from the journal-boxes, a guard secured to these arms, bars having fingers thereon, and spring hinges connecting these bars to the guard, substantially as set forth.

25. The combination with the shell or body of a band cutting cylinder, of clamping plates secured to the surface thereof in pairs, said clamps separated slightly, a knife inserted between the pairs of plates, said plates having outwardly projecting lugs thereon adapted to engage the sides of the knives, the knives and lugs having holes formed therein in alignment with one another, and a removable device adapted to be passed through these holes to hold the knife in place, substantially as set forth.

26. The combination with the shell or body of a band cutting cylinder, of clamping plates secured thereon in pairs and between which knives are adapted to be held, knives having notches in their inner edges, pins extending across from one clamping plate to the next and adapted to enter these notches, and a removable key passed through the plates and knife for holding the knife in place between them, substantially as set forth.

27. The combination with a separator, a feeder and a governor or regulator, of gearing for driving the feeder, a pulley carried by one of the shafts of the feeder, a pulley carried by the governor or regulator, a belt passing over said pulleys and a set of intermeshed gear wheels within the governor pulley for reducing the speed of the governor below that of the cylinder of the separator and the feeder, substantially as set forth.

28. The combination with a separator, a feeder and a governor or regulator, of gearing for driving the cylinder of the separator and the feeder, a pulley carried by one of the shafts of the feeder, a cone pulley carried by the shaft of the governor or regulator, a straight belt passing over said pulleys, and gearing within the governor pulley constructed and adapted to reduce the speed of the governor below that of the cylinder and feeder and in a reverse direction, substantially as set forth.

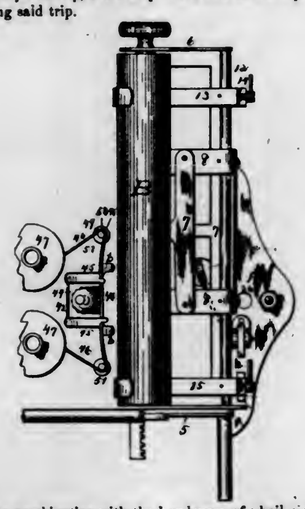
29. The combination with a separator, a feeder and a governor or regulator, of a pulley mounted loosely on the shaft of the governor or regulator, a fast and a loose pinion on said shaft, a device to prevent the rotation of the loose pinion, pintles carried by said pulley, and two pinions carried by each pintle and adapted to rotate together and respectively mesh with the pinions on the shaft, substantially as set forth.

30. The combination with a separator, a feeder and a governor or regulator, of a loose pulley mounted on the shaft of the governor or regulator, a fast and a loose pinion on said shaft, one having an even and the other an odd number of cogs, pintles carried by said pulley, two pinions mounted loosely on each of said pintles, one pinion of each pair having an even number of cogs and the other an odd number of cogs, the pinions having the even number of cogs meshing with the pinion on the shaft having the odd number of cogs and the pinions carried by the pintles and having the odd number of cogs meshing with the pinion on the shaft having the even number of cogs and a device to prevent the pinion mounted loosely on the shaft from rotating, substantially as set forth.

31. The combination with the concave of a thrashing machine and the forward roller of a carrier, of a feed board located between said concave and roller, a board located at the outer end of said feed board, a bar hinged to said board and a brush secured to said bar and adapted to engage the roller, substantially as set forth.

546,292. TYPE-WRITING MACHINE. EDWIN R. BARNEY, Groton, N. Y., assignor to the Crandall Typewriter Company, same place. Filed Apr. 2, 1894. Serial No. 506,129. (No model.)

Claim.—1. The combination with the carriage, impression platen and the bell, of a paper guide adjustably mounted upon said carriage, a pawl upon said guide, a trip with which said pawl engages, a hammer carried by said trip, and a stop with which said said pawl engages after passing said trip.



2. The combination with the key levers, of a bail, a shaft rotated thereby, a primary cam secured to said shaft, a secondary cam actuated by the primary one, a spindle frame a spring bar engaging with it, and provided with arms through which the ribbon is guided.

3. The combination with the carriage, the platen and its shaft journaled therein, of a plate pivoted upon the carriage and slotted as shown, a pawl upon said plate, a ratchet secured upon said shaft, and means to lift said plate to rotate said platen.

4. The combination with the carriage, the platen and its shaft journaled therein, of a plate pivoted upon the carriage and slotted as shown, a pawl upon said plate, a ratchet secured upon said shaft, a stop pawl mounted upon said plate, and means to lift said plate.

5. The combination with the carriage, the platen and its shaft journaled therein, of a plate pivoted upon the carriage and slotted as shown, a pawl upon said plate, a ratchet secured upon said shaft, a stop pawl adjustably mounted upon said plate, and means to lift said plate.

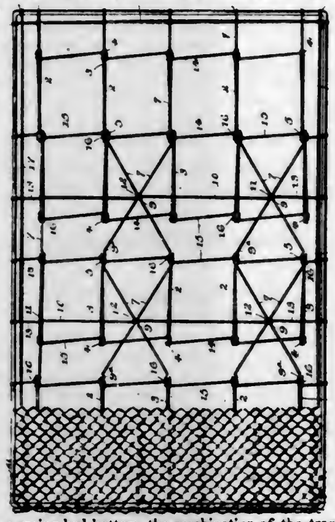
6. In a type-writing machine, the combination with the lift-key-levers and a curved fulcrum rod, upon which they are journaled, of a straight bail upon the line of a chord to the circle of said fulcrum rod with which said levers engage to raise it, and a type-sleeve lifted thereby when a lever is operated.

7. In a type-writing machine, the combination with the lifter-key-levers and a curved fulcrum rod upon which they are journaled, of a straight bail upon the line of a chord to the circle of said fulcrum rod with which said levers engage with varying fulcrum, and a type-sleeve lifted by said bail when a lever is operated.

546,293. SPRING BED-BOTTOM. ALBERT E. BRALL, Hubbard, Iowa. Filed Feb. 28, 1895. Serial No. 540,032. (No model.)

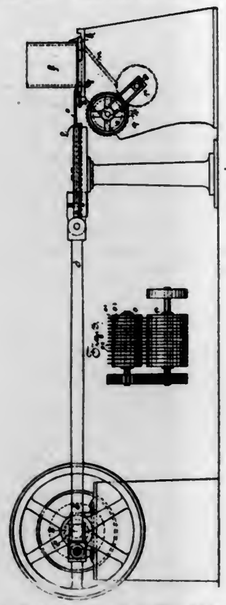
Claim.—1. In a spring bed bottom, the combination of upper and lower rectangular wire border frames, transversely and longitudinally aligned rows of vertically disposed V-shaped springs arranged between the border frames and provided at their intermediate apices and at the extremities of the arms leading from said apices with spring coils, said V-shaped springs being further provided with upper and lower horizontal wires extended from the upper and lower terminal spring coils thereof, the upper and lower horizontal wires of each pair of adjacent parallel springs diagonally crossing each other and provided at their terminals opposite the coils with engaging hooks engaging in the terminal coils of a diagonally opposite spring in the next adjacent transverse row, transverse brace wires connecting the diagonally crossed upper and lower horizontal wires of the springs, and suitable connections between the springs and the border frames, substantially as set forth.

2. In a spring bed bottom, the combination of transversely and longitudinally aligned rows of vertically disposed V-shaped springs provided at their intermediate apices and at the extremities of the arms leading from the apices with spring coils, and sectional connecting wires connecting the aligned coils of the transverse rows of springs, said sectional connecting wires consisting of a series of separate wire links having slide connections between their adjacent ends, the slide connections between the adjacent ends of the links also engaging with the spring coils through which the wires extend, substantially as set forth.



3. In a spring bed bottom, the combination of the transversely and longitudinally aligned rows of vertically disposed V-shaped springs provided at their intermediate apices and at the extremities of the arms leading from the apices with spring coils, and sectional connecting wires connecting the aligned coils of the transverse rows of springs, said sectional connecting wires consisting of a series of separate wire links provided at their ends with right angularly disposed hook loops loosely embracing the end of the adjacent link, one of the hook loops at the connected ends of the links being disposed at one side of the adjacent spring coil, and the other adjacent hook-loop being disposed at the opposite side of the same spring coil, substantially as set forth.

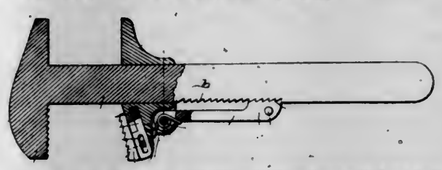
546,294. WOOD-CUTTING MACHINE. EDUARD E. BIRKNER, Crimmitzschau, Germany. Filed May 25, 1895. Serial No. 550,626. (No model.)



Claim.—1. In a wood-cutting machine the combination with an open bottomed hopper, of a knife *c*, guides therefor, reciprocating ledges *g* and *k*, driving shaft *b*, push rods *l*, mechanism operatively connecting the knife *c* and ledge *g* with the driving shaft, springs *m*, cutting roller *o*, feed roller *p*, and mechanism for operatively connecting said rollers with each other substantially as set forth.

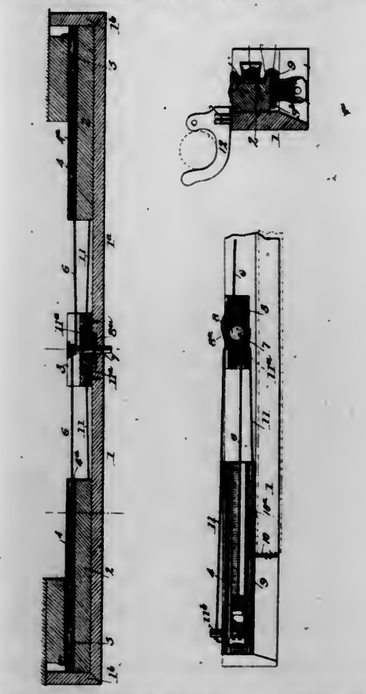
2. In a wood cutting machine, the combination with an open bottomed hopper, of a knife *c*, guides therefor, reciprocating ledges *g* and *k*, driving shaft *b*, push rods *l*, connecting rod *d*, cams *e*, rods *h*, springs *m*, cutting roller *o*, feed roller *p*, and toothed gearing operatively connecting said rollers with each other substantially as set forth.

546,295. WRENCH. CHRISTIAN BLACK, Green Cove Springs, Fla. Filed May 20, 1895. Serial No. 549,971. (No model.)



Claim.—In a sliding jaw wrench, the combination of a fixed jaw having a shank provided on one of its sides with a series of transverse teeth, a sliding jaw arranged on said shank and having apertured lugs on its rear side, the arm having one of its ends bifurcated and also having teeth on its inner side at its opposite end to engage the teeth of the shank, the bolt taking through and pivotally connecting the said arm to the lugs of the sliding jaw, and a coiled spring surrounding the bolt and arranged within the bifurcation of the arm and having one of its ends bearing against the sliding jaw and its opposite end bearing against the outer side of the arm, substantially as specified.

546,296. WINDOW-SHADE CORNICE. DANIEL BOYER, Cressona, Pa. Filed Aug. 14, 1894. Serial No. 520,270. (No model.)



Claim.—1. A device of the class described, comprising the cornice-piece proper having the guide members 2, the guide-ways 4 secured to the inner face of the latter and forming the grooves 4^a, the guide-ways 9 secured to the under side of the guide members 2 and having their longitudinal edges forming the guide grooves 9^b and 9^c, the outer edge of the guide-ways 9 being overlapped by the lower corresponding edge of the guide-ways 4, substantially as set forth, the clamps or claws having their shank portions accommodated and sliding in the grooves 4^a, the supports or brackets 10 having their

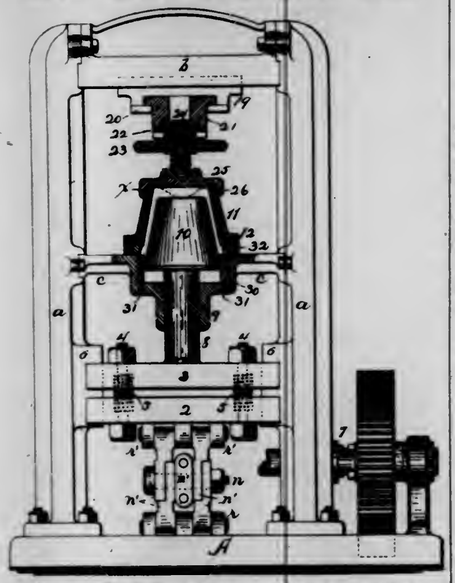
shank portions accommodated and sliding within the grooves 9^b and 9^c, and independent means for controlling the adjustment of the clamps or claws and of the supports or brackets, substantially as and for the purpose set forth.

2. The herein-described window cornice and curtain support device, comprising the cornice-piece proper formed of the front longitudinal section or member 1^a carrying the grooved guide members 2, the guide-ways 4 secured to the inner grooved face of the members 2 and having their longitudinal edges conjointly forming the groove 4^a, the guideways 9 secured to the under sides of the members 2 and having their longitudinal edges forming the grooves 9^b and 9^c, the clamps or claws 5 having their shanks accommodated and sliding in the grooves 4^a, the supports or brackets 10 having their shanks accommodated and sliding in the grooves 9^b and 9^c, the intermediate central member or bracket 3 secured to the section or member 1^a, the transverse horizontal shaft 7 mounted in the bracket 3, the tapes or lines 6 passing from the clamps to said shaft, and the cords or lines 11 passing respectively from the supports 10 to the bracket 3 and respectively through vertical slots or apertures in the latter, substantially as and for the purpose set forth.

3. In a device of the class described, comprising the cornice-piece proper, the posts 11^b mounted upon the latter and cross-slitted vertically substantially as set forth, in combination with the removable pole-supporting brackets 12 adapted to be set in the cross-slits of said posts, substantially as and for the purpose set forth.

4. A device of the class described, comprising the cornice-piece proper having the guide members 2 with the grooved inner faces, the guide-ways 4 secured in said grooved surfaces and having their inner longitudinal edges offset from the bottoms of said grooves to conjointly form the grooves 4^a, the guide-ways 9 secured to the under side of the guide members 2 and having their longitudinal edges forming the guide grooves 9^b and 9^c, the clamps or claws having their shank portions accommodated and sliding in the grooves 4^a, the supports or brackets 10 having their shank portions accommodated and sliding within the grooves 9^b and 9^c, and independent means for controlling the adjustment of the clamps or claws and of the supports or brackets, substantially as and for the purpose set forth.

546,297. POTTERY-MACHINE. CONRAD BREITSCHWERTH, Syracuse, N. Y. Filed Aug. 27, 1894. Serial No. 521,387. (No model.)



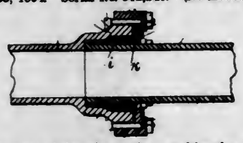
Claim.—1. The hollow stationary portion of the mold, the removable cap piece applied to the upper end of the mold, a screw for operating the cap, a rotating nut for the screw, a slide in which the nut is supported, and tracks on which the slide is moved laterally, substantially as described.

2. In a pottery machine, the mold, a vertically moving cap piece, a screw for vertically operating the cap piece, and a laterally moving slide to which the screw is connected, whereby the cap piece can first be moved over the mold, and then adjusted vertically, substantially as set forth.

3. In a pottery machine, the combination with a sectional mold, of a lock consisting of a sectional ring around the mold, a sliding jaw, engaging with said ring sections adjacent to their meeting edges to clamp it around said mold.

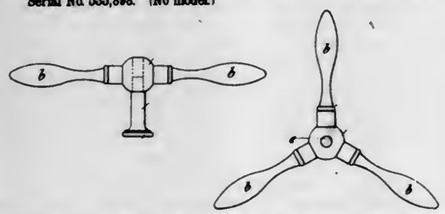
4. In a pottery machine, the combination with a sectional mold, of a lock consisting of a sectional ring around the mold, a horizontally sliding jaw engaging with said sections adjacent to their meeting edges to clamp the mold sections, and a flanged cap adapted to be mechanically lowered to close and lock the top of the mold and to be mechanically raised to open it for filling.

546,298. PIPE-JOINT CLAMP. JAMES BRICE, Columbus, Ohio. Filed May 23, 1894. Serial No. 512,246. (No model.)



Claim.—In a pipe joint clamp the combination with a sectional clamping ring having bolt holes formed as described at intervals therein, lugs *g* projecting at right angles with the plane of said ring, a circular seat or depression *f* in the inner face of said clamp and a pliable band or gasket adapted to fit against said depression or seat, of clamping bolts having elongated curved heads as described, the stems of which are adapted to pass through said ring bolt holes and under the lugs *g* thereby being retained in a clamping position, substantially as and for the purpose specified.

546,299. APPARATUS FOR INDICATING TELEPATHIC MESSAGES. COLIN R. CAMPBELL, London, England. Filed Jan. 23, 1895. Serial No. 535,898. (No model.)



Claim.—1. The herein described scientific toy comprising a board and a spider like device movable over the surface thereof, said device having a central boss, handles radiating therefrom, and a central indicating leg extending at right angles to the plane of the handles from the said boss and resting upon the table, substantially as described.

2. The herein described scientific toy, comprising a board, and a spider like device movable over the same, said device consisting of a central boss with a perforation extending entirely through the same, the handles radiating from said boss and the removable indicating leg and pencil extending from the central boss and on opposite sides thereof and at right angles to the plane of the handles, substantially as described.

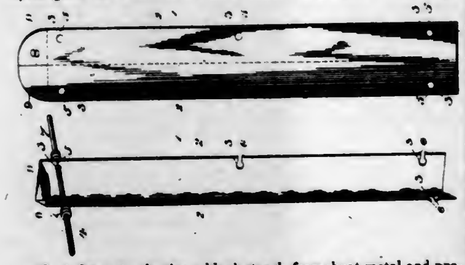
546,300. CENTER FASTENING FOR BREAST-STRAPS. ERASTUS J. CLARK, Enid, Okla. Filed July 13, 1895. Serial No. 555,861. (No model.)



Claim.—The herein described breast-strap fastener comprising two members, one of which is formed with a segmental pocket or recess for the reception of the hook on the other member, and also provided with a lug having an angular notch or slot formed therein, a pin extending transversely across said pocket or recess, a hook on the other member for engaging said pin, a revoluble pin or shaft carried by said other member and provided with a cam or eccentric for engaging the angular notch or slot referred to, and means for operating said pin or shaft, substantially as described.

546,301. FENCE-STAY. LEANDER CLARK, Greenville, Ohio. Filed Mar. 22, 1895. Serial No. 542,819. (No model.)

Claim.—1. A fence stay having a blank of sheet metal bent upon its longitudinal center to form angularly disposed duplicate wings which are extended at their upper ends to provide ears folded upon each other in parallel planes to hold the wings in the desired relative positions, the wings being further provided near their free edges with openings for the reception of fence runners, substantially as specified.



2. A fence stay having a blank struck from sheet metal and provided with openings 3, slots 4 communicating with said openings and extending to the edges of the blank to form ears 6, and a slit 8 at one end in the line of the longitudinal center of the blank to form contiguous ears 9 which are adapted to be folded in parallel planes when the blank is bent upon its longitudinal center to provide a V-shaped cross-sectional construction, substantially as specified.

546,302. EMBALMING-COUCH. WILLIAM CLOCKER, Greenfield, Ohio. Filed Nov. 7, 1894. Serial No. 528,142. (No model.)



Claim.—1. In an embalming couch, the combination, with the top of the couch, of the rockers supporting the top and hinged so as to fold beneath said top, substantially as set forth.

2. In an embalming couch, the combination, with the top of the couch, of the rockers *d d* supporting said top and hinged so as to fold beneath said top, and the brace-rods *f f* designed to hold said rockers in position, substantially as set forth.

3. In an embalming couch, the combination, with the top of the body-portion A, of the rockers *d d* supporting said body-portion and hinged so as to fold beneath said top, and the head-portion B pivotally attached to said body-portion A so as to fold upon the top of said body-portion A, substantially as set forth.

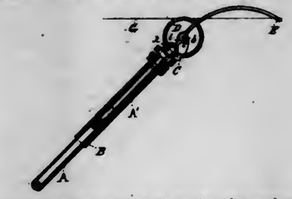
4. In an embalming couch, the combination, with the body-portion A, having rockers *d d* hinged so as to fold beneath the top of body-portion A, of a foot-portion C hinged so as to fold beneath body-portion A, and braces *h h* pivotally attached to foot-portion C and designed to engage rings h^4 h^4 in rockers *d d*, so as to hold the foot-portion C in position, substantially as set forth.

5. In an embalming couch, the combination, with the body-portion A, having rockers *d d* hinged so as to fold beneath the top of body-portion A, and braces *f f* designed to hold said rockers in position and pivotally attached so as to fold beneath the top of body-portion A, of a head-portion B pivotally attached so as to fold upon the top of body-portion A, an adjustable head-rest carried by said head-portion B, and a foot-portion C, having braces *h h* pivotally attached so as to fold beneath foot-portion C, said braces being designed to engage rings h^4 h^4 in rockers *d d*, and said foot-portion C being hinged or pivotally attached so as to fold beneath body-portion A, substantially as set forth.

6. In an embalming couch the combination, with the body-portion A having rockers *d d* and the depending leg k^2 pivotally attached, of the foot-portion C having the depending brace k^2 pivotally attached, said brace k^2 being designed to engage rings k^3 in leg k^2 and thus regulate the elevation of the foot of the couch, substantially as set forth.

7. In an embalming couch, the combination, with the body-portion A, having the folding rockers *d d*, and a depending leg k^2 pivotally attached so as to fold beneath the top of body-portion A, of a foot-portion C having a depending brace k^2, said brace k^2 being designed to engage rings k^3 in leg k^2, and being pivotally attached so as to fold beneath foot-portion C, and said foot-portion C being hinged or pivotally attached so as to fold beneath body-portion A, substantially as set forth.

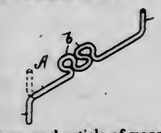
546,303. TROLLEY-POLE FOR RAILWAY-CARS. ROBERT CROMMER, Philadelphia, Pa., assignor of one-half to James Stewart, Jr., same place. Filed Jan. 29, 1895. Serial No. 536,517. (No model.)



Claim.—1. The pivotal rod A', having the conical point upon its lower end, and provided with the bracket, or head C, having a truncated flanged base, the trolley wheel D, hung on the journals *b*, in the lugs *c*, and the forked arms E, pivoted on said journals, and provided with balance weights *k*, on the studs, or posts *l*, *l*, for guiding and retaining the trolley wheel upon the wire, substantially in the manner and for the purpose herein shown and described.

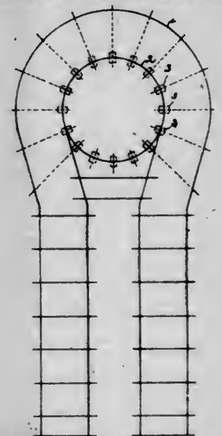
2. The pivotal rod A', provided with the bracket C, carrying the trolley wheel D, upon its outer end, in combination with the sleeve B, secured to the trolley by means of the lug *d*, slot *e*, and channel *h*, substantially in the manner herein shown and described for the purpose set forth.

546,304. SHUTTER-HOOK. BENJAMIN H. DAVIDSON, Lynn, Mass. Filed Jan. 30, 1895. Serial No. 536,675. (No model.)



Claim.—As an improved article of manufacture, a shutter-hook comprising a metal strip bent at one end to form an anchoring projection and constructed at its opposite end for the attachment to the shutter and having the intermediate portion constructed to form a lateral bearing, for the purpose specified.

546,305. RAIL. JAMES DAVIS and WILLIAM A. THOMAS, Pittsburg, Pa. Filed Dec. 26, 1894. Serial No. 532,983. (No model.)



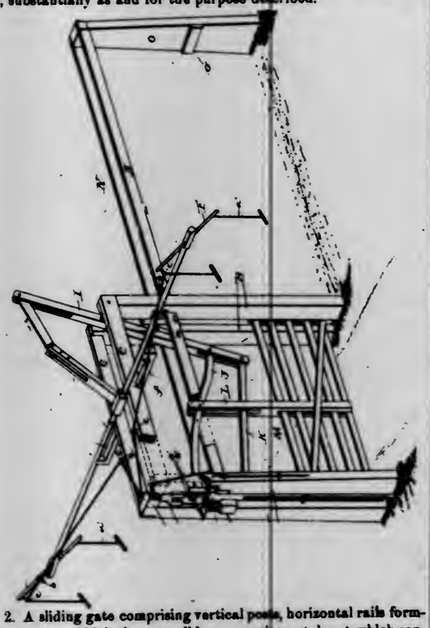
Claim.—1. In loops or curves for railways, the inner rail mounted on a series of rolls said rolls having straight and beveled flanges, castings extending slightly above the level of the rail inclosing chairs substantially as described and shown.

2. In loops and curves for railways, the inner rail operating on a series of rolls provided with flanges in combination with chairs, and castings extending slightly above the level of said rail, all parts being arranged substantially as described, and for the purpose set forth.

546,306. SLIDING GATE. LEE DEARMONT, Mound City, Mo. Filed May 22, 1895. Serial No. 550,166. (No model.)

Claim.—1. A sliding gate comprising vertical posts, horizontal rails forming ways upon which the gate slides, a supplemental post

which supports the ends of the rails, a gate having antifriction rolls at its top, a latch for the gate, a releasing device for the latch a system of levers connected with the latch, a long rotary arm at right angles to the gate, transverse arms on the end of the cross arm, a cord or chain connected near its center to the releasing device, for the latch and extending to and, depending from the transverse arms, and supplemental depending cords on the cross arms for closing the gate, substantially as and for the purpose described.



2. A sliding gate comprising vertical posts, horizontal rails forming ways upon which the gate slides, a supplemental post which supports the ends of the rails, a gate having antifriction rolls at its top, a latch for the gate, means for releasing the latch from its closed position, a system of levers connected therewith, a rotary arm at right angles to the gate and projecting beyond it at both sides, transverse arms on the rotary arm, a cord or chain provided with stops and connected near its center to the releasing device; for the latch and extending to and depending from the transverse arms, and supplemental depending cords on the cross arms for closing the gate, substantially as described.

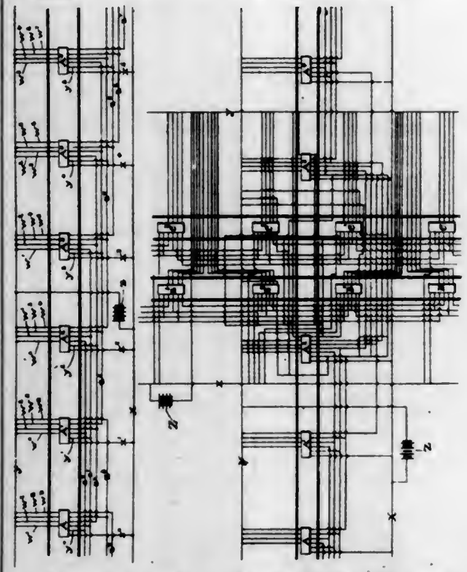
3. A sliding gate comprising vertical posts, horizontal rails forming ways upon which the gate slides, a supplemental post which supports the ends of the rails, a gate having antifriction rolls at its top, a latch for the gate, means for releasing the latch from its closed position, a system of levers for operating the latch, a rotary arm at right angles to the gate and projecting beyond it at both sides, transverse arms on the rotary arm, a cord or chain provided with stops and connected near its center to the releasing device for the latch and extending to and depending from the transverse arms, and supplemental depending cords on the cross arms for closing the gate, and an additional cord or rod for operating the latch from the ground, substantially as described.

546,307. POLE-TIP. FRED DE LA MATYR, Fremont, Nebr. Filed May 15, 1895. Serial No. 549,430. (No model.)



Claim.—A tongue or pole for vehicles having a hold back thereon, and a pair of thin laterally projecting ears extending abruptly from the tongue or pole and adapted to extend transversely of the opening formed in the neck yoke which latter they are adapted to retain in place, substantially as set forth.

546,308. SYSTEM FOR CONTROLLING RAILWAY-TRAINS. ADOLPH L. DE LEEUW, Springfield, Ohio, assignor of one-third to Philip E. Montanus, same place. Filed Jan. 25, 1894. Serial No. 498,060. (No model.)



Claim.—1. A system for automatically controlling railway trains, a series of stations arranged at intervals in the railway track, each of said stations consisting essentially of a moving part, and an intermittently moving mechanism for alternately locking and unlocking said moving part, an electric contacting device connected to said moving part, and electrically operative mechanism for moving said locking device, and an electrical connection in multiple arc from each of said contacting devices to the electrically operated mechanism of two or more stations arranged on opposite sides thereof, substantially as specified.

2. In a railway, a series of boxes each having a yieldingly supported platen, a rotating holding device having alternately-arranged spaces and projections which successively engage and disengage said platen, electrically operative mechanism for rotating said holding device by an electrical impulse, an electrical contacting device in each of said boxes adapted to be moved by said platen, and an electric circuit between the circuit breaker of one of said boxes and the electrically operative mechanism in two or more other boxes arranged on opposite sides thereof, substantially as specified.

3. The combination in a line of railway, of moving contacting devices, and an electrically operated locking device therefor, and an electrical connection from said contacting devices to the electrical operative locking device in two or more other boxes which are connected in multiple arc, substantially as specified.

4. In a system for controlling railway trains, a series of boxes arranged at intervals in a line of railway track, each of said boxes being connected in multiple arc to two or more of the other boxes, and mechanical devices in each of said boxes adapted, by an electrical impulse, to change said box from its normal condition to an abnormal condition, and means in each of said boxes for sending an electrical impulse through the other boxes connected thereto by a passing car, when said box is in its normal condition, a yielding contact device on said car adapted to operate said box when in its normal condition, and to be operated thereby when the box is in an abnormal condition, and a connection from said yielding contact device to mechanism for controlling said car, substantially as specified.

5. In a railway system, a series of contacting devices arranged in the railway track, an electrical connection in multiple arc from each of said boxes to two or more of the other boxes, and contacting devices in each of said boxes adapted, under normal conditions, to send an electrical impulse to the other boxes connected therewith, a moving car adapted to operate said boxes when in their normal conditions and thus effect a change in the other boxes connected thereto, and means, substantially as described, for controlling said car by contacting with a box in its abnormal condition, and a central station electrically connected to said boxes so as to send an electrical impulse through either of them, and thus change the condition thereof, substantially as specified.

6. In a system for controlling railway trains, a series of sub-stations arranged at intervals, and an electric connection in multiple arc from each of said stations to two or more of the other stations, contacting devices at each of said stations adapted to be operative by the passing of a car to effect a change in the other stations connected thereto from its normal condition, and mechanism connected with said car to automatically stop the same when the car contacts with an abnormally changed station, and a central station electrically connected to each of said sub-stations, and means, as described, for sending an electrical impulse from said central station through either of the sub-stations so as to change the condition thereof, substantially as specified.

7. In a railway, a series of contacting devices, and a car adapted to travel on said railway having mechanism to engage successively with said contacting devices, means connected with each of said contacting devices for changing one or more of the other contacting devices when said contacting device is operated by the passing car, and a central station electrically connected to each of said contacting devices, and means at said central station for effecting a change in either of said contacting devices, substantially as specified.

8. In a railway, a series of boxes each having a yieldingly supported platen, a locking device in each of said boxes for holding said platen in a rigid position, and electrically operative mechanism for controlling said locking device, a circuit closer in each of said boxes connected in multiple arc with the electrically operative mechanism in two or more of said boxes, in combination with a moving car having a contacting device to engage said platen and mechanism connected therewith for stopping said car, substantially as specified.

9. The combination, in a railway and with a moving car, of a series of boxes each having a yieldingly supported platen, an electrical circuit closer connected therewith so as to close an electric circuit by a movement of said platen, a locking device for engaging and disengaging said platen, and electrically operative mechanism for operating said locking device, the electrically operative mechanism in each of said boxes being connected in multiple arc with the circuit closer in two or more of the other boxes, substantially as specified.

10. The combination with a movable platen, a spring for supporting the same, and a moving disk adapted to lock or unlock said platen, electrical contacting devices adapted to be operated by a movement of said platen, and an electro-magnet, the armature of which is connected to said disk, the contacting device of said platen being connected to one or more of the electro-magnets of adjacent platens, substantially as specified.

11. In a railway, and in combination with a movable car thereon, a box having a movable spring supported platen with electrical contact devices connected thereto, a revolving disk having a series of alternating teeth and spaces adapted to alternately come under a projection on said platen, a pawl and ratchet device connected to said disk and operated by an electro-magnet in said box, contacting devices for said car to engage with said platen, and means, as described, for sending an electrical impulse through said box to lock or unlock said platen, substantially as specified.

12. In a railway having a movable track section, a moving bar for holding said track, and a box connected to said bar containing locking devices for locking or unlocking said bar, an electro-magnet connected with said locking devices and adapted to operate the same, a contacting box arranged in the railway and locking devices in said contacting box, and electrical connections from said contacting box, and means, as described, for locking either of said devices when the other is operated, substantially as specified.

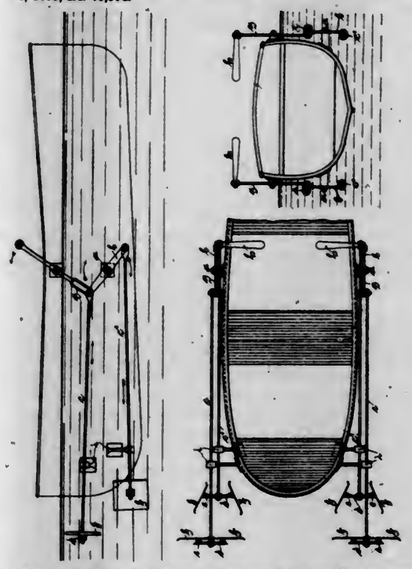
13. The combination with a series of sub-stations in a railway track, of a central station having an electrical connection to each of said sub-stations, a common continuously moving time recording device, and means connected with said device for operating said sub-station for recording the number of said sub-station on the common recording devices when said station is operated, substantially as specified.

14. The combination with a series of sub-stations in a railway track, and a central station, a series of contacting devices in electrical connection with the respective sub-stations, and time recording devices at said central station, and mechanism connected with each of said contacting devices adapted, when operated so as to operate a sub-station, to record the number of the station operated and to produce an unusual movement of the time recording devices, substantially as specified.

15. The combination with a series of sub-stations in a railway track, of a central station having an electrical connection to each of said sub-stations, and time recording devices adapted to electrically record the time on a moving strip, as described, and means, as described, for breaking the electrical connection and thus preventing the operation of a sub-station in the event that the strip is broken, substantially as specified.

16. The combination of a central station with a series of contacting devices connected to a series of sub-stations, printing devices connected to each of said contacting devices adapted to imprint a character corresponding to said sub-station when said sub-station is operated a moving strip to receive said imprint, and electrically operating devices to automatically mark said strip at uniform intervals of time, and means, as described, for destroying the electrical connection to each of said devices and thus prevent the operation of any of the sub-stations, substantially as specified.

546,309. MECHANISM FOR PROPELLING AND STEERING VESSELS. ERNST F. H. DENNITZ, Nieder-Sedlitz, Germany. Filed Dec. 19, 1894. Serial No. 532,362. (No model.) Patented in Germany Feb. 4, 1895, No. 79,331.



Claim.—1. The combination with a boat, of a pair of rods arranged upon each side of the same and parallel to the longitudinal axis thereof, and in different horizontal planes, the rods of each pair adapted to be reciprocated in opposite directions, a pair of thrust blades or wings pivotally connected to the rear ends of the latter and each adapted to swing in opposite directions in horizontal planes in the manner described, a lever arranged upon each side of the boat and pivotally connected thereto and adapted to oscillate in a vertical plane, each of said levers being pivotally connected at its ends to the forward ends of the respective pair of rods, all as and for the purpose specified.

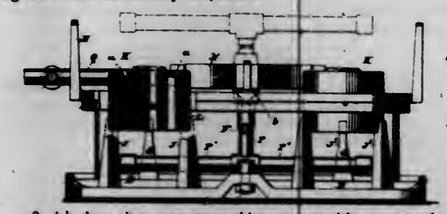
2. The combination with a boat, of a pair of rods arranged longitudinally upon each side of the boat, the rods of each pair adapted to be reciprocated in opposite directions, a cross bar carried by the rear end of each of the rods, a pair of thrust blades or wings pivoted upon vertical pivots carried by each of the cross bars and each pair of blades being adapted to swing in opposite directions in the manner described, a lever pivotally connected to each side of the boat and similarly connected at its ends to the forward ends of the respective pair of rods, all arranged as and for the purpose specified.

3. The combination with a boat, of a pair of rods arranged longitudinally upon each side of the boat, the rods of each pair adapted to be reciprocated in opposite directions, a pair of thrust blades or wings pivotally connected with each of the said rods at the rear ends of the latter and each adapted to swing in opposite directions in the manner described, a lever pivotally connected to each side of the boat and similarly connected at its ends to the forward ends of the respective pair of rods, and a second lever pivotally connected to the boat upon each side thereof, the latter levers having pivotal connection at their lower ends with the upper ends of the first levers and provided with handles at their upper ends, all as and for the purpose specified.

546,310. REVERSIBLE HYDROCARBON GENERATOR AND BURNER. BENJAMIN G. DEVOR, Lima, Ohio. Filed Mar. 1, 1895. Serial No. 540,218. (No model.)

Claim.—1. A hydrocarbon generator and burner comprising a supporting base, a frame corresponding in outline substantially to said base, standards secured to said base for supporting the frame above the same, a vaporizing retort reversibly supported upon said frame

having a pipe provided with vapor outlets, and an oil supply pipe communicating therewith, and oxygen superheating drums, having vapor passages inclosed thereby, reversibly disposed in proximity to the vaporizing retort, and the vapor outlets in the pipes communicating therewith, substantially as specified.



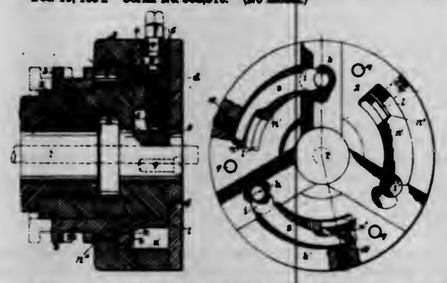
2. A hydrocarbon generator and burner comprising a supporting base, having a deep forward or pan portion therein, a frame corresponding in outline substantially to said base, tubular standards secured to said base for supporting the frame above the same, said frame having upright supports at its opposite ends, a mixing plate movably supported thereon, a reversible vaporizing retort supported upon said frame, having a vapor delivery pipe provided with outlets communicating therewith and an oil supply pipe provided with a suitable valve adapted to be connected to said vaporizing retort in either position, and oxygen superheating drums having central vapor passages therein reversibly supported upon standards secured to the base, in proximity to the vaporizing retort, and the vapor outlets in the pipes communicating therewith, substantially as specified.

3. A reversible vaporizing retort comprising an oil receptacle portion having an oil supply pipe connected thereto, and a vapor compressing portion communicating with and inclosed by said oil receptacle portion having a vapor delivery pipe connected thereto; said vapor compression portion being constructed narrower in cross-section than the surrounding oil receptacle portion so that when the retort is operated in either position the base of the oil receptacle portion will be on a lower level than that of the vapor compression portion, substantially as specified.

4. A reversible superheating drum having vertical sides, an open end and a closed end having a series of concentrically arranged apertures therein, said apertures being wide at the base and contracted at the mouth, and a cylindrical vapor shell, integral with the superheating drum, having a central passage provided with a contracted mouth, and supported at its top by the closed end of the superheating drum, substantially as specified.

5. A hydrocarbon generator and burner comprising the supporting base A having a deep forward or pan portion B, and a surrounding flange C, a frame D, tubular standards E for supporting the said frame above the base, a mixing plate I having uprights H, H for supporting the same secured to the opposite ends of the frame D, a reversible vaporizing retort N supported upon the frame D, on seats *b*, and held in position by lugs *c*, *c'* and hook-bolt F, an oil supply pipe Q having a valve Q', and a vapor delivery pipe P having arms P', P'' provided with vapor outlets *d*, communicating with said vaporizing retort, and reversible oxygen superheating drums K, K having central vapor passages M, M, supported in proximity to the vaporizing retort and the outlets *d* in the pipes communicating therewith, upon standards J, J' secured to the base A, substantially as shown and described.

546,811. **WORK-HOLDING DEVICE FOR LATHES.** HENRY DRESEL, Cincinnati, Ohio, and WILLIAM BARKER, Newport, Ky. Filed Dec. 19, 1894. Serial No. 532,316. (No model.)



Claim.—1. A lathe-chuck, provided with radial grooves in its face, jaws occupying these grooves, recessed at *c* and having grooves in said recesses, a sliding block 4, for each jaw, fitting the recess thereof, cylindrical bores passing longitudinally inwardly from the outer ends of the jaws and so located thereon as to have one half contained in the jaw, the other half being contained in the contiguous surface of the sliding block, screws 7, for these bores, engaging however only with that half thereof which is contained in blocks 4, which latter half is only threaded, a collar *g* on each screw 7 in engagement with the grooves cut in the recessed part of the jaws whereby said screws are longitudinally confined on the jaws but may be rotated for adjusting the relative position between blocks and jaws and levers whereby the two may be adjusted together and independent of the adjustment between them.

2. A lathe-chuck provided with and adapted to support adjustable jaws, and having recesses *s'* in its face, back of said jaws, and openings *s''* in the bottom of said recesses, passing rearwardly clear through the body of the chuck, levers 8 connected to the jaws and pivotally supported in recesses *s'* and located therein parallel to the face of the chuck and at right angles to the spindle thereof, a sliding collar on the hub of the chuck, having prongs 1, of unequal thickness, reaching through openings *s''* into recesses *s'* and passing under the tail-ends of levers 8 therein and springs opposing the action of prongs 1.

3. A lathe-chuck, or similar work-holding device, provided with radially movable jaws 5, recessed at *c*, nuts 4, contained in said recesses, screws 7, in engagement with the nuts, screws 7, and jaws 5, provided with grooves 38, and 37, respectively opposite each other, the former on screws 7, the other on jaws 5, a segmental ring 36, resting partly in each groove and connecting screws 7, to jaws 5, levers 8, pivotally supported on the chuck-body and operatively connected to nuts 4, and means to oscillate the levers.

4. A lathe-chuck, or similar work-holding device, provided with levers 8, pivotally connected thereto, nuts 4, supported by levers 8, screws 7, in engagement with said nuts, jaws 5, carried on the screws, a collar 3, loosely supported on the hub of the chuck and adapted to oscillate levers 8, a ring 14, pivotally supported and in engagement with said collar, a handle 15 on said ring to adjust it longitudinally for the purpose of acting upon levers 8, a customary feed-mechanism for advancing the work longitudinally and means whereby it is connected to ring 14, in a manner that when the latter is operated for the purpose of releasing the work from the jaws said feed-mechanism advances the work.

5. A lathe-chuck, or similar work-holding device, provided with levers 8, pivotally connected thereto, nuts 4, supported by levers 8, screws 7 in engagement with said nuts, jaws 5, carried on the screws, a collar 3, loosely supported on the hub of the chuck and adapted to oscillate levers 8, a ring 14, pivotally supported and in engagement with said collar to adjust it longitudinally for the purpose of acting upon levers 8, a lever 19, connected with one free end to ring 14, a rod 20, connected to the other end of lever 19, a customary feed-mechanism having a reciprocating feed-rack 23, and means to connect rod 20 to the latter whereby the manipulation of ring 14, affects simultaneously levers 8, with jaws 5, and the feed-mechanism.

6. A lathe-chuck, or similar work-holding device, provided with radially movable jaws and pivotally supported levers which operatively connect to said jaws, a collar 3, loosely supported on the hub of the chuck and adapted to oscillate levers 8, a ring 14, pivotally supported and in engagement with said collar to adjust it longitudinally for the purpose of acting upon levers 8, a lever 19, connected with one free end to ring 14, a rod 20, connected to the other end of lever 19, a customary feed-mechanism having a reciprocating feed-rack 23, and means to connect rod 20, to the latter, whereby the manipulation of ring 14, affects simultaneously levers 8, and the feed-mechanism.

546,812. **RAILWAY-FROG.** HENRY ELLIOT, St. Louis, Mo. Filed Jan. 29, 1895. Serial No. 536,545. (No model.)

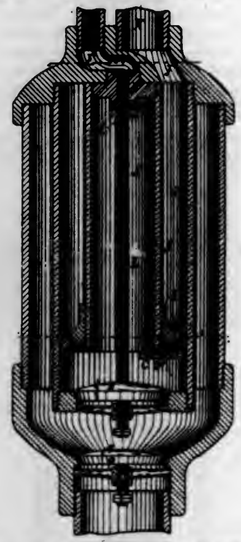


Claim.—1. In a railway frog, the combination of a binding clamp having its ends concaved and adapted to receive and inclose the rails and bracing blocks, bracing block 7 having its outer side convex and adapted to engage one end of said binding clamp, bracing blocks 8 having a concave outer side, and a wedge 9 having convex sides adapted to engage the bracing block 8 and the other end of said binding clamp and secure the parts, substantially as described.

2. In a railway frog, the combination of binding clamp 4 provided with concave ends, bracing block 7 having a convex outer side adapted to engage one end of said clamp, bracing block 8 having a concave outer side, wedge 9 having convex sides adapted to engage said bracing block 8 and the other end of said binding clamp, rails 1 and 2, bracing blocks 3, and pin 5 adapted to secure said rails and bracing blocks in position, substantially as described.

3. In a railway frog, the combination of a binding clamp having its ends concaved and adapted to receive and inclose the rails and bracing blocks, bracing block 7 having its outer side convex and adapted to engage one end of said binding clamp, bracing block 8, and wedge 9 having a convex outer side adapted to engage bracing block 8 and the other end of said binding clamp and secure the parts, substantially as described.

546,813. **STEAM-PUMP.** JAMES B. ERWIN, Milwaukee, Wis. Filed Dec. 20, 1894. Serial No. 532,407. (No model.)



Claim.—1. In a single acting steam pump the combination within a single inclosure of a steam chamber provided at its upper end with a steam controlling valve; a water chamber communicating at its upper end with a water discharge pipe, and at its lower end with the lower end of said steam chamber; a check valve located between said steam and water chambers, and the inlet water supply duct; a valve rod communicating between said check valve and said steam valve, and a water discharge check valve located between said steam chamber and said water discharge pipe and adapted to permit the escape of water to, and to prevent its return from said water discharge pipe, substantially as and for the purpose set forth.

2. In a single acting steam pump, the combination of a steam chamber provided at its upper end with a steam controlling valve; an exterior inclosing water chamber communicating at its upper end with the water discharge pipe and provided at its lower end with an inlet water controlling check valve; a valve-rod communicating between said check valve and said steam valve; and a check valve located between said steam chambers and said water chamber and adapted to permit the escape of water and to prevent its return from said water discharge pipe, substantially as and for the purpose specified.

3. In a single acting steam pump of the class described, the combination of a steam chamber provided at its upper end with a steam controlling valve; an exterior inclosing chamber communicating at its upper end with the water discharge pipe and provided at its lower end with an inlet water controlling check valve; a valve-rod communicating between said check valve and said steam valve; an annular valve seat surrounding the lower end of said steam chamber inclosing the space between said steam chamber and the inclosing water chamber; and an annular valve located between said steam chamber and said water discharge pipe and inclosing said steam chamber against which it has guide bearings adapted to close said annular valve seat against the return of the water elevated, substantially as and for the purpose specified.

4. In a single acting steam pump, the combination of a steam chamber provided with a steam controlling valve; an exterior water chamber communicating at its upper end with the water discharge pipe and provided at its lower end with an inlet water controlling check valve; means for communicating motion from said check valve to said steam valve; a check valve adapted to close the outlet water passage against the return of the elevated water; and an exterior inclosing water reservoir surrounding both of said chambers, closed at its upper end and communicating at its lower end with the inlet water pipe, and with the lower ends of said inclosed steam and water chambers, substantially as and for the purpose specified.

5. In a single acting steam pump, the combination within a single inclosure of a steam chamber open at its lower end for the reception of water and provided at its upper end with a steam controlling valve; a separate water chamber communicating between the inlet water duct and the lower end of said steam chamber; a water controlling check valve located between said inlet water duct and said water chamber; a valve-rod communicating between said inlet water controlling valve and said steam valve; an outlet water duct communicating from said steam chamber with the water discharge pipe; an outlet check valve located in said outlet water duct or pipe; a water return spray duct communicating from said outlet water duct above said outlet check valve with the interior of said steam chamber, all substantially as and for the purpose specified.

6. In a single acting vacuum pump, the combination of a steam chamber provided at its upper end with a steam controlling valve, an inlet water duct or chamber, a water controlling valve located in said inlet duct or chamber, a connection communicating between said water and said steam controlling valves, a discharge duct or chamber communicating from said steam chamber to the place of discharge, provided with a check valve to prevent the return of water, and an open unchecked spray tube communicating from above the check valve in said outlet discharge duct or chamber to the lower end of said steam chamber, substantially as and for the purpose specified.

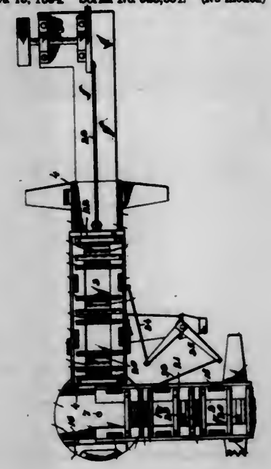
546,814. **PIPE-COUPLING.** PHILIP H. FARREY, Amsterdam, N. Y. Filed Oct. 29, 1894. Serial No. 527,184. (No model.)



Claim.—1. In a detachable coupling, the combination with an end-expanded lead-pipe, and retaining ring on the pipe at the junction of the expanded and unexpanded portions, of a coupling-sleeve having a screw-threaded end inclosing the expanded end of the pipe, a coupling-tube formed of a separate piece secured to the coupling-sleeve and inserted in the expanded end of the pipe, and a screw-threaded locking-nut in engagement with the screw-threaded end of the sleeve and engageable with the retaining ring on the pipe, and an inner seat on the sleeve for limiting the inward movement of the retaining ring, substantially as described.

2. In a detachable coupling, the combination with an end-expanded lead pipe, and retaining-ring on the pipe at the junction of the expanded and unexpanded portions, of a coupling-sleeve having a screw-threaded end inclosing the expanded end of the pipe, a coupling-tube secured to the coupling-sleeve and inserted in the expanded end of the pipe, an inner inclined packing-seat on the sleeve, a screw-threaded locking-nut in engagement with the screw-threaded end of the sleeve and engageable with the retaining ring, and a packing-ring interposed between the retaining ring and the inclined packing-seat in the sleeve, substantially as described.

546,815. **CONVEYER.** WALTER T. FERGUSON, Fugate's Hill, Va. Filed Oct. 13, 1894. Serial No. 525,531. (No model.)



Claim.—1. The combination of a trough, a reciprocating carriage-frame mounted on the trough, shovels hingedly mounted on the carriage-frame and depending therefrom, and the upper and lower cross bars arranged in pairs at each shovel, the upper one being located in rear of the shovel and the lower one in advance of the same, whereby the shovels are supported, and their forward swing limited, substantially as and for the purpose described.

2. In a conveyer, the combination of a trough, a reciprocating carriage-frame, swinging shovels depending from the carriage-frame, upper and lower cross-bars secured to the frame and located in rear and in advance of the shovel to support and limit the forward swing of the latter, and transversely-disposed shields rigidly mounted on the carriage frame and arched over the tops of the shovels and the cross-bars, substantially as described.

3. In a conveyer, the combination of a trough, a reciprocating carriage-frame, swinging shovels depending from the carriage-frame, means for limiting the forward swing of the shovels, a rigidly mounted hopper located directly above the trough, and shields disposed transversely of the carriage-frame and rigidly mounted thereon and having inclined sides to direct the material into the trough, substantially as described.

4. In a conveyer, the combination of a trough, a reciprocating carriage-frame provided with rollers, tracks arranged on the sides of the trough and receiving the rollers, guard-rails located above the rollers and arranged to be engaged by the same to prevent upward movement of the carriage-frame while carrying the material, and shovels depending from the carriage-frame, substantially as described.

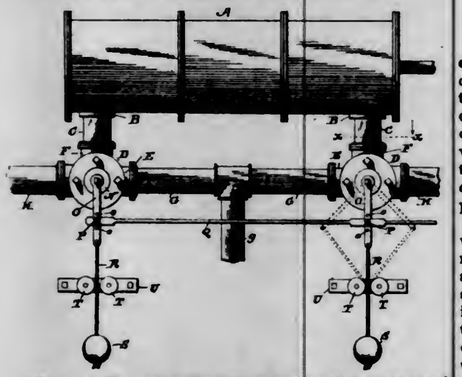
5. In a conveyer, the combination of a trough composed of two sections, one of the sections being pivotally connected with the other and capable of swinging horizontally and of being arranged at right angles to change the direction of the conveyer and provided at opposite sides with openings adapted to register with the adjacent end of the other section, and shovels, substantially as described.

6. In a conveyer, a trough composed of two sections pivotally connected, one of the sections being arranged to swing at right angles to the other section to change the direction of the conveyer and having openings at opposite sides and provided with lateral extensions adapted to register with the adjacent end of the other section, combined with doors for normally closing said openings, substantially as described.

7. In a conveyer, the combination of a main trough section provided with a bed-plate, an extension section provided at opposite sides with openings and having lateral extensions, a turn-table mounted on the bed-plate and supporting the adjacent end of the extension section, and doors for normally closing said openings, substantially as described.

8 In a conveyer, the combination of a main section, an extension section pivotally connected with the main section and capable of swinging at right angles thereto, reciprocating carriage-frames mounted on the sections and provided with shovels, a horizontally-disposed oscillating bell-crank lever fulcrumed at its angle, and connecting-rods extending between the arms of the bell-crank lever and the carriage-frames, substantially as described.

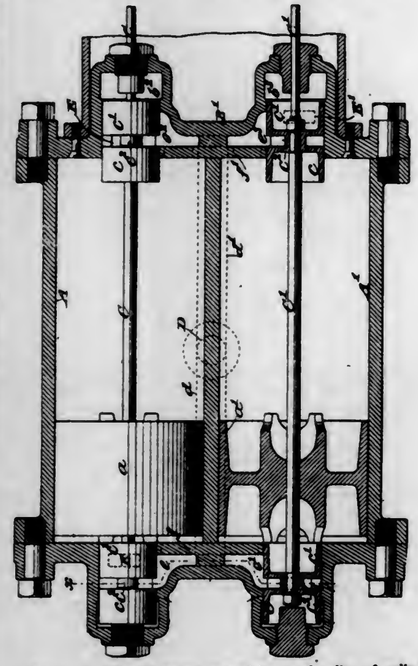
546,316. STEAM-ENGINE VALVE. ANDREW H. FORD, Orange, Tex. Filed Apr. 7, 1894. Serial No. 506,741. (No model.)



Claim.—1. The combination with an engine cylinder having end steam ports; of oppositely arranged valve casings connected with said cylinder ports and provided with circular tapered bearings and side and top ports piercing the bearings, tapered rotary valve plugs mounted in said bearings and shorter in length than the length of the bearings, said plugs having separate steam passages to connect the side and top ports, the valve stems, and take-up collars mounted for longitudinal adjustment on the valve stems inside of the opposite heads of the casing at both ends of the plugs to provide for adjusting the latter within their bearings, substantially as set forth.

2. The combination with a steam engine cylinder having opposite end ports; of opposite connected valve casings connected with the end ports of the cylinder, rotary valves mounted in said valve casings and having projected valve stems, swinging depending valve arms connected at their upper ends to said projected valve stems, a single operating rod arranged intermediate of and pivotally connecting the opposite valve stems to insure a simultaneous turning of the valves, stationary pairs of pulleys arranged below each valve casing, and weighted ropes guided between said pulleys and connected at their upper ends respectively to the lower end of each swinging valve arm, the combined weight of both weighted ropes providing means for normally holding the valve arms vertical and for automatically returning the same to such position, substantially as set forth.

546,317. LIQUID-METER. WILLIAM M. FOWLER, Stamford, Conn. Filed Sept. 24, 1894. Serial No. 523,883. (No model.)



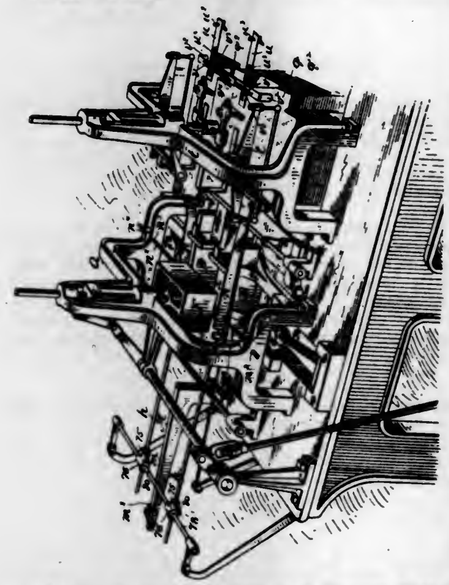
Claim.—1. A liquid meter, comprising a plurality of cylinders each provided with a movable piston, valves at the ends of the cylinders independent of the pistons throughout a portion of the stroke of the pistons and under the control of the pistons to be simultaneously operated at opposite ends of the cylinders as the piston approaches each end of the cylinder, inlets and outlets under the control of the valves, the inlet and outlet of a cylinder being under the control of the moving piston in a companion cylinder to keep the flow of liquid constant and means for recording the number of strokes of one of the pistons, substantially as set forth.

2. A liquid meter, comprising a plurality of cylinders each provided with a movable piston, valves at the ends of the cylinders, valve rods each connecting the valves at the opposite ends of the cylinder and having a sliding engagement with the piston of that cylinder, the said valves being under the control of the piston to operate them as it nears each end of the stroke and inlets and outlets under the control of said valves, the inlet, and outlet of a cylinder being under the control of the valves of a companion cylinder to keep the flow of liquid constant, substantially as set forth.

3. A liquid meter, comprising a plurality of cylinders each provided with a movable piston, valves at the opposite ends of each cylinder, rods connecting the said valves at the opposite ends of each cylinder, one of said rods extending through the end of the cylinder, the said rods having a sliding engagement with the pistons, the said valves being under the control of the piston as it nears the limit of

its stroke to operate them, inlets and outlets under the control of the valves, the inlet and outlet of the cylinder being under the control of the valves in a companion cylinder and a recording device engaged with the projecting valve connecting rod, substantially as set forth.

546,318. PAPER-BOX MACHINE. CHAUNCEY W. GAY, West Springfield, assignor, by mesne assignments, to the Brightwood Box Machinery Company, Springfield, Mass. Filed Aug. 2, 1894. Serial No. 519,239. (No model.)



Claim.—1. In a paper-box machine of the character specified, the combination with the reciprocatory followers, B, B, and the conveyer-rods, *h*, *h*, mounted in ways of the followers, movable in unison with them, and also movable endwise through them, of members adapted to be confined along the lengths of said rods, the cross-rod, 78, having a free sliding engagement through said adjustably confined members, the stationary horizontal bar on which said rod, 78, is supported as it moves, and which has the buffer, m^3, fixed thereon, all substantially as and for the purpose set forth.

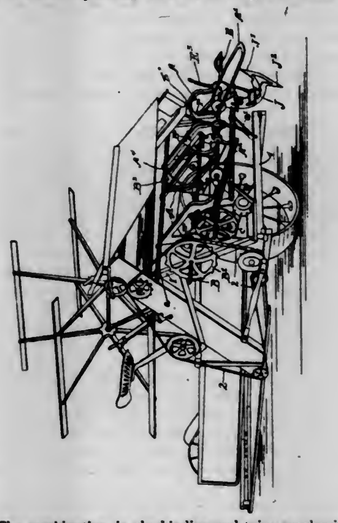
2. In a paper box machine, the combination with the movable members constituting the contractible throat under the plunger, and the blank conveyer of the strips, *n*, *n*, arranged in parallelism at opposite sides of, and above, the said contractible throat and having the outwardly deflected forward ends, substantially as and for the purpose set forth.

3. In a paper box machine, the combination with the movable members constituting the contractible throat under the plunger, the blank conveyer, and the supports, as the uprights of the arch, Q, having the transverse socket holes, n^3, n^3, of the rods, passed through and adjustably confined in said socket holes, which are provided at their inner ends with right angular strips, or plates, *n*, *n*, the forward end portions of which are outwardly deflected, substantially as and for the purposes set forth.

4. In a paper box machine of the character described, the combination with the conveyers, *h*, *h*, of the horizontal, longitudinally ranging bars, *u*, *u*, with the slots, u^2, and the transverse slotted strips, *v*, *v*, having the depending members, v^2, and the clamp-screws, v^3, v^3, adjustably confining the slotted strips, *v*, in different endwise positions along the length of the bars, *u*, substantially as described.

546,319. SELF-BINDING ATTACHMENT FOR REAPING-MACHINES. JOHN J. GAYNOR, Indianapolis, Ind., assignor to the Gaynor Straw Binder Company, same place. Filed July 31, 1894. Serial No. 519,069. (No model.)

Claim.—1. The combination, in an automatic binding apparatus, of a binding-ring composed of two halves, the lower half being stationary and the upper half adapted to be opened and closed, a shaft whereby said upper half is operated, band forming mechanism mounted in said binding ring, a shaft driving a gear-wheel which operates said band forming mechanism, a spur gear-wheel upon the end of said shaft, a spur gear-wheel upon the end of the shaft driving the movable portion of the binding-ring, and a rack-bar adapted to engage successively with the two-last named spur-gears, whereby first one of said shafts is revolved and then the other, thus first closing the binding ring and afterward operating the band-forming mechanism.



2. The combination, in the binding and tying mechanism of an automatic binding apparatus, of a wheel C, a reciprocating rack-bar D, a pitman connecting said wheel and said rack-bar, whereby the latter is driven from the former, said rack-bar being provided with two sets of teeth, a shaft E, a movable binding-ring part operated by said shaft, a shaft F, a band-forming mechanism operated by said shaft, said shafts E and F being provided with spur wheels adapted to engage with the racks or sets of teeth of said rack-bar, respectively, the gear-wheel on the shaft E having a portion of its periphery smooth, whereby it is permitted to remain quiet for a portion of the movement, and the teeth of said rack-bar which engage with the wheel on said shaft F occupying a shorter length than the travel of said rack-bar, whereby the opening and closing of the ring and the operation of the band-forming mechanism can be successively and independently effected by a single reciprocation of said rack-bar.

3. The combination, in an automatic binding apparatus, with the two halves of a binding ring, of an automatic locking and unlocking device therefor, consisting of a pin *q*, devices leading therefrom to near a revolving part, a strike O^4 on said revolving part whereby said locking pin is moved in one direction, and a spring *q'* whereby a reverse movement is effected, thus securing an automatic locking and unlocking of the movable part of said ring.

4. The combination, in mechanism for operating the binding and tying devices of an automatic binder, including a binding ring and a band forming mechanism of the reciprocating rack-bar D having two sets of teeth or racks and an arm D^4, of two shafts one operating the movable part of said binding ring and the other operating said band-forming mechanism and each carrying a spur gear-wheel and operated by said racks, respectively, of said rack-bar, one of said spur gear-wheels E^2 being smooth on a portion of its periphery, and its shaft E being provided with an arm E^4, whereby, as said rack-bar continues to move, it may, by means of said arms D^4 and E^4, throw said spur gear E^2 into and out of engagement at predetermined times, substantially as and for the purposes set forth.

5. The combination, in an automatic binding apparatus, of a main shaft, a spur gear wheel thereon, a second spur gear wheel C having a portion of its periphery smooth and adapted to be driven from said spur gear wheel on the main shaft, a reciprocating rack-bar mounted in a suitable way in the framework, a pitman connecting said rack-bar and said last mentioned wheel, a spring catch in the end of the shaft on which said wheel is mounted, a latch recess in said pitman, said parts being arranged as described so that the engagement of said spring catch with said pitman occurs at the same time the spur gear-wheel on the main shaft is opposite the smooth portion of the periphery of the spur gear-wheel C, and means whereby when a predetermined weight of grain has accumulated the spur gear-wheel C will be impelled to engagement with the spur gear-wheel on the main shaft, and the binding apparatus thus set in motion, substantially as set forth.

6. The combination, in an automatic binding apparatus, of the wheel C having the spring catch c^3 attached thereto, the tripping or

scale apparatus adapted to be operated by the weight of the accumulating grain, and having a rock-shaft with a finger G^3 on the end thereof adapted to come in contact with the catch c^3 on the wheel C, and thus propel said wheel slightly and throw it into engagement with a wheel on the driving shaft, substantially as set forth.

7. The combination, in an automatic binding apparatus, with the binding ring, of a stop P mounted on a stationary part of said ring and embodying a rack-bar, and a circular rack mounted on a movable part of said ring and engaging with and operating said stop, whereby said stop is held in raised position when the ring is open, and permitted to descend as the ring is closed, substantially as set forth.

8. The combination, in an automatic binding apparatus, of a binding ring consisting of two parts, one stationary and the other movable, said movable part being adapted to move from open to closed position, a shaft forming the hinge-pivot therefor, mechanism for operating said shaft, a second ring mounted in circular ways within the main parts of the binding ring and also composed of two parts, teeth on the periphery of said last-named ring, a shaft parallel with the shaft on which the movable ring-part is mounted, and a spur gear on said last-named shaft projecting into the edge of the binding ring and engaging with the teeth on the periphery of the inner ring thereof, whereby the latter is operated.

9. The combination, in the binding-ring of an automatic binding apparatus, of a stationary main ring part, a movable main ring part, a secondary ring mounted in circular ways in said main ring parts, gearing by which said secondary ring is driven, said secondary ring being provided with toothed segments on its sides, small shafts mounted on the binding-ring parts, small gear-wheels thereon adapted to be operated from said segments, other spur gear-wheels on said small shafts, and tucking fingers operated from said small gear-wheels, which said tucking-fingers move transversely of the binding-ring structure, substantially as set forth.

10. The combination, in the binding-ring of an automatic grain binding apparatus, of a stationary main part, a movable main part, cam grooves in the surfaces of said two main parts, a secondary ring mounted in circular ways in the main ring parts, gathering fingers mounted on said secondary ring, and projections on said gathering fingers engaging with said cam grooves, whereby said fingers are swung outwardly and inwardly and adapted to engage with and carry wisps of straw around the waist of the bundle being tied, substantially as set forth.

11. The combination, with the binding-ring of an automatic binding apparatus, of transversely moving tucking fingers mounted on said binding-ring and provided with heads adapted to engage with the wisps of straw respectively and tuck them under each other, and gathering fingers adapted to bring said wisps of straw into position for said tucking fingers to operate upon, substantially as set forth.

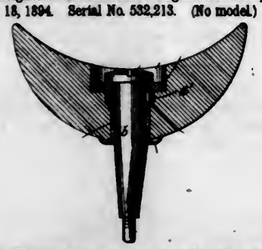
12. The combination, in an automatic binding apparatus, of a binding ring, a secondary ring mounted in circular ways in said binding ring, gathering fingers mounted on said secondary ring, projections on said gathering fingers engaging with the cam grooves in the face of the main binding-ring parts, and projections at or near the inner surface of the binding-ring over which said gathering fingers will draw the wisps of straw gathered from the bundle being tied, and tucking fingers adapted to tuck in the ends of said wisps of straw under the adjacent wisps, substantially as set forth.

13. The combination, in the binding-ring of an automatic binding apparatus, of a stationary main part, a movable main part, a secondary ring, also consisting of two parts, mounted in circular ways in said main parts, and provided with cogs on its periphery by which it is driven, and also provided with segmental racks upon one side, transverse shafts bearing cog-wheels driven from said segmental racks, and also bearing other cog wheels which drive transverse rack-bars mounted in ways in the main binding-ring parts, said rack-bars, tucking fingers connected to and driven by said rack-bars, and gathering fingers mounted upon said secondary ring and operated therefrom and from cam grooves in the main binding-ring parts, said main binding-ring parts also having projections upon or near the inner surface thereof over which to draw the wisps of straw in operation, said several parts being arranged and operating substantially as set forth.

14. The combination, in an automatic binding apparatus, with a binding-ring, one half of which is adapted to be opened and closed, of throwing-off arms mounted upon the same shaft which operates said movable part of the binding-ring, and provided with a ratchet-and-pawl attachment, whereby said arms are moved when the binding-ring is opened, but permitted to remain quiet when the binding-ring is closed, substantially as and for the purposes set forth.

15. The combination, in the binding ring of an automatic grain binding apparatus, of the ring parts provided with lateral projections O, and inwardly-projecting secondary projections o thereon, with the gathering fingers by which the wisps of straw are selected from the bundle, whereby said wisps are more accurately bent and held in position, substantially as set forth.

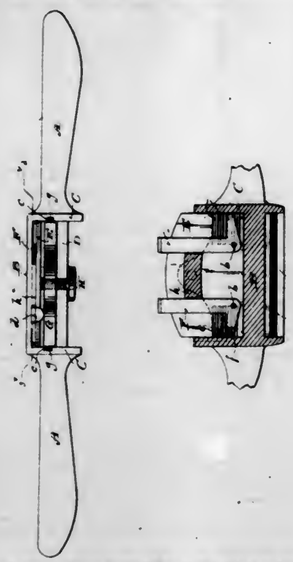
546,320. VEHICLE-WHEEL RIM. FRANK L. GOODRICH, Belvidere, Ill., assignor to the National Sewing Machine Company, same place. Filed Dec. 18, 1894. Serial No. 532,213. (No model.)



Claim.—1. The combination with a perforated vehicle wheel rim, of a washer arranged around the inner end of said perforation, a sheath passing through said perforation and having its outer end reamed down upon the face of the rim and its inner end arranged at a distance from said washer and a stem or spoke passing through said sheath and having a head resting upon said washer, substantially as set forth.

2. The combination with a perforated vehicle wheel rim having a counter-sink therein provided with a second counter-sink of smaller diameter, of a washer arranged in said first counter-sink, a sheath passing through said perforation and having its inner end reamed down upon the shoulder of said second counter-sink and being at a distance from said washer, and its outer end turned down against the face of the rim, and a stem passing through said sheath and having a head resting upon said washer, substantially as set forth.

546,321. SPOKESHAVE. ALBERT GUHL, Milwaukee, Wis. Filed Jan. 20, 1894. Serial No. 497,499. (No model.)

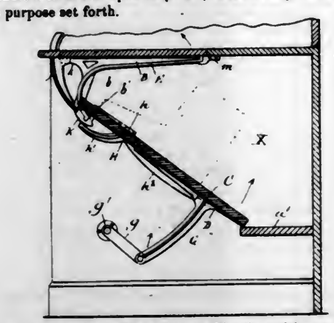


Claim.—A spoke-shave comprising a suitable handled housing, a blade, and a pair of pivoted bell crank levers in engagement with said blade for advancing and retracting said blade by a simultaneous movement of both of said levers, and for adjusting the edge of said blade to cut evenly by a slight independent movement of the levers, substantially as set forth.

546,322. TYPE-WRITER CABINET. MAGNUS J. HAFGAR, Chicago, Ill. Filed June 24, 1895. Serial No. 553,859. (No model.)

Claim.—1. In a type-writer cabinet the combination with a case or desk, of a table for carrying the type-writer, a table to serve as a writing surface when the type-writer is out of service and being pivoted to the case so as to turn over forwardly and downwardly and connection between the two tables so that as the writing table is turned down the type-writer is brought into position for use and as the writing table is raised the type-writer is thrown within the case, substantially as described and for the purpose specified.

2. In a type-writer cabinet the combination with the case or desk, of a table, *a*, adapted to form a writing surface, brackets B secured to the side edges of the table and having pendent arms *b* near their forward ends pivoted to the case or desk, a guide way on each bracket B extending from its pivoted point to its rearward end, a table C, having its forward end in engagement with guide ways of the brackets B, levers H pivoted to the case and each having its forward end in bearing engagement with the arm of one of the brackets B and its rearward end in similar engagement with the table C, the arms of the brackets serving as cams for depressing the forward ends of the levers as the table *a* is turned upon its pivots, substantially as described and for the purpose set forth.



3 In a type writer cabinet the combination with a case or desk, of a writing table *a* having pendent arms, *b*, near its front edge, such arms being pivotally secured to the desk at their lower ends, and a table, C, located below the normal position of the table *a* and having its forward end pivotally supported, levers H, pivoted to the desk back of the pivotal points of the arms *b* and having their forward ends caught under said arms, the rearward ends of said levers supporting the rearward end of the table C, the pendent arms having a cam action to depress the levers as the table *a* is turned down, substantially as described and for the purpose specified.

4. In a type writer cabinet the combination with a case or desk, of a writing table, *a*, having pendent arms, *b*, near its front edge, such arms being pivotally secured to the desk at their lower ends, a table, C, located below the normal position of the table *a* and having its forward end pivotally supported, levers H, pivoted to the desk back of the pivotal points of the arms *b* and having their forward ends caught under said arms, the rearward ends of said levers supporting the rearward end of the table C, the pendent arms having a cam action to depress the levers as the table *a* is turned down, and link connection between the table C and the desk, substantially as described and for the purpose specified.

546,323. TURNED SHOE. GEORGE H. HARLAND, Detroit, Mich. Filed Aug. 10, 1894. Serial No. 519,964. (No model.)

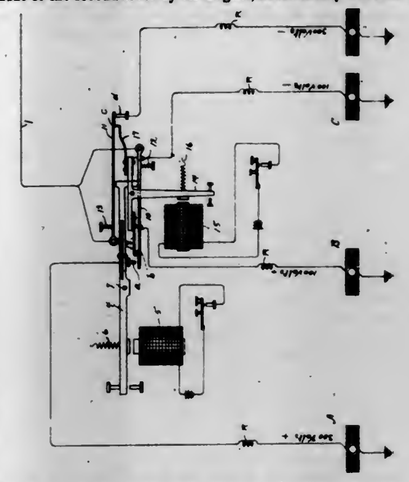


Claim.—As an improved article of manufacture, a shoe comprising a stiff sole having all its parts in substantially the same plane except the front end, which is extended beyond the prescribed outline of the finished shoe and bent to form a stiffened toe, and an upper, comprising quarters and a vamp, of comparatively thin and pliable material and having its lower edges brought to the plane of the sole and stitched to the edges thereof, the front end of the vamp being shortened to correspond with the said outline of the shoe and stitched to the edge of the said upturned stiffened toe, substantially as set forth.

546,324. DYNAMO-TELEGRAPHY. ALBERT S. HARRIS, Minneapolis, Minn. Filed Feb. 13, 1895. Serial No. 538,183. (No model.)

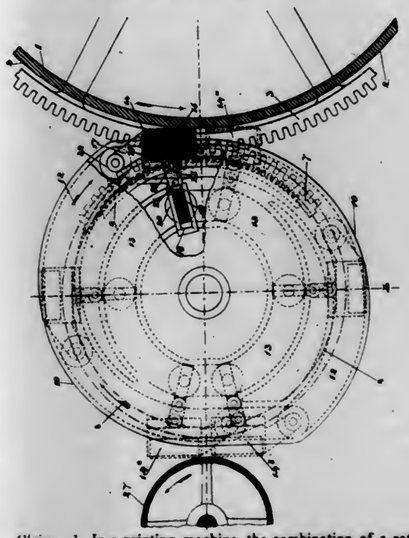
Claim.—1. A transmitting instrument embodying two sets of contact points, each set being independently controlled by a lever, two sources of current of like potential but of opposite polarity connected to one set of contacts, and two other sources of current of different potential and opposite polarity connected to the second set of contacts, substantially as set forth.

2. In a telegraphic instrument, two operating levers independently controlled by electro-magnets, two sets of contacts, one set arranged to constitute the open and closed points for the first lever while the second lever is in normal position and the other set arranged to constitute the open and closed points for the first lever upon movement of the second lever by its magnet, substantially as set forth.



3. In a transmitting instrument, the combination with a lever and electro-magnet controlling a pair of arms; a second lever and electro-magnet controlling a second pair of arms; two sets of contact points, one set serving as the contacts for the first lever in normal position and the second being substituted for them by the operation of the second lever by its magnet; sources of current of different potential and polarity, and suitable connections to said contacts, substantially as set forth.

546,325. PRINTING-MACHINE FOR PRINTING FROM ROTARY FLAT FORMS. JOHN T. HAWKINS, Taunton, Mass., assignor to the Campbell Printing Press and Manufacturing Company, New York, N. Y. Filed Nov. 12, 1890. Serial No. 371,207. (No model.)



Claim.—1. In a printing machine, the combination of a rotary impression cylinder, a rotary form cylinder, an annular rack carried by said form cylinder and oscillating, sectional form-holders having racks meshing with the annular rack carried by the form cylinder, substantially as described.

2. In a printing machine, the combination of an impression cylinder, a rotating form cylinder having an annular rack, sectional form holders having racks meshing with said annular rack carried by the form cylinder, and also having rollers engaging with a stationary cam, substantially as described.

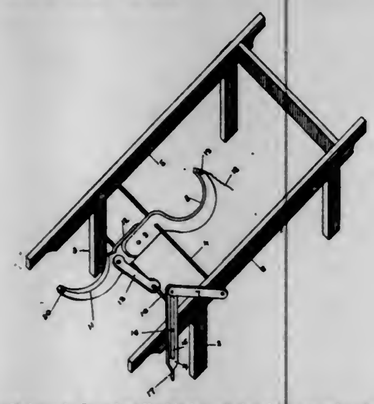
3. In a printing machine, the combination of an impression cylinder, a rotary form cylinder, having an annular rack and a series of radially movable bars, sectional form holders, articulated to said radially movable bars, and having racks meshing with said annular rack, and rollers engaging with a stationary cam, substantially as described.

4. In a printing machine, means for printing rotarily from sectional, flat, type or plate forms, consisting of the following named elements in combination: an impression cylinder; stationary cams, as 10, 11; one or more cylinders geared to said impression-cylinder, so that the surface velocities of the several cylinders shall be equal and provided with sectional form-carriers, or chases, as 14, annular racks, as 9, racks as 16 secured to said chases and engaging said annular racks and rollers as 32, 20, connected to said chases and engaging grooves in said cams; substantially as and for the purposes set forth.

5. In a printing machine, in combination with an impression-cylinder and a principal reciprocating flat form, as 40, means for printing rotarily from flat type or plate forms consisting of the following named elements; stationary cams, as 10, 11; one or more form cylinders geared to said impression cylinder, so that the surface velocities of the several cylinders shall be equal and provided with sectional form-carriers, or chases, as 14, annular racks, as 9, racks as 16 secured to said chases and engaging said annular racks, and rollers, as 32, 20, connected to said chases and engaging grooves in said cams; and inking rollers; whereby areas for impression may be omitted by said principal form, and printed, in the same or a different color, from a form or forms on said form-cylinder, or cylinders, substantially as set forth.

6. In a perfecting printing-machine, in combination with each of two impression cylinders, means for printing from flat, type or plate forms, consisting of the following named elements; stationary cams, as 10, 11; one or more form-cylinders geared to each of said impression cylinders, so as to have equal surface velocities therewith and provided with sectional form-carriers, or chases, as 14, annular racks, as 9, racks as 16 secured to said chases and engaging said annular racks, and rollers, as 32, 20, connected to said chases and engaging grooves in said cams; and inking-rollers; whereby type, or other flat, forms are rotated and also caused to travel in right lines while being inked and while printing, substantially as set forth.

546,326. BUNDLE-BINDER. FRANCIS A. HEDGES, Vera Cruz, Ind., assignor of one-third to Harry C. Hedges, same place. Filed Apr. 3, 1895. Serial No. 544,227. (No model.)



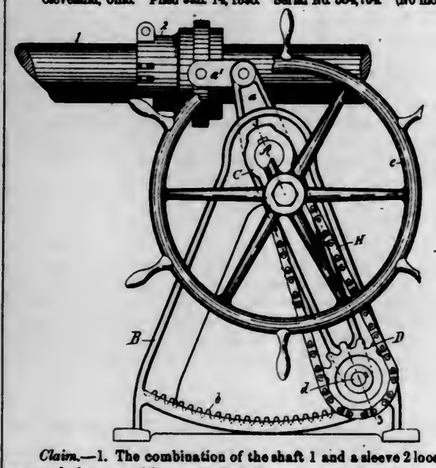
Claim.—1. In a bundle binder of the class named, a frame to which are attached the transverse operating bar 4 and the rod 10: two semicircular jaws provided with arms pivotally attached to each other at their ends, one of the arms being rigidly attached to the operating bar at a point near its jaw, and the other arm 12 pivotally attached at a similar point to a link: a link pivotally attached at one end to said arm 12 and pivotally secured to the transverse rod 10: and means to operate the bar 4.

2. In a bundle binder of the class named, a frame to which are attached the transverse operating bar 4 and the rod 10: two semicircular jaws provided with arms pivotally attached to each other at their ends, one of the arms being rigidly attached to the operating bar at a point near its jaw, and the other arm pivotally attached at a similar point to a link: a link pivotally attached to said arm 12 at one end, and pivotally secured to the transverse rod 10: a crank shaft 7: a pull bar 14 and means to guide said pull bar.

3. In a bundle binder of the class named, a frame to which are attached the transverse operating bar 4 and the rod 10: two semicircular jaws provided with arms pivotally attached to each other at their ends, one of the arms being rigidly attached to the operating bar at a point near its jaw, and the other arm 12 pivotally attached at a similar point to a link: a link pivotally attached to said arm 12 at one end, and pivotally secured to the transverse rod 10: a pulley attached to the end of one of the jaws: a clip or pin attached to the end of the other jaw, and a cord passing through said pulley and attached to the clip or pin on the other jaw.

4. In a bundle binder of the class named, a frame to which are attached the transverse operating bar 4 and the rod 10: two semicircular jaws provided with arms pivotally attached to each other at their ends, one of the arms being rigidly attached to the operating bar at a point near the jaw, and the other arm 12 pivotally attached at a similar point to a link: a link pivotally attached to said arm 12 at one end, and pivotally secured to the transverse rod 10: a crank shaft 7: a pull bar 14 and means to guide said pull bar: a pulley attached to the end of one of the jaws; a clip or pin attached to the end of the other jaw, and a cord passing through said pulley and attached to the clip or pin on the other jaw.

546,327. CLUTCH-OPERATING MECHANISM. HARRY W. HILL, Cleveland, Ohio. Filed Jan. 14, 1895. Serial No. 534,764. (No model.)



Claim.—1. The combination of the shaft 1 and a sleeve 2 loosely mounted thereon, with a rock shaft lying substantially at right angles to said shaft 1, suitable mechanism for connecting said sleeve and rock shaft, an operating arm rigidly secured to the rock shaft, a fixed curved rack, a pinion mounted on said arm and engaging with said rack, and mechanism for turning said pinion, substantially as and for the purpose specified.

2. The combination of a rock shaft and suitable mechanism for connecting the same with a sliding sleeve of a clutch or other device, with an operating arm rigidly connected with said rock shaft, a fixed curved rack, a pinion mounted on said arm and engaging with said rack, a sprocket wheel rigidly connected with said pinion, a second sprocket wheel, a sprocket chain connecting said sprocket wheels, and means for rotating the last named sprocket wheel, substantially as and for the purpose specified.

3. The combination of a rock shaft, an operating arm secured thereto, a fixed curved rack, a pinion mounted on the arm and engaging with said rack, a sprocket wheel rigidly connected with said pinion, a second sprocket wheel pivoted to said operating arm, means for adjusting the position of the pivot of the last named sprocket, a sprocket chain connecting said sprocket wheels, and means for turning the second sprocket wheel, substantially as and for the purpose specified.

4. The combination of a rock shaft, two arms secured thereto, and links pivoted to said arms and adapted to be connected with the sliding sleeve of a clutch or other device, with an operating arm secured to said shaft, a fixed curved rack, a pinion engaging with said rack and mounted on said operating arm, a sprocket wheel connected with said pinion, a second sprocket wheel, a chain connecting said sprocket wheels, and a hand wheel connected with the second sprocket wheel, substantially as and for the purpose specified.

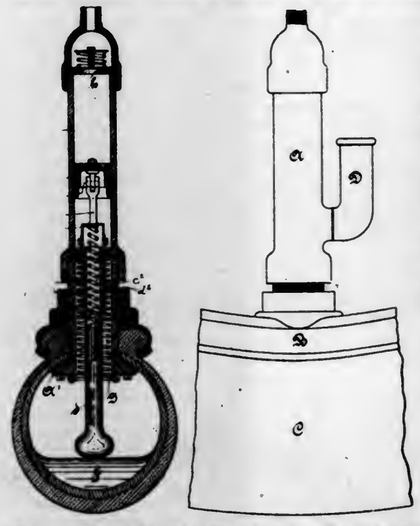
546,328. ANODE FOR ELECTROLYTICAL APPARATUS. CARL HOEPFNER, Giessen, Germany. Filed Mar. 26, 1894. Serial No. 505,179. (No specimens.)

Claim.—1. An anode for electrolytical apparatuses, consisting of a conductive substance, the surface of which anode contains in *minimo* about ten per cent. silicium, so as to render such anode proof against the action of liquids or gases to which it may be exposed, particularly against the action of chlorine.

2. An anode for electrolytical apparatuses, consisting on its surface of a compound of silicium and another conductive metal in such proportions (i. e. in *minimo* ten per cent. silicium) so as to render such anode proof against the action of liquids or gases to which it may be exposed, particularly against the action of chlorine.

3. The herein described plastic composition, consisting of a conductive substance, ferro-silicium, with ten per cent. silicium in *minimo*, and paraffine, for the purpose set forth.

546,329. INFLATING DEVICE FOR PNEUMATIC TIRES. CARL R. HOFFMANN, Krauschütz, Germany. Filed Oct. 17, 1894. Serial No. 526,209. (No model.) Patented in England Aug. 16, 1894, No. 15,642.



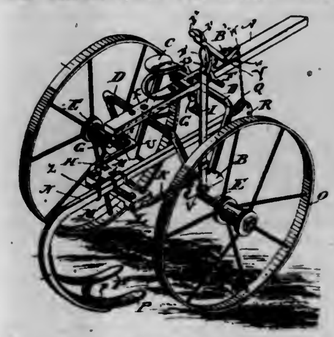
Claim.—1. The combination with a wheel rim and tire of a bicycle or similar vehicle, of a cylinder carried by the wheel rim and communicating with the interior of the tire, a sectional piston rod working within said cylinder and projecting within the tire and adapted to be forced inwardly by the latter when it is compressed as described, a piston carried by one of the sections of the piston rod, said piston and piston rod adapted to have independent longitudinal movement and said piston having a port to provide communication between the spaces above and below the piston a flexible cup carried by the under side of the piston and adapted to open and close the said port in the piston as described, the upper end of the cylinder having a port, an inlet valve carried by the cylinder and adapted to open and close the said port in the outer end of the cylinder, a spring arranged intermediate the sections of the piston rod and adapted to be compressed by the inward movement of one section of the rod or the outward movement of the other section of the piston rod and a second spring encircling the piston rod and acting to draw the piston rod radially outward against the air pressure within the tire, all as specified.

2. The combination with a wheel rim and tire of a bicycle or similar vehicle, of a cylinder carried by the wheel rim and communicating with the interior of the tire, a sectional piston rod working within said cylinder and projecting within the tire and adapted to be forced inwardly by the latter when it is compressed as described, a piston carried by one of the sections of the piston rod, said piston and piston rod adapted to have independent longitudinal movement and said piston having a port to provide communication between the spaces above and below the piston a flexible cup carried by the under side of the piston and adapted to open and close the said port in the piston as described, the upper end of the cylinder having a port, an inlet valve carried by the cylinder and adapted to open and close the said port in the outer end of the cylinder, a spring arranged intermediate the sections of the piston rod and adapted to be compressed by the inward movement of one section of the rod or the outward movement of the other section of the piston rod, a second spring encircling the piston rod and acting to draw the latter radially outward against the air pressure within the tire, and a safety-valve adapted to control the communication between the space upon the under side of the piston and consequently the interior of the tire and the outer air, as specified.

3. The combination with a wheel rim and tire of a bicycle or similar vehicle, of a cylinder carried by the wheel rim and communicating with the interior of the tire, a piston rod made in sections telescopically arranged, one of said sections projecting within the tire and adapted to be forced inwardly by the latter when it is compressed as described, a spring arranged between the sections of the rod, a piston carried by the inner section of said rod and having a port to open communication between the spaces above and below the piston, a cut-off device or valve carried by said piston and adapted to open and close said port in the manner specified, an air inlet valve at the outer end of the cylinder adapted to control the communication between the interior of the cylinder and the outer air, and a spring acting upon the piston and its rod to move them outwardly as specified, and a safety valve adapted to control the communication between the space upon the under side of the piston and consequently the interior of the tire and the outer air.

4. The combination with a wheel rim and tire of a bicycle or similar vehicle, of a nipple engaging the rim and tire, a cylinder secured to the nipple and communicating with the interior of the tire, a piston rod working within said cylinder and projecting within the tire, a boss or enlargement on the latter against which said rods bear, a piston jointed to said rod and having a port to open communication between the spaces above and below the piston, a cut-off device or valve adapted to open and close said port in the manner specified, an air inlet valve at the other end of the cylinder adapted to control the communication between the interior of the cylinder and the outer air, a spring surrounding the piston rod and secured fixedly at one end to the nipple and at its opposite end to the piston rod, a valve casing carried by the cylinder at one side, and a safety valve arranged in said casing and adapted to control the communication between the space upon the under side of the piston and consequently the interior of the tire and the outer air.

546,330. SUBSOIL SULKY-PLOW. ORWIN E. HOWE, Winfield, Kans. Filed Dec. 22, 1894. Serial No. 532,657. (No model.)



Claim.—1. In a subsoil sulky plow the combination with the bifurcated inverted U-shaped arched axle and sector, secured thereto, and the regulating U-shaped device with ends located in the bifurcation of axle and being secured thereto and carrying the parallel slotted hinge or coupling and double lever for operating same, substantially as described.

2. In a subsoil plow the combination with the inverted U-shaped arched bifurcated axle, the adjustable U-shaped regulating device located in the bifurcation of said axle having the parallel slotted hinge or coupling secured by means of clips thereto, the lever secured to one of the arms of said U-shaped regulating device; the pole having the sector secured thereto and a bearing or bolt thereon to which is loosely journaled a lever for adjusting the beam, carrying the plows substantially as described.

3. In a subsoil plow the combination with the inverted U-shaped arched bifurcated axle the U-shaped regulating device having one lever secured to one of its arms, the adjustable parallel slotted hinge or coupling secured to said device, the sector, and lever, secured to the pole by bolts or bearing of said sector, and chain connection, uniting the lever with the forward end of plow beam, foot rest secured to the pole as described and pole having the spring seat secured to its rear end and pulleys secured to the under side and rear end of the pole, and a chain having one end secured to the beam and the

other free end passed through said pulleys and a stirrup secured to the free end of the chain or rope, said chain connecting the beam with the pole whereby the beam and the plows are adjusted, substantially as described.

4. In a subsoil sulky plow, the beam provided with the double plows and brace secured to the curved standard as described, and the said plows located parallel with and one above the other substantially as described and for the purpose specified.

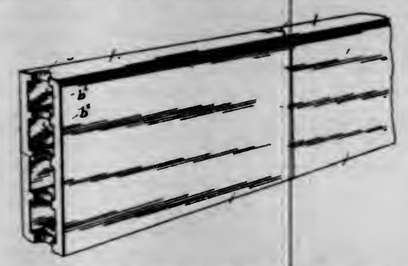
546,331. ARTIFICIAL TEETH. GEORGE A. JOHNSTON and HOUSTON M. CARROLL, San Antonio, Tex. Filed June 4, 1895. Serial No. 551,638. (No model.)



Claim.—1. In an artificial denture, a lower plate having retainers extending vertically from its inner or rear ends, and above the plane of the biting edge of the teeth substantially as described for the purpose set forth.

2. The combination with a lower set of artificial teeth, of retainers having curved shank portions which are attached to the inner ends of the plate, and having expanded portions which extend vertically and are concavo-convex, said expanded portions standing at opposite angles, substantially as set forth for the purpose described.

546,332. STREET-CURBING. ATHELSTAN O. JONES, Zanesville, Ohio. Filed Mar. 9, 1895. Serial No. 541,106. (No model.)



Claim.—In a street curbing the combination of the blocks *a* having two of their diagonally opposite corners rounded and each having a series of conduits formed therethrough, the horizontal walls of said conduits being recessed at one end to form a vertical groove in one end of the block and having tongues or projections at their opposite ends, said tongues and grooves being of such form that the tongues of one block may be inserted in the grooves of an adjacent block by moving one of the blocks endwise, pin holes formed in one or more of the horizontal walls of the conduit in such manner that they will register with the similar holes in the adjacent block irrespective of which of the rounded corners of the block is upward, dowel pins to fit in said registering holes, and a suitable filling for said conduits, substantially as specified.

546,333. BABY-WALKER. SIMI KNIL, Los Angeles, Cal. Filed May 27, 1892. Serial No. 434,562. (No model.)

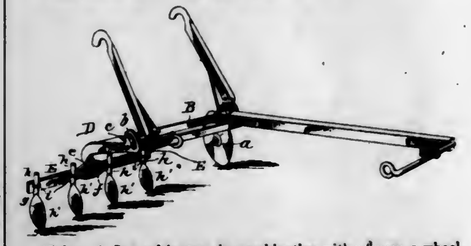
Claim.—1. A baby walker comprising the combination of a vertically arranged shaft journaled to revolve; a horizontally arranged table secured to such shaft and provided with a central opening arranged to receive the child; the toy support fixed to the upper end of the shaft and adapted to support toys within the reach of the child placed within the opening in the table, and means for journaling such shaft.

2. In a baby walker, the combination of the shaft provided with the axially arranged journal pins inserted in the ends of the shaft; the floor plate, arranged to be secured to the floor and provided with the journal arranged to receive the journal pin; the bracket hub provided with the bracket arms adapted to be secured to the walls of the room, and with the journal adapted to receive the journal pin; means for securing the bracket arms to the wall, means for securing the floor plate to the floor; a horizontally arranged table secured to the shaft and provided with a central opening arranged to receive the child, and the toy support secured to the upper end of the shaft and arranged to project over the table and revolve therewith.

546,333.



546,334. CULTIVATOR. HARMON C. KISNER, Fredonia, N. Y. Filed Dec. 29, 1894. Serial No. 533,316. (No model.)

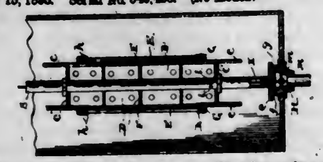


Claim.—1. In a cultivator, the combination with a frame, a wheel at one side thereof for the support of the cultivator at that point and a shank at the opposite side, of a transverse beam or bar secured to this shank and carrying a series of cultivator teeth, said bar projecting laterally beyond the end of the shank, substantially as set forth.

2. In a cultivator, the combination with a frame, of a shank pivoted to the frame to move in a vertical plane, means for locking this shank, a bar secured to this shank, said bar projecting laterally beyond the side of the frame and carrying cultivator teeth, substantially as set forth.

3. In a cultivator, the combination with a framework having a laterally projecting portion, of a shank pivoted between its ends to said laterally projecting portion and having an elongated slot at its upper end, a pin projecting from the framework into said slot, a transverse beam secured to the lower end of said shank, and a series of cultivator teeth carried by said beam, substantially as set forth.

546,335. FILTER. EDWARD M. KNIGHT, New York, N. Y. Filed May 15, 1895. Serial No. 549,420. (No model.)



Claim.—1. In a filter, an open center filter frame, in combination with an asbestos sheet or strip and a binding strip or frame inclosing

the edges of the asbestos sheet or strip, and clamped thereto, said binding strip or frame and open center frame being fitted face to face and secured one to the other, and said open center frame having a woven wire backing secured directly to it in contradistinction to the binding strip or frame which clamps the asbestos sheet.

2. In a filter, an open center frame forming a chamber for filter water, and a tank or vessel for unfiltered water, in which the said frame is placed, in combination with sheets of asbestos fitted against or proximate to the open faces of the frame, a binding strip or frame of U-shape, in cross section inclosing the edges of the fabric and having its side face secured to the adjacent face of the open center frame to form a water-tight joint, and a reticulated plate behind the asbestos sheet and secured permanently to the open center frame, in contradistinction to the frame or strip which carries the asbestos sheet.

3. In a filter, an open center frame forming a receptacle for filtered water, and having a woven wire or reticulated backing secured directly and permanently to it, and a tank or vessel for unfiltered water, in which said frame is secured in combination with a filter bed placed contiguous to the open sides of the frame, and consisting of a sheet of asbestos having its edges inclosed and bound by a frame or binding strip of U-form in cross section, adapted to lie flatwise against the outer or exterior face of open center frame.

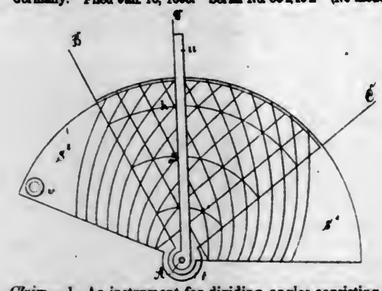
4. In a filter, a filter frame, in combination with means for securing a fabric thereto consisting of a folded frame or strip binding the edges of the fabric, and having points or tongues adapted to engage and enter the fabric to secure the same and hold the same under tension said binding frame being fitted to the filter frame.

5. In a filter, a filter bed composed, essentially, of asbestos or fabric, and a frame or strip surrounding and inclosing the edges of the same and having bendable points or tongues to engage the fabric and secure the same under tension.

6. In a filter, the combination, of a frame supporting a filter bed and adapted to serve as a chamber or vessel for filtered water, an exterior tank or vessel for unfiltered water, and means for securing the filter frame within said tank comprising a stay or tube passing into the filter frame and having perforations or openings through which the filtered water passes, a discharge for filtered water, having a raised rib forming a seat, a packing on the lower end of the stay or tube adapted to form a tight joint with the rib, and means for maintaining said joint consisting of a fixed rod projecting upwardly from said outlet and through the stay or tube and an adjusting nut on the rod adapted to bear upon the stay or rod to force its packing tightly against the seat and form a water tight joint.

7. In a filter, the combination, of a tank or vessel for unfiltered water, a filter frame having means for filtering the water, sustained within the tank or vessel, a discharge pipe or tube in the tank or vessel having an integral lateral extension projecting through a wall of the tank, a hollow tube passing through the filter frame having perforations through which filtered water passes to the interior of the tube, a packing strip or piece on the lower open end of the tube adapted to close water tight against a raised rib or seat on the discharge pipe or tube, and means for locking the filter frame to said discharge pipe consisting of a rod secured to the latter and extending through the tube and a nut on the rod engaging the tube to draw it tightly to said seat.

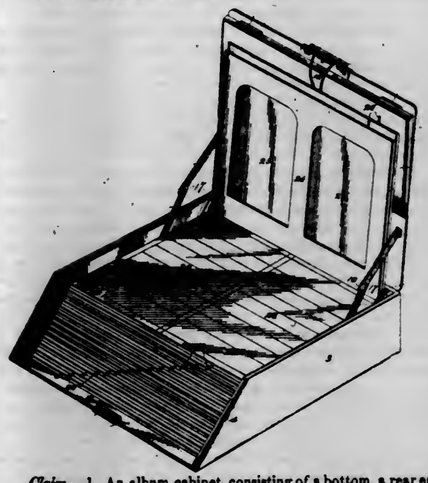
546,336. DIVIDING APPARATUS. LOTHAR VON KÖPPEN, Munich, Germany. Filed Jan. 10, 1895. Serial No. 534,464. (No model.)



Claim.—1. An instrument for dividing angles consisting of two sector shaped plates S' S^3 provided with a system of curves and pivoting around a common center, the top plate of which is transparent, the various points of intersection of the curves constituting the desired dividing points of the angles combined with a ruler *u* pivoted at the common center of the sector plates, the said dividing points along the curves being visible through the top plate, substantially as described.

2. An instrument for dividing angles consisting of two sector shaped plates S' S^3 provided with a system of curves and pivoting around a common center, the top plate of which is transparent, the various points of intersection of the curves constituting the desired dividing points of the angles combined with a suitable ruler, the said dividing points along the curves being visible through the top plate, substantially as described.

546,337. ALBUM. SWAN MARTIN, Oklahoma, Okla. Filed Feb. 16, 1895. Serial No. 538,644. (No model.)



Claim.—1. An album cabinet, consisting of a bottom, a rear end-wall, side-walls having their front ends beveled; said bevel extending downwardly and forwardly to the front end of the bottom, a lid or cover hinged to the rear end-wall, and an inclined lid or cover hinged to the front end of the first-named lid or cover and closing the space between the beveled ends of the sides, and a spring-catch extending externally from front to rear over said inclined lid, and hinged at its upper end to the front end of the first-named lid or cover and engaging at its lower end a pin projecting from the front end of the bottom, substantially as set forth.

2. An album cabinet, consisting of a bottom, a rear end-wall, side-walls having their front ends beveled; said bevel extending downwardly and forwardly to the front end of the bottom, a lid or cover hinged to the rear end-wall, and an inclined lid or cover hinged to the front end of the first-named lid or cover and closing the space between the beveled ends of the side, and a spring-catch extending externally from front to rear over said inclined lid and hinged at its upper end to the front end of the first-named lid or cover and engaging at its lower end a pin projecting from the front end of the bottom, in combination with a series of pivoted picture-carrying leaves inclosed by said cabinet, substantially as set forth.

546,338. INKSTAND. JULIUS C. MILLER, Syracuse, Nebr. Filed Mar. 23, 1895. Serial No. 542,885. (No model.)



Claim.—1. An inkstand of the class described, comprising the cap-piece having the threaded bore and bottom opening and provided with an air-inlet running from the outside of the cap-piece to said bore, and the screw valve fitting in said bore and having the point corresponding to the bottom opening, substantially as and for the purpose set forth.

2. An inkstand of the class described, comprising the cap-piece having the threaded bore and bottom opening and provided with the air-inlet running from the outside of the cap-piece to said bore, and the screw valve embodying the threaded stem, the smooth reduced portion below the threaded portion, and the point projecting from the reduced portion, substantially as and for the purpose set forth.

3. An inkstand of the class described, comprising the threaded cap-piece having the threaded bore formed with a bottom in which is provided the opening or perforation, said cap-piece being provided with the diagonal air-inlet channel or perforation running from the top diagonally to the threaded bore, the washer-block or bushing at the bottom of the bore, and the valve embodying the threaded stem and the smooth reduced portion below the threaded portion forming a shoulder or bottom from which projects a point, substantially as and for the purpose set forth.

4. An inkstand of the class described, comprising the dome or reservoir having the raised annular ring or flange at its top provided with a threaded opening, a cap-piece having an exteriorly-threaded body portion fitting said ring and provided with a threaded bore having a bottom opening and with an air-inlet or channel entering said bore, and the valve having a threaded stem and a projecting point corresponding to the bottom opening, substantially as and for the purpose set forth.

5. An inkstand of the class described, comprising the dome or reservoir having the raised annular ring or flange at its top provided with a threaded opening surrounded by an annular edge, *b'*, the cap-piece having an exteriorly-threaded body fitting said ring and a circumferential projecting flange corresponding to the edge *b'*, said cap-piece being provided with a threaded bore having a bottom opening and with an air-inlet or channel entering said bore, and a valve having a threaded stem and projecting point, substantially as and for the purpose set forth.

6. An inkstand of the class described, comprising the dome or reservoir having the raised annular ring or flange at its top provided with a threaded opening surrounded by an annular edge, *b'*, the cap-piece having the exteriorly-threaded body fitting said threaded opening and the circumferential projecting flange corresponding to the annular edge *b'*, the ring or washer bound between the edge *b'* and the circumferential flange, said cap-piece being provided with a threaded bore having an air-inlet or channel, and the threaded valve stem working in said bore, substantially as and for the purpose set forth.

7. An inkstand of the class described, comprising the dome or reservoir having an annular ring or flange at its top provided with a threaded opening surrounded by an annular edge, the cap-piece having an exteriorly-threaded body fitting said threaded opening and a circumferential flange corresponding to said annular edge, the cap-piece being provided with a threaded bore having a bottom in which is formed an opening and with an air-inlet or channel entering said bore, a ring or washer arranged under said circumferential flange, and the valve provided with the threaded stem fitting said bore and with a reduced portion below the threaded portion from which projects the point, substantially as and for the purpose set forth.

8. An inkstand of the class described, comprising the dome or reservoir having the raised annular ring or flange at its top provided with a threaded opening surrounded by an annular edge, *b'*, the cap-piece having an exteriorly-threaded body fitting said opening and a circumferential projecting flange corresponding to the edge *b'*, the cap-piece being provided with a threaded bore having a bottom in which is formed the opening or perforation and having the air-inlet or channel extending diagonally from the top to the bore, the ring or washer carried by the cap-piece and interposed between the edge *b'* and the circumferential projecting flange, and the valve having a threaded stem and a smooth reduced portion below the threaded portion from the bottom of which reduced portion projects the point, substantially as and for the purpose set forth.

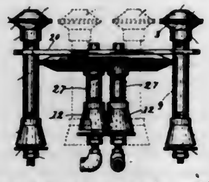
546,339. ROLL-PAPER HOLDER AND CUTTER. DUNCAN MCLACHLAN, Groton, N. Y. Filed Apr. 8, 1893. Serial No. 469,635. (No model.)



Claim.—A blade for a roll paper cutter, comprising a cutting bar, substantially triangular in cross section, adapted to rest upon the periphery of the roll, and having its front face slotted longitudinally and adapted to receive the paper and the edges of said slot forming cutting edges.

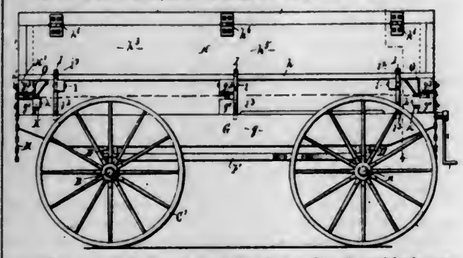
546,340. GAS-BURNER. MICHAEL J. O'REILLY, Buffalo, N. Y. Filed Dec. 18, 1893. Serial No. 493,978. (No model.)

Claim.—1. A gas burner for heating purposes, comprising two substantially concave disks, the peripheries of which are vertically adjustable relatively to each other, and each one is provided with a flange, one of the disks having an interiorly screw threaded collar projecting from its bottom and a hollow perforated central supporting portion projecting upwardly from the interior, the upper end of which is closed and exteriorly screw threaded, and the other disk is in the form of an inverted annular cone, the inner edge of which is screw threaded to fit upon the screw threads of the central supporting portion, and the flange at its periphery is provided with upwardly projecting teeth or studs upon its upper surface, substantially as set forth.



2. In a burner for heating purposes, the combination, with a plate, each end of which is perforated, and the central portion is provided with two perforations in line with and two slots or elongated holes upon opposite sides of and at right angles to the lines to the end perforations, of a burner for each of the end perforations, said burner being adapted to be removed to the inner perforations, and a long burner adjustably secured in each one of the slots the outer surface of each of which is substantially even with the outer edge of the plate, said first mentioned burners being above the plate and the long burners being below the plate, substantially as set forth.

546,341. DUMPING-WAGON. GEORGE W. PELLET, Jr., Syracuse, N. Y. Filed Jan. 13, 1894. Serial No. 496,746. (No model.)



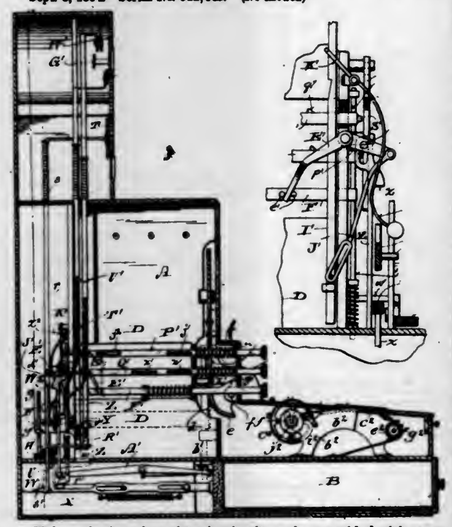
Claim.—1. In a dumping vehicle, the combination with the running gear consisting of wheels, axles, bolsters, and a frame having side bars and cross bars, the latter being provided with sockets in their upper faces, and supporting rollers journaled in said sockets; of a box consisting of a bottom having rigid end walls connected by side walls whose upper sections are stationary and whose lower sections are hinged beneath the upper sections, catches pivoted between their ends to ears depending from the bottom and having shoulders at their outer ends normally engaging the lower edges of said lower sections and provided with rounded outer faces, springs holding these shoulders normally raised, the inner ends of the catches having downwardly rounding faces standing normally inside and below the plane of the side bars of said frame, and means substantially as described for moving said box laterally in either direction over the rollers on the frame, as and for the purpose set forth.

2. In a dumping vehicle, the combination with the running gear consisting of wheels, axles, bolsters, and a frame having side bars and cross bars, the latter being provided with sockets in their upper faces, and supporting rollers journaled in said sockets; of a box consisting of a bottom, rigid end walls rising above and depending slightly below said bottom, and swinging side walls, catches pivoted between their ends to ears depending from the bottom and having shoulders at their outer ends normally engaging the lower edges of said swinging walls and provided with rounded outer faces, the inner ends of the catches having downwardly rounding faces standing normally inside and below the plane of the side bars of said frame, guides rising from the centers of the endmost cross-bars of the frame and standing just inside the depending portions of the end bars of the box, a shaft journaled longitudinally in said frame and having a pair of drums near each end and a crank on one extremity, guide pulleys mounted at opposite ends of the inner faces of the endmost cross bars of the frame, flexible connections leading from each drum outward over a guide-pulley and then across beneath the box and secured to the opposite edge thereof, and means substantially as described for tripping said catches, limiting the dumping movement of the box, and holding the latter in normal position, all as and for the purpose set forth.

3. In a dumping vehicle, the combination with the running gear consisting of wheels, axles, bolsters, and a frame having side bars and

cross bars, the latter being provided with sockets in their upper faces, and supporting rollers journaled in said sockets; of a box consisting of a bottom, rigid end walls rising above and depending slightly below said bottom, and swinging side walls, catches for holding the latter normally in closed position, guides rising from the centers of the endmost cross bars of the frame and standing just inside the depending portions of the end bars of the box, a shaft journaled longitudinally in said frame and having a pair of drums near each end and a crank on one extremity, guide pulleys mounted at opposite ends of the inner faces of the endmost cross bars of the frame, flexible connections leading from each drum outward over a guide pulley and then across beneath the box and secured to the opposite edge thereof, chains connected at their extremities to the ends of the endmost crossbars of the frame and of the box, and a hook linked to the center of one cross bar of the frame and detachably engaging an eye in one cross bar of the box, all as and for the purpose set forth.

546,342. CASH-REGISTER. FRED J. PETERSEN and WILLIAM C. EBERHARDT, Plymouth, and GUSTAV A. PIPER, Sheboygan, Wis. Filed Sept. 8, 1894. Serial No. 522,445. (No model.)



Claim.—1. A cash-register having its casing provided with an extension containing the cash-drawer and embodying a compartment constituting a cashier's desk, a stand in the desk, supply and exhaust rollers journaled in the stand, record-paper traveled from one to the other of the rollers past an opening in the desk-top or lid, a hand-wheel on the exhaust-roller extended through another opening in said desk-top or lid, and a pawl-and-ratchet mechanism arranged to prevent reverse operation of said exhaust-roller.

2. A cash-register having its casing provided with an extension containing the cash-drawer and embodying a compartment constituting a cashier's desk, a stand in the desk, a roll of paper having its bearings in the stand, the free end of the paper being run through a slot in the top or lid of said desk, a spring-controlled reciprocative slide on said stand provided with a spring-push bar, and a handle on the push-bar arranged to work in an opening in said desk-top or lid.

3. A cash-register comprising a series of right angle lifting-bars, having rack-toothed vertical portions, key-levers having toothed segmental inner ends in gear with the bars, a reciprocative plate having a series of fingers variable as to length and arranged in the paths of said bars, a rack-and-pinion gear operating incidental to movement of the finger-plate, a pawl carrying lever controlled by the pinion, and a ratchet register wheel engaged by the pawl.

4. A cash-register comprising a series of lifting-bars, key-levers in gear with the bars, a reciprocative plate having a series of fingers variable as to length and arranged in the path of said bars, a rack-and-pinion gear operating incidental to movement of the finger-plate, a pawl-carrying lever controlled by the pinion, a ratchet register wheel engaged by the pawl, a notched cam on the register wheel, a spring-controlled lever opposing the cam, another pawl-carrying lever linked to the lever opposing the cam, and another ratchet register wheel engaged by the latter pawl.

5. A cash-register comprising a series of lifting-bars, key-levers in gear with the bars, a reciprocative plate having a series of fingers variable as to length and arranged in the paths of said bars, a rack-and-pinion gear operating incidental to movement of the finger-plate, a pawl-carrying lever controlled by the pinion, a ratchet register wheel engaged by the pawl, a notched cam on the register-wheel, a spring-controlled lever opposing the cam, another pawl-carrying lever linked to the lever opposing the cam, another ratchet register wheel engaged by the latter pawl and of itself provided with a spring-pawl having a projection, still another ratchet register wheel encircled by the one provided with said spring-pawl, and a fixed cam arranged in the path of the projection on the latter pawl to cause a temporary engagement of this pawl with the inner register wheel.

6. A cash-register comprising a series of lifting-bars, key levers in gear with the bars, a reciprocative plate having a series of fingers variable as to length and arranged in the paths of said bars, a rack-and-pinion gear operating incidental to movement of the finger-plate, a pawl-carrying lever controlled by the pinion, a ratchet register wheel engaged by the pawl and of itself provided with a spring-pawl having a projection, another ratchet register wheel within the one aforesaid, and a fixed cam arranged in the path of the projection on the latter pawl to cause a temporary engagement of this pawl with the inner register wheel.

7. A cash-register comprising a series of lifting bars, key-levers in gear with the bars, reciprocative plates having a series of fingers variable as to length and arranged in the paths of said bars, rack-and-pinion gear operating incidental to movement of each plate, a pawl-carrying lever controlled by the pinion in each gear, ratchet register wheels engaged by the pawls, a notched cam on one of the register wheels, a spring-controlled lever opposing the cam, another lever linked to the cam-opposing lever and a pawl carried by the link-controlled lever to engage the other register wheel.

8. A cash-register comprising a series of lifting-bars, key-levers in gear with the bars, reciprocative plates having a series of fingers variable as to length and arranged in the paths of said bars, a rack-and-pinion gear operating incidental to movement of each plate, a pawl-carrying lever controlled by the pinion in each gear, ratchet register wheels engaged by the pawls, a notched cam on one of the register wheels, a spring-controlled lever opposing the cam, another lever linked to the cam-opposing lever, a pawl carried by the link-controlled lever to engage the other register-wheel, still another register wheel within the latter of the two aforesaid, and suitable means for automatically moving the same one space at each revolution of the encircling wheel.

9. A cash-register comprising a series of lifting-bars, key-levers in gear with the bars, a series of laterally adjustable plates each provided with fingers variable as to length, suitable means for shifting the plates to bring any desired set of fingers in the paths of said bars, rack-and-pinion gear operating incidental to reciprocative movement of each plate, and registering mechanisms actuated by operation of said gear.

10. A cash-register comprising a series of reciprocative combs, plates laterally adjustable on the combs and provided with fingers of variable length, lifting bars alternating with the comb-teeth, key-levers in gear with the lifting-bars, suitable means for shifting the plates on said combs to bring any desired set of fingers in the paths of said bars, rack-and-pinion gear operating incidental to reciprocative movement of each plate, and registering mechanism actuated by operation of said gear.

11. A cash register comprising a series of lifting-bars, key-levers in gear with the bars, suitable means for springing said bars out of their normal position upon the initial movement of any one thereof, a series of loose spring supported staves having projections that come in the return paths of the aforesaid bars, and indicator-tags on the staves.

12. A cash-register comprising a series of lifting-bars key-levers in gear with the bars, suitable means for springing said bars out of normal position upon the initial movement of any one thereof, a series of loose spring-supported staves each provided with a series of projections arranged to be successively opposed by a lifting-bar upon the returns movements of the latter, a reciprocative plate provided with detents for the stave-projections, suitable means for actuating the plate incidental to opening and closing of a cash-drawer in said register, and a multiple indicator tag on each staff.

13. A cash-register comprising a series of loose spring-supported staves each carrying a multiple indicator-tag and provided with a series of projections, suitable means for effecting longitudinal movement of each stave subsequent to the operation of a register mechanism, to thereby display an arbitrary amount on a corresponding indicator-tag, a spring-controlled plate provided with detents for the stave-projections, a pin depending from the plate, and a crank-lever connected to the pin to be actuated by the closing of a cash-drawer in said register.

14. A cash-register comprising a series of lifting-bars key-levers in gear with the same, a spring-controlled plate provided with pins engaging the inner ends of the bars, a cam-lever loose on a lateral projection of the pin-plate, a spring-controlled push-bar in the inward

path of a cash-drawer in the register and having a wedge like inner end opposing the foot of the cam-lever, a reciprocative yoke operating incidental to movement on the part of any one of said bars, a lug on the yoke opposing the cam-lever, a drawer catch-mechanism, a trip for this catch-mechanism in the upward path of the yoke, a series of loose spring-supported staves having projections in the return paths of the aforesaid bars, and indicator-tags on the staves.

15. A cash-register comprising an automatically opening drawer, a catch for holding the same in closed position, a push-plug, trip-mechanism for the catch under control of the plug, a loose rod, a sign carried by the rod, a lever-and-link mechanism connecting said plug and rod, a catch for said rod, and a reciprocated yoke that trips the latter catch.

16. A cash-register comprising an automatically opening drawer, a catch for holding the same in closed position, a push-plug, a trip-mechanism for the catch under control of the plug, a ratchet register wheel, a pawl engaging the wheel, a spring controlled lever-mechanism for the pawl, and a cam-shoulder on said plug operative against the lever-mechanism to actuate said pawl.

17. A cash-register comprising an automatically opening drawer, a catch for holding the same in closed position, a push-plug provided with a cam-shoulder, a trip-mechanism for the catch under control of the plug, a loose rod, a sign carried by the rod, a lever-and-link mechanism connecting said plug and rod, a gravity catch for said rod, a reciprocative yoke that trips the latter catch, and a register mechanism actuated by movement of the cam-shoulder on said plug.

18. A cash-register comprising a series of lifting-bars, key-levers in gear with the same, vertically reciprocative laterally adjustable plates provided with fingers of variable length, a push-plug operating to effect a simultaneous lateral adjustment of plates to bring the fingers of one plate out of the paths of the lifting-bars and those of another plate in said paths, and an automatic catch-and-trip detent for the push-plug operating in conjunction with a drawer in the register, and registering mechanism operative incidental to each lift of a plate.

19. A cash-register comprising a series of lifting-bars, key-levers in gear with the same, vertically reciprocative laterally adjustable plates provided with fingers of variable length, a push-plug operating to effect a simultaneous lateral adjustment of plates to bring the fingers of one plate out of the paths of the lifting bars and those of another plate into said paths, an automatic catch-and-trip detent for the push-plug operating in conjunction with a drawer in the register, registering mechanism operative incidental to a lift of each plate, a spring-controlled rod carrying a sign, suitable means for actuating the rod against resistance of its spring subsequent to the shift of said plates by said push-plug, and other mechanism, a catch for the rod in its adjusted position, and other suitable means for releasing the catch incidental to a depression of any key-lever subsequent to a closing of the aforesaid drawer.

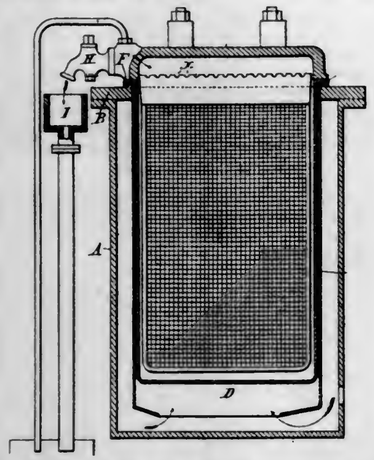
20. A cash-register comprising a series of lifting-bars, key-levers in gear with the same, vertically reciprocative combs constituting guides for the bars, a register mechanism operating in conjunction with each comb, plates movable laterally on the combs and provided with fingers variable as to length, a push-plug having wings operative against the plates to simultaneously shift the same on the combs to thereby bring the fingers of one plate out of the paths of said bars and those of another plate in said paths, a drawer, a spring-controlled push-bar in the return path of the drawer, a spring-controlled catch-and-trip detent for the push-plug operating in conjunction with the push-bar, a spring-controlled rod carrying a sign, a reciprocative yoke in the path of the lifting bars, a wire on the rod provided with an inturned foot that comes in the return path of the yoke when said push-plug is moved inward, a spring-controlled sliding plate having pins engaging the aforesaid lifting bars, a catch on the plate for the sign-rod, and a cam-lever pivoted on said plate and opposed by a lug on said yoke, the fulcrum of the lever being the wedge-like inner end of the aforesaid push-bar when the latter is in normal position.

21. A cash-register comprising a reciprocative yoke in the paths of lifting-bars actuated by key-levers and controlling various mechanisms, a series of push-plugs also controlling various mechanisms, and a lock for the yoke and plugs.

22. A cash-register comprising a reciprocative yoke in the path of lifting bars actuated by key-levers and controlling various mechanisms, a series of push-plugs also controlling various mechanisms, and a lock consisting of a spring controlled loose rod having a finger for engagement with a notch in the yoke and another finger for opposition to the inner ends of said plugs, and a pivotal cam-plate operated by a key to actuate said rod against the resistance of its controlling spring.

546,343. MECHANICAL OR BAG FILTER. LOUIS A. PHILIPPE, Paris, France. Filed Sept. 7, 1894. Serial No. 523,314. (No model.) Patented in France July 4, 1890, No. 206,813; in Belgium July 5, 1890, No. 91,153; in England Jan. 10, 1891, No. 534; in Spain Mar. 3, 1891, No. 11,655; and in Austria-Hungary Nov. 28, 1891, No. 28,645 and No. 50,682.

Claim.—1. In a mechanical or bag filter for filtering all kinds of liquids either at the atmospheric pressure *in vacuo* or under pressure or diminished pressure, the combination with the filter tank and with the bags placed therein of the hollow caps upon the cover of the tank bridge pieces and nuts for securing said caps upon the cover and outlet nozzles for the delivery of the filtrate above the level of the liquid to be filtered, as described.

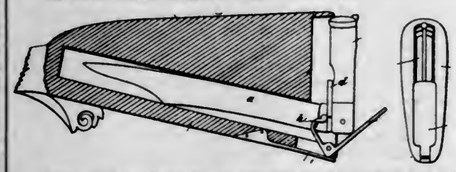


2. In the herein described filter, the combination with the bag of a flange or bead around the mouth having a core of cord, leather or other flexible material covered with rubber leather or other material as described.

3. In the herein described filter, the combination with the bag of an interior frame formed of metallic trellis supported by a frame apertured at its upper part to hold the sides at the desired distance apart, as described.

4. In the herein described filter, the combination with a plurality of bags an unobstructed filter tank into which said bags project, of divisions forming one or more compartments inclosing one or more of the bags and open to the tank at the lower end only for the purpose of extracting the whole of the liquid contained in the filter as described.

546,344. GUN-STOCK. THEODOR PRASSE, Leitzweller, Germany. Filed Oct. 11, 1894. Serial No. 525,604. (No model.)



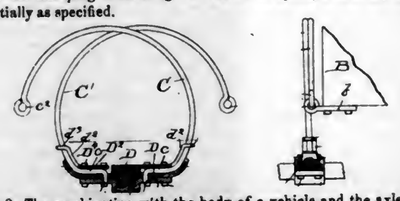
Claim.—1. In a fire-arm, the combination of a receptacle in the stock, said receptacle being adapted to receive and hold a hunting knife or bayonet, a flap or cover for closing said receptacle, and means engaging the knife or bayonet for partially withdrawing it upon the opening of the cover; substantially as described.

2. In a fire-arm, the combination of a receptacle in the stock, said receptacle being adapted to receive and hold a hunting knife or bayonet, a hinged flap or cover for closing said receptacle, and means connected to the cover for engaging the knife or bayonet and partially withdrawing it as the cover is opened; substantially as described.

3. In a fire-arm, the combination of a receptacle in the stock, said receptacle being adapted to receive and hold a hinged-bladed hunting knife, one portion of said receptacle extending lengthwise of the stock, into which portion the open blade of the knife extends, and the other portion extending cross-wise of the slot, and adapted to receive the handle of the knife, and a flap or cover for closing the receptacle; substantially as described.

546,345. SPRING FOR VEHICLES. SAMUEL D. REYNOLDS, Rochelle, assignor to Charles E. Bradt, M. D. Shipman, and S. E. Bradt, De Kalb, Ill. Filed Dec. 7, 1892. Serial No. 454,333. (No model.)

Claim.—1. In a vehicle, the combination with a vehicle axle and body of a spring consisting of two crossing, curved spring rods C C', clip plates D D' for securing the same to the axle, and clamp plates D^3 D^3 for clamping or securing the ends of the spring to the clip, substantially as specified.



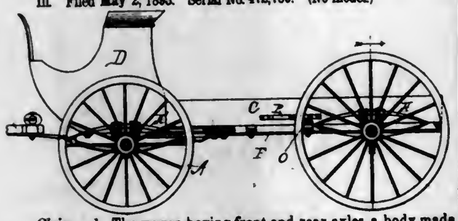
2. The combination with the body of a vehicle and the axle or side bars from which it is supported, of springs each consisting of two crossing spring rods bent into substantially circular form so that their free ends hang below the crown of the bends, said rods being secured to the axle or side bars in positions longitudinal of the vehicle and also having their free ends secured to the body at opposite sides of the point where they are attached to the axle or side bars, substantially as specified.

3. The combination with clamp plates, of a spring consisting of two curved and crossing spring rods, said clamp plate D having curved flanges d' d', substantially as specified.

4. The combination with clamp plates, of a spring consisting of two curved and crossing spring rods, said clamp plate having curved flanges d' d', and one of said clip plates having guide arms d^3, substantially as specified.

5. The combination with clamp plates D, D^3 D^3, of a spring consisting of two curved and crossing spring rods, said clamp plate D having curved flanges d' d', said clip plates D^3 D^3 having guide arms d^3, furnished with eyes d^3, substantially as specified.

546,346. WAGON. SAMUEL D. REYNOLDS, Rochelle, assignor to Charles E. Bradt, Madison D. Shipman, and Samuel E. Bradt, De Kalb, Ill. Filed May 2, 1893. Serial No. 472,789. (No model.)



Claim.—1. The wagon having front and rear axles, a body made in two parts which are pivoted together, springs whereby the body and front portion are supported from the axles, means for attaching the draft to the forward springs, bracing connections for same springs, and draft connections for the rear springs, substantially as specified.

2. The wagon having front and rear axles, a body made in two parts which are pivoted together, springs whereby the body and front portion are supported from the axles, the straps J and braces M forming the draft connections of the forward springs, and suitable draft connections for the rear springs, substantially as specified.

3. The wagon having front and rear axles, a body made in two parts which are pivoted together, springs whereby the body and front portion are supported from the axles, draft connections joined to the front springs, and draft connections N O P joined to the rear springs, substantially as specified.

4. The combination of the bent axles, the body made in two parts which are pivotally joined together, the springs, the supports whereby the body and front portion are movably supported from the springs, and the draft connections, substantially as specified.

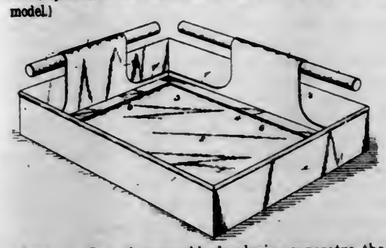
5. The combination of the bent axles, the body made in two parts which are pivotally joined together, the springs, the rocking pivots whereby parts of the body are suspended from the springs, and the draft connections, substantially as specified.

6. The downwardly bent axles, the springs, and the wagon body made in two parts pivotally united together, in combination with rocking supports I whereby the two parts of the body are suspended from and below the top of the springs, substantially as specified.

7. The combination with the springs H' and the axle to which they are clipped, of straps J secured at one end at the axle and at the other end to clamping pieces K, and said clamping pieces K, substantially as specified.

8. The four wheeled wagon, the body whereof is made in two pivotally united parts C and D with one axle under each part, the rear part C being the main portion and having its floor extended over the floor of the front part D, whereby the wagon is adapted to carry pianos and other long objects, substantially as specified.

546,347. PHOTOGRAPHIC DEVELOPING-TRAY. WILLIAM I. ROOD, Spencer, Iowa. Filed Dec. 29, 1894. Serial No. 533,340. (No model.)

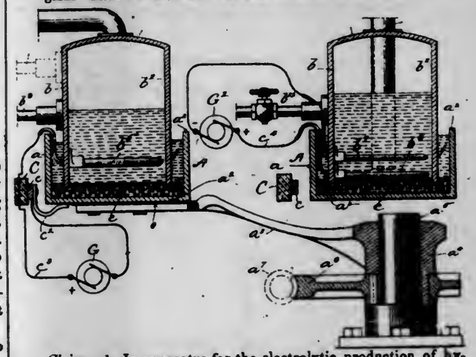


Claim.—1. In a photographic developing apparatus, the combination of a pan or dish, the bottom of which is provided at the inner sides and ends with a continuous rectangular countersink or recess, and a holder frame adapted to removably fit within the pan or dish and having its sides and ends registering in said countersink or recess, substantially as set forth.

2. In a photographic developing apparatus, the combination of a pan or dish, the bottom of which is provided at the inner sides and ends with a continuous countersink or recess, and a flanged rectangular holder frame provided at one side and at one end with a handle and adapted to have the side and the end portions thereof register in the countersink or recess of the pan or dish, substantially as set forth.

3. A plate or film holder for photographic developing purposes, the same consisting of a rectangular skeleton frame provided at its outer edge with a continuous upturned retaining flange, and at one side and one end with integral upwardly disposed arm extensions terminating at their upper ends in circular beads forming sockets, and right angularly disposed handles fitted in the sockets formed at the upper ends of said arm extensions, substantially as set forth.

546,348. ELECTROLYTIC APPARATUS. WILLIAM A. ROSENBAUM, Montclair, N. J., assignor to the Matthieson Alkali Works, of Virginia. Filed Dec. 20, 1894. Serial No. 532,440. (No model.)



Claim.—1. In apparatus for the electrolytic production of hydrates of alkaline metals, the combination of a tank or cell provided with a compartment containing a layer of mercury which is adapted to receive a charge or deposit of the alkaline metal, an electrolyte in said compartment capable of oxidizing the alkaline metal and dissolving the oxide so produced, and an anode and cathode immersed in said electrolyte and separate and distinct from the mercury, substantially as described.

2. In apparatus for the electrolytic production of hydrates of alkaline metals, the combination of a tank or cell provided with a compartment containing a layer of mercury which is adapted to receive a charge or deposit of the alkaline metal, an electrolyte in said compartment capable of oxidizing the alkaline metal, and dissolving the oxide so produced, and an anode and cathode immersed in said electrolyte and separate and distinct from the mercury, the anode being located nearest to the surface of the mercury, substantially as described.

3 In electrolytic apparatus, a structure provided with compartments, in combination with a body of mercury, a receptacle therefor, the mercury and receptacle being stationary with respect to each other and means for moving the receptacle to convey the mercury from one compartment to another of the structure, for the purpose set forth.

4. In electrolytic apparatus, a hood provided with a number of compartments, a tray movable with respect to the hood and closing the lower side thereof and containing a layer of mercury, said com-

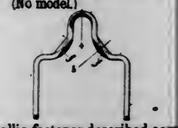
partments being separated by partitions extending into the mercury, and means for transferring the mercury from one compartment to another.

5. In electrolytic apparatus, a hood provided with a number of compartments, a tray movable with respect to the hood and closing the lower side thereof and containing a layer of mercury, said compartments each containing an electrolyte and being separated by partitions extending into the mercury, and means for transferring the mercury from one compartment to another.

6. In electrolytic apparatus, a structure provided with two compartments separated by a partition under which there is a communicating passage, a layer of mercury extending from one compartment to the other beneath and immersing the lower edge of the partition, an electrolyte in each compartment resting upon the mercury, an anode in the electrolyte of one compartment to which the mercury acts as the cathode, an anode and a cathode in the electrolyte of the other compartment, both separate and distinct from the mercury contained therein, and two separate sources of electricity of which the electrodes in each compartment are respectively the circuit terminals.

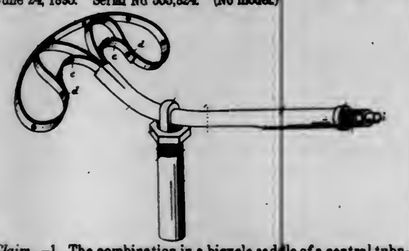
7. In apparatus for the electrolytic decomposition of the salts of alkaline metals, a vessel containing a circular or endless body of mercury, means for imparting thereto movement in a line substantially parallel to its circumference, in combination with a series of communicating compartments arranged along the line of movement of the mercury, each compartment containing an anode and a cathode and the compartments alternately containing a solution to be decomposed, and a solution capable of oxidizing alkaline metal and dissolving the oxide so produced.

546,349. METALLIC FASTENER FOR ATTACHING BUTTONS TO SHOES, &c. IRA J. SAUNDERS, New York, N. Y. Filed Feb. 17, 1893. Serial No. 462,638. (No model.)



Claim.—The metallic fastener described combining the following elements namely, a flat metal strip having the arch A the inclined portions C provided with the corrugations *f*, and shoulders B substantially as specified.

546,350. BICYCLE-SADDLE. BENJAMIN S. SHAMAN, Canton, Ohio, assignor to the Gilliam Manufacturing Company, same place. Filed June 24, 1895. Serial No. 553,824. (No model.)



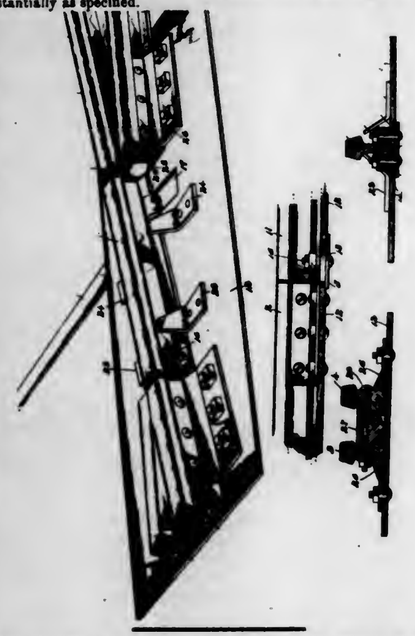
Claim.—1. The combination in a bicycle saddle of a central tubular support, having at its rear end an open rigid cantle frame B, curved in its middle part to conform to the leather seat, the ends bent forward and inward and back, and secured to the back, the free ends bent forward to the rear part of the tube, and the braces *c*, secured to the frame B, and the tube A, and at the front end of the tubular support, a means for adjusting said frame or support to the saddle leather, substantially as described and for the purpose set forth.

2. The combination with a bicycle saddle frame, of the post B, having at its top end an annular screw thread, a slot *f*, the binder C, and a nut D, substantially as described and for the purpose set forth.

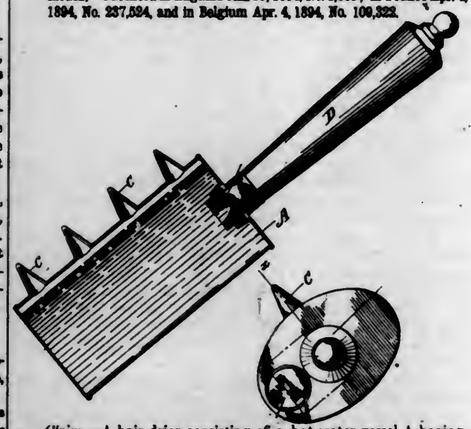
3. The combination in a bicycle saddle, of a tubular support semicircular in cross section, of the post B, having a threaded portion, and a central slot, the binder C, and nut D, substantially as described and for the purpose set forth.

546,351. RAILWAY-FROG. DANIEL E. DREA, Watertown, assignor of one-fourth to Thomas J. Shea, Charlotte, N. Y. Filed Mar. 14, 1895. Serial No. 541,764. (No model.)

Claim.—The combination with intersecting main and track rails and switch mechanism, of a base plate arranged under the contiguous extremities of the intersecting rails and permanently secured thereto, said plate being provided with a circular bearing 14 and a concentric segmental slot 19, a turn table mounted in the bearing and provided with a flange in contact with the under surface of the base-plate, the upper surface of said turn-table being flush with the upper surface of the base-plate, a frog bolted at one end to the upper surface of the turn-table and adapted to be aligned with either the main or the siding track-rail, said frog extending toward both ends beyond the periphery of the turn-table to prevent downward displacement of the turn-table, an arc-shaped slide 18 arranged in the segmental slot of the base-plate and provided with integral terminal clips 20 which engage the foot of the frog-rail near its free end, a connecting-bar 17 pivotally connected at one end to the under side of the slide, said slide being provided with a keeper 21 in which the end of the connecting-bar is fitted, stops 25 projecting beyond the extremities of the main and siding track-rails to limit the lateral movement of the free end of the frog, and angle braces 23 and 24 arranged upon opposite sides of the path of the frog-rail and provided with upwardly and inwardly inclined extremities to bear against the under surfaces of the tread of the frog when it is in alignment with either track-rail, substantially as specified.

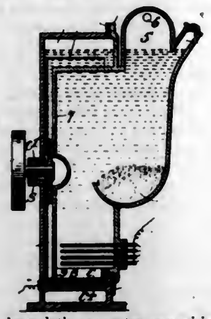


546,352. APPARATUS FOR DRYING HAIR. WILLIAM S. SIMPSON, London, England. Filed May 13, 1895. Serial No. 549,163. (No model.) Patented in England Jan. 25, 1894, No. 1,685; in France Apr. 4, 1894, No. 237,524, and in Belgium Apr. 4, 1894, No. 109,322.



Claim.—A hair drier consisting of a hot water vessel A having closable plug B, comb like teeth C and handle D as set forth.

546,353. ELECTROLYTIC APPARATUS. ALF SINDING-LARSEN, Christiania, Norway. Filed July 9, 1894. Serial No. 516,965. (No model.)



Claim.—1. An electrolytic apparatus, comprising a decomposing cell, a suitable anode therein, a solution cell, a passage leading from one cell into the other, a mercury cathode adapted to form a seal for said passage, and a revoluble cylindrical amalgam coated conveyer within the solution cell adapted to take up the electrolytically formed amalgam and convey the same from the decomposing cell into the solution cell without breaking the aforesaid seal, for the purpose set forth.

2. An electrolytic apparatus, comprising a decomposing cell, a suitable anode therein, a solution cell, a passage leading from one cell into the other, a mercury cathode adapted to form a seal for said passage, and a drum revoluble in the solution cell, said drum open at one end and having its exterior and interior surfaces coated with an amalgam, said drum adapted to take up the electrolytically formed amalgam and convey the same in the form of a thin sheet or film from the decomposing cell into the solution cell without breaking the aforesaid seal, for the purpose set forth.

3. An electrolytic apparatus comprising a decomposing cell, a suitable anode therein, a solution cell, a passage leading from one cell into the other, a mercury cathode adapted to form a seal for said passage, and an amalgam coated conveyer arranged within the solution cell and adapted to take up the electrolytically formed amalgam and convey the same from the decomposing cell into the solution cell without breaking the aforesaid seal, and means for conveying the said electrolytically formed amalgam to the amalgam coated conveyer, for the purpose set forth.

4. The combination with the cell C, the shaft S, and the drum D on said shaft, of the cell C′ fitting into said drum and opening into cell C at the lowest point thereof, a mercury cathode at said point luting or sealing the said opening, and the anodes *a* arranged in cell C′ above the opening, for the purpose set forth.

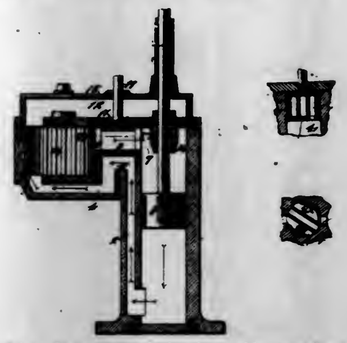
5. The combination with the cell C, the shaft S and the drum D on said shaft, of the cell C′ fitting into said drum and opening into cell C at the lowest point thereof, a mercury cathode at said point luting or sealing said opening, said cell C′ provided with a dome, as 5, a pocket, as 2, and a feed duct, as 3, adapted to discharge into said pocket, and the anodes *a* arranged in cell C′ above the aforesaid opening, for the purpose set forth.

6. The combination with the cell C and the drum D revoluble therein, of the cell C′ fitting into said drum and having an opening at its lowest point provided with a downwardly projecting encompassing flange, a metal lining for said flange coated with an amalgam, a mercury cathode contained in cell C and luting or sealing said opening, a revoluble metal roller, as *r*, partly immersed in the cathode above the drum D, said metal roller also coated with an amalgam, a metal amalgam-coated shield covering the roller and dipping into the cathode, and an anode arranged in cell C′ in proximity to the cathode, for the purpose set forth.

7. The combination with the cell C, a mercury cathode therein, and the drum D revoluble in said cell and dipping into the cathode, said drum having peripheral slots, one of the edges of alternate slots being turned inwardly and outwardly respectively; of the cell C′, the anode therein, said cell C′ projecting into the drum D and having an opening in its bottom luted by the cathode in cell C′, substantially as and for the purpose set forth.

8. The combination with the cathode cell of an electrolytic apparatus, its valved discharge pipe, and a stand pipe in communication with said cell near the bottom thereof, a two-armed lever, a float in said pipe suspended from one of the arms of said lever the other arm thereof being weighted to balance the float and provided with a conductive contact, of a second contact within range of the lever contact, an electric circuit including said contacts and an electro-magnet, and a connection between the valve of the aforesaid discharge pipe and the armature of the electro-magnet, for the purpose set forth.

546,354. PRESSURE DEVICE. CHARLES SINNING, St. Louis, Mo., assignor to the Sinning Lasting Machine Company, same place. Filed Nov. 4, 1893. Serial No. 489,997. (No model.)



Claim.—In a pressure device the combination of a cylinder 1, a piston working in said cylinder, a chamber 3 located at the upper end of said cylinder and having communication with the top and bottom thereof, a pair of wheels located and working in said chamber, a valve located between said chamber and the upper end of the cylinder, and means for moving said valve and wheels, said valve having a passage 21 for forming the communication between the cylinder and chamber 3, a passage 22 provided with an opening 23 and a passage 24 provided with openings 25 and 26 for forming communications between the chamber 3 and passage 4 and chamber 3 and cylinder 1, substantially as and for the purpose set forth.

546,355. TRUSS. JAMES M. SMITH, Galt, Canada. Filed Mar. 10, 1894. Serial No. 503,179. (No model.)



Claim.—1. The combination, in a hernia truss, of a pad (or pads) having an annular groove on the back of a depth and form to receive the loop (or loops) of the bow, the body of said pads adjacent to said grooves, outward and inward as well as laterally, forming abutments for the loops of said bow, in combination with said bow and loops, as and for the purpose set forth.

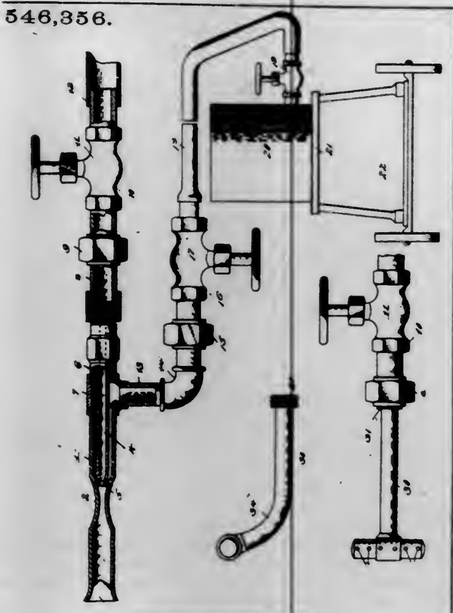
2. In combination: the bow with its loops, the pads, with their grooves and a button secured to one of said pads, as described, and the waist belt, as and for the purpose set forth.

546,356. VACUUM FIRE-KINDLER. NORBOURN H. SMITH, Bristol, Tenn., assignor, by direct and mesne assignments, of three-fourths to Jere Bunting, Jr., Lindsay Bunting, Thomas McCulloch, and L. N. Buford, same place. Filed Oct. 25, 1894. Serial No. 526,972. (No model.)

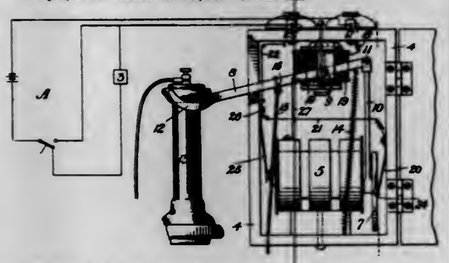
Claim.—1. In an apparatus of the class described, an air-operated injector provided at one end with a combined oil or air feed pipe having a detachable connection with an oil tank or reservoir whereby either a supply of oil or air may be drawn through the feed pipe by the suction within the injector, substantially as set forth.

2 In a vacuum fire kindling apparatus, the combination of a cylindrical mixing pipe or casing provided at or about its center with an integral contracted throat and at one end beyond said throat with a narrow oblong mouth, said contracted throat and contracted mouth forming there between an intermediate mixing chamber with straight walls, an air jet pipe fitted within one end of the mixing pipe or casing and extending to a point partly within said contracted throat, and a combined oil or air feed pipe connected to the mixing pipe or casing at the same end as the connection of the air jet pipe therewith, substantially as set forth.

546,356.



546,357. TELEPHONE. IRA D. SMITH, Pittsburg, Pa. Filed May 3, 1895. Serial No. 548,010. (No model.)

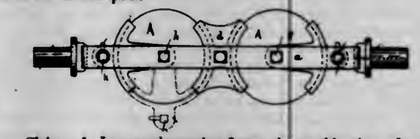


Claim.—1. In a telephone, a spring controlled carrying bar for the receiver pivotally supported between its outer and inner ends, a toothed disk in mesh with a pinion on the shaft of the generator armature, and a pitman attached to the inner end of the carrying bar and to the toothed disk, substantially as set forth.

2. In a telephone, a spring controlled carrying bar for the receiver, pivotally supported between its outer and inner ends, capable of being depressed by the weight of the receiver, a toothed disk in mesh with a pinion on the shaft of the generator armature the disk bearing a piece of insulation located in the path of a contact spring, and a pitman attached to the inner end of the carrying bar and to the toothed disk, substantially as set forth.

546,358. SPOOL-CARRYING FRAME. JOHN SOMMER, Tremont, Ill. Filed Mar. 31, 1894. Serial No. 505,980. (No model.)

Brief.—An apparatus designed to carry a spool by contact with the rims only, thereby producing tension on the material being unwound from the spool.



Claim.—1. In a spool carrying frame, the combination, of a supporting frame-work, bearing plates carried by said frame and having recesses to engage the opposite sides of a spool rim, one of such bearing plates being movable to permit the removal of such spool.

2. In a spool carrying frame, a series of bearing plates, supported in a frame work, two bearing plates being provided for each spool, one of said plates being fixed, and one having provisions in virtue of which it is movable with respect to the rim of the spool for the purpose specified.

3. In a spool carrying frame, the combination, with a frame work, of two separate bearing plates, one fixed and one having provisions in virtue of which it is movable with respect to the rim of a spool for the purpose specified.

4. In a spool carrying frame, the combination of the frame-work *a*, provided with journals at its extremities, the centrally disposed plate *d*, and the plates *e* and *f*, having provisions in virtue of which they are movable with respect to the rims of the spools, all substantially as described and shown.

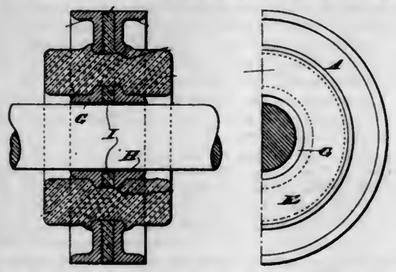
5. In a spool carrying frame, the combination of the general frame work *a*, provided with journals at its extremities, the centrally disposed stationary plate *d*, and the plates *e* and *f*, pivoted to the frame work *a*, at points on lines with the centers of the spools designed to be carried between the said plates, all substantially as described and shown.

6. In a spool carrying frame, the bearing plates *d*, *e*, and *f*, the bearing plate D fixed in connection with the frame work *a*, and the bearing plates *e* and *f* having provisions in virtue of which they are movable with respect to the rims of the spools, for the purpose specified, and mechanism for engaging and releasing the said movable plates *e* and *f*, all substantially as described and shown.

7. In a spool carrying frame, the plates *d*, *e* and *f*, the bearing plate *d*, being fixed in connection with the frame work *a*, and the bearing plates *e* and *f* having provisions in virtue of which they are movable with respect to the rims of the spools, for the purpose specified, and mechanism for engaging and releasing the said movable plates *e* and *f*, consisting of bars *k*, *k*, suitably carried in the frame work to accommodate lateral shifting thereof, all substantially as described and shown.

8. In a spool carrying frame, the bearing plates *d*, and *e*, *f*, the bearing plate *d* being fixed in connection with the frame work *a*, and the bearing plates *e* and *f* having provisions in virtue of which they are movable with respect to the rims of the spools for the purpose specified, and the mechanism for engaging and releasing the movable plates *e* and *f*, consisting of the bars *k*, *k*, shiftable laterally, and provided with pins *r*, *r*, and the spring *s*, carried under compression between the ends of the bars *k*, *k*, all substantially as described and shown.

546,359. INDIA-RUBBER BUFFER AND BEARING SPRING. ALEXANDER SPENCER, London, England. Filed Apr. 18, 1895. Serial No. 546,196. (No model.) Patented in England July 26, 1889, No. 11,921.



Claim.—1. A buffer draw or bearing spring constructed with an india rubber body having a hole therethrough and with a compound ring comprising two cup rings made without nozzles and arranged back to back with an India rubber ring molded in between them, this compound ring being made separate from and being forced into place upon said india rubber body and said body being formed with a groove to receive and retain said compound ring in its proper place on said body, as herein above described.

2. A buffer draw or bearing spring constructed with an india rubber body having a hole therethrough and with a compound nozzle comprising two metal rings with an India rubber ring to serve as a supplementary spring molded in between them, said compound nozzle being forced into its proper place in said hole and said compound nozzle being formed the one with a groove the other with a bead adapted to enter said groove and keep said compound nozzle in place as described.

3. A draw buffer or bearing spring comprising an india rubber body having a hole through it, a groove around its exterior, a groove within said hole, two cup rings made without nozzles and arranged back to back with an India rubber ring molded in between them, thus forming a compound ring which is forced into said exterior groove, and a compound nozzle comprising two metal rings with an India rubber ring to serve as a supplementary spring molded in between them, said compound nozzle being forced into its proper place in said hole, and said hole and said compound nozzle being formed the one with a groove the other with a bead adapted to enter said groove and keep said compound nozzle in place as described.

546,360. PRODUCTION OF IMITATION ONYX FROM PYROXYLIN COMPOUND. JOHN H. STEVENS, Newark, and EDWIN D. HARRISON, Irvington, N. J., assignors to the Celluloid Company, New York, N. Y. Filed June 5, 1895. Serial No. 551,717. (No specimens.)



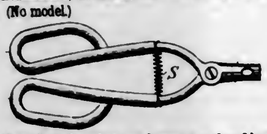
Claim.—1. The method of producing a pyroxyline compound in imitation of onyx, consisting, first, in forming the light tinted parts in solidified strata; second, cutting through these strata across their edges; third, inserting coloring matter between the cut parts, and, fourth, solidifying the whole into blocks, shapes or masses, substantially as described.

2. The method of producing a pyroxyline compound in imitation of onyx, consisting, first, in forming the light-tinted parts in solidified strata; second, cutting through these strata across their edges; third, inserting a pyroxyline composition of a different color between the cut parts, and, fourth, solidifying the whole into blocks, shapes or masses, substantially as described.

3. A pyroxyline compound in imitation of onyx, consisting of two or more light tints in solidified strata with lines of a different color breaking through or crossing the edges of these light tinted strata, substantially as described.

4. A rod or sheet of pyroxyline composition in imitation of onyx, consisting of two or more light tints with streaks of a darker color breaking through or interspersed with the lighter tints, substantially as described.

546,361. PLIERS FOR TRIMMING ELECTRIC-ARC LAMPS. ROBERT D. TACKABERRY, Lewiston, Me. Filed Sept. 26, 1894. Serial No. 524,199. (No model.)



Claim.—In pliers for trimming arc lamps a pair of jaws, a spring acting to hold them closed upon the carbon, longitudinal grooves in the jaws which have a cross section adapting them to seize and inclose a carbon, and a length corresponding to that of its heated portion, and transverse grooves which are adapted to seize and hold a carbon; all combined with each other as and for the purposes set forth.

546,362. DOUBLE-ACTING PUMP. HENRY O. THOMAS, Chicago, Ill. Filed Nov. 30, 1894. Serial No. 530,321. (No model.)

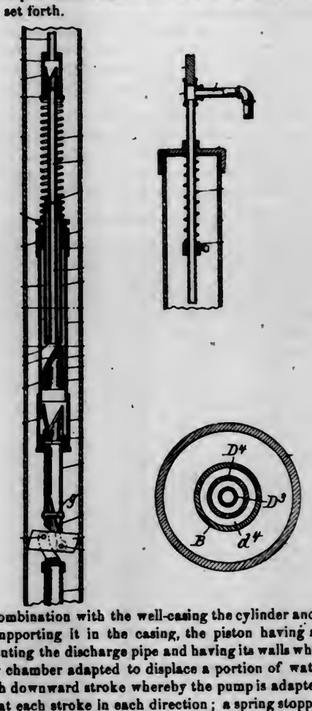
Claim.—1. In combination with the well-casing the pump tube and the pilot rod loosely connected at the lower end of the pump tube, the connection comprising a clutch adapted to be positively moved to the position in which it will grip the wall of the well casing by the arrest or upward movement of the pilot, substantially as set forth.

2. In combination with the well-casing the pump tube adapted to be inserted down thereinto, the pilot rod and a link connecting said pilot rod with the pump tube, said link being adapted to pass freely down into the casing when in the position in which it is normally held by the weight of the pilot and to extend across and bind at its ends against the opposite sides of the casing when the pilot and well tube approach each other, substantially as set forth.

3. In combination with the well-casing the pump tube adapted to descend freely therein, the pilot M, the clutch link N pivoted to the pilot, the link N' pivotally connected to the pilot and to the pump tube at the lower end of the latter, substantially as and for the purpose set forth.

4. In combination with the well-casing the pump tube adapted to descend freely therein, the pilot M, the clutch link N pivotally connected to the pilot, the link N' pivoted to the clutch link and having a loose connection with the pump tube adapted to permit said link longitudinal movement with respect to the latter, substantially as set forth.

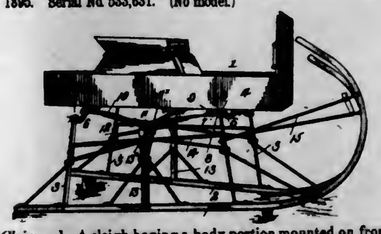
5. In combination with the cylinder piston and piston rod springs reacting upon the piston rod, tending one to support the weight of the piston and rod, and the other tending to depress the same, said springs being proportioned to each other and to said weight to normally hold the piston at the middle of its stroke in the cylinder, substantially as set forth.



6. In combination with the well-casing the cylinder and suitable means for supporting it in the casing, the piston having a tubular stem constituting the discharge pipe and having its walls which enter the cylinder chamber adapted to displace a portion of water therefrom at each downward stroke whereby the pump is adapted to elevate water at each stroke in each direction; a spring stopped at the lower end upon the cylinder and a stop on the stem thereabove against which said spring reacts upward, and a further spring stopped downward on the stem and upward against a stop fixed with respect to the well-casing, said springs being proportioned with respect to each other and to the weight of the entire piston, stem, and discharge pipe, to normally hold the piston at the middle of its stroke in the cylinder, substantially as set forth.

7. In a pump, in combination with the cylinder, the piston head F having the central water inlet *f*, and the tubular stem constituting part of the discharge pipe, the piston head being cut away obliquely at the upper part to form a valve seat below the attachment thereto of the tubular stem, and a transversely flexible valve hinged at its lower end at the lower side of said oblique valve seat; whereby such valve may be flexed transversely in a curve corresponding with the curvature of the cylinder when it is opened by the entering current of water, and the stream of water admitted through the valve seat may pass without deflection into the tubular stem: substantially as set forth.

546,363. SLEIGH. ERNEST L. THOMS, Ashby, Minn. Filed Jan. 2, 1895. Serial No. 533,631. (No model.)



Claim.—1. A sleigh having a body portion mounted on front and rear springs which are connected by shackles to the upper end of the front and rear standards of the runners, side springs having their ends connected to cross beams, extending across the sleigh body, and rigidly connected to a cross beam, hinged on the upper ends of the middle standards substantially as and for the purpose set forth.

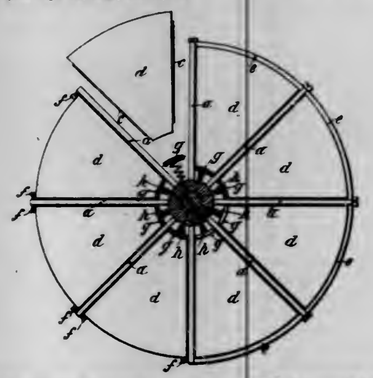
2. In a sleigh having a spring body mounted on front and rear springs which are connected by shackles to the front and rear standards, side springs connected at their ends to cross beams secured to

the under side of the body, and connected at their centers to a cross beam which is hinged to the central standards, substantially as and for the purpose set forth.

3. A sleigh the combination with the body portion swiveled at the front and rear to cross bars 6'—6' which are shackled to the front and rear standards and bolted directly to a central cross beam, which is hinged upon the upper ends of the central standards, substantially as set forth.

4. A sleigh having its body portion mounted on front and rear springs, which are connected by shackles to the front and rear standards of the runners, said springs being connected at about their centers to the under side of the body of the sleigh, by a pivot or swivel connection, substantially as and for the purpose set forth.

546,364. APPARATUS FOR EXTRACTING, SEPARATING, AND REFINING METALS BY ELECTROLYSIS. DONATO TOMMASI, Paris, France. Filed Sept. 24, 1892. Serial No. 446,775. (No model.) Patented in France Apr. 1, 1892, No. 220,580; in England Apr. 1, 1892, No. 16,892, and May 21, 1892, No. 16,893; in Belgium Aug. 19, 1892, No. 101,006; in Austria-Hungary May 3, 1893, No. 55,418 and No. 83,065, and in Spain Sept. 16, 1893, No. 14,798.

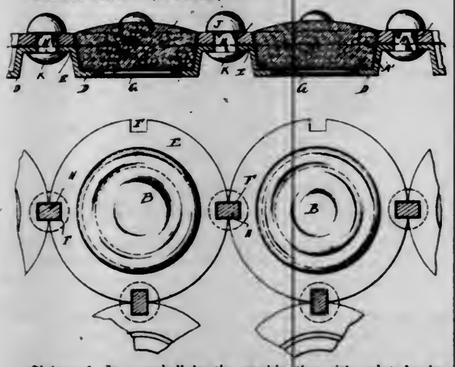


Claim.—1. In an electrolyzer as herein specified a rotating cathode disk composed of a mixture of carbon and oxide of copper, as and for the purpose specified.

2. In a cathode disk the combination of a hub having radial grooved arms, spring pressed contact plates between the radial arms, sector shaped cathode segments having tongued edges adapted to fit in the grooves of the radial arms and held in place by screws at the periphery of the disk and by the pressure of the contact plates, substantially as described.

3. In a cathode disk the combination of a hub having radial grooved arms, spring pressed sector shaped cathode segments having tongued edges adapted to fit in the grooves of the radial arms, and means for retaining the segments in place against the tension of the spring, substantially as described.

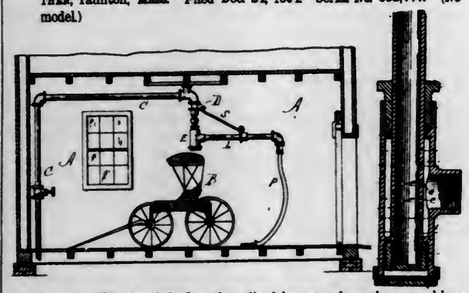
546,365. VAULT-LIGHT. WILLIAM TOWLE, Brooklyn, N. Y., assignor of one-half to Henry Held, same place. Filed June 21, 1895. Serial No. 553,557. (No model.)



Claim.—1. In a vault light, the combination with a plate having apertures arranged equidistant from each other in lines at right angles to each other, of a lens placed in each hole, an apertured cup placed against the bottom of each lens, which cups each have an exterior flange, said flanges being of such size that the flanges of the cups on adjacent lenses come in contact and the flanges having notches, a quarter circle from each other and rivets passing through registering slots of two adjacent flanges and through the plate, substantially as herein shown and described.

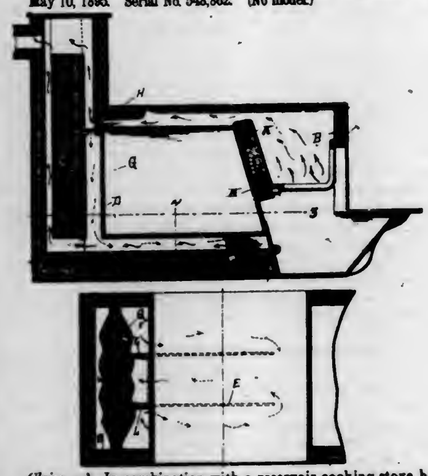
2. In a vault light, the combination with a plate having holes arranged equidistant from each other in rows at right angles to each other and serving to receive glass lenses, said plate also having smaller holes between the lens receiving holes, and on lines equidistant from each other and on lines at right angles to each other, an apertured flanged cup placed against the bottom of each lens, which flanges have notches in the edges, said notches registering to form apertures below the smaller holes in the plate and rivets passed through the smaller holes in the plate and through the registering notches in the flanges, substantially as herein shown and described.

546,366. CARRIAGE-WASHING DEVICE. CHARLES G. TREFETHEN, Taunton, Mass. Filed Dec. 24, 1894. Serial No. 532,777. (No model.)



Claim.—The hereinbefore described improved carriage-washing device, consisting of the combination with the feed pipe C and horizontal pipe L, of the drop pipe D secured to and extending vertically down from the feed pipe, said drop pipe having its lower end closed by a cap the upper end of which constitutes a ledge or annular step upon the outside of said pipe, the external pipe E provided with the internal annular flanges E' E'' and the horizontal branch K for connection with said pipe L and closed at its lower end, and the stuffing nut H extending into the upper end of said pipe E around the pipe D and above the upper flange E', said pipe D being perforated so as to communicate with the annular chamber I located between the two said flanges of the pipe E, said flanges bearing on the pipe D and allowing the pipe to rotate thereon, and the lower flange resting upon the upper edge of said cap D', all constructed and arranged as and for the purpose set forth.

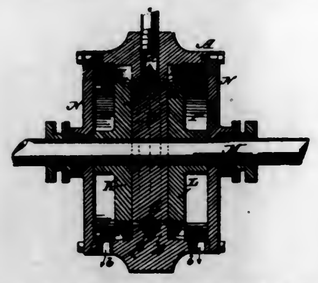
546,367. WATER-HEATING STOVE. JOHN A. WAGLE, Avonmore, Pa., assignor of one-half to Albert Clawson, same place. Filed May 10, 1895. Serial No. 548,862. (No model.)



Claim.—1. In combination with a reservoir cooking stove having a double casing as described, a rectangular hollow frame K having a central recess and a fire brick M held in said recess, the rear and forward faces of said brick being flush with the sides of said frame, and suitable communication between the frame K and the outer reservoir, substantially as shown and described.

2. In combination with a reservoir cooking stove having a horizontally disposed corrugated reservoir extending beneath the oven and a vertically disposed corrugated water tank at the rear end of the stove and communicating with a water holding casing surrounding the stove, the vertical partitions L, and the damper H pivoted between said partitions and having its free edge shaped to conform to the vertical corrugated wall of the tank, substantially as described.

546,368. ROTARY ENGINE. WILLIAM A. WEBSTER, Monmouth, Ill. Filed July 8, 1895. Serial No. 555,291. (No model.)



Claim.—1. In a rotary engine, the combination of the two chambers with the wheels provided with blades set at opposite angles, a partition having an annular steam passage or groove, and angular passages leading from the annular steam passages to direct the steam against the blades of each wheel, substantially as and for the purpose set forth.

2. In a rotary engine, the combination of two wheels mounted upon a shaft, with a cylinder, a partition in the cylinder between the wheels, and angular passages formed upon the periphery of the partition for directing the steam to operate the wheels, substantially as and for the purpose specified.

3. In a rotary engine, the combination of two wheels mounted upon a shaft, with a cylinder, a partition between the wheels, one part of which partition is on the cylinder and the other formed by a disk, and grooves formed in the two parts of the partition to provide an annular passage for the steam, and passages leading therefrom to direct the steam to operate the wheels, substantially as and for the purpose described.

4. In a rotary engine, the combination of the cylinder provided with a partition formed partly by the cylinder and a disk, each provided with a groove which forms an annular steam passage, and passages leading from said groove, and wheels in the cylinder or chambers formed by said partition and heads of cylinder, and oppositely set angular blades upon the wheels, and the independent exhaust ports for each chamber, substantially as and for the purpose set forth.

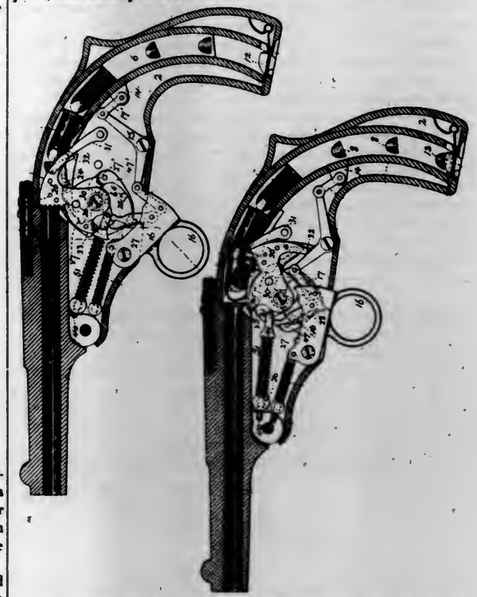
5. A rotary engine, consisting of a suitable cylinder formed upon its interior with a circumferential rim or projection having a groove therein, a disk having a similar groove which registers with the groove in the rim or projection to form an annular steam passage and a partition to divide the cylinder into two steam chambers, wheels located within the chambers and fitting closely against the face of the disk, blades upon the wheels extending in opposite directions, and inclined passages upon the periphery of the disk which communicate with the annular steam passage in the partition and directs the steam against the blades of the wheel, substantially as and for the purpose described.

546,369. MAGAZINE-PISTOL. HENRY F. WHEELER, Peterborough, N. H. Filed Oct. 24, 1894. Serial No. 526,842. (No model.)

Claim.—1. In fire-arms a hammer adapted to serve as a breech block, comprising a hammer, and a rocking plate within the hammer, said plate arranged to have independent movement in advance of the hammer, combined with an extractor mounted on and carried by the hammer, said extractor being rendered active or inactive by the movements of the rocking plate, substantially as specified.

2. In fire arms, a slotted hammer, a firing-pin thereupon, a push pin movable in the hammer, and a locking bolt operated by the push-pin, combined with a rocking plate, a pivot common to the hammer and the plate, interconnecting mechanism to allow movement of the rocking plate in advance of the hammer, a trigger, and a fly to alternately engage the cocking and firing notches formed in the rocking plate, substantially as stated.

3. In fire-arms the combination with a hammer, a rocking plate located within the hammer, and cocking and firing notches formed in the rocking plate, of a trigger, and a fly operated by oppositely disposed springs and arranged to alternately engage the cocking and firing notches in the rocking plate on different sides of the hammer pivot, substantially as described.



4. In magazine fire-arms a curved feeder-plate attached to the trigger and operated by the trigger spring to advance the cartridge forward, substantially as explained.

5. In magazine fire-arms the combination with a magazine having laterally notched wall plates adapted to feed the loaded cartridges upwardly into the breech of the weapon, of a sliding gate which serves to close the entrance to the magazine, and an interior lug affixed upon the gate and adapted to raise the cartridge last entered and cause said cartridge to engage the lowest notches in the magazine walls in the act of closing the magazine by the gate, as stated.

6. In fire arms, a curved magazine having notched wall plates, one stationary, the other movable, an operating trigger, and interconnecting levers by which the trigger in cocking the weapon causes retreat of said movable plate, as explained.

7. In fire arms the combination with an apertured side plate for passage of empty shells, and a magazine formed with notched wall plates, one fixed the other adapted to reciprocate, of a trigger connected with said movable wall plate and adapted to positively withdraw said wall plate and open the shell aperture after discharge of the weapon, substantially as stated.

8. In fire-arms an extractor beveled transversely along its top edge and adapted to seize an empty shell and direct the latter through an aperture arranged for this purpose.

9. In fire-arms a hammer which serves as a breech-block, and a plate rocking within the hammer and both upon the same pivot, combined with a rocking extractor carried on the hammer, an ear 34 upon the rocking plate to engage said extractor and positively raise the extractor in the act of rocking the weapon, substantially as described.

10. In combination with a hammer, a rocking plate, both upon the same pivot, and an operating trigger, an extractor pivotally on the hammer, a notch 37 on one side of its pivot, and a lip 38 upon the opposite side, said notch and lip to engage respectively a tooth 36, and a shoulder 39 upon the rocking plate, whereby upon rocking of said hammer, the extractor is first raised to clasp an empty shell and then depressed to allow a loaded cartridge to pass over it into the barrel, substantially as explained.

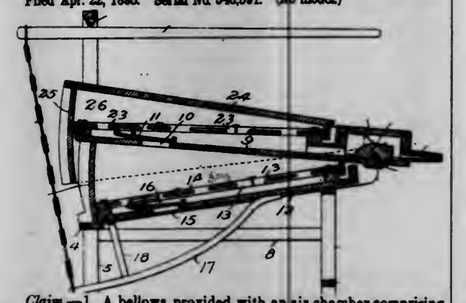
11. In fire-arms the combination with a hammer adapted to serve as a breech-block, and a rocking plate which operates the hammer by means of the trigger and both on a common pivot, of an operating trigger, a fly which engages the firing and rocking notches on the hammer, and two springs which control the movement of the fly and are placed alternately under tension by the movements of the hammer in the acts of cocking or firing the weapon, substantially as specified.

12. In fire-arms the combination with a hammer adapted to serve as a breech-block, and a trigger for operating the same, of a fly which engages the cocking and firing notches in the hammer, a fixed stop in the side plate of the weapon, and means for causing the fly to engage the stop, whereby the trigger is permitted only partial movement in the discharge of the weapon, substantially as described.

13. The combination with a hammer, a trigger for operating the same, and a spring-actuated carrier slide for feeding cartridges, of mechanism which unites the said slide with the trigger, an oscillating fly carried by the trigger, and a fixed stop which engages said fly in the discharge of the weapon and thereby limits the travel of said slide, substantially as set forth.

14. In fire arms the combination with a hammer, a carrier slide for feeding cartridges, a trigger which operates said hammer and slide, and mechanism which unites the slide and trigger, of an oscillating fly carried by the trigger and adapted to engage the hammer, and a fixed stop so positioned upon the side plate of the weapon that the fly can engage therewith only when said fly is in one extreme of position, whereby a full movement of the trigger is permitted in cocking the hammer and a partial movement of said trigger in the release of the hammer substantially as stated.

546,370. BELLOWS. ALFRED M. WICKERSHAM, Minneapolis, Minn. Filed Apr. 22, 1895. Serial No. 546,591. (No model.)



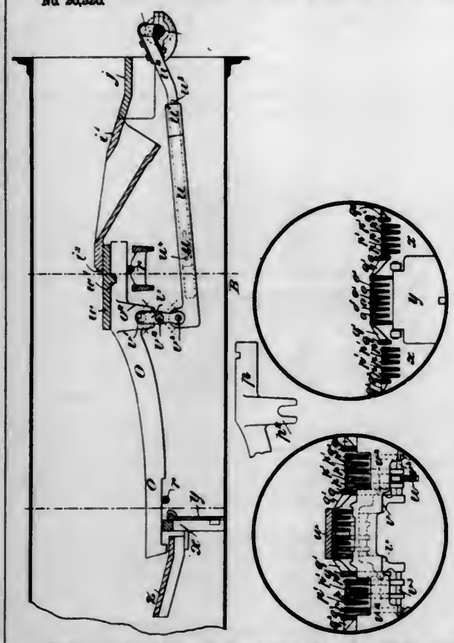
Claim.—1. A bellows, provided with an air chamber comprising the sides 2, the top 9 provided with a suitable opening, the valve 10 for closing said opening, the curved part 3 forming one end of said chamber, the pivoted part 12 forming the bottom of said chamber, and arranged to move up and down therein, said part 12 being provided with a suitable opening, a valve for closing said opening, the packing strips carried by said part 12, springs for holding said packing strips in close contact with the walls of said chamber, and a second chamber arranged above said fixed portion and provided with a suitable outlet, for the purpose set forth.

2. A bellows, comprising a fixed and a pivoted portion, forming the primary chamber, a second pivoted portion arranged above said fixed portion, and forming a secondary chamber communicating with said first named or primary chamber, said fixed portion being provided with a series of packing strips, means for holding said strips in close contact with the walls of said second pivoted portion, and said fixed portion being also provided with a suitable passage forming the outlet to said secondary chamber, and means for closing said passage, substantially as described.

3. A bellows having a primary chamber, comprising a fixed portion, the pivoted portion forming the bottom of said chamber, said portion being provided with packing strips in close contact with the walls of said chamber, a valve for admitting air to said chamber, a second pivoted portion arranged above said primary chamber, forming with said fixed portion a secondary chamber, said fixed portion being provided with a passage leading to said secondary chamber, said fixed portion being provided on its upper surface with a series of packing strips or blocks, means for holding the same in close contact with the walls of said second pivoted portion, said fixed portion being provided with an outlet leading from the space beneath said second pivoted portion, and a sliding valve for closing said outlet or passage, substantially as described.

4. A bellows having a primary chamber, comprising a fixed and a pivoted portion forming the bottom of said chamber and adapted to compress the air within said fixed portion, said fixed portion being provided with an opening, the valve for closing said opening, the lever for raising said pivoted portion to compress the air within said fixed portion, a second pivoted portion arranged above said fixed portion, forming therewith a secondary chamber communicating with said primary chamber, a valve for closing the passage between said chambers, suitable packing arranged upon the upper surface of said fixed portion and in close contact with the walls of said second pivoted portion, whereby the escape of air from said secondary chamber is prevented, and said fixed portion being provided with a passage leading from said secondary chamber, substantially as described.

546,371. AUTOMATIC STOKING APPARATUS. RICHARD H. WILLIAMSON, Ashton-under-Lyne, assignor to the Direct Automatic Stoker Syndicate, Limited, Manchester, England. Filed Dec. 18, 1894. Serial No. 532,223. (No model.) Patented in England Oct. 24, 1894, No. 20,320.



Claim.—1. In combination in a furnace, the reciprocating grate, means for operating the same, the feed mouth *i* at one end of the grate and the ledge i^3 over the grate bars and means for feeding the fuel up through the feed mouth and over the ledge i^3, the said grate bars extending and working beneath the said overhanging ledge i^3, substantially as described.

2. In combination in a furnace, the grate bars and the plates *i* having feeding openings, the rolling plates *l* and the plates *k*, *m*, forming a floor for a coking chamber, substantially as described.

3. In combination in a furnace, the reciprocating grate bars having notches, the plate extending across the bars having a rib fitting in the notches and a second series of bars having wider notches to receive a limited amount of movement from the plate and means of operating the bars, substantially as described.

4. In combination in a furnace, the reciprocating grate bars, the bearings therefor, and means for operating the bars comprising the rod *u*, the rod u^3 having a sliding connection therewith and the removable collar u' with means for holding the same in place.

5. In combination in a furnace, the reciprocating bars having notches the plate *w* extending across the bars having a rib engaging the notches, means for operating the bars and the ledge i^3 under which the plate *w* extends, substantially as described.

6. In combination in a furnace, the grate comprising the elevated section of bars, the side sections in a lower plane, the saddle plates *n* over the side sections, the mouth plate i' over the elevated section of bars and means for operating the bars.

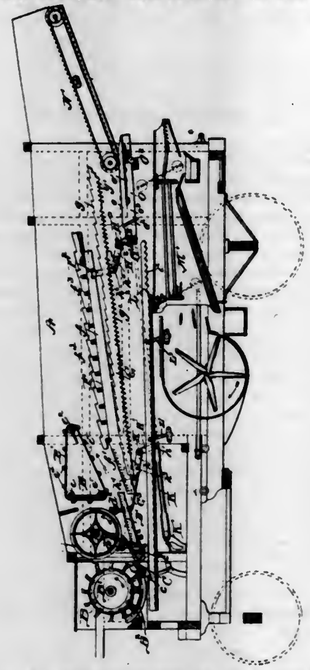
7. In combination in a furnace, the grate bars, with means for moving them lengthwise and the upwardly sloping shelf at the rear end of the grate bars, said shelf being below the bars whereby the rear ends of the bars will act directly upon the material on the shelf, substantially as described.

8. In combination in a furnace, the reciprocating grate bars, a coking chamber at the front end of said bars having a floor composed of plates with small perforations therein, said plates being arranged in different horizontal planes to provide a central elevated portion, the feed mouth opening up through the said coking chamber floor at the central elevated portion and means for reciprocating the grate bars below the plane of the said floor, substantially as described.

9. In combination, the central elevated section of grate bars, the side sections in a lower plane, means for reciprocating the bars, the feed mouth opening up in front of the elevated section and means for feeding the fuel through the same, substantially as described.

10. In combination, the central elevated section of grate bars, the side sections in a lower plane, the means for reciprocating the grate bars, the feed mouth i' and ledge i^3 extending over the central elevated sections of bars and the plates *l*, *k*, *m*, arranged laterally of the feed mouth, and in line with the lower section of bars, said plates forming the floor of a coking chamber at the front ends of the grate bars, substantially as described.

546,372. THRASHING-MACHINE. GEORGE E. WILSON, Stillwater, Minn. Filed Nov. 16, 1894. Serial No. 529,023. (No model.)



Claim.—1. In a thrashing machine, the combination with the thrashing cylinder, the concave, and vibrating separating mechanism, of the grate arranged adjacent to the rear of the concave and supported independently of the main separating mechanism, and means for vibrating such grate at a speed relatively greater than that of the main separating mechanism.

2. In a thrashing machine, the combination with the thrashing cylinder, the concave, and the longitudinally reciprocating straw table behind the cylinder, of the grate hinged at the rear end of the concave and supported independently of the straw table, said grate normally extending upward and backward to a point above the forward end of the straw table, and means, independent of the means for vibrating the straw table, for throwing the rear edge of the grate up and down, substantially as set forth.

3. In a thrashing machine, the combination with the thrashing cylinder, the concave, the straw table behind the cylinder, and means for reciprocating the straw table, of the grate hinged to the concave at the rear end thereof and extending partially over the straw table, and means, independent of the mechanism for reciprocating the straw table, for causing the grate to vibrate at a speed greater than that of said straw table, substantially as set forth.

4. The combination with the thrashing cylinder, the concave, and the vibrating straw carrier in rear of the cylinder of the rotary beater, the vibrating grate behind the concave, and supported independently of the vibrating carrier and the vibrating mechanism engaging therewith and actuated from the beater shaft, substantially as set forth.

5. In a thrashing machine, the combination with the thrashing mechanism, and the vibrating straw table, of the curtain or deflector for the grain berries having a wall approximately vertical, and having a continuously moving carrier independent of the straw table adapted to advance the straw, substantially as set forth.

6. The combination with the thrashing machine, and the rotary beater, of the curtain or grain deflector having a vertical wall in the path of the grain berries, and an endless belt carrier moving downward between the curtain and beater oppositely to the grain beater to uniformly advance the straw, substantially as set forth.

7. The combination with the thrasher mechanism, the beater the vibrating grate interposed between the thrashing mechanism and the beater, the grain pan and the reciprocating separating tables at the rear, of the supplemental reciprocating table adjacent to the beater and arranged to advance the straw longitudinally thereof without materially moving it toward or from the beater, and means independent of the grain pan for supporting the supplemental reciprocating table, as set forth.

8. In a thrashing machine, the combination with the cylinder and concave, of the two separating tables F, G, arranged one above the other, the rock shaft journaled below the forward ends of said tables, arms A carried by said shaft and pivotally connected to both the separating tables at points both on the same side of the axis of said arms A, rocker arms H^3 beneath the rear ends of the tables and connected to both of them at points on the same side of the axis of said arms H^3, the distance from the axis of the arms A to the lower table being the same as the distance from the axis of the arms H^3 to said table, and the distance of the axis of the arms H^3 from the upper table being greater than that from the axis of the arms A' to said upper table, substantially as set forth.

9. In a thrashing machine, the combination with the thrashing mechanism, of the two separating tables F, G, arranged one above the other, the rock shaft H' below the forward ends of said tables, the arms A, carried by said shaft and pivotally connected to both tables on points on the same side of the axis of said arms, rocker arms H^3 beneath the rear ends of the tables and pivoted to the lower table G, arms F^3 connected to the table F and pivotally connected to the arms H^3, both tables being on the same side of the axis of the arms H^3, and means for rocking the arms A, substantially as set forth.

10. In a thrashing machine, the combination with the thrashing mechanism, and the rotary beater, of the relatively elongated main straw separating table in the rear of the beater, means for reciprocating said table longitudinally, means for vibrating vertically the rear end of said table relatively to its forward end, whereby the straw is carried backward with a lesser vertical movement at first, and a more violent vertical motion finally, and a short supplemental table D' beneath the beater reciprocating approximately rectilinearly in substantially the plane occupied by the forward end of the main table when the latter is in its elevated position and adapted to, at that time, have its rear edge lie in close proximity to the inner edge of the main table, substantially as set forth.

11. In a thrashing machine, the combination with the thrashing mechanism, of the main straw table F adapted to reciprocate both longitudinally and vertically through a relatively long path, and the inner supplemental table D' adapted to reciprocate approximately rectilinearly and in the same directions as the table F, the forward end of the table F when in its lower position extending under the table D', and lying in substantially the same plane with said table D' when in its upper position, and means for simultaneously reciprocating said tables in the same directions, substantially as set forth.

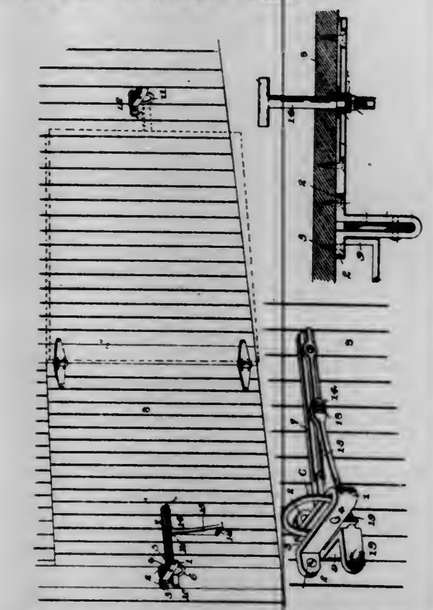
12. In a thrashing machine, the combination with the thrashing mechanism, and the rotary beater, of the two separating tables F, G, arranged one above the other, means for reciprocating the said tables simultaneously longitudinally in the same directions, means for vibrating the rear end of the upper table vertically relatively to its forward end, the supplemental table D' below the beater supported independently of the tables F and G and reciprocating longitudinally in the same directions with them, and the link G^4 connecting the said table D' with the devices which reciprocate the tables F and G, and adapted to impart to said table D' a relatively shorter throw than that imparted to the upper table F, substantially as set forth.

13. In a thrashing machine, the combination with the cylinder, the concave, the beater, and the straw carrier N', of the separating mechanism arranged between the beater and straw carrier, and adapted to be vibrated longitudinally and vertically, the supplemental separating table D' arranged below the beater and vibrating in a path tangential thereto, the apron or deflector E arranged in rear of the beater, and the endless carrier F' traveling around said deflector and extending over the forward portion of the main separating mechanism in a line parallel to the path of the supplemental separating table D', substantially as set forth.

14. In a thrashing machine, the combination with the thrashing mechanism, of the two separating tables F, G, arranged one above the other and supported on the same side of a common axis of vibration at their forward ends and supported on the same side of another common axis at their rear ends, means for reciprocating both tables simultaneously in the same directions, means for throwing upward the rear end of the upper table independently of its forward end, and a grain receptacle counterbalancing the said two tables and supported from the said axes but on the sides thereof opposite to those where-

on lie the said tables, and moving oppositely thereto, substantially as set forth.

546,373. LATCH. ORLANDO R. WIBLOW, Marshfield, Mo. Filed Jan. 19, 1895. Serial No. 535,532. (No model.)



Claim.—1. The combination with main and auxiliary catches located, respectively, at the free edges of a gate or door and at a distance from the hinged edge thereof corresponding approximately with the width of the gate or door, said catches having gravity rings, of a latch rigidly secured to a gate or door with its body portion projecting beyond the free edge thereof to engage the ring of the main catch and provided with a forwardly offset tongue 10 parallel with the body portion of the latch and adapted to serve as a handle when the gate or door is in its closed position and to engage the ring of the auxiliary catch when the gate or door is in its open position, said offset tongue being also adapted to serve as a stop to limit the swinging movement of the gate or door when it reaches its open position, substantially as specified.

2. The combination with a catch having a gravity ring and means for limiting the movement thereof, of a latch adapted to be secured to a gate or door in a plane contiguous to the lower side of the catch, said latch being provided with an offset tongue 10 parallel with the body portion of the latch, and a pivotal disengaging arm mounted upon the body portion of the latch at an intermediate point of the latter and terminating in an abrupt extremity contiguous to the offset of the latch and approximately equal to the interval between the plane of the body portion and the tongue thereof, said disengaging arm being provided with a perpendicularly disposed handle adapted to extend through the gate or door, substantially as specified.

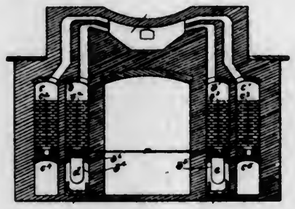
546,374. MUSICAL INSTRUMENT. ELWIN J. BARRITT, Defiance, Ohio, assignor of one-half to Frank Summer, Jr., same place. Filed June 4, 1895. Serial No. 551,619. (No model.)



Claim.—1. A musical instrument comprising a body, a sounding board arranged between the back and front of said body, two sets of keys connected to said sounding board, two sets of strings secured by said keys, one set of strings being arranged on the front of the body and the other set on the back thereof, and bridges on which said strings rest, substantially as described.

2. The musical instrument herein described, comprising a body 2, a sounding-board 1 set centrally in the body, and having a keyboard 8 formed of an extension thereof, two sets of keys set in said keyboard, two sets of strings arranged on opposite sides of the body and connected to the keys, and the bridges 9 and 10, all substantially as described and shown.

546,375. OIL-GAS-FUEL GENERATOR. ROBERT BARLOW and EDWARD W. BARLOW, Chicago, Ill. Filed Apr. 25, 1895. Serial No. 547,107. (No model.)

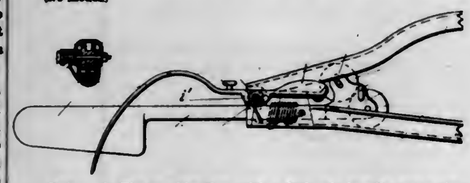


Claim.—1. In a regenerative furnace, the combination with retorts situated in the flues leading from the gas chambers, of means for passing mixed oil and steam continuously through the retorts of both flues, pipes extending between said gas chambers and said retorts and a valve for directing the oil and steam issuing from the retorts into one or the other of the gas chambers; substantially as described.

2. The combination with a super-heater situated in each of the flues leading from the gas chambers, of a steam pipe connected with said super-heaters at one end, a mixing chamber connected with the opposite ends of said super-heaters, an oil pipe leading into said mixing chamber, retorts situated in said flues and connected with said mixing chamber, a valve connected with said retorts and connections between said valve and each of said gas chambers, whereby the oil and steam may be directed into either of said gas chambers at will, through the agency of said valve; substantially as described.

3. The combination with the super-heaters *f f'* situated in the flues b^4 b^5, of the steam pipe f^4, pipes f^3 f^5 connecting said pipe f^4 with the super-heaters, mixing chamber *k*, pipes *g g'* connecting the super-heaters with said mixing chamber, oil pipe *K*, retorts *d d'* and *e e'*, pipes *i i'* connecting said mixing chamber with said retorts, valve *m*, pipes *l l'* connecting said retorts with said valve, and pipes *o o'* extending to the gas chambers; substantially as described.

546,376. TABLE-CUTLERY. JOHN BARRY and MICHAEL L. SHAUGHNESSY, Lenox, Iowa. Filed Jan. 29, 1895. Serial No. 536,544. (No model.)



Claim.—1. The combination, with a fork, of a handle supporting the fork, and a longitudinally retractible knife blade arranged on one side of the said fork, and in line with and slidable in the said handle, substantially as set forth.

2. The combination, with a handle, of a longitudinally retractible knife sliding therein, and a fork pivoted to the said handle and movable in a plane parallel with the knife blade, substantially as set forth.

3. The combination, with a handle formed of two pivoted parts, the upper part being curved; of a retractible knife blade provided with a shank sliding between the parts of the handle and provided with rollers for the said parts to bear against, substantially as set forth.

4. The combination, with a handle formed of two pivoted parts, of a retractible knife blade provided with a shank sliding between the said parts, and a spring normally holding the said knife blade extended, substantially as set forth.

5. The combination, with a handle formed of two pivoted parts, of a retractible knife blade provided with a shank sliding between the said parts and provided with a laterally-projecting push piece at its rear end, whereby the knife blade may be held extended, substantially as set forth.

6. The combination, with a handle formed of two pivoted parts, of a retractible knife blade provided with a shank having a forked end and sliding between the said parts, and two rollers journaled in the said forked end and bearing against each other and against the said parts, substantially as set forth.

7. The combination, with the lower part of the handle provided with lugs at its front end, the pin passing through the said lugs, and the upper part of the handle pivoted on the said pin; of a flanged roller journaled on the said pin between the said lugs, and a retractible knife blade provided with a shank sliding in the said lower part, under the said roller, and between its flanges, substantially as set forth.

8. The combination, with a handle formed of two pivoted parts, one of the said parts being provided with laterally projecting guards to prevent the hand from being pinched; of a retractible knife blade provided with a shank sliding between the said parts, substantially as set forth.

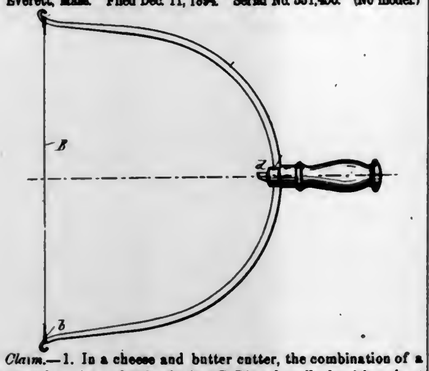
9. The combination, with a handle, and a longitudinally retractible knife blade carried thereby; of a fork pivoted to the said handle, and a spring normally holding the tines of the fork pressed downward, substantially as set forth.

10. The combination, with a handle, and a longitudinally retractible knife blade carried thereby; of a pin projecting laterally from the said handle, and a fork pivoted on the said pin with its front end free to move laterally with respect to the knife blade, substantially as set forth.

11. The combination, with a handle, and a longitudinally retractible knife blade carried thereby; of a pin projecting laterally from the said handle, and a fork provided with lugs upon the sides of its stem, said lugs being pivoted on the said pin and the lug next the handle having an elongated hole permitting the tines of the fork to be moved laterally, substantially as set forth.

12. The combination, with a handle, and a longitudinally retractible knife blade carried thereby; of a fork pivoted to the said handle and provided with an end portion projecting rearwardly of the pivot and provided with a curved lip on one side, substantially as set forth.

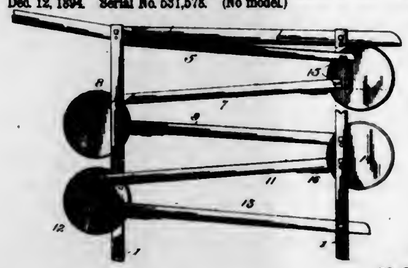
546,377. CHEESE OR BUTTER CUTTER. EDWIN G. BENNETT, Everett, Mass. Filed Dec. 11, 1894. Serial No. 531,450. (No model.)



Claim.—1. In a cheese and butter cutter, the combination of a bow, a cutting wire and a shank piece D D' as described, with a short knife, suitably attached to the inner end of the shank piece D D', adapted to cut through the hard rind of the cheese so as to admit of the passage of the cutting wire B, substantially as and for the purpose set forth.

2. In a cheese-cutter, the combination of a bow, cutting wire and handle as described, with a delta-shaped knife *d* located in the inner end of the handle, adapted to cut away a portion of the rind of the cheese to admit of the free working of the wire B, substantially as and for the purpose set forth.

546,378. AMALGAMATOR AND SEPARATOR. GEORGE A. BLINK, Tres Piedras, N. Mex., and DANIEL C. BLINK, Denver, Colo., assignors of one-third to Albert A. Carpenter, Tres Piedras, N. Mex. Filed Dec. 12, 1894. Serial No. 531,578. (No model.)

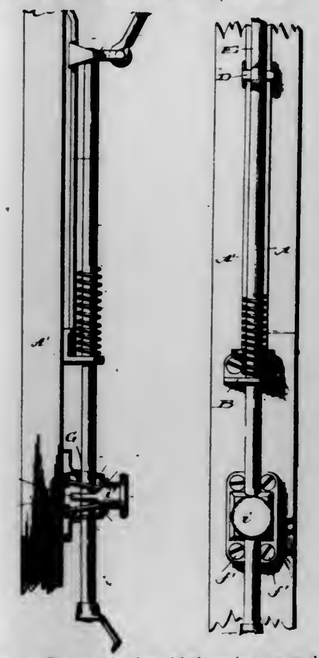


Claim.—1. In a separator, the combination of a frame, a series of drums adjustably mounted therein, and a corresponding series of pairs of oppositely inclined adjustable pans entering apertures in the drums, the upper pan in each pair projecting over the lower one and the lower one projecting beyond the edge of the opening into the drum, and adjustable to different distances over said edge of said opening, substantially as described.

2. In a separator, the combination of a frame having a series of adjusting bolt holes, a series of pans and drums supported by said frame, the pans being arranged in oppositely-inclined pairs projecting into openings in the drums, the upper pan projecting beyond the lower one, and said lower one projecting beyond the edge of the opening into the drum, and adjustable to different distances over said edge of said opening, and bolts passing through holes made in said frame, pans and drums, whereby the drums may be readily removed and the position of the pans readily adjusted, substantially as described.

3. In a separator, a frame, a removable drum having an opening at its side and an extension at the lower part of said opening, a pair of pans extending into said opening, the lower pan projecting beyond the edge of said opening into the drum and provided on its under side with a pocket to receive the extension of the drum, substantially as described.

546,379. TRANSOM-LIFTER. GEORGE A. COLTON, Chicago, Ill. Filed Mar. 28, 1895. Serial No. 543,516. (No model.)



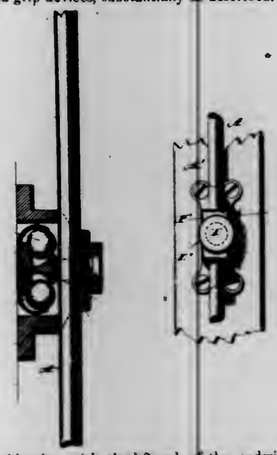
Claim.—1. The combination with the spring actuated grip plates pivotally held at their inner ends and the lift-rod, passed loosely through openings in said plates, of the push rod through which the lift-rod loosely passes said push rod being mounted to move endwise between the plates to separate them, substantially as specified.

2. The combination with the lock-casing and the gripper plates pivotally mounted therein and having openings for the passage of the lift-rod, of the spring held behind the ends of the plates at right angles thereto and having its ends acting upon said plates, and the endwise-movable push-rod having beveled portion to move between said plates, as set forth.

3. The combination with the lock-casing, the gripper plates pivotally mounted therein and having beveled outer ends and notched inner ends, the spring having its ends bent to engage the outer faces of the said plates, and the push-rod mounted to slide in the casing and having a portion with elongated opening and a tubular portion with beveled faces, substantially as and for the purpose specified.

546,380. TRANSOM-LIFTER. GEORGE A. COLTON, Chicago, Ill. Filed Apr. 1, 1895. Serial No. 544,120. (No model.)

Claim.—1. The combination with the lift-rod, of a lock therefor embodying loosely mounted bodily separable unpivoted grip devices having curved acting faces and mounted to grip the lift-rod, and an endwise movable device adapted to enter between and bodily move and separate said grip devices, substantially as described.

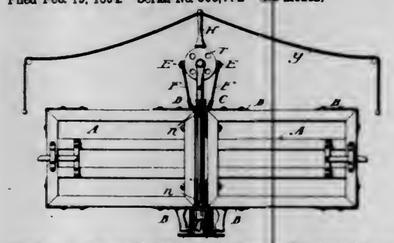


2. The combination with the lift-rod, of the endwise-movable push-button, the balls, and means for holding the balls against displacement, as set forth.

3. The combination with the lift-rod, of the lock-case having transverse bar with rounded face, the spring, the balls and the endwise-movable push-button, substantially as shown and described.

4. The combination of the lock-case having transverse bar with rounded outer face, the spring having curved ends, the balls or disks held by the curved ends of said spring, and the endwise-movable push-button having tapered inner end and elongated opening, substantially as specified.

546,381. AUTOMATIC GATE. DAVID M. EVERTON, Austin, Tex. Filed Feb. 19, 1894. Serial No. 500,774. (No model.)

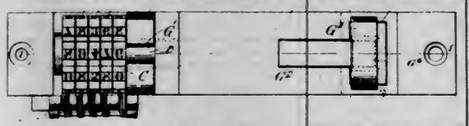


Claim.—1. The combination with a centrally pivoted gate supported by cam ways, of the pulley *r*, mounted upon the center-post, the collar D, chains F, and cords *y*, all substantially as shown and described.

2. The combination with a centrally pivoted gate, of a cam block for operating the same, having the inclines *o*, *o*, arch M, and crown P, all substantially as shown and described.

3. The combination with a centrally pivoted gate of the block having a cam groove, the cam rods attached to the gate, traveling in said groove, the center post terminating in a forked bearing, a pulley mounted therein, a collar surrounding the center post, and connected to said pulley by side chains, and cords for operating the same, substantially as shown and described.

546,382. NUMBERING-MACHINE. THOMAS F. GEARY and WILLIAM E. BRACKWELL, Brooklyn, assignors to the New York Stencil Works, New York, N. Y. Filed June 13, 1894. Serial No. 514,423. (No model.)

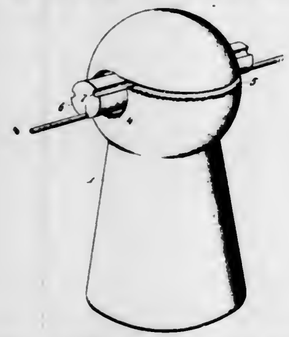


Claim.—1. A numbering machine, comprising a frame adapted to be set in a type or printing plate cylinder, a series of numbering wheels mounted in the frame, gear wheels also mounted in the frame below the numbering wheels and meshing therewith, each gear wheel having a tooth for engaging the adjacent numbering wheel, a spring pressed slide provided with a slot through which the shafts of the numbering and gear wheels pass, a pawl carried by the slide and engaging one of the gear wheels, and a head adapted to be engaged by the impression cylinder to operate the slide, substantially as described.

2. A numbering machine, comprising a frame adapted to be set in a type or printing plate cylinder, a series of numbering wheels mounted in the frame, gear wheels also mounted in the frame below the numbering wheels and meshing therewith, each gear wheel having a tooth for engaging the adjacent numbering wheel, a slide provided with a slot through which the shafts of the numbering and gear wheels pass and with a head on its upper end adapted to be engaged by the impression cylinder, springs arranged between the lower end of the slide and the frame, and a pawl carried by the slide and engaging one of the gear wheels, substantially as described.

3. A numbering machine, comprising a frame adapted to be set in a type or printing plate cylinder, two shafts mounted in the frame one above the other, a series of numbering wheels loose on the upper shaft, gear wheels loose on the lower shaft and meshing with the numbering wheels, each gear wheel having a tooth for engaging the adjacent numbering wheel, a slide provided with a longitudinal slot through which the shaft of the numbering and gear wheels pass and with a head on its upper end adapted to be engaged by the impression cylinder, pins on the frame below the slide, springs surrounding the pins and engaging the frame and slide, a pawl carried by the slide and engaging one of the gear wheels, and dogs carried by the frame and engaging the gear wheels to prevent return movement thereof, substantially as herein shown and described.

546,383. INSULATOR. GOTTLIEB GERSTENLAUER, Williamsport, Pa. Filed Mar. 27, 1895. Serial No. 543,354. (No model.)



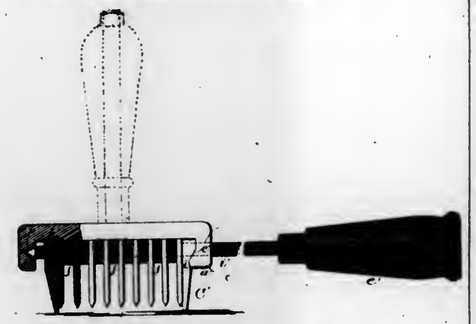
Claim.—1. An insulator for electric wires, comprising a body of non-conducting material, having formed therein a straight transverse open slot extending upwardly and inwardly from the exterior surface of said body and deepened at its inner end to form a pocket for the reception of a wire, said pocket being formed in such manner as to recede beneath and leave an overhanging lip, which projects inwardly partially over the pocket and is disposed between the latter and the inner end of the slot communicating therewith, substantially as and for the purpose specified.

2. An insulator for electric wires, comprising a body of non-conducting material formed with a substantially spherical and concentric head, a transverse perforation in said head for the reception of a wire, and an inclined open slot communicating tangentially with said perforation at or near the top thereof in such manner as to leave a depression or pocket beneath the plane of the inner end of said slot, substantially as and for the purpose described.

3. An insulator for electric wires, comprising a body of non-conducting material, a perforation for the reception of the line wire, and an open slot communicating with said perforation, in combination with a grooved and tapering pin or cylindrical plug adapted to enter said perforation and to receive and bind said wire in fixed relation to the insulator, substantially as described.

4. An insulator for electric wires, comprising a body of non-conducting material, a perforation for the reception of the line wire, and an open slot communicating with said perforation, in combination with a cylindrical pin or plug provided with one or more tapering grooves and adapted to enter said perforation and receive said wire and bind the latter therein, substantially in the manner and for the purpose described.

546,384. MEAT-CHOPPER. RUSSELL L. GORE, Carlisle, Ky. Filed Dec. 18, 1894. Serial No. 532,215. (No model.)



Claim.—1. In a chopper, the combination with a back, and guard, blocks or teeth extending laterally therefrom, knives located between said guard blocks or teeth, said guard blocks or teeth projecting beyond the outer edges of the knives, and a rod passed through the knives and guards and holding the knives rigidly in place between the guards and against the back, substantially as set forth.

2. In a chopper, the combination with a back having flanges, one of said flanges having a socket with inclined walls, of a series of knives, and a handle having a rod passing through said knives, said rod being connected with one of said flanges and adapted to enter the socket in the other whereby, when the parts are assembled, the knives will be made to bear firmly against the back, substantially as set forth.

3. In a chopper, the combination with a back having flanges thereon, and knives located between the flanges with their inner edges resting against the back, of a rod passed through one of the flanges and through the knives and its inner end having bearing in the other flange, said rod provided with a screw thread at or near one end thereof and a slidable device in which said threads turn whereby the said device is moved toward or away from the knives and the rod locked or released according to the direction in which the rod is turned, substantially as set forth.

4. In a chopper, the combination with a back and flanges projecting therefrom, of a series of knives located between said flanges, guard blocks or teeth located at the respective ends of the series of knives, a threaded rod passing through said knives and blocks or teeth and adapted to enter a socket in one of said flanges, and a lug on the other flange adapted to engage one of said blocks or teeth, substantially as set forth.

5. In a chopper, the combination with a back having downwardly projecting flanges on two of its edges, one of which flanges having a conical hole or socket formed therein, of knives, and a block located between these flanges, said block having a threaded hole, and a rod having a conical end and screw threads near said end, said rod passed through one of the flanges of the back, through the knives, its extreme cone shaped end entering the cone shaped hole in the flange and its threads engaging threads in the block, substantially as set forth.

6. In a chopper, the combination with a back, and flanges projecting therefrom, one of said flanges having a conical socket and the other flange being provided with a beveled lug, of a series of knives disposed between said flanges, guard blocks or teeth at the respective ends of the series of knives and adapted to project beyond the edges of the same, one of said blocks or teeth having a screwthreaded perforation and the other a plain perforation, the last-mentioned block or teeth having an inclined or beveled face to engage the said beveled lug, and a rod passing through said knives and guard blocks or teeth and adapted to enter said conical socket, said rod also being screw-threaded where it passes through the block or tooth having a screw-threaded perforation, and a handle for the device, substantially as set forth.

546,385. GATE. JOSEPH W. HENRY, Kansas City, Mo. Filed Mar. 14, 1895. Serial No. 541,826. (No model.)

Claim.—1. A swinging gate, comprising a crane at one side of a road-way, a slotted post at the opposite side of the road-way, a gate proper pivotally connected to the free or outer end of the crane, and a lever pivotally carried by said crane and connected to the gate in such manner that the gate will be elevated or lowered accordingly as said lever is operated, substantially as set forth.

2. A swinging gate, comprising a crane at one side of a road-way, a slotted post at the opposite side of the road-way, a gate proper pivotally connected to the free or onter end of the crane, a lever pivotally carried by said crane and connected to the gate in such manner that the gate will be elevated or lowered accordingly as said lever is operated, and a spring-catch carried by said crane, substantially as and for the purpose set forth.



3. A gate, comprising a swinging crane located at one side of a roadway, a slotted post at the opposite side of said road-way, a gate proper at one end projecting into the slot of said post and at its opposite end resting against the side of said crane, a downwardly-disposed hook carried by said crane, and a pivoted locking-bar forming one of the slats of the gate and engaging at its opposite ends the slot of said post and the said downwardly-disposed hook, substantially as set forth.

4. A swinging gate, comprising a swinging crane located at one side of a road-way, eye-bolts projecting from the free end of the same at some distance apart, a gate proper, eye-bolts projecting from the same midway its length, one of said eye-bolts being located vertically above and the other vertically below the eye-bolt of the said crane, a vertical pivot-rod extending through said eye-bolts and provided with a retaining-nut at its lower end, a chain attached to its upper end, and a lever pivotally carried by the crane and provided with a hook detachably engaging said chain, substantially as set forth.

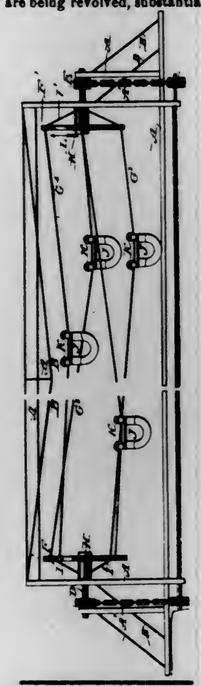
5. A swinging gate, comprising a hinge-post, a plate carried at the upper end of the same, parallel guide-bars projecting also from said post, with their upper surface preferably in the plane of the ground, a sliding-plate mounted upon said guide-plates, means to adjust the same toward or from the lower end of the hinge-post, and a swinging crane pivoted at its upper and lower end, respectively, in the plate carried by the hinge-post and the said adjustable plate, and a gate proper pivotally connected to the free end of the crane, substantially as set forth.

546,386. REVOLVING GRAVITY-RAILWAY. JESSE S. LAKE, Pleasantville, N. J. Filed Jan. 4, 1895. Serial No. 533,868. (No model.)

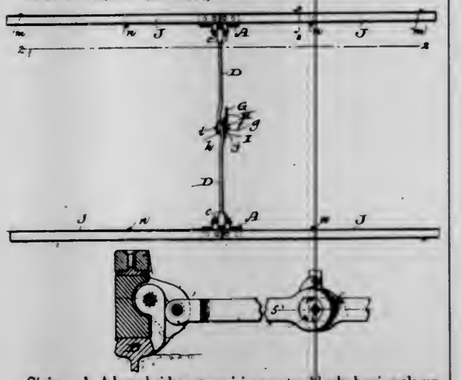
Claim.—1. The combination with two wheels, so mounted that their sides face each other, of a cable secured to the said wheels at or near their margins, one end of said said cables being maintained in the substantially equal rotation of the wheels, at a point in said rotation in advance of the other end, substantially as described and set forth.

2. The combination with the wheels mounted with their sides facing each other, of two or more cables secured to said wheels at or near the margins, thereof, said cables being at one end secured to one wheel in advance of the point of attachment of said cables at the other to the other wheel, said cables mounted with such proportionate tension, and advance of one point of attachment, beyond the other, as to provide for the car traveling thereon, slight upward grade near the end of its course, substantially as described.

3. In a revolving gravity railway, the revolving wheels F F', wire rope tracks G, cars J, whereby the cars J are caused to run over said tracks by their own gravity back, and forth, from wheel, to wheel, as said wheels F F' are being revolved, substantially as described and set forth.



546,387. HOSE-BRIDGE. ISAAC NISKERN, Milwaukee, Wis., assignor of one-half to James R. Hatch, same place. Filed Feb. 18, 1895. Serial No. 538,840. (No model.)



Claim.—1. A hose-bridge comprising center-blocks having clamp-jaws that come inside of track-rails when the blocks are in place thereon, a jointed brace connected at its extremities to the blocks to exert pressure against the jaws when extended, and bridge-rails jointed to said blocks.

2. A hose-bridge comprising center blocks having clamp-jaws that come inside of track-rails when the blocks are in place thereon, a brace connected at its extremities to the blocks to bear against the jaws and provided with an intermediate extensible joint, together with bridge-rails joined to said blocks.

3. A hose-bridge comprising center-blocks having clamp-jaws that come inside of track-rails when the blocks are in place thereon, a jointed brace connecting the blocks and exertive at its extremities against the jaws, together with bridge rails pivotally connected to said blocks and having transverse recesses engaging studs on the same.

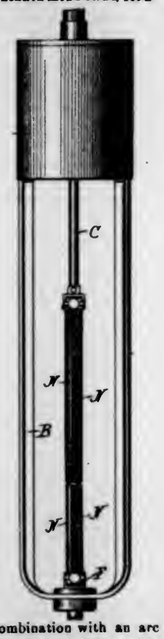
4. A hose-bridge comprising center blocks having clamp-jaws that come inside of track-rails when the blocks are in place thereon, brace-sections connected to the blocks to exert pressure against the jaws, a double-eccentric engaging the brace-members to form an extensible joint, suitable means for adjusting the eccentric, and bridge-rails joined to said blocks.

5. A hose-bridge comprising center-blocks having clamp-jaws that come inside of track-rails when the blocks are in place thereon, brace-sections connected to the blocks to exert pressure against the jaws, a double eccentric engaging the brace-members to form an extensible joint, a squared stem fitting the eccentric, a ratchet-wheel fitted on the stem to turn therewith, a lever loose on said stem and provided with a clutch-pawl engageable with the ratchet wheel, a detent also engageable with said ratchet-wheel, and bridge-rails joined to said blocks.

6. A hose-bridge comprising center-blocks having clamp-jaws that come inside of track-rails when the blocks are in place thereon, a brace connecting the blocks and exertive at its extremities against the jaws, bridge-rails joined to said blocks, a toe at the outer end of each bridge-rail arranged to come on one side of a track-rail, and a foot depending from said bridge-rail intermediate of the toe and center-block to bear upon said track-rail and extend against the other side of the same.

7. A hose-bridge comprising center-blocks having recessed upper faces and clamp-jaws, the latter being arranged to come inside of track-rails when the blocks are in place thereon, a jointed brace connecting the blocks and exertive at its extremities against the jaws, plates engaging the block-recesses, bridge-rails pivoted to the plates, and studs on said blocks engageable with openings in the bridge-rails.

546,388. ELECTRIC-ARC LAMP. SAMUEL P. PARMLY, Chicago, Ill., assignor, by mesne assignments, to the Standard Electric Company, same place. Original application filed Oct. 26, 1891, Serial No. 409,941. Divided and this application filed Dec. 24, 1894. Serial No. 532,838. (No model.)



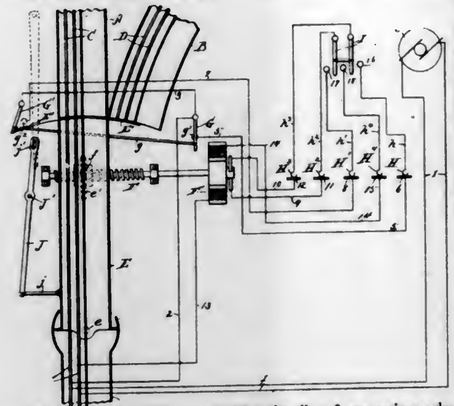
Claim.—1. The combination with an arc lamp, of two carbon electrodes between which the arc is formed in alignment and in direct circuit, each electrode being composed of a series of carbon pencils placed in parallel position and united by a web portion, whereby the arc travels from one pair of opposing pencils to an adjacent pair by means of the connecting web portion, substantially as described.

2. The combination of two electrodes constituting the opposite terminals of the lamp, each consisting of two or more pencils in electrical connection along longitudinal edges, and feeding mechanism therefor, substantially as described.

3. In an arc lamp the combination of a lamp mechanism adapted to feed the carbons, with two electrodes each consisting of two round carbons placed parallel to each other with a conductor rib or intermediate conductor between them upon which they are firmly secured, the construction being such that the arc is localized between each pair of carbons and then shifts to the other pair where it is again localized.

4. In an arc lamp the combination of a lamp mechanism adapted to feed the carbons, with two electrodes each consisting of a sheet or plate of carbon substantially in the form of two round carbons with a connecting or intermediate portion.

546,389. UNDERGROUND CONDUIT FOR ELECTRIC RAILWAYS. HERLUF A. F. PETERSEN, Milwaukee, Wis. Filed Mar. 19, 1894. Serial No. 504,248. (No model.)

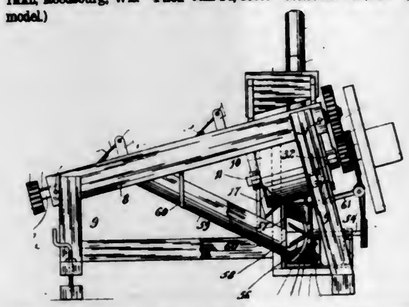


Claim.—1. The combination with a plurality of converging under ground conduits for electric conductors, of a movable conduit section provided with conductor sections, and adapted to be adjusted so as to register with and establish continuous communication between a desired pair of the ends of said converging conduits, and to bring said conductor sections into register with the conductors of a desired conduit, suitable electrically actuated mechanism operatively connected with said adjustable conduit section and adapted to adjust the same into a desired position, switch mechanism for starting, stopping and reversing said adjusting mechanism, and adapted for operative engagement with the adjustable conduit section, substantially as described.

2. The combination with a plurality of converging underground conduits for electric conductors of a movable conduit section, adapted to be adjusted so as to register with and establish a continuous communication between a desired pair of the ends of said converging conduits, suitable electrically actuated mechanism for adjusting said conduit section, and suitable switch mechanism adapted for engagement by said adjustable conduit section as it approaches the limit of its adjustment, so as to cut out the current from said actuating mechanism, substantially as described.

3. The combination with a plurality of converging underground conduits for electric conductors of suitable means for establishing continuous communication between a desired pair of the ends of said converging conduits, suitable means for closing the ends of the conduits which are not in communication, and suitable tubular connections communicating with said conduits at both sides of the junction thereof, and arranged to permit an air circulation past said junction, from one conduit to another, substantially as described.

546,390. FEED-CUTTER AND CORN-HUSKER. AUGUST ROSENTHAL, Reedsburg, Wis. Filed Jan. 24, 1895. Serial No. 536,045. (No model.)

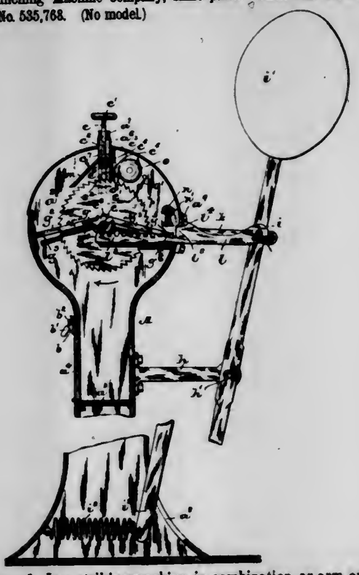


Claim.—1. The combination, of a frame having rollers journaled therein adapted for separating the ears of corn from their stalks, the stalks adapted to pass between the rollers, a fan casing secured to the frame beneath the rollers, said casing having an inlet and an outlet opening, a rotatable fan within said fan casing, a casing beneath the rollers for receiving the corn stalks therein, said casing provided with a discharge opening, mechanism within this casing for cutting the corn stalks, said cut stalks passing out of the discharge opening to the fan casing, and a conduit extending from the fan casing to the point of delivery, the cut corn stalks adapted to be forced up the conduit by the air draft created by the fan, substantially as set forth.

2. The combination, of a frame having rollers journaled therein, said rollers adapted for separating the ears of corn from their stalks, and for husking said ears of corn, the stalks passing between the rollers at one point, and the husks at another point, a fan casing secured to the frame beneath the rollers, said casing having an inlet and an outlet opening, a rotatable fan within the casing, a conduit, leading from the husking portion of the rollers to the inlet opening of the fan casing, a casing beneath that portion of the rollers between which the stalks pass, said casing provided with a discharge opening, mechanism within the casing for cutting the corn stalks, said cut stalks passing out of the discharge opening to the fan casing, and a conduit extending from the fan casing to the point of delivery, the husks and cut corn stalks adapted to be forced up the conduit by the air draft created by the fan, substantially as set forth.

546,391. WITHDRAWN.

546,392. COIN-CONTROLLED STRIKING AND TESTING MACHINE. GUSTAVUS TROXLER, Jr., Newark, N. J., assignor to the Champion Punching Machine Company, same place. Filed Jan. 22, 1895. Serial No. 535,768. (No model.)



Claim.—1. In a striking machine, in combination, an arm or rod pivotally arranged in a bearing on the casing of the machine, a punching bag or ball on said rod, and mechanism adapted to be operated by the movement of said arm or rod, to register the force of a blow, comprising therein, a ratchet wheel mounted on an axle, a rack and pinion, and a coin-operated saddle pivotally supported on said axle, and means connected with said pivoted arm or rod, co-operating with said saddle, to force the coin therefrom when the parts are operated, substantially as and for the purposes set forth.

2. In a striking machine, in combination, an arm or rod pivotally arranged in a bearing on the casing of the machine, and a punching bag or ball on said rod, a coin chute in said casing, comprising therein an opening in the top of the casing, a recessed coin holder movably arranged in said opening, a rod or axle in said casing, a coin-operated saddle mounted thereon, a ratchet wheel on said rod or axle, an index hand on one or both ends of said axle, and means, connected with said rod or arm having the ball thereon, co-operating with said saddle to still farther tilt the same, and for operating the registering mechanism in the casing, substantially as and for the purposes set forth.

3. In a striking machine, in combination, an arm or rod pivotally arranged in a bearing on the casing of the machine, and a punching bag or ball on said rod, a coin chute in said casing, comprising therein an opening in the top of the casing, a recessed coin holder movably arranged in said opening, a rod or axle in said casing, a coin-operated saddle mounted thereon, a ratchet wheel on said rod or axle, an in-

dex hand on one or both ends of said axle, and means, connected with said rod or arm having the ball thereon, consisting essentially, of a rack pivotally attached to said rod or arm, and a pinion on the axle in the casing of the machine, with which said rack is in operative engagement, and a stop on said rack normally in holding engagement with said saddle, but co-operating therewith to still farther tilt the same, when said saddle is partially raised by the weight of a coin, substantially as and for the purposes set forth.

4. In a striking machine, the combination, with the registering mechanism and a coin chute, of a saddle *g* adapted to be partially tilted by the weight of a coin, and a pivoted arm *l* having a stop thereon, said arm being adapted to be operated to still farther tilt said saddle, substantially as and for the purposes set forth.

5. In a striking machine, the combination, with the registering mechanism and a coin chute, of a saddle *g* adapted to be partially tilted by the weight of a coin, a weight, *s*, arranged to slide in guides *n'* in the casing of the machine, and an arm *l* having a stop thereon, said arm being adapted to be operated to still farther tilt said saddle, substantially as and for the purposes set forth.

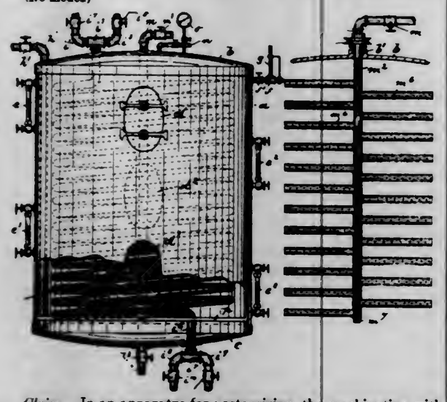
6. In a striking machine, in combination, with the registering mechanism, comprising therein, a rod or axle *c*, a ratchet wheel and pinion thereon, and an index hand on one or both ends of said rod *c*, a coin chute, a saddle *g* adapted to be partially tilted by the weight of a coin, and a pivoted arm *l* having a stop *l*⁵ thereon and a rack *l*⁶ engaging with said pinion on the rod *c*, and means for operating said arm *l* to still farther tilt said saddle and operate the registering mechanism, substantially as and for the purposes set forth.

7. In a striking machine, in combination, with the registering mechanism, and a coin chute, of a coin holder, *c*, adapted to slide up and down in said chute, and means on said coin holder adapted to lock with the registering mechanism, and means for operating the same, substantially as and for the purposes set forth.

8. In a striking machine, in combination, with the registering mechanism, and a coin chute, of a coin holder, *c*, adapted to slide up and down in said chute, consisting essentially, of a recessed plate c^3, and a lock-plate c^4 movably connected with said plate c^3, adapted to lock with the registering mechanism, and means for operating the same, substantially as and for the purposes set forth.

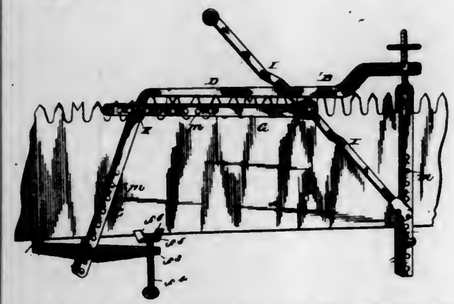
9. In a striking machine, in combination, with the registering mechanism, and a coin chute, of a coin holder, *c*, adapted to slide up and down in said chute, consisting essentially, of a recessed plate c^3, and a lock-plate c^4 movably connected with said plate c^3, adapted to lock with the registering mechanism, and means for operating the same, comprising therein, a pivoted arm *i* having a ball or punching bag thereon, an arm *l* pivotally connected with said arm or rod *i*, a rack l^6 on said arm *l*, a pinion in engagement with said rack, adapted to operate the registering mechanism, and a saddle *g* adapted to be partially tilted by the weight of a coin, and said arm *l* co-operating therewith to still farther tilt said saddle, substantially as and for the purposes set forth.

546,393. APPARATUS FOR PASTEURIZATION OF BEER. WILLIAM WIRTZ, Newark, N. J. Filed May 3, 1895. Serial No. 548,509. (No model.)



Claim.—In an apparatus for pasteurizing, the combination with the receptacle, of a pipe coil in said receptacle and penetrating the top and bottom thereof, a T-joint on the in and outlet of said coil, two valve controlled pipes branching off each T-joint, a supply pipe penetrating the top of the receptacle and extending downward to near the bottom thereof, an outlet arranged in the bottom, an air vent in the top, a bearing and bushing in the center of the top of the receptacle, a brace traversing the receptacle near its bottom and provided with a centrally arranged bearing, a perforated tube adapted to revolve in said bearings, a series of horizontally arranged blades on said tube, a series of manholes alternately arranged on the side of the receptacle, a series of valve controlled tubes, on the side of the receptacle arranged alternately and diametrically opposite each other and communicating with said receptacle, and a thermometer in each of said tubes all said parts, substantially as and for the purposes described.

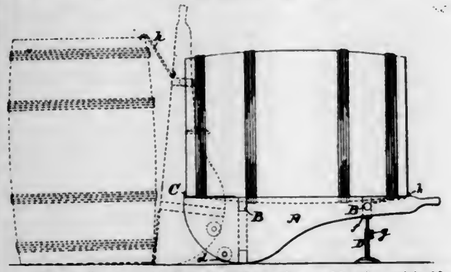
546,394. SAW-GUMMER. BENJAMIN C. BRADLEY and GEORGE EWING, Ripley, Tenn. Filed May 13, 1895. Serial No. 549,052. (No model.)



Claim.—1. In a saw-gummer the combination with the reamer suitably mounted in adjustable arms, of an adjustable frame, adapted to be secured to a saw the said frame consisting of a bifurcated clamp C, a bifurcated brace D, a bifurcated clamp E and a lever F, all substantially as and for the purpose set forth.

2. In a saw-gummer the combination with the reamer arms of the bifurcated brace D adapted to rest upon the said reamer arms, the said brace being held in position by the nut L substantially as and for the purpose set forth.

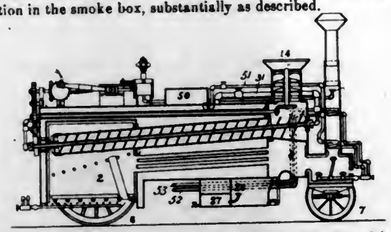
546,395. BARREL-SUPPORT. HAMILTON S. COVEY, Newark, N. J. Filed Nov. 6, 1894. Serial No. 528,012. (No model.)



Claim.—In a portable barrel platform, the combination, with side pieces, the rear end of each of which is formed into or provided with a quadrant, of cross-pieces for holding the side pieces parallel with each other, wheels journaled to the side pieces between the ends of the quadrants, whereby the wheels are out of contact with the floor except when the platform is standing at an angle between the horizontal and the vertical, an adjustable support pivotally secured to the cross-pieces at the front end of the platform and adapted to stand at right angles to the side pieces when the platform occupies a horizontal position and to swing into a position substantially parallel with the side pieces when the platform stands in a vertical position, the length of the support being such that when it stands in a vertical position to support the front end of the platform the wheels are out of contact with the floor and when the wheels are in contact with the floor the support is out of contact with the floor, a plate or bracket secured to the ends of the side pieces provided with the quadrants, and adapted to engage with the articles being supported, and a hook secured to the front cross piece and adapted to engage with the opposite end of the article being supported, substantially as set forth.

546,396. PORTABLE GARBAGE INCINERATOR OR DESTROYER. HENRY C. FELLENBAUM, Philadelphia, Pa. Filed Apr. 13, 1894. Serial No. 507,387. (No model.)

Claim.—1. An incinerator comprising, a boiler having a main combustion chamber and a smoke box, a desiccating chamber communicating with the main combustion chamber and having openings or perforations through which communication between it and the smoke box is provided for the passage of fumes and vapors, an inlet in the desiccating chamber for garbage, and means for effecting combustion in the smoke box, substantially as described.



2. An incinerator comprising, a boiler having an internal fire box and a smoke box, a desiccating chamber penetrating the water and steam space of the boiler and having perforations through which communication between it and the smoke box is provided, an inlet for garbage in the desiccating chamber, a conveyer for discharging garbage through openings in said chamber and into the fire box, a hollow shaft for said conveyer, and pipe connections and valves for supplying water to said shaft when fire is started in the fire box and for supplying steam to said shaft to dry garbage on its way to the fire box, substantially as described.

3. An incinerator comprising, a boiler having fire and smoke boxes, a desiccating chamber penetrating the boiler and extending into the fire box, a conveyer for conveying garbage through said chamber, a hopper for delivering garbage through the smoke box to the desiccating chamber, fixed and revolubleicutters in the throat of said hopper, a strainer underlying the hopper, fixed and revolable cutters mounted at the end of the desiccating chamber and in the fire box, burners at the base of the fire box and in the smoke box, and a prime mover and connections for driving the cutters and conveyer, substantially as described.

4. An incinerator comprising, a tubular boiler having fire and smoke boxes, a desiccating chamber and a conveyer penetrating the boiler and extending into the fire box, a hopper for delivering garbage through the smoke box to the desiccating chamber, a strainer underlying the hopper, a rose and connections for creating a forced draft through the smoke box, and burners for creating combustion in the smoke box whereby fumes, smoke and vapors are destroyed or deodorized before leaving the apparatus.

5. An incinerator comprising, an externally heated boiler having a fire box and a smoke box, a desiccating chamber and conveyer extending through the interior of the boiler and communicating with said fire and smoke boxes, and an inlet in the smoke box communicating with said conveyer and chamber, substantially as described.

6. An incinerator comprising, a boiler having fire and smoke boxes, a desiccating chamber and conveyer penetrating the boiler and extending into the fire box, a hollow shaft in said chamber, and means for supplying steam to said shaft, substantially as described.

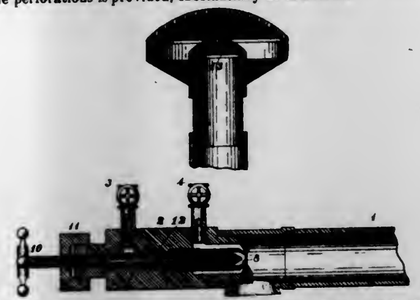
7. In combination, a fire box provided with a bridge wall and fire tubes and a grate, a perforated desiccating chamber extending into the fire box, a series of bars or water tubes intermediate of the grate and desiccating chamber, and burners disposed beneath the grate, substantially as described.

8. The combination in a garbage incinerator of, a desiccating chamber extending across the fire box and provided with openings or perforations at its curved walls and with openings formed between the arms of cutters at its end, a positively driven conveyer for forcing garbage in small pieces through said side and end openings of the desiccating chamber, and burners at the base of the fire box directing their flames up through the falling pieces of garbage, substantially as described.

9. An incinerator comprising, an internally fired tubular boiler having smoke and fire boxes at its respective ends, a desiccating chamber communicating with the smoke box and perforated and extended into the top of the fire box, a garbage inlet communicating with said chamber and with the smoke box, and means for effecting combustion in the smoke box whereby fumes are drawn therein from the inlet, conveyer and tubes of the boiler and deodorized in the smoke box, substantially as described.

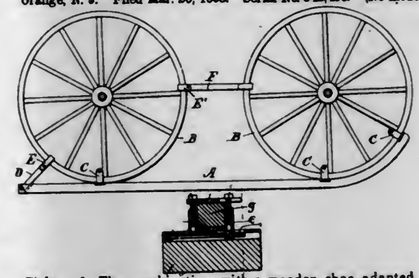
546,397. FLUID-FUEL ATOMIZING AND BURNING APPARATUS. HENRY C. FELLENBAUM, Philadelphia, Pa. Filed Aug. 27, 1894. Serial No. 521,392. (No model.)

Claim.—1. A burner comprising the combination of a supply pipe provided with an air inlet and an injector, a perforated dome shaped cap as 13, fitted to and over the end of said pipe, and an independent or second cap comprising two parts whereof one is attached to said pipe beneath the cap 13, and whereof the other is perforated and applied to the periphery of the first part and incloses the cap 13, whereby a clear space, as 16, to which access is afforded only through the perforations is provided, substantially as described.



2. In an injector the combination with a burner supply pipe having an air inlet 9, and a fixed nozzle between which and the casing is an oil passage and within which is a movable and central steam nozzle, of a centrally perforated diaphragm located between said nozzles and supply pipe and having the walls of its perforation beveled from its opposite sides whereby steam, oil and air are independently discharged through it and caused to mix in the supply pipe and beyond the diaphragm and near the air inlet, substantially as described and shown.

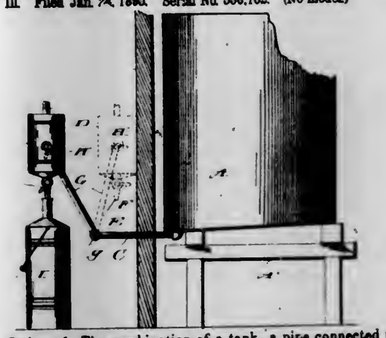
546,398. DETACHABLE SLEIGH-SHOE. HENRY H. HAHN, East Orange, N. J. Filed Mar. 20, 1895. Serial No. 542,450. (No model.)



Claim.—1. The combination, with a wooden shoe adapted for application to a wheel rim or sleigh runner, of the flat foot-plate *a* fitted to the top of said shoe and provided with the bracket *b*, and the cap *d* and cheek piece *c* with screws for pressing them respectively toward the foot plate and bracket.

2. The combination, with a sleigh runner, of a sleigh shoe of greater width than the runner and two or more clamps secured upon the upper side of the shoe by flat foot plate *a* provided with bracket *b*, cap *d*, and cheek piece *c*, the sleigh runner being inserted in the angle of the bracket and foot plate, and the latter being provided with screws for pressing the cap and cheek piece upon the top and side of the runner, substantially as herein set forth.

546,399. GRAVITY MEASURING-TANK. JAMES HALL, Chicago, Ill. Filed Jan. 24, 1895. Serial No. 536,102. (No model.)



Claim.—1. The combination of a tank, a pipe connected therewith and having a movable or knuckle joint and a measuring vessel

carried by said pipe and having a pivotal connection therewith, substantially as described.

2. The combination of a tank, a pipe connected therewith and extended through an opening in the wall, a pipe connected with the said pipe upon the side of the wall opposite the tank by a knuckle or movable joint, and the measuring vessel pivotally mounted on said pipe, substantially as described.

3. A measuring vessel provided at its top with a tube extended within said vessel and also extended above its top and a plurality of diaphragms within said tube above the top of the vessel and having openings whereby said tube and diaphragms serve the double function of a vent and an audible alarm, substantially as described.

4. The combination of a tank, a pipe connected therewith, a pivoted measuring vessel carried by said pipe with a movable or knuckle joint between the tank and vessel, a cock controlling the supply to said vessel, a discharge nozzle for said vessel, and a cock controlling the discharge therefrom, substantially as described.

546,400. ROTARY BOLT. LEVI HEITSLER, Mechanicsburg, Pa. Filed Feb. 14, 1895. Serial No. 538,446. (No model.)



Claim.—In a rotary bolt the combination with the ribs, of knockers provided with arms, pivoted on rods of the spider, bearing posts secured to the ribs and a rod mounted to partially rotate therein, curved extensions on the rod for embracing the knockers, a plate on the head of the reel having a slot in which the end of the rod is adjustable, as and for the purpose described.

546,401. ADHESIVE PASTE. CHARLES M. HIGGINS, Brooklyn, N. Y. Filed Feb. 20, 1894. Serial No. 500,577. (No specimens.)

Claim.—1. An adhesive paste formed of white dextrine and water substantially in the manner and proportions described and having the qualities set forth; to wit:—a pure white color, homogeneous texture, soft unctuous consistency, non-fluid at rest, and becoming fluent on agitation, substantially as herein set forth.

2. The herein described process of making an adhesive paste, viz., first making a thin liquid solution of white dextrine in warm water, then filling said solution into jars or packages, and then cooling and keeping said packages at rest for a prolonged period until the contents assume a white pasty form, substantially as herein set forth.

3. The mode herein described of making an adhesive paste, viz., first dissolving white dextrine in warm water, then chilling said solution and keeping it refrigerated at or below a temperature of 55° Fahrenheit for a prolonged period until set or matured into a white pasty form, substantially as herein set forth.

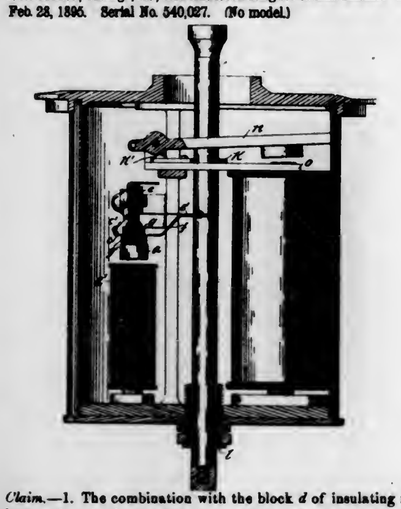
546,402. HAT-HOLDER. GEORGE J. JOHNSON, St. Paul, Minn. Filed Jan. 31, 1895. Serial No. 536,897. (No model.)



Claim.—1. In combination with and suitably secured to a hat, a hat-holding device consisting of a pair of levers hinged together near their middle, the pivot of said hinge or joint being of the safety-pin type and serving also as a pin for attaching the device to the hat, by being extended beyond the joint and inserted in the hat as shown, said levers extending through the top of the hat and having their upper ends spread apart, a spring interposed in the joint of the levers for holding their upper ends spread and the lower ends closed, the elongated plates or strips adjustably secured to said levers and having their lower long edges provided with curved teeth adapted to take hold of the hair, substantially as shown and described.

2. In combination with and secured to a hat, a hat-holding device consisting of two elongated plates or strips having their lower and longer edges provided with curved teeth for taking hold of the hair, a pair of spring closed levers having the said plates secured to their lower ends inside the hat, and their upper ends extending up through the top of the hat and serving as thumb-pieces for operating the device, said levers being pivoted together, the pivot serving also as the means for attaching the device to the top of the hat, substantially as set forth.

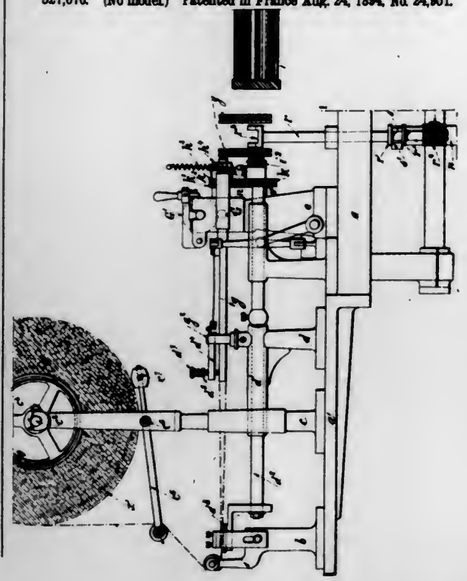
546,403. ARC-LAMP MECHANISM. KARL A. LANTAU and CARL J. ANDERSON, Chicago, Ill.; said Anderson assignor to said Lantau. Filed Feb. 28, 1895. Serial No. 540,027. (No model.)



Claim.—1. The combination with the block *d* of insulating material secured to the frame of the lamp, of the plate *d'* mounted upon the front of said block, the end of said plate serving as one terminal of the cut-out, the plate *e* mounted upon the rear of said block *d* and provided with a horizontal extension *e'*, bent plate *f* mounted by one end upon the end of extension *e'* and resting by its free end in contact with the end of plate *d'* to constitute the second terminal of the cut-out, and the armature *a* mounted upon the under side of plate *f* and insulated therefrom, substantially as described.

2. The combination with the upper frame plate *m* of the carbon rod *h* passing therethrough, the vertical frame piece or standard *o*, the top thereof terminating a short distance below said frame plate *m*, the bushing plate *k* mounted upon and secured to the top of said standard *o* and being provided with an opening through which the carbon rod *h* is adapted to pass, and a bushing ring k^2 formed in one piece and carrying a bore in which said carbon rod is adapted to accurately fit, said ring being removably secured in the opening provided in the bushing plate; substantially as and for the purpose set forth.

546,404. MACHINE FOR MAKING PAPER CIGARETTE-TUBES. CHARLES A. MARCHAL, Paris, France. Filed Oct. 26, 1894. Serial No. 527,076. (No model.) Patented in France Aug. 24, 1894, No. 24,961.

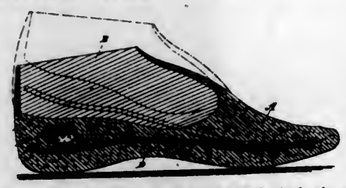


Claim.—1. In a machine for making cigarette tubes without adhesive material, mechanism for closing or twisting one end of the paper tube which consists of a socket surrounding the end of the tube spindle, a sleeve adapted to slide longitudinally on the said socket and to turn therewith, means for reciprocating the sleeve, two pieces pivoted to the said socket diametrically opposite to one another and vibrated by the said sleeve when the said sleeve is operated and two blades connected to the said pivoted pieces and adapted to slide radially to and from one another across the said socket in order to flatten and twist the end of the paper tube, substantially as set forth.

2. In a machine for making cigarette tubes without adhesive material, in which one end of the paper tube is closed by folding or twisting, the combination with tube transporting mechanism, of devices for turning the paper tube round, end for end, which consists of a rod one end of which is adapted to receive and hold the tube while the said rod and the paper tube supported thereby is raised and lowered, and is caused to make a half revolution, and means for raising and lowering and rotating the said rod, substantially as set forth.

3. In a cigarette tube making machine, the combination of a tube-forming spindle substantially as described, a rotary sleeve in operative relation thereto, blades carried by the sleeve, means for reciprocating the blades at an angle to the axis of the sleeve, and means for rotating the sleeve and blades.

546,405. ARTIFICIAL FOOT. GEORGE E. MARKS, New York, N. Y., and WILLIAM L. MARKS, Sound Beach, Conn. Filed June 12, 1895. Serial No. 552,550. (No model.)



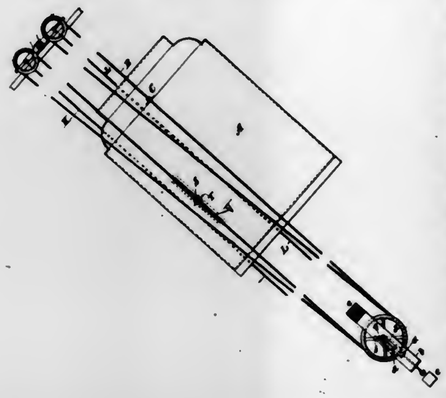
Claim.—1. The artificial foot consisting of the inelastic core, the sponge rubber portion in the outline of the foot and inclosing said core, and the continuous spring embedded in said rubber substantially midway between said core and the sole of the foot and extending lengthwise of the foot, said spring being unrestrained except by the rubber inclosing it; substantially as and for the purposes set forth.

2. An artificial foot of flexible material having embedded therein the continuous spring which extends lengthwise of the foot and is unattached, being held only by the flexible material itself; substantially as set forth.

3. An artificial foot having embedded within and extending lengthwise of its rubber lower portion the spring composed of the series of wires covered with canvas; substantially as set forth.

4. An artificial foot consisting of the inelastic core and the rubber or elastic portion in the outline of the foot and inclosing said core, the heel portion of said rubber having within it the air space or cell; substantially as set forth.

546,406. CONTROLLING DEVICE FOR ELEVATORS. JOHN MCADAMS, New York, N. Y. Filed June 26, 1895. Serial No. 554,069. (No model.)



Claim.—1. In controlling mechanism for elevators, the carriage, the pulleys at the top of the elevators shaft and the pulleys at the lower end of said shaft, combined with the cable passing over said pulleys in the manner described and having one of its sections positively secured to the carriage, the starting and stopping devices, and mechanism connected with said pulleys for operating said starting and stopping devices from the carriage by force applied to one part of the other section of the said cable; substantially as set forth.

2. In controlling mechanism for elevators, the carriage, the continuous cable B secured to the carriage, the pulley wheels at the upper portion of the elevator shaft over which pulleys the said cable passes, the bar connecting said pulleys, the rock shaft upon which the said bar is mounted, the rods suspended from said rock shaft, and starting and stopping devices connected with said rods, combined with the pulley wheels at the lower end of said shaft around which said cable passes; substantially as set forth.

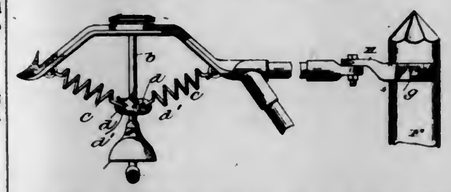
3. In controlling mechanism for elevators, the carriage, the continuous cable B connected with said carriage, the pulleys at the upper end of the elevator shaft and the pulleys at the lower end of the elevator shaft, around which pulleys the said cable passes, combined with the stopping and starting devices operable from said cable, the pulleys at the lower end of the shaft being suspended upon the cable to exert a tension thereupon; substantially as set forth.

4. In controlling mechanism for elevators, the carriage, the continuous cable B connected to said carriage, the pulleys at the upper end of the elevator shaft, the pulleys at the lower end of the elevator shaft, around which said pulleys the said cable passes, and a projection carried by said cable and entering the carriage, combined with the starting and stopping devices and means intermediate said pulleys and said devices to operate the latter from said cable; substantially as set forth.

5. In controlling mechanism for elevators, the carriage, the continuous cable B connected to the said carriage, the pulleys at the upper end of the elevator shaft, the pulleys at the lower end of the elevator shaft, over which pulleys the said cable passes as set forth, combined with the weighted frame connected with the pulleys at the lower end of the shaft, pawl and ratchet mechanism for locking said frame and pulleys against upward movement, starting and stopping devices and means intermediate said devices and said pulleys to operate said devices from the said cable; substantially as set forth.

6. In controlling mechanism for elevators, the carriage, the continuous cable connected to the carriage, the pairs of pulleys at the upper and lower ends of the elevator shaft over which pulleys the said cable passes as set forth, the handle upon said cable passing into the carriage, and means for guiding said handle, combined with starting and stopping devices and means intermediate the pulleys and said devices to operate the latter from the said cable; substantially as set forth.

546,407. TROLLEY-WIRE BRACKET. LEROY S. PROUTY, Canton, Ohio. Filed Oct. 20, 1894. Serial No. 526,453. (No model.)



Claim.—1. The combination of an arched arm, having attached to the side portions thereof the springs C, and their inner ends connected to a trolley wire clamp, substantially as and for the purpose specified.

2. The combination of the arched arm A, provided with the elongated opening *a*, the bar *b*, carrying a trolley wire clamp, and provided at its top or upper end with the head *c*, and the springs C, substantially as and for the purpose specified.

3. The combination of a trolley wire arm, having pivotally attached to one end thereof the arms H, and a pole located between said pivoted arms, substantially as and for the purpose specified.

4. The combination of an arched arm supported at right angles to the trolley wire by an arm secured to a pole, and springs attached to said arched arm, and a trolley wire clamp located below the arched arm, substantially as and for the purpose specified.

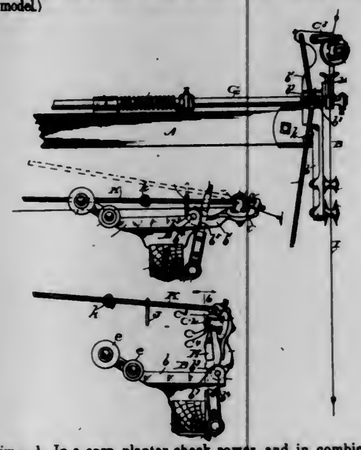
546,408. ATTACHMENT FOR STRINGED INSTRUMENTS. JOHN C. ST. JOHN, Boston, Mass., assignor to the Flagg Manufacturing Company, Portland, Me. Filed Jan. 14, 1895. Serial No. 534,753. (No model.)

Claim.—1. The attachment for stringed instruments above described consisting of a bridge with a plurality of rows of keys, each key consisting of a hammer extending below the bridge, and a finger piece projecting above the bridge, and each provided with a spring by which it is held normally above and clear of its string in a position to strike a blow on its string when moved on its axis through the finger piece against the force of its spring and then released, rebounding by the force of its spring when it strikes its blow, all substantially as described.



2. The key *b*, composed of a hammer and finger piece, notched as shown, in combination with the spring strip *b'*, substantially as set forth.

546,409. CORN-PLANTER CHECK-ROWER. JOHN C. TUNNICLIFF, Galesburg, assignor to the H. H. Perkins Manufacturing Company, Kewanee, Ill. Filed Jan. 6, 1893. Renewed Mar. 7, 1895. Serial No. 540,863. (No model.)



Claim.—1. In a corn planter check rower, and in combination substantially as hereinbefore described, with a check rower line, forked lever and means for transmitting motion therefrom to the seed measuring and dropping mechanism of a corn planter, a check rower head with a forward end or part hinged to its rear fixed part, to swing upwardly in a vertical plane, to discharge the check rower line from a pulley mounted on its forward end.

2. In a corn planter check rower, the combination substantially as hereinbefore described, with a check rower line, forked lever, and means for transmitting motion therefrom to the seed measuring and dropping mechanism of a corn planter, of a check rower head with a forward end or part hinged to its rear fixed part to swing upwardly in a vertical plane, and provided with a pulley having an annular flange at its end next thereto.

3. In a corn planter check rower, the combination substantially as hereinbefore described, with a check rower line, forked lever, and means for transmitting motion therefrom to the seed measuring and dropping mechanism of a corn planter, of a check rower head with a forward end or part hinged to its rear fixed part to swing upwardly in a vertical plane, and provided with a pulley having an annular flange at its end next thereto, and a guard finger constructed substantially as described.

4. In a corn planter check rower, the combination substantially as hereinbefore described with a check rower line, forked lever, means for transmitting motion therefrom to the seed measuring and dropping mechanism of a corn planter, and a check rower head with a forward end or part hinged to its rear fixed part to swing upwardly in a vertical plane, and provided with a guide pulley, of a locking pin removably seated in an aperture in the hinge between said fixed part and swinging part.

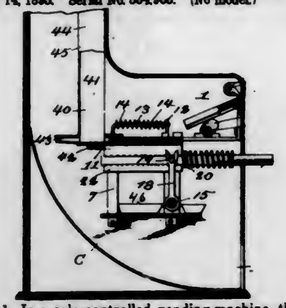
5. In a corn planter check rower, the combination substantially as hereinbefore described with a check rower line, forked lever, means for transmitting motion therefrom to the seed measuring and dropping mechanism of a corn planter, and a check rower head with a forward end or part hinged to its rear fixed part to swing upwardly in a vertical plane and provided with a guide pulley near its free end, of a locking pin removably seated in an aperture in the hinge between said fixed part and swinging part of the head, and a cord or line fixed at one end to the free end of the vertically swinging part of the head, and near thereto to the locking pin.

6. In a corn planter check rower, the combination substantially as hereinbefore described with a check rower line, forked lever means for transmitting motion therefrom to the seed measuring and dropping mechanism of a corn planter, and a check rower head with a forward end or part hinged to its rear fixed part to swing upwardly in a vertical plane, and provided with a guide pulley C having an annular flange, *c'*, and a guard finger c^3, of a locking pin J and a cord K, fixed to the swinging part of the head and to the locking pin substantially as described.

7. In a corn planter check rower, and in combination substantially as described, with a check rower head in two parts *b* and *b'*, a locking pin removably seated by insertion in an aperture formed by the confronting grooves *j* in the parts of the hinge.

8. In a corn planter check rower, and in combination substantially as described, with a check rower head in two parts, a fixed part *b* and a swinging part *b'* hinged thereto, the contacting shoulders b^5 and vertical faces b^6 to limit the downward swing thereof and hold the swinging part in a horizontal position, and the shoulder b^7 adapted to strike the part *b* and limit the upward movement thereof.

546,410. COIN-CONTROLLED VENDING-MACHINE. WILLIAM WYAND, Atlantic City, N. J., assignor to Maurice F. Rich, same place. Filed Jan. 14, 1895. Serial No. 534,903. (No model.)



Claim.—1. In a coin-controlled vending-machine, the combination, with the coin-chute thereof, of a rockable finger having a bifurcated or slotted end adapted to receive and support a coin dropped from said chute, a horizontally-reciprocating ejector, and means for operating said finger, whereby the coin is caused to operate said ejector to deliver an article from the article-holding receptacle.

2. In a coin-controlled vending-machine, the combination of a coin-chute, having an opening at its bottom, a hinged plate at the bottom of said chute, and carrying a magnet on its upper face, to arrest iron or steel substitutes for coin, and means for releasing the arrested coins, substantially as specified.

3. In a coin-controlled vending-machine, the combination, of a coin-chute, having an opening at its bottom, inwardly projecting flanges at each side of the opening forming guide ways for the coin, a hinged plate carrying a magnet to arrest substitutes for coin, means for holding the plate in normal position and for dropping it to release the coin, substantially as specified.

4. In a coin-controlled vending-machine, the combination of a coin-chute, an ejector-slide, the intermediate finger located upon a rock-shaft and adapted to hold the coin against the forward edge of the slide, and the push-rod and lever connecting the same with the rock-shaft whereby an inserted coin can be caused to operate the slide to discharge the confection and deposit the coin in a proper receptacle, substantially as specified.

5. In a coin-controlled vending-machine, the combination with the coin-chute thereof, a spring-actuated ejector-slide, a rockable coin-receiving and supporting finger and mechanism for operating the same, of a rockable finger situated at the rear of the coin-slot, and mechanism whereby said finger is thrown across said slot when the operating-mechanism is out of normal position.

6. In a coin-controlled vending-machine, the combination, with the coin chute and a spring-actuated ejector-slide, of a rock-shaft 15 carrying a coin-supporting finger, a rock-shaft 32 situated in the rear of the coin-slot and carrying a segmental gear meshing with a gear-wheel, a finger 33 secured upon said rock-shaft 32 and mechanism connected with rock-shaft, 15, whereby the finger 33 is moved in and out of the coin-slot.

7. In a coin-controlled vending-machine, the combination, of a coin-chute provided with guide-ways for the coin and having a hinged bottom carrying a magnet to arrest fraudulent coins, a rock-shaft carrying a cam adapted to hold said hinged bottom in normal position, and means for rocking said cam to drop the hinged bottom and release the fraudulent coin.

8. In a coin-controlled vending-machine, the combination, with the coin-chute, the spring-actuated ejector-slide, and a rockable coin-supporting-finger, of a removable article-holding case having a discharge chute provided with a spring bottom to hold the article to be ejected by frictional contact, and mechanism for operating the coin-supporting finger to force the coin against the ejector-slide and thereby eject said article, substantially as specified.

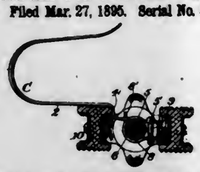
9. In a coin-controlled vending-machine, the combination, with the coin-chute and spring-actuated ejector-slide, of a rock-shaft carrying a coin-supporting finger and a bifurcated arm, and a spring-actuated push-rod adapted to operate said arm to rock said shaft.

546,411. LAMP-CHIMNEY HOLDER. AMBROSE J. BECK, Renovo, Pa. Filed July 1, 1895. Serial No. 554,595. (No model.)



Claim.—A lamp chimney holder constructed of wire and consisting of a shank having at its lower or inner end laterally extending arms and at its upper or outer end a spur and a curved spring clamp terminating in a thumb-piece, substantially as and for the purpose set forth.

546,412. TOE-CLIP FOR BICYCLES. ABNER A. BEVIN, East Hampton, Conn. Filed Mar. 27, 1895. Serial No. 543,346. (No model.)



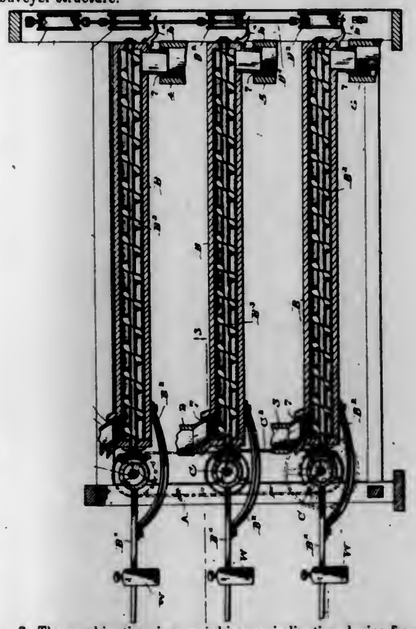
Claim.—1. A two-part toe-clip consisting of a member having a toe-engaging portion and a rearwardly-extending clip portion having an elongated slot, and of a separable and removable supplemental clip-member having a T-shaped holding head and extending transversely through the elongated slot of the other member; and said supplemental clip-member having also one of its ends non-contiguous to said rearwardly-extending clip portion; and a clamping device for connecting the rearwardly-extending clip portion with the non-contiguous end of the supplemental clip-member, whereby said toe-clip is adapted to positively engage a crank-pin or carrier of a bicycle-pedal, substantially as described.

2. A two-part clip consisting of a member having a toe-engaging portion and a rearwardly-extending downwardly-bent right-angled clip portion adapted to depend below a pedal-bar and firmly engage the rear face of the pedal-bar and the pedal-pin or carrier; and of a separable and removable supplemental clip-member, one of said members having an elongated slot through which the other member is adapted to be passed, and said supplemental clip-member having one of its ends non-contiguous to said rearwardly-extending clip portion; and a clamping device for connecting the rearwardly-extending clip portion with the non-contiguous end of the supplemental clip-member, whereby said toe-clip is adapted to positively engage a crank-pin or carrier of a bicycle pedal, substantially as described.

546,413. PROPORTIONAL INDICATOR FOR MILL PRODUCTS. ALLEN C. BRAITINGHAM, Toledo, Ohio, assignor to the Nordyke & Marmon Company, Indianapolis, Ind. Filed Nov. 2, 1894. Serial No. 527,758. (No model.)

Claim.—1. The combination, in an indicator for mill products, of a balanced conveyer structure, an ingress spout leading thereto, an egress pipe leading therefrom, and a weight-indicating device connected thereto and arranged as described whereby the weight of the material passing through the conveyer at any given time will be indicated by said weight-indicating device.

2. The combination, in an indicator for mill products, of several balanced conveyer structures, each adapted to receive one grade of said products, a single balancing or weighing device carrying a frame-work suspended thereto, an independent balancing or weighing device for each conveyer structure carried by said frame-work, and a point of engagement between each conveyer sections and the corresponding balancing or weighing devices, whereby the total mill product passing may be indicated, and also the proportion thereof passing through each conveyer structure.



3. The combination, in a weighing or indicating device for mill products, of several conveyer structures each connected with a spout leading from one division of the grading or separating apparatus and receiving the discharge therefrom, and an independent weighing or balancing device connected with each of said conveyer structures, whereby the amount or proportion passing through each conveyer structure may be independently observed at all times, substantially as set forth.

546,414. PRINTING-PRESS. JOHN BROOKS, Plainfield, N. J., assignor, by mesne assignments, to the Potter Printing Press Company, same place. Filed Oct. 3, 1889. Serial No. 325,893. (No model.)

Claim.—1. In a printing machine, the combination of an impression cylinder, a co-acting form bed, a paper feeding cylinder having grippers for seizing the paper and delivering it direct to the impression cylinder and intermittent driving connections connecting said paper feeding cylinder with the impression cylinder, substantially as described.

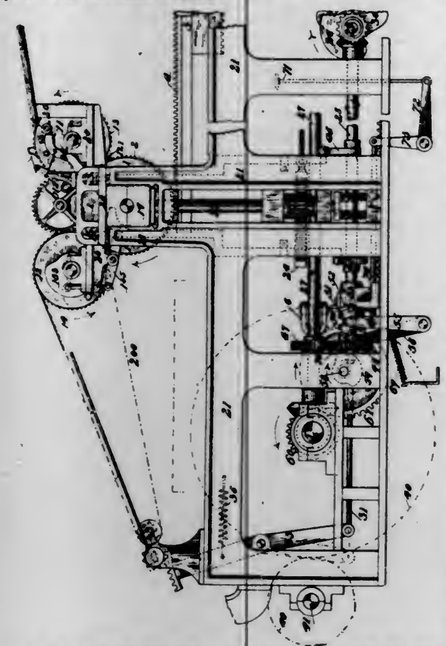
2. The combination in a printing machine of a form bed reciprocating in its plane of impression, an oscillating impression cylinder, a paper feeding cylinder auxiliary to the impression cylinder, a paper delivering cylinder auxiliary to the impression cylinder operative in conjunction therewith and with the paper feeding cylinder and a stop motion mechanism for the feeding and delivering cylinders in the manner described.

3. The combination in a printing machine, of an oscillating impression cylinder and spur gear thereon, an auxiliary paper feeding cylinder, a mutilated tight gear section and a loose ratchet and companion gear section upon the shaft of the feeding cylinder, said gear sections engaging with the said spur gear, and a pawl upon the feed cylinder opposite the periphery of the said ratchet operative in the manner described.

4. The combination in a printing machine, of an oscillating impression cylinder and spur gear thereon, an auxiliary paper feeding cylinder having a tight mutilated gear section and a loose companion gear section engaging with the spur gear, an auxiliary paper delivering cylinder, a spur gear thereon, a transmitting gear, and a tight gear section of said feeding cylinder driving said transmitting gear.

5. The combination in a stop cylinder mechanism for a printing press of a driving spur gear (or equivalent) a mutilated tight gear section and a loose ratchet and companion gear section on the stop cylinder shaft, which gear sections engage with said spur gear, a pawl upon the cylinder opposite the periphery of the said ratchet, a pawl operating cam head independently movable, a circular cam disk fixed to the stop cylinder shaft bearing a projection, a spring retained roller opposite the periphery of the cam disk, a locking pawl pivoted to the

frame of the machine, and a locking pawl tooth attached to said disk or other part rigid with the stop cylinder, said parts all being co-operative in the manner set forth.



6. In a printing machine, the combination of a form bed, an oscillating impression cylinder, an auxiliary feed cylinder, a stop motion mechanism substantially as described for the feed cylinder, a pawl and pawl operating cam head controlling the stop motion, a shaft and cam thereon for operating said cam head, a clutch substantially as described, a shaft receiving motion from the driving shaft of the form bed and a cam thereon for operating the clutch to control the stop motion at intervals in definite relation to the movements of the form bed and impression cylinder.

7. In a printing machine the combination with a form bed reciprocative in its plane of impression on a stationary frame, and an impression cylinder and auxiliary paper feeding and delivering cylinders journaled in conjunction therewith upon a frame movable perpendicularly to the said plane of impression.

8. The herein described organization of a printing press, consisting in the combination of a form bed, an oscillating impression cylinder having permanent driven connection therewith, auxiliary paper feeding and delivering cylinders to which the stop motion mechanism is applied, a movable cylinder journal frame and a lifting mechanism therefor, a pawl and pawl operating cam head controlling the stop motion, a shaft and cams thereon for lifting the journal frame, and for operating the pawl cam head, a clutch having a single stop point, and a clutch operating cam geared in definite relation to the movement of the form bed and impression cylinder.

9. The combination in a printing press, of an oscillating impression cylinder having permanent driven connection with the form bed an auxiliary paper feeding cylinder adjacent the impression cylinder and to which the stop motion is applied, grippers on said cylinders for seizing the paper, fixed cams for operating the gripper rollers of the respective cylinders to transfer the head of the sheet from one to the other of said cylinders, a cam head intercepting the path of the gripper roller of the feed cylinder as it approaches the stop point but independently movable to close the grippers of the feed cylinder simultaneously with the starting of the same, and a shaft and cam thereon for operating the said gripper cam head.

10. The combination in a printing press, of an oscillating impression cylinder having permanent driven connection with the form bed, an auxiliary paper feeding cylinder adjacent the impression cylinder and to which the stop motion is applied, grippers on said cylinders for seizing the paper, fixed cams or other mechanism for operating the gripper rollers of the respective cylinders to transfer the head of the sheet from one to the other of said cylinders, a cam head intercepting the path of the gripper roller of the feed cylinder as it approaches the stop point but independently movable to close the grippers of the feed cylinder simultaneously with the starting of the same, a shaft and cam thereon for operating the said gripper cam head, a clutch connected to said shaft having a single stop point, and a clutch operating cam geared in definite relation to the movement of the form bed and impression cylinder.

11. The combination in a printing press, of an oscillating impression cylinder having permanent driven connection with the form bed, auxiliary paper feeding and delivering cylinders to which the stop motion mechanism is applied, grippers on said cylinders for seizing the paper, fixed cams for operating the gripper rollers of the feed and impression cylinders to transfer the head of the sheet from the one to the other thereof, a cam head intercepting the path of the gripper roller of the feed cylinder as it approaches the stop point but independently movable to close the grippers of the feed cylinder simultaneously with the starting of the same, a cam head independently movable to intercept or to clear the path of the gripper roller of the impresson cylinder as the grippers thereon approach the point adjacent the delivering cylinder, a gripper operating cam rotative on the shaft of the delivering cylinder to vary the time of action of the grippers thereon and connected with the impression cylinder cam head to co-operate such action therewith in the manner specified, a shaft and cams thereon for operating the said cam heads, a clutch connected to the cam shaft having a single stop point, and a clutch operating cam geared in definite relation to the movement of the form bed and impression cylinder.

12. The combination with the feed table and feed cylinder, of the pivoted registering gage, the cam head for closing the feed cylinder grippers, and a connecting rod between the cam head and the pivoted registering gage (or a rock arm thereof) for the purposes set forth.

13. The combination in a printing machine, with a stop cylinder, and stop motion mechanism substantially as described, of a pawl operating cam head therefor, and a gripper operating cam head combined in one, and a shaft and cam thereon for operating the combined cam heads at definite intervals with relation to a driving shaft of the machine.

14. The combination with the stop cylinder, the pawl thereon and the loose ratchet disk of the stop motion mechanism, of the rock shaft 97, on the cylinder, the pawl operating arm 98, and spring sustained tail piece 102, thereof fixed to the rock shaft, and the independently movable cam head 100, and cam arm 99, also fixed to said rock shaft.

15. The combination in a printing machine of an impression cylinder oscillating continuously, and an auxiliary paper carrying cylinder moving intermittently in conjunction with and transferring the sheet directly to the impression cylinder for the purposes described.

16. The combination in a printing machine of an impression cylinder oscillating continuously, and an auxiliary paper feeding cylinder, and an auxiliary paper delivering cylinder, both moving intermittently in conjunction with and transferring and receiving the sheet directly to and from the impression cylinder.

17. The combination in a printing machine of an impression cylinder and its gear, a form bed, a paper feeding cylinder having a loose gear in mesh with the impression cylinder gear and means for connecting the loose gear to the feeding cylinder whereby the two cylinders revolve together, substantially as described.

18. The combination in a printing machine, of a form bed, a driver, an impression cylinder and its gear in constant mesh with its driver, a paper feeding cylinder having a loose gear in mesh with the impression cylinder gear and means for connecting the loose gear to the feeding cylinder whereby the two cylinders revolve together, substantially as described.

19. The combination in a printing machine, of an impression cylinder with grippers and its gear, a form bed, a paper feeding cylinder with grippers having a loose gear in mesh with the impression cylinder gear, means for rendering the feeding cylinder grippers inoperative, and a connecting device connecting the loose gear to the feeding cylinder whereby the two cylinders revolve together, substantially as described.

20. The combination in a printing machine, of an impression cylinder and its gear, a form bed, a paper feeding cylinder having a loose gear in mesh with the impression cylinder gear, means for connecting the loose gear to the feeding cylinder, and raising and lowering mechanism for the impression cylinder, substantially as described.

21. The combination in a printing machine, of an impression cylinder and its gear, a form bed, a paper feeding cylinder having a loose gear in mesh with the impression cylinder gear, means for connecting the loose gear with the feeding cylinder, and a delivery cylinder cooperating with the impression cylinder, substantially as described.

22. The combination in a printing machine, of an impression cylinder and its gear, a form bed, a paper feeding cylinder having a loose gear in mesh with the impression cylinder gear, means for connecting the loose gear with the feeding cylinder, a delivery cylinder cooperating with the impression cylinder and gear between said delivery cylinder and said feeding cylinder, substantially as described.

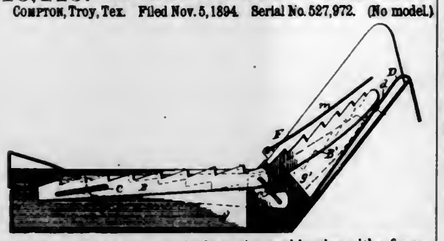
23. The combination in a printing machine, of an impression cylinder with grippers, a form bed, a paper feeding cylinder having grippers for seizing the paper and delivering it to the grippers of the impression cylinder, and a stop mechanism for the feeding cylinder, substantially as described.

24. The combination in a printing machine, of an impression cylinder, a form bed, a paper feeding cylinder, a delivery cylinder driven from the feeding cylinder, and a stop mechanism for the feeding cylinder, substantially as described.

25. The combination in a printing machine, of a cylinder having periods of rest, a disk having a stop cam carried with the cylinder, and a yielding roller bearing constantly upon said disk to cooperate with the cam to overcome the momentum of the cylinder, substantially as described.

26. The combination in a printing machine, of a cylinder having periods of rest, a stop cam carried with the cylinder, a yielding roller cooperating with the stop cam, an abutment also carried with the cylinder, and a movable stop coacting with said abutment to hold the cylinder against rearward movement, substantially as described.

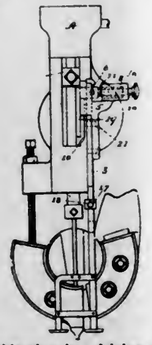
546,415. HARVESTER-PLATFORM AND CARRIER. SILAS T. COMPTON, Troy, Tex. Filed Nov. 5, 1894. Serial No. 527,972. (No model.)



Claim.—1. In a harvester platform, the combination with a frame of a carrier formed of two series of toothed bars, a crank-shaft with which both series of bars are connected, the bars of one series being slotted and loosely connected with a fixed cross-rod so as to allow their longitudinal movements, a slotted, inclined plate, with which bars of the other series are loosely connected, and a cross-bar, pivotally mounted and having a series of rods extending therefrom, in position to rest on the grain when the latter is being elevated, substantially as and for the purposes described.

2. The combination, with a harvester platform, a portion of which is inclined and slotted as shown, of a grain carrier provided with two series of toothed bars, B, B', the bars, B, being provided with inclined slots *c*, and bars B', being loosely connected at their upper ends with the inclined, slotted portion of said platform, a fixed, cross-rod extending through the inclined slots c, in bars B, and a rotative shaft provided with cranks, one bar, B, and a bar, B', being connected with each of said cranks, substantially as described and shown.

546,416. SAFETY ATTACHMENT FOR DRIVING-MACHINES. CHARLES A. COPELAND, Peabody, Mass. Filed Feb. 20, 1895. Serial No. 539,160. (No model.)



Claim.—1. The combination, in a driving machine, of a nipple and fastening-driving mechanism with a safety-device at the nipple and means for arresting the stroke of the driver by pressure on a safety-device, substantially as and for the purpose set forth.

2. The combination, in a driving machine, of a nipple and fastening-driving mechanism with a safety-device at the nipple and means for connecting the safety-device and driving mechanism to prevent the stroke of the driver, by pressure on the safety-device, substantially as and for the purpose set forth.

3. The combination, in a driving machine, of a nipple and fastening driving mechanism, with a safety-device at the nipple, and means for coupling the safety-device with the fastening driving mechanism by pressure on the safety-device, substantially as and for the purpose set forth.

4. The combination, in a driving machine, of a nipple, and fastening-driving mechanism, with a safety-device mounted on a sliding bar; a sliding-bar, a spring-controlled plunger to engage the sliding-bar and a projection from the driving mechanism, substantially as and for the purpose set forth.

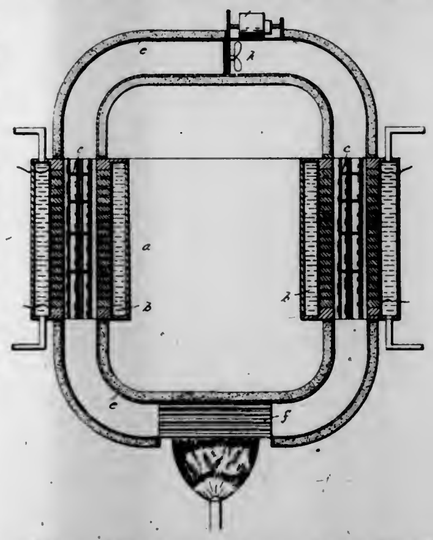
5. The combination, in a driving machine, of a nipple and fastening-driving-mechanism, with a safety-device at the nipple, and means for automatically preventing the driving of a fastening when pressure is applied to the safety-device, substantially as and for the purpose set forth.

6. The combination, in a driving machine, of a nipple and fastening-driving-mechanism, with a safety-device mounted on a slide-bar; an automatically acting plunger to engage the slide-bar and driving mechanism and prevent the operation of the driving mechanism, substantially as and for the purpose set forth.

7. The combination, in a driving machine, of a nipple and fastening driving-mechanism with a safety-device; a slide-bar carrying the safety-device; an automatically acting plunger having a projection and a projection from the driver-bar, the slide-bar having a lip and a recess, all substantially as and for the purpose set forth.

8. The combination, in a driving machine, of fastening-driving mechanism and a nipple with a plurality of safety-devices at the nipple, and means for preventing the driving of a fastening when pressure is applied to either safety-device, substantially as and for the purpose set forth.

546,417. THERMO-ELECTRIC GENERATOR. HARRY R. COX, Hartford, Conn. Filed Oct. 4, 1894. Serial No. 524,856. (No model.)



Claim.—1. A thermo electric generator having its surface to be heated comprised within and forming a part of an insulated fluid circuit or conduit, means to heat the fluid in said conduit, and a propeller in said conduit for circulating the fluid therein, substantially as described.

2. A thermo electric generator, a continuous fluid conduit including the generator, a heater included in said conduit, and a propeller in said conduit provided with exterior driving means, substantially as set forth.

3. A thermo electric generator, in combination with a continuous closed insulated fluid conduit including the generator and a heater which form a part of the conduit, substantially as set forth.

4. One or more thermo electric generators, in combination with insulated pipes connecting the interiors thereof so as to form a continuous closed air conduit, a heater or heaters for the conduit through which the air passes, and an air circulating device, substantially as described.

5. In a thermo electric generator, a continuous closed conduit of which a surface of the generator forms a part, and a propeller in said conduit, substantially as described.

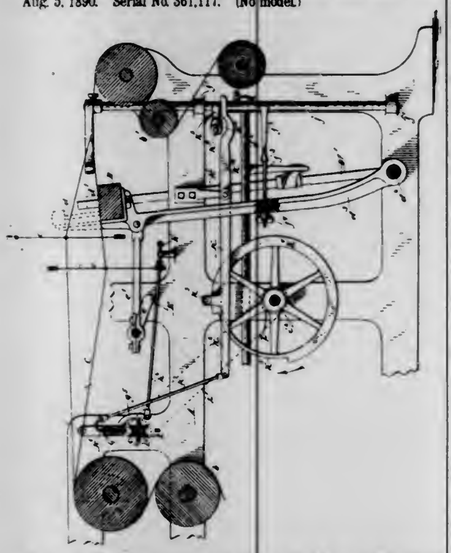
6. A hollow thermo electric generator, a heater, a continuous insulated closed conduit of which said heater and the hollow interior of the generator form a part, substantially as described.

7. In a thermo electric generator, a continuous closed conduit of which a surface of the generator forms a part, a rotary propelling fan in the conduit, and a motor therefor at the exterior of the conduit, substantially as set forth.

8. In a thermo electric generator, a continuous closed conduit of which a surface of the generator forms a part and including a series of tubes provided with a heater, and propelling means in the conduit, substantially as set forth.

9. A pair of thermo electric generators having open centers, the top tube connecting the interiors of said generators and provided with fluid propelling means, and the bottom tube connecting the lower ends of said generators and provided with an air heating device, substantially as set forth.

546,418. STOP-MOTION FOR LOOMS. WILLIAM H. CRAIG, Syracuse, N. Y., assignor to the E. C. Stearns & Company, same place. Filed Aug. 5, 1890. Serial No. 361,117. (No model.)



Claim.—1. The combination with the pendant frame, of pendants provided with shanks which slide in the frame, hooks which engage over the warp threads and projecting weights or wings, substantially as set forth.

2. The combination with the rock shaft provided with a feeling finger bearing against the weft thread and with a trip arm, of a trip lever engaging against said trip arm, a wheel provided with a notch which permits the trip lever to drop when the weft thread is broken, a clutch, and mechanism interposed between the trip lever and the clutch whereby the operation of the latter is controlled, substantially as set forth.

3. The combination with the main frame of a loom, of a rock shaft provided with a feeling finger bearing against the weft thread and with a trip arm, a clutch, mechanism connecting said trip arm with the clutch, a lay moving toward and from said rock shaft and a sliding connection between the lay and said rock shaft, whereby the movement of the lay toward said rock shaft presses the weft thread against the feeling finger and swings the latter in one direction, while the return movement of the lay swings the feeling finger in an opposite direction by means of the sliding connection, substantially as set forth.

4. The combination with the main frame of a loom, of a rock shaft provided with a feeling finger bearing against the weft thread and with a trip arm, a lay moving toward and from said rock shaft, a sliding connection between the lay and said rock shaft, a trip lever engaging against said trip arm, a wheel provided with a notch which permits the trip lever to drop when the weft thread is broken, a clutch, and mechanism interposed between the trip lever and the clutch whereby the operation of the latter is controlled, substantially as set forth.

5. The combination with the main frame of a loom, of a rock shaft provided with a feeling finger bearing against the weft thread and with a trip arm, a lay moving toward and from said rock shaft, a sliding connection between the lay and said rock shaft, a trip lever engaging against said trip arm, a wheel provided with a notch which permits the trip lever to drop when the weft thread is broken, a clutch, a movable pendant frame connected with the clutch, a pendant arranged in said frame and connected with the trip lever, and a rotating star wheel adapted to engage against a dropped pendant and thereby move the pendant frame and the clutch, substantially as set forth.

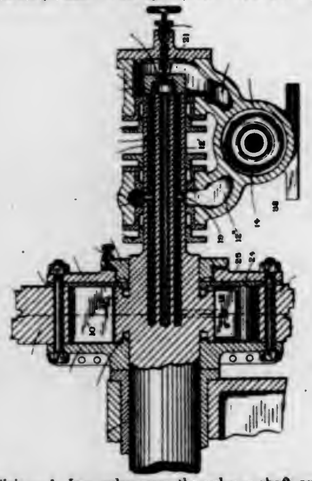
6. The combination with the clutch, of a movable pendant frame connected therewith, a pendant arranged in said frame, a star wheel adapted to engage with a dropped pendant and thereby move the pendant frame and the clutch, a feeling finger bearing against the weft thread, and intermediate mechanism substantially as described, whereby the failure to move the feeling finger occasioned by the breaking of the weft thread causes the pendant to drop, substantially as set forth.

7. The combination with the clutch, of a movable pendant frame connected therewith, a pendant arranged in said frame, a star wheel adapted to engage with a dropped pendant and thereby move the pendant frame and the clutch, a trip lever connected with the pendant, a wheel provided with a notch which permits the trip lever to drop when the weft thread is broken, and a feeling finger bearing against the weft thread and connected with a trip arm whereby the trip lever is controlled, substantially as set forth.

8. The combination with the clutch, of a movable pendant frame connected therewith, a weft pendant connected with said frame, a feeling finger bearing against the weft thread, mechanism substantially as described whereby the feeling finger is connected with said weft pendant, a warp pendant arranged in said pendant frame and supported on the warp thread, and a star wheel arranged underneath said pendant frame and adapted to engage with either of said pendants when dropped, substantially as set forth.

9. The combination with the clutch, of a movable pendant frame connected therewith, a weft pendant arranged in said frame, a trip lever connected with said weft pendant, a wheel provided with a notch which permits the trip lever to drop when the weft thread is broken, a feeling finger bearing against the weft thread and connected with a trip arm whereby the trip lever is controlled, a warp pendant, and a star wheel arranged underneath said pendant frame and adapted to engage with either of said pendants when dropped, substantially as set forth.

546,419. VALVE-GEAR FOR ENGINES. JOHN DEAN, Shannon Harbour, Ireland. Filed Apr. 27, 1895. Serial No. 547,368. (No model.)



Claim.—1. In a valve gear, the valve, a shaft and a connection between the shaft and valve comprising a block mounted on the shaft arranged to be adjusted circumferentially about the shaft and carrying an eccentric or eccentrics, the block and the shaft being provided with abutments to permit a limited relative angular movement between the block and the shaft, and means for operating the block by fluid pressure.

2. In a valve gear, the valve or valves, a shaft and a connection between the shaft and valve comprising a block mounted on the shaft arranged to be adjusted circumferentially about the shaft and carrying an eccentric or eccentrics, the block and shaft being provided with abutments to permit a limited relative angular movement between the block and shaft, and means for operating the block including the cylinder and piston with operating means therefor and the ports leading therefrom to the block through the shaft and the abutments thereof, substantially as described.

3. In combination in a valve gear, a valve or valves, a shaft and a connection between the shaft and valve comprising a block mounted on the shaft to be adjusted circumferentially about the same and carrying eccentrics, said block and shaft having abutments, the passage 11′ through the shaft having ports 11 leading to the recesses between the abutments and the passages 12′, 12′, leading to the opposite recesses, means for forcing the fluid through the passages and the non-return valve controlling the passage 11′ with means for operating the said valve, substantially as described.

4. In combination in a valve gear, the valve or valves, the shaft and the connection between the same and the shaft comprising the block carrying an eccentric or eccentrics and arranged to be adjusted about the shaft circumferentially and held by fluid pressure and an independently operated non return valve for maintaining the block in intermediate position.

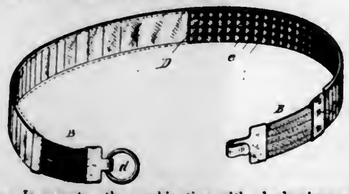
5. In combination in a valve gear, the valve or valves, a crank shaft, a block mounted thereon and capable of limited angular movement relative thereto, a secondary shaft, carrying the eccentrics to operate the valves, and driven by means of cranks at right angles, by eccentrics mounted on the block; and means for operating the block by fluid pressure.

6. In combination, a valve gear, the valve or valves, the shaft, the block thereon carrying an eccentric or eccentrics, means for adjusting the position of the block in its angular relation to the shaft by fluid pressure and the packing joint between the block and crank shaft comprising the flexible side piece 24 and the central part 23′ of the side piece 23, the said flexible piece 24 being held at its outer edge to the block together with the said piece 23 and the central portion 23′ being screwed into the side piece 23 and forcing the inner edge of the flexible piece against the crank shaft substantially as described.

7. In combination in a valve gear, the shaft, the valve, the connections between the shaft and valve comprising the block on the shaft having abutments to contact with abutments on the shaft and means for supplying fluid pressure between the abutments consisting of the hydraulic cylinder and piston, the wing casings extending from the cylinder and having channels through the same, the bearings at the upper ends of the wing casings, the said shaft having an extension journaled in said bearings and having ports extending through the same and communicating with the passages in the wing casing and a non return valve with a controlling device therefor adapted to regulate the fluid pressure between the abutments, substantially as described.

8. In combination, the valve, the crank shaft having laterally extending abutments, the block having inwardly extending abutments between the shaft abutments and fitted to the shaft forming radial recesses about the shaft, fluid pressure means and the conduits therefrom to the recesses between the abutments, substantially as described.

546,420. GARTER. BERNHARD DREYFUS, New York, N. Y. Filed May 12, 1894. Serial No. 511,061. (No model.)



Claim.—In a garter, the combination, with a body piece, of elastic end pieces and fastening devices attached thereto, and a soft rubber lining on said body piece, which lining is provided on its exposed surface, throughout, with small protuberances, substantially as herein set forth.

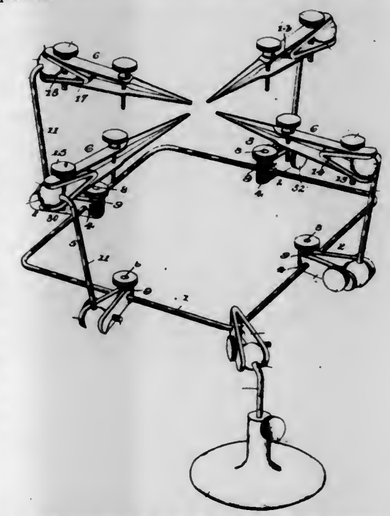
546,421. SOLDERING-CLAMP. FRED W. DUKE, Fort Dodge, Iowa. Filed Oct. 10, 1894. Serial No. 525,497. (No model.)

Claim.—1. In a device of the class described, the combination with a frame, of a plurality of articulated arms having clips adjustably mounted upon the frame, terminal clamps for the engagement of work, and intermediate members connecting said clips and clamps, the articulations between the intermediate members, and the clip and clamp of each arm consisting of universal joints, substantially as specified.

2. In a device of the class described, the combination with a frame, of a plurality of articulated arms comprising clips adjustably mounted upon the frame, clamps for the engagement of work, and intermediate members provided with angular bends or elbows, the articulations between the parts of the arms consisting of universal joints, substantially as specified.

3. In a device of the class described, the combination with a frame, of a plurality of articulated arms comprising clips adjustably mounted upon the frame, terminal clamps for the engagement of work and intermediate members provided with angular bends or elbows, said intermediate members being provided with terminal enlarged balls, and the clips and clamps being provided with sockets for the reception of said terminal balls and means for adjusting the sockets to secure the parts in the desired relative positions, substantially as specified.

4. In a device of the class described, the combination with a frame, of a plurality of articulated arms supported by the frame and each having a terminal clamp and an intermediate member arranged between the clamp and the frame, a universal joint being arranged at the inner and outer end of the intermediate arm, substantially as specified.



5. The combination with an endless frame surrounding an open space, articulated arms having terminal clamps, and means for securing the inner ends of said arms adjustably to the frame, of a base, and a universal joint between the base and the frame, substantially as specified.

6. The combination with a frame, of articulated arms having intermediate members adjustably mounted upon the frame and provided with outer terminal balls, and clamps having divergent arms provided with shallow sockets for the reception of said outer terminal balls and fitted with set-screws for adjusting the deflection of said arms, the sockets receiving the balls at the extremities of their diameters, only, substantially as specified.

7. The combination with a frame, of a series of articulated arms having outer terminal clamps, inner V-shaped clips, and intermediate members provided at their inner ends with balls fitting in sockets in the inner surface of the arms of the clips, said clips being provided adjacent to their apices with registering perforations for the reception of a rod or wire forming the frame, means for adjusting the arms of the clips to take up lost motion between the sockets and balls, and means for locking the clips at the desired adjustment on the frame, substantially as specified.

8. The combination with a frame, of articulated arms having terminal clamps, and inner V-shaped clips provided in their arms with registering perforations for the reception of the rod or wire forming the frame, and means for locking the clips on the frame, such means consisting of wedge-blocks inserted between the rod or wire and the apex of the clip and provided with a threaded stem, and a thumb-nut threaded upon said stem and seated upon the edge of the clip, substantially as specified.

9. The combination with a frame, of a series of articulated arms carried thereby, each arm comprising a clip slidably and rotatably mounted upon the frame, means for securing the clip at the desired adjustment, an intermediate arm universally jointed to the clip and having an outer terminal ball, means for locking the joint between the clip and the intermediate member to hold the latter in the desired relative position, a clamp having adjustable jaws, and provided at its rear end with adjustable arms having terminal sockets for the reception of the ball at the outer end of the intermediate arm, and a thumb

screw for adjusting the arms of the clamp to cause the desired frictional contact between the sockets and the balls, substantially as specified.

10. The combination with a frame, of a series of articulated arms carried thereby, each arm comprising a terminal clamp, an intermediate arm universally jointed at one end to the clamp and provided at the opposite end with a ball, means for locking the joint between the clamp and the intermediate arm to hold said parts in the desired relative position, a V-shaped clip provided in the inner surfaces of its arms near their outer extremities with sockets or depressions for the reception of the said ball, on the intermediate arm and provided near the meeting point of its arms with registering perforations for the reception of a rod or wire forming a part of the frame, a thumb-screw connecting the arms to the clip contiguous to the sockets at the outer ends thereof, and means arranged near the apex of the clip for securing the latter at the desired adjustment upon the frame, substantially as specified.

11. In a device of the class described, an articulated arm having a clip comprising flat, twin, opposite relatively adjustable arms provided with shallow seats or depressions, means for adjusting the arms of the clip, and a member provided with a ball mounted in said seats or depressions, the seats or depressions covering less than one-half the area of the ball, substantially as specified.

12. In a device of the class described, the combination with a frame, and articulated arms carried thereby and provided with clamps of a support and a universally jointed connection between the frame and the support, said connection having a clip provided with opposite seats or depressions, and a rod having a ball mounted in said seats or depressions, the rod being provided adjacent to the ball with a bend or elbow, substantially as specified.

13. In a device of the class described, the combination with a frame, and articulated arms carried thereby and provided with clamps, of a support and a universally jointed connection between the frame and the support, said connection having a clip comprising spaced arms provided with opposite seats or depressions, means for adjusting the arms of the clip, and a rod having a ball fitted in said seats or depressions, the interval between the arms of the clip being sufficient to allow the portion of the rod contiguous to the ball to pass therebetween, substantially as specified.

546,422. GARMENT-STRETCHER. GEORGE H. GREGORY, Somerville, Mass. Filed Dec. 13, 1893. Serial No. 493,588. (No model.)



Claim.—A trousers stretcher composed of spring wire bent into a general oblong form, the ends of the wire being adjustably secured together at one end of the oblong, and the other end being bent inwardly from the corners so as to form a re-entrant angle, whereby its sides under compression can be made to converge, one of said corners being provided with a hook, and the other corner being bent convexly inward for engagement with the hook, when said sides have been compressed together, substantially as described.

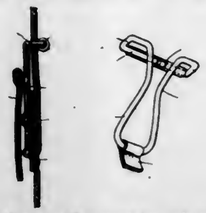
546,423. SASH-FASTENER. SIGEL HADNEL, Quincy, Ill. Filed Dec. 13, 1894. Serial No. 531,630. (No model.)



Claim.—1. In a sash lock, the combination with the housing, of the hook pivoted therein gradually increasing in thickness toward its base, and having a cam shaped inner face, corrugated outer face and inclined upper surface, the spring pressed corrugated locking cam pivotally mounted in the casing and cooperating with the corrugated face of the hook, independent handles for said cam and hook, and a cooperating member having an undercut cam like projection thereon, with which the hook engages, substantially as and for the purpose set forth.

2. In a sash lock, the combination with the base plate, the independent covering plate having the downwardly extending sides fitting into grooves in the base plate, a cam hook pivoted in the housing formed by the base and covering plates, a pivot passing through the base and covering plates and through the hook for uniting said parts and a cooperating member having a hook-like projection with which the pivot hook engages; substantially as described.

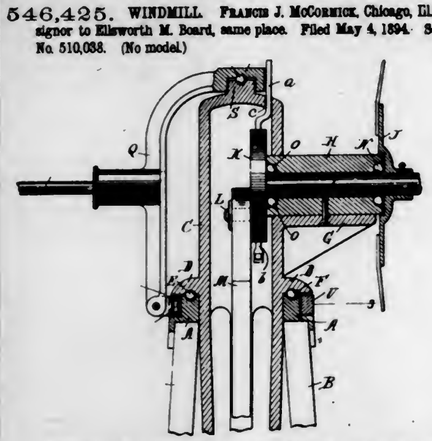
546,424. FASTENER FOR SUSPENDER-ENDS. HENRY A. HAYDEN, Jersey City, N. J. Filed Feb. 27, 1895. Serial No. 539,864. (No model.)



Claim.—1. A fastening for suspender ends made from metal and comprising a button stirrup adapted to lie in the rear of the suspender, bends *e*, *e*, which pass around the edges of the suspender, a cross-bar formed by terminals of the ends *e*, *e*, which extends across the front of the suspender, said bar and bends forming a keeper through which the suspender is adapted to slide or play, and a tab *c*, at the lower end of the button loop for the attachment of the fastener to the suspender.

2. As an improved article of manufacture, a fastening device for a suspender-end comprising the bar *a*, with a break, a covering sleeve *d* thereon, an elongated loop or stirrup *b*, bends *e*, *e*, connecting the upper ends of the side-wires of the loop *b* with the respective ends of the bar *a*, and a tab *c*, substantially as set forth.

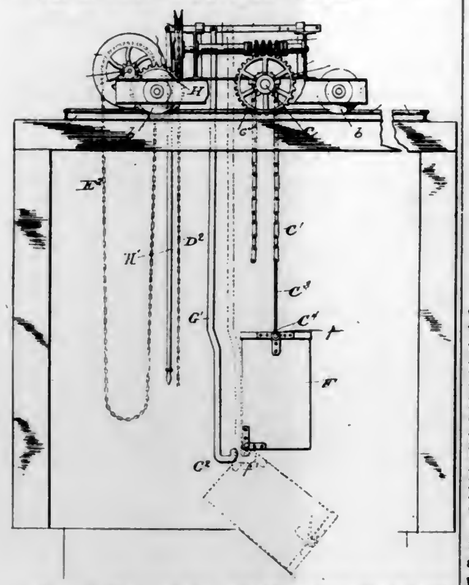
546,425. WINDMILL. FRANCIS J. MCCORMICK, Chicago, Ill., assignor to Ellsworth M. Board, same place. Filed May 4, 1894. Serial No. 510,038. (No model.)



Claim.—1. In a wind mill, the combination with a stationary mast having a recessed upper surface and laterally projecting flange below said surface, of a swivel mast mounted thereon having an annular flange and anti-friction balls arranged between the flange and upper surface of the stationary mast, a movable ring resting upon said laterally projecting flange of the stationary mast and below the annular flange on the swivel mast, said ring being provided with a recess in the inner face thereof, the vane-yoke pivotally connected at its lower end to said ring and terminating at its upper end with a recessed cap adapted to fit over a boss upon the top of the swivel mast, and the anti-friction rollers carried by the recess in the movable ring and adapted to bear only upon the top portion of the stationary mast, substantially as shown and described.

2. In a wind mill, the combination with the stationary and swivel masts, said swivel mast having a boss on its top and a slot near said boss, of the movable ring arranged between said masts, the vane casting pivotally connected at its lower end to said ring and journaled at its upper end upon the boss on the swivel mast, the upper end of said casting carrying a lug, the wheel shaft journaled in the swivel mast, and carrying a crank disk, and a spring friction bar attached to the interior of the swivel mast, its free end projecting through the slot in the top of the said mast and in the path of the lug carried by the vane casting, substantially as shown and described.

546,426. TRAVELING CRANE. JAMES MCCOY, Baltimore, Md. Filed Mar. 18, 1895. Serial No. 542,220. (No model.)



Claim.—1. The combination, with lifting devices provided with means for engaging a receptacle to be lifted, above its center of gravity, of a tilting support provided with means for engaging said receptacle below its center of gravity and supporting the same, whereby said receptacle will be tilted by lowering it into engagement with the tilting support, substantially as described.

2. The combination with lifting devices provided with means for engaging a receptacle to be lifted, above its center of gravity, of a tilting support provided with means for engaging said receptacle below its center of gravity and supporting the same, and means for moving said tilting support into and out of position to be engaged by said receptacle, substantially as described.

3. In a traveling crane, the combination, with multiple lifting devices each provided with means for engaging a receptacle above its center of gravity, of a tilting support for each as said lifting devices, each provided with means for engaging said receptacle below its center of gravity and means for moving said supports simultaneously into and out of position to be engaged by said receptacles, substantially as described.

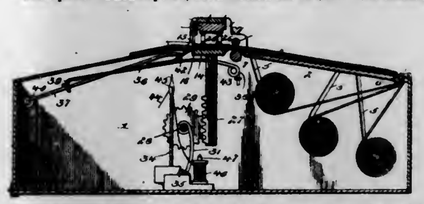
4. In a traveling crane, the combination, with lifting devices, of a receptacle having devices above its center of gravity adapted to be engaged by said lifting devices, a tilting support movable toward and from the lifting devices, and devices connected with said receptacle below its center of gravity adapted to engage said tilting support, substantially as described.

5. In a traveling crane, the combination with the multiple lifting devices, of a series of receptacles each having devices above its center of gravity for engaging the lifting devices and a dumping projection below its center of gravity, a series of slidable bars, tilting supports carried by said bars and having devices for engaging the dumping projections on said receptacles, and a shifting device for moving all of said bars and tilting supports into and out of position to be engaged by said dumping devices, substantially as described.

6. In a traveling crane, the combination with the multiple lifting devices, of a series of receptacles each provided with parts above its center of gravity for engaging said lifting devices, and dumping projections below its center of gravity and located at one side of the same, a series of tilting supports having portions for engaging said dumping projections and means for moving said supports into and out of position to be engaged by said dumping projections, substantially as described.

7. In a traveling crane, the combination with the lifting shaft, of multiple lifting devices operatively connected therewith and provided with bails, a series of receptacles each provided with projections above its center of gravity to be engaged by said bails and with dumping projections below its center of gravity, a series of slidable bars, tilting supports depending from said bars, and having hook shaped portions for engaging said dumping projections and means for simultaneously moving said bars and supports into and out of operative position with respect to said lifting devices and receptacles, substantially as described.

546,427. AUTOGRAPHIC REGISTER. GEORGE A NORCROSS, San Antonio, Tex., assignor of two-thirds to G. R. Sullivan and J. O. Sullivan, same place. Filed Sept. 26, 1894. Serial No. 524,177. (No model.)



Claim.—1. In an autograph register, the combination with a casing having a writing plate, a plurality of paper feed rolls mounted therein, a common direction or guide roller arranged at one end of the writing plate, and means for feeding and cutting the strips supplied by said feed rolls, of a carbon or duplicating paper supply roll arranged parallel with and contiguous to one side edge of the writing plate and adapted to contain a single continuous strip of carbon or duplicating paper, and holding devices arranged contiguous to the opposite side edges of the writing plate and disconnected throughout their length from the writing plate, whereby the carbon or duplicating paper may be extended around the same to provide for carrying said paper across the plate and doubling it upon itself to form a plurality of layers, substantially as specified.

2. In an autograph register, the combination with a casing having a writing plate and a plurality of paper feed rolls mounted therein, a direction or guide roller being arranged at one end of the writing plate, of a carbon paper supply roll arranged parallel with and adjacent to one side of the writing plate and adapted to contain a single continuous sheet of carbon or duplicating paper, holding bars pivotally connected at one end to the casing approximately in the plane of the writing plate and adapted to normally rest upon said plate parallel with and contiguous to its side edges, the carbon or duplicating paper from said supply roll being adapted to be extended transversely across the writing plate, carried around the opposite holding bar and returned to the side adjacent to the supply roll with its extremity secured by means of the holding bar adjacent to the supply roll, and feeding devices for operating the strips of paper supplied by the feed rolls, substantially as specified.

3. The combination with a casing having a writing-plate, paper supply-rolls, means for guiding the strips from said rolls, and carbon or duplicating paper holding devices for maintaining carbon or duplicating paper in operative relation with the strips as they traverse the writing-plate, of feeding devices, a platform or platen arranged adjacent to the feeding devices, printing mechanism having a type-carrying follower arranged to approach and recede from the plane of the platform or platen, means for operating said follower, and a cutting device operatively connected with the follower, substantially as specified.

4. The combination with a casing having a writing plate, paper supply-rolls, guiding and feeding devices for the strips, and means for holding carbon or duplicating paper in operative relation with the portions of the strips which are upon the writing-plate, of a platform or platen, a type-carrying follower arranged to approach and recede from the plane of the platform or platen, means for operating said follower, and a cutting device comprising a stationary blade arranged adjacent to one edge of the platform or platen, and a movable blade arranged in operative relation with the stationary blade and connected with the follower, substantially as specified.

5. The combination with a casing having a writing plate, paper-supply rolls arranged in the casing, means for guiding and feeding the strips from the paper rolls, and holding devices to maintain carbon or duplicating paper in operative relation with said strips upon the writing plate, of a platform or platen, a reciprocal type-carrying follower mounted for movement perpendicular to the plane of the platform or platen, means for operating said follower, a stationary cutting blade fixed to one edge of the platform or platen, movable cutting blades pivotally connected at their outer extremities to the platform or platen contiguous to the stationary blade, and links connecting the free ends of said movable blades with the follower, substantially as specified.

6. The combination with a casing having a writing plate, paper supply-rolls arranged in the casing, paper guiding and feeding devices, and means for holding carbon or duplicating paper in operative relation with the strips on the writing-plate, of a platform or platen, a type-carrying follower arranged to approach and recede from the plane of the platform or platen, means for operating said

follower, inking mechanism having a ribbon arranged in contact with the type on the follower, and opposite ribbon rolls or spools mounted in and carried by the follower and holding said ribbon in its operative postion, and cutting devices operatively connected with the follower, substantially as specified.

7. The combination with a casing having a writing-plate, paper supply-rolls, guiding and feeding devices for the paper strips, and means for holding carbon or duplicating paper in operative relation with the strips upon the writing-plate, of a platform or platen, a follower arranged to approach and recede from the platform or platen, means for operating the follower, a type-block fitted in a seat or recess in the face of the follower, journal-blocks removably fitted in cavities at opposite ends of the type-blocks, ribbon-rolls or spools mounted in said journal-blocks, a ribbon attached at its ends to said ribbon-rolls or spools and extending across the face of the type-block, and cutting devices operatively connected with the follower, substantially as specified.

8. The combination with a casing, paper supply-rolls, and feeding and guiding devices for the paper-strips, of printing mechanism, means for operating the printing mechanism, cutting devices operatively connected with the printing mechanism, and permanent filing means arranged within the casing and having a filing-pin, and movable filing springs connected with the printing mechanism and arranged to engage checks or severed portions of the paper strips with the filing-pin, substantially as specified.

9. The combination with a casing, paper supply-rolls, paper guiding and feeding devices, cutting devices, and means for operating the same, of filing mechanism having a filing-pin, filing-springs arranged in operative relation with the filing-pin and adapted to engage checks or severed portions of the paper strips as they leave the cutting devices, and connections between the filing mechanism and the cutting devices, substantially as specified.

10. The combination with a casing, paper-supply rolls, guiding and feeding devices for the paper, cutting devices, and means for operating the same, of filing mechanism having a pivotal filing-pin, an actuating spring connected to said filing-pin for maintaining the latter in its operative position, filing springs arranged to engage the checks or severed portions of the paper strips as they leave the cutting devices, and operating connections between the filing-springs and the cutting devices, substantially as specified.

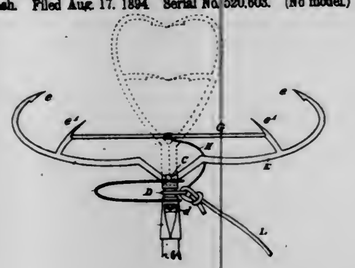
11. The combination with a casing, paper supply-rolls, guiding and feeding devices for the paper strips, rack-bars, and means for reciprocating the same, and cutting devices operatively connected with the rack-bars, of filing mechanism having a filing-pin, and filing springs connected together for simultaneous movement, the arms of one of said springs extending through slotted or elongated openings in the rack-bars, substantially as specified.

12. The combination with a casing, paper-supply rolls, guiding and feeding devices for the paper strips, rack-bars, and means for reciprocating the same, said rack bars being provided with slotted or elongated openings, and cutting devices operatively connected with the rack-bars, of filing mechanism having a filing-pin and oppositely disposed looped filing springs 36 and 37, the former of which is provided with eyes engaging the sides of the latter and the latter of which is provided with a reduced tongue or loop to engage the checks or portion of the paper strips and depress them upon the filing-pin, said spring 36 having its arms extended through the said openings in the rack-bars, substantially as specified.

13. In an autograph register, the combination with a writing plate, supply-rolls and duplicating devices of paper feeding devices, printing mechanism having a follower, cutting mechanism for severing the paper strips, filing mechanism having a movable part, and connections between the movable part of the filing mechanism and the follower of the printing mechanism, the feeding devices being independent of the printing and filing mechanisms to provide for forming checks of varying lengths substantially as specified

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546,428. FISH OR SEAL SPEAR. HOMER F. NORTON, Seattle, Wash. Filed Aug. 17, 1894. Serial No. 520,603. (No model.)



Claim.—In a seal spear the combination with the socket piece for the insertion of a pole, two oppositely curved arms pivoted thereto and having retaining spurs or sharp points projecting from their inner edges and a notch upon each for the trigger, of a trigger consisting of a straight bar adapted to engage by its ends the notches on each arm to hold them spread and to be displaced therefrom to release the arms by contact with the seal, a closing spring surrounding the socket piece and the pivoted ends of the arms, and a flexible connection from the trigger to the body of the spear to prevent their separation, substantially as shown and described.

546,429. CYLINDRICAL TRUNK. NATHANIEL S. O'NEALL, Cumberland, Md. Filed Jan. 7, 1895. Serial No. 534,068. (No model.)



Claim.—1. A cylindrical trunk constructed with a casing 1, a bottom 4, a pair of curved sliding legs 8, the diametrically arranged pull-bar 10, and means for operating the pull-bar for projecting and retracting the legs; substantially as described.

2. A cylindrical trunk comprising a casing 1, a bottom 4, a pair of curved sliding legs 8, the pull-bar 10, the pivoted links 11, connecting the legs with the pull-bar, a spring for holding the latter in normal position, a draw-bar 16, secured to the outer end of the pull-bar, and means for holding the pull-bar against the action of the spring; substantially as described.

3. The combination of the cylindrical casing 1, a bottom 4, a pair of sliding legs 8, the pull-bar 10, the pivoted links 11, the spring connected with the pull-bar, the angle plates 17 secured to the inside of the casing at diametrically opposite points, and the semi-circular false bottom 18 having distance cleats 19 and providing a floor to protect the legs, links, and the spring, together with the inner end of the pull bar; substantially as described.

4. The combination of the cylindrical casing 1, a bottom 4, the angle plates 17 secured to the inside of the casing at diametrically opposite points, the semi-circular false bottom 19, the series of semi-circular independently removable trays 20, 21, 22, located on and over the false bottom and fitting between the angle plates and the casing, and the head having a diametrically arranged strip 33, semi-circular lids 35 and suitable locking devices; substantially as described.

5. The combination of the cylindrical casing 1, a bottom 4, the right angle plates 17 secured by one of their sides to the inside of the casing, at diametrically opposite points, the obtuse angle plates 23 secured by one of their sides to the inside of the casing at points at right angles to the right angle plates, the removable closely fitting frame consisting of the diametrically arranged division board 24 and the division boards 25 transverse thereto, forming segmental compartments 26, and the head having a diametrically arranged strip 33, semi-circular lids 35 and suitable locking devices; the frame being secured between the obtuse angle plates on the one side and the right angle plates on the other side, substantially as described.

6. The combination of the cylindrical casing 1, a bottom 4, the removable frame occupying one-half of the casing and consisting of the diametrically arranged division board 24, the transverse division boards 25, forming the segmental compartments 26 having lids 27, and the series of shelves 30 between the transverse division boards, the series of drawers 31; the upper drawer having a segmental top 31^b fitting the casing, and the head having a diametrically arranged strip 33, semi-circular lids 35, and suitable locking devices; substantially as described.

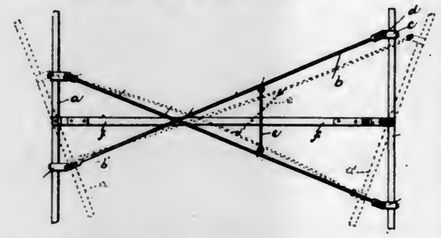
7. The combination of the cylindrical casing 1, a bottom 4, the right angle plates 17, the obtuse angle plates 23, the removable semi-circular false bottom 19, the independently removable semi-circular trays 20, 21, 22 located on and over the false bottom, the removable frame occupying one-half of the casing consisting of the division board 24, the division boards 25, transverse thereto, forming segmental compartments 26, and the series of shelves 30; substantially as described.

8. The combination of the cylindrical-casing 1, a bottom 4, the removable head comprising the diametrically arranged strip 33 having suitable locking devices at its ends and forming a central piece, and the semi-circular lids 35 hinged to the strip, and having suitable locking devices, and the semi-circular frame and the independently removable semi-circular trays, on which the head rests; substantially as described.

9. The combination of the cylindrical casing 1, a bottom 4, the removable head comprising the diametrically arranged strip 33, having the spurs 38 projecting from one end thereof and engaging orifices in the casing and the sliding bolt 40 located at the other end of the strip, and engaging an orifice in the casing, and the semi-circular lids 35 hinged to the strip and having suitable locking devices, and the semi-circular frame and independently removable semi-circular trays on which the head rests; substantially as described.

10. The combination of the cylindrical casing 1, a bottom 4, and the removable head comprising the diametrically arranged strip 33, having suitable locking devices, and the semi-circular lids 35, hinged to the strip and each having locking devices comprising wheels 43 located at the inner edge of the lid, having a hub 43^a provided with a key-hole 43^b sliding spring bolts 45 engaging orifices in the casing and the curved flexible rods 49 lapping around and connecting the wheel with the bolts; substantially as described.

546,430. VEHICLE-GEAR. NORMAN A. PALMER, Clarksburg, Ohio. Filed Feb. 8, 1895. Serial No. 537,694. (No model.)



Claim.—1. In a vehicle gear the combination with the axles, the axle eyes, the crossed draft rods and pins jointedly and adjustably connecting said eyes and rods, of a tension rod between said crossed draft rods, substantially as specified.

2. In a vehicle gear the combination with the axles, and the axle eyes, of crossed draft rods jointedly connected with said axle eyes, said draft rods being normally curved and bowed laterally substantially as specified.

3. In a vehicle gear the combination with the axles and the axle eyes, of the normally curved crossed draft rods jointedly and adjustably connected with said axle eyes and a tension rod between said draft rods, substantially as specified.

546,431. BUTTON. IRVING G. PLATT, Waterbury, Conn. Filed Mar. 25, 1895. Serial No. 543,099. (No model.)



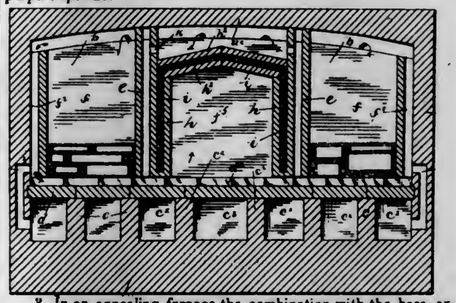
Claim.—1. A button or stud consisting of a die or anchor, having an enlarged closed head and a contracted neck, and a foot or shank, the upper end of which fits around said neck and in which shank said neck is locked, substantially as described.

2. A button or stud consisting of a die or anchor, having an enlarged closed head, and a split neck, and a bell shaped foot or shank fitting around said neck below the head, and in which shank said neck is fitted, the lower end of the latter being spread or flared outwardly against the sides of said foot, substantially as described.

546,432. ANNEALING-FURNACE. CHARLES H. PRUST and JAMES WATKINS, Columbus, Ohio. Filed Feb. 27, 1895. Serial No. 539,852. (No model.)

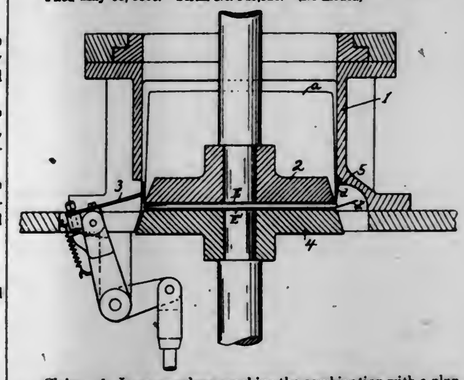
Claim.—1. In an annealing furnace the combination with the base, external walls and cover, a fire space extending across one end of said furnace and a bridge wall in front of said fire space, of communicating heat circulating flues arranged in the furnace base, two or more compartments formed within said furnace, the upper portions of said compartments communicating with the fire box over the bridge wall, the lower portions of said compartments communicating with each other and a communication between said compartments and the circulating flues, substantially as and for the purpose specified.

2. In an annealing furnace the combination with the base, external walls and cover, a fire space and a bridge wall in front of said fire space, of transverse channels or ways d^3 arranged as described on the floor of the furnace and compartments within said furnace supported above said channels and communicating therewith, said compartments being separated by hollow walls and communicating with the fire space in their upper portions and with each other through said fire channels in their lower portions, substantially as and for the purpose specified



3. In an annealing furnace the combination with the base, external walls, a cover and fire space, a bridge wall in front of the same and heat flues arranged in said base, of ways or channels d^3 formed above said base heat flues, compartments arranged above said channels and at right angles therewith as described, one of said compartments having hollow side walls and internal side and end lining walls inclosing a packing and a communication between said fire space and compartments and between said compartments and base flues, substantially as and for the purpose specified.

546,433. ENVELOPE-MACHINE. EMANUEL RAU, Brooklyn, N. Y. Filed May 16, 1895. Serial No. 549,525. (No model.)



Claim.—1. In an envelope-machine the combination with a plunger, of flap-folders for folding the envelope-flaps which are sealed down, and a folding-box which is cut away on the side next to the open flap, to form an edge, substantially as described.

2. In an envelope-machine the combination with a plunger, of flap-folders for folding the envelope-flaps which are sealed down, and a folding-box which is cut away on the side next to the open flap to form an edge beneath which the unsealed flap can open and having a recess above the edge, substantially as described.

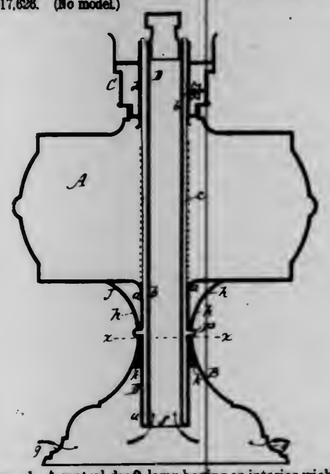
546,434. PROCESS OF SEPARATING WOOL FROM SILK. ALFRED L. RICE and GEORGE M. RICE, 2d, Worcester, Mass. Filed Sept. 21, 1894. Serial No. 523,689. (Specimens.)

Claim.—1. In the art of separating fibers in mixed wool-stock containing silk, the process which consists in treating the mixed stock with hydrochloric acid, chlorine; or, chemicals furnishing chlorine or chlorine compounds; then releasing and driving off the inherent moisture therefrom until the stock is in super-dry condition and the carbonization of vegetable substances is complete; and then by subsequent treatment digesting the silk, while thus impregnated with such chemical agent, with steam at low tension applied in intimate contact with the fiber, and maintained substantially at the temperature and in condition of partial condensation as hot watery-vapor upon the material or silk fiber, for the purpose set forth.

2. In the art of separating wool fibers from silk in mixed wool-stock and similar material; the process of destroying silk fibers, which consists in primarily impregnating the material with a destructive chemical agent, as the gas of hydrochloric acid, chlorine, or chlorine compounds; then heating to complete carbonization of vegetable matter; then subjecting the mixed wool and silk fibers in intimate direct contact to continued action of live steam at low tension as hot saturating vapor thereon, while said material is confined and under pressure, as and for the purpose set forth.

3. In the art of separating wool fiber from silk in mixed wool-stock and similar material; the process which consists in treating the mass of mixed stock inclosed within a cylinder or container, by first impregnating the mass with gas generated from hydrochloric acid, chlorine; or a chlorine compound; then heating the same to a degree that effects complete carbonization of the vegetable fibers; and subsequently converting the silk fibers to gelatinous and friable condition by subjecting the same to hot watery-vapor generated from a substance of which water is a chief constituent.

546,435. LAMP. HENRY R. SHAFFER, Rochester, N. Y., assignor to the Shaffer Lamp Company, same place. Filed July 16, 1894. Serial No. 517,626. (No model.)

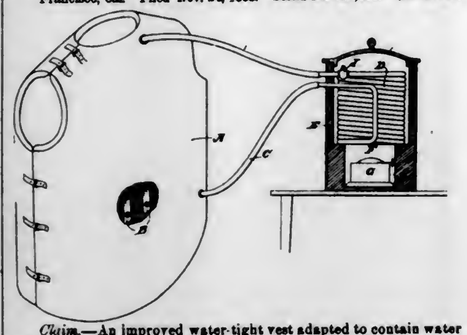


Claim.—1. A central draft lamp having an interior wick tube extending from the burning point to some distance below the fount, an exterior wick tube in two sections, the upper section extending to the top of the interior tube and removable therefrom, the lower section extending from the bottom of the fount and connected with the interior wick tube to form a wick and oil chamber below the fount, the two exterior wick tube sections being separated in the fount to directly expose the wick to the oil, and a hollow base having a tubular stem embracing a portion of the exterior wick tube and secured thereto, the said exterior wick tube being exposed to the air above and below the tubular stem of the base, as herein shown and described.

2. A central draft lamp having an interior wick tube extending from the burning point to some distance below the fount, an exterior wick tube in two sections, the upper section extending to the top of the interior tube and removable therefrom, the lower section extending from the bottom of the fount and connected with the interior wick tube to form a wick and oil chamber below the fount, the two exterior wick tube sections being separated in the fount to directly expose the wick to the oil, the lower exterior wick tube being provided with a bead, and a hollow base having a tubular stem embracing a portion of the exterior wick tube and abutting against the bead, the said exterior wick tube being exposed to the air above and below the tubular stem of the base, as herein shown and described.

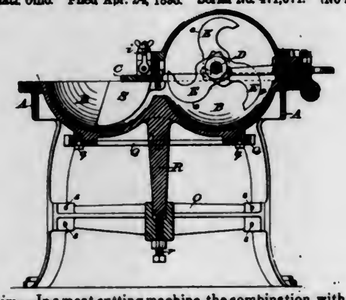
3. A central draft lamp having an interior wick tube extending from the burning point to some distance below the fount, an exterior wick tube in two sections, the upper section extending to the top of the interior tube and removable therefrom, the lower section extending from the bottom of the fount and connected with the interior wick tube to form a wick and oil chamber below the fount, the two exterior wick tube sections being separated in the fount to directly expose the wick to the oil, a hollow base having a tubular stem embracing a portion of the exterior wick tube and secured thereto above the lower end thereof to expose the lower end of the wick tube to the air, and an exterior brace above the base joined at one end to the exterior wick tube and at the other to the fount, as shown and described and for the purpose specified.

546,436. WATER-BANDAGE. BENJAMIN F. SPRINGSTEEN, San Francisco, Cal. Filed Nov. 24, 1893. Serial No. 491,881. (No model.)



Claim.—An improved water-tight vest adapted to contain water and to surround the body of the patient, said vest being separable at its side and consisting of an inner and an outer wall of flexible imperforate material, partitions or diaphragms extending in the direction of the length of the vest, in parallel series, and arranged on edge so that they may be connected directly with the inner and outer walls and hold the same separated, whereby water containing chambers are formed, said partitions or diaphragms having openings made transversely through them so as to connect the chambers one with the other, pipes entering the space between the walls at different levels, and a heating coil connected with the pipes to insure circulation of water and maintenance of heat.

546,437. MEAT-CUTTING MACHINE. LEOPOLD STRICKRT, Cincinnati, Ohio. Filed Apr. 24, 1893. Serial No. 471,671. (No model.)



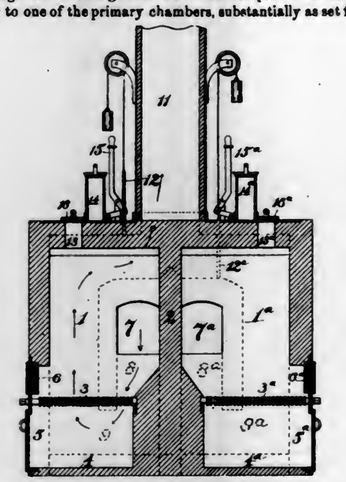
Claim.—In a meat cutting machine, the combination, with a frame, of a bowl therein, a cover hinged to the bowl at one side and provided with a guide way, a finger plate within the guide way, the outer end of which is provided with a handle for removing it, and means for securing the plate in the cover, a shaft journaled above the cover, and provided with knives adapted to be operated within the bowl, and to be passed between the fingers of the plate, substantially as set forth.

546,438. GARBAGE-FURNACE. WILLIAM SWINDELL, Allegheny, Pa. Filed June 21, 1893. Serial No. 478,413. (No model.)

Claim.—1. In a garbage furnace, the combination of two primary combustion chambers, a secondary garbage chamber, passages connecting the secondary chamber at or near its ends with the primary chambers, a stack, discharge passages leading from the ends of the primary chambers opposite those which communicate with the secondary chamber to the stack, and valves controlling communication between the discharge passages and stack, substantially as set forth.

2. In a garbage furnace, the combination of two primary combustion chambers, grates in said combustion chambers, ash pits below said grates, a secondary garbage chamber, passages connecting the secondary garbage chamber at or near its ends with the primary chambers, a closed ash pit below the secondary chamber, a stack, discharge openings leading from the primary combustion chambers to the stack, valves controlling communication between the discharge passages and stack, and passages leading from the ash pit of the secondary chamber to the ash pits of the primary chambers, substantially as set forth

3. In a garbage furnace, the combination of two primary combustion chambers, a secondary garbage chamber communicating at its ends therewith, a partition extending across the lower portion of the secondary chamber, and forming a division wall between two ash pits below the same, supply hoppers communicating with the top of the secondary chamber near its ends, a grate located below the top of the partition in the secondary chamber, a stack, discharge opening leading from the primary combustion chambers to the stack, valves controlling communication between the discharge passages and stack, and passages each leading from one of the ash pits of the secondary chamber to one of the primary chambers, substantially as set forth.



546,439. CHUCK. WILLIAM W. TUCKER, Hartford, Conn. Filed May 11, 1895. Serial No. 548,949. (No model.)



Claim.—1. In a chuck of the class described, the combination with two reciprocatory sliding heads; a rotatable clamping-jaw carried by one of said heads; a clamping-jaw carried by the other of said heads, and embodying a rotatable member, rotatable relatively to its carrying head, and an automatically and universally adjustable, rotative member, adjustable on its axis relatively to, and rotatable with, its companion member; and a locking device for preventing the rotation of said jaws, substantially as described.

2. In a chuck of the class described, the combination with two reciprocating heads carrying clamping-jaws rotatable thereon, one of said jaws consisting of a member having a circular, concave face and a member having a circular, convex face adapted to form frictional contact with said concave face, and means for holding said members in frictional contact with each other to permit said convex member to be automatically, universally movable on its axis, relative to the concave face of its adjacent member, and to the other jaw, whereby said jaws are adapted to clamp an irregular piece of work, substantially as described.

3. In a chuck of the class described, the combination with two reciprocating heads; of bolts extending therethrough; longitudinally-bored clamping-jaws carried by said heads and adapted to rotate on said bolts, one of said jaws consisting of a concave member and a convex member, the convex face of one member being adapted to form frictional contact with the concave face of the other member, and the bore thereof being of larger diameter than the bore of the concave member, whereby it is adapted to be automatically, universally movable on its axis, relative to the concave member and to the other clamping-jaw, substantially as described.

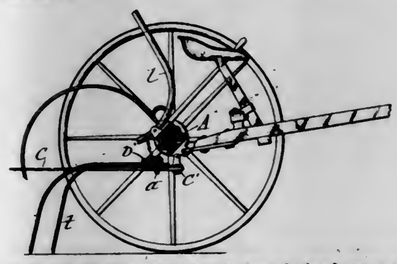
4. In a chuck of the class described, the combination with two reciprocating heads; of bolts extending therethrough; longitudinally-bored clamping-jaws carried by said heads and adapted to rotate on said bolts, one of said jaws consisting of a concave member and a convex member, the convex face of one member being adapted to form frictional contact with the concave face of the other member, and the bore thereof being of larger diameter than the bore of the concave member, said convex member being also provided with a recess having a concave inner face; and a locking device, provided with a convex face adapted to engage the concave face of the recess for engagement with the bolt, whereby said convex member is automatically, universally movable relative to said concave member and to the other jaw, substantially as described.

5. In a chuck of the class described, the combination with two reciprocatory sliding heads having circular recesses in their opposing faces; a rotatable clamping-jaw carried by one of said heads and having a circular projecting-plate adapted to fit said recess and rotatable therein; and a jaw carried by the other of said heads, and embodying a rotatable member having a circular projecting-plate adapted to fit the circular recess of the head and rotatable therein, and an automatically and universally adjustable, rotative member, adjustable relatively to, and rotatable with its companion member, substantially as described.

6. In a chuck of the class described, the combination with two reciprocating-heads; a rotatable clamping-jaw carried by one of said heads; and a clamping-jaw carried by the other of said heads, and embodying a rotatable member, and an automatically and universally adjustable, rotative member, adjustable on its axis relatively to, and rotatable with, its companion member, said members having concentric bores of different diameters; a bolt extending through one of said reciprocating-heads and through the concentric bores of the clamping-members; and means for locking said members in frictional contact with each other, substantially as described.

7. In a chuck of the class described, the combination with two reciprocating-heads, one of said heads having a longitudinal recess and a transverse slot adjacent to said recess and communicating therewith; a rotatable clamping-jaw carried by said head and having an aperture in the face thereof adjacent to said head; and a clamping-jaw carried by the other reciprocating-head, and embodying a rotatable member, and an automatically and universally adjustable, rotative member, adjustable relatively to its companion member and to the other jaw, and rotatable with its companion member; a spring-actuated bolt disposed in the longitudinal recess of the head, and adapted to engage the aperture in the rotatable clamping-jaw; a stem secured to said bolt and projecting through, and working in, the transverse slot, whereby said bolt can be actuated, substantially as described.

546,440. WEEDER ATTACHMENT FOR HORSE-RAKES. JOHN M. TUPTS, Wampsville, N. Y. Filed June 7, 1895. Serial No. 553,009. (No model.)



Claim.—1. The combination, with the rake-head supported on carrying wheels, of a supplemental head extending lengthwise of said rake-head and pivoted to turn on its axis, and weeding-tines attached to said supplemental head as set forth.

2. The combination, with the rake-head and rake-cleaner hinged to said head, of a supplemental head secured to the fingers of said cleaner adjacent to the head of the latter and weeding teeth attached to the supplemental head.

3. The combination, with a horse hay-rake provided with vertically swinging cleaner fingers, of a head mounted upon said fingers adjacent to the rake-head, clips detachably securing said head to the fingers, and tines extending rearward and downward from said head as set forth.

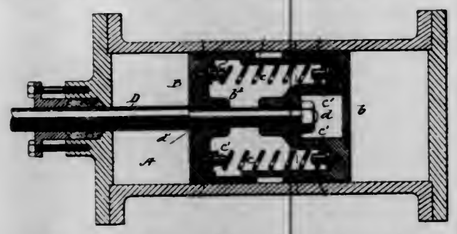
546,441. PISTON. HENRY VOGT, Louisville, Ky., assignor to The Sulzer-Vogt Machine Company, of Kentucky. Filed Nov. 23, 1894. Serial No. 529,580. (No model.)

Claim.—1. The combination with a cylinder, of a piston constructed in two parts, both fitting the bore of the cylinder, and a spring interposed between the parts, for the purpose set forth.

2. The combination of a cylinder and piston, and a piston rod, the piston constructed in two parts movable with respect to each other, and the piston rod passing loosely through them.

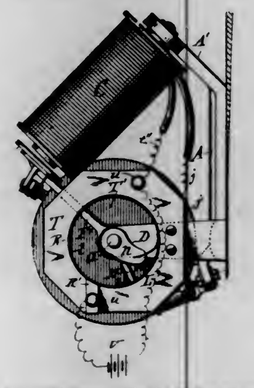
3. The combination of a cylinder and piston, and a piston rod, the piston being made in two parts, a spring interposed between said parts and tending to separate them, the said parts being loosely

mounted upon the piston rod, and the piston rod being provided with shoulders against which the parts are held by the spring.



4. The combination of a cylinder, a piston formed of two cup-shaped parts placed with their cavities opposite each other and with their edges overlapping to form a telescopic connection, and a spring or springs located inside of the piston and tending to separate the said cup-shaped parts, substantially as described.

546,442. ELECTRIC MOTOR. FRANK H. WILLIAMS, Greene, N. Y. Filed Mar. 11, 1895. Serial No. 541,222. (No model.)



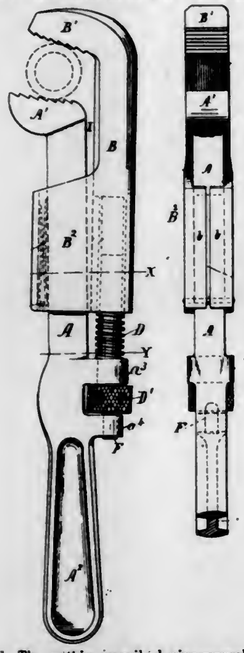
Claim.—1. In combination with the motor-magnets and their armature, a circuit-breaker consisting of an inferior supplementary magnet having its helix connected with the core and with the aforesaid motor-magnets, and an electric contact-finger carried to and from the core of the supplementary magnet by the aforesaid armature as set forth.

2. In combination with the motor-magnets and oscillatory armature, an inferior supplementary magnet having its helix connected with the core and with the motor-magnets, an arm oscillated toward and from said core by the oscillations of the armature a spring supported on said arm, and an electric contact-point on said spring and lifted thereby from the core of the supplementary magnet and pressed into contact with the core by the oscillations of the supporting arm of said spring as set forth.

3. In combination with the motor-magnets, oscillatory armature and circuit-breaker actuated by said armature, a revoluble shaft, a wheel fixed to said shaft and provided with a circumferential groove, a pawl pivoted to the armature and having a tooth with reversely beveled sides engaging opposite sides of the groove of the wheel to transmit motion to the wheel during the movement of the armature to the magnets as set forth.

4. In combination with the motor-magnets, a revoluble shaft, the armature mounted on said shaft and rocking independently thereof to and from the magnets, an arm extending from the heel of the armature, a supplementary magnet under the free end of said arm and having its helix connected with the core and with the motor-magnets, a spring secured to said arm, an electric contact-screw passing through the spring and arm directly over the core of the supplementary magnet, nuts on the screw directly under and over the spring to adjustably support the screw, a head on the screw beneath the arm with a vertical play between said head and arm and held normally in contact with the arm by the aforesaid spring, commutator-segments in a plane at right angles to the aforesaid shaft and concentric thereto, the commutator-brush attached to said shaft and in electric connection with the aforesaid contact-screw, a wheel fixed to the aforesaid shaft, and a pawl connected to the armature and transmitting motion to said wheel all combined to operate substantially as set forth.

546,443. PIPE-WRENCH. EDWARD WRIGHT, Worcester, Mass. Filed Feb. 9, 1895. Serial No. 537,765. (No model.)



Claim.—1. The within described pipe-wrench, comprising the main bar, its upper end formed as a jaw and its lower end a handle, and provided with projecting bearing portions upon its back edge above the handle, the slide-bar having the outer jaw at its upper end, and internally chambered and threaded at its lower end, its lower body portion provided with lipped cheek-plates that form a guide-box loosely about said main bar, and the adjusting screw its thread fitting the thread in said slide-bar, its neck embraced by the bifurcated bearing projection on the main bar with its rosette head loosely confined in the space below said bearing, said slide-bar and its jaw having a limited backward and forward swing relative to the main bar, from the rosette head as a center, for the purpose set forth.

2. In a pipe-wrench, the main bar A having the jaw A', the handle A^3 and the backward projections a^3 and a^4 thereon, with a recess between said projections; the slide-bar B formed with jaw B' and cheek-plates B^3, the latter loosely embracing said main-bar, the adjusting-screw D threaded into said slide-bar, its neck journaled in the projection a^3 and having the rosette-head disposed within the recess between the projections, and the pintle-stud F fixed in the projection a^4 with its end engaging within an axial opening in said rosette-head, and the spring disposed between the overhanging lips on said cheek-plates and the front of said main bar, all combined for operation substantially as and for the purposes set forth.

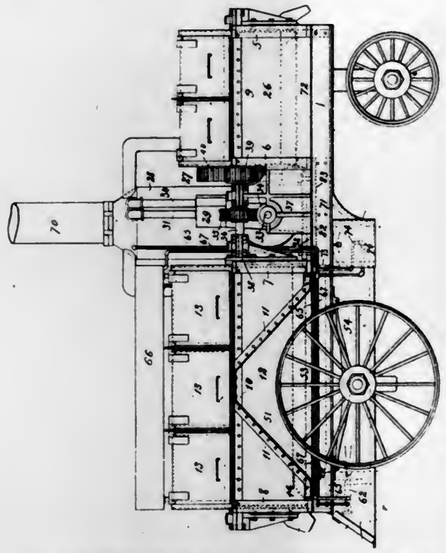
546,444. MACHINE FOR HEATING AND MIXING ASPHALT. ROBERT BUTCHER, New York, N. Y. Filed Jan. 18, 1895. Serial No. 535,376. (No model.)

Claim.—1. In an asphalt machine, the combination of a portable frame or platform, mixing pans at each end thereof, heating devices and chambers beneath the pans, a boiler and engine intermediate of said pans, a feed water heater beneath the engine, and agitating devices in the pans connected with said engine, substantially as set forth.

2. In an asphalt mixing machine, the combination of a frame or platform, mixing pans at each end thereof, heating devices and chambers beneath the pans, an engine intermediate of said pans, a feed water heater beneath the engine, longitudinal stirrer shafts passing through both of said pans and provided with agitating or stirring arms, and connections between the engine and said shafts, substantially as set forth.

3. In an asphalt mixing machine, the combination of a frame or platform, mixing pans at each end thereof, heating devices beneath the pans, an engine intermediate of said pans, a feed water heater beneath the engine, agitating devices in the pans connected with the said engine and continuous heating chambers beneath said pans, substantially as set forth.

4. In an asphalt mixing machine, the combination of a frame or platform, mixing pans at each end thereof, an engine and boiler intermediate of said pans, agitating devices in the pans connected with the engine and a continuous heating chamber beneath said pans and communicating with the boiler flues, substantially as set forth.



5. In an asphalt mixing machine, the combination of a frame or platform, mixing pans at each end thereof, heating devices and chambers beneath the pans, an engine intermediate of said pans, a feed water heater beneath the engine, longitudinal stirrer shafts situated in said pans, a worm on the engine shaft, a counter-shaft having a worm wheel operated by said worm and gearing connecting the stirrer shafts with said counter shaft, substantially as set forth.

6. In an asphalt mixing machine, the combination of a frame or platform, independent asphalt and sand pans mounted thereon, a heating chamber below the asphalt pan, a combustion chamber communicating with the said heating chamber, an injector burner in said combustion chamber, a heating chamber below the sand pan communicating with the first mentioned heating chamber, a boiler and engine, and communications between the heating chambers and the boiler flues, substantially as set forth.

7. In an asphalt mixing machine the combination of two mixing pans, a boiler, a heating chamber below one of said mixing pans and communicating with the flues of said boiler, a damper controlling such communication, heating chamber below the other pan and also communicating with the boiler flues and a damper-controlled communication between the heating chambers of said pans, substantially as set forth.

8. In an asphalt mixing machine the combination of a mixing pan, a boiler, a heating chamber beneath said pan and communicating at one end with the boiler flues, an injector burner for supplying heat to said chamber at its other end and a steam pipe connecting the boiler with said burner, substantially as set forth.

9. In an asphalt mixing machine, the combination of a frame or platform, mixing pans at the ends thereof, a boiler and engine intermediate of said pans, a platform or deck supporting said engine and boiler, a feed water heater formed below said deck and communicating with the boiler, heating chambers below said pans, and a flue connecting said chambers and contiguous to said feed water heater, substantially as set forth.

10. In an asphalt mixing machine, the combination of a frame or platform, mixing pans and a boiler mounted on said platform, heating chambers beneath the pans, an injector burner for supplying heat to said chambers, and a transverse auxiliary heating chamber and burner for supplying heat to the boiler flues, substantially as set forth.

11. In an asphalt mixing machine provided with mixing devices, an engine and a boiler, a transverse combustion chamber for heating said boiler and provided with an injector burner and a fuel door near the boiler, as set forth.

12. In an asphalt mixing machine provided with a boiler, the transverse combustion chambers for heating respectively the asphalt pan and the boiler, both of said chambers having communication with the boiler flues, and injector burners for said chambers, as set forth.

13. In an asphalt mixing machine, a double mixing pan provided with two sets of longitudinal stirring devices and a central elevation along its bottom, a downwardly extending plate 25 terminating said elevation, a central discharge opening at the lower end of said plate, and a gate for the opening, substantially as set forth.

14. In an asphalt mixing machine, a combustion chamber provided with the transverse arches and ties, and an injector burner arranged to deliver its blast into said chamber, which blast is distributed by said arches as set forth.

15. The combination with the asphalt pan and its heating chamber, of the combustion chamber having the supports 60, ties 58 carried by said supports, arches 57 held by the ties, and burner 62.

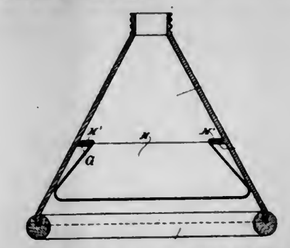
16. In an asphalt mixing machine the combination, with the heating and mixing pan, of a longitudinal heating chamber for the latter communicating at its forward end with a flue, a transverse combustion chamber beneath the rear end of said heating chamber, and an injector burner for the latter, substantially as set forth.

17. In an asphalt mixing machine the combination, with the pan, of a longitudinal heating chamber beneath the same, transverse combustion chambers beneath the heating chambers and oppositely directed injector burners for said combustion chambers, substantially as set forth.

18. The combination with the pans, engine and boiler, of the deck or bed plate between said pans and formed with a feed water heating space 100 extending to the outer side of the base of the boiler, substantially as set forth.

19. The combination with the pans, their communicating heating chambers, and the boiler and flue, of the sliding damper 98 between said heating chambers for directing the products of combustion from one of said heating chambers to said flue immediately, or mediately of the second heating chamber, substantially as set forth.

546,445. CLEANSING SINK OR DRAIN PIPES. FRANCESCO CAVALLARO and JOSEPH N. STURM, San José, Cal. Filed Mar. 6, 1895. Serial No. 540,735. (No model.)



Claim.—1. A flushing apparatus, consisting of a conical chamber having a flexible rim fixed to the periphery of the larger open end, a pipe connecting the smaller open end of the cone with the water faucet, whereby water under pressure may be delivered into the cone, and a supplemental chamber or receiver within the cone adapted to contain a detergent substance within the line of flow of the water, said receiver having lugs adapted to engage with the interior of the cone whereby it is removably secured in position.

2. A flushing apparatus for drain pipes, consisting of a hollow cone, open at both ends, a tube secured to the open apex of the cone having a coupling by which it may be connected with a water faucet, a flexible elastic rim removably fixed to the open base of the cone, adapted to fit the surface around the mouth of the drain pipe, lugs fixed within the cone, an open-topped receiver having a perforated or foraminous bottom and adapted to contain a detergent substance, lugs projecting from said receiver so as to engage the fixed lugs within the cone whereby the receiver and its contents are fixed in the line of discharge from the upper end of the cone

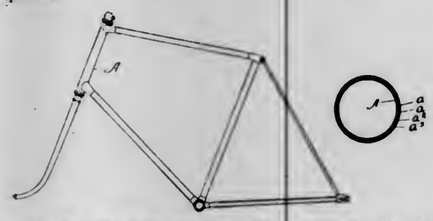
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546,446. BICYCLE-FRAME AND ART OF FINISHING SAME. GEORGE GROSS, Plymouth, Ind., assignor to the Plymouth Cycle Manufacturing Company, same place. Filed Sept. 15, 1894. Serial No. 523,120. (No model.)

Claim.—1. The process of finishing bright steel tube bicycle frames, consisting in first applying to the bright steel surfaces of the tubes a coating of size composed of slow baking varnish, boiled linseed oil and white lead in the proportion substantially as specified; then baking the frame tube so coated until the coating of size is given a strong semi-hard tack, then applying and rubbing in a coating of dry aluminum bronze powder, then baking in an oven until hard, then applying a coating of baking varnish, and finally baking for a third time in an oven, whereby the frame is given a perfectly smooth hard high gloss and polished aluminum finish, untarnishable and capa-

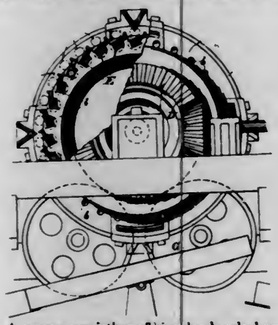
ble of being exposed to mud and moisture without injury, substantially as specified.

2. The process of finishing bright steel tube bicycle frames with a hard, smooth, untarnishable finish, capable of being exposed to mud and moisture without injury, said process consisting in first applying to the bright steel surfaces of the tubes a coating of size, then baking the same to produce a strong semi hard tack, then applying and rubbing in a coating of aluminum bronze powder, then baking in an oven until hard, then coating with varnish and rebaking, substantially as specified



3. The bright steel tube bicycle frame provided with a hard, smooth, untarnishable aluminum finish capable of being exposed to mud and moisture without injury, said finish being composed of a hard baked coating of size, a hard baked coating of aluminum bronze powder, and an outer hard baked coating of varnish, substantially as specified.

546,447. ADJUSTABLE ROTARY SCREEN. HUGH P. GREGIN, Bannack City, Mont. Filed June 7, 1895. Serial No. 552,032. (No model.)

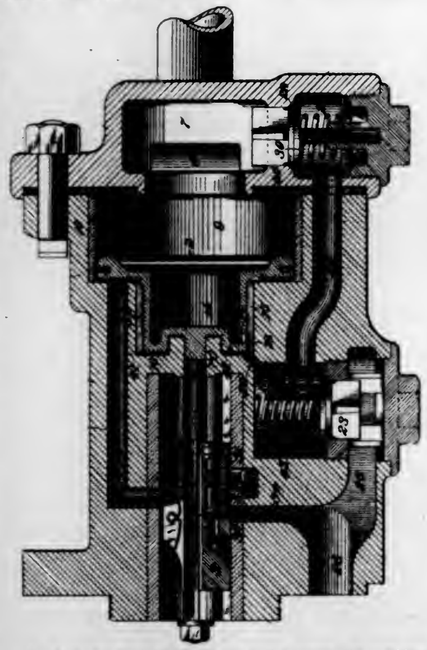


Claim.—1. A screen consisting of circular heads, bars extending horizontally between the heads and provided with threaded ends and nuts for securing said heads together, other bars around the periphery journaled to turn loosely in the heads, having the intermediate portion of each projecting to one side of the line of the journals so that the free edges will move about said journals, arms projecting from the journal shafts and an annular disk having pockets on its inner face into which said arms project, said disk slotted at intervals to directly receive the ends of the holding bars whereby it is movable about the axis of the apparatus, so as to open or close the screen bars with relation to each other.

2. An improved screen consisting of circular heads supported to turn about a horizontal axis with openings for the admission of material to be screened, bars extending between said heads with nuts by which they are locked to the heads, screen bars also extending from one head to the other having journals formed upon the ends, near one edge, of each bar whereby the opposite edge is turnable so that the bars may close together or open to any desired degree, an annular ring having slots through which the main holding bars pass, and pockets into which crank arms from the screen bars enter, whereby the turning of said rim in one direction or the other, will close or open the bars and form screen openings of any desired size, a beveled gear on one of the heads and an engaging pinion by which it is driven, and a sluice placed directly beneath the cylinder.

546,448. AIR-BRAKE. THOMAS J. HOGAN, Pittsburg, assignor to the Westinghouse Air Brake Company, Wilmerding, Pa. Filed Oct. 12, 1894. Serial No. 525,697. (No model.)

Claim.—1. In an automatic fluid pressure brake system, the combination with a train pipe and a triple valve device, of a release valve, for releasing fluid under pressure from the train pipe, a piston whose movement causes the operation of the release valve and which is normally exposed to fluid under pressure in a chamber on one side of the piston, a controlling piston which is exposed to the same fluid under pressure in the chamber and whose movement effects variations in the fluid under pressure in the chamber by varying the volume of the chamber between the pistons, and means whereby the release valve will be opened by a rapid movement only of the controlling piston, substantially as set forth.



2. In an automatic fluid pressure brake system, the combination with a train pipe, of a release valve, for releasing fluid under pressure from the train pipe, a piston whose movement causes the opening of the release valve and which is located in a chamber normally charged with fluid under pressure, and means for varying the volume of the chamber, and of the fluid under pressure therein, whereby the pressure of the fluid may be reduced by expansion, without release of the fluid, to effect the opening of the release valve, substantially as set forth.

3. In an automatic fluid pressure brake system, the combination with a train pipe, of a release valve, for releasing fluid under pressure from the train pipe, a piston whose movement causes the opening of the release valve and which is located in a chamber normally charged with fluid under pressure, a controlling piston whose movement enlarges the volume of the chamber and effects a reduction of pressure without release of the fluid therein, and means for permitting a limited admission of fluid to the chamber, whereby a sufficient reduction of pressure in the chamber to cause the opening of the release valve will be effected only when the controlling piston moves rapidly, substantially as set forth.

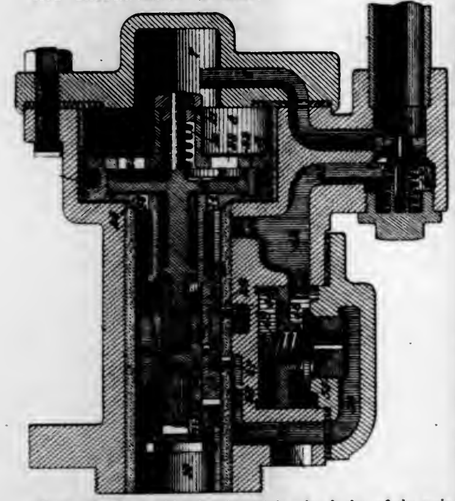
4. In an automatic fluid pressure brake system, the combination with a train pipe, of a triple valve device, a release valve, for releasing fluid under pressure from the train pipe, whose opening is effected independently of the main or slide valve of the triple valve device, a controlling piston on the stem of the triple valve device for controlling the release of fluid from the train pipe, and means whereby the controlling piston is adapted to move the full length of its stroke without opening the release valve when the train pipe pressure is slowly, or gradually, reduced, and whereby the opening of the release valve is effected only when the controlling piston is moved rapidly on a rapid reduction of train pipe pressure, substantially as set forth.

5. In an automatic fluid pressure brake system, the combination with a train pipe of a release valve for releasing fluid under pressure from the train pipe, a piston whose movement causes the opening of the release valve and which is located in a chamber normally charged with fluid under pressure, and a controlling piston whose movement effects opening movement of the release valve independently of the operation of any other valve, substantially as set forth.

6. The combination, in an automatic fluid pressure brake system, of a train pipe, a triple valve device whose piston has the same traverse in both service and emergency applications of the brakes, and a release valve for releasing fluid under pressure from the train pipe and which is opened by the movement of the triple valve piston independently of the main valve of the triple valve device, substantially as set forth.

7. In an automatic fluid pressure brake system, the combination, with a train pipe, of a release valve for releasing fluid under pressure from the train pipe, a passage leading from the train pipe to the brake cylinder and controlled by the release valve, a piston whose movement causes the opening of the release valve and which is located in a chamber normally charged with fluid under pressure, and a controlling piston whose movement independent of the operation of any other valve effects opening movement of the release valve, substantially as set forth.

546,449. AIR-BRAKE. THOMAS J. HOGAN, Pittsburg, assignor to the Westinghouse Air Brake Company, Wilmerding, Pa. Filed Nov. 14, 1894. Serial No. 528,710. (No model.)



Claim.—1. The combination, in a triple valve device, of the main valve, and the graduating valve, and ports controlled by said graduating valve for effecting the release of fluid from the train pipe when the main valve is in position to make an application of the brakes, substantially as set forth.

2. The combination in a triple valve device of a main valve which has but a single traverse for service and emergency applications of the brakes, and a graduating valve whose movement controls the local exhaust of fluid from the train pipe when the main valve is in position to make an application of the brakes, substantially as set forth.

3. The construction, in a triple valve device, of the main valve, and the graduating valve, and ports controlled by said graduating valve for effecting the local exhaust of fluid from the train pipe in emergency applications of the brakes, substantially as set forth.

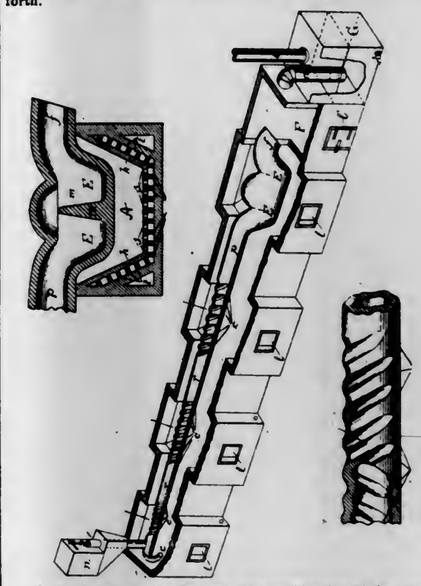
4. The combination, in a triple valve device, of the main valve, a release valve, for releasing fluid under pressure from the train pipe, a piston controlling the operation of the release valve, the graduating valve and ports controlled by said graduating valve for effecting variations of pressure on one side of the piston and thereby controlling the operation of the piston and the release valve, substantially as set forth.

5. The combination, in a triple valve device, of the main valve, a release valve for releasing fluid under pressure from the train pipe, a piston normally exposed to fluid under pressure and controlling the release valve, the graduating valve, and ports controlled by said graduating valve for effecting the release of fluid under pressure from one side of the piston, substantially as set forth.

6. The combination, in a triple valve device, of a main valve, a graduating valve having an initial traverse relative to the main valve whereby fluid under pressure is admitted from the auxiliary reservoir to the brake cylinder when the main valve is in service position, and having an additional traverse for effecting an emergency application of the brake without further movement of the main valve, substantially as set forth.

546,450. FURNACE FOR ROASTING ORES. HENRY P. HOLLAND, San Francisco, Cal. Filed Oct. 9, 1893. Serial No. 487,699. (No model.)

Claim.—1. An ore roasting furnace consisting of the ore feeder, *n*, for feeding the ore into the worm; the screw, *o*, for regulating the passage of the ore from the feeder to the worm; the worm B, having straight lengths, *r*, between the sections of the worm and extending from the ore feeder to the double kettle through which worm and straight lengths the ore is carried from the ore feeder to the double kettle by the force of the compressed air forced into said worm; the double kettle, E E, having division, *m*, into which the ore is delivered from the worm discharge, P, and is subjected therein to intense heat; the ore receiver, F, into which the roasted ore passes from the double kettle through pipe, *f*; the ore discharge, P, and pipe, *f*; the water tank, G, into which the smoke and gases pass and are washed; the gas escape pipe, *e*, for conducting off the gases from the water tank; the air and flame flues, *c c c c*, entering the lower part of the coils of the worm through which compressed air and flame are forced for carrying the particles of ore forward in suspension, and at the same time roasting them; the fire boxes, A; the inner walls of the furnace, *h h*, forming with the outer wall spaces for compressed air; the air spaces, *i i i*, under the fire boxes and between the walls; the supports, *k k*, under the worm, and *t t*, under the fire boxes; the air passages, *s s s s*, under the fire boxes, through which compressed air is forced into the fire boxes; the pipes, *a a a a*, conducting compressed air from the air receiver to the furnace; the air receiver, D; the air supply pipe, *b*, for conveying compressed air from the air compressor to the air receiver; and the air compressor, C; substantially as herein described and set forth.



2. In an ore roasting furnace, the combination of the worm, B, having the straight lengths, *r*, through which the ore is carried and roasted; the fire and flame flues, *c c c c*, entering the lower parts of the coils of the worm through which compressed air and flame are forced for carrying the particles of ore forward in suspension, and at the same time roasting them; the ore feed, *n*; the screw, *o*, for regulating the passage of the ore from the ore feeder to the worm; the double kettle, E E, at the end of the worm for subjecting the ore to greater heat, having division, *m*; the ore receiver, F, into which the roasted ore is discharged from the double kettle; the connecting pipe, *f*; the water tank, G, in which the smoke and gases are washed; the gas escape pipe, *p*; with the air compressor, C; the air supply pipe, *b*; the air receiver, D; the air conductors, *a a a a* for conveying compressed air to the furnace; the air passages, *s s s*, through which the compressed air is forced into the fire boxes; the fireboxes, A; the air spaces, *i i i*, under the fire boxes; the inner walls of the furnace, *h*, *h*; the supports, *k k*, under the worm, and *t t* under the fire boxes,—substantially as herein described and set forth.

3. In an ore roasting furnace, the combination of the worm, B, having straight parts, *r*; and the air and flame flues, *c c c*; the discharge, P; the double kettle, E E, into which the ore is discharged from the worm and subjected to intense heat; the ore feeder, *n*; the screw, *o*, for regulating the passage of the ore from the ore feeder to the worm; the receiver, F, for receiving the roasted ore from the double kettle; the ore discharge, P, and pipe, *f*; the air compressor, C; the supply pipe, *b*; the air receiver, D; the air passages, *s s s*, under the fire boxes through which the compressed air is forced into the fire boxes; the fire box, A; the inner wall *h h* the air spaces, *i i*, under the fireboxes and between the walls of the furnace; the supports *k k*,

under the worm, and *f f* under the fire boxes; with the water tank, G; and gas escape pipe, *e*,—substantially as herein described and set forth.

4. In an ore roasting furnace, the combination of the passages, *a a a*, in the bottom of the fire boxes through which compressed air is forced therein; the inner wall *h h* the air spaces, *i i* under said fire boxes and between the inner and outer walls of the furnace; the supports, *k k*, under the worm and *f f* under the fire boxes; the air pipes, *a a a*, conveying compressed air from the air compressor to the furnace; the air receiver, D; the air supply pipe, *b*, conveying compressed air from the air compressor to the air receiver; with the compressed air and flame, *c c c*, entering the lower part of the coils of the worm, through which compressed air and flame are forced into the worm, roasting the ore and moving the particles of ore in suspension through the worm; the worm, B, through which the ore is conveyed by compressed air, and at the same time roasted therein; the ore feeder, *n*; and the screw, *o*, for conveying and regulating the ore being fed into the worm; the discharge, P; the double kettle E E, into which the ore is discharged from the worm; the receiver, F, into which the ore is discharged from the double kettle; the connection *f*, the water tank, G, and the gas escape, *e*, for conducting off the gases from the tank, substantially as herein described and set forth.

5. In an ore roasting furnace, the combination of the double kettle, E E, through which the ore is carried by compressed air as it is discharged from the worm; with the ore receiver, F, for receiving the roasted ore from the double kettle; the water tank, G; the gas escape pipe, *e*, for conducting off the gases from the water tank; the kettle connection, *f*; the division, *m*, in the double kettle for the purpose of retarding and retaining the ore in its passage to the receiver in intense heat; the ore feeder, *n*, and screw regulator, *o*, for conveying the ore feed to the worm, and regulating the same in its passage thereto; the worm, B, through which the ore is conveyed in compressed air and roasted; the air and flame flues, *c c c*, entering the lower part of the coils of the worm through which compressed air and flame are forced for moving the particles of air forward in suspension, and at the same time roasting the ore; the air spaces, the inner wall *h h i i*, under the fire boxes, and between the walls of the furnace; the fire boxes, A; the supports, *k k* under the worm, and *f f* under the fire boxes; the air pipes, *a a a a*, conducting the compressed air from the receiver to the furnace; the air receiver, D; the air supply pipe *b*, conveying compressed air from the air compressor to the receiver; and the air compressor, C,—substantially as herein described and set forth.

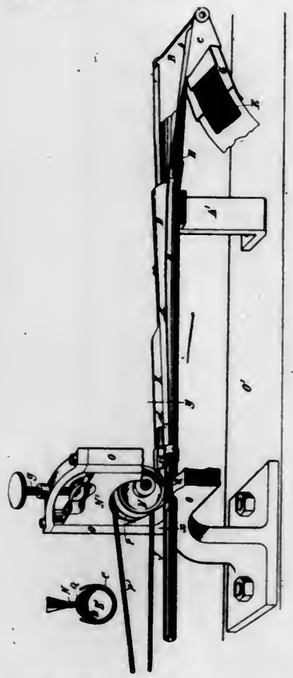
546,451. METHOD OF AND MECHANISM FOR MAKING TOBACCO CIGARETTES. WILLIAM A. HULSE, Rochester, N. Y., assignor, by direct and mesne assignments, to the Bonsack Machine Company, of Virginia. Filed Feb. 12, 1892. Serial No. 421,254. (No model.) Patented in New South Wales May 2, 1892, No. 3,771; in Victoria May 26, 1892, No. 9,675; in Canada June 24, 1892, No. 39,191; in England July 11, 1892, No. 12,736, and in Spain Aug. 8, 1892, No. 13,505.

Claim.—1. The method of making continuous cigarettes which consists in simultaneously advancing a long or continuous wrapper and a filler superposed thereon, progressively wrapping or folding the wrapper around the filler, folding or rolling the opposite edges of the wrapper together and securing such folded or rolled edges into a seam by pressing, crimping or indenting them together.

2. In a machine for making continuous cigarettes, the combination, substantially as set forth, of mechanism for simultaneously advancing a wrapper and a filler superposed thereon, mechanism for progressively folding the wrapper around the filler, and a seam-forming mechanism, which consists of devices by which the opposite edges of the wrapper are folded, rolled or interlocked together, and pressing, crimping or indenting devices arranged to operate upon the opposite sides of such folded or rolled together edges to incorporate them into a completed seam.

3. In a machine for making continuous cigarettes, the combination, substantially as set forth, of mechanism for simultaneously advancing a wrapper and a filler superposed thereon, mechanism for progressively folding the wrapper around the filler and a seam-forming mechanism, which consists of devices by which the opposite edges of the wrapper are folded, rolled or interlocked together, and pressing, crimping or indenting devices arranged to operate upon the opposite sides of such folded or rolled together edges to incorporate them into a completed seam, the part or parts of such devices upon one side of the seam being located inside of the wrapper.

4. In a machine for making continuous cigarettes, the combination, substantially as set forth, of mechanism for simultaneously advancing a continuous wrapper and a tobacco filler encircled thereby, a seam-forming mechanism consisting of devices by which the opposite edges of the wrapper are brought into engagement with each other and a two-part pressure device, one part being arranged to operate outside of the wrapper, and the other inside thereof and of such form as to permit the tobacco filler to pass it, the two parts cooperating to secure the engaged edges of the wrapper, while it encircles the filler, into a flattened longitudinal seam.



5. In a machine for making cigarettes, composed of a tobacco filler inclosed in a paper wrapper having a longitudinal seam formed without paste or other adhesive material and flattened down upon the body of the cigarette, the combination substantially as set forth, of a chamber adapted to receive the tobacco filler and to be encircled by the wrapper, and a two-part device, one part arranged to operate outside of the wrapper, and the other inside thereof and of such form as to permit the filler to pass it, the two parts cooperating to secure the engaged edges of the wrapper, while it encircles the filler, into a flattened longitudinal seam.

6. In a machine for making cigarettes, composed of a tobacco filler inclosed in a paper wrapper, the combination substantially as set forth, of a chamber adapted to receive the tobacco filler and to be encircled by the wrapper, and a two-part pressure device, one part being arranged to operate outside of the wrapper, and the other inside thereof, the latter being of such form as to permit the filler to pass it and separated by a wall or partition from the filler chamber.

7. In a machine for making cigarettes, composed of a tobacco filler inclosed in a paper wrapper, the combination substantially as set forth, of a chamber adapted to receive the tobacco filler and to be encircled by the wrapper, and a two-part pressure device, one part consisting of a wheel arranged to operate outside of the wrapper and having its periphery serrated or roughened, and the other part arranged to operate inside of the wrapper and of such form as to permit the filler to pass it.

8. In a machine for making cigarettes, composed of a tobacco filler inclosed in a paper wrapper, the combination substantially as set forth, of a chamber adapted to receive the tobacco filler and to be encircled by the wrapper, and a two-part pressure device, one part consisting of a wheel arranged to operate outside of the wrapper and adjustably arranged thereto, and the other part consisting of a frictionally driven roller arranged to operate within the wrapper and of such form as to permit the filler to pass it.

9. In the seam forming mechanism of a cigarette machine, the combination substantially as set forth, of a chamber adapted to receive the tobacco filler and to be encircled by the wrapper, and a two part pressure device for incorporating the engaged edges of the wrapper into a seam, one part thereof consisting of a wheel arranged to operate outside of the wrapper and provided with a notched or serrated periphery, and the other part consisting of a roller of such form as to permit the filler to pass it, arranged to operate inside the wrapper and having its face provided with notches or serrations.

10. In a machine for making continuous cigarettes, the combination substantially as set forth, of a tube, mechanism for advancing a tobacco filler and a paper strip through the tube and for wrapping the paper strip around the filler, and seam-forming mechanism, consisting of devices for bringing the opposite edges of the paper strip into engagement with each other, and of a two-part pressure device, one part being located on the tube to operate on the inside of the wrapper and of such form as to permit the filler to pass it, while the other part is located to operate on the outside of the wrapper, the two parts co-acting to press the engaged edges of the wrapper together when the tobacco filler is inclosed therein, and to incorporate such edges into a longitudinal seam.

11. In a machine for making continuous cigarettes, the combination substantially as set forth, of a tube, an endless band adapted to carry or advance a continuous strip of paper and a tobacco filler deposited thereon through the tube, devices for wrapping the paper strip around the filler, and seam forming mechanism comprising devices for bringing the opposite edges of the wrapper into engagement with each other, and a two-part pressure device, one part being a roller Q, located near the forward end of the tube and arranged to operate inside the wrapper when it encircles the filler and of such form as to permit the filler to pass it, and the other part being a roughened or serrated wheel N arranged to operate on the outside of the wrapper.

12. In a machine for making continuous cigarettes by wrapping a tobacco filler with a continuous strip of paper, the combination substantially as set forth, of a two-part pressure device for incorporating the engaged edges of the wrapper strip into a seam when it encircles the filler, one part being arranged to press upon the engaged edges from the outside of the wrapper, and the other part being located inside of the wrapper to resist the outside pressure and being of such form as to permit the filler to pass it, and mechanism for compressing the tobacco filler, whereby the filler when released from pressure will expand to take up the slack of the wrapper caused by the presence within the wrapper of the pressure-resisting part or anvil.

13. In a machine for making continuous cigarettes, the combination, substantially as set forth, of mechanism for advancing a wrapper and a filler superposed thereon, mechanism for folding the wrapper to encircle the filler with its edges turned outwardly, and seam-forming mechanism consisting of devices by which the wrapper edges are folded or rolled together, and pressing, crimping or indenting devices arranged to operate upon the opposite sides of such folded or rolled together edges to incorporate them into completed seam.

14. In the seam forming mechanism of a cigarette machine, a device L, consisting of two spirally curved pieces *e e*, arranged to form a narrow way for the edges of a wrapping strip of paper, in combination with a tapered chamber *f*, whereby the edges of a paper strip as they are advanced through the device L are rolled or coiled spirally upon each other, substantially as set forth.

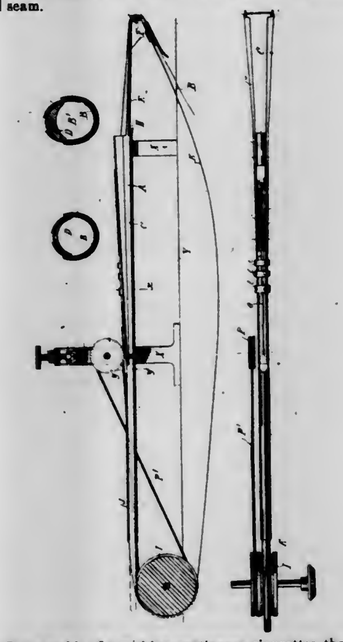
15. In the seam-forming mechanism of a cigarette machine, a piece M carrying devices for spirally rolling or coiling the edges of a wrapping strip of paper upon each other, and adapted to be removably secured in place, substantially as set forth.

16. In a cigarette tube, comprising devices for wrapping a continuous strip of paper around a tobacco filler and uniting its opposite edges into a seam on the outside of the wrapper, metal strips *d d*, in combination with a projection K and the surface of the tube, the metal strips being secured to the projection and forming in connection therewith and the surface of the tube ways or guides for the edges of the wrapping strip, substantially as set forth.

17. A tube provided with a channel B' through which an endless band, a continuous strip of paper and a tobacco filler deposited on said strip can be passed, devices for wrapping the paper strip around the filler and bringing its edges into engagement with each other, in combination with a device for incorporating the engaged edges of the wrapper into a seam while it encircles the filler, one part of such device consisting of a roller Q arranged to operate inside of the wrapper and the other part of a wheel N arranged to operate outside of the wrapper, substantially as set forth.

546,452. CIGARETTE-MACHINE. WILLIAM A. HULSE, Rochester, N. Y., assignor to the Bonsack Machine Company, of Virginia. Original application filed Feb. 12, 1892, Serial No. 421,254. Divided and this application filed Mar. 21, 1893. Serial No. 467,032. (No model.) Patented in New South Wales May 2, 1892, No. 3,771; in Victoria May 26, 1892, No. 10,173; in Canada June 24, 1892, No. 39,191; in England July 11, 1892, No. 12,736, and in Spain Aug. 8, 1892, No. 13,505.

Claim.—1. In a machine for making cigarettes composed of a tobacco filler inclosed in a paper wrapper and having a longitudinal seam formed without paste or other adhesive material, the combination substantially as set forth, of devices for advancing the cigarette wrapper and a filler inclosed therein with the edges of the wrapper turned inwardly and engaged with each other, and a two part pressure device, one part arranged to operate outside of the wrapper, and the other part inside thereof and of such form as to permit the filler to pass it, the two parts co-operating to secure the inturned engaged edges of the wrapper while it encircles the filler into a flattened longitudinal seam.



2. In a machine for making continuous cigarettes, the combination substantially as set forth, of devices for simultaneously advancing a continuous wrapper and a tobacco filler inclosed therein, devices for folding the wrapper around the filler with its opposite edges turned inwardly and folded or rolled together, and a two part pressure device, one part being arranged to operate outside of the wrapper, and the other part inside thereof and of such form as to permit the filler to pass it, the two parts co-acting to incorporate the inwardly turned and folded edges of the wrapper while it encircles the filler into a flattened longitudinal seam.

3. In a machine for making cigarettes composed of a tobacco filler inclosed in a paper wrapper and having a longitudinal seam formed without paste or other adhesive material, the combination substantially as set forth, of devices for advancing a cigarette wrapper and filler inclosed therein, devices for folding the wrapper around the filler with the opposite edges of the wrapper turned inwardly and folded or rolled together, and a two part crimping or indenting device, one part arranged to operate outside of the wrapper, and the other part arranged to operate inside thereof and of such form as to permit the filler to pass it, the two part co-acting to crimp or indent the inwardly turned engaged wrapper edges into a longitudinal seam.

4. In a machine for making cigarettes composed of a tobacco filler inclosed in a paper wrapper and having a longitudinal seam formed without paste or other adhesive material, the combination substantially as set forth, of devices for advancing a cigarette wrapper and filler inclosed therein, devices for folding the wrapper around the filler, devices for turning the opposite edges of the wrapper inwardly, devices for folding or rolling the inwardly turned wrapper edges together, and a two part crimping or indenting device, one part arranged to operate outside of the wrapper, and the other part inside thereof and of such form as to permit the filler to pass it, the two parts co-acting to crimp or indent the inwardly turned engaged wrapper edges into a seam.

5. In a machine for making a continuous cigarette composed of a tobacco filler inclosed in a paper wrapper, the combination substantially as set forth, of a chamber adapted to receive the tobacco filler and to be encircled by the wrapper, devices for turning the opposite edges of the wrapper inwardly and folding or rolling them together, and a two part pressure device, one part consisting of a wheel arranged to operate outside the wrapper and having its periphery serrated or roughened, and the other part arranged to operate inside of the wrapper and of such form as to permit the filler to pass it.

6. In a machine for making continuous cigarettes composed of a tobacco filler inclosed in a paper wrapper, the combination substan-

tially as set forth, of a chamber adapted to receive the tobacco filler and to be encircled by the wrapper, devices for turning the opposite edges of the wrapper inwardly and folding or rolling them together, and a two part pressure device, one part consisting of a wheel adjustably arranged to operate outside of the wrapper, and the other part consisting of a frictionally driven roller arranged to operate within the wrapper and of such form as to permit the filler to pass it.

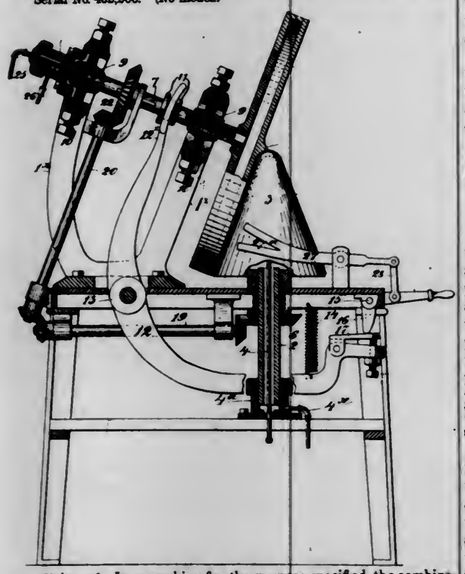
7. In a machine for making continuous cigarettes, the combination substantially as set forth, of a tube, mechanism for advancing a tobacco filler and a wrapper through such tube, mechanism for folding the wrapper around the filler, mechanism for turning the opposite edges of the wrapper inwardly and seam forming mechanism, consisting of devices for folding or rolling the inturned edges of the wrapper together, and a two part pressure device, one part being located on the tube to operate on the inside of the wrapper and of such form as to permit the filler to pass it, while the other part is located to operate on the outside of the wrapper, the two parts coacting to press the engaged edges of the wrapper together when the filler is inclosed therein and to incorporate such edges into a longitudinal seam.

8. In a machine for making continuous cigarettes, the combination substantially as set forth, of a tube, an endless band adapted to carry or advance the continuous wrapper and a tobacco filler deposited thereon through the tube, devices for folding the wrapper around the filler, devices for turning the opposite edges of the wrapper inwardly and seam forming mechanism comprising devices for folding or rolling the inturned wrapper edges together, and a two part crimping or indenting device, one part being located outside of the wrapper, and the other part inside thereof and of such form as to permit the filler to pass it, the two parts co-acting to crimp or indent the inwardly turned and engaged wrapper edges into a longitudinal seam.

9. In a cigarette machine comprising devices for feeding a continuous wrapper and a tobacco filler superposed thereon, folding the wrapper around the filler and turning its edges inwardly and securing them into a seam on the inside of the wrapper, the combination, substantially as set forth, of the part D having groove I formed therein, of metal strips *j j* secured at one of their ends to the part D and provided with inwardly projecting edges *k k*, for the purpose set forth.

10. In a cigarette machine comprising devices for feeding a continuous wrapper and filler superposed thereon and bringing the opposite edges of the wrapper into engagement with each other, the combination, substantially as set forth, with the part D having groove I formed therein of a tapering core *p* and tapering chamber *r*, the rear end of the core *p* being attached to the wall of the groove i while its free end projects into the chamber *r* for the purpose set forth.

546,453. MACHINE FOR SIZING, FELTING, AND PINNING OUT HATS. WILLIAM H. KNOWLES, Danbury, Conn. Filed Feb. 13, 1893. Serial No. 462,200. (No model.)



Claim.—1. In a machine for the purpose specified, the combination with a rotatable, conical support for the hat, of a rotatable disk with its face adapted to be put in contact with the hat on the support by the movement of the disk in the direction of its axis, the shafts of the said support and disk, and a supporting frame therefor.

2. In a machine for the purpose specified, the combination with an upright, conical, rotatable support for the hat, and its shaft, of a rotatable disk and its shaft, the disk being movable toward and from the cone in the direction of its axis, and the conical support and disk being so arranged, relatively, that the prolonged axis of the disk cuts the axis of the conical support substantially at the apex of the latter.

3. In a machine for the purpose specified, the combination with the upright, conical, rotatable support for the hat, and the shaft of said support, of the pressing disk and its shaft, said disk having a central projection, 8^x, on its operative face to take over the apex of the hat on the cone, and the shaft of the disk being movable endwise in its bearings, as set forth.

4. In a machine for the purpose specified, the combination with an upright, conical, rotatable support for the hat, and the shaft of said support, of the pressing disk and its shaft, and means for shifting the disk axially into and out of contact with the hat on the support, the axes of the respective shafts of the hat-support and disk being in the same vertical plane, substantially as shown.

5. In a machine for the purpose specified, the combination with the conical, rotatable support for the hat, of the rotatable hollow pressing disk, 8, arranged with its operative face substantially parallel with the inclined face of the conical support, the shafts of the conical support and disk, and means for heating the hollow disk.

6. In a machine for the purpose specified, the combination with the rotatable, conical support for the hat, of the pivotally mounted spring blade, 27, adapted to be brought into contact with the hat on the rotating support by rocking on its pivot, substantially as set forth.

7. In a machine for the purpose specified, the combination with the frame, of the shafts 2 and 7, mounted therein, the latter capable of longitudinal movement in its bearings, the conical support on the shaft 2, the pressing disk on the shaft 7, adapted to be brought into contact with the hat on the support as described, the lever 12, fulcrumed in the frame and having a fork which engages a collar on the shaft 7, the spring 14, to retract the parts, the cam 16, for depressing the arm of the lever 12, and an operating arm 18, for operating said cam, substantially as set forth.

8. In a machine for the purpose specified, the combination with the frame, the rotatable, hollow cone, 3, its shaft, mounted in the frame, means for introducing steam to the cone for heating it, the rotatable disk 8, arranged with its operative face substantially parallel with the inclined side of the cone and adjacent thereto, the shaft of said disk, movable longitudinally in its bearings, and means for moving said shaft longitudinally in order to shift the disk toward or from the cone, substantially as set forth.

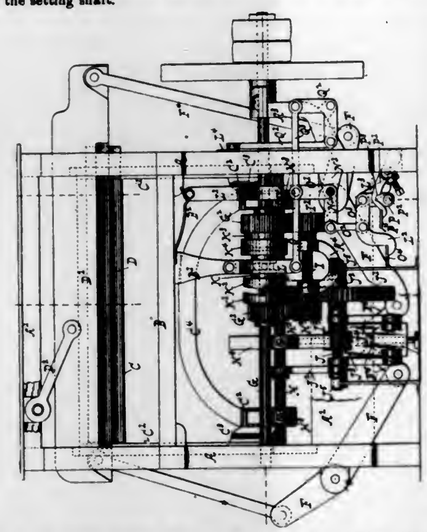
9. In a machine for the purpose specified, the combination with the supporting cone, 3, and its rotatable shaft, of the rotatable disk 8, its shaft 7, means for moving the shaft 7 longitudinally in its bearings, mechanism for driving said supporting cone, and gearing, intermediate the shafts 2 and 7, whereby the former drives the latter, as set forth.

10. In a machine for the purpose specified, the combination with the hollow supporting cone, 3, and its hollow shaft, of the step 4^s, at the base of said shaft, and the pipe 4, extending up through said step and through the hollow shaft to the cone, the step having an outlet 4^x, substantially as set forth.

546,454. SELF-CLAMPING PAPER-CUTTING MACHINE. ALEXANDER MALM, Brooklyn, N. Y. Filed May 18, 1894. Serial No. 511,650. (No model.)

Claim.—1. In a paper cutting machine the combination of a work bed, a movable clamp adapted to clamp the paper on said bed, and provided with a rack, a movable cutter adapted to cut the paper on said bed, a setting shaft, a segment fixed on said setting shaft and engaging said rack, a transmitting segment also fixed on said setting shaft, a movable auxiliary shaft journaled in swinging arms supported on said setting shaft, a pinion fixed on said auxiliary shaft and meshing with the transmitting segment on the setting shaft for imparting motion thereto, a gear wheel fixed on said auxiliary shaft, a pinion loose on said setting shaft and meshing with said gear wheel, levers for actuating the cutting knife, connected with said auxiliary shaft, and means for actuating said loose pinion.

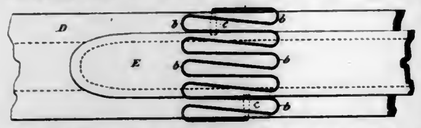
2. In a paper cutting machine the combination of a work bed, a movable clamp adapted to clamp the paper on said bed and provided with a rack, a movable cutter adapted to cut the paper on said bed, a setting shaft, a segment fixed on said setting shaft and engaging said rack, a transmitting segment also fixed on said setting shaft, a movable auxiliary shaft journaled in swinging arms supported on said setting shaft, a pinion fixed on said auxiliary shaft and meshing with the transmitting segment on the setting shaft for imparting motion thereto, a gear wheel fixed on said auxiliary shaft, a pinion loose on said setting shaft meshing with said gear wheel, levers for actuating the cutting knife connected with said auxiliary shaft, a gear loose on the setting shaft and connected with the loose pinion thereof, a driving shaft provided with a pinion meshing with said gear, a resetting shaft provided with a pinion also engaging said gear on the setting shaft, another gear loose on the driving shaft, a pinion on said resetting shaft meshing with the latter, and a clutch mechanism for operating either of the gears on the driving shaft to impart motion in either direction to the setting shaft.



3. In a paper cutting machine the combination with the clamp and knife of the knife levers, the slide, the main shaft provided with clutch pinions, as G', G^2, and double clutch as K, the setting shaft with the gear wheel, as H', pinion as H^2 toothed clamp segments as H^3, and toothed knife segments as H^4, the clamp racks, as C^2, the resetting shaft with pinions as I', I^2, and the auxiliary shaft with gear wheel as J' and pinion as J^2, the whole adapted to operate substantially as described.

4. In a paper cutting machine, the combination with the clamp and knife, of the knife levers, rods as F^4, connecting the levers to the knife stock, the slide, links as F^5 connecting the slide to the knife levers, the main shaft with clutch pinions as G', G^2, and double clutch as K, the setting shaft with gear wheel as H', pinion as H^2, toothed clamp segments as H^3, and toothed knife segment as H^4, the clamp racks as C^2, the resetting shaft with pinions as I', I^2, the auxiliary shaft provided with gear wheel as J', which meshes with the pinion H^2 on the setting shaft, and links as J^4 connecting the slide to the auxiliary shaft, the whole adapted to operate substantially as described.

546,455. ADJUSTABLE HARNESS-LOOP. STEPHEN R. MONROE, Bristol, Vt., assignor, by direct and mesne assignments, to Edward C. Marsh, same place. Filed Nov. 6, 1894. Serial No. 528,051. (No model.)



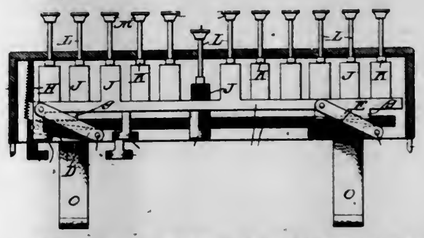
Claim.—An adjustable and detachable spring loop constructed of a single piece of suitable spring wire having its body or central portion consisting of the wire bent back and forth upon itself so as to form reflections or foldings, and having its ends terminating in prongs or tangs which are bent inwardly and transversely of the body reflections, and adapted to be forced into the edges of the strap to which the loop may be attached, substantially as and for the purposes specified.

546,456. PIN-WHEEL BLANK. CHARLES A. MONTGOMERY, Brooklyn, N. Y. Filed July 10, 1895. Serial No. 555,526. (No model.)

Claim.—A rectangular blank for pin-wheels imprinted on the face with triangular fields or designs separated by diagonal division-lines of the blank, and on the back with fragments or portions of the designs or fields on the face, said fragments having border-lines which register with the division-lines on the face, substantially as set forth.



546,457. ATTACHMENT FOR STRINGED INSTRUMENTS. ALBERT PIETSCH, St. Louis, Mo. Filed Nov. 27, 1894. Serial No. 530,126. (No model.)



Claim.—1. In an attachment for stringed instruments, the combination with a suitable casing, of pivot rods mounted in the casing, links pivotally mounted on the rods, presser-bars mounted upon the free ends of the links, guard projections on the presser-bars for preventing interruption of movement of any of the presser-bars and links, fingers on the presser-bars for contacting with the strings, and means for operating one or more presser-bars at a time, substantially as described.

2. In an attachment for stringed instruments, the combination with a suitable casing, a number of links mounted therein, presser-bars which are mounted upon said links, which presser-bars have a parallel movement, guard projections on the presser-bars, springs for returning the presser-bars after actuating, fingers for contacting with the strings, and means for operating the presser-bars, substantially as described.

3. In an attachment for stringed instruments, the combination with a series of independently movable presser-bars, which are provided with fingers for contacting with the strings of the instrument, of means for maintaining parallelism in the movement of said bars, cross-bars which extend across the entire nest of presser-bars, and teeth extending up from said nest and in line with the cross-bars, whereby when a cross-bar is actuated, it operates the presser-bars whose teeth are in its line of travel; substantially as described.

4. In an attachment for stringed instruments, the combination with a suitable casing, of buttons projecting therefrom, cross-bars on the shanks of the buttons, a nest of presser-bars arranged beneath the cross-bars and provided with teeth which are in line with some of the cross-bars, links upon which said presser-bars are mounted, springs for normally holding the presser-bars in an elevated position, and fingers projecting from the nest of presser-bars and in line with the strings; substantially as described.

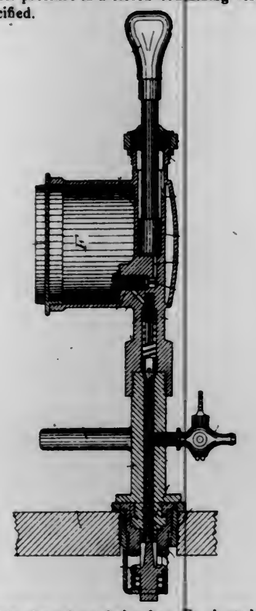
5. In an attachment for stringed instruments, the combination with a suitable casing, of a metallic lining therein, cross-bars which are formed with grooves in the ends, said ends entering the slots in the lining, the groove embracing one edge of the slot, and presser bars, provided with fingers, which are operated by the cross-bars, substantially as described.

6. In an attachment for stringed instruments, the combination with a suitable casing, of two rods mounted therein near the ends of the casing and at the lower edge thereof, links which are pivotally mounted upon said rods, liners or spacers interposed between the links, presser-bars mounted on the ends of the links, fingers projecting from the presser-bars, for contacting with the strings, and means for operating the presser-bars, substantially as described.

546,458. APPARATUS FOR COLORING ALE, &c., UNDER PRESSURE. GEORGE W. ROBINSON, Albany, N. Y. Filed July 20, 1895. Serial No. 556,591. (No model.)

Claim.—1. The combination of a key, E, adapted to open a valve in a tap that is permanently fixed in a barrel or other vessel; said

key being tubular, a receptacle for containing a coloring liquid, and an injecting-pump for injecting said coloring liquid into the ale, or other liquid, under pressure in a closed containing vessel, as and for the purpose specified.



2. The combination of a tubular key, E, adapted to open the valve of a tap that is permanently fixed in a barrel or other vessel for containing liquid under pressure; said key having a try-cock which communicates with the bore of the key, a receptacle for containing a coloring liquid as herein set forth, and a pump for injecting said coloring liquid into the liquid under treatment, as and for the purpose specified.

546,459. ADJUSTABLE JOINT. OTIS C. WHITE, Worcester, Mass., assignor to the O. C. White Company, same place. Filed Jan. 19, 1895. Serial No. 535,475. (No model.)



Claim.—1. As an article of manufacture, a frictional swivel joint comprising a rod or pipe section, a two-part socket fitting upon said pipe, means for holding these parts in longitudinal engagement, and means for securing the parts of said socket together, and for adjustably clamping said socket into frictional engagement with said pipe, substantially as described.

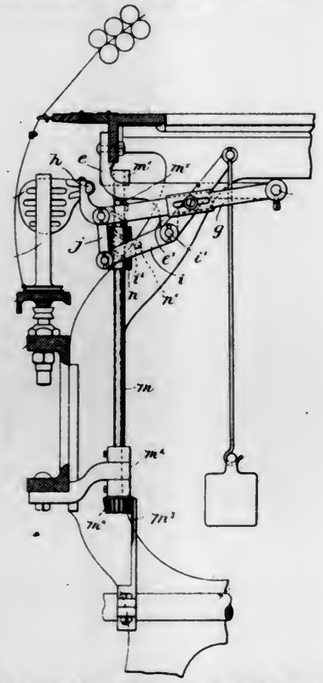
2. A frictional swivel joint comprising a rod or pipe section, a two-part socket fitting on said pipe, a ring fitted into grooves in said socket and pipe, screws for securing the parts of said socket together, and spring washers mounted on said screws, and forming an adjustable spring tension device for adjusting the frictional contact between said socket and pipe, substantially as described.

3. A combined swivel and elbow joint comprising a two-part socket constructed to rotatably engage a rod or pipe section, means for securing the parts of said socket together and for adjustably clamping said socket into frictional engagement with the pipe, a two-part elbow joint, and means for adjustably clamping the parts of said elbow joint into frictional engagement, substantially as described.

4. An elbow joint comprising two concentrically pivoted disks, means for adjustably clamping said disks into frictional engagement, and a counter-balancing spring made in the form of a reversely coiled double spiral secured in place between said disks, one end of the spring being secured to one disk, and the other end of said spring being arranged to engage any one of a series of recesses in the other disk, substantially as described.

546,460. SPINNING-FRAME. EDWARD WHITTUM, Fall River, assignor to George Draper & Sons, Hopedale, Mass. Filed June 14, 1895. Serial No. 552,775. (No model.)

Claim.—1. In a spinning-frame, the combination with the spindles and ring-rail, of the separator-rod, the separators attached to said rod, an oscillatory support to which said rod is affixed, said support being movable to permit the downward displacement of the separators into contact with the ring-rail, and means for holding the separators in contact with the ring-rail.



2. In a spinning-frame, the combination with the spindles and ring-rail, of the separator-rod, the separators rigidly attached to said rod, an oscillatory support to which said rod is affixed, said support being movable to permit the downward displacement of the separators into contact with the ring-rail, and an adjustable gravity controlling device which normally exerts an upward yielding pressure on the separators and is caused by the downward movement of the separators to exert a downward yielding pressure thereon and hold them in yielding contact with the ring-rail.

3. In a spinning-frame, the combination with the spindles and ring-rail, of the separator-rod, the separators rigidly attached to said rod, a vertically movable support to which said rod is rigidly attached, said support being adapted to yield downwardly to permit a downward displacement of the separators, and means for holding the separators and their support in a downwardly displaced position.

4. In a spinning-frame, the combination with the spindles and ring-rail, of the separator-rod and its separators, a vertically movable weighted support which presses said separators upwardly, and a vertically reciprocating operating device connected with the support and permitting the independent depression of the support.

5. In a spinning-frame, the combination with the spindles and ring-rail, of the separator-rod, the separators thereon, a vertically movable support for said rod and separators, and a pivoted lever loosely connected at one end with the said support and provided at its other end with a weight, the last mentioned end being movable to either side of a vertical passing through the pivot, whereby when said lever is in one position the weight exerts an upward pressure on the separators and when the lever is in another position the weight exerts a downward pressure on the separators.

6. In a spinning-frame, the combination with the spindle and ring-rail, of the separator-rod, the separators thereon, a vertically movable support for said rod and separators, a pivoted weighted lever loosely connected at one end with said support and provided at its other end with a weight, said lever and its weight being adapted to exert either an upward or a downward pressure on the said support, and a reciprocating operating device separably engaged with said lever and permitting its independent depression.

7. In a spinning-frame, the combination with the spindles and ring-rail, of the separator-rod, the separators thereon, a vertically movable support for said rod and separators, a pivoted weighted lever provided with a stud, a link connecting one end of said lever with said support, a weight connected with the other end of said lever, a vertical rock-shaft having a screw-thread, and a nut engaged with said thread and vertically reciprocated thereby, said nut having a lug or projection bearing on the stud on the lever.

8. A sheet-metal separator-blade having a shank provided at one edge with an outwardly projecting tenon in the same plane with the blade, combined with a holder having grasping ears formed to engage the edges of said shank, one of said ears having a slot to receive said tenon.

9. A separator-blade holder comprising a single piece of sheet metal bent to form a socket, two arms projecting from said socket and each provided with blade-grasping ears, one of said arms having a slot to receive a tenon on the blade, and a screw engaged with said arms and adapted to press the same toward each other.

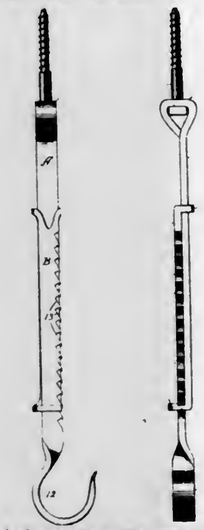
546,461. FLOOR OR CEILING PLATE. ALLAN J. BEATON, Southington, Conn., assignor to the Beaton & Bradley Company, same place. Filed Oct. 1, 1894. Serial No. 524,592. (No model.)



Claim.—1. A pipe thimble consisting of two sections joined at their abutting ends by hooked lugs and recesses with which the sections are respectively provided, one end of one of the sections having an overhanging edge or locking flange adapted to prevent disengagement of the hook and recess at that point and the opposite end of one of the sections having a retaining spring adapted to prevent accidental disengagement of the hook and recess thereat, substantially as described and for the purpose specified.

2. A pipe thimble comprising two sections adapted to be connected and disconnected for application to and removal from a pipe, and having an inner flange provided with slits, and the spring arms S secured within said slits and extended along inside of the inner face of said flange, substantially as described and for the purpose specified.

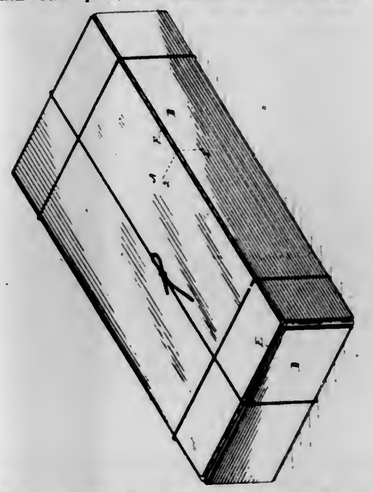
546,462. PIPE-HANGER. ALLAN J. BEATON, Southington, Conn., assignor to the Beaton & Bradley Company, same place. Filed Jan. 22, 1895. Serial No. 535,831. (No model.)



Claim.—1. A pipe hanger having means for attaching to a suitable support and two bars and loops with the body of one bar passing through the loop of the other bar and vice versa, one of said bars being toothed on one edge, said teeth being adapted for engagement with the cross or end bar of the loop of the companion bar, the loop which coacts with said toothed edge being of a size to permit the necessary vibration for engagement and disengagement; one of said bars carrying a pipe sustainer, substantially as described and for the purpose specified.

2. A pipe hanger provided with devices for sustaining a pipe and for attaching the hanger to a suitable support and having two bars and loops interlocking each other, one of said bars having at one edge the ratchet shaped teeth with the projection 14 on the holding face of said ratchet teeth, said bar and loops being relatively arranged for uniting and disuniting the interlocking loop and teeth, substantially as described and for the purpose specified.

546,463. CELERY-PACKAGE. SAMUEL J. DUNKLEY, Kalamazoo, Mich. Filed Apr. 19, 1895. Serial No. 546,338. (No model.)



Claim.—1. A paper board or paste board package for celery constructed from a single piece of water-proofed paper laid out into the parts A, A, B, B′, B″, D, D, D, D, E, E, E′, E′, C, C, with the corners between the same formed by compressing the material into a rounded form to prevent abrading of the material and cut to form a square, C, C, at each end of the part, B, and squares, E, E, at each end of the part, B′ and continuous therewith; and squares, E′, E′, at the end of the parts, D, D, and continuous therewith lying opposite the part, B″, formed into a package by folding the parts, C, C, at right-angles to the part, B, doubling the parts, A, A, to a vertical position folding the parts, E, E, to right-angles to the part, B′, shutting the portions, D, over the parts, E and C, with the part, D, bearing portion, E′, at the outside folding the portion, E′, over the part, B′, and the portion, B″, over the parts, E′, E′, and B′, and securing the same together by a suitable cord, all substantially as described for the purpose specified.

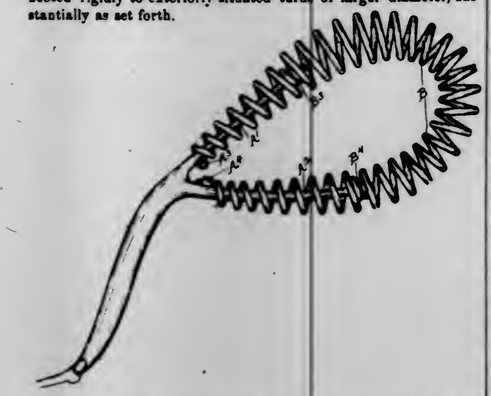
2. A paper board or paste board package for celery constructed from a single piece laid out into the parts, A, A, B, B′, B″, D, D, D, D, E, E, E′, E′, C, C, and cut to form a square, C, C, at each end of the part, B′; and squares, E, E, at each end of the part, B′; and squares, E′, E′, at the end of the parts, D, D, lying opposite the part, B″, formed into a package by folding the parts, C, C, at right-angles to the part, B, doubling the parts, A, A, to a vertical position folding the parts, E, E, to right-angles to the part, B′, shutting the portions, D, over the parts, E, and C, with the part, D, bearing the portion, E′, at the outside, folding the portion, E′, over the part, B′, and the portion, B″, over the parts, E′, E′, and B′, and securing the same together by a suitable cord, all substantially as described for the purpose specified.

3. A paper board or pasteboard package for celery constructed from paper or pasteboard suitably waterproofed to prevent absorption of moisture to dry the celery constructed in the form of a box, the corners of which are formed by compressing the same into a circular mold so that the same will fold easily and smoothly without abrading the material to preserve its full strength on the corners, as specified.

4. A package for celery constructed of waterproofed paper board or straw board material folded to form a substantially air tight package, to protect the celery from injurious temperatures and prevent evaporation of its moisture as specified.

546,464. HANDLE. WILLIAM F. GREENE, Troy, N. Y. Filed Dec. 18, 1894. Serial No. 532,157. (No model.)

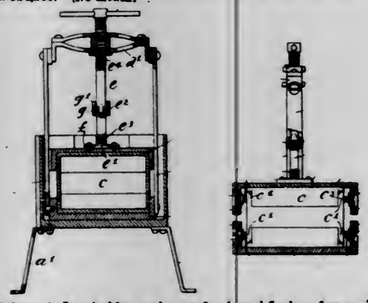
Claim.—1. In a handle, the combination with a shank, of a shank-inclosing coil of wire having its end turns and one or more intermediate turns in the coil relatively small and approximately fitting the shank, and having relatively large turns in the coil between the small intermediate turn and each end-turn, said small end and intermediate turns being secured to the shank and the small intermediate turns connected rigidly to exteriorly situated turns of larger diameter, substantially as set forth.



2. In a handle, the combination with a bifurcated shank, of a looped coil of wire having relatively small end and intermediate turns inclosing each bifurcate arm of the shank, and relatively large arm-inclosing turns between the intermediate and end-turns, and means for securing the coil upon the shank, said small end and intermediate turns being secured to the shank and the small intermediate turns connected rigidly to exteriorly situated turns of larger diameter, substantially as set forth.

546,465. PRESS-HOLDER AND HEATER FOR DENTAL FLASKS.

MALCOLM R. GRISWOLD, Hartford, Conn. Filed Sept. 26, 1894. Serial No. 524,209. (No model.)



Claim.—1. In a holder and press for dental flasks a frame pivoted to a lower mold section, an upper mold section pivoted to the frame, and a lifting rod pivoted to the upper mold section with means for clamping the mold sections together, all substantially as described.

2. In a holder and clamp for a dental flask, a frame pivoted to a lower mold section, a cross bar pivoted at the upper part of the frame, a jointed lifting rod rotarily secured to the upper mold section and to the cross bar and having means for clamping the sections together, all substantially as described.

3. In a holder and clamp for dental flasks, a frame pivoted to a lower mold section, a cross bar pivoted at the upper part of the frame, a jointed lifting rod extending through the cross bar and having a threaded portion engaging a threaded opening in the cross bar, an upper mold section secured to the lifting rod, and a locking sleeve adapted to surround the joint in the lifting rod to lock the same, all substantially as described.

4. In a holder and clamp for a dental flask, a frame pivoted to a lower mold section, a cross bar pivoted to the upper part of the frame, a jointed lifting rod having a threaded portion engaging a threaded opening in the cross bar, an upper mold section secured to the lifting rod, a threaded locking sleeve located on a threaded portion of the rod and adapted to surround the joint to lock the same, and a retaining thread located on the lower part of the rod, all substantially as described.

5. In a holder and clamp for dental flasks, in combination, a frame, an exteriorly threaded sleeve located in the frame and provided with means of rotation, and a flask having a projecting part engaging the opening in the sleeve, all substantially as described.

6. In combination in a dental flask holder and press, a flask section having ears adapted to lie against the outer surface of the opposite section, beveled perforations located in said ears, a holder, and a screw threaded beveled locking device located in the holder and adapted to engage the beveled perforations in the ears of the flask sections, all substantially as described.

7. In combination in a dental flask holder and press, a flask section having ears adapted to lie against the outer surface of the opposite section, beveled perforations located in the ears, a holder, a threaded sleeve adjustably secured in the holder and having a beveled edge adapted to engage the beveled socket in the ears of the flask section, and a stud located in the threaded sleeve and adapted to project through the opening in the ears of the flask section, all substantially as described.

8. In combination with a dental flask holder, a kettle adapted to receive the holder, said kettle being provided on its interior side walls with guiding surfaces whereby the flask sections are aligned to properly engage each other as they are forced together, all substantially as described.

9. In combination with a holder and press for dental flasks or the like, a kettle provided on the under side with legs, and having its interior surface conforming to shape of the holder, and the mold held therein whereby the sections of the mold are guided into proper position one upon the other, all substantially as described.

10. In combination with a dental flask holder a clamp, a clamp key having a central opening and laterally projecting lugs, all substantially as described.

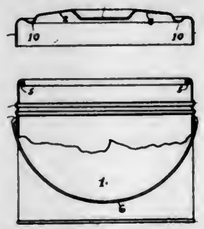
11. In a holder and clamp for dental flasks in combination with a frame, a longitudinally adjustable sleeve located in the frame, and a flask having a projecting part engaging a central opening in the sleeve, all substantially as described.

12. In combination in a holder and press for dental flasks, a jointed lifting rod, an automatic locking device located in one of the sections and adapted to engage the opposite section whereby the rod is held rigid at the joint, and means for operating the locking device, all substantially as described.

13. In a holder and press for dental flasks, a frame pivoted to a lower mold section, a cross bar pivoted at the upper end of the frame, a jointed lifting rod rotarily secured to an upper mold section and to the cross bar, and a lock to rigidly secure the joint in the lifting rod, all substantially as described.

546,466. SHEET-METAL VESSEL.

FREDERICK E. HEINIG, Louisville, Ky. Filed Feb. 28, 1895. Serial No. 539,984. (No model.)



Claim.—In a sheet metal vessel, a body portion 1 terminating in an inner beaded edge, a dome shaped cover 2 with an annular flange and a marginal portion 10 depressed below the level of the dome shaped center, and extending beneath the beaded edge and leaving a space between its point of contact with the body portion and said edge, substantially as described.

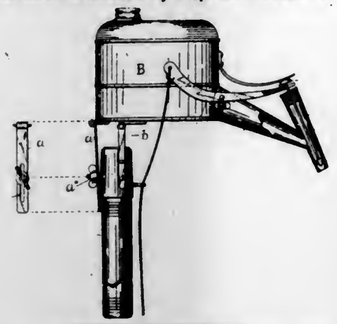
546,467. OIL-CAN.

FREDERICK E. HEINIG, Louisville, Ky. Filed Feb. 28, 1895. Serial No. 539,985. (No model.)

Claim.—1. In an oiler, a can body, a deflected spout an auxiliary having an intermediate connection thereto, a spring actuated valve in said auxiliary, a supporting standard adjustable connections between said can-body and the standard, and controlling devices for operating said spring actuated valve, all in combination, substantially as specified.

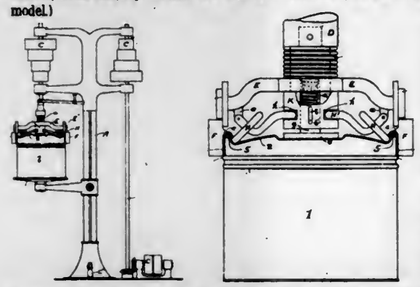
2. In an oiler, a standard, adjustable securing devices thereon, a can body connected to said standard by said adjustable securing devices, a deflected spout extending from said can body, an auxiliary spout connected to said deflected spout with its ends entirely free from said deflected spout, a spring actuated valve in said auxiliary, a controlling lever and a cord connected thereto at its free end, adapted to actuate said lever and valve, substantially as shown and specified.

3. In an oiler, a can body, a downwardly deflected spout extending therefrom at or near its lower end, an auxiliary spout of greater deflection at the free end thereof, a valve and valve stem in said auxiliary spout, said valve stem projecting upward therefrom, an actuating lever hung in convenient proximity to said valve stem and engaging therewith at one end, an actuating cord connected thereto, and a spring set in such position as to bear upon said valve stem, a supporting standard and adjustable supporting devices connecting said valve standard and the can body and adapted to hold it in different angles therefrom substantially as specified and shown.



546,468. SHEET-METAL-WORKING MACHINE.

FREDERICK E. HEINIG, Louisville, Ky. Filed Feb. 28, 1895. Serial No. 539,986. (No model.)



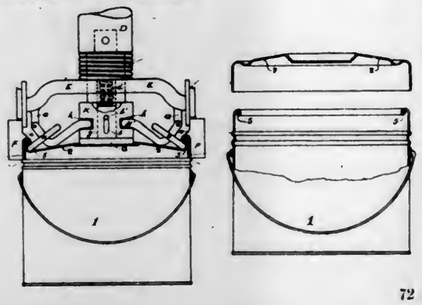
Claim.—1. In a machine for the described purpose, a base step, a carrying spindle, a thrust block connected thereto, a roller carrying yoke, pressure levers pivotally connected to said yoke at one end and to the thrust block at the other end and forming rollers on said levers all combined substantially as specified.

2. In a machine for the described purpose, a support for the work, a collar for clamping the cover flange, a yoke, a thrust block, above the position of the work, levers connected at one end to said yoke and adapted to be carried at the opposite end in said thrust block and forming rollers on said levers, all combined substantially as specified.

3. In a machine for the described purpose, a support for the work, a collar for clamping the cover flange, a pair of pressure rolls, a carrying yoke for said rolls, a pair of forming rolls, a pair of pivoted levers carrying said forming rolls and a thrust block carrying the inner ends of said levers, substantially as specified.

546,469. PROCESS OF SEAMING COVERS TO SHEET-METAL VESSELS.

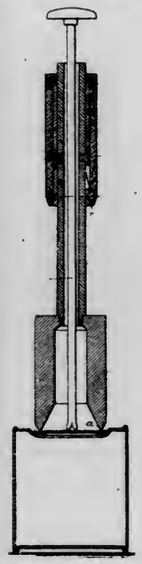
FREDERICK E. HEINIG, Louisville, Ky. Filed Feb. 28, 1895. Serial No. 539,987. (No model.)



Claim.—The herein described process consisting in first placing a flanged cover over the end of a vessel which has a beaded edge and then pressing down and outwardly the top surface of the cover within the margin of the flange beneath the bead of the vessel substantially as described.

546,470. SOLDERING-IRON.

JOHN C. MCINTYRE, Farnham, N. Y., assignor to the Sprague Manufacturing Company, same place. Filed May 6, 1895. Serial No. 548,217. (No model.)



Claim.—1. The combination with a rotary soldering block having a stem provided with a pin or projection, of a reciprocating handle sliding on said stem and provided with a spiral groove engaging with said pin or projection, substantially as set forth.

2. The combination with a hollow rotary soldering block and a hollow stem secured thereto and having a pin or projection, of a central rod passing loosely through said hollow block and stem, and a reciprocating handle sliding on said stem and having a spiral groove which engages with the pin or projection of the stem, substantially as set forth.

3. The combination with a rotary soldering block having a stem provided with a pin or projection, of an actuating handle or sleeve capable of reciprocating on said stem and provided in its bore with raised spiral ribs separated by a space forming a spiral groove, said groove engaging with the pin or projection of said stem, substantially as set forth.

4. The combination with a rotary soldering block having a stem provided with a pin or projection, of an actuating handle or sleeve capable of reciprocating on said stem and provided in its bore with raised spiral ribs separated by a space forming a spiral groove, said groove engaging with the pin or projection of said stem, and filling pieces or stops arranged between the end portions of said spiral ribs, substantially as set forth.

5. The combination with a rotary soldering block having a stem provided with a pin or projection, of an actuating sleeve capable of reciprocating on said stem and composed of upper and lower rings, spiral ribs secured at their ends to said rings and forming a spiral groove which engages with the pin or projection of said stem, and a handle surrounding said spiral ribs and confined between said rings, substantially as set forth.

546,471. CONNECTOR FOR TERMINALS OF ELECTRIC CIRCUITS.

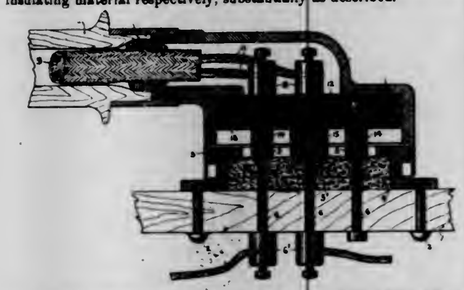
JULES E. NEHER, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, same place. Filed July 30, 1894. Serial No. 518,991. (No model.)

Claim.—1. In a connector for the terminals of an electric circuit, the combination with a yielding, resilient, insulating support for one of said terminals, of an unyielding, insulating support for the opposing terminal and means for clamping the said parts together, substantially as described.

2. The combination of a head having a substantially unyielding insulating plate carrying a contact piece, with a soft rubber support

carrying a contact piece and means for pressing said contact pieces together and into said soft rubber support, substantially as described.

3. The combination of a head having an unyielding insulating plate therein and having a screw-threaded inner end, with a base plate, a ring mounted thereon having a screw thread at its outer end, a body of yielding, insulating material in said ring, and contact terminals carried by said insulating plate and by said body of yielding, insulating material respectively, substantially as described.

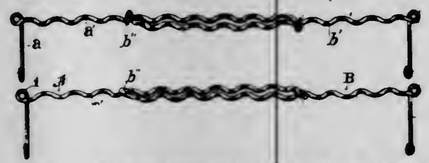


4. The combination of a head having an insulating plate therein and provided with a hollow handle, with an electric line conductor supported in and protected by said head and handle, a contact device carried by said insulating plate, a base plate, a ring carried by said base plate, a soft rubber insulator in said ring, and a contact device carried by said insulator and extending through said base plate, substantially as described.

5. The combination of a plurality of line conductors and a plurality of contact devices, with suitable supporting and insulating means therefor, a soft rubber bed or plate, a plurality of contact devices supported thereby and means for clamping said two sets of contacts together, substantially as described.

6. The combination with a line conductor and its terminal contact device suitably supported and insulated, a body of yielding, resilient, insulating material, an unyielding support therefor, a contact device supported thereby and means for forcing said contact devices together and maintaining them in contact, substantially as described.

546,472. ADJUSTABLE WINDOW-SHADE HOLDER. OSCAR H. NIES, Los Angeles, Cal.; assignor of one-half to Claborn P. Randolph, same place. Filed June 28, 1895. Serial No. 554,310. (No model.)



Claim.—1. In a shade holder the bracket bar set forth composed of two interlocked sections of wire each of which comprises a bracket arm and a crimped member terminating at one end in a hook adapted and arranged to clasp the crimped member of the opposite section.

2. In a shade holder the combination set forth of the wire section comprising a bracket arm bent at its end to form an angular loop, and a virtually straight crimped member connected with the bracket arm and terminating in a hook; and the wire section interlocked therewith and comprising a bracket arm bent at its end to form a round loop, and a virtually straight crimped member connected with the bracket arm and terminating in a hook.

3. In a shade holder the combination set forth of the wire section comprising a bracket arm bent at its ends to form an angular loop, a virtually straight crimped member terminating at one end in a hook, and a spring loop connecting the bracket arm with the crimped member; and the wire section interlocked therewith and comprising a bracket arm bent at its end to form a round loop, a virtually straight member terminating at one end in a hook, and the spring loop connecting such bracket arm and crimped member.

546,473. FLOUR-BIN. JAMES M. PATTON, Chico, Tex., assignor of one-half to John M. McKay, same place. Filed Apr. 11, 1895. Serial No. 545,343. (No model.)

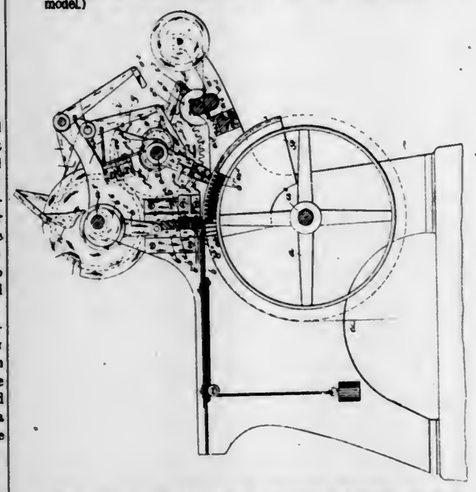
Claim.—1. The combination with the bin for storing flour, meal, &c., gradually decreasing in area throughout its length, of a stirrer formed from a series of wires which are twisted together at intervals in their length and which have the portions intermediate of the twists outwardly bowed to form loops, which loops are of graduated sizes to correspond to the taper of the said bin, substantially in the manner set forth.

2. As a new article of manufacture a stirrer for the purpose set forth formed of two wires which are twisted together at intervals in their length, and which have the portions between the twists bowed in opposite directions to provide loops, and which latter stand at different relative angles, substantially as set forth, for the purpose described.



3. The herein shown and described flour bin, comprising sloping sides and having a neck portion at its lower end, a partition dividing the bin into vertical compartments, cut-offs operating in the said neck portion to control the passage of the flour or meal from the said compartment, a spout adapted to embrace the lower end portion of the said neck and hinged thereto at one side, and secured at the opposite side by a suitable fastening, a sifter removably fitted to the lower end of the said spout, stirrers arranged in the said vertical compartments, and formed from wires which are twisted together at intervals in their length and have the portions between the twists bowed in opposite directions to form eyes, which eyes diminish in size from the upper to the lower end of the compartment and occur at different relative angles, said stirrers being supported by cross bars in the compartments, and covers to close the top ends of the said compartments, substantially as set forth.

546,474. MACHINE FOR SMOCKING CLOTH. FREDERICK S. PINKHAM, Everett, assignor, by mesne assignments, to Andrew J. Robinson, Boston, Mass. Filed July 26, 1892. Serial No. 441,248. (No model.)



Claim.—1. In a machine of the character described, the combination of a grated bed over which the material lies, means for entering the material into the channels or slots of the bed so that it lies in folds over the bars thereof, and means for applying fastenings to the adjacent folded edges of the material.

2. In a machine of the character described, the combination of a grated bed over which the material lies, detached bars to enter the channels or slots of the bed and hold the material in folds, means for inserting said bars and means for applying fastenings to the adjacent folded edges of the material.

3. In a machine of the character described, the combination of a movable grated bed over which the material lies, means for intermittently moving said bed, detached bars stacked one against another on a fixed support and designed to be introduced one by one into the channels of said bed to fold the material over the bars thereof, means for moving the stack of bars on its support to bring the bars one by one into position for engagement with the channels of the bed, and means for engaging the bars with the bed when brought to such position.

4. In a machine of the character described, the combination of a rotary cylindrical grated bed over which the material lies, means for turning the same step by step, means for introducing the material into the channels or slats of the bed so that it lies in folds over the bars of the bed, and means for applying fastenings to the adjacent folded edges of the material.

5. In a machine of the character described, the combination of a support for the plaited material, a plurality of gangs of devices for applying fastenings to adjacent folded edges of the material, the members of said gangs being arranged alternately so that those of one gang apply fastenings to a pair of folded edges opposite spaces between fastenings applied by the other gang to a preceding pair of folded edges, and means for actuating the fastening appliers.

6. In a machine of the character described, the combination of a movable support for the plaited material, means for intermittently moving said support, a plurality of gangs of devices for applying fastenings to adjacent folded edges of the material, the members of one gang alternating in position with those of the other gang, and means for alternately actuating the gangs, for the purpose described.

7. In a machine of the character described, the combination of a support for the plaited material; a fixed die out beyond said support; and a fastener-applier movable back and forth between the die and the material support and having fastener-forming means co-acting with the die.

8. In a machine of the character described, the combination of a support for the plaited material, a fixed die, a fastening applier pivotally suspended between the die and the material support and having fastening-forming means to co-act with the die, and means for vibrating the said fastening applier and for operating its forming devices.

9. In a machine of the character described, the combination of a support for the plaited material; a fixed die-bed; a fastening applier movable between the die-bed and the material and having fastening-forming means to co-act with the die-bed, said means including clinching-jaws; means for vibrating the fastening applier; means for independently actuating its clinching jaws; and means for rendering said jaw-actuating means operative or inoperative, according as the fastening applier is over the material or over the die-bed.

10. In a machine of the character described, the combination of a support for the plaited material, a fixed die-bed, a fastening applier movable between the die-bed and the material and having fastening forming means to co-act with the die-bed, said means including clinching jaws, means for vibrating the fastening applier, a shiftable cam for actuating its clinching jaws, and means for shifting said cam into and out of operative position, for the purpose described.

11. In a machine of the character described, the combination of a grated bed with notched bars over which the material lies in folds, and a fastener applying device comprising a plunger to take a substantially V-shaped fastener between the bars of the grated bed, clinching jaws to act through the notches of the bar and close bent ends of said fastener on the folded edges of the cloth, means for actuating said plunger, and means for independently actuating the clinching jaws.

12. In a machine of the character described, the combination of a support for the plaited material, a fixed die-bed, a swinging fastener-forming and setting device, and means for vibrating the same, including a compound cam with an automatic switch for the purpose described.

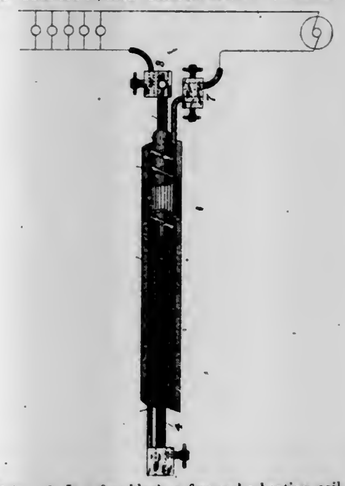
13. In a machine of the character described, the combination of a suitable support for the plaited material, a fixed die-bed, gangs of swinging fastener-forming and setting devices, and sets of actuating means applied to said gangs respectively and including oppositely set cam-disks each having a compound cross over groove with an automatic switch.

14. In a machine of the character described, the combination of a grated bed over which the material lies, detached bars to enter the slots of said bed carrying the material with them, means for engaging said bars with the bed, and means for holding the bars in engagement with the bed.

15. In a machine of the character described, the combination of a grated bed over which the material lies, detached bars to enter the slots of said bed carrying the material with them, a plunger to force said pieces into the slots, and spring catches to hold the pieces in place

16. In a machine of the character described, the combination of a movable grated bed over which the material lies, detached bars for insertion in the slots of the bed, a plunger for inserting said pieces, spring catches for holding the pieces in the slots, and flanges forming extensions of said catches.

546,475. FUSE-BLOCK. HENRY N. POTTER, Allegheny, assignor to the Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Filed Oct. 17, 1894. Serial No. 526,126. (No model.)



Claim.—1. In a fuse block, a fuse and a heating coil surrounding the same and in series therewith, substantially as described.

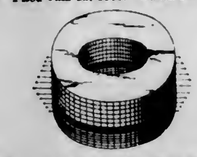
2. A fuse and insulating material surrounding the same, combined with a heating coil surrounding said insulating material and in series with said fuse, substantially as described.

3. In a fuse block, a fuse, an iron wire coil surrounding the same and in series therewith, and insulating material interposed between said coil and fuse, substantially as described.

4. A fuse block comprising a heat generating conductor formed of material having a high temperature resistance coefficient and an adjacent conductor formed of material fusible at a comparatively low temperature in series therewith, substantially as described.

5. A fuse block comprising a fuse, an adjacent heat generating conductor electrically connected in series therewith, interposed non-conducting material and an insulating shell or casing, substantially as described.

546,476. ELECTRIC CONVERTER. CHARLES F. SCOTT, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, same place. Filed Jan. 12, 1895. Serial No. 534,639. (No model.)



Claim.—1. In a converter, a secondary coil presenting a plurality of conducting paths leading to single work circuit and having considerable breadth in a single plane, as nearly as possible parallel to the leakage lines of the converter, substantially as described

2. In a converter, a secondary coil comprising a series of successive cylindrical layers of wire, the opposite ends of which are connected in multiple arc to opposite ends of the secondary distributing system, thus constituting a plurality of conducting paths of considerable breadth and substantially parallel to the leakage lines of the converter.

3. In a converter, a secondary composed of successive double layers the opposite ends of which are connected in multiple arc to the terminals of the secondary distributing system, substantially as described.

4. In a converter, a secondary composed of a number of layers of wire, said layers being connected in pairs, the end of the inmost layer being connected to the beginning of the outermost and so on, in such a manner as to provide a number of substantially equal branches in multiple arc, substantially as described.

546,477. THILL-COUPLING. NEWELL SOUTH, Humphrey, Nebr. Filed July 27, 1895. Serial No. 557,364. (No model.)



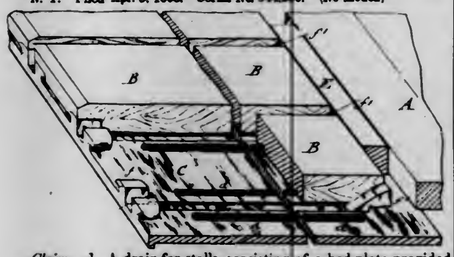
Claim.—1. The herein described thill coupling comprising two forwardly projecting parallel arms having U-shaped sockets formed in their upper faces and cut away or recessed upon their outer opposite faces in such manner as to form dove-tailed locking edges, and two pivoted guard members hinged to the forward ends of said arms and adapted to engage and retain the thill iron pin or bolt in place, said guard members being provided with the integral depending flanges for closing the outer ends of the U-shaped sockets referred to, and having their rear swinging edges beveled or chamfered off to engage behind and interlock with said dove-tailed edges, substantially in the manner and for the purpose described.

2. The herein described thill coupling, comprising a pair of forwardly projecting parallel arms having U-shaped sockets in their upper faces and formed with rounded forward extremities, and a pair of pivoted guard members hinged to the forward ends of said arms and each provided with a depending lug portion having a curved or semi-circular recess adapted to enter the U-shaped depressions in the coupling arms and to engage with the pin or bolt of the thill iron, said guard members being also provided each with a depending flange adapted to swing downward and close the outer end of such U-shaped socket in the coupling arm, substantially as and for the purpose described.

3. In a thill coupling, the main coupling member provided with a forwardly extending pair of parallel arms, a thill iron having its pin or bolt arranged within horizontally aligning sockets in said arms, and a pair of pivoted guard members hinged to said arms and adapted to embrace and engage said pin or bolt, in combination with a locking spring the same being folded centrally upon itself, one terminal thereof being curved or formed in such manner as to engage with and press forwardly against the rear end of the thill iron, and the other terminal of said spring having connected therewith a transverse pin resting at its opposite ends upon the pivoted guard members for preventing the accidental upward movement of said members, substantially as set forth.

4. In a thill coupling, a pair of forwardly extending arms provided at their rear ends with overlapping transverse portions having a dove-tailed sliding connection with each other, and provided upon their contiguous inner faces with vertically extending grooves which are adapted to register with each other and receive a key, substantially as and for the purpose specified.

546,478. DRAIN FOR STALLS. FERDINAND STEINLE, New York, N. Y. Filed Apr. 3, 1895. Serial No. 544,239. (No model.)



Claim.—1. A drain for stalls, consisting of a bed-plate provided with front and rear-lugs, and blocks or slats provided at their under side with front and rear-plates adapted to interlock with the front and rear-lugs of the bed-plate, substantially as set forth.

2. A drain for stalls, consisting of a bed-plate provided with longitudinal ribs, longitudinal grooves intermediately between said ribs, and with front and rear-lugs, and of blocks provided at their under side with grooves registering with said ribs, and with front and rear-plates interlocking respectively with the front and rear-lugs of the bed-plate, substantially as set forth.

3. In a drain for stalls, the combination of a bed-plate provided with longitudinal ribs, longitudinal grooves between said ribs, and with front and rear-lugs, blocks provided with grooves fitting over the ribs of the bed-plate, and with front and rear-plates interlocking with the front and rear-lugs of the bed-plate, a gutter extending along the front-end of the bed-plate, and a transverse retaining block extending along the rear-ends of the blocks, substantially as set forth.

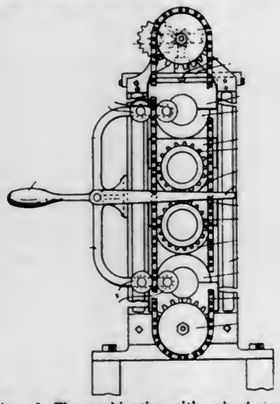
4. A bed-plate for stall-drains, provided with parallel guide-ribs of less length than the plate, longitudinal grooves or depressions between said ribs, and with front and rear-lugs for locking the blocks or slats to the bed-plate, substantially as set forth.

546,479. BOOK-HOLDER AND ADVERTISING DEVICE. CHARLES L. WHIPPLE, Los Angeles, Cal. Filed Nov. 23, 1894. Serial No. 529,734. (No model.)



Claim.—A combined book-holding and advertising device comprising a support, a top formed with an upper section having a book-aperture, a skeleton advertising frame secured to the upper section forming a support for a book, and having slots located transversely to the book-aperture, and a series of card spaces surrounding the book-apertures, the clamps hinged to the frame at the edges of the book-aperture, and having lips for engaging the edges of the book covers, and the coil-spring located beneath the frame and having semi-circular arms extending through the transverse slots of the frame and bearing against the clamps; substantially as described.

546,480. PRESSURE-CONTROLLED APPARATUS FOR CALENDERING-ROLLS. ALONZO S. WOODWARD, Pepperell, Mass., assignor of one-half to George Jenks and Fred W. Lovejoy, same place. Filed Jan. 30, 1894. Renewed July 6, 1895. Serial No. 555,163. (No model.)



Claim.—1. The combination with calendering rolls and devices for applying pressure thereto, of means adjustable to operatively connect one or more of the calendering rolls with or disconnect the same from said pressure applying devices, whereby pressure may be applied or removed by the revolution of the rolls, and a disconnector set in motion by the establishment of the connections.

2. The combination with calendering rolls and devices for applying pressure thereto, of means adjustable to operatively connect one or more of the calendering rolls with or disconnect the same from said pressure applying devices, whereby pressure may be applied or removed by the revolution of the rolls, and a disconnector in the form of an endless traveler set in motion by the establishment of the connections

3. The combination with calendering rolls and devices for applying pressure thereto, of means adjustable to operatively connect one or more of the calendering rolls with or disconnect the same from said pressure applying devices, whereby pressure may be applied or removed by the revolution of the rolls, a clutch lever for making and breaking the connections, and an endless traveler set in motion by the establishment of the connections and having a lug or lugs to act against the clutch lever and break the connections at a predetermined point.

4. The combination, with calendering-rolls and screws for applying pressure thereto, of gears on two of the rolls, a chain adapted to engage said gears and operatively connected with the pressure-applying screws, and means for engaging the chain with one or the other of said gears.

5. The combination, with calendering-rolls and screws for applying pressure thereto, of gears on two of the rolls, a chain adapted to engage said gears and operatively connected with the pressure-applying screws, and a lever having lateral arms which engage the chain on opposite sides of the gears and by whose oscillation the chain may be engaged with one or the other of said gears.

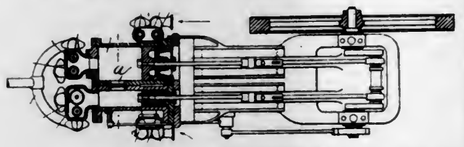
6. The combination, with calendering-rolls and screws for applying pressure thereto, of gears on two of the rolls, a chain adapted to engage said gears and operatively connected with the pressure-applying screws, and a lever having lateral arms which engage the chain on opposite sides of the gears and by whose oscillation the chain may be engaged with one or the other of said gears, the said lever having a centrally-located arm extending between lugs on the chain, substantially as and for the purpose described.

7. The combination with calendering rolls and devices for applying pressure thereto, of means adjustable to operatively connect one or more of the calendering rolls with or disconnect the same from said pressure applying devices, whereby pressure may be applied or removed by the revolution of the rolls, detent devices for locking the parts in connection, and detent tripping means set in motion by the establishment of the connection.

8. The combination, with calendering-rolls and screws for applying pressure thereto, of gears on two of the rolls, a chain adapted to engage said gears and operatively connected with the pressure-applying screws, a lever having lateral arms which engage the chain on opposite sides of the gears and by whose oscillation the chain may be engaged with one or the other of said gears, and detents which engage and lock the lever and carrying rolls to act on the chain.

9. The combination, with calendering-rolls and screws for applying pressure thereto, of gears on two of the rolls, a chain adapted to engage said gears and operatively connected with the pressure-applying screws, a lever having lateral arms which engage the chain on opposite sides of the gears and by whose oscillation the chain may be engaged with one or the other of said gears, detents which engage and lock the lever and carry rolls to act on the chain, and a lug or lugs on the chain to act on the detents.

546,481. MOTOR. WILLIAM B. BARY, St. Petersburg, Russia Filed Apr. 10, 1895. Serial No. 545,196. (No model.)



Claim.—1. In combination, in a gas engine the two cylinders arranged side by side with a port between them, the two pistons moving in unison and in the same direction in said cylinders, a compressed air supply leading to one cylinder and controlled by a valve, an explosive mixture supply controlled by a valve and leading to the other cylinder and an igniting device in one cylinder arranged to act when the port between the two cylinders is closed, substantially as described.

2. A gas engine comprising the compressed air and explosive mixture reservoirs, the cylinders having valve connections therewith from the opposite ends of the cylinders, the port between the cylinders, the pistons moving in unison in the cylinders and arranged to cover and uncover the said port, substantially as described.

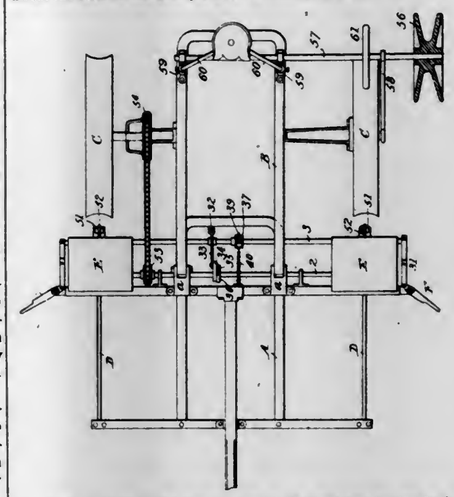
546,482. CORN-PLANTER. LORENZO D. BENNER, Peoria, Ill., assignor of one-half to Louis C. Evans, Springfield, Ohio. Filed May 28 1894. Serial No. 512,705. (No model.)

Claim.—1. In a seed planting machine, the combination of the seed dropping devices, the check row devices, a rock shaft connected to be operated by the check row devices, a revolving shaft which operates the seed dropping devices, and connecting mechanism between the rock shaft and seed dropping shaft, whereby the latter is intermittently operated from the former, substantially as described.

2. In a seed planter, the combination of the seed dropping devices, a rotary shaft which operates said devices, the shaft carrying a ratchet wheel, a rock shaft carrying an arm 32, an arm loosely mounted on the said rotary shaft and carrying a pawl adapted to engage with the said ratchet wheel, and a link connecting the two said arms, substantially as described.

3. In a seed planter, the combination of the seed box having a bottom provided with an annular flange, the circular seed dropping plate having its edge notched to form seed cells and arranged within the said flange, the hopper or false bottom closing the space between the flange and walls of the box and mechanism for rotating the plate, substantially as described.

4. In a planter, the combination of the seed box having its bottom provided with an annular flange 6, the rotary seed dropping plate arranged within the said flange, and a false bottom or hopper arranged within the seed box above the seed plate, and arranged to direct the seed to the seed plate, substantially as described.



5. In a planter, the combination of the seed box having its bottom provided with an annular flange, the rotary seed dropping plate arranged within the said flange, a false bottom or hopper, arranged within the seed box above the seed plate and with its lower edge extending over the edge of the seed plate, whereby the seed is directed to the seed plate, and the latter is held in place and means for holding the said hopper in position, substantially as described.

6. In a planter the combination of the seed box having a bottom provided with the annular flange 6, the opening 7, and the spout 8, leading away from the said opening, the circular seed dropping plate having its edge notched to form the open-ended cells, the said flange serving to close the open ends of the said cells, and the false bottom or hopper 14, extending from the walls of the seed-box to the annular flange and which directs the seed to the seed plate, substantially as described.

7. In a planter, the combination of the runner, having the seed channel 22, the box 20, mounted on the runner frame and having the opening 21, which registers with the channel 22, and is surrounded by a flange 120, the seed box, provided with the spout 8, the end of which fits inside the said flange, and means for securing the said boxes together and to the runner frame, substantially as described.

8. In a planter, the combination with the check row devices, of a rock shaft, connecting mechanism between the check row devices and the rock shaft, mechanism driven by the rock shaft, and an adjustable tension device for restoring the parts to a desired initial position, consisting of a spool adjustable around the shaft, a spring and a flexible connection between the spring and the spool, and means for securing the spool in different positions substantially as described.

9. In a planter, the check row device consisting of a vibrating tappet arm and a stationary part, the latter being adjustable forward and backward relative to the tappet arm, substantially as described.

10. In a planter, the combination of the tappet arm, the shaft upon which it is mounted, supported in a bracket carried by the frame of the machine, the plate or arm 42, carrying the stationary part of the check row device, the said plate or arm being slotted as at 44, and means for securing the said plate or arm in the various positions to which it may be adjusted relative to the tappet arm, substantially as described.

11. In a planter, the combination of the seed box, the runner having the channel 22, the valve mounted in the said channel and consisting of the plate 47, extending transversely across the channel, mounted upon the transverse axis 46, and having the guard plate 48, at one end, and the rearward extending arm 50, and means for intermittently moving the valve, substantially as described.

12. The combination with the planter, of the reel, its supporting shaft, a support or bearing for the shaft arranged outside of one of the main supporting wheels and carried by the axle thereof, and another bearing on the main frame arranged inside the said wheel, and a friction wheel on the said shaft bearing upon the said supporting wheel, substantially as described.

13. The combination with the check row device and the seed box, of an intermittently operated rotary seed plate, a worm gearing for driving the same, an intermittently rotated shaft for operating the said worm gearing, and the connections between the said shaft and

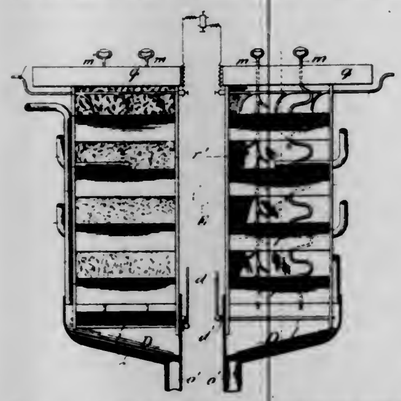
the check row devices for imparting an intermittent rotary motion to the said shaft, substantially as set forth.

14. In a seed planter, the combination with the check row device and the seed box, of the intermittently rotated seed dropping plate, a shaft provided with a worm, and with a ratchet wheel, a worm wheel mounted upon the shaft of the seed dropping plate and gearing with the said worm, and a pawl operating upon the said ratchet wheel and receiving its motion from the check row devices, for imparting an intermittent rotary motion to the said shaft, substantially as set forth.

15. In a planter, the combination of check row devices, a rock shaft, seed-dropping devices, an intermediate mechanism or connections whereby said seed-dropping devices are operated intermittently from said rock shaft, substantially as described.

16. In a planter, the combination of check-row and seeding devices, a rock shaft, an intermittently rotating shaft, and connections to operate the shafts from said check-row devices, substantially as described.

546,483. ELECTRODEPOSITING APPARATUS. HENRY L. BRIDGMAN, Blue Island, Ill. Filed Dec. 22, 1894. Serial No. 532,651. (No model.)



Claim.—1. An anode-device for an electro-depositing apparatus, comprising a basket formed with end-plates supporting pockets in vertical series for holding the anode-material, in combination with a stirring-implement extending through the vertical series of pockets, substantially as described.

2. An anode-device for an electro-depositing apparatus, comprising a basket formed with end-plates supporting pockets in vertical series for holding the anode-material, in combination with a valve *l* below the series of pockets, and a trough at the base of the basket, having an outlet *o'*, substantially as described.

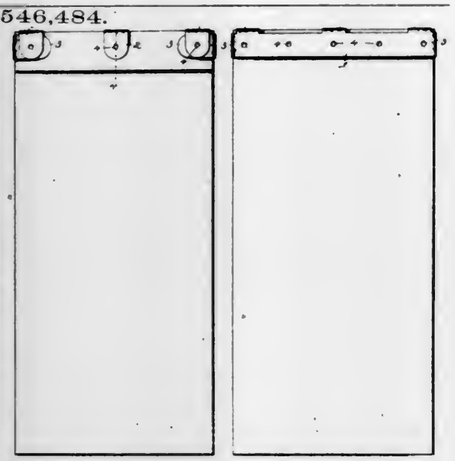
3. An anode-device for an electro-depositing apparatus, comprising a basket formed with end-plates *r* and *r'* reinforced at their upper ends by beams affording a mouth C, pockets B, supported in vertical series between the end-plates, for holding the anode-material, each pocket comprising a pair of downwardly converging plates *p*, in combination with a valve *l* below the series of pockets and a trough at the base of the basket, having an outlet *o'*, substantially as described.

546,484. BAG-FASTENER. NELLIE BROWN, Pueblo, Colo. Filed Apr. 29, 1895. Serial No. 547,542. (No model.)

Claim.—1. As an article of manufacture, a fastener for the purpose named comprising an integral blank struck from pliable sheet metal and having a longitudinal strip or body portion and a plurality of terminal and lateral ears provided upon their inner surfaces with spurs, said ears being adapted to be folded upon the strip or body portion of the fastener to engage the free edges of a bag or container, substantially as specified.

2. A bag fastener of pliable metal having a longitudinal strip or body portion, terminal ears arranged in alignment with the body portion, and lateral ears arranged at the ends and at an intermediate point of the body portion, said terminal and lateral ears being provided upon their inner surfaces with spurs projecting beyond the inner surface of the fastener and formed by punching the same, the terminal ears being adapted to be folded parallel with the body portion to bear against the bag, the end lateral ears being adapted to be folded upon the outer surfaces of the terminal ears, and the intermediate ear being adapted to be folded parallel with the end lateral ears to bear against the surface of the bag, substantially as specified.

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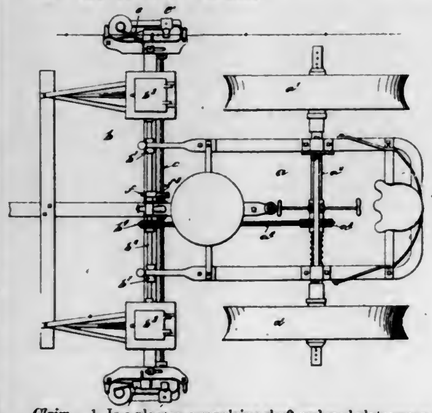


546,485. OIL-DISTRIBUTER. JOHN ERICSON, Sabine Pass, Tex., and ADELBERT PHINNEY, Edgartown, Mass. Filed Jan. 9, 1895. Serial No. 534,348. (No model.)



Claim.—In an oil distributer, a tubular cigar-shaped float body provided near one end with a widened body portion, a transverse partition arranged within the widened body portion of the float body to form separated air and oil chambers, the former of which is smaller than the latter and is located at the forward end of the float body whereby the latter will be floated in an upright position when not being trailed, said float body being provided at the bottom with a water inlet opening disposed at an angle whereby the water will be forced into the oil chamber when the float body is being trailed, and at the top with oil discharge openings, a central longitudinally disposed keel-pin fitted on the under side of the float body, and curved side-fins projected from opposite sides of the float body, substantially as set forth.

546,486. CORN-PLANTER. LOUIS C. EVANS, Springfield, Ohio, assignor of one-half to Lorenzo D. Benner, Peoria, Ill. Filed Mar. 17, 1894. Serial No. 503,990. (No model.)



Claim.—1. In a planter, a revolving shaft and seed plates operated thereby, a rock shaft operating valves in seed tubes under said seed plates, a ratchet wheel on said revolving shaft, and a pawl on said rock shaft adapted to engage said ratchet wheel, and a stop projection adapted to limit the movement of said ratchet wheel when moved by said pawl, substantially as specified.

2. In a planter having seed hoppers with seed plates therein, and seed tubes having valves therein, two parallel shafts for operating the plates and valves, respectively, and a pawl and ratchet connection between said shafts, and means, substantially as specified, for stopping the revolution of one shaft when moved by the other shaft by said pawl and ratchet devices, substantially as specified.

3. In a planter, the combination with a revolving shaft for operating the hopper seeding devices, and a rock shaft for operating the valves in seed tubes, of a projecting finger on said rock shaft, a spring-actuated pawl pivoted to said finger, a stop projection also on said finger, and a ratchet wheel on said revolving shaft adapted to be operated by said pawl and finger, substantially as specified.

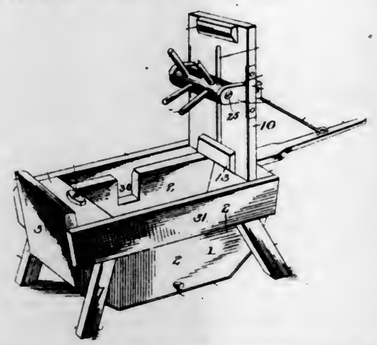
4. In a planter having hoppers with seeding devices operated by a revolving shaft, and seed tubes having valves therein operated by a rock shaft, a ratchet wheel on said revolving shaft, and a spring-actuated pawl pivoted to said rock shaft to engage said ratchet wheel, and means, as described, for retarding the motion of said revolving shaft when operated by said rock shaft, substantially as specified.

5. In a planter having a hopper, and a perforated revolving plate in said hopper, a removable false bottom in said hopper over said perforated plate, a stud on which said plate revolves, and an intermediate movable supporting ring adapted to support said false bottom, and a removable extension for said stud having engaging projections for the false bottom, substantially as specified.

6. In a planter having revolving perforated plates arranged in hoppers, as described, and seed tubes having independently operated valves therein, driving rings for said seed plates to which said plates are removably attached, perforated bottoms in said hoppers having projecting studs on which said plates revolve, removable false bottoms arranged above said plates, and intermediate removable supporting rings adapted to rest on said bottoms and support said false bottoms, and extensions for said studs also adapted to engage with said false bottoms when supported on said supporting rings, substantially as specified.

7. The combination in a seed hopper, of a driving ring, a removable plate in said ring, a removable false bottom supported above said plate, and an intermediate removable supporting ring for said false bottom, a stud on which the plate revolves, and a removable extension on said stud, said extension being provided with engaging features to engage said stud and false bottom, respectively, and means, substantially as described, for clamping the said parts together so as to permit the free operation of said plate, substantially as specified.

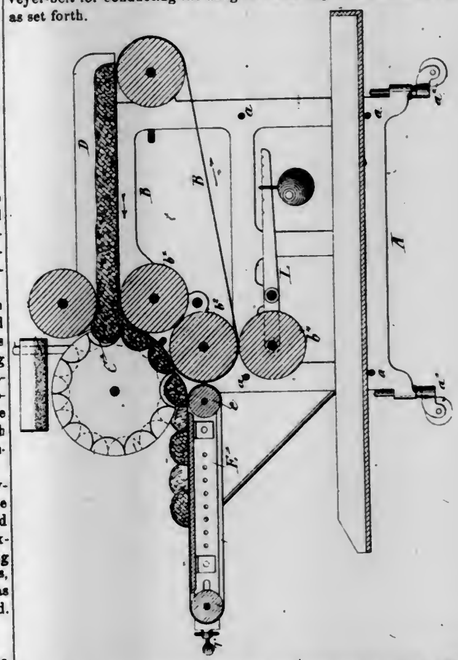
546,487. WASHING-MACHINE. WILLIAM HAAS, Lyndon, Kans. Filed Apr. 29, 1895. Serial No. 547,536. (No model.)



Claim.—In a washing machine, the combination with the suds box having oppositely-disposed notches in the upper edges of its sides, and a cover provided in its edges with notches to correspond with the notches in the said sides, of side standards operating in the notches of the cover and adapted to enter the notches in the sides of the suds box when the cover is closed, and guided in their vertical movements by the combined action of the walls of the notches in the cover and the said sides, the upper ends of the standards projecting beyond the top of the cover, a rubber journaled to the lower ends of the said standards, means for rocking the said rubber on its bearings, and coil springs having oppositely-projecting extensions to engage, respectively, with the top ends of the standards and the upper side of the cover, said springs being arranged exterior to the cover and supported thereby, substantially in the manner set forth.

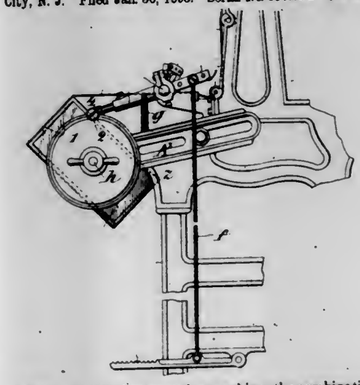
546,488. DOUGH-DIVIDING MACHINE. CARL HESSE, Long Island City, N. Y. Filed Jan. 8, 1895. Serial No. 534,169. (No model.)

Claim.—1. In a dough-dividing machine, the combination of a dough feeding-belt, two adjacent rollers arranged at one end of the belt, a roller at the opposite end of the belt, said belt being stretched over said rollers, means for imparting forward motion to the belt, a rotary dough-dividing cylinder provided with a number of pockets in its circumference and rotating in contact with that portion of the feeding-belt which is between said two adjacent rollers, and a conveyer-belt for conducting the dough from said cylinder, substantially as set forth.



2. In a dough-dividing machine, the combination of an endless dough-feeding belt, two adjacent rollers arranged at the other end of the belt, said belt being stretched over said rollers, a fourth weighted roller by which, in connection with the juxtaposed roller, motion is imparted to the feeding-belt, a dough regulating roller above the feeding-belt, a rotary dough-dividing cylinder provided with pockets and moving in contact with the feeding-belt at a point intermediately between said two adjacent rollers, and an endless conveyer-belt below the dough-dividing cylinder, substantially as set forth.

546,489. PAPER-BOX-COVERING MACHINE. JAMES LEO, Jersey City, N. J. Filed Jan. 30, 1895. Serial No. 536,624. (No model.)

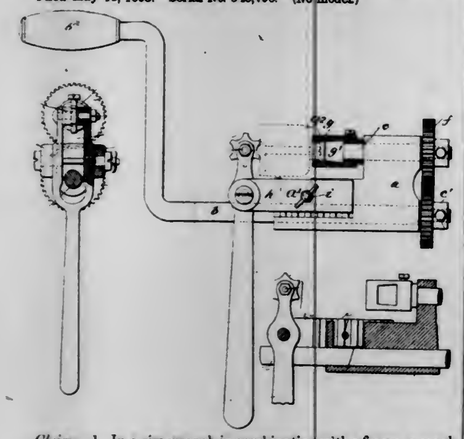


Claim.—1. In a box-covering machine, the combination with the form and form-spindle having on it a cone 6 and thumb-nut 7, of the disk 1, having a conical bore to fit the cone 6, and a locking recess 2, of a pivotally mounted arm 3, bearing a detent stud which rests on

the periphery of said disk, the treadle and the treadle-rod adapted to operate said arm 3, substantially as set forth.

2. In a box covering machine, the combination with the form-spindle, of a disk 1, mounted adjustably on said spindle and having in its periphery a single recess 2, of the rock-shaft *a*, the arm 3 thereon, provided with a stud 4, which bears on the periphery of said disk 1, the knife carried by the rock-shaft, the arm *d*, on said shaft, and the treadle coupled to said arm, substantially as set forth.

546,490. RIM-WRENCH. CHARLES B. LOOMIS, Andover, Conn. Filed May 10, 1895. Serial No. 548,798. (No model.)

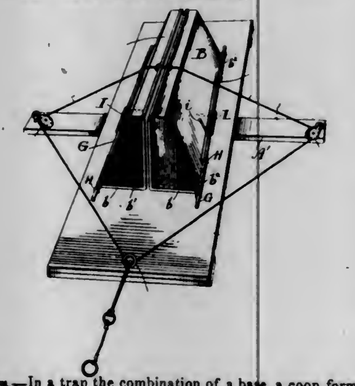


Claim.—1. In a rim wrench in combination with a frame, a crank shaft supported in bearings in the frame, a wrench shaft also supported in the frame, interengaging cog wheels secured to the respective shafts, a wrench borne on the inner end of the wrench shaft, and a lever bracket supporting a pivoted lever and adjustably secured to the frame, all substantially as described.

2. In a rim wrench in combination with a frame, a crank shaft supported in bearings in the frame, a wrench shaft also supported in the frame, interengaging cog wheels secured to the respective shafts, a wrench borne on the inner end of the wrench shaft and having a socket with flaring walls with a transverse opening therethrough, and a pivoted lever mounted on the frame, all substantially as described.

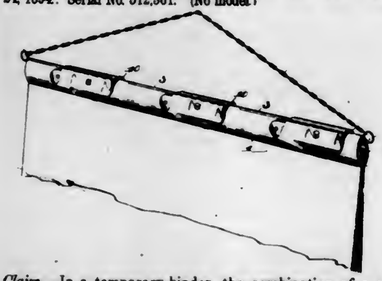
3. In a rim wrench in combination with the frame, a crank shaft supported in bearings in the frame, a crank secured to the shaft, a wrench shaft also supported in the frame, interengaging cog wheels adjustably secured to the respective shafts, a wrench borne on the inner end of the wrench shaft, a lever bracket adjustably secured to the frame, a pivoted lever mounted on the bracket and a contact piece borne on the inner end of the lever in opposition to the wrench, all substantially as described.

546,491. BIRD-TRAP. FRITZ MAIERHOFER, Chicago, Ill. Filed Apr. 1, 1895. Serial No. 544,079. (No model.)



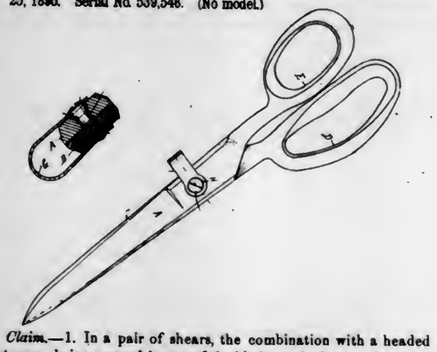
Claim.—In a trap the combination of a base, a coop formed in two sections having flanges on three sides thereof, hinges connecting the fourth side of each section to the base, springs holding said sections normally closed, cords secured to the upper portions of said sections and suitable devices remote from the coop over which the cords are trained, substantially as set forth.

546,492. TEMPORARY BINDER. EDGAR R. MILLERT, Walla Walla, Wash., assignor to May E. Bailey, Portland, Oreg. Filed May 24, 1894. Serial No. 512,361. (No model.)



Claim.—In a temporary-binder, the combination of a pair of spring metal concavo-convex clamping leaves hinged together at one longitudinal edge to form opposite longitudinal clamping edges, and a series of U-shaped spring metal clamps adapted to embrace or work over the hinged edges of said leaves, said U-shaped spring metal clamps having one of their sides extended and permanently pivoted to the outer side of one of the clamping leaves, and being further provided at one end with upturned finger plates, and with inwardly bent or flanged terminal edges, which inwardly bent or flanged terminal edges of the clamps are adapted to tightly compress against the outer sides of both leaves directly adjacent to the free clamping edges thereof, substantially as set forth.

546,493. SHEARS. JOHN NEIMEYER, Trenton, Ohio. Filed Feb. 25, 1895. Serial No. 539,546. (No model.)



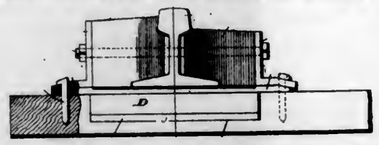
Claim.—1. In a pair of shears, the combination with a headed pivot screw being secured in one of the blades and whereon the other blade is movable, the head of the screw being projected without the surface of the movable blade, and without exerting any pressure thereon, of a U shaped clamping yoke containing a perforation through one of its ends to movably and detachably engage with the head of the screw, said yoke being attachable in a transverse position to embrace the jaws of the shears, and adapted to exert a yielding clamping pressure on the shear blades, for the purpose specified.

2. In a pair of shears, the combination with the blades and the pivot therefor, said pivot being adjustable through the blades to project its point more or less from one blade and its head from the other blade without permitting the head to clamp the blades together, of a U shaped yoke to clamp the blades between its jaws, one jaw thereof being perforated to encircle the screw head and to permit it to exert a yielding pressure on the contiguous blade while the opposite jaw presses on the point of the screw without the other blade, and whereby the tension of the yoke may be changed by adjusting the screw.

546,494. INSULATING RAILROAD-JOINTS FOR ELECTRICAL SIGNALS. THOMAS O'BRIEN, Jr., Philadelphia, Pa. Filed July 18, 1895. Serial No. 556,331. (No model.)

Claim.—1. A wooden stringer on which the insulated ends of rails are supported, longitudinally-extending wooden blocks aside of the rails, and metallic chairs secured to said blocks and separated from each other, the bases of said chairs being also separated and adapted to be spiked to wooden ties, substantially as described.

2. Railroad rails insulated at their ends, in combination with a wooden stringer supported upon ties, metallic plates rested on said stringer, and metallic chairs bolted to wooden blocks aside of the rails and separated from each other, said chairs and plates being adapted to be spiked to the ties, substantially as and for the purpose set forth.



3. Insulated rails, longitudinally-extending wooden blocks aside of the same, metallic chairs connected with said wooden blocks and separated from each other, a wooden stringer having a raised neck, metallic plates on said stringer aside of the neck, the rails being supported on said neck and plates, and ties supporting said plates, the bases of the chairs being over the side portions of said plates, and spiked with the same to the ties, substantially as described.

546,495. EXHAUST-NOZZLE. HANS O. OLSON, Two Harbors, Minn. Filed Feb. 21. 1895. Serial No. 539,316. (No model.)



Claim.—1. In an exhaust nozzle for a locomotive engine, the combination of a circular casing having guides on its inner sides, a regulating hoop working in said guides, two circular halves hinged adjacent to a circular elevation in the base of said casing, one of said circular halves having apertures, wherein the other interposes, substantially as described and shown.

2. In an exhaust-nozzle the combination of a circular casing, two circular halves hinged to said casing, a circular hoop working in said casing to regulate said circular halves by means of two incline guides on the outside of the circular halves, substantially as described and shown.

3. In an improvement for an exhaust-nozzle the combination of a circular casing with guides on its inner sides, two circular halves hinged to said casing, and being regulated by a circular hoop working in said guides, the ends of said hoop projecting outside of said casing, and engaged in arms having slotted holes for said ends to work in, and extending to a shaft at a convenient place, said shaft being journaled in standards; an arm extending from said shaft and connecting to a rod which may be extended back to the engine-cab or to any convenient place substantially as described and shown.

546,496. BICYCLE AND WALKING COSTUME. MATTIE L. PECK, New York, N. Y. Filed Mar. 16, 1895. Serial No. 541,984. (No model.)



Claim.—1. In a combined bicycle and walking costume, the combination with a short outer bicycle skirt having a band or belt at the top, of an inner walking skirt, the main body of which extends from above the bottom of the outer skirt considerably below the same, the said skirt having an upper portion of thin or flimsy material cut out to form strips secured to the band of the outer skirt and depending therefrom, and cords secured to the top of the main body of the said inner skirt and extending to the band, whereby the said inner skirt may be elevated to the level of the outer skirt, substantially as shown and described.

2. In a combined bicycle and walking costume, the combination with a short outer bicycle skirt having a band at the top, and open throughout at the side with means for securing the ends thereof, of an inner walking skirt comprising a lower body extending considerably below the outer skirt, and an upper skeleton portion of thin or flimsy material secured to the band of the outer skirt, the said inner skirt being also open at the side and provided with means of fastening, and cords secured to the top of the lower body of the walking skirt and extending upwardly to the band thereon, substantially as shown and described.

3. In a combined bicycle and walking costume, the combination with a short outer bicycle skirt having a band at the top and open at the side with means of fastening the same, of an inner walking skirt comprising a lower body extending considerably below the outer skirt, similarly open and having means of fastening thereon, and an upper skeleton portion of thin or flimsy material secured to the band of the outer skirt and depending therefrom, guide-pieces secured to the said band, hooks adjacent thereto, cords secured to the top of the lower portion of the skirt, extending upwardly around the hooks through the guides and the band to the outside of the skirt, and buttons upon the said cords, substantially as shown and described.

4. In a combined bicycle and walking costume, the combination with an outer bicycle skirt having a band at the top thereof, and open at the side throughout, buttons upon one of the ends thereof, and button-holes in the opposite end, of an inner walking skirt comprising a lower main body extending from above the level of the bicycle skirt considerably below the same, the said main body being similarly open and provided with like means of fastening, and an upper skeleton portion of thin or flimsy material cut out to form strips secured to the band of the outer skirt and depending therefrom, guide-pieces secured to the inside of the band having strengthening strips thereon, hooks secured to the said band adjacent thereto, cords secured to the top of the main body of the inner skirt, passing upwardly around the hooks and into the guides and extending through the band to the outside of the skirt, and buttons secured to the ends of the said cord, whereby the inner or walking skirt may be elevated to the level of the outer skirt, substantially as shown and described.

546,497. GARBAGE-FURNACE. MARTIN V. SMITH, Pittsburg, assignor of one-half to Cyrus Borgner, Philadelphia, Pa. Filed June 13, 1894. Serial No. 514,391. (No model.)



Claim.—1. A garbage furnace having a sealed garbage chamber or retort and a feeding port in the crown thereof, in combination with an air heater adjoining said chamber and connected thereto by a downwardly inclined flue.

2. A garbage furnace having adjoining connected and sealed garbage chambers or retorts, in combination with an air regenerator adjoining each of said chambers and connected thereto by a flue.

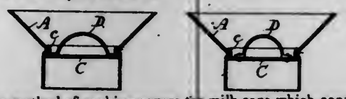
3. A garbage furnace having adjoining connected and sealed garbage chambers or retorts, in combination with air regenerators connected to said chambers by flues, and a gas producer provided with flues which connect with the flues between the regenerators and the garbage chambers.

4. In a garbage furnace the combination with a producer having a main gas supply pipe leading to the garbage chambers or retorts, and regenerators at the ends of said garbage chambers provided with air flues leading to the reversing valve located between the producer and down-take of the main gas flue, and an escape flue leading centrally under the main gas flue to a stack between the same and the furnace.

5. A regenerative furnace in combination with a producer and the main gas flue leading therefrom and downward to the gas valve chamber, from which flues lead to the garbage chambers or retorts, and having the regenerators at the ends of said chambers and the air flues leading therefrom to the reversing valve, and the escape flue leading centrally under the gas valve chamber and communicating with the stack.

546,498. MILK-CAN COVER. LEE STURGES, Chicago, Ill., assignor to the Chicago Stamping Company, same place. Filed Jan. 2, 1895. Serial No. 533,606. (No model.)

Claim.—1. A cover for milk cans having a seamless flaring portion, a seamless cylindrical portion integral therewith, a bead on the interior of the cylindrical portion, a diaphragm closing the cylindrical portion and having a marginal flange embracing said bead, and a handle having ends projecting beneath the bent flange of the diaphragm, substantially as set forth.



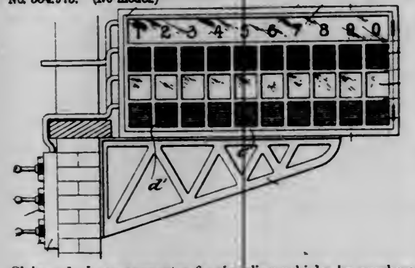
2. The method of making covers for milk cans which consists in drawing the blank to a form having a flaring portion, a cylindrical portion, and a diaphragm closing the end of the cylindrical portion, then severing the diaphragm from the cylindrical portion and then securing the diaphragm in the cylindrical portion so as to close it, substantially as set forth.

3. The method of making covers for milk cans which consists in drawing the blank to a form having a flaring portion, a cylindrical portion and a diaphragm closing the end of the cylindrical portion, then severing the diaphragm from the cylindrical portion and then securing the diaphragm in the cylindrical portion, above the bottom thereof, substantially as set forth.

4. The method of making covers for milk cans which consists in drawing the blank to a form having a flaring portion, a cylindrical portion and a diaphragm closing the cylindrical portion, severing the cylindrical portion some distance from the diaphragm, leaving said diaphragm with a marginal flange, redrawing the diaphragm to reduce its diameter to less than the interior diameter of the cylindrical portion, and securing the diaphragm in the cylindrical portion, substantially as set forth.

5. The method of making covers for milk cans, which consists in drawing the blank to a form having a flaring portion, a cylindrical portion, and a diaphragm closing the cylindrical portion, severing the cylindrical portion some distance from the diaphragm, leaving said diaphragm with a marginal flange, redrawing the diaphragm to reduce its diameter to less than the interior diameter of the cylindrical portion, inserting the diaphragm in the cylindrical portion and beading the cylindrical portion and the flange of the diaphragm to secure the diaphragm in place, substantially as set forth.

546,499. APPARATUS FOR SIGNALING VEHICLES BY NUMBERS. FRANK WARREN, New York, N. Y. Filed Jan. 15, 1895. Serial No. 534,975. (No model.)



Claim.—1. In an apparatus for signaling vehicles by numbers, a sign box suitably supported, having a continuous longitudinal compartment having transparent sides at the top thereof, and the remainder or lower portion being divided by vertical and horizontal partitions into three series of ten compartments, having transparent sides, doors hinged at one end to each side of the box, having in the tops thereof continuous strips of glass, aligning with the continuous compartment in the top of the box, and the remainder of said doors being divided by longitudinal and vertical strips into spaces corresponding with the three series of vertically aligning compartments, in which are inserted three series of ten glass panes, each series being definitely colored, and the upper continuous strips being provided with the numerals 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, in alignment with or immediately above the panes of each series, a lamp in each of the compartments of each of the series, and a number of lamps in the continuous compartment, and means for lighting the various lamps in each series and in the continuous compartment, and displaying the numbers to designate the various vehicles, substantially as shown and described.

2. In an apparatus for signaling vehicles by numbers, a sign board or box, suitably supported and visible upon both sides or faces, and divided by horizontal and vertical partitions into a number of series of vertically aligning compartments, having transparent sides, and provided at the top with a continuous longitudinal compartment, having transparent sides and numbers marked thereon, numbers on said sign so arranged that the vertically aligning compartments designate the same number, lamps in each of said compartments and in the continuous compartment, and a switch board properly located, and a number of switches corresponding in position, and individually connecting with the various lamps, whereby the action of the switches displays the various figures of the vehicle number in vertical rotation, substantially as shown and described.

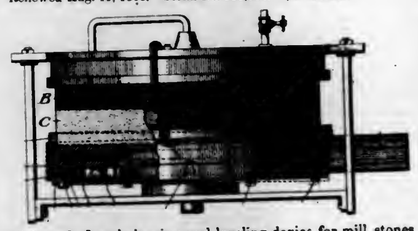
3. An apparatus for signaling vehicles or the like by numbers, which comprises a sign box conspicuously displayed, having a continuous longitudinal compartment in the top thereof, and a number of series of ten compartments below said longitudinal compartments, numbers marked upon said sign, whereby the vertically aligning compartments of the different series indicate the same number, said compartments having transparent panes upon each side thereof, whereby the sign is conspicuous upon both of its faces, lamps secured within each of said compartments, a series of switches corresponding in number to and communicating individually with each of the lamps of the upper series to display the first figure of the vehicle number, and one or more similar series of switches likewise connecting with the lamps of the lower series, whereby the remaining figure or figures of the number are displayed beneath the same, and said number is arranged in vertical rotation to be visible and corresponding upon both faces of the sign, substantially as shown and described.

4. An apparatus for signaling vehicles or the like by numbers, which comprises a sign conspicuously displayed, having a plurality of series of compartments inclosed by transparent panes visible upon both faces of the sign, each series being distinctively colored, lamps secured in each compartment and normally closed or shut off, a continuous longitudinal compartment at the top of the sign provided with panes to be visible upon both sides, having numerals marked thereon above the vertically aligning compartments of each series, lamps secured within said compartment whereby the same is constantly and wholly illuminated, and a plurality of series of switches individually connecting to the various lamps of the series of compartments, whereby the actuation of the switch of one of said series will illuminate the compartment of the upper series upon the sign corresponding in position thereto, and the actuation of a switch of the remaining series will illuminate the corresponding compartment or compartments of the lower series, whereby the vehicle number is displayed by differently colored lights in vertical rotation, to be visible upon both sides of the sign, substantially as shown and described.

5. An apparatus for signaling vehicles or the like, which comprises a sign, conspicuously displayed and secured upon the outside of a building, consisting of a box divided by longitudinal and vertical partitions into three longitudinal series of ten compartments, each above the other, with a continuous longitudinal compartment at the top, doors hinged to each face of the sign, divided by corresponding partitions into three similar series of spaces or sections, transparent panes inserted in each of said sections, the panes of each series of compartments being correspondingly colored and distinctively from the remaining series, a continuous pane in the top of each of said doors, having numerals marked thereon above the vertically aligning panes, whereby the same are caused to designate the number above, lamps in each of the series compartments, and a plurality of lamps in the continuous compartment at the top whereby the same is constantly and wholly illuminated, a switch-board secured within the building, having three longitudinal series of switches thereon corresponding in position to the lamps in the series compartments and individually connecting therewith, whereby the actuation of a switch of the upper and lower series illuminates the corresponding lamps of the same series to display the vehicle number in vertical rotation upon the sign by illumination of the colored panes beneath the figures representing said number, substantially as shown and described.

6. An apparatus for signaling vehicles or the like by numbers, which comprises a sign conspicuously displayed upon the outside of a building, consisting of a box divided by longitudinal and vertical partitions into three series of ten compartments one above the other, and an upper continuous compartment, doors hinged to each of the faces of said sign and divided by like partitions into three series of spaces or sections, having glass panes therein, the panes of each series being correspondingly colored and distinctively from the remaining series, a continuous strip of glass at the top of each door, having numerals marked thereon above each compartment of the several series, whereby the vertically aligning compartments are designated by the same number, lamps secured in each of the series compartments, and a plurality of lamps inserted in the upper compartment to wholly illuminate the same, a switch-board secured within the building, three series of switches thereon corresponding to the series compartments of the sign, individual conductors leading from said switches to the lamp corresponding in position therewith, return wires leading from all of said lamps to the dynamo, and a feeder connecting said dynamo to the switches, said switches being normally closed whereby the lamps are normally shut off, and adapted when actuated to display the vehicle number in vertical rotation with the figures thereof in distinctive colors, and branch wires leading from the dynamo, feeder, and return conductor to the lamps of the upper continuous compartment, said branch forming a constant circuit, whereby the lamps in said upper compartment are normally lighted to wholly illuminate the said compartment, substantially as shown and described.

546,500. BALANCING AND LEVELING DEVICE FOR MILLSTONES. WILLIAM WEBER, Philadelphia, Pa. Filed July 25, 1894. Renewed Aug. 10, 1895. Serial No. 558,936. (No model.)



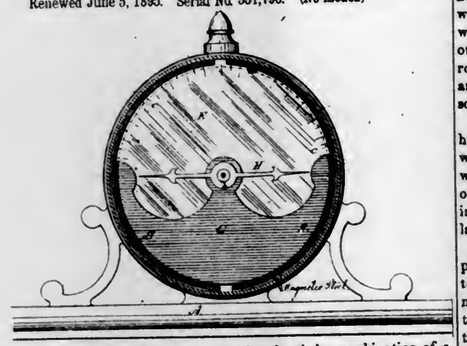
Claim.—1. In a balancing and leveling device for mill stones a flat hoop, having an upturned edge, weights adjustable on said hoop, and means for securing said hoop in place, said parts being combined substantially as described.

2. The herein described ring G, having the hoop H, and flange J, and adapted to be attached to the runner of a mill or to its supporting device, for the purpose described.

3. In a mill, the combination of the runner C, the supporting ring F, and the balancing device G attached thereto, a portion of said balancing device being adapted to form a bearing for the belt which rotates said runner, substantially as described.

4. In a mill, the runner C, the supporting ring F, and the balancing device G having a flange J adapted to form a bearing for the belt which rotates the runner, and having also the hoop H adapted to support weights, substantially as described.

546,501. MAGNETIC PENDULUM-LEVEL. THEODOR ZANGER, Erie, Pa., assignor to Jacob W. Seip, same place. Filed Oct. 28, 1893. Renewed June 5, 1895. Serial No. 551,790. (No model.)



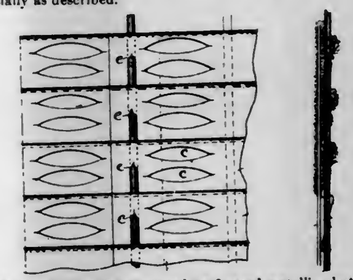
Claim.—1. In a magnetic pendulum level the combination of a cylinder having a magnetic liner, and the glass front and back, with a shaft provided with needle-points journaled in said glass front and back, and a pendulum with magnetized face and a pointer secured to said shaft, all arranged as specified.

2. The magnetic pendulum level herein described, consisting of the stock A having the cylinder B provided with magnetic inner surface, attached to it, and having a glass front and back, in which the needle-pointed shaft A is journaled, and carrying the pendulum G having magnetized face and the pointer H, all constructed and operating as specified.

546,502. FIREPROOF PARTITION, CEILING, &c. THOMAS BAILEY, New York, N. Y. Filed Dec. 22, 1894. Serial No. 532,674. (No model.)

Claim.—1. The improved metallic plaster holding partition sheet, having corrugations produced with alternate wide and narrow sides in acute angular relation to each other, and being perforated in the wide sides of the corrugations suitably to anchor a plastic coating on them, and the edges of the perforations being projected on the side of the sheath having the ledges formed by the narrow sides of the corrugations for re inforcing them to secure the plaster on that side of the sheet, when the sheet is arranged with the corrugations horizontally substantially as described.

2. The improved metallic plaster holding partition sheet, having corrugations produced with alternate wide and narrow sides in acute angular relation to each other, and being perforated in the wide sides of the corrugations suitably to anchor a plastic coating on them, and the edges of the perforations being projected on the side of the sheet having the ledges formed by the narrow sides of the corrugations for re-inforcing them to secure the plaster on that side of the sheet, when the sheet is arranged with the corrugations horizontally, and provided with stiffening bars connected transversely of the corrugations substantially as described.



3. The improved corrugated perforated metallic plaster holding partition sheets having corrugations produced in alternate wide and narrow sides in acute angular relation to each other and with one side in a greater angle to the plane of the sheet than the other side, and having stiffening rods inserted through the perforated sides of the corrugations substantially as described.

4. The combination in fire proof elevator and other shafts, of the angle iron corner posts, corrugated metallic plaster holding partition sheets having corrugations produced in alternate wide and narrow sides in acute angular relation to each other, and with one side in a greater angle to the plane of the sheet than the other side, and the bars connecting the posts, and having the sheets connected to them substantially as described.

5. The combination in fire proof elevator and other shafts of the angle iron corner posts, corrugated and perforated metallic plaster holding partition sheets having corrugations produced in alternate wide and narrow sides, in acute angular relation to each other, and with one side in a greater angle to the plane of the sheet than the other side and placed with the corrugations upright, and stiffening rods inserted through perforations in the sides of the corrugations and secured to and forming tie rods to the posts substantially as described.

6. The improved corrugated fire proof perforated metallic plaster holding partition sheets having corrugations produced in alternate wide and narrow sides in acute angular relation to each other, and with one side in a greater angle to the plane of the sheet than the other side, spliced together by overlapping edges secured by stiffening rods inserted through holes in the sides of the corrugations of the lapped sheets substantially as described.

7. The combination with the improved corrugated and perforated plaster holding sheets and stiffening or splicing rods inserted through the perforated sides, of the corrugations, of the suspending links connected to the sheets by the said rods and adapted for being secured to the floor beams to suspend the sheets with a free space between them and the beams substantially as described.

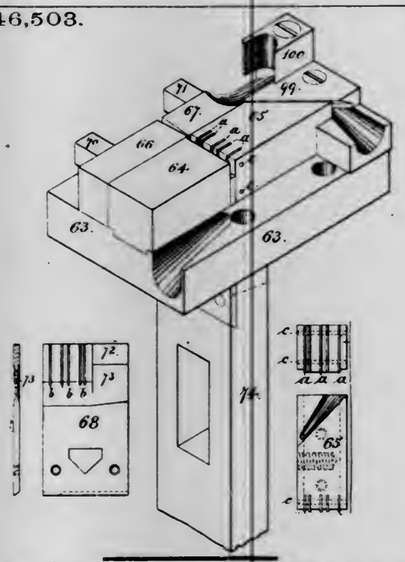
8. In a corrugated fire proof skeleton partition base of sheet metal for receiving and supporting a plaster coating on each side, and having stiffening bars connected transversely of the corrugations suitably to be inclosed by the plaster coating of the two sides, said corrugations produced with alternate wide and narrow sides in acute angular relation to each other and being perforated in the wide sides of the corrugations for coaction with the ledges formed by the narrow sides of the corrugations to anchor the plaster coatings of both sides of the sheet substantially as described.

546,503. TYPE-CASTING MACHINE. HENRY BARTH, Cincinnati, Ohio. Filed Sept. 25, 1893. Serial No. 486,423. (No model.)

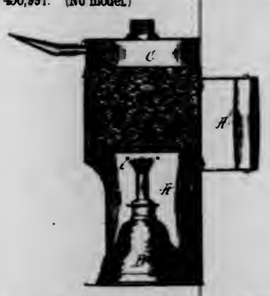
Claim.—1. In a type-mold, the combination of a cheek-piece provided with flat plates inserted therein and projecting in parallel relations beyond the face thereof into the cavity of the mold, in combination with a plunger provided with corresponding side-grooves adapted to pass over and upon the edges of the plates, substantially as set forth.

2. In a type-mold, the combination of a cheek-piece having parallel recesses cut into the face-end of the same, plates adapted to fit in said recesses and project beyond said face, and pins inserted from side to side through the recesses and plates in series, to retain the same removably in position, substantially as set forth.

546,503.



546,504. MOISTENER OR SOFTENER FOR WALL-PAPER, PAINTS, &c. BYRON R. BLAISDELL, Plano, Ill. Filed Nov. 4, 1892. Serial No. 450,991. (No model.)



Claim.—1. An apparatus for moistening or softening substances, comprising a suitable casing, a heat-generator located in the lower part of the casing, and a tank or receptacle located in the casing, directly over the heat-generator, said tank being provided with a flat discharging nozzle having a plurality of projections extending beyond the discharge orifice, substantially as set forth.

2. An apparatus for moistening or softening substances, comprising a suitable casing, a heat-generator removably located in said casing, and a tank or receptacle located removably in the upper part of the receptacle directly over the heat-generator, and provided with a flat discharging spray nozzle having a plurality of guides extending beyond the discharge orifice, substantially as set forth.

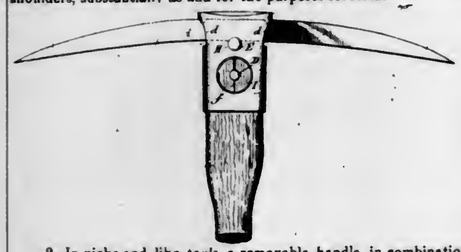
3. An apparatus for moistening or softening substances, comprising a casing, a tank or receptacle carried thereby, a heat-generator also carried by said casing, and a flat spraying discharge-nozzle provided with guide projections at each end of the orifice flexibly connected to said tank or receptacle, substantially as set forth.

4. An apparatus for moistening or softening substances, comprising a steam generator and a discharge-nozzle provided with adjustable guide comprising a series of connected projections placed adjacent to the vent of the nozzle, substantially as set forth.

5. An apparatus for moistening or softening substances, comprising a steam generator and a discharge-nozzle carrying a movable slide having projections placed adjacent to the vent of the nozzle, substantially as set forth.

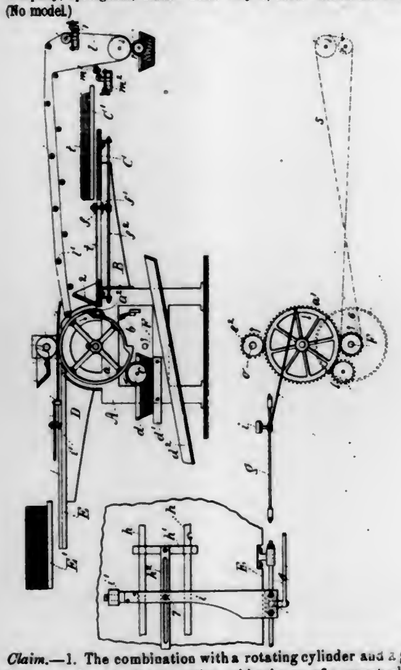
546,505. PICK OR LIKE TOOL. SAMUEL BOYTON, Brooklyn, N. Y. Filed Nov. 26, 1894. Serial No. 529,933. (No model.)

Claim.—1. In picks and like tools, a handle, a socket piece connected thereto, and a removable blade, said socket piece having a transverse blade socket at its outer end and shoulders *a* at the outer ends of said socket, and a transverse wedge socket intermediate of said shoulders at the inner side of said blade, and said blade having shoulders *g* at its outer edge engaging said shoulders *a*, and a curved wedge surface at its inner edge opposite said wedge socket and intermediate of and equidistant from said shoulders, in combination with a wedge in said wedge socket having a convex face engaging said wedge surface of said blade and forcing the latter outwardly and its shoulders into engagement with those of said socket piece, whereby said blade can adjust itself around said wedge equally against said shoulders, substantially as and for the purposes set forth.



2. In picks and like tools, a removable handle, in combination with a socket piece B, having side walls *f*, edge walls *j*, cross-pieces *e*, longitudinal handle-socket F traversing its entire length, transverse blade socket G at right angles to said socket F and extending in the direction of its longer diameter, shoulders *a* on said cross-pieces, tapering wedge socket H at right angles to and in the line of said blade socket, and wedge apertures I in its walls *f* between said wedge socket and its inner end, the blade A in its socket G, having shoulders *g* on its upper edge engaging said shoulders *a*, and wedge surface *b* on its lower edge, the tapering wedge E in said wedge socket engaging said wedge surface and forcing said blade outwardly, and the wedge D of less size than said wedge apertures and traversing said handle and the latter, substantially as and for the purpose set forth.

546,506. MACHINE FOR PASTING AND MOUNTING SHEETS. HARRY CARLISLE, Shutesbury, assignor to the Holyoke Card and Paper Company, Springfield, Mass. Filed July 1, 1895. Serial No. 554,563. (No model.)



Claim.—1. The combination with a rotating cylinder and a gripper thereon and means for operating said gripper, of a receptacle for printed sheets, a receptacle for sheets of card-board, guides for locating one printed sheet at a time to be taken by the gripper, a paste roller for pasting the backs of the printed sheets, adjustable means for locating one sheet of card-board at a time and for moving the same to meet the pasted printed sheet, and a roller above the cylinder for pressing the printed sheet and card-board together, substantially as set forth.

2. The combination with a rotating cylinder and a gripper thereon and means for operating said gripper, of a receptacle for printed sheets, a receptacle for sheets of card-board, guides for locating one printed sheet at a time to be taken by the gripper, a paste roller for pasting the backs of the printed sheets, adjustable means for locating one sheet of card-board at a time and for moving the same to meet the pasted printed sheet, and a roller above the cylinder for pressing the printed sheet and card-board together, and an endless belt upon which the united sheets are delivered and conveyed away, substantially as set forth.

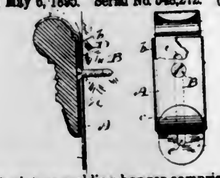
3. The combination with a cylinder, means for rotating the same and means for engaging and pasting thereon one printed sheet at a time, of a receptacle for superposed sheets of cardboard, a table upon which is laid one sheet of cardboard at a time, a cross head against which the back ends of the sheets of cardboard are laid and means for adjusting said cross head to provide for cardboard sheets of various sizes, and means for operating said cross head in unison with the cylinder for feeding forward the cardboard sheets to meet the advancing ends of the pasted printed sheets and a roller above the cylinder for applying pressure as the sheets are united, substantially as set forth.

4. In a machine for pasting printed sheets and uniting the same to sheets of cardboard, the combination with a receptacle for sheets of cardboard, of a table E, slide-ways *h* longitudinally of said table, a cross head *h'*, a slotted bar h^3 connected to said cross head, a cross head *i* and bolt for adjustably connecting the same to the slotted bar h^3 said parts being capable of adjustment for various sizes of sheets of cardboard, substantially as set forth.

5. In a machine for pasting printed sheets and uniting the same to sheets of cardboard, the combination with a receptacle for sheets of cardboard, of a table E, slide-ways *h* longitudinally of said table, a cross head *h'*, a slotted bar h^3 connected to said cross head, a cross head *i* and bolt for adjustably connecting the same to the slotted bar h^3, the relation of said parts being capable of adjustment for various sizes of sheets of cardboard, a guide rod *g* upon the side of the table, a sliding standard *g'* upon said guide rod and connected to the cross head *i*, and a connecting rod g^3 extending from said standard *g'* to a gear wheel upon the cylinder shaft whereby with the rotation of the cylinder the cardboard sheets are drawn forward one at a time, substantially as set forth.

6. In a machine for pasting printed sheets and uniting the same to sheets of cardboard, the combination with a gripper cylinder and pasting roller and a pressure roller, of an endless belt or apron for receiving the product and conveying the same away, means for keeping said endless belt at a tension, means for cleansing the surface of the same with water and other means for removing the surplus water and surplus paste so that the advancing portion of the belt is always clean for receiving the successive united sheets, substantially as set forth.

546,507. DEVICE FOR HANGING PICTURE-MOLDINGS. JOHN CHRISTMANN, Milwaukee, Wis., assignor to Albert J. Christmann, same place. Filed May 6, 1895. Serial No. 548,272. (No model.)



Claim.—1. A picture-molding hanger comprising two plates laid flat one against the other, the outer plate being attachable to a wall but bent at its lower end to come up outside the molding, the inner plate being vertically adjustable on the one aforesaid and bent at its upper end to overlap said molding.

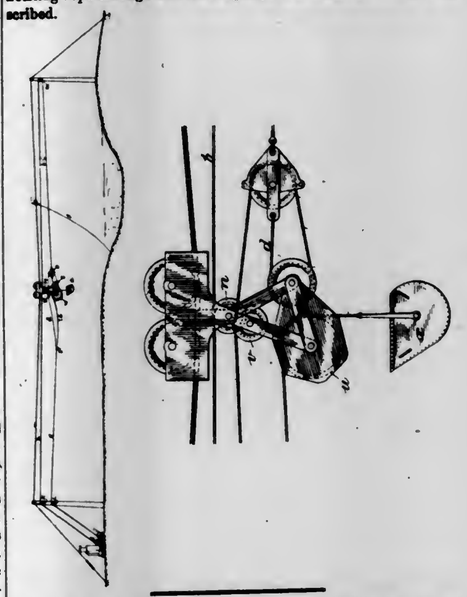
2. A picture-molding hanger comprising an outer plate having inturned vertical edges and an upturned lower end, a wall-attaching screw extended through said plate, and a longitudinally slotted inner plate that engages said screw and has an offset upper end.

546,508. AERIAL TRAMWAY. JOSEPH H. DICKINSON, Trenton, N. J. Filed Dec. 7, 1894. Serial No. 531,092. (No model.)

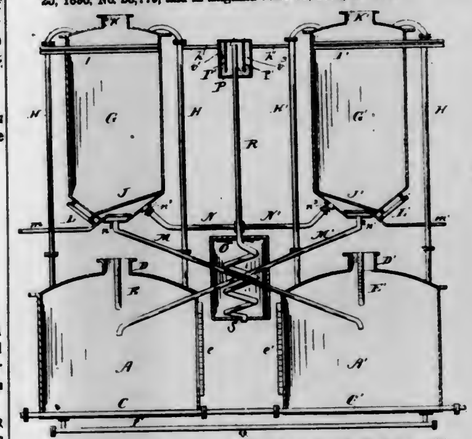
Claim.—1. In a conveying apparatus having a cable or trackway, a carriage to travel thereon and a hoisting rope, the combination with the said parts, of a tail rope and a slack-pulling-rope connecting the carriage and hoisting rope with said tail rope, substantially as described.

2. In a conveying apparatus having a cable or trackway, a carriage to travel thereon and a hoisting rope, the combination with the said parts, of a sheave connected with the tail rope and a slack-pulling-rope connecting said sheave with the carriage and the hoisting rope, substantially as described.

3. In a conveying apparatus having a cable or trackway, a carriage to travel thereon and a hoisting rope, the combination with said parts, of a hoisting rope sheave mounted upon the carriage, a tail rope and a slack-pulling-rope connecting said tail rope with said hoisting rope through said hoisting rope sheave, substantially as described.



546,509. APPARATUS FOR EXTRACTING FATTY SUBSTANCES. EUGÈNE DONARD, Rouen, France. Filed May 21, 1890. Serial No. 352,681. (No model.) Patented in France Dec. 15, 1888, No. 194,784; in Spain Apr. 14, 1890, No. 10,772; in Belgium Apr. 24, 1890, No. 90,317; in Italy Apr. 25, 1890, No. 28,779, and in England June 19, 1890, No. 9,825.



Claim.—1. In an apparatus of the class described, the combination with a boiler A, an extractor G therefor, pipes leading from the boiler and into the upper end of the extractor, a second boiler A', an extractor G' therefor, pipes leading from the latter boiler and into the upper end of the extractor G', a pipe leading from the lower end of extractor G and into the boiler A', a pipe leading from the lower end of extractor G' and into the boiler A, a condensing device arranged in each of the extractors at the upper end thereof, a cooler through which pass the pipes connecting the extractor G with boiler A', and extractor G' with boiler A, and means for supplying heat to said boilers, as and for the purpose specified.

2. In an apparatus of the class described, the combination with a boiler A, an extractor G therefor, pipes leading from the boiler and into the upper end of the extractor, a second boiler A', an extractor G' therefor, pipes leading from the latter boiler and into the upper end of the extractor G', a pipe leading from the lower end of extractor

G and into the boiler A', a pipe leading from the lower end of extractor G' and into the boiler A, a safety device consisting of a vessel containing a liquid, and pipes connecting the said vessel with the extractors, a condensing device arranged in each of the latter at the upper end thereof, a cooler through which pass the pipes connecting the extractor G with boiler A', and extractor G' with boiler A, and means for supplying heat to said boilers, as and for the purpose specified.

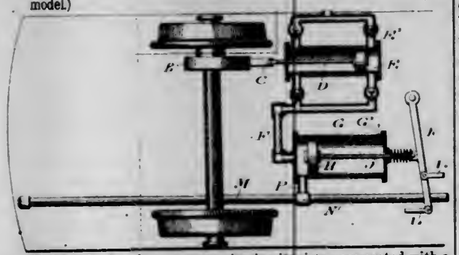
3. In an apparatus of the class described, the combination with a boiler A, an extractor G therefor, pipes leading from the boiler and into the upper end of the extractor, a second boiler A', an extractor G' therefor, pipes leading from the latter boiler and into the upper end of the extractor G', a pipe leading from the lower end of extractor G and into the boiler A', a pipe leading from the lower end of extractor G' and into the boiler A, water and steam pipes located in the upper portion of each of said extractors, a water pipe located in the lower portion of the same, a cooler through which pass the pipes connecting the extractor G with boiler A' and extractor G' with boiler A, and means for supplying heat to the boilers, as and for the purpose specified.

4. In an apparatus of the class described, the combination with a boiler A, an extractor G therefor, pipes leading from the boiler and into the upper end of the extractor, a second boiler A', an extractor G' therefor, pipes leading from the latter boiler and into the upper end of extractor G', a pipe leading from the lower end of extractor G and into the boiler A', a pipe leading from the lower end of extractor G' and into the boiler A, water and steam pipes located in the upper portion of each of said extractors, a water pipe located in the lower portion of the same, a cooler through which pass the pipes connecting the extractor G with boiler A', and extractor G' with boiler A, means for supplying heat to the boilers, and a safety device consisting of a vessel containing a liquid and pipes connecting said vessel with the extractors, as and for the purpose specified.

5. In an apparatus of the class described, the combination with the boiler A, an extractor G therefor, a pipe leading from the boiler and into the upper end of the extractor, of a second boiler A', an extractor G' therefor, a pipe leading from the boiler A' and into the upper end of extractor G', a pipe leading from the lower end of extractor G and into the boiler A', a pipe leading from the lower end of extractor G' and into boiler A, water and steam pipes arranged in the upper portion of each of the extractors, and filter plates located in the lower portion of the same, a cooler through which pass the pipes connecting the extractor G with boiler A', and extractor G' with boiler A, and means for supplying heat to the boilers.

6. In an apparatus of the class described, the combination with the boiler A, an extractor G therefor, a pipe leading from the boiler and into the upper end of the extractor, with a second boiler A', an extractor G' therefor, a pipe leading from the boiler A' and into the upper end of extractor G', a pipe leading from the lower end of extractor G and into boiler A', a pipe leading from the lower end of extractor G' and into boiler A, water and steam pipes arranged in the upper portion of each of the extractors, filter plates located in the lower portions of the same, a cooler through which pass the pipes connecting the extractor G with boiler A', and extractor G' with boiler A, means for supplying heat to the boilers, and a safety device consisting of a vessel containing a liquid, and pipes connecting the said vessel with the extractors, and with the cooler, as and for the purpose specified.

546,510. AIR-BRAKE FOR RAILWAY-CARS. DENNIS DUNN, Mahanoy City, assignor of forty-nine one-hundredths to John E. Reyburn, Philadelphia, Pa. Filed Dec. 21, 1894. Serial No. 532,552. (No model.)



Claim.—1. An air compressor having its piston connected with a rotatable axle, a separate cylinder having at one end an inlet pipe leading from said air compressor, and an air opening in its opposite end, a piston in said cylinder connected with a brake mechanism, a pipe leading from the inlet pipe end of the cylinder to a whistle, and a three way cock in said pipe, the casing of said cock having an outlet to the atmosphere, and the parts being combined substantially as described.

2. An air compressor having its piston connected with a rotatable axle, a separate cylinder having an inlet pipe communicating with said air compressor at both ends of the latter, and provided with an air opening, a piston in said cylinder connected with a brake mechanism, the pipe P leading from the inlet pipe end of said cylinder and the pipes M and N communicating with said pipe P, and having cocks, therein, substantially as described.

546,511. STUMP-PULLER. CHARLES D. EDWARDS, Albert Lea, Minn. Filed May 25, 1895. Serial No. 550,612. (No model.)



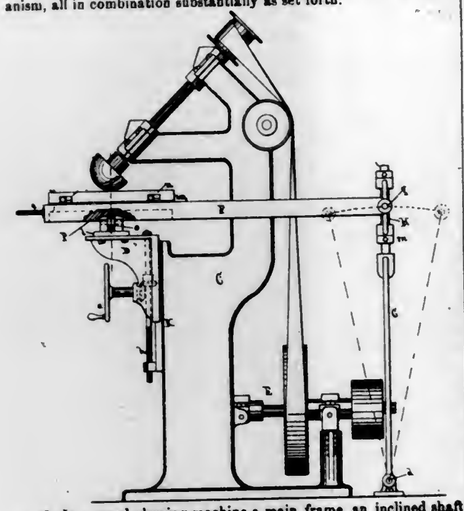
Claim.—1. In a stump puller, the combination, with a base having an upright post or pintle, provided with a key seat, of a capstan drum working on said pintle, and having in its upper end a sweep-head seat of angular form in cross section, a flanged key insertible into said key seat and engageable with said pintle to hold said drum in working position, and a sweep-head independent of the sweep and of angular form in cross section, engageable and disengageable with the seat for the same in the drum to lock together or separate the said sweep-head and drum, substantially as described.

2. In a stump puller, the combination with a base having an upright post or pintle, provided with a key-seat, of a capstan drum working on said pintle, a key engageable with said key-seat in the pintle and provided below its tip with a horizontal flange overreaching a part of the drum-head, a sweep-head seat on the top of the upper drum-head, a sweep-head having a central hole for the passage of the key tip and a body portion adapted to engage with said seat, to lock the sweep-head and drum together, and a lever device pivoted to the sweep-head and arranged to bear against the pintle tip as a base of resistance for raising the sweep-head out of engagement with the drum, substantially as described.

3. The combination with a frame $d\ d'\ d^2\ d^3\ d^4$ of the post or pintle a^5 having the key seat $a^6\ a^7$, the drum $c\ c'\ c^3\ c^4$, working on said pintle, the key $d\ d'\ d^3$ engageable with said key seat of the pintle, the sweep-head $f'\ f^4$ having the hole f for passing the key tip d^3, and the crank shaft f^5 pivoted to the sweep-head and having a hand lever f^6, all arranged and operating substantially as described.

546,512. WOOD-SHAPING MACHINE. CHARLES H. ELLINGWOOD, Harrison, Me. Filed Dec. 31, 1894. Serial No. 533,417. (No model.)

Claim.—1. In a wood shaping machine the work carrying frame having one end supported on an upright G pivoted at its foot below the frame to move in the direction of the length of said frame, the latter having pivotal connections near the top of the upright to permit its turning either horizontally or vertically, work clamping devices situated intermediate the ends of the frame, a cutting tool supported to rotate adjacent to said clamping devices, and driving mechanism, all in combination substantially as set forth.



2. In a wood shaping machine a main frame, an inclined shaft having fixed bearings in said frame, a cutter held by said shaft to rotate in approximately vertical lines whereby it can always be made to shear across the grain of wood and cut the face of an article such as a seat, a work-supporting frame or carrier suitably supported to move lengthwise and the same frame pivoted at or near one end to move both laterally and vertically whatever its lengthwise situation, and means for pressing the work against the cutter, substantially as set forth.

3. The main frame C, the cutter shaft having bearings in the main frame and driving gears having axes also supported by said frame, in combination with the work carrying frame provided with a handle or handles at one of its ends and at the other pivotally supported to turn in either a vertical or horizontal direction, a support G pivoted to provide for the lengthwise movement of the said working frame, and work clamping devices situated intermediate the ends of the work frame, substantially as set forth.

546,513. SPOKE-SOCKET. IRVING A. ELMER, Kansas City, Mo., and THOMAS H. JOHNSON, Farlington, Kans. Filed Dec. 26, 1894. Serial No. 532,947. (No model.)

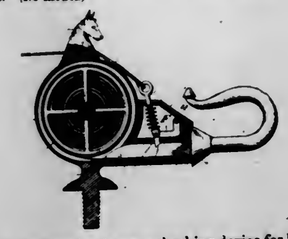


Claim.—1. The combination with the spoke and felly of the vehicle wheel, of the ferrule adapted to be carried on the spoke, the slotted tenon thereon, the felly plate carried on the tenon and adapted to bind the felly, the tire plate carried on the outside of the felly and the key on the tire plate, adapted to enter the slot in the tenon, substantially, as herein shown and described.

2. The combination with the spoke, the felly, and the tire of the vehicle wheel of the ferrule carried on the spoke, the slotted tenon thereon, the felly plate carried on the tenon, and adapted to bind the felly, the tire plate between the felly and the tire, the key on the tire plate adapted to enter the slot in the tenon, and the flanges on the tire plate, adapted to engage the tire, substantially, as shown and described.

3. The combination with the spoke, the felly and the tire of the vehicle wheel of the ferrule carried on the spoke the slotted tenon thereon, the felly plate carried on the tenon, the leaves 8, on said plate extending longitudinally of the felly and conforming thereto, the leaves 9, binding the felly, laterally the tire plate, the key 12, thereon adapted to enter the slot in the tenon and the flanges on the said tire plate adapted to engage the tire, substantially as shown and described.

546,514. UNCHECKING DEVICE FOR HARNESS. WILLIAM H. FERRIS and JOHN P. HART, Brownsville, Pa. Filed July 26, 1895. Serial No. 557,180. (No model.)



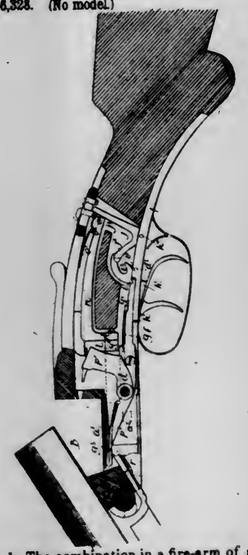
Claim.—In combination in an unchecking device for harnesses, a shell designed to be held to the saddle of a harness having recesses in its two removable sides to receive the ends of the shaft carrying the wheel R, an integral socket C, the check hook having a shank portion designed to fit in said socket, a steel tape having one end connected to the said shank portion, its other end connected to the circumference of the said wheel, coiled springs T, each having an end fastened to a lug Q on said shaft, and their other ends connected to the inner circumference of the said shell, and means for releasing the check hook, substantially as shown and described.

546,515. PEN. FREDERICK J. W. FISCHER, Jersey City, N. J., assignor to the Eagle Pencil Company, New York, N. Y. Filed July 26, 1895. Serial No. 557,243. (No model.)



Claim.—The pen A with the slit or narrow slot *c* extending parallel with and at a short distance from the edge of the tapered portion of the pen throughout the length or extent of that portion, the narrow V-band thus divided from the body of the pen having the solid nib *a* at its apex, with the longitudinal groove *d* in the under side of the nib, as shown and described.

546,516. COCKING AND SAFETY MECHANISM FOR BREAK-DOWN GUNS. EMIL FLUER, Bay City, Mich. Filed Jan. 26, 1895. Serial No. 536,328. (No model.)



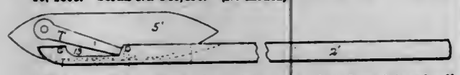
Claim.—1. The combination in a fire-arm of a spring controlled sear having a V-shaped notch in the upper side of its rear end, a pivoted locking piece having its forward end conforming to said notch and adapted to engage the same to lock the sear, the rear end of said locking piece having a curved slot terminating at its upper end in a curved recess, a pivoted lever, one arm of which extends forwardly and terminates in a rounded end to conform to the recess and adapted

to engage the latter or to move in said slot, and the other arm of which extends upwardly and has loose connection with an exposed slide plate, the locking bolt, and the pusher rod, the forward end of which is rigidly connected to said bolt and extends therefrom upwardly and then rearwardly to the vertical arm of the lever, all as and for the purposes set forth.

2. The combination in a fire-arm of a hammer provided with a forwardly projecting integral arm terminating in a laterally projecting finger, and a radially and slidably movable cocking lug carried by the lump, the rearward end of said lug contacting with said finger and adapted to raise the same to cock the hammer when the barrels are broken, substantially as described.

3. The combination in a fire arm, of a hammer provided with a forwardly extending integral arm terminating in a laterally projecting finger, and a cocking lug slidably mounted in the lower end of the lump and carrying a forwardly extending pin in contact with the fore-end, said lug moving radially with and slidably on said lump with its rearward end in the path of the finger, whereby the hammer is cocked by the movement of the latter as the barrels are broken, substantially as described.

546,517. PILE-WIRE. CHARLES FORD, Lowell, Mass. Filed Apr 19, 1895. Serial No. 546,433. (No model.)



Claim.—1. The combination with a pile wire slotted longitudinally in part, and a pin transversely of the slot, of a removable blade, a holding prong upon the lower edge of said blade to engage the transverse pin, and a device carried by the blade to prevent forward movement of said blade and its consequent disengagement from the wire, substantially as explained.

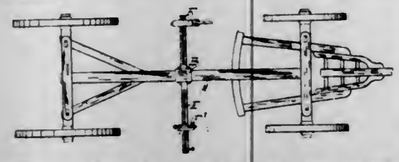
2. In combination with a pile wire slotted longitudinally in part, and a pin transversely of the slot near the rear end of said wire, a removable blade fitted with a holding device upon its lower edge, and a spring finger adapted to engage the pile wire and enter a transverse slot in the blade, substantially as described.

3. The combination with a pile wire slotted in part, and a pin transversely of the slot, of a removable blade having a prong upon its lower edge to engage the pin, a spring offset finger on the blade to engage the wire, and an aperture in the blade to receive the offset on the finger, substantially as set forth.

4. In combination with a pile wire slotted in part, a plurality of transverse pins, and an aperture at the rear end of said wire, a removable blade, prongs forming part of said blade to engage the pins, and a spring catch carried by the blade and adapted to engage the pile wire to prevent sliding movement of the blade, substantially as herein set forth and stated.

5. The combination of a blade having fastening devices along the lower part thereof, a wire slotted in part to receive said blade and provided with a shoulder, transverse pins at the rear end portions of the wire, and a spring catch having a lateral offset which contacts against said shoulder in the wire and extends through the blade, all operating, substantially as described.

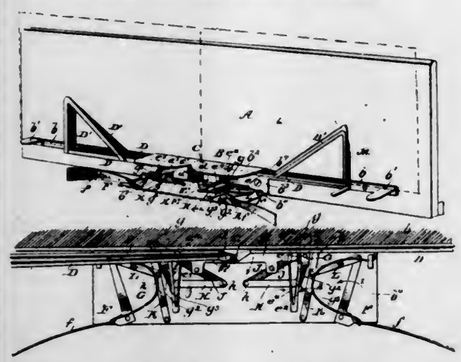
546,518. DEVICE FOR BINDING LUMBER ON WAGONS. FREDERICK FOUNTAIN, Appleton, Wis. Filed Apr. 8, 1895. Serial No. 545,034. (No model.)



Claim.—1. A device for binding lumber on wagons, consisting of the combination with the wagon reach, of the block C, provided with a journal bearing D, and supported from said reach by a casing or shell B, the screw shaft E, supported in said journal bearing substantially at right angles to the reach, and oppositely threaded at each end, the nuts F and F' adapted to be turned on each end of the shaft, respectively, and provided with chain engaging hooks, together with a single chain adapted to be passed over the load and engaged at each end by said hooks, and a lever for turning said shaft, substantially as described.

2. A device for binding lumber on wagons consisting of the combination with the wagon reach, of the casing or shell B provided with slots L and adapted to be adjusted to said reach, the journal block C and screw shaft E supported thereby and oppositely threaded at each end, the nuts F, F', adapted to be turned on each end of said shaft respectively and provided with chain engaging hooks, the pins J J adapted to limit the outward movement of the nuts, together with the chain adapted to reach over said load and to be engaged by said hooks on each side thereof and a lever for turning said shaft, substantially as described.

546,519. MUSIC-LEAF TURNER. DANIEL T. FOX, Mount Pleasant, Pa. Filed Jan. 25, 1895. Serial No. 536,241. (No model.)



Claim.—1. In a device for the purposes described, a supporting or body portion having a series of swinging sheets carrying arms pivotally connected thereto, finger operated throw devices arranged when pressed upon to throw the carrying arms, such devices including lever members arranged to impart a speed movement to such arms which is accelerated when the arm reaches a predetermined position, as set forth.

2. In a device for the purposes described, the combination with the sheet carrying pivoted swinging arms, of a finger operated lever mechanism having a spring pressed carrier member adapted to successively grip the said arms, and a trip pawl operated by the movement of the carrier and finger operated mechanism to release the carrier at a predetermined point, as and for the purposes described.

3. In a device for the purposes described, the combination with the body portion, a series of reversely swinging arms pivotally connected therewith having pendent members near their pivot ends, of a bell crank finger operated lever, a throw lever pivoted on the swinging arm pivot post, having a spring actuated grip member, adapted when the throw lever moves to its normal position to engage and grip one of the said pendent portions, and a trip pawl carried by the throw arm, and a series of pivoted lever connections between the pawl, the throw arm and the finger operated crank lever arranged substantially as shown whereby when the lever is pressed the throw lever will first carry the swinging arm over and in turn be released from the said arm by the trip pawl, as and for the purposes described.

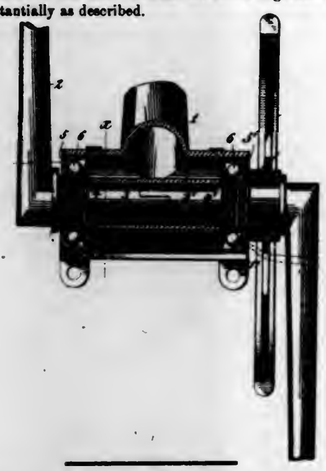
4. As an improvement in music leaf turners, the combination with the main frame, the pivot swinging arms and the pivoted throw arms arranged substantially as shown, of the levers K pivoted at their outer ends to the main frame, the levers J pivotally connected with the outer end of such levers K and to the throw arms, the trip members G, the levers H connecting such members and the levers J, the finger operated bell crank devices and the link members L, all arranged substantially as shown and described.

546,520. CRANK. WILLIAM E GARD, Brooklyn, N. Y. Filed July 13, 1895. Serial No. 555,829. (No model.)

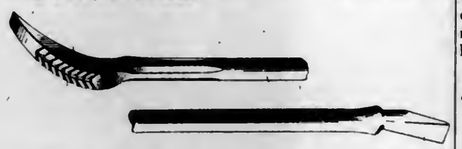
Claim.—1. In a crank, the combination, with two crank arms and two crank shaft sections secured each to one of said crank arms and having ends adapted to interlock, of independent bearing cones mounted upon said crank sections and facing toward the crank arms, other bearing cones suitably supported and adapted to engage with said first named cones and facing toward the center of the crank shaft, bearing balls inclosed between said cones, and collars or shoulders upon said shaft sections, outside of but in close proximity to and adapted to engage with said last named cones, whereby the bearing balls are at all times retained between the bearing cones, substantially as described.

2. In a crank, the combination, with two crank arms and two crank shaft sections secured each to one of said crank arms and having ends adapted to interlock, of independent bearing cones mounted upon said crank sections and facing toward the crank arms, other bearing cones screwing into the crank bracket and adapted to engage with said first named cones, and facing toward the center of the crank shaft, and collars or shoulders upon said shaft sections, outside of but

in close proximity to and adapted to engage with said last named bearing cones, whereby, when said cones are screwed into or out of the crank bracket the shaft sections are drawn together or pulled apart, substantially as described.



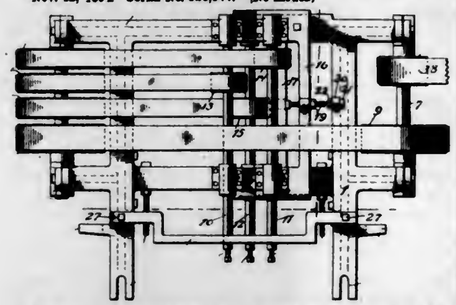
546,521. PRYING-BAR. TONY C. GATTI, Scranton, Miss., assignor of one-half to Edmund Mitchell, same place. Filed July 20, 1895. Serial No. 556,644. (No model.)



Claim.—1. A prying bar, made of a single piece of steel and formed at one end with a curved point and at the other end with a collared stop, substantially as shown and described.

2. A prying bar for timber, provided at one end with a stop, and a collar for preventing the stop from passing too far into the timber, substantially as shown and described.

546,522. COMBINED SHEATHING AND LATH MACHINE. FRANKLIN C. GERHARD and MICHAEL BINTNER, Minneapolis, Minn. Filed Nov. 12, 1894. Serial No. 528,577. (No model.)

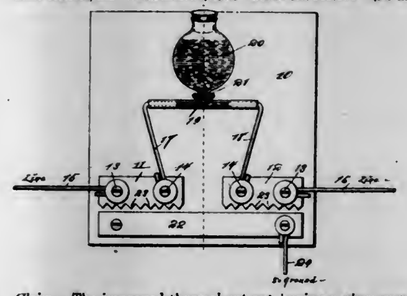


Claim.—1. An attachment for a planing machine, and which is independent thereof, consisting of a frame that is adapted to be secured in a vertical position above the planing machine at any desired point, combined with a suitable number of vertical cutter shafts journaled in the frame, a presser bar, vertically adjustable upon the lower portion of the frame, and means for adjusting the shafts laterally, substantially as described.

2. An attachment for a planing machine, consisting of a frame that is adapted to be secured in a vertical position above the top of the planing machine, combined with a number of vertical cutter shafts, journaled in the frame, driving mechanisms for the shafts independent of the planing machine, means for adjusting the shafts laterally, and a vertically adjustable presser bar, on the lower portion of the frame, and which also serves as a bearing for the lower ends of the cutter shafts, substantially as set forth.

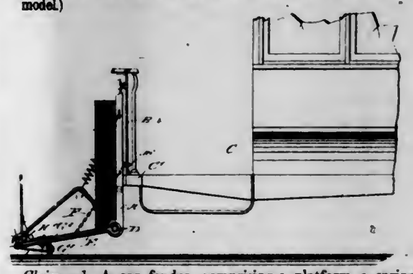
3. The frame, provided with suitable means for attachment to a planing machine at its lower ends; the bent presser bar, and means for adjusting it vertically upon the frame; the cutter shafts, and mechanisms for driving each one separately; adjustable arms in which two of the shafts are journaled, and means for adjusting the arms laterally; the lower ends of the shafts being made to pass through the presser bar which forms a guide for them, all being arranged and combined to operate, substantially as specified.

546,523. LIGHTNING-ARRESTER AND CUT-OUT. OTTO GIESEKE, Lake Charles, La. Filed Mar. 26, 1894. Serial No. 505,160. (No model.)



Claim.—The improved thermal cut-out, having a glass reservoir 20 provided with an opening, a plug or stopper loosely mounted in said opening, an integral transversely-extending tube 19 the interior of which communicates with the interior of said reservoir, the line-terminals inserted in the opposite outer ends of said tube, and a body of conducting-fluid located in the reservoir and said tube and normally forming a connection between said terminals, substantially as herein specified.

546,524. CAR-FENDER. JOHN F. GIRTLER, Brooklyn, N. Y., assignor to himself and Gaston E. Constantin, Adolf Glaus, and Friedrich Heinemann, same place. Filed June 5, 1895. Serial No. 551,767. (No model.)



Claim.—1. A car fender, comprising a platform, a spring-actuated guard rail arranged when released to stand in a raised position, a tripping plate secured loosely at its lower end to said platform with its upper end extending above the same and provided with a hook arranged to engage said guard rail and hold the same normally in a lowered position, said tripping plate being arranged to be moved backward on contact with an obstruction on the track to disengage said hook from the guard rail, substantially as specified.

2. A car fender, comprising a frame adapted to be hooked to a support on the car, a platform fulcrumed on the lower end of the said frame and extending forwardly and downwardly, and a plate pivoted on the front end of the said platform and extending downwardly and rearwardly under the said platform and carrying rollers at its rear end, substantially as shown and described.

3. A car fender, comprising a frame adapted to be hooked to a support on the car, a platform fulcrumed on the lower end of the said frame and extending forwardly and downwardly, a plate pivoted on the front end of the said platform and extending downwardly and rearwardly under the said platform, and carrying rollers at its rear end, and arms projecting from the said plate and engaging staples on the said frame, substantially as shown and described.

4. A car fender, comprising a frame adapted to be hung on a support on the car, a platform pivoted on the lower end of the said frame, a tripping plate on the front end of the said platform and normally extending vertically, the said platform being spring-pressed and provided with a hook, and a guard rail pivoted on the said platform and extending on the sides thereof and across the front, the front end of the said guard rail being normally engaged by the said hook, substantially as shown and described.

5. A car fender comprising a platform, a guard rail pivotally connected thereto, a spring connected to the guard rail and adapted to hold the same in operative position, a tripping plate pivotally mounted on the forward part of the platform and provided with means for holding it normally in an elevated position, and a hook projecting from the forward side of said tripping plate, the guard rail when in a lowered and operative position being adapted to fold down in front of said tripping plate in position to be engaged by the hook thereon, substantially as set forth.

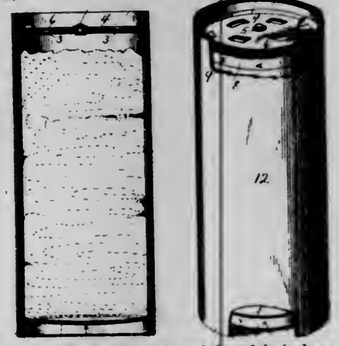
6. A car fender comprising a platform, a guard rail pivotally connected to the rear part thereof and having its end portions bent upward at their central parts, springs connected at their lower ends to the upwardly bent central portions of the said guard rail and adapted to raise the same into operative position, a tripping plate pivoted at the front edge of the platform, a spring arranged to bear against the rear side of the tripping plate to hold the same normally in a raised position, and a hook carried on the front side of the tripping plate to engage the transverse front part of the guard rail when the same is in a lowered and operative position, substantially as set forth.

546,525. APPARATUS FOR FILLING CHOCOLATE-DIPPERS. CYPRIEN GOUBERT, New York, N. Y. Filed Oct. 5, 1894. Serial No. 524,970. (No model.)



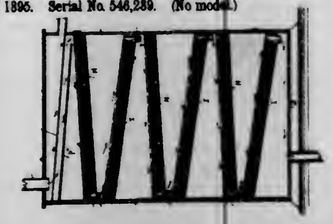
Claim.—The apparatus for filling chocolate dippers with cream drops, consisting of a suitable table, 10, provided with a series of projections, each projection adapted to support a cream drop in position to pass the same into a pocket tallying therewith in such chocolate dipper, in combination with a perforated guide-board, 14, adapted to cause the cream drops to take position upon such projections, substantially as described and shown.

546,526. PACKAGE FOR PULVERULENT MATERIALS. DAVID H. GREENE, Savannah, Ga. Filed Mar. 18, 1895. Serial No. 542,202. (No model.)



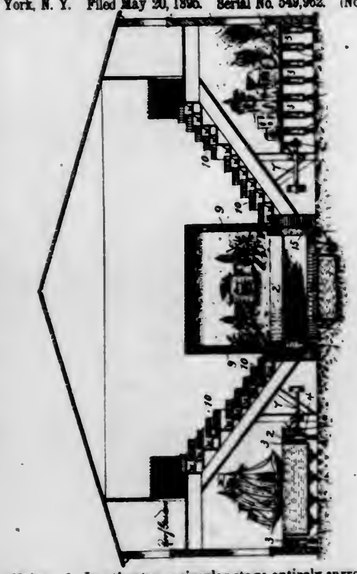
Claim.—The box or package consisting of the body portion, and the outside inclosing jacket having open ends and extended beyond both ends of the body portion, the valve controlled cap at one end of the body portion having a flange fitting between it and the outside jacket, the spring-bottom at the opposite end of the body portion having a flange fitting between it and the outside jacket, and the circumferential securing strips placed inside of the opposite open ends of the outside jacket to secure the cap and spring-bottom against withdrawal, substantially as and for the purposes described.

546,527. FILTER. ALBERT GUDEMAN, Eureka, Ill. Filed Apr. 18, 1895. Serial No. 546,289. (No model.)



Claim.—In a filter, the combination of the casing A substantially of the form shown, a lid C, a conduit passing through the top of said casing, an outlet pipe in the bottom of casing, an inclined strainer placed beneath said conduit, a spout at the lower end of said strainer, a drain board F placed beneath and parallel with said strainer substantially as shown, a series of filtering trays below said drain or running board substantially in the manner shown and described, said trays being slanted in alternate directions and having an opening in the lower extremities thereof, a strainer covering said openings, a filtering material placed in said trays and all arranged substantially in the manner and for the purposes set forth and described.

546,528. CONSTRUCTION OF THEATERS. CLAUDE L. HAGEN, New York, N. Y. Filed May 20, 1895. Serial No. 549,962. (No model.)



Claim.—1. In a theater, a circular stage entirely surrounding the pit and supported by wheels adapted to move upon circular rails, which pass in rear of a proscenium opening, said stage to have movement at proper intervals to bring the successive scenes into view through said opening, substantially as described.

2. A continuous circular stage for a theater supported upon rails which extend entirely around the auditorium and in rear of a proscenium opening, and means for giving rotary movement to said stage to cause the successive scenic representations to pass the proscenium opening, substantially as described.

3. A circular stage for a theater supported by wheels movable upon circular rails, a proscenium opening for the same, and an auditorium consisting of successive tiers of seats concentric with an open pit and facing the proscenium opening, substantially as described.

4. A movable, continuous, circular stage, extending entirely around and adapted to move concentrically with the pit and auditorium, from which said stage is concealed save at a single proscenium opening in rear of which the stage passes, said stage being provided with necessary furniture which is set in advance of the successive movements, substantially as described.

5. A theater or similar structure having a continuous circular stage adapted to travel on rails and to move behind a proscenium opening, an auditorium surrounding a central circular space, and a drive-way passing beneath the circular stage and entering said circular space, substantially as described.

6. A theater, or similar structure, having a circular space surrounded by the auditorium and separated from the latter by a wall, a drive-way, or entrance entering said space from the exterior, and a water-gate arranged in a recess below the surface and adapted to be raised to close said entrance to enable the central space to be converted into a tank or basin, substantially as described.

7. A theater, or other structure, having a circular space surrounded by the auditorium and separated from it by a wall, a drive-way, or entrance from without communicating with said space, a water-gate arranged in a recess beneath the surface and means for raising and lowering said gate to hermetically close the entrance and enable the central space to be converted into a tank or basin, substantially as described.

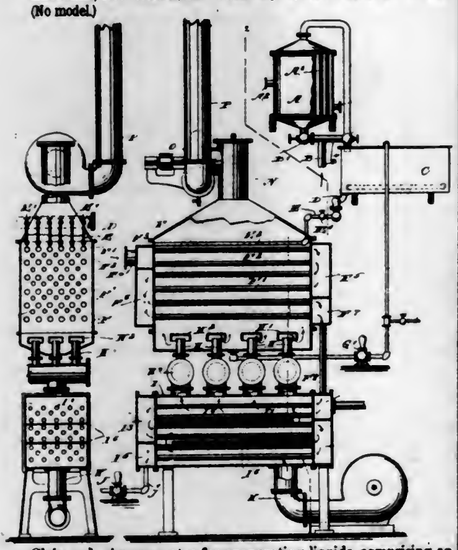
546,529. EARTH-AUGER. ENSLEY HARPER, Lawrence, Ind. Filed May 20, 1895. Serial No. 550,023. (No model.)



Claim.—1. In an earth auger, an auger head with radial guideways in it, downwardly extended blades with shanks that fit within the guideways and have lugs on them, and a rotatable cam plate having eccentric grooves or slots in which the lugs extend and move, and means for holding the cam plate in a fixed position, substantially as set forth.

2. In an earth auger, the handle bar 1, the cam plate 9 with the eccentric grooves or slots 11 and the set screw 10, the plate 2 with radial guideways 3 therein, the plate 7 with the radial slots 8, and the blades 5 with the shanks 4 that fit into the guide ways, and the lugs 6 that extend into the slots in the plates 8 and 9, all combined substantially as set forth

546,530. APPARATUS FOR EVAPORATING LIQUIDS. LEON F. HAUSTMAN, New Orleans, La. Filed July 12, 1894. Serial No. 517,346. (No model.)



Claim.—1. An apparatus for evaporating liquids, comprising an evaporator provided with heating flues or pipes for the passage of a heating medium, perforated pipes for discharging the liquid over the said pipes or flues in the evaporator, air pipes connected with the said evaporator, to pass a current of air through the evaporator to bring the air in contact with the liquid, an air heater into which air is discharged and heated to pass through the said air pipes into said evaporator, and a blower for forcing air in and through the said heater, substantially as shown and described.

2 An apparatus for evaporating liquids, comprising an evaporator provided with heating flues or pipes for the passage of a heating medium, perforated pipes for discharging the liquid over the said pipes or flues, air pipes connected with the said evaporator to pass a current of air through the evaporator to bring the air in contact with the liquid, and a circulating pump connected with the bottom of the said evaporator and adapted to discharge into a tank containing the liquid, substantially as shown and described.

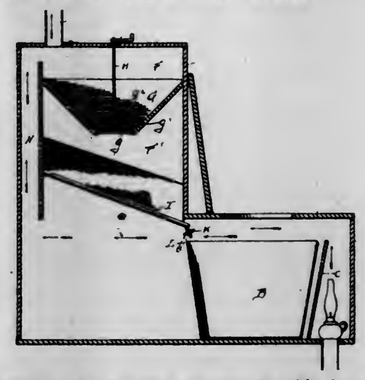
3. In an evaporator, the combination with a casing provided with heating flues and a perforated pipe above the flues, of an air heater arranged below the casing, pipes leading from the air heater up through the bottom of the said casing, and a blower connected with the air heater, substantially as described.

4. In an evaporator, the combination with a casing having end chambers and provided with flues communicating with the said chambers, of a second casing communicating with the first named casing and provided with end chambers and flues communicating with the end chambers, a pipe connecting one lower and upper chamber of the two casings, and a blower connected with the second casing, substantially as described.

5. An evaporator, comprising a steam heater, a heating tank connected with the heater, a casing provided with flues and perforated pipes, said perforated pipes being connected with the heating tank, an air heater below the casing, pipes leading into the bottom of the casing, and manifolds connected with the air heater and with which the pipes leading into the casing are connected in sets, substantially as described.

6. An evaporator, comprising a steam heater, a heating tank connected with the steam heater, an evaporator connected with the tank and provided with heating tubes and a perforated pipe above the said tubes, an air heater connected with the bottom of the evaporator, and a blower connected with the air heater, substantially as herein shown and described.

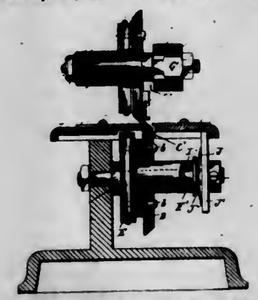
546,531. DRY CLOSET. HAMDEN A. HECOX, Centreville, Mich. Filed May 25, 1895. Serial No. 550,695. (No model.)



Claim.—1. In a dry closet, the combination with a box or casing having a seat and adapted to contain a receptacle, of a hopper supported thereon, said hopper having an upper and a lower chamber or compartment, the walls of which are inclined inwardly, or contracted, a grinding or pulverizing device in the bottom of the upper chamber or compartment, a pivoted, inclined plate forming the bottom of the lower chamber or compartment, said plate being arranged to deliver the material from the hopper into the receptacle, and means for agitating said plate, substantially as specified.

2. In a dry closet, the combination with the box or casing having a seat and adapted to contain a receptacle, and means for supplying a current of warm air through said box or casing, of a hopper having upper and lower compartments, a grinding and pulverizing device in the bottom of the upper compartment, an inclined discharging plate forming the bottom of the lower compartment, and a vertical flue to the rear of said compartments through which the foul air passes in escaping from said box or chamber, substantially as specified.

546,532. MACHINE FOR CUTTING KNITTED FABRICS. JOSHUA D. HEMPHILL, Shelton, assignor of one-half to George H. Radcliffe, Derby, Conn. Filed Apr. 22, 1895. Serial No. 546,671. (No model.)

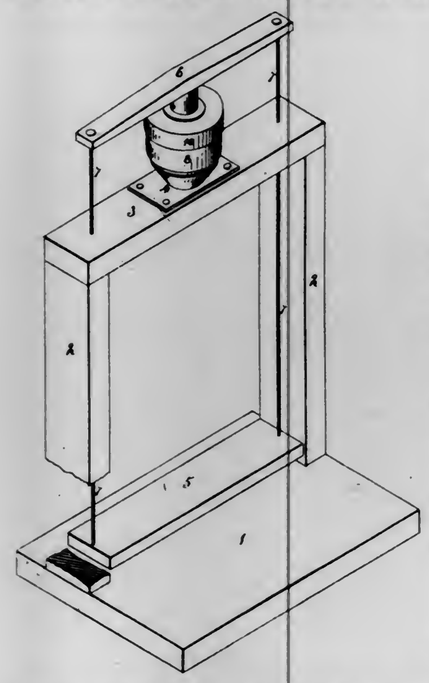


Claim.—1. In a machine for cutting knitted fabric, the combination with a work-table constructed with a longitudinally arranged clearance opening, of two disk-shaped cutters respectively located above and below the said table in the longitudinal plane thereof, one of them passing through the said opening and overlapping the other, means extending parallel with the length of the table for driving the cutters to move their cutting edges in the same direction, two parallel guides mounted upon the table with a space between their inner edges

to form a guide-way in line with the edges of the cutters, and a vertical guide located above the said space, substantially as described, and whereby the work may be fed directly inward away from the operator and with the length of the table.

2. In a machine for cutting knitted fabric, the combination with the frame thereof provided with a horizontal arm, of a work-table mounted upon the said frame below the said arm, extending parallel with the length thereof and constructed with a longitudinally arranged clearance opening, two disk-shaped cutters respectively located above and below the said table in the longitudinal plane thereof, one of them being mounted in the said arm, and one of them extending through the said opening to overlap the other, means located in the longitudinal plane of the table and arm for driving the cutters to move their cutting edges in the same direction, two laterally adjustable guides located upon the table and having their inner edges separated to form a guide-way between them in line with the cutters, and a vertical guide located over the said guide-way, provided upon its inner face with a vertically arranged leaf co-operating with it to form a passage for the work, and connected with the outer end of the said arm, substantially as described, and whereby the work may be fed directly inward away from the operator and with the length of the table.

546,533. INSECT-POWDER DISTRIBUTER. JOHN HETHERINGTON, Porter, Ind. Filed Feb. 20, 1895. Serial No. 539,151. (No model.)



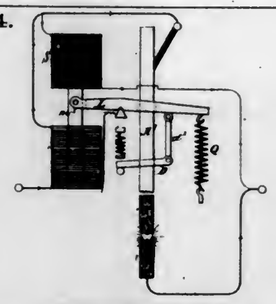
Claim.—1. An insect powder distributer consisting of a powder magazine having a flexible upper portion, a platform, and a connection between the magazine and platform whereby the depression of the platform automatically discharges powder from the magazine.

2. An insect powder distributer consisting of a powder magazine having a flexible upper portion, a platform, a connection between the magazine and platform, and a needle located within the magazine and movable in unison with the platform.

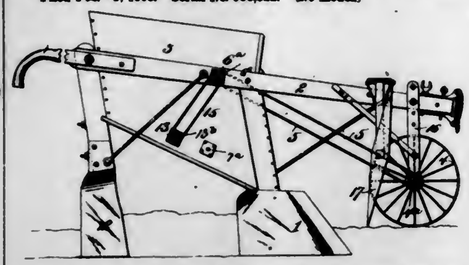
546,534. ELECTRIC-ARC LAMP. DANIEL HIGHAM, Boston, Mass., assignor to the Higham Electric Company, Portland, Me. Filed June 4 1895. Serial No. 551,632. (No model.)

Claim.—An electric arc lamp, having a suitable feeding mechanism with a carbon rod and clutch for same, in combination with a spring or elastic stop for said clutch, acting to lock said clutch with said rod and to oppose the magnetic action of the series windings of said lamp, when the arc is being struck, but free from action upon said clutch and opposition to said series windings when the lamp is normally working, substantially as described.

546,534.



546,535. POTATO-PLANTER. JOHN HORSCROFT, Moberly, Mo. Filed Feb. 15, 1895. Serial No. 538,522. (No model.)



Claim.—A planter comprising a guide-wheel, a driving sprocket wheel on the axis of the guide-wheel, a hopper, the upper shaft extending across the hopper, provided with an inner sprocket-wheel, a belt wheel, and an outer sprocket-wheel, the chain carried by the driving sprocket-wheel and the inner sprocket-wheel, the lower shaft having an idle wheel, a cup chain extending over the belt wheel and idle wheel, the chute, the receiver at the base of the chute through which the cup chain passes, the finger guides secured beneath the receiver, the guide shaft having flat sides and a sprocket-wheel, and located between the chute and the receiver and the chain carried by the outer sprocket-wheel on the guide shaft; substantially as described.

546,536. TAILPIECE FOR BANJOS. EDWARD JACOBY, Los Angeles, Cal., assignor of one-half to Charles S. De Lano, same place. Filed Dec. 13, 1894. Serial No. 531,683. (No model.)



Claim.—1. A tail piece for banjos, having a flange adapted to rest on the rim of the instrument and a series of posts on the flange, with which the strings may be connected, substantially as set forth.

2. A tail piece for banjos having a body with wedge shaped lugs thereon to form a bearing on the rim of the instrument and means for securing strings to the tail piece, substantially as set forth.

3. In a tail piece for banjos the combination of the vertical body having bearing lugs, upper flange having posts, lower flange having slots and a lip on the lower flange having an aperture for the reception of a bolt, substantially as set forth.

546,537. LAWN-SPRINKLER. RUSSELL T. JOY, Tacoma, Wash. Filed July 10, 1894. Serial No. 517,089. (No model.)

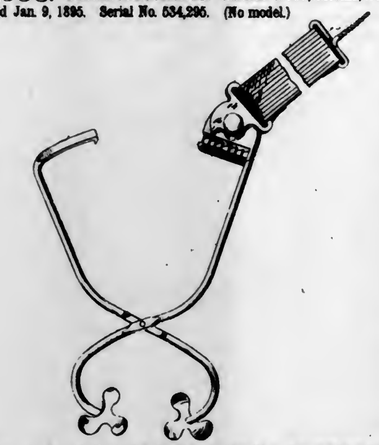


Claim.—1. A lawn sprinkler, comprising a casing having a central outlet opening in its top, a raised bottom provided with a threaded opening, a supporting flange or projection around the lower edge of the case below said bottom, an inlet opening at one side to which the hose or supply pipe may be coupled, and a cone having a threaded base screwed adjustably in said threaded bottom opening and provided with means for rotating it from the exterior of the case, the apex of the cone entering the outlet aperture, substantially as described.

2. In a lawn sprinkler, the combination, with a casing provided with a water inlet and an outlet, and guard flanges surrounding the outlet, the outer wall of the outlet being outwardly inclined, of a spreading or spraying cone, provided with a threaded base, the base being adjustably located in the bottom of the casing, the apex of the cone entering the said outlet, and a means for adjusting said cone, as and for the purpose specified.

3. In a lawn sprinkler, the combination, with a casing having an arched top and bottom, a flange at the bottom adapted to rest upon a support, the bottom being provided with a threaded opening, the top with a water outlet and the side with a water inlet, the outlet in the casing being surrounded by guards, of a spreading or spraying cone having a threaded base, adjustably screwed into the aperture in the bottom of the casing, the apex of the cone entering the said outlet, and a handle by means of which the cone may be turned, as and for the purpose specified.

546,538. BEDCLOTHES-HOLDER. RUSSELL T. JOY, Tacoma, Wash. Filed Jan. 9, 1895. Serial No. 534,295. (No model.)



Claim.—1. In a bed clothes holder or the like, the combination of a pair of pivoted arms having opposing ends provided with gripping jaws, a rack secured to one arm and extending transversely of the same a pawl secured to the other arm to engage the teeth of said rack, and a pivoted latch adapted to hold said pawl in engagement with said rack substantially as set forth.

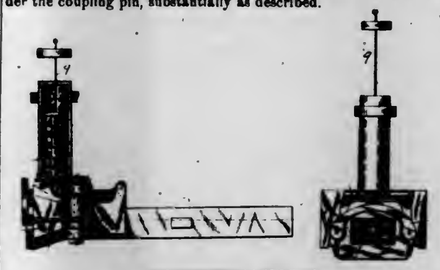
2. In a bed clothes holder or similar device, the combination, with a pair of pivoted arms provided with gripping jaws at one of their ends, of a ratchet plate secured to one arm, the ratchet teeth being depressed, a pawl secured to the opposing arm, adapted for engagement with the ratchet, and a gravity latch adapted to extend over the pawl and ratchet, substantially as shown and described.

3. In a bed clothes holder or like device, the combination with a pair of pivoted arms provided with gripping jaws at one of their ends, the said jaws consisting of a series of leaves inwardly curved and spaced a predetermined distance apart, the leaves of one jaw being arranged opposite the space intervening the leaves of the opposing jaw, a ratchet formed upon one of the said arms, and a pawl formed upon the opposing arm, both ratchet and pawl being directed to the space intervening the said arms, and a latch adapted to lock the pawl to the ratchet, as and for the purpose set forth.

4. In a bed clothes holder or like device, the combination, with a pair of pivoted arms provided with gripping jaws at one of their ends, a ratchet and pawl locking device at their opposite ends, and a gravity latch confining the pawl to the ratchet, of an elastic band connected with said latch, and fastening devices, substantially as described, carried by the said band, as and for the purpose set forth.

546,539. CAR-COUPLING. WILLIAM A. KEANEY, Garnett, Ark., assignor to John Whisenhunt, same place. Filed Nov. 10, 1893. Renewed Apr. 24, 1895. Serial No. 547,042. (No model.)

Claim.—In a car coupler, the combination with the draw bar having a head and a flaring mouth with a groove therein, of the plate bolted to said drawhead, the tube secured thereto, the coupling pin located in said tube, having a rod or stem and a coiled spring, the lugs pivoted on the bolts of said plate, the rods, the transverse bar connected therewith located in front of the drawhead, and the spring actuated plates secured to said lugs and adapted to be projected under the coupling pin, substantially as described.



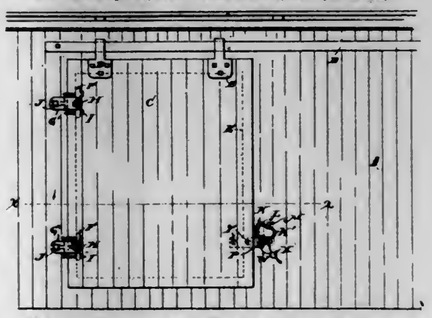
546,540. BALL-BAT. ALBERT H. KENNEDY, Rockport, Ind. Filed Jan. 2. 1895. Serial No. 533,654. (No model.)



Claim.—1. The combination, in an elastic bat, of the parts A, B, with their grooves H, H, the ferrules C, D, spun into the grooves H, H, the bolt E, F, and the cushion G, substantially as described.

2. In an elastic bat, the combination of the ferrules C, D, the bolt E, F, and the rubber spring or cushion G, substantially as described.

546,541. CAR-DOOR FASTENER. THOMAS C. KENNEDY, Dayton, Ohio. Filed Apr. 20, 1895. Serial No. 546,449. (No model.)



Claim.—1. In a car door lock, the combination with a car in its sliding door, of a keeper secured by interior devices near one side of the door opening and adapted to receive the edge of the door and hold it from outward movement, a stud on the door near the other edge, and a tumbler mounted within the wall of the car and adapted to extend out and engage with said stud and to be forced back into the side, the fastening devices for the tumbler being interiorly placed.

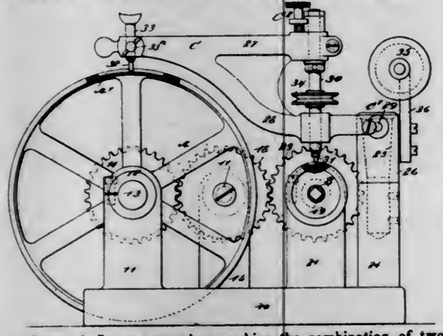
2. In a car door lock, the combination with a car and its door, of a keeper consisting of a shank fastened back of the door and a hook embracing the outer edge and side of the door, and a case let into the car side and fastened interiorly, and a tumbler slidable in and out of the case, and a stud on the door adapted to be engaged by the tumbler.

3. In a car door lock, the combination with the car, and its door having a stud, of a case fitted into the side of the car and fastened by devices within the car, a partition or cross-piece in the case, and a tumbler slidingly fitted to said piece, with a stop-device on one end and a hook on the other, the hook being adapted to embrace the stud on the door, the hook and stud having openings for receiving a sealing wire.

4. In a car door lock, the case having a flange adapted to be interiorly secured to the car frame, a cross partition or piece, and a tumbler slidingly mounted therein and adapted to extend beyond the case in one position and within the case in the other position, with a hook on one end and a stop projection on the other.

5. In a car door lock, a lock proper consisting of a case, a partition across it, with a tumbler-hole and a slot, a tumbler fitted to slide in said hole, and having a stop-projection adapted to pass through the slot in inserting the tumbler, but to prevent the withdrawal of the tumbler when the tumbler is revolved to bring said stop-projection out of line with said slot.

546,542. ENGRAVING-MACHINE. JESSE G. KINGSBURY, Bridgeport, Conn. Filed Nov. 28, 1894. Serial No. 530,236. (No model.)



Claim.—1. In an engraving machine the combination, of two shafts, one adapted to support a master wheel and the other adapted to support a blank wheel, means for imparting rotary movement to one shaft, a compensating gearing between the two shafts, and a delineating arm having a tracing point adapted to engage the master wheel and a cutting tool adapted to engage the blank wheel, substantially as set forth.

2. In a machine of the character described, a compensating gear adapted to mesh with a solid gear, said compensating gear being made in two circular sections, adapted to fit one against the other, one section being provided with apertures and recesses leading into said apertures, the recesses being provided with springs, and the other section being provided with corresponding threaded apertures of reduced diameter, and screws the plain surfaces of which are held loosely in the larger apertures of one section and in contact with the springs of the recesses leading into said apertures, the threaded portion of the screws being seated in the threaded apertures of the opposing section of the gear, as and for the purpose set forth.

546,543. WATCHCASE. FRITZ KÖHLI, Bienne, assignor to Emile Flotron, Madretsch, Switzerland. Filed May 15, 1895. Serial No. 549,409. (No model.)



Claim.—1. The combination with an inner case C holding the watch mechanism and provided with a bezel and glass, of the external case A having an opening at one side for the reception of the inner case, interlocking projections a c at one side of the inner case, a winding stem adapted to engage the winding mechanism within the inner case, and a coiled spring around within the outer case acting upon the winding stem to draw the same inwardly and hold the inner end in engagement with the inner watch case for holding such inner watch case in its proper position, substantially as set forth.

2. The combination with an external watch case having a shank and an opening at one side, of an inner case adapted to receive the watch mechanism, a glass and bezel for the same, a winding stem within the shank and a crown connected with the winding stem, a coiled spring around within the external case having a projection passing through a hole in the case and by which the spring is held in position, and a fork at the other end, there being a neck or annular groove around the winding stem for receiving the fork of the spring and by which such winding stem is drawn inwardly to engage the inner case, substantially as set forth.

546,544. CONSTRUCTION OF RAILROAD-CARS. JOHN P. MAHER, Philadelphia, Pa. Filed Dec. 4, 1894. Renewed Aug. 21, 1895. Serial No. 560,061. (No model.)



Claim.—1. The combination, with the frame of the body of a railroad car, and the supplemental base-frame of the said body, of the socket-castings 22 and 27 bolted respectively to the said supplemental-frame and to the roof-plates of the body, the posts secured into said socket-castings, the socket of the upper casting being open at one side and provided with a cap plate for securing the post therein, whereby the said posts may be removed from said castings and replaced by new ones without removing said sockets or any of the parts with which they are connected.

2. In a railroad car, the frame of the body, comprising the supplemental base-frame, the roof-frame, the body-posts and the diagonal-braces, in combination with socket-castings 22 and 27 for securing the posts respectively to the supplemental-frame and to the roof-plates, the socket castings 31 upon the ends of the braces, having an abutting bearing upon an integral part of the casting 27 at the side of the post, the base sill structure, and the tension-rods 10 connecting the roof-plates, the base-sills, and the socket castings for the posts and the braces in the way and for the purpose stated.

3. In a railroad car, the combination of the posts, with base-castings 22 having dovetail-sockets and removable face-plates 28 for said sockets, the roof-plate castings 27 having rectangular sockets and removable face-plates 28, for said sockets, the diagonal wall-braces having the socket-castings 31, the tension-rods and the nuts thereon, the said posts being secured to and made removable from said castings in the way described.

4. In a railroad car, the combination of the body-posts having the top socket-castings secured to the roof-plates, the diagonal wall-braces, the tension-rods, their nuts, and the socket-castings on the upper ends of the braces engaging and bearing upon the post socket-castings by their vertical faces, for the purpose stated.

5. The combination, in a railroad car, of the body-posts having the top socket-castings 27 secured to the roof-plates, formed each with a depending plate 33 having a vertical groove 35, the diagonal wall-brace having a socket-casting provided with a tongue 34 engaging the groove of the post-casting, the tension-rods, and the nuts thereon, for the purpose stated.

6. The combination, in a railroad car, of the body-framing and the base-timbers, with a supplemental-frame having dowel-pins 14 engaging the intermediate base-timbers 3 at various points throughout their length, the posts and their socket-castings, the bolts 23 and 25 securing the latter to said supplemental-frame, and the bolts 24 securing the castings to the supplemental-frame and to the base-timbers, whereby the two frames are anchored together at its sides, ends and intermediate timbers.

7. The combination, in a railroad car, of the body posts and socket-castings for securing said posts to the roof-plates and to the base-structure, with the diagonal wall-braces, the tension-rods and the nuts thereon, the said braces being secured within the base-castings and provided at their upper ends with socket castings which engage both the tension-rods and roof-plate castings, for the purpose stated.

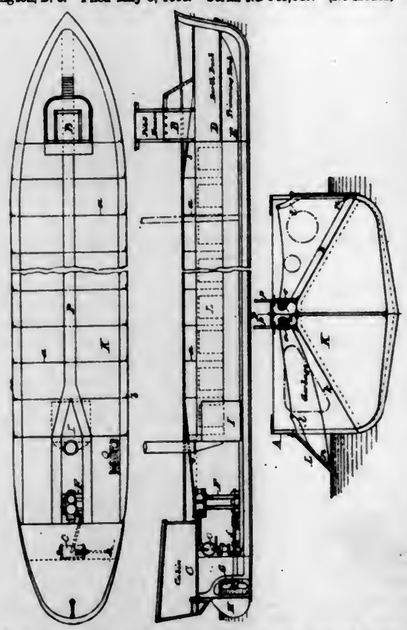
8. The combination in a railroad car, of the top-post casting 27 and the top brace-casting 31, means for engaging the said castings which will permit of the adjustment of the brace-casting upon the post-casting, the tension-rods passing through both castings, and the nuts upon said rods for the purpose stated.

9. In a railroad car, the combination, with the body frame, of the socket-castings for securing the wall-posts to the roof and to the base-frames, the socket castings for securing the upper ends of the diagonal braces, the tension-bolts passing through the several castings and connecting the roof-frame and the sill-frame, the said roof-frame castings having depending plates 33 arranged to form bearings on the sides of the posts upon which the castings of the diagonal braces abut, and are made adjustable in the way and for the purpose stated.

10. In a railroad-car, the combination, with the body and the base structures, of the socket-castings 22 and 27 for the posts, the socket-castings 31 for the diagonal-braces, the tension-rods passing through the said several castings and the nuts upon said rods, the said castings 27 and 31 being connected by tongue-and-groove, for the purpose stated.

11. The combination with the frame of the body of a railroad car, the sill-frame and the supplemental-frame, of the socket-castings 22 and 27 bolted respectively to the supplemental-frame and to the roof-plates, the posts tenoned in said socket-castings—the lower tenon being dovetailed in its socket, the joint-bolts 25 nutted in said tenon and securing together the posts, the socket-castings and the supplemental-frame, and the bolts 24 securing together the said socket-castings, the supplemental-frame and the sill-frame in the way described

546,545. STEAM GARBAGE-SCOW. GEORGE W. MELVILLE, Washington, D. C. Filed May 3, 1895. Serial No. 548,049. (No model.)



Claim.—1. A scow having the hull, provided with an inclined deck over which only a series of transverse bulkheads extend and form a continuous and unobstructed air space under said inclined deck, as shown and specified.

2. A scow having the hull provided with an inclined deck, over which extend a series of transverse bulkheads, conforming to said deck, and between each of said bulkheads having side doors arranged and operated as shown, in combination with the continuous unobstructed air space below said inclined deck, as set forth.

3. A scow having the hull provided with an inclined deck, over which extend a series of transverse bulkheads conforming to said deck from side to side, and provided between each bulkhead with a side door hinged directly to the hull, the continuous unobstructed air space below said deck, in combination with a trimming tank E arranged under the berth deck at the forward end of the hull, as shown and specified.

4. In a steam scow, the combination of the hull having an inclined deck, over which extend a series of transverse bulkheads conforming to said deck from side to side, and provided with side doors hinged directly to the hull, and a continuous unobstructed air space below said deck, in combination with a trimming tank placed under the berth deck at the forward end of the hull and a pump for washing the deck, all arranged as shown and set forth.

5. The steam scow herein described, consisting of a hull provided with an inclined deck, over which the series of transverse bulkheads extend from side to side, the continuous unobstructed air space located under said inclined deck, the side doors hinged directly to the hull between said bulkheads, in combination with a trimming tank under the berth deck arranged at the forward end of the hull, the pump and propelling machinery, all arranged as specified.

546,546. ELECTRIC RAILWAY. HARRY M. MONTGOMERY, New York, N. Y., assignor, by mesne assignments, to Leon Dion, Boston, Mass. Filed June 14, 1892. Serial No. 436,696. (No model.)



Claim.—1. In an electrical railway, the combination with a continuous supply conductor, of a sectional working conductor, and an intermediate auxiliary conductor formed of a continuous series of similar magnetic parts interlinked and in electrical contact with each other for connecting the supply conductor with the sections of the working conductor, substantially as described.

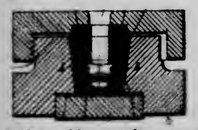
2. In an electrical railway, a closed conduit consisting of an electrically continuous lower portion, and a sectional upper portion, said sections being insulated from each other and from the lower portion, and an auxiliary conductor composed of a continuous series of similar interlinked members of magnetic material inclosed in said conduit, for the purpose of establishing electrical connection between said lower and upper portions, substantially as described.

546,547. WATCHCASE-PENDANT. FRANK MOORFIELD, Newark, N. J. Filed Apr. 2, 1894. Serial No. 506,036. (No model.)



Claim.—As a new article of manufacture, a watch case pendant having an integral, oval-shaped enlargement that extends around the cylindrical, body portion thereof and is adapted at its small ends for the attachment of the bow, and in its upper side having an annular cavity to receive the lower edge of a winding crown, substantially as and for the purpose specified.

546,548. DIE FOR MAKING WATCHCASE-PENDANTS. FRANK MOORFIELD, Newark, N. J. Filed Apr. 2, 1894. Serial No. 506,037. (No model.)



Claim.—1. A die for making watch case pendants that is shaped to form the same with an enlargement extending around the body portion and which comprises similar sections and a tubular part that has a cylindrical interior which conforms to the cylindrical body of the pendant, and at its inner end projects into the enlargement forming portion of the matrix to produce in such enlargement an annular cavity to receive the lower end of a winding crown, substantially as and for the purpose specified.

2. A die for making watch case pendants that is shaped to form the same with an enlargement extending around the body portion, and comprising similar sections and a tubular part having a beveled inner end that extends into the enlargement forming portion of the matrix,

to produce in said enlargement a cavity to receive the lower end of a winding crown, substantially as and for the purpose shown.

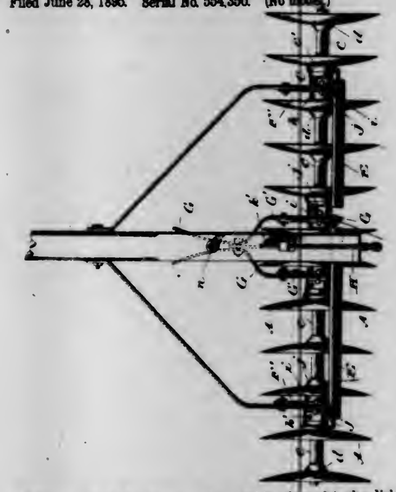
3. A die for making watch case pendants comprising similar sections having shouldered openings and a tubular part whose end abuts against the shoulders, substantially as and for the purpose described.

4. The combination of the tapering die parts, a holder having a tapering opening, to receive said parts and through which the small ends thereof project, substantially as and for the purpose specified.

5. The combination of the tapering die parts, a holder having a tapering opening to receive said parts and through which the smaller ends thereof project, a block against which said ends abut, and means to force and hold said parts in said opening, substantially as and for the purpose shown.

6. The combination of the tapering die parts having shouldered openings, a flanged tubular part extending into the latter, a holder having a tapered opening, and a cap to engage the flanged portion of the tubular part, substantially as and for the purpose set forth.

546,549. HARROW. FREDERICK H. NORTON, Gouverneur, N. Y. Filed June 28, 1895. Serial No. 554,350. (No model.)



Claim.—1. In a disk harrow, the combination with the disk carrying axles, and journal boxes thereon, of a main beam provided with downwardly turned ends, which project below the center of the journal boxes and to the rear thereof, so as to take the draft strain, the pole, and brace or connecting bars extending across and resting upon the journal boxes to which they pertain, and secured at one end to the pole and at the other end to the downwardly extending ends of the main beam, substantially as and for the purposes hereinbefore set forth.

2. In a disk harrow, the combination with the disk carrying axles and supports for their outer ends, of journal boxes located at or near the inner ends of said axles, an operating lever pivoted in the pole or supporting frame of the harrow, and inner connecting or brace bars pinned to said lever and at their rear or gang ends passing over and loosely around said journal boxes, substantially as and for the purposes hereinbefore set forth.

3. In a disk harrow, the combination with the disk carrying axles, each provided at or near its two ends with journal boxes, of the pole the main beam provided with downwardly turned ends, extending down behind and below the center of the outer journal boxes, the outer brace bars attached at one end to the pole and thence extending outwardly and rearwardly over and resting upon and loosely connected with the outer journal boxes and secured to the downwardly turned end of the main beam, the operating lever, and the inner connecting or brace bars pinned to the operating lever and at their rear or gang ends passing over and loosely around the inner journal boxes, substantially as and for the purposes hereinbefore set forth.

4. In a disk harrow, the combination of the disk-carrying axle and disks thereon; the journal boxes provided on top with a flat bearing surface *i* and two lugs *j* one on each side of said surface; the main beam provided with downwardly turned ends which project below the center of the journal boxes and to the rear thereof; the pole; and the brace bars resting upon the flat bearing surface *i* of the journal boxes and extending between the lugs *j*, and secured at one end to the pole and at the other end to the downwardly turned ends of the main beam, substantially as and for the purposes hereinbefore set forth.

546,550. COMBINED CORN-HUSKER AND FODDER-SHREDDER. GEORGE W. PACKER, Rock Falls, assignor to the Keystone Manufacturing Company, Sterling, Ill. Filed Apr. 22, 1895. Serial No. 546,696. (No model.)



Claim.—1. In a fodder shredder, the combination, with the shaft D, of collars H thereon, each of said collars comprising a cylindrical hub and two transversely perforated cylindrical spiral rims, each rim being of substantially the same thickness as the length of the hub, and the pitch of the spiral being such that one side of each end of one of the spirals will be substantially even with the opposite side of the adjacent end of the other spiral, shredding blades between the rims of the different collars, and pins through the blades and into the rims, substantially as set forth.

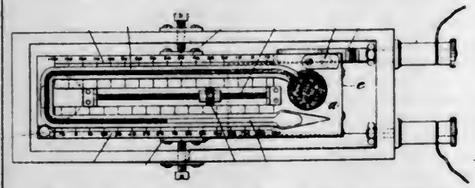
2. In a fodder shredder, the combination, of a shaft G, shredder blades F arranged spirally upon said shaft, and collars H, consisting of a tubular center adapted to be seated on said shaft, and segmental blade rests, formed obliquely in opposite directions on the periphery of said tubular center, and adapted to receive the aforesaid blades, substantially as set forth.

3. In a fodder shredder, the combination, with a frame, of a bracket secured thereto, the upper portion of which is provided with a set screw, a shaft journaled in one leg of the bracket, a sprocket wheel, a gear wheel, and a yoke upon the shaft, a roller journaled in the free end of the yoke, a second roller journaled in the frame adjacent the first mentioned roller, one end of which is provided with a sprocket wheel, an idle wheel, a sprocket chain over the two sprocket wheels and the idle wheel, and a spring between the free end of the yoke and the upper end of the bracket, substantially as set forth.

4. In a corn husking machine, the snapping rollers, A, B, formed oblong in cross-section and provided with fluted and ridged sides adapted to mutually engage, substantially as set forth.

5. In combination with husking rollers D, regulators 23 provided with sloping bases 25 and suspended over the interval between said rollers and adapted to have a longitudinal, orbital movement in the line of said roller substantially as shown and for the purpose described.

546,551. THERMOMETRIC CIRCUIT-CLOSER. RICHARD PEARSON, London, England. Filed May 2, 1895. Serial No. 547,945. (No model.)



Claim.—1. A thermometric circuit closing device, consisting of a balanced thermometer mounted to oscillate on a horizontal axis and containing a thermometric fluid other than mercury and also a mercurial column movable along the bore by the expansion of such fluid under heat, this motion of the mercurial column having for effect to both increase the weight at one side of the axis and at same time decrease it at the other side of the axis, substantially as specified.

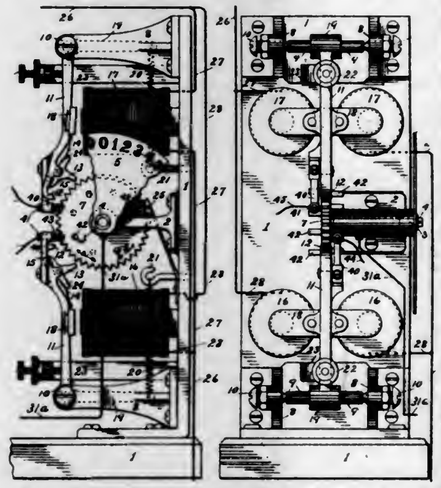
2. A thermometric circuit closing device, comprising a U-shaped maximum and minimum thermometer mounted to oscillate on a transverse horizontal axis, and containing a thermometric fluid other than mercury, the tube containing a mercurial column movable under the expansion of the thermometric fluid in such manner that the length of the column of mercury at the one side of the axis of oscillation will be diminished concurrently with the increase in the length of the column at the other side of the axis, and thereby cause the bulb end to preponderate and a circuit to be closed, substantially as specified.

546,552. BLASTING-POWDER. BENJAMIN C. PETTINGELL, Victoria, Canada, assignor to Joanna Pettingell, same place. Filed Nov. 9, 1894. Serial No. 528,332. (No specimens.)

Claim.—1. The process of manufacturing explosive powder, which consists in first immersing the powdered carbon singly and alone in a solution of niter, then drying the same, and afterward adding and mixing mechanically therewith the other ingredients substantially as and for the purpose described.

2. The process of manufacturing explosive powder which consists in first immersing pulverized mineral carbon singly and alone in an aqueous solution of niter, and then adding and mixing mechanically therewith sulfur and wood pulp, substantially as and for the purpose described.

546,553. ELECTRIC CALCULATOR. WILLIAM C. PORTER, Arlington, Minn., assignor of one-half to Aug. G Obernolte, same place. Filed Dec. 1, 1894. Serial No. 530,625. (No model.)



Claim.—1. In an electric calculator, the combination of a series of dials each representing a different denomination and having numbers upon their faces corresponding to the places in each denomination, electro-magnets for each dial provided with armatures each adapted by the action of the magnet to move an arm with a pawl thereon, ratchet wheels adapted to be engaged by such pawls and thereby rotated to the right or left together with its connected dial each time an electric current passes through the magnet, means to swing the arms and pawls back when the electric current is broken, studs projecting from the opposite faces of the ratchet wheels, a post carried by each of said arms and adapted to swing therewith, said studs being so disposed and said post so adapted as to come in contact with one of said studs only when a number is to be added to or taken from the next higher denomination, means for connecting said studs with one pole of an electric battery, and means for connecting said posts with the other pole of the battery, in such manner that when a post and stud are in contact with each other, an electric circuit is closed through the corresponding magnet of the next higher order, and other means for making and breaking an electric current through the respective magnets of each denomination substantially as described.

2. In an electric calculator the combination of a series of dials each representing a different denomination and having the numbers of their respective denominations upon their faces arranged in proper order, one or more full series on each dial, a ratchet wheel for each dial designed to rotate both to the right and to the left and to carry the dial in each direction, two pivoted arms, one at each side of the ratchet wheel, and each adapted to rotate the wheel toward its side by means of a pawl engaging in the teeth of the wheel, a pawl upon each of said arms adapted to swing therewith and to engage and lock the ratchet wheel when it has moved one point by the same action of the arm, an armature secured to each of said arms, an electro-magnet for each armature adapted to attract the same and thereby to operate the arm, locking pawl, operating pawl, ratchet wheel, and dial by the closing of an electric circuit, means to swing the arm, pawl and locking pawl back when the circuit is broken, ready for their next action, a cushioned post carried by each of said arms and one thereof playing near each face of the ratchet wheel, studs projecting from the faces of said wheel and so disposed that one thereof will be struck by the cushioned post on that side when a number is to be added to or taken from the next higher denomination, means for connecting said studs with one pole of an electric battery, means for connecting said posts with the other pole of the battery through the magnet operating on the same side of the ratchet wheel of the next higher order, and other means for making and breaking an electric current, substantially as set forth.

3. In an electric calculator for registering the results of mathematical calculation upon a series of registering faces representing denominations successively of a higher order, means for making and breaking an electric current to advance the numbers on said faces or to reduce them as desired, consisting of a tablet the face of which has a series of conductor surfaces equal to the numbers in each denomination, connected with one pole of a battery and intervened by non conductor surfaces; and a brush provided with two sets of teeth, one in each set for each of said registering faces, each tooth of one set connected to the other pole of the battery through a separate magnet, each adapted to operate one registering face to advance the numbers thereon, and each tooth of the other set connected in like manner to the same pole through magnets adapted to reduce the numbers on their registering faces respectively, substantially as set forth.

4. In an electric calculator, the combination of a series of registering faces each representing a different denomination and having numbers thereon corresponding to the places in each denomination, a series of electro-magnets for the several registering faces respectively, means whereby the action of a magnet will add to or take from a number displayed by its face, tens carrying devices whereby the action of the mechanism adapted to advance or reduce the numbers on any such face, will automatically call into action the magnet and mechanism respectively adapted to add to or take from the numbers on the face of the next higher order when required, and means for opening and closing an electric current, consisting of a tablet the face of which has a series of conductor surfaces equal to the numbers in each denomination, connected with one pole of a battery and intervened with non conductor surfaces, and a brush having a tooth corresponding to each registering face and connected to the other pole of the battery through the magnet of its corresponding dial, substantially as herein set forth.

5. In an electric calculator, the combination of a series of registering faces each representing a different denomination and having numbers thereon corresponding to the places in each denomination, a series of electro-magnets for each registering face, one set adapted to operate appliances to advance the numbers displayed on their respective registering faces and the other set adapted to reduce the same, and means for closing and opening an electric current consisting of a board or tablet the face of which has a series of conductor surfaces equal to the numbers in each denomination, intervened by non conductor surfaces, a metallic point adapted to be moved over the surfaces of said tablet, means for connecting said conductor surfaces with one pole of a battery and said point with the other pole, one of said electric connections passing through magnets adapted to add to or subtract from the number displayed on the dial, and means for varying said connection so as to pass through either the "adder" or "subtracter" magnets as desired, substantially as shown and described.

6. In an electric calculating machine the combination of a series of registering faces having numbers thereon corresponding to the places in each denomination of the series, a series of electro-magnets corresponding to said registering faces, each adapted to operate appliances to reduce the number displayed on their respective registering faces, a brush having a tooth for each denomination present in the sum to be used as a dividend, means for electric connection of each tooth to one pole of a battery through the said magnet of the corresponding denomination, a quotient registering tooth upon said brush and connected to one pole of a battery, a divider board consisting of a tablet the face of which has a series of conductor surfaces equal to the numbers in each denomination, intervened by non-conductor surfaces, said conductor surfaces being connected to the opposite pole of the battery to that from which connection through said magnets run; and of a second series of conductor surfaces connected to the opposite pole of the battery to which said quotient registering tooth is connected, through a series of magnets adapted to operate mechanism to add to the numbers on their respective dials, and said last series of conductor surfaces being so disposed upon said board that said quotient registering tooth will pass over them one at a time successively to register the quotient when the brush is given a full sweep in subtracting the divisor from the dividend, and tens-carrying devices adapted to reduce the number displayed on a higher order by the action of the parts which operate the registering face of the lower order, substantially as shown and described.

7. In an electric calculator the combination of a series of registering faces, a series of electro-magnets adapted to operate said registering faces, a brush having a series of teeth representing respect-

ively the denominations of said registering faces, and having a quotient registering tooth, a divider board having thereon a tablet with a series of conductor surfaces intervened by non conductor surfaces, and a second series of conductor surfaces so disposed that when one of the teeth first named is passed over said tablet and board a full sweep, the said quotient registering tooth will pass over one of said second series of conductor surfaces, and means for connecting said conductor surfaces and teeth with said magnets and the poles of a battery, substantially as described.

8. In an electric calculator for effecting division and other calculations, the combination of a series of registering faces having numbers thereon corresponding to the places in each denomination of the series, a series of electro-magnets corresponding to said registering faces each adapted to operate appliances to reduce the number displayed on their respective registering faces, means for registering the remainder when the divisor is being subtracted from the dividend, consisting of a board on the face of which is a series of conductor surfaces equal to the number in each denomination, intervened by non-conductor surfaces, a metallic point adapted to be moved over the said conductor and non conductor surfaces, and means for connecting said conductor surfaces with one pole of a battery and said point with the other pole, one of said electric connections passing through said magnets, and means for registering the quotient consisting of a second series of conductor surfaces connected to one pole of a battery through a series of magnets adapted to operate mechanism to add to the numbers on their respective dials, said last series of conductor surfaces being so disposed upon said board that a point connected with the other pole of the battery will pass over them successively one at a time, when the metallic point which is moved over said first series of conductor surfaces is given a full sweep in subtracting the divisor from the dividend; and tens-carrying devices adapted to reduce the number displayed on a higher order when the number displayed on a lower order calls for such change, substantially as described.

9. In an electric calculator, having a series of registering faces representing denominations, a divider board on the face of which is a series of conductor surfaces connected with a pole of a battery and intervened by non conductor spaces and a second series of conductor surfaces connected with a pole of a battery, in combination with means for making and breaking the circuit with said first named series of conductor surfaces to register the remainder on said registering faces in the process of division, and by the same movement of said means, to close an electric circuit upon said second series to register the quotient, means for operating said registering faces by making and breaking said circuits, and tens-carrying devices, substantially as set forth.

10. In an electric calculator the combination of a series of registering faces representing different denominations and adapted to display successively the numbers of an arithmetical order, a series of electro-magnets with intervening mechanism adapted to operate said registering faces, a brush provided with a series of teeth representing the several denominations of said registering faces, and having connection with the pole of a battery through the magnets of the registering faces of their respective denominations a double tablet having two faces composed each of a series of conductor and non conductor surfaces arranged alternately, a multiplier board having spaces or squares thereon, each representing a multiplicand and a multiplier, a number of conductor points exposed on said squares equal to the sum of the numbers which express the product of the multiplicand and multiplier represented by such square, connection between the conductor points of said squares and the conductor surfaces of said tablet, and means for connecting the conductor points on said squares with the opposite pole of said battery, substantially as set forth.

11. In an electric calculator for effecting multiplication and other arithmetical operations, the combination of a multiplier board having spaces or squares thereon each representing a multiplicand and a multiplier, and a number of conductor points exposed on said squares equal to the sum of the numbers which express the product of the multiplicand and multiplier represented by such square, a series of conductor surfaces separated by non-conductor surfaces, and connected each with one of said conductor points on said squares, a brush having a series of teeth representing successive arithmetical denominations, adapted and said conductor surfaces so disposed, that a tooth of lower order may pass over the series of conductor surfaces which is connected to the said points on the square which represent the lower denomination of said product, and the tooth of the next higher order may pass over the series which is connected to the points on the square which represent the higher denomination of said product, means for connecting the points on said squares with one pole of a battery, means for connecting said teeth with the opposite pole of a battery and means located on said circuit, adapted to register said product and the sum of successive products, substantially as shown and described.

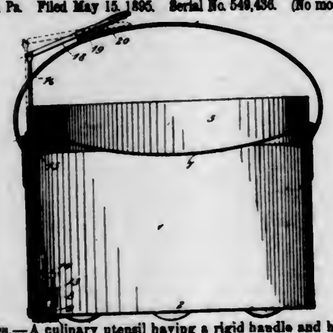
12. In an electric calculator the combination of a series of registering faces representing different denominations and adapted to display successively the numbers of an arithmetical order, a series of electro-magnets with intervening mechanism adapted to operate said registering faces, a brush provided with a series of teeth representing the several denominations of said registering faces and having connection with the pole of a battery through the magnets of the registering faces of their respective denominations, a double tablet having two opposite faces composed each of a series of conductor and non-conductor surfaces arranged alternately on the same face and alternately to each other on the opposite faces, a multiplier board having spaces or squares thereon each representing a multiplicand and a multiplier, a number of conductor points exposed on said squares equal to the sum of the numbers which express the product of the multiplicand and the multiplier represented by such square, connection between said points on said squares which represent the lower denomination of said product, and the conductor surfaces of one face of said tablet, and connection between said points which represent the higher denomination of said product and said surfaces of the other face of said tablet, means for connecting the conductor points on said square with the opposite pole of said battery and means to increase the number displayed on a higher order of registering face when the number produced on the lower order requires it, substantially as described.

13. In an electric calculator the combination of a series of registering faces representing different denominations and adapted to display successively the numbers of an arithmetical order, a series of electro-magnets with intervening mechanism adapted to operate said registering faces, a brush provided with a series of teeth representing the several denominations of said registering faces and having connection with the pole of a battery through the magnets of the registering faces of their respective denominations, a double tablet having two opposite faces composed each of a series of conductor and non-conductor surfaces arranged alternately on the same face and alternately to each other on the opposite faces, a multiplier board having spaces or squares thereon each representing a multiplicand and a multiplier, a number of conductor points exposed on said squares equal to the sum of the numbers which express the product of the multiplicand and the multiplier represented by such square, connection between said points on said squares which represent the lower denomination of said product, and the conductor surfaces of one face of said tablet, and connection between said points which represent the higher denomination of said product and said surfaces of the other face of said tablet, a metallic foot secured to said tablet, connected with the opposite pole of said battery and adapted to be placed upon said squares, substantially as herein set forth.

14. In an electric calculator the combination of a series of registering faces representing different denominations and adapted to display successively the numbers of an arithmetical order, a series of electro-magnets with intervening mechanism adapted to operate said registering faces, a brush provided with a series of teeth representing the several denominations of said registering faces, and having connection with the pole of a battery through the magnets of the registering faces of their respective denominations, a double tablet having two faces composed each of a series of conductor and non-conductor surfaces arranged alternately, a multiplier board having eighty one spaces or squares arranged in rows nine in a row each way, and each representing a multiplicand and a multiplier, a number of conductor points exposed on said squares equal to the sum of the numbers which express the product of the multiplicand and multiplier represented by such square, connection between the conductor points of said squares and the conductor surfaces of said tablet, and means for connecting the conductor points on said squares with the opposite pole of said battery, substantially as set forth

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546,554. CULINARY UTENSIL. EDWARD O. RADON, Philadelphia, Pa. Filed May 15, 1895. Serial No. 549,436. (No model.)



Claim.—A culinary utensil having a rigid handle and having an opening in its bottom, a valve commanding said opening, a valve stem connected to the valve and passed upwardly to a lever fulcrumed on the handle and pivoted to the valve stem, and a cover, the same having adjacent to the valve stem a depression which receives said stem, the lever having a normally inclined position so that the stem may be moved upwardly and outwardly and so that the cover can be withdrawn only when the stem is thus moved, substantially as described.

546,555. FLUE-STOPPER. JOSEPH K. RANDLES, Quincy, Ill. Filed May 6, 1895. Serial No. 548,306. (No model.)

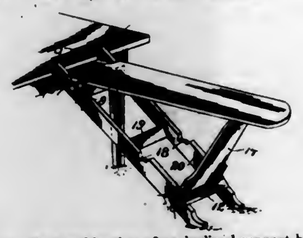


Claim.—1. A flue-stopper consisting of an outer disk, an inwardly-curved strap secured to the inner face of said disk and having slotted ends, a bridge-piece having slide bearing in said slotted ends and a bolt or screw connecting said disk, strap and bridge-piece and adapted to adjust said bridge-piece, substantially as and for the purpose set forth.

2. A flue-stopper consisting of an outer disk, a strap secured to the inner face of said disk and having inwardly-curved arms having slotted ends, a bridge-piece having tenoned ends having bearing in and projecting outwardly from the slotted ends of said strap, and a bolt or screw connecting said disk, strap and bridge-piece and adapted to adjust said bridge-piece, substantially as and for the purpose set forth.

3. A flue-stopper consisting of an outer disk having a central hole, an inwardly-curved strap secured to the inner face of said disk and having slotted ends, an angular bridge-piece having tenoned ends having bearing in and projecting outwardly from the slotted ends of said strap and a horizontal apex having a threaded bore, and a threaded bolt or screw connecting said disk, strap and bridge-piece and having bearing in the threaded bore of said bridge-piece, substantially as and for the purpose set forth.

546,556. IRONING-BOARD. HENRY RATCLIFFE, Lynchburg, Va. Filed Apr. 17, 1895. Serial No. 546,074. (No model.)



Claim.—1. The combination of an inclined support having parallel side bars notched for engagement with the edge of a table and provided contiguous to its upper and lower ends, respectively, with transversely opposite seats, parallel transverse braces being arranged contiguous to the lower seats, an ironing board having a reduced inner end to fit between the side bars of the support and engage the under surface of the table-top, the shoulders contiguous to said reduced portion being fitted in the seats near the upper end of the support, and a bosom-board having a reduced extremity adapted to fit between the side bars of the support and extend between the contiguous edges of said transverse braces, the shoulders of the bosom-board contiguous to said extension being arranged in the seats near the lower end of the support, substantially as specified.

2. The combination of a support having parallel side bars notched near their upper extremities to engage the edge of a table, connected near their upper and at intermediate points by cross bars 11 and 19 secured respectively to the front and rear surfaces of the bars and connected near their lower ends by the approximately opposite cross-bars 12 and 13, said side bars being provided in the plane of the upper edge of the upper cross-bar with seats 6, at their lower ends with seats 16 and at intermediate points slightly below the plane of the lower edge of the cross-bar 19 with intermediate seats, and boards provided with shoulders to fit in said seats and having reduced extensions to pass between the inner surfaces of the side bars of the support, substantially as specified.

546,557. BALL-BEARING. THOMAS J. REID, Washington Court-House, assignor of one-half to J. Lyman Dann, Columbus, Ohio. Filed Dec. 18, 1894. Serial No. 532,224. (No model.)



Claim.—1. The combination with the journal, of an axle box, enlarged at its outer end and interiorly screw threaded, a case having a threaded flange extending under and engaging the said outer end of the box, the outer end of said case also interiorly screw threaded, a cap having exterior screw threads engaging with said case, a shell placed on the end of the journal and partially inclosed by said cap, said cap and shell each provided with raceways, and balls in said raceways, and an internally screw threaded locking ring on said cap, substantially as described.

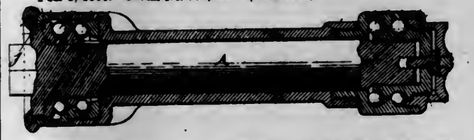
2. The combination with the journal of an axle box enlarged at its inner end and interiorly screw threaded, a cone externally threaded extending under and engaging with said box, an unthreaded ring within said box abutting said cone, a partly threaded sleeve screwed onto the inner end of said journal, the threaded end of said sleeve adapted to bear against the journal collar, said ring and cone placed between the journal box and said sleeve, and the said ring, cone and sleeve provided with raceways for balls, and said balls, substantially as described.

3. The independent, removable and adjustable incasement for the outer end of the journal, said incasement comprising a case interiorly screw threaded, a cap externally threaded to engage with said case, a shell inclosed by said cap and adapted to be placed on the end of the journal, said cap and shell each provided with raceways for balls, and said balls, and a locking ring for locking the said cap and case, substantially as described.

4. The independent, removable and adjustable incasement for the inner end of the journal, said incasement comprising a cone, an unthreaded ring next to the inner end of said cone, a partly threaded sleeve adapted to be screwed on the end of said journal, said ring, cone and sleeve provided with raceways for balls, and said balls, and an elastic band sprung into a recess on said sleeve to hold said cone in place. substantially as described.

5. The combination with an axle box, of a hub having a bore of a plain continuous surface at its central portion, said box provided at its outer end with a peripheral enlargement fixed by a driven fit in the outer end of said bore, whereby when the axle box is inserted in place in the hub a clearance space for the spoke tenons is left between the middle portion of the axle box and the hub, substantially as described.

546,558. BALL-BEARING. THOMAS J. REID, Washington Court-House, assignor of one-half to J. Lyman Dann, Columbus, Ohio. Filed Feb. 8, 1895. Serial No. 537,725. (No model.)



Claim.—1. The combination with the journal, of the axle box enlarged at its outer end, a case having a flange extending under said enlarged end, an internally threaded nut screwing on and inclosing the threaded end of said journal, means passing through said nut for locking it to the journal, said case and nut provided with raceways for balls, and said balls, substantially as described.

2. The combination with the journal of the axle box enlarged and threaded interiorly at its outer end, a case having a threaded flange extending under and engaging said enlarged end, said case threaded internally at its outer end, a cap having a threaded flange extending under and engaging said case, an internally threaded nut on the threaded end of said journal and partially inclosed by said cap, said case and nut provided with raceways for balls, and said balls, substantially as described.

3. The combination with the journal, of the axle box threaded interiorly at its inner end, a case having at one end an externally

threaded flange screwing under the end of said box, said case provided with internal screw threads at its other end, a cone on said journal abutting the axle collar, said cone having a flange provided with screw threads upon its surface, said case and cone provided with raceways for balls, and said balls, substantially as described.

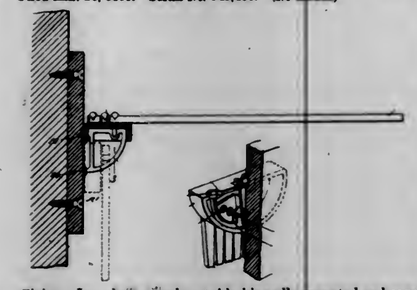
4. In combination with the journal, the axle box, a case having raceways for balls, a journal cone provided with corresponding raceways, balls in said raceways, said case having conveyer threads upon its inner surface whereby when the wheel is in motion said threads prevent dirt from entering the box, substantially as described.

5. In combination with the journal, the axle box, a case having raceways for balls, a journal cone provided with corresponding raceways, balls in said raceways, said cone having conveyer threads upon its outer surface, whereby when the wheel is in motion said threads retain the oil within the box, substantially as described.

6. In combination with the journal and the axle box enlarged at its outer end, a complete and independent inclosement for the balls composed of a case having a flange extending under said enlarged end and an internally threaded nut on the threaded end of said journal, said case and nut provided with conveyer threads, said case and nut provided with raceways for balls, and said balls, substantially as described.

7. In a ball bearing axle, the combination with the journal collar and the case, said case provided with an exterior annular groove, of an external elastic cap having an annular rounded portion adapted to be sprung into said groove, said cap near its inner edge bearing with a slight tension upon said journal collar, substantially as described.

546,559. CLOTHES-DRIER. WILLIAM M. ROWLEY, Cuba, N. Y. Filed Mar. 28, 1895. Serial No. 543,489. (No model.)



Claim.—In a clothes rack, a table hingedly mounted and capable of swinging to a vertical and horizontal position and having a cavity on its under side, a table-supporting bracket mounted in the cavity and capable of swinging in and out thereof, and clothes supporting arms mounted on the table, substantially as described.

546,560. ELECTRIC LOCOMOTIVE. SIDNEY H. SHORT, Cleveland, Ohio. Filed Apr. 23, 1894. Serial No. 508,715. (No model.)

Claim.—1. In an electric locomotive, the combination with an electric motor journaled in arms journaled on the driving axle, and gearing connecting the armature shaft and axle, of a cross-bar yieldingly mounted on the truck-frame, and a laterally swinging link, for connecting one side of the motor casing and the cross-bar, substantially as set forth.

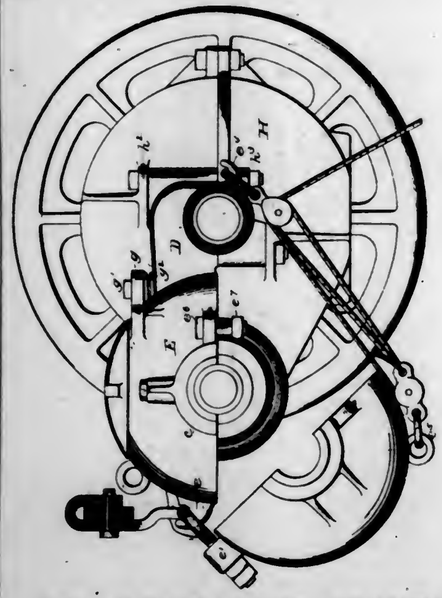
2. In an electric locomotive, the combination with an electric motor journaled in the free ends of a frame mounted at its outer end on the driving axle, and gearing connecting the motor and axle, of a cross-bar supported at its opposite ends by the side bars of the truck-frame; springs interposed beyond the cross-bar and side bars, and a swinging link connecting one side of the motor casing with the cross-bar, substantially as set forth.

3. The combination with a motor casing provided with a downwardly projecting hook, of a cross-bar and a link pivotally connected with the cross-bar, and detachably secured at its lower end to the hook on the motor casing, substantially as set forth.

4. The combination with a motor casing provided at one side with a hook, of a cross-bar, and a link formed with a hooked upper end which is pivoted to the cross-bar, and which is detachably secured at its lower end to the hook on the motor, substantially as set forth.

5. The combination with the cross bar, and side bar of the truck-frame, of brackets fitting against the upper and lower sides of the side bar, a bolt extending through the cross-bar and the brackets at one side of the side bar, and springs interposed between the brackets and cross bar and nut or washer on the lower end of the bolt, substantially as set forth.

6. The combination with a frame journaled at one end on the driving axle, of a motor casing provided with trunnions which are journaled in the outer end of said frame, the casing and trunnions being divided or formed in detachable sections, substantially as set forth.



7. The combination with a motor casing constructed with end trunnions, said casing and trunnions being divided or formed in detachable sections, of a hook formed in one section of the casing, a perforated lug on the other section, and an eye bolt for connecting together such sections and forming a hinged joint between them, substantially as set forth.

8. The combination with a two part motor casing, one part having an upturned hook cast on one side and perforated lugs on the opposite ends, the other part having perforated lugs cast on its ends, and on one side, of an eye bolt for connecting the adjacent parts of the casing, and bolts for securing their ends, substantially as set forth.

9. The combination with a two part motor casing having the parts hinged together at one side, one of the sections being provided with a ring or staple, of a sleeve journaled on the axle, said sleeve having a hook cast thereon, whereby a block and tackle may be readily applied to the lower section of the casing for raising or lowering it, substantially as set forth.

10. The combination with a frame journaled on the driving axle, an electric-motor journaled in the outer end of said frame, the motor casing and its trunnions being formed in two longitudinally divided sections, and the journal bearings in the frame formed in two parts which are bolted together, substantially as set forth.

11. The combination with the driving axle of a vertically adjustable frame constructed with a divided sleeve that is journaled on the axle, substantially as set forth.

12. The combination with an electric motor casing having outwardly projecting lugs cast on its opposite ends, of the side arms of a frame in which the motor is mounted, having spring pockets or recesses formed in the upper and lower side of each arm, of bolts extending through the lugs and side arms, and springs encircling said bolts and seated at one end in said pockets or recesses, substantially as set forth.

13. The combination with frame journaled on the driving axle, of a two part gear casing having lugs cast on the inner sides of its upper and lower sections said lugs being arranged to engage the upper and lower sections of the sleeve and be secured by means of the bolts which secure the sleeve sections together, substantially as set forth.

14. In an electric locomotive, the combination with the lower section of the gearing casing having an annular recess formed in its upper edge, of a flexible tube located in said recess, the lower edge of the upper section seated upon said tube and bolts for securing the two sections together, substantially as set forth.

15. The combination with the divided motor casing having divided trunnions formed on its opposite ends, of journal bearings encircling the journals on the armature shaft, and means for detachably

securing the journal bearings to the upper sections of the divided trunnions, substantially as set forth.

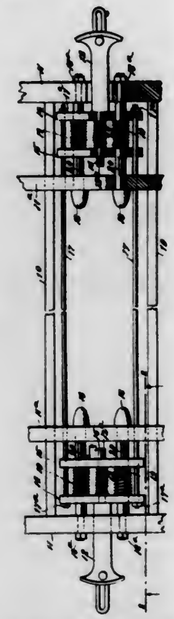
16. An electric motor casing having trunnions formed on its outer ends openings being formed between the lower sections of the trunnions and the casing, substantially as set forth.

17. The combination with an electric motor casing made in two parts removably connected together and having trunnions cast on its opposite ends, of journal bearings supported within said trunnions, flanges on said journal bearings, an armature shaft journaled in the bearings, shoulders on said armature shaft, and thrust bearings interposed between the shoulders on the armature shaft and the flanges on the journal bearings, substantially as set forth.

18. The combination with a divided electric motor casing having divided trunnions cast on its opposite ends, of thrust bearings located in a recess formed between the casing and inner ends of the trunnions, said thrust bearings being constructed with an annular oil groove, substantially as set forth.

19. The combination with an armature hub, and commutator detachably secured thereto, said commutator having an inwardly beveled bore, of an armature shaft constructed with a beveled section that fits the beveled bore or seat in the commutator, substantially as set forth.

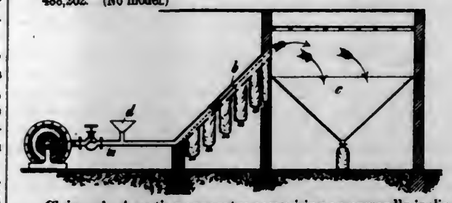
546,561. BUFFER AND CONTINUOUS-DRAFT DEVICE FOR CARS. GEORGE R. SHUEY, Lawtey, Fla. Filed July 23, 1895. Serial No. 556,878. (No model.)



Claim.—1. The combination with a car frame, of car couplings, a yoke for each coupling and transversely secured thereto, guide rods on the car frame, held spaced from the car coupling one at each side thereof, springs on said guide rods, a follower plate loosely mounted on the guide rods and pressing on the rear ends of said springs, and draft rods passing loosely at their ends through the follower plates and secured to the yokes, substantially as described.

2. The combination with a car frame, of car couplings, having the rear portions of their drawheads diametrically reduced and cylindrically formed, a yoke affixed on each drawhead intermediately of its ends, a spiral spring on the cylindrical portion of each drawhead, a follower plate loosely mounted on each cylindric portion of the drawheads and prevented from displacement by cross keys, guide rods for each car coupling, spaced therefrom at each side thereof and passing through a transverse frame timber of the car, then loosely engaging the follower plate and yoke of each car coupling, and secured to the bumper timbers of the car frame, the follower plates being held in contact with the springs on the guide rods by cross keys, and draft rods extending loosely at their ends through the transverse car frame timbers, and also through the follower plate and yoke of each car coupling, and secured against end play in the yokes, as specified.

546,562. SIFTING AND SORTING APPARATUS. KARL H. A. STITZ, Halle-on-the-Saale, Germany. Filed Oct. 14, 1893. Serial No. 488,202. (No model.)

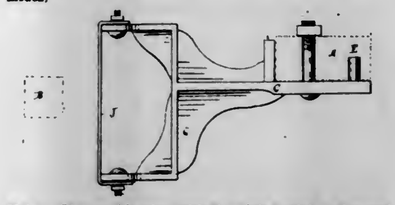


Claim.—1. A sorting apparatus comprising an upwardly inclined covered surface having the form of an isosceles triangle, a series of openings therein, and a blower arranged to discharge the material at the lower apex of the surface; substantially as described.

2. A sorting apparatus comprising an upwardly inclined covered surface having the form of an isosceles triangle, a series of circular openings whose centers are in the axial line of the triangle, and a blower arranged to discharge the material at the lower apex of the surface; substantially as described.

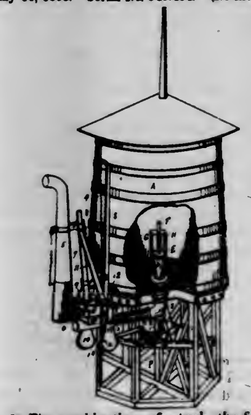
3. A sorting apparatus comprising an upwardly inclined covered surface having the form of an isosceles triangle, a series of openings therein, a blower arranged to discharge the material at the lower apex of the surface, and a dust chamber communicating with the upper end of the sorting surface; substantially as described.

546,563. CUSHIONED STOP FOR PICKER-STICKS. ROBERT T. TAYLOR, Philadelphia, Pa. Filed Aug. 17, 1894. Serial No. 520,571. (No model.)



Claim.—The combination with the picker stick and sword, of a stop device consisting of an arm C extending, substantially at right angles to the sword, toward the picker stick, and provided with a shoulder D fitting against the side of the sword, a yoke having two yoke arms extending in the same direction as the arm C and lying at opposite sides of the path of the picker stick, the yoke arms and arm C being provided with strengthening fins and the piece of flexible material running between and secured to the yoke arms substantially as described.

546,564. WATER-TANK. CORNELIUS THEOBALD, Plainwell, Mich. Filed May 16, 1895. Serial No. 549,484. (No model.)



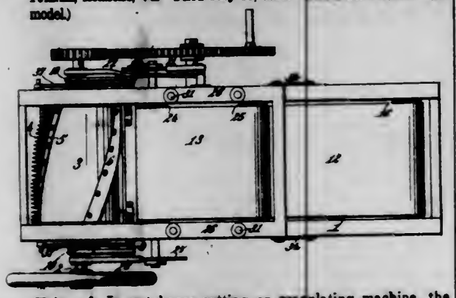
Claim.—1. The combination, of a tank, the fixed portion of the feed-pipe, a bolster pivotally mounted thereon; an adjustable portion of the feed-pipe hinged to the bolster, a supporting arm having a sliding connection at one end with the adjustable pipe, and pivoted to the bolster at the other end, short projecting bars pivoted at one end

to the same point, braces attached at one end to the supporting-arm, the other ends being pivoted at the ends of the projecting short arms, weight-bars pivoted to the bolster, and short bars pivoted at the pivoted ends of the braces and to the weight-bars, substantially as set forth.

2. The combination, of a tank, a fixed portion of the feed-pipe, a bolster pivotally mounted thereon, an operator's chain-lever pivoted to said bolster between its two ends, the rear end of said fixed portion of the feed-pipe being extended up through the bottom of the tank, an escape-valve having a downwardly extended stem and adapted to rise against a spring resistance, a crank-shaft having a crank at one end and provided with a projecting arm, a lever pivoted at one end to the tank frame and slotted at the other, said slotted end connecting the crank of the crank-shaft, the lower end of the valve-stem being pivoted to the slotted lever between its two ends, and a connecting-rod pivotally connecting the arm of the crank-shaft and the lower end of the operator's lever, substantially as set forth.

3. The combination, of a tank, a fixed portion of the feed pipe, a bolster thereon, an adjustable portion of the feed-pipe hinged to said bolster, a supporting-arm having a sliding connection at one end with the adjustable portion of the feed-pipe and pivoted to the bolster at the other end, short bars pivoted at one end to the same point, braces attached at one end to the supporting-arm, the other ends being pivoted at the ends of the projecting short arms, weight-bars pivoted to the bolster and short bars pivoted at the pivoted ends of the braces and to the weight-bars, substantially as set forth.

546,565. TOBACCO-GRANULATING MACHINE. GEORGE A. TURNER, Roanoke, Va. Filed May 18, 1895. Serial No. 549,301. (No model.)



Claim.—1. In a tobacco-cutting or granulating machine, the combination with a rotary cylinder provided with a cutting blade and with a series of splitting knives moving in a larger circle than said cutting blade and projecting beyond the same, of an automatically adjustable cutter-bar supported adjacent to said cylinder for joint operation with the said cutting blade and knives, substantially as described.

2. In a tobacco-cutting or granulating machine, the combination with a rotary cylinder provided with a cutting-blade and with a series of splitting knives moving in a larger circle than said cutting-blade and projecting beyond the same, of a movable cutter-bar supported adjacent to said cylinder for joint operation with the cutting blade carried thereon, and eccentric mechanism connecting said cutter-bar with the shaft of the said cylinder to automatically move said bar to and from the cylinder and out of the path of the splitting knives, substantially as described.

3. In a tobacco-cutting or granulating machine, the combination with a rotary cylinder provided with a cutting-blade and with a series of splitting knives, of an automatically movable cutter-bar supported adjacent to the said cylinder, eccentric mechanism connecting said cutter-bar with the cylinder-shaft to automatically move the said bar out of the path of the splitting knives, a presser-bar supported above the cutter-bar, springs for holding the presser-bar down onto the tobacco on the cutter-bar, cams mounted on the cylinder shaft, and levers actuated by said cams to lift the presser-bar, substantially as described.

4. In a tobacco-cutting or granulating machine, the combination with a cylinder provided with a cutting-blade and with a series of splitting knives, an automatically adjustable cutter-bar actuated from the cylinder-shaft, and a yielding presser-bar provided with cam-actuated lifting mechanism, of two endless feed bands arranged one above the other and mounted on the rollers, ratchet-wheels secured to rollers of said feed bands, and pawl mechanism engaged with said ratchet wheels and actuated from the cylinder-shaft, substantially as described.

5. In a tobacco-cutting or granulating machine, the combination of a frame having a cutting-cylinder mounted in one end, a cutter-bar supported on said frame and automatically adjustable from the cylinder shaft, a presser-bar arranged above the cutter bar, means for actuating said presser-bar, a lower endless feed band mounted in the main frame and actuated from the cylinder-shaft, an upper detachable frame section having an upper endless feed band mounted therein and actuated from the cylinder shaft, and spring pressed rods or bolts extended vertically through the main frame and upper frame section and adapted to cause the upper feed band to press down on the tobacco, substantially as described.

6. In a tobacco-cutting or granulating machine, the combination of a rotary cylinder provided with a cutting-blade and with a series of splitting knives moving in a larger circle than said cutting blade and projecting beyond the same, an automatically adjustable cutter-bar supported adjacent to said cylinder for joint operation with the cutting-blade and knives carried thereon, means for automatically adjusting the said cutter-bar, and a stationary plate supported above said cutter-bar and outside the circuit of the splitting knives carried by the cylinder, substantially as described.

7. In a tobacco-cutting or granulating machine, the combination of a rotary cylinder provided with a cutting-blade and with a series of splitting knives, an automatically adjustable cutter-bar arranged for joint operation with the cutting-blade and knives carried on the rotary cylinder, a stationary bed-plate below said movable cutter-bar, a stationary top plate above the movable cutter-bar, said bed plate and top plate being outside the circuit of the splitting knives carried by the cylinder, and means for automatically moving the adjustable cutter-bar to and from the cylinder and out of the path of the splitting knives, substantially as described.

8. In a tobacco-cutting or granulating machine, the combination of a rotary cylinder provided with a cutting-blade and a series of splitting knives, an automatically adjustable cutter-bar for joint operation with the cutting-blade and knives, means for automatically adjusting said cutter-bar, a stationary plate above said cutter-bar, a yielding presser-bar above said plate, and the endless feed bands, substantially as described.

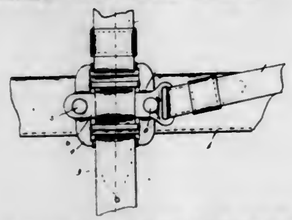
546,566. NAPKIN-HOLDER. ALEXANDER A. VERNON, Owen Sound, Canada, assignor to himself and Alexander Green, same place. Filed June 19, 1895. Serial No. 553,347. (No model.)



Claim.—1. A napkin holder, comprising a back plate formed at or near its middle with a recess and with rearwardly extending hooks, and a front clamping plate extending in front of the said back plate and connected therewith at the ends, substantially as shown and described.

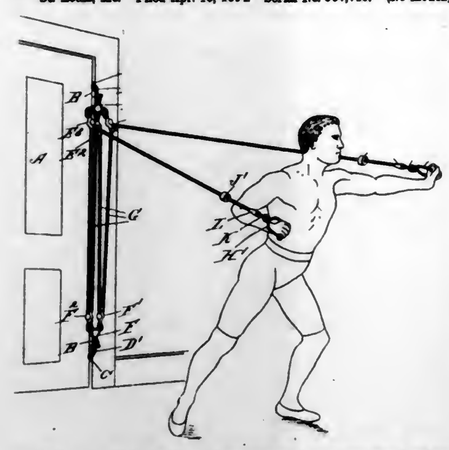
2. A napkin holder, made of a single piece of material, and formed with a back plate having an upward extension at or near its middle, hooks into which merges the upper end of the said extension, downwardly-projecting extensions at the ends of the said back plate, bent upwardly at the front, to form loops, and a clamping plate connecting the upper ends of the loops with each other, the said clamping plate extending in front of the said back plate, substantially as shown and described.

546,567. HARNESS. WASHINGTON F. WALLS, Greencastle, Ind. Filed Apr. 13, 1895. Serial No. 545,836. (No model.)



Claim.—In harness, the plate 4 with the depressions 7 and side bars 11, a continuous trace with two vertical slots in one or more of the outer layers of said trace, the D-bar 6 extending through such slots in the trace and fitting in the depressions in the plate 4, rivets securing the D-bar, plate 4 and trace together, the back-band secured to one cross bar of the plate 4, the belly-band secured to the other, and the hold-back strap secured to the D-bar, substantially as set forth

546,568. EXERCISING-MACHINE. ALEXANDER A. WHITELY, St. Louis, Mo. Filed Apr. 16, 1894. Serial No. 507,719. (No model.)



Claim.—1. In an exercising machine, the combination of pulleys adapted to be attached to the wall or the like with an elastic cord passing about such pulleys and connecting them, and a stop near each end of such elastic cord to engage the case of the last pulley and prevent the cord passing therethrough, said stop consisting of a collar or the like with a central aperture of less cross-section than the cross-section of the cord, and a slot opening into such aperture so that the elastic cord can be stretched and introduced into the aperture through the slot and then partially relaxed so as to be cramped by the collar and held in position.

2. In an exercising machine, the combination of pulleys adapted to be attached to the wall or the like, with an elastic cord passing about such pulleys and connecting them, and a stop near each end of such elastic cord to engage the case of the last pulley and prevent the cord passing therethrough, said stop consisting of a collar or the like with a central aperture of less cross-section than the cross-section of the cord, and a slot opening into such aperture so that the elastic cord can be stretched and introduced into the aperture through the slot and then partially relaxed so as to be cramped by the collar and held in position, the slot of less width than the diameter of the aperture so that the partially relaxed cord in the aperture is prevented from escaping through the slot.

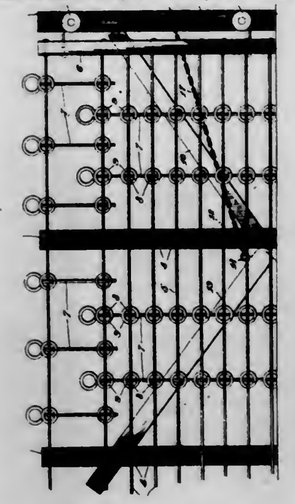
3. In an exercising machine the combination of pulleys adapted to be attached to the wall or the like with an elastic cord passing about such pulleys and connecting them, and having two projecting ends and a double stop for the two projecting or free ends of the cord, said stop consisting of a piece with two apertures of less cross-section than the cross-section of the cord, and a slot opening into each so that the elastic cords can be stretched and introduced into the apertures through the slots and then partially relaxed.

546,569. COMPENSATOR. DAVID WHITMORE, Scotch Ridge, Ohio. Filed Dec. 26, 1894. Serial No. 532,928. (No model.)

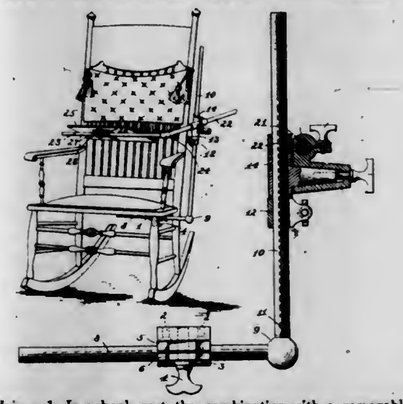
Claim.—1. The combination with the posts 1, 2 and 3, the staples and wires passing loosely therethrough, of the evener-bar in advance of the post 1 to which the wires are attached, the pulleys 13 and 14 attached loosely to and located near the upper and lower ends of the post 1, the compensating-wire 15 passing over the pulleys and connected at its end to the evener-bar opposite the pulleys, the beam bearing loosely at its inner end against the post 2, the eye thereon, and the chain 17, connected to the eye and to the intermediate point of the wire 15, substantially as specified.

2. The combination with the posts 1, 2 and 3, the staples 2 on the posts 2 and 3, the evener-bar 6 in advance of and adjacent to the post 1, the line wires passed loosely through the staples and connected to the evener-bar, of a fulcrumed beam bearing loosely at its inner end against the post 2, the upper and lower pulley on the face of the post 1, the wire passing around the pulleys and connected to the evener-bar, the draft connection between the same and the beam, and the inclined brace 10, interposed between the posts 1 and 2, substantially as specified.

3. The combination with the posts 1, 2, and 3, the line-wires and their supports, and the evener-bar attached to the ends of the line-wires, of the pulleys secured to the post 1 the wire 15 passing thereround and attached at its ends to the evener bar, the vertical guide at the side of the post 3, the compensating-bar having its free end supported therein and its inner end fulcrumed against the side of the post 2 and near the same provided with an eye, and the draft-chain secured to said eye, passed through a guiding perforation in the post 2 and secured to the wire 15, substantially as specified.



546,570. ADJUSTABLE BOOK-REST. JONAS F. YOUNG, Niagara Falls, N. Y. Filed Mar. 29, 1895. Serial No. 543,777. (No model.)



Claim.—1. In a book rest, the combination with a removable plate adapted to be attached to the under side of a chair seat or other article, of a pivoted clamping device provided with a thumb screw, a substantially horizontal bar adapted to be adjusted and secured in said clamping device, an upright supporting bar secured to the outer end of said bar, an adjustable collar mounted on the upright bar, a sleeve also mounted on said bar so as to rest on said collar and turn thereon and having a tapering holding portion extending out from one side, a correspondingly tapering sleeve mounted thereon and provided with a tightening device, a clamping portion on said sleeve having a thumb screw, and a supporting adjustable bar carrying a book rest secured in said clamping portion, substantially as and for the purposes described.

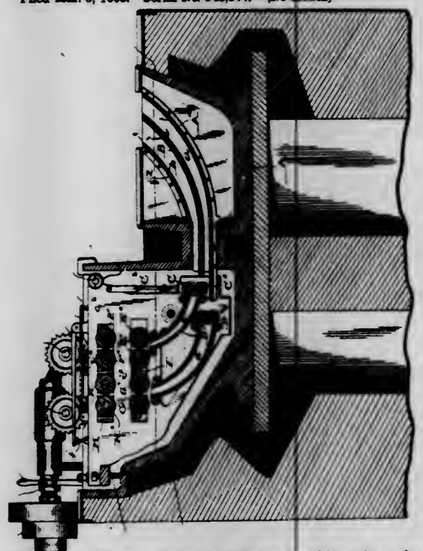
2. A book rest mounted on a holding adjustable bracket, and means for securing it thereon, in combination with a slotted bar on the inner side of the book rest, two angular crank shaped book holding portions having screw shanks which pass through said slots, and thumb screws on the screw shanks for tightening or loosening them, whereby books of different sizes may be secured as described.

3. The combination with a book-rest mounted on a supporting bar, of a clamping portion also mounted on said bar so as to be adjustable either along or around said bar, a thumb screw for tightening it when adjusted, a series of teeth on the periphery of the clamping device and a spring actuated pawl for engaging with said teeth, whereby the book rest may be adjusted horizontally or to any suitable inclination, substantially as described.

4. A book holding bracket, a book rest mounted thereon and means for adjusting the same to any suitable position either horizontally or vertically, in combination with a removable plate adapted to be secured to the under side of the chair seat, a clamping device pivoted to said plate so as to turn thereon, and a thumb screw for securing it at any point of adjustment on the lower bar of the bracket, substantially as described.

546,571. TINNING-MACHINE. JAMES R. BAIRD, Elwood, Ind.

Filed Mar. 5, 1895. Serial No. 540,577. (No model.)



Claim.—1. The combination, in a tinning machine, of two sheet-ways arranged one above the other, a set of finishing rolls for each sheet way, and also a set of feeding rolls for each sheet way, the upper feed roll of one set being behind and in substantially the same horizontal plane with the lower roll of the other set, whereby each set of feed rolls is enabled to be located substantially the same distance from the corresponding set of finishing rolls, substantially as shown and described.

2. The combination, in a tinning machine, of two sheet-ways arranged one above another and divided by a partition B, said partition being cut away in its center to permit the convenient insertion of tongs while handling the plates, substantially as set forth.

3. The combination, in a tinning machine, of the tank, the sheet ways, driving gearing embodying short shafts and spur gear-wheels thereon mounted on the frame of the tank, a detachable frame W having pivots *w* and adjusting screws *w'*, roll trains mounted in said frame, means for moving said short shafts endwise and the gear-wheels thereon into and out of engagement with the gear wheels on said roll trains, and means for raising said frame carrying said roll trains out of said tank when detached, said several parts being arranged and operating substantially as shown and described.

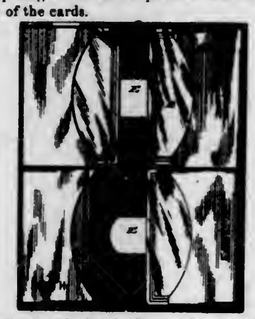
4. The combination, in a tinning machine having two sets of finishing rolls, the boxes of one roll of each pair being adjustable, of spring levers J and K mounted on the frame-work carrying the rolls and each connected to one of said adjustable boxes, said lever K having a perforation or bifurcation through which the lever J passes, whereby said levers are maintained exactly in line with equal strain thereon, and means for adjusting said levers, all substantially as shown and described.

5. The combination, in a tinning machine, with the various finishing and feeding rolls, of separate spring levers operating upon the bearings of one roll of each pair, the finishing rolls being operated upon by the levers J and K, with suitable adjusting screws, and the feeding rolls being operated upon by the angle levers C^3, the longer arms of which are upright and provided with adjusting screws c^3 bearing against the inner faces of the frame-work, substantially as shown and described.

546,572. APPARATUS FOR PLAYING DUPLICATE WHIST.

FRANK L. BARROWS, Ironwood, Mich. Filed Apr. 20, 1895. Serial No. 546,571. (No model.)

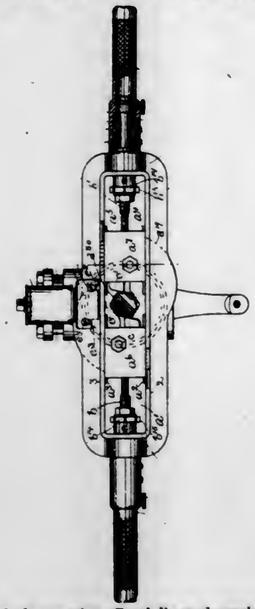
Claim.—1. A duplicate whist apparatus consisting essentially of a medially divided tray, and a flexible connection between the two portions of the tray, each portion of the tray carrying two pockets to receive "hands" of cards and the flexible connection being provided with openings between the pockets to facilitate the insertion and removal of the cards.



2. A device for playing duplicate whist consisting of two strips of light stiff material having notches in their inner edges, a flexible connection between said strips having openings in alignment with said notches, and pockets on the inner sides of said strips adapted to receive and hold the cards, said pockets being suitably inscribed to denote the lead and the position of the tray on the table.

546,573. STOCK FOR THREADING AND CUTTING OFF RODS.

ALBERT W. BARTHOLOMEW, Boston, Mass., assignor of one-half to Chester M. Sprague, same place. Filed Apr. 24, 1895. Serial No. 546,995. (No model.)



Claim.—1. In a cutting-off and die-stock machine, the combination of the following instrumentalities, viz:—a stock provided with a substantially oblong opening, cutter carriers movable longitudinally in said opening, threaded rods connected to said cutter carriers and having smooth extensions 5 projecting through the end walls of the said opening, stationary sleeves carried by the said end walls and through which the smooth extensions 5 project, handles fitted over the said sleeves and secured thereto against longitudinal movement but capable of rotary movement thereon, and means to connect the said handles with the extensions of the threaded rods, to effect rotation of the said rods by a rotary movement of the handles on the said sleeves, substantially as described.

2. In a cutting-off and die stock-machine, the combination of the following instrumentalities, viz:—a stock provided with a substantially oblong opening, cutter carriers movable longitudinally in said opening, threaded rods connected to said cutter carriers and extended through the end walls of the said opening, toothed wheels or disks fast on the said threaded rods, handles attached to said stock to rotate the same, means to connect the said handles to the threaded rods and to permit the same to be disconnected therefrom, a chuck to which the stock is secured to revolve thereon, and a projection carried by the chuck to engage the toothed wheels or disks and rotate the threaded rods independent of the handles when the latter are disconnected from the said rods, substantially as described.

3. In a cutting-off and die-stock machine, the combination of the following instrumentalities, viz:—a work holding chuck, a tool carrying stock revoluble thereon, an oil receptacle carried by said stock, and means on the chuck to engage the oil receptacle in the revolution of the stock to eject oil from the said receptacle, for the purpose specified.

4. In a cutting-off and die-stock machine, the combination of the following instrumentalities, viz:—a work holding chuck, a tool carrying stock revoluble thereon, an oil receptacle detachably carried by said stock, and means on the chuck to engage the oil receptacle in the revolution of the stock to eject oil from the said receptacle, for the purpose specified.

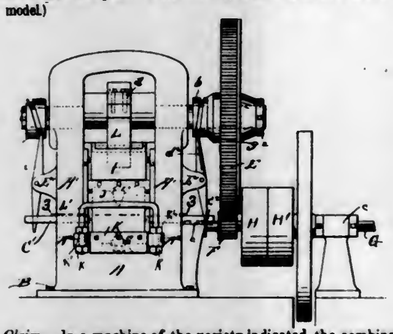
5. In a cutting-off and die-stock machine, the combination of the following instrumentalities, viz:—a stock provided with a substantially oblong opening *a'*, cutter carriers movable longitudinally in said opening, threaded rods connected to the said carriers and extended through the end walls of said opening, handles attached to the said rods, and an oil can or receptacle detachably secured to one side of the stock and provided with a nozzle projecting into the opening *a'* substantially at right angles to the length of the opening and to the handles, substantially as described.

6. In a cutting-off and die-stock machine, the combination of the following instrumentalities, viz:—the stock A provided with the substantially oblong slot or opening *a'* having its side walls provided with guiding ribs or ledges of less length than said opening, cutter carriers inserted in said opening and mounted to slide on said guiding ribs, threaded rods *b b'* connected to the said cutter carriers and having extensions 5 projecting through the end walls of the said opening, stationary sleeves carried by the stock through which the said extensions project, handles fitted over the said sleeves and secured thereto against longitudinal movement but capable of rotary movement thereon, and means to connect the said handles with the extensions of the threaded rods, substantially as described.

7. In a cutting-off and die-stock machine, the combination of the following instrumentalities, viz: a stock, cutter carriers movable in an opening in said stock, threaded rods connected to said carriers to move the same, toothed wheels or disks on said threaded rods within the openings in the stock, and handles attached to the stock, and means to connect the handles to the threaded rod and which permit the said handles to be disconnected from the threaded rods while remaining attached to the stock, substantially as described.

546,574. MACHINE FOR SHEARING RAILWAY-TIES.

FREDERICK BAUGH and WILLIAM MURPHY, Alliance, Ohio, assignors to John C. Devine, same place. Filed Oct. 18, 1894. Serial No. 526,316. (No model.)

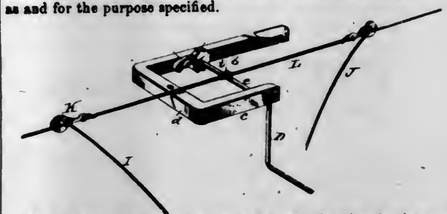


Claim.—In a machine of the variety indicated, the combination of the supporting frame provided with the crank-shaft D having mounted thereon the gear wheel E, a driving shaft provided with a pinion meshing with the gear E, the cam wheels *b*, provided with the cams g^2, the levers d^3, pivotally attached to the reciprocating cutting-blades C' and C^3, and operatively connected with the cam wheels *b*, the shears J and K, and means for imparting a vertically reciprocating motion to the blade J, substantially as and for the purpose specified

546,575. FENCE-WIRE STRETCHER.

EDWARD H. BAUGH, Mexia, Tex. Filed Feb. 4, 1895. Serial No. 537,224. (No model.)

Claim.—1. A fence wire stretcher, consisting of a suitable bracket, one arm of which terminates in a slotted extension, a rotary shaft connected to the bracket, a pawl and ratchet connecting with the shaft, and claws pivotally connected to the bracket, substantially as and for the purpose specified.



2. A fence wire stretcher, consisting of a bracket having two parallel arms, one of which terminates in a slotted extension, a rotary shaft having its bearings in the arms, a pawl and ratchet connecting with the shaft, and claws having their shanks terminating in eyes and pivotally connected to the bracket, substantially as and for the purpose described.

546,576. BLACK COLORING-MATTER.

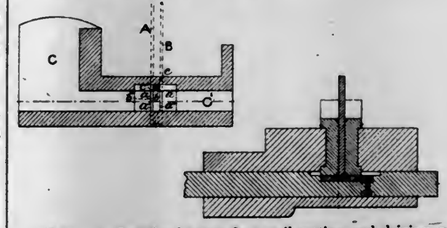
RENÉ BOHN, Mannheim, assignor to the Badische Anilin and Soda Fabrik, Ludwighafen, Germany. Filed July 3, 1895. Serial No. 554,839. (Specimens.)

Claim.—1. As an article of manufacture the new black coloring matter which can be obtained by treating the herein described dyes derived from dinitro-naphthalene and mixtures thereof, with hot caustic soda solution and which occurs as a black powder (or in solution) and is readily soluble in cold water giving a blue violet to black solution, from which excess of alkali throws down no precipitate, but mineral acids yield a black precipitate and which is soluble in concentrated sulfuric acid giving a dirty green colored solution all substantially as described.

2. The process for the production of new black coloring matter which consists in digesting with caustic soda solution the herein described coloring matters obtained by the action of sodium sulfide on dinitro-naphthalene substantially as described.

546,577. CUTTER FOR NAIL MAKING AND DRIVING MACHINES.

JONATHAN BOOTHMAN, Manchester, England. Filed May 11, 1894. Serial No. 510,926. (Model.)



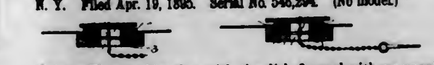
Claim.—1. In a fixed cutter for a nail cutting and driving machine the combination of the two side sections *a a* each notched to form a groove for receiving the nail with a removable center section *b* substantially as and for the purpose set forth.

2. The combination of the side sections *a a* the center section *b* and the top section *c* the whole forming a fixed cutter for a wire nail cutting and driving machine substantially as set forth.

3. A combination cutter for a nail cutting and driving machine having reversible side sections provided with grooves at both ends for receiving two sizes of wire substantially as set forth.

546,578. FASTENING DEVICE.

MARY L. BROWN, Oriskany Falls, N. Y. Filed Apr. 19, 1895. Serial No. 546,294. (No model.)



Claim.—The combination with the disk formed with an annular recess or depression having a central aperture and a series of holes between said aperture and the outer edge of the recess or depression, of the small disk seated in said recess and adapted to clamp a garment, and formed with a central aperture and with a series of holes adapted to register with the holes in the large disk and to receive fastening devices, and the chain having a cross bar at one end a loop at the other end, substantially as described.

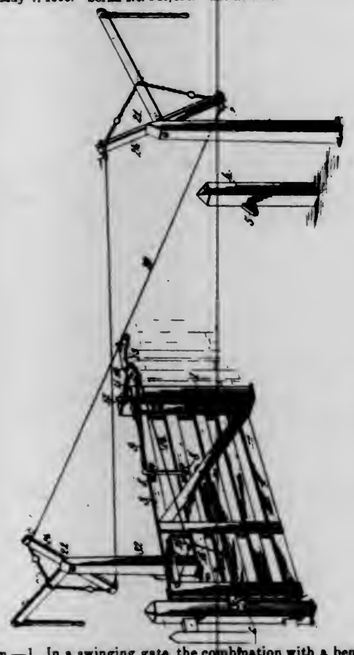
546,579. INSULATED ELECTRIC CONDUCTOR.

FRANZ CLOUTH, Cologne, Germany. Filed June 26, 1895. Serial No. 554,096. (No model.) Patented in England Dec. 14, 1894. No. 24,374.

Claim.—The combination with an electrical conducting wire or conductor, of a covering layer of caoutchouc surrounding said conductor or wire and a layer of guttapercha surrounding and inclosing the caoutchouc, substantially as described for the purpose set forth.



546,580. SWINGING GATE. AARON F. COGHILL, Auburn, Ky. Filed May 7, 1895. Serial No. 548,431. (No model.)



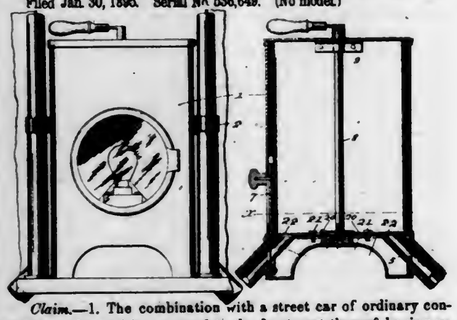
Claim.—1. In a swinging gate, the combination with a bent arm carried by the gate and bent up at its upper extremity to form a journal 10, and an arm 11 secured to the end of said bent arm and pivotally secured to the gate post, of a combined tripping and operating lever 13 journaled upon the journal 10, a gravity latch 7 pivotally connected to the gate for locking the latter in both its open and closed position, tripping mechanism operated by the initial movement of said lever in either direction for raising the latch, rocking hand levers 21, 22, pivotally secured to supports arranged upon opposite sides of the gate, a wire 23 connecting the upper end of one of said levers to the lower end of the other lever, and operating wires 19 and 20 connected at their adjacent ends to the lever 13, and at their opposite ends to the opposite ends of the levers 21 and 22, substantially as described.

2. In a swinging gate, the combination with a bent arm, carried by the gate, of an oscillating lever journaled upon the extremity of said bent arm, a pivoted latch for locking the gate in both its open and closed position, a flexible connection secured at its opposite ends to the latch and to the upper portion of the gate, a wire connected at one end to the flexible connection intermediate of the ends of the latter and at its opposite end to one end of said lever, hand levers arranged upon the opposite sides of said gate and connected together to move simultaneously in opposite directions, and operating wires connecting said hand levers with the said oscillating lever, substantially as described.

3. In a swinging gate, the combination with a support 9 carried by the gate and pivotally connected by a hinged arm 11 to the gate post, of an oscillating lever 13 journaled upon said support, a gravity latch 7 pivotally connected to the gate, a flexible connection connected to said latch and to the upper portion of the gate, a wire 14 connected at one end to said flexible connection and at its other end to one end of the lever 13, rocking hand levers 21, 22, pivotally secured to supports arranged upon the opposite sides of the gate, a wire 23 connecting the upper end of one of said levers to the lower end of the other lever, and operating wires 19 and 20 connected at their adjacent ends to the lever 13, and at their opposite ends to the opposite ends of the levers 21 and 22, substantially as described.

4. The combination with a swinging gate, and mechanism for opening and closing the same, of rocking hand levers 21—22, pivotally secured to supports arranged upon the opposite sides of the gate for actuating the gate operating mechanism, each of said hand levers, consisting of a head 24 and a shank portion 25 secured thereto at an approximate right angle and provided with a pendent handle 26, and wires 27 connected to the shank and to the ends of the head and twisted torsionally to brace said head and shank, the ends of said twisted wires terminating in loops 30 for the attachment of the gate operating wires, substantially as described.

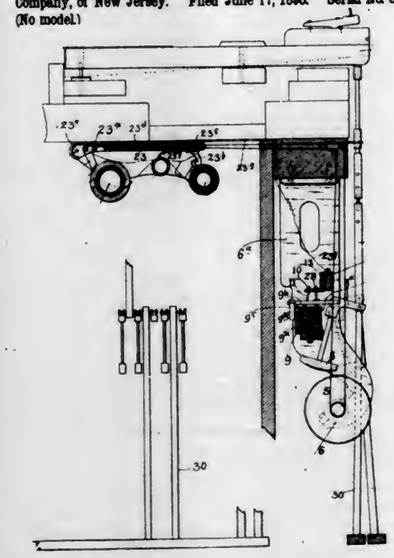
546,581. COMBINED HEADLIGHT AND SAND-BOX. ISAAC H. DAVIS, South Butte, assignor of one-half to Adolph Pincus, Butte, Mont. Filed Jan. 30, 1895. Serial No. 536,649. (No model.)



Claim.—1. The combination with a street car of ordinary construction, of a sand box secured to the front part thereof, having an opening in its top for the admission of sand to the interior of said box and means for discharging said sand, the front face of said sand box having a depression therein, a head light secured in said depression, and a door provided with a suitable reflector hinged to the front of said depression, substantially as described.

2. The combination with general street cars, of a sand box adapted to be secured thereto, having outlet openings in the bottom thereof and spouts leading therefrom, valves for opening and closing said outlets, and means for operating the same, consisting of a plate having a cam slot therein, a vertical rod leading upwardly therefrom and provided with an operating handle, a sliding plate having a pin engaging said cam slot, valve plates pivotally mounted at one end and having pins projecting therefrom engaging converging curved slots in the bottom of said casing, and slots in said sliding plate, whereby upon turning said handle said valves are caused to be opened or closed in unison, substantially as and for the purpose described.

546,582. ELECTRICAL PIANO. GEORGE H. DAVIS, New York, N. Y., assignor, by mesne assignments, to the Electric Self-Playing Piano Company, of New Jersey. Filed June 17, 1895. Serial No. 553,162. (No model.)



Claim.—1. In an electrical piano, the combination with a revolving roller or drum, of a friction shoe pivoted above said roller and adapted to be brought into contact therewith, an electro-magnet arranged adjacent to and having its armature connected with the shoe, and a connection between the latter and the keys of a piano, substantially as described.

2. In an electrical piano, the combination with a revolving roller or drum, of a friction shoe pivotally mounted above said drum and provided with a rearwardly extending arm, an electro-magnet located in front of and having its armature-lever connected to the shoe, and a connection between the rearwardly extending arm and the strikers or hammers of a piano, substantially as described.

3. In an electrical piano, the combination with a drum and means for revolving the same, of a series of friction shoes pivotally mounted above the drum and each provided with a rearwardly extending arm, a series of electro-magnets corresponding to and arranged in front of the shoes, pivoted armature-levers connected to said shoes and adapted when energized to bring the latter into contact with the drum, and a rod connecting each rearwardly extending arm with the keys or strikers of a piano, substantially as described.

4. In an electrical piano, the combination with a revolving roller or drum, of a series of friction shoes pivotally mounted above the drum and each provided with a rearwardly extending arm which has a connection with the keys of the piano, a plurality of electro-magnets arranged in front of and having their armature-levers connected to the shoes, a perforated music sheet and holder, and gearing intermediate the rotary drum and music sheet whereby the latter is advanced or fed during the rotation of the drum, substantially as described.

5. In an electrical piano, the combination with means for electrically operating the keys, or a rotary note-sheet holder hinged at one end to the piano and adapted to be swung down out of position, and catches secured to the piano and adapted to support the sheet holder in operative position, substantially as described.

6. In an electrical piano, the combination with a revolving drum, of a series of friction shoes pivotally mounted above the drum and each provided with a rearwardly extending arm having a connection with the striker arms of the piano, a series of electro-magnets arranged in front of and having their armature-levers connected with the shoes, a spring for normally holding the armature levers raised, and means for limiting the upward movement of the latter, substantially as described.

7. In an electrical piano, the combination with a rotary drum, of a series of friction shoes pivoted above the drum and provided with rearwardly extending arms having a connection with the strikers of the piano, a series of electro magnets arranged in front of said shoes and having their armature levers connected thereto, a music sheet holder having one end pivoted to the under side of the piano keyboard and its other end being detachably connected to the latter, a rotary contact roller carried by the music holder and over which the note sheet passes, and a plurality of contact fingers bearing upon said roller, as and for the purpose described.

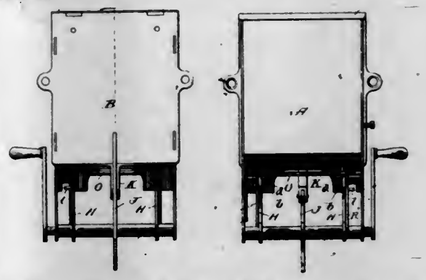
8. In an electrical piano, the combination with a rotary drum, of a series of friction shoes pivotally mounted above the latter and provided with rearwardly extending arms having a connection with the keys of the piano, an angle-bar mounted in front of said shoes, a series of magnets arranged upon said angle-bar and having their armature levers connected with the shoes, a contact roller having electric connection with the magnets, a note sheet, and electrically connected contact fingers bearing upon said roller, substantially as described.

9. In an electrical piano, the combination with a rotary drum, of an electric motor for imparting motion thereto, a series of friction shoes pivotally mounted above the drum and having rearwardly extending arms which are connected to the strikers of the piano, an angle-plate mounted in front of the shoes, a series of electro magnets mounted upon the angle-plate and provided with adjustably arranged armature-levers which are connected at their forward ends to the shoes, a note-sheet holder hinged at one end to the piano and having its other end detachably connected thereto, a pair of rotary note cylinders mounted upon the holder, an intermediate rotary contact roller, contact fingers adapted to bear upon said roller, and a belt and pulleys arranged between one of said rotary note cylinders and the rotary drum whereby the rotary movement of the latter will be imparted to the former, substantially as described.

546,583. MATCH-BOX. JOHN B. DENNIS, Ottumwa, Iowa, assignor of two-thirds to C. W. Major, same place, and Guy G. Major, Toledo, Ohio. Filed June 27, 1895. Serial No. 554,254. (No model.)

Claim.—1. In a match safe having the hopper shaped bottom open to permit the passage of a single match, the segmental arms H constructed as described and mounted on the rock-shaft D, the shaft O with curved arms R and R′ and exterior arm P and spring Q, substantially as and for the purpose set forth.

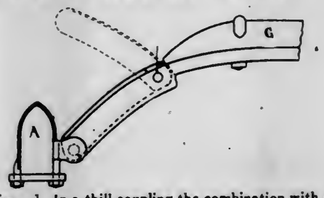
2. In combination with the hopper shaped safe and interior spring plates L, M, connected near their lower ends by links N, the rock-shaft D provided with segmental ratchet I and the pivoted lever J whereby the matches within the safe are agitated, as hereinbefore set forth.



3. In combination with the rock shaft D and segmental arms H H having recesses *c*, the spring arm R′ formed with a crooked end, and the pin *l*, whereby the match is caused to be turned upwardly and firmly grasped, substantially as and for the purpose set forth.

4. The spring plates L, M, constructed as described, secured at their upper ends to the box and cut away and rolled up at their lower corners, in combination with the links N, N and pivots *i*, *i*, whereby both plates are caused to vibrate in unison, substantially as described.

546,584. THILL-COUPLING. EUGENE L. DEVEREAUX, Owosso, Mich. Filed Feb. 20, 1895. Serial No. 539,071. (No model.)



Claim.—1. In a thill coupling the combination with an axle clip and a thill, of the two springs secured to the thill and adapted to engage the inner sides of the clip ears, and a pivotally supported locking piece carried on the thill and adapted to drop into position between the springs to lock and retain the springs in their engagement with the clip and whereby, on lifting the said locking piece, the springs may be pressed together for the purpose of detaching the thill, substantially as described.

2. In a thill coupling, the combination with an axle clip, and a thill having secured thereto a pair of springs adapted to engage the clip ears, one of said parts being provided with trunnions and the other part having recesses or openings to receive the trunnions, of a locking piece pivoted at one end to the thill and adapted to drop between the springs and retain them in a secure engagement with the clip, substantially as described.

546,585. INSULATOR. WILLIAM DIBB and ALBERT VICKERS, Syracuse, N. Y. Filed Mar. 12, 1895. Serial No. 541,426. (No model.)



Claim.—1. An insulator provided with a cavity in its upper end, similar opposite slots in the wall thereof to receive the line-wire, and a plug to kink the wire.

2. An insulator having a central cavity in its upper end, in the wall of said cavity slots to receive the line-wire, and a plug to exert pressure on the line-wire substantially at right angles to its length and to kink the same, substantially as described and shown.

3. An insulator having a central cavity in its upper end, in the wall of said cavity slots to receive the line-wire, and a plug to kink the line-wire, the thickness of the plug being so proportioned to the thickness of the wire, that together they substantially fill the cavity

on its diameter at right angles to the length of the line-wire, substantially as described and shown.

4. In combination with an insulator having a central cavity in its upper end, provided with similar opposite slots in the wall, a plug to kink the line-wire, and automatically to pinch it with gradually increasing pressure when strain is applied to the wire, substantially as described and shown.

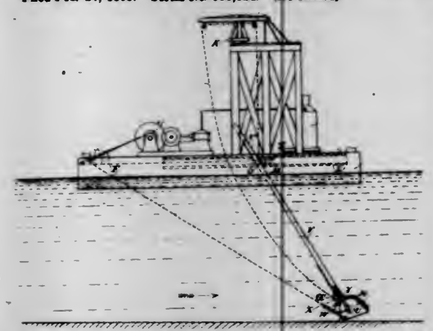
5. In combination with an insulator having a central cavity in its upper end and similar opposite slots in the wall thereof, a plug so proportioned to the size of the cavity that in its normal position the distance between the plug and the side of the cavity is substantially equal to the diameter of the wire, but when the plug is rolled in either direction by a strain on the wire this distance decreases, substantially as described and shown.

6. In combination with an insulator having a cavity in its upper end and similar opposite slots in the wall thereof, a plug whose diameter added to the diameter of the wire to be held is slightly smaller than the greatest horizontal diameter of the cavity, substantially as described and shown.

7. In combination with an insulator having a cavity in its upper end provided with similar opposite inclined slots in the wall thereof, a plug to kink the line-wire and automatically to pinch it with gradually increasing pressure under strain, substantially as described and shown.

8. As an article of manufacture, an insulator having a central cavity B provided with slots D D, sides 4 and 5 not parallel to each other, in combination with a plug having eccentric groove E and groove 3, substantially as described and shown.

546,586. DREDGER. WILLIAM H. DIETELHORST, Redding, Cal. Filed Feb. 27, 1895. Serial No. 539,921. (No model.)



Claim.—1. A device for dredging and raising material from beneath the surface of the water, consisting of anchored floats connected together with an open space between them, longitudinal guides or tracks extending parallel with the space, a frame or carriage movable upon said guides, and means for locking it at any desired position, a bucket with means for suspending, raising and lowering it, said bucket having a handle, to the lower end of which it is swiveled, a lever extending from the truck or carriage across the open space, means for connecting the handle with said lever so that it forms a fulcrum about which the handle is movable, and a chain or connection with the front of the bucket whereby it may be drawn forward about the fulcrum upon which the handle turns.

2. A dredging apparatus consisting of anchored floats connected together with a space or channel between them, an engine or source of power mounted upon one of said floats, a traveling derrick mounted upon the other, a bucket or scoop having a handle with a bail at the lower end to which the bucket is swiveled, a rope or chain with direction pulleys over which it extends from the winding drum upon the engine to the derrick from which the bucket is suspended, a second rope or chain extending from a winding drum of the engine around direction pulleys and connected with the front of the bucket, whereby the latter may be drawn forward, a car or frame traveling upon horizontal guides upon one of the floats, a brake or locking mechanism whereby it may be fixed at any point on the track with relation to the position of the bucket and the angle of its handle, a lever or mechanism connected with the movable car extending across the space between the boats and devices by which the handle of the bucket is temporarily fulcrumed to said lever so that when the bucket is drawn forward it will describe the arc of a circle and be forced into the material in the bed of the stream to receive its load.

3. A device for dredging from the bottom of streams, consisting of a bucket swiveled in a yoke at the lower end of a handle, anchored floats secured together in parallel lines with an open space between them, a movable derrick fixed upon one of the floats having an arm and a chain by which the bucket is suspended and raised or lowered, a latch device by which the bucket is temporarily locked with relation to the handle, a horizontally movable carriage traveling upon guides upon one of the floats having an arm extending therefrom across the space between them, with means upon said arm and upon the bucket handle whereby the latter may be temporarily fulcrumed to the arm to form a point of support about which the bucket is movable, a brake mechanism by which the carriage is locked in position when the bucket handle stands at the proper angle with relation to the bucket after the latter has been lowered to the surface where it is to dig, and a chain connected with a bail at the front of the bucket extending around direction pulleys, a winding drum and means for applying power thereto whereby the bucket is forced into the material and caused to travel in an arc of a circle so as to become loaded, means for disengaging the bucket handle from the lever arm whereby the bucket may be raised with its load, and a derrick and suspending chain connected with the bucket and with a winding drum for raising the bucket.

4. In a dredging apparatus, an open front bucket or scoop, a bail or yoke between the ends of which the lower side of the bucket is swiveled, a beam or handle to which the bail is rigidly fixed, and by which the bucket is held down to its work, lugs on the upper front portion of the bucket, a yoke fulcrumed between its ends to said lugs, having a hook-shaped formation at its rear end adapted to drop behind the yoke or bail when the handle is brought to its proper position whereby the upper part of the bucket and the bail are locked or disengaged.

5. In a dredging apparatus, an open front bucket or scoop, a bail or yoke between the ends of which the lower side of the bucket is swiveled, a beam or handle to which the upper portion of the bail or yoke is rigidly fixed, a centrally fulcrumed bail near the upper portion of the bucket having a hook formation at its rear by which the upper portion of the bucket is engaged with the bail while being loaded, and disengaged to discharge, a mechanism comprising a car or frame traveling upon the float, and inter-engaging devices between the car or frame and the handle adapted to lock the latter, and form a fulcrum about which the bucket is movable while loading, and a bail connected with the bucket front having attachments for a draft chain.

6. In a dredging apparatus, an open front bucket or scoop, a bail or yoke between the ends of which the lower side of the bucket is swiveled, a beam or handle to which the bail is rigidly fixed, a mechanism comprising a movable car or frame on the float and inter-engaging devices between the same and the beam or handle adapted to lock the upper end of the handle and form a fulcrum about which the bucket is movable while loading, a latch by which the bucket is engaged with the bail while being loaded, and disengaged to discharge, a second bail connected with the bucket front with attachments for a draft chain.

546,587. PEGGING-JACK. WILLIAM H. DILLON, Virginia, Ill. Filed May 16, 1895. Serial No. 549,547. (No model.)

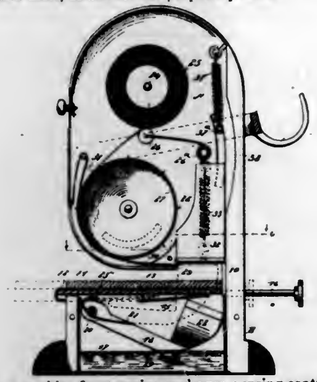


Claim.—The combination with the standard formed with a tongue and with lugs and shoulders, of the removable and invertible last having an aperture therein, and a recess at the rear end of said slot; substantially as described.

546,588. MACHINE FOR AFFIXING STAMPS. WINFIELD L. DINSMOOR, Portland, Oreg. Filed May 11, 1895. Serial No. 548,938. (No model.)

Claim.—1. In a machine for stamping packages, a plunger, a lever operating the same, a table located beneath the plunger, means, substantially as shown and described, for moving the said table from beneath the plunger, and a moistening lever operated by the movement of the table, as and for the purpose specified.

2. In a device for stamping packages, a spring-controlled plunger, a sliding table located below the plunger, a stamp-feeding device operated simultaneously with the upward movement of the plunger, and a moistening device independent of the plunger and operated from the said table, as and for the purpose specified.



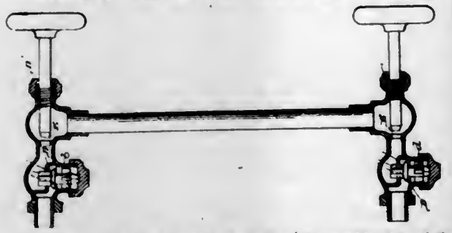
3. In a machine for stamping packages, a spring-controlled plunger, a lever operating the same, a stamp feeding device operated from the said lever, the stamps being fed to the said plunger and beneath the same, a cutting surface formed on the said plunger, a vertically movable moistening device, and a movable table with which the plunger is adapted to contact, a movement of said table imparting motion to the moistening device, as and for the purpose specified.

4. In a machine for stamping packages, a spring-controlled plunger, a lever operating the same, a stamp-feeding device operated from the said lever, the stamps being fed to the said plunger and beneath the same, a cutting surface formed on the said plunger, a table having sliding movement below the plunger, a spring-controlled lever provided with moistening material, and an extension from the table adapted for contact with the lever when the table is moved outwardly, causing the moistening material to be carried upward substantially to an engagement with the bottom of the plunger, as and for the purpose specified.

5. In a device for stamping envelopes and other packages, the combination, with a spring-controlled plunger, a lever operating the same, a stamp-carrying wheel, and a dog operated by the said lever and operating the said wheel, the wheel being adapted to feed the stamps carried thereby to the bottom of the plunger, of a water receptacle located beneath the plunger, a table mounted to slide on the said receptacle, a lever located in the said water receptacle, being provided with moistening material, and an extension from the table, adapted for engagement with the said lever, to elevate the moistening material thereof when the table is forced outward, as and for the purpose specified.

6. In a device for stamping envelopes and the like, the combination, with feeding mechanism, of a water receptacle, a moistening device comprising absorbent material movable into and out of the said receptacle and a part supporting an absorbent material in said water receptacle, serving to supply moisture to the movable absorbent material and also serving as a stop to limit the downward movement of said first named absorbent material, substantially as described.

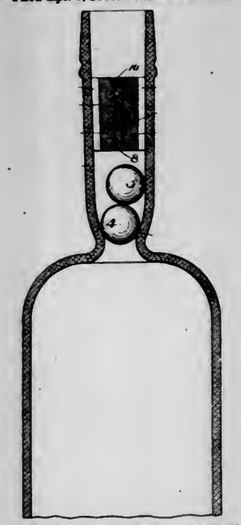
546,589. GAGE FOR STEAM-BOILERS. MARCUS DOERHOEFER, Louisville, Ky. Filed Mar. 4, 1895. Serial No. 540,471. (No model.)



Claim.—1. In a safety gage for boilers, the combination of the upper and lower shells or castings provided each with means for their attachment to a boiler and with a seat for the glass, and having each in its horizontal arm a partition formed with a port therethrough and with a valve seat in its under face, and a downward offset underneath said valve seat having a valve chamber therein, an upwardly seating valve in each of the said chambers, one of said valves having a leak which forms a way of communication between the boiler and glass when the said valve is seated, and a glass held in said shells or castings, substantially as specified.

2. The herein described water gage for steam boilers said gage having in each of its boiler connections an inverted check valve which is normally held away from its seat by gravity, but which when seated closes the passage connecting the boiler and glass, one of said valves having filed in its seating face a fine notch or groove, and screw valves one of which is provided for each of the boiler connections, being arranged when closed to cut off all communication between the boiler and the glass independently of the said check valves, substantially as specified.

546,590. DEVICE FOR PREVENTING REFILLING OF BOTTLES. ALFRED P. FRANCIS, Wheeling, W. Va., assignor to George W. Bremer, same place. Filed Apr. 8, 1895. Serial No. 544,881. (No model.)

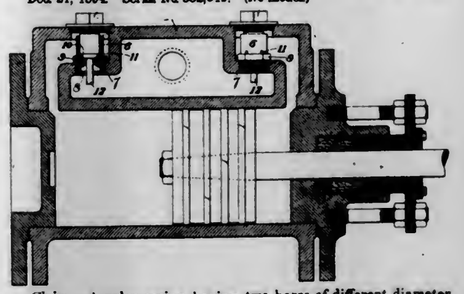


Claim.—1. A stopper composed of hard material which is divided longitudinally into two or more parts, each of which contacts with the neck of the bottle, and cork or similar material interposed between said parts, substantially as described.

2. A stopper composed of two or more longitudinally divided parts, having inner projections, and strips of cork interposed between said parts; substantially as described.

3. A stopper composed of two or more longitudinally divided parts, with cork or similar material between them, one of said parts having an upper offset arranged to cover and protect the cork; substantially as described.

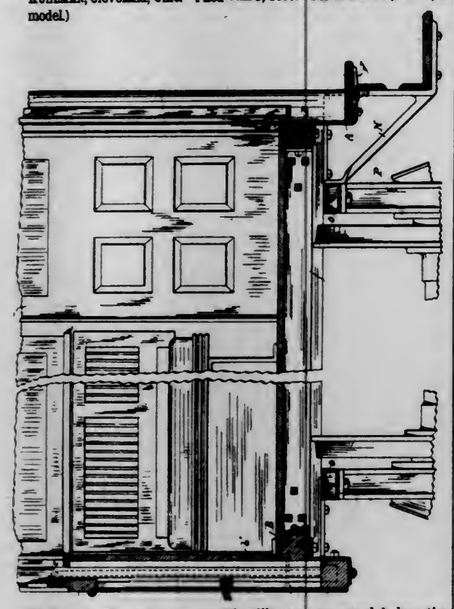
546,591. PUMP-VALVE. HERBERT E. HUNT, Pittsburg, Pa. Filed Dec. 21, 1894. Serial No. 532,515. (No model.)



Claim.—A valve casing having two bores of different diameter joined by a beveled seat, and a valve having a body portion of substantially uniform diameter throughout and fitting closely in the larger bore, said valve having a tapered intermediate portion fitting on the beveled seat and provided with a guide-stem extending downwardly through the smaller bore, the casing having an annular chamber recessed therein around the guide-stem, and holes leading into

said chamber, the stem being sufficiently smaller than the portion of the smaller bore above the recess to allow the air to pass upwardly around said stem, the said casing having radial holes above the guide-stem; substantially as described.

546,592. CONSTRUCTION OF RAILWAY-CARS. GUSTAVE C. KUHLMAN, Cleveland, Ohio. Filed Jan. 5, 1895. Serial No. 533,921. (No model.)



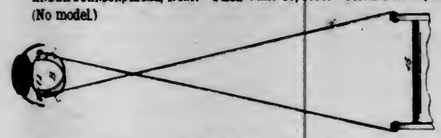
Claim.—1. In cars, the two side sills, one arranged below the other, combined with angle plates for securing the sills together, substantially as shown.

2. In cars, the two side sills, one arranged below the other, combined with the side posts, which have their lower ends to rest upon the lower sills and which are bolted directly to the outer sides of the upper sills, substantially as described.

3. In cars, the floor sills B, the auxiliary sills B', placed below the floor sills, and the sidings *b b'*, of the cars secured to the two sills, combined with the windows and doors which close into the spaces between the sidings but outside of the flooring of the car, substantially as set forth.

4. In a car, the upper sills, extending the full length of the car, the lower sill formed in two parts, and the sliding door, moving about on a level with the floor of the car, combined with steps placed between the inner ends of the lower sills, and below the door, substantially as specified.

546,593. WHEEL FOR BICYCLES. GUSTAVE LE BLANC and LEANDER JOHNSON, Mead, Nebr. Filed June 10, 1895. Serial No. 552,327. (No model.)



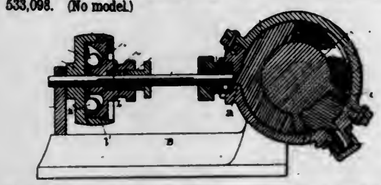
Claim.—1. In a vehicle wheel, a rim, springs attached at one end to the rim, their opposite ends being free, the free ends of alternate springs facing opposite sides of the wheel, and spokes attached to the hub of the wheel and to the free ends of the springs, whereby the spokes cross one another, as and for the purpose set forth.

2. In a vehicle wheel, a rim having a concave outer surface, and provided with inwardly extending marginal flanges, springs having one end secured to the body of the rim between the flanges thereof, and spokes secured directly to the free ends of the springs, substantially as described.

3. In a wheel for bicycles and like purposes, a rim having a circumferential channel, a cushioned tire secured in the channel of the rim, bow springs secured at one of their ends to the under face of the rim, the free ends of opposing springs facing opposite sides of the wheel, and adjustable spokes attached to the free ends of the springs and to the hub of the wheel, whereby the said spokes cross one another, as and for the purpose set forth.

4. In a bicycle wheel, a rim, a hub, spokes connected with the hub, and springs attached to the rim and to the spokes, alternate springs yielding in direction of opposite faces of the wheel, as and for the purpose specified.

546,594. PISTON AND CUT-OFF VALVE FOR STEAM-ENGINES. GEORGE MURRAY, Cambridge, Mass. Filed Dec. 27, 1894. Serial No. 533,098. (No model.)



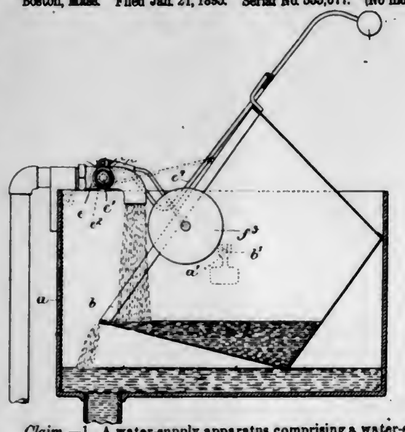
Claim.—1. In a rotary engine, the piston, comprising a ball or sphere having cut therein two broad segmental channels or chambers in planes at right angles to each other, the shaft having a segment arm working in one of said channels or chambers, and a second and similar segment working in the other of said channels or chambers and fitted to rotate upon a fixed axis, substantially as specified.

2. In a rotary engine, the combination with the globe or shell, its steam chamber, slide valve, governor and exhaust, of the piston consisting of a ball or sphere having cut therein two broad segmental channels or chambers in planes at right angles to each other, the ends of one being formed by the lateral walls of the other, the shaft extending into said globe or shell and having a segment arm fitted to play in one of said channels or chambers, a second and similar segment working in the other of said channels or chambers, and a stem carrying said second segment and rotatably seated in a closed bearing of said globe or shell at an oblique angle to said shaft, substantially as specified.

3. In a rotary engine, the universal piston, comprising a ball or sphere having cut therein two broad open segmental chambers in planes at right angles to each other, the end walls of each chamber being formed by the lateral walls of the other chamber, substantially as specified.

4. In a rotary engine, the combination of the globe or shell, the universal piston consisting of a ball or sphere having cut therein two broad segmental channels or chambers, the rotary shaft having a spherically fitted segment arm working in one of said channels or chambers, a second and similar segment working in the other of said grooves or chambers, the steam chamber, the slide valve, a governor therefor, and an exhaust, substantially as specified.

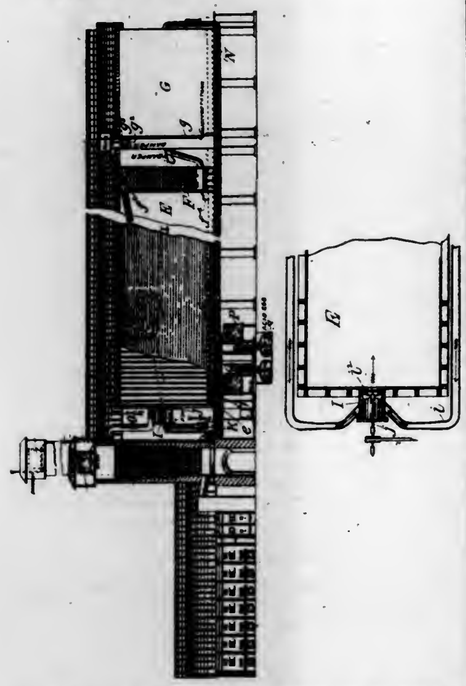
546,595. WATER-SUPPLY APPARATUS. SIMON A. POLITZKY, Boston, Mass. Filed Jan. 21, 1895. Serial No. 535,677. (No model.)



Claim.—1. A water-supply apparatus comprising a water-supply pipe, a pivoted bucket arranged to receive water from said pipe, means such as a cord and pull whereby the bucket may be tipped to discharge its contents, a fixed detent, a valve controlling said pipe and provided with a valve-opening and arranged to be actuated by the bucket when the latter is tipped, and with a latch which automatically engages said detent and holds the arm in its valve-opening position, and a float connected with said latch and arranged to be actuated by the accumulation of water in the bucket to displace the latch and release the arm, the latter being weighted so that when released it closes the valve.

2. A water-supply apparatus comprising a tank having an outlet pipe, a pivoted bucket mounted to swing in the tank, a water-supply pipe arranged to deliver water to the bucket, means such as a cord and pull connected with the bucket whereby the latter may be tipped to discharge its charge of water into the tank, a fixed detent, a valve in the supply-pipe having a weighted arm projecting over the bucket and adapted to be raised by the discharging movement of the latter and thus open the valve, a latch pivoted to the valve and adapted to engage said detent, and an arm connected with the latch and provided with a float which is arranged to be raised by the water in the bucket and to displace the latch, thereby releasing the weighted arm and permitting the latter to close the valve.

546,596. PROCESS OF AND APPARATUS FOR MAKING SULFURIC ACID. NATHANIEL P. PRATT, Atlanta, Ga. Filed Jan. 19, 1895. Serial No. 535,543. (No model.)



Claim.—1. In the manufacture of sulfuric acid, the method of accelerating and increasing the production within a given chamber-space, which consists in introducing the materials into the chamber, causing agitation of the same throughout the acid-producing portion of the apparatus, and withdrawing a portion of the matter from one part of the chamber and re-presenting it at another, the operation being without interference with the draft, substantially as described.

2. In the art of making sulfuric acid, the improvement which consists in conducting a portion of gases previous to denitration against a current of dilute sulfuric acid, and subsequently projecting said gases into the chamber by mechanical means, substantially as described.

3. The method of decomposing any nitro-sulfuric acid present which has escaped previous decomposition and of precipitating the sulfuric acid freed in the decomposition, by projecting the nitro-sulfuric acid against suitable surfaces under subjection to the action of water or weak sulfuric acid, and returning whatever thereof remains undecomposed and whatever sulfuric acid remains unprecipitated, to the front of the chamber, substantially as described.

4. The method of effecting a thorough commingling of the gases passing to the acid-chamber, which consists in withdrawing a portion of the gases, already generated, from the rear end of the chamber and passing them through a converter, thence leading the gases from the said converter to the front of the acid-chamber, and then mechanically projecting them into the chamber, substantially as described.

5. The method of changing a part of any sulfurous acid present which has escaped previous combination, into nitro-sulfuric acid, of splitting up this compound into sulfuric acid and nitrous anhydrid, of precipitating and saving the resultant sulfuric acid, and conserving the resultant nitrous anhydrid for reintroduction and admixture with the freshly-entered or entering acid-producing materials; which consists in projecting sulfurous acid, nitrous anhydrid and oxygen against obstructive surfaces in the presence of water or weak sulfuric acid and returning the compounds not retained, as well as the materials not converted, toward the front of the apparatus, substantially as described.

6. The method of trapping some of the sulfuric acid which has escaped previous precipitation, by projecting the same against suitable surfaces and returning the materials not precipitated to be intimately mixed with freshly entering acid-producing materials and projecting the mixture against precipitating surfaces, substantially as described.

7. In a sulfuric acid plant, an acid-chamber having an entrance for supplying acid-making materials and an exit-opening, in combination with a blast device, mouthing toward the exit-opening only, for projecting the matter solely toward the exit-opening, and a return for reintroducing a portion thereof at or toward the entrance, substantially as described.

8. In a sulfuric acid plant, an acid-chamber having an entrance for supplying acid-making materials thereto, and an exit-opening, in combination with blast-mechanism and a conduit opening from a portion of the chamber toward its rear end into a portion toward the front thereof, substantially as described.

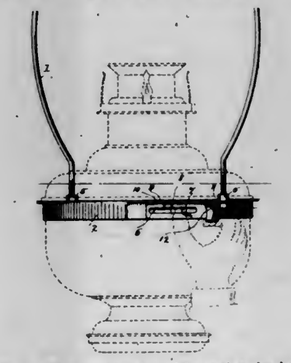
9. In a sulfuric acid plant, an acid-chamber having a conduit for supplying acid-making materials thereto, a converter connecting with the chamber, and a flue from the converter to the chamber, in combination with blast-mechanism, substantially as described.

10. The combination of an acid-chamber, conduits leading therefrom to towers supplied with packing, and suitable spraying devices, conduits leading from said towers to the front of the chamber, and means for projecting the gases from the front part of the chamber, substantially as described.

11. In a sulfuric acid-chamber, the combination of mechanical means for circulating non-denitrated gases which have once passed through the chamber, and columns located in the path of said gases, substantially as described.

12. The combination with the acid-producing portion of a sulfuric acid plant, of circulation-inducing mechanism, and comminuting and converting columns, substantially as described.

546,597. HARP-RING FOR LAMPS. FRANK RHIND, Bridgeport, Conn., assignor to The Bridgeport Brass Company, same place. Filed June 12, 1895. Serial No. 552,528. (No model.)



Claim.—1. The combination with a spring ring having at one end a slot 6 and at the other end a pin adapted to engage said slot, a flange 3 and a slot 10 in said flange, of a locking catch upon one end of the ring which is provided with a hook adapted to engage slot 10 in the other end of the ring so that a lamp carried by the ring will act to retain the catch in the locking position.

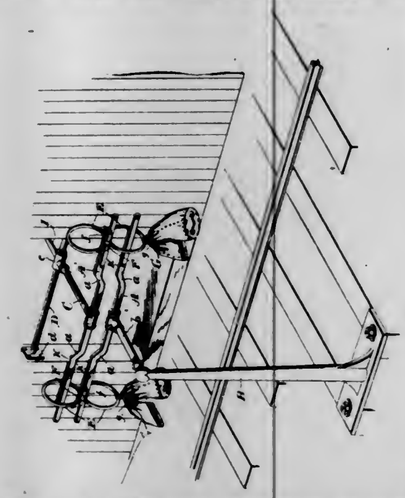
2. The combination with a spring ring provided with a flange adapted to support a lamp in use, said flange being provided with a slot 10, of a locking catch having at one end a hook adapted to engage said slot and at the other end a finger-piece for convenience in operation.

546,598. BUTTON. GODFREY ROSSBERG, Brooklyn, N. Y. Filed Jan. 3, 1895. Serial No. 533,738. (No model.)

Claim.—A button provided with a rivet having a slotted shank, and a hook having a perforated shank provided with a lip made to project into said slot, said rivet shank being passed through the perforation in the hook shank, substantially as described.



546,599. MAIL-BAG CATCHER. JOHN R. ROUTH, Jeffersonville, Ind. Filed Aug. 15, 1894. Serial No. 520,360. (No model.)



Claim.—1. In a mail bag-catcher, the combination, with two bars that are, respectively, mounted upon a car, and upon a relatively stationary support, a bag-holding device that has a part to engage either of the bars and has an opening above and below such part substantially as and for the purpose specified.

2. In a mail bag catcher, the combination with two bars that are, respectively, mounted upon a car and upon a relatively stationary support, a bag holding device comprising two rings or loops connected together and a saddle to rest upon and engage a bar, substantially as and for the purpose shown.

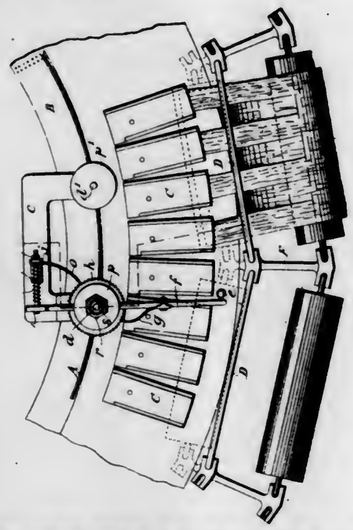
3. As an improvement in mail bag catchers, the combination with two bars that are respectively mounted upon a car and upon a stationary support, and have each its middle portion bent, a bag holding device comprising two united rings or loops and a saddle to rest upon and engage either bar, and a bag engaging means attached to the lower ring or loop and adapted to be passed around the middle of the bag, substantially as and for the purpose specified.

546,600. COMBING-MACHINE. ALEXANDER N. SHARP and SAMUEL METCALFE, Bingley, England. Filed Apr. 5, 1895. Serial No. 544,613. (No model.)

Claim.—1. In a combing machine of the character described, the combination with a feed-knife, of a screwed spindle connected thereto; a nut on said spindle; a spring pawl for holding the nut against backward movement; a ratchet carried by the nut, a rocking lever; means for supporting same; a pawl carried by said lever and engaging with the ratchet; and a tappet carried by a moving part of the combing machine for operating the lever to rotate the ratchet and nut, and thus gradually raise the feed knife, substantially as and for the purposes described.

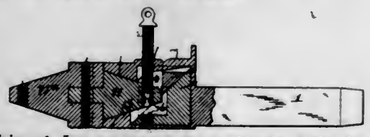
2. In a combing machine of the character described, the combination with the feed knife, of a screwed spindle connected thereto; a nut on said spindle; a spring pawl for holding the nut against turning backward; a ratchet carried by the nut; a rocking lever; means for supporting the same; a spring for replacing same, means for supporting the spring; a pawl carried by the lever and engaging with the ratchet; a wheel secured to the nut for rotating the latter by hand; stops for limiting the movement of the nut; and a tappet carried by a moving part of the combing machine for operating the lever to rotate the ratchet and nut, and thus gradually raise the feed knife, substantially as described.

3. In a combing machine of the character described the feed knife, a screwed spindle connected thereto, a nut on said spindle, means for holding the nut, a ratchet carried by the nut, a rocking lever, means for supporting same, a pawl carried by said lever and engaging with the ratchet, and a tappet carried by a moving part of the combing machine for operating the lever to rotate the ratchet and nut, and thus gradually raise the feed knife substantially as and for the purpose described.



4. In a combing machine of the character described, the feed knife, a screwed spindle connected thereto, a nut on said spindle, means for holding the nut, a ratchet carried by the nut, a rocking lever, means for supporting the same, a spring for replacing same, means for supporting the spring, a pawl carried by the lever and engaging with the ratchet, a wheel secured to the nut for rotating the latter by hand, stops for limiting the movement of the nut, and a tappet carried by a moving part of the combing machine for operating the lever to rotate the ratchet and nut, and thus gradually raise the feed knife, substantially as described.

546,601. AUTOMATIC CAR-COUPLING. ALBERT E. SINGER, Dayton, assignor of one-half to J. M. Singer, Lewisburg, Ohio. Filed July 19, 1895. Serial No. 556,447. (No model.)



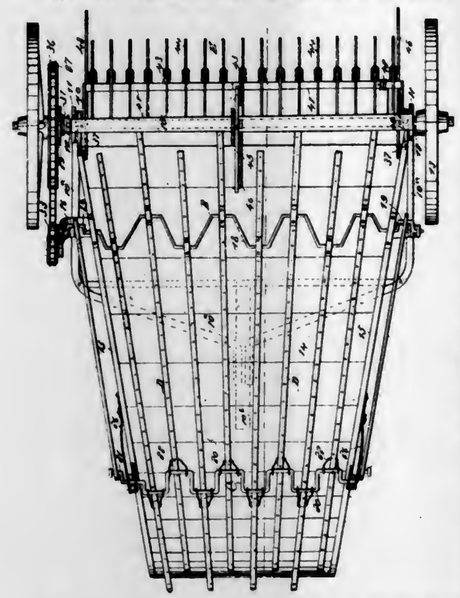
Claim.—1. In a car coupler, the combination with a draw bar, the head of which is provided with a tapering opening terminating rearwardly in a square opening, and openings in said head adapted to receive a coupling pin, of a stationary incline —5— mounted in the square opening in said head, said incline being provided with a recess —6— and an opening —7—, a triangular slide —9— normally resting upon said incline, said slide provided with a groove —10— in which the coupling pin may rest, and a coupling link composed of members —11— and —11ª— flexibly connected, either one of said members being adapted to enter the opening in the draw head, and thereby shift the triangular slide —9— upwardly on the incline —5— and raise the pin to effect a coupling, substantially as described.

2. In a car coupler, the combination with a draw bar provided with a guide plate projecting at a right angle and adapted to be secured to a car, of a draw head —16— mounted and adapted to slide vertically in said guide plate, a stationary incline in said head, a slide normally resting on said incline and adapted to support a coupling pin when the mechanism is not coupled, a hinged coupling link adapted to move said slide to effect a coupling, and means for adjusting said head —16— to enable a coupling with cars of different sizes, substantially as described.

3. In a car coupler, the combination with a draw bar provided with an integral guide plate as described, of a draw head adapted to slide in said guide, a stationary incline —5— in said head provided with a recess and an opening extending therefrom, through which a coupling pin may pass, a slide normally resting on said incline and provided with a recess or groove in its upper surface adapted to receive the end of the coupling pin, a coupling link composed of two tapering members either one of which is adapted to enter the draw head and shift the slide —9— upwardly to raise the coupling pin to enable it to drop therefrom, a rack bar and a segmental gear for adjusting said draw head, substantially as described.

4. In a car coupler, the combination with a guide plate —18—, of a draw head —16— slidingly mounted in said plate, a stationary incline, and a slide in said draw head, a rack and segmental gear for adjusting said draw head, and a coupling link provided with a hinge joint in its center, and a crank shaft —24— provided with lugs —25— and —26— adapted to regulate the movement thereof, and an arm —26— projecting from said shaft, adapted to an attachment with the chain of the coupling pin, substantially as herein described.

546,602. HAY-LOADER. OLE SWENSON and WILLIAM SWENSON, Cresco, Iowa. Filed Jan. 30, 1895. Serial No. 536,670. (No model.)



Claim.—1. In a hay loader, a tapering elevator having slotted bearings at its contracted end, a rock shaft provided with crank arms journaled in said bearings, springs normally holding the shaft in its bearings, permitting the shaft to adjust itself to the amount of hay on the elevator, a rotatable crank shaft journaled near the base end of the elevator, elevator arms pivotally connected with the corresponding crank arms of the two shafts, and a driving connection between the rotatable shaft and the rock shaft, as and for the purpose set forth.

2. In a hay loader, the combination with an elevator having slotted bearings at its upper end, of a rock shaft journaled in said bearings and provided with crank arms, springs engaging the rock shaft and holding it in the said bearings, yokes pivoted on the cranks of the said shaft, a rotatable crank shaft journaled near the base or lower end of the elevator, elevator arms pivotally connected with the crank arms of the rotatable shaft and with the yokes of the rock shaft, a driving connection between the said shafts, and means for operating the rotatable shaft, substantially as described.

3. In a hay loader, the combination with the drive wheels, and their axles, of an elevator having its lower end loosely suspended from the axles, and provided with reciprocating feed arms, and means for operating the feed arms from one of the drive wheels, substantially as described.

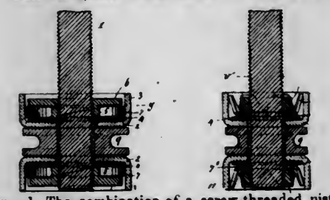
4. In a hay loader, the combination, with the carriage thereof, and the elevator, of slotted hangers connecting the carriage with the elevator, whereby the said elevator may have movement on the said carriage to clear an obstruction, as and for the purpose set forth.

5. In a loader, the combination, with a carriage and the elevator thereof, of a slotted hanger secured at each side of the base of the elevator and loosely mounted on the axle of the carriage, the axle passing through the slots of the hangers, as and for the purpose set forth.

6. In a hay loader, the combination, with the carriage and the elevator, of slotted hangers attached to the elevator, by means of which the elevator is mounted upon the carriage, and a rake pivotally connected with the said hangers, whereby the rake and the elevator will be simultaneously raised in passing an obstruction, as and for the purpose specified.

7. In a hay loader, the combination with a supporting frame, axles carried by the frame, drive wheels on the axles and a sprocket wheel mounted on the hub of one of the drive wheels and having a pawl and ratchet connection therewith, of an elevator having slotted hangers at its lower end through which the axles pass, crank shafts mounted in the elevator, feed arms pivotally connected with the crank shafts, a sprocket wheel on the lower shaft, a guide pulley, and a chain passing around the guide pulley and sprocket wheel of the drive wheel and over the sprocket wheel of the crank shaft, substantially as described.

546,603. SYRINGE-PISTON. CHARLES J. TAGLIABUE, Brooklyn, N. Y. Filed Jan. 3, 1895. Serial No. 533,763. (No model.)



Claim.—1. The combination of a screw-threaded piston-rod, a cup shaped packing mounted thereupon, a nut screwed upon the piston-rod and located within the cup-shaped packing, and a radially expansible spring interposed between the nut and the base of the cup-shaped packing and acting to press the latter radially outward against the internal surface of the barrel in which the piston operates, substantially as described.

2. The combination with a screw-threaded piston-rod, a cup-shaped packing mounted thereupon, a metallic plate arranged within the cup-shaped packing and bearing against the base portion thereof, a nut engaging the screw-threaded piston-rod, and a radially expansible spring mounted on the piston-rod within the cup-shaped packing, and located between the said plate and the said nut for pressing the cup-shaped packing laterally outward against the internal surface of the barrel in which the piston rotates, substantially as described.

546,604. AMIDO-TETRAZOTIC ACID AND PROCESS OF MAKING SAME. JOHANNES THIELE, Munich, assignor to the Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Filed Oct. 30, 1894. Serial No. 527,478. (Specimens.) Patented in Germany Sept. 20, 1891, No. 65,584; in France Jan. 22, 1892, No. 218,855, and in England Feb. 4, 1892, No. 2,194.

Claim.—1. The process for the production of amido-tetrazotic acid which process consists in exposing diazo-guanidin to the action of a compound possessing weakly alkaline properties such for example as sodium acetate, and then concentrating the solution by evaporation, substantially as described.

2. As a new article of manufacture, the amido-tetrazotic acid which can be derived from diazo guanidin and sodium acetate and which appears in the form of a white crystalline body soluble in water, but is precipitated from its solution by copper salts, and yields a diazo compound on treatment with nitrous acid, all substantially as herein described.

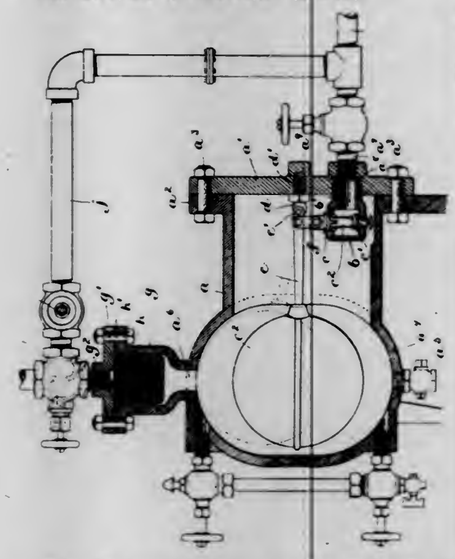
546,605. RAILWAY-FUSEE PLACER. JACOB R. WRIGHT, Wilkes-Barré, Pa. Filed July 25, 1894. Serial No. 518,565. (No model.)



Claim.—In a fusee placer, the combination with the hollow head, open on its rear side at 9 to permit of the discharge of the fusee, of a clamping lever for holding the fusee in the head and a releasing

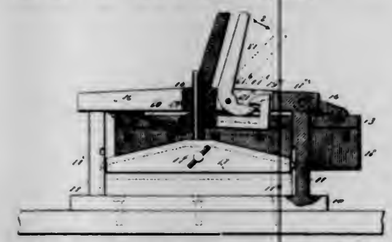
lever for releasing the same, said levers being pivoted to the head, substantially as described.

546,606. STEAM-TRAP. GEORGE S. BRAINERD, Boston, Mass. Filed June 10, 1895. Serial No. 552,304. (No model.)



Claim.—The improved steam-trap, comprising the chamber having the inlet a^6 and the outlet a^7, the valve-casing within the chamber, the valve in said casing, the pivoted float-lever connected with the valve, the strainer-holder communicating with the inlet and composed of separable sections, the detachable strainer in said holder, the supply-pipe detachably connected with said holder, the by-pass connecting said supply-pipe with the outlet a^7 and provided with a valve whereby it may be opened and closed, the supply-pipe being also provided with a valve between the by-pass and the chamber i whereby said pipe may be closed to discontinue the operation of the trap, the by-pass providing an outlet for the steam and water of condensation when the trap is not in operation.

546,607. CUTTING DEVICE. CHARLES A. BYRD, Drain, Oreg. Filed Mar. 7, 1895. Serial No. 540,871. (No model.)

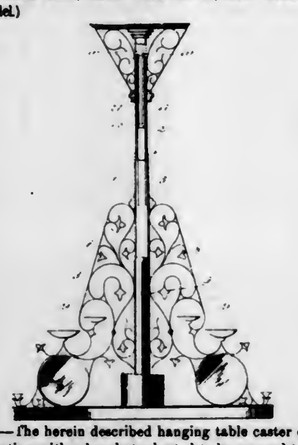


Claim.—1. The combination with a supporting frame, of a cutter blade, mechanism for imparting a vertical and lengthwise movement to said blade, the presser block, an upright adjustable guide rod therefor, a lateral presser arm adjustable on the guide rod and having a hook-nosed extension, means for holding the presser arm in yielding tilting contact with the arm, and a lever having a cam-shaped end to engage and operate the presser arm and block, substantially as described.

2. In a cutting device, substantially as described, the clamping attachment comprising a presser block, an upright guide rod thereon, a lateral presser arm adjustable on the guide rod, and having a hook nosed extension, means for holding the presser arm in yielding biting contact with the arm and a lever having a cam-shaped end to engage and operate the presser arm and block, substantially as described.

3. In a cutting device, substantially as described, the clamping attachment, comprising a presser block loosely engaging its ends with grooves in the cutter frame, and vertically perforated near its center, a guide rod adjustably held in the perforation in said block, a presser arm having an adjustable clamped connection with the guide rod and provided with an extension at one end having a hook nose thereon, a spring adapted to enforce an interlock of the presser arm with said guide rod, and a cam lever pivoted on the cutter frame, and having a toe engaged with the hook nose on the presser arm, which arm is depressed when the cam lever is rocked toward the hook nose, as specified.

546,608. HANGING CASTER. ISAAC H. DAVIS and WILLIAM H. DAVEY, South Butte, Mont. Filed Jan. 30, 1895. Serial No. 536,712. (No model.)



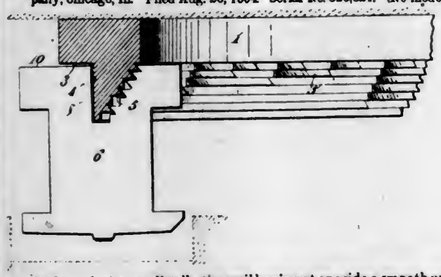
Claim.—The herein described hanging table caster consisting of the combination with a bracket adapted to be secured to the ceiling and having a hollow shank depending therefrom, of a caster proper, having a hollow central core integrally therewith, adapted to fit over said hollow shank and provided with a base of transparent material and a fret work of ornamental design extending upwardly therefrom and containing receptacles for holding dishes and the like, a pair of pulleys pivoted in said shank and having cords or chains passing thereover, supporting at one end a balance weight and at the other end a caster proper, substantially as and for the purposes specified.

546,609. CAR-WHEEL. SAMUEL B. DEARING, Roanoke, Va. Filed Nov. 10, 1894. Serial No. 528,403. (No model.)



Claim.—A hollow railway car wheel provided at its inner side with a supplemental brake wheel cast integral therewith and at one end of its hub, said brake wheel being smaller in diameter than the wheel proper and provided with a flat tread or periphery, a flat side disposed away from the inner side of the wheel proper to form an intermediate air circulating space that obviates the direct transmission of heat from the direct wheel to the wheel proper, and with a series of passages or openings that communicate with the interior of the hollow wheel and the outside air, substantially as set forth.

546,610. TYPE-DISTRIBUTING RAIL. JOSEPH C. FOWLER, Washington, D. C., assignor to the Fowler Composing and Type Setting Company, Chicago, Ill. Filed Aug. 20, 1894. Serial No. 520,821. (No model.)



Claim.—1. A type distributing rail having at one side a smooth unbroken guiding surface and at the opposite side a notched or toothed surface arranged at an angle of inclination greater than the angle of the smooth guiding surface, said smooth guiding surface serving to retain notched or toothed types in engagement with the notched or toothed surface of the rail and to guide the types in the downward motion when free to drop from the rail.

2. A type-distributing rail having a smooth unbroken guiding side surface and a notched or toothed side surface arranged at different angles relatively to one another, said smooth side surface serving to retain notched or toothed types in engagement with the notched or toothed side surface of the rail and to temporarily guide the types in their downward motion, substantially as described.

3. The combination of a type-distributing rail having a smooth unbroken guiding side surface and a notched or toothed side surface arranged at different angles relatively to one another, with types each having an angular recess, the edges of which are at different angles, one edge having a smooth unbroken surface and the opposite edge provided with notches or teeth, substantially as described.

4. A type-distributing rail having a top guide surface 3, a smooth unbroken side surface 4, and a notched or toothed surface arranged at an angle of inclination greater than the angle of the side guide surface, substantially as described.

546,611. BILLIARD OR POOL TABLE SHADE AND REFLECTOR. EMIL P. GEHNERT, Brooklyn, assignor to the E. P. Gleason Manufacturing Company, New York, N. Y. Filed Mar. 16, 1893. Serial No. 466,227. (No model.)



Claim.—1. A shade or reflector of the character described in combination with gas pipes and light wires, secured thereto and supported thereby and lights or burners extending into position centrally beneath the shade alternately and interchangeably.

2. In a billiard table shade or reflector, adapted to be secured above the table, the combination of an electric and gas burner secured to one side of the shade, and supported by the shade substantially as described.

3. A shade or reflector of the character described, in combination with gas pipes and light wires secured thereto and supported thereby, and lights or burners extending into position centrally beneath the shade alternately and interchangeably, and means for locking the gas pipe connection and light burner into place centrally, substantially as described.

4. In a billiard table shade or reflector, adapted to be secured above the table, the combination of an electric and gas burner conducted to the shade from above and secured to one side of the shade and leaving the space beneath the reflector, entirely clear, substantially as described.

5. In a billiard table shade or reflector, adapted to be secured above the table, the combination of an electric and gas burner secured to one side of the shade, and electric and gas burners and conductors brought down from above the shade and conducted in the same, leaving the space entirely clear below and to the sides all around the shade, substantially as described.

6. In a billiard table shade or reflector, adapted to be secured above the table, the combination of an electric burner and a gas burner and a locking arm made in sections for the gas burner and adapted to lock it in position for lighting against accidental movement, substantially as described.

7. The combination of a shade or reflector with electric and gas conductors, secured thereto and extending through and under a tube or shield on the reflector and interchangeable gas and electric burners adapted to be secured within the reflector centrally, leaving the space clear all around the reflector, as described.

8. A polygonal shade or reflector of the character described having inclined sides; in combination with interchangeable electric and gas lights and supports therefor, either of which is adapted to be moved out of the way when the other is in use, substantially as described, whereby the shadows are avoided from beneath the shade or reflector, substantially as and for the purpose specified.

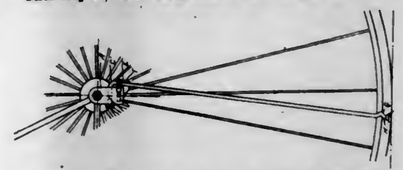
9. A shade or reflector of the character described, having inclined sides; in combination with interchangeable electric and gas lights and an independent support for each, either of which is adapted to be moved out of the way when the other is in use, substantially as described, whereby the shadows are avoided from beneath the shade or reflector, and means for locking the gas burner centrally beneath the reflector and shade, substantially as and for the purposes specified.

10. The herein described polygonal shade or reflector having inclined reflecting surfaces; in combination with electric and gas lights adapted to be supported interchangeably and alternately, centrally beneath the reflector, and means for supporting the burners of both electric and gas lights at and by the side of the shade or reflector, substantially as described, leaving the space below and around the reflector entirely clear and devoid of shadows, substantially as described.

11. A shade or reflector of the character described; in combination with electric and gas conductors secured thereto and projecting therefrom, substantially as described, whereby an electric light or a gas light may be secured centrally within the shade or reflector and whereby light may be thrown away from the reflector by its reflecting sides, without producing shadows over the area covered by the reflected light, as set forth.

12. A shade or reflector having a vertical support above it; in combination with a gas burner and an electric light burner secured to and projecting from the shade or reflector, which supports said burners, in front of the reflecting surface or surfaces of the reflector, substantially as described, whereby all shadows are avoided on the lighted area, as set forth.

546,612. BICYCLE-SUPPORT. JOHN K. GETTY, Camden, N. J. Filed May 28, 1894. Serial No. 512,774. (No model.)



Claim.—1. The combination in a bicycle support, of a bracket; having a hole or opening by which it is securely fastened to the bicycle at a proper place, preferably the axle, by a step, nut, or adequate means, and having a proper pivotal bearing or recess fitted to receive the stiff rod of the support, and an ear, or stop, to adjust the rod in its right relation to the tread of the wheel, and having also, in a recess, a spring bolt fitted automatically to lock the stiff rod securely between itself and the stop, against danger of its being unfastened accidentally by moving the bicycle either backward, forward, or side wise; with the stiff rod, which is bent at the upper end so as properly to fit and operate in the pivotal recess in the bracket, and also bent at the lower end, so as to form a foot, of the form of at least a semi-circle, at nearly right angles to the rod, so as to accomplish the purpose, of presenting sufficient resistance against sinking into the ground to assure that the bicycle will stand securely, all substantially as and for the purposes set forth.

2. The combination in a bicycle support, of a bracket; having a hole or opening by which it is securely fastened to the bicycle at a proper place, preferably the axle, by a step, nut, or adequate means, and having a proper pivotal bearing or recess fitted to receive the stiff rod of the support, and an ear, or stop, to adjust the rod in its right relation to the tread of the wheel, and having also, in a recess, a spring bolt fitted automatically to lock the stiff rod securely between itself and the stop, against danger of its being unfastened accidentally by moving the bicycle either backward, forward, or side wise, substantially as described.

546,613. ELECTRIC FUSIBLE CUT-OUT. DUANE N. GLEASON, Brooklyn, N. Y. Filed July 19, 1892. Serial No. 440,557. (No model.)



Claim.—1. In electric cut out, the combination with an insulating base having an opening through it, of U-shaped contact pieces, forming two arms, connecting screws on one side of the base, and connecting nuts on the opposite side for attaching the line conductor and fusible conductor, respectively, the fusible conductor extending through and across said opening, substantially as specified.

2. In an electric cut out, the combination of a base composed of non-conducting material having an opening through it; a fusible conductor extending across the opening and contact pieces embracing both sides of the base, substantially as specified.

3. An electric cut out, consisting of a base of insulating material, having contact pieces at each end, embracing both sides of said base, an opening through the base and a fusible conductor extending through and across the opening connecting the contact pieces, substantially as specified.

4. In an electric cut out the combination of U-shaped contact pieces, one arm of which extends above, and one below the insulating base; with screws for connecting the electrical conductors and nuts,

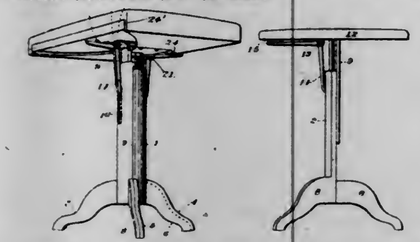
secured to the screws for connecting the fuse to the contact pieces, substantially as set forth.

5. In an electric cut out, the combination of U-shaped contact pieces one arm of which extends above and one below the insulating base; with screws for connecting the electrical conductors, and nuts, secured to the screws adjacent to the contact pieces, for connecting the fuse to the contact pieces, substantially as set forth.

6. In an electric cut-out, the combination of U-shaped contact pieces, one arm of which extends above, and one below the insulating base; with screws for connecting the electrical conductors and nuts, secured to the screws adjacent to the contact pieces, and on the outside of the contact pieces, for connecting the fuse to the contact pieces, substantially as set forth.

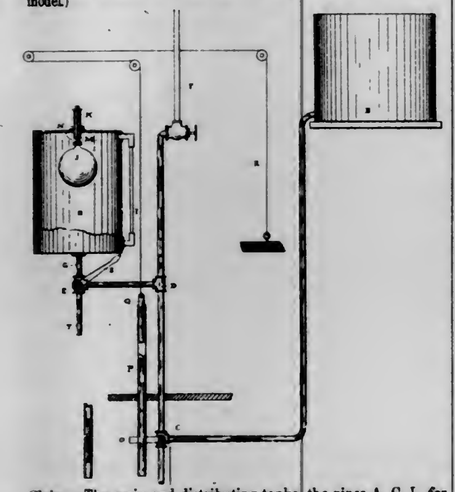
7. In an electric cut-out, the combination of U-shaped contact pieces, one arm of which extends above, and one below the insulating base; with screws for connecting the electrical conductors, and nuts, secured to the screws on the side of the insulating base, opposite the side at which the head of the screw is located, for connecting the fuse to the contact pieces, substantially as set forth.

546,614. DUPLEX PIANO-STOOL. AUGUST GSCHWEND, Portland, Oreg., assignor of one-half to Morris Sternfels, same place. Filed June 22, 1894. Serial No. 515,401. (No model.)



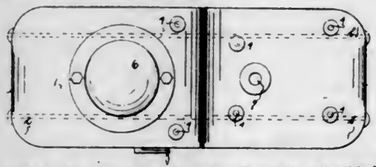
Claim.—The combination in a piano stool, of two semi-tubular standards, forming in contact a single standard, each standard consisting of two parts, one vertically adjustable upon the other, and having a seat attached to the upper end of the smaller part, the upper seat having a cut away portion in which the lower seat is secured and slides, legs secured to the lower ends of said standards and compactly adjustable upon one another, said lower seat, its standard and legs admitting of side adjustment to form a double seat having a standard under each seat, a rack on each standard and a pawl and lever on the bottom of each seat to engage its respective rack to permit vertical adjustment of the stool in compact or extended form, substantially as described and set forth.

546,615. MECHANISM FOR DISCHARGING LIQUIDS. ANDREW D. HOWARD, Atlanta, Ga. Filed Apr. 17, 1895. Serial No. 546,160. (No model.)



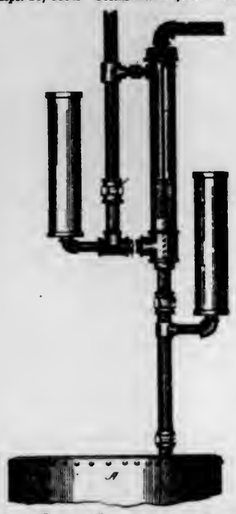
Claim.—The main and distributing tanks, the pipes A, G, L, for connecting the two tanks, and the three way valve located at the junction of the two pipes A, L, combined with a slotted pipe through which the handle of the valve extends, a weight placed in the pipe, a cord which extends around the building and is connected at one end to the weight, and guiding pulleys over which the cord passes; the lower end of the pipe L, terminating in a sewer or oil well, substantially as shown and described.

546,616. TRAP. JOHN R. KELLY, Johnsonburg, Pa. Filed Jan. 2, 1895. Serial No. 533,683. (No model.)



Claim.—The case 1 formed as described with a hand hole opening and cover thereon above the discharging orifice, a balanced pivotally supported discharging valve attached to said discharging orifice and a siphon removably attached to said discharging valve body in combination with the float 13 and lever 11 constructed and arranged to operate the discharging valve substantially as set forth and described.

546,617. VACUUM-PUMP. WILLIAM KIRKWOOD, Chicago, Ill. Filed Apr. 23, 1894. Serial No. 508,620. (No model.)



Claim.—1. In a single acting steam pump, the combination with a single vacuum chamber having a steam inlet port, a valve controlling said port, a water controlling valve located at the opposite end of said chamber and a connection between said valves, whereby the vacuum causes the movement of the second valve, and thereby the first is actuated to cut off the steam, substantially as described.

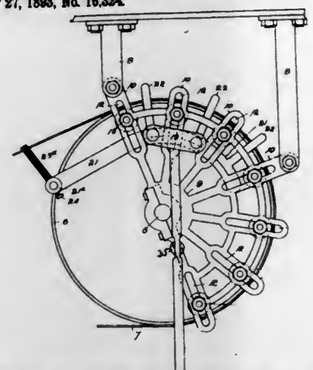
2. In a single acting steam pump, the combination with a vacuum chamber having a steam inlet port or duct, provided with radial openings above or at a slight distance from its lower end, a steam controlling valve having a reciprocating movement in said duct upward and downward past said radial openings and adapted to cut off the steam as it is raised above said openings, without contact with seat or other bearings, and to admit steam as it is moved in the opposite direction below said openings, and a connecting rod communicating between said steam controlling valve and the inlet water controlling valve, substantially as and for the purpose specified.

3. In a single acting steam pump, the combination with a single vacuum chamber having a steam inlet port, a steam controlling valve located in said port, an inlet water controlling valve, a connection between said steam and water controlling valves, said valves being adapted to alternately act upon each other through said connection as the pump is operated, and a discharge duct provided with a check valve to permit the escape and prevent the return of the discharged water, substantially as described.

4. In a pump, the combination with a single vacuum chamber having a steam inlet controlled by a slide valve, a water controlling valve located at the opposite end of the chamber, a rod connecting said valves, a water inlet pipe, and a reservoir connected therewith, and a discharge pipe communicating with the vacuum chamber, substantially as described.

5. In a pump, the combination with a single vacuum chamber having suitable induction and eduction ports for water, a steam inlet, a valve controlling the steam inlet and a second valve at the opposite end of the chamber, a connection between the said valves, a pipe or passage connecting the upper end of the vacuum chamber with the discharge pipe, and a relief valve arranged in said pipe, substantially as described.

546,618. BELT-SHIFTING DEVICE. OSCAR R. KUNER, Ebersbach, Germany. Filed May 25, 1894. Serial No. 512,418. (No model.) Patented in Belgium Jan. 30, 1893, No. 103,200; in France Feb. 7, 1893, No. 227,715; in England Feb. 27, 1893, No. 4,272, and Dec. 30, 1893; in Austria-Hungary June 22, 1893, No. 2,137 and No. 1,974, and in Germany July 27, 1893, No. 16,324.

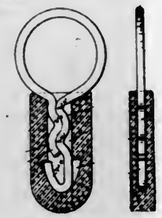


Claim.—1. In a belt-shifting and supporting device, the combination of the stationary segmental frame having the slotted arms, the supporting rollers having spindles adjustably attached to the arms, and suitable means attached to the supporting frame for removing and replacing the belt, substantially as described.

2. The belt-shifting device composed of the cross-head, the curved bar, the arms 18 connecting said parts, the replacing arms attached to the bar, and the adjustable removing arm also attached to the bar, substantially as described.

3. In a belt shifting and supporting device, the combination of the segmental frame, supporting rollers attached to the frame, the shifting device composed of the cross-head, the bar, and the arms connecting the cross head and bar; the removing and replacing arms attached to the bar, and the lever suitably connected with the shifting device, substantially as described.

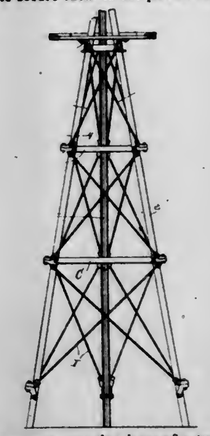
546,619. SEAL. DANIEL F. MACCARTHY, St. Paul, Minn., assignor of one-half to Harry T. Drake, same place. Filed Mar. 13, 1894. Serial No. 503,400. (No model.)



Claim.—In a seal, a bolt or shank formed with two connected legs, having interlocked crimps or bends, and with the ends of one or both legs projecting laterally, in combination with a breakable seal having an aperture adapted to receive said legs when said crimps or bends are interlocked, and with an enlargement to receive said lateral projections, whereby said aperture is completely filled by said legs and their removal without breaking the seal rendered impossible, substantially as and for the purpose set forth.

546,620. WINDMILL-TOWER. JOHN H. MILLER, Batavia, Ill. Filed May 11, 1895. Serial No. 548,948. (No model.)

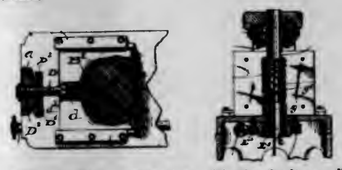
Claim.—1. The corner socket iron having the horizontal flange to fit under the platform of the tower to which it is secured; vertical socket flanges fitting on the post of the tower, having sockets adapted to receive the spherical ends of the brace-rods; and holes through which bolts pass to secure them to the post of the tower.



2. The two-part corner socket irons of a tower, one part having sockets to receive the spherical ends of the brace-rods and flanges by which it is firmly secured to the post of the tower; the other part having sockets to receive the spherical ends of the brace-rods and made adjustable to the other part of the corner iron to tighten the brace-rods, substantially as specified.

3. The brace-rods of a wind mill tower, having enlarged ends; socket-irons having sockets adapted to receive the enlarged ends of the brace-rods, said socket-irons being adjustable relative to each other to tighten the brace-rods.

546,621. EMBOSSING-MACHINE. THOMAS NELSON, Indianapolis, Ind., assignor, by mesne assignments, to the Union Embossing Machine Company, same place. Filed Dec. 5, 1893. Serial No. 492,880½. (No model.)



Claim.—1. The combination, with the feeding rolls of an embossing machine, of the housing carrying the same, and screws for moving the housings and feeding rolls toward and from the embossing roll, said screws being provided with ordinary threads and nuts for adjusting, and with a coarser screw-threaded structure at one end for throwing the rolls into and out of operative position quickly, substantially as shown and described.

2. The combination, in an embossing machine, of the feeding rolls B, the housings B^3, the screw D having the operating nut or wheel D^3, and the coarse-threaded structure d with the collar d^2 having holes for a pin or hand-lever whereby to operate it, substantially as set forth.

3. The combination, with the hollow shaft of an embossing machine, of a pin bearing, the pins having central grooves therein, and a spring laid in said grooves, whereby the pins are retained in position during the insertion and removal of the shaft, substantially as set forth.

4. The combination, in an embossing machine, of a furnace located outside the machine, a hollow shaft for the embossing roll connected by a flue or pipe to said furnace, and a core G secured within said shaft in the path of the products of combustion and within the embossing roll mounted on said shaft and adapted to be heated by said products of combustion as they pass from said furnace, whereby the heat is communicated more directly to said embossing roll, substantially as and for the purposes set forth.

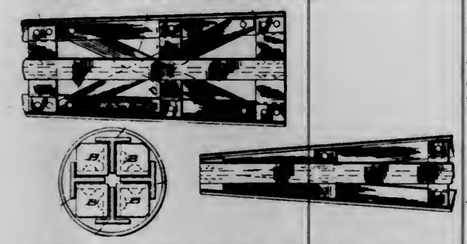
5. The combination, with the hollow shaft of an embossing machine forming part of the flue leading from the furnace, of a heating core secured within said shaft in the path of the products of combustion, said heating core being formed of a highly heat conductive metal, substantially as set forth.

6. The combination, in an embossing machine, with the hollow shaft, of a heating core secured within said shaft, and a rod extend-

ing from said core down to or toward the furnace, substantially as set forth.

7. The combination, in an embossing machine, with the hollow shaft to the embossing roll which forms also a portion of the flue leading from the furnace, of a heating core secured within said shaft consisting of a cylindrical shell, and arms or cross-bars extending across inside said shell in the path of the products of combustion, and arranged and operating substantially as set forth.

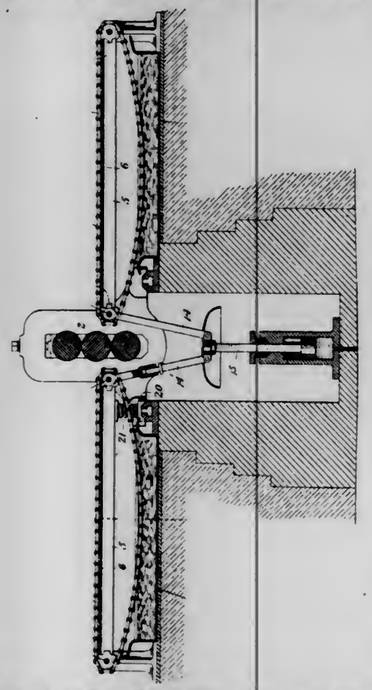
546,622. METAL POLE. LEROY S. PROUTS, Canton, Ohio. Filed Oct. 13, 1894. Serial No. 526,268. (No model.)



Claim.—1. The combination of the vertical bars A, T shaped in cross section, the span bars *b* formed in sets or pairs, and their ends abutted against the flanges *a*, and the diagonal braces *c* abutted against the flanges *a*, substantially as and for the purpose set forth.

2. The combination of the T shaped bars A, secured together to form a pole, the non-metallic blocks B located between the bars, the hood D located around the blocks B, and over the ends of the bars and provided with the eye bar *d*, substantially as and for the purpose specified.

546,623. ROLLING-MILL FEED-TABLE. JOHN A. POTTER, Cleveland, Ohio. Filed Jan. 9, 1895. Serial No. 534,308. (No model.)



Claim.—1. A rolling-mill feed-table comprising a series of parallel chains each equipped with sets of rollers, and means for moving the chains, whereby the rollers are caused to travel lengthwise of the table and to move the metal pieces placed upon their surfaces; substantially as described.

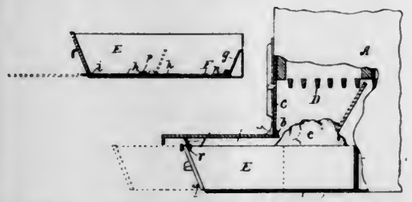
2. A rolling mill feed table comprising a series of parallel chains each equipped with sets of rollers, and means for moving the chains in both directions, whereby the rollers are caused to travel lengthwise of the table and to move the metal pieces placed upon their surfaces, said table having a plate surface underlying the rollers and by which air currents are excluded from striking the metal from below; substantially as described.

3. A rolling-mill feed-table comprising a table-frame provided with endless chains bearing rollers, and having a surface on which said rollers travel and rotate, and means for moving the table vertically; substantially as described.

4. Rolling-mill feeding apparatus comprising feed-tables set on the opposite sides of the rolls, and having common lifting mechanism, one of the tables being connected therewith by a loose connection to permit unequal motion of the tables and having a stop-cushion; substantially as described.

5. Rolling-mill feeding apparatus comprising feed-tables set on the opposite sides of the rolls, and having common lifting mechanism, one of the tables being connected therewith by a loose connection to permit unequal motion of the tables; substantially as described.

546,624. STOVE. MICHAEL SCHIRD, Rochester, N. Y. Filed Apr. 22, 1895. Serial No. 546,730. (No model.)



Claim.—1. A stove formed with a chamber beneath the hearth, extending under the grate, and a drawer in said chamber, in combination with a movable leveler for the ashes, within the drawer, substantially as specified.

2. A stove formed with a chamber beneath the hearth, extending under the grate, and a drawer in said chamber, in combination with a movable leveler for the ashes, within the drawer, the leveler consisting of a transverse plate and an operating rod resting upon the bottom of the drawer, and projecting in front thereof, substantially as and for the purpose specified.

3. A stove formed with a chamber beneath the hearth and extending under the grate, and a drawer in said chamber, the front end of which is provided with an opening, in combination with a bar upon the bottom of the drawer, the outer end of which is provided with a handle, and the intermediate portion is provided with a stop for limiting its outward movement, and a transverse plate secured to the inner end of the bar, substantially as set forth.

4. A stove formed with a chamber beneath the hearth and extending under the grate, and a drawer in said chamber, the front end of which is provided with an opening, in combination with a guide upon the bottom of the drawer, a bar through the opening and the guide, the outer end of which is provided with a handle, and the intermediate portion is provided with a stop for limiting the outward movement of the bar, a backwardly inclined transverse plate secured to the inner end of the bar, of a length and width less than the width and depth of the drawer, the lower edge of which plate is provided with a notch and a lip, and a fastening through the lip and the bar, substantially as set forth.

546,625. ELECTRIC-ARC LAMP. HENRY A. SEYMOUR, Washington, D. C., assignor to the Jandus Electric Company, Cleveland, Ohio. Filed July 20, 1895. Serial No. 556,623. (No model.)

Claim.—1. In an electric arc lamp the combination with an arc-inclosing globe of a cover seated directly upon the upper and open end of the globe and adapted to move laterally in any direction, said cover being provided with an opening in which the feeding carbon snugly fits and through which it feeds, substantially as set forth.

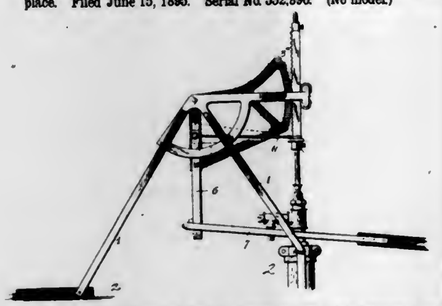
2. In an electric arc-lamp the combination with an arc-inclosing globe having a flat seat formed about its upper and open end, of a cover constructed with an annular flat portion which rests upon said seat, and is adapted to move laterally thereon, the cover being provided with an opening in which the feeding carbon snugly fits and through which it feeds, substantially as set forth.

3. In an electric arc-lamp the combination with an arc-inclosing globe and a cover seated directly upon the upper and open end of the globe and adapted to move laterally thereon, said seat and cover being constructed to form an annular gas check about the upper end of the globe, substantially as set forth.

4. In an electric arc lamp the combination with an arc-inclosing globe, of a glass or equivalent cover seated directly upon the upper and open end of the globe and adapted to move laterally thereon, said cover being provided with an opening in which the feeding carbon snugly fits and through which it feeds.



546,626. PUMPING-JACK. WILLIAM C. SHEANFELD, Fremont, Ohio, assignor of one-half to Nicholas P. Lehr and Joseph W. Lehr, same place. Filed June 15, 1895. Serial No. 552,890. (No model.)



Claim.—1. In a pumping jack, in combination with a support, an arm pivoted thereto, said arm having angular extremities, the lower being connected with a pitman, and the opposite extremity having an integral segmental gear, a rack bar meshing with said gear, a polish rod passing loosely through the center of the rack bar, collars secured to the rod above and below the rack bar, a ratchet connected with the polish rod, and means for operating the ratchet and arm in unison, as and for the purpose described.

2. A pumping jack in combination with a bracket or support, an angular arm pivoted thereto and having at one end a segmental gear, a rack bar meshing therewith, a polish rod free to rotate in the rack bar and taking motion therefrom and means for rotating the polish rod, for the purpose described.

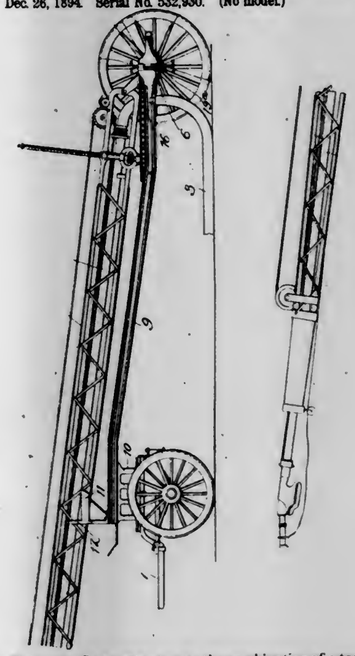
3. A pumping jack in combination with a suitable bracket, a lever, a rack bar operated thereby, a polish rod rotatable in the rack bar, and receiving a vertical motion therefrom and means for turning said rod for the purpose described.

4. A pumping jack in combination with a bracket, an angular arm pivoted thereto and having at one end a segmental gear, a rack bar meshing therewith, a polish rod free to rotate in the rack bar, collars secured to the rod, above and below the rack bar, a ratchet wheel secured to the rod, an arm carrying a pawl engaging the wheel and a connection between the arm carrying the pawl and the angular swinging arm, for the purpose described.

5. In a pumping jack, a suitable support, an angular arm pivoted to the support, and having on its end an integral segmental gear, means for operating the rod, in combination with a rack bar, a polish rod free to rotate in the rack bar, and taking vertical motion therefrom, a ratchet wheel secured to the rod, an arm carrying a pawl engaging the wheel, and a connecting rod between the arm of the pawl and the swinging arm, as and for the purpose described.

6. In a pumping jack, a suitable frame having its forward legs secured on either side of the well casing, an arm pivoted to the frame and carrying a segmental gear, means for operating the arm, a rack bar meshing therewith, a polish rod free to rotate in the rack bar and taking motion therefrom, in combination with means for turning the rod, as and for the purpose described.

546,627. WATER-TOWER. ERNST F. STECK, Chicago, Ill. Filed Dec. 26, 1894. Serial No. 532,930. (No model.)



Claim.—1. In a water tower, the combination of a tower proper, a truck or carriage having a frame provided with slotted portions an axle passing through said slotted portions, and lifting screws secured to said frame and bearing upon said axle, substantially as set forth.

2. In a water tower, the combination of a truck or carriage having a frame provided with slotted portions at the sides thereof, the rear axle arranged in said slotted portions, a tower proper supported upon the rear end of said frame and adjacent to said axle, and opposing screws arranged at the upper and lower ends of said slots respectively on each side of the frame and impinging the upper and lower sides of the carriage axle, substantially as set forth.

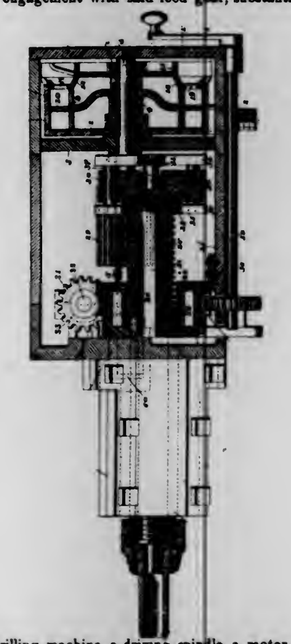
546,628. PORTABLE DRILLING-MACHINE. GEORGE STITES, Philadelphia, Pa., assignor of five-eighths to James B. Thomas, same place, and Charles C. Thomas, Wayne, Pa. Filed Mar. 21, 1895. Serial No. 542,602. (No model.)

Claim.—1. In a drilling machine, a rotary motor or power wheel, a casing or chamber therefor, a driving spindle upon which said power wheel is mounted, in combination with an auxiliary fan also mounted upon said spindle, said fan tending to assist in the creation of a vacuum in said chamber, substantially as described.

2. In a drilling machine, a rotatable power wheel, a driving spindle on which the same is mounted, an auxiliary fan also mounted upon said spindle, a chuck spindle separate from said driving spindle mounted in a suitable bush, and adapted to carry a chuck, a bearing for said bush, an internally threaded collar engaging the latter, and gearing mounted on said driving spindle and meshing with other gearing which rotates and feeds said chuck spindle, substantially as described.

3. In a drilling machine, a chuck spindle, a bush in which the same is mounted, an internally-threaded collar engaging said bush,

gearing for rotating and thus feeding the same, a pinion mounted on a shaft having suitable bearings, and means for moving said shaft and pinion out of engagement with said feed gear, substantially as described.



4. In a drilling machine, a driving spindle, a motor or power wheel mounted thereon, a casing for said power wheel, an auxiliary fan mounted so as to rotate in unison with the latter, a diaphragm intermediate said wheel and fan, a chuck spindle, a shaft arranged transversely thereto, and gearing intermediate the above spindles, and shaft, substantially as described.

5. In a drilling machine, a driving spindle, a motor or power wheel mounted thereon, a casing for said power wheel, an auxiliary fan attached to a suitable portion of the latter, and a diaphragm intermediate said wheel and fan, substantially as described.

6. In a machine of the character described, a power wheel having the hub 6, the web 8, the flanges 9 and 10, the blades 11, and the ports 10^{x} through said flange 10, in combination with a casing for said wheel, said casing having one side open and the other partially closed, a portion of said casing being alternately elevated and depressed, an inlet nozzle adjacent to said elevated and depressed portions, a partition in said casing, a spindle rotatably mounted in the latter, and an auxiliary fan mounted on said spindle, substantially as described.

7. In a drilling machine, a driving spindle, a motor or power wheel mounted thereon, a casing for said power wheel, an auxiliary fan attached to a suitable portion of the latter, in combination with a diaphragm intermediate said wheel and fan, said diaphragm being open at its central portion, and having openings and solid portions alternating, with each other, substantially as described.

8. In a drilling machine, a driving spindle, a bearing therefor, a rotatable power wheel mounted on said spindle, a casing for said wheel, an auxiliary fan constructed substantially as shown, and mounted on the hub of said wheel, an apertured diaphragm intermediate of said wheel and fan, and a cover or head adjacent said fan and provided with a port for the final exhaust of the motive fluid, substantially as described.

9. In a drilling machine, a chuck consisting of a hollow cylindrical shell having its exterior surface provided with a taper at one end, said shell being cut longitudinally and provided with a longitudinally-extending wedge, and a cutter of hard material secured in an end of said shell, substantially as described.

10. A chuck consisting of a hollow shell, cut longitudinally and provided with an external taper at one end, and having a longitudinally-extending slot and wedge, and a diamond cutter suitably secured in said slot, substantially as described.

11. In a drilling machine, a driving spindle, a chuck spindle, intermediate gearing for actuating and feeding the latter, said chuck spindle having on its extremity the shoulder 31^{x}, the threaded portion 42, and the tang 44, adapted to receive a hollow chuck and means for holding said chuck in position, substantially as described.

12. In a drilling machine, a chuck spindle, means for rotating and feeding the same, the end of said spindle having a shoulder thereon, a portion of said spindle being threaded and having a tang projecting therefrom, a hollow divided chuck having an external taper at one end, and adapted to fit on said tang, a cutter of hard material inserted in said chuck, and a socket nut for holding the latter in position on said spindle, substantially as described.

13. In a drilling machine, a driving spindle, a chuck spindle, a shaft mounted transversely to said spindles, gearing intermediate the latter and said shaft, movable boxes for the latter, and a lever common to said boxes, and having a portion adapted to serve as a bearing for said driving spindle, said lever being suitably fulcrumed, substantially as described.

14. In a drilling machine, a driving spindle, a chuck spindle, a bushing suitably supported in which one end of said driving spindle rotates, a lever secured to said bushing, suitable boxes or bearings attached to said lever, and a shaft having gearing thereon meshing with gearing on said spindles, substantially as described.

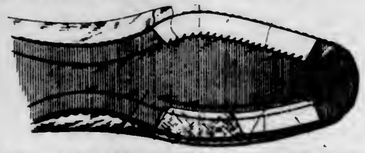
15. In a drilling machine, a driving spindle having a pinion and worm thereon, a chuck spindle, a gear mounted thereon, a yoke inclosing said gear, a thrust in said chuck spindle and yoke, non-rotating bushing in which said chuck spindle rotates, a portion of said yoke being attached to said bush, a portion of which latter is threaded, a threaded collar engaging said bush, and means for rotating said collar, substantially as described.

16. In a drilling machine, a chuck spindle, a driving spindle, a shaft mounted transversely to the same, a threaded bush, a collar engaging the latter, a keeper and means for causing said collar to rotate in either direction, substantially as described.

17. In a drilling machine, a chuck spindle, a driving spindle, a shaft mounted transversely to the same, a threaded bush, a collar engaging the latter, a keeper, gearing intermediate said spindle and shaft for rotating said collar and chuck spindle, means for stopping the rotation of said collar at will, and means for rotating the same in an opposite direction, substantially as described.

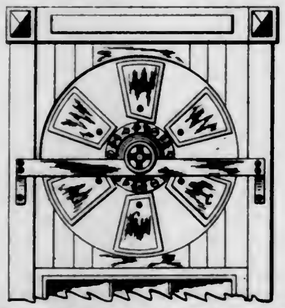
18. In a drilling machine, a driving spindle having mounted thereon a power wheel, and an auxiliary fan, an apertured diaphragm intermediate the same, a chuck spindle, gearing intermediate said spindles, means for feeding said chuck spindle, in either direction, and means for stopping the feeding of said chuck spindle, in combination with a suitable casing inclosing the above parts, substantially as described.

546,629. TURNED SHOE. THOMAS W. TRIMBY, Rochester, N. Y. Filed Feb. 25, 1895. Serial No. 539,586. (No model.)



Claim.—A turned shoe having its upper sewed in a channel at the edge of the sole and the upper and lining extended beyond the channel and overlapping the same and stitched to the flat surface of the body of the sole beyond and independent of the channel flap with the two rows of stitches in substantially parallel planes, whereby the sole is strengthened and retains its shape, substantially as shown and described.

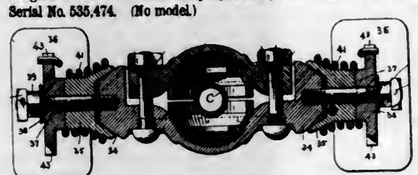
546,630. VENTILATING-FAN. FREDERICK W. TUERK, Jr., Fulton, N. Y. Filed Mar. 25, 1895. Serial No. 543,034. (No model.)



Claim.—In a ventilating fan, an annular frame, formed of two parts and having the sleeve 2 and flange 3 formed integral therewith,

and openings in its periphery, combined with shanks mounted in said openings and having their inner ends bearing against the sleeve and provided with pinions, and their outer ends provided with fan blades C; and the toothed slip collar made in two parts and secured to the shaft, substantially as described.

546,631. UNIVERSAL JOINT. OTIS C. WHITE, Worcester, Mass., assignor to the O. C. White Company, same place. Filed Jan. 19, 1895. Serial No. 535,474. (No model.)

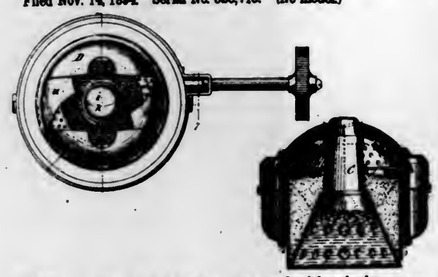


Claim.—1. A universal joint comprising a clamping device for receiving the end of a rod or pipe, said clamping device being mounted to swivel or turn in two directions, and two sets of adjustable spring tension friction devices for controlling the motion of the clamping device in either direction, substantially as described.

2. A universal joint comprising clamping jaws formed by two similar sections, a two-part socket for said clamping jaws, screws and spring washers for clamping the socket into frictional engagement with the clamping jaws, bearings for said socket, and clamping screws and spring washers for adjustably clamping the socket into frictional engagement with its bearings, substantially as described.

3. A universal joint comprising clamping-jaws, a pivoted socket for said clamping jaws, a counter-balancing spring normally tending to move the socket in one direction, and means for adjusting the tension of said counter-balancing spring, substantially as described.

546,632. ALCOHOL-LAMP. LOUIS WOJIDKOW, Brooklyn, N. Y. Filed Nov. 14, 1894. Serial No. 528,713. (No model.)



Claim.—1. An alcohol lamp constructed with a body proper, a perforated cone, or inner receptacle for receiving the alcohol, and a packing of asbestos or similar material contained within said body, and around said cone, substantially as described.

2. An alcohol lamp constructed with a body proper for containing asbestos, or other material, an outer shell surrounding and secured to said body proper, and a perforated cone or inner receptacle located within said body proper for receiving the alcohol, substantially as described.

3. An alcohol lamp constructed of a body proper, an outer plate or shell, secured to and surrounding said body, leaving an air space between them, and a perforated deflector fitting between said plate and body proper and extending above and over said body proper, for directing the air to the flame, substantially as described.

4. An alcohol lamp constructed with a body proper, containing an inner perforated cone or receptacle for receiving the alcohol, and having a removable perforated cap extending above said body, substantially as described.

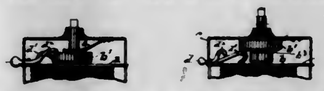
5. An alcohol lamp constructed with a body proper for containing asbestos or similar material, a perforated cone or receptacle, located within and extending above said body, and a wire gauze or netting extending over said asbestos, and having its center removed for the protrusion of said cone, substantially as described.

6. An alcohol lamp constructed with a regulator consisting of the sections D, E, having secured thereto plates u, u, substantially as described.

7. An alcohol lamp, constructed with a body, located within an outer shell, a regulator, a shaft, connected with the latter, and passing through a bracket attached to said shell, and a strip of spring metal bearing on said shaft and against said bracket for holding the regulator in its different adjustments, substantially as described.

8. An alcohol lamp constructed with a body proper and containing an inner cone or receptacle, extending above said body, and a regulator adapted to be opened or closed above said body, and fitting around the upper end of said cone, substantially as described.

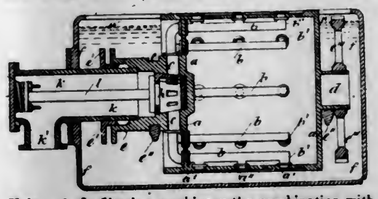
546,633. FISHING-REEL. ALBERT J. ARNOLD, National City, Cal. Filed June 24, 1895. Serial No. 553,842. (No model.)



Claim.—1. In a fishing reel, in combination with a driving gear, adapted to be moved in the prolongation of its axis out of mesh with the driven gear or pinion, a bifurcated lever pivoted to the casing, having one terminal wedge shaped, adapted to swing beneath the gear and elevate the same out of mesh, and a second terminal adapted to swing into contact to hold the gear in mesh as the lifting terminal is withdrawn, substantially as set forth.

2. In a fishing reel in combination with the movable driving gear, its retaining spring, and the pivoted lever, the wedge shaped lifting terminal of the lever having a tangential movement in relation to the gear, whereby the rotation of the gear tends to displace the wedge and restore the gear into mesh with the driven pinion, substantially as set forth.

546,634. FILTERING MACHINERY. HARRY C. ATKINS, London, England. Filed Apr. 23, 1894. Serial No. 508,728. (No model.) Patented in England May 18, 1893. No. 9,952.



Claim.—1. In filtering machinery the combination with a tank containing the liquid to be filtered, of a drum or cylinder in said tank adapted to be slowly revolved while partially immersed in said liquid therein, an endless band of filtering material passing around said drum, a number of holes or openings through the periphery of said drum, a series of grooves or channels arranged on the exterior of said drum and acting as separate collecting areas each such area being adapted to collect and conduct the liquid to the aforesaid openings, collecting pipes or passages connected on the inside of the drum to said openings and leading to the collecting box of the drum, and a discharge pipe leading from the said collecting box, substantially in the manner and for the purposes hereinbefore set forth.

2. In filtering machinery the combination with a tank containing the liquid to be filtered of a drum or cylinder in said tank adapted to be slowly revolved while partially immersed in said liquid therein, an endless band of filtering material passing around said drum, a number of holes or openings through the periphery of said drum, a series of grooves or channels arranged on the exterior of said drum and acting as separate collecting areas each such area being adapted to collect and conduct the liquid to the aforesaid openings, collecting pipes or passages connected on the inside of the drum to said openings and leading to the collecting box of the drum, a spring-mounted tapering (conical) stationary hollow plug adapted to fit in said collecting box and around which the said drum revolves, and a discharge pipe leading from the said collecting box substantially in the manner and for the purposes hereinbefore set forth.

3. In filtering machinery the combination with a tank containing the liquid to be filtered, of a drum or cylinder in said tank adapted to be slowly revolved while partially immersed in said liquid therein, an endless band of filtering material passing around said drum, a number of holes or openings through the periphery of said drum, a series of grooves or channels arranged on the exterior of said drum and acting as separate collecting areas each such area being adapted to collect and conduct the liquid to the aforesaid openings, collecting pipes or passages connected on the inside of the drum to said openings and leading to the collecting box of the drum, a spring-mounted tapering (conical) stationary hollow plug adapted to fit in said collecting box and around which the said drum revolves, a longitudinal division or divisions in said plug forming separate compartments therein, a separate discharge pipe leading from each such compartment to a separate outlet so as to give qualities of filtration substantially in the manner and for the purposes hereinbefore set forth.

4. In filtering or the like machinery, the combination with a revolving drum and an endless band of filtering material operating around same, of a hollow collecting box of conical form internally carried on one end of said drum and into which the filtered water is conveyed, and a spring-mounted hollow valve or skeleton plug of corresponding conical form to the inside of the said collecting box with which it is adapted to fit closely and be there held up to its work substantially in the manner and for the purposes hereinbefore set forth.

5. In filtering or the like machinery, the combination with a revolving drum and an endless band of filtering material operating around same, of a number of separate collecting areas formed on the exterior of said drum as described, an opening through the periphery of the drum for each such area, a pipe connecting each such opening to a collecting box on the drum of a conical form internally, and a spring-mounted hollow valve or skeleton plug of corresponding conical form adapted to fit inside said collecting box and be there held up to its work by its spring, substantially in the manner and for the purposes hereinbefore described.

546,635. RAILWAY-SWITCH. HENRY C. BENAGH, Nashville, Tenn. Filed May 9, 1895. Serial No. 548,790. (No model.)



Claim.—1. A railway switch, a movable tongue comprising the tongue proper and integral stud and a rear extension, said stud being arranged at the junction of the tongue proper and rear extension which rear extension is in a plane below the tongue proper whereby when said movable tongue is in operative position the rear extension will rest below grade and thus be safe from breakage, and means connected with such extension for operating the tongue substantially as shown and described.

2. In a railway switch a tongue having a rear extension below the plane of the said tongue, a spring throwing device connected with said extension, and a plate for covering the said extension and mechanism substantially as shown and described.

3. In a railway switch, the combination with a block, having a compartment or chamber adapted to contain oil or a lubricant of a tongue, pivoted upon said box and the operating devices located within said box, and connected with the tongue substantially as shown and described.

4. In a railway switch the combination with a block having a box or chamber, of a tongue pivoted upon the block and having an extension projecting into said box, said extension having a bifurcated end, a bolt fixed in the box and resting in said bifurcated end of extension and a spring carried by said bolt and adapted to bear upon said extension substantially as shown and described.

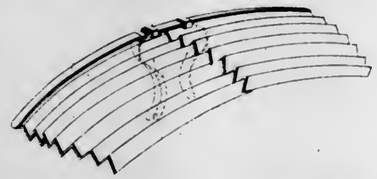
5. In a railway tongue switch, the combination with the block having a transverse lubricant-holding compartment at the rear end, a throw switch device held therein, a tongue having a rear extension having a member projected into such compartment to engage the spring devices, and a detachable head plate fitted over the said extension and compartment, all arranged substantially as shown and described.

6. In a railway tongue switch, a block or base member having a transverse spring-holding compartment having a slot-way in the top, and having a non circular opening in ode end thereof, of the spring bolt, having a non-circular portion fitted in the aforesaid opening, and a threaded extension, a hand nut fitted on such extension, the pivoted tongue member having a pendent portion projected over the said bolt and the spring held on the bolt, all arranged substantially as shown and described.

7. In a spring switch mechanism, a switch base or block having at one end a transverse compartment for the spring having a removable end, and a supplemental box portion for the adjusting devices for the spring connected therewith having a removable top, substantially as shown and described.

8. In a railway tongue switch, a movable tongue having a portion extended rearward from its pivotal point, formed with a pendent bifurcated end, in combination with the spring throw devices, having a bolt adapted to pass between the said bifurcated end, all arranged substantially as shown and for the purposes described.

546,636. EYE-SHADE. ALBERT R. BRANDLY, New York, N. Y. Filed Feb. 7, 1895. Serial No. 537,597. (No model.)



Claim.—1. The eye-shade comprising the sectional frame, with its sections adapted to slide toward and from each other, and the sectional canopy with its sections connected to said frame-sections respectively and adapted to slide one upon the other and means for connecting the shade to the nose, substantially as set forth.

2. The eye-shade comprising the nose-clamp, the sectional frame, with one section connected to said nose-clamp and the other adapted to slide in guides upon said nose-clamp, and the sectional canopy with its sections connected to said frame-sections respectively and adapted to slide one upon the other, substantially as set forth.

546,637. METHOD OF AND MACHINE FOR MAKING CIGARETTES. WILLIAM H. BUTLER, Brooklyn, N. Y., assignor to the Bonsack Machine Company, Salem, Va. Filed May 9, 1892. Serial No. 432,334. (No model.) Patented in France Jan. 3, 1894, No. 235,268; in Italy Feb. 23, 1894, No. 35,795/188; in Trinidad June 26, 1894; in Barbadoes July 6, 1894, No. 81; in Cape Colony July 12, 1894, No. 376 or 6/678; in Natal July 16, 1894; in South African Republic July 18, 1894, No. 675, and in Austria June 14, 1895, No. 45/2,150.

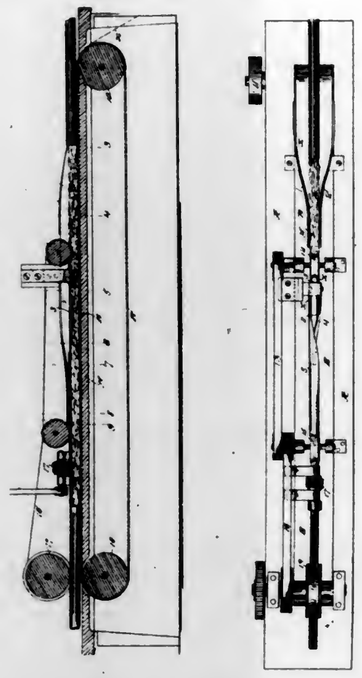
Claim.—1. The method of making a cigarette which consists in advancing a continuous wrapper and a continuous filler, rolling or folding the edges of the wrapper together, and pressing, crimping, indenting or perforating them together and applying paste, substantially as described.

2. The method of making a cigarette, which consists in advancing a continuous wrapper and a continuous filler thereon, folding the wrapper about the filler and an interior support, rolling or folding the edges of the wrapper together, and securing the edges by pressing, crimping, indenting or perforating them against the interior support and applying paste in the indentations, substantially as described.

3. The combination with feeding devices for advancing a continuous cigarette wrapper and filler, of folding devices for folding the wrapper over the filler with its edges rolled or folded together, pressing, crimping, indenting or perforating devices acting on opposite sides of the rolled or folded edges, and pasting devices, substantially as described.

4. The combination with feeding devices for advancing a continuous cigarette wrapper and filler, of an interior support, folding devices for folding the wrapper over the filler and support with its edges rolled or folded together, a crimping, indenting or perforating device co-acting with the support to secure the edges, and pasting devices for applying paste to said crimping, indenting or perforating devices, substantially as described.

5. The combination with feeding devices for advancing a continuous cigarette wrapper and filler, of an interior support, folding devices for folding the wrapper over the filler and support with its edges rolled or folded together, a pressing device co acting with the interior support to press down the edges, and a crimping, indenting or perforating device co-acting with the support to secure the edges, substantially as described.



6. The combination with feeding devices, of folding devices for folding the wrapper and rolling or folding the edges together, and pressing, crimping, indenting or perforating devices acting on opposite sides of the rolled or folded edges and including as one member a crimping worm, substantially as described.

7. The combination with feeding devices for advancing a continuous cigarette wrapper and filler therein with the edges of the wrapper engaged, of an interior support inside the wrapper, and a crimping worm coacting with said support to secure the edges, substantially as described.

8. The combination with feeding devices, of an interior support, folding devices for folding the wrapper over the support and rolling or folding the edges together, and a crimping worm co-acting with said support to secure the edges, substantially as described.

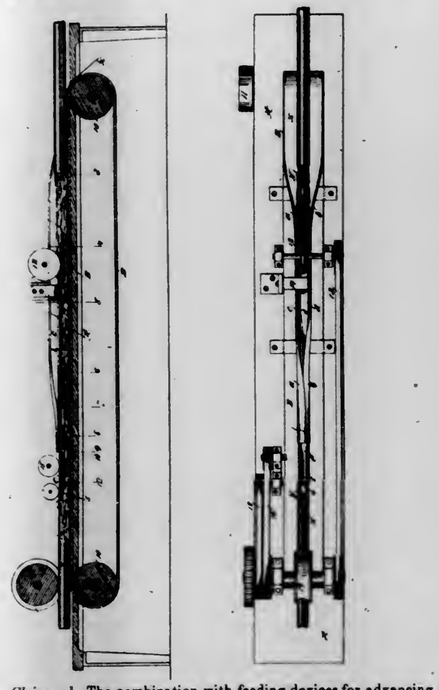
9. The combination with feeding devices, of an interior support formed or provided with a worm thread, folding devices for folding the wrapper over the support and rolling or folding the edges together, and a wheel rotating transversely to the line of feed co-acting with the worm thread on the support to secure the edges, substantially as described.

10. The combination with feeding devices, of an interior support formed or provided with a worm thread, folding devices for folding the wrapper over the support and rolling or folding the edges together, and a worm wheel rotating transversely to the line of feed co-acting with the worm thread on the support to secure the edges, substantially as described.

11. The combination with feeding devices for advancing a continuous cigarette wrapper and filler therein, of the interior support 3, guides 4, 5 constructed to turn the edges of the wrapper outwardly and roll or fold them together on the support, roller 15 co-acting with the support to press down the edges, and a crimping device co-acting with the support to crimp, indent or perforate the edges, substantially as described.

12. The combination with feeding devices, of the interior support 3, guides 4, 5 constructed to turn the edges of the wrapper outwardly and roll or fold them together, on the support, roller 15 co-acting with the support to press down the edges, and crimping worm 17 co-acting with the support to secure the edges, substantially as described.

546,638. CIGARETTE-MACHINE. WILLIAM H. BUTLER, Brooklyn, N. Y., assignor to the Bonsack Machine Company, Salem, Va. Filed May 13, 1892. Serial No. 432,914. (No model.) Patented in France Jan. 3, 1894, No. 235,268; in Italy Feb. 23, 1894, No. 35,795/188; in Trinidad June 26, 1894; in Barbadoes July 6, 1894, No. 81; in Cape Colony July 12, 1894, No. 376 or 6/678; in Natal July 16, 1894; in South African Republic July 18, 1894, No. 675, and in Austria June 14, 1895, No. 45/2,150.



Claim.—1. The combination with feeding devices for advancing a continuous cigarette wrapper and filler, of an interior support, folding devices for folding the wrapper over the filler and support with its edges turned inwardly and rolled or folded together, a pressing device co-acting with the support to press down the edges, and a crimping, indenting or perforating device co-acting with the support to secure the edges, substantially as described.

2. The combination with feeding devices for advancing a continuous cigarette wrapper and filler, of an interior support, folding devices for folding the wrapper over the filler and support with its edges turned inwardly rolled or folded together, a crimping, indenting or perforating device co-acting with the support to secure the edges, and pasting devices for applying paste to said crimping, indenting or perforating device, substantially as described.

3. The combination with feeding devices for advancing a continuous cigarette wrapper and filler, of a convex roll for pressing down the filler and forming a recess therein, folding devices for folding the wrapper over the filler and rolling or folding its edges together, and devices for securing the edges, substantially as described.

4. The combination with feeding devices for advancing a continuous cigarette wrapper and filler, of a convex roll for pressing down the filler and forming a recess therein, an interior support in said recess, folding devices for folding the wrapper over the filler and support, and devices coacting with said support to secure the edges, substantially as described.

5. The combination with feeding devices for advancing a continuous cigarette wrapper and filler, of a concave support, folding devices for folding the wrapper over the filler and support and rolling or folding its edges together, and a roll pressing the edges of the wrapper into the concave support, substantially as described.

6. The combination with feeding devices for advancing a continuous cigarette wrapper and filler, of convex roll 12 for pressing down the filler and forming a recess therein, an interior support in said recess, folding devices for folding the wrapper over the filler and support with the edges turned inwardly on said support, and devices co-acting with said support to secure the edges, substantially as described.

7. The combination with feeding devices, of exterior side guides

a, *b*, one of said guides being provided with the inwardly curved wing 1, and interior guides *c*, *d* provided with wings 2, 3 co-acting with said wing 1, substantially as described.

8. The combination with feeding devices, of exterior side guides *a*, *b*, one of said guides being provided with the inwardly curved wing 1, interior guides *c*, *d* provided with wings 2, 3 co-acting with said wing 1, and interior support *e* below the rolled or folded edges, substantially as described.

9. The combination with feeding devices, of exterior side guides *a*, *b*, one of said guides being provided with the inwardly curved wing 1, interior guides *c*, *d* provided with wings 2, 3 co-acting with said wing 1, interior support *e* below the rolled or folded edges, and devices co-acting with said support to secure the edges, substantially as described.

10. The combination with feeding devices, of exterior side guides *a*, *b*, one of said guides being provided with inwardly curved wing 1, interior guides *c*, *d*, having wings 2, 3 co-acting with said wing 1 to turn the edges inwardly and roll or fold them together, interior support *e* formed by an extension of said wing 3, and devices co-acting with said support to secure the edges of the wrapper, substantially as described.

11. The combination with feeding devices, of convex roller 12 for forming a recess in the filler, exterior side guides *a*, *b*, one of said guides being provided with an inwardly curved wing 1, interior guides *c*, *d*, having wings 2, 3 co-acting with said wing 1 to turn the edges inwardly and roll or fold them together, interior support *e* lying in the recess formed by said roller 12, a roll carried by said support and a roller outside the wrapper co-acting with said roll on the support to crimp, indent or perforate the edges, substantially as described.

546,639. TOP ROLL FOR TEXTILE-MACHINES. ROBERT G. CAMPBELL, Salisbury, N. C., assignor of one-half to F. J. Murdoch, same place. Filed Mar. 5, 1895. Serial No. 540,609. (Model.)

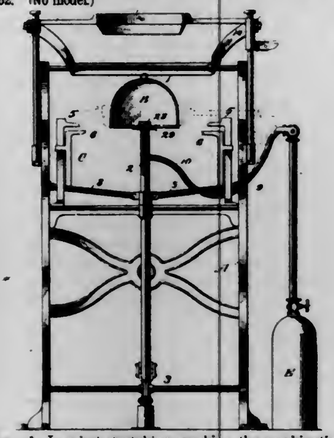


Claim.—1. A top roll for textile machinery having journals integral with the roll and provided with open lint chambers in the journals at each end of the roll.

2. A top roll for textile machinery having journals integral with the roll and provided with open lint chambers in the journals at each end of the roll and said chambers having flaring outer ends.

3. A top roll for textile machinery having journals integral with the roll and provided with open lint chambers at each end of the roll which extend throughout the length of the roll.

546,640. MACHINE FOR BLOCKING AND STRETCHING HATS. JOHN C. CHAMBERLAIN, Bridgeport, Conn. Filed Apr. 2, 1894. Serial No. 506,062. (No model.)



Claim.—1. In a hat stretching machine, the combination of the former provided with openings forming a free passage therethrough, the tubular spindle, upon which said former is supported, the flexible tube, the trip valve, a source of air supply communicating with said valve, and means for operating said valve to admit a blast of air through the former to remove a hat therefrom, substantially as described.

2. In a hat stretching machine, the combination of the former provided with openings forming a free passage therethrough, the reciprocating banding ring, and means for automatically admitting a blast of air through the former at each elevation of the banding ring, substantially as described.

3. In a hat stretching machine, the combination with the former provided with openings, the trip valve, a source of air supply connected therewith, connections between said valve and former, the banding ring, devices connected thereto for guiding the same and means on said guiding devices for tripping said valve to open the same as the banding ring is elevated, substantially as described.

4. In a hat stretching machine, the combination of the former, the clamps, the banding ring, the rods 13, the collars sliding thereon, provided with pins, devices connecting the collars and banding ring, the slotted frame for lowering said banding ring, the slots of which are engaged by the pins of said collars, substantially as described.

5. In a hat stretching machine, the combination of the former provided with openings, a source of air supply, connections between said former and source of air supply, the valve controlling said air supply, the valve stem having a projection thereon, the reciprocating banding ring and its frame, a lug secured to said frame for engaging the projection of the valve stem, to open the valve and permit the flow of air through the former, substantially as described.

6. In a hat stretching machine, the combination of a former provided with openings, a source of air supply, connections between said former and source of air supply, a valve and its operating devices in said connections, a reciprocating banding ring and its frame and a lug on said frame for engaging the operating devices of the valve for opening the same to permit the flow of air through the former, substantially as described.

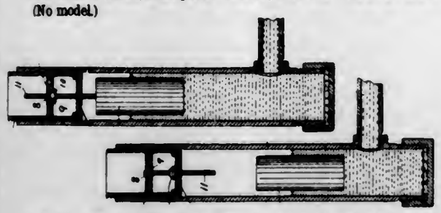
546,641. METHOD OF MAKING LACING-HOOKS. HENRY H. CUMMINGS, Malden, Mass., assignor to the Reversible Rivet Company, Portland, Me. Filed Oct. 4, 1894. Serial No. 524,881. (No model.)



Claim.—1. The herein described method of producing a lacing hook from a substantially circular blank, which consists in cutting into the periphery of the blank near one end, spinning the material at one side said cut to form a tubular shank, cutting into the periphery of said blank from one edge past its center, to leave a connecting neck, forging and drawing said neck to elongate the same, and shaping the outer portion of the disk to form a head, substantially as described.

2. The herein described method of producing a lacing hook from a substantially circular blank, which consists in cutting into the periphery of the blank near one end, spinning the material at one side said cut to form a tubular shank, cutting into the periphery of said blank from one edge past its center, to leave a connecting neck, forging and drawing said neck to elongate the same, shaping the outer portion of the disk to form a head, nicking the top of the head, and securing a non-metallic cap to said nicked head, substantially as described.

546,642. STAND-PIPE FOR GASOLINE-BURNERS. OSCAR DAMAN and LOUIS W. DAMAN, Minneapolis, Minn., assignors of one-third to Edward D. Perkins, same place. Filed Apr. 13, 1895. Serial No. 545,577. (No model.)



Claim.—The combination with a burner and a pipe for conducting gasoline upward thereto, of a transverse partition in the pipe providing a port, a valve below the same having a valve-stem extending above and below the port, a bridge in the pipe for guiding such stem, and an independent float in the pipe below the stem for co-operating therewith to regulate the feed, substantially as set forth.

546,643. WINDOW-SCREEN. JOSEPH A. DURNBAUGH, Washington, D. C., assignor of three-fourths to Louis F. Stutz, same place. Filed June 29, 1894. Serial No. 516,116. (No model.)

Claim.—1. The combination with a spring roller, and a flexible screen secured at its upper end to said roller and provided at its lower end with a transverse guide-bar having terminal extensions or ears, of parallel guiding strips arranged contiguous to the lateral edges of the screen and provided with vertical slots or kerfs to receive said lateral edges of the screen, and the terminal extensions or ears of the guide-bar, and means for contracting the guiding strips to engage said terminal extensions or ears and secure the screen at the desired adjustment, consisting of the finger 18 secured to one of the strips, and a sliding bolt 15 mounted on the other strip and engaging the finger, substantially as specified.



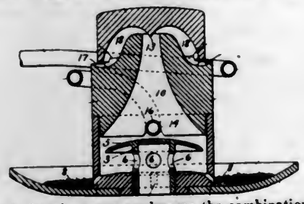
2. The combination with a spring roller, and a flexible screen having its upper end secured to said roller, of guiding-strips arranged at opposite sides of a window-frame and each consisting of a single bar provided with a longitudinal slot or kerf extending partly through the bar at its terminals and entirely through the same at intermediate points to allow contraction of said intermediate points, guiding ears carried by the lower end of the screen to fit slidably in said slots or kerfs, and means for contracting the guiding-strip to lock said guiding ears at the desired adjustment, substantially as specified.

3. The combination of the guide strips having secured firmly to their upper ends and carried thereby the brackets provided with offset portions to engage the guide-way of a lower window-sash and hold the guide strips from outward or inward deflection, and stops or shoulders 26 arranged in the path of said sash to limit the upward movement thereof, a spring-roller having its trunnions mounted in sockets in said brackets directly above said sash, a flexible screen secured at its upper end to the roller, and means for holding the screen at the desired extension, substantially as specified.

4. The guide strips arranged at opposite sides of the window frame, brackets 19 secured firmly to the upper ends of the guide strips and carried thereby and extending outward so as to lie in the path of the lower sash when the latter is raised, and provided with offset ears 20 which fit in the top of the guide-way of said sash and thus lock the guide strips from outward and inward deflection, said brackets being provided with bearings 22 and sockets 25, a leaf 23 journaled in the bearings, a screen roller journaled in the sockets in a line directly above the lower sash, and stops or shoulders 26 on the brackets to limit the upward movement of the lower sash, substantially as specified.

5. The combination with a spring roller, and a flexible screen having its upper end secured to said roller, of guiding strips arranged at opposite sides of a window frame and each consisting of a single bar provided with a longitudinal slot or kerf extending partly through the bar at its terminals and entirely through the same at intermediate points to allow for contraction of said intermediate points, guiding ears carried by the lower end of the screen to fit slidingly in said slots or kerfs, means for contracting the guiding strip to lock said guiding ears at the desired adjustment, and brackets 19 secured firmly to the upper ends of the guiding strips and carried thereby and extending downward so as to lie in the path of the lower sash when the latter is raised, and provided with offset ears 20 which fit in the top of the guide way of said sash and thus lock the guide strips from outward and inward deflection, said brackets providing bearings for the spring roller, substantially as described.

546,644. KEROSENE-GAS BURNER. ALLEN J. HUBER, Minneapolis, Minn. Filed Aug. 6, 1894. Serial No. 519,594. (No model.)



Claim.—1. In a kerosene gas burner, the combination of a generator, a jet orifice opening into an aerating chamber, an air inlet opening into the chamber, a conical projection at the escape opening of the chamber, a cap supported over said opening the lower surface of which runs from said cone to the rim of the cap by an upward curve, while the top of the opposite surface of the burner runs from the circumference toward the center by a downward curve, leaving a space between said opposite surfaces, substantially as shown and described.

2. In a kerosene gas burner, the combination of an aerating chamber into which the gas is discharged, a cap supported over the escape opening of the aerated chamber, having on its lower surface at said escape opening, a conical projection and said surface running from the conical projection toward the rim of the cap by an upward curve, while the opposite surface of the burner runs from the circumference toward the center by a downward curve, a space between said opposite surfaces, and an annular opening at the rim of the cap, substantially as shown and described.

3. In a kerosene gas burner, the combination of an aerating chamber into which the gas is led, a cap supported over the escape opening of the aerating chamber, having on its lower surface, at the center of said escape opening, a conical projection, a space bounded by curved surfaces between said cap and the body of the burner, said surface of the cap running from the cone toward the rim by an upward curve and said surface of the body running from the circumference thereof toward the center by a downward curve, an annular opening at the rim of the cap, and a gas generator near said annular opening, substantially as shown and described.

4. In a kerosene gas burner, the combination of an aerating chamber into which the gas is led from the generator, a cap supported over the escape opening of the aerating chamber, having on its lower surface, at the center of said opening, a conical projection, a gas jet orifice in said chamber, toward which orifice said conical projection points, a space bounded by curved surfaces between said cap and the body of the burner, an annular opening at the rim of the cap, and a gas generator near said annular opening, substantially as shown and described.

5. In a kerosene gas burner, the combination of a bell shaped aerating chamber, an air inlet opening into the chamber, a cap supported over the escape opening of the aerating chamber, having on its lower surface, at the center of said opening, a conical projection; a gas jet orifice in said chamber adapted to discharge the gas toward said projection, a space bounded by curved surfaces between said cap and the body of the burner, an annular opening at the rim of the cap, and a generator near said annular opening, substantially as set forth.

6. In a kerosene gas burner, the combination of a bell shaped aerating chamber, an air inlet opening into the chamber, a cap supported over the circular escape opening of the aerating chamber, said cap having on its lower surface, at the center of said opening, a conical projection, a gas jet orifice in said chamber, a space bounded by curved surfaces between said cap and the body of the burner, an annular opening at the rim of the cap and a generator coil around the burner near said annular opening, substantially as set forth.

7. In a kerosene gas burner, the combination of an aerating chamber, a gas jet orifice within the chamber, an air inlet pipe entering the chamber beneath the jet orifice, and having its interior end covered, one or more air openings in the air pipe, a tray beneath the burner, one or more oil openings leading from the interior of the burner to the tray, a cap supported above the escape opening of the aerating chamber, an annular opening at the rim of said cap, a gas generator near said annular opening and over said tray, and a porous non-combustible substance adapted to receive oil upon the tray, substantially as shown and described.

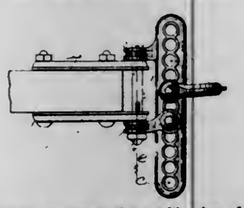
8. In a kerosene gas burner, the combination of a bell shaped aerating chamber, a gas jet orifice within the chamber, an air inlet pipe entering the chamber beneath the jet orifice, and having its interior end covered, one or more air openings in the side of the air pipe, a tray beneath the burner, one or more oil openings leading from the interior of the burner to the tray, a cap supported above the escape opening of the aerating chamber, a space bounded by curved surfaces between said cap and the body of the burner, an annular opening at the rim of the cap and a generator near said annular opening and over said tray, substantially as shown and described.

9. In a kerosene gas burner, the combination of a bell shaped aerating chamber, a gas jet orifice within the chamber, a chamber beneath said aerating chamber, adapted to receive air from the exterior and conduct it to the larger end of the aerating chamber, an air inlet pipe entering the chamber beneath the aerating chamber and beneath the jet orifice, having its interior end covered by a shield which extends beyond the circumference of the pipe, an annular opening around said shield, one or more air inlets in said air pipe beneath said shield, one or more oil escape openings leading from the interior beneath said shield to a tray upon which the burner rests, a cap supported above the escape opening of the aerating chamber, a space bounded by curved surfaces between the cap and the body of the burner, an opening at the rim of said cap, and a generator near said opening and above said tray, substantially as set forth.

10. In a kerosene gas burner, the combination of a bell shaped aerating chamber, a gas jet orifice within the chamber, a chamber beneath said aerating chamber, adapted to receive air from the exterior and conduct it to the large end of the aerating chamber, an air inlet pipe entering the chamber beneath the aerating chamber and beneath the jet orifice, having its interior end covered by a shield, an annular opening around said shield, one or more air inlets in said air pipe, one or more oil escape openings leading from the interior to a tray upon which the burner rests, a cap supported above the circular escape opening of the aerating chamber, having on its lower surface at

said escape opening a conical projection, a space bounded by curved surfaces between said cap and the body of the burner, an annular opening at the rim of the cap, and a generator coil near said annular opening, and above said tray, substantially as set forth.

546,645. PLOW-CLEVIS. EDWARD W. KRUSE, Higginsville, Mo. Filed Apr. 30, 1894. Serial No. 509,544. (No model.)



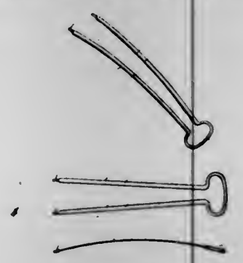
Claim.—1. In a plow clevis, the combination of the cross clevis having the series of perforations, the lug, and the clip, said clip being adjustable upon said clevis and having the offset, substantially as and for the purpose described.

2. The herein-described plow clevis attachment, the same consisting of the cross clevis having the perforations, the lug, the adjustable clip, and the clevis-jaws bolt, substantially as described.

3. The combination of a plow beam, a pair of perforated clevis jaws attached thereto, and extending far enough out beyond the end of said plow beam to permit a clip to be pivoted between them on their bolt; a cross clevis C containing the perforations *c*, and provided with a lug D formed integral therewith, near one end thereof, and perforated at *d*; an independent adjustable clip having one end connected to the cross clevis by a bolt passing through one of the perforations *c*, and perforated at the other end for the passage of the clevis-jaws bolt; a clevis jaws bolt passing through perforations in said clevis jaws, and through said adjustable clip and said lug D and thus connecting the cross clevis to the clevis jaws, and means for detachably securing the clevis-jaw bolt in position.

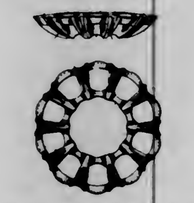
DESIGNS.

24,677. HAT-PIN. CLARENCE E. DE LUE, Boston, Mass. Filed July 22, 1895. Serial No. 556,834. Term of patent 3½ years.



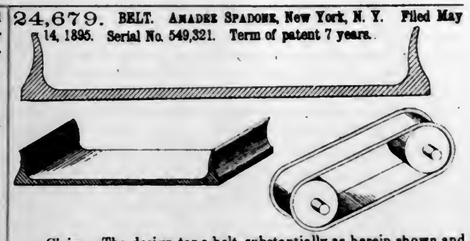
Claim.—The design for hat pins as herein shown and described.

24,678. CLUSTER-SETTING FOR GEMS. MILTON K. OPPENHEIMER, New York, N. Y. Filed June 27, 1895. Serial No. 554,272. Term of patent 14 years.



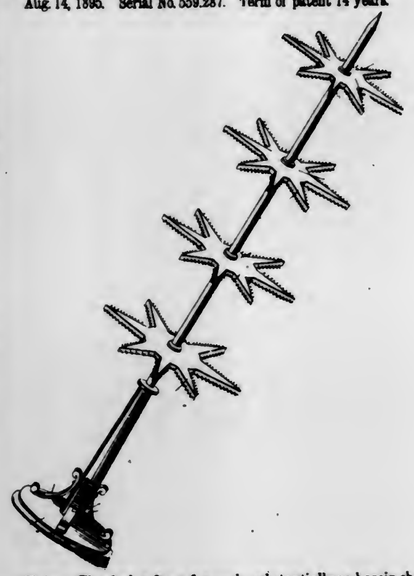
Claim.—The design for a cluster setting for gems, substantially as shown and described.

24,679. BELT. AMADEE SPADONE, New York, N. Y. Filed May 14, 1895. Serial No. 549,321. Term of patent 7 years.



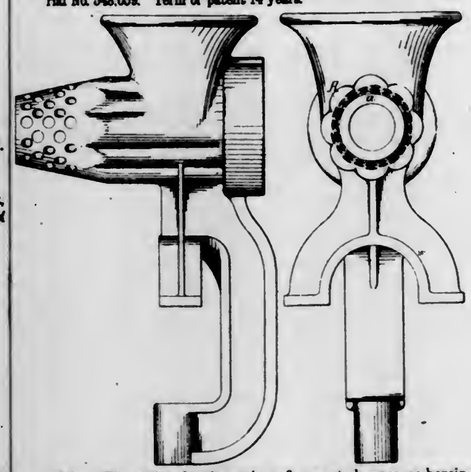
Claim.—The design for a belt, substantially as herein shown and described.

24,680. FAN-RACK. ALEXANDER H. DAVIDON, Athens, Ga. Filed Aug. 14, 1895. Serial No. 559,287. Term of patent 14 years.



Claim.—The design for a fan-rack, substantially as herein shown and described.

24,681. FRAME OR CASING FOR MEAT-CHOPPERS. JOHN WILSON BROWN, JR., Philadelphia, Pa., assignor to the Enterprise Manufacturing Company of Pennsylvania, same place. Filed May 3, 1895. Serial No. 548,059. Term of patent 14 years.



Claim.—The design for the casing of a meat chopper, as herein described and as shown in the accompanying drawings.

24,682. HANDLE-BRACKET. JAMES I. FLANAGEN, Philadelphia, Pa. Filed Aug. 13, 1895. Serial No. 559,190. Term of patent 7 years.



Claim.—The design for a handle-bracket, substantially as described and shown.

24,683. FONT OF TYPE. WILLIAM P. QUENTELL, Kansas City, Mo., assignor to the American Type Founders Company, Newark, N. J. Filed Feb. 9, 1895. Serial No. 537,836. Term of patent 7 years.

ABCDEFGHIJKLMNOPQRSTUVWXYZ

abcdefghijklmnopqrstuvwxyz

Claim.—The design for a font of type as herein described and as shown in the accompanying typographical impression.

24,684. FONT OF TYPE. CHARLES H. BEELER, Jr., Philadelphia, Pa., assignor to the American Type Founders Company, Newark, N. J. Filed Dec. 22, 1893. Serial No. 494,468. Term of patent 7 years.

ABCDEFGHIJKLMNOPQRS

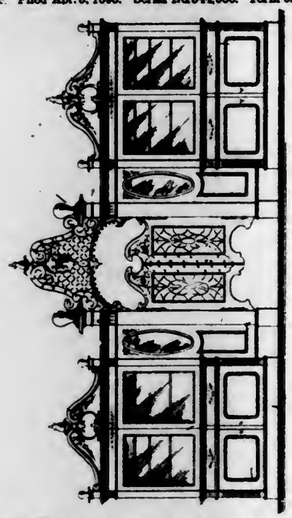
TUVWXYZ

abcdefghijklmnopqrstuvwxyz

1234567890

Claim.—The design for a font of type as herein described and shown in the accompanying typographical impression.

24,685. MAIN ENTRANCE FOR BAR-ROOMS. EDWIN RINGOLD, Cincinnati, Ohio, assignor to the Brunswick-Balke-Collender Company, of Ohio. Filed Apr. 5, 1895. Serial No. 544,680. Term of patent 7 years.



Claim.—1. The herein described and shown design for the portal of a bar-room main entrance, the characteristic features of which are the posts *a*, *a*, having the fancy top portions *b*, *b*; the open-work member *g*, spanning the space between the upper portions of the post members; and the short door members *f*, *f*, substantially as set forth.

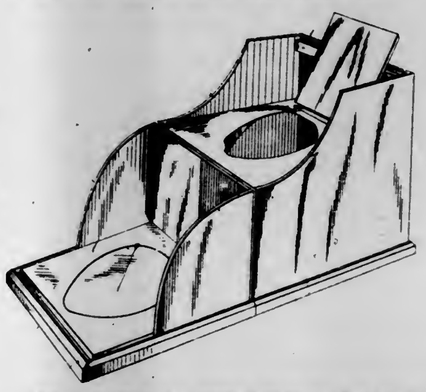
2. The herein shown and described design of the partition-like portion of the bar-room main entrance, the characteristic features of which are the members C, C, having oval glasses at *e*, *e*; and the cabinets D, D; all arranged as set forth.

24,686. COTTON-BALE. WILLIAM EMMET ANDERSON, Washington, D. C. Filed Jan. 7, 1895. Serial No. 534,142. Term of patent 14 years.



Claim.—The design for a cotton bale herein shown and described, the same being of a cylindrical shape with flat ends, with edges slightly rounded and with annular grooves or constrictions on the walls thereof.

24,687. COMMODE. CHARLES R. HANMAN, Springfield, Ohio. Filed Feb. 21, 1895. Serial No. 539,285. Term of patent 7 years.



Claim.—The design for a commode herein shown and described.

24,688. BISCUIT. HENRY D. PERRY, Boston, Mass. Filed Aug. 2, 1895. Serial No. 558,026. Term of patent 14 years.

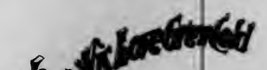


Claim.—The design for a biscuit, substantially as herein shown and described.

TRADE-MARKS

REGISTERED SEPTEMBER 17, 1895.

27,066. PRINTED MUSIC AND SONGS AND WORKS OF FICTION. LAURA JEAN LIBBEY, Brooklyn and New York, N. Y. Filed Aug. 20, 1895.



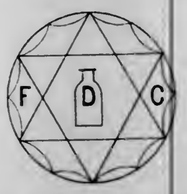
Essential feature.—The words "WHEN HIS LOVE GREW COLD." Used since June 25, 1895.

27,067. TANNED HIDES AND SKINS. ERNST L. C. SCHULZ, Boston, Mass. Filed Aug. 5, 1895.



Essential feature.—An outline representation of a building displayed upon the stretched hide of an animal. Used since August 1 1895.

27,068. DANDRUFF CURE. CUMMINS H. FOLKNER, Murray, Iowa. Filed Aug. 16, 1895.



Essential feature.—The figure of a six-pointed star formed by the intersection of two equal-angled triangles, the letters "F D C," and the picture of a bottle. Used since July 16, 1895.

27,069. COUGH DROPS. R. B. STILES' SONS, Norristown, Pa. Filed Aug. 15, 1895.



Essential feature.—A figure representing a typical witch having the appearance of traveling through the air. Used since August 1, 1895.

27,070. WHEAT-FLOUR. REGINA FLOUR MILL COMPANY, St. Louis, Mo. Filed Feb. 28, 1895.

REGINA

Essential feature.—The word "REGINA." Used since February 2, 1885.

27,071. LEAF-LARD. JACOB DOLD PACKING COMPANY, Wichita, Kans., Buffalo, N. Y., Harrisburg, Pa., and Kansas City, Mo. Filed Aug. 19, 1893.

WHITE CLOVER

Essential feature.—The words "WHITE CLOVER." Used since May 1, 1892.

27,072. TEA. BERRY, HALL & CO, Burlington, Vt. Filed July 17, 1895.



Essential feature.—The words "GOLD STAR CHOP" and the representation of a star. Used since August, 1890.

27,073. MINERAL WATER. C. W. MANSFIELD & Co., Greenville, Ala. Filed July 19, 1895.

M. M. W.

Essential feature.—The letters "M. M. W." Used since June 1, 1894.

27,074. WHISKY. JOHN HENRY QUELL, New York, N. Y. Filed July 30, 1895.

John F. Chamberlin

Essential feature.—The name "JOHN F. CHAMBERLIN" in facsimile autograph. Used since March 5, 1895.

27,075. CIGARS. WILLIAM SEELENFREUND, Lincoln, Nebr. Filed July 18, 1895.



Essential feature.—The figures and word "16 TO 1" and a semicircle of roses and medals partially inclosing them. Used since May 1, 1895.

27,076. DYES. WILLIAM EDGE & SONS, LIMITED, Bolton, England. Filed Aug. 19, 1895.

'DOLLY'

Essential feature.—The word "DOLLY." Used since February, 1893.

27,077. LAUNDRY BLUE. WILLIAM EDGE & SONS, LIMITED, Bolton, England. Filed Aug. 19, 1895.

DOLLY

Essential feature.—The word "DOLLY." Used since November, 1886.

27,078. OILS. A. C. BRAGONIER & Co., Baltimore, Md. Filed Aug. 6, 1895.



Essential feature.—The letters "A" and "C" intwined and bearing the representation of an insect bee thereon. Used since August 1, 1895.

27,079. GLASS AND PAINTS. EDWARD FROHLICH, Detroit, Mich., and Toledo, Ohio. Filed May 24, 1895.



Essential feature.—The words "THE MAGNET FIRM," together with a representation of a horseshoe-maguet and a number of queer people and tradesmen. Used since April 15, 1895.

27,080. BURNERS FOR LAMPS, LANTERNS, OIL-STOVES, AND KINDRED ARTICLES. THE AMERICAN BURNER COMPANY, Providence, R. I. Filed Aug. 23, 1895.

EAGLE

Essential feature.—The word "EAGLE." Used since May 27, 1895.

27,081. ROOFING-SLATE. ROBERT B. PRITCHARD, Middle Granville, N. Y. Filed Feb. 4, 1895.

EAGLE



Essential feature.—An eagle represented by word or symbol. Used since September, 1886.

27,082. BICYCLES. INDIANA BICYCLE COMPANY, Indianapolis, Ind. Filed June 6, 1895.

Waverley

Essential feature.—The word "WAVERLEY." Used since October, 1892.

ANDREW B. GRAHAM PHOTO-LITHOGRAPHER. WASHINGTON, D. C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE BLUMER AND SCHLAGENHAUFER.

Decided June 15, 1895.

1. PROCESS OF MAKING YEAST—OMITTING A STEP—PATENTABILITY.
The change in a process of making yeast, the chief feature of the improvement consisting in treating grains of cereals whole or only slightly broken instead of reducing them to small fragments, *Held* to be invention. (*Lawther* v. *Hamilton*, 42 O. G., 487; 124 U. S., 1, wherein the step of "grinding" was omitted, discussed, and followed.)

2. SAME—ALKALI TREATMENT—PATENTABILITY.
Claims which depend for novelty over the references upon treating a starch extract from which yeast is made with an alkali *Held* to be patentable.

3. SAME—DIFFERENT TEMPERATURE—PATENTABILITY.
Where it appears that certain advantages arise from treating a starch extract from which yeast is being made at a higher temperature than has been done heretofore and the claims including this feature are otherwise limited, *Held* that they may be allowed.

APPEAL from the Examiners in-Chief.

METHOD OF MAKING YEAST.

Application of Jacob Blumer and Charles Schlagenhaufer filed June 8, 1892, No. 435,959.

Messrs. Dyer & Seely and *Messrs. Dyer & Driscoll* for the applicants.

SEYMOUR, *Commissioner:*

This is an appeal from the decision of the Examiners-in-Chief affirming the action of the Primary Examiner in denying the following claims:

1. The method of making yeast, which consists in extracting soluble substances from whole or only slightly-broken grains of cereals or other starch-bearing materials in a suitable liquid, and at a temperature which leaves the starch substantially intact, separating the extract from the solid material, fermenting the extract, thereby forming yeast, and separating the yeast, substantially as described.

2. The method of making yeast, which consists in extracting soluble substances from whole or only slightly-broken grains of cereals or other starch-bearing materials in a suitable liquid, and at a temperature which leaves the starch substantially intact, separating the extract from the solid material, sterilizing the extract, separating the coaguluin therefrom, fermenting the clear liquid, thereby forming yeast, and separating the yeast, substantially as described.

3. The method of making yeast, which consists in extracting soluble substances from cereals or other starch-bearing materials in a suitable liquid, and at a temperature which leaves the starch substantially intact, separating the extract from the solid material, sterilizing the extract, treating it with an alkali, separating the precipitates from the extract, fermenting the clear liquid, thereby forming yeast, and separating the yeast, substantially as described.

4. The method of making yeast, which consists in extracting soluble substances from cereals or other starch-bearing materials in a suitable liquid, and at a temperature which leaves the starch substantially intact, separating the extract from the solid material, treating it with an alkali, separating the precipitate from the extract, fermenting the clear liquid, thereby forming yeast, and separating the yeast, substantially as described.

5. The method of making yeast, which consists in extracting soluble substances from unmalted starch-bearing materials at a temperature higher than 50° centigrade, but leaving the starch substantially intact, separating such extract from the solid material, treating it with an alkali, separating the precipitate and fermenting the clear wort, thereby forming yeast, and separating the yeast, substantially as described.

6. The method of making yeast, which consists in extracting soluble substances from unmalted starch-bearing materials at a temperature higher than 50° centigrade, but leaving the starch substantially intact, separating such extract from the solid material, sterilizing the extract and treating it with an alkali, separating the precipitates and fermenting the clear wort, thereby forming yeast, and separating the yeast, substantially as described.

The references are patent to Blumer and Schlagenhaufer, dated May 17, 1892, No. 474,943; French patent No. 7, 80, dated September 7, 1852, to Dubus; German patent No. 39,144, dated August 24, 1886, to Fricker; "Fermentation," Schutzenberger, pp. 163, 164, 165; "Science of Brewing," Morritz and Morris, pp. 95, 97; "Malzbereitung und Bierfabrikation," Thausing, pp. 127, etc.; "Industrial Chemistry," Payen, pp. 760, 761, 762.

The invention relates to the growth of yeast in an extract containing the waste products from the manufacture of starch out of corn or other cereals. The special problem undertaken by the appellants was to utilize the organic liquid resulting from steeping the corn in the course of manufacturing starch from corn, and yet in the preparation of this liquid to avoid carrying into it any of the starch. Before the appellants devised their improved process this liquid, the soak-water of the starch factory, containing certain soluble constituents of the corn—sugar, dextrine, a part of the albuminous substances, and a part of the mineral salts—ran to waste.

The steps of the appellants' method as at first developed and as defined in their Patent No. 474,943 were, first, grinding the starch-bearing material—corn or other cereal; second, adding water and raising the temperature, but not above 50° centigrade; third, removing the extract from the crushed grain; fourth, sterilizing the extract by 60° to 130° centigrade of heat; fifth, removing the coagulate; sixth, adding a small quantity of mother-yeast and fermenting the extract, and, seventh, separating the yeast from the liquid.

It is represented in argument that the application of this method upon a considerable scale in November, 1892, showed that yeast of good quality could be produced, but that the starch product was to some extent, if not proportionably, reduced. They also learned that soluble substances could be obtained from the whole grains in sufficient quantities for the manufacture of yeast not more slowly than from the finely-crushed grains and without diminution or waste of the starch. They found that a higher temperature might be employed with the whole grains than could be employed with the finely-crushed grains

without gelatinizing the albuminous compounds. They found that a further treatment with alkali than that mentioned in their patent, where it was introduced into the second step of the process—the steeping—was necessary to complete success, in that the amount of acid formed in the extract depended on such varying conditions, the material, the temperature, the length of time that the quantity of alkali necessary to neutralize the acid could not be correctly known in advance, but only by suitable tests after the heating process.

Embodying these discoveries, the appellants' improved process—that now under consideration—consisted in steeping whole or only slightly-broken grains at a certain temperature, separating the extract from the solid material, fermenting the extract, and separating the yeast. The question is whether the change from the patented process, the chief feature of the improvement being to treat the grains whole or only slightly broken instead of reducing them to small fragments, amounts to invention. It is clear that one who should finely crush the grains as his first step could not produce the full quantity of starch and at the same time the full quantity of yeast. It is clear that by treating the grains whole or only slightly broken the appellants are able to do both. The result is important and constitutes the whole difference between commercial success and failure. The means employed are a change which is only slight, and the change is also negative in character, consisting, as it does, in omitting, in effect, the first step of the earlier process.

In the *Flaxseed-Oil Case* there was under consideration an improved process of working flaxseed in such a manner that a greater yield of oil was obtained at a saving of time and power, while also a cake of superior texture was produced. The earlier process was, first, crushing the oil-seeds between revolving rollers; second, completing the imperfect crushing by passing them under muller-stones with water added; third, stirring, moistening, and heating the crushed seed in a steam-jacketed reservoir, and, fourth, expressing the oil from the mass.

The improved process consisted in omitting the second step—the additional crushing and grinding of the muller-stones. Lawther, whose patent was there in controversy, found that the earlier process was defective on account of the overgrinding of portions of the seed and the husks by the action of the muller-stones, so as to form a pasty mass and produce an absorption of oil by the fine particles of bran. Other portions of the mass would be under-ground, forbidding the extraction of the full amount of oil. The difference which he introduced was an even breaking of the seeds without reducing any portion to a pasty condition, leaving the bran also comparatively coarse. The Circuit Court for the Eastern District of Wisconsin dismissed the bill on the ground that Lawther dispensed with one step and employed the rollers alone.

He thereby simply omitted one of the instrumentalities previously used in the first stage of treatment of the seed. This was undoubtedly a useful improvement, but it was not the invention or discovery of a new process.

In reversing this decree the Supreme Court said:

The view thus taken by the court below seems to us open to some criticism. If, as that court says, and we think rightly says, the omission of the muller-stones is a real improvement in the process of obtaining the oil from the flaxseed, if it produces more oil and better oil-cakes, and it is new and was not used before, why is it not a patentable discovery? And why is not such new method of obtaining the oil and making the oil cakes a process? There is no new machinery. The rollers are an old instrument, the mixing machinery is old, the hydraulic press is old. The only thing that is new is the mode of using and applying these old instrumentalities. And what is that but a new process? This process consists of a series of acts done to the flaxseed. It is a mode of treatment. The first part of the process is to crush the seeds between rollers. Perhaps, as this is the only breaking and crushing of the seed which is done, the rollers are required to be stronger than before; but if so, it is no less a process. (*Lawther v. Hamilton*, 42 O. G., 487; 124 U. S., 1.)

It is upon the authority of this case that I think this application presents patentable subject-matter. As in that case Lawther found, so here the appellants find that by altogether omitting one of the steps of the former process—the grinding—an improvement was effected. Like that, it was the result of careful and long-continued experiments and the application of much ingenuity.

The improved process has hitherto been treated as consisting in the omission of the first step of the earlier process—the grinding. The patent describes the grinding in the words:

The cereals are reduced to small fragments, either dry or wet, by mills, crushing-rollers, or other suitable appliances.

Between treating the cereals whole, on the one hand, and reducing them to small fragments, on the other, slight crushing might be considered to be covered by neither this application, if limited to treating the grains whole, nor by the patent, which calls for reducing the grains to small fragments. With prudence, therefore, the claims read: "Whole or only slightly-broken grains of cereals," and the application contains similar language. But if the grains are slightly broken, instead of the more minute grinding described in the appellants' patent, the suggestion is made that a mere difference in degree is presented. *The Flaxseed-Oil Case* is again in point. Lawther merely omitted the grinding and mixing under the muller-stones, but not all grinding. The horizontal rollers of the earlier process crushed, though somewhat imperfectly, the seed. While omitting the muller-stones, Lawther increased the grinding by the crushing-rollers and made it more even. There can hardly be said to be even a difference in degree in the grinding. It was in some portions of the mass not unlike that produced by Lawther's improvement. It was simply uneven. Yet Lawther's even and sufficient yet not excessive grinding in place of the imperfect grinding before his invention is the feature which characterized his improvement and for which a patent was granted and sustained.

While it is true that much or little grinding is usually within the discretion of the mechanic or operator, still where a difference results from the change such that the extraction of the solubles in corn is effected without loss of any of the contained starch, and in view of the fact that the process is worked upon organic matter, not wholly by mechanical means, and especially in view of the fact that the change in the process effects a marked gain in result, diligently sought but not before found, it is thought that the change surpasses the bounds of mere degree and was neither obvious nor within the reach of mechanical

skill, and by consequence that claims 1 and 2 are allowable.

Claims 3 and 4 depend for novelty and patentability over the references upon treating the extract with an alkali, claim 3 being limited to treating a sterilized extract. The advantage of the alkali treatment after steeping, removing the extract from the crushed grains, sterilizing the extract, and removing the coagulate, but before adding the mother-yeast and fermenting the extract, are clearly set forth in the specification. This step of the appellants is not found in the reference, unless in the use of a small amount of alkali in the steeping process. At this stage it is employed in the patent, where an acid may as well be employed, to aid in the extraction of the soluble parts. If alkali were used in steeping and the precise amount necessary to neutralize the acids afterward developed were employed, it would be unnecessary to further treat the extract with alkali after the clear extract were obtained; but since no test could indicate the precise amount of alkali which would be required in the extract to free it from acidity as early as the steeping stage of the process, and since this special alkali treatment is employed to render the extract more favorable to the growth of the yeast-cells, and not, as in the patent, to aid in the extraction of the solubles from the corn, and was found to be an advantage, it is thought that this is enough to confer patentability upon claims 3 and 4.

Claims 5 and 6 cover the features of extracting the soluble substances from unmalted starch-bearing materials at a temperature higher than 50° centigrade and treating the extract with an alkali, claim 6 having the additional feature of sterilizing the extract before treating it with alkali.

As hereinbefore stated concerning claims 3 and 4, the alkali treatment in the last step before fermentation is not found in the patent. Neither is the treatment of the material at a temperature higher than 50° centigrade found in the patent, the reference distinctly stating that the most suitable temperature at which to perform the extraction would be from 10° to 15° centigrade, and in no case must it be above 50° centigrade. It is thought that this language contains no implication that a temperature higher than 50° centigrade might be used, but rather, on the other hand, that a temperature of 50° centigrade should not be reached. The advantage arising from the treatment at the relatively high temperature is distinctly set forth, is not found in the patent, and is not negatived by any considerations apparent in the record, and as these two claims include the special alkali treatment they may be allowed.

The claims appear to be wanting in technical precision in the order of the steps, "fermenting the clear liquid, thereby forming yeast." Sowing the yeast in the liquid that it may multiply after its nature by the process of germination, thereby forming yeast, is thought to be the cause of the fermentation. The claims as they read appear to imply that the fermentation is the cause and the formation of yeast the effect. The claims should be reviewed by the Examiner before passing the case to issue.

The decision of the Examiners-in-Chief is reversed.

KIRBY *v.* MCLAUGHLIN & CO. *v.* JOHNSTON.

Decided August 21, 1895.

1. TRADE-MARK—"ELECTRIC"—"ELECTRIC LIGHT"—REGISTRABILITY.

The differences in appearance, as written or printed, in sound, and in meaning are sufficient to differentiate the words "Electric Light" from the word "Electric," and therefore the prior registration of the latter word does not bar the registration of the former words.

2. SAME—INTERFERENCE—MOTION TO DISSOLVE.

A trade-mark consisting of the words "Electric Light" alone and another trade-mark consisting of these words accompanied by the representation of the upper part of an electric-light bulb with zigzag rays emanating from it conflict, the words being the "prominent, essential, and vital feature" of the marks, and a motion to dissolve the interference denied.

APPEAL on motion.

TRADE MARK FOR FLOUR.

Application for registration filed by John B. Kirby November 30, 1894. Application for registration filed by McLaughlin & Co. November 7, 1894. Trade-mark registered to Willis Johnston June 12, 1894, No. 24,861.

Mr. J. J. Sheehy for Kirby and McLaughlin & Co.
Mr. E. J. Underwood for Johnston.

FISHER, *Acting Commissioner:*

This is an appeal by Johnston from the decision of the Examiner of Trade-Marks dissolving the interference upon the ground of no interference in fact. The appeal also states error in the decision of the Examiner that the words "Electric Light" are not entitled to registration in view of the prior registration of the word "Electric."

In disposing of this appeal I find it expedient to first consider the suggestion of the Examiner that the phrase "Electric Light" is not entitled to registration in view of the prior registration of the word "Electric." The word "Electric" has been applied to various classes of merchandise as a trade-mark. It is a generic name denoting quality, though generally not of the goods themselves. As applied, for example to flour, it is purely arbitrary, and yet it might be considered remotely suggestive of improvement, modern processes, or that the goods are endowed with qualities which impart energy and activity. It is not intended by these suggestions to state the purpose of the application of this word to flour, but simply to enumerate some of the effects that might be created in the mind of the purchaser by the presence of the mark. The term "Electric Light" designates a concrete thing—an article in general use representing the latest development of illumination.

I think that the differences in appearance, as written or printed, the differences in sound, and the differences in meaning are sufficient to differentiate the words "Electric Light" from the word "Electric," and, therefore, that the prior registration of the word "Electric" does not bar the registration of the term in question.

The words "Electric Light" alone form the subject-matter of McLaughlin & Co.'s application. The registrant, Johnston, states in his registration, No. 24,861, that his—

trade-mark consists of the words "Electric Light;"

but afterward states that the essential features are—

the words "Electric Light" and the representation of the upper part of an electric-light bulb with zigzag rays emanating from it.

The difference between the two statements was created by an amendment consequent upon a rejection of this trade-mark in view of the prior registration of the word "Electric" for flour by Kufeke, No. 14,398, May 17, 1887. The application of Kirby presents identically the same mark in its essential features as the registration of Johnston and is very nearly identical in its details.

It is argued that the words "Electric Light" alone do not conflict with the words "Electric Light" accompanied by the representation of the upper part of an electric-light bulb with zigzag rays emanating from it. The device of this trade-mark is said to represent the upper part of an electric-light bulb with zigzag rays emanating from it; but, as shown, the device is the usual symbol representing a light-giving body and is, in fact, more applicable to a representation of the sun, for it does not accurately illustrate the upper part of an electric light bulb. The rays have an arbitrary character which is universally used to designate rays of electric light or force. These rays are a familiar feature of advertisements of electric brushes, belts, and other articles, and have been so generally used that they are associated in the minds of the public with any term bearing the qualification of the word "electric." The symbol then bears the relation to the words of the ordinary well-known and arbitrary suggestion conveyed by its customary use.

Moreover, the marks of Kirby and Johnston are of the most common kind—that is, words associated with symbols. A mark of this character is impressed upon the memory not only through the sense of sight, but also, and in a larger measure, through the sense of hearing. The word becomes, in the language of the Court of Appeals of New York, "a short phrase between the buyer and seller." In ordering either orally or by letter the purchaser would commonly use the words alone, and this of itself is strongly indicative of what is really the essential feature of the mark. The case of *Filley* v. *Fassett* (44 Mo., 168; 100 Am. Dec., 275; A. & E. Enc. of Law, vol. 26, 432, note, topic, "Trade-Marks") is instructive in this connection. In that case the plaintiff owned a trade-mark for a stove, consisting of the words "Charter Oak," surrounded by a sprig of oak-leaves. Defendant sold other stoves, using the same words as a mark, but without the sprig of leaves. The Court said:

The plaintiff's stoves are not conspicuously known by the particular device which surrounded the name upon them, but by the name itself. By that name the stove was bought and sold, and known in the western and southern markets. It was the prominent, essential, and vital feature of the plaintiff's trade-mark.

It is held, therefore, that in the marks of Kirby and Johnston the words "Electric Light" dominate the symbol accompanying them and are to the eye the essential feature, and that there can be no doubt but that the flour would be bought and sold under the name given by the words. The words then must be held to be the "prominent, essential, and vital feature" of the marks, and there is an interference in fact.

The decision of the Examiner of Trade-Marks is therefore reversed, and the interference will proceed upon the issue as drawn.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court of Appeals—Second Circuit.

KILMER MANUFACTURING COMPANY *v.* GRISWOLD *et al.*

Decided April 23, 1895.

1. KILMER—BALE-TIES—INVALID.

Claim 2 of the patent to Irving A. Kilmer, No. 372,375, issued August 14, 1883, examined in view of the state of the art and *Held* void for want of patentable novelty.

2. PATENTABLE NOVELTY—LACK OF—SIMILARITY OF FUNCTION.

While complainant's bale-tie is much simpler than the anticipating device and is applicable to all sizes of bale-ties, while the latter could probably be used to advantage only with "dimension" bale-ties, still the anticipating device shows the addition of a gripping action to a wedging action, and that, too, in a clasp for bale-ties, and not only might be made to accomplish the functions performed by the patent in suit, but was designed by its maker and adapted and actually used for the performance of such functions.

3. APPEAL—INTERLOCUTORY DECREE—INJUNCTION.

As the decree of the circuit court was not final, *Held* that the only appeal which could be considered is from so much of such decree as grants an injunction.

APPEAL from the Circuit Court of the United States for the Northern District of New York.

STATEMENT OF THE CASE.

This was a bill by the Kilmer Manufacturing Company against J. W. Griswold and F. B. Griswold for alleged infringement of Patents Nos. 282,991 and 372,375, issued to Irving A. Kilmer August 14, 1883, and November 1, 1887, respectively, for improvements in adjustable bale-ties. Upon the hearing complainant's contention was confined to the second claim of each patent. The circuit court held that the second claim of No. 282,991 was invalid and that the second claim of No. 372,375 was valid and had been infringed by defendants, and decreed an accounting and an injunction restraining them from future infringement. (68 O. G., 415; 62 Fed. Rep., 119.) From this interlocutory decree both parties have appealed.

Before WALLACE, LACOMBE, and SHIPMAN, Judges.

Mr. W. H. Singleton and *Mr. S. A. Duncan* for the complainant.

Mr. Edwin H. Brown for the defendants.

LACOMBE, *J.*:

Inasmuch as the decree of the circuit court is not final, the only appeal which can be considered is from so much of such decree as grants an injunction. The bale-tie of No. 282,991, as complainant contends, possessed the following characteristics: first, a band made of wire; second, a clasp made of wire and of larger gage than that of the band and presenting a rounded bearing-surface to the band-wire; third, a pinching-angle in the wire clasp, formed by bending the wire composing the clasp into the form of a **V**, having an apex smaller than the diameter of the band-wire; fourth, such a union between the band-wire and the clasp that the pull upon the band arising from the expansive force of the bale will operate to hold the sides of the pinching-angle from spreading under the wedging action of the free end of the band.

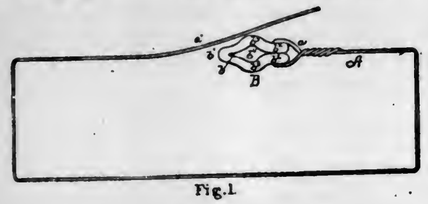


Fig. 1.

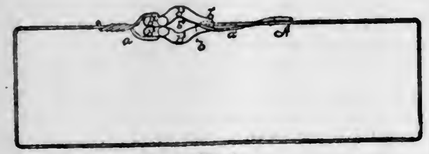


Fig. 2.

It is manifest that the tendency of a wire forced down into the angle of the **V** is to spread the arms of

the **V** apart. This is overcome in the patent by prolonging the arms and inclining them inward until they touch each other, thus forming, approximately, a diamond-shaped aperture, into one corner of which the loose end is forced, and then placing an eye or loop at the extremity of each arm, through which the clasp end of the wire is passed and made fast. Whenever expansion of the bale forces the loose end of the wire deeper down into the angle, the same expansion draws the two eyes tighter together, and thus prevents any spreading of the arms of the **V**. The circumstance that the clasp is made of wire very much stouter and stronger than the band-wire prevents the elongation of the diamond-shaped aperture and any consequent drawing together of the sides which form the **V**-shaped angle. Patent No. 372,375 declares that—

This invention is an improvement upon United States Patent No. 282,991. In this patent [meaning No. 282,991] the band has a clasp made of wire much larger than that of which the band is made. This clasp has an angle in which the loose end of the wire of the band is caught and bound when the bale expands. In this patented device [still referring to No. 282,991] the ends of the clasp are close together where the clasp is secured to the band, and hence, when the bale expands, the clasp maintains its normal position.

Fig. 1.

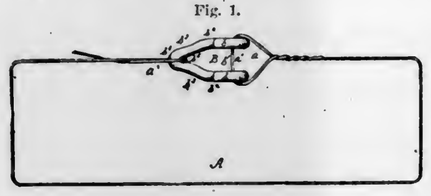
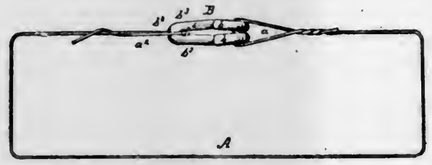


Fig. 2.



Then follows a description of the drawings, the essential feature of which is the clasp B.

Substantially a V-shaped piece of * * * wire, the ends *b* of which surround the [loose end of the bale-wire when placed in the angle of the V] and are spread some distance apart, * * * and not in contact, as in the patent [No. 282,991] referred to.

The arms of the clasp form the angle b^5. The patent proceeds:

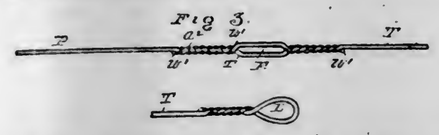
In use, after the bale is compressed, the band is placed about it, and the end a^2 is inserted into the angle b^5 and twisted about itself. The bale, being released, expands, tightening on the band. This causes the sides b^2 to come toward each other until the ends *b* contact. The result is that the wire A is not simply held in the angle by being pulled therein, as shown in the patent referred to [No. 282,991], but there is a positive action of the clasp, so that the wire is not only pulled into the angle, but also the clasp is jammed against the wire, thus forming a double security against the wire being pulled out.

The claim relied on is:

2. The band A, having the clasp B, with the angle b^5 and its ends *b* apart, as set forth.

The extent of this improvement is quite clearly set forth. By reason of the circumstance that the prolongations of the arms of the **V** do not curve inward and normally contact the pressure exerted by the expansion of the bale operating to pull the wire which is rove through the eyes at the ends of the **V**-arms draws them together, so that they nip the loose end of the band-wire in the angle. Devices performing similar functions in a similar way were known in analogous arts. A sufficient illustration of these is found in the stocking-supporter of the Phelps patent, No. 301,150. It is unnecessary to discuss the effect of such prior devices. The circuit court disregarded them, holding that the fundamental idea of this patent, No. 372,375, was new as applied to bale-ties, and that, as Kilmer was the first to employ in a bale-tie a clasp which added this gripping action to the wedging action of his earlier patent, his patent disclosed a meritorious invention and should be sustained. The court, however, seems to have overlooked the patent to F. B. Griswold for a bale-tie, No. 322,442, issued July 21, 1885, nearly two years before complainant's application. The clasp of this tie is best shown in Fig. 3 of that patent, as follows:

Fig. 3.



The end P is passed through a loop at the other extremity of the bale-wire, is then turned backward, passed through the eye E, and bent under the twisted wire shown between a^2 and w'. It rests then in the V-shaped angle formed by the arms w' and T'. The pressure produced by the expansion of the bale operates to wedge the wire P into that angle, and at the same time the pull in the direction of the band-wire T elongates the eye E, and thus brings the sides of the V closer together, so as to nip the wire in the angle. Complainant's device is much simpler than this and is applicable to all sizes of bale-ties, while this Griswold device could probably be used to advantage only with what are known as "dimension" bale-ties, which are used for bales of uniform circumference. Still, this Griswold device does show the addition of a gripping action to the wedging action, and that, too, in a clasp for bale-ties. Moreover, this Griswold device is not open to the objection formulated in *Topliff* v. *Topliff* (59 O. G., 1257; 145 U. S., 156; 12 Sup. Ct., 825)—viz., that, although it might be made to accomplish the function performed by the patent in question,

it was not designed by its maker, nor adapted, nor actually used, for the performance of such functions.

The specification of the Griswold patent, No. 322,442, after describing the method of passing the end of the wire P through the loop and the eye, says:

When the parts are thus connected, and any strain is brought upon the tie-union, such strain tends to close in the side of the eye E, so as to more firmly hold the wire P in its clutch, and hence the latter need only be secured beyond the eye E by any means that will keep it where bent toward the loop L, so as to rest on the bale or against itself.

With this patent in the prior art, it is difficult to see how there could be patentable invention merely in adding a gripping action to the wedging action in a clasp which, in all its other details, was covered by the first Kilmer patent, and that addition is all that is described or claimed in this second Kilmer patent. The decree of the circuit court is reversed, with costs, and cause remitted, with instructions to decree in conformity with this opinion.

SHIPMAN, *J.*, (dissenting:)

The reason of my dissent from the conclusions of the majority of the court is as follows: The improvement in No. 372,375 consisted in the substantial separation of the elastic ends of the clasp, so that when pulled together by the expansion of the bale they would give to the clamp a gripping action. I agree with Judge Coxe that the device of the Foote patent, No. 139,899, upon which, apparently, the most reliance was placed by the defendants' experts, was not an anticipation, and for the reasons which he states. The device of the F. B. Griswold patent, No. 322,442, dated July 21, 1885, is regarded by the majority of the court as embodying the idea of closing the sides of the clamp, and thereby gripping the tie-wire in so substantial a manner as to preclude the existence of patentable invention in the device of the second claim of No. 372,375. As has been said, the improvement in this claim consisted in the separation at some distance from each other of the elastic ends of the clasp. The clamp of the F. B. Griswold patent was an eye formed by doubling the tie-wire back upon itself, twisting the two parts together, leaving an untwisted place to form the eye, and then twisting the two parts together again. At each end of the eye the wires close together and form an angle. It is true that by the strain of the expanding bale the sides of the eye are probably brought together, so as to hold more firmly the wire in its clutch, and that thus Griswold had in his mind the idea of a gripping movement. Kilmer made this idea far more available by separating the sides of the clamp, giving them loose play at the end opposite the V-shaped angle, so that the gripping action, when they were pulled together, was powerful. In my opinion Kilmer's departure from Griswold's attempt at a gripping action was sufficiently marked, substantial, and operative to constitute invention.

U. S. Circuit Court of Appeals—Second Circuit.

GEORGE L. THOMPSON MANUFACTURING COMPANY *v.* WALBRIDGE. SAME *v.* HAFF *et al.*

Decided May 28, 1895.

THOMPSON—CURLING-IRON—VOID.

Letters Patent No. 460,709, granted October 6, 1891, to George L. Thompson for an improvement in curling irons, consisting, essentially, in the shape and location of the spring between the handles, is void for want of invention.

APPEAL from the Circuit Court of the United States for the Southern District of New York.

STATEMENT OF THE CASE.

These were suits by the George L. Thompson Manufacturing Company against John H. Walbridge and against Edward F. Haff and Louis S. Coe, respectively, for infringement of Letters Patent No. 460,709, granted October 6, 1891, to George L. Thompson, for an improvement in curling-irons. The circuit court dismissed the bills. (60 Fed. Rep., 91.) Complainant appeals.

Before WALLACE, LACOMBE, and SHIPMAN, Judges.

Mr. C. Clarence Poole and *Mr. Taylor E. Brown* for the appellant.

Mr. Esek Cowen for the appellees.

SHIPMAN, *J.*:

This invention related to a curling-iron of the class having two jaws, one of which is a solid mandrel, and the other is a clasp pivoted thereto and adapted to fit against the convex surface of the same, said jaws being each provided with a handle and being closed and held together by the action of a spring and opened by pressure of the hand upon the handles. The specification further says that the spring is placed—

between the separated shanks of the mandrel and clasp, with its bent portion adjacent to their point of pivotal connection, and is attached at its ends to the said shanks.

One end of the spring is inserted into an inclined notch cut in the inner side of the shank or handle part of the mandrel, and the other end is attached to the other shank by engagement at its end with a lip. In arranging the spring between the shanks the specification points out that—

care is taken in bending and locating the same that it will only touch the same shanks at the points where it is connected with them, which point is so remote from the jaws themselves and so far back of the pivoted point that heat is not likely to reach the spring through the shanks to an extent sufficient to impair the efficiency of the spring.

The first claim of the patent is as follows:

1. A curling-iron comprising a mandrel, a clasp pivoted thereto, said mandrel and clasp being each provided with a relatively-long outwardly-deflected shank, a plate-spring bent upon itself and secured at its ends near the rear ends of said shanks, said spring being suitably bent so as to come into contact with the said shanks only at their points of connection with the same, and handles arranged upon said shanks, substantially as described.

The second claim is in the same terms, except that it provides for wooden handles.

Judge Coxe dismissed the bills upon the ground that, in view of Letters Patent to Mark Campbell, No. 294,309, dated February 26, 1884, and to Charles H. Bissell, No. 384,418, dated June 12, 1888, the patent in suit was void for lack of invention. The Campbell device is almost exactly like the invention of the patent, but differs from it in one particular, which the appellant deems important. The inner sides of the Campbell handles were provided with grooves for the reception of the sides of the spring, and the spring was removably retained in place by frictional contact with the parts against which it bears, whereas the spring of the Thompson device is secured at its ends near the rear ends of the shanks and comes in contact with them nowhere else, and it is said that its removal from contact with the jaws prevents the spring from becoming overheated. The spring of the patent in suit is a very familiar article. A U-shaped spring fastened to the inside of the handles of a pair of scissors or of shears which did not touch the handles except at the point of contact is well known, and is seen, though not as a novelty, in divers Letters Patent. If the defect in the spring of the Campbell device or in any spring which was similarly fastened consisted in the danger of injury to it by reason of its proximity to the heated shanks, an obvious remedy was to place the spring farther from the sides of the shanks. The use of the Thompson spring rather than of the spring of the Campbell iron cannot rise to the dignity of invention.

The decrees of the circuit court are affirmed, wit costs.

THE
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United States Patent Office.
[*BY AUTHORITY OF CONGRESS.*]

VOL. 72.—No. 13. TUESDAY, SEPTEMBER 24, 1895. PRICE—$5 per year.

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Indexes to Patents on Electricity.

Indexes to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1890, have been issued, and are for sale. These indexes, arranged alphabetically, numerically, and by classes, comprise the following volumes, the prices of which are given below:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

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Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Vol. 4. Appendix No. 4, July 1, 1884, to June 30, 1885. One volume, 60 pages. In paper covers, $1.50.

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Vol. 9. Appendix No. 9, July 1, 1889, to June 30, 1890. One volume, 84 pages. In paper covers, $1.50.

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Vol. 12. Appendix No. 12, July 1, 1892 to June 30, 1893. One volume, 80 pages. In paper covers, $1.50.

Publishers' Catalogues.

This Office would be pleased to receive from manufacturers and publishers such catalogues, circulars, price-lists, or other advertisements relating to the sciences and mechanical arts as are published by them for gratuitous distribution; but notice is hereby given such manufacturers or dealers who feel disposed to send their publications that not less than three copies should be forwarded in order that the subjects may be properly indexed, classified, and subclassified in the Scientific Library for convenient and ready reference.

Amendment to the Rules of Practice.

The following regulations for the conduct of proceedings in the Patent Office are established:

65. An applicant will be considered to persist in his claim for a patent without altering his specification in case he fail to act in prosecution of the same for six months after the Office action thereon, and thereupon the Examiner will make a re-examination of the case

134. In appealable cases in which no limit of appeal is fixed, no appeal will be entertained by any tribunal in the Office unless taken within six months from the action which puts the case in condition for appeal, unless it be shown to the satisfaction of the Commissioner that such delay was unavoidable.

68. In every case pending before the Office more than five years, in which the record raises the presumption that there have been intentional delays in prosecution, the Examiner may require the applicant to show cause why the case was not more rapidly prosecuted, and at the hearing thereon, or upon failure of the applicant to appear, the Examiner will determine, under all the circumstances of the case, whether there have been intentional and unreasonable delays in prosecution, and upon finding the fact to be so, he will reject the case for that reason. Present Rules 65, 69, and 134 are repealed, and present Rule 68 is renumbered 69.

The foregoing rules will be in effect on and after April 15, 1895, and will affect pending cases as though the last Office action were upon said date.

Price of Printed Copies of Patents.

Attention is called to the fact that under date of May 14, 1891, the price of uncertified printed copies of patents was fixed at the *uniform price of ten cents each*, whether purchased singly or in quantities.

Notice.

All solicitors, agents, or attorneys who, in circulars or advertisements or otherwise, refer to the Commissioner of Patents, or to any other official of the Patent Office, for evidence of their professional standing, do so without authority.

Notice.

On the 9th day of February, 1893, the President approved "An act to establish a Court of Appeals for the District of Columbia, and for other purposes," which contains the following:

Sec. 9. That the determination of appeals from the decision of the Commissioner of Patents, now vested in the general term of the Supreme Court of the District of Columbia, in pursuance of the provisions of section seven hundred and eighty of the Revised Statutes of the United States, relating to the District of Columbia, shall hereafter be and the same is hereby vested in the court of appeals created by this act; and in addition, any party aggrieved by the decision of the Commissioner of Patents in any interference case may appeal therefrom to said court of appeals.

Sec. 17. That all acts and parts of acts inconsistent herewith are hereby repealed.

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below:

INDEX TO FRENCH PATENTS, 1791 to 1879, inclusive, (subject-matter,) one volume, 935 pages, bound in cloth $10 00

INDEX TO ITALIAN PATENTS, 1848 to May 1, 1884, (subject-matter,) one volume, 120 pages—

Bound half-turkey	2 50
Bound in cloth	1 25
Paper covers	1 00

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Patents	335—No. 546,646 to No. 546,980,	inclusive.
Designs	32—No. 24,689 to No. 24,720,	inclusive.
Trade-Marks	21—No. 27,083 to No. 27,103,	inclusive.
Labels	None.	
Prints	None.	
Reissues	None.	
Total issue	388	

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Bermuda	1	.....	Norway	.....	.....
Brazil	.....	.....	Portugal	.....	.....
Canada	4	.....	Queensland	.....	.....
Chile, Republic of	.....	.....	Roumania	.....	.....
Colombia	.....	.....	Russia	1	.....
Cuba	.....	.....	Scotland	1	.....
Denmark	1	.....	South African Republic	.....	.....
Ecuador	.....	.....	South Australia	.....	.....
Egypt	.....	.....	Spain	.....	.....
England	14	2	Sweden	.....	.....
Finland	.....	.....	Switzerland	.....	.....
France	10	.....	Victoria	.....	.....
Germany	12	.....	West Australia	.....	.....
Guatemala	.....	.....			
Ireland	.....	.....			
Isle of Jersey	.....	.....			
Italy	.....	.....	Total to citizens of foreign countries	47	3

APPLICATIONS UNDER EXAMINATION.

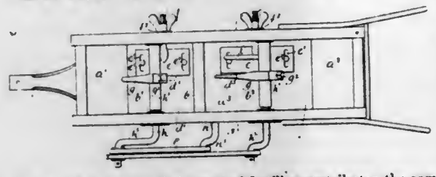
Condition at Close of Business September 17, 1895.

Division No.	Subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears.—Under one month.			
15	Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Aug. 19	Sept. 16	78
31	Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	Aug. 17	Sept. 14	84
11	Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	Aug. 19	Sept. 13	147
34	Railway Brakes, Draft Appliances, and Rolling-Stock.	Aug. 17	Sept. 11	117
4	Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Sept. 7	Sept. 9	66
12	Mechanical Engineering, Stores-Service, etc.	Aug. 20	Sept. 9	125
13	Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Aug. 24	Sept. 7	65
3	Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	Aug. 17	Sept. 7	106
8	Furniture, Beds, Store Furniture, etc.	Aug. 19	Sept. 5	236
15	Telegraphy, Telephony, Electric Lighting and Signaling.	Aug. 17	Sept. 5	104
14	Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	Aug. 19	Sept. 3	89
29	Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Aug. 19	Sept. 3	103
21	Textiles, etc.	Aug. 17	Sept. 3	113
25	Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone-Working, Vegetable Cutters and Crushers.	Aug. 18	Aug. 31	111
27	Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Aug. 19	Aug. 30	153
17	Paper-Manufactures and Printing.	Aug. 17	Aug. 27	123
10	Carriages and Wagons	Aug. 17	Aug. 26	189
33	Instruments of Precision, Acoustics, etc.	Aug. 19	Aug. 24	119
1	Tillage and Fences	Aug. 19	Aug. 24	252
6	Chemistry, Explosives, Medicines, Fertilizers, Preserving, Photography, Sugar and Salt, Surgery.	Aug. 20	Aug. 23	193
18	Steam-Engineering, etc.	Aug. 17	Aug. 23	106
2	Farm Stock, Products, etc	Aug. 19	Aug. 21	184
22	Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Aug. 17	Aug. 20	145
26	Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Aug. 17	Aug. 17	159
28	Pneumatics, Refrigeration, Air and Gas Engines, etc.	Aug. 17	Aug. 17	190
	Between one and two months.			
5	Fine Arts, Stationery, Book-Binding, Music, etc.	Aug. 12	Sept. 5	165
20	Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	Aug. 14	Sept. 3	124
9	Hydraulics, Fire-Extinguishers, etc.	July 20	Aug. 27	304
32	Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels, etc.	Aug. 10	Aug. 17	281
19	Stoves and Furnaces	Aug. 7	Aug. 15	292
7	Harvesters, Games and Toys, and Velocipedes.	Aug. 6	Aug. 12	651
30	Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, Optics.	Aug. 7	Aug. 7	302
24	Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	July 20	July 30	241
	Total number of applications awaiting action			5,717
	Under one month in arrears.			
	Designs	Aug. 30	Sept. 7	89
	Trade-Marks	Sept. 11	Sept. 14	21

PATENTS

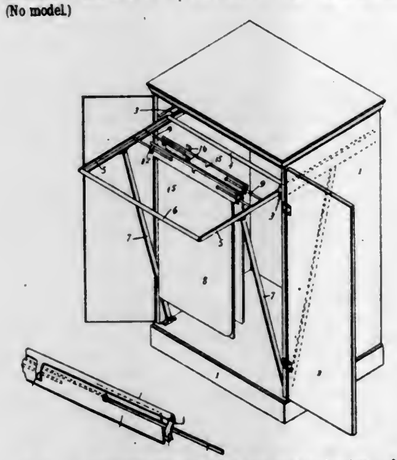
GRANTED SEPTEMBER 24, 1895.

546,646. COMBINED PLANTER AND FERTILIZER-DISTRIBUTER. WILLIAM H. BAKER, Stilesborough, Ga. Filed Nov. 11, 1893. Serial No. 490,647. (No model.)



Claim.—In a combined planter and fertilizer distributer, the combination of the two-compartment hopper, the vertical conical chute depending from the bottom of the fertilizer-compartment, the inclined chute depending from the bottom of the seed-compartment, the coverer arranged in rear of the seed-chute and carried by said hopper, the covering wheel upon which the hopper is supported, arranged intermediately of said chutes, the distributers or stirrers arranged in vertical alignment with said chutes and carried by reciprocating crank-shafts, the fingers of said distributers reaching into the fertilizer and seed dropping openings or slots in the bottom of hopper, said crank-shafts being connected together by a rod and actuated by a pitman connected to the forward one of said crank-shafts and a crank-extension of the covering wheel shaft, the opener-plow with its standard adapted to permit the fertilizer-chute to pass therethrough, and itself having a pin and slot connection with said standard, and the regulating slides arranged over the seed and fertilizer dropping openings in the hopper, and having slots receiving pins projecting from the bottom of said hopper, and screw-threaded spindles secured to said slides and fitted with thumb-nuts, having therein annular grooves engaged by plates fixed to said hopper, substantially as set forth.

546,647. APPARATUS FOR HOLDING DRAWINGS. WILLIAM H. BARNES, Rochester, N. Y. Filed Nov. 10, 1894. Serial No. 528,435. (No model.)



Claim.—1. The combination with the casing having a door or doors, of the rectangular frame open at the top and upon the sides of which drawings may be hung and inspected, the supporting and guiding bars pivoted at one end within the casing and pivoted at the other to the sides of the frame, and guides between the frame and casing for guiding said frame when moved in or out of the casing, the whole arranged and operating substantially as described.

2. The combination with the casing, having suitable doors, of the frame open at the top, and movable in and out of the casing, guides between the rear portion of the frame, and the casing, supporting arms pivoted in the casing, and to the frame, and drawing supports having arms resting on the sides of the open frame, substantially as described.

3. The combination with the casing having doors, the frame open at the top, having the notched side bars, of supports for the frame, and the guides for the rear end thereof extending above the level of the frame when extended, and retaining devices for holding said frame within the casing, with the rear end elevated, substantially as described.

4. The combination with the open supporting frame, of the drawing support embodying a plate, having the perforations, and the projection thereon, the securing and supporting arm, having the bent end passing through the perforation in the plate, and also cooperating with the projection to support the plate on the frame, substantially as described.

5. The herein described clip for holding drawings, &c., composed of the plate having the perforations and the projections, the cooperating cover-plate also having the perforations, and the securing and supporting arms having the bent ends passing through the perforations in the plates and also cooperating with the projections and extending beyond the plates, substantially as described.

6. The herein described clip for holding drawings, &c., composed of the two plates having perforations, and the arms having the bent end passing through said plates for holding them together, and extending beyond the ends thereof to form supports, substantially as described.

546,648. SAP-BUCKET. CHARLES BOUTON, Hudson, Ohio, assignor to the G. H. Grimm Manufacturing Company, same place. Filed Jan 28, 1895. Serial No. 536,503. (No model.)



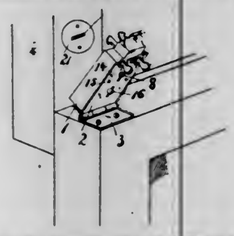
Claim.—1. The combination of a sap bucket, with a frame pivoted thereto, and a cover pivoted to and adapted to turn in said frame substantially as and for the purpose specified.

2. The combination of a sap bucket, with a curved wire pivoted near its middle to the bucket, and a cover pivotally connected at opposite points to the ends of said wire, substantially as and for the purpose specified.

3. The combination of a sap bucket, with a curved wire pivoted near its middle to the side of the bucket and having inwardly turned ends, and a cover having in its edge at opposite points holes which receive said inwardly turned ends of the wire, substantially as and for the purpose specified.

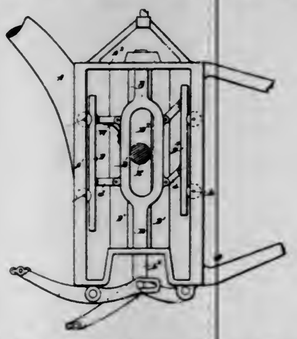
546,649. SASH-FASTENER. ANN E. BRAY, Los Gatos, Cal. Filed Feb. 21, 1895. Serial No. 539,256. (No model.)

Claim.—1. In a sash lock the combination of the casing 1 hinged to the lower sash and twin spring actuated jaws 7 bent at right angles at their outer ends and pivoted to said casing, knobs 19 engaging with said jaws and sliding key-operated plate 11 adapted to engage and prevent the movement of said knobs substantially as set forth.



2. In a sash lock the combination of a casing 1 hinged to the lower sash and spring actuated twin jaws 7 bent at right angles at their outer ends and pivoted to said casing and adapted to be operated by the knobs 19, and sliding key operated plate 11 capable of movement into engagement with said knobs, and a secondary key 17 for the purpose of operating said locking jaws substantially for the purpose specified.

546,650. **FRICTIONAL DRIVING MECHANISM.** CHARLES H. BROWN, Jackson, Mich. Filed Feb. 9, 1894. Serial No. 499,582. (No model.)



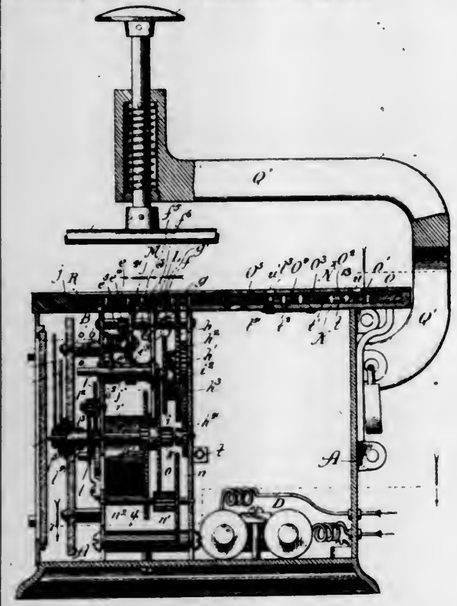
Claim.—1. In a mechanism for transmitting rectilinear motion to rotary motion, the combination with a frame, of a plunger having two opposite frictional contact surfaces adapted to reciprocate in said frame, a shaft adapted to be rotated by alternate contact with said opposite frictional contact surfaces, links engaging with said plunger and means engaging said links whereby said opposite frictional contact surfaces are alternately forced to engage with said shaft, and means to reciprocate said plunger, substantially as described.

2. In a mechanism for transmitting rectilinear motion to rotary motion, the combination of a reciprocating plunger having two opposite frictional contact surfaces, a shaft adapted to be rotated by alternate contact with said opposite frictional contact surfaces, toggle links adapted to alternately cause said friction surfaces to contact with said shaft, and means to reciprocate said plunger, substantially as and for the purpose described.

546,651. **TIME-STAMP.** JACOB J. BURKHARDT, Chicago, Ill. Filed Sept. 29, 1894. Serial No. 524,457. (No model.)

Claim.—1. In a time-stamp, the combination with the printing rings and a motor-actuated train of gears operatively connected with said rings to bring to the point of stamping the type thereon corresponding with divisions of time, of a spring-controlled oscillatory releasing lever carrying an armature and having a bifurcated end provided with stops *s* and *s'*, the shaft *m'* carrying a pinion *m* meshing with a toothed-wheel *n* on a shaft n^3 in said train a spur s^2 on the shaft *m'* normally engaged at each half-revolution of its shaft by one or the other of said stops to restrain the motor of said train, and an electro-magnet arranged to be included with an extraneous clock in an electric circuit successively closed and opened by the action of said extraneous clock, to oscillate the armature, substantially as described.

2. In a time-stamp, the combination with the printing rings and a motor-actuated train of gears operatively connected with said rings to bring to the point of stamping the type thereon corresponding with divisions of time, of a spring-controlled oscillatory releasing lever normally restraining the motor of said train, and an oscillatory hand-lever extending at one end into the path of said releasing lever to oscillate the latter and produce its releasing function by oscillating the hand-lever, and means for fastening said hand-lever against the releasing lever to lock it, substantially as described.



3. In a time-stamp, the combination with the printing rings and a motor-actuated train of gears operatively connected with said rings to bring to the point of stamping the type thereon corresponding with divisions of time, of a spring-controlled oscillatory releasing lever carrying an armature and normally restraining the motor of said train, an electro-magnet arranged to be included with an extraneous clock in an electric circuit successively closed and opened by the action of said extraneous clock, an oscillatory hand-lever bifurcated at its inner end where it embraces the adjacent end of the releasing lever, whereby oscillating said hand-lever actuates the releasing lever to produce its releasing function, and means on the outer end of said hand-lever for fastening it against and locking the releasing-lever substantially as described.

4. In a time-stamp, the combination with a time-keeping train and horizontal rotary printing rings one within the other and each carrying, at suitable intervals about its printing surface, type indicating divisions of time, said printing rings having teeth on their under sides, of spring-controlled trip-levers on rock-shafts and carrying at their upper ends pivotal pawls engaging said teeth, spurs on shafts of the time-keeping train encountering and tripping said levers periodically to operate the pawls to actuate the rings, springs carrying detents to engage said teeth in opposition to the pawls, and fingers normally bearing against said springs to hold the detents in operative position and movable with the said trip-levers, substantially as described.

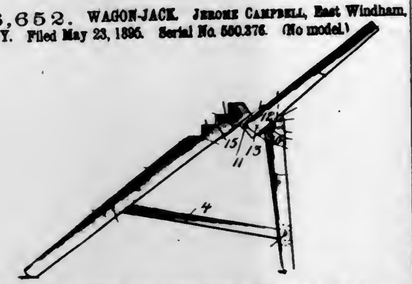
5. In a time-stamp, the combination with the case having a cover provided with an aperture through which printing is performed and containing a segmental slot provided at intervals along one side with notches, designating marks on the cover at intervals corresponding with those between said notches, a printing ring O having on part of its surface printing type corresponding with said indicating marks on the cover, and a spring-finger on said ring protruding through said segmental slot to afford means for turning it, to enter said notches and lock the ring in any position to which it is turned, and affording an index-finger, substantially as described.

6. In a time-stamp, in combination with a motor-actuated time-train provided with an oscillatory spring-controlled releasing lever normally restraining the motor, and means for periodically actuating said lever to release the motor to actuate the time-train step by step, a minute printing ring, an hour printing ring and a date printing ring, each having on one face printing type and on the other face teeth, and all being rotary and horizontally disposed one within the other, a ratchet-wheel *h* engaging the teeth of the minute printing ring and geared to the minute-wheel of the time-train, a trip-finger f^3 on the shaft of said minute-wheel, a rock-shaft *f'* carrying a spring-controlled trip-lever *f* extending at one end into the path of said trip-finger and having pivotally supported upon its opposite end a pawl L engaging the teeth of the hour printing ring, a trip-finger i^3 on *i'* of said train, and a spring-controlled trip-lever *e* on a rock-shaft *e'* and extending at one end into the path of said trip-finger i^3 and carrying at its opposite end a pivotal pawl M engaging the teeth of the date printing ring, substantially as and for the purpose set forth.

7. In a time stamp, in combination with a clock in the time-stamp case, an oscillatory spring-controlled releasing lever C normally engaging a spur s^2 in the clock-train to restrain its motor and carrying an armature D', an electro-magnet D arranged to be included with an extraneous clock in an electric circuit successively closed and opened by the action of said extraneous clock to actuate the armature, a minute printing ring, an hour printing ring, and a date printing ring horizontally disposed one within the other and rotatably supported in the case above the clock-train and each having printing type on one face and teeth on the other face, a ratchet-wheel *h* engaging the teeth of the minute printing ring and geared to the minute-wheel of the clock-train, a trip-finger f^3 on the shaft of said minute-wheel, a rock shaft *f'* carrying a spring-controlled trip-lever *f* extending at one end into the path of said trip-finger and having pivotally supported upon its opposite end a pawl L engaging the teeth of the hour printing ring, a trip-finger i^3 on a shaft *i'* of said train, and a spring-controlled trip-lever *e* on a rock-shaft *e'* and extending at one end into the path of said trip-finger i^3 and carrying at its opposite end a pivotal pawl M engaging the teeth of the date printing ring, substantially as and for the purpose set forth.

8. In a time-stamp, in combination with a clock in the time-stamp case, an oscillatory spring-controlled releasing lever C normally engaging a spur s^2 in the clock-train to restrain its motor and carrying an armature D', an electro-magnet D arranged to be included with an extraneous clock in an electric circuit successively closed and opened by the action of said extraneous clock to actuate the armature, a minute printing ring, an hour printing ring and a date printing ring each having teeth on its under face, a month printing ring and a legend printing ring, said rings being horizontally disposed one within the other and rotatably supported in the case above the clock-train and each having printing type on its upper surface, a ratchet-wheel *h* engaging the teeth of the minute printing ring and geared to the minute-wheel of the clock-train, a trip-finger f^3 on the shaft of said minute-wheel, a rock-shaft *f'* carrying a spring-controlled trip-lever *f* extending at one end into the path of said trip-finger and having pivotally supported upon its opposite end a pawl L engaging the teeth of the hour printing ring, a spring f^5 carrying a detent f^4 and normally engaged by a finger f^6 movable with said trip-lever, a trip-finger i^3 on a shaft *i'* of said train, a spring-controlled trip-lever *e* on a rock-shaft *e'* and extending at one end into the path of said trip-finger i^3 and carrying at its opposite end a pivotal pawl M engaging the teeth of the date printing ring, and a spring e^4 carrying a detent e^5 and normally engaged by a finger e^6 movable with the trip-lever *e*, the whole being constructed and arranged to operate substantially as described.

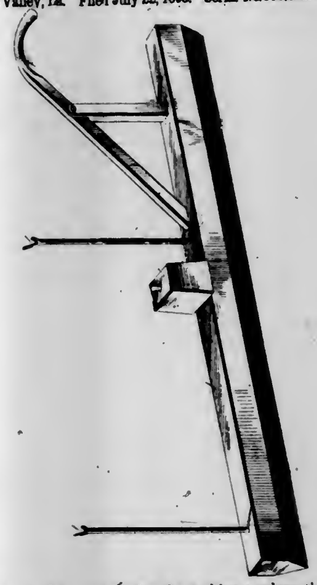
546,652. **WAGON-JACK.** JEROME CAMPBELL, East Windham, N. Y. Filed May 23, 1895. Serial No. 550,376. (No model.)



Claim.—1. A wagon jack comprising in its construction two reversely inclined standards, an operating lever having one of its ends introduced between the adjacent upper ends of said inclined standards, a strap hinge interposed between the end of the operating lever and one of said standards, and a second strap hinge interposed between said operating lever and the adjacent end of the other standard, substantially as and for the purpose specified.

2. In a wagon jack, a pair of inclined standards, in combination with a lifting lever interposed between the upper ends of said standards, a hinge interposed between said lever and one of the standards and having a shoulder bearing against said lever, and a second hinge interposed between said lever and the other standard and having a shoulder bearing upon the upper end of said standard, all arranged for joint operation substantially as and for the purpose specified.

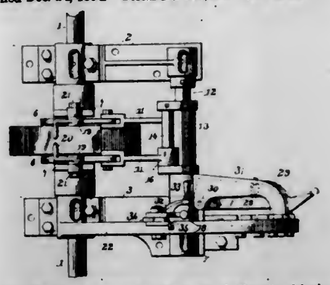
546,653. **ROW-MARKER FOR GARDENS.** GEORGE L. CARRUTHERS, Cotton Valley, La. Filed July 22, 1895. Serial No. 556,810. (No model.)



Claim.—1. In a row marker for making gardens, the body portion having a suitable operating handle, in combination with vertical standards, notched at their upper extremities to be used in leveling the device, substantially as shown and described.

2. The herein described row marker, the same consisting essentially of a body portion or timber having its lower edge sharpened, a handle at one end of said timber, the standards E, notched at their upper ends, and rising from the upper face of the timber in advance of the handle, and a post G rising from the upper face of the body portion and designed to retain in place a weight, all combined substantially as shown and for the purpose set forth.

546,654. **SAWMILL SET-WORKS.** CHARLES F. COFFIN, Eau Claire, Wis. Filed Dec. 24, 1894. Serial No. 532,834. (No model.)



Claim.—1. The combination with a set shaft, of a friction wheel fixed to the shaft, a pair of arms mounted on the shaft and depending therefrom and located at opposite sides of the friction wheel, a pair of clutch levers fulcrumed at their lower ends on the lower terminals of the depending arms and interposed between the same and the friction wheel and extending above the shaft, the shoes located at the lower ends of the levers and being rigid therewith and extending inward therefrom and arranged on the outer periphery of the friction wheel, and mechanism connected with the upper ends of the levers, whereby the shoes are caused to engage the friction wheel alternately to produce a continuous forward rotation of the same, substantially as described.

2. In set-works for saw-mills, the combination with a set shaft, of a friction wheel fixed to the shaft, a pair of depending oscillating arms mounted on the shaft and provided with upward extensions, the clutch levers fulcrumed on the depending arms and provided with shoes for engaging the friction wheel, means for operating the levers, and eccentrics mounted on the extensions of the arms and arranged to engage the clutch levers, whereby the shoes are held out of engagement with the wheel, substantially as described.

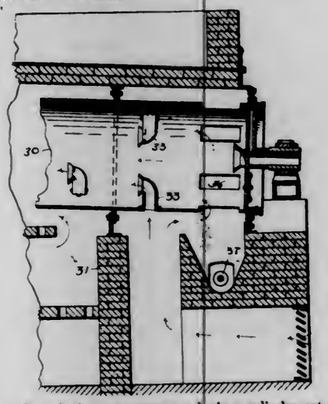
3. In set-works for saw mills, the combination of an arch or ratchet, a set lever, an adjustable stop for limiting the forward swing of the set lever, an eccentric stop arranged to limit the rearward swing of the same and having a centrally pivoted disk provided with a scale, and an indicator mounted on the arch or ratchet adjacent to the scale, substantially as described.

4. In set-works for saw mills, the combination with a set lever, of an arch or ratchet provided with a curved groove, a curved bar detachably clamped in the groove and provided with adjustable teeth or stops, and a swinging stop for limiting the forward movement of the lever, said swinging stop being provided with means for detachably engaging the teeth or stops of the curved bar, substantially as described.

5. In set-works for saw mills, the combination with a set lever, of an arch or ratchet provided with a curved groove, a curved bar arranged in the groove, rectangular collars mounted on the curved bar and arranged in the groove and provided at their inner sides with openings, screws for clamping the bar to the segment, whereby the collars are retained in their adjustment, and a swinging stop provided with a device for engaging the collars, substantially as described.

6. An arch or ratchet designed for use in set-works for saw mills, and provided with a curved groove, a detachably curved bar arranged in the groove and provided with adjustable teeth or stops, and means for clamping the curved bar in the groove, whereby the teeth or stops are secured in their adjustment, substantially as described.

546,655. MECHANICAL DRIER. FRANKLIN D. CUMMER, Cleveland, Ohio, assignor to Eliza F. Cummer, same place. Filed Aug. 7, 1895. Serial No. 558,490. (No model.)



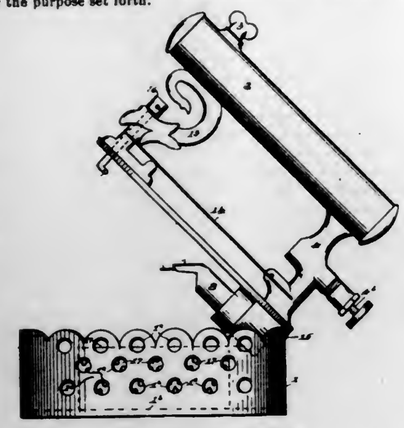
Claim.—1. In a drying apparatus, a drying cylinder set within the walls of a furnace and having a series of hooded inlet openings between its ends through which the products of combustion enter said cylinder, a conveyer for the dried material outside of the rear wall of the furnace and drying chamber, and an opening in the said cylinder outside the said wall discharging into said conveyer, substantially as set forth.

2. The drier substantially as set forth, comprising the furnace, the drying cylinder having a series of hooded openings entering the same, and a portion of said cylinder projecting beyond the rear wall of the furnace and drying chamber, a conveyer for the dried material at the rear end of said cylinder, and a close cover over said conveyer and the rear exposed end of the cylinder outside the drying chamber, substantially as set forth.

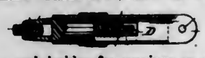
546,656. SELF-HEATING SAD-IRON. JOHN M. DORNER, Bridgeport, Conn. Filed June 17, 1895. Serial No. 552,982. (No model.)

Claim.—1. The improvement in sad irons of the character described, comprising in combination, the liquid reservoir handle 2 and means for filling the same; standard 4 having a passageway therethrough for the liquid and a regulating valve screw therefor; said passageway terminating at a chamber filled with packing having an outlet for the vapor and at which point it is ignited, combined with a downwardly projecting spreader to direct the flame against the bottom of the sad iron; a perforated shield within said spreader to break the force of air and thus protect the flame; the hollow sad iron to which the handle portion is pivoted; holes in the sides of said iron for the admission of air; a cover for said iron integral with rear standard; and means for locking the cover to the iron, as set forth.

2. In a sad iron of the character described, comprising in combination the handle reservoir hinged to the hollow sad iron; cover therefor; burner, spreader, and perforated flame protector, as shown; and a perforated shield within the iron to prevent the flame passing through the air holes in the sides of said iron, all as described and for the purpose set forth.



546,657. ANTIRATTLER FOR WINDOWS. EDWARD J. DONOVAN, Boston, Mass. Filed Feb. 27, 1895. Serial No. 539,922. (No model.)



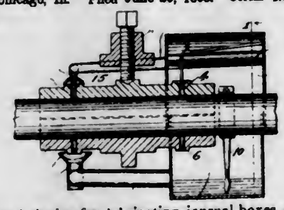
Claim.—In a sash holder for carriage or other vehicle windows in combination the tube G provided with the end K and the stop F with the binder M arranged thereon and the holder B having the arm D with a rectangular slot E in which said stop F is arranged with a spring H arranged around said arm D as shown and the roller A upon the shaft C arranged in the holder B all substantially as shown and described.

546,658. NAPKIN-HOLDER. ANNA DORNITZER, New York, N. Y. Filed May 24, 1895. Serial No. 550,474. (No model.)



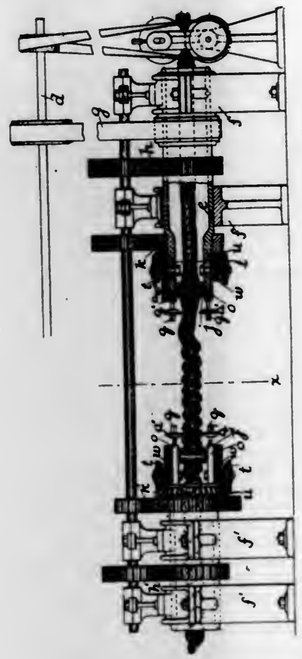
Claim.—A napkin holder, comprising a spring ring A, open at one side, a slide C, mounted on each side thereof and provided with outwardly directed shoulders D, a convex plate spring F, arranged between said shoulders, a flat spring E, having one end pivoted between said shoulders and inwardly directed side flanges G, provided with serrated edges on the free end thereof, said spring E, being curved to conform to the contour of the ring, substantially as shown and described.

546,659. DEVICE FOR LUBRICATING JOURNAL-BOXES. FRANK FERR, Chicago, Ill. Filed June 29, 1895. Serial No. 554,513. (No model.)



Claim.—A device for lubricating journal boxes, consisting of a casing adapted to hold oil secured to said journal box at one end thereof, devices secured in the upper portion of said casing adapted to receive oil and deliver the same to different openings in said journal box, a brush secured to the shaft and revolving within said casing adapted to feed oil to said receiving devices, and a device secured to said casing adapted to receive oil dripping from said journal box and lead same back to said casing consisting of a tube having its free end beneath an opening in said journal box and opening at its other end into said casing, substantially as described.

546,660. FIBER-CURLING APPARATUS. SAMUEL A. FLOWER and WILLIAM S. RHOADES, Newark, N. J. Filed July 10, 1894. Serial No. 517,084. (No model.)



Claim.—1. In a fiber curling machine, the combination of two drawing and twisting heads placed in line and fronting each other means for rotating both in the same direction, rolls carried by said heads and means for driving the rolls receiving the fiber at a greater speed than the rolls of the other head, substantially as described.

2. In a fiber curling machine, the combination of two drawing and twisting heads provided with rolls, said heads being placed in line and fronting each other, means for gearing them together for uniform speed in the same direction, and means for causing the rolls of the head receiving the fibers to revolve at higher speed than the rolls of the other head substantially as described.

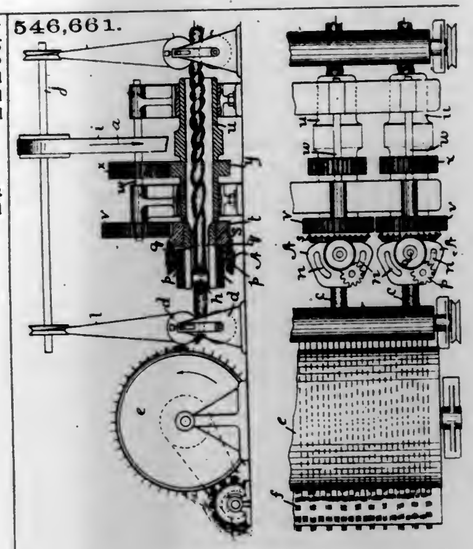
3. A drawing and twisting head provided with rolls mounted and adjustable in arcs of circles, driving wheels for said rolls located in the axis on which the rolls are adjustable, and geared with the respective rolls at their opposite ends respectively, said driving wheels having suitable means of actuating them substantially as described.

4. A drawing and twisting head provided with rolls mounted and adjustable in arcs of circles, and an adjusting screw and push rods at each end of the rolls adapted for adjusting both rolls in one direction by said screw, with opposing adjusting screws for each roll substantially as described.

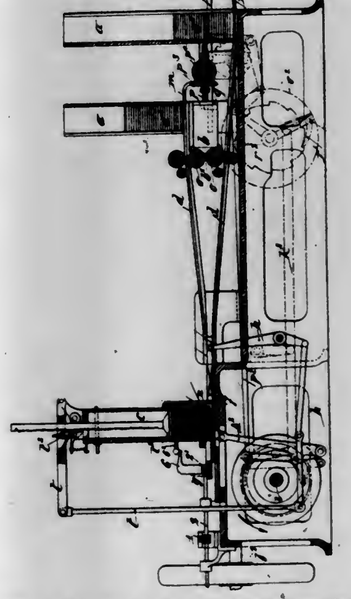
546,661. MACHINE FOR UNTWISTING AND PICKING ROPES OF CURLED FIBER. SAMUEL A. FLOWER, Newark, N. J. Filed Oct. 23, 1894. Serial No. 526,704. (No model.)

Claim.—The combination of untwisting apparatus for roped fibers, consisting of one or more drawing and twisting heads having rolls *h* for holding the ropes for untwisting, and being geared for feeding them along, feed rolls *b*, for delivering the roped fibers thereto, and holding them for untwisting, feed rolls *d*, for receiving the untwisted ropes from the drawing and twisting heads, and a picker for picking the fibers apart substantially as described.

546,661.



546,662. MACHINE FOR MAKING SANDWICHES. SEVERIN A. GAGÉ, Paris, France. Filed Mar. 30, 1892. Serial No. 427,016. (No model.) Patented in France Aug. 10, 1891, No. 215,429.



Claim.—1. In a machine for making sandwiches, the combination of bread hoppers, a meat container, butter spreading devices adapted to butter the bread received from said bread hoppers and a carrier for conveying the meat from said meat container and interposing it between the slices of bread, substantially as described.

2. In a machine for making sandwiches, the combination of bread hoppers, a meat container, a suitably operated carrier plate therefor, feeding devices for advancing the bread from said bread hoppers to the meat container and butter feeding rolls interposed between said bread hoppers and meat container, substantially as described.

3. In a machine for making sandwiches, the combination of bread hoppers, a meat container, a suitably operated knife therefor, a carrier plate to receive the meat from said knife and feeding devices for advancing the bread from said bread hoppers to each side of the carrier plate, substantially as described.

4. In a machine for making sandwiches, the combination of bread hoppers, a meat container, a suitably operated carrier plate and knife therefor, feeding devices for advancing the bread from said bread hoppers to the meat container, and butter feeding rolls interposed between said bread hoppers and meat container, substantially as described.

5. In a machine for making sandwiches, the combination of bread containing hoppers, suitably operated plungers therefor, guide ways communicating therewith, a grid-frame connected with said guide-ways, a suitably operated grid, and means for automatically placing meat between the slices all arranged and operated substantially as and for the purposes set forth.

6. In a machine for making sandwiches, the combination of butter rollers, means for automatically and intermittently feeding slices of bread to opposite sides thereof, a butter feeder or container for said butter rollers, a plunger for said butter container, a screw for said plunger, means connected with the screw for automatically and intermittently advancing the plunger as the slices of bread are fed to the butter rollers, whereby a plurality of slices are fed simultaneously to the butter rollers and buttered on their opposing faces, substantially as described.

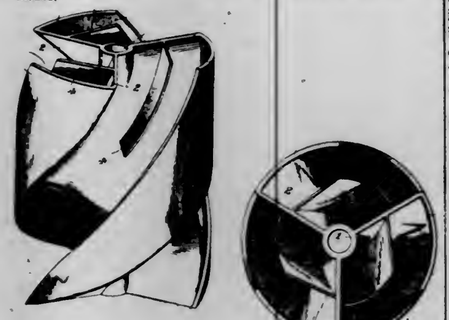
7. In a machine for making sandwiches, the combination of a meat container, a knife operating therein, means for operating said knife, a suitably operated carrier plate for discharging the cut meat and a curtain adapted to come into the path of said carrier plate in its backward movement, substantially as described.

8. In a machine for making sandwiches, the combination of pushers *m*, suitably operated rods *l* connected therewith, grid-frame *e*, guideways *d* extending from said bread containing cases to the grid-frame *e*, grid-wires *f*, cross-head *g* therefor, levers *h* for operating said cross-head, and means for operating said lever *h*, all adapted to operate substantially as described and for the purposes set forth.

9. In a machine for making sandwiches, the combination with a meat container *c*, of guide-ways *d*, knife *s*, lever *t*, rack-rod *q*, pinions *v*, cranks *x*, knife-carrier-frame *y*, shafts *z* and *i*, lever 1, curtain 5 and cam 6, all arranged substantially as and for the purposes specified.

10. The herein described machine for making sandwiches combining therein a bread feeding and buttering mechanism, mechanism for interposing a substance between the slices of bread consisting of a container *c*, knife *s*, operating therein, a carrier 4', and means for operating said knife and carrier, and a receiving tray 7 adapted to receive and discharge a completed sandwich, substantially as described.

546,663. WATER-WHEEL. MELVIN E. HASKINS and GEORGE L. EVANS, Lowell, Ark. Filed Feb. 26, 1895. Serial No. 539,736. (No model.)

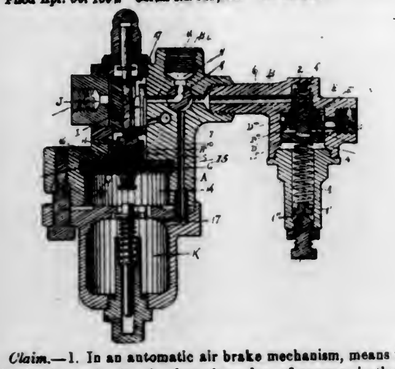




Claim.—1. A water-wheel having its wings disposed in straight radial lines and having curved flanges at their outer edges, said flanges gradually diminishing in width from the receiving to the discharging end of the wheel, and short blades carried by the wings and disposed at an intermediate point between the hub and flanges, and extending and curving in their length to correspond with the curved edges of the said flanges, substantially as set forth.

2. The herein shown and described water-wheel composed of a plurality of wings extending in straight radial lines from the hub and running spirally in the direction of their length, and having curved flanges at their outer edges which gradually diminish in width from the receiving to the discharging end of the wheel, and short blades attached to one face of the wings and occupying an intermediate position between the hub and the adjacent flanges, the outer edges of the blades terminating a short distance from the circular outline of the wheel and extending approximately parallel with the free edges of the adjacent flanges, substantially as set forth.

546,664. VALVE FOR AIR-BRAKES. SAMUEL H. HEGINBOTTOM, Saginaw, Mich., assignor of one-half to Stanford T. Crapo, same place. Filed Apr. 30, 1894. Serial No. 509,805. (No model.)



Claim.—1. In an automatic air brake mechanism, means in the engine brake mechanism for detecting a loss of pressure in the train pipe, comprising a valve located in the brake operating mechanism on the engine and between the train pipe and the engine triple valve piston chamber, with valve ports opening into the train pipe connection and the triple valve piston chamber, the valve adapted to resist a moderate reduction of pressure in the train pipe and to discharge air into the train pipe when its resistance has been overcome by the pressure in the piston chamber.

2. In an automatic air brake system, means located in the brake mechanism for automatically detecting leakage in the train pipe comprising an intermediate piston valve located in the passage way leading to the train pipe from the engine triple valve chamber and adapted to allow the passage of air to the brake operating device of the engine and to prevent the backward flow thereof until the pressure of the train pipe is reduced to a certain degree, when the valve will be operated and discharge air from the brake triple valve piston into the train pipe, substantially as described.

3. In an automatic air brake system, a piston valve located in the main passage from the engine triple valve chamber to the train pipe, adapted to allow the passage of air to the brake triple valve chamber, and to resist by means of springs the backward flow of air into such passage, substantially as described.

4. In an automatic air brake mechanism a piston held to its extreme throw by a spring and a check valve arranged in the head of the said piston, the said valve held to its seat by a spring, ports leading from the side of the piston chamber to the valve seat, all in a casing located intermediate of the train pipe and the triple valve piston chamber, and having passages leading from the train pipe to the piston chamber and from the check valve chamber to the brake mechanism.

5. In a brake mechanism, the combination with the train pipe the triple valve and reservoir, of a casing containing a valve mechanism arranged intermediate of the train pipe and the valve mechanism consisting of a piston held to its extreme throw by a spring and a check valve arranged in the head of the said piston, the valve held to its seat by a spring, ports leading from the side of the piston to the valve seat, the passage in the casing leading from the train pipe to the piston chamber and through the valve chamber to the brake operating mechanism, substantially as described.

6. In an automatic air brake mechanism the combination with the train pipe, the triple valve and reservoir of the retaining valve mechanism between the train pipe and the brake operating mechanism, a triple valve chamber having large ports and the auxiliary mechanism on the triple valve piston consisting of the loose collar H having edge ports and the spring between the collar and the piston whereby the piston will be actuated by and cover the large cylinder ports when under equal pressure, substantially as described.

7. In a brake mechanism, the combination with the triple valve chamber having the long and short ports 18 and 15 respectively, of the piston, the triple valve, and the loose collar H, having edge ports 16, the spring S between the collar and the piston, separating them when under equal pressure and thereby closing the shorter ports 15, by the piston, substantially as described.

8. In an automatic air brake system, the combination with the mechanism described for filling the brake reservoir quickly, consisting of a triple valve chamber having large ports permitting the air to freely pass around the piston to the auxiliary reservoir, means for actuating the piston by and cover the large ports when the reservoir is filled, of a retaining valve between the triple valve piston and the train pipe adapted to resist the pressure from the triple valve chamber when the pressure in the train pipe is reduced.

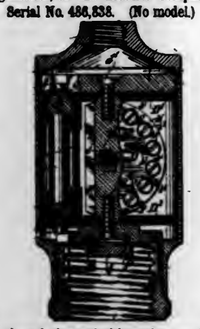
546,665. HORSESHOE-NAIL CUTTER AND CLINCHER. HENRY M. HOADLEY, Van Wert, Iowa. Filed Jan. 2, 1895. Serial No. 533,587. (No model.)



Claim.—1. In a farrier's implement, the combination with two handles the upper ends of which are crossed and connected together by a pivot pin, and provided below said pivot pin with perforated guide blocks, of two clinching jaws one of which carries a fixed clipping jaw and both of which clinching jaws are pivotally secured to the upper ends of the handles and have their lower ends reduced and slidably movable in said guide blocks, a movable clipping jaw pivoted at its upper end with the clinching jaw carrying the fixed clipping jaw, and at its lower end to the pivot pin, and a set screw passed through one of the clinching jaws above said pivot pin to adjust the movement of both jaws, substantially as and for the purpose set forth.

2. In a farrier's implement, the combination with two handles the upper ends of which are crossed and connected together by a pivot pin, and provided below said pivot pin with perforated guide blocks, of two clinching jaws one of which carries a fixed clipping jaw and both of which clinching jaws are pivotally secured to the upper ends of the handles and have their lower ends reduced and slidably movable in said guide blocks, a movable clipping jaw pivoted at its upper end with the clinching jaw carrying the fixed clipping jaw, and at its lower end to the pivot pin, said clipping jaws having cutting edges which, when closed, are within the extreme outer side of said jaws, and a set screw passed through one of the clinching jaws above said pivot pin to adjust the movement of both jaws, all substantially as and for the purposes set forth.

546,666. MEANS FOR VARYING LIGHT FOR INCANDESCENT ELECTRIC LAMPS. CHARLES A. HUBBY, New York, N. Y., assignor, by mesne assignments, to the Electric Company, same place. Filed Sept. 29, 1893. Serial No. 486,538. (No model.)

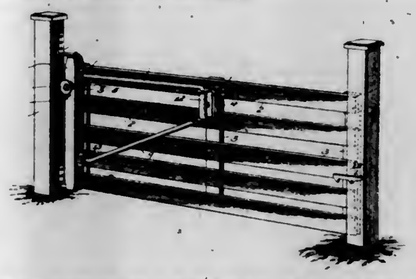


Claim.—In an electric lamp holder, the combination of a socket or receptacle, two electrodes, connections for leading in wires or conductors, two disks of non-conducting material, resistance devices in the form of rods or pencils extending between and connected to said disks, a block or plate interposed between said disks, a row of contact pieces in electrical communication with said resistance devices, and a key journaled in said plate or block and provided with a finger adapted to coact with said set of insulated contact pieces, substantially as specified.

546,667. GATE. JOSEPH H. JACKSON, Galveston, Ind. Filed May 21, 1895. Serial No. 550,110. (No model.)

Claim.—1. The combination of an upright, provided with bearing brackets, a hanger comprising a post journaled in the said bearing brackets, a horizontal rod extending from the upper portion of the post, the bracing rod and the vertical spindle connecting the rods at their outer ends, a bearing bracket mounted on said spindle and provided with a roller, a pair of rollers located at opposite sides of the post, and a sliding gate mounted on the rollers and adapted to be reversed to arrange it at either side of the hanger, substantially as described.

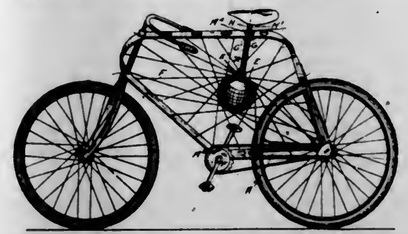
2. The combination of a hanger frame, comprising a vertical post journaled in suitable bearings, and the horizontal and inclined rods extending from the post and adjustably secured to the same, a bearing bracket journaled at the outer ends of the rods, a roller mounted on the bearing bracket, a pair of rollers mounted on said post and located at opposite sides thereof, and the reversible sliding gate mounted on said rollers, substantially as described.



3. The combination of an upright, provided with L-shaped bearing brackets, a hanger comprising a vertical post journaled in the bearing brackets, and the horizontal and inclined rods adjustably secured at their inner ends to the post, a bearing bracket mounted on the outer ends of the rods and provided with a roller, a pair of rollers mounted on the post and located at opposite sides thereof, and a sliding gate arranged on the rollers, substantially as described.

4. The combination of a hanger, provided with a post, a roller mounted on the outer end of the hanger, a pair of rollers arranged at opposite sides of the post, a reversible sliding gate mounted on the rollers, and the L-shaped arms arranged at opposite sides of the post and located beneath the rollers thereof and engaging the gate, substantially as described.

546,668. BICYCLE. WALTER JOHNSON, Denver, Colo., assignor of one-half to Charles Twist and Frederick J. Sterner, same place. Filed Dec. 27, 1894. Serial No. 533,111. (No model.)



Claim.—1. In a bicycle, the combination with an outer frame, of a smaller frame inclosed therein; spokes connecting the two frames, a seat support passing through parts of the two frames and adapted to move vertically therein, and an elastic connection between said inner frame and said seat support, substantially as described.

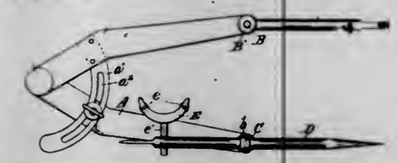
2. In a bicycle, the combination with an outer frame, of a smaller frame inclosed therein; spokes connecting the two frames, a seat support passing through parts of the two frames, and adapted to move vertically therein, and a pneumatic cushion mounted in said inner frame and supporting said seat support, substantially as described.

3. In a bicycle, the combination with an outer frame forming bearings for the guide tube, seat post and hind wheel, and slotted to admit the periphery of the hind wheel; of an inner frame inclosed within the outer frame; spokes connecting the two frames; a seat support passing through parts of the two frames, and adapted to move vertically therein; and an elastic connection between said inner frame and said seat support, substantially as described.

4. In a bicycle, the combination with an outer frame forming bearings for the guide tube, seat post and hind wheel, and slotted to admit the periphery of the hind wheel; of an inner frame inclosed within the outer frame; spokes connecting the two frames; and a seat support passing through parts of the two frames, and adapted to move vertically therein, substantially as described.

546,669. COMBINATION COMPASSES AND GLASS-CUTTER. JOSEPH KOHLER, Cincinnati, Ohio. Filed May 31, 1895. Serial No. 551,150. (No model.)

Claim.—1. In a combination compass and tram, a tram point having glass cutters mounted at and near its outer end in combination with the other tram point having a pivotally mounted yoke provided with one or more glass cutters, substantially as described and for the purposes specified.



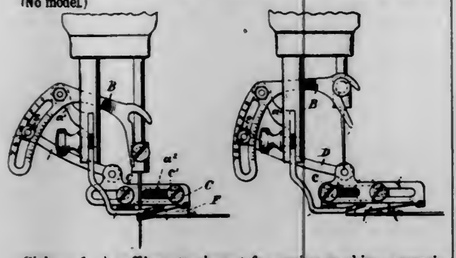
2. In a combination compass and tram, a tram point provided with a pivotally mounted yoke, in combination with the opposite tram point provided with suitable cutters, substantially as described and for the purposes specified.

3. In a combination compass and tram, tram points adjustably secured to the free ends of the compass legs and adapted to be locked in parallelism, or otherwise, one of said points having a cutter mounted upon its side and adapted to cut the inner circumference of a tube simultaneously with cutters for cutting the corresponding outer circumference thereof, said cutters being mounted in a yoke pivotally secured to the other tram point, substantially as described.

4. In a combination compass and tram, the tram points pivotally adjustable and adapted to be locked in parallelism to each other at any desired distance apart, the outer end of one tram having a suitable cutter and the outer end of the other tram having the needle point, substantially as described and for the purposes specified.

5. A pivotally mounted yoke E provided with one or more cutters *c* in combination with a compass point substantially as described and for the purposes specified.

546,670. RUFFLER FOR SEWING-MACHINES. ALEXANDER LAUBSCHER, Bridgeport, Conn., assignor to The Wheeler & Wilson Manufacturing Company, same place. Filed Feb. 1, 1895. Serial No. 537,011. (No model.)



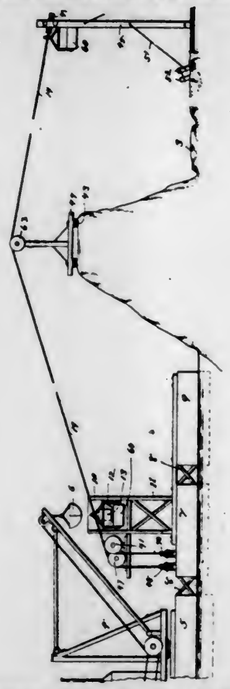
Claim.—1. A ruffling attachment for sewing machines comprising a reciprocating crimper, an operating lever forked at the end of an arm for connection with a stud upon the needle bar of the sewing machine, the lower prong of said fork having an elongated straight interior edge, and connections between the other arm of the lever and the crimper, whereby upon the downward movement of the needle bar said lever will first move the crimper forward for a predetermined distance and then, by the movement of the stud against said straight edged prong, hold the crimper stationary until the completion of the downward movement of the needle bar.

2. A ruffling attachment for sewing machines comprising a reciprocating crimper, an operating lever forked at the end of one arm for connection with a stud upon the needle bar of the sewing machine, the lower prong of said fork having an elongated straight interior edge, a link pivoted to the crimper and having an adjustable connection with the other arm of the lever whereby upon the downward movement of the needle bar said lever will first move the crimper forward for a predetermined distance to properly form and lay the crimp, and then, by the movement of the stud against said straight edged prong, hold the crimper stationary and the crimp in position until punctured by the needle in the further descent of the needle bar.

546,671. CONVEYER FOR COAL OR OTHER MATERIAL. ERNEST DU BOIS LUKIS, New Orleans, La., assignor of two-thirds to Robert J. Whann and Robert W. Tyler, same place. Filed May 31, 1895. Serial No. 551,187. (No model.)

Claim.—1. The combination of a movable float, a hopper mounted on a suitable support on the float, a portable support adapted to be placed on the shore, a sheave mounted on said portable support, a cable passed around said sheave and past the hopper on the float, two carriers connected with the cable at different points and means located on the float for moving the cable in opposite directions, substantially as specified.

2. The combination of a movable float, a hopper mounted on a suitable support on the float, a portable support adapted to be placed on the shore, a sheave mounted on said portable support, a cable passed around said sheave and past the hopper on the float, two carriers connected with the cable at different points, means located on the float for moving the cable in opposite directions, and a second counterpoise float fixedly connected with the first named float at the side of the same and movable therewith, substantially as specified.



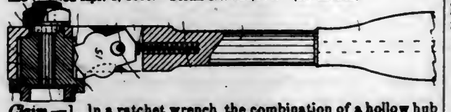
3. In a conveyer, the combination of a movable float, a hopper mounted on a suitable support on the float, an intermediate portable support adapted to be mounted on a levee, sheaves arranged on opposite sides of said support, a portable end support arranged on the opposite side of the levee support with respect to the float, a sheave mounted on said end support, a cable passed around the sheave of the end support, over the sheaves of the intermediate support and past the hopper on the float, two carriers connected with the cable at different points, and means located on the float for moving the cable in opposite directions, substantially as specified.

4. In an elevated carrier, the combination of a cable, a suitable means for moving the same, a connecting device mounted on the cable and comprising the clips having threaded ends, the plate and nuts mounted on the threaded ends of the clips, and a gripping block interposed between the plate and the ends of the clips and adapted to clamp the cable against the ends of the clips and having a transverse aperture, a hanger having a lateral branch at its upper end arranged in the transverse aperture of the gripping block and a carrier connected with the hanger, substantially as specified.

5. In an elevated carrier, the combination of a sheave mounted on a suitable support, a wheel mounted at the side of the sheave, a cable taking over the sheave, a connecting device secured on the cable, a carrier connected with the connecting device, and a lifting shoe connected with the carrier and adapted to engage the wheel at the side of the sheave as it passes over the same and thereby raise the connecting device above the sheave, substantially as specified.

6. In an elevated carrier, the combination of a cable, a suitable means for moving the same, a connecting device mounted on the cable and comprising the clips having threaded ends, the plate and nuts mounted on the threaded ends of the clips, and a gripping block interposed between the plate and the ends of the clips and adapted to clamp the cable against the ends of the clips and having a tranverse aperture, a hanger having a lateral branch at its upper end arranged in the transverse aperture of the gripping block, a carrier connected with the hanger, a sheave mounted on a suitable support and adapted to support the cable, a wheel mounted at the side of the sheave, and a lifting shoe arranged on the branch of the hanger and adapted to engage the wheel at the side of the sheave as it passes over the same and thereby raise the connecting device above the sheave, substantially as specified.

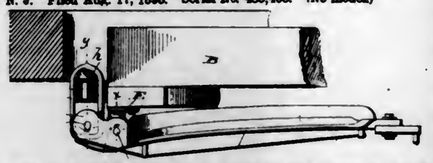
546,672. RATCHET-WRENCH. HENRY MARKEL, Spencerville, Ind. Filed Apr. 3, 1895. Serial No. 544,877. (No model.)



Claim.—1. In a ratchet wrench, the combination of a hollow hub 2 having an integral neck 1 provided at its upper extremity with a slot 13 for the holding pawl, and at its lower end with a spring-pressed supporting-pin mounted therein as shown, a rotatable ratchet 3 mounted in said hub, as described, having a toothed periphery to engage the said pawl, provided at one end with a screw-threaded shank for the holding nut, and at the other end with a flanged die-holding plate 4, a spring-pressed holding-pawl 15 pivotally mounted in said slot 13 as described, adapted for holding engagement with said ratchet, and a removable die-plate 5 mounted as shown on the front face of the rotatable ratchet, substantially as described.

2. A ratchet wrench comprising a hollow hub 2 apertured as shown, having an integral neck 1 and an external shank 6 for the fixed handle, the said neck having at its upper end a transverse slot 13 for the holding pawl and having in its lower end a central aperture 20 containing a spring-pressed pin 18 adapted to press the said pawl normally into engagement with the ratchet, a cylindrical ratchet having a toothed periphery, rotatably mounted in said hub as described, provided upon one end with a threaded shank for the securing nut, and upon the other end with means for securing the removable die, the die 5 adapted to engage a nut or burr, and having a central perforation coincident with that of the ratchet on which it is detachably mounted, and the holding-pawl 15 apertured as described, pivotally mounted in the said slot 13, provided with oblique faces upon both extremities, for the purpose specified, being vertically movable on its pivoted support, and adapted to normally engage the rotatable ratchet under the tension of the said spring-pressed pin, substantially as described.

546,673. PLATFORM-SCALE. FREDERICK F. MEYER, Newark, N. J. Filed Aug. 17, 1893. Serial No. 483,403. (No model.)



Claim.—In a platform scale, the lever having its inner end made bifurcated and having the two pivotal bearings passed through this end, the block D provided with the pintle *d*, and the recessed plate E through which the pintle passes and in which it has a turning movement, combined with the suspending link G provided with a bearing for the end pivot, the bar H, and the head or block A, placed upon the bar, substantially as shown.

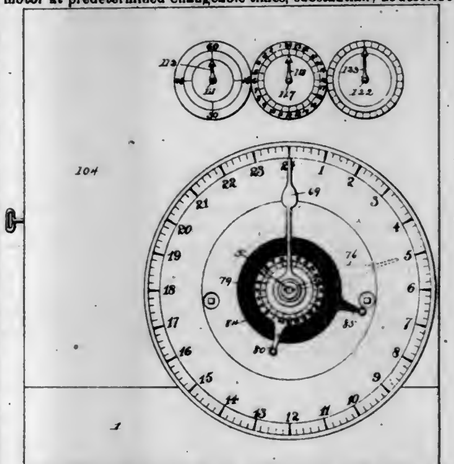
546,674. ELECTRIC TIME-SWITCH. JAMES F. MCLAUGHLIN, Philadelphia, Pa., assignor to James W. Difenderfer, same place, and Theodore H. Gehly, York, Pa. Filed Apr. 11, 1893. Serial No. 469,906. (No model.)

Claim.—1. An automatic electric time switch consisting of a rotary switch for closing and opening an electric circuit, a spring motor for rotating the switch, a lock for the switch motor, a time piece, setting mechanism controlled by the time piece and connections between the setting mechanism and switch-motor lock whereby the time piece will operate to release the switch motor at predetermined changeable times, substantially as described.

2. An automatic electric time switch consisting of a rotary switch for closing and opening an electric circuit, a spring motor for rotating the switch, trip mechanism limiting the movement of and locking the switch motor, a time piece, setting mechanism controlled by the time piece, and connections between the setting and trip mechanism, whereby the time piece will operate to release the switch motor at predetermined changeable times, substantially as described.

3. An automatic electric time switch consisting of a rotary switch for closing and opening an electric circuit, a spring motor for rotating the switch, a spring actuated trip mechanism for the switch motor, a time piece, setting mechanism controlled by the time piece and connections between the setting and trip mechanisms, whereby the time piece will operate to release the switch motor at predetermined changeable times, substantially as described.

4. An automatic electric time switch consisting of a switch for closing and opening an electric circuit, a motor for the switch, a lock for the switch motor, a spring driven striking movement for actuating the lock, a time piece, a setting mechanism controlled by the time piece, and connections between the setting mechanism and striking movement whereby the time piece will operate to release the switch motor at predetermined changeable times, substantially as described.



5. An automatic electric time switch consisting of a switch for closing and opening an electric circuit, a spring motor geared to the switch for rotating the same, a lock for the switch motor, another spring motor for actuating the lock, a time piece, setting mechanism controlled by the time piece and stop mechanism for the lock motor controlled by the setting mechanism, substantially as described.

6. An automatic electric time switch, consisting of a circuit closing and opening switch, a spring motor for the same, a lock for the switch motor, another spring motor for the lock, with its spring on the same winding arbor as the spring of the switch motor, and a time piece controlling the lock motor for releasing the switch motor at predetermined changeable times, substantially as described.

7. An automatic electric time switch, consisting essentially of a time-piece, a circuit closing and opening switch, an actuating mechanism for the same, operating both to open and to close the switch independently of the driving mechanism of the time-piece and two setting mechanisms both carried by the main or hand arbor of the time piece, and operating to release the said actuating mechanism at successive predetermined and changeable times, substantially as described.

8. An automatic electric time switch consisting essentially of a circuit closing and opening switch, a spring motor for the same, a spring driven striking movement controlling the switch-motor, with a common winding arbor to the springs of both the motor and striking movement, and a time-piece and connections for controlling the striking movement to release the switch motor at predetermined changeable times, substantially as described.

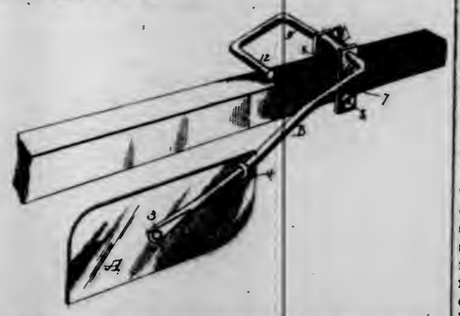
9. The combination with an automatic electric time switch, comprising a circuit closing and opening device, an actuating mechanism for the same, and a time piece controlling the said actuating mechanism at predetermined times, of a meter, and connections between the latter and the time piece, controlled by the mechanism driving the circuit closing and opening device, whereby the time piece is coupled with and actuates the meter when the circuit is closed and is uncoupled therefrom when the circuit is opened, substantially as described.

546,675. PLOW-FENDER. JAMES T. NUCKOLLS, Fort Mitchell, Ala. Filed June 25, 1895. Serial No. 554,010. (No model.)

Claim.—1. The combination with a plow beam, of a fender, the shank of which extends laterally and transversely of the beam with which it has pivotal connection, and is provided with a stop on its free end which rests on the beam to limit the depression of the fender, substantially as set forth.

2. In a plow fender, the combination with an adjustable clamp carried by the plow beam, of a fender pivoted and laterally adjustable in said clamp, a stop for regulating the downward thrust of said

fender and a sleeve provided with a set screw mounted on the fender arm whereby the latter may be locked in any desired lateral position, substantially as set forth.



3. In a plow fender, the combination with a clamp adapted to be secured to a plow beam, of a fender the shank of which is pivotally connected to the clamp, said shank having a stop formed thereon adapted to engage the plow beam to limit the downward movement of the fender, and means engaging the clamp for regulating the lateral adjustment of the fender, substantially as set forth.

546,676. TIE-HOLDER FOR COLLARS. HENRY M. O'REILLY, Almonte, Canada. Filed May 15, 1894. Serial No. 511,380. (No model.) Patented in Canada June 4, 1894. No. 46,242.



Claim.—The herein described neck-tie fastener consisting essentially of a piece of resilient or spring wire bent to form the clip E, adapted to receive and hold the head of a neck tie and having the loop *a*, the bends *b*, at the upper open end of said loop, disposed at right angles to the width of the same, and adapted to engage opposite sides of the head of a collar button and also having the legs *d*, extending downwardly from the bends *b*, and the clip F, adapted to receive the lower edge of a collar and having the bends *e*, at the lower ends of the legs *d*, disposed at right angles to the width of the loop *a*, the legs *f*, extending upwardly from the bends *e*, the bends *g*, at the upper ends of the legs *f*, extending at a slight angle to a line drawn through the legs *d*, with their inner contiguous ends at the greatest distance from such imaginary line, and the portions *h*, depending from the inner ends of the bends *g*, and the plate G, connecting the portions *h*, or the ends of the piece of wire, all substantially as and for the purpose set forth.

546,677. THREAD-TENSION DEVICE FOR LOOM-SHUTTLES. HERBERT W. OWEN, Millbury, assignor to George Draper & Sons, Hopedale, Mass. Filed Feb. 23, 1895. Serial No. 539,323. (Model.)



Claim.—1. In combination with a shuttle-frame, a supporting plate and a tension-device of wire, consisting of two coils of a plurality of members each, said coils being formed in the same direction away from a common center, and having an intermediate portion adapted to be secured to the supporting-plate, the ends of said coils being free and adapted to receive a thread, substantially as shown and described.

2. In combination with a shuttle-frame, a supporting plate and a tension-device of wire, consisting of two coils of a plurality of members each, said coils being formed in the same direction away from a common center, and having an intermediate portion adapted to be secured to the supporting-plate, the ends of said coils being free and adapted to receive a thread, the outer member of the outer of said coils being higher at its lowest point than the next adjoining member, whereby the thread may be prevented from working out of the tension device, substantially as shown and described.

3. In combination with a shuttle-frame, a supporting plate and a tension-device of wire, consisting of a middle portion, bent substantially into a U-shape adapted to be secured to the supporting-plate, and terminating in two coils, of a plurality of members each, substantially at right angles with said middle portion, said coils being formed in the same direction away from a common center, the ends of said coils being free and adapted to receive a thread, substantially as shown and described.

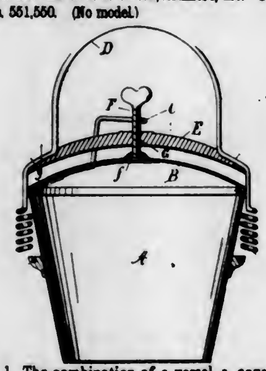
4. In combination with a shuttle frame, a supporting plate adapted to receive a tension-device and a tension-device of wire, consisting of a middle portion, bent substantially into a U-shape, and terminating in two coils of a plurality of members each, substantially at right angles with said middle portion, said coils being formed in the same direction, away from a common center, said supporting plate having a saddle piece and upward projection therefrom, and a hollow seat, whereby said tension device may be securely held in place, substantially as shown and described.

5. In combination with a shuttle-frame, a supporting-plate adapted to receive a tension-device and hold it in position, and a tension-device of wire, consisting of a middle portion, bent substantially into a U-shape, and terminating in two coils of a plurality of members each, substantially at right angles with said middle portion, said coils being formed in the same direction, away from a common center, the upper face of said supporting plate terminating in a downwardly-turned end, and having its lower surface curved, whereby the thread may be prevented from working out, and may be delivered to the tension-device, substantially as shown and described.

6. In combination with a shuttle-frame, a supporting plate and a tension-device of wire, consisting of a middle portion bent substantially into a U-shape, adapted to be secured to the supporting-plate, and terminating in two coils of a plurality of members each, substantially at right angles with said middle portion, said coils being formed in the same direction away from a common center, the ends of said coils being free, and adapted to receive a thread, and the outer member of the outer of said coils being higher at its lowest point than the next adjoining member, whereby the thread may be prevented from working out of the tension device, substantially as shown and described.

7. In combination with a shuttle-frame, a supporting plate and a tension-device of wire, substantially square in cross-section, consisting of a middle portion bent into a U-shape, adapted to be secured to the supporting-plate, and terminating in two coils of a plurality of members each, substantially at right angles with said middle portion, said coils being formed in the same direction away from a common center, the ends of said coils being free and adapted to receive a thread, whereby any enlargement in the thread will cause it to break, substantially as shown and described.

546,678. STEAM COOKING-VESSEL. CHARLES T. OWENS, Snow, assignor of one-half to S. P. Owens, Ardmore, Mo. Filed June 3, 1895. Serial No. 551,550. (No model.)



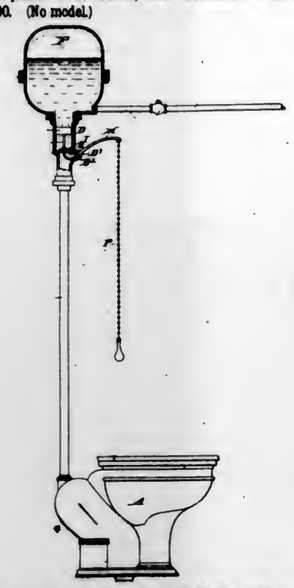
Claim.—1. The combination of a vessel, a cover fitting steam-tight, a spring bail, a cross-bar arranged above the cover and between the opposite legs of the spring bail, and a connection between the said cross-bar and the cover, bearing upon the latter at substantially its central portion, substantially as set forth.

2. The combination of a vessel, its cover, the spring bail, a cross-bar between the opposite legs of the bail and having engagement therewith, and a screw mounted in the cross-piece and having bearing upon the cover, substantially as set forth.

3. The combination of the vessel, the cover, the spring bail having in-turned portions, *d'*, a cross-bar having its ends grooved to engage with the in-turned portions of the spring bail, and a bearing piece carried by the cross-bar and adapted to engage with the cover, substantially as set forth.

4. The combination of a cooking vessel, a cover fitting the same steam-tight, the spring bail, D, having the coiled-spring portions, *d'*, and the in-turned portions adapted to overlie the edge of the cover, a cross-bar, E, and a screw, F, in the cross-bar and adapted to engage with the cover at substantially its central portion, substantially as set forth.

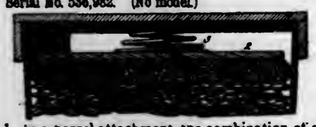
546,679. MEANS FOR FLUSHING WATER-CLOSETS. WILLIAM H. ROBINSON, New York, N. Y., assignor to himself and William Treglown, same place. Filed Dec. 21, 1893. Renewed Feb. 21, 1895. Serial No. 539,290. (No model.)



Claim.—1. In a water closet the tank E, F, having a removable top, the casting D having a truly bored cylinder larger than the valve, a valve seat D' arranged below and in line therewith, in combination with each other and with the valve I, valve stem I', and open-work piston J corresponding to the cylinder, adapted to guide the valve and to allow the easy removal of the valve from above when required, substantially as herein specified.

2. In a water closet the air-tight tank E, F, casting D, having the aperture *d*, a truly-bored cylinder larger than the valve, a valve-seat D', arranged below, in line therewith, the valve I having stem I' and open-work piston or guiding ring J matching easily within and guided by the cylinder, adapted to allow the removal of the valve and its stem from above, in combination with each other and with the operating lever M playing in the aperture *d*, all arranged for joint operation substantially as herein specified.

546,680. BARREL ATTACHMENT. WILLIAM L. ROBERTON, Chicago, Ill., assignor of one-half to Thomas C. Oakman, same place. Filed Feb. 1, 1895. Serial No. 536,982. (No model.)



Claim.—1. In a barrel attachment, the combination of a self-adjusting follower head adapted to be loosely arranged within a barrel or similar package, a stationary cross bar secured on top of the barrel or package above the follower head, an adjusting spring interposed between the cross bar and the follower head, and a cushion-bag arranged within the barrel or package directly under the follower head, said bag being adapted to evenly distribute the pressure on the contents of the barrel or package, and also to retain moisture to provide for maintaining the said contents in a moist condition, substantially as set forth.

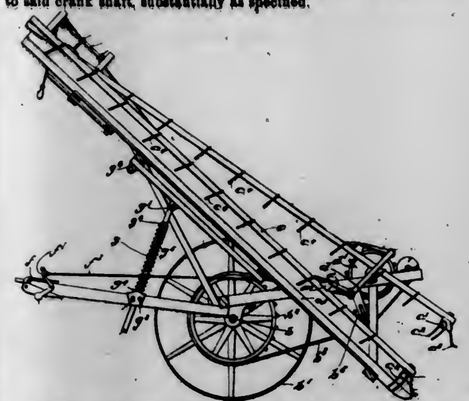
2. In a barrel attachment, the combination of an adjustable follower head adapted to be arranged within a barrel or package, and a sand bag also arranged within the barrel or package directly under the follower head, said sand bag being adapted to evenly distribute the pressure on the contents of the barrel or package, and also to retain moisture to provide for maintaining the said contents in a moist condition, substantially as set forth.

546,681. HAY-LOADER. SAMUEL T. RUSSELL, Springfield, Ohio. Filed May 28, 1894. Serial No. 512,660. (No model.)

Claim.—1. In a hay loader, a series of rake bars in combination with an inclined bed, a sliding support for said bars at one end, and a crank shaft connected to said bars at the opposite end, connecting arms between said crank shaft and said rake bars, each of said connecting arms being pivoted to one of said rake bars and provided with an extended portion to limit the movement thereof, substantially as specified.

2. The combination with a rake bar and crank shaft, as described, of an arm hinged to said crank shaft and pivotally connected to said rake bar, said arm being provided with an extended portion or foot to contact with said rake bar and thus limit the movement thereof, substantially as specified.

3. The combination with a rake bar and a crank shaft, of a hinged arm, as described, a bearing block for said hinged arm having an extended piece, and a foot on said arm adapted to contact with said bearing block, and an open bearing in the end of said arm connected to said crank shaft, substantially as specified.

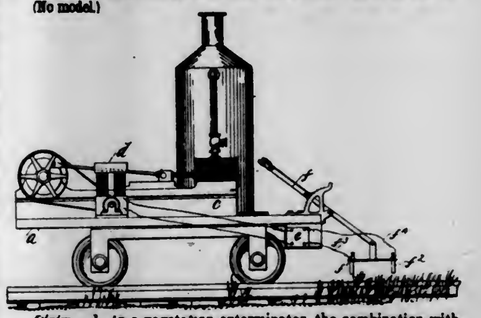


4. The combination with the crank shaft and rake bars, and a hinged arm on said crank shaft for each of said rake bars, each of said arms being pivoted to one of said rake bars and extended so as to contact with said rake bars and limit the movement thereof, bearings for said crank shaft, and a stationary rod in proximity to said crank shaft, and means as described for communicating motion to said crank shaft, substantially as specified.

5. The combination with a crank shaft and a rake bar connected thereto, a hinged arm journaled on said crank shaft and pivoted to said rake bar, said arm being extended to contact with said rake bar and limit the movement thereof, a rake head on said rake bar, a curved bar extending downwardly from said rake head to form a shoe, and means, substantially as described, for securing said shoe in different positions of adjustment to said rake head, substantially as specified.

6. The combination with a reciprocating rake bar, of a rake head connected to said rake bar, a supporting seat for said rake head, said seat being provided with an extended portion, a curved bar extending downwardly from said head to form a shoe, said bar being provided with a series of openings adapted to receive a fastening device to secure the same in different positions of adjustment, and a cap over said bar, substantially as specified.

546,682. APPARATUS FOR EXTERMINATING VEGETATION. ALBERT SCHEIBLE, Chicago, Ill. Filed Jan. 28, 1895. Serial No. 535,761. (No model.)



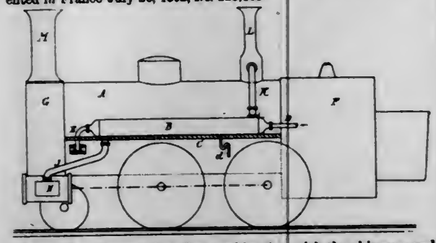
Claim.—1. In a vegetation exterminator, the combination with a source of electricity, of electrodes connected respectively with the opposite sides thereof and forming terminals adapted to be moved over the vegetation in electrical contact therewith, whereby the cur-

rent flowing from one electrode to the other is caused to pass through the stalks and roots of two sets of plants in series; substantially as described.

2. In a vegetation exterminator, the combination with a source of electricity, of electrodes connected respectively with the opposite sides thereof, and adapted to make electrical contact with the vegetation, and means for moving said electrodes closer together or farther apart to change the resistance of the path between the two electrodes through the plants, substantially as described.

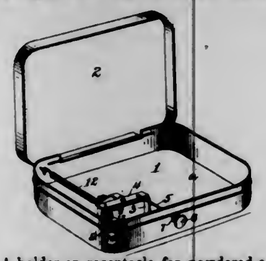
3. In a vegetation exterminator, the combination with a source of electricity, of electrodes connected respectively with the opposite sides thereof, and adapted to make electrical contact with the vegetation, said electrodes being arranged in sections, whereby the load is distributed.

546,683. **LOCOMOTIVE FEED-HEATER.** JEAN P. SERVE, Lyons, France. Filed Aug. 29, 1893. Serial No. 484,276. (No model.) Patented in France July 20, 1892, No. 223,113.



Claim.—In a locomotive, the combination with the chimney and steam cylinder, of a feed water heater communicating with the steam exhaust tube of said cylinder, and mechanical means, independent of the exhaust steam, for increasing a draft in said chimney.

546,684. **RECEPTACLE FOR PULVERIZED SOAP.** CHARLES S. STEVENSON, Washington, D. C. Filed Dec. 29, 1894. Serial No. 533,249. (No model.)

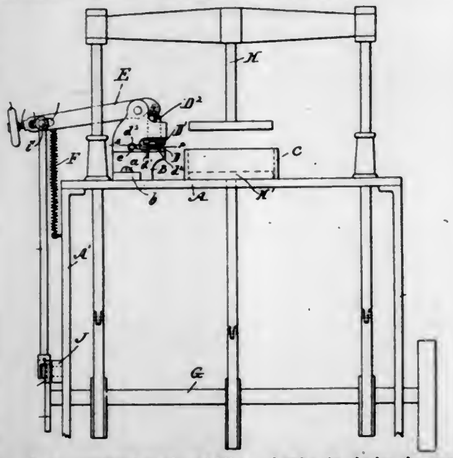


Claim.—1. A holder or receptacle for powdered or pulverized soap having a bottom provided with a peripheral flange, a cover corresponding to said bottom connected at one side to said flange, said flange having two holes or openings therein, a valve designed to be seated against one of said holes or openings, a lever fulcrumed in said holder, a rod connecting said valve to said lever, a push rod connected to the other end of said lever and extended through the other one of said holes or openings, a spring connected to said lever for normally holding said valve against said hole or opening, and a guide-bar for said valve-rod, substantially as set forth.

2. The herein described improved holder for powdered or pulverized soap consisting of a holder of elliptical form having a bottom provided with a peripheral flange, said flange having two holes or openings therein, a cover corresponding to said bottom and attached to said flange, a bracket extending from said bottom, a lever fulcrumed thereon, a valve designed to close one of said holes or openings, a rod therefor connected with one end of said lever, a push-rod connected to the other end of said lever and extended through the other one of said holes or openings, a spring connected to said lever, and the guide-bar having a notch to accommodate the said valve-rod, substantially as set forth.

546,685. **COMBINED ENVELOPE FOLDING AND EMBOSSING MACHINE.** JOHN M. TATE and GEORGE A. BRUNE, New York, N. Y.; said Brune assignor to said Tate. Filed Dec. 15, 1894. Serial No. 531,888. (No model.)

Claim.—1. In a combined envelope folding and embossing device, the combination, with an envelope folding machine which comprises a mold and plunger, and a shaft actuating the same, of an embossing press mounted upon said machine adjacent to the mold, whereby the envelope flap enters the same as the blank is fed upon the mold, a lever pivoted in the top of said press and carrying the upper die, means, substantially as shown and described, for tightening and adjusting the lower die, a cam mounted upon the shaft, a lever pivoted in engagement therewith and adapted to be raised thereby, a pitman pivoted to said lever and to the end of the operating lever of the press, means for adjusting the pivotal connection of the pitman with said operating lever, and the throw thereof, and means whereby said lever is normally depressed and the jaws of the press opened.

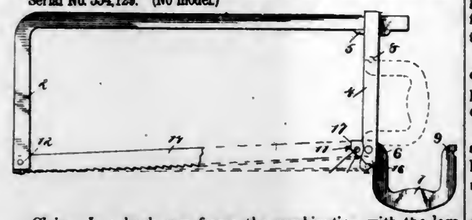


2. In a combined envelope folding and embossing device, the combination, with an envelope folding machine which comprises a mold and plunger, and a shaft actuating the same, of an embossing press mounted upon said machine, having its jaws in substantial alignment with the top of the mold, whereby the envelope flap enters the same as the blank is fed upon said mold, a lever pivoted in the top of said press and carrying the upper die of the same, a substantially elliptical cam mounted upon the end of the shaft, a lever pivoted above said shaft, having a friction-roller thereon near its free end, which bears upon said cam, a pitman pivoted to the end of said lever and to the end of the operating lever of the press, whereby they rise and fall in conjunction, a screw adapted to adjust the said pitman longitudinally upon said lever, and a spring secured to said lever and to the frame of the machine, to normally depress the same and open the jaws of the press, substantially as shown and described.

3. In a combined envelope folding and embossing device, the combination, with an envelope folding machine which comprises a mold and plunger, and a shaft actuating the same, of an embossing press mounted upon said machine adjacent to the mold, and having its jaws in substantial alignment therewith, whereby the envelope flap enters the same as the blank is fed upon the mold, a lever pivoted in the top of said press and carrying the upper die, and longitudinally slotted upon the opposite end thereof, the lower die of said press being adjustably secured therein by means of a lever pivoted upon said press, having a head thereon which bears against the same, and a screw in the opposite end thereof, bearing against the press and adapted when turned to tighten and secure said die, a substantially elliptical cam mounted upon the end of the shaft, a lever pivoted to the frame of the machine above said shaft, having a friction-roller near the opposite end thereof which rests upon the cam, whereby said lever is alternately raised and permitted to fall by the rotation of said cam, a pitman pivoted to the end of said lever and having its upper end pivotally secured to the slotted end of the operating lever of the press, a block sliding within said slotted end, projecting therethrough, and having the pitman mounted thereon, a screw journaled in the end of said lever, revolubly engaging said block, and a head or handle thereon to actuate the same to adjust said block and regulate the throw of the lever, and a spring secured to said lever and to the frame of the machine to maintain the same normally depressed and the jaws of the press open, substantially as shown and described.

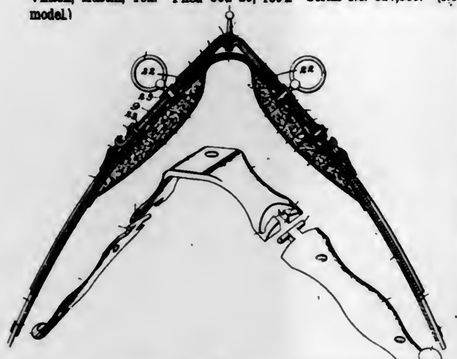
4. In an auxiliary attachment for envelope folding machines, embodying a mold, a plunger and a shaft actuating the same, an embossing press B, provided with jaws aligning substantially with the upper surface of the mold C, a block *c* having a diagonal edge, the lower die D supported against said edge, whereby it aligns with the upper edge of the envelope flap, a lever *d* pivoted on the press and bearing against the die at one end to secure said die in place, and a flat pointed screw *e* passing through the other end of the lever and bearing against the frame of the press to maintain the lever in its proper position, substantially as described.

546,686. **HANDSAW.** DAVID R. THOMAS, Baltimore, Md., assignor of one-half to James F. Heyward, same place. Filed June 26, 1895. Serial No. 554,129. (No model.)



Claim.—In a hack saw frame, the combination, with the legs thereof, the end of one of which is provided with a shoulder, of two pins projecting at substantially right angles from the end of the other leg, a handle pivotally secured to the end of the leg provided with the shoulder, the longer end of which is provided with a loop, two pins projecting from the shorter end of the handle at substantially right angles to each other, one of which is adapted to engage with the shoulder, the handle and the leg to which it is secured being at such a distance from each other that the blade may lie between them, and means for locking the long end of the handle to the leg after it has been turned upon its pivotal point with the loop intermediate the pivotal point and the back of the frame, substantially as set forth.

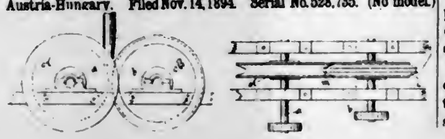
546,687. **HARNESS-SADDLE.** LIONEL J. VARGA and HOWARD A. VARGA, Austin, Tex. Filed Oct. 29, 1894. Serial No. 527,305. (No model.)



Claim.—1. In a gig saddle, the combination of the pad body, a sectional self-adjusting tree arranged on the body and comprising a V-shaped center plate having a central flattened top portion, and opposite side plates having detachable hinge connections with the opposite extremities of said center plate, separate cover leathers for the different sections of the tree, the cover leather placed on said V-shaped center plate being provided at its ends with short jockey extensions overlapping and protecting said hinge connections between the plates of the tree, and the saddle seat or cantle plate clamped on the central flattened top portion of the V-shaped center plate and on the cover leather for such plate, substantially as set forth.

2. In a gig saddle, the pad body provided in the pad piece thereof with opposite longitudinally disposed slots, longitudinally slotted metallic facing plates attached to the under face of the pad piece over the slots and provided with widened nut openings at one end of the slots, the tree arranged on the pad piece, the terrets and pad screws having their threaded shanks passed through opposite portions of the tree, the terret nuts engaging the shanks of the terrets and having a detachable connection with the pad piece of the pad body, and the pad screw nuts adapted to freely pass through the nut openings of the facing plates and having opposite flattened flanged sides adapted to engage in the longitudinal slots of said plates, substantially as set forth.

546,688. **ROTARY-DISK MOTOR.** LADISLAV VOJACEK, Prague, Austria-Hungary. Filed Nov. 14, 1894. Serial No. 528,735. (No model.)



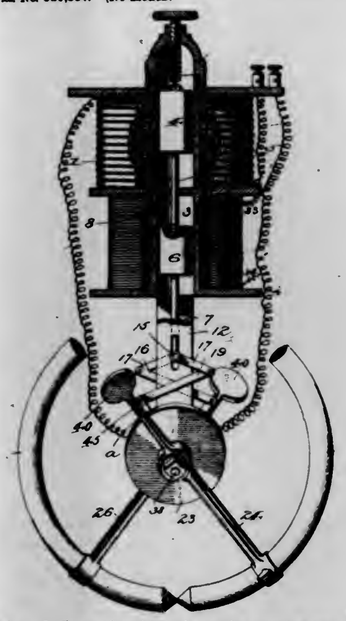
Claim.—1. In combination the two wheels having their peripheries substantially in contact and grooved and ribbed, said ribs and grooves extending circumferentially around the two wheels and the fluid jet pipe directed between the wheels to cause the motor fluid to strike the ribbed and grooved surfaces, substantially as described.

2. In combination, the two wheels having their peripheries in contact along their side edges and the intermediate portions of said peripheries having a space to receive the motor fluid and the jet pipe directed to said intermediate space, substantially as described.

3. A rotary motor comprising a pair of disks, one having a V shaped circumferential rib and the other with a V shaped groove leaving a V shaped passage between the disks, and the jet nozzle directed to the meeting points of the disks, substantially as described.

4. In combination, the two wheels having their peripheries grooved and ribbed circumferentially and fitted to each other with buckets *r* formed in the periphery of one wheel, substantially as described.

546,689. **ELECTRIC-ARC LAMP.** CONRAD WEBER, FRIEDRICH GOELLNER, and ALBERT SCHWEITZER, Allegheny, Pa. Filed Nov. 19, 1894. Serial No. 529,337. (No model.)



Claim.—1. In an electric arc lamp, the combination of two substantially circular carbons mounted to lie in diverging planes, disks mounted in planes parallel thereto, and connected to rotate with the said carbons, gripping levers adapted to engage with the said disks, and actuating mechanism for the said gripping levers, substantially as described.

2. In an electric arc lamp, the combination with a carbon controlling disk, a gripping lever co-operating with the said disk, and an electrically controlled rod, of toggle levers connecting the said rod and the gripping lever, substantially as described.

3. In an electric arc lamp, the combination with a solenoid and an armature adapted to pulsate therein, of a carbon controlling flanged disk, a gripping lever having a notch therein for the reception of the said flange, and toggle-levers connecting the said armature and the gripping lever, substantially as described.

4. In an electric arc lamp, the combination of a counter-balanced carbon holder, a disk, and a link mounted on the same journal, a gripping lever pivoted to the link, and actuating mechanism having connection with the free or outer end of the gripping lever, substantially as described.

5. In an electric arc lamp, the combination of a carbon holder, a disk, and a link mounted on the same spindle with the disk, a gripping lever pivoted to the link, and toggle levers connecting the said disk with an electrically controlled actuating rod, substantially as described.

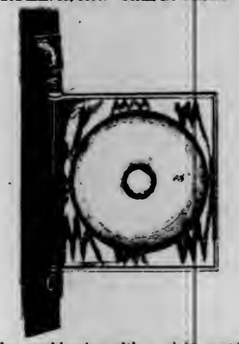
6. In an electric arc lamp, the combination of solenoids of different electrical resistance in axial alignment and one being in shunt with the other, a rod carrying an armature and which is adapted to pulsate within the solenoids, a carbon controlling disk, a lever adapted to

cooperate with the disk to actuate the same, and toggle-levers connecting the said lever with the armature carrying rod, substantially as described.

7. In an electric arc lamp, the combination with a solenoid, and armature adapted to pulsate therein, of a carbon controlling disk, a gripping lever adapted to cooperate therewith, and toggle-levers connecting the said lever and the armature, substantially as described.

8. An electric arc lamp comprising the combination of solenoids of wire of different electrical resistances in axial alignment one with the other, a non-magnetic spring-retracted armature-carrying rod adapted to pulsate within the said solenoids, curved counterbalanced carbons lying in diverging planes, carbon controlling revolving disks mounted on spindles, links loosely mounted on the disk spindles, levers adapted to grip the disks, and toggle-levers connecting the said gripping levers with the armature rod, substantially as described.

546,690. BLINDER FOR BRIDLES. Mina A. Wilson, Kansas City, Kans. Filed Mar. 18, 1895. Serial No. 542,570. (No model.)

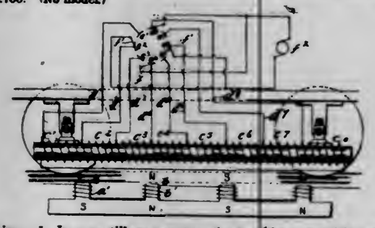


Claim.—1. The combination with a plate secured to a bridle, hinge or pivot rods carried by said plate, and a spring-actuated clutch-member carried by said rods, of a blinder pivotally mounted upon said rods and provided with a clutch-face engaged by said clutch-member, substantially as set forth.

2. The combination with a plate secured to a bridle, hinge or pivot rods detachably carried by said plate, and a spring-actuated clutch-member carried by said rods, of a blinder pivotally mounted upon said rods and provided with a clutch-face engaged by said clutch-member, substantially as set forth.

3. The combination with a plate secured to a bridle, provided at one end with a longitudinal slot, and hinge or pivot-rods, one of them secured rigidly but detachably to said plate, and the other extending through the said slot and bent at right-angles to the same to prevent accidental disconnection with the plate, of a blinder mounted to swing upon said rods, and means to secure it at the required point of adjustment, substantially as set forth.

546,691. CONTINUOUS-CURRENT RECTILINEAR MOTOR. Clinton R. Woods, Chicago, Ill., assignor, by direct and mesne assignments, to the C. R. Woods Company, same place. Filed Apr. 6, 1895. Serial No. 544,735. (No model.)

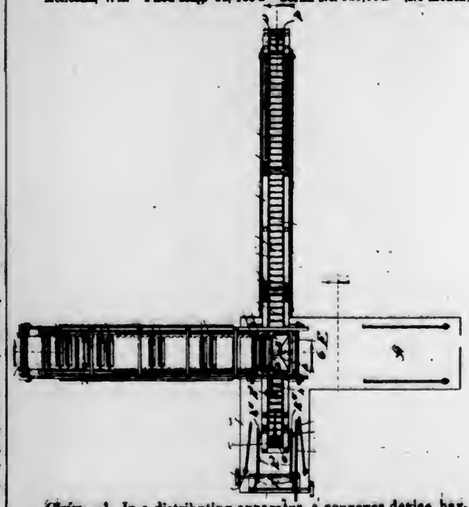


Claim.—1. In a rectilinear motor, the combination with a number of polar projections or poles of alternate polarity situated along the way or line of travel, of a magnetic core mounted upon the vehicle with its axis parallel to the line of travel, said core being wound with a number of coils, the said coils being connected together end to end to form a closed circuit, a commutator with the segments of which the ends of said coils are respectively connected, and brushes bearing upon said commutator and connected with a source of electricity whereby current is directed through the coils to produce changing poles in the magnetic core, adapted to react upon the poles situated along the way to propel the vehicle forward; substantially as described.

2. The combination with a number of polar projections or poles of alternate polarity, situated along the way or line of travel, of a magnetic core mounted upon the vehicle, the ends of said core being joined together to form a complete magnetic circuit or ring, a number of coils wound upon said core, the ends of adjacent coils being united, the end of the first coil being also connected with the end of the last coil to thus form a closed circuit, a commutator, the segments of which are connected respectively with the ends of said coils, and brushes bearing upon said commutator and connected with a source of electricity; substantially as described.

3. The combination with polar projections or poles of alternate polarity arranged along the way or line of travel, of a number of magnetic cores mounted respectively upon a number of vehicles, each of said cores being wound with a number of coils, the ends of the coils upon each of the cores being connected end to end to form a closed circuit, a single commutator with the segments of which corresponding coils wound upon the several cores are connected in parallel, and brushes bearing upon the commutator and connected with a source of electricity, whereby current is directed through the several series of coils, through the agency of a single commutator, and changing magnetic poles are produced in each of the cores adapted to react upon the fixed poles situated along the line of travel to propel the vehicle forward; substantially as described.

546,692. DISTRIBUTING APPARATUS. Henry G. Butler, Kenosha, Wis. Filed Aug. 11, 1894. Serial No. 520,064. (No model.)



Claim.—1. In a distributing apparatus, a conveyer device having a base formed in sections n, n', n^2 with a stop t on the middle section, said sections overlapping and engaging each other at adjacent ends and supported to slide telescopically one upon the other to fold and extend them lengthwise, and means for actuating said base to fold and extend it, substantially as described.

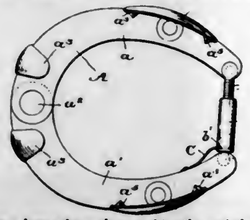
2. In a distributing apparatus, a conveyer device comprising a frame C extending from a suitable support, endless traveling chains having the interposed scraper-bars at intervals and supported on said frame, a base D' comprising the telescopically slidable sections supported on the frame to be extended and contracted independently of the movement of said chains and provided with an operating cable, and means for actuating the chains and base at differential speed, substantially as described.

3. In a distributing apparatus, a conveyer device comprising a frame C on a car A supported to move on a track r, endless traveling chains having the interposed scraper-bars at intervals and supported on said frame, a base D' comprising the telescopically slidable sections supported on the frame to be extended and contracted independently of the movement of said chains and provided with an operating cable, and means for actuating the chains and base at differential speed, substantially as described.

4. In combination with a frame F, endless chains carrying pivotally between them, at intervals, buckets g, a track suspended from the frame, a carriage G movably supported on said track and provided with sprocket-wheels c' and pendent bars c^4 carrying sprocket-wheels c^5, a forward shield d and a rear shield d' having end-plates d^3 provided with segmental slots d^2 by which the pendent bars are adjustably connected with the end-plates, the conveyer-chains passing about said sprocket-wheels, substantially as described.

5. In combination, a distributing apparatus having a distributer-conveyer device, and an automatic feed comprising a supplementary conveyer-device extending at an angle to the distributer and formed with endless chains carrying pivotal buckets, a carriage movably supported on a track below the upper plane of said endless chains and carrying sprocket-wheels c^5 and pendent arms c^4 carrying sprocket-wheels c^5 and shields d and d', and a dumping-stop c at the distributer in the path of said buckets, substantially as described.

546,693. NAILLESS HORSESHOE. William P. Cambles and William Bittles, Philadelphia, Pa., assignors to Elizabeth Marion Bittles, same place. Filed May 11, 1895. Serial No. 548,891. (No model.)



Claim.—1. In a horseshoe, the combination of the two sections jointed together at the front or toe portion and provided with suitably arranged clamping ears or flanges, a screw-clamping device at the heel portion of the shoe comprising a nut pivotally connected with one of the sections and a co-acting screw shank pivotally connected with the other section, substantially as described.

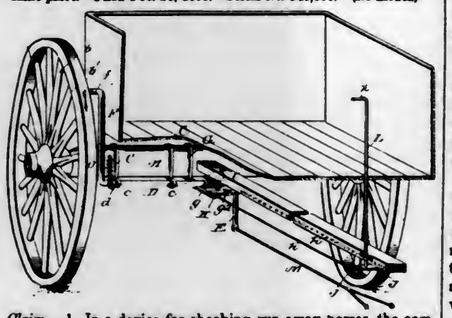
2. In a horseshoe, the combination of the two sections jointed together at the front or toe portion and provided with suitably arranged clamping ears or flanges, a screw clamping device at the heel portion of the shoe comprising a nut pivotally connected with one of the sections and a co-acting screw shank pivotally connected with the other section, and locking means for the nut, substantially as described.

3. In a horseshoe, the combination of jointed sections provided with suitably arranged clamping ears or flanges, a nut connected with one of said sections by a ball and socket joint, and a co-acting screw shank pivotally connected with the opposite section, substantially as described.

4. In a horseshoe, the combination of jointed sections provided with suitably arranged clamping ears or flanges, a nut pivotally connected with one of said sections and provided with peripheral openings, a co-acting screw-shank pivotally connected with the opposite section, and a locking device constructed and arranged to engage the said openings, substantially as described.

5. In a horseshoe, the combination of the two sections jointed together at the front or toe portion and provided with swiveled clamping ears or flanges having teats or points thereon, a screw-clamping device at the heel portion of the shoe comprising a nut pivotally connected with one of the sections and a co-acting screw-shank pivotally connected with the other section, substantially as described.

546,694. DEVICE FOR STOPPING RUNAWAY HORSES. James G. Carey, Lehigh, Ind. Ter., assignor of one-fourth to Felix Phillips, same place. Filed Feb. 28, 1895. Serial No. 540,099. (No model.)



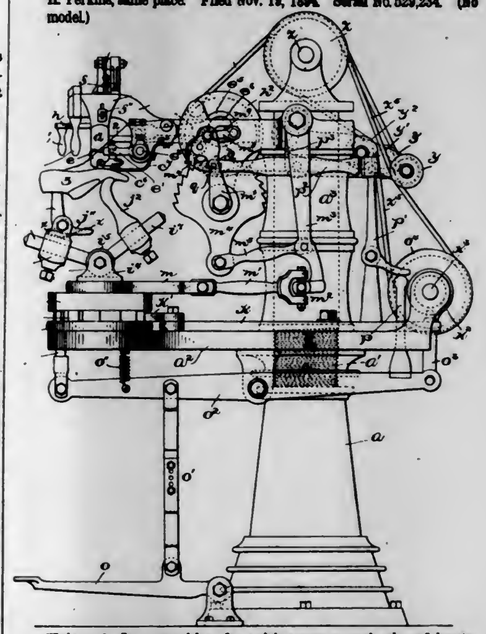
Claim.—1. In a device for checking run away horses, the combination with the axle and the wheel of the rock-shaft having at one end a downward projecting crank and at the opposite end an upward projecting wheel crank, and means for moving the wheel crank into engagement with the wheel, substantially as set forth.

2. In a device for checking run away horses, the combination with the axle and the wheel of a rock-shaft having two oppositely projecting cranks of which one is disposed in close proximity to the axle, of means for moving the wheel crank into engagement with the wheel, whereby as the wheel rotates forward a crank is moved from the axle and when the wheel rotates backward the said crank engages with the axle and serves as a stop to resist backward movement of the vehicle, substantially as set forth.

3. In a device for checking runaway horses, the combination with a rock-shaft having two oppositely projecting cranks, and the wheel which engages one of the cranks of a spring for rotating the shaft backward, and a stop for resisting the backward rotation of the shaft beyond its normal position, substantially as set forth.

4. In a device for checking run away horses, the combination with the rear axle, of the rock-shaft having at one end the wheel crank arranged vertically in front of the axle, a downward rein crank, and means for moving one crank into engagement with the wheel, whereby as when the wagon is moved forward the said vertical crank is moved from the axle and when the rein crank is moved forward the said vertical crank engages with the axle and serves as a stop to resist backward movement of the vehicle, substantially as set forth.

546,695. SEWING-MACHINE FOR LASTING BOOTS OR SHOES. William C. Collyer, Reading, Mass., assignor of one-third to William H. Perkins, same place. Filed Nov. 19, 1894. Serial No. 529,234. (No model.)



Claim.—1. In a machine for uniting uppers and soles of boots and shoes, the combination of a last-jack comprising a turn-table having a slide-way, a slide fitting said way, a holder horizontally swiveled to said slide, and a last-support on said holder; feed mechanism applied to the slide; and feed mechanism applied to the turn-table.

2. In a machine for uniting uppers and soles of boots and shoes, the combination of a last-jack comprising a turn-table having a slide-way, a slide fitting said way, a holder horizontally swiveled to said slide, and a last-support pivotally mounted on the said holder to permit endwise tilting; feed mechanism applied to the slide; and feed mechanism applied to the turn-table.

3. In a machine for uniting uppers and soles of boots and shoes, the combination of a last-jack comprising a swiveled member and a sliding member; feed-mechanisms for moving the sliding jack-member step-by-step and for turning the swiveled member step-by-step; clutch mechanism for rendering the feed-mechanisms operative or inoperative; a lock for the swiveled jack-member; and a controlling device as a treadle operatively connected with the clutch mechanism and with the lock.

4. In a sewing machine for uniting uppers and soles of boots and shoes, the combination of a last-jack comprising an endwise tilting last-support and a swiveled holder therefor; and stitch-forming devices on a universally movable head under control of the attendant.

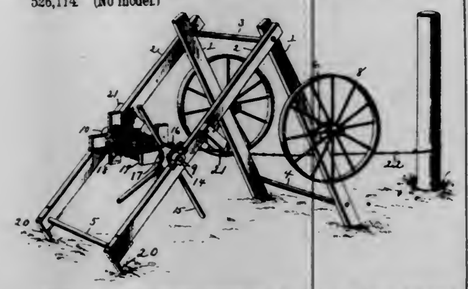
5. In a sewing machine for lasting boots and shoes, the combination with stitch-forming devices including a vibratory needle; of lasting pinchers controlled in their action by the movements of the said needle.

6. In a sewing machine for lasting boots and shoes, the combination with stitch-forming devices including a vibratory needle and a reciprocating driver therefor, of lasting pinchers operatively connected with said driver whereby they are opened and closed by the same, connections between the vibratory needle and the pinchers whereby they are raised and lowered, and means for moving the pinchers laterally in their vertical movement.

7. In a sewing machine for uniting uppers and soles of boots and shoes, the combination of a bifurcated guide for turning up and holding a lip of the sole, said guide having a transverse needle-opening, a bifurcated presser-foot arranged to press the upper against said guide, a side-rest for the last, a needle arranged to pass through the bifurcation of the presser-foot and the opening in the guide, a thread-guide on the outer side of the lip-guide, and lasting pinchers on the inner side of the latter.

546,696. COMBINED WIRE-STRETCHER AND CARRIAGE.

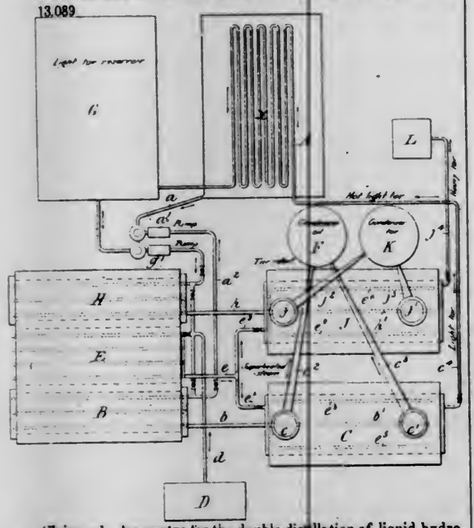
WILLIAM P. DUNLAP, Maquoketa, Iowa. Filed Oct. 17, 1894. Serial No. 526,114. (No model.)



Claim.—A wire stretcher consisting of two sets of straight standards pivoted together at their upper ends, a spool of wire located on one set of standards below the pivotal point, said sets of standards adapted to be placed on end on the surface of the ground at an angle to each other, and each set at an angle to the surface of the ground, anchors secured to the lower ends of one set of standards on the opposite side of the spool from which the wire is unwound, said anchors extending substantially at right angles to the standards to which they are attached and adapted to be driven in the ground at an acute angle to the upper surface thereof when the standards are placed on the ground at an angle to each other, and a set of traction wheels journaled to the outer perpendicular sides of the standards without anchors, as set forth.

546,697. APPARATUS FOR DISTILLING LIQUID HYDROCARBONS.

PAUL DVORKOVITZ, London, England. Filed Nov. 24, 1891. Serial No. 412,945. (No model.) Patented in England Aug. 1, 1891, No 13,089.

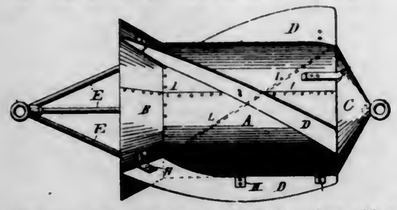


Claim.—1. Apparatus for the double distillation of liquid hydrocarbon consisting of a furnace, three superheaters located side by side within said furnace, a steam generator connected with the intermediate superheater, a crude-hydrocarbon reservoir and a tar reservoir connected respectively with the other superheaters, two retorts provided with means for heating them, a spray pipe leading from the intermediate superheater into both retorts, a spray pipe leading from each of the other superheaters to its corresponding retort, and a separate condenser for each retort; substantially as described.

2. Apparatus for the double distillation of liquid hydrocarbon consisting of a furnace, three superheaters located side by side within said furnace, a steam generator connected with the intermedate superheater, a crude-hydrocarbon reservoir and a tar reservoir connected respectively with the other superheaters, two retorts, a spray pipe leading from the intermediate superheater into both retorts, a spray pipe leading from each of the other superheaters to its corresponding retort, a separate condenser for each retort, a heating coil located within the crude-hydrocarbon reservoir, and a pipe connecting said heating coil with the residue-discharge opening of one of the retorts; substantially as described.

546,698. DREDGING-BUCKET.

ELIJAH J. FADER, Calgary, Canada. Filed Jan. 28, 1895. Serial No. 536,755. (No model.)

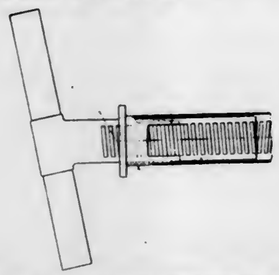


Claim.—1. A dredging bucket of cylindrical form with or without the propeller flanges D, D, D, which are required only in slack currents, having a funnel-shaped dipping flange B, at mouth of bucket barrel A, which serves to fill bucket when drawn by that end on river bed, and having two swivels, one F, at end of draw irons E, E, E, and another G on bottom C allowing bucket to revolve over river bed, substantially as and for the purpose hereinbefore set forth.

2. The combination of the bucket with the cable E, F, having one end fastened on river shore at M, working through pulley I and the other end to winch G which hauls bucket ashore, and with the cable K one end of which is fastened on opposite shore at L or to an anchor out in the stream and the other end to swivel ring on bottom of bucket when by paying out the cable E, F the river current acting on cable K and on bucket revolves and swings the bucket out into position ready to be filled and drawn ashore, substantially as and for the purpose hereinbefore set forth.

546,699. TELESCOPIC JOINT.

ROBERT A. KANE, Milwaukee, Wis., assignor of one-half to Charles J. Bodenbach, same place. Filed July 10, 1895. Serial No. 555,483. (No model.)



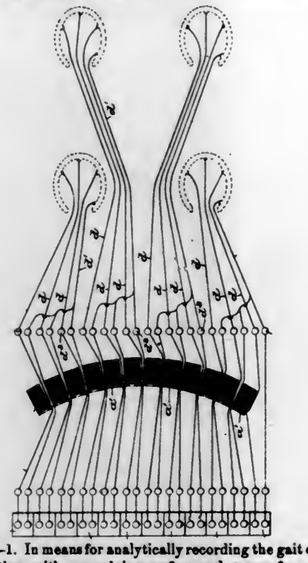
Claim.—1. A telescopic-joint comprising one section having a bore provided with interrupted alternate ridges and depressions, another section engaging the former and also provided with corresponding interrupted ridges and depressions, and a sliding sleeve on the inner section of the joint provided with as many tongues as there are interruptions of said ridges and depressions pertaining to each of the joint-section...

2. A telescopic-joint comprising one section having a bore provided with an interrupted thread, another section engaging the former and also provided with an interrupted thread, and a sliding sleeve on the inner section provided with as many tongues as there are interruptions of the thread pertaining to each of the joint-sections.

3. A bicycle tube having its bore provided with interrupted alternate ridges and depressions, a post or shank engaging the tube and also provided with corresponding interrupted ridges and depressions, and a sliding sleeve on the post or shank provided with as many tongues as there are corresponding interruptions of the ridges and depressions pertaining to said tube and post.

546,700. MEANS FOR ANALYTICALLY RECORDING GAIT OF HORSES.

THOMAS J. KEAN, Philadelphia, Pa. Filed Dec. 5, 1894. Serial No. 530,862. (No model.)



Claim.—1. In means for analytically recording the gait of a horse the combination, with a receiving surface and means for advancing the same at a rate of speed controlled by that of the horse, of electrically-controlled means for automatically recording on said surface, circuit wires leading from said means to the hoof of a horse, and a contact device on said hoof connected with the circuit wires, substantially as described.

2. In means for analytically recording the gait of a horse the combination, with a strip or web, and means for feeding the same at a rate of speed controlled by that of the horse, of electrically controlled means for automatically recording on said strip, circuit wires leading from said means to the hoof of a horse, and a contact device on said hoof connected with the circuit wires, substantially as described.

3. In means for analytically recording the gait of a horse the combination, with an electrically-controlled recording device, of circuit wires leading therefrom to the hoof of a horse, and a series of independent contact devices on said hoof connected with the circuit wires, substantially as described.

4. In means for analytically recording the gait of a horse the combination, with an electrically-controlled recording device, of circuit wires leading therefrom to the respective hoofs of the horse, independent contact devices on said hoofs connected with the respective circuit wires, substantially as described.

5. The combination, with a strip or web, and means for actuating the same, of a series of markers adjacent thereto, magnets operatively connected with said markers, a battery or batteries, circuit wires connecting said battery or batteries with the magnets, and leading to the hoof of the horse, and a series of independent contact devices on said hoof connected with the circuit wires, substantially as described.

6. The combination, with a strip or web, and means for actuating the same, of markers arranged adjacent thereto in independent sets, magnets operatively connected with said markers, a battery or batteries, circuit wires connecting said battery or batteries with the magnets and leading to the respective hoofs of the horse, independent contact devices on said hoofs connected with the respective circuit wires, substantially as described.

7. The combination, with an electrically-controlled recording device, of circuit wires leading therefrom to the hoof of a horse, a series of independent contact devices on said hoof connected with the circuit wires, and means for breaking the circuits simultaneously, substantially as described.

8. The combination, with a strip or web, and means for actuating the same, of a series of markers adjacent thereto, magnets operatively connected with said markers, a battery or batteries, circuit wires connecting said battery or batteries, with the magnets and leading to the hoof of a horse, a series of independent contact devices on said hoof connected with the circuit wires, means to break the electrical connections between the battery or batteries and the magnets, and means to throw the strip or web operating mechanism out of action, substantially as described.

9. In means for analytically recording the gait of a horse, the combination, with an electrically-controlled recording device, of a horse's shoe, a vertically-movable contact stud therein, a contact plate arranged adjacent to said stud and insulated from the shoe, and circuit wires connected with said plate, the shoe and the recording device, substantially as described.

10. In means for analytically recording the gait of a horse, the combination, with an electrically-controlled recording device, of a horse's shoe, a contact device therein, a supplemental shoe of non-conducting material provided with a contact plate, and circuit wires connected with said plate, the shoe and the recording device, substantially as described.

11. The combination, with a horse's shoe, of a series of contact devices arranged thereon, at predetermined points, a corresponding series of contact devices insulated from said shoe, and circuit wires connected with said latter devices and the shoe, substantially as described.

12. The combination, with a horse's shoe, and a series of contact devices arranged therein at predetermined points, of a supplemental shoe of non-conducting material provided with a corresponding series of contact devices, and circuit wires connected with said latter devices and the shoe, respectively, substantially as described.

13. The combination, with a horse's shoe, and a series of contact devices arranged therein at predetermined points, of a sectional supplemental shoe of non-conducting material provided with a corresponding series of contact devices, and circuit wires connected with said latter devices and the shoe, respectively, substantially as described.

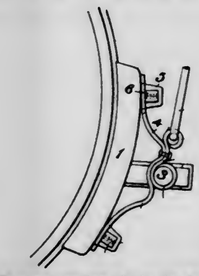
14. The combination, with a vehicle, of a mechanism therein comprising a suitable frame or housing, a web supply roller, a feed roller, and gearing between the feed roller and one of the wheels of the vehicle, electrically-controlled means for recording on the web, circuit wires leading from said means to the hoof of a horse, and a contact device on said hoof connected with the circuit wires, substantially as described.

15. The combination, with a vehicle, of a mechanism therein comprising a suitable frame or housing, a web supply roller, a feed roller, gearing between the feed roller and one of the wheels of the vehicle, and means for throwing said gearing into and out of operation, electrically-controlled means for recording on the web, circuit wires leading from said means to the hoof of a horse, and a contact device on said hoof connected with the circuit wires, substantially as described.

16. The combination, with a vehicle, of a mechanism therein comprising a suitable frame or housing, a web supply roller, a feed roller, gearing between the feed roller and one of the wheels of the vehicle, a series of markers adjacent to said feed roller, magnets operatively connected with said markers, a battery or batteries electrically connected with the magnets, a series of independent contact devices arranged on the hoof of a horse and connected with the electric circuits as described, means whereby the circuits may be simultaneously broken, and means whereby the feed roller gearing may be thrown out of operation, substantially as described.

546,701. BRAKE-SHOE CONNECTION.

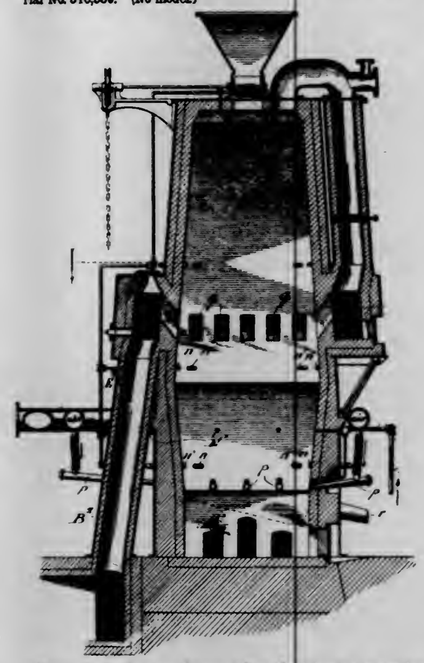
JOHN J. KIRKER, Jr., Pittsburg, Pa. Filed May 28, 1895. Serial No. 550,965. (No model.)



Claim.—1. The combination of a brake shoe or brake shoe carrier, a brake beam, a hanger, a spring connected to the shoe or carrier, and a clip provided with eyes for the reception of the hanger, and end of the brake beam, substantially as set forth.

2. The combination of a brake shoe or brake shoe carrier, a brake beam, a spring connected to the shoe or carrier and a clip attached to the spring, having a yielding eye for the reception of the end of the brake beam, substantially as set forth.

546,702. PROCESS OF AND APPARATUS FOR MANUFACTURE OF GAS. WILLIAM A. KONEMAN, Chicago, Ill. Filed May 8, 1894. Serial No. 510,539. (No model.)



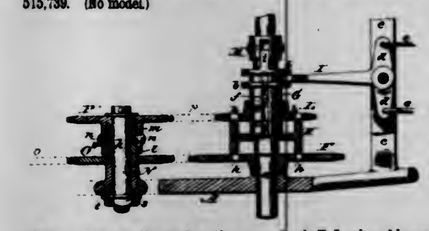
Claim.—1. In the manufacture of gas by injecting steam into a bed of incandescent carbonaceous fuel in a generator, the process of maintaining the incandescent condition of the fuel against the heat-absorbing effect of the steam in decomposing, which consists in maintaining the fuel under subjection to the heat of the electric arc and projecting the arc into the bed of fuel, substantially as described.

2. In the manufacture of gas by injecting steam into a bed of incandescent carbonaceous fuel in a generator, the process of maintaining the incandescent condition of the fuel against the heat-absorbing effect of the steam in decomposing, which consists in maintaining the fuel under subjection to the heat of the electric arc and injecting steam against the arc to project it into the bed of fuel, substantially as described.

3. In combination with a gas-generator, an electric-current generator having arc-forming electrode-terminals projecting into the chamber of the gas-generator, and a steam-jet directed against said arc to project it into the fuel-bed, substantially as and for the purpose set forth.

4. In combination with a gas-generator, an electric-current generator having arc-forming electrode-terminals projecting into the chamber of the gas-generator at different points about its circumference and in sets on different planes, and steam-jets directed against said arcs to project them into the fuel-bed, substantially as and for the purpose set forth.

546,703. DRIVING-GEAR FOR BICYCLES. DAVID LIPPY and IRA R. FINFROCK, Mansfield, Ohio. Filed June 26, 1894. Serial No. 515,739. (No model.)



Claim.—The treadle shaft *a*, the two wheels F, L, placed loosely thereon, a sliding clutch placed between the wheels and provided with slots *g*, flanges *b*, and tongues *i*; the recessed collar M, and the pins *f*, secured to the shaft, and a mechanism for moving the clutch; combined with a bearing A, having one end secured to the frame, the two wheels O, P, placed upon the bearing and having tubular hubs that are secured together, the short chain *p*, that extends only around the wheels L, P. the chain *o*, which extends around the wheels F. H. and past the wheel O, and the wheel H, on the rear hub substantially as described.

546,704. LIFTING-JACK. JOHN M. LYNN, Weldon, Tex. Filed July 10, 1895. Serial No. 555,557. (No model.)



Claim.—1. A lifting-jack consisting of a suitable standard and lifting bar, and means for operating said bar, consisting of a pivoted hand-lever, a notched segment upon the standard, a sliding spring actuated pawl adapted to engage therewith, and a pivoted locking lever upon the end of the pawl, a perforation in said lever and a locking-pin on the hand-lever engaging with the perforation, substantially as and for the purpose specified.

2. A lifting-jack consisting of a suitable standard and lifting bar, notched segment upon the standard, a pivoted hand-lever connecting with the lifting-bar, and a sliding pawl recessed upon its under side and a coiled spring located therein, and a pivoted locking-lever connected to the pawl, substantially as and for the purpose set forth.

3. A lifting-jack consisting of a suitable standard and lifting bar, a notched segment upon the standard, a pivoted hand-lever connecting with the lifting-bar, and a spring actuated sliding pawl supported upon the hand-lever and held thereon by means of a guide secured to said lever, said pawl having a recess or chamber and a spring located therein, a bifurcation upon the end of the pawl, a locking-lever pivoted between the arms of the bifurcation, a perforation in said lever and a pin upon the hand-lever for engaging therewith, substantially as and for the purpose set forth.

4. A lifting-jack consisting of a standard having a dove-tail groove therein, a correspondingly formed lifting-bar fitting in the groove, an adjustable support connected to the upper end of the bar, a notched segment upon the standard, a yoke pivoted thereto, a rod connecting the yoke with the lifting-bar, a suitable hand-lever connected to the yoke, a spring actuated sliding pawl supported upon the hand-lever, and means for locking the pawl out of engagement with the notched-segment, substantially as and for the purpose set forth.

546,705. CONCEALED JOINT FOR CARRIAGE-TOPS. HERBERT C. MARTELL, Columbus, assignor to the Eberhard Manufacturing Company, Cleveland, Ohio. Filed May 8, 1895. Serial No. 548,470. (No model.)

Claim.—1. A concealed joint for carriage tops composed of two concavo-convex parts which are hinged together, substantially as and for the purpose specified.

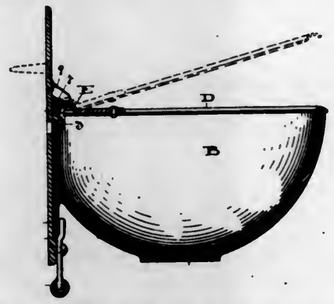
2. In a buggy top, a concealed joint composed of two parts hinged together and having their outer ends bifurcated to form ears, combined with bows which lie between said ears and are pivotally connected with them, substantially as and for the purpose specified.

3. A concealed joint composed of two concavo-convex pieces of sheet metal, which have on their proximate ends two outwardly and upwardly bent integral ears,—the ears upon one part being hinged to the ears upon the other part, substantially as and for the purpose specified.



4. In a carriage top, a concealed joint composed of two concavo-convex parts hinged together, and having their outer ends bifurcated to form ears, combined with bows which lie between and are pivoted to said ears, substantially as and for the purpose specified.

546,706. BOWL OR BOX FOR HOUSEHOLD PURPOSES. JOHN MCCONNELL, Cleveland, Ohio. Filed Aug. 17, 1894. Serial No. 520,572. (No model.)

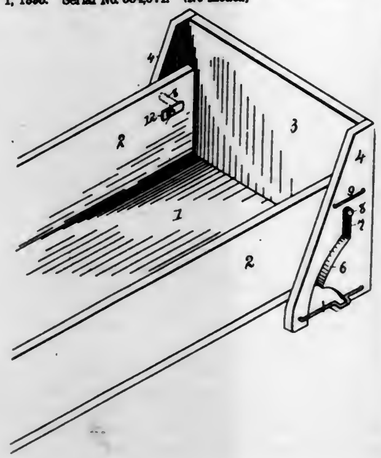


Claim.—1. The bowl having a flat back portion and a projection at the bottom thereof, the flat bracket plate to support the bowl provided with a projection at its bottom serving as a rest for the bowl, and hook shaped catches to engage over the top edge of the bowl and a movable catch for the lower portion of the bowl, substantially as set forth.

2. The bracket plate having a flat face and provided with separate forwardly projecting lugs and catches at its upper portion on different horizontal planes and a ledge at its bottom, in combination with a bowl having a flat back and confined on said ledge and engaged by said lugs, and a cover engaged by said catches and resting on said lugs, substantially as set forth.

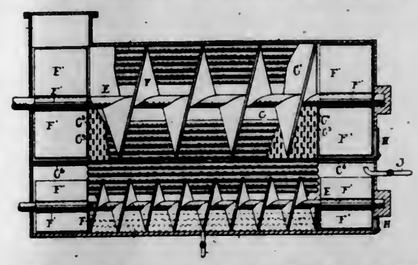
3. The bracket plate —A— provided with lugs —3— and catches —9— near its top and ledge —6— at its bottom, in combination with the bowl —B— secured upon said plate, the cover —D— having projections —8— resting on the lugs —3— and engaged by catches 9—, and a latch to confine the bowl at its bottom on said plate, substantially as set forth.

546,707. SCOOP-BOARD. DAVID S. MCGURTHY, Decatur, Ill. Filed July 1, 1895. Serial No. 554,571. (No model.)



Claim.—A scoop board having side wings cut away at their lower ends substantially as shown and described, and slotted upward and rearward from the apex of the space, ties connecting the separated portions of the lower ends of the wings, such ties being bent outward adjacent to the rear sides of the space, and a bed having pins projecting from its sides, all in combination, for the purpose set forth.

546,708. OIL EXTRACTOR AND DRIER. WALTER S. PIERCE, New York, N. Y. Filed Jan. 29, 1895. Serial No. 536,537. (No model.)



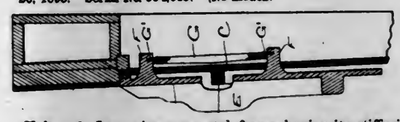
Claim.—1. The combination of a pair of cylinders, mechanical stirrers therein contained, a series of steam-pipes located between said cylinders, a second pair of cylinders below the first and in line therewith, a sieve or screen located between the upper and lower pair of cylinders, and steam-pipes located in the space between said cylinders, substantially as set forth.

2. The combination of a pair of cylinders, a part of said cylinders being perforated to form a sieve, another pair of cylinders located below the first pair but in line therewith, and steam-pipes in the space between the two pairs of cylinders, substantially as set forth.

3. The combination of a pair of cylinders, a part of said cylinders being perforated to form a sieve, said perforated portion not extending to the ends of the cylinders, a further perforated plate extending between the ends of the perforated part of the cylinder and the cylinder ends, a second pair of cylinders below the first, and steam-pipes located in the space between the two pairs of cylinders, substantially as set forth.

4. The combination of a pair of cylinders arranged side by side and with a space at their ends, a screw conveyer in each cylinder, and straight wings on one end of each of the shafts carrying the screw conveyer blades, substantially as set forth.

546,709. PIANO FRAME AND BRIDGE. DUANE L. RICE, Chicago, Ill., assignor to The W. W. Kimball Company, same place. Filed June 26, 1895. Serial No. 554,085. (No model.)



Claim.—1. In a piano, a metal frame having its stiffening rib arched to give room for the bridge, in combination with the sounding board and a continuous bridge for the strings, substantially as specified.

2. In a piano, a metal frame having its stiffening rib arched to give room for the bridge, and also having a rear brace, in combination with the sounding board and a continuous or unbroken bridge for the strings, substantially as specified.

3. The combination in a piano, of frame A, arched rib E, posts F and compression member G, with the sounding board and the continuous or unbroken bridge secured to the board, substantially as specified.

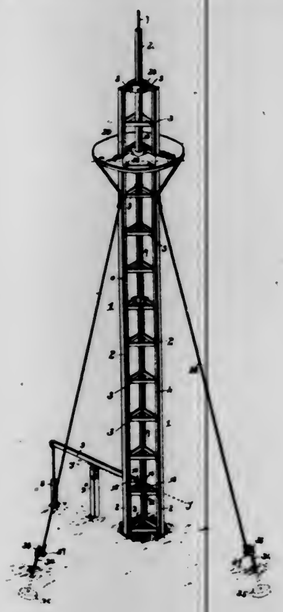
4. In a piano, a metal frame provided with a stiffening rib upon its front or string side, and with a reinforce to said rib upon the back or sounding board side, substantially as specified.

5. In a piano, a metal frame provided with a stiffening rib upon its front or string side, and with a reinforce to said rib upon the back or sounding board side, in combination with a continuous or uncut bridge, passing under the rib and a sounding board, substantially as specified.

546,710. WINDMILL-TOWER. TIMOTHY ROGERS, Dayton, Ohio, assignor to Francis J. McCormick, Sr., same place. Filed Mar. 31, 1894. Renewed Aug. 8, 1895. Serial No. 558,685. (No model.)

Claim.—1. A triangular tower, comprising vertical bars, horizontal bars connecting the vertical bars and arranged in the form of

a triangle and located at intervals and forming ladders, the braces disposed horizontally and arranged in pairs and provided with arms extended to and engaging the adjacent horizontal bars at the top and bottom, and clamping bolts connecting the braces, substantially as described.



2. A triangular tower, comprising the upward extending flanged bars T-shaped in cross-section, the horizontally disposed triangularly arranged bars having their ends bent at a slight angle and secured at opposite sides of the adjacent flanges of the upward extending bars, and the braces arranged in pairs and provided with arms extending to the horizontal bars, and clamping bolts connecting the braces, substantially as described.

3. A triangular tower, comprising vertical bars, horizontal connecting bars arranged in the form of a triangle and secured to the vertical bars, the braces arranged in pairs and located at intervals and provided with central openings to receive a pump rod, and having outward extending arms with angularly bent ends engaging the outer faces of the adjacent horizontal bars, and clamping screws connecting the braces, substantially as described.

4. In a wind mill tower, the combination of a reciprocating pump rod, a lever, a clamp composed of two jaws engaging the pump rod and having rearward extensions, a clamping screw connecting the front ends of the jaws, and a link pivoted between the extensions of the jaws and connecting the clamp with the lever, substantially as described.

5. The combination of the vertical bars arranged in the form of a triangle, horizontal connecting bars, a vertical tube arranged at the top of the bars, a turn table support having a central tubular portion receiving the tube and having a concentric flange provided with openings and seated on the adjacent connecting bars, and clamping screws mounted on the tubular portion of the turn table support and engaging the tube, substantially as described.

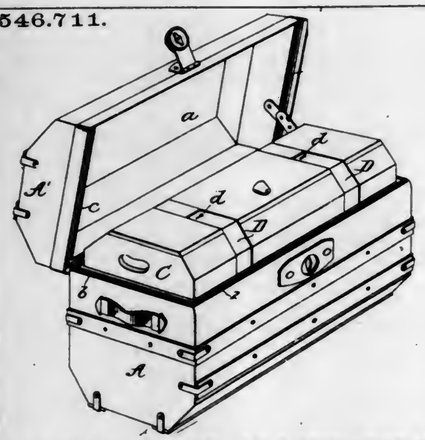
546,711. COMBINED BATH-TUB AND TRUNK. EUGEN SANDOW, New York, N. Y. Filed Apr. 11, 1895. Serial No. 545,300. (No model.)

Claim.—1. The combination with a trunk body lined with waterproof material, of a series of trays entirely filling said trunk body and locked together for entire simultaneous removal therefrom, substantially as described.

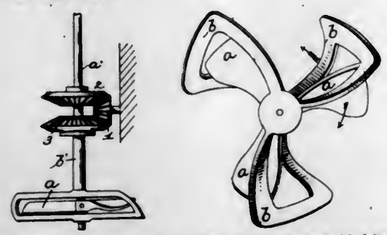
2. The combination with a trunk body lined with a water proof material, of a series of trays adapted to fit in said trunk body and means for locking said trays together for simultaneous removal therefrom, substantially as described.

3. The combination of a trunk body, of the series of trays adapted to fit therein and a band surrounding and uniting said trays and means for locking said band whereby said united trays may be simultaneously removed from the trunk body, substantially as described.

546,711.



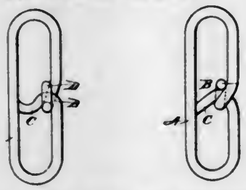
546,712. PROPELLER. PAUL F. SCHMIDT, Levallois-Perret, France. Filed Feb. 19, 1894. Serial No. 500,933. (No model.) Patented in France Apr. 13, 1893, No. 229,351; in Belgium Oct. 10, 1893, No. 106,694; in Switzerland Oct. 10, 1893, No. 7,580, and in England Nov. 11, 1893, No. 21,510.



Claim.—1. A compound propeller comprising a divided hub, the outer propeller having front and rear connection with the sections of said divided hub, and the inner propeller rotating between said hub sections and front and rear connections, substantially as described.

2. A compound propeller comprising the outer propeller having the blades with openings therein leaving outer portions held by inner and outer arms to the driving shaft, and an inner propeller working in the openings in the blades of the outer propeller, substantially as described.

546,713. CHAIN-LINK. JOHN C. SCHMIDT, York, Pa. Filed Feb. 15, 1895. Serial No. 538,523. (No model.)

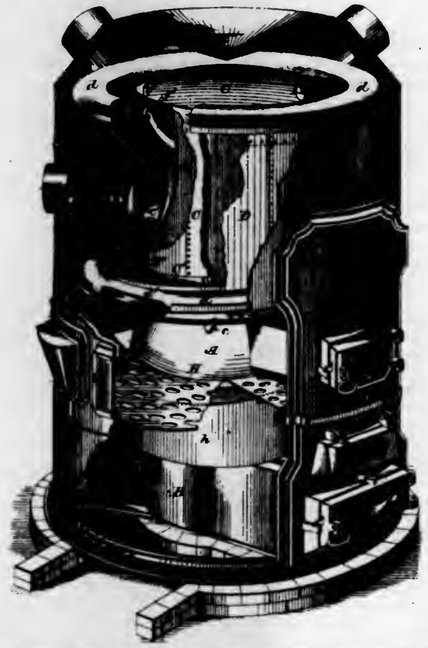


Claim.—1. A link for chains constructed of rod or bar metal, one of the ends of the bar or rod being bent into a hook and extended back across the link in an inclined position to form an inclined cross bar and the opposite end of the bar or rod being united to the base of the hook or cross bar by an eye which encircles the latter, substantially as described.

2. A link for chains formed of rod or bar metal, one of the ends of the rod or bar being bent into substantially S-shape and extended across the link and abutted against the opposite side, the other end of the rod or bar being formed into an eye encircling the base of the S-shaped cross bar, said eye being given an inward inclination; substantially as described.

3. A link for chains formed of rod or bar metal, one of the ends of the rod or bar being bent into a hook and extended across the link and abutted against the opposite or straight side, the other end being formed into an eye which encircles the base of the hook or cross bar portion, the end of the cross bar being seated in the side piece against which it abuts, substantially as described.

546,714. HOT-AIR FURNACE. RUDOLPH J. SCHWAR, Milwaukee, Wis. Filed Aug. 23, 1890. Serial No. 362,826. (No model.)



Claim.—1. The combination in a furnace with the dome provided with a flue opening through the side thereof, of a deflector suspended within said dome from said flue and movable at its lower edge away from the walls of the same, substantially as and for the purposes set forth.

2. The combination in a furnace with the dome provided at the base with outwardly projecting arms, of an annular drum encircling said dome and supported upon said arms, substantially as and for the purposes set forth.

3. In a furnace, an annular heating drum constructed of sheet iron or steel sides and cast iron top and bottom rings curved outwardly in cross section and having tapering marginal flanges, the sheet metal sides overlapping both flanges on each ring on their outer sides, substantially as and for the purposes set forth.

4. In a furnace, an annular heating drum having its bottom concave in cross section on the upper inner side and formed in the lower portion thereof with clean out openings and removable doors arranged to close said openings, substantially as and for the purposes set forth.

5. The combination in a furnace with the fire pot and casing, of a perforated diaphragm interposed horizontally between said fire pot and casing, and a vertical plate attached to the under side of said diaphragm between its inner and outer edges and surrounding the fire pot, substantially as and for the purposes set forth.

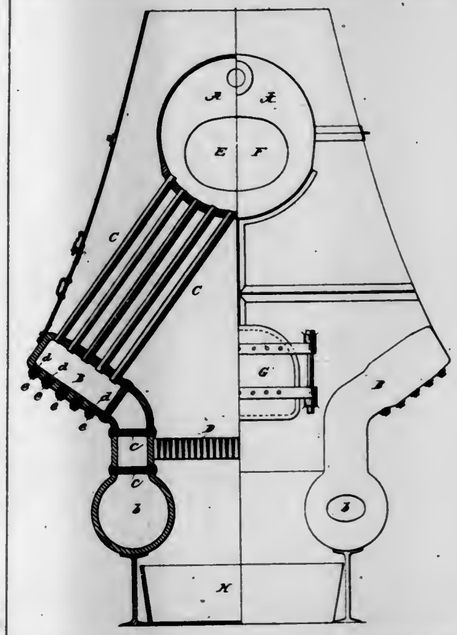
6. In a furnace, the combination with an annular drum having induction and eduction openings near together but out of line, of a partition plate between said openings provided with extended side edges presenting wide bearing surfaces to the walls of said drum, substantially as and for the purposes set forth.

7. In a furnace, the combination with an annular drum having induction and eduction openings out of line with each other, of a partition plate having a packing groove at the top in which is inserted a tongue on the top of the drum and seated at the bottom in a packing groove in the bottom of the drum, substantially as and for the purposes set forth.

8. In a furnace, the combination with an annular drum having induction and eduction openings out of line with each other, of a partition plate located between said openings and formed in its upper edge with a groove to receive a transverse tongue formed on the top ring of the drum, substantially as and for the purposes set forth.

546,715. WATER-TUBE BOILER. HORACE SEE, New York, N. Y. Filed June 7, 1894. Serial No. 513,741. (No model.)

Claim.—1. In a water-tube boiler, the combination of the following named elements; a cylindrical steam-and-water-drum within the furnace; a rectangular water-bottom, located outside of the grate-bars; straight water-tubes, inclined crosswise of the furnace, secured at top to said drum and at bottom to said water-bottom; means substantially as described for bracing said water-bottom; and screw-plugs for obtaining access to the bottom of the tubes, as described.



2. In a water-tube boiler, the combination of the following named elements; a steam-and-water-drum above the furnace; a water-bottom located outside of the grate-bars and provided with a downward extension at the side of the ash-pit; and straight water-tubes inclined crosswise of the furnace and secured at top to said drum and at bottom to said water-bottom.

3. In a water-tube boiler, the combination of the following named elements; a steam-and-water-drum above the furnace; a water-bottom located outside of the grate-bars and extending beneath the ash-pit; and straight water-tubes inclined crosswise of the furnace and secured at top to said drum and at bottom to said water-bottom.

4. In a water-tube boiler, the combination of the following named elements; a steam-and-water-drum above the furnace; a water-bottom located outside the grate-bars and extending beneath the ash-pit; a water-tube-brace connecting the two sides of said water-bottom below the grate-bars; and straight water-tubes inclined crosswise of the furnace and secured to said drum and water-bottom.

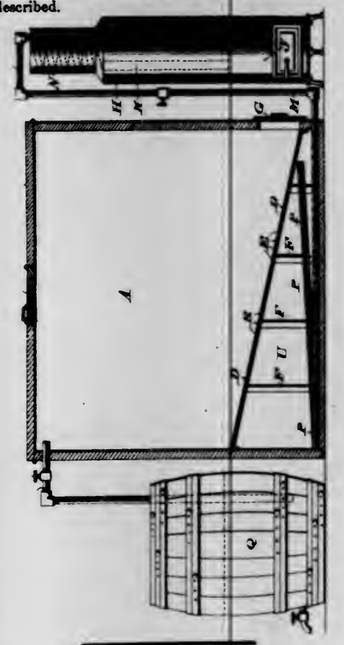
546,716. METHOD OF AND APPARATUS FOR PREPARING FERTILIZERS. WILLIAM A. SHEPARD, New York, N. Y. Filed Aug. 14, 1894. Serial No. 520,251. (No model.)

Claim.—1. The method of preparing fertilizer from excrement, which consists in passing superheated steam through the same in an air tight chamber to separate and remove ammoniacal and other offensive gases therefrom, condensing said gases in water, removing the solid matters, and mixing the dehydrated and cooked material with lime, substantially as described.

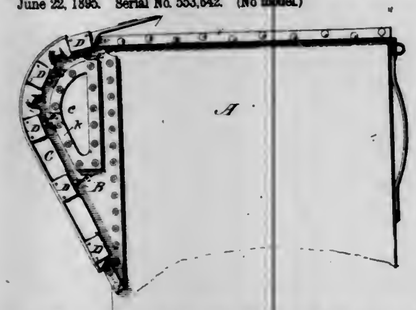
2. An apparatus for the purpose set forth consisting of an air tight tank having a lid and door, an inclined perforated false bottom leading to said door, a superheated steam supply leading into said tank below said false bottom, a condenser consisting of a closed receptacle with a discharge pipe, and a pipe leading from the upper part of said tank into the upper part of said receptacle, and extending to the bottom of the same, said parts being combined substantially as described.

3. An apparatus for the purpose set forth, consisting of the tank A having the lid B with the inspection opening C therein, the discharge door G, the inclined perforated false bottom D leading to said door, the fire box J with the stack L, the pipe M with the coil N in said stack, and the perforated convolutions P in said tank below said false bottom, the closed receptacle Q adapted to contain water, and the pipe R leading from the upper part of the said tank into and to-

ward the bottom of said receptacle Q, said pipe having a cock T, and said receptacle having a cock S, said parts being combined substantially as described.



546,717. MAIL-BAG. JESSE SHILLING, Jr., Troy, Ohio. Filed June 22, 1895. Serial No. 553,642. (No model.)



Claim.—1. A mail bag or pouch having an off-set or lateral extension which projects out from the upper portion of the side only and decreases in width in a direction from top to bottom, and a slidable cap for closing the opening in the bag or pouch and adapted to engage with the off-set or extension, substantially as and for the purpose set forth.

2. A mail bag or pouch having an off-set or lateral extension provided with a reinforced opening, said off-set or lateral extension projecting out from the upper portion of the side only and provided upon its sides with guides, and a slidable cap for closing the opening in the bag or pouch adapted to engage with the guides, substantially as and for the purpose described.

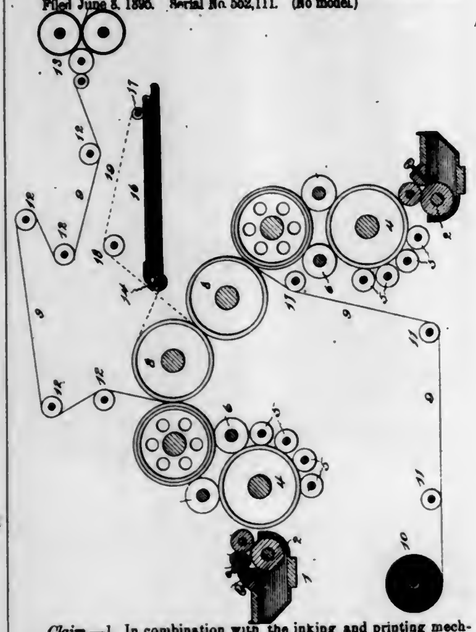
3. A mail bag or pouch having an off-set or lateral extension provided with a reinforced opening, said off-set or lateral extension projecting out from the upper portion of the side only and guides upon the sides of the off-set or extension, a slidable cap engaging therewith, and means for locking the cap closed over the mouth or opening of the bag or pouch, substantially as and for the purpose specified.

4. A mail bag or pouch having an off-set or lateral extension which projects out from the upper portion of the side only and has an opening to serve as a hand-grasp or handle, and a slidable cap adapted to engage with the off-set or extension, substantially as and for the purpose set forth.

5. A mail bag or pouch having an off-set or lateral extension provided with a reinforced opening, said offset or lateral extension projecting out from the upper portion of the side only, and a slidable cap adapted to engage therewith and provided with anti-friction rollers, substantially as and for the purpose described.

6. A mail bag or pouch having an off set or lateral projection which projects out from the upper portion of the side only and decreases in width in a direction toward its lower end, guides upon the sides of the off-set or extension, and opening in the same, and a flexible cap and anti-friction rollers thereon, substantially as and for the purpose specified.

546,718. PRINTING-PRESS. FRANK C. STOCKHOLM, Hartford, Conn. Filed June 8, 1895. Serial No. 552,111. (No model.)



Claim.—1. In combination with the inking and printing mechanism of a web printing press, a main ink fountain extending the full width of the press and containing ink of one color, a supplemental ink fountain located adjacent to the main ink fountain on the same side of the press for supplying ink to the same cylinder, extending only a portion of the width of the press and containing ink of another color, and means for preventing the ink from the main ink fountain from being supplied in line with the ink supplied by the supplemental ink fountain, substantially as described and for the purpose specified.

2. In combination with the supply roll, distributing cylinder, form roll and form and impression cylinders of a web printing press, an ink fountain extending the full width of the press for supplying ink to a supply roll, a supplemental ink fountain located adjacent to the main ink fountain on the same side of the press, extending only a portion of the width of the press for supplying ink of a different color to a portion of a supply roll, and means for preventing the ink from the main ink fountain from being supplied in a line with the ink supplied by the supplemental ink fountain, substantially as specified.

3. In combination with the inking and printing mechanisms of a web printing press, a main ink fountain extending the full width of the press and containing ink of one color, a removable supplemental ink fountain extending only a portion of the width of the press and containing ink of another color, a shield located between the main ink fountain discharge and the supplemental ink fountain discharge for preventing the supply of ink from the main ink fountain in line with the supplemental fountain, and turn bars for directing paper from one line of movement back into the press in a reversed direction in another line of movement, substantially as specified.

4. In combination with a supply roll, distributing cylinder, form roll and form and impression cylinders of a web printing press, an ink fountain extending the full width of the press for supplying ink to a supply roll, a removable supplemental ink fountain extending only a portion of the width of the press for supplying ink of a different color to the same supply roll, a shield adjacent to the supply roll for preventing the main ink fountain from supplying ink to that portion of the supply roll which is supplied with ink by the supplemental ink fountain, and turn bars in the press for directing the web from one section of the impression cylinder to another section, substantially as specified.

5. In combination with the supply roll, distributing cylinder, form roll and form and impression cylinders of a web printing press, a main ink fountain extending the full width of the press and adapted to supply ink to the entire length of a supply roll, and a supplemental ink fountain extending only a part of the width of the press and adapted to supply different colored ink to a portion of the same supply roll, and a shield adjacent to the supply roll for preventing the main ink fountain from supplying ink to that portion of the supply roll which is supplied with ink by the supplemental ink fountain, substantially as specified.

6. In combination with the supply roll, distributing cylinder, form roll and form and impression cylinders of a web printing press, a main ink fountain for supplying ink to a supply roll, and a supplemental ink fountain mounted on the main ink fountain for supplying ink of a different color to the supply roll, substantially as specified.

7. In combination with the supply roll, distributing cylinder, form roll and form and impression cylinders of a web printing press, a main ink fountain for supplying ink to the supply roll, and a supplemental ink fountain for supplying ink of a different color to the same supply roll, and a shield located over a portion of the main fountain roll to prevent that portion from making contact with the supply roll, substantially as specified.

8. In combination with the supply roll, distributing cylinder, form roll and form and impression cylinders of a web printing machine, a main ink fountain having a fountain roll for supplying ink to the supply roll, a supplemental ink fountain having a fountain roll for supplying ink of a different color to the same supply roll, and a shield located over a portion of the main fountain roll to prevent that portion from making contact with the supply roll, said supply roll having a portion of its periphery cut away to prevent an intermixture of the different inks, substantially as specified.

9. In combination with the supply roll, distributing cylinder, form roll and form and impression cylinders of a web printing press, a main ink fountain having a fountain roll for applying ink to the supply roll, a supplemental ink fountain having a fountain roll for supplying ink of a different color to the same supply roll, and a movable shield located over a portion of the main fountain roll to prevent that portion from making contact with the supply roll, said shield being adapted to be moved in one direction by the rotation of the main ink fountain roll and in the opposite direction by a spring, substantially as specified.

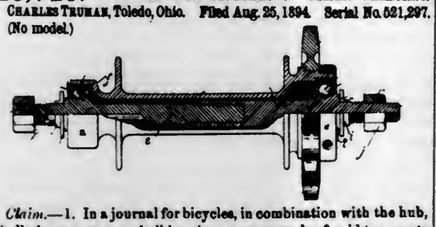
10. In combination with the supply roll, distributing cylinder, form roll and form and impression cylinders, of a web printing press, a main ink fountain having a fountain roll mounted on a shaft for supplying ink to the supply roll, a supplemental ink fountain mounted adjacent to the main fountain and having a fountain roll for supplying ink to the supply roll, and lever connections between the main fountain roll shaft and the supplemental fountain roll shaft whereby both shafts are rotated by the same mechanism, substantially as specified.

11. In combination with the supply roll, distributing cylinder, form roll and form and impression cylinders of a web printing press, a main ink fountain for supplying ink to the supply roll, a supplemental ink fountain mounted on the main ink fountain for supplying ink of a different color, to a portion of the same supply roll and a pair of turn bars extending parallel with each other at an angle of forty five degrees to the line of movement of the paper around the impression cylinders, substantially as specified.

12. In combination with an ink fountain and supply roll of a printing press, a supplemental ink fountain consisting of an ink trough, a rotatable fountain roll, an adjustable ink scraper, and a shield extending outwardly from the supplemental fountain, substantially as described and for the purpose specified.

13. In combination with the ink fountain and supply roll of a printing press, a supplemental ink fountain consisting of a trough, a rotatable fountain roll in the trough, an adjustable ink scraper borne by the trough, a thin shield loosely connected with the bottom of the trough, and a spring for retaining the shield in normal position, substantially as described and for the purpose specified.

546,719. JOURNAL FOR BICYCLES OR OTHER VEHICLES. CHARLES TRUMAN, Toledo, Ohio. Filed Aug. 25, 1894. Serial No. 521,297. (No model.)



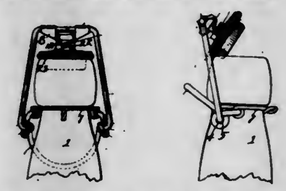
Claim.—1. In a journal for bicycles, in combination with the hub, a spindle in two parts, a ball-bearing cone on each of said two parts formed integral therewith, and a male and female screw at the meeting ends of said two parts of said spindle whereby said ball-bearing cones may be adjusted in relation to each other, substantially as and for the purpose specified.

2. In a journal for bicycles, in combination with the hub, a spindle in two parts, a ball-bearing cone on each of said two parts formed integral therewith, and a male and female screw at the meeting ends of said two parts of said spindle whereby said ball-bearing cones may be adjusted in relation to each other, and a square head or equivalent device at the outer extremity of said spindle adapted to receive a wrench or key whereby the adjustment of the ball-bearing cones may be effected from outside the fork-ends of the wheel, substantially as shown and described, for the purpose specified.

3. In a journal for bicycles, in combination with the hub, a spindle in two parts, a ball-bearing cone on each of the two parts formed integral therewith, a male and female screw at the meeting ends of said two parts of said spindle, a shoulder (*i'*) upon each of said two parts of said spindle, washers (*i i*) resting against said shoulders and nuts (*j j*), on the projecting screw-threaded ends of said spindle, all substantially as and for the purpose specified.

4. A journal for bicycles or other vehicles, comprising a hub, a sprocket-wheel screwed thereon, a ball-bearing cup screwed therein, in combination with a two-part spindle passing therethrough, and adjustably screwed together at their meeting ends, ball-bearing cones on each of said two parts of said spindle formed integral therewith, anti-friction balls in the ball-race formed by said screw-cups and said cones, a shoulder and washer (*i i'*), on each of the two parts of said spindle, nuts on the outer extremities of said spindle adapted to engage the fork-ends of the bicycle frame, and a square head or equivalent device at the outer extremity of one of said spindle parts, all substantially as and for the purpose specified.

546,720. BOTTLE-STOPPER. GUSTAVE C. VOLLMER, St. Louis, Mo. Filed May 22, 1895. Serial No. 550,173. (No model.)



Claim.—1. In an improved bottle stopper comprising a casting, having at its under side an incline, ears formed at the end of the upper portion, a wire placed between said ears, said ears bent over said wire to hold the same, said incline meshing with a like incline upon the top of the stopper plate, substantially as shown and described.

2. In an improved bottle stopper comprising an elongated casting, said casting provided at its upper ends with ears, a groove formed in said casting, a wire placed in said groove, and formed as a yoke, said ears bent over said wire and holding same therein, a hole formed in the center of said casting for the insertion of a pivot, a boss formed on the under side of said casting and having an inclined face, said inclines meshing with an incline upon the stopper plate, substantially as shown and described.

3. In an improved bottle stopper comprising a casting of an elongated form, said casting formed with ears so as to clamp over a wire, a boss formed at the under side of the casting and having inclines, a stopper plate having an inclined boss upon its upper surface, a pin formed in the boss, and adapted to fit in an opening in the casting, and hold said casting thereto, substantially as set forth.

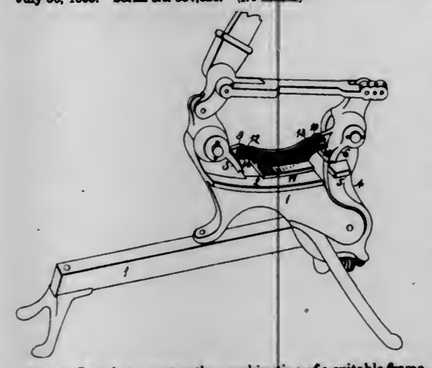
4. In an improved bottle stopper, composed of two parts, the upper part or casting having at its lower surface an inclined boss 12 ears provided at its upper corners, for the purpose of lapping over and held to a wire 2 a stopper, having at its upper surface an inclined boss, a pin located in the center of said boss, and adjustably held in an opening in the casting, for the purpose as shown and described.

5. In an improved bottle stopper, comprising a stopper plate, a boss or inclined projection, located at its upper surface, and about one-third its diameter, a pin forming part of said boss, and located in the center thereof, and loosely connected to a casting which is movably secured to a yoke, a boss or inclined projection secured to its under surface, having a tendency to mesh with the other inclined projection and operated by said yoke, thereby firmly sealing said bottle when the lowest point of the upper incline is upon the highest point of the lower incline, substantially as shown and described.

6. In an improved bottle stopper, the combination of a stopper plate, a boss upon said plate, provided with inclines, a pin in the center of said boss and forming part thereof, said pin loosely secured in a casting, a boss located at the under surface of said casting, said boss also provided with inclines which mesh with the inclines upon the

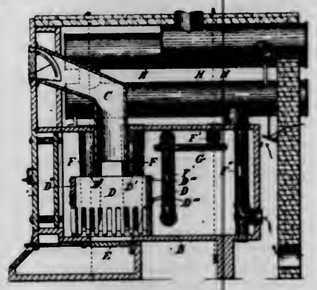
lower boss, ears located upon the upper portion of said casting, a wire or yoke placed between said ears, and held therein by said ears, said yoke pivotally secured to a lever wire for the purpose of locking the same, substantially as shown and described.

546,721. TIRE-UPSETTER. FRANK WARD, Rockford, Ill. Filed July 30, 1895. Serial No. 557,629. (No model.)



Claim.—In a tire upsetter, the combination of a suitable frame, a support for the tire, two pivoted dogs, a hand lever pivotally connected with one of the dogs, a link pivotally connected at one end to the other dog, and at its other end to the hand lever, a shoe overlying that portion of the tire located between the dogs having a pivotal connection with one of the dogs, and a movable connection with the other dog.

546,722. HOT-AIR FURNACE. DAVID R. WEIGHTMAN, Grand Rapids, Mich. Filed May 21, 1895. Serial No. 550,062. (No model.)



Claim.—1. In a hot air furnace, the combination of the casing, having upper and lower doors; a combustion chamber within said casing, said combustion chamber having an open front contiguous to said lower door, whereby it may be supplied directly with wood or soft coal; a magazine leading from said upper door to said combustion chamber; a fire pot, within said combustion chamber and beneath the delivery end of said magazine, said fire pot being removable to adapt the combustion chamber to long wood; and a grate beneath said fire pot, substantially as described.

2. In a hot air furnace, an oblong combustion chamber, having a door at one end, vertical air pipes at each side of said chamber, plates detachably supported by said pipes forming the sides of a fire pot, and plates detachably secured to said side plates, a magazine above said fire pot and a grate beneath the same, substantially as described.

3. In a hot air furnace, an oblong combustion chamber, having a door at one end, a removable fire pot near said door, a magazine above said fire pot, and a grate beneath the same, air pipes at each side of said fire pot opening at the top through the top of the said chamber, and opening at the bottom through the sides of the same, air pipes at the rear of said fire pot opening at one end through the sides of the chamber, extending vertically near the sides of said chamber, thence horizontally near the top of said chamber and thence through the top of the same, and vertical air pipes at the rear of said chamber, substantially as described.

4. In a hot-air furnace, the combination of the casing, having cold air inlets and hot air outlets; a combustion chamber, located within said casing and being of such size relatively thereto as to provide inclosed air passages which partly surround the combustion chamber and are in communication with said air inlets and outlets; air pipes, within said combustion chamber having communication at their tops and bottoms with said air passages, certain of said pipes having transversely extending branches; and water pipes, within the combustion chamber and adjacent to said branches, substantially as described.

5. In a hot-air furnace, the combination of the casing, having cold-air inlets and hot-air outlets; a combustion chamber, located within said casing and being of such size relatively thereto as to provide inclosed air passages which partly surround the combustion chamber and are in communication with said air inlets and outlets; air pipes within said combustion chamber, each of said air pipes opening at both ends into said passages and certain of them having transversely extending branches; pipes coiled contiguous to said branches; and heating drums, located within the casing and adjacent to said combustion chamber.

6. In a hot-air furnace, the combination of the casing, having cold-air inlets and hot-air outlets; the combustion chamber, located within said casing and being of such size relatively thereto as to provide inclosed air passages partly surrounding said combustion chamber, said air passages being in communication with said air inlets and outlets; air pipes within said combustion chamber, each opening at both ends into said air passages; coiled pipes within the combustion chamber; and dampers for controlling the flow of air through said passages.

7. In a hot-air furnace, the combination of the casing, having cold-air inlets and hot-air outlets; the combustion chamber, located within said casing and being of such size relatively thereto as to provide air-passages partly surrounding the former, said air passages being in communication with said air inlets and outlets; heating drums within said passages; air pipes within the combustion chamber, each opening at both ends into said air-passages; and water-pipes within said combustion chamber.

8. In a hot-air furnace, the combination of the casing, having cold-air inlets and hot-air outlets; the combustion chamber, located within said casing and being of such size relatively thereto as to provide inclosed air-passages partly surrounding the former, said air passages being in communication with said air-inlets and outlets; heating drums within said passages; air pipes within the combustion chamber, each opening at both ends into said air-passages; water pipes within said combustion chamber; and dampers within said air passages.

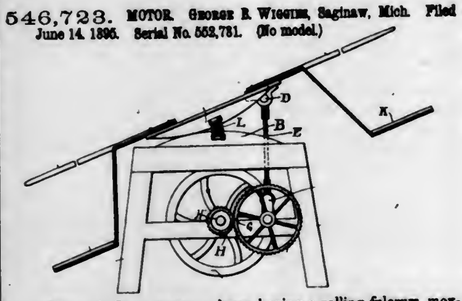
9. In a hot air furnace, a rectilinear fire pot having the front plate horizontally divided and hinged, substantially as described.

10. In a hot air furnace, a combustion chamber, vertical air pipes having their upper ends enlarged and extending through said chamber, and a fire pot in said chamber, having its sides supported by said pipes, substantially as described.

11. In a hot air furnace, a combustion chamber, having an upper and lower door in its front, a fire pot near said lower door, having its front plate divided and hinged, a magazine extending from the upper door to a point above said fire pot and air pipes supporting the sides of said fire pot, substantially as described.

12. A hot air furnace, constructed to burn wood, or soft or hard coal, embodying a combustion chamber having an upper and a lower door in its front; a fire pot within said combustion chamber, said fire pot having its front contiguous to said lower door and divided horizontally and the two parts hinged together, as set forth, and a magazine leading from said upper door to said fire pot.

546,723. MOTOR. GEORGE B. WIGGINS, Saginaw, Mich. Filed June 14, 1895. Serial No. 552,781. (No model.)

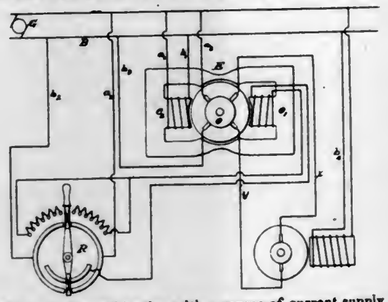


Claim.—1. In a motor, a lever having a rolling fulcrum movably secured to and rolling over a curved base, and thereby giving a rocking motion to the lever, and means for converting the rocking motion to a rotary motion, substantially as and for the purpose set forth.

2. In a hand motor a rocker having secured to each end thereof a bar extending laterally, the rocker being movably secured to and rocking upon a convexed base, and means secured to the rocker for converting the reciprocating motion of the rocker to a rotary motion comprising a pitman and disk, substantially as and for the purpose set forth.

3. In a motor, one or more parallel rockers having laterally extending arms supporting platforms, a convex base under the rockers and forming the base for the rockers, a coiled spring connecting the rockers to the base at the middle of their curved surfaces, whereby the rockers may be held on the base as they rock, a pitman, disk and shaft for conveying and converting the reciprocating motion of the rockers to a rotary motion of machinery, substantially as and for the purpose set forth.

546,724. ELECTRIC SYSTEM. MERLE J. WIGHTMAN, Johnstown, Pa. Filed Apr. 3, 1895. Serial No. 544,267. (No model.)



Claim.—1. In combination with a source of current supply and a translating device, an electrical device having a single armature and a plurality of fields, independent connection from the source of current supply to the fields, a connection from the source of current supply to the portion of armature controlled by one field, said connection being separate from the connection to the fields and a connection between the portion of the armature controlled by another field and the translating device.

2. In combination with a source of current supply and a translating device, an electrical device having a single armature and a plurality of pairs of fields, the members of each pair being at opposite sides of the armature, independent connection from the source of current supply to the pairs of fields, a connection from the source of current supply to the portion of armature controlled by one set of pairs of fields, said connection being separate from the connection to the fields and a connection between the portion of the armature controlled by another set of pairs of fields and the translating device.

3. In combination with a source of current supply and a translating device, an electrical device having a single armature and a plurality of fields, independent connection from the source of current supply to the fields, a connection from the source of current supply to the portion of armature controlled by one field, and a connection between the portion of the armature controlled by another set of fields and the translating device, and means to vary the strength of current to the field controlling the portion of the armature in electrical connection with the translating device.

4. In combination with a source of current supply and a translating device, an electrical device having a single armature and a plurality of pairs of fields, the members of each pair being at opposite sides of the armature, independent connection from the source of current supply to the pairs of fields, a connection from the source of current supply to the portion of armature controlled by one set of pairs of fields and a connection between the portion of the armature controlled by another set of pairs of fields and the translating device, means to vary the strength of the current in the field controlling the portion of the armature in electrical connection with the translating device.

5. In combination with a source of current supply and a translating device, an electrical device having a single armature and a plurality of fields, independent connection from the source of current supply to the fields, electrical circuits, one adapted to connect the source of current supply and the portion of the armature controlled by one field, and the other to connect the portion of the armature controlled by the other field and the translating device, a switch device adapted to reverse the portions of the armature to which said circuits are connected.

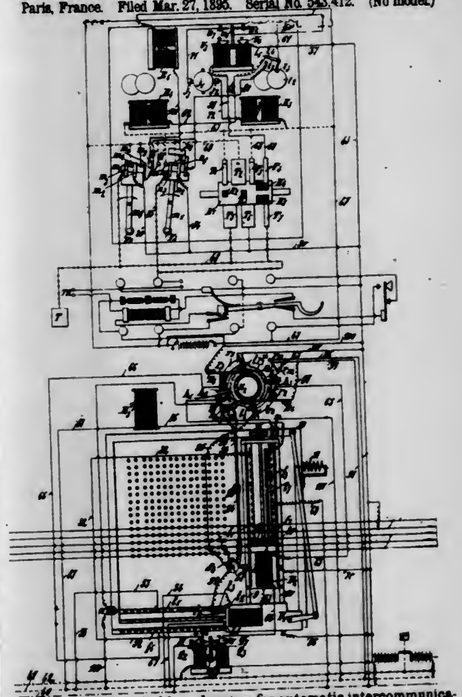
6. In combination with a source of current supply and a translating device, an electrical device having a single armature and a plurality of fields, independent connections from the source of current supply to the fields, electrical circuits, one adapted to connect the source of current supply and the portion of the armature controlled by one field, and the other to connect the portion of the armature controlled by the other field and the translating device, a switch device adapted to reverse the portions of the armature to which said circuits are connected, one field controlling a greater portion of the armature than the other field.

7. In combination with a source of current supply and a translating device, of an electrical device having a single armature and a plurality of fields, independent connection from the source of current supply to the fields, electrical circuits, one adapted to connect the source of current supply and the portion of the armature controlled by one field, and the other to connect the portion of the armature controlled by the other field and the translating device, a switch device adapted to reverse the portions of the armature to which said circuits are connected, one field controlling a greater portion of the armature than the other field, and means to vary the current strength in the fields, the arrangement being such that the current strength is first decreased in the motor field and increased in the generator field when the generator field is the field controlling the smaller portion of the armature, and the current strength increased in the motor field when the generator field is the field controlling the larger portion of the armature.

8. An electrical machine consisting essentially of a single armature, a plurality of fields, a source of current supply and independent connection from the source of current supply and each of the fields and independent connection from the portion of the armature controlled by each field and a translating device.

9. An electrical machine consisting essentially of a single armature, a plurality of fields, a source of current supply and independent connection from the source of current supply and each of the fields and independent connection from the portion of the armature controlled by each field and a translating device, and means to independently vary the strength of the current in each of the fields.

546,725. SELF-ACTING COMMUTATOR FOR TELEPHONES. SALOMON BERDITSCHEWSKY DIT APOSTOLOFF and MOISE FREUDENBERG, Paris, France. Filed Mar. 27, 1895. Serial No. 543,412. (No model.)



Claim.—1. A switchboard system for automatic intercommunication, having separate switchboards for the several subscribers' lines, each switch board composed of duplicate series of similarly arranged contacts with a switch point electrically movable relatively to both series and transferable (as by a solenoid) from one series to the other, the corresponding contacts of the different switchboards being interconnected so that a given subscriber's line may be connected with any other such line through their switchboards by either of the series of contacts, substantially as described.

2. The combination with duplicate series of contacts, of two carriages, a switch point movable with said carriages and transferable from one contact series to the other and an electro-magnet with pawl and ratchet for advancing each carriage; said pawls being adapted to be disengaged from their ratchets to permit the return of said carriage by springs, substantially as described.

3. The combination with a series of contacts, a movable switch point and electrical means for shifting said point, of circuit-changers for breaking the line connection of said point during the shifting of said point, and electrical means for reestablishing such connection when the said point has reached the desired contact, substantially as described.

4. The combination with subscribers' lines and interconnected switchboards having each an electrically movable switch point normally connected to line, of means for breaking said line connection with the switch point during the shifting of said point and then reestablishing such connection, substantially as described.

5. The combination with duplicate series of contacts, and a switch point electrically movable with reference to both series and transferable electrically from one series to the other, of an apparatus composed of an electro-magnet, a ratchet wheel arranged to be turned by the armature of said electro-magnet, a toothed circuit-breaking wheel mounted on the shaft of said ratchet wheel but insulated therefrom, brushes arranged to bear on said wheel for putting a central office battery to line to send a shunt current as often as the said wheel is advanced a step, a circuit changing wheel also movable with said ratchet wheel arranged to close the circuit through the point-shifting means in one position and to establish a line connection for said point in another position and additional circuit-changers also movable with said ratchet wheel to establish a circuit through the point transferring solenoid, substantially as described.

6. The combination with a polarized relay, of two electro-magnets in two local circuits connected with the same terminal of said relay one of said circuits being normally open while the other is normally closed, an electro-magnet in a local circuit connected with the other relay terminal, a circuit changer operated by the last mentioned electro-magnet to break the said normally closed local circuit and close the said normally open local circuit, and a circuit changer operated by the electro-magnet in the normally open circuit to break the circuit of the third mentioned electro-magnet aforesaid, substantially as described.

7. The combination with a series of contacts at the central office, an electrically movable switch point, and circuit-breakers for sending controller currents at each movement of said point, of apparatus at the subscribers' substation arranged to be operated by such controller currents, and means whereby the subscriber sends the currents to shift said switch point, substantially as described.

8. A circuit breaking drum adapted to be shifted horizontally as well as to be rotated, in combination with contact springs or brushes arranged to bear on said drum so as to send positive currents when the drum rotates in one position and negative currents when it is in its other position, substantially as described.

9. The combination of the circuit breaking drum adapted to be shifted longitudinally as well as to be rotated, its contact spring or brushes, a mechanical power for turning said drum when released, a pin for retaining said drum when engaged, means for effecting its disengagement without shifting said drum longitudinally and means for effecting its disengagement by such shifting of said drum, substantially as described.

10. The combination with the point-shifting electro-magnets at the central office, one operated when a positive current is sent over the subscriber's line and the other when a negative current is so sent, of the circuit-breaking drum at the subscriber's substation adapted to be shifted longitudinally as well as to be rotated, contact springs or brushes for sending positive currents when said drum rotates in one position and negative currents when it is in its other position, substantially as described.

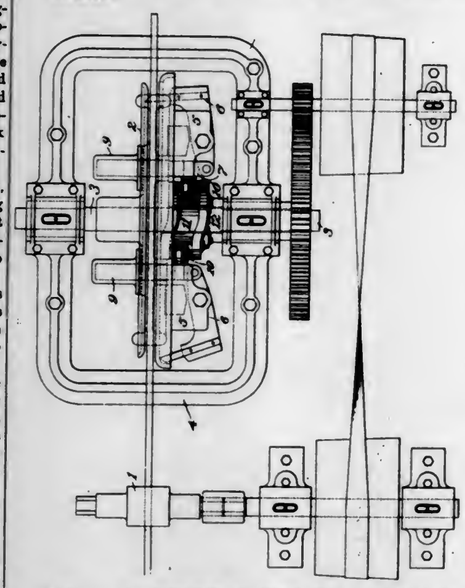
11. The combination with subscribers' lines, and current sending means at the subscribers' substations, of subscribers' switchboards at the central office composed each of a series of contacts with the similarly placed contacts in the several switchboards interconnected and the several sets of interconnected contacts in electrical connection with different subscribers' lines, movable switch points normally connected to line, electrical means for shifting said points and for connecting them with their subscribers' lines after having been shifted, means for breaking the line connections of the switch-points during the shifting of such points to the desired contacts, substantially as described.

12. The combination with subscribers' lines, and current sending means at the subscribers' substations, of subscribers' switchboards at the central office composed each of duplicate series of contacts with the similarly placed contacts in the several switchboards interconnected and the several sets of interconnected contacts in electrical connection with different subscribers' lines, movable switch points transferable from one series of contacts to the other and electrical means for shifting said points and for connecting them with their subscribers' lines after having been shifted, such line connections being broken during the shifting of said points to the desired contacts and for transferring the said switch-points from one series of contacts to the other, the aforesaid electrical connections between the subscribers' lines and the sets of interconnected contacts being through said switch-point, substantially as described.

13. The combination with subscribers' lines, and current sending means at the subscribers' substations, of subscribers' switchboards at the central office composed each of duplicate series of contacts with the similarly placed contacts in the several switchboards interconnected and the several sets of interconnected contacts being in electrical connection with different subscribers' lines, movable switch-points transferable from one series of contacts to the other polarized relays in the subscribers' lines, and electro-magnets arranged in the local circuits of said relay for shifting the said switch points, the aforesaid electrical connections between the subscribers' lines and the sets of interconnected contacts being through their corresponding switch points, substantially as described.

14. An automatic switch board system composed of switchboards with duplicate series of contacts and electrically movable switch points connected with the substation lines and electrically transferable from one series of contacts to the other and also composed of means whereby the line connections with the respective switch-points are interrupted during the shifting of said switch-points, substantially as described.

546,726. MACHINE FOR CUTTING METAL STRIPS, RODS, &c. JOHN BOTT, Youngstown, Ohio. Filed Apr. 12, 1895. Serial No. 545,472. (No model.)



Claim.—1. In a mechanism for cutting metal strips, rods, &c., the combination of mechanism for moving the strips, rods, &c., longitudinally, a wheel or drum arranged in the line of feed of such mechanism and adapted to be driven at a peripheral speed approximately equal to the onward movement of the strip or rod, one or more pairs of cutting blades arranged transversely of the face of the wheel or drum, and means for operating the cutting blades during the rotation of the wheel or drum, substantially as set forth.

2. In a mechanism for cutting strips, rods, &c., the combination of a rotating wheel or drum, one or more cutting blades arranged transversely of the face of the wheel or drum, and stationary with respect thereto one or more movable cutting blades mounted on the wheel or drum in operative relation to the stationary blades, means for operating the movable blade or blades during the rotation of the wheel or drum, and one or more recesses in the face of the wheel or drum in front of the stationary cutting blade or blades, substantially as set forth.

3. In a mechanism for cutting strips, rods, &c., the combination of a rotating wheel or drum provided with one or more recesses in its face, one or more cutting blades arranged, at the rear ends of the recess or recesses with their upper edges flush or approximately flush with the periphery of the wheel or drum, and stationary with respect thereto, one or more movable cutting blades mounted on the wheel or drum in operative relation to the stationary blade or blades, and means for shifting the movable blade or blades to a position wholly behind the stationary blade or blades, substantially as set forth.

4. In a mechanism for cutting strips, rods, &c., the combination of a rotating wheel or drum, one or more cutting blades arranged transversely of the wheel or drum, and stationary with respect thereto, one or more radial levers pivotally mounted on the wheel and provided with cutting blades, a stationary sleeve surrounding the shaft of the wheel or drum, and provided with a cam groove for operating the lever or levers, substantially as set forth.

546,727. WIRE-TYING MACHINE. FRANK G. CHAMBERS, Syracuse, N. Y. Filed Apr. 23, 1894. Serial No. 509,356. (No model.)



Claim.—1. A tying machine comprising a body, a radially slotted twisting wheel, secured on a grooved or slotted feed screw mounted in said body, and means for actuating said feed screw laterally.

2. A tying machine comprising a body, a radially slotted twisting wheel secured on a grooved or slotted feed screw mounted in said body, means for actuating said feed screw laterally, and a tension wheel vertically mounted and adjacent to said twisting wheel, and intermediate means for operating the twisting wheel, as set forth.

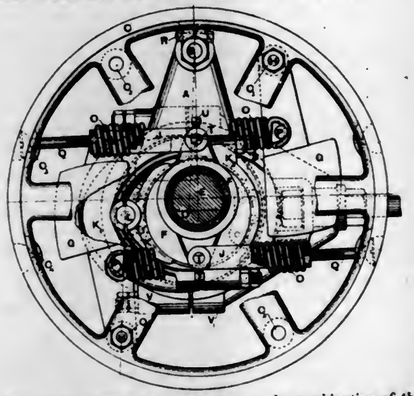
3. A tying machine, comprising a body, a radially slotted twisting wheel mounted therein having shoulders upon its ends, shoulders or lugs upon the inner face of the body with which the aforesaid shoulders are adapted to engage for the purpose of stopping the twisting wheel, and means for rotating said wheel, substantially as described for the purposes set forth.

4. The frame, an adjusting screw extending up through it, a spring, the supporting frame C placed upon the top of the spring, and a tension roller loosely journaled in the supporting frame, combined with the slotted twisting wheel, and an operating cord for causing the wheel to revolve, substantially as shown.

5. The frame A, pronged at its upper ends, the slotted springs applied to opposite sides, the slotted journal screw threaded at one end only, the slotted twisting wheel placed upon the journal, a set screw, slotted at its inner end and which has its slotted end to extend up into the slotted journal, and means for causing the twisting wheel to revolve, substantially as described.

6. The frame A, provided with prongs at its upper ends, and shoulders formed on the inner sides of the prongs, slotted springs applied to the outer sides of the prongs for holding the ends of the wires to be twisted, and a slotted journal screw threaded at one end, and which is made to move back and forth through the prongs, combined with the twisting slotted wheel secured to the journal and also provided with shoulders on its ends, a tension wheel, and means for causing the twisting wheel to revolve, substantially as set forth.

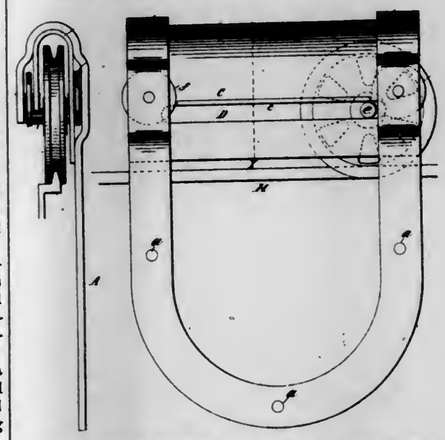
546,728. STEAM-ENGINE GOVERNOR. HARRY C. CLAY, Dayton, Ohio. Filed June 29, 1895. Serial No. 554,416. (No model.)



Claim.—1. In an engine-shaft governor the combination of the case rigidly attached to the engine shaft, the pivotal arm suspended within said case, the principal eccentric held on the free end of said arm, the weighted-arms pivotally suspended from said case, the tension springs uniting said case with said weighted-arms, the auxiliary eccentric, the rear strap comprising two parts with bearings and united by links to said weighted arms, the trunnion held in bearings of said rear strap and uniting the two eccentrics, and the principal one having connection with the engine valve, substantially as described.

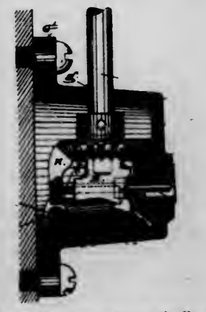
2. The combination of the auxiliary eccentric provided with the straps K K' the latter provided with a central bearing, the inner bearing plate K, to engage the face of the eccentric, and provided with a like central bearing, the principal eccentric and the trunnion connecting the two, substantially as and for the purpose specified.

546,729. DOOR-HANGER. JAMES W. CONCHAR, Dubuque, Iowa. Filed Feb. 16, 1895. Serial No. 538,737. (No model.)



Claim.—In a door hanger for sliding doors the combination of a carrying wheel, with trunnions and one or more anti-friction rollers set to come in contact with said trunnions, at the end of the travel of said trunnions, for the purposes shown.

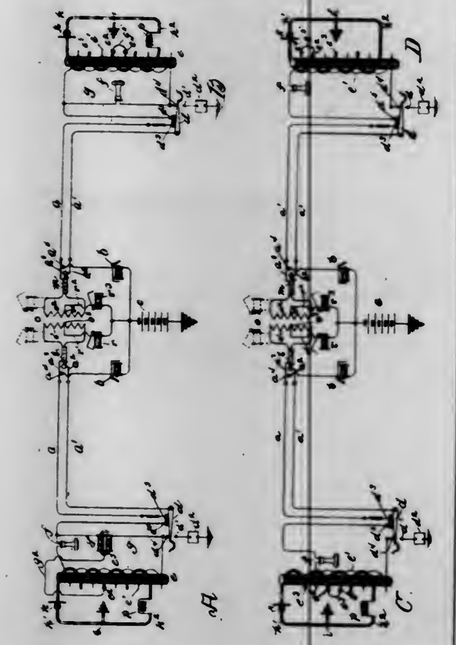
546,730. AWNING-OPERATING MECHANISM. THOMAS J. DANIELS, San Francisco, Cal. Filed Feb. 12, 1895. Serial No. 538,114. (No model.)



Claim.—1. The combination, of a vertically set bevel-gear provided with a hub in which is a socket for the shaft of a hand-crank, a horizontally set bevel-gear engaging said gear, a pivoted locking piece weighted on one side of the line of its pivot and adapted thereby to engage and lock one of said gears, a hand-crank having a square-shaft which is insertible into and removable from the socket of the hub and acts by contact with the said locking-piece to throw it back and hold it out of operation, and a box having bearings for said gears and inclosing all the said parts, substantially as described.

2. In an awning-operating mechanism, the combination in an inclosing box, of the bevel-gears in continual engagement, the fixed bearing-block having bearings for said gears, the pivoted locking-piece located on the side of the bearing-block opposite to the vertical gear, a hub on the vertical gear extending through the inclosing box to the outside and provided with a square socket, a hand-crank having a square shaft to fit the socket in the vertical gear and adapted by insertion in the said socket to press back the locking-piece and hold it out of action and means, as a weight, applied to the locking-piece to throw it into the gear when released, substantially as described.

546,731. TELEPHONE SYSTEM. WILLIAM W. DEAN, St. Louis, Mo., assignor to the Bell Telephone Company of Missouri, same place. Filed May 18, 1895. Serial No. 549,777. (No model.)



Claim.—1. The combination with a telephone line extending in two limbs to the central station, said limbs being united at the sub station, of a connection to ground or a common return from said united limbs at the sub-station, a local transmitter circuit included in said connection and comprising parallel paths in which are included the microphone and the primary inductive winding, switching apparatus at the central station comprising a repeating coil, through one winding of which the limbs of the telephone line are adapted to be united a connection to ground from the united limbs of said telephone line, a battery and a clearing out indicator included in said connection to ground or common return and means for preventing the leakage of voice currents through said ground connection, substantially as described.

2. The combination with a telephone line extending in two limbs to the central station, said limbs being united at the sub-station, of a connection to ground or common return from said united limbs at the sub-station, a local transmitter circuit included in said connection and comprising parallel paths in which are included the microphone and the primary inductive winding, switching apparatus at the central station comprising a repeating coil, through one winding of which the limbs of the telephone line are adapted to be united, a connection to ground or a common return from the middle of said winding, a battery and a clearing out indicator included in said ground connection, said indicator possessing retardation effect to prevent the leakage of voice currents; substantially as described.

3. The combination with a local transmitter circuit, comprising two parallel branches, of an induction coil, the secondary winding thereof being included in the telephone circuit, a portion of the primary winding thereof being included in each of the two branches of the local transmitter circuit, a microphone included in said local transmitter circuit and a battery adapted to direct current over the branches of said local transmitter circuit in parallel; substantially as described.

4. The combination with a telephone line, of an induction coil, the secondary winding thereof being included in circuit with the telephone line, a local transmitter circuit containing the microphone, the primary winding of said induction coil being included in said local transmitter circuit, said secondary winding being connected with an intermediate point of said primary winding, and a battery adapted to direct current over the telephone line and from the point of connection with the primary winding over the two portions of the primary winding through the transmitter circuit in parallel; substantially as described.

546,732. PACKING DEVICE FOR BEER-FAUCETS. JACOB DESERICH, Denver, Colo. Filed Apr. 27, 1895. Serial No. 547,407. (No model.)



Claim.—1. A packing device for air pipes of beer faucets comprising a projection on the faucet externally threaded at its end, a gland threaded to said projection, and a packing sleeve comprising a frustum of an elliptical sleeve having a hole therein through which the pipe slides, and an enlarged space in the walls of said hole intermediate of the ends of the sleeve, whereby the ends of the sleeve are compressed by said gland against the pipe and the internal central portion is removed from contact with it, substantially as described.

2. A packing device for air pipes of beer faucets comprising a projection having its end externally threaded, a gland having a flanged top provided with a circle of radially disposed recesses therein, an opening through the top of said gland and projection through which said air pipe passes, an oval or elliptical counterbore arranged opposite each other in said gland and projection, and a rubber packing sleeve fitting said gland and shaped to fit said elliptical or oval counterbores in said gland and projection, substantially as specified.

3. A packing device for air pipes of beer faucets comprising a projection on the faucet externally threaded to receive a gland, a gland, having a packing chamber, internally threaded thereto, a milled or recessed flanged outer end on said gland adapted to receive a spanner wrench and afford a frictional gripping surface for the hand, a hole through said gland and projection adapted to receive said air pipe, counterbores in the partition of said gland and in the top of said projection oppositely arranged and preferably of oval or elliptical form, a step between the edges of the counterbore of the gland and the side walls of its packing chamber, and a cylindrical, elliptical shaped rubber sleeve fitting said gland chamber and said counterbores in the gland and projection, a hole through said sleeve adapted to said air pipe and a circumferential recess in the walls of said hole intermediate of the ends of said sleeves, whereby the central portion is prevented from contacting with said air pipe and the ends by manipulation of the gland make two independent joints around it, substantially as herein described.

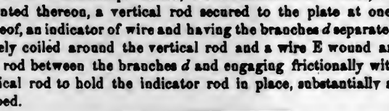
4. The combination in an air pipe packing device for beer faucets of a projection cast integral with said faucet having its end externally threaded, a gland having a packing chamber therein threaded thereto, oppositely arranged oval or elliptical counterbores concentric to the openings for the air pipe, and a rubber packing sleeve substantially as herein described arranged and adapted to bear at its external center against the side walls of said gland and at the ends in said counterbores, and to compress and pack said air pipe at two independent points, substantially as specified.

5. In an air pipe packing device for beer faucets the combination of the faucet and the air pipe, the gland and the rubber packing having the enlarged space surrounding the air pipe intermediate of the ends of the sleeve, as set forth.

546,733. HARMONICA. MAX DOMPEL, Klingenthal, Germany. Filed Mar. 19, 1894. Serial No. 504,296. (No model.)

Claim.—1. In a harmonica the combination with the casing having openings therein, of the resonance body arranged to be turned within said casing, substantially as described.

2. In a harmonica, the combination with the casing having openings therein, of the resonance body located within the same and having both a lateral and longitudinal movement therein, substantially as described.



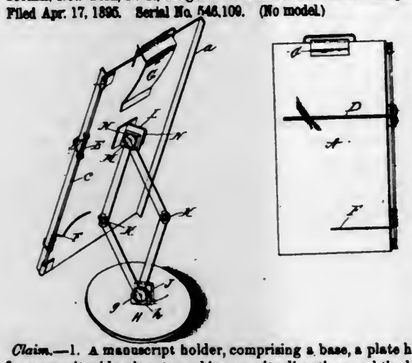
3. In a harmonica, the combination with the casing comprising the two parts revolubly mounted one upon the other and having aligning openings arranged to be thrown out of alignment by the movement of one casing upon the other, of the resonance body sliding within the inner casing, substantially as described.

4. In combination, the resonant body, and the double casing about the same, one being arranged to move on the other.

5. In combination the resonant body and the double casing, one being arranged to turn on the other.

6. In a harmonica, the combination with the casing having openings, of the resonance body arranged to be turned therein to throw the openings into and out of alignment with the blow holes and the stop for said turning movement, substantially as described.

546,734. COPY-HOLDER. HOWARD E. FOXALL and HENRY M. STORMS, New York, N. Y., assignors to Winfield S. Russell, same place. Filed Apr. 17, 1895. Serial No. 546,109. (No model.)

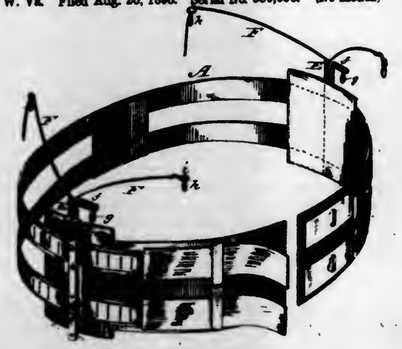


Claim.—1. A manuscript holder, comprising a base, a plate having flanges on its side edges turned in opposite directions and the lazy tongs pivotally secured to said base and to the plate, whereby the plate may be adjusted, substantially as described.

2. In a manuscript holder, the combination of a base having a projection thereon, the lazy tongs pivotally secured to said projection, a plate having a projection by which said plate is pivotally mounted on said lazy tongs, set screws to secure the lazy tongs rigidly in position and spring clamp devices to retain the manuscript in place on the plate, substantially as described.

3. In a manuscript holder, the combination of a base, a plate mounted thereon, a vertical rod secured to the plate at one side thereof, an indicator of wire and having the branches *d* separated and loosely coiled around the vertical rod and a wire E wound around said rod between the branches *d* and engaging frictionally with the vertical rod to hold the indicator rod in place, substantially as described.

546,735. GARMENT-SUPPORTER. ALVA S. GRIMM, St. Mary's, W. Va. Filed Aug. 20, 1895. Serial No. 559,933. (No model.)



Claim.—1. A garment supporter, consisting of a suitable belt, vertically adjustable bars connected thereto, hinged or jointed brackets upon the upper ends of the arm having laterally extended and elongated loops, and suitable arms attached to the bracket, said elongated loops and arms adapted for the attachment thereto of suitable elastic button-loops, substantially as and for the purpose set forth.

2. A garment supporter, consisting of a suitable belt, suitable bars adjustably connected thereto, a spring latch device for holding the bars in their adjusted position, jointed brackets upon the upper ends of the bars provided with laterally extended and elongated loops, and spring wire arms connected to the brackets, substantially as and for the purpose specified.

546,736. MOLDING APPARATUS. JOHN F. HAY, Erie, Pa., assignor to the Erie Malleable Iron Company, Limited, same place. Filed Mar. 8, 1895. Serial No. 540,969. (No model.)

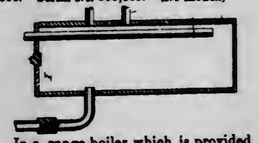


Claim.—1. In an apparatus for forming mold sections for casting metal articles with embossed or indented patterns thereon, the combination of a flask for holding a mold section having an annular surface thereon; an annular gear carried by said flask; a die having an embossed or indented pattern surface thereon of a diameter different from said flask and mold section and adapted to be brought into opposition to a mold section in place in said flask, and to impress the pattern on said mold section by rotative movement; a gear on said die which meshes with the gear on the flask when the mold section and die are in contact; and a guide for maintaining said gears and mold section and die in the same relative planes during the rotative movement.

2. In an apparatus for forming mold sections for casting metal articles with embossed or indented patterns thereon, the combination of a flask for holding a mold section having an annular surface therein; an annular gear carried by said flask, a die having an annular indented or embossed pattern thereon of less diameter than said flask and mold section and adapted to be brought into opposition with a mold section in place in said flask and to impress the pattern on the mold section by rotative movement; a gear on said die which meshes the gear on the flask when the mold section and die are in contact; and a guide on which said die is mounted which maintains the gears, mold section and die in the same relative planes during the rotative movement.

3. In an apparatus for forming mold sections for casting metal articles with embossed or indented patterns therein, the combination of the guide table F; the die G having a pattern surface *g'* and a gear *g* thereon; the flask C having the mold section holding cavity therein; and the cap part E doweled to said flask C and having the gear *e* therein, said mold section holding cavity and gear *e* being at such height from the table as to be brought into opposition to the pattern surface *g'* and gear *g* when the flask C is placed on the table F

546,737. RANGE-BOILER. JOSEPH HUBBEY, Madison, Wis. Filed June 11, 1890. Serial No. 355,105. (No model.)

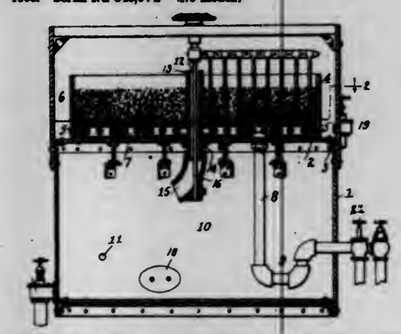


Claim.—1. In a range-boiler which is provided in the bottom thereof with a readily accessible screw-plug and hand-hole, for the removal of sedimentary deposits, a service-pipe which is connected to the boiler at one side, and at a point a considerable distance above the bottom thereof; combined with a circulating or water-back pipe, which is connected to the boiler at a point opposite the mouth of the service-pipe; a water-back; an upper circulating or return-pipe which leads from the water-back, and is connected to the boiler at a point directly above the receiving extremity of the lower circulating pipe; and a hot-water supply or distributing-pipe which extends from a point near the upper extremity of the boiler, directly downward through the bottom of the same; whereby an active circulation of the contents of the boiler, in the lower portion thereof, is avoided; and whereby a rapid flow of the heated currents, from the return-pipe to the distributing-pipe, is assured.

2 In a range-boiler which is provided, in the bottom thereof, with a hand-hole and screw-plug, for wiping the sediment-chamber, and for discharging deposits therefrom, a service-pipe which is connected to the boiler at one side of the vertical body, and at a considerable distance above the bottom thereof; a circulation-pipe which is connected to the boiler at a point directly opposite the mouth of the service-pipe, and which leads to the water-back of the range; a water-back; and a return-pipe which leads from the water-back, and discharges into the boiler at a point directly above the receiving extremity of the circulation-pipe; combined with a hot-water supply or distributing-pipe, which extends from a point near the upper extremity of the boiler, directly downward, through the bottom of the same,—the boiler being unprovided with any other interior pipe.

3. The herein described range-boiler, consisting of the ordinary vertical cylindrical body or shell A; the service-pipe C, discharging directly into the boiler, at a point a considerable distance above the bottom thereof, and provided with automatically-closing check-valve C', to prevent outflow through such service-pipe; a heating-circuit, consisting of the lower pipe E, the water-back B, and the return-pipe D;—the pipe E being connected to the boiler at a point directly opposite the mouth of the inflow or service-pipe C, and the return-pipe D discharging into the boiler at a point directly above the receiving extremity of the pipe E; the clearing-opening and closing-plug, in the bottom of the boiler; and the hot-water supply or distributing-pipe F, at the heating-circuit side of the boiler, and extending directly downward, from a point near the upper extremity of the boiler, to and through the bottom thereof; substantially as and for the purposes set forth.

546,738. FILTER. OMAR H. JEWELL, Chicago, Ill. Filed May 11, 1895. Serial No. 548,974. (No model.)



Claim.—In a filter the combination of a filter tank, a subsiding tank, and a filter material holding tank, formed as described, with a central communicating passage or opening between said tanks, an agitator for said filter, the shaft of which passes through said central opening, and projects into said subsiding chamber, and a pipe elbow rigidly secured to said shaft, and adapted to be rotated thereby, to give force and direction to the water passing down through said central opening and elbow, for flushing out and removing the sediment from said subsiding chamber, substantially as set forth.

546,739. METHOD OF MAKING POROUS PLATES OR ELECTRODES. JOHN JOHNSON and JAMES H. ROBERTSON, Brooklyn, N. Y. Filed Apr. 2, 1895. Serial No. 544,216. (No specimens.)

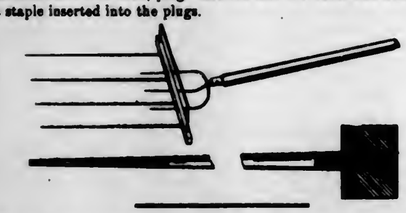
Claim.—1. The herein described method of making a mechanical mixture of a metal and an inert non-conducting porous substance, which consists in heating the metal until brought to a molten condition and then while in such condition adding and kneading the inert substance to such metal, whereby the air in such porous substance is expanded and caused to produce air spaces.

2. The herein described method of making an electrode for a battery, which consists in making a mechanical mixture of a molten metal and an inert non-conducting porous substance, and subjecting the mixture to an electric current.

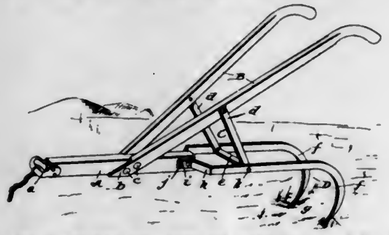
3. The herein described method of making an electrode for a battery, which consists in making a mechanical mixture of molten metallic lead and granulated pumice stone, and subjecting the mixture to an electric current.

546,740. BARLEY-FORK. NEWTON LEONARD, Washington Mills, N. Y. Filed Apr. 29, 1895. Serial No. 547,466. (No model.)

Claim.—A fork comprising a head, tines constructed from pieces of sheet metal, one of the ends of said blanks being sheared off so that they will roll into a point and the opposite ends into tubes and mounted into said head, plugs inserted into the tubes and head and a staple inserted into the plugs.

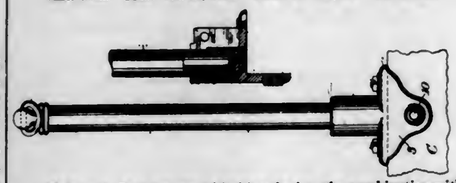


546,741. SUGAR-CANE HOOK. JOHN T. MOORE, Schriever, La. Filed Mar. 25, 1895. Serial No. 543,109. (No model.)



Claim.—The cane hook described, consisting essentially of the beam, the handles connected to and extending upwardly and rearwardly from the beam, the two parallel hooks D of equal length respectively formed in one piece and provided at their forward ends with the inwardly bent portions A, secured to the beam adjacent to the rear end thereof, and at their rear ends with the sweeping curved depending branches directed slightly forward and pointed at their ends and adapted to enter the ground; the said depending branches of the hooks being narrow transversely so as not to materially increase the draft, and blunt so as not to cut the cane, and the angular strap brace C arranged in rear of the beam and having its ends connected to the handles and its lower portion interposed between and connected to the hooks D, all as and for the purpose set forth.

546,742. HITCHING DEVICE. HERBERT R. MURILLEN, Rockville, Conn. Filed Jan. 28, 1895. Serial No. 536,440. (No model.)



Claim.—1. In a two-part hitching device, the combination with a post; of a base comprising a base-plate; a longitudinally-divided tubular post-holder integral with said base-plate and having different internal diameters; means integral with said base-plate and projecting into that part of the holder having the largest internal diameter for engaging and rigidly holding the lower end of the post against lateral movement; and means for clamping said longitudinally-divided holder, whereby that portion of the holder having the smallest internal diameter will be clamped on to the post, substantially as described.

2. In a two-part hitching device, the combination with a post; of a unitary base having a divided tubular post-holder integral with the base-plate and adapted to receive the lower end of the post, said holder comprising a lower portion separating the clamping-collar and the inclined shoulder of the base-plate; and an upper clamping-collar of smaller internal diameter than said body portion and forming a continuation thereof; and said base also having a base-plate formed with an inclined shoulder in fixed, axial alignment with the longitudinal axis of the clamping-collar; and said base also having said shoulder in position and adapted to locate and fixedly hold the lower end of the post in lateral direction; and means for closing the clamping-collar upon the post, to thereby lock the base and the post in rigid engagement with each other, substantially as specified.

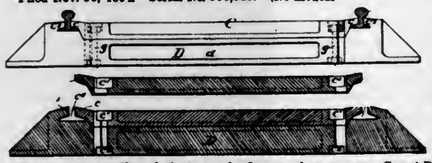
546,743. CURTAIN-FIXTURE. WASHINGTON K. MCCOY, Washington, D. C. Filed June 11, 1895. Serial No. 552,419. (No model.)

Claim.—1. In curtain fixtures, the main pole provided with dependent spring supports curved upward and outward, thereby forming an enlarged space at the bottom of the curve, and carrying a pole in said space, an auxiliary pole sprung into place and held in contact with the pole in said space by the elasticity of said spring-supports, as set forth.



2. In curtain fixtures, a main pole provided with dependent spring supports carrying an inner auxiliary pole, an outer auxiliary pole held in place by said spring supports, and spring clasps pivoted in said main pole, all arranged and combined as set forth.

546,744. RAILROAD-TIE. JOHN D. MCDOWELL, Evergreen, Pa. Filed Nov. 30, 1894. Serial No. 530,513. (No model.)

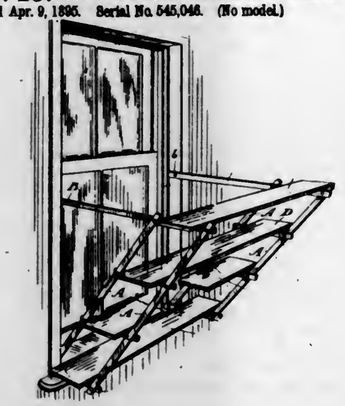


Claim.—1. A railroad tie formed of paper in two parts C and D which have enlarged end portions to embrace the sides of the rails, as shown, and having registering bolt openings, the part D having nuts E embedded therein, substantially as specified.

2. A railroad tie made of paper having the two parts, C and D, the former having the parts c c and the latter having the parts c^3 c^3, both being enlarged for the purpose specified, all substantially as described and shown.

3. A railroad tie formed of paper in two parts C and D, the part D having raised end portions to form seats for the rails and having enlarged portions c^3, and the part C fitted upon the part D and having sloping sides and enlarged ends c, both parts C and D having registering openings for the bolts, and nuts E embedded in the part D to receive the bolts by which the parts C and D are secured together, substantially as specified.

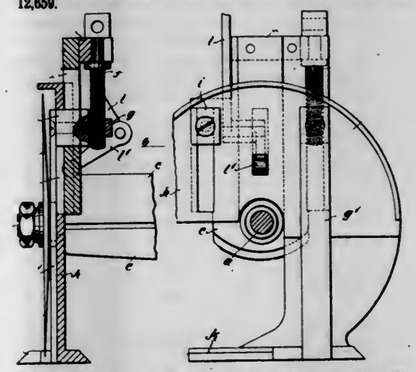
546,745. FLOWER-STAND. WILLIAM NAFE, Waterloo, Canada. Filed Apr. 9, 1895. Serial No. 545,046. (No model.)



Claim.—1. In combination with a window frame, the inclined side bars, the horizontal top and bottom bars pivotally connected to the inclined bars and detachably connected with the window frame, intermediate supports connected with the inclined bars, and the shelves supported therefrom, substantially as described.

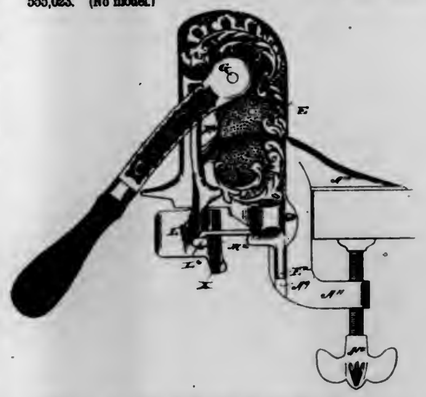
2. In combination with a window frame, the inclined side bars, the horizontal top and bottom bars pivotally connected to the inclined bars and detachably connected with the window frame, the intermediate folding supports pivotally connected to the inclined bars with means for holding them in a horizontal position, and the shelves supported by said supports, substantially as described.

546,746. CLOTH-CUTTING MACHINE. JACOB PHILIPPSOHN, Berlin, Germany. Filed July 24, 1894. Serial No. 518,473. (No model.) Patented in Germany Feb. 1, 1893, No. 71,835, and June 9, 1893, No. 72,606, and in England May 23, 1893, No. 10,182, and June 28, 1893, No. 12,659.



Claim.—In a cloth cutting machine having a rotatable knife provided with a movable knife-guard guided by a plate secured to the casing of the cutting machine, and a foot attached to said knife-guard, and adapted to raise the cloth against said knife, the combination with said guide-plate, of a slide taking through vertical slots provided in the said guide-plate as well as in the said knife-guard, and having secured to its front a vertical stop-bar adapted to prevent the knife from cutting into the table; a threaded spindle connecting said slide with its guide-plate, and adapted to adjust by means of the said slide said stop-bar as well as the knife-guard according to the wear of the knife, substantially as described.

546,747. CORK-EXTRACTOR. MICHAEL REDLINGER and MATTHIAS REDLINGER, Jr., Freeport, Ill. Filed July 5, 1895. Serial No. 555,023. (No model.)



Claim.—1. In a cork extractor, in combination, a standard terminating at its upper end in a horizontal arm, a cork screw rotatably mounted by its upper end in a stationary bearing therein, a cork screw nut corresponding with, and adapted to freely slide up and down upon, the cork screw, an oscillatory cam disk for driving the cork screw nut, and a cork screw nut carrier connecting the oscillatory cam disk with the cork screw nut, substantially as and for the purpose specified.

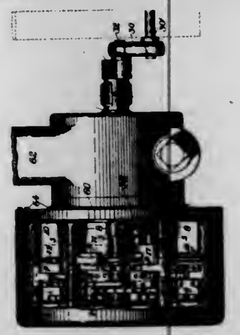
2. In a cork extractor, in combination, a standard terminating at its upper end in a bracket having a cam groove in the horizontal arm thereof, a bottle carriage adapted to travel vertically on the bracket, an oscillatory cam disk mounted in the bottle carriage and a wheel—mounted on the inner face of the oscillatory cam disk eccentrically therewith—engaging with and adapted to travel back and forth in the cam groove in the horizontal bracket arm, substantially as and for the purpose specified.

3. In a cork extractor, in combination, a main frame, jaws, for grasping the necks of bottles, hinge jointed at their rear portions and provided with supporting arms, hinge jointed by their upper ends to the main frame, and springs for actuating the jaws, substantially as and for the purpose specified.

4. In a cork extractor, in combination, a standard terminating at its upper end in a bracket having a cam groove in the horizontal arm thereof, a cork screw rotatably mounted by its upper end in the horizontal bracket arm, a bottle carriage provided with spring actuated jaws for grasping the necks of bottles and adapted to travel up and down the vertical arm of the bracket, an oscillatory cam disk mounted in the bottle carriage and a wheel—mounted on the inner face of the oscillatory cam disk eccentrically therewith—engaging with and adapted to travel back and forth in the cam groove in the horizontal bracket arm, substantially as and for the purpose specified.

5. In a cork extractor, in combination, a standard terminating at its upper end in a bracket having a cam groove in the horizontal arm thereof, a cork screw rotatably mounted by its upper end in the horizontal bracket arm, a cork screw nut corresponding with, and adapted to freely slide upon, the cork screw, a cork screw nut carrier, connected with the cork screw nut, a bottle carriage adapted to travel up and down the vertical arm of the bracket, and an oscillatory cam disk mounted in the bottle carriage and connecting with the cam groove in the horizontal bracket arm and with the cork screw nut carrier, substantially as and for the purpose specified.

546,748. REGISTERING MECHANISM. FRANCIS H. RICHARDS, Hartford, Conn. Filed Mar. 3, 1894. Renewed Feb. 15, 1895. Serial No. 538,521. (No model.)



Claim.—1. In a registering apparatus, the combination with a register-train and an actuator; of two independently-operative and reciprocally-effective feed devices in operative connection with the register-train, and adapted, one of them for normally actuating said register-train independent of the other, substantially as described, and for the purpose set forth.

2. In a registering apparatus, the combination with the register-train, and with a reciprocatory member whose movements are to be registered; of a compound-feed device embodying two revoluble feed-members in co-operative connection, and adapted for reciprocally actuating the register-train; and an actuator in connection with said revoluble members and with the reciprocatory member, substantially as described.

3. In a registering apparatus, the combination with a register-train, and with a reciprocatory member whose movements are to be registered; of two independent feed devices in operative connection with the register-train, and each having a feed-wheel in operative connection, one with the other, and adapted for reciprocally actuating the register-train, substantially as described.

4. In a registering apparatus, the combination with the register-train and the reciprocatory member whose movements are to be registered; of a compound-feed device, substantially as described, in operative connection with the register-train, and comprising a primary feed device and a secondary feed device having independent feed-wheels in operative connection with each other, and with the reciprocatory member, and adapted for reciprocally effective and ineffective operations.

5. In a registering apparatus, the combination with a reciprocatory member whose movements are to be registered; of a pair of peripherally-toothed register-wheels carrying dials; a transmission-lever carried by one of said wheels with its free end adapted for successively engaging the successive teeth of the other of said wheels; and a compound-feed device in operative connection with one of said wheels and with the reciprocatory member, and embodying two independently-operable and reciprocally-effective feed devices in co-operative connection, and adapted, one of them for normally actuating the register-train independent of the other, substantially as described, and for the purpose set forth.

6. The combination with the register-train of a register and with the reciprocatory member whose movements are to be registered, of a ratchet-feed wheel in operative connection with the register-train, a supplemental feed-wheel in operative connection with the ratchet-wheel, and an oscillating actuator in operative connection with the reciprocatory member and carrying means for directly actuating one or the other of said feed-wheels, whereby said register-train may be driven directly by the supplemental feed-wheel through the medium of the ratchet-feed-wheel, substantially as described and for the purpose set forth.

7. The combination with the register-train of a register, and with the reciprocatory member whose movements are to be registered, of a ratchet-feed wheel in operative connection with the register-train, a supplemental-feed wheel in operative connection with the ratchet-wheel, an oscillating actuator in operative connection with the reciprocatory member and carrying means for directly actuating one or the other of said feed-wheels, a spring-actuated roller-detent in engagement with the teeth of the supplemental-feed wheel, and a spring-held detent device in engagement with a tooth of the ratchet-feed wheel, the roller detent being adapted for retaining the supplemental-feed wheel in proper operative relation to the ratchet-feed wheel and the other detent-device being adapted for preventing retractive movement of said ratchet-feed wheel, substantially as described and for the purpose set forth.

8. In a registering-apparatus, the combination with the register-wheels operatively connected together, of a feed-wheel in connection with one of said register-wheels, means for directly and intermittently rotating said feed-wheel, and a supplemental feed-wheel in connection with the first feed-wheel, and means for operating said second feed-wheel independent of the actuating-mechanism of the first feed-wheel, substantially as described and for the purpose set forth.

9. The combination with the reciprocatory member whose movments are to be registered, and with the actuator of the register, and the connection between said actuator and reciprocatory member, of a feed-wheel in operative connection with, and adapted for moving, the register-wheels of said register, a pawl carried by the actuator and adapted for rotating said feed-wheel, a supplemental or safety-feed wheel located at one side of and in normal idle engagement with said first feed-wheel, means for retaining the supplemental feed-wheel in proper relation to the first feed-wheel and means connected with the actuator for operatively engaging and rotating said supplemental-feed wheel to operate the register-wheels in case the pawl should become inoperative, substantially as described and for the purpose set forth.

10. The combination with the reciprocatory member, the register-train actuator, and the connection between said actuator and reciprocatory member, of a ratchet-wheel operated by a pawl carried by said actuator and adapted for imparting movement to the register-train, an escapement-wheel connected with said ratchet-wheel and adapted to be operated to rotate said ratchet-wheel in case the direct actuating-mechanism of the ratchet-wheel should become inoperative, and means for rotating said escapement-wheel directly from the actuator, and means for retaining said escapement-wheel in operative position with relation to the ratchet-wheel, substantially as described.

11. The combination with the register-train of a register; of a compound-feed mechanism in operative connection with the register-train, and comprising two independent feed devices in co-operative relation—viz., a pawl-and-ratchet-feed device in position and adapted for normally and independently actuating the register-train continuously; and a supplemental feed device in operative connection with the pawl-and-ratchet-feed device, and controlled in its effective operation by the stopping of said ratchet-feed device, substantially as described, and for the purpose set forth.

12. The combination with the register-train of a register; of a compound-feed mechanism consisting of a pawl-and-ratchet feed device; and an independent, supplemental feed device in operative connection with said pawl-and-ratchet feed device; an actuator adapted for engaging with and for operating one or the other feed device; and detent devices in engagement with and adapted for holding the feed mechanism against retractive movement, substantially as described.

13. The combination with the register-train, the reciprocatory member whose movements are to be registered, and the feed-actuator; of a compound feed device in operative connection with the register-train and feed-actuator, and comprising two independent, and reciprocally-effective feed members in co-operative connection; and means carried by the feed-actuator in position and adapted for engaging and rotating said members, reciprocally, substantially as described.

14. In a registering apparatus, the combination with the reciprocatory members whose movements are to be registered, and with a register-train; of a primary and a secondary feed device, each having a revoluble-feed member in operative connection with the other, and one of which is in direct operative connection with the register mechanism; and a feed-actuator in connection with the reciprocatory member and the feed devices, and adapted for effectively operating one of said feed devices, independent of, and during the ineffective operation of the other of said feed devices, and vice versa; substantially as described.

15. In a registering apparatus, the combination with the register-train; of two independent feed devices in co-operative connection, and each embodying an independent, revoluble-feed member and an actuator therefor, substantially as described.

16. In a registering apparatus, the combination with the register-train; of two independently-operative intermeshing feed-wheels in operative connection with said register-train; and an actuator in position and adapted for engaging and actuating said feed-wheels, reciprocally and independently, substantially as described, and for the purpose set forth.

17. In a registering-apparatus, the combination with the register-train, of two operatively-connected feed-wheels, one of which is in direct operative connection with the register-train and both of which are adapted for reciprocally-actuating one another, and means in position and adapted for directly actuating one or the other of said feed-wheels, substantially as described and for the purpose set forth.

18. In a registering-apparatus, the combination with the register-train, of a compound feed-mechanism embodying two intermeshing feed-wheels; an actuator in position and adapted for imparting an advancing movement to said feed-wheels and means controlled by said actuator for limiting the advancing movement of said feed-wheels substantially as described and for the purpose set forth.

19. In a registering apparatus, the combination with the register-train; of a compound-feed mechanism comprising two independent feed devices, one of which is supplemental to, and is dependent for effective operation upon the ineffective operation of the other; an actuator in position and adapted for engaging and advancing one or the other of said feed devices; and means carried by said actuator in position and adapted for engaging one of said feed devices, and for limiting the advancing movement of the feed mechanism, substantially as described, and for the purpose set forth.

20. In a registering-apparatus, the combination with the register-train, of a ratchet-feed-wheel in operative connection with said register-train, an escapement-wheel in mesh with said ratchet-wheel, an actuator in position and adapted for directly and reciprocally-operating said ratchet-wheel and escapement wheel, and means carried by said actuator in position and adapted for engaging the escapement-wheel and for limiting the advancing-movement thereof, substantially as described and for the purpose set forth.

21. In a registering-apparatus, the combination with the register-train, of two meshing feed-wheels, one of which is in operative connection with the register-train, an actuator in position and adapted for reciprocally imparting an advancing movement to said feed-wheels and means carried by said actuator in position and adapted for engaging one of said feed-wheels and for limiting the advancing movement thereof, substantially as described and for the purpose set forth.

22. The combination with a reciprocatory member whose movements are to be registered and with the actuating member of a dial-mechanism, of a duplex- or quarter-stroke-linkage having two dead-centers, and comprising two single-linkages operatively connected together and adapted, one of them, for producing one of the dead-centers at one end, and the other of them the other of the dead-centers at the other end, of the stroke of said duplex-linkage, substantially as described and for the purpose set forth.

23. In a registering-apparatus, in combination, a reciprocatory member whose movements are to be registered, a first and a second register-wheel, having a corresponding number of teeth, and carrying dials, a transmission-lever carried by one of said wheels in position for engagement with the teeth of and adapted for rotating the other wheel, an actuator operatively connected with the first register-wheel, and a duplex-linkage, operatively connecting the actuator and the reciprocatory member, and adapted for rotating said first-wheel to impart an intermittent rotary movement to the second wheel, and comprising two single-linkages and each single-linkage having a dead-center at opposite ends, respectively, of the stroke of the duplex-linkage, substantially as described and for the purpose set forth.

24. In a registering-apparatus, the combination with a reciprocatory member whose movements are to be registered, of a driving and a driven wheel, the driving wheel of which has a series of peripheral teeth, a transmitting lever carried by the driving-wheel and adapted for engaging the teeth of and for carrying said driven-wheel the aliquot part of a complete rotation upon each complete rotation of said lever, and a duplex-linkage in operative connection with the reciprocatory member and driving-wheel, and comprising two single-linkages, of two members each, and each single-linkage having a dead-center at opposite ends, respectively, of the stroke of the duplex-linkage, substantially as described and for the purpose set forth.

25. In a registering-apparatus, the combination with a pair of register wheels adapted for intermittent rotary movements, of a stop-wheel carried by one of said register-wheels a locking-wheel carried by the other of said register-wheels, a reciprocatory wheel-locker intermediate to said locking-wheel and stop-wheel, and adapted for being held normally in engagement with the stop-wheel, to prevent movement thereof, an actuator operatively connected with the locking-wheel a reciprocatory-member, and a duplex-linkage connecting said reciprocatory-member and actuator, and adapted for rotating the locking-wheel to intermittently release the wheel-locker from engagement with the stop-wheel, and comprising two single-linkages each having a dead-center at opposite ends, respectively, of the stroke of the duplex-linkage, substantially as described and for the purpose set forth.

26. In a registering-apparatus, in combination, a reciprocatory-member whose movements are to be registered a pair of register-wheels, a stop-wheel carried by one of the register-wheels, a locking-wheel carried by the other of the register-wheels, a locking-arm in position and adapted for operation by the locking-wheel and for engaging and releasing the stop-wheel, an actuator operatively connected with the locking-wheel and with the reciprocatory member by means of a duplex-linkage consisting of two pivotally connected single linkages, each having a dead-center at opposite ends, respectively, of the stroke of said duplex-linkage, substantially as described and for the purpose set forth.

27. In a registering-apparatus, the combiuation with a register-wheel and with a locking-wheel carried thereby having a holding-face and a let-off notch, of a second register-wheel and a stop-wheel carried by said register-wheel and having a series of stop-notches, a reciprocatory wheel-locker, in position and adapted for operation by the locking-wheel for engaging and releasing said stop-wheels, actuating-mechanism for the first register-wheel consisting of a reciprocatory-member, an actuator in connection with the first-register wheel, a duplex-linkage connecting the actuator with a reciprocatory-member, and comprising two single linkages each having a dead-center at opposite ends, respectively, of the stroke of the duplex-linkage, and means for intermittently rotating the second-register wheel from the first register-wheel, substantially as described.

28. In a registering-apparatus, in combination, a pair of register-wheels adapted for intermittent movements, a stop-wheel carried by one of said register-wheels and having stop-notches in the periphery thereof, a locking-wheel carried by the other of said register-wheels having a let-off notch formed in its periphery, a wheel-locker having two working-faces, one of which is in bearing contact with the periphery of the locking-wheel, and the other of which is contiguous to a stop-notch of the stop-wheel, and means for rotating the locking-wheel to intermittently throw the wheel-locker out of and into engagement with a stop-notch of the stop-wheel, which means consists of a reciprocatory-member, an actuator operatively connected with the locking-wheel and a duplex-linkage comprising a plurality of single-linkages pivotally connected together and to the reciprocatory-member and actuator and each single-leakage having a dead-center at opposite ends, respectively, of the stroke of the duplex-linkage, substantially as described.

29. In a registering-apparatus, the combination with two dial-carriers of a notched stop-wheel carried by one and a notched locking-wheel carried by the other of said carriers, a pivotally supported locking-lever having at its free end working-faces, one of which working-faces is contiguous to the locking-wheel and the other of which working-faces is contiguous to the stop-wheel, a reciprocatory-member whose movements are to be registered operatively connected with the locking-wheel by means of a duplex-linkage comprising two single-linkages having each a dead-center at opposite ends, respectively, of the stroke of the duplex-linkage, and means for carrying the stop-wheel and aliquot part of a complete rotation at each complete rotation of the locking-wheel, substantially as described.

30. In a registering-apparatus, in combination, a ratchet wheel carrying a dial, a toothed register-wheel adjacent to said ratchet wheel, a transmission-lever carried by the ratchet wheel and adapted for intermittently engaging the tooth of the adjacent wheel, an actuator carrying a pawl in engagement with the ratchet wheel a reciprocatory-member and a duplex-linkage or quarter-stroke-linkage connecting said reciprocatory member and actuator and comprising two single-linkages and each single-linkage having a dead-center at op-

posite ends respectively of the stroke of the actuator, substantially as described and for the purpose set forth.

31. In a registering-apparatus, in combination, two register-wheels each having ten peripheral teeth, a transmission-lever carried by one of said wheels and adapted for intermittently engaging the teeth of the next adjacent wheel, an oscillating actuator carrying a pawl in engagement with the teeth of one of said wheels, a stop-wheel carried by one, and a locking-wheel carried by the other, of said wheels, a wheel-locker having two working-faces, one of which is in contact with the locking-wheel and the other of which is contiguous to the periphery of the stop-wheel reciprocatory-member whose movements are registered, and a duplex-linkage connecting the reciprocatory-member and actuator, and comprising two single-linkages each having a dead-center at opposite ends, respectively, of the stroke of the said duplex-linkage, substantially as described and for the purpose set forth.

32. In a registering-apparatus, a pair of toothed register-wheels, one of which carries a transmission-lever in position and adapted for engagement with the teeth of the adjacent wheel, a compound feed device in connection with one of said wheels, it comprising an actuator carrying a pawl in engagement with one of said wheels and having pallets adapted for engagement with the teeth of an escapement wheel, and an escapement wheel adapted to be engaged by said pallets for rotating the said register-wheel in case the pawl should become inoperative, and a reciprocatory member having a linkage connection with the actuator, substantially as described and for the purpose set forth.

33. In a registering-apparatus, in combination, two or more successive register-wheels carrying dials, transmission levers carried by one or more of said register-wheels each of which levers is in position and is adapted for engagement with the next preceding wheels upon one complete rotation of the wheel by which said lever is carried, means for locking the successive register-wheels against movement when the transmission levers are out of engagement therewith and means for rotating the first register of the series of register-wheels, it consisting of a reciprocatory member an actuator in connection with the said first wheel and a duplex linkage connecting the actuator and reciprocatory-member which duplex-linkage consists of two single-linkages each having a dead-center at opposite ends, respectively, of the stroke of the duplex-linkage, substantially as described and for the purpose set forth.

34. The combination with the dial-mechanism of a register, and with a reciprocatory member whose movements are to be registered and whose working stroke consists of an effective period between two neutral periods, of an actuator for the dial-mechanism, and a connection between the reciprocatory-member and the actuator consisting of a linkage having the dead-center periods of its stroke coincident with the neutral periods, respectively, of said reciprocatory-member, substantially as described and for the purpose set forth.

35. The combination with the dial-mechanism of a register, and with the reciprocatory-member whose movements are to be registered and whose working stroke comprises an upper and lower neutral period and a middle period, substantially as described, of an actuator operatively connected with the dial-mechanism and a connection between said actuator and reciprocatory-member consisting of a duplex-linkage comprising two single-linkages, and whose dead-center period coincides with the upper neutral period of the reciprocatory-member and whose effective operation upon the actuator-member takes place near the middle of the complete stroke of the reciprocatory-member, substantially as described and for the purpose set forth.

36. The combination with the dial-mechanism of a register and with the reciprocatory-member whose movements are to be registered and whose working-stroke comprises an upper and lower neutral period and a middle period, of an actuator-member in operative connection with the register-mechanism and a duplex-linkage, connecting the actuator-member and the reciprocatory-member, and comprising two single-linkages, and having the dead-center period of its stroke coincident with the lower neutral period of the reciprocatory-member, and having its effective retractive action upon the actuator take place between the lower neutral period and middle period of the retractive stroke of the reciprocatory-member, substantially as described and for the purpose set forth.

37. The combination with the dial-mechanism, of a register, and with a reciprocatory-member whose movements are to be registered, and whose working stroke consists of an upper and a lower neutral period and a middle period, of an actuator for the dial-mechanism, and a duplex-linkage operatively connecting the actuator and the reciprocatory-member, and consisting of two single-linkages each having a dead-center at opposite ends, respectively, of the stroke of the duplex-linkage coinciding with the upper and lower neutral periods, respectively, of the reciprocatory member, and having the total stroke thereof composed of an active period between the neutral periods, substantially as described.

38. In a registering-apparatus, a pair of toothed register-wheels, one of which carries a transmission-lever in position and adapted for engagement with the teeth of the adjacent wheel, a compound feed device in connection with one of said wheels, it comprising an actuator carrying a pawl in engagement with one of said wheels and having pallets adapted for engagement with the teeth of an escapement wheel, and an escapement-wheel adapted to be engaged by said pallets for rotating the said register-wheel in case the pawl should become inoperative, and a reciprocatory member in operative connection with the actuator, substantially as described and for the purpose set forth.

39. The combination with the reciprocatory member whose movements are to be registered, and with the actuating member of the dial-mechanism, of a duplex linkage consisting of two single linkages each consisting of a link and rocker-arm organized substantially as set forth so that on one stroke of said reciprocatory member one linkage comes to its dead-center position, and on the opposite stroke of said member the other linkage comes to its dead-center position, whereby the resultant movement of the actuator takes place only during the middle portion of the stroke of the reciprocatory member, substantially as described.

40. The combination with the reciprocatory member whose movements are to be registered, and with the actuating member of a dial-mechanism, of two single linkages each comprising a link and a rocker-arm, one of which links is pivotally connected with the actuator, and the other of which links is pivotally connected with the reciprocatory member, and all of which are so organized that one of said linkages comes to its dead-center position at one end of the stroke of the reciprocatory member, and the other of said linkages comes to its dead-center position at the opposite end of the stroke of said member, whereby the effective movement of said linkages together with the actuator takes place at the middle portion of the stroke of the reciprocatory member, substantially as described and for the purpose set forth.

41. The combination with the reciprocatory member whose movements are to be registered and with the actuating member of a registering-mechanism, of a duplex-linkage comprising two links, one of which is pivotally secured to the reciprocatory member, and the other of which is pivotally secured to the actuator, and two intermediate rocker-arms secured at one end to, or formed upon a rocker-shaft at an angle to each other, and pivotally secured at their opposite ends to the aforesaid links and so organized as to have their total strokes resultant from an active period located between the two neutral periods of the reciprocatory member, substantially as described.

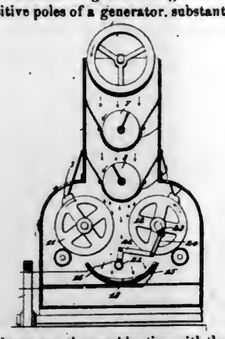
42. The combination with the reciprocatory member whose movements are to be registered, and with the actuating-member of a register-mechanism, of the linkage intermediate to said reciprocatory member and actuator, and two feed-wheels, one of which is in operative connection with the registering-mechanism, and means connected with the actuator for operating one or the other of said feed-wheels directly from the actuator whereby the feed-wheel which is directly operated by the actuator rotates the adjacent feed-wheel, substantially as described and for the purpose set forth.

43. The combination with the register-train of a register and with the reciprocatory member whose movements are to be registered, of a ratchet-feed wheel in operative connection with the register-train, a supplemental feed-wheel in operative connection with the ratchet-wheel, and an oscillating actuator in operative connection with the reciprocatory member and carrying means for directly actuating one or the other of said feed-wheels, whereby said register-train may be driven directly by the supplemental feed-wheel through the medium of the ratchet feed-wheel, substantially as described and for the purpose set forth.

44. In a registering mechanism, a peripherally-toothed register-wheel; a peripherally-notched stop-wheel, concentrically carried by, and having its stop-notches in alternating disposition, relatively to the tooth-spaces of, the register-wheel; a locking-wheel located in the peripheral plane of the stop-wheel, and having a let-off notch adapted to register successively with the stop-notches of the stop-wheel; a pivotally-supported wheel-locker having its working-faces intermediate to and in alignment with the axis of the stop-wheel and locking-wheel; and a register-wheel actuator carried by the locking-wheel with its free working-end in position for successively engaging the successive teeth of the register-wheel; and means for rotating the actuator; substantially as described, and for the purpose set forth.

546,749. AMALGAMATOR. GEORGE M. URIE, San Francisco, Cal. Filed Apr. 5, 1895. Serial No. 544,608. (No model.)

Claim.—1. In an amalgamator, the combination with the receiving, revolving screen, the stationary screens of finer mesh, to receive the screenings from said revolving screen, and the rotary conveyers, of the revolving magnetic cylinders, located below the same, the amalgamating pan or trough provided with riffle plates and amalgamated plates, the oscillating electrode suspended above said trough, and the conductors connecting said trough and electrode with the negative and positive poles of a generator, substantially as described.



2. In an amalgamator, the combination with the revolving, receiving screen, the stationary screens located below the same, and the rotary conveyers, of the magnetic revolving cylinders, located beneath said screens, the amalgamating pan or trough provided with riffle plates and amalgamated plates, the oscillating electrode suspended above said trough, the conductors connecting the said trough and electrode with the negative and positive poles of a generator, and the non magnetic scrapers, substantially as described.

3. In an amalgamator, the combination with the revolving receiving screen, the vertical chute at one end thereof, the open screens and the revolving conveyers, of the revolving magnetic cylinders located below said screens, the amalgamating pan or trough, provided with riffle plates and amalgamated plates, the oscillating electrode, the bell cranks in which it is journaled, the arm on the shaft of one of said magnetic cylinders with which it is connected, the conductors connected with said electrode and trough and with the positive and negative poles, respectively, of a generator and the non magnetic brushes, substantially as described.

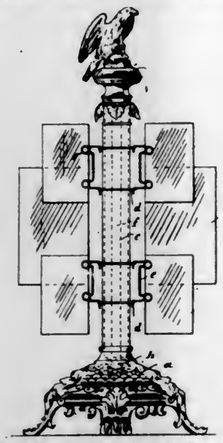
546,750. KNIFE FOR ROTARY TRIMMERS. AMBROSE S. VOSE, Boston, Mass. Filed Jan. 2, 1895. Serial No. 533,526. (No model.)



Claim.—1. As a new article of manufacture a knife having a chisel edge and provided with a transverse groove extending across its flat face below said edge, substantially as and for the purpose set forth.

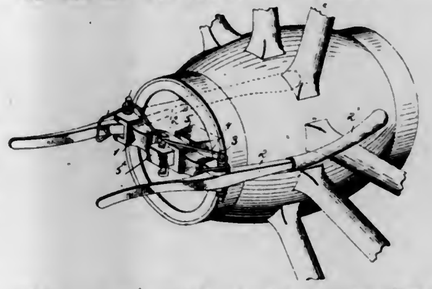
2. As a new article of manufacture a knife having a chisel edge and provided with a transverse groove extending completely across its flat face; said groove being approximately in parallelism with said edge.

546,751. PILLAR PHOTOGRAPH-STAND. ISAAK WERTHEIM, Charlottenburg, Germany. Filed July 24, 1894. Serial No. 518,435. (No model.)



Claim.—1. In a pillar photograph stand the combination of the foot-piece *a*, an upright axis *f* with an ornamental head, said axis being firmly screwed to said foot-piece, a pillar *e* surrounding and adapted to rotate about said axis, a series of parallel perforated disks secured to said pillar and rotating therewith, wires *e* looped at two different places forming clips for holding photographs the ends of the wires being bent downward to enter the perforations of the disks whereby the photographs are held for inspection, substantially as set forth.

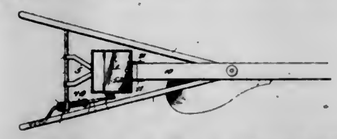
546,752. AXLE-NUT WRENCH. ALBERT R. YOUNT, Yountsville, Ind. Filed June 7, 1895. Serial No. 552,007. (No model.)



Claim.—1. A nut wrench for vehicles, having a main frame, a pair of clamping arms mounted on pivot pins in the ends of said frame, a pair of soft coverings mounted on the arm fingers which clamp between the spokes on opposite sides of the wheel-hub, in combination with a pair of bent arm springs mounted on pivot pins in the ends of the main frame having their outer ends pushing outwardly on the handles of the arms and their inner ends pressing inwardly on the outer end of the rectangular shank of the nut cap, as and for the purposes set forth.

2. A nut wrench having a main frame, a pair of clamping arms mounted on pivot pins in the ends of said frame, a pair of soft coverings mounted on the arm fingers, in combination with a pair of bent arm springs mounted on pivot pins in the ends of said frame having their inner ends pressing inwardly on the rectangular shank of the nut cap which holds the axle nut securely in its proper position in the wheel-hub, while applying lubricants to the spindle, for starting the nut home by rotating the replaced wheel without having to steer the appliance, and a self adjusting nut cap having a suitable aperture which receives the axle nut and a rectangular shank at its rear side longitudinally movable in a suitable aperture in the main frame which receives the pressure of the inner ends of the bent arm springs, all as and for the purposes set forth.

546,753. CORN-PLANTING ATTACHMENT FOR PLOWS. CLARENCE D. BAIRD, Alexandria, Tenn., assignor of two-thirds to D. W. Dingus and J. R. Sneed, same place. Filed Oct. 20, 1894. Serial No. 526,512. (No model.)



Claim.—1. The combination with a plow, of a seed hopper provided with dropping mechanism and located in rear of the plow beam, the plates 11 pivoted to the beam and to the hopper and hinging the latter to the former, and the substantially Y-shaped support adjustably secured to the hopper, and provided at the upper terminals of its diverging arms with hooks engaging the cross-bar or rung of the plow handles, and rigidly supporting the hopper at the desired adjustment, substantially as described.

2. The combination of a hopper having an opening in its bottom and provided with an enlargement located at the rear of the opening and having an inclined front face, an upwardly yielding plate located at the front of the opening of the bottom, and having an actuating spring, a reciprocating seed slide having a seed opening and provided in advance of the same with a recess having corrugations, said seed slide being provided in rear of its opening with a beveled projection, and an adjustable plate mounted on the seed slide in advance of the opening thereof for regulating the size of the same and interlocked with said corrugations and located beneath the upwardly yielding plate and held by the same in engagement with the corrugations, substantially as described.

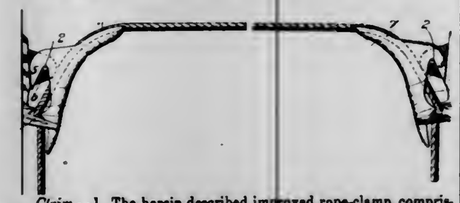
3. The combination of a hopper having an opening in its bottom, an upwardly yielding spring pressed plate mounted on the bottom of

the hopper and projecting over the opening thereof, a reciprocating seed slide having a seed opening and provided in advance of the same with corrugations, and an adjustable plate interposed between the corrugated portion of the seed slide and the yielding plate and held by the same in engagement with the corrugations, said adjustable plate being provided with a depending portion or flange arranged in the opening of the seed slide and adapted to vary the size of the same, substantially as described.

4. The combination of a hopper, a casing located at the bottom thereof and having a removable back, a supporting plate disposed horizontally in the casing and provided with a longitudinal slot and having a discharge-opening, a removable bottom arranged within the casing and provided at opposite sides with depending flanges forming ways and having an opening, a reciprocating seed-slide mounted in said ways and having a seed-opening and provided with a depending lug arranged in the slot of the supporting plate, and means for operating the seed-slide and connected with the lug thereof, substantially as described.

5. The combination of a hopper, a casing located at the bottom of the same and having a removable back and provided at one side with a curved slot, a supporting plate mounted in the casing and having a discharge-opening and provided with a longitudinal slot, a removable body mounted in suitable ways of the casing and provided with an opening and having depending flanges provided with ways, a seed slide arranged in the ways of the flanges and having a seed-opening and provided with a depending lug located in the slot of the supporting plate, a spring connecting the lug with the back of the casing, a lever fulcrumed on the casing and provided with a pin extending through the curved slot thereof and connected with the lug, and means for operating the lever, substantially as described.

546,754. CLOTHES-LINE FASTENER. CHARLES BENDER, Wahpeton, N. D., assignor, by mesne assignments, to H. E. Holmes and Samuel J. Carpenter, Minneapolis, Minn. Filed Jan. 26, 1895. Serial No. 536,372. (No model.)



Claim.—1. The herein-described improved rope-clamp, comprising a fixed or stationary member, an ear or lug projecting therefrom, trunnions projecting from said ear or lug, and a removable member having an upper curved arm forming a rope seat, the hook-shaped bearings projecting from said arm and mounted on said trunnions, and a lower end adapted to grip the rope between it and the fixed member, substantially as set forth.

2. The herein-described improved rope clamp, comprising a stationary member having clamping ribs at its lower end, guide-arms projecting from said clamping ribs, an ear or lug also projecting from said stationary member, trunnions projecting from said ear or lug, a removable member having an upper curved arm forming a rope seat, hook-shape bearings projecting from said arm and mounted on said trunnions, and a clamping rib on the lower end of said removable member designed to coincide with the clamping ribs of said stationary member, substantially as set forth.

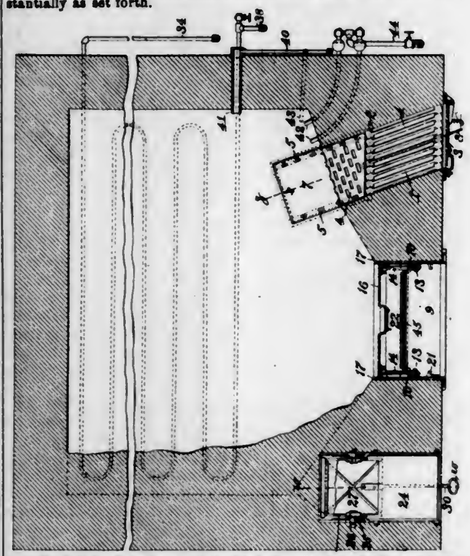
546,755. BAKER'S OVEN. GEORGE BLENDINGER, FREDERICK BLENDINGER, and JOHN R. GEYSER, Allegheny, Pa.; said Geyser assignor to said George Blendinger and Frederick Blendinger. Filed Aug. 4, 1894. Serial No. 519,427. (No model.)

Claim.—1. A baker's oven provided with a combustion chamber in combination with grate bars arranged in the front portion of the chamber, a frame provided with a pocket at one end, friction-rollers mounted in the frame and a plate or grate supported by said rollers and movable into and out of the pocket, substantially as set forth.

2. A baker's oven provided with a charging opening in combination with segmental frames pivotally mounted on the sides of said opening and a plate, having dimensions corresponding approximately to the transverse dimensions of the opening, secured to said frames, substantially as set forth.

3. A baker's oven provided with a charging opening in combination with segmental frames pivotally mounted on the sides of said opening, curved ribs on the sides of the opening in line with the perimeters of the segmental frames and a plate attached to the frames, the ends of the plate overlapping the ribs, substantially as set forth.

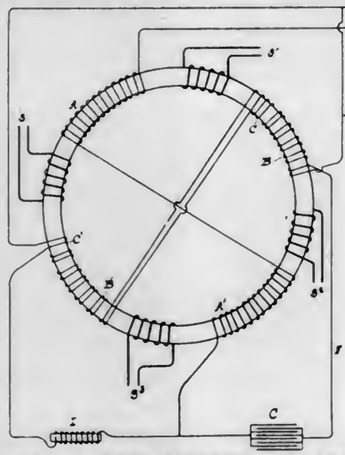
4. A baker's oven having a charging opening in combination with segmental frames pivotally mounted on the sides of the opening, a plate, adapted to close said opening attached to the frames, an adjustable strip bearing against the plate, and a groove in the bottom of the opening for the reception of the lower edge of the plate, substantially as set forth.



5. A baker's oven provided with a charging opening in combination with segmental frames pivotally mounted on the sides of the opening, a handle attached to one of the frames, a spring latch mounted on the handle, and a tooth bar on one side of the opening for engagement by the latch, substantially as set forth.

6. A damper for a baker's oven having in combination with a frame provided with a pocket at one end and a transverse opening at the opposite end, a movable slide mounted in said frame and provided on its back with inclined or wedge-like ribs and rollers mounted on the sides of the frame and adapted to bear upon the ribs when the slide is moved across the opening in the frame, substantially as set forth.

546,756. PRODUCTION OF DISPLACED PHASES AND ROTARY FIELDS. CHARLES S. BRADLEY, Avon, N. Y. Filed Dec. 24, 1894. Serial No. 532,791. (No model.)



Claim.—1. As a means of producing a definite displacement of magneto motive force in a core a compound coil substantially as described in combination with a phase advancing device.

2. As a means of producing a definite displacement of magneto-motive force in a core, a compound coil substantially as described in combination with a condenser and an inductance in its branches.

3. As a means of producing currents of relatively displaced phases a coil influenced by line current and a coil whose current phases are a resultant of two branch currents passing through a condenser and inductance respectively.

4. As a means of producing currents of relatively displaced phases a coil influenced by line current and a compound coil substantially as described containing in its branches a condenser and an inductance.

5. As a means of producing currents of relatively displaced phases, a simple coil and a compound coil substantially as described having two branches containing respectively a condenser and inductance each in series relation to the simple coil.

6. As a means of producing a rotary magnetic field, a compound coil and a simple coil suitably spaced on a ring or drum core, the compound coil having a condenser in series therewith to produce a displaced magneto motive force relatively to that of the simple coil.

7. As a means of producing a rotary magnetic field, a compound coil and a simple coil suitably spaced on a ring or drum core, the compound coil being connected in two branch circuits containing an inductance and condenser adjusted to produce a definite displacement of magneto motive force.

8. As a means of producing a rotary magnetic field, a compound coil and a simple coil suitably spaced on a ring or drum core, the compound coil having two members in parallel relation to the supply circuit differentially wound and in the same inductive relation to the core and containing respectively inductance and capacity to produce the required phase displacement of magneto motive force relatively to that produced by the simple coil.

9. As a means of producing a rotary magnetic field, a compound coil and a simple coil suitably spaced on a ring or drum core and connected in series relation, the compound coil comprising two members in parallel relation differentially wound and in the same inductive relation to the core and containing respectively inductance and capacity to produce a displacement of phase of magneto motive force to correspond to the angular displacement on the core.

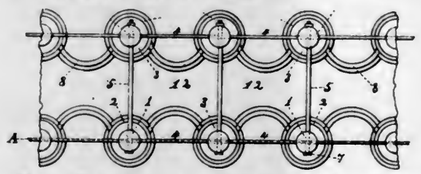
10. As a means of producing a rotary magnetic field, a compound coil and a simple coil spaced ninety degrees apart on a ring or drum core and connected in series relation, the compound coil comprising two members in parallel relation differentially wound and in the same inductive relation to the core, and containing respectively inductance and capacity to produce a phase displacement of magneto motive force of ninety degrees with reference to the simple coil.

546,757. ECCENTRIC GEAR. WILLIAM R. BROWN, New Market, Ind. Filed June 7, 1895. Serial No. 551,978. (No model.)



Claim.—In a shiftable eccentric, the combination with the revoluble shaft and a sectional boxing rigidly mounted thereon, of the movable circular disk, an oblong opening in said disk, and means for operating said disk transversely on its sectional boxing and revoluble shaft, said means comprising a movable shaft ring, a pivoted frame, a pair of movable bars, and a pair of links, all as, and for the purposes, set forth, substantially as specified.

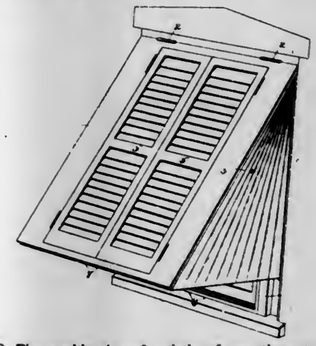
546,758. JETTY. BENJAMIN N. BRYANT, Dallas, Tex. Filed Dec 1, 1894. Serial No. 530,519. (No model.)



Claim.—The combination consisting of a jetty having curved pieces of terra-cotta 8, filling in the spaces between the two rows of incased piles, with the curve of said pieces turned inwardly, all substantially as set forth.

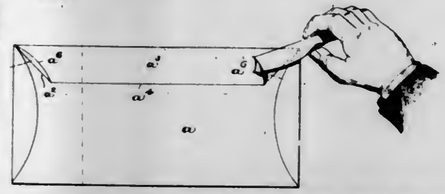
546,759. AWNING-BLIND. SAMUEL H. DAVIS, Alfred Centre, N. Y. Filed Sept. 4, 1894. Serial No. 522,099. (No model.)

Claim.—1. The combination of a window frame, an outwardly swinging shutter carrying frame, hinged at its top to the window frame, and the automatically folding bellows-shaped sides connected with the outwardly swinging frame and the window frame, each bellows-shaped side being formed of a blank having a straight upper edge, parallel side edges, and a concavely curved lower edge forming a depending outer portion, whereby the bellows-shaped sides will have straight horizontal edges when the shutter carrying frame is arranged to form an awning, substantially as described.



2. The combination of a window frame, the outwardly swinging shutter carrying frame, and the automatically folding brace, composed of two sections having their inner ends slidingly connected with each other and having their outer ends hinged respectively to the shutter carrying frame and the window frame, the vertical distance between the points of hinging of the ends of the brace being greater than the length of a section of the brace, substantially as described.

546,760. ENVELOPE. JOSEPH A. ENO, Newark, N. J., assignor to Annie C. Eno, same place. Filed Oct. 1, 1894. Serial No. 524,599. (No model.)



Claim.—1. In an envelope or wrapper having a flap adapted to be folded upon itself in a straight line from side to side thereof, the upper edge of the inner fold of said flap terminating, when sealed, at a line coincident or approximately coincident with that at which said flap commences, thereby forming a straight tubular channel for the passage of the opening instrument, substantially as and for the purposes set forth.

2. An envelope or wrapper comprising therein, the body a, a flap a^3 connected therewith, a flap a^2 connected with flap a^3, and folded inwardly against the same in a straight line from side to side thereof, the inner edge of said flap a^2 extending, when folded, to a line substantially coincident with that at which the flap a^3 commences, the ends of said flap a^2 extending beyond the ends of flap a^3 to expose an aperture for the insertion of the opening instrument, substantially as and for the purposes set forth.

546,761. DRILL-CHUCK. JAMES T. FINK, Washington, D. C., assignor to himself and Albert Stephan, same place. Filed Mar. 1, 1895. Serial No. 540,172. (No model.)



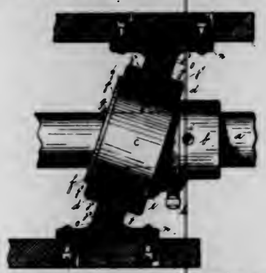
Claim.—1. A drill chuck provided in its head with a cylindrical bore and with a bearing therein for the reception of the flattened end of the shank of a drill, adapted to hold the latter against rotation without interfering with its endwise motion, and a ring R of the same interior diameter throughout as the exterior diameter of the head of the chuck and adapted to slide thereon, in combination with the lever L pivoted in a slot in the head of the chuck and of greater length than the width of the aforesaid ring, said lever provided with a pin adapted to engage the shank of the drill, with a lip l' at its outer end

forming an abutment for and limiting the movement of the ring in one direction, and with a tail adapted to project into the plane of motion of said ring when the latter holds the forward end of the lever down, substantially as and for the purpose set forth.

2. A drill chuck provided in its head with a cylindrical bore, and with a bearing formed by two spaced pins near the inner end of said bore and adapted to receive between them the flattened end of the shank of a drill and hold the latter against rotation without interfering with its endwise movement, a thrust or wear plate or plates at the inner end of the bore held against displacement by the aforesaid pins, and the lever L pivoted in the head of the chuck and provided with a pin adapted to engage the shank of the drill and hold the latter against endwise motion, in combination with the ring R of the same interior diameter as the exterior diameter of the head of the chuck, said ring adapted to slide on said head and move the lever into and out of its operative position, substantially as and for the purpose set forth.

3. A drill chuck provided in its head with a cylindrical bore and with a bearing formed by two removable pins having proximate flat faces within the bore and adapted to receive between them the flat end of the shank of a drill and hold the same against rotation without interfering with its endwise motion, a thrust or wear plate or plates at the inner end of the bore, held against displacement by the aforesaid pins, and the lever L pivoted in the head of the chuck and provided with a removable pin adapted to engage the shank of the drill and hold the same against endwise motion, in combination with the ring R of the same interior diameter as the exterior diameter of the head of the chuck, said ring adapted to slide on said head and move the lever into and out of its operative position, substantially as and for the purpose set forth.

546,762. CLOTH-STRETCHING MACHINE. DAVID GESSNER, Worcester, Mass. Filed Oct. 8, 1891. Serial No. 408,195. (No model.)



Claim.—1. In a cloth stretcher, in combination, an oblique arbor, a head containing radial openings conical at the outer ends and cylindrical toward the center, radial studs conforming to said openings and means whereby the same are rotatably secured thereon, substantially as described.

2. In a cloth stretcher, in combination, an oblique arbor, a head provided with an oil channel and openings extending from its inner bearing surface outward, lags and lag supporting studs in said openings whereby the oil supplied to the bearing surface on said arbor will be distributed through said openings to lubricate said studs, substantially as described.

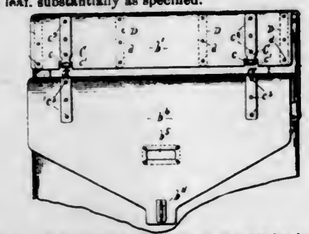
3. In a cloth stretcher, in combination, an oblique arbor, a head, radial studs rotatably mounted on said head, separate cross members whereby said studs are secured in place and lags pivotally secured to said studs; the said studs being provided with conical bearings on the outside of said head, substantially as described.

4. In a cloth stretcher, in combination, an oblique arbor, a head, radial studs mounted in said head and separate cross members carried by said head and engaging with grooves in the peripheries of said studs whereby said studs are secured in place, substantially as described.

546,763. MAIL-BAG. THOMAS H. GORDON, Liverpool, N. Y., assignor to William O. Wilcox, same place. Filed Apr. 6, 1895. Serial No. 544,740. (No model.)

Claim.—1. In a mail bag, the combination of a body having an opening therein, an inner flap projecting from one side of the opening and lapping upon its opposite side for closing the opening, an outer flap projecting from the opposite side of the opening and lapping upon the former flap, stiffening pieces extending transversely across one of the flaps, and hinge divisions or leaves secured to the flaps for detachably connecting the same, substantially as described.

2. In a mail bag, the combination of a body having an opening therein, an inner flap projecting from one side of the opening and lapping upon its opposite side for closing the opening, an outer flap projecting from the opposite side of the opening and lapping upon the former flap, a hinge division or leaf extending transversely across the outer face of the inner flap and having one extremity secured thereto and its opposite extremity formed with an engaging end arranged in proximity to the outer edge of said flap, and a hinge division or leaf extending transversely across the inner face of the outer flap and having its extremity arranged nearest the outer edge thereof secured to the flap and its opposite extremity provided with an engaging end for detachably interlocking with the adjacent end of the former division or leaf, substantially as specified.

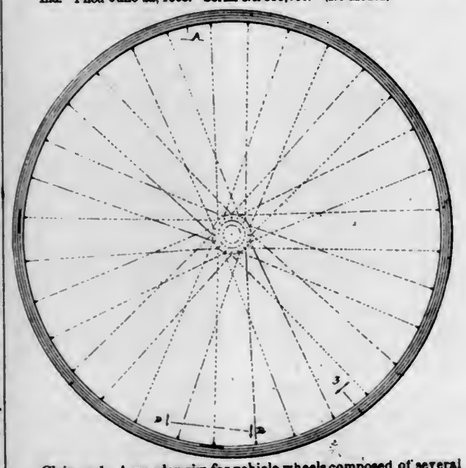


3. In a mail bag, the combination of a body having an opening in its top, an encircling band secured to the upper portion of the bag and having one side provided with a slot and an inner projecting flap lapping upon the opposite side of the band for closing the opening and its other side provided with an outer flap lapping upon the inner flap and having a slot therein aligned with the former slot, and a label pocket secured to the inner face of the slotted side of the band and aligned with said slots, substantially as described.

4. In a mail bag, the combination of a body having an opening therein, an inner flap projecting from one side of the opening and lapping upon its opposite side for closing the opening, an outer flap projecting from the opposite side of the opening and lapping upon the former flap, a hinge division or leaf extending transversely across the outer face of the inner flap and having one extremity secured thereto and its opposite extremity formed with an engaging end arranged in proximity to the outer edge of said flap, a hinge division or leaf extending transversely across the inner face of the outer flap and having its extremity arranged nearest the outer edge thereof secured to the flap and its opposite extremity provided with an engaging end for detachably interlocking with the adjacent end of the former division or leaf, and a lock secured to the body for holding the outer flap in its closed position, substantially as set forth.

5. In a mail bag, the combination with a body having its top provided with separate pieces normally lapped upon each other, one of said pieces being provided with a slot extending therethrough; of a label pocket aligned with the slot and secured to the inner face of said piece for permitting inspection of the label through the slot, substantially as and for the purpose described.

546,764. WOOD RIM FOR VEHICLE-WHEELS. CLEMENTS A. GREENLEAF, Greencastle, assignor to Greenleaf & Wood, Indianapolis, Ind. Filed June 22, 1895. Serial No. 553,706. (No model.)



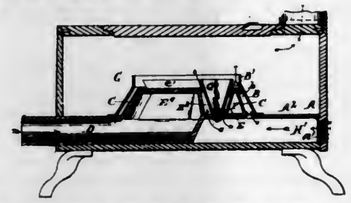
Claim.—1. A wooden rim for vehicle wheels composed of several layers or rings wedge-shaped in cross section from one edge to the other, whereby close union of the parts can be effected, substantially as set forth.

2. A wooden rim for vehicle wheels composed of several layers or rings, wedge-shaped in cross section, or thicker at one edge than the other, and tapering regularly from the thicker to the thinner edge, with the thick and thin edges arranged alternatively, the thick edge of one layer being on the same edge of the rim as the thin edge of the adjacent layer, substantially as shown and described.

3. A wooden rim for vehicle wheels composed of several layers or rings, each ring being united where the ends of the wood composing it come together by interlacing fingers having curved sides and ends, substantially as shown and described.

4. A wooden rim for vehicle wheels having the ends of the wood of which it is composed formed in fingers, said fingers being rounded at the ends and between them, and having bulbs or enlargements thereon which fit into corresponding depressions or cavities on the adjacent fingers, substantially as shown and described.

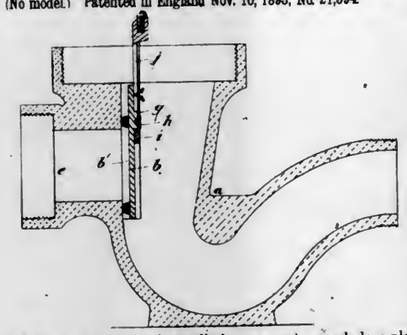
546,765. GAS-BURNER. EZRA S. HOYT, Detroit, Mich. Filed Feb. 23, 1894. Serial No. 501,181. (No model.)



Claim.—1. A burner composed of an outer chamber, perforated at its top, and a number of central chambers extending inwardly from the outer chamber and communicating at the center of the burner, and also perforated at their tops; combined with deflectors, placed in the openings between the chambers, and which correspond in shape to the openings, and are of a greater depth than the burner, so as to extend above its top surface, and which deflectors limit the quantity of air passing through the openings and hold in it contact with the heated walls of the burner, substantially as shown.

2. A burner composed of an outer chamber, perforated at its top, and a number of central chambers extending therefrom and united at their inner ends, and also perforated at their tops, combined with, deflectors placed in the openings between the chambers, and which deflectors are of a greater depth than the burner, so as to project above its top, and which correspond in shape to the openings in which they are placed so as to hold the rising currents of air in contact with the heated walls of the burner; and an outer surrounding deflector which corresponds in shape to the burner, and projects above its top, substantially as set forth.

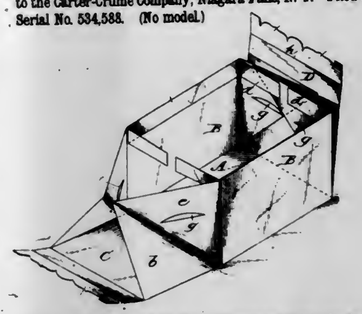
546,766. TESTING AND FLUSHING DRAIN-PIPES, &c. WILLIAM KEITH, Alloa, Scotland. Filed Oct. 10, 1894. Serial No. 525,458. (No model.) Patented in England Nov. 10, 1893, No. 21,394.



Claim.—1. A trap having a discharge *e* and a manhole, a plate-valve, the grooves *c*, *c'*, arranged to receive the plate valve inserted through the manhole to cover the discharge *e* and a wedge also adapted to said grooves *c*, *c'*, and arranged to be operated through the manhole, substantially as described.

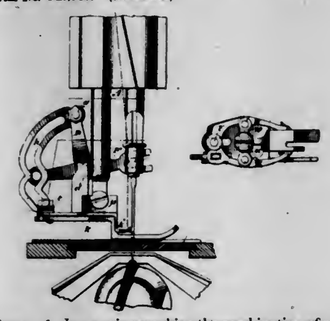
2. In combination, the trap having the opening *e* and the manhole, the grooves adjacent to the opening, the plate valve arranged in said grooves and having a boss *g*, and the slotted wedge plate adapted to said grooves and boss, substantially as described.

546,767. PAPER BOX. FRANK KNOBELOCH, Dayton, Ohio, assignor to the Carter-Crume Company, Niagara Falls, N. Y. Filed Jan. 11, 1895. Serial No. 534,583. (No model.)



Claim.—In a paper box the combination with the bottom, sides, and ends, of side and end folds between the sides and ends, with slits in the side folds, and side pieces attached to the sides, with side wings thereon for reinforcing the sides and ends, end flaps to be folded over the corner folds, and side wings with double tongue thereon to be inserted in the slits in the side folds, said end flaps having a crease about mid-way thereof to facilitate the locking of same, substantially as shown and described.

546,768. SEWING-MACHINE. ALBERT LEGG, Allendale, N. J., and FRANK H. TREACY, Brooklyn, N. Y., assignors to the Self-Threading Sewing-Machine Company, New York, N. Y. Filed Mar. 19, 1895. Serial No. 542,319. (No model.)



Claim.—1. In a sewing machine the combination of a needle having a recess or open eye for engaging the thread, with means of operating said needle, means for feeding thread to the same, which consists of a guide and finger and means to cause said guide and finger to move simultaneously from in front of the path of said needle first so as to distend the thread and then so as to carry the same into the open eye of said needle as it descends, and with complemental stitch forming mechanism below the cloth plate, substantially as described.

2. In a sewing-machine having a presser-foot and a needle with a recess or open eye for engaging the thread, the thread feeding mechanism for said needle, which consists of arms journaled on a vertical axis movable horizontally on the presser-foot, means of swinging said arms on said axis as the same is reciprocated, and means of reciprocating said axis as the needle-bar reciprocates, substantially as described.

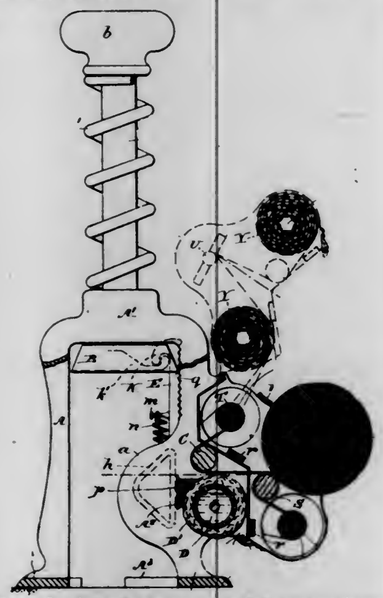
3. The combination of a plate having a slot therein with two arms journaled on a common axis, said axis being operatively connected with said slot; two links each journaled at one end on one of said arms, and at the other end on a common fixed journal, and with means of reciprocating said first named axis in said slot, whereby said arms are swung upon said axis as the same is reciprocated, substantially as described.

4. In a sewing-machine having a presser-foot and a needle with a recess or open eye for engaging the thread, the thread feeding mechanism for said needle, which consists of arms journaled on a vertical axis movable horizontally on the presser-foot, means of swinging said arms on said axis as the same is reciprocated, which consists of two links, each journaled at one end on one of said arms and at the other end on a journal fixed on said presser-foot, and means of reciprocating said movable axis, substantially as described.

5. In a sewing machine having a needle with a recess or open eye for engaging the thread, the thread feeding mechanism for said needle, which consists of two connected arms bearing respectively a guide and finger and concurrently and interdependently movable and so as to carry said guide and finger from a point in front of the path

of said needle toward and to opposite sides of said path, means of moving said arms connected only with said finger-bearing arm, substantially as and for the purposes described.

546,769. HAND DEVICE FOR AFFIXING POSTAGE-STAMPS. JAMES P. MARTIN and WILLIAM P. MCKEAT, Montreal, Canada. Filed July 28, 1893. Serial No. 481,749. (No model.) Patented in Canada Sept. 14, 1893. No. 44,276.



Claim.—1. In a device for the purpose set forth, the combination with a structure comprising a frame or support, composed of vertical legs or sections disposed to allow space between them extending from an open bottom upward throughout their length, feed and dampening mechanism in roller form, a stationary cutting edge, a spring operated gear and rack connection for operating the feed and a depressible plunger, of a carrier supported by said frame in the form of a pair of bands united at one end and connected to a roller and adapted to be rolled, with the strip to be operated upon between them, and unwound by said feed mechanism, and means for taking up the unwound ends of said carrier.

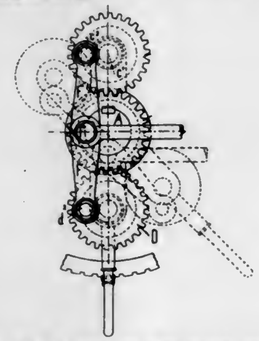
2. In a device for the purpose set forth, the combination of a main frame or support, composed of vertical legs or sections disposed to allow space between them extending from an open bottom upward throughout their length, a depressible plunger normally elevated; feed and dampening mechanism in roller form, the dampening roller being perforated and containing the moistening liquid; a stationary cutting edge and a spring-operated gear and rack connection with an independent offsetting guideway for the rack shorter than the stroke of the plunger and a loose connection between the plunger and the rack, to secure the operation of said feed during a period only of the depression of said plunger, as set forth.

3. In a device for the purpose set forth, the combination of a main frame, or support, composed of vertical legs or sections disposed to allow a space between them, extending from an open bottom upward throughout their length; a depressible plunger working therein and being normally elevated; feed and dampening mechanism; a stationary cutting edge, and a movable feed operating rack bar having a reciprocal compound or indirect travel imparted to it by the combined action of said plunger, a spring connection between it and said frame and an irregular guideway.

4. In a device for attaching stamps and the like, having a gear and rack connection for operating the feed, a detachable and swinging carrier frame, a carrier for the strip to be acted upon, in the form of a pair of bands united at one end and connected to a roller, mounted in said frame, and adapted to be rolled together upon said roller with said strip between them, and unwound by said feeding mechanism, and take up rolls also mounted in said frame for taking up the bands as they are unwound.

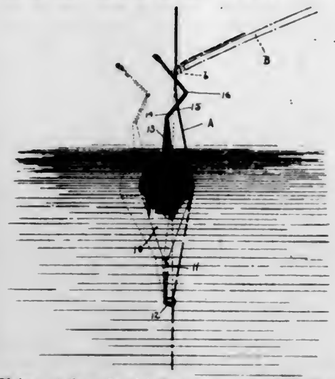
546,770. VALVE-GEAR FOR ENGINES. KAJETAN MOSCICKI, Warsaw, Russia. Filed Jan. 31, 1895. Serial No. 536,769. (No model.)

Claim.—1. A controller for steam and other engines, comprising a gear wheel mounted on the main driving shaft, two eccentric gear wheels meshing with the gear wheel on the driving shaft, a lever rotating on the driving shaft and carrying the two eccentric gear wheels, a valve rod secured eccentrically to said eccentric gear wheels and driven thereby to operate and reciprocate a valve, substantially as and for the purposes set forth.



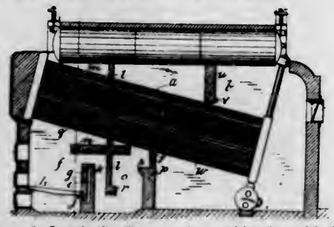
2. A controller for steam and other engines, comprising a gear-wheel mounted on the main driving shaft, two eccentric gear wheels meshing with the gear wheel of the driving shaft, a lever rotating on the driving shaft and carrying the eccentric gear wheels, a link pivoted eccentrically to both eccentric gear wheels and a valve rod journaled to the middle of said link, substantially as and for the purposes set forth.

546,771. FLOAT. OLIVER A. BENOIT, Worcester, Mass. Filed May 20, 1895. Serial No. 549,860. (No model.)



Claim.—A float for fish-lines comprising a body portion 10, a downwardly extending arm 11, a pivoted split ring 12, an upwardly projecting arm 13, a spring clip or fastening device formed by the parallel spring wires 14 and 15 which extend at an angle, and are bent back to form the cam-elbow 16, whereby said spring clip or fastening device may be automatically detached from the line when brought into contact with the tip or fixture at the end of a pole, substantially as described.

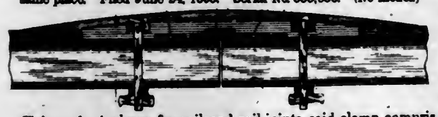
546,772. BOILER-FURNACE. WILLIAM BRAND, Pittsburg, Pa. Filed June 9, 1894. Serial No. 514,108. (No model.)



Claim.—1. In a boiler furnace, the combination with the boiler, of a fuel chamber at the forward end thereof having a bridge wall, a combustion chamber back of said bridge wall and having a rear bridge wall, a depending wall between said bridge walls within said combustion chamber, and an arch or roof extending forwardly from the depending wall just beyond the front bridge wall, whereby an air space is left between the bottom of the boiler and the upper face of said arch or roof, substantially as set forth.

2. In a boiler furnace, the combination with the boiler, of a fuel chamber at the forward end thereof having a bridge wall, a combustion chamber back of said bridge wall having a rear bridge wall, a depending wall between said bridge walls within said combustion chamber, said depending wall having an arch or projecting ledge at the lower end thereof extending into said combustion chamber, and said rear bridge wall having a ledge at the upper end thereof projecting into said combustion chamber, substantially as set forth.

546,773. CLAMP FOR USE IN WELDING RAILWAY-RAILS. WILLIAM M. BROWN, Johnstown, Pa., assignor to The Johnson Company, same place. Filed June 24, 1895. Serial No. 553,838. (No model.)

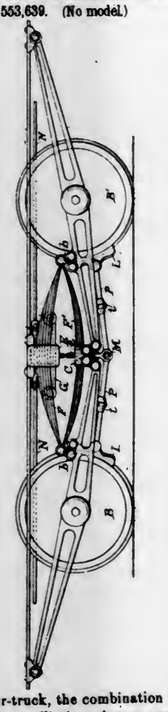


Claim.—1. A clamp for railroad rail joints, said clamp comprising a body portion adapted to lie upon the rails and having a track surface thereupon aligning with that of the rails, and side projections from said body, and clamping members depending from said side members and passing beneath the rails.

2. A clamp for railroad rails, said clamp comprising a body portion having sloping track surfaces adapted to align with those of the rails, and overhanging portions on each side of the track surface, and clamping members passing beneath the rail and engaging the overhanging projections.

3. A clamp for railroad rail joints, said clamp comprising a body portion adapted to fit upon the top of the rails, said body portion having track surfaces thereupon aligning with the track surface of the rails, side projections from said track surfaces and open slots in said projections; clamping members passing through said slots and means for causing said clamping members to secure said body portion.

546,774. CAR-TRUCK. EDWARD CLIFF, Newark, N.J. Filed June 22, 1895. Serial No. 553,639. (No model.)



Claim.—1. In a car-truck, the combination with the frame and the axles and wheels, of an elliptic spring on each side of the frame midway between the axles having its upper half heavier than its lower half, and levers connected to the ends of said spring and extending therefrom in opposite directions to the ends of the frame, said levers being fulcrumed intermediate their length on the axles, as set forth.

2. In a car-truck, the combination with the frame and the axles and wheels, of an elliptic spring on each side of the frame midway between the axles having its upper half heavier than its lower half, levers fulcrumed intermediate their length on the ends of the axles, and having their inner ends connected to the center of the lower portion of the spring and connections between the ends of the springs and the said levers, as set forth.

3. In a car-truck, the combination with the frame and the axles and wheels, of a hanger on each side and mounted on the center of the frame, of an elliptic spring held by the center of its upper half in each hanger, its upper half being heavier than its lower half, levers fulcrumed intermediate their length on the ends of the axles, and having their outer ends pivoted to the ends of the frame, links connecting the central part of the lower half of the spring to the inner ends of the levers, and links connecting the levers with the ends of the spring, as set forth.

4. In a car truck, the combination with the frame and the axles and wheels, of a hanger on each side and mounted on center of the frame, of a spring held in each hanger, levers fulcrumed intermediate their length on the ends of the axles, and provided with axle-boxes integral with the levers, a partition with a recess therein in the axle box, and a cover connected to the partition, by a bolt extending through the cover and the recess in the partition, as set forth.

5. In a car truck, the combination with the frame and the axles and wheels, of a spring on each side of the frame between the wheels, and levers connected to said springs and extending therefrom in opposite directions to the ends of the frame and pivoted thereto, said levers being fulcrumed intermediate their length on the said axles, of a bar pivoted on the frame and adapted to rotate in a horizontal plane, a cross rod, in the center, between, and parallel with the axles, a pair of toggle arms pivoted to each end of the rod, a brake shoe pivoted to each of the levers, and connected to the ends of the toggle arms, connections between the cross rod and the pivoted bar, and suitable means at each end of the car to rotate the pivoted bar, as set forth.

6. In a car-truck, the combination with the frame and the axles and wheels, of a spring on each side of the frame between the wheels, and levers connected to said springs and extending therefrom in opposite directions to the ends of the frame and pivoted thereto, said levers being fulcrumed intermediate their length on the said axles, of a bar pivoted at its center on the frame and adapted to rotate in a horizontal plane, a pair of toggle arms on each side between the wheels and pivoted together at their inner ends, the toggle arms on one side of the truck being parallel with those on the other side a brake shoe pivoted to each of the levers fulcrumed on the axles and also pivoted to the ends of the toggle arms, connections between the toggle arms and the pivoted bar, and suitable means to rotate the said pivoted bar, as set forth.

7. In a car-truck, the combination with the frame and the wheels and axles thereof, of a cross rod at the center below the frame, a pair of toggle arms pivoted to each end of the rod, and lying in vertical parallel planes, a bar pivoted at its center, to the frame, in the center of the truck and adapted to rotate in a horizontal plane, connections between the ends of the cross rod and the ends of the pivoted bar, brake-shoes pivoted to the ends of the toggle arms and suitably supported, and means to rotate the pivoted bar, as set forth.

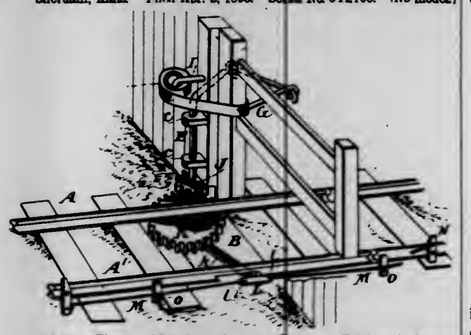
8. In a car-truck, the combination with the frame and the wheels and axles thereof, of a cross rod at the center below the frame, a pair of toggle arms pivoted to each end of the rod, a bar pivoted at its center, to the frame, in the center of the truck and adapted to rotate in a horizontal plane, connections between the ends of the cross rod and the ends of the pivoted bar, pulleys mounted in the frame for the connections, brake-shoes pivoted to the ends of the toggle arms and suitably supported, and means to rotate the pivoted bar, as set forth.

9. In a car-truck, the combination with the frame and the wheels and axles thereof, of a cross rod at the center below the frame, a pair of toggle arms pivoted to each end of the rod, a bar pivoted at its center, to the frame, in the center of the truck and adapted to rotate in a horizontal plane, connections between the ends of the cross rod and the ends of the pivoted bar, pulleys mounted to turn in the frame to receive the said connections, and having their axes set at an angle to the sides of the frame, brake-shoes pivoted to the ends of the toggle arms and suitably supported, and means to rotate the pivoted bar, as set forth.

10. In a car-truck, the combination with the frame and the axles and wheels, of a spring on each side of the frame between the wheels, and levers connected to said springs and extending therefrom in opposite directions to the ends of the frame and pivoted thereto, said levers being fulcrumed intermediate their length on the said axles, of a bar pivoted on the frame and adapted to rotate in a horizontal plane, a cross rod, a pair of toggle arms pivoted to each end of the

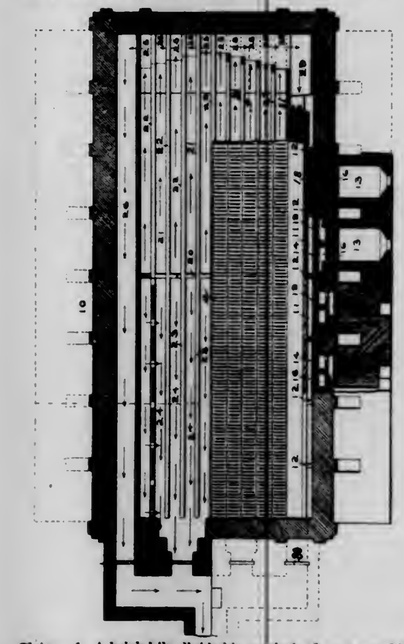
rod, a brake shoe pivoted to each end of the levers and connected to the ends of the toggle arms, connections between the ends of the cross rod and the ends of the pivoted bar, pulleys mounted to turn in the frame to receive the connections, and having their axes set at an angle to the sides of the frame, brake shoes pivoted to the ends of the toggle arms, and also pivoted at their upper ends to the levers fulcrumed on the axles, and means connected to the pivoted bar to operate the same, as set forth.

546,775. RAILROAD CATTLE-GUARD. EDWIN G. EMMERT, Sheridahl, Kans. Filed Apr. 2, 1895. Serial No. 544,168. (No model.)



Claim.—The combination of a post C, a gate D hinged thereto and extending across the track; a shaft E supported in bearings on the post which carries a pinion J and has a crank-arm extending behind said post; an arm G secured to the gate-stile; a link F connecting arm G with the crank-arm; a spurwheel K intermeshing with the pinion J and having an arm which passes under and completely across the track; tread-levers N connected to said arm; and a retracting spring secured to the gate, all substantially as shown and described.

546,776. BRICK-KILN. WALTER P. GRATH, St. Louis, Mo. Filed July 9, 1894. Serial No. 516,889. (No model.)

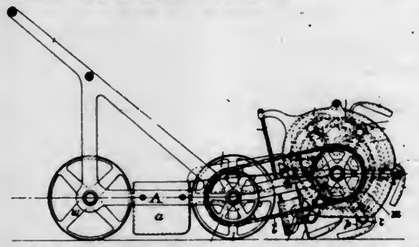


Claim.—1. A brick kiln divided beneath the floor thereof into a front and rear part, and having flues in the front part beneath the floor leading to the front of the kiln, said flues communicating with a return flue leading to the smoke-stack for the purpose described.

2. A brick kiln divided beneath the floor thereof into a front and rear part, and having flues in the front part beneath the floor leading into a common flue at the front of the kiln, said latter flue communicating with a return flue leading to the smoke-stack for the purpose described.

3. A brick kiln divided beneath the floor thereof into a front and rear part, the front part subdivided into two longitudinal halves, and having flues leading from each said subdivision to a common flue at the front of the kiln, and side flues beneath the floor of the kiln, communicating with the said flues at the front of the kiln, and leading to the smoke-stack, substantially as described.

546,777. BERRY-PICKING MACHINE. GEORGE H. HASEY, Taunton, Mass., assignor to Robert C. Woodward, same place. Filed Sept. 29, 1893. Serial No. 486,767. (No model.)

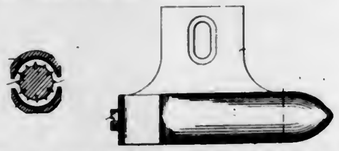


Claim.—1. The berry picking machine above described consisting of a carriage supporting the mechanism; a gate, mounted in guides on that carriage; those guides; picker fingers co-operating with the gate to strip the berries from the vines; their carriers; a shaft carrying the carriers; wipers upon the picker finger carriers to move the gate; mechanism for controlling the movement of the picker finger carriers; a receptacle to receive the berries, when released by the gate; and mechanism for connecting the carrier shaft with the carriage axle, the movement of the carriage actuating the machine; all the parts being organized and operating substantially as described.

2. In a berry picking machine the combination of picker fingers; picker finger carriers; cams; and radial slotted arms the radial slotted arms controlling the bodily and the cams the axial movement of the picker fingers, all organized and operating substantially as described.

3. In a berry picking machine a series of picker fingers; carriers by which the fingers are carried bodily about a single axis; cams by which each set of fingers is given an axial movement; and a plate with which each set of fingers engages, one set after the other, to form a temporary receptacle for the berries as they are stripped from the vines; all substantially as described.

546,778. LOOM-TEMPLE. WILLIAM HINCHLIFFE, Huntsville, Ala., assignor to the Dutcher Temple Company, Hopedale, Mass. Filed Aug. 24, 1893. Serial No. 483,893. (No model.)



Claim.—1. A loom temple comprising a pod and a cap, and provided with a lining softer than the teeth of the temple roll, substantially as described.

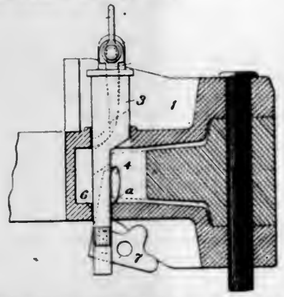
2. A temple pod provided with a lining softer than the teeth of the temple roll, substantially as described.

546,779. CAR-COUPLING. WILLIAM KELSO, Pittsburg, Pa., assignor to the McConway & Torley Company, same place. Filed Apr. 23, 1895. Serial No. 546,814. (No model.)

Claim.—1. The combination of a coupler head, a pivoted knuckle or swinging hook, a pin for locking the hook in a closed position and adapted to be shifted to unlocking position by the action of the knuckle thereon when swung to closed position, and a catch pivoted to the pin at one end, swinging freely at the other end, and adapted to engage some fixed portion of the draw head so as to support the pin in unlocking position, when the pin is raised by means other than the knuckle in its closing movement, substantially as set forth.

2. The combination of a coupler head, a pivoted knuckle or swinging hook, a pin for locking the hook in a closed position and a catch pivoted to the pin for supporting the latter in its raised or unlocking position by engagement with a portion of the coupler, and adapted to be shifted from such engagement by the knuckle in its opening movement, and thereby permit the locking pin to move to normal or locking position, substantially as set forth.

3. The combination of a coupler head, a pivoted knuckle or swinging hook, a pin for locking the hook in a closed position, a catch for supporting the pin in unlocking position, a stop for preventing such a movement of the pin by the knuckle as will permit of the operation of the catch, substantially as set forth.



4. The combination of a coupler head, a pivoted knuckle or swinging hook, a pin for locking the hook in a closed position, means for lifting the pin from locking position, a catch for supporting the pin in its unlocking position, a stop for preventing such a movement of the pin by the knuckle as will permit of the operation of the catch, but adapted to be shifted out of operative position by the pin lifting mechanism, substantially as set forth.

5. The combination of a coupler head, a pivoted knuckle or swinging hook, a pin for locking the hook in a closed position, a catch pivoted to the pin for supporting the latter in its raised or unlocking position, and provided with an arm adapted by engagement with a portion of the coupler to shift the catch into engagement with some fixed portion of the draw head, and into the path of movement of the tail piece of the knuckle, substantially as set forth.

6. The combination of a coupler head, a pivoted knuckle or swinging hook, a pin for locking the hook in a closed position, a catch pivoted to the pin for supporting the latter in unlocking position, and a spring carried by the catch for shifting and holding the latter in operative position, substantially as set forth.

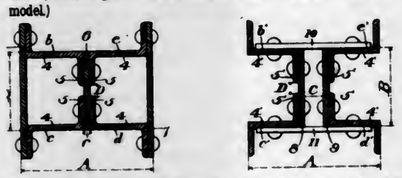
7. The combination of a coupler head, a pivoted knuckle or swinging hook, a pin for locking the hook in a closed position, a catch for supporting the pin in unlocking position, a movable block arranged in a slot in the pin and provided with a toe normally projecting beyond the wall of the pin for limiting the upward movement of the latter, and means for lifting the pin into unlocking position, so connected to the block as to shift the latter sufficiently to withdraw the toe and permit a full upward movement of the lifting pin, substantially as set forth.

546,780. METALLIC ALLOY. WILLIAM H. KEMLER, Ashland, Ky. Filed Apr. 30, 1895. Serial No. 547,626. (No specimens.)

Claim.—1. An alloy containing zinc, copper and aluminum, the zinc being present in greater proportion than the aluminum, and the aluminum being present in greater proportion than the copper.

2. An alloy containing about seventy-nine parts of zinc, about eight parts of copper, and about thirteen parts of aluminum.

546,781. CONSTRUCTION OF Z-BAR COLUMNS. FREDERICK H. KINDL, Pittsburg, Pa. Filed July 15, 1895. Serial No. 556,009. (No model.)



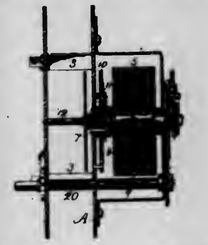
Claim.—1. A compound column, the successive sections of which are composed respectively of four Z-bars the bars of the several sections being of unequal dimensions but being riveted together in such a way that the dimensions A and B are constant; substantially as described.

2. A compound column, the successive sections of which are composed respectively of four Z-bars riveted together, so that the dimensions C between the opposing flanges of the Z-bars shall vary, and that the outline dimensions A and B of the column shall be constant throughout; substantially as described.

3. A compound column, the several sections of which are composed respectively of four Z-bars tied together, the bars of the several sections being of unequal dimensions, but being tied together so that the dimensions C between the opposing flanges of the Z-bars shall vary, and so that the outline dimensions A and B of the column shall be constant throughout; substantially as described.

4. A compound column, the several sections of which are composed respectively of four Z-bars tied together, the bars of the several sections being of unequal dimensions, but being tied together so that the dimensions D between the ends of the opposing flanges of the beams shall vary, and so that the outline dimensions A and B of the column shall be constant throughout; substantially as described.

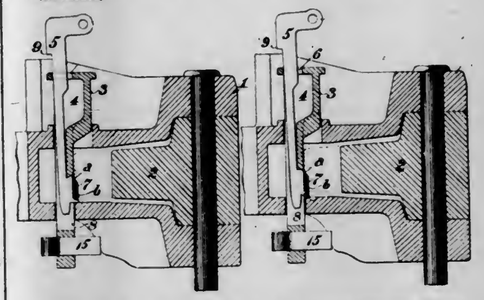
546,782. CLOCK-WINDING MECHANISM. ALMERON M. LANE, Meriden, Conn. Filed Jan. 5, 1893. Serial No. 457,892. (No model.)



Claim.—1. In a winding attachment the combination of the main spring shaft, the main spring barrel mounted to rotate upon the same, the spring with its ends secured respectively to said barrel and shaft, the planet wheel mounted to move with said spring barrel and provided with a stop, the pinion and connected stop mounted on said main spring shaft, the teeth of said pinion engaging said planet-wheel, substantially as described and for the purpose specified.

2. The combination of the main spring shaft, the spring barrel, the main spring connected therewith, the wheel 13 rotating with said spring barrel, the planet wheel 14 mounted on said wheel and having the stop 15, the pinion 17 and connected stop mounted on the main spring shaft, the wheel 23 engaging with the wheel 13 and the winding shaft 20, substantially as described and for the purpose specified.

546,783. CAR-COUPLING. WILLIAM MCCONWAY, WILLIAM KELSO, and FRANK J. CURTIS, Pittsburg, Pa., assignors to the McConway & Torley Company, same place. Filed Apr. 25, 1895. Serial No. 547,077. (No model.)



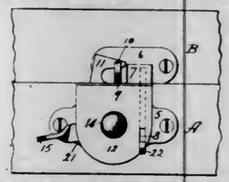
Claim.—1. In a car coupler having a swinging hook locked and unlocked through the tail piece, a vertically and longitudinally movable locking block or pin grooved longitudinally for the reception of an operating stem and recessed for the projection therethrough of a catch made on the stem, in combination with a stem and catch whereon the locking block may move freely a distance sufficient for the independent lifting of the locking block by the tail piece of the knuckle, substantially as described.

2. In a car coupler having a swinging hook locked and unlocked through the tail piece, a vertically and longitudinally movable locking block or pin grooved longitudinally for the reception of an operating stem and recessed for the projection therethrough of a catch made on the stem, in combination with a stem and catch whereon the locking block may move freely a distance sufficient for the independent lifting of the locking block by the tail piece of the knuckle, and, also, having an oscillatory movement whereby the catch will be projected into the path of the swinging tail piece and engage some fixed portion of the draw head, substantially as set forth.

3. The combination of a coupler head and pivoted knuckle or swinging hook, a block or pin for locking the hook in a closed position, a stem mounted on the block or pin and adapted to raise the latter to unlocking position, a catch adapted to be shifted by the stem into engagement with the pin and some portion of the coupler, thereby supporting the block or pin in unlocking position, and a lock for holding the catch as against accidental displacement from such operative position, substantially as set forth.

4. The combination of a slotted locking block a stem having a limited range of movement therein, and a catch projecting from the stem through a slot or recess in the locking block or pin, and constructed to have a V-shaped engagement with a portion of the coupler with reference to holding the catch in unlocking position as against accidental displacement, substantially as set forth.

546,784. SASH-FASTENER. WILLIAM J. NEIDL, New Britain, Conn. Filed Aug. 3, 1894. Serial No. 519,391. (No model.)



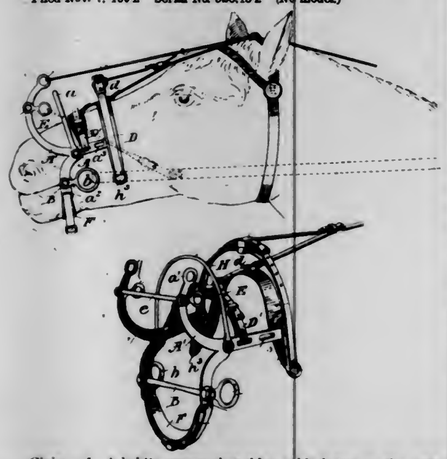
Claim.—1. A sash fastener having a self fastening catch for locking the rails against vertical movement and a separate hook fastener for drawing the rails toward each other, substantially as described and for the purpose specified.

2. A sash fastener consisting of a case having at one side the self fastening sliding catch 8, its spring 13, the post 14, lever 15 pivoted thereon and having the lugs 16 and 17 and the hook bolt having the post slot 18 and curved edges 19 and 20 for being engaged by said lugs, substantially as described and for the purpose specified.

3. The combination of a frame or support, the post 14, the lever 15 pivoted on said post and having the lugs 16 and 17 nearly diametrically opposite each other, and the hook bolt having the slot 18 which receives said post and the opposing convex edges 19 and 20 forming a neck with opposing concave edges at the junction of the outer and inner ends of said hook bolt, against the opposite edges of which neck said lugs act respectively for forcing the hook bolt into and out of its case, substantially as described.

4. The combination of the hook bolt and its operating devices, with the keeper post 9 rigidly secured against independent movement and having the shoulder 10 at its upper end and underneath said shoulder a smooth rear edge of a vertical height many times exceeding the vertical thickness of that part of said hook bolt that engages therewith, and over which smooth edge said hook bolt may unobstructedly slide up and down when in engagement therewith, substantially as described and for the purpose specified.

546,785. BRIDLE. ALBERT M. PENDLETON, Salt Lake City, Utah. Filed Nov. 7, 1894. Serial No. 528,154. (No model.)



Claim.—1. A bridle comprising sides, a bit between the same, means for normally holding the bit from the mouth corners of the horse, levers extending from the bit, a nose strap connected to said levers, and means for fastening the reins to the levers above the point of connection between the levers and the nose strap; substantially as described.

2. A bridle comprising sides, a bit between the same, levers extending from said bit, a nose strap connected to said levers, an overdraw connected to said levers, and means for fastening the reins to the levers above the point of connection between the levers and the nose strap; substantially as described.

3. A bridle comprising forked sides, a connection between said sides whereby they are held upon the horse or other animal, means upon one set of forks for attaching the bridle to the mouth or chin of the animal, and means for the attachment of lines upon the other set of forks; substantially as described.

4. A bridle comprising forked sides, a bit between one set of forks, means for the attachment of the lines upon the other set of forks, and a connection between the sides whereby they are held upon the horse or other animal; substantially as described.

5. A bridle comprising forked sides having openings therein, a nose strap in said openings, means upon one set of forks for attaching the bridle to the mouth or chin of the animal, and means for the attachment of lines upon the other set of forks; substantially as described.

6. In a bridle, a curb or similar member comprising an arch, a fastening member upon said arch, and a strap secured to said fastening and suspended within the arch; substantially as described.

7. In combination with the sides of a bridle having openings therein, an arch removably secured in said openings, and a strap suspended within said arch; substantially as described.

8. In combination with the sides of a bridle having openings therein, a spring arch adapted to be sprung into said openings, members upon said arch for engaging with the openings, and a strap suspended within the arch; substantially as described.

9. In combination with the sides of a bridle having slots in their lower ends, an arch having means for fastening in said slots, a fastening member upon said arch, and a strap secured to said fastening, said strap passing through the slots and being suspended in the arch; substantially as described.

10. A bridle comprising sides, a nose band or similar member composed of an arch, said arch being provided with a series of openings A', connections through said openings between the arch and the sides, portions upon said arch exteoding below the sides, said downwardly extending portions being provided with openings A^2, and a strap passing through said openings across the interior of the arch; substantially as described.

11. A bridle comprising sides, means for securing the bridle to the mouth or chin of the horse or other animal, a nose strap having adjustment upon said sides, and means for fastening the lines above the point of connection between the sides and the nose strap; substantially as described.

12. A bridle comprising sides, means for securing the bridle to the mouth or chin of the horse or other animal, a series of sets of securing means upon said sides, a nose strap adjustable to said sets of securing means, and means for fastening lines above the point of fastening between the nose strap and the sides; substantially as described.

13. A bridle comprising sides, means for securing the bridle to the mouth or chin of the horse or other animal, a series of openings as a^3 in said sides, a nose strap adjustable to said sets of openings and means for fastening lines above the openings to which the nose strap may be secured; substantially as described.

14. A bridle attachment comprising sides, a bit between the same, a nose strap, means above the point of connection between the sides and the nose strap for the attachment of an overdraw, and means above the point of connection between the sides and the nose strap for the attachment of the reins; substantially as described.

15. A bridle attachment comprising sides, a bit between the same, levers extending from each side of the bit, a nose strap, connected to the levers, the levers extending above said connection, rings upon said levers above the connection, and a second set of rings upon said levers above the connection; substantially as described.

16. A bridle attachment comprising sides, a removable bit between said sides, a curb, a nose strap, means for the attachment of an overdraw, and means for the attachment of reins; substantially as described.

17. A bridle comprising a main portion to be secured upon the horse or other animal, sides, a nose band or similar member composed of an arch secured to said sides, a strap suspended within said arch, and a connection between the arch and the main portion of the bridle, whereby the arch is held in position; substantially as described.

18. A bridle comprising a main portion to be secured upon the horse or other animal, sides, a nose band or similar member composed of an arch secured to said sides, a nose strap suspended within said arch, a strap or similar connection extending from the nose strap to the main portion of the bridle, and a second strap or similar connection between the arch and the strap from the nose strap; substantially as described.

19. A bridle comprising a main portion to be secured upon the horse or other animal, sides, a nose band or similar member composed of an arch secured to said sides, a nose strap suspended within said arch, a strap or similar connection extending from the nose strap to the main portion of the bridle, a second strap or similar connection between the arch and the strap from the nose strap, and means for adjusting the length of the said second strap; substantially as described.

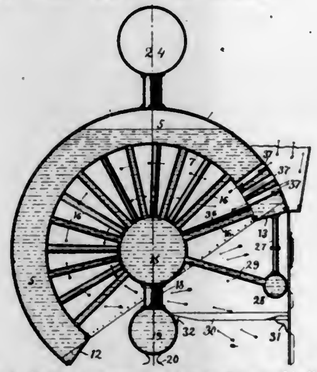
20. A bridle comprising sides, means for securing the bridle to the mouth or chin of the horse or other animal, an overdraw, a nose strap, an arch upon said sides, a strap suspended within said arch, and a connection between said arch, nose strap and suspended strap and the main portion of the bridle; substantially as described.

21. A bridle comprising sides, means for securing the bridle to the mouth or chin of the horse or other animal, an overdraw, a nose strap, an arch upon said sides, a strap suspended within said arch, a fastening member upon said suspended strap, a strap or similar connection between the nose strap and the main portion of the bridle, the fastening member upon the suspended strap engaging said connection, and a second strap or similar connection between the arch and the first connecting strap; substantially as described.

22. A bridle comprising sides, means for securing the bridle to the mouth or chin of the horse or other animal, an overdraw, a nose strap, an arch upon said sides, a strap suspended within said arch, a fastening member upon said suspended strap, a strap or similar connection between the nose strap and the main portion of the bridle, the fastening member upon the suspended strap engaging said connection, means for adjusting the length of the connection between the nose strap and the suspended strap, and a second strap or similar connection between the arch and the first connecting strap; substantially as described.

23. A bridle comprising sides, means for securing the bridle to the mouth or chin of the horse or other animal, an overdraw, a nose strap, an arch upon said sides, a strap suspended within said arch, a buckle upon said suspended strap, a buckle upon the nose strap, a strap or similar connection provided with holes engaging said buckles and being fastened to the main portion of the bridle, and a connection between said connecting strap and the arch; substantially as described.

546,786. STEAM-GENERATOR. JAMES J. ROHAN, St. Louis, Mo. Filed Apr. 17, 1895. Serial No. 546,035. (No model.)



Claim.—1. A steam generator consisting of a curved hollow shell, set inclined, with its axis substantially horizontal, and a furnace arranged in the inclined space beneath said hollow shell.

2. A steam generator consisting of a curved hollow shell, with its axis substantially horizontal, hollow ends or heads communicating with said hollow shell, a central drum within said hollow shell and connecting with said hollow ends, and having its axis also substantially horizontal, leaving a fire space between said hollow shell and drum and said hollow ends, and radial water tubes extending from said central drum to said hollow shell.

3. A steam generator consisting of a curved hollow shell, with its axis substantially horizontal, a central drum within and communicating with said hollow shell, leaving a fire space between said hollow shell and drum, and a mud drum below and connected with said central drum.

4. The combination to form a steam generator, of a curved hollow shell, with its axis substantially horizontal, a central drum connected therewith, leaving a fire space between said hollow shell and drum, and a downdraft grate below said hollow shell and adjacent to said drum.

5. The combination to form a steam generator, of a curved hollow shell, with its axis substantially horizontal, a central drum connected therewith, leaving a fire space between said hollow shell and drum, water legs extending from said central drum, a mud drum below communicating with said water legs, and a downdraft grate beneath said hollow shell and adjacent to the said central drum.

6. The combination to form a steam generator, of a curved hollow shell, with its axis substantially horizontal, a central drum connected therewith, leaving a fire space between said hollow shell and drum, and a downdraft grate beneath said hollow shell, said downdraft grate consisting of water tubes communicating at one end with said central drum and connected at the other end with the water of the generator

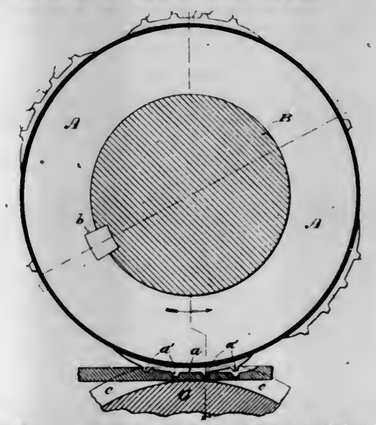
7 The combination to form a steam generator, of a curved hollow shell, with its axis substantially horizontal, hollow ends or heads communicating with said hollow shell, a central drum within said hollow shell and opening into said hollow ends, radial water tubes extending between said drum and hollow shell, and a downdraft grate arranged beneath said hollow shell. and consisting of water tubes communicating at one end with said central drum and at the other end with the water of the generator.

8. The combination to form a steam generator, of a curved hollow shell, with its axis substantially horizontal, a central drum connected therewith, leaving a fire space between said hollow shell and drum, water legs extending from said central drum, a mud drum below communicating with said water legs, and a downdraft furnace, consisting of downdraft water-tube grate bars communicating at one end with said central drum and connected at the other with the water of the boiler, and an updraft grate arranged below the downdraft grate adjacent to said mud drum.

9. The combination to form a steam generator, of a curved hollow shell, with its axis substantially horizontal, a central drum within and communicating with said hollow shell, leaving a fire space between said hollow shell and drum, fire tubes at the front of said generator leading through said hollow shell, and a stack at the front of the generator communicating with said fire tubes.

10. The combination to form a steam generator, of a curved hollow shell, with its axis substantially horizontal, a central drum within and communicating with said hollow shell, leaving a fire space between said hollow shell and drum, radial water tubes extending between said drum and shell, a downdraft grate arranged beneath said shell, and fire-proof covering or arch-ways for the radial tubes next above the downdraft grate, said fire-proof covering or arch-ways leaving the lower part of said latter-mentioned radial tubes exposed to the fire on the downdraft grate.

546,787. HORSESHOE-CREASING RING. JOHN SCHWARTING, Milwaukee, Wis., assignor to the Eagle Horse Shoe Company, same place. Filed Mar. 30, 1894. Serial No. 505,758. (No model.)

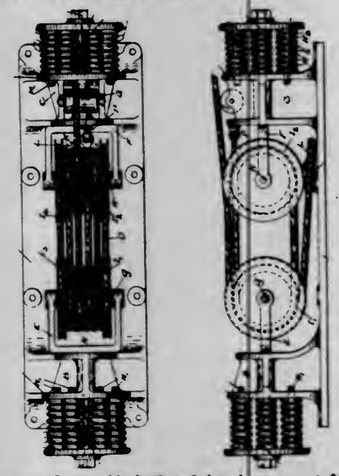


Claim.—1. A creasing ring for horseshoes, provided with creasing ribs or ridges and markers located thereon between said ridges at unequal distances from the toe calk space between the ridges on opposite sides thereof, so as to designate on shoe blanks the proper points for cutting them for right or left shoes, having the outside heels longer than the inside heels, substantially as and for the purposes set forth.

2. A creasing ring for horseshoes, provided on opposite sides of its periphery with creasing ridges or ribs, having projections at intervals on their outer edges for partially forming the nail holes and

markers located on opposite sides of and equidistant from the diameter of said ring which diameter is midway between the centers of the toe calk spaces whereby one side of the shoe is made longer than the other, substantially as and for the purposes set forth.

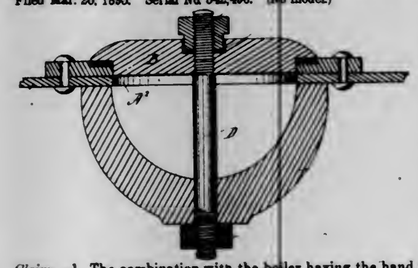
546,788. CABLE-BUFFER. LEWIS W. SHELDON, Bloomfield, N. J. Filed Feb. 14, 1895. Serial No. 538,337. (No model.)



Claim.—1. In a cable buffer of the character set forth, two frames, located at each end of a bed-plate, in combination with twelve or any practical number of sheaves, cross-heads supporting such sheaves and passing through the center of frames, disks attached at the ends of cross-heads, having each six or any practical number of rods carrying rings made of any flexible yielding material, suitable under the circumstances, each ring alternating with a ring made of metal preferably brass, for the purposes as set forth all substantially as described.

2. In a cable buffer of the character set forth, a double set of sheaves made up of any appropriate number, in combination with means for supporting same, a series of rings made of any suitable flexible, yielding material, alternating with a series of metal rings supported on appropriately fixed rods, said rings lying in compression between disks fixed on ends of cross-heads and frames said compression occasioned by a rope one end of which is fixed to one end of frames or supports and reeved around sheaves the other end being attached to the object in process of being maneuvered with, for the purposes as set forth all substantially as described.

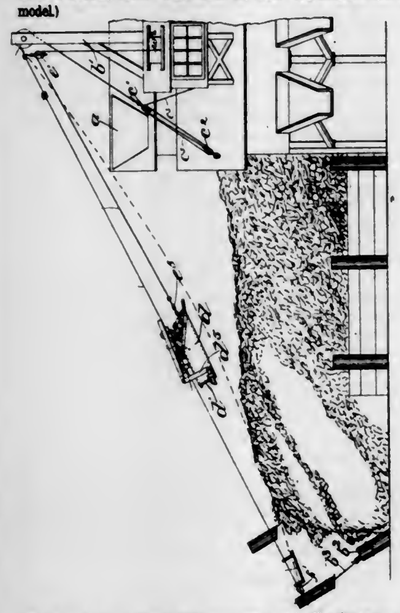
546,789. CLOSURE FOR HAND-HOLES OF BOILERS. JOHN D. SMITH, Dalton, assignor of two-thirds to W. Libbey Eaton, Holyoke, Mass. Filed Mar. 20, 1895. Serial No. 542,496. (No model.)



Claim.—1. The combination with the boiler having the hand or man hole, of the hand-hole cover having the screw-threaded hole through it with the enlarged orifice at the inner side, the bolt screw-threading through the cover and protruding inwardly beyond it, and a nut adapted to seat itself and be packed in the base of the said orifice as it is screwed upon the inner extremity of the bolt, and the yoke, C, and nut, H, externally applied, substantially as described.

2. The combination with the boiler having the hand-hole, of the hand-hole cover internally applied and closing said hole and having the screw-threaded hole through it with the circular orifice or socket at the inner side, the bolt screw-threading through the cover and protruding inwardly beyond it, the nut having the hexagonal or equivalent formation and also having its forward portion round and adapted to enter within said socket as the nut is screwed upon the inner extremity of the bolt, and the yoke C, and nut, H, externally applied about and upon the bolt, substantially as described.

546,790. APPARATUS FOR RELOADING COAL. FRANK H. STIMSON, Boston, Mass. Filed Dec. 10, 1894. Serial No. 531,318. (No model.)



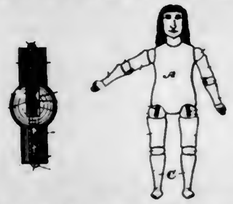
Claim.—1. In a conveying apparatus, an inclined runway, a coal tub running thereon, means for slackening the runway while the tub is filling and for thereafter tightening it, substantially as described.

2. In a conveying apparatus, an inclined runway, a coal tub thereon, means for drawing it up the runway, and for permitting it to descend, and means for slackening the runway for a short time while the tub is being drawn up, that it may scoop up the coal, and for thereafter tightening it, substantially as described.

3. In a conveying apparatus, an inclined runway, a coal tub thereon, means for drawing it up the runway, and for permitting it to descend, a winding drum for one end of the runway whereby it may be slackened while the tub is filling, and for thereafter tightening it, and a suitable point of attachment for the lower end of the runway, substantially as described.

4. In a conveying apparatus, a runway, a conveying tub, consisting of a scoop having rollers which follow along said runway, a pivoted door at the rear end having at each side a projection d^5, bell crank levers d^6, pivoted to each side of the scoop, and having latches which engage said projections d^5, the forwardly projecting yoke or frame d^7 connected with said bell crank levers, spring d^{10} normally holding the bell crank levers in engagement with the projections d^5, a stop at the upper end of the runway against which the yoke d^7 strikes to operate the bell crank levers, and thereby release the door, and a stop at the lower end of the runway against which the door strikes to close it.

546,791. JOINT FOR DOLLS, &c. EMIL VERPILLIER and CHARLES W. GRAVES, Newark, N. J. Filed Apr. 22, 1895. Serial No. 546,693. (No model.)



Claim.—1. A joint for dolls or the like, consisting, essentially, of a pierced sphere having a slit, a hinge-joint in said sphere inclosing the point of articulation of said joint and presenting said slit for the movement of one of the arms of articulation of said joint, and a sleeve rotatively arranged on one of said arms of the hinge-joint, substantially as and for the purposes set forth.

2. A joint for dolls or the like, consisting, essentially, of a pierced sphere having a slit, a tubular post or sleeve connected with said sphere, a hinge-joint in said sphere inclosing the point of articulation of said joint and presenting said slit for the movement of one of the arms of articulation of said joint, a sleeve rotatively arranged on one of said arms of the hinge-joint, and means for securing the tubular post or sleeve connected with the sphere in a fixed position on said other arm of articulation of the hinge-joint, substantially as and for the purposes set forth.

3. A joint for dolls or the like, consisting, essentially, of a pierced sphere having a slit, a hinge-joint, comprising therein, doubled portions c' and c^3, forming arms c^4 and c^7 respectively, having perforated ends c^4 and a pin or rivet for securing them together, to form a quadruple joint of articulation, said sphere inclosing the point of articulation of said joint and presenting said slit for the movement of one of the arms of articulation of said joint, and a sleeve rotatively arranged on one of said arms of the hinge-joint, substantially as and for the purposes set forth.

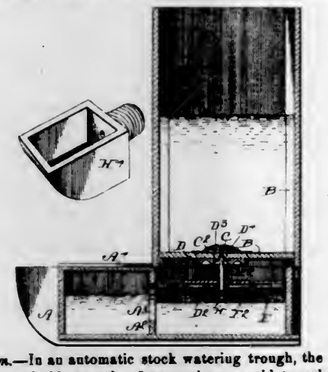
4. A joint for dolls or the like, consisting, essentially, of a pierced sphere having a slit, a tubular post or sleeve connected with said sphere, a hinge-joint, comprising therein, doubled portions c' and c^3, forming arms c^4 and c^7 respectively, having perforated ends c^4 and a pin or rivet for securing them together, to form a quadruple joint of articulation, said sphere inclosing the point of articulation of said joint and presenting said slit for the movement of one of the arms of articulation of said joint, a sleeve rotatively arranged on one of said arms of the hinge-joint, and means for securing the tubular post or sleeve connected with the sphere in a fixed position on said other arm of articulation of the hinge-joint, substantially as and for the purposes set forth.

546,792. FILAMENTARY HOOD OR GRATING. WILLIAM L. VOELKER, Elko, Va., assignor, by mesne assignments, to the Sterling Incandescent Gas Light Company, of West Virginia. Filed Sept. 19, 1894. Serial No. 523,503. (No specimens.)

Claim.—1. A porcelanous incandescent gas lamp mantle having a filamentary body or frame work incorporated with an incandescing substance and brought to a finished hard and refractory condition by baking.

2. A porcelainized web or woven mantle of an incandescent oxide for an incandescent gas lamp.

546,793. AUTOMATIC STOCK-WATERING TROUGH. WILLIAM VOSBURGH, Des Moines, Iowa, assignor of one-half to M. M. Ferguson, same place. Filed Jan. 19, 1895. Serial No. 535,443. (No model.)



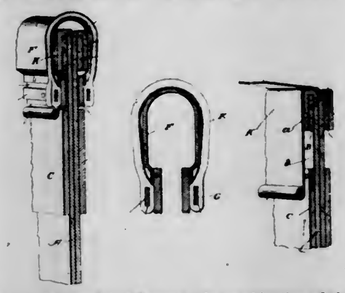
Claim.—In an automatic stock watering trough, the combination with a suitable trough, of a top piece on said trough having a round opening communicating with a source of water supply, a block having an opening with inclined sides, secured to the under side of the top piece, a flexible washer mounted in the top of said block and having a central opening above the opening in the block, a vertically movable float in the tank, an upright secured to the float, and having an approximately spherical top with a central tapered projection, substantially as set forth.

546,794. DEVICE FOR STOPPING RUNAWAY HORSES. WILLIAM R. VOSE, Chicago, Ill. Filed June 16, 1893. Serial No. 477,875. (No model.)

Claim.—A device for stopping runaway horses, and adapted to be used independently of a bridle-bit, said device comprising, in combination, a pair of pivotally connected curved jaws A carrying knobs B at their forward ends to flank the nostrils of the animal and straps D at which to suspend the device on the bridle, said straps being connected by a nose-strap E, the jaws crossing each other at their pivotal connection and having arms A' behind the same, and a chain C, or the like, flexibly connecting said arms and at which to fasten a pull-strap, substantially as described.



546,795. MAIL-BAG FASTENER. EDWARD H. WALKER, Somerset, Pa. Filed May 15, 1895. Serial No. 549,391. (No model.)



Claim.—1. In a mail bag fastener, the combination of the reinforced edges of the mouth, the lateral strip or strips on the bag, guide strips movable in ways between the edges and the said lateral strips, a tubular cover connected to said strips, and a series of stiff bows or loops surrounding the tubular cover, and the longitudinal fastening strips attached to said bows, substantially as described.

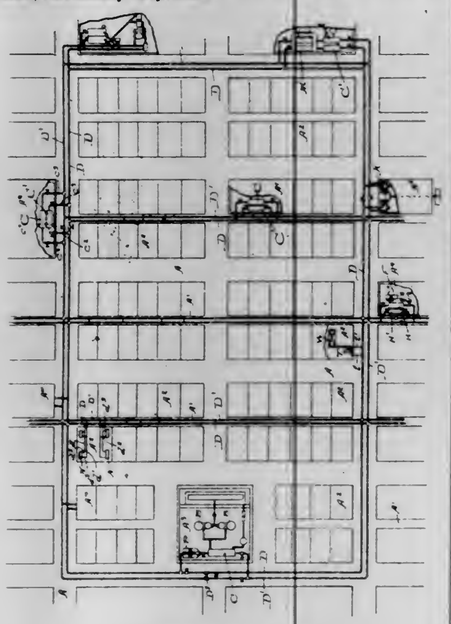
2. In a mail bag fastener, the combination with the reinforced mouth-edges and the lateral strip or strips on the bag, of the tubular sliding fastener provided with a series of exterior stiffening bows, and the auxiliary closing flap, substantially as described.

546,796. SYSTEM AND APPARATUS FOR GENERATING, ACCUMULATING, AND DISTRIBUTING POWER AND HEAT. CHARLES C. WARREN, Chicago, Ill., assignor of one-half to Emory A. Clark, same place. Filed Mar. 28, 1895. Serial No. 543,459. (No model.)

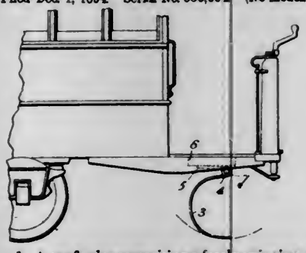
Claim.—1. The combination with a circuit of pipes including the usual radiators of a liquid heat vehicle within, and means for propelling said heat vehicle through the said circuit of pipes, and a plurality of sources of intermittent or variable waste heat supply situated at different points of and adapted to heat said circuit, whereby some of the said sources of heat will supplement the action of or compensate for the inaction of other of said sources of heat, substantially as specified.

2. The combination with a circuit of pipes including the usual radiators of a liquid heat vehicle within, and means for propelling said heat vehicle through the said circuit of pipes, and a plurality of sources of intermittent or variable waste heat supply situated at different points of and adapted to heat said circuit, whereby some of the said sources of heat will supplement the action of or compensate

for the inaction of other of said sources of heat, together with a supplemental or reinforcing direct fuel burning heater for heating directly the liquid in the circuit to be used when the waste heat is not sufficient, substantially as specified.



546,797. CAR-FENDER. WILLIAM E. WOODBRIDGE, Washington, D. C. Filed Dec. 1, 1894. Serial No. 530,604. (No model.)



Claim.—1. A car fender comprising a freely swinging cradle having resilient bearings or abutting arms swinging with the cradle, and suspended by means of coiled springs from which its resiliency is derived, substantially as described.

2. A car fender comprising a spring cradle pivotally or loosely supported from the car and adapted to swing freely, the lower portion having a curvature whereby it is adapted to retain the object received within or upon it, in opposition to the centrifugal force generated by the partial rotation of the cradle upon its support, substantially as described.

3. A car-fender comprising a swinging cradle having downwardly curved spring arms and resilient bearings or abutting-points composed of projecting loops intermediate to the arms and connecting each arm with the arms adjacent to it on either side, substantially as described.

4. A car-fender comprising a single piece of wire or rod bent or turned into a number of co-axial spring coils, curved arms, and projecting bearings or abutting-points, substantially as described.

5. A car-fender comprising a number of co-axial spring coils and a series of curved arms and of resilient bearings or abutting-points formed in loops of a continuous wire or rod, combined with a rod passing through said coils and suitable supports or attachments to the car, substantially as described.

6. A car fender comprising a swinging cradle combined with an inwardly folding retaining flap pivoted to the lower edge of the cradle, and means adapted to return it automatically after depression to its normal position, substantially as described.

7. A car fender comprising a series of downwardly curved spring arms, combined with a flap secured to the lower extremities of said arms and adapted to be turned against the arms and automatically restored to position, substantially as described.

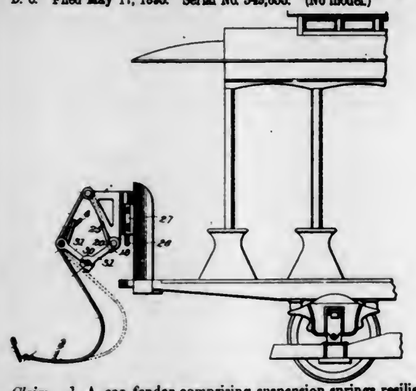
8. The combination with the fender or cradle constructed with the downwardly curved spring arms, of the flap loosely attached to the lower extremities of alternating arms and normally maintained in a vertical position by the arms, substantially as described.

9. A car-fender comprising a cradle adapted to swing freely in an outward direction and provided with elastic resistances or bearing-points formed of loops continuous with the coiled springs from which the resilience is derived and which also serve as a means of suspension or carrier, substantially as described.

10. A car-fender comprising a number of downwardly curved arms flexibly joined or united at their lower ends by means of independent links connecting the adjoining arm, combined with resilient bearings or abutting-points, substantially as described.

11. The combination with a car or other similar vehicle, of a rod supported by suitable attachments to the same, and a swinging cradle suspended from said rod, the said cradle being formed or provided with elastic or resilient portions adapted to act upon the cradle whenever the latter is forced inwardly, and with a retaining flap hinged to the lower edge of the cradle and capable of being turned inwardly against its bottom, and automatically restored to a vertical position by the action of springs, substantially as described.

546,798. CAR-FENDER. WILLIAM E. WOODBRIDGE, Washington, D. C. Filed May 17, 1895. Serial No. 549,653. (No model.)



Claim.—1. A car fender comprising suspension springs resilient in the direction of the motion of the car, a suspended swinging cradle supported by said springs, and intermediate co-operating abutting arms between said springs and cradle, substantially as described.

2. A car fender comprising suspension springs having coils alternating with upwardly projecting arms, and a cradle provided also with alternating coils and arms, the two sets co-operating, substantially in the manner shown and described.

3. A car fender comprising suspension springs having coils alternating with upwardly projecting abutting arms, a cradle provided also with alternating coils and arms, and tube sections passing through both sets of coils and united at their ends by links, substantially as described.

4. A car fender comprising suspension springs having abutting arms, a spring cradle having abutting arms co-operating therewith, and a friction link interposed between the points of suspension and the rearward bearing of the suspension springs, substantially as shown and described.

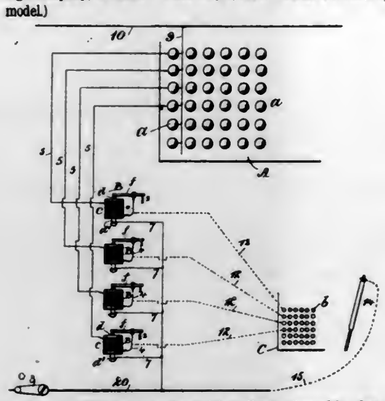
5. A car fender comprising downwardly curved arms, plates hinged to said arms, a flexible strip connecting the plates, and springs exerting an outward pressure upon the plates, substantially as shown and for the purpose described.

6. A car fender comprising a cradle and a retaining flap attached to its lower front edge, said retaining flap being constituted of bent plates forming a hinged attachment to the front of the cradle, and of a flexible band extending along the front of the cradle and connecting the hinged plates, substantially as described.

7. A car fender comprising a cradle, curved-plates having their lower edges turned over to form bearings through which the arms pass, springs carried by the arms and having their bearings between the plates and an independent longitudinal rod, and a leather strip extending along the lower edge of the cradle and secured to the plates, substantially as described.

8. In a car fender, a friction link interposed between parts of the same which react upon each other in its operation, substantially as described.

546,799. ELECTRIC-LIGHT DISPLAY SYSTEM. JONATHAN E. WOODBRIDGE, Duluth, Minn., assignor to the Electrical Advertising and Sign Company, of Maine. Filed July 8, 1895. Serial No. 555,212. (No model.)



Claim.—1. The combination with a display board having a multiplicity of electric lamps, of electro-magnetic switches one for each lamp and circuit connections through each lamp and its electro-magnetic switch and means for closing each of the circuits whereby the circuit that is closed through any lamp is maintained by the magnet holding switch, and a hand switch in the main circuit to turn off the current and extinguish the lamps and break the circuits at the switches, substantially as specified.

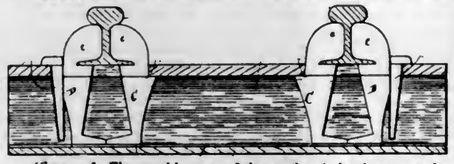
2. The combination with a display board having a multiplicity of electric lamps, of electro-magnetic switches and circuit connections through each lamp and its electro-magnetic switch whereby the circuit that is closed through any lamp is maintained by the magnet holding switch, and a hand switch in the main circuit to turn off the current and extinguish the lamps and break the circuits at the switches, a writing board with contacts corresponding in number and position to the lamps, branch circuit connections to the contacts and a stylus circuit-closer and flexible connections thereto for actuating the switches electrically, substantially as specified.

3. The combination with a display board having a multiplicity of electric lamps, of electro-magnetic switches and circuit connections through each lamp and its electro-magnetic switch whereby the current that is closed through any lamp is maintained by the magnet holding switch, and a hand switch in the main circuit to turn off the current and extinguish the lamps and break the circuits at the switches, a resistance in the main circuit for lessening the current to the lamps and a switch for short circuiting such resistance substantially as specified.

4. The combination with a display board having a multiplicity of electric lamps, of electro-magnets one for each lamp, circuit connections passing through the armatures and cores for causing the armatures to act as switches, branch circuits from the magnets and a circuit closing stylus for energizing the electro-magnets and closing their switches, substantially as specified.

5. The combination with a display board having a multiplicity of electric lamps, of electro-magnetic switches corresponding in number and position to the lamps, circuit connections through each lamp and its corresponding electro-magnetic switch, means for depressing the armatures of any desired number of said electro-magnetic switches to complete a permanent electric circuit through said electro-magnetic switches and lamps to light the lamps, which circuits are maintained by the magnets holding the switch armature, and a hand switch in the main circuit to turn off the current and extinguish all the lamps at once and break the currents at the respective switches, substantially as specified.

546,800. COMBINED RAIL CHAIR AND TIE. JOHN ALBRIGHT, Massillon, Ohio. Filed May 1, 1895. Serial No. 547,745. (No model.)

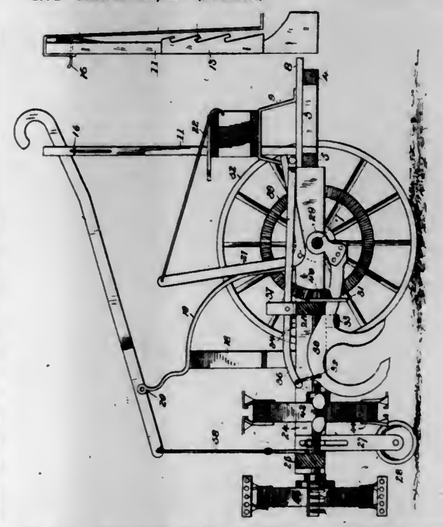


Claim.—1. The combination of the section A, having secured to the bottom or lower portion of said section the plate B, provided with the groove *b*, the locking dogs C and D, provided with the ribs *f*, and the keys or wedges E, substantially as and for the purpose specified.

2. The combination of a hollow tie provided with a grooved bottom, the locking dogs provided with ribs upon their bottom or lower ends, and the serrated keys or wedges, substantially as and for the purpose specified.

3. In a railway tie the section A, provided with flaring sides, the grooved bottom B, secured to the section A, the locking dogs having ribs formed upon their bottom or lower ends, and means for securing said locking dogs, substantially as and for the purpose specified.

546,801. COMBINED SCRAPING, CHOPPING, AND CULTIVATING MACHINE. JULIUS A. ALEXANDER, Pine Bluff, Ark. Filed Oct. 30, 1894. Serial No. 527,445. (No model.)



Claim.—1. In a machine of the character described, a chopping wheel adapted for rotation in a plane at right angles to the path of the machine, provided with a plurality of radial chopping hoes arranged in pairs, one on each side of said wheel, said hoes having angular cutting edges and the rear hoes of each pair having a cut away portion on its inner edge, substantially as and for the purpose described.

2. In a combined scraping, chopping and cultivating machine, the combination with the main frame mounted on a shaft to which the main wheels are secured, of a double footed plow beam mounted in a collar surrounding said shaft and resting on a cross bar depending from the rear part of the frame, a yoked lever connected to the rear end of said plow beam fulcrumed in brackets on the rear part of the frame, an angle lever fulcrumed to the front part of the frame, having its free arm in engagement with the yoke of said plow lever, and a rod extending from the other arm of said angle lever to the seat of the machine, substantially as and for the purpose described.

546,802. SCREENING ELECTRICAL OR OTHER INSTRUMENTS AND APPARATUS. WILLIAM E. AYRTON and THOMAS MATHER, London, England. Filed July 3, 1893. Serial No. 479,523. (No model.) Patented in England May 16, 1893. No. 9,753.

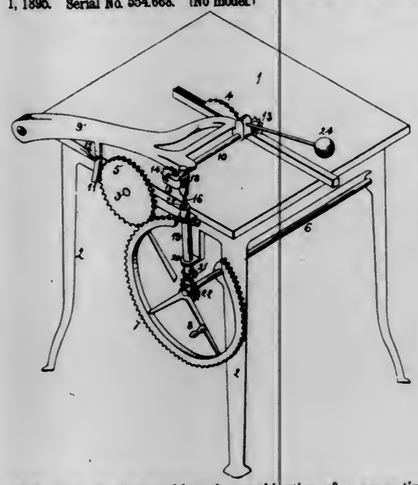


Claim.—1. In combination with a transparent cover for electrical and other instruments and apparatus a transparent electrically conducting screen S as described.

2. In combination with a transparent cover for electrical and other instruments and apparatus a transparent electrically conducting screen formed of adhesive material as described.

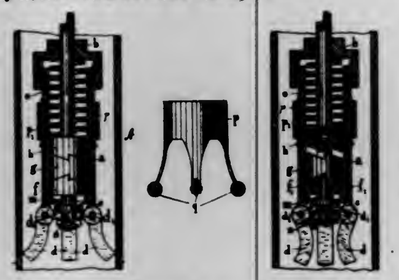
3. In combination with a transparent cover for electrical and other instruments and apparatus a transparent electrically conducting screen of adhesive material covered by a protective coating as described.

546,803. SAWING-MACHINE. JOHN BARNES, Rockford, Ill., assignor to the W. F. & John Barnes Company, same place. Filed July 1, 1895. Serial No. 554,668. (No model.)



Claim.—In a sawing machine, the combination of a supporting frame, an arm having a pivotal connection therewith, a toothed wheel carried by the arm, a shell having a lengthwise central rectangular opening, means for rotating the shell, a shaft carrying a head corresponding to the opening in the shell, and movable therein, and means forming a connection between the shaft and toothed wheel.

546,804. APPARATUS FOR REMOVING INCRUSTATION, &c., FROM BOILER-TUBES. HENRI BASCHY, Hamburg, Germany. Filed July 13, 1895. Serial No. 556,823. (No model.)



Claim.—1. The combination of a casing with a set of pivoted chisels, and with a divided toothed and revoluble clutch connected to the chisels, substantially as specified.

2. The combination of a casing with a set of pivoted chisels, a triplex divided toothed clutch connected to the chisels, and a spring-actuated rod for revolving the clutch, substantially as specified.

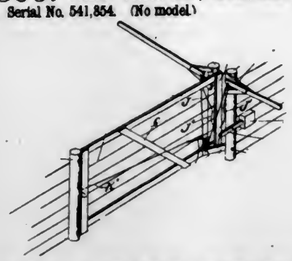
3. The combination of a casing with a set of pivoted chisels, a divided toothed clutch connected to the chisels, an outer sliding sleeve and cutters pivoted to said sleeve, substantially as specified.

4. The combination of a casing with a set of pivoted chisels, a divided toothed clutch connected to the chisels, a hollow revoluble spindle connected to the clutch, and a frame that engages the spindle, substantially as specified.

5. The combination of a casing with an inclosed spring-actuated clutch, a rod engaged by said clutch and having an outwardly projecting flanged head and with scrapers pivoted to the casing and having tappets that engage said head, substantially as specified.

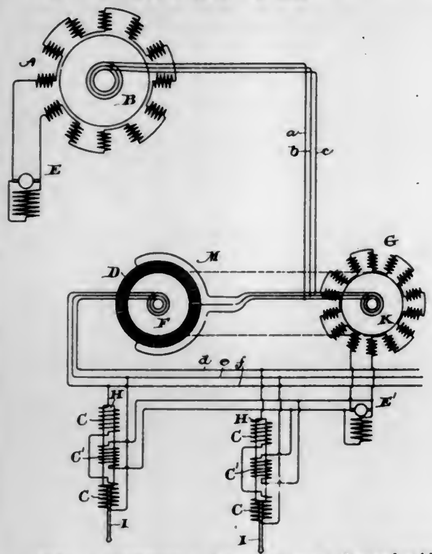
6. The combination of a casing with an inclosed spring-actuated clutch, a rod engaged by said clutch and having an outwardly projecting flanged head, scrapers pivoted to the casing and engaging said head, a longitudinally movable sleeve surrounding the casing and having spring arms, and with cutters secured to said arms, substantially as specified.

546,805. GATE. VICTOR BERG, Dexter, Mich. Filed Mar. 15, 1895. Serial No. 541,854. (No model.)



Claim.—The combination of the gate, the braces B, the separated posts D D', the pivot rod or bolt passing through the braces and the posts, the brackets extending outwardly from the top of the posts, the levers pivoted in the outer ends of said brackets, the cords J, connected to the inner ends of said levers and to the braces, the cords J' connected to the inner ends of the levers, and to the gate at a point above its pivot, the gate latch, the latch cords connecting from the cords J to the latch, the weighted lever pivoted to the posts D, and the flexible connection between the gate and lever, substantially as described.

546,806. FREQUENCY-CHANGER. ERNST J. BERG, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed June 21, 1895. Serial No. 553,528. (No model.)



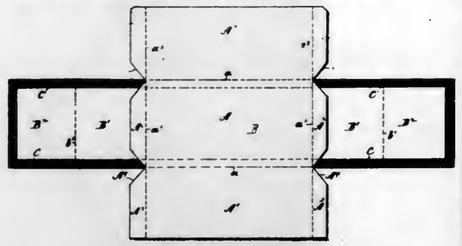
Claim.—1. A generator of alternating current of normal or high frequency, lines leading therefrom, an induction motor having its inducing member supplied from the lines and its induced member supplying other lines, drills or other apparatus requiring currents of low frequency connected to the lines supplied from the induced member of the induction motor, a generator of alternating currents operated by the induction motor, and an exciter supplying the generator and the continuous current coils upon the drills.

2. A generator of alternating current of normal or high frequency, lines leading therefrom, an induction motor having its inducing member supplied from the lines and its induced member supplying other lines, drills or other apparatus requiring currents of low frequency connected to the lines supplied from the induced member of the induction motor, a generator of alternating currents operated by the induction motor, and an exciter supplying the generator and the continuous current coils upon the drills; the generator being connected to line, substantially as described.

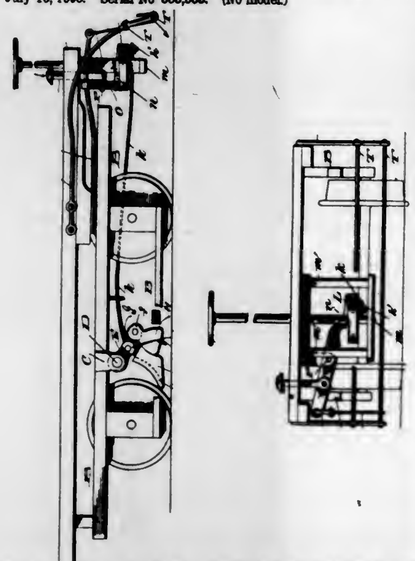
546,807. FOLDING PAPER BOX. JULIUS H. BITTERLICH, New Haven, Conn. Filed Mar. 22, 1895. Serial No. 542,786. (No model.)

Claim.—The herein described box-body or cover consisting of two independently formed parts, one part forming the inner bottom

portion and side walls, each of which is extended to form narrow retaining flanges, the other part forming the outer bottom portion and doubled ends between the folds of which the flaps of the sides extend, said parts being firmly united substantially as described.



546,808. AUTOMATIC CAR-BRAKE. CHRISTINA BRANDAU, Cohoes, N. Y., assignor of one-fourth to Frank P. Higby, same place. Filed July 10, 1895. Serial No. 555,556. (No model.)



Claim.—1. In a car brake, the combination of a sectional gravity brake shoe journaled on a shaft which has connection with a wheel whose upper surface is spirally inclined and terminates in a shoulder designed to be engaged by a dog, and means for releasing the said dog, substantially as shown and described.

2. In a brake for railway cars, the combination of the sectional shoe, mounted on a suitable shaft, a rod connecting the said shaft with a wheel having its upper surface spirally inclined, of the spring actuated dog adapted to engage a shoulder on the said spiral surface, and a push rod pivoted to the said dog, substantially as shown and described.

3. In a car brake, the combination of the sectional shoe mounted on a rocking shaft, a collar on said shaft having connection by any suitable means with a wheel having a spirally inclined upper surface, and mounted on a vertical shaft provided with a hand wheel, of a spring actuated dog pivoted to a portion of the car, and adapted to engage with a shoulder on the inclined surface of said wheel, and a push rod pivoted to the dog, whereby the brakes are set by gravity when dog releases the said wheel, substantially as shown and described.

4. In a brake for cars, the combination of the sectional brake shoe, mounted on a rock shaft, collar on said rock shaft, a rod connected to said collar at one end, its other end eccentrically pivoted to the under surface of the wheel L, which is keyed to the vertical shaft M, the dog O pivoted to an upright post, the push rod pivoted to the dog, and the spring rod R, having its rear end secured to the side of the car or truck, its forward end engaging the outer end of the said dog, and of suitable connection with a fender, substantially as shown and described.

5. In combination with the brake mechanism as described, adapted to be set by gravity, when released by the dog O, the fender which is yieldingly secured to the end of a car, and has connection with the outer end of the spring actuated dog, substantially as shown and described.

6. In combination with a car brake, as described, the fender consisting of the downwardly curved rods S secured at their rear ends to the side of the car truck, their forward ends terminating in loops carrying the cross bars T, and the link U, connecting a cross bar with the spring rod R, substantially as and for the purpose set forth.

7. The improved brake shoe made up of the wheel engaging portion F, having a flange *f*, and pivoted to a collar E, combined with the section H pivoted to an integral portion of the said wheel engaging section, substantially as and for the purpose set forth.

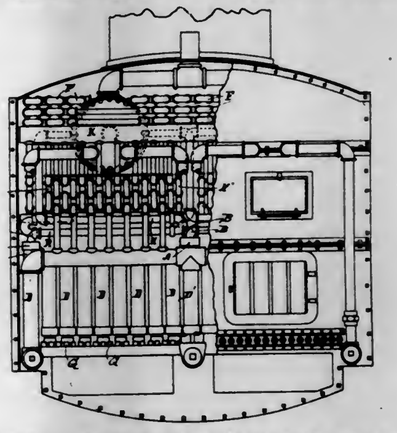
8. As an improved article of manufacture, a brake shoe, which is adapted to hold emery, sand or other substance, which is designed to be automatically fed upon the track, as the brake is applied, substantially as shown and described.

9. The improved brake shoe made up of sections, consisting of the flanged wheel engaging section to which is pivoted a track engaging section designed to hold sand, emery or other material, which is designed to be automatically fed upon the track, as the brake is applied substantially as shown and described.

10. The improved sectional brake shoe consisting of the wheel engaging section, the hollow sand carrying section pivoted thereto, and the slide *h* normally closing the outlet for the sand, but when the brake is applied, to slide up and allow the sand to escape, all substantially as shown and described.

11. A brake shoe for cars, made up of the section F, designed to engage with the wheel, the section H pivoted to an integral portion of the said section F, combined, so that the section H, when the brake is applied, will crowd the said wheel engaging section between the periphery of the said wheel and the track, all substantially as shown and described.

546,809. STEAM-BOILER AND COUPLING. EDWARD A. CLARK, Boston, Mass. Filed Nov. 13, 1894. Serial No. 528,644. (No model.)



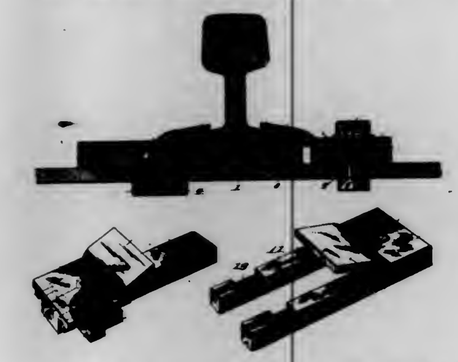
Claim.—1. In a steam boiler, an offset coupling for uniting tubes of different sizes, such coupling consisting of a threaded end-cap for the larger tube, and formed with a threaded coupling socket opening through the outer end and at one side of the axial center of said cap, and adapted to receive the threaded end of the smaller tube lying at one side of the axial plane of the larger tube, the remaining portion of the end of said cap being closed, to give space for the reception of the return bend of a like tube extending thereto from a similar coupling at the opposite side of the boiler, whereby the two smaller tubes lie parallel to each other and within the plane of the larger tubes from which they extend, substantially as and for the purpose set forth.

2. In a steam boiler, an offset coupling for uniting tubes of different sizes in perpendicular planes, such coupling consisting of a threaded end-cap for the larger tube, and a quarter-turn screw-threaded coupling socket formed integral with the end portion of said cap and at one side of its axial center, and adapted to receive the threaded end of a tube running at right angles to the axis of the cap, the end of said cap being otherwise closed, substantially as and for the purpose set forth.

3. In a steam boiler, a fire-box having an end wall and side walls formed of closely set vertical water tubes supplied from horizontal manifold base pipes and suitably arranged feed-water pipes, in combination with transverse heating tubes of less diameter than the ver-

tical tubes, crossing and recrossing the fire-box above the fuel chamber, and with couplings joining such vertical and transverse tubes, the threaded socket for the smaller tube being offset and placed at one side of the center of the end portion of the cap for the larger tube, the remainder of such end portion being closed, substantially as set forth.

546,810. DEVICE FOR ATTACHING RAILROAD-RAILS TO METAL TIES. FREDERICK F. EHRICH and JASON ROLLINS, Little Rock, Ark. Filed June 15, 1895. Serial No. 552,948. (No model.)



Claim.—1. The herein described device for attaching railroad rails to metal ties, switch bars or bridles, consisting of the combination with a metal tie having a slot therein, of a clamping device made in two parts, each formed with ledges adapted to surround the flange of the rail, one of said parts bolted or otherwise secured to the metal tie and the other formed with a lug on its under side having a T-shaped head adapted to fit the slot in said tie, and means for adjusting said movable clamping piece relatively to the other and for securing the same in its adjusted position, substantially as and for the purpose described.

2. The herein described device for attaching railroad rails to metal ties, switch bars or bridles consisting of the combination with a metal tie having a slot therein, of a clamping device made in two parts, each formed with ledges adapted to surround the flange of the rail, one of said parts having laterally projecting arms formed with recesses near their ends in the upper surface thereof, and the other part having a laterally projecting tongue fitting between said arms provided with a horizontal slot near one end aligning with the recesses in said arms, a lug on the under side thereof of a shape corresponding to the shape of the slot in said tie, a bolt for securing one of said clamping pieces to the tie, and a wedge shaped key fitting the recess in said arm and the aligned slot in the other clamping piece, substantially as and for the purpose described.

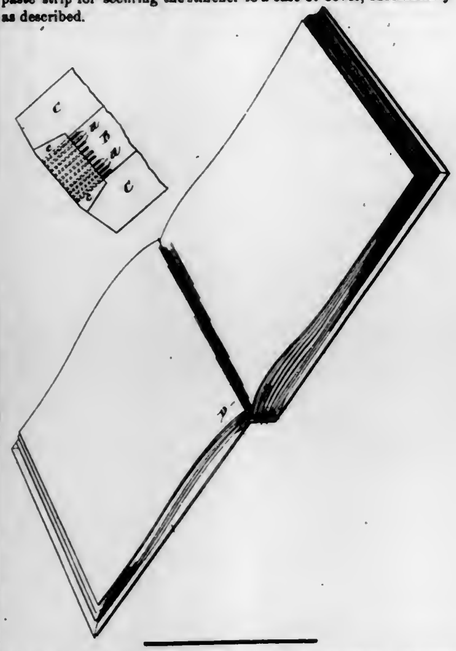
546,811. FOLIO-BINDER. PROSPER D. PENN, Chicago, Ill. Filed Apr. 11, 1894. Serial No. 507,151. (No model.)

Claim.—1. In a binder of the class described, the combination with a stiffener forming a portion of the hinge, of a series of binder wires having bodies of a length equal to that of the stiffener and their ends bent or hooked, the extremities embracing the stiffener and permanently secured thereto and means for securing the stiffener to a case or cover whereby the bent ends are inclosed between the stiffener and such case or cover, substantially as described.

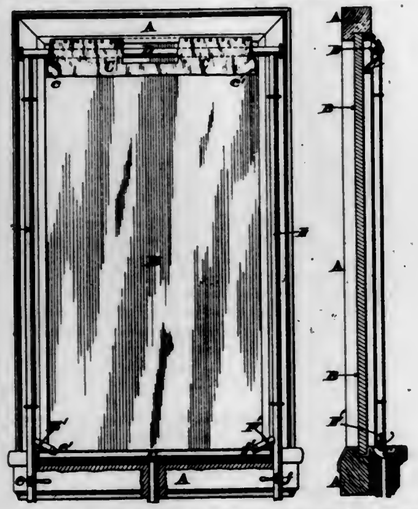
2. In a binder of the class described, the combination with a stiffener forming a portion of a hinge piece, of a series of binder wires having their ends returned to embrace the ends of the stiffener and the extremities of the bent ends secured to the back thereof, and a paste strip secured to the stiffener and affording means for attaching the latter to a case or cover, substantially as described.

3. In a binder of the class described, the combination with a stiffener adapted to form a portion of a hinge, of a series of binder wires having their ends bent angularly with reference to the bodies and their extremities returned parallel to the bodies and embracing the ends of the stiffener, a paste strip secured with the body of the stiffener and having its margins extended beyond the edges thereof, and a fold thereof secured over the returned ends of the binder wires, substantially as described.

4. In a binder of the class described, the combination with a stiffener having its ends up-turned, of a series of binder wires having an angular bend therein toward their ends and their extremities beyond said bends returned parallel to the body and embracing the bent ends of the stiffener and secured to the body thereof, and a paste strip for securing the stiffener to a case or cover, substantially as described.



546,812. WINDOW-CLEANING ATTACHMENT. BENEDICT FRITSCH, Vincennes, Ind., assignor of one-half to Richard Murphy, Cincinnati, Ohio. Filed Apr. 9, 1894. Serial No. 506,891. (No model.)



Claim.—The combination of a frame having a glass fitted therein; a perforated pipe extending across the frame, at or near its top; means for supplying water to said pipe; and a flexible strip arranged in the rear of the perforated pipe with its lower edge in contact with the glass, substantially as shown and described.

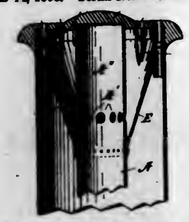
546,813. CAN-OPENER. JAMES GILBERT, Sauk Centre, Minn. Filed Feb. 4, 1895. Serial No. 537,153. (No model.)

Claim.—1. In a can opener, the combination of a central holding pin, a cutting knife, and yielding means for varying the distance between the pin and the knife, said knife having its cutting part set oblique to the axis of the handle whereby the severed edge of the can is spread outward, substantially as described.

2. In a can opener the combination of a handle, a sliding bar secured therein and terminating with a pointed holding pin, a knife secured to the handle and having its cutting blade set oblique to the axis of the sliding rod, a spring adapted to hold the point in yielding relation to the knife, substantially as described.



546,814. EXHAUST-MUFFLER. RALPH B. HAIN, Grand Rapids, Mich. Filed Jan. 14, 1895. Serial No. 534,789. (No model.)

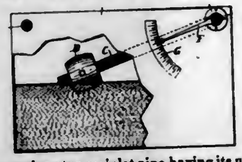


Claim.—1. In an exhaust muffler, in combination with an exhaust pipe having a closed chamber at its end lateral openings at a distance from its end, a truncated conical diaphragm surrounding said pipe, and a cap closing said pipe and conical diaphragm, and having exhaust openings, substantially as described.

2. In an exhaust muffler, an exhaust pipe having lateral openings, and a closed chamber between said openings and its ends, an air jacket surrounding said pipe, having means for circulating air therethrough, a truncated conical diaphragm surrounding said pipe, a cap closing the end of said pipe and conical diaphragm, and having exhaust openings, substantially as described.

3. In an exhaust muffler, an exhaust pipe having lateral openings, an air jacket surrounding said pipe, a truncated conical diaphragm between said pipe and jacket, a cap closing said pipe and the base of said conical diaphragm, exhaust openings in said cap, and pipes through said cap and conical diaphragm, substantially as described.

546,815. CARBURETOR. RALPH B. HAIN, Grand Rapids, Mich. Filed Jan. 14, 1895. Serial No. 534,791. (No model.)



Claim.—1. In a carburetor, an inlet pipe having its upper end near the top of said vessel and extending outside the same and its inner end, vertically movable, and increasingly immersed in the liquid as it descends, and a float supporting the movable end of said pipe substantially as described.

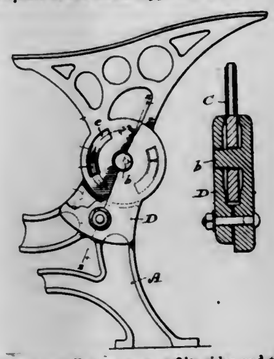
2. In a carburetor, in combination, a closed vessel, a pipe within said vessel, and extending outside the same, and pivoted at its upper end, and having its lower end movable vertically in the arc of a circle, and gradually and increasingly immersed in the contents of the vessel as it descends, and a float on said pipe supporting its movable end, substantially as described.

3. In a carburetor, in combination with a closed vessel, a pipe inserted in the wall of said vessel and rotative therein, an extension of said pipe at right angles to the same and within the said vessel, and an adjustable float on said extension, substantially as described.

546,816. FURNITURE-JOINT. WILLIAM C. HOOD, Racine, Wis. Filed Apr. 3, 1895. Serial No. 544,961. (No model.)

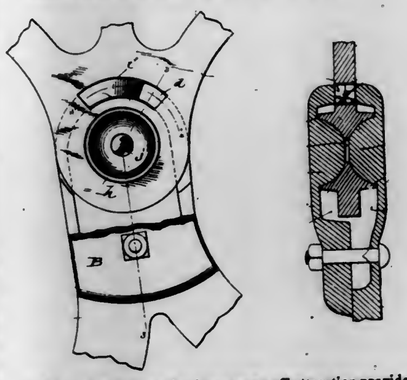
Claim.—1. A furniture-joint comprising a support offset upon one of its sides, a plate secured at one end to the support and having its free end offset upon the side in opposition thereto, a seat-bracket arranged to have rotary movement in the space bounded by the offset sides of the support and plate, together with lateral inclines arranged to come intermediate of a side of the seat-bracket and an opposing surface on a circle struck from the axis of said bracket, these inclines being in opposite directions on said circle at such points as will insure outward pressure of the aforesaid bracket against the free end of said plate as the former approaches its limit of travel in either direction.

2. A support offset upon one of its sides, a plate secured at one end to the support and having its free end offset upon the side in opposition to the offset portion of the support, a seat-bracket arranged in the space bounded by the offset sides of the support and plate, a stationary lug within the joint engaging a segmental slot in the seat-bracket, and inclines also arranged within the joint in opposite directions from the lug to thereby cause lateral pressure of said seat-bracket against the plate as the former approaches its limit of tilt in either direction.



3. A support offset upon one of its sides and this offset provided with a central boss and a pair of lugs, the latter being arranged on a circle diametrically opposite each other, inclines that flank each lug on the same circle therewith and rise in opposite directions, a seat-bracket loose on the boss and provided with segmental slots engaged by the lugs, a boss-engaging plate fast at one end to the support and having its free end offset upon the side in opposition to the offset portion of said support, and inclines on the plate facing those on the aforesaid support.

546,817. FURNITURE-JOINT. WILLIAM C. HOOD, Racine, Wis. Filed May 23, 1895. Serial No. 550,349. (No model.)



Claim.—1. A support having a partly offset portion provided with a recess and a lateral semi-spherical boss within the recess, a plate in bolt-connection with the support and having an offset recessed portion also provided with a lateral semi-spherical boss opposite the one aforesaid, a stop intermediate of said offset portions of the support and plate, and a seat-bracket provided with lateral sockets for the bosses and a segmental slot engaged by the stop, the play-space for the bracket being contracted in opposite directions from the stop.

2. A support having a partly offset portion provided with a recess, a lateral semi-spherical boss within the recess, and a stop-lug on the offset portion of the recess-rim concentric to the lug, this rim being inclined in opposite directions from the stop-lug; a plate in bolt-connection with the support and having an offset recessed portion also provided with a semi-spherical boss, stop-lug and inclined surfaces opposite those of said support; and a seat-bracket provided with lateral sockets for the bosses and a segmental slot engaged by the stop-lugs.

546,818. BALL-BEARING. OLIVER C. KNIPE, Norristown, Pa. Filed Feb. 19, 1895. Serial No. 538,965. (No model.)

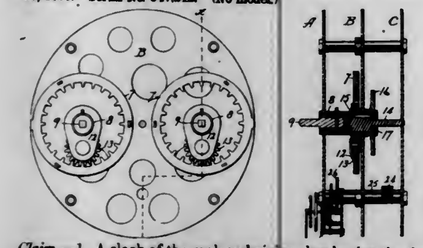
Claim.—1. A ball bearing comprising a race way of independent annular parts meeting in a plane passing through the balls and form-

ing an open annular way embracing more than half of each ball, and a casing around the raceway parts, as and for the purpose set forth.



2. A ball-race for a bearing comprising a sectional race-way A, B, containing a series of balls, and a casing C upset around the raceway to lock the sections permanently together.

546,819. CLOCK. ALMERON M. LANE, Meriden, Conn. Filed Apr. 26, 1895. Serial No. 547,212. (No model.)



Claim.—1. A clock of the rack and pinion class having the three movement plates, the spring hub carrying the planet wheel and journaled within the front and middle plates, the stationary internal rack mounted between said front and middle plates, the shaft 14 carrying the pinion for engaging the planet wheel and having its rear bearing in the rear plate, the wheel 16 loosely mounted on said shaft and the ratchet and pawl in connection with said wheel and shaft, whereby the spring may be wound from the front plate by the direct application of a key to the spring-hub substantially as described.

2. A clock of the rack and pinion class having three movement plates with the rack, spring, spring hub and planet wheel between the front and middle plates, the shaft 25 having its rear bearing in the rear one of said plates and its front bearing in the front plate, a wheel near the front end of said shaft, connecting gearing between said shaft 25 and the planet wheel, and an escapement train mounted in the minor plates and secured upon the front plate in connection with the wheel near the front end of said shaft 25, substantially as described and for the purpose specified.

3. A clock of the rack and pinion class having the pinion which is driven by the planet wheel mounted rigidly on its shaft, the wheel 16 loosely mounted upon said shaft, a pawl mounted on said wheel, and a ratchet also rigidly connected to said shaft, substantially as described and for the purpose specified.

546,820. ELECTRIC SWITCH. GEORGE E. LINTON, Worcester, Mass. Filed Jan. 4, 1895. Serial No. 533,807. (No model.)



Claim.—1. In an electric switch, the combination of a switch-knife, a plurality of contact pieces, a clamping device mounted in each of said contact pieces, a handle for moving the switch-knife, and an independent handle mounted on a fixed part of the switch for actuating the clamping devices, substantially as described.

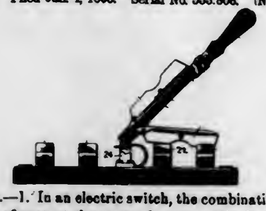
2 In an electric switch, the combination of a switch-knife, a plurality of contact pieces, a clamping bolt and nut mounted in each of said contact pieces, a handle for moving the switch-knife, an independent handle, and insulated connections for actuating said clamping devices, substantially as described.

3. In an electric switch, the combination of a switch-knife, a plurality of split contact pieces, an independently adjustable bolt and nut for clamping each of said contact pieces into engagement with said knife, means for holding each clamping device in its adjusted position and means for simultaneously actuating said clamping devices, substantially as described.

4. In an electric switch, the combination of a pivoted switch-knife having a plurality of independent sections or blades, a plurality of contact pieces, means for clamping said contact pieces into engagement with said switch-knife and a connection between the blades of said switch-knife for causing said blades to turn simultaneously while allowing them to have an independent lateral movement, substantially as described.

5. In a double-throw switch, the combination of a switch-knife pivoted in a central contact piece, a contact piece located at each side of said central contact piece, a clamping device for each of said contact pieces, and means for simultaneously actuating said clamping devices, substantially as described.

546,821. ELECTRIC SWITCH. GEORGE E. LINTON, Worcester, Mass. Filed Jan. 4, 1895. Serial No. 533,808. (No model.)

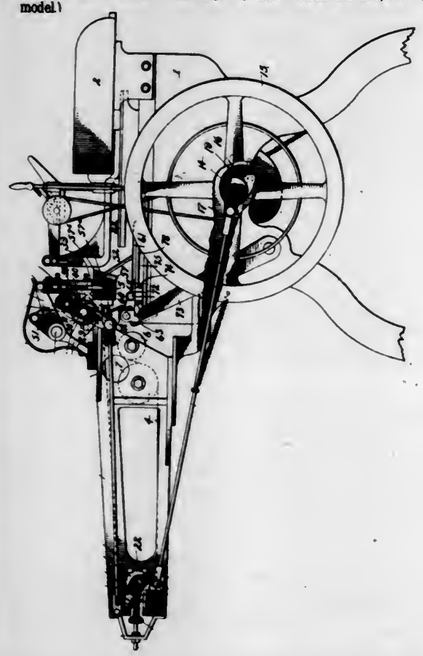


Claim.—1. In an electric switch, the combination of a base-plate, a plurality of contact pieces, stands arranged in line with said contact pieces, a pivoted switch-frame having slotted side-bars pivoted in said stands, an insulated cross-bar for said side-bars, switch-knives pivoted in said side-bars, springs for said switch-knives, and an insulated connection between said switch-knives for causing them to turn together, substantially as described.

2. In an electric switch, the combination of a base-plate A, contact pieces mounted upon said base-plate, a stand arranged in line with said contact pieces, a switch-frame pivoted in said stand, a U shaped spring for engaging said switch-frame and holding the same in the desired position, a switch-blade having its pivot eccentrically arranged with reference to the pivot of the switch-frame, said switch-blade having a tail-piece 15 for engaging the switch-frame and causing said switch-blade to turn therewith, a flat spring 16 for said switch-blade, and a stud 17 for securing said spring in place, substantially as described.

3. In a double-throw electric switch, the combination of a base-plate, a plurality of contact pieces, a pivoted switch-frame, a plurality of independently movable switch-knives arranged back to back in said switch-frame, said switch-blade having engaging tail pieces, and a spring for actuating said switch-blades, substantially as described.

546,822. CIGARETTE-MACHINE. ADOLPH MOONELIS, New York, N. Y., assignor, by mesne assignments, to the American Tobacco Company, of New Jersey. Filed Apr. 9, 1894. Serial No. 506,906. (No model.)



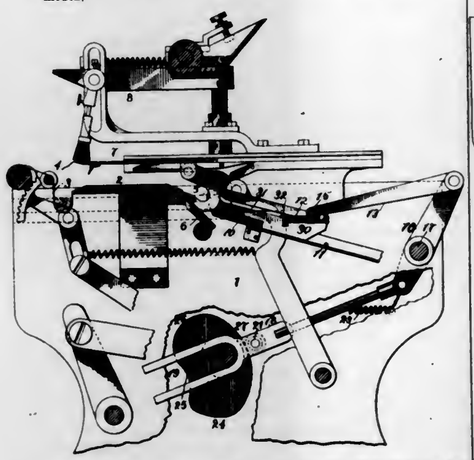
Claim.—1. The combination with the bunching roller 72 and slides in which said roller is journaled, of means for moving said slides and tracks on which the roller travels and by contact with which it is rotated, substantially as described.

2. The combination of a bunching roller 72 and slides for moving it, said roller being journaled in bearings on said slides, with tracks 78 and bushings or disk 77 secured to said bunching roller and arranged to travel on said tracks to rotate said roller, substantially as described.

3. The combination of a reciprocating wrapper carrier having a pivoted portion 81^a, a wrapper holder pivoted thereon and having a shaft 84 provided with fingers extending at an angle to each other and a pin or projection to engage said fingers to turn the wrapper holder as and for the purposes specified.

4. The combination of a reciprocating wrapper carrier having a pivoted portion 81^a with a wrapper holder consisting of a bail carried by a rock shaft journaled on said wrapper carrier, said shaft having fingers projecting at a suitable angle to each other, and a pin or projection to engage said fingers alternately to rock said shaft as and for the purpose specified.

546,823. CIGARETTE-MACHINE. ADOLPH MOONELIS, New York N. Y., assignor, by mesne assignments, to the American Tobacco Company, of New Jersey. Filed July 5, 1894. Serial No. 516,601. (No model.)



Claim.—1. In a cigarette machine, the combination of means for making a cigarette, with a rubbing device for rolling the cigarette and means for giving the movable part of said device a to and fro motion to roll the cigarette back and forth, substantially as described.

2. In a cigarette machine, the combination of mechanism for making a cigarette, with a chute or plate a rubber to coact therewith in rolling a cigarette, and means for giving said rubber a to and fro motion to roll the cigarette back and forth, substantially as described.

3. In a cigarette machine, the combination of mechanism for making a cigarette, with a chute or plate adapted to receive a cigarette therefrom, a rubber to co-act with said chute or plate in rolling a cigarette, a cam arranged to move said rubber to and fro to roll the cigarette back and forth and devices connecting said rubber with said cam whereby the latter can operate the former, substantially as described.

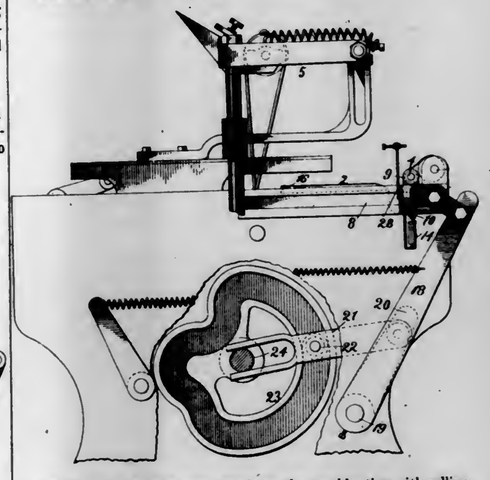
4. In a cigarette machine the combination of mechanism for making a cigarette, with a chute or plate to receive a cigarette therefrom, a rubber to co-act with said chute or plate in rolling a cigarette, a rock-arm 16, a rod 13 pivotally connecting said arm with said rubber and a rod 18 pivotally connected with said rock arm and a cam to actuate said rod 18 and having portions arranged to reciprocate the rod 18 to move said rubber to and fro, to roll a cigarette back and forth, substantially as described.

5. In a cigarette machine the combination of mechanism for making a cigarette, with a chute or plate to receive a cigarette therefrom, a rubber to act with said chute or plate in rolling a cigarette, a cam to operate said rubber, said cam having projecting portion 24, depression 25, projecting portion 26 and depression part 27, and with mechanism connecting said cam with said rubber, as and for the purposes specified.

6. In a cigarette machine, mechanism for making a cigarette combined with a chute or plate to receive a cigarette therefrom, a rubber to act with said chute or plate, a brush carried by said rubber to sweep said chute or plate, and means for operating said rubber to roll a cigarette, substantially as described.

7. In a cigarette machine, mechanism for making a cigarette, combined with a chute or plate to receive a cigarette therefrom, a rubber to act with said chute or plate to roll a cigarette, guides for said rubber having slots 31, that are parallel with said chute or plate at one portion and turned outwardly at another portion, pins or projections carried by said rubber to travel in said slots, and means for operating said rubber to roll a cigarette, substantially as described.

546,824. CIGARETTE-MACHINE. ADOLPH MOONELIS, New York, N. Y., assignor, by mesne assignments, to the American Tobacco Company, of New Jersey. Filed June 20, 1894. Renewed Apr. 20, 1895. Serial No. 546,550. (No model.)



Claim.—1. In a cigarette machine, the combination with rolling devices for rolling a cigarette wrapper on a filler, of means for actuating said rolling devices with a sidewise or angular movement, substantially as described.

2. In a cigarette machine, the combination with rolling devices for rolling a cigarette wrapper on a filler, of means for actuating said rolling devices at right angles to the line of rolling during one part of the rolling operation and with a sidewise or angular movement during another part of the rolling operation, substantially as described.

3 The combination with a rolling table and rolling devices coacting therewith to roll a cigarette wrapper on a filler, of means for moving the rolling devices with a sidewise or angular movement relatively to said table, substantially as described.

4. The combination with a rolling table and rolling devices coacting therewith to roll a cigarette wrapper on a filler, of means for moving said rolling devices in straight lines during one part of the rolling operation and moving the rolling devices angularly with relation to the rolling table during another part of the rolling operation, substantially as described.

5. The combination of a rolling table and apron, with a roller and means for moving the latter independently at opposite ends to enable it to move angularly with relation to the rolling table, substantially as described.

6. The combination of a rolling table and apron, with a roller, and independent actuating devices connected with opposite ends of said roller for moving its ends separately, substantially as described.

7. The combination of a rolling table and apron, with a roller, and means for first moving said roller along said table in straight lines, and for then moving said roller angularly, substantially as described.

8. The combination of a rolling table and apron, with a roller, and means for moving said roller at one end continuously in straight lines, and means for moving the opposite end of said roller intermittently along the rolling table, substantially as described.

9. The combination of a rolling table and apron, with a roller, and means for moving said roller along said table in straight lines for a certain distance, for then arresting the movement of one end of said roller, and for then further advancing said end of said roller, substantially as described.

10. The combination of a rolling table and apron with a roller, slides to which said roller is pivotally connected, and means for independently actuating said slides, substantially as described.

11. In a cigarette machine, the combination with rolling devices for rolling a cigarette wrapper on a filler, of means for separating the rolling devices to relieve the pressure on one end of the filler, substantially as described.

12. In a cigarette machine, the combination with rolling devices for rolling a cigarette wrapper on a filler, of means for actuating said rolling devices with a sidewise or angular movement, and means for separating the rolling devices to relieve the pressure on one end of the filler, substantially as described.

13. The combination of a rolling table and apron with a roller, means for moving the latter over the rolling table, and means for raising one end of the roller from the table at the end of the rolling operation, substantially as described.

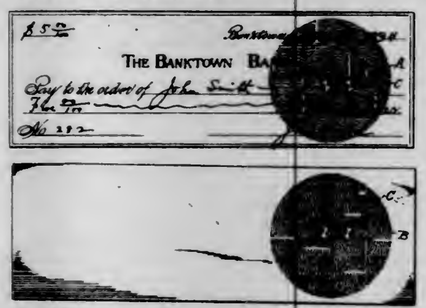
14. The combination of a rolling table and apron with a roller, means for moving the latter along said table in straight lines for a certain distance and for then moving said roller angularly, and means for raising one end of said roller from the table during the angular movement, substantially as described.

15. The combination of a rolling table and apron, with a roller, slides, bearings carried thereby to receive said roller, pins connecting said bearings with said slides, one of said pins being connected with one slide by a spring, ways or tracks for said roller, a raised plate or stop on said way to receive and raise said roller at one end, and means for reciprocating said slides, substantially as described.

16. The combination of a rolling table and apron, with a roller, cams for operating said roller and connections between said cams and said roller, one of said cams being arranged to advance one end of said roller, to then bring it to rest and to again advance said roller, and a spring to act with said cam to operate the roller, substantially as described.

17. The combination of a rolling table and apron with a roller, slides connected therewith, links connected with said slides, rock arms independently supported connected with said links, a cam connected with one arm to move it continuously in one direction, another cam connected with the other arm and arranged to move said arm conjointly with the first mentioned arm for a certain distance, to then arrest the movement of said arm and to then advance said arm, substantially as described.

546,825. **BANK-CHECK, DRAFT, OR ANALOGOUS MONETARY INSTRUMENT.** ISAAC RANDALL, Milwaukee, Wis. Filed Jan. 12, 1895. Serial No. 534,621. (No specimens.)

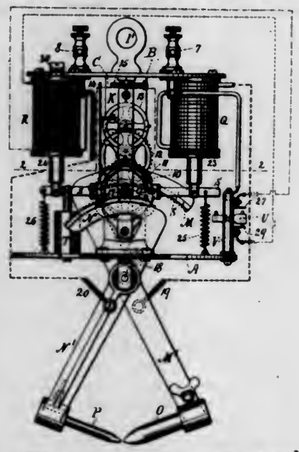


Claim.—1. A bank-check, draft, or analogous monetary instrument, bearing upon both faces thereof protective impressions, registering in location with each other, whereby a punch or perforator applied anywhere within the limits of the protective impression on one face of the said instrument will cut out its mark within the limits of the said protective impression on the other face thereof, the said protective impressions being composed of series of lines of ordinary printed reading matter, substantially as set forth.

2. A bank check, draft, or analogous monetary instrument, bearing upon both faces thereof protective impressions, registering in location with each other, whereby a punch or perforator applied anywhere within the limits of the protective impression on one face of the said instrument will cut out its mark within the limits of the said protective impression on the other face thereof, said protective impressions being composed of series of lines of ordinary printed reading matter, the said lines upon one face of the instrument being arranged at a different angle from that of the lines on the other face thereof, substantially as set forth.

3. A series of bank checks, drafts or analogous monetary instruments, each bearing upon both faces thereof protective impressions, registering in location with each other, and composed of series of lines of ordinary printed reading matter, the said lines upon one face of each instrument being arranged at a different angle from that of the lines on the other face thereof, and with the lines of the impressions upon one face of all the instruments in said series being arranged at the same angle throughout the entire series, and the lines of the impressions upon the opposite faces of the said instruments being arranged at a different angle in each successive instrument of said series, substantially as set forth.

546,826. **ELECTRIC-ARC LAMP.** RUPERT SCHEFRAUER, Paterson, N. J., assignor to the Auerbach-Woolverton Electric Company, New York, N. Y. Filed Nov. 16, 1894. Serial No. 528,966. (No model.)



Claim.—1. The combination with a spring, a frame and gearing and a fly, of pinions on the shaft rotated by the spring, carbon holders and racks upon the same at opposite sides of the pinions, a ratchet to hold the spring as strained by the carbon holders being separated, a spring stop upon the frame and acting to hold the fly, an electro-magnet and connection for moving the frame, and a device with which the spring stop is brought into contact and liberated from the fly to allow the same to rotate as the carbons are brought toward each other, substantially as specified.

2. The combination with a spring, a frame and gearing and a fly, of pinions on the shaft rotated by the spring, carbon holding arms, pivots upon which such arms swing, racks upon the carbon holding arms one above and the other below its pinion, a ratchet to hold the spring as strained by the carbon holding arms being separated, a spring stop for the fly and an electro-magnet, a lever connected to and moving the frame, a screw for arresting the spring stop and liberating the fly so that the spring rotates the pinions to bring the carbons toward each other, substantially as specified.

3. The combination with the pivoted carbon holding arms and their segmental racks, of pinions at the opposite sides of which the racks act, and a shaft and a spring connected with such shaft, a train of gearing and a fly, a ratchet wheel and pawl intervening between the pinion shaft and train of gearing, a yielding stop for the fly, and a rocking frame and electro-magnet for moving the same and liberating the fly, substantially as specified.

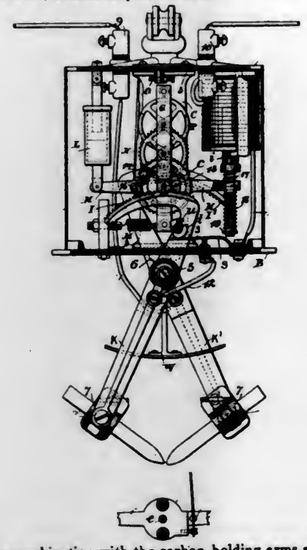
4. The combination with a spring barrel and fly, of pinions on the shaft of the spring barrel, carbon holding arms, pivots upon which such arms swing, racks upon the carbon holding arms one above and the other below its pinion, a ratchet to hold the spring as wound up by the carbon holding arms being separated, a stop for the fly, and an electro-magnet to move the parts and allow the fly to rotate as the carbons approach each other, substantially as set forth.

5. The combination in an electric arc lamp, of a helix in the main line circuit passing through the carbons, a helix in a shunt circuit, a lever acted upon by the cores of the two electro-magnets, a switch moved by such lever, circuit connections and a resistance that is added in the shunt circuit by the movement of the switch so that the helix and resistance are in series if the circuit through the carbons is interrupted substantially as set forth.

6. The combination with the carbons and the electro-magnet in the main circuit, of an electro-magnet in a shunt circuit, a lever connecting the cores of the magnets and the armature 30 for varying the action of the shunt magnet, and a switch acted upon by the lever, and a resistance thrown into the shunt by the switch, substantially as specified.

546,827. **ELECTRIC-ARC LAMP.** RUPERT SCHEFRAUER, Paterson, N. J., assignor to the Auerbach-Woolverton Electric Company, New York, N. Y. Filed Mar. 5, 1895. Serial No. 540,604. (No model.)

Claim.—1. The combination with the carbon holding arms, segmental racks and pinions for actuating such arms, of a lever for drawing the electric arc, an electro-magnet in the circuit to the arc, an extension from the core of the electro-magnet passing through an eye in the lever and helical springs around such extension and at each side of the lever, substantially as set forth.



2. The combination with the carbon holding arms and their insulated pivots and segmental racks, of pinions for acting upon such racks, a train of gearing and fly, an intervening ratchet wheel and pawl, a swinging frame and lever carrying the gearing, a spring stop for the fly, and an adjustable connection between such spring stop and the frame and lever for varying the pressure of such spring, substantially as set forth.

3. The combination with the carbon holding arms and their insulated pivots and segmental racks, of pinions for acting upon such racks, a train of gearing and fly, an intervening ratchet wheel and pawl, a swinging frame and lever carrying the gearing, a spring stop for the fly, and an adjustable connection between such spring stop and the frame and lever for varying the pressure of such spring, an electro-magnet in the circuit to the carbons and a yielding connection between the core of the magnet and the lever, substantially as set forth.

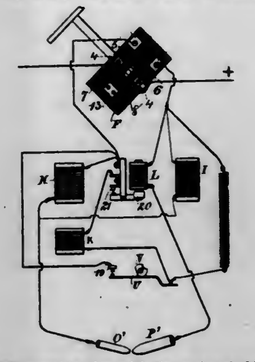
4. The combination in an electric arc lamp, of carbon holding arms, pivots for the same, gearing and a fly for regulating the approach of the carbons toward each other, a frame for the gearing and a lever therewith connected, a spring for acting upon the lever in one direction, an electro-magnet and its core for acting upon the lever in the other direction, and flexible connections between the lever and the core for preventing vibrations in the core extending to the carbons, substantially as set forth.

5. The combination in an electric arc lamp, of carbon holding arms, pivots for the same, gearing and a fly for regulating the approach of the carbons toward each other, a frame for the gearing and a lever therewith connected, a spring for acting upon the lever in one direction, an electro-magnet and its core for acting upon the lever in the other direction, a rod extending from the core and passing through an eye in the lever, helical springs at both sides of the lever for flexibly connecting the lever and the core to prevent vibrations in the core extending to the carbons and a dash-pot connected with the lever, substantially as set forth.

6. The combination with the carbon holders and means for feeding the carbons, a lever for drawing the arc and an electro magnet in the circuit to the arc, an extension from the core of the electro magnet passing through an opening in the lever and helical springs around such extension and at each side of the lever, substantially as specified.

7. The combination with the carbon holders in an electric arc lamp and the actuating helix, of a spring circuit closer in the same circuit carrying a contact point and an adjacent contact, a notched tumbler and rigid pivot for the same, such tumbler having two flat surfaces at different distances from the pivot to act on the spring and open or close the circuit, a pin moved by the carbon holders for acting in the notch and turning the tumbler one way or the other to break or close the circuit at the spring, substantially as specified.

546,828. **ELECTRIC-ARC LAMP.** RUPERT SCHEFRAUER, Paterson, N. J., assignor to the Auerbach-Woolverton Electric Company, New York, N. Y. Filed Mar. 5, 1895. Serial No. 540,605. (No model.)



Claim.—1. The combination with the carbon holders in an electric arc lamp and the main line circuit passing through the same, of two helices in said main line circuit, and mechanism acted upon by one of said helices to draw the arc and an armature cut out acted upon by the other helix to break a shunt circuit between the binding posts when the current is passing through the carbons and to close such shunt circuit when the current ceases to pass through the carbons, an electro-magnet and a resistance in said shunt circuit, such electro-magnet acting to move the carbons toward each other, substantially as specified.

2 The combination in an electric arc lamp with the carbon holders and main line circuit passing through the carbons, of a magnet in said main line circuit, a lever acted upon by the same for drawing the arc, a rheostat and spring circuit closer in a shunt around the lamps, a fixed pivot and a tumbler with flat places for the spring to bear against, a projection on the carbon holder for automatically moving the tumbler to close the circuit to the rheostat when the carbons are burned out or to break such circuit when fresh carbons are inserted, substantially as set forth.

3. The combination with the carbon holders in an electric arc lamp and the main line circuit passing through the same, of two helices in said main line circuit, and mechanism acted upon by one of said helices to draw the arc, and an armature cut out acted upon by the other helix to break a shunt circuit between the binding posts when the current is passing through the carbons and to close such shunt circuit when the current ceases to pass through the carbons, an electro-magnet and a resistance in said shunt circuit such electro-magnet acting to move the carbons toward each other, a helix of high resistance in a shunt between the binding posts and a lever acted upon by such helix to feed the carbons, substantially as set forth.

4. The combination in an electric arc lamp, of a rheostat and a circuit closing spring in a shunt between the binding posts, a main line helix and cut out helix in the circuit passing through the carbons, a fine wire helix in a shunt of the main circuit and mechanism actuated thereby for feeding the carbons, an armature and cut out actuated by the cut out helix, a starting magnet and a rheostat in the circuit leading to the cut out, a spring circuit breaker and mechanism actuated by the carbon holders for opening the circuit breaker when fresh carbons are inserted, substantially as set forth,

5. The combination with the carbons and the main line circuit through the same, of two helices in such circuit in series with the carbons, mechanism acted upon by one of said helices to draw the arc, a cut out acted upon by the other helix, a shunt circuit passing through the cut out and a rheostat therein, the cut out closing the shunt circuit through the rheostat when the current is not passing through the carbons, substantially as specified.

6. The combination with the carbon holders in an electric arc lamp of a shunt circuit between the binding posts and a spring contained in such shunt, a pivot and a tumbler having flat places against which the spring rests and a projection moved by the carbon holder and acting to turn the tumbler and make or break the circuit through the spring, substantially as specified.

546,829. **GATE.** EDWARD F. SHELLABERGER, De Kalb, Ill. Filed Mar. 9, 1895. Serial No. 541,068. (No model.)

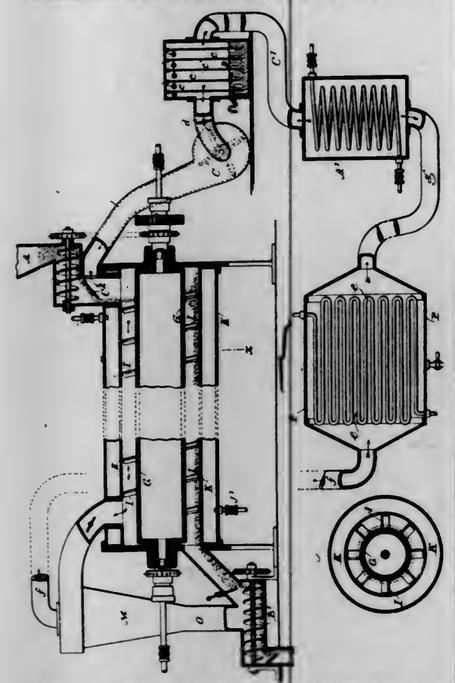
Claim.—1. A gate frame composed of corner pieces consisting of two mating members having seats or sockets, the members of two of said corner pieces having integral mating projections forming hinge members, double bottom and top bars and single side bars adapted to said seats or sockets and intermediate brace bars and a suitable

filling for the body of the gate, and the margins whereof are secured between the members of the top and bottom bars, substantially as described.



2. A gate frame composed of corner pieces, each consisting of two mating members having seats or sockets, top and bottom bars each composed of two members adapted to the seats or sockets of the corner pieces and to clamp between them pickets, side bars and intermediate brace bars secured to the side bars parallel to the top and bottom bars, one bar of said intermediate brace being extended beyond the side bar and a spring latch having its lower end secured between the projecting ends of said braces, and a latch keeper formed by mating projections on the upper corner pieces of the free edge of the gate, substantially as described.

546,830. METHOD OF UNIFYING FLOUR, &c. KINGSLAND SMITH, St Paul, Minn. Filed Oct. 8, 1894. Serial No. 525,210. (No model.)



Claim.—1. The method herein specified of heating flour to render the same substantially uniform consisting in supplying such flour regularly into one end of a substantially tight vessel, moving the flour gradually from the receiving to the delivery end and simultaneously agitating and heating the same to a temperature about equal to boiling water, as and for the purposes set forth.

2. The method herein specified of preparing flour to render the same substantially uniform in quality, consisting in subjecting the flour to the action of heat about equal to that of boiling water while such flour is subjected to agitation within a substantially air-tight case, and introducing warm air to commingle with the flour, substantially as set forth.

3. The combination in an apparatus for treating flour, of a casing, means for supplying the flour at one end and discharging the same at the other end and at the same time excluding the atmosphere, means for maintaining the flour and the casing at a temperature corresponding or nearly so to that of boiling water, and means for forcing heated air in a regulated quantity into such apparatus, substantially as set forth.

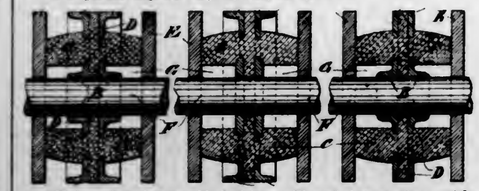
4. The combination in an apparatus for treating flour, of a casing, means for supplying the flour at one end and discharging the same at the other end and at the same time excluding the atmosphere, means for maintaining the flour and the casing at a temperature corresponding or nearly so to that of boiling water, means for forcing heated air in a regulated quantity into such apparatus, a dust catcher for separating the flour from the air, and a pipe for returning the air to the fan or forcing apparatus, substantially as set forth.

5. The combination in an apparatus for treating flour, of a casing, means for supplying the flour at one end and discharging the same at the other end and at the same time excluding the atmosphere, means for maintaining the flour and the casing at a temperature corresponding or nearly so to that of boiling water, means for forcing heated air in a regulated quantity into such apparatus, a dust catcher for separating the flour from the air, a pipe for returning the air to the fan or forcing apparatus, means for supplying moisture to the heated air in its passage to the casing containing the flour, and means for condensing the surplus moisture from the atmosphere before it is returned to the heater and the fan, substantially as set forth.

6. The method herein specified of preparing flour to render the same substantially uniform in quality, consisting in subjecting the flour to the action of heat about equal to that of boiling water while such flour is subjected to agitation within a substantially air-tight case and introducing warm air and moisture to commingle with the flour, substantially as set forth.

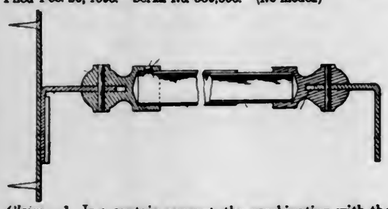
7. The method herein specified of preparing flour to render the same substantially uniform in quality, consisting in grinding wheat that has been moistened to soften the hulls, subjecting the flour therefrom to the action of heat about equal to that of boiling water and within a substantially air-tight case and agitating such flour during the heating operation, substantially as set forth.

546,831. CAR-SPRING. ALFRED G. SPENCER, London, England. Filed July 31, 1894. Serial No. 519,051. (No model.) Patented in England Mar. 19, 1886, No. 3,906; in Belgium Feb. 9, 1893, No. 103,305, and in Argentine Republic July 11, 1893, No. 1,319.



Claim.—A spring provided with metallic end rings or plates, with metallic intermediate rings or plates, and having an india-rubber body into which said intermediate rings or plates are mounted, said india-rubber body having a part or parts of itself located between said intermediate rings or plates so as to constitute a supplementary spring or elastic part or parts integral with said india-rubber body, and which will afford, at all times a reserve of elasticity, substantially as herein described for the purpose specified.

546,832. CURTAIN-SUPPORT. JOHN H. STEVENSON, Ann Arbor, Mich., assignor to the Ann Arbor Manufacturing Company, same place. Filed Feb. 26, 1895. Serial No. 539,806. (No model.)



Claim.—1. In a curtain support, the combination with the pole and heads thereon, of brackets pivotally secured to the head comprising flat metal strips of uniform thickness having their outer ends bent at right angles, the securing plates having parallel edge flanges formed with inwardly turned edges and of uniform size throughout, substantially as described.

2. In a curtain support, the combination of the telescoping tubular pole section, having a slot B at its outer end, the boss C on one lip of the slot, the heads, and the tubular sockets on the heads, having an aperture E adapted to receive the boss C, substantially as and for the purpose described.

546,833. CURLING-IRON. HOWARD B. STOUT, Chicago, Ill., assignor to the Stout Manufacturing Company, same place. Filed June 25, 1894. Serial No. 515,585. (No model.)

Claim.—1. In a hair curling implement, the combination with the usual handle, of a mandrel rotatably mounted with relation to such handle, a clasp pivoted upon the mandrel, a sleeve or button, free to slide on the mandrel, but fixed thereto with reference to the rotary movement, said slide being also connected with the clasp, whereby it may serve as the manipulating handle for both rotating the mandrel and actuating the clasp; substantially as and for the purpose set forth.

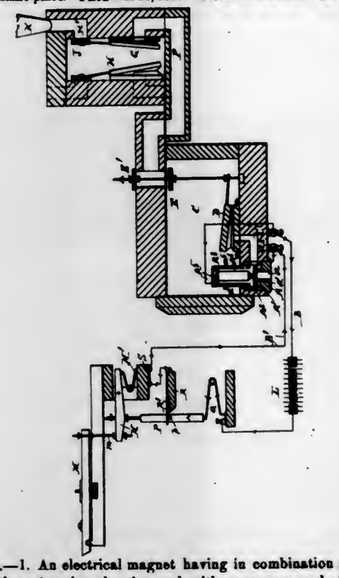


2. In a hair curling implement, the combination with the usual handle, of a mandrel rotatably mounted with relation to such handle, a clasp pivoted to such handle, a sleeve or button splined to the mandrel and connected to the clasp; substantially as and for the purpose set forth.

3. In a hair curling implement, the combination with the usual handle, of a mandrel rotatably mounted with relation to such handle, a clasp pivoted to such handle, a manipulating sleeve encircling such mandrel and splined thereto, and connected with the clasp, and a spring for returning the clasp to its closed position; substantially as and for the purpose set forth.

4. In a hair curling implement, the combination with the usual handle, of a mandrel swiveled in such handle, a clasp pivoted to the mandrel, a sleeve or button splined to the mandrel so as to rotate therewith, but freely slide thereon, said sleeve or button being connected by a pivoted link to the inner end of the clasp, and a spring arranged between the usual handle and the manipulating handle or sleeve; substantially as shown and described.

546,834. ELECTROMAGNET FOR PIPE-ORGANS. EDWIN S. VOTEY, Detroit, Mich., assignor to the Farrand & Votey Organ Company, same place. Filed Jan. 21, 1895. Serial No. 535,595. (No model.)



Claim.—1. An electrical magnet having in combination a base formed with an interior chamber and with passages a and a^3 communicable with said chamber, a tubular shell having a screw threaded engagement therewith, a core located in the shell and space therefrom forming a wind-way about the core, a valve located within the chamber of the base seating against the lower edge of the shell when the electrical circuit is closed and seating upon the upper end of the passage a when the electrical circuit is open, the wind-way within the shell opening through the shell above its lower end, substantially as set forth.

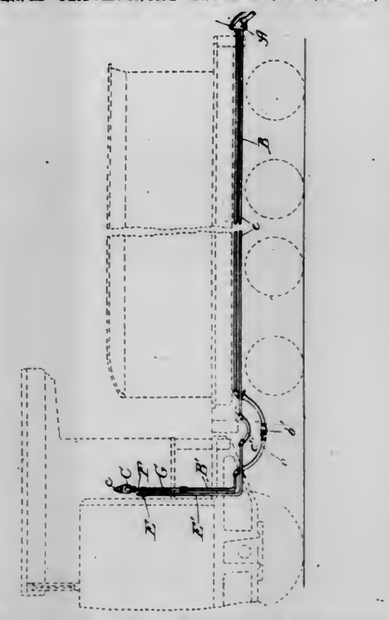
2. An electrical magnet having in combination a base formed with an interior chamber, an exhaust passage a having a valve seat at its upper end, and an orifice a^3 at the side of the base opening into said chamber, a tubular shell having a screw threaded connection with the upper end of said base provided with a valve seat at its lower edge and with ports a^3 thereabove, a core having a screw threaded engagement at its upper end within the upper end of the shell, the lower end of said core spaced from the shell forming a wind-way therebetween, and a valve within the chamber of the base to seat upon the upper end of the passage a when the circuit is open and to seat against the lower end of the shell when the circuit is closed, substantially as specified.

3. An electrical magnet having in combination a metal base provided with an inner chamber and with orifices a a^3, a core, a shell inclosing the core forming a wind-way A^3 therebetween having ports a^3 through said shell, a valve closing the communication between the chamber in said base and said wind-way, and to control the communication of the orifices in the base, and electrical conductors the one connected with said base and the other wound upon said core, substantially as set forth.

4. In combination, an electrical magnet constructed with a metal base provided with an inner chamber and with orifices a a^3 communicable with said chamber, a core wound with an electrical conductor, and a shell inclosing said core provided with ports a^3 and forming a wind-way between said shell and said core, a valve to control the communication of said orifices a a^3, and to control the communication of the chamber in the base with the wind-way in the shell and means connected with the key board for throwing said magnet into and out of electrical circuit.

5. In combination, a wind-box C, a pneumatic in said wind-box, an electrical magnet provided with a base forming an interior chamber communicating with the pneumatic and with an exhaust passage, a shell, a core provided with electrical conductors inclosed in said shell forming a wind way therebetween communicable with the chamber in the case and with said wind box, and an electrically controlled valve in the chamber of the base to control the communications, substantially as set forth.

546,835. AIR-BRAKE. ANDREW L. WHEELER, Freeport, Ill., assignor of two-thirds to Ezra O. Dana, same place, and William F. Renshaw, Chicago, Ill. Filed June 25, 1894. Serial No. 515,572. (No model.)



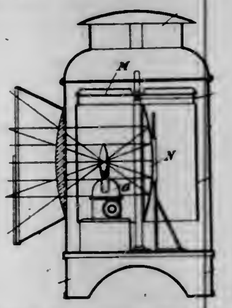
Claim.—1. An air brake system, consisting in the combination of a pipe to furnish air pressure to the usual brake mechanism, an engineer's valve to control the admission of air to such pipe, an angle cock attached to such pipe and provided with a passage for regular service and an auxiliary passage that will be in its open position when the regular passage is substantially closed, and means to connect such auxiliary passage with the train pipe, substantially as described.

2. An air brake system, consisting of the combination of pipe to furnish air pressure to the usual brake mechanism, an engineer's valve for controlling the admission of air to such pipe, an angle cock attached to such pipe and provided with an opening for the regular service pipe and an auxiliary passage that will be in its open position when the regular opening is substantially closed, an auxiliary or signal cock connected by means of pipes with the source of air pressure and the auxiliary passage in the angle cock, substantially as described.

3. An air brake system, consisting of the combination of a pipe to furnish air pressure to the usual brake mechanism from the source of air pressure, an engineer's valve for controlling the admission of air to such pipe, an angle cock attached to such pipe and provided with a passage registering with such pipe and an auxiliary passage at

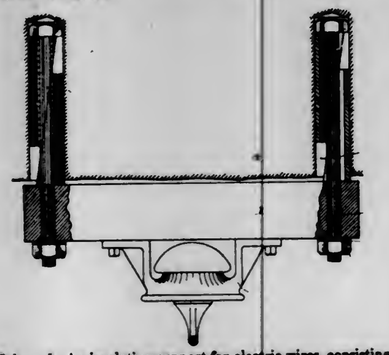
an angle thereto arranged to be in its open position when the regular passage is closed and vice versa, an auxiliary or signal cock connected by means of pipes with the source of air pressure and the auxiliary passage of the angle cock for furnishing a supply of air through such passage, and a pneumatic signal on the signal cock arranged to be sounded when the auxiliary passage of the angle cock is open and the signal cock closed, substantially as described.

546,836. LAMP FOR ADVERTISING PURPOSES. ALFRED C. WRIGHT, Birmingham, England. Filed Mar. 9, 1895. Serial No. 541,183. (No model.)



Claim.—An advertising lantern comprising a body portion, a screen containing the advertisement, a lamp within the body, the lens interposed between the lamp and the screen, the reflector and a series of colored glasses arranged in cylindrical form and having its side revolving between the lamp and the screen and the current-wheel at the top of said cylinder, said lamp serving both as the illuminating medium and as the motive power for the colored glasses, substantially as described.

546,837. INSULATING-SUPPORT FOR ELECTRIC WIRES. JOS. N. BULKLEY, Ridgway, Pa., assignor, by mesne assignments, to the General Electric Company, of New York. Filed Mar. 4, 1895. Serial No. 540,392. (No model.)



Claim.—1. An insulating support for electric wires, consisting of an insulating bar adapted to support a bracket for electric wires, in combination with a ceiling or other solid support provided with holes, bolts passing through said insulating bar and projecting into said holes, and wedge-shaped sections of a tube located in said holes, said wedge-shaped sections being diagonal from end to end and overlapping each other in wedging relation, and the lower wedge-shaped tubular section projecting from said hole and abutting against the insulating bar, and means on the outer end of said bolts for tightening up the said bar against the lower wedge-shaped tubular sections and wedging them into said holes.

2. In an insulating support for electric wires, the combination, with an insulating bar, of bolts and nuts and wedge-shaped tubular sections adapted to be disposed about said bolts in wedging relation to one side of said insulating bar, said wedge-shaped sections being diagonal from end to end, and overlapping each other in wedging relation.

3. In an insulating support for electric wires, a headed bolt and nut, in combination with wedging tubular sections, diagonal from end to end, adapted to fit over said bolts and be arranged to overlap each other in wedging relation to each other.

4. In an insulating support for electric wires, a fastener for securing an insulating support to an overhead ceiling or other foundation, consisting of a headed bolt and nut and a short section of a tube composed of two longitudinal tubular sections diagonal from end to end and adapted to surround the bolt and be in wedging relation to each other.

546,838. FASTENING DEVICE. SPENCER C. CARY, Baldwin, N. Y., assignor to Charles S. Cary. Filed Aug. 11, 1894. Serial No. 520,013. (No model.)



Claim.—1. In a fastening device a central spring stud or button having a head in two or more sections with slots which at least partially separate one section from another, and provided with two or more extremities, each integral with some division of the stud, bent at substantially a right angle to its axis, and each expanded into a plate adapted to rest upon one face of the material to be fastened, and an under plate adapted to rest upon the opposite face of said material, and to extend across under two of the plates of the upper member, together with a fastening device adapted to hold said plates together, substantially as set forth.

2. In a fastening device a button composed of one plate having a central portion formed into a spring stud, with slots at the sides and two or more extremities in the form of plates, adapted to rest upon one face of the material to be fastened, and a second plate adapted to rest upon the opposite face of said material, and to extend across under two of the plates of the upper member, together with a fastening device for each of the plates of the upper member, adapted to hold said plates together, all substantially as set forth.

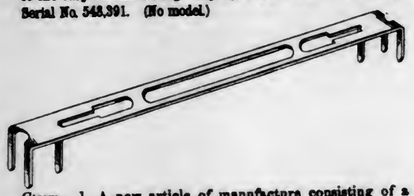
3. In a fastening device a central spring stud or button having a head in two or more sections with slots which at least partially separate one section from another, and provided with two or more extremities each integral with some division of the stud, bent at substantially a right angle to its axis, expanded into a plate "E," adapted to rest upon one face of the material to be fastened, and to be secured to an under plate by a clamping device, all substantially as set forth.

546,839. BOX-FASTENER. SPENCER C. CARY, Brooklyn, N. Y. assignor to the Cary Manufacturing Company, of New York. Filed May 7, 1895. Serial No. 548,390. (No model.)



Claim.—A new article of manufacture consisting of a metal box fastener with prongs struck up from a somewhat yielding metal and twisted, substantially as set forth.

546,840. PAIL-HOOK. SPENCER C. CARY, Brooklyn, N. Y., assignor to the Cary Manufacturing Company, of New York. Filed May 7, 1895. Serial No. 548,391. (No model.)



Claim.—1. A new article of manufacture consisting of a pail hook having one or more prongs at or near the ends and a slot between the side edges of some portion of that part between the ends, substantially as set forth.

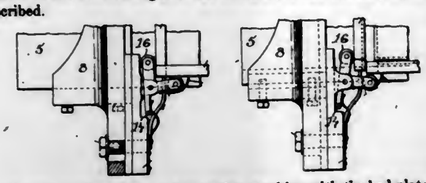
2. A new article of manufacture consisting of a pail hook having one or more prongs at or near the ends and two or more slots in the portion intermediate the ends, separated by one or more bridges of metal which connect the side portions of the hook substantially as set forth.

3. A new article of manufacture consisting of a pail hook having three or more prongs at each end or near each end, one of said prongs being located nearer the center than two others at the same end, and on a different longitudinal line and its width being less than the space between said other prongs, all substantially as set forth.

4. A new article of manufacture consisting of a pail hook having prongs at each corner within the side lines of the body of the hook, and a slot intermediate the ends, substantially as set forth.

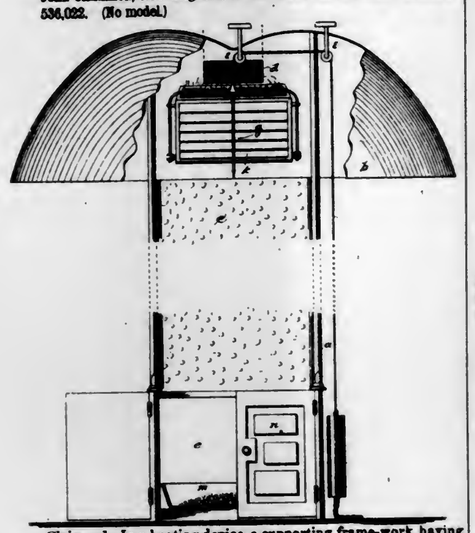
546,841. BOX-SETTING MACHINE. JOHN R. CRAGG, Orange, Mass. Filed Dec. 21, 1894. Serial No. 532,595. (No model.)

Claim.—1. In a box-setting machine, the combination with the bed-plate, the fixed end-block, and the reciprocating end-block, of the slides 10—10, the bell-crank levers 13 pivotally secured to the slides and provided with the spring-pressed stop 14, the springs 17—17 secured to the side arms of the bell-cranks and adapted to bear on the box sides, and the springs 18—18 secured to the slides and adapted to bear on the vertical edges of the box-ends, as and for the purpose described.



2. The combination in a box-setting machine with the bed-plate 5, the end-block 9, the adjusting-screw 19, the end-block 8, the slides 10 provided with the pivoted bell-crank levers 13, and the guides 17 and 18, of the mechanism, substantially as described, for reciprocating the end-block 8, substantially as described.

546,842. HEATING AND VENTILATING ROOMS OR HOUSES. JOHN CINNAMON, New Brighton, N. Y. Filed Jan. 24, 1895. Serial No. 536,022. (No model.)



Claim.—1. In a heating device, a supporting frame-work having a grate suspended therein free of contact from any wall, and capable of being lowered or elevated to any height in a room, substantially as described.

2. In a heating device the combination of a grate with means for elevating and lowering the same, a metal box into which it may be lowered and from which it may be elevated, and having a front door exteuding upward about one half of its height, having a back to stand against a wall, the frame work of the structure being of metal bars, covered with sheet metal, substantially as set forth.

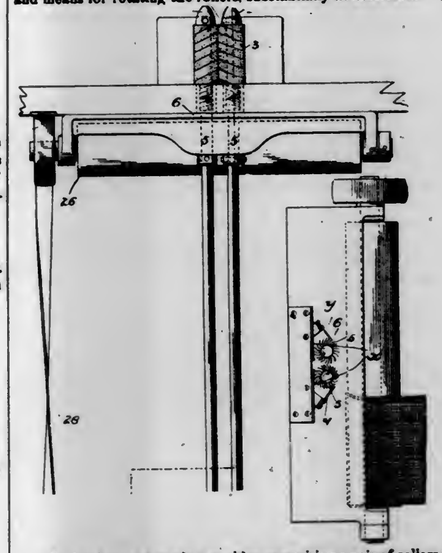
3. In a heating device the combination of a grate, a metal box to which it may rest or above which it may be suspended, and a reflector to intercept the heat rays radiated from the fire in the grate, substantially as described.

4. In a heating device the combination of a grate, a metal box into which it may be lowered or from which it may be hoisted to any height in a room, a reflector to intercept the radiated heat from the grate, and a hoisting apparatus to lift the grate toward the smoke flue when desired to burn a fire, and to lower it to the bottom of the box when the heating process is to cease, substantially as set forth and described.

546,843. MACHINE FOR STEMMING TOBACCO-LEAVES. ARTHUR H. COCHRANE, London, England. Filed June 5, 1895. Serial No. 551,706. (No model.)

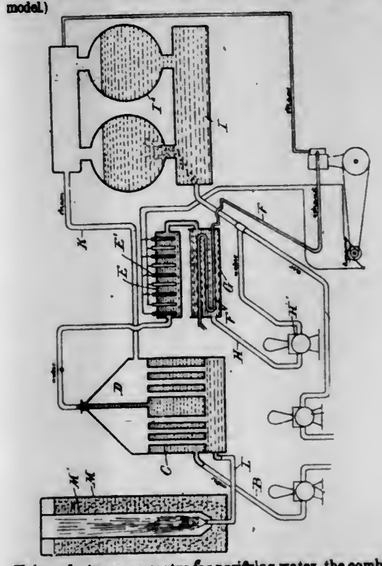
Claim.—1. A machine for stemming tobacco leaves consisting of two rollers covered with card clothing, that on one roller being wound spirally and in a direction opposite to the spiral winding of the other roller, means for rotating the rollers in opposite directions and means for supporting the rollers to leave a feeding space at one end for the introduction of the leaves between them. substantially as described.

2. A machine for stemming tobacco leaves, consisting of two rollers covered with card clothing, that on one roller being wound spirally and in a direction opposite to the spiral winding of the other roller, the points of said card clothing inclining backwardly from the direction of rotation, means for supporting the rollers to leave a feeding space at one end for the introduction of the leaves between them and means for rotating the rollers, substantially as described.



3. A tobacco stemming machine comprising a pair of rollers having teeth arranged spirally and in opposite directions, and flaring guiding means at the ends of the rollers for directing the leaves to the bight of the rollers, substantially as described.

546,844. APPARATUS FOR PURIFYING WATER. THOMAS CRANEY, Bay City, Mich. Filed Dec. 8, 1894. Serial No. 531,223. (No model.)



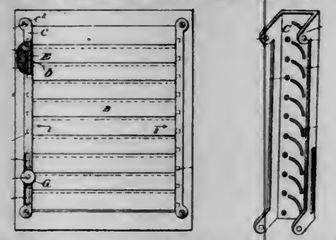
Claim.—1. In an apparatus for purifying water, the combination of a water supply pipe, an electrolytic pan into which the pipe leads and into and through which the water is fed, an open tank communicating with the pan and into which the water passes from the pan, means for heating the water in the tank, an evaporator and condenser and pipe connection between the same and the evaporator and tank, combined for the purpose set forth.

2. In an apparatus for purifying water, the combination of a water supply pipe, an electrolytic pan into which the pipe leads and through which the water is fed, an open tank communicating with the pan and into which the water passes after leaving the pan means for heating the water in the tank, an evaporator communicating with the tank and into the bottom of which the heated water is fed, an air pump having its discharge communicating with the evaporator for delivering air into the evaporator with the water, a condenser and a pipe connection between the evaporator and condenser, combined for the purpose set forth.

3. In an apparatus for purifying water, the combination of the water supply pipe, a condenser into which the pipe leads and through which the fresh water passes, an electrolytic pan having a pipe connection with the condenser and through which the water passes after leaving the condenser, an open heated tank communicating with the pan and into which the water passes after leaving the pan, an evaporating apparatus a pipe connection between the same and tank, and a steam pipe from the evaporating apparatus to the steam chamber of the condenser.

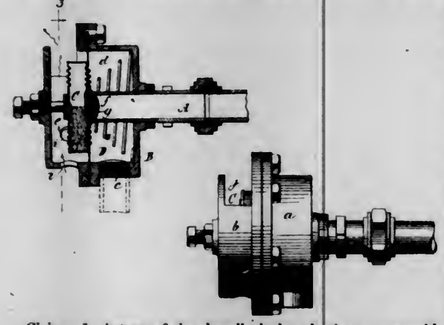
4. The combination of the feed pump, the condenser, electrolytic tank, open heated tank, and evaporating apparatus and pipes connecting the same and through which the water passes successively in the order named, a steam pipe from the evaporating apparatus to the condenser, a dynamo connected to the anode of the electrolytic apparatus, the engine for driving the dynamo, and an exhaust pipe from the engine leading to a heating coil in the open heating pipe.

546,845. SLAT-OPERATOR FOR SHUTTERS. THEODORE M. FULLER, Paterson, assignor to himself and Nelson Fredericks, Haledon, N. J. Filed Feb. 9, 1895. Serial No. 537,731. (No model.)



Claim.—The combination with a shutter frame and the slats thereof, of a pivot plate interposed between the side bar of the frame and the slats and provided with pivot holes for said slats, a slat operating bar between the plate and side bar, and webs extending from the pivot plate, covering said operating device, and overlapping the side bar, whereby said plate may be adjustably secured to said side bar at variable distances therefrom, substantially as described.

546,846. THERMOSTATIC STEAM-TRAP. EDWARD R. GOLD, New York, N. Y. Filed Jan. 29, 1895. Serial No. 536,514. (No model.)



Claim.—1. A trap of the described class, having a removable expansion vessel and a flexible diaphragm intervening between the outlet-opening and the expansion-vessel.

2. A trap of the described class, having a flexible diaphragm between the outlet-opening and the expansion-vessel, with a gasket mounted on the diaphragm movable thereby and seating against the outlet opening.

3. A trap of the described class, having its casing divided by a diaphragm into two chambers, with the outlet-opening discharging into one chamber and a discharge opening leading therefrom, and the expansion-vessel arranged in the other chamber.

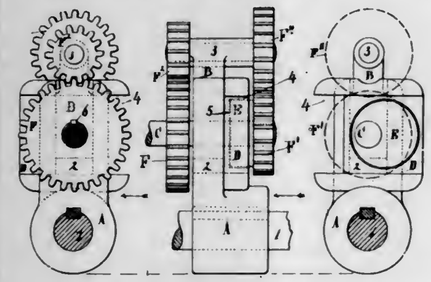
4. A trap of the described class, having its casing divided by a diaphragm into two chambers, with the outlet-opening discharging into one chamber and the expansion-vessel arranged in the other chamber, with ventilating openings in the shell of the latter adapted to admit a circulation of air through this chamber to cool the expansion-vessel.

5. A trap of the described class, having a diaphragm between the outlet-opening and the expansion-vessel, with the latter arranged in contact with the diaphragm, and both the diaphragm and the adjoining wall of the vessel formed with interfitting corrugations whereby their surface in contact is increased.

6. A trap of the described class having a diaphragm between the outlet-opening and the expansion-vessel, said diaphragm formed with concentric circular corrugations, and the expansion-vessel formed with like corrugations, whereby the corrugations interfit when the vessel is in proper position against the diaphragm.

7. A trap of the described class having a diaphragm between the outlet-opening and the expansion-vessel, and having its casing formed with an opening adapted to admit the removal and replacement of the expansion-vessel without disturbing the casing.

546,847. RECIPROCATING-MOTION CRANK. HENRI J. F. GUILLOU, Paris, France. Filed July 27, 1894. Serial No. 518,696. (No model.) Patented in France Jan. 30, 1894, No. 235,893.



Claim.—1. The combination with a shaft 1, of a crank-piece A mounted thereon having a slot or slide 2 and a slot or slide 4 formed therein, a slide-bar B reciprocating in the slide 2, a slide-block D reciprocating in the slide 4, a cam E revolubly mounted in the slide-block D, and a crank-pin C revolubly mounted in the slide-bar B and eccentrically mounted in the cam E, substantially as shown and described.

2. The combination with a shaft 1, of a crank-piece A mounted thereon, a reciprocating slide-bar B carried by the piece A, a slide-block D also carried by the piece A and reciprocating at an angle to the line of reciprocation of the slide-bar B, a cam E revolubly mounted in the slide-block D, and a crank-pin C revolubly mounted in the slide-bar B and eccentrically mounted in the cam E, substantially as shown and described.

3. The combination with the shaft 1, of a crank piece, A, of substantially the shape shown, a slide-bar B, a slide-block D carried by the piece A, an eccentric-cam E, and a crank pin C in the cam E, substantially as shown and described and for the purposes set forth.

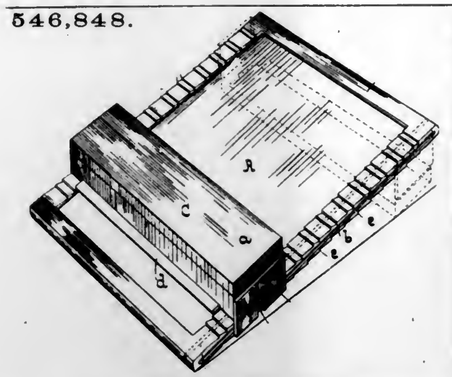
4. The combination with a shaft 1, of a crank-piece A mounted thereon, a reciprocating slide-bar B carried by the piece A, a slide-block D also carried by the piece A and reciprocating at an angle to the line of reciprocation of the slide-bar B, a cam E revolubly mounted in the slide-block D, a crank-pin C revolubly mounted in the slide-bar B and eccentrically and revolubly mounted in the cam E, and mechanism for rotating the cam E in the slide block D as the crank is rotated, substantially as shown and described.

5. The combination with a shaft 1, of a crank-piece A mounted thereon, a reciprocating slide-bar B carried by the piece A, a slide-block D also carried by the piece A and reciprocating at an angle to the line of reciprocation of the slide-bar B, a cam E revolubly mounted in the slide-block D, a crank-pin C revolubly mounted in the slide-bar B and eccentrically and revolubly mounted in the cam E, a gear-wheel F rigidly mounted upon the crank-pin C, a gear-wheel F' rigidly secured to the cam E, and gearing connecting the gear-wheel F with the gear-wheel F', substantially as shown and described.

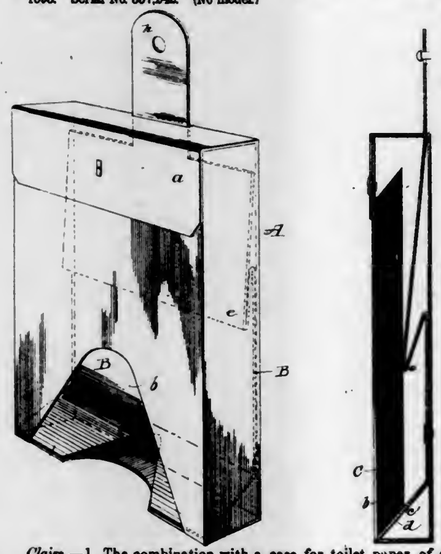
546,848. COMBINED SLATE AND SCHOLAR'S COMPANION. BERNHARD R. HARTLER, Baltimore, Md. Filed Mar. 29, 1895. Serial No. 543,712. (No model.)

Claim.—In combination with a slate, a box pivoted to the slate frame, adapted to be swung around the ends of the frame to either side of the slate, substantially as specified.

546,848.



546,849. TOILET-PAPER CASE. SAMUEL HUGHES, Charleston, S. C., assignor of one-half to William H. Richardson, same place. Filed July 26, 1895. Serial No. 557,242. (No model.)



Claim.—1. The combination with a case for toilet paper, of a lever within said case and adapted to bear against the paper so as to force it forwardly and means for suspending the device from said lever, substantially as set forth.

2. The combination with a case for toilet paper, of a flexible card bent between its ends to form a lever adapted to bear against the paper in the case and force it toward the front thereof, and an extension on said card passing loosely through the upper end of the case and serving as means whereby to suspend the device, substantially as set forth.

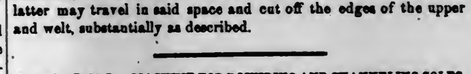
3. The combination with a case for toilet paper having an opening in its front and bottom, of a card in said case secured to the back thereof near its lower end, and bent at its lower end to form an inclined false bottom, said card being bent between its ends to form a lever adapted to bear against the package of paper in the case and force it forwardly against the front of the case, and a perforated tongue projecting from said card and loosely through the top of the case, substantially as set forth.

546,850. DRAWING-PEN. FRED W. LEPPER, Washington, D. C. Filed Apr. 10, 1895. Serial No. 545,212. (No model.)

Claim.—1. A drawing pen having a handle and legs provided with tenons, and removable pen points having spring sockets embracing said tenons, substantially as described.

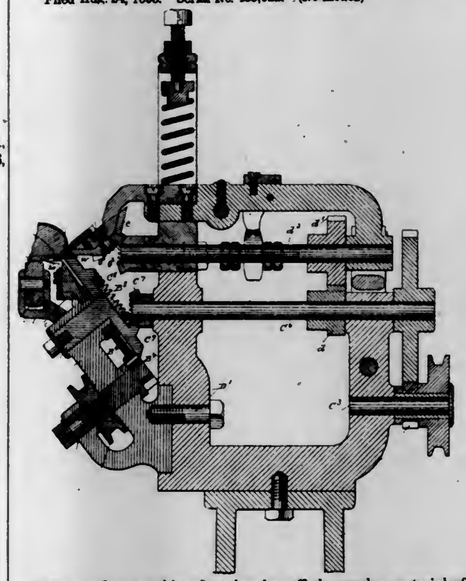
2. The combination with the leg of a drawing pen having a tapered tenon thereon and a shoulder above the same, of a removable pen point having a tapering socket integral with the body and adapted to grasp the tenon, substantially as described.

3. A pen point having a single nib, and provided with a socket above the point into which the leg of a drawing pen handle enters snugly, substantially as described.



4. A removable pen point for drawing pens having a single nib and means for attaching the same to the leg of a pen holder, substantially as described.

546,851. MACHINE FOR TRIMMING EDGES OF WELTS AND UPPERS. ZACHARY T. FRENCH and WILLIAM C. MEYER, Boston, Mass. Filed Aug. 24, 1893. Serial No. 483,922. (No model.)



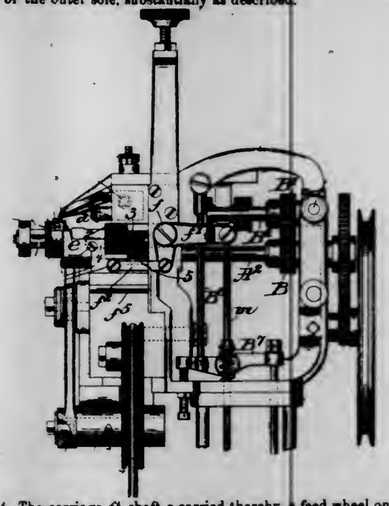
Claim.—In a machine for trimming off the surplus material of the welt and upper from the bottom of an inner sole; two wheels between which the welt is placed; gearing intermediate the said wheels to rotate both of them positively; and an independent support for the inner sole inside the seam connecting the welt and upper thereto, these parts of the inner edge of the welt and of the upper to be trimmed off being extended into the space between said wheels and said support; combined with a trimming-blade located and movable in a plane below the plane occupied by the face of the wheel C^9 on which the lower side of the welt rests, a carrier to which the said blade is attached; and means to move the said carrier and blade whereby the latter may travel in said space and cut off the edges of the upper and welt, substantially as described.

546,852. MACHINE FOR ROUNDING AND CHANNELING SOLES. ZACHARY T. FRENCH and WILLIAM C. MEYER, Boston, Mass. Filed May 26, 1894. Serial No. 512,579. (No model.)

Claim.—1. In a machine for rounding soles on a last, the following instrumentalities, viz:—a welt feeder, means to support it; a feed wheel to support that part of the outer sole opposite the welt; means to actuate said devices to effect the feeding of the shoe; a rounding knife; its carrier; a support for said knife carrier; and connections between the support for the said carrier and the said welt feeder, whereby the said parts may rise and fall in unison with relation to said feed wheel according to variations in the thickness of the stock, substantially as described.

2. In a machine for rounding and channeling soles on a last, the following instrumentalities, viz:—a welt feeder, means to support it; a feed wheel to support that part of the outer sole opposite the welt; means to actuate said devices to effect the feeding of the shoe; a rounding knife; its carrier; a support for said knife carrier; connections between the support for the said carrier and the said welt feeder, whereby the said parts may rise and fall in unison with relation to said feed wheel according to variations in thickness of the stock; and a channeling knife to channel the outer sole near its edge, substantially as described.

3. In a machine for rounding and channeling soles on a last, the following instrumentalities, viz:—a welt feeder, means to support it; a feed wheel to support that part of the outer sole opposite the welt; means to actuate said devices to effect the feeding of the shoe; a rounding knife; its carrier; a support for said knife carrier; connections between the support for the said carrier and the said welt feeder, whereby the said parts may rise and fall in unison with relation to said feed wheel according to variations in thickness of the stock; a channeling knife to channel the outer sole near its edge; and devices to move said channeling knife laterally with relation to the said rounding knife according to the distance desired for the channel from the edge of the outer sole, substantially as described.



4. The carriage f^4, shaft g carried thereby, a feed wheel on said shaft; means to rotate said shaft; a channel knife holder mounted on said carriage; and a channel knife; combined with a slide movable at right angles to said shaft g; a shaft carried thereby; a rounding knife carrier movable with said slide and actuated by said shaft; and a rounding knife, to operate, substantially as described.

5. The carriage f^4, shaft g carried thereby; a feed wheel on said shaft; means to rotate said shaft; a channel knife holder mounted on said carriage; and a channel knife; combined with a slide movable at right angles to said shaft g; a shaft carried thereby; a rounding knife carrier movable with said slide and actuated by said shaft; a rounding knife; and a shelf having a throat to receive the end of the rounding knife, substantially as described.

6. A slide; a rotatable shaft therein; a rounding knife; a carrier for said knife; connections between said carrier and said shaft to reciprocate said carrier; a pulley mounted on said shaft, a second pulley movable with said slide, and a third pulley fixed independently of said slide; combined with a belt common to said three pulleys, whereb said belt may rotate the carrier actuating shaft notwithstanding changes of position of said slide, substantially as described.

7. A feed wheel to support an outer sole of a lasted shoe; a welt feeding wheel to bear on the welt of said shoe opposite said feed wheel; a support for said welt feeding wheel; a movable slide; a carrier; a rounding knife attached to said carrier; a shaft located in said slide and adapted to reciprocate said carrier and rounding knife, combined with a link to connect the said slide with the support for the said welt feeding wheel, substantially as described.

8. A feed wheel to support the outer sole of a lasted shoe; a welt feeding wheel to bear on the welt; a shelf located within said welt feeding wheel and bearing on said welt near its outer edge and provided with a throat; combined with a rounding knife, and means to reciprocate the same to trim off the edges of said sole and welt, the said shelf acting to keep the welt down closely against the sole while both are being simultaneously trimmed, substantially as described.

9. A feed wheel to support the outer sole of a lasted shoe; a welt feeding wheel to bear on the welt; a shelf located within said welt feeding wheel, and bearing on said welt near its outer edge and provided with a throat; combined with a rounding knife and means to reciprocate the same to trim off the edges of said sole and welt, the said shelf acting to keep the welt down closely against the sole while both are being simultaneously trimmed; and with a channel knife, and a support therefor, substantially as described.

10. The welt feeding wheel provided at its under side near its center with a bevel gear c; combined with a shelf to support said wheel at its under side, said shelf having a central opening down through which said bevel gear is extended, and an arm to bear on the upper side of said wheel and keep it on the said shelf, substantially as described.

11. The welt feeding wheel having an annular chamber at its lower side and provided at said side with a bevel gear c; a shelf having a central opening to receive said bevel gear and shaped to enter said annular chamber and sustain said welt feeding wheel; combined with an arm D secured to the machine to bear upon the opposite side of said welt feeding wheel and keep it seated on said shelf, substantially as described.

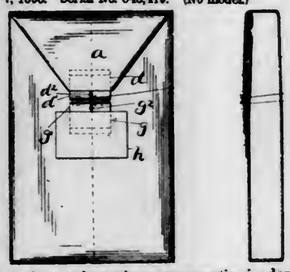
12. A feed wheel to support an outer sole of a lasted shoe; a rounding knife; actuating devices therefor; an inclined shelf having a central opening; and a welt feeding wheel mounted thereon and provided at its under side near its center with a gear c extended through said shelf; and an arm to bear on the upper side of said wheel and keep it on said shelf, combined with a shaft, and a gear thereon to engage the gear c of said welt feeding wheel and rotate the same, the inclined position of said shelf affording free space under the center of said welt feeding wheel for the movement of the sole being rounded, substantially as described.

13. A rounding knife to round the sole of a lasted shoe, a feed wheel to support the sole under the welt and in line with the portion of the sole being channeled; a beveled faced welt engaging and feeding wheel having connected directly to its under side near its center a bevel pinion; an inclined open centered shelf to sustain said welt-engaging wheel; an arm to bear on the welt engaging wheel to retain it on the shelf, combined with gearing in engagement with and to rotate both the said feed wheel and the said welt engaging wheel positively, substantially as described.

14. In a machine of the character described, a channel knife to channel the sole of a lasted shoe, and a rotatable support for the outer sole adjacent to the channel-knife, said knife overlapping said support, combined with a rotatable bevel faced welt-feeding wheel, and a rounding knife and means to move it, substantially as described.

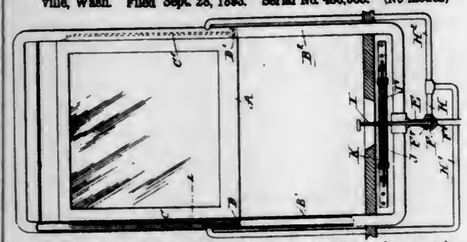
15. A feed wheel to support the sole of a lasted shoe, and a channel-knife having its cutting edge extended over said feed wheel, combined with a bevel faced toothed welt-feeding wheel, and gearing to rotate said wheels positively, substantially as described.

546,853. PAPER BAG. ALBERT HERRING, St. Mary's, Ohio. Filed May 7, 1895. Serial No. 548,419. (No model.)



Claim.—A paper bag, whose upper portion is adapted to be folded against the lower or body-portion to form a flap for closing the bag, said flap-forming-portion having attached a piece of cloth or fabric provided with an eyelet, and the body-portion of the bag, upon the side against which the flap-forming-portion is folded in closing the bag, having attached a piece of cloth or fabric provided with an eyelet, substantially as shown, for the purpose specified.

546,854. PNEUMATIC DEVICE FOR RAISING OR LOWERING CAR-WINDOWS. HORACE HOLBROOK and THOMAS S. BEALS, Jr., Coupeville, Wash. Filed Sept. 28, 1893. Serial No. 486,683. (No model.)



Claim.—1. A pneumatic device for raising and lowering car windows, comprising a cylinder, a piston fitted to slide in the cylinder and having its piston rod connected with the window sash, pipes connecting with the upper and lower ends of the said cylinder on opposite sides of the piston, and a valve for controlling the admission of air to either of the said pipes, substantially as described.

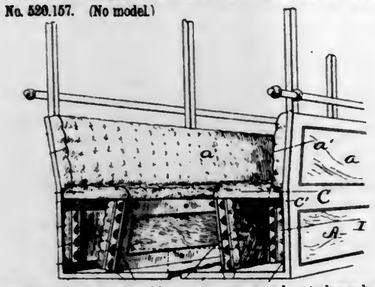
2. In a pneumatic device for raising and lowering car windows, the combination with a sash, of cylinders, pistons sliding in the cylinders and connected with the sash, an air supply pipe, pipes connecting the upper and lower ends of the cylinders with the supply pipe, and a valve for controlling the admission of air from the supply pipe to either of the pipes which connect with the cylinders, whereby air can be admitted to either the upper or lower ends of the cylinders, substantially as described.

3. In a pneumatic device for raising and lowering car windows, the combination with a sash, of cylinders, pistons sliding in the cylinders and connected with the sash, an air supply pipe, pipes connecting the upper and lower ends of the cylinders with the air supply pipe, and a valve for controlling the admission of air from the supply pipe to either of the pipes which connect with the cylinders, said valve being constructed to permit the air from the cylinders and pipes to escape to the outer air, substantially as described.

4. A pneumatic device for raising or lowering car windows, comprising cylinders, pistons fitted to slide in the said cylinders and having their piston rods connected with the window sash, pipes connecting with the upper and lower ends of the said cylinders, a valve for controlling the admission of air to the said pipes, a handle held on the valve plug of the said valve alternately to connect the said pipes leading to the upper and lower ends of the cylinder with an air supply pipe, and springs pressing on the said handle at opposite sides thereof to hold the latter in a neutral position, substantially as shown and described.

5. In a pneumatic device for raising and lowering car windows, a tubular window frame having cylinders formed in the lower portion, in combination with a sash sliding in the frame, pistons sliding in the cylinders, and having their piston rods connected with the upper part of the sash, and a valve for controlling the admission of air to the cylinders, substantially as herein shown and described.

546,855. CONVERTIBLE PATROL-WAGON AND AMBULANCE. EDMUND K. HUTCHINSON, Cleveland, Ohio. Filed Aug. 13, 1894. Serial No. 520,157. (No model.)



Claim.—1. A convertible patrol-wagon and ambulance having an independent seat section and an independent bed-section, the seat section being hinged to the side of the vehicle and the bed-section hinged to the floor of the vehicle, said bed-section being adapted to be swung into position so as to support the seat-section at or near its free end.

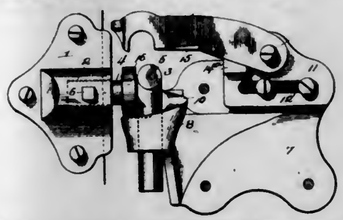
2. A convertible patrol-wagon and ambulance having an independent seat-section and an independent bed-section, the seat section being hinged to the side of the vehicle in such a manner that when the vehicle is used as an ambulance it forms a cushioned side-section, substantially as shown and described.

3. A convertible patrol-wagon and ambulance having seat-sections hinged to the side of the vehicle and bed-sections hinged to the floor of the vehicle in such a manner that the bed-sections, when extended upon the floor of the vehicle will meet at their edges and the seat-sections will be so adjusted as to form cushioned side-pieces contiguous to the bed-sections, substantially as set forth.

4. A convertible patrol-wagon and ambulance having independent seat sections and independent bed-sections hinged to the body of the vehicle, the seat-sections being supported at their free ends by the bed-sections when the vehicle is used as a patrol-wagon and said seat-sections forming when in a depending position sides for the bed-sections, substantially as shown and described.

5. A convertible patrol-wagon and ambulance having independent seat-sections and independent bed-sections, said seat-sections and bed-sections being hinged, respectively, to the sides and bottom of the vehicle in such position that when the parts are adjusted to form an ambulance the bed-sections will meet at their free edges and form a bed and the seat-sections will form the sides of the bed, substantially as set forth.

546,856. LOCK-HINGE. WILLIAM R. KINNEAR, Columbus, Ohio. Filed Nov. 3, 1894. Serial No. 527,792. (No model.)



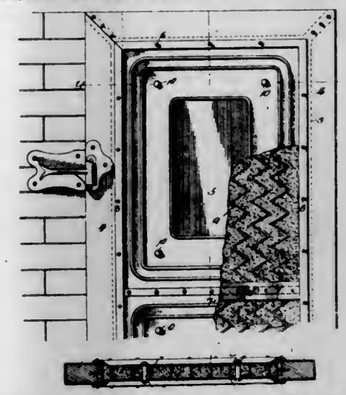
Claim.—1. A hinge comprising a pintle having two arms extending at angles therefrom, one of which supports the shutter, and a latch for engaging the other in the open position of the shutter.

2. A hinge comprising a pintle having two arms extending at angles therefrom, one of which supports the shutter, and an adjustable latch for engaging the other in the open position of the shutter, substantially as described.

3. A hinge comprising a plate 1 having a socket 2, a pintle 3 provided with arms 4 and 5, the arm 4 adjustable in said socket, a plate 7, and an adjustable latch on said plate 7 to engage arm 5 to hold the shutter in open position.

4. A hinge comprising a pintle having two arms 4 and 5 extending at angles therefrom, a roller on arm 4, the plate 7, a cam surface on said plate upon which the roller rests, and a latch on said plate for engaging the arm 5 to hold the shutter in open position.

546,857. FIREPROOF SHUTTER. WILLIAM R. KINNEAR, Columbus, Ohio. Filed Dec. 7, 1894. Serial No. 531,119. (No model.)



Claim.—1. In fire-proof shutters and the like, a frame, panels secured to said frame, a fire-proof packing in the space between said panels, with devices substantially as described for retaining said packing in position.

2. In fire-proof shutters and the like, a frame, panels secured to said frame, a fire-proof packing in the space between said panels, devices for retaining said packing in position, and rivets uniting the panels, substantially as shown.

3. A body of wood or similar material, a hard strip placed within said material, a sheathing secured to said material by a nail having its end clinched or turned by said hard strip.

4. In fire-proof shutters and the like, a frame of wood or other material having embedded therein a nail clinching strip, a protective sheathing covering said frame, and panels secured to said frame by nails clinched by the clinching strip, substantially as shown and described.

546,858. ROLLING FIREPROOF BLIND OR PARTITION. WILLIAM R. KINNEAR, Columbus, Ohio. Filed June 4, 1895. Serial No. 551,666. (No model.)

Claim.—1. A slat for rolling blinds or curtains formed of two thicknesses of metal bent to form a hollow air space between them and with a shoulder 3, and their edges lapped together and bent to form a single groove and a single tongue on each edge with a narrow slit between the edge of the tongue and shoulder 3, whereby a similarly constructed slat may be slid longitudinally into the groove and when so slid in shall be inseparable therefrom in a lateral direction, substantially as described.

2. A slat for rolling fire-proof curtains and the like composed of two thicknesses of metal having their edges lapped and bent to form the shoulders 3, grooves 4, and tongues 5, substantially as described.

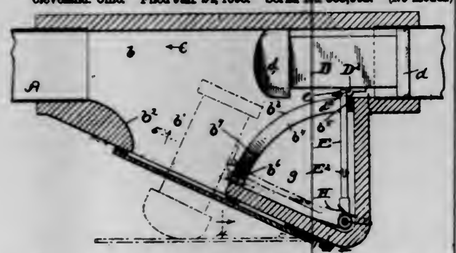


3. A slat for fire-proof curtains and the like composed of two thicknesses of metal having their edges lapped and bent to form shoulders 3, grooves 4, tongues 5 and their body portions parallelly curved with an intermediate air space between them, substantially as described.

4. A curtain composed of hollow metallic slats connected by a hinge joint and a plug secured in the ends of the slats having a flange adapted to engage the ends of a contiguous slat to prevent longitudinal movement of the two with respect to each other, substantially as described.

5. A curtain composed of hollow metallic slats connected by a hinge joint, a plug secured in the ends of the slats, having flanges projecting beyond the faces of the slats, substantially as and for the purpose explained.

546,859. PNEUMATIC DISPATCH SYSTEM. OTTO KONIGSLOW, Cleveland, Ohio. Filed Jan. 24, 1895. Serial No. 535,993. (No model.)



Claim.—1. In a pneumatic dispatch-system, the combination with the tube-circuit, a local or sub-station having a passage-way therethrough in line with the tube-circuit, and a carrier for said station, said passage-way enlarged to form a mouth for accommodating the introduction of the carrier into, and its removal or passage from, the tube-circuit at said station, of means whereby the carrier, upon its arrival at the station, is guided from the aforesaid passage-way to the outer end of the mouth of the station, substantially as and for the purpose set forth.

2. In a pneumatic dispatch system, the combination with a tube-circuit, a local or sub-station having a passage-way therethrough in line with the tube-circuit, and a carrier for said station, the aforesaid passage-way being enlarged to form a mouth b' for accommodating the introduction of the carrier into, and its removal or passage from, the tube circuit at said station, of means for automatically guiding or switching the carrier, upon its arrival at the station, to the outer end of the mouth of the station, and means for automatically releasing the carrier when the latter has been switched or guided as aforesaid, substantially as set forth.

3. In a pneumatic dispatch-system, the combination with the tube-circuit, a local or sub-station provided with a passage-way b therethrough in line with the tube-circuit, and a carrier for said station, the aforesaid passage-way being enlarged to form a mouth b' suitably constructed to accommodate the introduction of the carrier to, and its removal or passage from, the tube-circuit at said station, of a dog or projecting-member D^3 on the carrier at any suitable point between the heads or ends of the carrier, and means at the station for guiding or switching the carrier from the line of the tube-circuit to the outer end of the aforesaid mouth of the station, said means being adapted to be operatively engaged by the carrier upon the arrival of the latter at the station and being adapted to operatively engage said member on the carrier in such a manner as to cause the carrier to be guided or switched to the outer end of the mouth of the station, and means for automatically effecting the release of the carrier after the latter is switched or guided as aforesaid, substantially as set forth.

4. In a pneumatic dispatch-system, the combination with the tube-circuit, a local or sub-station provided with a passage-way b therethrough in line with the tube-circuit, and a mouth b' communicating with said passage-way and having opposing side-walls b^3 b^3 converging toward the outer end of the mouth, and a carrier for said station, of a dog or projecting-member D^3 on the carrier at any suitable point between the heads or ends of the carrier, and means at the station for guiding or switching the carrier from the line of the tube-circuit to the outer end of the aforesaid mouth of the station, said means being adapted to be operatively engaged by the aforesaid dog or member on the carrier upon the arrival of the latter at the station, and being adapted to operatively engage said member on the carrier in such a manner as to cause the carrier to be guided or switched to the outer end of the mouth of the station, and means for automatically effecting the release of the carrier after the latter is switched or guided as aforesaid, substantially as set forth.

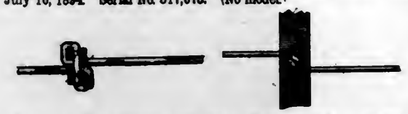
5. In a pneumatic dispatch-system, the combination with the tube-circuit, a local or sub-station having a passage-way b therethrough in line with the tube-circuit and a carrier for said station, the aforesaid passage-way being enlarged to form a mouth b' for accommodating the introduction of the carrier into, and its removal or passage from, the tube-circuit at said station, of a dog or projecting-member D^3 on the carrier, and a swinging guiding-arm E that, normally, extends into the path of the aforesaid member on the carrier, and, at its free end, is adapted to be operatively engaged by said dog or member of the carrier upon the entrance of the carrier into the passage-way through the local station from the tube-circuit, means acting to retain said member E in its normal position, the free or engaging-ends of members D^3 and E being shaped or constructed in such a manner that member E, upon having motion transmitted thereto by the momentum of the incoming carrier shall guide or switch the carrier to the outer end of the mouth of the station, and suitable means for automatically releasing the carrier after the latter has been switched or guided as aforesaid, substantially as set forth.

6. In a pneumatic dispatch-system, the combination with the tube-circuit, a local or sub-station having a passage-way b therethrough in line with the tube-circuit and a mouth b' communicating with said passage-way and having opposing walls b^3 b^3 converging toward the outer end of the mouth, and a carrier for said station, the wall b^3 of the aforesaid mouth being slotted laterally, as at b^4, of a dog or projecting-member D^3 on the carrier, and a swinging guiding-arm E that extends through the aforesaid slot and, at its free end, is adapted to be operatively engaged by said dog or member of the carrier upon the entrance of the carrier into the passage-way through the local station from the tube-circuit, the free or engaging-ends of members D^3 and E being shaped or constructed in such a manner that member E, upon having motion transmitted thereto by the momentum of the incoming carrier, shall guide or switch the carrier to the outer end of the mouth of the station, and suitable means for automatically releasing the carrier after the latter has been switched or guided as aforesaid, all arranged and operating substantially as shown, for the purpose specified.

7. In a pneumatic dispatch-system, the combination with the tube-circuit, a local or sub-station having a passage-way b therethrough in line with the tube-circuit, and mouth b' communicating with said passage-way and having opposing side-walls b^3 b^3 converging toward the outer end of the mouth, said wall b^3 provided with slot b^4 that extends or inclines laterally at its outer end, as at b^7, and a carrier for said station, of a dog or projecting-member D^3 on the carrier, the swinging guiding-arm E pivoted to any stationary object and composed of two sections hinged together, as at E^3, and means acting to retain said member E in its normal position, all arranged and operating substantially as shown, for the purpose specified.

8. In a pneumatic dispatch-system, the combination with the tube-circuit, a local or sub-station having a passage-way b and mouth b' communicating with said passage-way and having opposing side-walls b^3 b^3 converging toward the outer end of the mouth, and wall b^3 provided with slot b^4 that extends or inclines laterally, as at b^7, and a carrier for said station provided with a dog or projecting-member D^3 at any suitable point between the heads or ends of the carrier, of the stationary case G chambered as at g; arm E pivoted, as at E', within said case, and composed of two sections hinged together, as at E^3, said arm extending through the aforesaid slot in wall b^3, suitable means acting to retain said arm in its normal position, all arranged and operating substantially as indicated, and the free or engaging ends of members D^3 and E being shaped or constructed in such a manner that member E, upon having motion transmitted thereto by the momentum of the incoming carrier, shall guide or switch the carrier along the aforesaid wall b^3 of the mouth of the station, substantially as set forth.

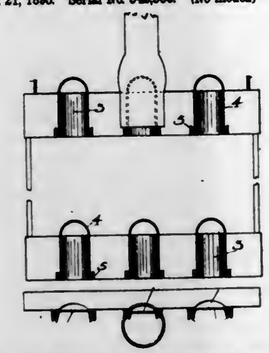
546,860. FLY-NET. WILLIAM KOOTZ, Milwaukee, Wis. Filed July 16, 1894. Serial No. 517,675. (No model.)



Claim.—1. In a fly net, a bar and a string secured at its end to the bar, the extremity of the string being inserted in a slit or aperture therefor in the bar transversely thereof in one direction, said string continuing thence around a strand of the bar and through the bar transversely thereof in a direction, substantially at a right angle to its said first direction in the bar, and projecting laterally therefrom, a part of the string crossing alongside and bearing against another part of the string in the bar, whereby the end of the string is effectually secured to the bar, substantially as described.

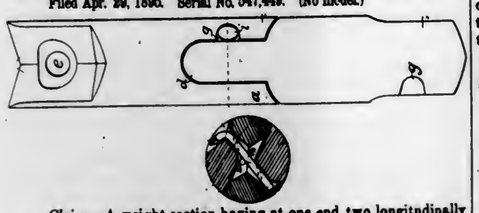
2. A fly net comprising longitudinal bars, and short transverse strings, extremities of the string being secured to the bars by being inserted transversely in the bars in one direction, the strings thence continuing about a strand of the bar and again passing through the bar in a direction at right angles to said first direction, a part of the string crossing alongside and bearing against another part of the string in the bar, substantially as described.

546,861. LAMP-CHIMNEY HOLDER. LESLIE H. LEIGHTON, Glens Falls, assignor of one-half to A. Mott Bailey, Ticonderoga, N. Y. Filed Mar. 21, 1895. Serial No. 542,586. (No model.)



Claim.—A lamp chimney holder consisting of a main framework of rails or stringers, said rails having recesses or hollows in their surfaces disposed at intervals and arranged to receive and practically conform to the outer surface of the lamp chimney and having a pressure device arranged to enter the chimney and press against its inner surface and force the chimney into the recess in the rail and retain it there substantially as described.

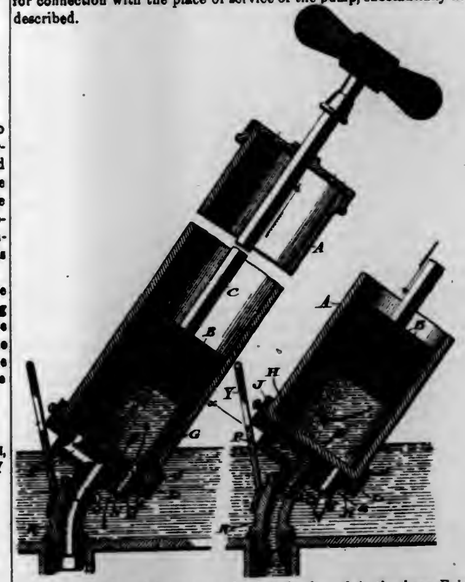
546,862. SASH-WEIGHT. WILLIAM E. MERRELL, Ravenna, Ohio. Filed Apr. 29, 1895. Serial No. 547,449. (No model.)



Claim.—A weight section having at one end two longitudinally projecting connecting lugs separated by a slot wider at the surface than at the center of the section, and at the other end a single longitudinal connecting shank similar in size and shape to said slot; the shank having a perforation and each of the lugs having a notch for receiving a nail or key for securing the sections together, substantially as set forth.

546,863. LIFT AND FORCE PUMP. EMIL NOPPEL, Philadelphia, Pa. Filed Apr. 26, 1895. Serial No. 547,210. (No model.)

Claim.—1. In a lift and force pump having a rotary barrel, a base with ports out of alignment with each other, and a valve freely located on said base having ports adapted to register alternately with the ports of said base, one of the ports of the valve having a branch for connection with the place of service of the pump, substantially as described.



2. In a lift and force pump having the barrel A, the base F in its lower extremity, the ports G and H, the valve M adjacent said base, having the flange L, and the ports P and N therein, the pipe R and the bushing S, said parts being combined substantially as described.

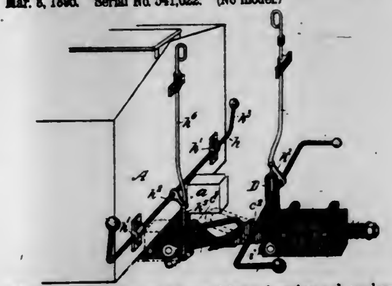
3. In a lift and force pump, a barrel with a coupling ring secured to its discharge end, a valve with ports between said coupling ring and barrel, and a plate secured to said coupling ring and having shoulders adapted to be engaged by the walls of said ports, said parts being combined substantially as described.

4. In a lift and force pump, a barrel, a cap secured on its head having an angular opening therein, a piston with a stem in said opening, a coupling ring on the discharge end of the barrel, and a valve between said ring and the end of the barrel, said parts being combined substantially as described.

5. In a lift and force pump, a barrel, a piston therein, the base of said barrel having a plurality of ports therein, a movable valve held against said base, having a plurality of ports adapted to register with the ports of said base, a pipe attached to one of said ports provided with a bushing, a handle attached to said pipe, means for holding said valve in position, and means for limiting the movement of said valve and barrel relative to each other, substantially as described.

6. A lift or force pump, consisting of a barrel with a cap on its head with openings therein and a plurality of ports in its base, a piston with a stem angular in cross section passing through said cap, a coupling ring secured to its base and a valve having ports therein between said coupling ring and base, said parts being combined substantially as described.

546,864. CAR-COUPLING. HARRY PARKER, Sr., EDWARD SCANLIN, HARRY PARKER, Jr., and HENRY H. SKEVINGTON, Philadelphia, Pa. Filed Mar. 8, 1895. Serial No. 541,022. (No model.)



Claim.—1. A car-coupler comprising a housing a draw-bar provided with a spear-shaped hook held within the same, a yielding link

pivoted to a guide block contained in said housing, and means for operating said link, substantially as and for the purposes set forth.

2. A car-coupler comprising a draw-bar having a spear-shaped hook as described, a link pivoted to a block yieldingly held in a guide way, a lever in contact with the under side of the link, to form a stop for and keep the link in substantially a horizontal position, and means connected to said lever to elevate the free end of the said link, substantially as and for the purposes set forth.

3. A car-coupler comprising a draw-bar provided with a spear-shaped hook and slidingly contained in a way of a housing attached to a car, a link pivoted to a block mounted in a bore or way of the same housing, a spring tending to push the said block and link outwardly and means to turn the said link about its pivot with the said block, substantially as and for the purposes set forth.

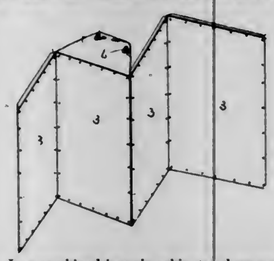
4. A car-coupler comprising a draw-bar contained within a housing attached to a car, a spear-shaped hook on said draw-bar forming a shoulder abutting the said housing at one end, a spring inserted between the housing and a nut on the other end of the said draw-bar, a link, yieldingly secured to the said housing and means for operating the said link, substantially as and for the purposes set forth.

5. A car-coupler comprising a housing a draw-bar slidingly mounted therein, a spear-shaped and sidewardly bent hook on said draw-bar, a yielding link pivoted to a block contained in said housing and means for turning the said link about its pivot consisting of a lever pivotally attached to the housing, a rock-shaft connected to said lever and journaled to the frame of the car and means for operating the said rock-shaft from either side or the top of the car, substantially as and for the purposes set forth.

6. A car-coupler comprising a housing, a draw-bar slidingly mounted therein, a spear-shaped hook on said draw-bar, a link pivoted to a block yieldingly contained in said housing, projections on said housing to limit the downward movement of the said link, and means for turning the link upwardly about its pivotal connections with the said block, substantially as and for the purposes set forth.

7. A car-coupler comprising a housing, a draw-bar slidingly mounted therein, a spear-shaped and sidewardly bent hook on said draw-bar, a coupling link pivoted to a yielding block contained in said housing, projections on opposite sides of the housing to support the coupling link in substantially a horizontal position, and means for operating the said coupling link, comprising a lever pivoted to the said housing and engaging with its free end one member of the said coupling link, a rock-shaft journaled in bearings attached to a car, an arm on said rock-shaft, a link between said arm and said lever, and handles assisted by weights to maintain the said coupling link in a position to automatically couple cars, or to permanently keep the said coupling link in a position in which it cannot come in contact with either a pin, hook or link of an adjacent coupler with which the coupler is to connect, substantially as and for the purposes set forth.

546,865. COMBINED HOT-AIR CABINET AND SCREEN. CHARLES M. ROBINSON, Toledo, Ohio. Filed Oct. 6, 1894. Serial No. 525,088. (No model.)



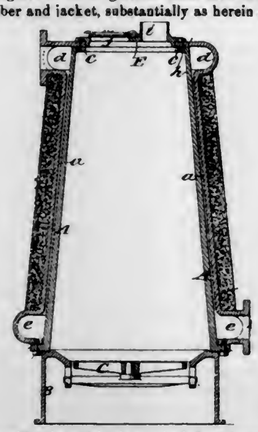
Claim.—1. In a combined hot air cabinet and screen, a plurality of frames or sections united alternately in hinged relation by a continuous cover of flexible impervious fabric material, the alternate hinge joints being formed by said covering, and the remaining joint being provided with independent hinges, whereby the sections may be conveniently folded alternately in opposite directions.

2. In a combined hot air cabinet and screen, a plurality of frames having a covering of a flexible impervious fabric material uniting them and acting as hinges of a width to extend above the frames and form a top closure when the sections are arranged to form an inclosure, substantially as described.

546,866. AIR-HEATING APPARATUS. HENRY C. SERGEANT, Westfield, N. J., assignor to the Ingersoll-Sergeant Drill Company, New York, N. Y. Filed Jan. 16, 1895. Serial No. 535,071. (No model.)

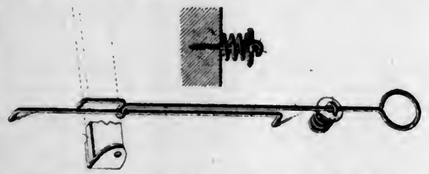
Claim.—1. In an air heating apparatus, the combination with a conical fire chamber, of an external conical air jacket surrounding said fire chamber and having an inlet in its upper part and an outlet in its lower part, substantially as herein described.

2. In an air heating apparatus, the combination with a fire-chamber, of a surrounding external jacket having a circumferential swell forming between said jacket and fire chamber an annular air channel for ingress or egress of air of greater width than the space between said fire chamber and jacket, substantially as herein set forth.



3. The combination with the conical fire chamber, of the surrounding external conical jacket having in its upper and lower parts respectively circumferential swells forming upper and lower air channels in communication with each other through the intervening narrower space between the said fire chamber and jacket, one of the said channels having an inlet for air to be heated and the other of said channels having an outlet for heated air, substantially as herein set forth.

546,867. CURTAIN-SHADE HOLDER. WILLIAM H. VAN GILDER and ANDREW H. WILSON, Perrysville, Ohio. Filed June 6, 1895. Serial No. 551,870. (No model.)



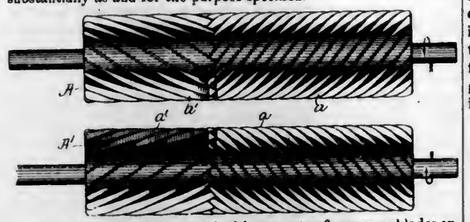
Claim.—1. In a curtain fixture, the combination, of parallel bars attached to the sides of the window-frame, rods B B bent below their upper ends into eyes or loops which hold the rods in sliding engagement with the parallel bars the portion of the rods above the eyes or loops being bent outwardly, upwardly and then inwardly, and a cross-bar C carried by the upper bent ends of the rods; together with catches attached to the window-frame below the parallel bars, said catches engaging with the vertically movable rods, substantially as shown and for the purpose set forth.

2. A curtain fixture comprising parallel bars A' A' having bent ends for engagement with the window-frame, rods B B bent near their upper ends to engage the bars A' the upper ends of the rods being further bent for engagement with the cross-bar of a fixture which supports the shade-roller and the lower ends of the rods being bent into rings or operating handles, and catches D secured to the window-frame below the bars A', springs *d* which encircle the catches, and plates *d'* which bear against the outer ends of the springs, the rods B being placed in engagement with the catches so as to bear against the plates *d'*, substantially as shown and for the purpose set forth.

546,868. FINISHING-ROLL. IRA VAUGHN, Salem, Mass., assignor to the Vaughn Machine Company, Portland, Me. Filed Apr. 19, 1895. Serial No. 546,398. (No model.)

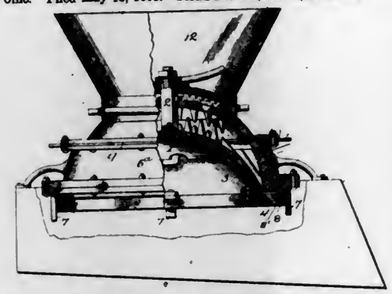
Claim.—1. A finishing roll provided with two sets of vanes or blades extended in opposite directions from a transverse line or plane through the roll and at different angles thereto and to each other, for the purpose specified.

2. A finishing roll provided with the long vanes *a* and with the shorter vanes *a'* extended in opposite directions at different angles, the long vanes being located on one side of a transverse line through the roll, and the short vanes being located on the other side of said transverse line, and each long vane having its co-operating short vane, substantially as and for the purpose specified.



3. A finishing roll provided with two sets of vanes or blades extended in opposite directions from a transverse line or plane through the roll, one set of vanes having a different pitch from the other set of vanes, substantially as described.

546,869. GRINDING-MILL. JOHN C. WOODCOCK, Upper Sandusky, Ohio. Filed May 13, 1895. Serial No. 549,041. (No model.)



Claim.—1. In a grinding mill, the cone, the coarse grinding ring, and a fine grinding ring extending horizontally from the lower edge of the coarse grinding ring, a rabbet around its outer edge combined with the outer coarse grinding ring 5 having a horizontally extending fine grinding surface and downward projections 7 with shoulders 8 which in connection with the rabbeted edge of the ring 3 prevents contact of the grinding surfaces and retains the grinding ring in horizontal position, substantially as described.

2. In a grinding mill, the grinding ring 3 having an exterior grinding surface, its lower edge being rounded outwardly, and a fine grinding ring 5 having an interior grinding surface in opposition to the grinding surfaces of the first named ring, the lower edges of the grinding surfaces of the ring 5 being rounded to correspond with the rounded lower edge of the ring 3, substantially as shown.

3. In a grinding mill, the cylinder or casing made in two parts, and the feed regulator interposed between said parts composed of two pieces 9 9 cut away at 9' 9² so as to slide one within the other in the same plane, the said pieces also having the elongated slots 10' 10' located so as to be engaged by the bolts that secure the parts of the cylinder or casing together, substantially as described.

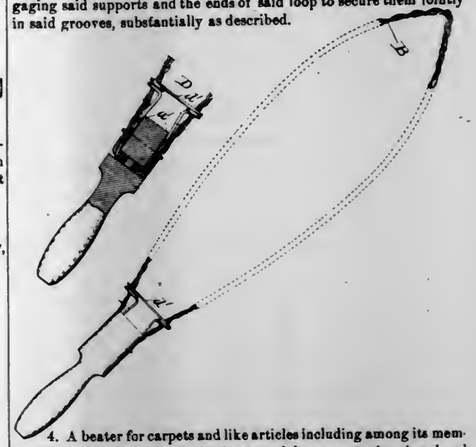
4. In a grinding mill, the cylinder or casing made in two parts, and the feed regulator composed of two pieces 9 9 cut away at 9' 9² so as to be movable one within the other in the same plane, the cut 9' being shallow and the tongue of cut 9² being narrow, the said pieces 9 9 also having the elongated slots 10' 10' located so as to be engaged by the bolts that secure the parts of the cylinder together, substantially as shown and described.

546,870. BEATER FOR CARPETS OR LIKE ARTICLES. GEORGE B. YOUNKIN, Williamsport, assignor to Eli B. Strait, Jersey Shore, Pa., and Newton A. Strait, Washington, D. C. Filed June 24, 1895. Serial No. 553,835. (No model.)

Claim.—1. A beater for carpets and like articles including among its members a handle, a loop of flexible material rigidly secured to said handle, an outer bearing head separate from the handle loosely engaging portions of said loop between the handle and the outer end of said loop and an elastic support for said bearing head between it and the handle, substantially as described.

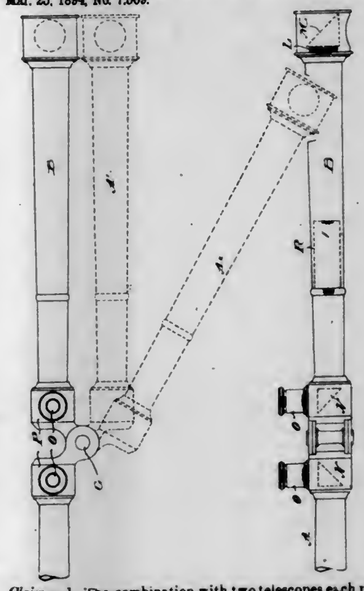
2. A beater for carpets and like articles including among its members, a handle, a loop of elastic material having its ends engaging said handle, an outer bearing head formed of wire, having eyes for loosely engaging portions of the loop between the handle and the end of the loop, wire supports for said eyes engaging the handle adjacent to the ends of the loop and securing devices for securing said wire supports and the ends of the loop to the handle, substantially as described.

3. A beater for carpets and like articles including among its members, a handle, having attaching grooves on opposite sides, a loop of elastic material having its ends engaging said grooves, an outer bearing head formed of wire having eyes for loosely engaging portions of the loop between the handle and the end of the loop, wire supports for said eyes engaging said grooves, and supporting devices for engaging said supports and the ends of said loop to secure them jointly in said grooves, substantially as described.



4. A beater for carpets and like articles including among its members a handle, a loop of elastic material, an outer bearing head formed of wire, having eyes for loosely engaging portions of said loop between the handle and the end of the loop, an elastic support for said eyes, and means for securing said loop and said elastic support to the handle, substantially as described.

546,871. BINOCULAR TELESCOPE. ERNST ABBE, Jena, Germany, assignor to the Firm of Carl Zeiss, same place. Filed Nov. 26, 1894. Serial No. 530,001. (No model.) Patented in Germany Oct. 19, 1893, No. 76,735; in France Mar. 12, 1894, No. 236,943; in Italy Mar. 12, 1894, LXX, 318; in Switzerland Mar. 15, 1894, No. 8,079; in England Mar. 17, 1894, No. 5,639; in Austria Mar. 25, 1894, No. 67,764, and in Hungary Mar. 25, 1894, No. 7,509.

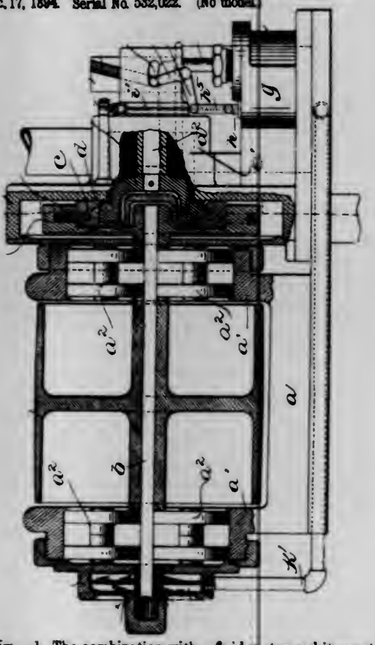


Claim.—1. The combination with two telescopes each presenting images in the erect or natural position and having the optical axes of the objective or object glass apertures and of the ocular or eye piece apertures parallel with one another and at right angles to the optical axis of the tube of the telescope and both arranged with the same direction of sight and so as to form a binocular double telescope, of means enabling either telescope to be rotated relatively to the other

in the plane common to their tubes, substantially as shown and described.

2. The combination with two telescopes each presenting images in the erect or natural position and having the optical axes of the objective or object glass apertures and of the ocular or eye piece apertures parallel with one another and at right angles to the optical axis of the tube of the telescope and both arranged with the same direction of sight and so as to form a binocular double telescope, of a hinge connecting two arms symmetrically attached to the ocular ends in the plane common to their tubes so as to enable either telescope to be rotated relatively to the other at an angle of about one hundred and eighty degrees the distance of the ocular apertures during this movement being in two different positions equal to the distance of the human eyes.

546,872. GOVERNOR. GEORGE J. ALTHAM, Swansea, Mass. Filed Dec. 17, 1894. Serial No. 532,022. (No model.)

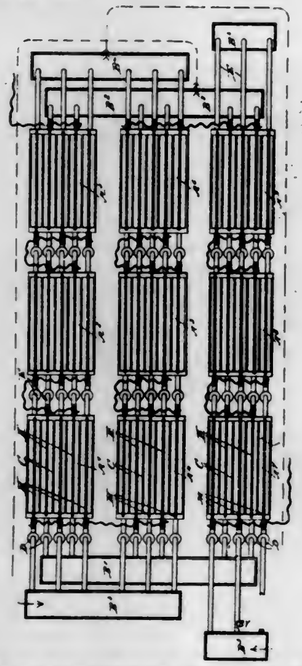


Claim.—1. The combination with a fluid motor and its controlling valve, of a governing apparatus comprising a steam cylinder and piston, suitable connections between said piston and the said motor-valve, a valve controlling admission of steam to said cylinder, a movable valve-seat interposed between said steam-valve and the ported side of the cylinder and itself suitably ported, connections between the piston and the valve-seat whereby the latter is moved by the piston, a movable air-receiver suitably jacketed, connections between said receiver and the steam-valve, and air-forcing means driven by the motor and in communication with the air-receiver.

2. The combination with a fluid motor having an oscillatory controlling valve with a segment on its stem, of a governing apparatus comprising a steam cylinder, a piston therein whose rod carries a head with a rack on one side in mesh with the segment on the stem of the oscillatory valve, and with an oblique slot in the other side, a valve controlling inlet of steam to the said cylinder, a movable valve-seat interposed between said valve and the ported side of the cylinder, a lever engaged at one end with the oblique slot in the head of the piston-rod, and connected at the other end with the said movable valve-seat, a movable air-receiver, suitable connections between the same and the steam-valve, and air-forcing means driven by the motor and communicating with the said air-receiver.

546,873. PROCESS OF TREATING ZINC-BEARING ORES. EDGAR A. ASHCROFT, Broken Hill, New South Wales. Filed Aug. 17, 1894. Serial No. 520,744. (No specimens.)

Claim.—1. The herein described process for the treatment of zinc bearing ores and zinc bearing products, which consists in first leaching the oxidized ore with a solution containing a ferric salt, to precipitate the iron from said solution and dissolve the zinc, secondly electrolyzing the resulting zinc bearing solution by first passing it around metallic cathodes to precipitate the zinc from the said zinc bearing solution, and then around iron anodes to impart a ferrous salt to the solution, and subsequently raising the ferrous salt to the ferric state and thereby regenerating the original ferric salt solution, substantially as described.



2. In the treatment of zinc bearing ores and zinc bearing products passing a zinc bearing solution first around the zinc cathodes then around the iron anodes and subsequently around the carbon or other insoluble anodes of an electrolytic system of vats, substantially as and for the purpose specified.

3. In the treatment of zinc bearing ores and zinc bearing products passing a zinc bearing solution first around the zinc cathodes then around the iron anodes and subsequently oxidizing the said solution, substantially as and for the purpose specified.

4. The herein described process for the treatment of zinc bearing ores and zinc bearing products, which consists in first leaching the oxidized ore with a solution containing a ferric salt, to precipitate the iron from said solution and dissolve the zinc, secondly electrolyzing the resulting zinc bearing solution by first passing it around metallic cathodes to precipitate the zinc from the said zinc bearing solution, and then around iron anodes to impart a ferrous salt to the solution subsequently raising the ferrous salt to the ferric state and finally returning the regenerated ferric salt solution to the leaching apparatus, substantially as described.

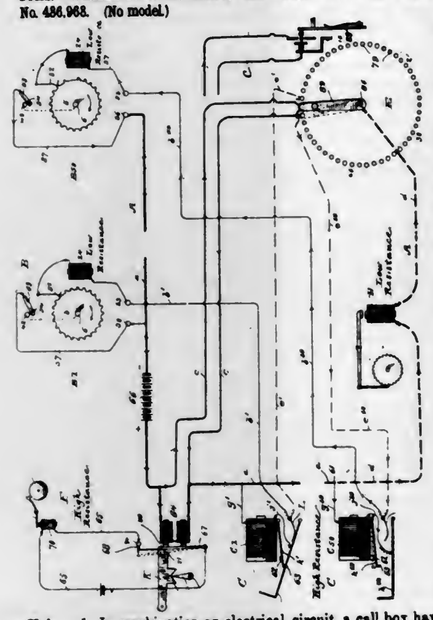
5. In the treatment of zinc bearing ores and zinc bearing products, the method of precipitating the zinc and supplying a ferrous salt to the zinc bearing solution, which consists in first leaching the oxidized ore, then passing the said solution first around the cathodes of an electrolytic vat, to precipitate the zinc on the said cathodes, and then around the iron anodes of the said vat, to impart a ferrous salt to the solution, substantially as described.

6. The process of preparing a solution suitable for leaching zinc bearing ores or zinc bearing products, which consists in passing a zinc bearing solution first around the metallic cathodes of an electrolytic apparatus, then around iron anodes of the said electrolytic apparatus, to impart a ferrous salt to the zinc bearing solution, and finally around insoluble anodes to raise the ferrous salt to the ferric state, substantially as described.

7. The process of preparing a solution suitable for leaching zinc bearing ores or zinc bearing products, which consists in passing a zinc bearing solution first around the iron anodes of an electrolytic apparatus, to impart a ferrous salt to the zinc bearing solution, and then around insoluble anodes to raise the ferrous salt to the ferric state, substantially as described.

8. In the treatment of zinc bearing ores and zinc bearing products, the herein-described method of simultaneously depositing zinc from a catholyte free from iron, and raising a ferrous salt solution to the ferric state, which consists in passing the zinc bearing solution, free from iron, around the metallic cathodes of an electrolytic apparatus, and simultaneously passing the ferrous salt solution around the insoluble anodes of the said electrolytic apparatus, substantially as and for the purpose specified.

546,874. ELECTRICAL INDICATING SYSTEM FOR ANNUNCIATORS. WALTER F. BANES, Milford, Conn. Filed Oct. 2, 1893. Serial No. 486,968. (No model.)



Claim.—1. In combination an electrical circuit, a call box having a low resistance electro magnet, an annunciator having a high resistance electro magnet, an indicator having a low resistance electro magnet and adapted to operate with the call box to indicate the special call sent and a controlling switch by which connection may be established between the call box and the indicator.

2. In combination an electrical circuit, a call box having a low resistance electro magnet, an annunciator having a high resistance electro magnet, an indicator having a low resistance electro magnet and adapted to operate in connection with the call box to indicate the special call sent, a controlling switch by which connection may be established between the call box and the indicator and an alarm having a high resistance electro magnet and operating in connection with the annunciator.

3. In combination an electrical circuit, calling apparatus having a low resistance electro magnet, an annunciator having a high resistance electro magnet, an indicator having a low resistance electro magnet and adapted to operate in connection with the calling apparatus to indicate the special call sent, a controlling switch by which connection may be established between the call box and the indicator, an alarm having a high resistance electro magnet and a local circuit for the alarm which is closed by the closing of the main circuit.

4. In combination an electrical circuit, a call box having a low resistance electro magnet, an indicator having a low resistance electro magnet adapted to operate in connection with the call box electro magnet to indicate the special call sent and to give a return signal, an annunciator having a high resistance electro magnet, suitable means for automatically opening the circuit the instant the annunciator acts, and a controlling switch whereby a second circuit may be established comprising the call box and the indicator.

5. In combination an electrical circuit, a call box having a low resistance electro magnet, an indicator having a low resistance electro magnet adapted to operate in connection with the call box electro magnet, an annunciator having a high resistance electro magnet, suitable means for automatically opening the circuit the instant the annunciator acts, an alarm, a local circuit for operating the alarm, a high resistance electro magnet 64 in the main circuit for controlling the alarm, said local circuit being closed by the closing of the main circuit, suitable means for retaining the local circuit closed so that the alarm will sound after the main circuit is opened and a controlling switch by which a second circuit may be established after the opening of the first circuit, said first circuit comprising the high resistance electro magnets so that the alarm will sound and the annunciator announce the call after which the circuit will be automatically opened, and said second circuit comprising the low resistance electro magnets in the call box and the indicator so that when the controlling switch has been operated the special call sent in will be indicated and a return signal given.

6. In a system of the character described the combination with an electrical circuit, of a call box having a low resistance electro magnet, an annunciator having a high resistance electro magnet, suitable means for automatically opening the circuit the instant the annunciator acts, and a controlling switch for establishing a second circuit so that the call box mechanism will act after the first circuit has been opened and the controlling switch has been operated.

7. In a system of the character described the combination with an electrical circuit, of a call box having a low resistance electro magnet by which the mechanism is released, an indicator having a low resistance electro magnet, an annunciator having a high resistance electro magnet, suitable means for automatically opening the circuit the instant the annunciator has acted, and a controlling switch for establishing a second circuit after the first circuit has been opened by the action of the annunciator.

8. In a system of the character described the combination with an electrical circuit, a call box having a low resistance electro magnet and an indicator having a low resistance electro magnet, of a high resistance electro magnet, means for automatically opening the circuit the instant said electro magnet has acted, and a controlling switch whereby a second circuit may be established comprising the two low resistance electro magnets.

9. The combination with an electrical circuit and an annunciator having a drop of ordinary construction, and a high resistance electro magnet, a call box having a low resistance electro magnet, an indicator having a low resistance electro magnet and a controlling switch of a contact piece L which is engaged by the drop when the latter is at its normal position whereby the circuit is kept closed, said drop when released by the announcing of a call moving away from said contact whereby the circuit is automatically opened.

10. In a system of the character described the combination with a call box having a low resistance electro magnet, an indicator having a low resistance electro magnet and an annunciator having a high resistance electro magnet, a drop, and an armature whereby the drop is held at its normal position, of a contact piece L which forms a portion of the circuit and is engaged by the drop when the latter is at its normal position so that when said drop is released by the announcing of a call the circuit is opened by the disengagement of the drop and the contact piece.

11. In combination an electrical circuit, a call box having a low resistance electro magnet, an indicator having a low resistance electro magnet and an annunciator having a high resistance electro magnet, a drop, an armature adapted to engage and to retain the drop at its normal position when said armature is in its retracted position, and a contact piece L forming part of the circuit which is engaged by the drop when the latter is at its normal position thereby keeping the circuit closed, said armature when drawn to the pole of the electro magnet releasing the drop and thereby opening the circuit.

12. In combination an electrical circuit, a call box, having a low resistance electro magnet, an indicator having a low resistance electro magnet, an annunciator having a drop, and high resistance electro magnet whose armature acts to hold the drop at its normal position, and a contact piece L which is engaged by the drop when at its normal position.

13. In combination an electrical circuit, a plurality of call boxes each having a low resistance electro magnet, an indicator having a low resistance electro magnet an annunciator having drops corresponding to the call boxes, high resistance electro magnets whose armatures act to hold the drops at their normal position, and contact pieces L which are engaged by the drops at their normal position, a controlling switch having contacts 79 corresponding to the call boxes and the drops, shaft 86 and switch lever 89 adapted to engage either of said contacts.

14. In a system of the character described the combination with a call box having a low resistance electro magnet, an indicator having a low resistance electro magnet, an annunciator having a high resistance electro magnet, and an alarm also having a high resistance electro magnet, of wires "*a*" and f^{50} leading from the call box to the annunciator, wire f^{50} leading from the magnet to an annunciator drop, a contact piece L adapted to engage the drop, wire b^{50} leading from the contact piece to the call box, wire c^{50} leading from the contact piece to a controlling switch, wire "*d*" leading from wire "*a*" to the controlling switch, and wires "*c*" which lead from the controlling switch to wire "*a*" on opposite sides of the alarm electro magnet whereby an electric current is caused to operate the annunciator and to open the circuit after which a second circuit may be established by the controlling switch which short-circuit the alarm electro magnet.

15. The combination with an electrical circuit having an electro magnet 64 provided with an armature 67 having a contact 68, of a local circuit 65 which is adapted to be opened or closed by said contact-piece, lever K having double inclines 82 and a shoulder 80 adapted to engage the armature whereby the contact is locked in position to keep the local circuit closed, a spring 85 acting to draw the armature back to its normal position, and an arm 88 adapted to engage the inclines to lift lever K and open the local circuit.

16. The combination with wires "*a*," b^{50}, "*d*," c^{50} and "*c*" of insulated face plate 76 having a plurality of contacts 79 with one of which wire c^{50} is connected, shaft 86 with which wire "*d*" is connected, an indicator also connected to wire "*d*" and having a low resistance electro magnet, a call box also having a low resistance electro magnet, an annunciator having a high resistance electro magnet, an alarm also having a high resistance electro magnet, and a lever 89 pivoted to shaft 86 and adapted to engage either of the contacts whereby a second circuit is established comprising the two low resistance electro magnets and leaving out the two high resistance electro magnets, substantially as described.

17. In combination a first electrical circuit comprising a call box having a low resistance electro magnet, an indicator having a low resistance electro magnet, an alarm having a high resistance electro magnet, an annunciator having a high resistance electro magnet, and a contact L and a second electrical circuit comprising wires "*a*," b^{50}, "*d*," c^{50} and "*c*" whereby when the first circuit is closed by operating the call box the two high resistance electro magnets operate the alarm and the annunciator and the circuit is automatically opened, an insulated face plate 76 having a plurality of contacts 79 with one of which wire c^{50} is connected, a shaft 86 with which wire "*d*" is connected and a lever 89 pivoted to said shaft and adapted to engage either of said contacts whereby a second circuit is established comprising the call box and the indicator, substantially as described and for the purpose set forth.

18. The combination with an electrical circuit having an electro magnet 64 provided with an armature 67 having a contact 68, of a local circuit 65 adapted to be opened or closed by said contact, lever K having double inclines 82, and a shoulder 80 adapted to engage the armature whereby the contact is locked in position to keep the local circuit closed, a spring 85 acting to draw the lever back to its normal position, insulated face plate 76 having a plurality of contacts 79, a shaft 86 having an arm 88 adapted to engage said inclines to lift lever K and open the local circuit, a pivoted lever 89 adapted to engage either of said contacts to establish a second circuit.

19. In combination an electrical circuit, a call box having a low resistance electro magnet, an indicator having a low resistance electro magnet, a high resistance electro magnet 64 provided with an armature 67 having a contact 68, a local circuit 65 adapted to be opened or closed by said contact, a high resistance electro magnet C^{50} having an armature k^{50} provided with a hook which holds a drop h^{50} in the raised position, contact piece L, lever K having a shoulder 80 adapted to engage armature 67 to keep the local circuit closed, insulated face plate 76 having a plurality of contacts 79 a shaft 86 having an arm adapted to engage lever K to open the local circuit, and a pivoted lever 89 adapted to engage either of said contacts whereby when the circuit is closed at the call box the two high resistance electro magnets operate as set forth and the circuit is automatically opened, and when lever 89 is operated a second circuit is established comprising the low resistance electro magnets of the call box and indicator.

20. The combination with wires "*c*," c^{50} and "*d*" of insulated face plate 76 having a plurality of contacts 79 with one of which wire c^{50} is connected, shaft 86 with which wire "*d*" is connected, lever 89 pivoted to said shaft and adapted to engage either of said contacts, bracket 93 and plate 94 with which wires "*c*" are connected, pin 92 engaging bracket 93 and having a cross pin adapted to engage plate 94, a spring 96 acting to hold the cross pin and plate in engagement, said pin corresponding to said contact points and being engaged by lever 89, and a spring 91 bearing against said lever and acting to force said pin inward against the power of spring 96 and retain the cross pin out of engagement with the plate until the lever is removed from said pin.

21. In combination a first electrical circuit, a second electrical circuit, a call box having a low resistance electro magnet, an annunciator having a high resistance electro magnet, an indicator having a low resistance electro magnet adapted to operate in connection with the call box, a controlling switch having contacts 79 corresponding to the different rooms in the system, and switch lever 89 adapted to be placed in engagement with either of said contacts whereby the second circuit comprising the call box, indicator and controlling switch may be established after the first circuit has been opened by the operation of the annunciator.

22. In combination an electrical circuit, a series of call boxes, each having a low resistance electro magnet, an indicator having a low resistance electro magnet, an annunciator having a high resistance electro magnet, and a controlling switch having a series of contacts corresponding to the several call boxes, and a switch lever pivoted to swing in an arc of a circle to engage either of said contacts whereby a circuit is established comprising the indicator and any special call box in the system.

23. The combination with an electrical circuit, a suitable annunciator, an annunciator having a high resistance electro magnet, an indicator having a low resistance electro magnet and a controlling switch, of a call box having a low resistance electro magnet and provided with a break wheel having teeth corresponding in number to the number of possible calls and one vacant space, a brush 52 adapted to engage the teeth only of the break wheel whereby the circuit is closed each time the brush comes in contact with a tooth and opened again when the tooth passes out of contact with the brush.

24. The combination with an electrical circuit, a break wheel and a suitable train adapted to return the break wheel to its normal position, of a pallet comprised in said train and provided with a locking hook, a locking lever G adapted to engage said hook when the train is set, an electro magnet whose armature is provided with an angle arm 28 adapted to hold the locking lever in locking position, a spring acting to draw the armature into locking position, and suitable means for moving the angle arm and causing the locking lever to release the locking hook so that the train can return the break wheel to its normal position.

25. In combination with an electrical circuit, a break wheel, and a suitable train adapted to return the break wheel to its normal position, of a pallet comprised in said train and provided with a locking hook, a locking lever G adapted to engage said hook, when the train is set, an electro magnet whose armature is provided with an angle arm 28 adapted to hold the locking lever in locking position, a spring acting to place the angle arm in locking position, brush 52 adapted to engage the break wheel, a brush 53 and a push pin adapted to engage brush 53 to close the circuit.

26. The combination with an electrical circuit, a break wheel and a suitable train adapted to return the break wheel to its normal position, of a pallet comprised in said train and provided with a locking hook, a locking lever G adapted to engage said hook, an electro magnet whose armature is provided with an angle arm to hold the locking lever in locking position, a spring acting to place the angle arm in the locking position, brush 52 adapted to engage the break wheel, brush 53 a push pin adapted to engage said brush, and a latch H adapted to lock the push pin at either of its positions.

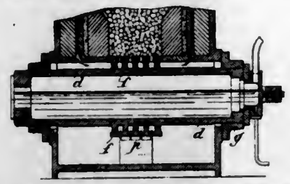
27. The combination with an electrical circuit, a break wheel and a suitable train adapted to return the break wheel to its normal position, of a pallet comprised in said train and provided with a locking hook, a locking lever G adapted to engage said hook, an electro magnet whose armature is provided with an angle arm adapted to hold the locking lever in locking position, a spring acting to place the angle arm in locking position, brush 52 adapted to engage the break wheel, brush 53, a push pin adapted to engage said brush and provided with locking notches, and a latch H having arms adapted to engage the notches in the push pin to lock said pin in either of its positions.

28. The combination with an electrical circuit, a break wheel having a pin 50 and a suitable train adapted to return the break wheel to its normal position, of a pallet comprised in said train and provided with a locking hook, a locking lever G adapted to engage said hook, an electro magnet whose armature is provided with an angle arm adapted to hold the locking lever in locking position, a spring adapted to place the angle arm in locking position, brush 52 adapted to engage the break wheel, brush 53, a push pin adapted to engage said brush and provided with locking notches, a spring 46 adapted to hold the push pin at its retracted position, a latch H having arms adapted to engage the notches in the push pin, spring 47 adapted to draw the latch into position to lock the push pin at its inward position, said pin 50 acting as the break wheel returns to its normal position to disengage the latch from the push pin and allow spring 46 to return the push pin to its retracted position in which it is locked by the engagement of the other arm of the latch with the other locking notch.

29. The combination with an electrical circuit, a break wheel having a stump 39, and a suitable train adapted to return the break wheel to its normal position, of a pallet comprised in said train and provided with a locking hook, a locking lever G adapted to engage said hook and having an arm 34 carrying a swinging arm 35 which is engaged by said stump when the break wheel begins to move to raise the locking lever into locking position, an electro magnet whose armature is provided with an angle arm, a spring acting to draw the armature away from the magnet and to place the angle arm in position to retain the locking lever in locking position, brush 52 adapted to engage the break wheel, brush 53, and push pin 42 adapted to engage brush 53.

30. The combination with an electrical circuit and a suitable call box, of an indicator consisting of a shaft carrying a ratchet, pointer and drum, a cord adapted to be wound on the drum and carrying a weight, an electro magnet, a pivoted armature carrying at its rear end a hooked pawl adapted to engage the ratchet, said pawl being provided with an incline 112, a spring acting to hold the armature out of engagement with the electro magnet, a pawl 113 adapted to lock the ratchet against backward movement, and a lever 119 carrying pins adapted to engage incline 112 and pawl 113 whereby the shaft, pointer and ratchet will be given a movement forward each time the armature is drawn to the pole of the electro magnet, and means for raising lever 119 so that both pawls are disengaged from the ratchet leaving the cord and weight free to return the parts to their normal position.

546,875. FURNACE-GRATE. LÉON BÉNIER, Paris, France, assignor to Compagnie Générale des Moteurs-Gazogènes Système Bénier, same place. Filed June 17, 1895. Serial No. 553,132. (No model.) Patented in France Nov. 9, 1893, No. 233,940; in England Apr. 4, 1894, No. 6,744; in Switzerland Apr. 7, 1894, No. 8,167; in Germany Apr. 12, 1894, No. 81,233; in Belgium Apr. 30, 1894, No. 109,727; in Spain May 14, 1894, No. 15,657; in Italy June 30, 1894, No. 36,126, and in Austria July 14, 1894, No. 44/3,204.



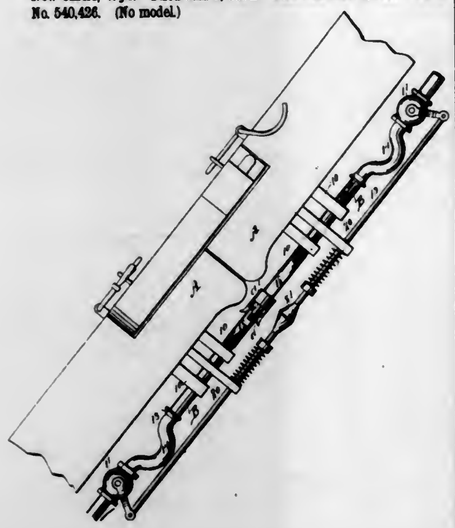
Claim.—1. A rotative grate for boilers, consisting of a hollow cylinder for water, acting as a generator of steam, and adapted to turn around its longitudinal axis, with ribs applied to its outside surface, the part of such ribs which is turned toward the fire-place forming at such time the surface of the fire-bars.

2. A rotative grate for boilers, consisting of a hollow cylinder for water, acting as a generator of steam, and adapted to turn around its longitudinal axis, with ribs applied to its outside surface, the part of such ribs which is turned toward the fire-place forming at such time, the surface of the fire-bars, and a comb, the teeth of which penetrate into the intervals of the said ribs to remove from them the scoriæ when the grate is turned, substantially as set forth.

546,876. SHOE-BLACKING. JOHN B. BERNARD, St. Paul, Minn. Filed May 15, 1895. Serial No. 549,401. (No specimens.)

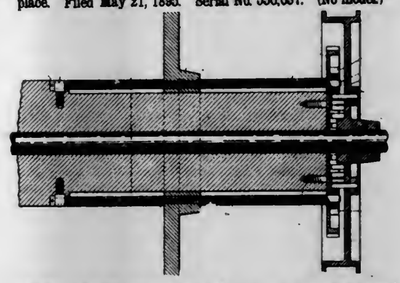
Claim.—The herein described composition of matter, consisting of bone black, muriatic acid, sulphuric acid, linseed oil, sugar, gelatine, and borax in about the proportions specified.

546,877. COUPLING FOR TRAIN-PIPES. FRANK R. BISCHOFF, New Castle, and JOHN C. RAIRD, Cheyenne, assignors to Joseph C. Spencer, New Castle, Wyo. Filed Jan. 9, 1894. Renewed Mar. 4, 1895. Serial No. 540,426. (No model.)



Claim.—The combination with a drawhead, of the rigid and forked train-pipe section, having a collar and spring, clutch prongs on its respective forks, and a stop-collar near its rear end, to limit its outward movement, rigid hangers pendent from the drawhead and one of them arranged in rear of said stop collar, a flexible section connected with said rigid section, a valve located in rear of such flexible section and having a pendent yoke, the valve push-rod arranged in the aforesaid hangers, beneath the rigid train-pipe section, and a spring and collar on said rod, all as shown and described, to operate as specified.

546,878. ADJUSTABLE HEAD FOR WARP-BEAMS. THOMAS BLACKBURN, Dover, N. H., assignor of one-half to John Lancaster, same place. Filed May 21, 1895. Serial No. 550,087. (No model.)



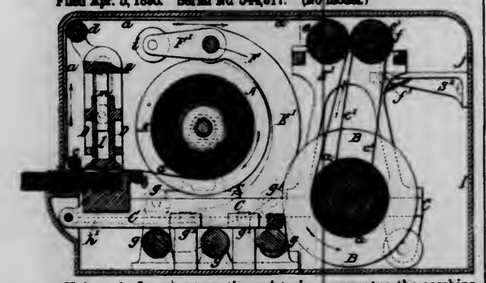
Claim.—In combination a shaft *a'* a warp-beam mounted upon said shaft, a ratchet fast upon the end of said beam, a head or wheel a^4 loosely mounted on said shaft adjacent to said ratchet, a pawl a^5 upon said head arranged to engage said ratchet, a head *b* slidingly mounted on said beam, screw-threaded rods arranged in screw-threaded apertures in said head *b*, the inner ends of said rods being loosely held in eyes *d'* fast to said beam, the outer ends of said rods being arranged in suitable apertures in said ratchet, spur-gears mounted upon said outer ends of said rods, and a tool *h* having a circular series of pins arranged to be inserted through a circular series of apertures in said wheel a^4 to engage and turn said spur-gears, substantially as and for the purpose set forth.

546,879. MOLD FOR CASTING SCREWS. JAMES DYSON and RICHARD H. WILLIAMSON, Ashton-under-Lyne, England. Filed Jan. 10, 1894. Serial No. 496,421. (No model.)



Claim.—A two-part mold or chill, consisting of two parts *a* and *b*, having helical contact surfaces, undercut joisting surfaces and a central projection *c* for casting an entire convolution of Archimedean screw blade, substantially as set forth.

546,880. APPARATUS FOR AUTOMATIC REGISTERING OF DISBURSEMENTS AND RECEIPTS. JULES FEYDMAN, Paris, France. Filed Apr. 5, 1895. Serial No. 544,617. (No model.)



Claim.—1. In an automatic registering apparatus, the combination of a carriage adapted to be moved by the insertion of a block into the apparatus, a press mounted upon the carriage and a band of copying material, with means actuated by the movement of the carriage to exert pressure on the press, substantially as set forth.

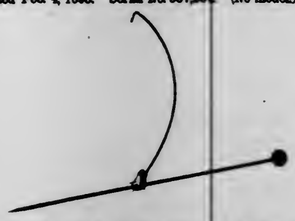
2. In an automatic registering apparatus, the combination of a carriage adapted to be moved by the insertion of a block into the apparatus, a press mounted upon the carriage, and a band of copying material, with means actuated by the movement of the carriage to exert pressure on the press and means also actuated by the movement of the carriage to move the copying material, all substantially as set forth.

3. In an automatic registering apparatus, the combination of a movable carriage, a press mounted thereon, a band of copying material, and an axis mounted in fixed standards and provided with an arm carrying a roller, with lever arms connecting the said axis with the carriage, whereby when the carriage is moved the axis is turned and the said roller exerts pressure on the press, substantially as set forth.

4. In an automatic registering apparatus, the combination of a press, and a band of copying material, with a movable carriage provided with a bobbin carrying the said material, a reeling bobbin upon which it is to be wound up, pulleys between which the band passes, pawl and ratchet mechanism actuated by the movement of the carriage to rotate one of the pulleys and an endless band and pulleys to transmit motion from the said rotating pulley to the reeling bobbin substantially as set forth.

5. In an automatic registering apparatus, the combination of a movable carriage and a band of copying material, with a cylinder *l* provided with a piston *m*, means for exerting pressure on the piston *m* by the movement of the carriage to press the cylinder against the copying material, and compensating springs *r r* interposed between the cylinder and piston, substantially as set forth.

546,881. HAT-PIN HOLDER. TIMOTHY J. GOLDEN, Jacksonville, Fla. Filed Feb. 4, 1895. Serial No. 537,264. (No model.)



Claim.—1. A hat pin holder comprising a flexible wire adapted to be connected at one end to the hat, and having at the other end a yielding body movable on the pin, and having a frictional contact therewith whereby it can be slid and held at any point on the pin, as specified.

2. A hat pin holder, comprising a flexible spring wire body, having means at one end for connecting it to the hat, and a slide block or member having a yielding portion, through which a pin is adapted to be inserted as and for the purposes described.

3. As a new article, a hat pin holder, formed of a spring wire member having means at one end for connecting it to the hat, and an eye portion at the other end, a slide block held on such eye portion having an aperture at right angles to the extending portion of the wire as set forth.

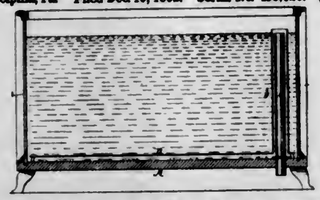
4. An improved hat pin and attaching means therefor comprising the pin proper, having a block held to slide thereon, and having the contact or bearing portion of an elastic material, of a wire member having an eye portion at one end passed through the block at right angles to the pin, and having a hook portion at the other end, all arranged substantially as shown whereby the said wire will, when the pin is pushed into the hat to its full extent such wire will form a spring loop adapted to force and hold the pin to its innermost position as and for the purposes described.

5. As an improvement in hat pin attachments, the combination of the pin, a slide block having a body formed of an elastic material and a spring wire having an eye member connected to such block, said member having a hook member at the free end, and being of a length less than the pin to which the attachment is adapted to be applied, whereby when attached to the hat and the pin it will serve to prevent the pin being entirely withdrawn from the hat substantially as shown and for the purposes described.

6. The combination with the pin and the slide block movable thereon, of the spring wire member having an eye portion passed through the block at right angles to the pin and provided with a hook portion at the free end, said wire member being of a length less than that of the pin substantially as shown and for the purposes described.

7. An improved attachment for hat pins consisting of a spring wire member having means at one end whereby it can be secured to the hat, and an eye portion at the other, and a slide block formed of a solid outer member having upper apertures to receive the aforesaid eye portion, and a second pair of apertures disposed at right angles to the upper apertures adapted to receive the hat pin and an internal body or core of rubber all arranged substantially as shown and for the purposes described.

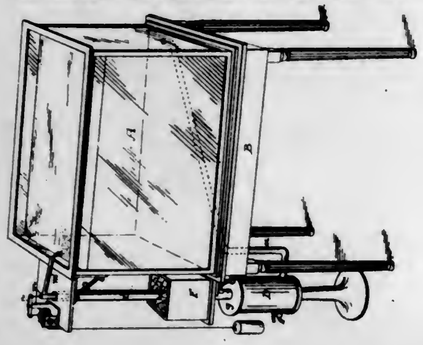
546,882. FISH-TANK OR AQUARIUM. GEORGE P. A. GUNTHER, Philadelphia, Pa. Filed Dec. 19, 1892. Serial No. 455,629. (No model.)



Claim.—1. The combination of a fish tank or aquarium, with a false bottom of somewhat less area than the tank, and mounted at a short distance above the bottom of the tank so as to provide between the same and the walls and bottom of the tank, channels of contracted area for the escape of waste water, and an outlet communicating with the channel between the false bottom and the real bottom of the tank, substantially as specified.

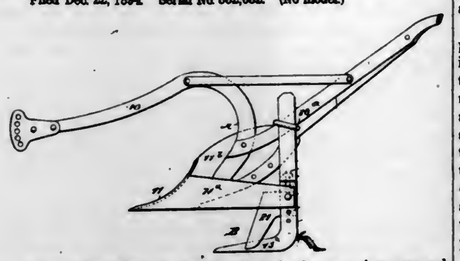
2. A fish tank or aquarium having an overflow pipe in combination with a false bottom, having a tube surrounding said overflow pipe and projecting above the top of the same, said false bottom being of less dimensions than the interior of the tank so as to provide a drainage passage between its edges and the walls of the tank, substantially as specified.

546,883. FISH-TANK OR AQUARIUM. GEORGE P. A. GUNTHER, Schwenksville, Pa. Filed Feb. 11, 1895. Serial No. 537,881. (No model.)



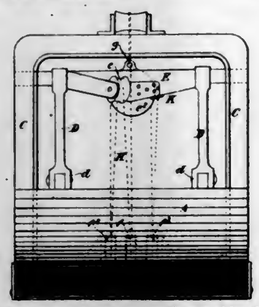
Claim.—The combination of an aquarium, a drain pipe leading from the bottom of the same and communicating with a settling chamber, a filter above said settling chamber, a pipe communicating with a chamber above the filter, and a pump whereby water is drawn through said pipe and returned to the aquarium, substantially as specified.

546,884. SUBSOIL-PLOW. PETER HEINTZ, Grand Island, Nebr. Filed Dec. 22, 1894. Serial No. 532,632. (No model.)



Claim.—In a plow, the combination of a beam, a share secured thereto and having a landside, a subsoil attachment comprising a share having a landside, and a shank for said attachment comprising two sections pivoted together and adapted to turn one on the other in a horizontal plane, the upper section being adapted to be secured to the plow beam and the lower section being connected at its lower end to the subsoil attachment and being connected to and vertically adjustable on the landside of the plow share at its upper end, substantially as set forth.

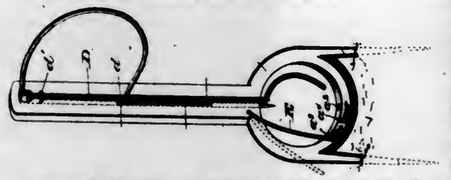
546,885. GRAB FOR EXCAVATING AND ELEVATING CLAY, COAL, &c. GEORGE J. HOSE, London, England. Filed Nov. 21, 1894. Serial No. 529,502. (No model.)



Claim.—1. In excavators or grabs, the combination of a guide frame provided with a block F carrying sheaves *f*, f^3, f^3, and having a central hole f^4, with a cross-head E sliding in the guide frame and provided with sheaves *e*, and e^3, and having a hole e^3, rods connecting the blades with the cross-head, and a hauling chain, all substantially as and for the purposes set forth.

2. In excavators or grabs, the combination with the sheaves on the block F of the sheaves on the crosshead E and a spring buffer attached to the said crosshead, substantially as and for the purposes hereinbefore described.

546,886. ANIMAL-TRAP. EDWARD HOOVER, Nemaha City, Nebr. Filed July 5, 1895. Serial No. 555,090. (No model.)

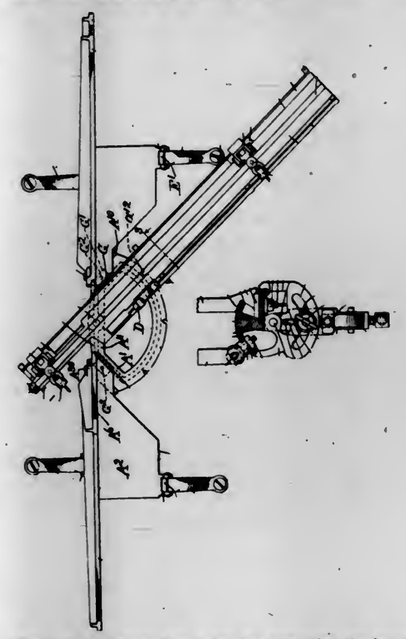


Claim.—1. In an impalement trap, the combination, of a frame having an extended portion with a longitudinal bore to receive a spring-actuated impaling rod, a ring or open frame having an opening a^2 therein into which the end of the impaling rod passes, and a trigger the lower end of which lies within the ring or open frame, substantially as shown and for the purpose set forth.

2. In an impalement trap, the combination, of a frame A having an opening and an extended portion provided with a longitudinal bore, an impaling rod or spear located within the longitudinal bore, a bowed spring attached to the spear and to the frame, and a trip-bar supported by the frame so that the free end thereof will lie within the opening, said trip-bar having a notch with which the bowed spring engages when the spear is retracted, together with a curved bar attached to the frame and adapted to engage with notches a^3 and a^4 so as to diminish the size of the opening in the frame, substantially as shown and for the purpose set forth.

3. In an impalement trap, the combination, of a frame A comprising a straight portion A', ring A^2 and prongs or tines A^3 extending from the ring, the straight portion of the frame having a longitudinal bore, an impaling rod or spear located within the longitudinal bore so as to be adapted to project across the ring, a bowed spring attached to the spear and to the upper part of the frame, a trip-bar suspended from the upper part of the spring so that the free end thereof will lie within the ring, said bar having a notch with which the bowed spring engages, and a curved bar E pivoted to the ring on the side opposite the free end of the trip bar, said bar E being adapted to engage with notches a^3 and a^4 in the ring so as to diminish the size of the opening therein, substantially as shown and for the purpose set forth.

546,887. MITER-BOX. KNUD I. HYLLER, Chicago, Ill. Filed Mar. 4, 1895. Serial No. 540,417. (No model.)



Claim.—1. In a miter box, a bed for supporting the board or molding to be cut comprising a vertical guide-wall, in combination with finger bars secured to the vertical guide-walls and having a face adapted to constitute a vertical extension of said guide-wall, such bed being divided between its ends, and a beam carrying the saw guide and extending through the interval between the divided portions of the bed, and provided with means for tilting the saw guides, said fingers proximate to the interval between the divided portions of the bed being adapted to be tilted about their connection with the said vertical wall of the latter, whereby they are adapted to be adjusted according to the inclination of the saw-cut to sustain the board on opposite sides of such cut: substantially as set forth.

2. In combination with the bed having the vertical wall A^2 divided between its ends and the beam extended through the interval and adapted to be adjusted to tilt the saw guide posts, the fingers A^6 pivoted to the vertical guide-wall and having the undercut and beveled shoulder a^6, the upper edge of said guide-wall being shaped in an arc about the pivot and beveled and adapted to engage under the under-cut shoulder a^6: substantially as set forth.

3. In combination with the bed having the vertical wall A^2, the fingers A^6 and A^8 pivoted to the rear side of such wall; the bed and the finger having, the one a rigid stud and the other an eye adapted

to receive the stud as the means of such pivoting; the edge of the vertical wall being shaped in arcs about such pivots respectively, and beveled inward, said fingers having beveled or undercut shoulders formed in arcs about the pivots and adapted to engage tightly the beveled arcs respectively at the edge of the wall: substantially as set forth.

4. In a miter box, in combination with a fixed bed and the beam which carries the saw posts pivotally and adjustably connected to the bed, said beam comprising a semi-cylindrical shell or skeleton having let into its upper surface a non-metallic track for the saw edge and having a longitudinal rift whose mouth at the cylindrical surface is parallel with the saw track; the saw guide post having a foot with a narrow portion or ankle above the same, said foot adapted to pass within the skeleton beam and the ankle adapted to pass into said rift; substantially as set forth.

5. In a miter box, in combination with the beam B, the shell or skeleton portion B^3 provided with a saw track and the horizontal web B^7 and the rift b^7 through the cylindrical web; the saw guide post having a foot C^{11} adapted to seat in the web B^7 and connected to a post by the ankle C^3 adapted to pass into the rift b^7; the web B^7 having a longitudinal slot and the foot having a threaded stem which passes through the slot; and a clamp nut adapted to operate on said stem and bind against the lower side of the web: substantially as set forth.

6. In a miter box, in combination with the beam comprising a semi-cylindrical shell or skeleton having the horizontal web B^7 and the rift b^7, the saw post having a foot adapted to seat on the horizontal web, and the ankle adapted to pass through the rift b^7, and the shoulder C^3 above the ankle adapted to bear upon the outer cylindrical surface of the beam, and suitable means for clamping the foot to the horizontal web: substantially as set forth.

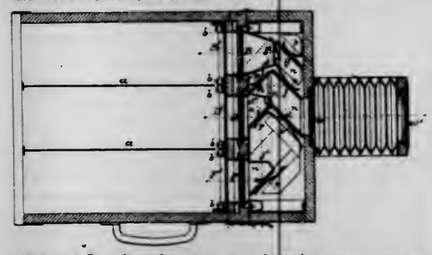
7. In a miter box, in combination with the bed divided between its ends and the beam which carries the saw posts extending between the divided portions, the edges of the bed on opposite sides of the interval through which the beam extends being provided with serrated lips G G, and suitable means for adjusting them to cause them to protrude or not to protrude above the surface of the bed; substantially as set forth.

546,888. PAINT. PHILIP INCH, Washington, D. C. Filed Apr. 30, 1895. Serial No. 547,612. (No specimens.)

Claim.—1. The herein described metallic paint consisting of tin and zinc in a fine granular form, oil and a drier, substantially in the proportions specified.

2. The herein described method of making a pigment consisting in taking tin and zinc, melting the same and mixing them together; cooling the mixture down to a semi-fluid mass, reducing the same to a granulated form and finally mixing the granules with oil and a drier, substantially as described.

546,889. PHOTOCHROMOSCOPE AND PHOTOCHROMOSCOPE-CAMERA. FREDERIC E. IVES, Philadelphia, Pa. Filed Feb. 1, 1895. Serial No. 536,939. (No model.)



Claim.—1. In a photochromoscope or photochromoscope camera, the combination of a casing, the lens or lenses, and a series of mirrors some of which are transparent, these mirrors being so disposed as to provide for the transmission of rays of light to or from three images located side by side in the same plane, the rays for the central image being laterally reflected once more than those for the side images, whereby the length of the rays for all of the images is the same.

2. In a photochromoscope or photochromoscope camera, the combination of the casing having a fixed extension, a series of mirrors some of which are transparent, said mirrors being so disposed as to provide for the transmission of rays of light to or from three images located side by side, and a focusing lens or lenses located in advance of the first mirror of the series, substantially as specified.

3. In a photochromoscope or photochromoscope camera, the combination of the casing having a fixed extension, one or more objective lenses for focusing the image at such fixed extension of the camera, a series of mirrors some of which are transparent, said mirrors being so disposed as to provide for the transmission of rays of light to or from three images, and a pair of focusing lenses located in advance of the objective lens or lenses and of the primary mirror of the series, one of said focusing lenses being positive and the other negative, and one being adjustable in respect to the other, substantially as specified.

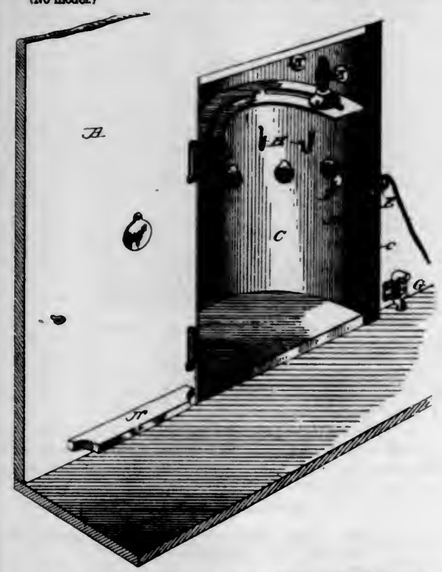
4. The combination of a camera having a fixed extension and one or more objective lenses for focusing the image at such fixed extensions of the camera, with a focusing device located in advance of said objective lens or lenses and comprising a fixed positive lens and a negative lens mounted in advance of the positive lens and adjustable in respect to the same, substantially as specified.

5. In a photochromoscope camera, the combination of the casing having three objective lenses so located as to form images side by side on the same sensitive plate or film, a series of mirrors some of which are transparent, said mirrors being so arranged as to divide the incident rays and project the same through the three objective lenses, and a focusing lens or lenses located in advance of the primary mirror of the series, substantially as specified.

6. The combination of the camera casing and its lenses, with a supplementary casing detachably secured to the front of the camera casing and carrying a series of mirrors some of which are transparent, said mirrors being so disposed as to transmit rays of light to or from the lenses, substantially as specified.

7. The combination of the casing of the camera, a series of mirrors some of which are transparent, blocks presenting faces inclined in respect to the line of the incident ray and serving as fixed bearings for said mirrors, and springs for maintaining the mirrors in contact with said blocks, but permitting of the removal of the same, substantially as specified.

546,890. APPARATUS FOR PROTECTING CARS FROM BURGLARS. FREDERICK H. KARNATZ, St. Louis, Mo., assignor of one-half to Edward J. Schall, same place. Filed Mar. 27, 1895. Serial No. 543,371. (No model.)



Claim.—1. The combination with a shield which is pivoted adjacent to a door, of means for projecting the shield through the door at the same time opening the door to admit of the passage of the shield; substantially as described.

2. The combination with a shield which is hinged adjacent to a door, which shield is adapted to be folded against the wall, of a sliding door, and means for opening the door and projecting the shield therethrough; substantially as described.

3. The combination with a shield which is hinged at the inside of a car adjacent to the door, of a door, a hook on the door, a flexible rope or chain secured to the outer edge of the shield, which rope or chain is adapted to be caught by the hook, for the purpose of swinging the shield and projecting it through the opening made by the door, which is opened co-incidently with the shield, and a rabbet on the shield with which the hook is adapted to engage; substantially as described.

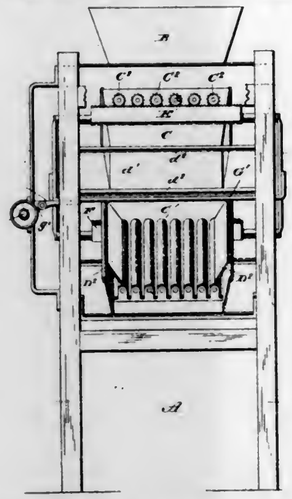
4. The combination with a swinging shield, of a door, means for operating both co-incidently, and a drop-bolt mounted on the door for locking the same after the shield has been projected through the opening made by the door; substantially as described.

5. The combination with the side wall of a car, of a bracket *n* projecting therefrom, and a swinging shield which incloses said bracket; substantially as and for the purposes described.

6. The combination with a swinging shield of a slotted shelf arranged therein, and lamps which are mounted upon said shelf and locked in position through the medium of the slot; substantially as described.

7. The combination with a swinging shield which is provided with ports and light openings, of lamps arranged within the shield, which lamps are adapted to be moved to register with the different light openings, and means for operating said shield; substantially as described.

546,891. SCREENING APPARATUS. JOHN F. H. KING, New York, N. Y. Filed May 4, 1895. Serial No. 548,169. (No model.)



Claim.—1. In a separator or screening apparatus, the combination, of a frame carrying a hopper, oppositely inclined chutes attached to the frame, the chutes carrying parallel rock-bars provided at their uppermost ends with pinions, reciprocating rack-bars E suitably supported so that the teeth thereof will mesh with the rock-bars, inclined bars G G connecting the reciprocating rack-bars to each other, a transverse bar G′ connected to the bars G, a frame H having a bearing through which passes a crank-shaft, and a link for connecting the crank-shaft to a pin which projects from the bar G′, the parts being organized substantially as shown and for the purpose set forth.

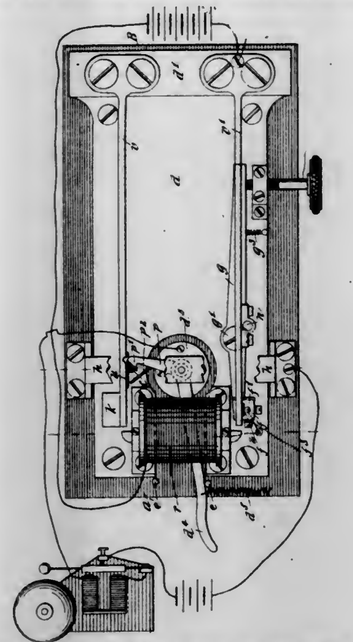
2. A screening apparatus comprising a pair of sieves or separators which are supported one above the other at different inclinations, the sieves being made up of parallel rock-bars having pinions at their uppermost ends which mesh with reciprocating rack-bars carried by the supporting frame, and means for reciprocating the rack-bars to cause a rocking of the rock-bars, together with inclined plates d positioned below the rock-bars, and chutes having plates d^3 which extend beyond the lower ends of the rock-bars and are provided with bearing plates attached to the upper edges of the plates d^3, substantially as shown and for the purpose set forth.

546,892. TELEGRAPHIC VIBRATOR. PAUL LA COUR, Askovshus, Denmark, assignor to Karsten Viborg Tuxen, Brooklyn, and Peter Hoykendorf, New York, N. Y. Filed May 7, 1895. Serial No. 548,415. (No model.) Patented in England Aug. 4, 1893, No. 14,997.

Claim.—1. The combination, with a vibrator, of a loose circuit-controlling body movable relatively to the vibrator and arranged to be actuated by the movement thereof, and a catch for automatically holding back the said circuit-controlling body after it has been actuated by the movement of the vibrator, substantially as described.

2. The combination, with a vibrator, of a separately mounted movable circuit-controlling body normally in contact with the vibrator, and a catch for holding the said circuit-controlling body back from the vibrator after the said body has been actuated by the vibrator, substantially as described.

3. The combination, with an independently movable vibrator, of a circuit-controlling pendulum suspended adjacent thereto so as to be actuated by the movement of the vibrator, and a catch for holding the pendulum back after it has been actuated, substantially as described.



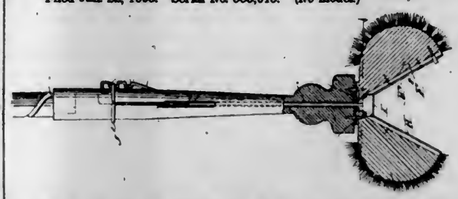
4. The combination, with the vibrator, the separately mounted movable circuit-controlling body arranged to be actuated by the movement of the vibrator, the catch constructed to engage the said body, and means for releasing the said body from the catch, substantially as described.

5. The combination, with the vibrator, the separately mounted movable circuit-controlling body arranged to be actuated by the movement of the vibrator, the movable catch constructed to engage the said body, and means for operating the catch to release the body, substantially as described.

6. The combination, with the vibrator, the separately mounted movable circuit-controlling body arranged to be actuated by the movement of the vibrator, and the catch having an insulated portion normally facing the said movable body, and a conducting portion engaging the movable body after the same has been actuated, substantially as described

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546,893. CUSPIDOR-CLEANER. ALFRID LARSON, Wausau, Wis. Filed Jan. 22, 1895. Serial No. 535,813. (No model.)



Claim.—1. In a cuspidor cleaner, the combination of a shaft having a handle and a head, a brush composed of two sections hinged to said head having adjacent inner faces and adapted to fold together, a block arranged to slide between the sections, and a rod guided on the head and connected to said block, substantially as set forth.

2. In a cuspidor cleaner, the combination of a shaft having a handle and a head, a brush composed of two sections hinged to the head, having adjacent inner faces and adapted to hold together, a block arranged to slide between the sections, a rod guided on the head and connected to the block and means for locking said rod in position to said head, substantially as set forth.

3. A cuspidor cleaner, comprising a revoluble head, a brush made in two parts hinged to the under side of the said head, guide-

ways secured on the opposite faces of the two parts of the brush, a block fitted to slide on the said guideways to open and close the brush parts, and a rod connected with the said block to move the latter up and down, substantially as shown and described.

4. A cuspidor cleaner, comprising a revolvible head, a brush made in two parts hinged to the under side of the said head, guideways secured on the opposite faces of the two parts of the brush, a block fitted to slide on the said guideways to open and close the brush parts, a rod connected with the said block to move the latter up and down, and a spring catch for locking the said rod in place when the brush parts are opened, as set forth.

546,894. THERMOCAUTER. JOHN R. LEE, Conshohocken, Pa.

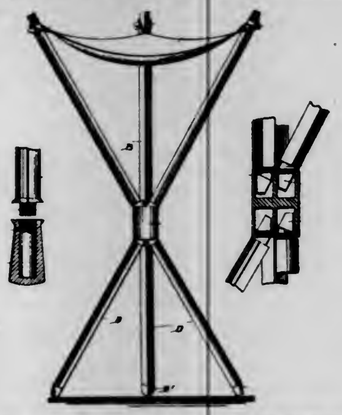
Filed May 13, 1895. Serial No. 549,049. (No model.)



Claim.—A cauterizing appliance having a carburetor and cauterizing point, in combination with a blow-pipe torch adjacent to the point, and consisting of an open top receptacle of porous or foraminous material adapted to take up combustible liquid, an air-supply pipe leading into the receptacle below said material, and a cock on the air supply side of the carburetor to supply air to the pipe leading to the torch.

546,895. CAMP-STOOL. HENRY LEVY, New Orleans, La. Filed

Apr. 26, 1893. Renewed Feb. 18, 1895. Serial No. 538,573. (No model.)



Claim.—In a camp stool, the combination, with the chambered, integral center piece, having slots as specified, of rods and legs having flat shanks fitting in said slots, and enlarged heads having inclined inner shoulders which engage the inner sides of the ends of said center piece, as shown and described, for the purpose specified.

546,896. KEY FOR TYPE-WRITERS. WILLIAM R. LILLARD, New

Orleans, La. Filed June 24, 1895. Serial No. 553,900. (No model.)



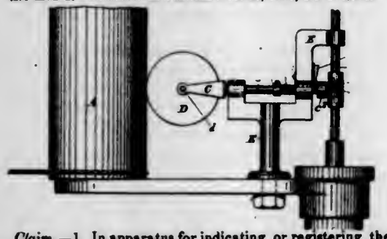
Claim.—1. A cap for the keys of typewriting or like machines having a plurality of soft elastic prongs or tongues adapted to be struck by the finger when the key is operated, substantially as described.

2. A cap for the keys of typewriting or like machines consisting of a base piece attached to the key, and provided with a plurality of upwardly projecting prongs of soft rubber adapted to be struck by the finger in operating the key, substantially as described.

3. The combination in a key for typewriting or like machines, of a socket attached to or integral with the key, and a rubber cap piece mounted in said socket and provided with a plurality of upwardly projecting prongs or tongues adapted to be struck by the finger in operating said key, substantially as described.

546,897. APPARATUS FOR RECORDING THE POWER OF STEAM-ENGINES. WILLIAM G. LITTLE, London, and CHARLES W. G.

LITTLE, Heckington, England. Filed May 3, 1895. Serial No. 548,005. (No model.) Patented in Belgium Mar. 16, 1895, No. 114,591.

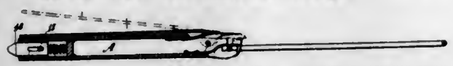


Claim.—1. In apparatus for indicating, or registering, the power exerted by steam, or other motive power engines, the combination with a surface which is reciprocated or moved as aforesaid by the action of the engine, of a disk, or wheel, with its periphery bearing on the said surface, a crank for altering in the required manner the angular position of the said disk or wheel, relatively to the line of motion of the said surface, a rod operated by the engine, in accordance with the variations of pressure in the engine, and having a pin and slot connection with the said crank, and a counter or register actuated by the said disk or wheel, substantially as hereinbefore described.

2. In apparatus for indicating or registering the power exerted by steam, or other motive power engines, the combination with a surface which is reciprocated or moved as aforesaid by the action of the engine, of a disk or wheel, with its periphery bearing on the said surface and mounted in a carrier turning upon an axis and a crank or lever on the axis of the carrier of the said disk or wheel operated by a piston (working in a cylinder such as B) by means of a pin and slot connection for altering in the required manner as aforesaid the angular position of the said disk, or wheel, relatively to the line of motion of the said surface, and in accordance with the variations of pressure in the engine, and a counter, or register, actuated by the said disk, or wheel, all substantially as hereinbefore described.

546,898. HAIR-CURLER. HERMAN NEUMANN, New York, N. Y.

Filed July 17, 1895. Serial No. 556,259. (No model.)



Claim.—1. In a hair curler, a body section substantially circular in cross section, a retaining arm spring-controlled and normally in engagement with the said body, a spring-controlled locking link adapted to extend over and around the body, and a bolt mounted on the outer end of the body section and engaging the cross piece at the free end of the link for locking the link when in position over the body, as and for the purpose specified.

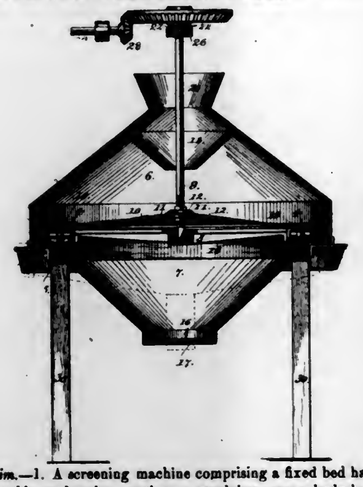
2. A hair curler, the same consisting of a body section of tubular formation, a spring-controlled retaining arm pivoted on the said body and adapted for engagement therewith substantially throughout its length, a link pivoted in one end of the body and adapted to extend across the opposite end and around the body, a tension device acting on the pivoted portion of the link, and a locking device carried by the outer extremity of the body for engagement with the cross piece at the free end of the link, as and for the purpose specified.

3. A hair curler, the same consisting of a body section of tubular formation, a spring-controlled retaining arm pivoted on the said body and adapted for engagement therewith substantially throughout its length, a link pivoted in one end of the body and adapted to extend across the opposite end and around the body, a tension device acting on the pivoted portion of the link, and a spring-controlled bolt held to slide in the body and extending beyond that end over which the link is to be passed, the link being adapted for engagement with the bolt to be locked thereby, as and for the purpose specified.

4. In a hair curler, a tubular body, a retaining arm fulcrumed near one of its ends at one end of the body, the retaining arm being substantially semicircular in cross section, a spring-controlled bolt contained within the body and extending a distance out therefrom, a locking link likewise pivoted in the body and serving also as a handle, the locking link being capable of passing over the bolt, and a tension device exerting outward tension on the retaining arm at its pivot end, being in constant engagement with and bearing on the pivot end of the locking link, as and for the purpose specified.

546,899. ROTARY SCREEN. JOHN J. NEWMAN, Elkhart, Ind.

Filed June 8, 1895. Serial No. 552,062. (No model.)



Claim.—1. A screening machine comprising a fixed bed having ratchet guide or bearing portions a revolving screen body having similar ratchet like bearing portions held to travel over the bed ratchet portions and intervening anti friction balls engaging such ratchet bearings and means for revolving the screen body substantially as and for the purposes described.

2. A screening mechanism comprising a fixed bed having ratchet like guide or bearing portions, and a screen body revolving upon the said bed having ratchet like bearing portions arranged to oppose the bed ratchets such ratchets being arranged to have their straight faces oppose each other, and anti friction balls held between such ratchet faces, all arranged substantially as shown and described.

3. In a rotary screen, the combination with a fixed or bed guide having a circular ratchet face, ball bearings held thereon and a rotary screen body having a circular ratchet bearing face adapted to rest on the said balls and having pendent flanges adapted to hold the balls in place between the said ratchet faces as specified.

4. In a rotary screen the combination with the circular bed having ratchet teeth of the surrounding trough, the hood or cover carrying a hopper, the revolving screen having an outer rim provided with ratchet teeth upon the under side thereof, the interposed anti-friction balls between the two ratchet faces and means for revolving said screen substantially as shown and described.

5. As an improvement in rotary screens, the combination with a circular bed frame and a screen body held to rotate on the circular frame having vertically extending drive shaft, said bed frame having laterally extending brackets and spaced apart from the circular bed frame, the hood supported by said brackets said hood having its upper portion cone shaped and terminating in a hopper like mouth, and a trough or collecting member secured to the bed frame and extended under the space between the bed frame and the hood as set forth.

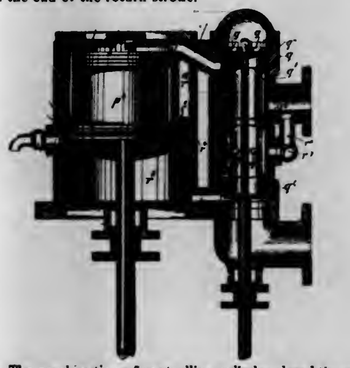
6. The combination with the bed frame, the rotary screen having a screen body inclined down from the center to the periphery a drive shaft connected therewith extending upward, the clamp devices for securing the screen, and the trough 14 all arranged substantially as shown, of the hood 6 having a straight portion 60 held over the trough 14 and bed frame, said portion 60 having a slide door, the upper end of which hood being conical and terminating in a hopper like mouth, and having an inverted cone shaped breaker on the inside below such mouth as set forth.

7. The combination with the ratchet bed plate 1, the frame 15, the hopper 7, the balls 4, the trough 14, and brackets 5 all arranged substantially as shown, of the spider frame 3, having an annular ratchet bearing plate 2, adapted to rest on the balls 4, the clamps 19, the shaft 9, the clamp nuts 11 and 12 the screen body 10 held thereby, and the hood 6 held on the brackets 5, having a conical upper end terminating in a hopper mouth, and provided with a breaker 13, as described and for the purposes set forth.

546,900. STEAM-ENGINE. JAMES C. PEACHE, London, England.

Filed Apr. 16, 1892. Serial No. 429,406. (No model.) Patented in England Aug. 27, 1891, No. 14,536.

Claim.—1. The combination of controlling cylinder closed throughout its sides and one of its ends with the exception of a communication through the latter to the valve cylinder; valve cylinder of smaller sectional area than the controlling cylinder, aligned therewith and joined to the said closed end thereof; controlling piston rigidly held to the reciprocating member of the engine to be controlled and adapted to move to and fro in the controlling cylinder; valve rigidly held to the controlling piston at a distance from it not less than the length of the stroke of the latter and adapted to move to and fro in the valve cylinder aforesaid; and a port or ports in the said valve cylinder which communicate with the supply and are adapted in respect of their position in the said valve cylinder to be opened by the valve only at the commencement of the working stroke and at the end of the return stroke.



2. The combination of controlling cylinder closed throughout its sides and one of its ends with the exception of a communication through the latter to the valve cylinder; valve cylinder of smaller sectional area than the controlling cylinder, aligned therewith and joined to the said closed end thereof; piston adapted to move to and fro in the first mentioned cylinder; port and valve adapted to regulate the supply to and exhaust from the working face of the said piston; a valve rigidly held to the said piston at a distance from it not less than the length of the stroke of the latter and adapted to move to and fro in the valve cylinder above mentioned, and a port or ports in the said valve cylinder which communicate with the supply and are adapted in respect of their position in the said valve cylinder to be opened by the valve only at the commencement of the working stroke and at the end of the return stroke.

3. The combination of high and low pressure pistons on the same piston rod and adapted to work within the high and low pressure cylinders respectively; high and low pressure cylinders aligned and communicating with each other; a port establishing a communication between the supply and the space between the two pistons aforesaid until it is closed by the outstroke of the high pressure piston; ports from the valve cylinder or steam chest to the outer ends of the high and low pressure cylinders, respectively, and a reciprocating valve working in the said valve cylinder or steam chest to distribute the steam to the said high and low pressure cylinders successively and to control the exhausts therefrom.

4. The combination of high and low pressure pistons on the same piston rod, and adapted to work within the high and low pressure cylinders respectively; high and low pressure cylinders aligned and communicating with each other; a port establishing a communication between the supply and the space between the two pistons aforesaid until it is closed by the out-stroke of the high pressure piston; a controllable branch supply from the main supply to the intermediate receiver; ports from the valve cylinder or steam chest to the outer ends of the high and low pressure cylinders, respectively, and a reciprocating valve working in the said valve cylinder or steam chest to distribute the steam to the said high and low pressure cylinders successively and to control the exhaust therefrom.

546,901. ATTACHMENT FOR ELECTRIC GENERATORS. GEORGE

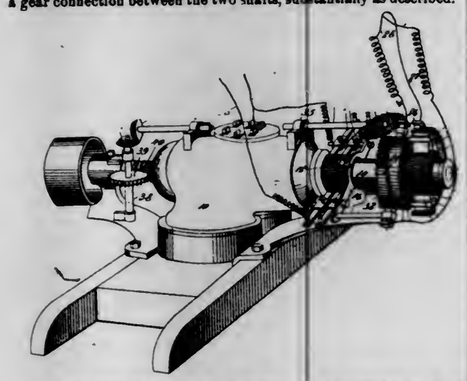
W. PICKETT, Denver, Colo., assignor of nine-sixteenths to Samuel Leeem, same place. Filed Jan. 12, 1895. Serial No. 534,655. (No model.)

Claim.—1. The combination, with a dynamo having the usual commutator, of an auxiliary commutator having whole and half contact rings in connection with the main commutator, a pair of brushes oppositely arranged to contact with the half ring, a brush to contact with the whole ring, and mechanism for giving an irregular speed to the auxiliary commutator, substantially as described.

2. The combination, with a dynamo and its commutator, of an auxiliary commutator revolving on the main commutator, whole and half rings on the auxiliary commutator, electrical connections between the said rings and the main commutator, brushes to successively contact with the half ring, a brush to contact with the whole ring,

and a gear connection between the auxiliary commutator and the armature shaft of the dynamo, substantially as described.

3. The combination, with a dynamo and its commutator, of an auxiliary commutator on the main commutator, whole and half contact rings on the auxiliary commutator, electrical connections between the said rings and the main commutator, a shaft parallel with the armature shaft and geared to the auxiliary commutator, a second shaft having a worm gear connection with the armature shaft, and a gear connection between the two shafts, substantially as described.

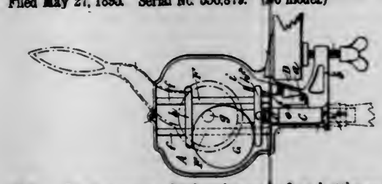


4. The combination, with a dynamo and its commutator, of an auxiliary commutator revoluble on the main commutator and provided with whole and half contact rings, an elliptical gear rigidly connected with the auxiliary commutator, an elliptical pinion to drive the gear, and an operative driving connection between the said pinion and the armature shaft of the dynamo, substantially as described.

5. The combination with a dynamo, of a two-part commutator having separated ends, a bearing sleeve between the ends, and an auxiliary commutator revoluble on one end of the main commutator, substantially as described.

6. The combination, with the main commutator and the revoluble auxiliary commutator mounted upon it, of mechanism to turn the auxiliary commutator, whole and half contact rings thereon, oppositely arranged brushes carried by the auxiliary commutator and rotating on the main commutator, and elliptical gear for driving the auxiliary commutator, substantially as described.

546,902. APPARATUS FOR DRAWING CORKS FROM BOTTLES. JOHN C. C. READ, Harborne, and GEORGE L. HURST, London, England. Filed May 27, 1895. Serial No. 550,879. (No model.)



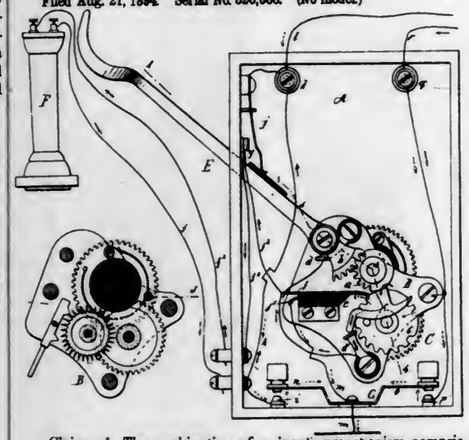
Claim.—In an apparatus for drawing corks from bottles or similar articles, the combination of a reciprocating frame provided with projections, a cork-screw attached to the said frame but free to rotate, a non-rotary nut engaging with the cork-screw and a spring catch adapted to engage the nut, with an eccentric or cam engaging between the projections on the frame and means for rotating the eccentric, all substantially as set forth.

546,903. LINEMAN'S VISE. JOHN RYAN, New York, N. Y. Filed Apr. 11, 1895. Serial No. 545,369. (No model.)



Claim.—A vise comprising a fixed jaw and a movable jaw provided with corresponding biting surfaces on adjacent sides, an adjusting screw connected to the fixed jaw, a nut engaging said screw, and a spring connection between said nut and the movable jaw, said connection forming a means of attachment between said screw and the movable jaw, substantially as set forth.

546,904. COMBINED DISTRICT TELEGRAPH AND TELEPHONE SYSTEM. EDGAR E. SALISBURY and ALBERT E. DEAN, Tacoma, Wash. Filed Aug. 21, 1894. Serial No. 520,888. (No model.)



Claim.—1. The combination, of a signaling mechanism, comprising a spring, a break wheel and contact springs for the break wheel, and swinging arm actuated by the signaling mechanism, contacts arranged in position to be engaged by and forming stops for the arm when in its extreme positions, a telephone circuit connected to the said contacts and also to the contact springs of the signaling mechanism, and a movable telephone support connected to and adapted to actuate the signaling mechanism, substantially as set forth.

2. The combination of a signaling mechanism, comprising a break wheel and contact points adapted when the break wheel is rotated to contact therewith, a signaling arm actuated by said swinging mechanism, a contact adapted to be engaged by and forming a stop for the arm when the said arm is in one position, a telephone circuit having one terminal connected to the said contact and also to the signaling mechanism, and a movable telephone support adapted to actuate the signaling mechanism, said swinging arm of the signaling mechanism being adapted when the telephone is arranged on the movable support, to be moved out of engagement with said contact, to break the telephone circuit, substantially as set forth.

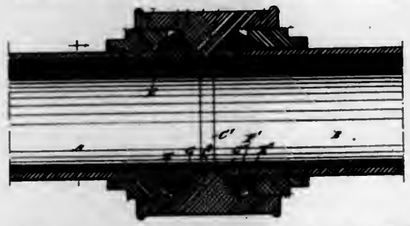
3. The combination of a signaling mechanism comprising a break-wheel, contact points adapted when the break-wheel is rotated to contact therewith, a swinging arm adapted to be actuated by the signaling device insulated contacts arranged in position to be engaged by and forming stops for the swinging arm when in its extreme positions, a telephone circuit having one terminal connected to both of said contacts and having its other terminal connected to the signaling mechanism, and a movable telephone support connected to and adapted to actuate the signaling mechanism when moved, said telephone circuit being adapted to be broken whenever the signaling mechanism is actuated and the swinging arm moved out of contact with either of the said contacts, substantially as set forth.

546,905. DEVICE FOR PREVENTION OF FEATHER-PULLING IN FOWLS. CHARLES C. SCHILD, Ionia, Mich. Filed May 16, 1895. Serial No. 549,481. (No model.)



Claim.—A device for the prevention of feather pulling in fowls, consisting of a single piece of spring wire, the outer or free ends of which are bent around, outward and inward to form the curved hooks *b*, *b*, the downward and outward curved portions *c'*, *c'*, and the nearly semi-circular portion *c*, bent at right angles to the portions *c'*, *c'*, substantially as described.

546,906. PIPE-JOINT. MICHAEL SEXTON, New York, N. Y., assignor of one-half to Catherine L. Steuerwald and Simon Ottenberg, same place. Filed Mar. 12, 1895. Serial No. 541,501. (No model.)



Claim.—1. A pipe joint comprising a sleeve having an integral annular projection against which the ends of the pipe sections abut, collars screwing in the ends of the sleeve and formed at their inner ends with bevels, and wedge-shaped rings each consisting of separated segmental portions adapted to be engaged by the bevels of the said collars and be pressed upon the pipe ends, substantially as shown and described.

2. A pipe joint, comprising a sleeve formed with an integral interior annular projection against which the ends of the pipe sections abut, packing rings seated on the said internal projection and surrounding the said pipes, wedge-shaped rings made in detached segments or sections fitted on the pipes within the said sleeve, and collars screwing in the threaded ends of the said sleeve and formed at their inner ends with bevels adapted to engage the said wedge-shaped rings, to press the latter upon the said packing rings and to fasten the rings on the said pipes, substantially as shown and described.

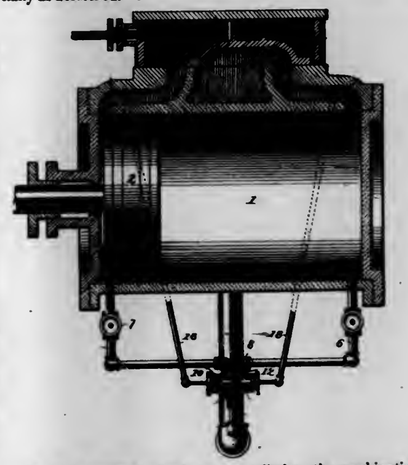
3. A pipe joint, comprising a sleeve formed with an interior annular projection forming a seat for the ends of the pipes to be coupled, packing rings seated on the said internal projection and surrounding the said pipes, wedge-shaped rings made in separated sections fitted on the pipes within the said sleeve, collars screwing in the threaded ends of the said sleeve and formed at their inner ends with bevels adapted to engage the said wedge-shaped rings, to press the latter upon the said packing rings and to fasten the rings on the said pipes, and washers between the said packing rings and wedge-shaped rings, substantially as shown and described.

4. A pipe joint comprising a shell formed with an interior annular projection having an inclined face and also a recess on each side, the recessed portions forming stops and guides for pipes to be coupled and the inclined portions forming seats, the packing rings in the inclined portions and encircling the said pipes, wedge-shaped rings in segmental sections fitted on the pipes within the said shell and collars screwing in the threaded ends of the said shell and formed at their inner ends with bevels adapted to engage the said wedge-shaped rings and to press the latter forward onto the said packing ring and inward on the sides of the pipes to be coupled, thereby forming a fluid tight joint at the outer annular projection and holding the pipe rigidly in place with the friction joint formed by the wedge-shaped rings being pressed against the sides of pipe, substantially as shown and described.

5. A pipe joint, comprising a shell formed with an interior annular projection having an inclined face and also a recess on each side, the recessed portions forming stops and guides for pipes to be coupled, and the inclined portions forming seats, the packing rings seated on the inclined portions and encircling the said pipes, wedge-shaped rings in detachable segmental sections fitted on the pipes within the said shell, and collars screwing in the threaded ends of the said shell and formed at their inner ends with bevels adapted to engage the said wedge-shaped rings and to press the latter forward onto the said packing ring and inward on the sides of the pipes to be coupled, and metal retaining rings or washers between the said packing rings and wedge-shaped rings, substantially as shown and described.

546,907. DRAINING-VALVE FOR STEAM-CYLINDERS. THOMAS D. SMITH, Wilkes-Barré, Pa. Filed Apr. 29, 1895. Serial No. 547,531. (No model.)

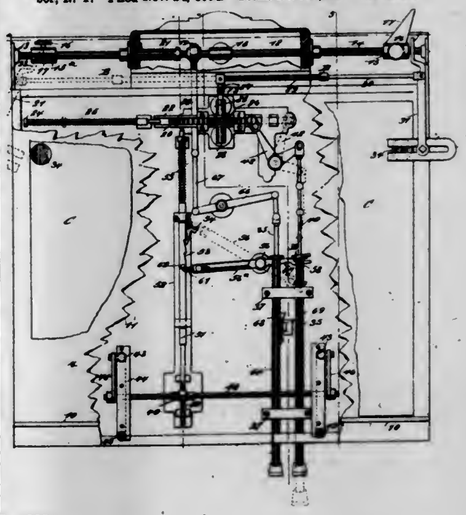
Claim.—1. In a draining valve for steam cylinders, a casing having two passages connected with drain pipes at opposite ends of the steam cylinder, a pair of pistons connected together and movable transversely across said passages and adapted to close them alternately, and pipes or passages 18 independent of the drain pipes, arranged to connect the spaces at the outer ends of the valve pistons alternately with the live steam and exhaust whereby the valve pistons are shifted each time the engine piston reciprocates, substantially as described.



2. In a draining valve for steam cylinders, the combination with the engine cylinder having drain pipes at opposite ends, of a relief valve casing having a cylindrical opening and a pair of connected piston valves therein, two inlet passages 12 at one side of said valve cylinder connected with the said drain pipes and adapted to be alternately opened and closed by the piston valves, a waste pipe connected with the cylinder and alternately communicating with the drain passages 12, and pipes 18 connecting the opposite ends of the valve cylinder alternately with the live steam and exhaust, substantially as described.

3. In a draining valve for steam cylinders, the combination with the engine cylinder having drain pipes at opposite ends, of a relief valve consisting of a casing having a valve cylinder closed at its ends, two connected piston valves movable in said cylinder, springs for holding said valves normally in a central position, pipes or passages connecting the ends of the valve cylinder with the live steam and exhaust of the engine alternately, and ports connecting the valve cylinder with the drain pipes and the waste pipe, said drain pipes and waste pipes being normally in communication when the engine is not using steam, substantially as described.

546,908. MUSIC-LEAF TURNER. WILLIAM E. SOMERS, Sag Harbor, N. Y. Filed Nov. 24, 1894. Serial No. 529,816. (No model.)



Claim.—1. In a music leaf turner, the combination, with a shaft provided with adjustable spurs located thereon, one at each side of the center, a swinging arm adapted for engagement with the sheet to be turned and provided with a trip for engagement with one of the said spurs on the shaft, of a key, a spring-controlled rack, a pinion connected with the arm operated by the rack, and a connection, substantially as shown and described, between the key and the rack, whereby the latter may be drawn against the tension of the spring, substantially as and for the purpose specified.

2. In a music leaf turner, the combination with an arm adapted for engagement with the leaf to be turned, a key operating the said arm, and a trip mechanism whereby the arm may be released from the sheet, of retaining members having sliding movement in a guide support and adapted normally for engagement with the front of the sheets to be operated upon, a shaft having link connection with each of said retaining members and provided with a pinion, a sliding bar having a rack surface engaging with the said pinion, the said bar being spring-controlled and provided with a series of teeth in one of its sides, independent of the rack teeth, a latch adapted for engagement with the said teeth, a lever operated from the said key, and means for lifting the bar from the said lever and likewise for releasing the latch from the bar on the upward movement of the lever, as and for the purpose specified.

3. In a music leaf turner, the combination, with a swinging arm adapted for engagement with the leaf to be turned, a key whereby the said arm is manipulated, a spring-controlled shaft, adjustable shifting spurs located on the said shaft, and a trip carried by the said swinging arm, adapted for engagement with one of the said spurs, of retaining members adapted normally for engagement with the sheets to be operated upon, a shifting device operated from the said key and acting upon the said retaining members, a rack, a pinion carried by the said spring controlled shaft and engaging with the said rack, a key-operated lever connected with the said rack, a keeper, and a latch operated in conjunction with the key-operated lever and adapted for engagement with the said keeper, as and for the purpose set forth.

4. In a music leaf turner the combination of a turning arm having a pivoted magnet for engaging and moving a sheet to be turned, means for actuating said arm, and a releasing device adapted to move the pivoted magnet out of operative position, whereby the sheet is released, substantially as set forth.

5. In a music leaf turner the combination of a turning arm having a pivoted device for engaging and moving the sheet to be turned, means for actuating said arm, and a movable releasing device adapted to engage the sheet-engaging device on the arm and move the same out of operative position, substantially as set forth.

6. In a music leaf turner the combination of a casing, a turning arm having a device for engaging and moving the sheet to be turned, means for actuating said arm, and movable releasing devices, located at opposite sides of the casing for engaging the sheet engaging device on the arm and moving the same out of operative position whereby the sheet is released, substantially as set forth.

7. In a music leaf turner the combination of a casing, a turning arm provided with a device for engaging and moving the sheet to be turned, means for actuating said arm, and releasing devices located at opposite sides of the casing for engaging the sheet-engaging device on the arm and moving the same out of operative position, whereby the sheet is released, said releasing devices being so arranged and connected that when one is moved into operative position the other will be simultaneously moved out of operative position, substantially as set forth.

8. In a music leaf turner, the combination of a casing, a turning arm, a trip lever pivoted thereon, a magnet carried by the trip-lever and adapted to attract an armature mounted on the sheet to be turned, means for actuating the turning arm and a releasing device adapted to engage the trip lever and move the magnet out of position to attract said armature, substantially as set forth.

9. In a music leaf turner, the combination of a casing, a turning arm, a trip lever pivoted thereon, a magnet carried by the trip lever and adapted to attract an armature mounted on the sheet to be turned, means for actuating the turning arm, a movable releasing device adapted to engage the trip lever and move the magnet out of position to attract its armature, and means for moving the releasing device to throw the same into and out of position to engage the trip lever, substantially as set forth.

10. In a music leaf turner, the combination of a casing, a turning arm, means comprising a rack and pinion for moving said arm in opposite directions, a cylinder, and a piston connected to said rack and movable in said cylinder, said piston and cylinder being arranged to cushion said arm at the end of each stroke thereof, substantially as set forth.

11. In a music leaf turner, the combination of a casing, a spindle mounted therein and provided with a pinion and with a turning arm, a rack slidingly mounted in the casing in engagement with said pinion, a key connected to the rack and having a retracting spring adapted to move the same in one direction, means for moving the rack in the opposite direction, a cylinder mounted in the casing, and a piston arranged to play in the cylinder and connected to and adapted to move with said rack, substantially as set forth.

12. In a music leaf turner, the combination of a casing, a turning arm mounted thereon and provided with a device for engaging and holding the leaf to be turned, a shaft rotatively mounted transversely of the casing, means for rotating said shaft, and releasing devices adapted to engage the leaf engaging device on the arm and move the same out of operative position, said releasing devices being mounted on said shaft and adapted as the same is rotated to be thrown into and out of operative position, substantially as set forth.

13. In a music leaf turner the combination of a casing, an extensible turning arm mounted thereon and provided with a device for engaging and holding the leaf to be turned, a shaft mounted transversely of the casing, means for rotating said shaft and releasing devices adapted to engage the leaf engaging device on the arm and move the same out of operative position, said releasing devices being adjustably mounted on the said shaft and adapted as the same is moved to be thrown into and out of operative position, substantially as set forth.

14. In a music leaf turner, the combination of a casing, a curved guide, a semi-circular piston mounted to play in said guide and adapted to engage the leaves, a rock shaft connected to and moving with the piston, a spring for holding said piston normally in position to engage the sheets, and means for rocking said shaft whereby the piston is moved out of its operative position, substantially as set forth.

546,909. DETACHABLE HINGE. OLIVER H. P. G. SPENCER, Mount Carmel, Ill. Filed Mar. 23, 1895. Serial No. 542,923. (No model.)



Claim.—1. The combination of a hinge having a projection at the outside, said projection having a transverse groove formed in it, a bracket piece formed to fit the transverse groove in the said projection and adapted to be secured to the frame of the door, and means for securing said projection to the bracket plate, substantially as set forth.

2. The combination of a hinge, having a projection at one side, said projection having a transverse groove formed in it, a bracket piece provided with a reduced central portion to fit in the transverse groove of the projection on the hinge and shoulders at opposite sides of said reduced central portion to engage the opposite sides of said projection on the hinge, and means for securing said projection to the bracket piece, substantially as set forth.

3. The combination of a hinge provided with a perforated projection at one side, a bracket piece adapted to be secured to a door frame and having a projecting threaded bolt to pass through the perforation in the projection on the hinge, and a nut screwing on said bolt outside said perforated projection and adapted to clamp the same to the bracket plate, substantially as set forth.

546,910. BINDER FOR NEWSPAPERS OR THE LIKE. JOSEPH W. WOOD, Baraboo, Wis. Filed May 15, 1894. Serial No. 511,335. (No model.)

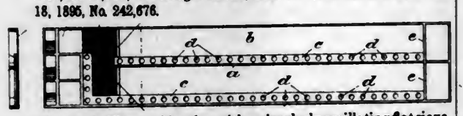


Claim.—1. As a new article of manufacture, a binder frame provided at each end with a transverse series of openings adapted for the passage of a strand and having between said end series of openings an intermediate transverse series of openings extending through it from its front to its rear sides, said openings being also adapted for the passage of a strand, and a strand passed through the respective openings in each end series and extending back and forth longitudinally on one face of the block, whereby runs are formed, said runs being each adapted to be drawn down to the back by means of a cord or thread passed through said intermediate openings, substantially as set forth.

2. The combination of a binder frame having a cord secured thereto and forming runs extending longitudinally of the said frame, and a cover consisting of sides secured to the outer runs of the cord at opposite sides of the frame, substantially as set forth.

3. The combination of a binder frame having a cord secured thereto and forming runs extending longitudinally of the said frame and a cover consisting of a back and sides united by said back, and strips pasted down on the cover over the outer runs of the cord at opposite sides of the frame, whereby the cover is secured to the frame, substantially as set forth.

546,911. SIFTING APPARATUS. ANTON BEHRINGER, Braunschweig, Germany. Filed Mar. 30, 1895. Serial No. 543,860. (No model.) Patented in Hungary Nov. 6, 1894, No. 1,512; in Belgium Nov. 15, 1894, No. 112,495; in Austria Nov. 29, 1894, No. 44/6,123; in Spain Jan. 11, 1895, No. 16,547; in Portugal Jan. 23, 1895, No. 1,942, and in France Feb. 18, 1895, No. 242,676.

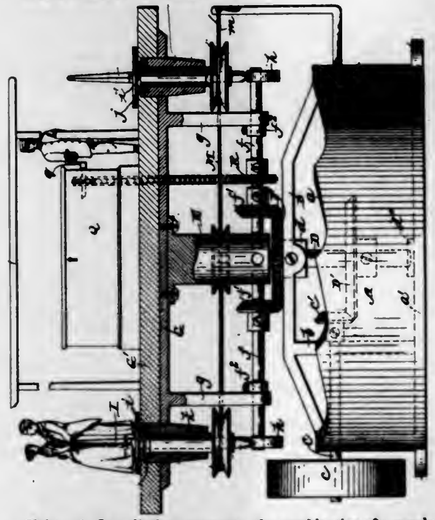


Claim.—1. The combination with a circularly oscillating flat sieve, of a perforated bar arranged above and parallel to one side of the sifting surface of the sieve and fixed relative thereto, substantially as described.

2. The combination with a circularly oscillating flat sieve, of a bar provided with a series of graduated perforations and arranged above and parallel to one side of the sifting surface of the sieve, substantially as described.

3. The combination with a circularly oscillating flat sieve having a plurality of parallel longitudinal channels, of a plurality of perforated bars, one for each channel, arranged above and parallel to one side of the sifting surface of each of said channels, substantially as described.

546,912. DISPLAY APPARATUS. FRIDRICH W. G. BOETTCHER, West Duluth, Minn. Filed Dec. 18, 1893. Renewed Mar. 18, 1895. Serial No. 542,273. (No model.)



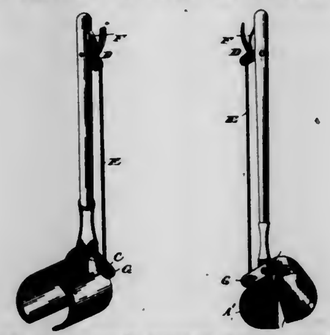
Claim.—1. In a display apparatus, the combination of a revolving platform, means for revolving the same, a spindle carried by the platform and having a rotary movement about its own axis independent of the platform, said spindle also having a vertical movement, a doll carried by said spindle, and means for imparting the respective movements to the spindle and the doll, carried thereby, substantially as described.

2. In a display apparatus, the combination of a revolving platform, gearing for revolving the same, spindles loosely mounted in said platform, dolls mounted on said spindles, means for imparting vertical movement to said spindles, and a stationary cord arranged to engage a portion of said spindles and thereby rotate said spindles and dolls, substantially as described.

3. In a display apparatus, the combination of a revolving platform, gearing for revolving the same, doll-carrying spindles loosely mounted in said platform, shafts carrying cams and gears and mounted on the movable platform and imparting a vertical movement to the said spindles, a stationary gear meshing with the gears on the said shafts, and a stationary cord engaging a portion of said spindles for imparting a rotary movement to the same, substantially as described.

4. In a display apparatus, the combination of a revolving platform, means for revolving the same, doll-carrying spindles mounted in sleeves in said platform so as to have a vertical but no lateral movement independent of said sleeves, means for rotating said sleeves and means for imparting vertical movement to the said spindles and the dolls carried thereby, substantially as described.

546,913. CUCUMBER-PICKER. GEORGE BOTKIN, Chambersburg, Mo. Filed June 17, 1895. Serial No. 553,070. (No model.)

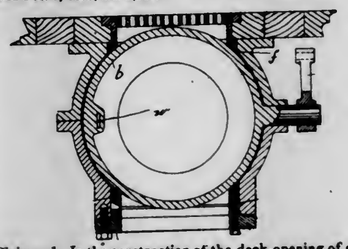


Claim.—1. A device for gathering cucumbers consisting essentially of a pair of semi-cylindrical jaws adapted to swing to and away from each other, and provided with cutting blades at one end.

2. A device for gathering cucumbers consisting of a pair of semi-cylindrical jaws, means for moving said jaws toward and away from each other, and knives at one end of the jaws, one of the jaws being provided with a notch to receive the opposing knife.

3. The combination of two semi-cylindrical jaws, a handle rising from one of the jaws, a lateral arm projecting from the opposing jaw and pivoted to the handle, knives at one end of the jaws, a bell crank lever mounted on the handle near the upper end thereof, and a link conecting the said lever with the lateral arm projecting from one of the jaws.

546,914. PORT-HOLE STOPPER. JAMES CASEY, London, England. Filed Apr. 17, 1895. Serial No. 546,058. (No model.) Patented in England Feb. 5, 1895, No. 2,543.



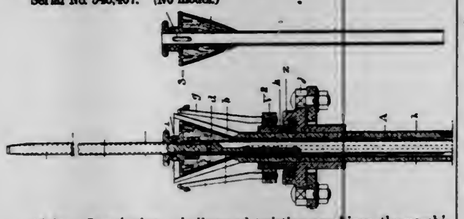
Claim.—1. In the construction of the deck-opening of a ship, the combination with a sectional casing, of a mutilated hollow ball having through way-openings and rotatable within said sectional casing, ball-supporting rings inclosing spherical segments of said ball, packing for securing a water-tight joint about the rings, and means for rotating the ball from the exterior of the sectional casing, substantially as described.

2. In the construction of the deck-opening of a ship, the combination with a sectional casing, of a mutilated, hollow ball having through way-openings and rotatable within said sectional casing, ball-supporting rings inclosing portions of the ball, elastic packing-rings bearing against the ball-supporting rings, devices for tightening the packing-rings against the supporting rings, a shaft extending from the ball through the casing, and means for operating the shaft to rotate the ball, substantially as described.

3. In the construction of ships' deck openings, the combination of a mutilated hollow ball *b*, having through-way openings; a casing *a* formed in two parts; a spindle *c* integral with the ball *b*; rings *f* and *f'* inclosing spherical segments of the ball of equal areas; an elastic packing ring f^3, and packing ring f^4, regulated by screws *y* in the covering ring *z*; the globe being fitted with internal handles or foot treads *w*, and the spindle *c* being fitted with a crank *v* for causing the globe *b* to rotate, substantially as and for the purposes described.

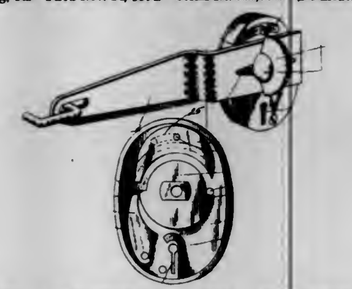
4. In the construction of bulk-head doors, port-holes for ships and forts, embrasures and the like, the combination of a mutilated hollow ball *b*, having through-way openings, and a level floor *b'*; spindle *c* fitted with a crank *v* for causing the globe *b* to rotate; rings inclosing spherical segments of the ball of equal areas; an elastic packing ring f^3 and packing ring f^4, regulated by screws *y* in the covering ring, substantially as and for the purposes described.

546,915. SPINDLE FOR SPINNING, WINDING, AND TWISTING MACHINES. MAXIMIN CHAPON, Lyons, France. Filed Mar. 4, 1895 Serial No. 540,467. (No model.)



Claim.—In spinning, winding and twisting machines, the combination of the spindle C, the tubular bobbin holding spindle A having the conical part *d* and mounted to turn with and slide longitudinally on the spindle C, the trumpet *b* having an elongated cylindrical socket *b'* in which the spindle A is received, the toothed sleeves M M' fixed to the spindle C and trumpet *b*, respectively, the bevel pinions *f f'* having ratchet teeth engaged with said toothed sleeves, driving gears E E' for engaging said pinions, and a lever L for raising the spindle and trumpet to disengage the toothed sleeves from the pinions, substantially as described.

546,916. HASP-LOCK. JOHN A. CRAWFORD, Findlay, Ohio, assignor of one-half to C. B. Angell, same place, and C. E. Corbett, Pittsburg, Pa. Filed Nov. 14, 1894. Serial No. 528,807. (No model.)

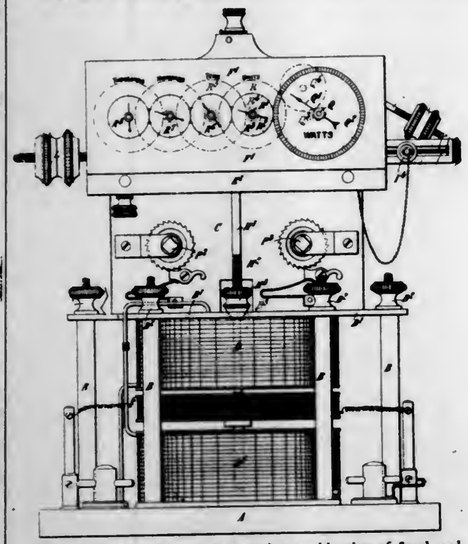


Claim.—1. The combination of a hasp having an opening, a lock casing having a key-hole, an exterior head mounted on the casing and adapted to be passed through the opening of the hasp and to engage the latter, and provided with a shank pivoted on the casing, a disk located within the casing and fixed to the shaft and provided at diametrically opposite points with peripheral shoulders, a stud located at one side of the disk and arranged to engage one of the shoulders to limit the movement of the disk, and a pivotally mounted spring-actuated tumbler disposed at the opposite side of the disk and located adjacent to the key-hole of the casing and arranged to engage the other shoulder of the disk, substantially as described.

2. The combination of a hasp having an opening, a casing, an exteriorly arranged head mounted on the casing and provided with a shank, a disk located within the casing and fixed to the shaft and provided with opposite shoulders, a stud arranged to be engaged by one of the shoulders, a spring actuated tumbler arranged to engage the other shoulder, and a sliding catch arranged within the casing and adapted to engage the outer side of the tumbler, substantially as described.

3. The combination of a hasp, a casing having a key-hole, the exteriorly arranged head having a shank, the disk fixed to the shank and arranged within the casing, the pivoted spring actuated tumbler located adjacent to the key-hole and engaging the disk, the sliding catch located adjacent to the disk and conforming to the configuration thereof and provided with a curved groove, a curved guide rib mounted on the casing and fitting within the groove, and an exteriorly arranged plate connected with the catch for operating the same, substantially as described.

546,917. ELECTRIC METER. JULES A. DJARDIN, Paris, France. Filed Apr. 20, 1895. Serial No. 546,539. (No model.) Patented in France Apr. 8, 1892, No. 220,769; in Belgium Oct. 8, 1892, No. 101,674, and in England Oct. 10, 1892. No. 18,066.



Claim.—1. In an electric meter, the combination of fixed and movable coils through which currents are passed, a pivoted balance beam from which the movable coil is suspended, a chain suspended from one end of said balance beam and at its other end resting upon a support, and means for continuously increasing the length of the chain suspended from the balance beam throughout equal intervals of time, and for shortening said chain at the end of each said intervals, substantially as and for the purpose specified.

2. The combination of fixed and movable coils through which currents are passed, a pivoted balance beam from which the movable coil is suspended and which is tilted by the said movable coil, a chain suspended from one end of said balance beam and at its other end resting upon a support, means for continuously increasing the length of the chain suspended from the balance beam throughout equal intervals of time and for shortening said chain at the end of each said intervals, integrating and indicating devices operated by a motor, and means for disconnecting the indicating and integrating devices from the motor as soon as the increase in the length of chain on the beam balances the tilting movement of the movable coil, substantially as and for the purpose specified.

3. The combination of fixed and movable coils through which currents are passed, a pivoted balance beam from which the movable coil is suspended, a chain one end of which is secured to the beam the other end thereof being secured to and supported by a rotary drum, and means for continuously unwinding the chain from the drum throughout equal intervals of time and winding the said chain on the drum at the end of each said intervals, substantially as, and for the purpose, specified.

4. The combination of fixed and movable coils through which currents are passed, a pivoted balance beam from which the movable coil is suspended, a chain one end of which is adjustably secured to the beam the other end thereof being secured to and supported by a rotary drum, and means for continuously unwinding the chain from

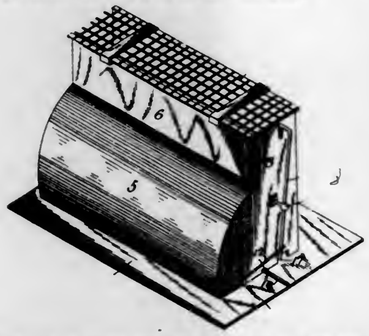
the drum throughout equal intervals of time and winding the said chain on the drum at the end of each said intervals, substantially as, and for the purpose, specified.

5. The combination of fixed and movable coils through which currents are passed, a pivoted balance beam from which the movable coil is suspended and which is tilted by the action of said movable coil, a chain one end of which is secured to the beam the other end thereof being secured to and supported by a drum, a rotatable shaft on which said drum is secured, an arm secured to said shaft and adapted to be engaged by a driving arm secured to the last wheel of a clock, means for putting the two said arms out of engagement at the end of each revolution of the said wheel, and means connected with the drum shaft whereby said shaft is rotated backward as soon as the arm thereon is disengaged from the driving arm, substantially as, and for the purpose, specified.

6. The combination of fixed and movable coils through which currents are passed, a pivoted balance beam from which the movable coil is suspended and which is tilted by the action of said movable coil, a chain one end of which is secured to the beam the other being secured to and supported by a drum, a rotatable shaft on which said drum is secured, an arm secured to said shaft and adapted to be engaged by a driving arm secured to the last wheel of a clock, indicating and integrating devices, and means carried by the beam whereby the drum shaft is connected with the first shaft of the indicating devices as long as the beam is tilted but is disconnected when and as long as the beam is level, substantially as, and for the purpose, specified.

7. The combination of fixed and movable coils through which currents are passed, a pivoted balance beam from which the movable coil is suspended and which is tilted by the action of said movable coil, a chain one end of which is secured to the beam the other being secured and supported by a drum, a rotatable shaft on which said drum is secured, an arm secured to said shaft and adapted to be engaged by a driving arm secured to the last wheel of a clock, means for putting the two said arms out of engagement at the end of each revolution of the said wheel, indicating and integrating devices, and means carried by the beam whereby the drum shaft is connected with the first shaft of the indicating devices as long as the beam is tilted but is disconnected when and as long as said beam is level, substantially as, and for the purpose, specified.

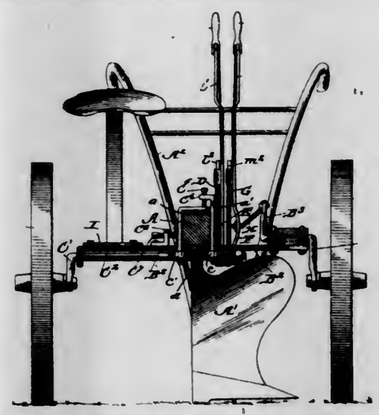
546,918. ANIMAL-TRAP. JOSEPH A. DIETZ, St. Mary's, Pa. Filed Dec. 13, 1894. Serial No. 531,618. (No model.)



Claim.—In an animal trap, the combination with the base 1 having a rectangular opening 3, the box consisting of vertical back wall 4, curved front 5, vertical extension 6 and segmental sides 7, the extension 8, secured to box 4, and the sliding grating forming the top of said box, and the rotatable flutter wheel comprising the shaft and the radial platforms, of the pivoted trigger having its upper end formed into a hook and its lower end bent inwardly at a right angle forming a lug adapted to engage with said platforms, the spring 18, secured to one of said sides 7, with its free end bearing against said trigger, and the vertical spring for preventing backward movement of the flutter wheel, substantially as described.

546,919. SULKY ATTACHMENT FOR PLOWS. JOHN A. DUTTERA and JOSHUA F. FLICKINGER, Hanover, Pa. Filed Apr. 29, 1895. Serial No. 547,530. (No model.)

Claim.—1. A sulky attachment for plows comprising separate crank axles with running wheel, frame plates arranged transversely to the plow beam and provided with axial bearings for the crank axles, two adjustable clamping devices arranged respectively one upon each transverse frame plate to clamp the attachment to plow beams of variable size, levers for operating the crank axles, and a connecting rod extending between and connecting the crank axles for simultaneous movement substantially as shown and described.

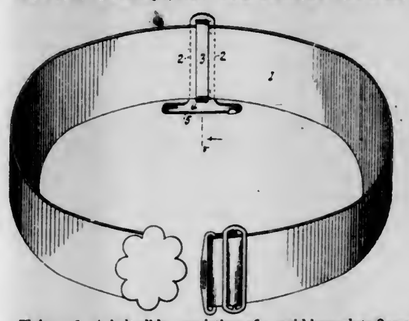


2. A sulky attachment for plows comprising separate crank axles with running wheels, frame plates arranged transversely to the plow beam and provided with axial bearings for the crank axles, two adjustable clamping devices arranged respectively one upon each transverse frame plate to clamp the attachment to plow beams of variable size, two hand levers arranged upon the rear crank axle, one rigidly thereon, and the other loose, the loose lever having upon one side a toothed locking segment rigidly fixed to the frame work, and carrying upon the other side a toothed locking segment for the hand lever which is rigid upon the crank axle, and a connecting rod connecting this rigid hand lever to the front crank axle at points eccentric to their axes substantially as and for the purpose described.

3. The combination with the front crank-axle, and its frame plate; of a clamp for securing it to the plow beams comprising two right angular bars with screw threaded ends, two vertical bars with perforated upper ends, two clamp plates perforated to receive the lower ends of both these pairs of bars, and a horizontal bolt for adjustably connecting said two clamp plates substantially as shown and described.

4. The rear crank-axle frame plate having a vertical extension with vertical slots and an overhanging flange with vertical set screws, and having also horizontal slots in the horizontal portion with flange and horizontal set screws; in combination with right angular bars inclosing the plow beam in the angle of the frame plate and extending through the slots and secured adjustably by nuts substantially as and for the purpose described.

546,920. BELT AND SKIRT ATTACHMENT. MAX FREUND, New York, N. Y. Filed July 3, 1895. Serial No. 554,854. (No model.)



Claim.—1. A belt slide, consisting of a rigid base plate 2 and an elastic plate 3 joined at one end to the base plate and having at its opposite end a catch which springs into and out of engagement with a part of the base plate, said plates being arranged relatively to each other to receive between them a belt, and said elastic plate being adapted to be opened by disengaging its catch from the rigid base plate, substantially as and for the purposes specified.

2. A belt slide, consisting of the rigid base plate 2 having at one end a cross-bar 4 provided with a safety pin 5, and an elastic plate 3 joined at one end to the base plate and provided at its opposite end with a catch constructed, substantially as set forth, to spring into and

out of engagement with a part of the base plate, said plates being relatively arranged to receive a belt between them, and said elastic plate springing open when its catch is disengaged from the base plate, substantially as and for the purposes described.

546,921. ARROWHEAD-SHAPED VESSEL. MARK GOLINSKY, St. George, Bermuda. Filed Nov. 26, 1894. Serial No. 530,055. (No model.)

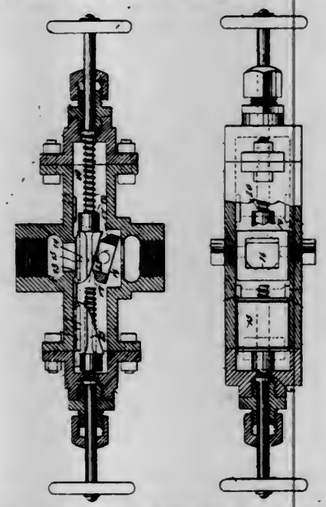


Claim.—1. A hull for marine vessels, having a bow which is of the arrow type or form, and whose maximum width or beam is at the rear extremity of the bow and forward of the midship section, substantially as shown and described.

2. A hull for marine vessels, having an arrow shape as shown, that is to say the bow or front third of the length of the hull widening from the bow rearward and having its greatest width at its junction with the body of the hull, which is narrower at every point than the said bow, as shown and described.

3. The combination, with a hull for a marine vessel, having its bow, or the portion forward of the midship section, of arrow-head shape, and said bow forming abrupt lateral offsets with the narrower after portion of the hull, of propellers located behind such offsets in the angles of the latter with the midship section, as shown and described.

546,922. VALVE. GEORGE W. GRAFFIN, Allentown, Pa. Filed Oct. 8, 1894. Serial No. 525,287. (No model.)

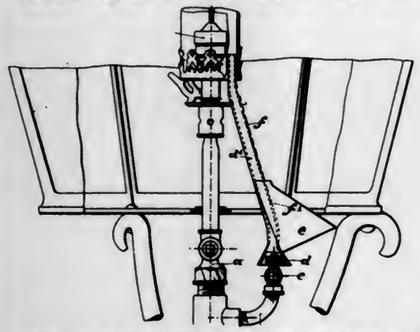


Claim.—1. A valve comprising a casing having an inlet and an outlet and provided with a seat at said inlet, two valves movably mounted in the casing and adapted to be seated on the valve seat, when moved in different directions and an abutment movably secured in the casing opposite the valve seat and adapted to be engaged by each valve when moved, whereby the valves are pressed down to said seat, substantially as set forth.

2. A valve comprising a casing having oppositely arranged inlet and outlet apertures and provided with a seat at said inlet, a valve mounted to slide in the casing and adapted to be seated on said seat, and an abutment pivoted in the casing behind said valve seat and having a perforation adapted to afford direct communication between the inlet and outlet when the valve is off its seat, said abutment being adapted to be engaged by the rear face of the valve when moved whereby said valve is pressed against its seat, substantially as set forth.

3. A valve comprising a casing having an inlet and an outlet and provided with a seat at said inlet, two valves slidingly mounted in the casing and each adapted to be seated on the valve seat, and a tilting abutment mounted in the casing and adapted to be engaged and moved by the respective valves when the same are moved whereby the valve moved is pressed against its seat, substantially as set forth.

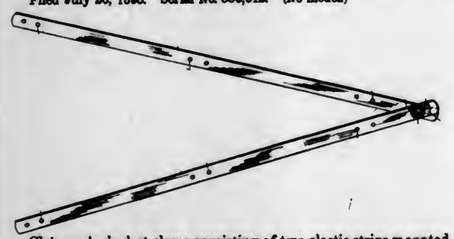
546,923. IGNITING APPARATUS. PAUL GROEBBELS, Weimar, Germany. Filed Jan. 31, 1895. Serial No. 536,827. (No model.)



Claim.—1. In an igniting apparatus, the combination with the main gas-tube provided with a burner, of a branch pipe projecting from the main-tube and provided with an upper threaded end, a perforated igniting tube leading from the branch tube to the burner, and provided at its lower end with a bell-mouth an apertured plug secured within the bell mouth and into which the end of the branch pipe is screwed, and an air opening in said plug, substantially as described.

2. In an igniting apparatus, the combination with the main gas-tube provided with a burner, of a branch-pipe projecting from the main-tube and provided with a nipple, a perforated igniting tube leading from the branch pipe to the burner and provided at its lower end with a bell-mouth, into which the free end or nipple of the branch pipe passes so as to leave an air opening, and a funnel attached to the lower portion of the igniting tube and inclosing some of the perforations, substantially as described.

546,924. PLACKET-CLOSER. EMIL GUMBINNER, New York, N. Y. Filed July 20, 1895. Serial No. 556,612. (No model.)



Claim.—A placket closer consisting of two elastic strips mounted one loosely and the other rigidly upon a pivot-pin, a spring fastened by one end to the projecting portion of the said pivot and coiled around the same, its other end being secured to a stud on the loosely mounted strip, said stud projecting through and beyond the other side of said strip to serve as a stop to limit the closing movement, substantially as described.

2. In a placket-closer, the combination with two elastic strips one loosely and the other rigidly mounted upon a pivot-pin a little above their lower ends, of a spiral spring coiled around a prolongation of said pin to which one end of said spring is attached, its other end being secured to a stud on the loosely mounted strip, which passes through the latter below the pivot-pin and upon one side of the central line of the strip its projecting end being adapted to lie in a notch cut in the edge of the rigidly mounted strip, to serve as a stop, substantially as described.

546,925. VALVE-GEAR. MILLARD F. HILL and CLIFTON W. EASLEY, Henrietta, Tex.; said Easley assignor to William B. Worsham, Clay County, Tex. Filed Jan. 11, 1895. Serial No. 534,560. (No model.)



Claim.—1. In an engine the combination of the shaft, an eccentric loose thereon abutments on the shaft and eccentric whereby the latter may be stopped in different positions on the shaft, a lock engaging directly with the eccentric whereby the same may be fastened securely in either one of such positions means by which to release the lock whereby the eccentric may shift automatically when the engine is in motion and means by which to positively shift the eccentric when the engine is at rest substantially as set forth.

2. In an engine the combination of the shaft, the eccentric loose on the shaft, and lock devices whereby such eccentric may be held in position to direct the engine in one or the other direction or in an intermediate position to stop the engine substantially as set forth.

3. In an engine the combination of the shaft eccentric loose on the shaft and having an abutment and provided with three lock seats, the collar or portion on the shaft having an abutment engaging that of the eccentric the lock bolt entering the seats of the eccentric and means for operating said lock bolt substantially as set forth.

4. In an engine the combination of the shaft, the eccentric having an abutment the lug fixed with respect to the shaft and forming an abutment for engaging that of the eccentric and the lock having a bolt playing through the lug of the shaft and into and out of engagement with the eccentric all substantially as and for the purposes set forth.

5. In an engine the combination of the shaft, the eccentric loose on the shaft, and having an abutment rigid with respect to the shaft and engaging the abutment of the eccentric and whereby the eccentric may be stopped in certain positions on the shaft and an independent lock device engaging directly with and adapted to positively secure the eccentric in its different positions substantially as set forth.

6. The combination in an engine of the shaft, the eccentric loose on the shaft, the collar fixed on the shaft such collar and eccentric having abutting stop portions and an independent lock device engaging with the eccentric such device being adapted to lock the eccentric and to transmit thereto the motion of the shaft, substantially as set forth.

7. The combination in an engine of the shaft, the eccentric loose on the shaft, and having an abutment, an abutment carried by the shaft and engaging that of the eccentric, the lock devices by which such eccentric is held in its different adjustments a toothed wheel fixed with relation to the eccentric and a toothed rack movable into and out of engagement with said toothed wheel substantially as and for the purposes set forth.

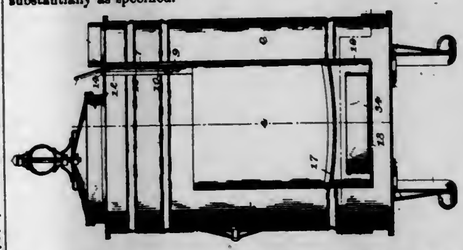
8. In an engine the combination of the shaft, the eccentric loose on the shaft and having a toothed wheel, such eccentric also having an abutment, an abutment carried by the shaft and engaging that of the eccentric, a lock device by which to secure the eccentric in its different adjustments and a rack movably supported in a plane common to that of the toothed wheel and movable in such plane into and out of mesh with the toothed wheel substantially as and for the purposes set forth.

9. In an engine the combination of the shaft, having an abutment, the eccentric loose on the shaft and having an abutment engaging that of the shaft, such eccentric also having a toothed wheel, the framing, the eccentric shaft carried by said framing and having an operating handle, and the rack pivoted on said eccentric shaft in a plane with the toothed wheel and movable in such plane toward and from the toothed wheel substantially as set forth.

10. The combination in an engine of the shaft having a collar provided with an abutment ing having a bolt opening formed through it the lock having a bolt playing through said opening, a lever by which to operate said lock, the eccentric loose on the shaft and having an abutment lug and also end seats for the bolt and an intermediate seat therefor whereby the engine may be reversed with a full head of steam on or stopped independent of the throttle, the eccentric being also provided with a toothed wheel the framing, the eccentric shaft journaled in said framing and having a handle, the rack pivoted or journaled on said eccentric shaft and movable by the turning thereof into and out of mesh with the toothed wheel substantially as set forth.

546,926. HEATING-STOVE. JOHN A. KENDALL, Maysville, Mo. Filed Jan. 24, 1895. Serial No. 536,109. (No model.)

Claim.—1. A stove having an exterior drum or casing provided in its top with a fuel-opening, a cover for said opening, a fire-box arranged in the drum or casing with its front and rear walls spaced from the corresponding walls of the drum or casing to form vertical front and rear flues, the former of which communicates at its upper end with the top of the fire-box, a grate arranged at the bottom of the fire-box, an ash-pit corresponding in cross-sectional area with the fire-box and having its floor spaced from the bottom of the drum or casing to form a transverse connecting passage between the lower ends of said vertical front and rear flues, this transverse passage being equal in cross-sectional area with the drum or casing and having for its floor the bottom of said drum or casing, an opening formed in the rear wall of the fire-box to communicate with the rear vertical flue, a closure for said opening provided with means for operating the same from the exterior of the drum or casing, a pipe-opening communicating with the upper end of the rear vertical flue, and a draft opening provided with a closure and communicating with the ash-pit, substantially as specified.



2. A stove having an exterior drum or casing provided with means for introducing fuel, a fire-box arranged within the drum or casing with its front and rear walls spaced from the corresponding walls of the drum or casing to form vertical front and rear flues, the former of which communicates at its upper end with the fire-box and the latter of which is separated therefrom by an upward extension of the rear wall of the fire-box, a direct draft valve or damper arranged in operative relation with an opening in said extension of the rear wall of the fire-box, a pipe-opening communicating with the rear vertical flue at its upper end, a grate arranged at the botom of the fire-box, an ash-pit equal in cross-sectional area with the fire-box and having its floor spaced from the bottom of the drum or casing to form a horizontal passage connecting the vertical flues at their lower ends, the floor of said connecting passage being formed by the bottom of the drum or casing, a draft opening arranged in the drum or casing in communication with the ash-pit and provided with a suitable closure, and an inlet opening in communication with the rear vertical flue at its lower end to promote a circulation of air in said flue when the draft opening is closed, said inlet opening being provided with a suitable closure, substantially as specified.

3. A stove having a drum or casing provided with means for introducing fuel, a fire-box suspended in the drum or casing with its front and rear walls out of contact with the corresponding walls thereof and secured at its sides to the drum or casing, the spaces between the front and rear walls of the fire-box and the contiguous portions of the drum or casing forming vertical front and rear flues which are connected at their lower ends below the plane of the bottom of the fire-box by a horizontal passage, the floor of which is formed by the bottom of the casing, a grate arranged at the bottom of the fire-box and depressed at its center, the same being concavo-convex in cross-section, an ash-pit constructed of downward extensions of the walls of the fire-box connected at their lower ends by a floor which forms the top of said horizontal connecting passage, a draft opening arranged in the drum or casing at the end of the ash-pit and provided with a suitable closure, a direct draft damper arranged to close an opening in the rear wall of the fire-box, said opening being in communication with the rear vertical flue, and a pipe opening in communication with said rear flue at its upper end, substantially as specified.

546,927. THEATRICAL DEVICE FOR PRODUCING ILLUSORY EFFECTS. AMARIAH LAKE, Pleasantville, N. J. Filed Sept. 14, 1894. Serial No. 522,970. (No model.)

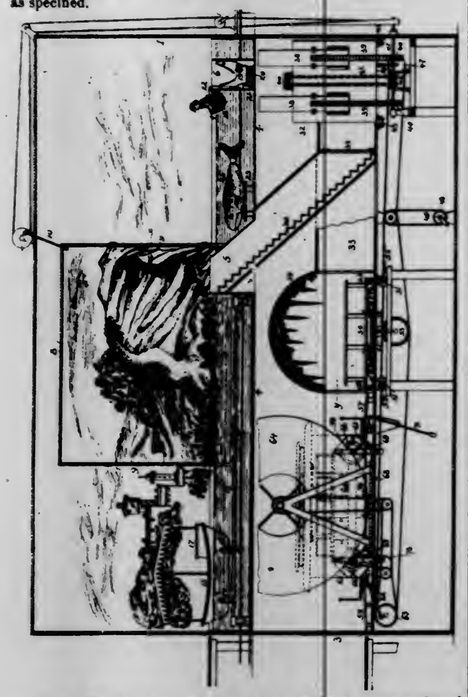
Claim.—1. An illusion apparatus in which are combined a water tank, a conveyance in the form of a boat movable therein, and a movable box or casing into which said conveyance can enter, said box or casing being combined with means for rocking the same, substantially as specified.

2. An illusion apparatus in which are combined a water tank, a conveyance in the form of a boat movable therein, and a movable box or casing into which the conveyance can be drawn, said box or casing having on the inside at or near the water level representations of rocks or stones, and being combined with means for rocking it, whereby said representations of rocks or stones can be caused to enter and leave the water, substantially as specified.

3. An illusion apparatus in which are combined a water tank, a conveyance in the form of a boat movable in said tank, and a vibratable box or casing into which said conveyance can be drawn, said casing being provided with doors which can be opened for the entrance of the conveyance, and closed after the same has entered the casing, substantially as specified.

4. An illusion apparatus in which are combined a water tank, a conveyance in the form of a boat movable in said tank, and a vibratable box or casing into which said conveyance can be drawn, said

box or casing having at the forward end doors which can be opened to expose that portion of the tank beyond the casing, substantially as specified.



5. An illusion apparatus in which are combined a water tank and a well extending up directly through the water in the tank, and having a stairway therein, the surface of the water in the tank being exposed to view from the upper portion of said stairway, substantially as specified.

6. An illusion apparatus in which are combined a water tank, a well extending up through the water therein, a stairway within said well and a conveyance in the form of a boat movable in said tank, said conveyance having a hooded opening for receiving the projecting portion of the well, substantially as specified.

7. An illusion apparatus in which are combined a water tank, a shell fashioned to represent a whale, and levers connecting the shell with the tank, a link connecting said levers at different distances from their fulcra, and means for operating the levers, whereby the shell may be raised above or lowered beneath the surface of the water in the tank, substantially as specified.

8. In an illusion apparatus, the combination of a water tank, a shell open at the bottom and formed on the outside to represent a whale, and having a spout hole in the head portion thereof, with means whereby said shell is mounted so that it can be caused to rise above or sink beneath the surface of the water in the tank, the air being compressed in the upper portion of the shell as the latter sinks in the water, so as to cause a discharge through the spout hole, substantially as specified.

9. In an illusion apparatus, the combination of a water tank, with a shell open at the bottom, and formed on the outside to represent a whale, said shell having in the head portion a spout hole with depeoding tube, and means for mounting the shell so as to cause it to rise above or sink beneath the surface of the water in the tank, air being compressed in the upper portion of the shell as the latter sinks, substantially as specified.

10. In an illusion apparatus, the combination of a water tank, with a shell open at the bottom and formed on the outside so as to represent a whale, said shell having a spout hole in the head portion, and in the upper portion an opening with valve opening inwardly, and means for mounting said shell so as to cause it to rise above or sink beneath the surface of the water in the tank, substantially as specified.

11. In an illusion apparatus, the combination of a water tank, with a shell formed on the outside to represent a whale, and mounted in the tank so as to be caused to rise above or sink beneath the surface of the water therein, said shell having pivoted at the end portion of the same, the representation of a tail in such manner that the latter is free to swing upwardly as the shell is drawn below the water, substantially as specified.

12. In an illusion apparatus, the combination of a water tank, a well extending above the level of the water therein, and a shell contained in said well and formed to represent a head with open mouth, said shell being adapted to rise in the well so as to appear above the top of the same, substantially as specified.

13. In an illusion apparatus, the combination of a water tank, a well extending above the level of water therein, a shell movable vertically in said well, and formed to represent a head with open mouth, and a pivoted hood or cover for closing said well, substantially as specified.

14. In an illusion apparatus, the combination of a water tank, a well extending above the top of the water therein, a shell mounted upon a spring in said well and capable of being projected above the top of the well, and a catch for retaining the shell when the latter is pushed down into the well, substantially as specified.

15. An illusion apparatus in which are combined a water tank, having a well projecting above the level of water therein and containing a stairway, a conveyance in the form of a boat movable in said tank, and a casing below the tank to which access may be had from the lower end of the well stairway, said casing being combined with means for imparting rocking movement thereto, substantially as specified.

16. An illusion apparatus in which are combined a water tank having a well projecting above the level of water therein and containing a stairway, a conveyance in the form of a boat movable in said tank, and a casing below the tank to which access may be had from the lower end of the well stairway, said casing being combined with means for causing the illusion of vertical movement, substantially as specified.

17. An illusion apparatus in which are combined a casing or compartment having converging inclosed passages and a door hung at the point of convergence of the passages and adapted to close either of the same, substantially as specified.

18. The combination of a casing or compartment having a doorway provided with a sliding door, converging passages leading to said doorway, a door pivoted at the point where the passages meet and capable of swinging so as to close either passage and catches whereby said door is connected to and moved by the sliding door of the casing, substantially as specified.

19. The combination of the casing having window openings therein, movable devices outside of said window openings to cause the illusive effect of movement of the casing and a rope or chain having one run passing through the casing and the other run on the outside of the same to cause an additional illusion of movement of said casing, substantially as and for the purpose set forth.

20. The combination of a water tank, with a room or apartment having its walls extending beneath the surface of the water in the tank, and means for rocking said room or apartment, substantially as specified.

21. The combination of the casing inclosing a room or apartment, with means for producing the illusion of vertical movement of said casing, said means comprising slides guided on the outside of the casing so as to move past window openings therein, racks secured to said slides and a shaft having pinions engaging with said racks, substantially as specified.

22. The combination in an illusion apparatus, of a casing, having openings at opposite sides, a bridge across said casing from one opening to the other and mounted so as to be free from rigid connection with the casing and means for rocking said casing, substantially as specified.

23. The combination in an illusion apparatus, of a casing having openings at opposite sides, with a bridge mounted upon springs having a support below said casing, said bridge serving as a means for crossing the casing from one opening to the other and means for rocking the casing, substantially as specified.

24. The combination in an illusion apparatus, of the casing having openings in opposite sides, a bridge serving as a means for crossing said casing from one opening to the other, said bridge being so mounted as to be free from rigid connection with the casing, a water tank contained in said casing and means for rocking the casing so as to cause the water to flow back and forth in said tank, substantially as specified.

25. The combination in an illusion apparatus, of the casing in the form of a car having window openings in the side of the same, with one or more disks mounted so as to rotate in proximity to said window openings to create the illusion of forward movement of the car, substantially as specified.

26. The combination in an illusion apparatus, of the structure representing a car and having openings in the side thereof, with two traveling surfaces arranged one in front of the other at the side of the car and means for raising and lowering the inner traveling surface so as to bring it into line with the window openings or drop it below the same, substantially as specified.

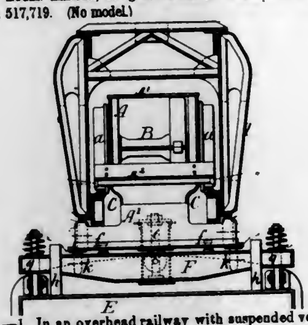
27. The combination in illusion apparatus, of a structure representing a car and having openings in the side thereof, with an endless chain of plates, drums carrying the same and means for raising and lowering said drums, said means comprising connected pairs of toggle levers and vertical guides for the shafts of the drums, substantially as specified.

28. The combination in illusion apparatus, of a structure representing a car and having openings in the side thereof, an endless chain of plates mounted upon vertically adjustable drums at the side of the car and driving mechanism comprising a belt and pulleys so arranged that when the drums are lowered the belt will be slack and when said drums are raised the belt will be tightened, substantially as specified.

29. The combination in illusion apparatus, of a structure representing a car, opposite frames, obliquely disposed pivots or trunnions whereby the car structure is hung to said frames and means for rocking said car structure, substantially as specified.

30. The combination in illusion apparatus, of two sets of illusion apparatus, one contained in a water tank and the other in a room or apartment below said tank, with a well extending up directly through the water in the tank and serving as a means of communication between the tank apartment and the apartment below the same, substantially as specified.

546,928. OVERHEAD RAILWAY WITH SUSPENDED VEHICLES. EUGEN LANGEN, Cologne, Germany. Filed July 16, 1894. Serial No. 517,719. (No model.)



Claim.—1. In an overhead railway with suspended vehicles, the combination of a truck frame A supported by wheels *a* on the rails, and having a laterally extended lower part A^3 carrying safety rollers *b* adapted to bear against the under side of the main girders D of the line, a transverse bearer F, from which the car body is suspended by bolts *g* and springs *g'*, and which is itself suspended from the part A^3 of the truck frame by a swiveling suspension bolt *e*, and rollers *k* on bearer F bearing against the under side of said part A^3, so as, with the bolt *e* to constitute a turntable for facilitating the turning of the frame A A^3 relatively to the bearer F and car body, substantially as described.

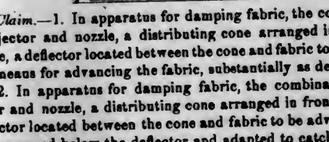
2. In an overhead railway with suspended vehicles, the combination of a truck frame A supported by wheels *a* on the rails, and composed of side frames connected by transverse pieces A' A^3 A^2, of which A^3 carries safety supports *c*, adapted to come in contact with the rails, while A^2 carries safety rollers adapted to bear against the under side of the girders D, a swiveling bolt *e* suspended from the part A^3 of the truck frame and serving as means of suspension for a transverse bearer F, from which the car body is hung and rollers *k* carried by said bearer F and adapted to bear against the under side of part A^3 of the frame, substantially as described.

3. In an overhead railway with suspended vehicles, the combination of a truck frame A supported by wheels *a* and carrying safety supports *c* a transverse bearer F from which the body of the vehicle is suspended, a swiveling bolt *e* connecting frame A with bearer F, safety rollers *b* carried by frame A adapted to bear against the under side of girders D of the line, rollers *k* on bearers F bearing against the under side of frame A, and projecting parts *d* on frame A projecting up beyond parts of the bottom members of the girders D for preventing excessive lateral motion of the frame, substantially as described.

4. In an overhead railway with suspended vehicles, the combination of the transverse bearers F, bolts *g* with springs *g'* connecting the bearers with the body of the vehicle E and safety looped straps A fixed to the body E and extending over the bearer F for supporting the body E in the event of one or more of the bolts *g* or springs *g'* breaking, substantially as described.

5. In an overhead railway with suspended vehicles, the combination of the truck frame A, transverse bearer F supporting the carriage body E, swivel bolt *e* connecting bearer F with truck frame A, and pins *f* passing through curved slots in the bottom plate of the frame A, said pins having enlarged heads above the slots so as to support the vehicle in the event of the swivel bolt fracturing, substantially as described.

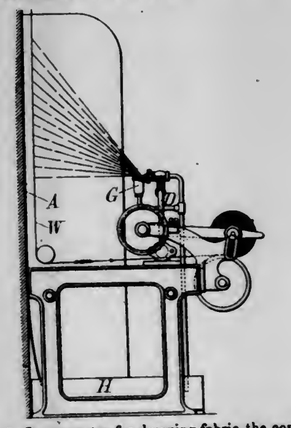
546,929. SKATE-SHARPENING DEVICE. FREDERICK W. LOWE, Philadelphia, Pa. Filed Jan. 3, 1895. Serial No. 533,724. (No model.)



Claim.—1. The skate-sharpener comprising the holder or frame, the movable parallel jaws arranged in said holder or frame, the right-hand and left-hand threaded screw bearing in said frame or holder and engaging said jaws respectively, and the file or sharpener proper, arranged as set forth substantially as set forth.

2. The skate-sharpener comprising the holder or frame, having at one end a fixed jaw, a movable jaw arranged in an opening in said holder or frame, in the opposite end of said holder, a screw bearing in said frame or holder and engaging said movable jaw, said fixed and movable jaws having conical bearing points, and a file or sharpener, proper, provided with cavities in its ends to receive said conical bearing points, axially pivoting said file or sharpener, proper, substantially as described.

546,930. APPARATUS FOR DAMPING TEXTILE FABRICS. WILLIAM MATHER, Manchester, England. Filed Jan. 10, 1895. Serial No. 534,475. (No model.) Patented in England Dec. 19, 1894, No. 24,715, and in France Dec. 19, 1894, No. 243,783.



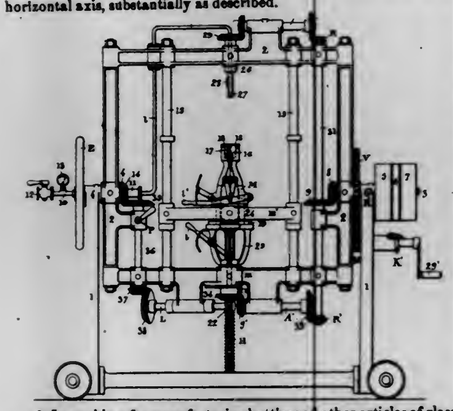
Claim.—1. In apparatus for damping fabric, the combination of an injector and nozzle, a distributing cone arranged in front of the nozzle, a deflector located between the cone and fabric to be advanced, and means for advancing the fabric, substantially as described.

2. In apparatus for damping fabric, the combination of an injector and nozzle, a distributing cone arranged in front of the jet, a deflector located between the cone and fabric to be advanced, a drip-cup arranged below the deflector and adapted to catch that portion of the spray deflected, and means for advancing the fabric, substantially as described.

3. In apparatus for damping fabric, the combination of an injector and nozzle, a distributing cone arranged in front of the nozzle, a drip-cup located in front of the nozzle, a deflector attached to the drip-cup and extending to a point substantially in line with and behind the cone, a tank located below the drip-cup, a pipe communicating with said tank and drip-cup, and means for advancing the fabric in front of the spray, substantially as described.

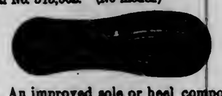
546,931. MACHINE FOR MANUFACTURING BOTTLES, &c. PIERRE B. MAUSSIER, St. Galmier, France. Filed Oct. 9, 1894. Serial No. 525,402. (No model.) Patented in France May 5, 1894, No. 238,152, and May 23, 1894, No. 238,634; in Belgium July 27, 1894, No. 111,154; in Italy Aug. 1, 1894, LXXII, 334, and in Hungary Sept. 3, 1894, No. 1,034.

Claim.—1. In machines for manufacturing bottles and other articles of glass or vitrifiable material, the combination with a frame supported on two horizontal shafts and adapted to be rotated thereon in a vertical plane, of a vertically movable mold holder supported in said frame and adapted to be rotated on its vertical longitudinal axis, a rotatable clamp located in the mouth of the mold and having the form of a bottle neck to grasp and rotate the same, a rotatable sleeve or barrel supported by a cross-bar of the frame and carrying a key adapted to engage said clamp, means for introducing air into the bottle through said barrel, and mechanism for rotating the said barrel and mold in opposite directions on their longitudinal axes and for simultaneously rotating the said frame in either direction on its horizontal axis, substantially as described.



2. In machines for manufacturing bottles and other articles of glass or vitrifiable material, the combination with the frame 1 having mounted therein a frame 2 adapted to be rotated in a vertical plane, of the vertically movable mold holder 20, 21, mounted in said rotatable frame 2 and adapted to be rotated on its longitudinal axis, the mold M having in its mouth the rotatable clamp 16, the barrel 27 adapted to be rotated on its longitudinal axis and provided with a key 28 to engage in said clamp, gearing for rotating the barrel and mold holder in opposite directions, and mechanism for simultaneously imparting a rotary movement to the frame 2 in a vertical plane, substantially as described.

546,932. SOLE. HERMAN MAYER, Bradford, Pa. Filed June 27, 1894. Serial No. 515,862. (No model.)



Claim.—1. An improved sole or heel composed of transversely alternating strips of rubber and textile material wound in successive layers from a central or starting point, and a means for securing together the strips, substantially as shown and described.

2. An improved method of making soles and heels which consists in winding sheets of rubber and textile material to form a block or roll and securing the sheets together, then pressing the block or roll to the shape of the sole or heel, and finally slicing the sole or heel therefrom, substantially as described.

3. An improved method of making soles and heels consisting in winding sheets of textile material and non-vulcanized rubber about a spindle to form a roll or block, then substituting a core of non-vulcanized rubber, then placing the block or roll in a press to conform it to the shape of the sole or heel, vulcanizing the rubber while in the press, and finally slicing the sole or heel from the block or roll after removing from the press, substantially as described.

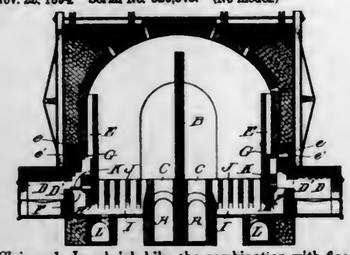
4. A sole or heel consisting of united strips of rubber and textile material wound spirally, substantially as shown and described.

546,933. CEMENTATION COMPOUND. WILLIAM J. MILES, Jr., Marion, Ohio. Filed Dec. 18, 1894. Serial No. 532,334. (No specimens.)

Claim.—1. The herein described compound for cementation, the same consisting of carbonate of lime, charred bone, and uncharred or raw bone, the ingredients being combined together, substantially as and for the purpose specified.

2. The herein described process of converting iron into steel the same consisting in subjecting the same during heating to the action of a compound composed of carbonate of lime, charred bone, and uncharred or raw bone, substantially as and for the purpose specified.

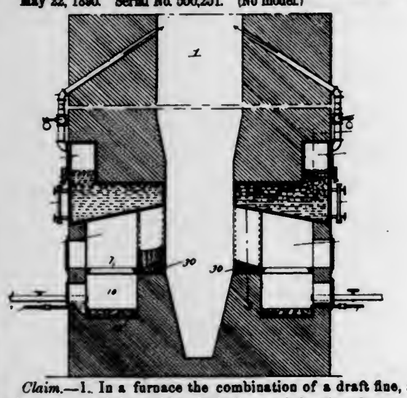
546,934. BRICK-KILN. THOMAS L. MYERS, St. Louis, Mo. Filed Nov. 22, 1894. Serial No. 529,573. (No model.)



Claim.—1. In a brick kiln, the combination with fire boxes arranged on opposite sides of the kiln, of a central curtain wall, dampered exit flues, located centrally in the kiln and on opposite sides of the curtain wall, the base of which forms the dividing wall for the flues, bag walls on opposite sides of the kiln, forming updraft flues, bridge walls forming down-draft flues, and dampers in the up and down-draft flues substantially as described.

2. In a brick kiln, the combination with fire boxes arranged on opposite sides of the kiln, of a curtain wall in the middle of the kiln dividing the same into substantially two compartments which are connected at the top, bag-walls forming updraft flues from the fire boxes and discharging near the crown of the kiln, bridge walls forming down draft flues which open beneath the floor of the kiln, suitable damper plates for the up and down draft flues, two exit flues beneath the kiln floor, and on each side of the curtain wall, and supplemental exit flues between the fire boxes and exit flues, substantially as described.

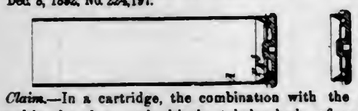
546,935. LIMEKILN. SILAS W. MCLOON, Rockland, Me. Filed May 22, 1895. Serial No. 550,251. (No model.)



Claim.—1. In a furnace the combination of a draft flue, and a fire box connected therewith, of a hollow arch forming the top of the fire-box, a dome formed on said arch, a pipe leading from said dome into the flue above the fire box connection therewith, an automatic valve in said pipe whereby the steam will pass into the draft flue at a predetermined pressure, and a water supply-pipe connected to the hollow arch, substantially as described.

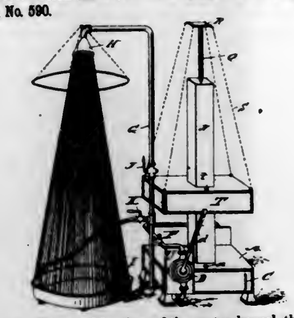
2. In a kiln for burning lime the combination of a flue, a furnace connected therewith, said furnace being formed with the hollow arch 4, hollow side walls 26, the hollow pillars 5, 5, and hollow bridge-wall connecting and communicating with said pillars, all connected together, a water-supply connected to said hollow walls, a steam pipe connected to the arch and opening into the flue above the furnace connection therewith, substantially as described and for the purpose set forth.

546,936. CARTRIDGE-CASE. JAMES PINFOLD, Aston, assignor of one-half to James George Acoles, Perry-Barr, England. Filed Mar. 13, 1894. Serial No. 503,454. (No model.) Patented in England Apr. 16, 1892, No. 7,341; in Belgium Sept. 30, 1892, No. 101,314, and in France Dec. 8, 1892, No. 224,197.



Claim.—In a cartridge, the combination with the internally grooved head or base, and with the tubular body, of an expansion piece which is integral with the base or head, and a second slit metal expansion piece which is not integral with the base or head, and which is inclosed by the former when the same is expanded and retains the cartridge body in the groove of the head, substantially as described, and for the purpose specified.

546,937. BATH. FERNANDO PONCE, Tulancingo, Mexico. Filed Jan. 2, 1895. Serial No. 533,599. (No model.) Patented in Mexico Aug. 9, 1894, No. 590.



Claim.—1. The combination of the water barrel, the piston constructed to move therein, the tubular standard surrounding the barrel and spaced therefrom, the barrel being provided in its upper portion with perforations leading into said space, a weight connected to the piston and having guided movement on the standard, and discharge pipes connected to the water barrel and adapted to receive the water forced out therefrom by the weighted piston, substantially as described.

2. The combination of the water barrel, the weighted piston arranged to move therein, said piston being hollow, closed on top and apertured in its bottom, a downwardly opening valve on the piston to close the aperture thereof, and discharge pipes connected to the water barrel and adapted to receive the water forced out therefrom by the weighted piston, substantially as described.

3. In a bath, the combination of a water barrel, a hollow piston adapted to move therein, said piston being closed at the top and apertured at the bottom, an outwardly opening valve on the piston to close the aperture thereof, a weighted box suspended from the piston and surrounding the water barrel, the box engaging the said barrel and having guided movement thereon, and discharge pipes connected to the water barrel and adapted to receive the water forced out therefrom by the weighted piston, substantially as described.

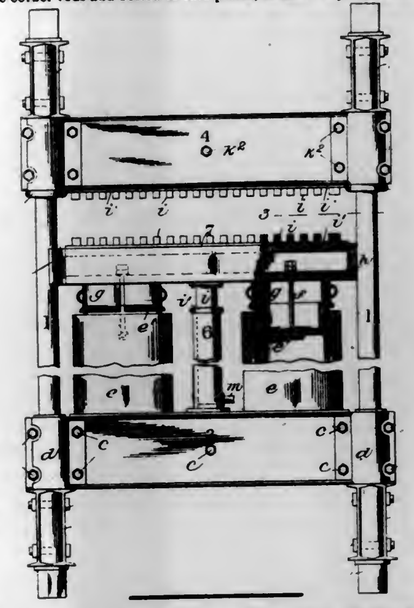
4. In a bath, the combination of a water tank, a pump connected thereto, a water barrel resting on the tank, a pipe connecting the water barrel with the delivery nozzle of the pump, a weighted piston constructed to move in the water barrel, a tubular standard surrounding the water barrel and spaced therefrom, the top of the tank having perforations to receive the water flowing down between the barrel and the standard when the piston is raised to a predetermined height, and discharge pipes connected to the barrel and adapted to receive the water forced out therefrom by the weighted piston, substantially as described.

546,938. HYDRAULIC COMPRESSOR. HENRY REISKI, Galveston, Tex. Filed May 13, 1895. Serial No. 549,058. (No model.)

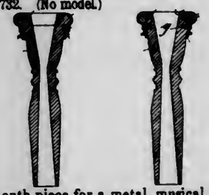
Claim.—1. In a hydraulic compressor, the combination of two platens, pistons connected to the lower platen, cylinders for said pistons, a support for said cylinders, and a swivel or pivotal support for the lower platen whereby it may be swung around horizontally away from over the cylinders, substantially as described.

2. In a hydraulic compressor, the combination of connecting rods, platens, a bed or cylinder support, cylinders mounted thereon, pistons working in the cylinders and depending from the lower platen, a telescopic swivel connection between the platen and the bed intermediate the cylinders, whereby the lower platen may be supported in its raised position and swung around horizontally for the purpose described, substantially as set forth.

3. In a hydraulic compressor, the combination of the vertical corner rods, the compound beams 2 and 5 connecting said rods at their upper and their lower ends, each of said compound beams consisting of a pair of I-beams notched to embrace the rods and connected together by a transverse bolt, a bed or cylinder support 3 resting upon the lower beams 2 and consisting of a series of I-beams set on edge and connected rigidly together by horizontal bolts extending through them, clamps *d* embracing the corner rods and bolted to the sides of said bed, cylinders resting on the bed, pistons working in the cylinders and supporting a lower platen, and an upper platen consisting of I-beams set on edge side by side and bolted rigidly together by horizontal bolts extending through them, and corner clamps k^2 embracing the corner rods and bolted to said platen, substantially as described.



546,939. MOUTHPIECE FOR METAL MUSICAL INSTRUMENTS. CARL G. SCHUSTER, Markneukirchen, Germany. Filed Jan. 3, 1895. Serial No. 533,732. (No model.)



Claim.—A mouth-piece for a metal, musical instrument, having threaded parts, an annular groove between said threaded parts, a removable and replaceable non-conducting covering applied over the face of the mouth-piece and having one edge inserted into said annular groove, and a pair of threaded rings engaging the threaded parts of the mouth-piece and respectively acting against and clamping the outer and inner edge portions of the said non-conducting covering, substantially as described.

546,940. MACHINE FOR INSERTING SHIRRING-STRINGS INTO BAGS. FRANK H. SHERMAN and FRED W. MCARDLE, Boston, Mass. Filed July 11, 1895. Serial No. 555,632. (No model.)

Claim.—1. The combination with a bag-holding device, of needle-mechanism for inserting a shirring string through a part of the mouth of a bag held by the bag-holder, and means for supplying the needle mechanism with string.

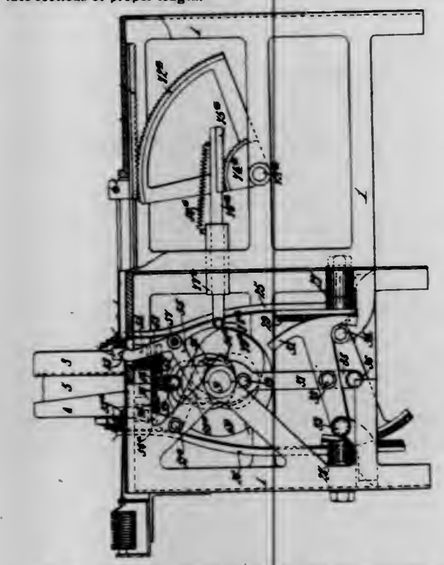
2. The combination with a bag-holder, of needle-mechanism for inserting a string through the mouth of a bag held by the bag-holder, means for supplying the needle-mechanism with string, and cutting mechanism for severing the string into sections of proper length to be inserted by the needle-mechanism into the bag-mouth.

3. The combination with a bag-holder, of reciprocatory needles for simultaneously entering opposite sides of the mouth or neck of a bag supported by the bag-holder, and means for supplying the needles with string.

4. The combination with a bag-holder, of two reciprocatory needles adapted to enter opposite sides of a part of the mouth of a bag supported by the bag-holder, means for supplying the needles with string, and cutting-mechanism for severing the string into sections of proper length to be inserted by the needles into the bag-mouth.

5. The combination of an expansible and retractible bag-holder, with needle-mechanism for inserting a string into or through a part of the mouth of a bag supported by the bag-holder.

6. The combination of a sectional, expansible bag-holder, with needle-mechanism for inserting a string into or through the mouth of a bag supported by the bag-holder, means for supplying the needle-mechanism with string, and cutting-mechanism for severing the string into sections of proper length.



7. The combination with a suitable bag-holder, of a pair of reciprocatory needles adapted to enter opposite sides of a part of the mouth of a bag supported by the bag-holder, means for holding string, and a vibratory feed-arm having devices to seize and draw or feed the string across the path of the needles, and mechanism for severing the string at the proper time.

8. The combination with a bag-holder, of needle-mechanism adapted to insert a string into or through a part of the mouth of a bag supported by the bag-holder, means for holding string, cutting-mechanism for severing the string, a device for holding the leading end of the severed string, and a movable feed-arm having means to engage the leading end of the string and draw or feed the latter into the path of the needle-mechanism.

9. The combination with bag-holding mechanism, of reciprocatory needles adapted to insert a string into or through a part of the mouth of a bag supported by the bag-holding mechanism, means for holding string, cutting-mechanism for severing the string into sections, means for holding the leading end of the string after the same has been severed, and means for seizing the leading end of the string and drawing or pulling the same into the path of the needles.

10. The combination of a bag-holder and stretcher, and means for actuating the same to stretch a bag after the latter has been placed upon the holder and stretcher, with needle-mechanism for inserting a shirring string into or through a part of the mouth of a bag supported by the bag-holder and stretcher.

11. The combination with a bag-holder and stretcher, of reciprocatory needles adapted to move at opposite sides of the bag-holder for introducing a shirring string into or through a part of the mouth of a bag supported by the holder, piercers for piercing the bag at the points where the needles enter the latter, means for holding string, string-feeding mechanism, and cutting mechanism for severing the string into sections of suitable length.

12. The combination of a pair of parallel needles which reciprocate in unison for inserting a shirring string into or through opposite sides of a part of the mouth of a bag, and means for placing string in the path of the needles.

13. The combination in a bag-stripping machine, of a sectional, expansible bag-holder, needle-mechanism for inserting string into or through a part of the mouth of a bag supported by the bag-holder, a vibratory feed-arm having devices for seizing the leading end of a string and drawing or pulling the same across the path of the needle-mechanism, cutting-mechanism for severing the string into sections of suitable length, and devices for causing the feed-arm to seize and release the spring at the proper time.

14. The combination of a sectional, expansible bag-holder, a pair of reciprocatory needles adapted to pass along opposite sides of the bag-holder to insert a string into or through a part of the mouth of a bag supported by the bag-holder, mechanism for reciprocating the needles, means for supplying string, devices for feeding the string across the path of the needles, and cutting-mechanism for severing the string into sections of suitable length.

15. The combination with a bag-holder, of needle-mechanism for inserting a shirring string into or through a part of the mouth of a bag supported by the bag-holder, piercers for piercing the bag at the points where the needles are to enter the same, string-feeding mechanism, and string-cutting mechanism.

16. The combination with a bag-holder, of reciprocatory needles adapted to insert a shirring string into or through a part of the mouth of a bag supported by the bag-holder, means for reciprocating the needles, piercers for piercing the bag at the points where the needles enter the same, a vibratory arm for drawing or pulling the string across the path of the needles, a cutting mechanism for severing the string into sections of suitable length, and a tension-device for keeping the string taut and holding the leading end thereof after the cutting-mechanism operates to sever the string.

17. The combination with a bag-holder, of reciprocatory needles, means for holding string, a pair of vibratory arms for seizing the string and drawing or pulling the same across the path of the needles at opposite ends of the bag-holder, and cutting-mechanisms for severing the string into sections of suitable length.

18. The combination of a bag-holder, reciprocatory needles, string-feeding arms, cutting-mechanisms, tension devices, and means for reciprocating the needles and vibrating the feed-arms.

19. The combination with a bag-holder, of reciprocatory needles, a main-shaft, devices operated by the main-shaft for reciprocating the needles, means for holding string, a vibratory feed-arm for seizing the string and drawing or pulling the same across the path of the needles, and devices operated by the main-shaft for vibrating the feed-arm.

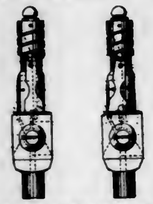
20. The combination with an adjustable bag-holder, needle-mechanism, and string-feeding mechanism, of two pairs of bag-piercers arranged to pierce the bag at the points where the needles pass through the bag, and mechanism for adjusting one pair of piercers toward and from the other pair.

21. The combination with a bag-holder, needle-mechanism, means for holding string, and devices for reciprocating the needles, of a vibrating feed-arm having a segmental gear and provided with devices for seizing the string and drawing or pulling the same across the path of the needles, a pivoted, toothed segment engaging the segmental-gear, a main-shaft, and devices actuated by the main-shaft for operating the toothed segment to vibrate the feed-arm.

22. The combination of needle mechanism for inserting a string into or through a part of the mouth of a bag, a vibrating feed-arm having gripping-fingers for seizing the string and drawing or pulling the same across the path of the needles of the needle-mechanism, and devices for automatically opening the gripping-fingers to seize and release the string at the proper intervals.

23. The combination of needle-mechanism for inserting a string into or through a part of the mouth of a bag, a vibrating feed-arm having gripping-fingers for seizing the string and drawing or pulling the same across the path of the needles of the needle-mechanism, a pivoted wedge-block for opening the gripping-fingers and thus enabling them to seize the string, and a device for opening the gripping-fingers and causing them to release the string at the proper time.

546,941. SAFETY GAS-BURNER. BENJAMIN SMITH, Utica, N. Y. Filed May 15, 1894. Serial No. 511,292. (No model.)

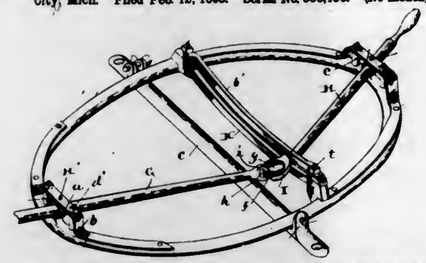


Claim.—1. A gas-burner-body provided with two passageways starting with the opening for the key, one passing obliquely upward, opening outward on the side of the burner, the other extending upward to an opening, extending thence downward and again upward terminating at the burner's tip, a valve pivoted to the body of the burner provided with a notch at its upper end and a cavity at its base to form a continuation of one of the said passageways, in combination with a thermostatic coil, fixed to the burner, provided at its free end with a tongue to engage the notch of said valve, as and for the purpose set forth.

2. The combination with the body of the burner, passageways as described extending from the opening for the key, the valve pivoted to the burner, provided with a cavity to connect with one of the passageways and the thermostatic coil connected to said valve as described, of the key of the burner provided with a spring, abutting by its free end against a shoulder in the body of the burner, whereby the said key is controlled, as and for the purpose specified.

3. In combination: the body of the burner arranged with passageways starting at the key, branching upward and opening outward, one of said passageways starting again and continuing thence through said burner, a thermostatic coil fixed to said burner, a lever valve, arranged to connect with said coil, provided at its base with a notch or cavity to form a continuation of the main passageway, and one key of the burner provided with a spring, a conical portion, and a groove formed partly around said conical portion, substantially as set forth.

546,942. BOW-ROWING DEVICE. ANDREW SMITH, Traverse City, Mich. Filed Feb. 12, 1895. Serial No. 538,158. (No model.)



Claim.—1. An oaring device comprising a frame, intermediately pivoted to have a vertical swing, a two part oar having its adjacent ends loosely connected, and a transverse slide-way extending across the frame, in which one part of the oar is held for the purpose described, substantially as set forth.

2. An oaring device comprising a frame, intermediately pivoted, a horizontally swinging ferrule at each end, a two part oar extending through the said horizontally swinging ferrule, the inner ends of the said two part oar being jointed to permit a free relative horizontal movement, a transverse slide-way across said frame, one part of the oar having grooves to receive the said slide-way, substantially as shown.

3. An oaring device comprising an intermediately pivoted frame, a two part oar, one part of the oar having a yoke, the other part of the oar a circular portion within the said yoke, one being provided with a groove and the other with a projection entering the said groove, whereby they are loosely held together, substantially as specified.

4. An oaring device comprising an intermediately pivoted frame, a guide in each end of the frame, for receiving the said two parts of the oar, a transverse bar extending across the frame, and a frame *b* extending up over the guide at each end of the frame, and back and across the said transverse bar or plate, substantially as specified.

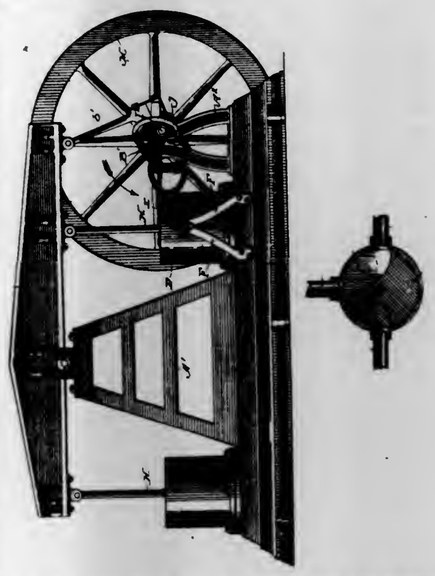
5. An oaring device comprising a two part oar, one part having a yoke, the other part a circular portion within the yoke, means for holding the circular portion within the yoke but permitting it a free circular movement, the part carrying the circular portion having an opening in rear of said portion to permit the passage of the ends of the yoke, and a supporting frame, substantially as specified.

546,943. HYDRAULIC ENGINE. FRED STARR, Chicago, Ill. Filed June 4, 1895. Serial No. 551,668. (No model.)

Claim.—1. The combination of a pair of cylinders having suitable inlets and exhausts at one end, a valve chamber common to said cylinders and communicating with the cylinder inlets, and suitable valves for controlling the inlet of water to the cylinders and the exhaust therefrom, the former being located in the valve chamber and being constructed, arranged and operated to admit water to the cylinders alternately without closing the inlet to the chamber and without interrupting the flow; substantially as described.

2. The combination of a pair of cylinders having suitable inlets and exhausts at one end, a valve chamber common to said cylinders, said chamber having a constantly open inlet, a two-way valve in the chamber for diverting the flow of water through said chamber into the cylinders alternately, and mechanism for operating said two-way valve so that the openings to the cylinders will be closed alternately, but not together, and without closing the inlet to the chamber; substantially as described.

3. The combination of a pair of cylinders having suitable inlets and exhausts at one end, a circular valve-chamber common to said cylinders and communicating with the cylinder inlets at opposite sides, a constantly open supply inlet for the valve chamber located at a point intermediate the cylinder inlets, a balanced, oscillating, two-way valve working in said chamber, and mechanism for operating the valve so that the openings to the cylinders will be closed alternately, but not together, and without closing the inlet to the chamber; substantially as described.



4. The combination of a pair of cylinders having independent inlets and exhausts at one end, a valve chamber common to the cylinders, said chamber having a constantly open inlet valve, and separate openings leading to the cylinders, a two-way valve in said chamber, said valve being constructed and arranged to move in its chamber so as to close the openings communicating with the cylinders alternately, but not both of said openings together, without at any time closing the chamber inlet, and mechanism for operating said two-way and exhaust valves so that the exhaust of each cylinder is closed as the two-way valve is operated to turn the water into the cylinder; substantially as described.

5. In a motor having a revolving shaft, the combination of a cylinder provided with a suitable inlet and exhaust at one end, valves for controlling the inlet and exhaust to and from said cylinder, and mechanism for operating the valves, said valve-operating mechanism comprising an oscillating lever having oppositely disposed cam recesses at its free end in which recesses works a crank on a revolving shaft of the motor; substantially as described.

6. In a motor having a revolving shaft, the combination of a pair of cylinders having suitable inlets at one end, a valve chamber common to said cylinders, a two-way valve in said chamber controlling the delivery of water therefrom alternately to said cylinders, exhausts leading from the cylinders, valves controlling the exhausts, and mechanism for operating all of said valves, said valve-operating mechanism comprising an oscillating lever having reversely curved recesses at its free end in which recesses works a crank on the revolving shaft; substantially as described.

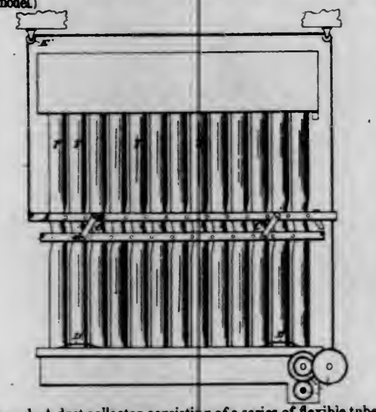
7. In a motor having a revolving shaft, the combination of a pair of cylinders, a valve chamber common to said cylinders, a two-way valve in the chamber controlling the delivery of water therefrom alternately to said cylinders, exhausts leading from the cylinder, valves controlling said exhausts, a sliding bar connecting all of said valves for simultaneous operation, an oscillating lever connected with said bar, said lever having at its free end reversely curved cam recesses in which works a crank on the revolving shaft; substantially as described.

8. In a motor, the combination of the main shaft, having a crank and an oscillating lever, said lever having an enlargement at its free end provided with two oval communicating recesses, in one of which recesses the crank works on one-half of the stroke, and in the other of which it works on the other half of the stroke, each of said recesses having a cam surface near its junction with the other recess; substantially as described.

9. In a motor having a revolving shaft, the combination of an oscillating lever, a detachable and adjustable enlargement at the outer end of said lever, two oval communicating recesses in said enlargement in which a crank on the shaft is adapted to work, an ad-

justable cam surface in each of said recesses near its junction with the other, and means for adjusting the position of the enlargement on the end of the lever; substantially as described.

546,944. CLEANER FOR DUST-COLLECTORS. JAMES F. STEPHENS and GEORGE M. PARSNEAU, St. Cloud, Minn., assignors of one-third to George Tileston, same place. Filed Dec. 14, 1894. Serial No. 531,833. (No model.)



Claim.—1. A dust collector consisting of a series of flexible tubes, in combination with a series of rods, adapted to impart a rubbing action to the flexible tubes, substantially as shown and described.

2. The combination with a dust collector composed of a series of flexible tubes, of a series of movable rods adapted to rub against the sides of the flexible tubes, substantially as shown and described.

3. A device for removing dust from the flexible tubes of a dust collector, consisting of a frame-work, a series of rods carried thereby and adapted to rub against the flexible tubes, and means for moving said frame-work and its rods, substantially as shown and described.

4. The combination with the vertical flexible tubes of a dust collector, of a frame work, a series of rods carried thereby and adapted to rub against the flexible tubes, a power driven shaft, and cords connecting the frame-work with the shaft and adapted to be wound upon the latter thereby raising the frame-work and its rods, substantially as shown and described.

5. The combination with the vertical flexible tubes of a dust collector, a frame-work, a series of rods carried thereby and adapted to rub against the flexible tubes, and a rotating shaft and intermediate connections for raising the frame-work and its rods, of a tripping mechanism for automatically stopping the rotation of the shaft when the frame-work reaches its uppermost position, substantially as shown and described.

6. The combination with the vertical flexible tubes of a dust collector, a frame-work, a series of rods carried thereby and adapted to rub against the flexible tubes, a rotating shaft and intermediate connections for raising the frame-work and its rods from the shaft, and a clutch mechanism on said shaft for throwing it into or out of connection with the power mechanism, of a lever for operating the clutch mechanism, an arm in the path of the frame-work as it reaches its uppermost position, and an intermediate connection between the lever and arm whereby the movement of the arm by the frame-work will rock the lever and disengage the clutch mechanism, substantially as shown and described.

7. The combination of a vertically movable frame-work carrying rods for cleaning the flexible tubes of a dust collector, a rotating shaft and intermediate connections between it and the frame-work for raising the latter, a clutch mechanism on said shaft, a lever for operating said clutch mechanism, a trip for automatically operating said lever to disengage the clutch when the frame-work reaches its uppermost position, and springs engaging the lever to retain it in its tripped position, substantially as shown and described.

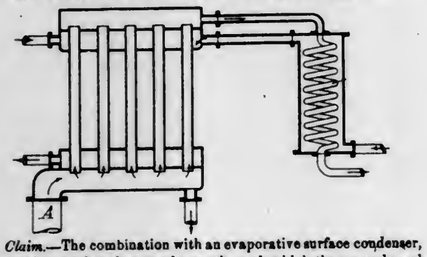
8. A device for removing dust from the flexible tubes of a dust collector, consisting of a frame-work formed of two sections, links hinging the two sections together, a series of rods carried by said sections and adapted to rub against the flexible tubes, and a stop on one of said sections adapted to engage the other section and limit the approach of one section to the other, substantially for the purpose described.

546,945. COMBINED ICE-CREAM FREEZER AND CHURN. WALTER R. THATCHER, Oskaloosa, Iowa. Filed Dec. 18, 1894. Serial No. 532,221. (No model.)

Claim.—A combined ice cream freezer and churn consisting of an outer cylindrical can provided with a cap opening at one end and with flange extensions at both ends forming rests to support the can on either end in an upright position, a cap removably fitted over the cap opening of the outer can and provided with a handle disposed entirely within one of said flange extensions, a fixedly positioned smaller inner cylindrical can fitted inside of the outer can and provided with an open end projecting beyond the closed end of the outer can, a cap removably fitted over the open end of the small inner can and provided with a handle disposed entirely within one of the flange extensions, an offset concentrically arranged bail rigidly attached to the outer can, and a running ring loosely engaging said bail and adapted to be connected to a swinging hanger, whereby the combined freezer and churn can be given a free lateral rotation in opposite directions and also a swinging movement in any direction by grasping the handles at either end, substantially as set forth.

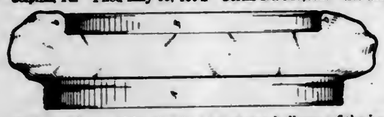


546,946. SURFACE CONDENSER. EDUARD THEISEN, Baden-Baden, Germany. Filed Aug. 28, 1894. Serial No. 521,555. (No model.) Patented in Belgium Aug. 4, 1894, No. 111,263; in France Aug. 4, 1894, No. 240,538; in England Aug. 11, 1894, No. 5,351; in Austria Sept. 21, 1894, No. 44/4,978, and in Hungary Jan. 5, 1895, No. 1,862.



Claim.—The combination with an evaporative surface condenser, of a supplemental surface condenser through which the uncondensed gases from the evaporative surface condenser are to be drawn off on their way to an air pump, the outer casing of the supplemental surface condenser being made to communicate at one end with a supply of cold water and at the other end with the compartment of the evaporative surface condenser into which the warm evaporative condensing water is sent, substantially as shown and described and for the purposes specified.

546,947. GAS-METER BELLOWS. JOSEPHINE D. VINEY, Philadelphia, Pa. Filed May 19, 1894. Serial No. 511,833. (No model.)

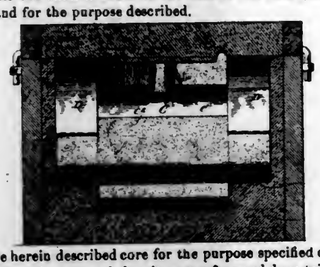


Claim.—The combination in a gas meter bellows, of the inner and outer rings, one of which is of greater diameter than the other, with the bellows leather cut substantially on the arc of a circle, the shorter side of which is applied to the smaller ring, whereby excessive plaiting on said ring is avoided, substantially as described.

546,948. CORE AND CHILL FOR CASTING JOURNAL-BOXES. STEWART WATT, Barnesville, Ohio, assignor to the Watt Mining Car Wheel Company, same place. Filed Nov. 28, 1894. Serial No. 530,268. (No model.)

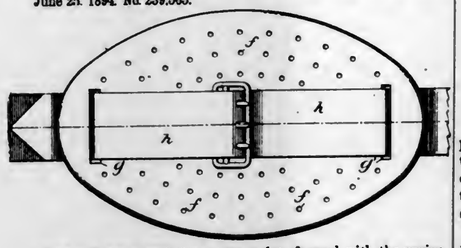
Claim.—1. The herein described core for the purpose specified consisting of the chill portion c, rounded on its outer face and dove-tailed on its other face, and the sand portion secured to the dove-tailed face of the chill, and forming a complete cylinder therewith, substantially as set forth.

2. The herein described core for the purpose specified consisting of the chill portion c rounded on its outer face and dove-tailed on its inner face, and the sand portion secured to the dove-tailed face of the chill, and forming a complete cylinder therewith, in combination with the metallic end chills D fitted on the ends of the chill c, all substantially as and for the purpose described.



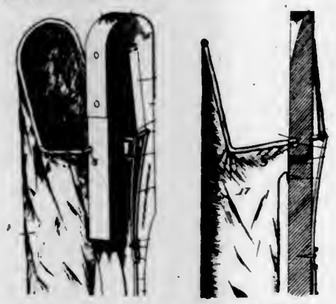
3. The herein described core for the purpose specified consisting of the chill portion c rounded on its outer face and dove-tailed on its inner face, and the sand portion secured to the dove-tailed face of the chill, and forming a complete cylinder therewith, in combination with the metallic end chills D fitted on the ends of the chill c, all substantially as and for the purpose described.

546,949. TRUSS. ADOLF WEIL, Frankfort-on-the-Main, Germany, assignor to Alexander Strauss, same place. Filed July 9, 1894. Serial No. 517,023. (No model.) Patented in Germany May 11, 1894, No. 78,742; in Switzerland June 20, 1894, No. 8,567; in Belgium June 20, 1894, No. 110,612; in England June 21, 1894, No. 12,039, and in France June 25, 1894, No. 239,565.



Claim.—A truss consisting of the pelote formed with the projection *b* and having an outer covering of fabric or wool, and an independent plate conforming to the shape of the body and adapted to move freely over the pelote, said plate being provided with bands for securing the truss to the body, substantially as described.

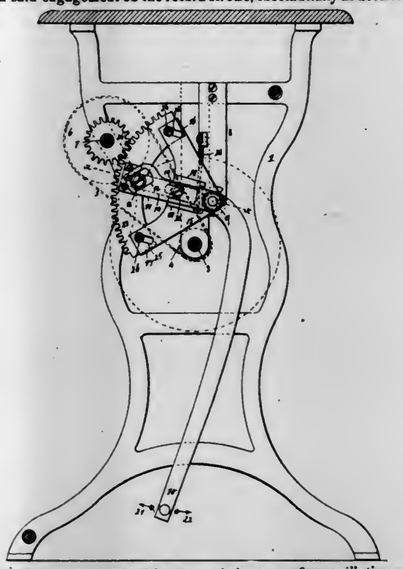
546,950. FRUIT-PICKER. THOMAS P. WILLIAMS, Troup, Tex., assignor of one-half to S. A. Norman, same place. Filed Dec. 15, 1894. Serial No. 531,958. (No model.)



Claim.—In a fruit picker, a rigid jaw formed with a transverse horizontal groove or recess, and a handle formed integrally therewith, in combination with a pivoted jaw made from a single wire blank and comprising a swinging loop or mouth portion, transversely aligning journal portions mounted in the transverse groove or recess in the fixed jaw, and a crank portion in the form of a three sided loop projecting through an aperture in the fixed jaw, substantially as and for the purpose specified.

546,951. POWER-TRANSMITTING MECHANISM. CONRAD BERNHARD, New York, N. Y. Filed Mar. 21, 1895. Serial No. 542,673. (No model.)

Claim.—1. The combination with a transmission gear, of a support, a driving gear slidingly mounted on said support, and an actuator connected with said driving gear to throw the same into engagement with the transmission gear on the driving stroke and to withdraw it from said engagement on the return stroke, substantially as described.



2. The combination with a transmission gear of an oscillating support, a driving gear slidingly mounted on said support, and an actuator loosely connected to the driving gear to throw the same into engagement with the transmission gear on the driving stroke and to withdraw the same from said engagement on the return stroke, substantially as described.

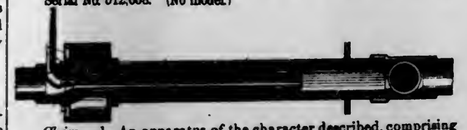
3. The combination with a transmission gear, of an oscillating support, a driving gear slidingly mounted on said support, an actuator loosely connected to the driving gear to throw the same into engagement with the transmission gear on the driving stroke and to withdraw it from said engagement on the return stroke, and a brake for retarding the motion of said oscillating support, substantially as described.

4. The combination with a transmission gear, of a support, a driving gear slidingly connected to said support by pin and slot connections, and an actuator connected to said driving gear by means of a pin and slot connection whereby said driving gear is thrown into engagement with the transmission gear during the driving stroke and withdrawn from such engagement during the return stroke, substantially as described.

5. A transmission gear and a driving gear therefor, combined with a support and an actuator, said support comprising a central or hub portion and arms made to extend from said hub portion, said arms being loosely connected to said driving gear, a guide or way carried by said hub portion, an arm for the driving gear guided by said way and loosely connected to said hub portion, and an actuator loosely connected to the driving gear substantially as described.

6. A transmission gear and a driving gear therefor, combined with a support and an actuator, said support being provided with a guide or way, an arm for the driving gear guided by said way and loosely connected to the support, and an actuator loosely connected to the driving gear substantially as described.

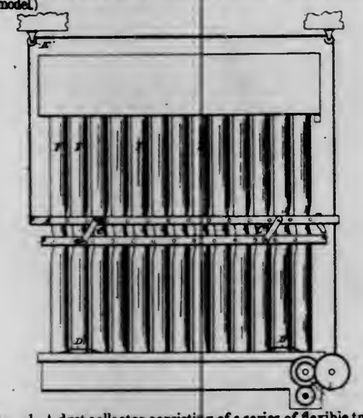
546,952. APPARATUS FOR WITHDRAWING GAS FROM NATURAL-GAS WELLS, &c. GEORGE C. DANFORTH and WILLIAM H. SENCENBAUGH, Washington, assignors, by direct and mesne assignments, to said Danforth, and Wm. C Hart, Chicago, Ill. Filed May 22, 1894. Serial No. 512,038. (No model.)



Claim.—1. An apparatus of the character described, comprising a gas delivery pipe having induction and discharge ends and having a contracted throat, a long discharge pipe commencing at said contracted throat and of substantially the diameter of said throat, and

justable cam surface in each of said recesses near its junction with the other, and means for adjusting the position of the enlargement on the end of the lever; substantially as described.

546,944. CLEANER FOR DUST-COLLECTORS. JAMES F. STEPHENS and GEORGE M. PARSNEAU, St. Cloud, Minn., assignors of one-third to George Tileston, same place. Filed Dec. 14, 1894. Serial No. 531,833. (No model.)



Claim.—1. A dust collector consisting of a series of flexible tubes, in combination with a series of rods, adapted to impart a rubbing action to the flexible tubes, substantially as shown and described.

2. The combination with a dust collector composed of a series of flexible tubes, of a series of movable rods adapted to rub against the sides of the flexible tubes, substantially as shown and described.

3. A device for removing dust from the flexible tubes of a dust collector, consisting of a frame-work, a series of rods carried thereby and adapted to rub against the flexible tubes, and means for moving said frame-work and its rods, substantially as shown and described.

4. The combination with the vertical flexible tubes of a dust collector, of a frame work, a series of rods carried thereby and adapted to rub against the flexible tubes, a power driven shaft, and cords connecting the frame-work with the shaft and adapted to be wound upon the latter thereby raising the frame-work and its rods, substantially as shown and described.

5. The combination with the vertical flexible tubes of a dust collector, a frame-work, a series of rods carried thereby and adapted to rub against the flexible tubes, and a rotating shaft and intermediate connections for raising the frame-work and its rods, of a tripping mechanism for automatically stopping the rotation of the shaft when the frame-work reaches its uppermost position, substantially as shown and described.

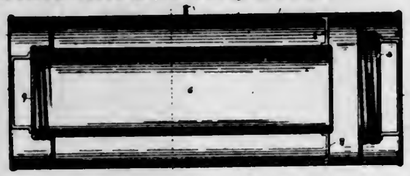
6. The combination with the vertical flexible tubes of a dust collector, a frame-work, a series of rods carried thereby and adapted to rub against the flexible tubes, a rotating shaft and intermediate connections for raising the frame-work and its rods from the shaft, and a clutch mechanism on said shaft for throwing it into or out of connection with the power mechanism, of a lever for operating the clutch mechanism, an arm in the path of the frame work as it reaches its uppermost position, and an intermediate connection between the lever and arm whereby the movement of the arm by the frame-work will rock the lever and disengage the clutch mechanism, substantially as shown and described.

7. The combination of a vertically movable frame-work carrying rods for cleaning the flexible tubes of a dust collector, a rotating shaft and intermediate connections between it and the frame-work for raising the latter, a clutch mechanism on said shaft, a lever for operating said clutch mechanism, a trip for automatically operating said lever to disengage the clutch when the frame-work reaches its uppermost position, and springs engaging the lever to retain it in its tripped position, substantially as shown and described.

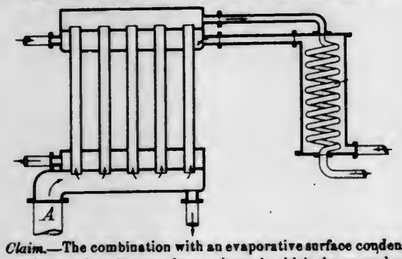
8. A device for removing dust from the flexible tubes of a dust collector, consisting of a frame-work formed of two sections, links hinging the two sections together, a series of rods carried by said sections and adapted to rub against the flexible tubes, and a stop on one of said sections adapted to engage the other section and limit the approach of one section to the other, substantially for the purpose described.

546,945. COMBINED ICE-CREAM FREEZER AND CHURN. WALTER R. THATCHER, Oskaloosa, Iowa. Filed Dec. 18, 1894. Serial No. 532,221. (No model.)

Claim.—A combined ice cream freezer and churn consisting of an outer cylindrical can provided with a cap opening at one end and with flange extensions at both ends forming rests to support the can on either end in an upright position, a cap removably fitted over the cap opening of the outer can and provided with a handle disposed entirely within one of said flange extensions, a fixedly positioned smaller inner cylindrical can fitted inside of the outer can and provided with an open end projecting beyond the closed end of the outer can, a cap removably fitted over the open end of the small inner can and provided with a handle disposed entirely within one of the flange extensions, an offset concentrically arranged bail rigidly attached to the outer can, and a running ring loosely engaging said bail and adapted to be connected to a swinging hanger, whereby the combined freezer and churn can be given a free lateral rotation in opposite directions and also a swinging movement in any direction by grasping the handles at either end, substantially as set forth.

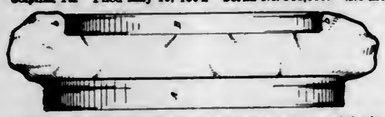


546,946. SURFACE CONDENSER. EDUARD THEISEN, Baden-Baden, Germany. Filed Aug. 28, 1894. Serial No. 521,555. (No model.) Patented in Belgium Aug. 4, 1894, No. 111,263; in France Aug. 4, 1894, No. 240,538; in England Aug. 11, 1894, No. 5,351; in Austria Sept. 21, 1894, No. 44/4,978, and in Hungary Jan. 5, 1895, No. 1,862.



Claim.—The combination with an evaporative surface condenser, of a supplemental surface condenser through which the uncondensed gases from the evaporative surface condenser are to be drawn off on their way to an air pump, the outer casing of the supplemental surface condenser being made to communicate at one end with a supply of cold water and at the other end with the compartment of the evaporative surface condenser into which the warm evaporative condensing water is sent, substantially as shown and described and for the purposes specified.

546,947. GAS-METER BELLOWS. JOSEPHINE D. VINEY, Philadelphia, Pa. Filed May 19, 1894. Serial No. 511,833. (No model.)

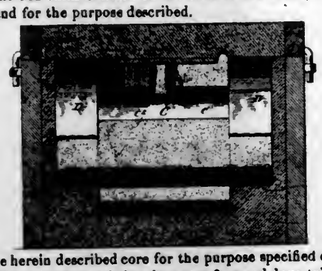


Claim.—The combination in a gas meter bellows, of the inner and outer rings, one of which is of greater diameter than the other, with the bellows leather cut substantially on the arc of a circle, the shorter side of which is applied to the smaller ring, whereby excessive plaiting on said ring is avoided, substantially as described.

546,948. CORE AND CHILL FOR CASTING JOURNAL-BOXES. STEWART WATT, Barnesville, Ohio, assignor to the Watt Mining Car Wheel Company, same place. Filed Nov. 28, 1894. Serial No. 530,268. (No model.)

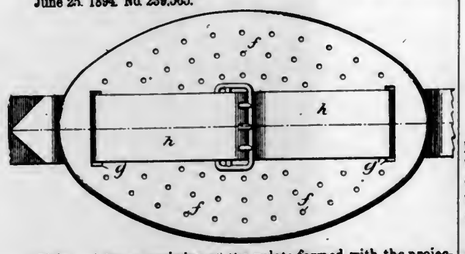
Claim.—1. The herein described core for the purpose specified consisting of the chill portion *c*, rounded on its outer face and dove-tailed on its other face, and the sand portion secured to the dove-tailed face of the chill, and forming a complete cylinder therewith, substantially as set forth.

2. The herein described core for the purpose specified consisting of the chill portion *c* rounded on its outer face and dove-tailed on its inner face, and the sand portion secured to the dove-tailed face of the chill, and forming a complete cylinder therewith, in combination with the metallic end chills D fitted on the ends of the chill *c*, all substantially as and for the purpose described.



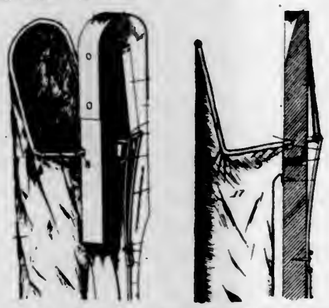
3. The herein described core for the purpose specified consisting of the chill portion *c* rounded on its outer face and dove-tailed on its inner face, and the sand portion secured to the dove-tailed face of the chill, and forming a complete cylinder therewith, in combination with the metallic end chills D fitted on the ends of the chill *c*, and the core *d* on top of core C, all substantially as described.

546,949. TRUSS. ADOLF WEIL, Frankfort-on-the-Main, Germany, assignor to Alexander Strauss, same place. Filed July 9, 1894. Serial No. 517,023. (No model.) Patented in Germany May 11, 1894, No. 78,742; in Switzerland June 20, 1894, No. 8,567; in Belgium June 20, 1894, No. 110,612; in England June 21, 1894, No. 12,039, and in France June 25, 1894, No. 239,565.



Claim.—A truss consisting of the pelote formed with the projection *b* and having an outer covering of fabric or wool, and an independent plate conforming to the shape of the body and adapted to move freely over the pelote, said plate being provided with bands for securing the truss to the body, substantially as described.

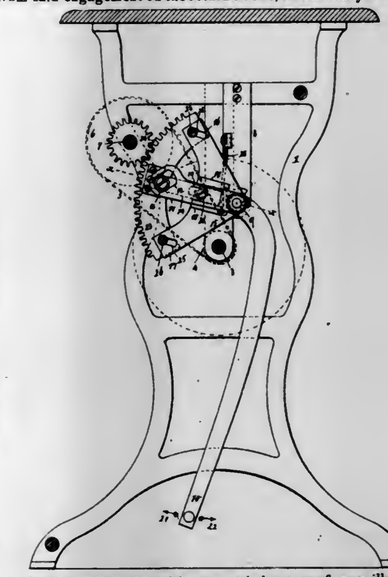
546,950. FRUIT-PICKER. THOMAS P. WILLIAMS, Troup, Tex., assignor of one-half to S. A. Norman, same place. Filed Dec. 15, 1894. Serial No. 531,958. (No model.)



Claim.—In a fruit picker, a rigid jaw formed with a transverse horizontal groove or recess, and a handle formed integrally therewith, in combination with a pivoted jaw made from a single wire blank and comprising a swinging loop or mouth portion, transversely aligning journal portions mounted in the transverse groove or recess in the fixed jaw, and a crank portion in the form of a three sided loop projecting through an apertnre in the fixed jaw, substantially as and for the purpose specified.

546,951. POWER-TRANSMITTING MECHANISM. CONRAD BERNHARD, New York, N. Y. Filed Mar. 21, 1895. Serial No. 542,673. (No model.)

Claim.—1. The combination with a transmission gear, of a support, a driving gear slidingly mounted on said support, and an actuator connected with said driving gear to throw the same into engagement with the transmission gear on the driving stroke and to withdraw it from said engagement on the return stroke, substantially as described.



2. The combination with a transmission gear of an oscillating support, a driving gear slidingly mounted on said support, and an actuator loosely connected to the driving gear to throw the same into engagement with the transmission gear on the driving stroke and to withdraw the same from said engagement on the return stroke, substantially as described.

3. The combination with a transmission gear, of an oscillating support, a driving gear slidingly mounted on said support, an actuator loosely connected to the driving gear to throw the same into engagement with the transmission gear on the driving stroke and to withdraw it from said engagement on the return stroke, and a brake for retarding the motion of said oscillating support, substantially as described.

4. The combination with a transmission gear, of a support, a driving gear slidingly connected to said support by pin and slot connections, and an actuator connected to said driving gear by means of a pin and slot connection whereby said driving gear is thrown into engagement with the transmission gear during the driving stroke and withdrawn from such engagement during the return stroke, substantially as described.

5. A transmission gear and a driving gear therefor, combined with a support and an actuator, said support comprising a central or hub portion and arms made to extend from said hub portion, said arms being loosely connected to said driving gear, a guide or way carried by said hub portion, an arm for the driving gear guided by said way and loosely connected to said hub portion, and an actuator loosely connected to the driving gear substantially as described.

6. A transmission gear and a driving gear therefor, combined with a support and an actuator, said support being provided with a guide or way, an arm for the driving gear guided by said way and loosely connected to the support, and an actuator loosely connected to the driving gear substantially as described.

546,952. APPARATUS FOR WITHDRAWING GAS FROM NATURAL-GAS WELLS, &c. GEORGE C. DANFORTH and WILLIAM H. SENCENBAUGH, Washington, assignors, by direct and mesne assignments, to said Danforth, and Wm. C Hart, Chicago, Ill. Filed May 22, 1894. Serial No. 512,038. (No model.)



Claim.—1. An apparatus of the character described, comprising a gas delivery pipe having induction and discharge ends and having a contracted throat, a long discharge pipe commencing at said contracted throat and of substantially the diameter of said throat, and

a steam jet having its discharge end located at said contracted throat and pointing in the direction of the discharge, substantially as described.

2. An apparatus of the character described, comprising a continuous gas delivery pipe B having induction and discharge ends, a long discharge pipe C provided at its induction end with a contracted throat and of substantially the diameter of said throat, a steam jet located at the throat of said pipe section C and pointing into said section, an exterior or admission tube D′ inclosing said long tube section C, the outer end of said tube D′ being constructed for the admission of air, substantially as described.

3. An apparatus of the character described, comprising a gas delivery pipe B having the discharge section C of smaller diameter than said pipe B and connected therewith by a contracted throat, a steam jet located at said contracted throat and pointing into the tube C, and an exterior air admission tube D′ inclosing said tube C for a considerable distance whereby a strong draft of gas may be obtained before the mingled gas and steam are admitted to the air entering the tube D′, and a chamber D at the induction end of the tube D′, the front wall of said chamber being perforated to receive the gas delivery tube, substantially as described.

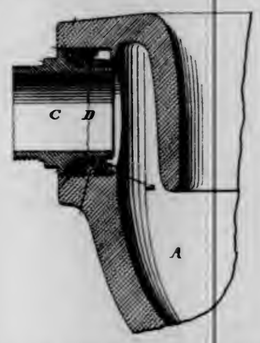
4. An apparatus of the character described, comprising the combination of a gas delivery tube, a steam pipe extending within said gas delivery tube and pointing in the direction of its discharge end, and an exterior air delivery tube provided with an induction port or ports at a distance from the discharge end of said tube, substantially as described.

5. An apparatus of the character described, comprising the combination of a tube C, a steam pipe E, entering said tube at a distance from its end, and an exterior air delivery tube D′ having its induction end located at a considerable distance from the discharge end of said tube C, and a valve for controlling the flow of air through said exterior tube, substantially as described.

6. An apparatus of the character set forth, comprising the combination of an inner tube C for gas, a steam pipe E entering said inner tube and pointing in the direction of its discharge end, an exterior tube for air and a burner connected to said air tube and into which said inner tube also discharges, substantially as described.

7. An apparatus of the character described, comprising the combination of an inner tube C, a steam pipe E at the mouth of said inner tube, an exterior tube D′ having an enlarged front end portion or chamber D, a burner connected to said exterior tube D′, said interior tube also terminating adjacent said burner and at a considerable distance from the induction end of said air tube, substantially as described.

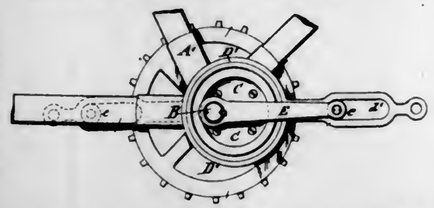
546,953. CONDUIT-COUPLING. GEORGE W. DAVIS, Trenton, N. J., assignor to Acme Brass Co., same place. Filed Oct. 25, 1894. Serial No. 526,973. (No model.)



Claim.— 1. In a conduit coupling, a coupling pipe externally threaded and flanged, a securing ring having external lugs and internally threaded to screw upon said coupling pipe, and an elastic gasket or washer located upon said coupling pipe between said flange thereon and said securing ring, in combination with a conduit having internal bearings with which the lugs on said securing ring engage; substantially as shown and described.

2. In a conduit coupling, a coupling pipe having an external flange and threaded at one end, a threaded securing ring having lugs and adapted to screw upon said coupling pipe, and an elastic gasket or washer located upon said coupling pipe between said flange thereon and said securing ring, in combination with a conduit having internal bearings with which the lugs on said securing ring engage; substantially as shown and described.

546,954. VELOCIPEDE. WILLIAM L. DECKER, Worcester, Mass., assignor to the Decker Cycle Company, same place. Filed Mar. 15, 1894. Renewed Apr. 8, 1895. Serial No. 545,010. (No model.)



Claim.—1. In a velocipede, the combination of a crank shaft, two similar sets of compound levers of different lengths for operating said crank shaft, the shorter levers being attached to said shaft, eccentrics on which the longer levers turn, the longer levers having sliding connections with the shorter levers and said sliding connections of the opposite sets being always on a diametrical line passing through the shaft, and means for applying power to the longer levers, substantially as described.

2. The combination in a velocipede of a supporting frame, a crank shaft supported in bearings of said frame, stationary eccentrics attached to the supporting frame and having their longer radii disposed forward of the crank shaft, crank arms fixed at their inner ends to the crank shaft, cranks extending beyond and connected with said crank arms and provided with straps engaging said eccentrics, the cranks having sliding connections with their respective crank arms, and said sliding connections being always in a diametrical line passing through the shaft, the cranks being provided with means whereby power is applied thereto, substantially as described.

3. The combination of a supporting frame having a lower forked part, a crank shaft supported in bearings of said forked part, stationary disks attached to the lower forked part eccentrically to the crank shaft, cranks connected by straps to said disks and movable thereon, said cranks being provided with slotted middle portions, crank arms fastened to the crank shaft and connected by anti-friction rollers with the slotted portions of the cranks, said cranks extending beyond said crank arms, and means for applying power to said cranks, substantially as described.

4. The combination of a velocipede frame, wheels supporting said frame, a sprocket pinion for communicating motion to one of said wheels, a driving crank shaft supported in said frame, a sprocket wheel on said driving shaft, a sprocket chain connecting said sprocket wheel and sprocket pinion, two similar sets of compound levers of different lengths for operating the crank shaft, the shorter levers being rigidly connected with said crank shaft, eccentrics on which the longer levers turn, said eccentrics having their longer radii disposed forward of the crank shaft, and pedals attached to the longer levers, the longer and shorter levers of each set having a sliding connection between their fulcrums and the pedal on the longer lever, and the connections on the opposite sets being always on a diametrical line passing through the center of the shaft.

5. In a velocipede, the combination of a shaft, a fixed eccentric disposed with its longer radius in front of said shaft, a crank adapted to rotate on said eccentric, a crank arm fixed to said shaft, a sliding connection between said crank and crank arm, and means for applying power to said crank at a point beyond said sliding connection, said crank and crank arm moving in unison in their rotation around their centers, substantially as described.

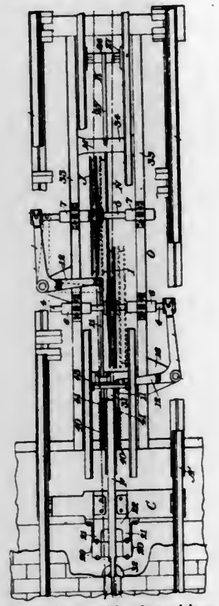
546,955. CABLE RAILWAY. CHARLES I. EARLL, New York, N. Y. Filed Apr. 6, 1894. Serial No. 506,586. (No model.)

Claim.—1. In a cable-railway, the combination with the track-structure having a grip-slot and with the grip of a cable-car, of a shiftable cable-carrier adjacent to the grip-slot and in position for normally holding the cable out of the path of movement of the cable-car grip, and shifting-mechanism in connection with said carrier and having an actuator-member located in the path of movement of the cable-car grip and adapted to be operated by said grip to shift the cable-carrier and bring the cable carried thereby into the path of movement of the grip, substantially as described and for the purpose set forth.

2. In a cable-railway, the combination with the track-structure having a grip-slot, and with a cable-car grip, of a transversely-shiftable cable-carrier, located below said grip-slot, a cable supported by said carrier normally in alignment with, but at one side of the jaws of the cable-car grip, a shifting device in connection with said carrier and having a reciprocatory actuator member adjacent to the grip-slot and in position and adapted to be operated by said grip to

shift the cable-carrier and its cable into path of movement of the grip, substantially as described.

3. In a cable-railway, the combination with a track-structure having a grip-slot, of a cable-car grip traveling in said slot and having laterally projecting cable-engaging jaws, a transversely-shiftable cable-carrier, a cable supported by said carrier normally in alignment with, but at one side of the jaws of the cable-car grip, a shifting device connected with said cable-carrier, a reciprocatory actuator pivotally supported in the path of movement of the cable-car grip and operatively connected with said shifting device, substantially as described and for the purpose set forth.



4. In a cable-railway, the combination with a track-structure having a grip-slot and with the grip of a cable-car, of two transversely-shiftable cable-carriers located one at each side of and below the grip-slot, and shifting-mechanism connected therewith and having an actuator located in the path of movement of the cable-car grip and adapted to be operated thereby to shift one or the other of said carriers transversely of the track-structure to bring the cable carried by said carrier into position for engagement with said grip, substantially as described and for the purpose set forth.

5. In a cable-railway, the combination with a track-structure having a grip-slot and with the grip of a cable-car, of two transversely-shiftable cable-carriers located one at each side of, and below the grip-slot, independent shifting-devices for each of said carriers and an actuator therefor having a portion thereof located in the path of movement of the cable-car grip and adapted to be operated by said grip, substantially as described and for the purpose set forth.

6. In a cable-railway, the combination with the track-structure having a grip-slot and with the grip of a cable-car, of transversely-shiftable cable-carrying sheaves located one at each side of, and below said slot, shifting mechanism for the cable-carrying sheaves comprising levers and connection embodying an actuator-member supported in position and adapted to be operated by the grip of a cable car, substantially as described and for the purpose set forth.

7. In a cable-railway, the combination with the track-structure having a grip-slot and with the grip of a cable-car, of two cable-carrying sheaves supported one at each side of, and below the grip-slot and adapted for transverse movement with relation to said grip-slot, two cables carried one by each sheave, and shifting-mechanism for the cable-carrying sheaves comprising levers connected with said sheaves, an actuator located below and in vertical alignment with the grip-slot and in position to be operated by the cable-car grip, and connections between said levers and actuator, substantially as described and for the purpose set forth.

8. In a cable-railway, the combination with a track-structure having a grip-slot and with the grip of a cable-car, of cable-carriers supported for movement transversely of the grip-slot, levers connected with said carriers, an actuator connected by thrust-rods with said levers and located in the path of movement of the cable-grip and adapted to be operated by said grip to throw one or the other of said carriers inward toward the grip-slot, and means for automatically imparting a return movement to said parts, substantially as described.

9. In a cable-railway, the combination with the track-structure having a grip-slot and with the grip of a cable-car, of a transversely-shiftable cable-carrier and shifting mechanism therefor embodying two oppositely-disposed actuator-members located in the plane of the grip slot, one of which members is adapted for actuating the shifting-mechanism to shift one or the other of the carriers in one direction, and the other of which members is to actuate the shifting mechanism to shift the carrier in the opposite direction substantially as described and for the purpose set forth.

10. In a cable-railway, the combination with the track-structure having a grip-slot, and with the transversely-shiftable cable-carriers and their shifting-mechanism, of two connected actuator-members located below the grip-slot and adapted to impart alternate opposite movements to said carriers through the medium of the shifting-mechanism, and a cable-car grip in position and adapted for successively engaging said actuator-members, substantially as described and for the purpose set forth.

11. In a cable-railway, the combination with the track-structure having a grip-slot and with a cable-car grip movably-supported in said slot, of two independently-operable cable-carriers supported for transverse shifting movement one at each side of, and below the grip-slot, a cable supported by each of said carriers normally out of alignment with the grip-slot, and actuating mechanism in connection with said carriers and embodying an actuator member supported in the path of movement of the cable-car grip and adapted for operating and shifting one or the other of said carriers into and out from alignment with the grip-slot, substantially as described and for the purpose set forth.

12. In a cable-railway, in combination, a track-structure having a transversely-shiftable cable-carrier, shifting mechanism in connection with said cable-carrier and adapted for shifting the carrier in one direction, a cable supported by said carrier, a cable-car grip adapted for engagement with and disengagement from said cable, a reciprocatory actuator pivotally supported below the grip-slot and in the path of movement of the cable-car grip and operatively connected with the shifting mechanism of the cable-carrier and adapted to be operated by the cable-car grip to automatically shift the cable into said grip, and a retracting-device in operative connection with the carrier-shifting mechanism and adapted for automatically retracting the shifting mechanism to shift the cable out of said grip, substantially as described.

13. In a cable-railway, the combination with a cable-car grip; and with a cable-sustaining carrier, rotatable in a plane substantially perpendicular to the plane of the rails of the line of way, and shiftable substantially in parallelism with, and at right angles to, the normal path of travel of the cable, and also shiftable substantially in parallelism with the plane of the rails of the line of way; of an actuator, located in the path of movement of, and adapted to be operated by, the grip; and shifting mechanism intermediate of and connecting said actuator and the cable-carrier, substantially as described.

14. In a cable-railway, the combination with a track-structure having a grip-slot in parallelism with the tracks thereof and having a cable-car grip movably supported in said grip-slot, of two independently shiftable cable-carriers located one at each side of, and below said grip-slot, an independent shifting-device for each cable-carrier, a reciprocatory actuator located in the path of movement of the cable-car grip and connected with one or the other of said shifting devices, and means for normally retaining the actuator in position for engagement by the cable-car grip, substantially as described and for the purpose set forth.

15. In a cable-railway, the combination with a track-structure having a grip-slot and with a shiftable cable-carrier adjacent to the grip-slot and in position for normally holding the cable carried thereby out of the path of the grip, of the vertically reciprocatory actuator having a cam-face in alignment with the grip-slot and having a depending actuator-arm, a shifting-device comprising a bell-crank connected with said cable-carrier, and a thrust-rod connecting said bell-crank with the arm of the actuator, a cable-car grip adapted for depressing the actuator, and means substantially as described, for elevating said actuator, substantially as specified.

16. In a cable-railway, the combination with the track-structure having a grip-slot and with a cable-car grip supported in said slot, of a cable-carrier adjacent to the grip-slot in position for normally holding a cable out of the path of movement of the cable-car grip, shifting mechanism in connection with said carrier, and two remotely-disposed actuators, operatively connected together and with the shifting mechanism, and located in the path of movement of the cable-car grip and adapted for shifting the carrier in opposite directions, substantially as described.

17. In a cable-railway, the combination with a track-structure having a grip-slot, and a cable-car grip supported in said slot, of a shiftable cable-carrier, an actuator located in the path of movement of

the cable-car grip and adapted to be operated by said grip in its travel, shifting mechanism connecting said actuator with the shiftable cable-carrier, and a retracting-spring intermediate to said actuator and cable-carrier, substantially as described and for the purpose set forth.

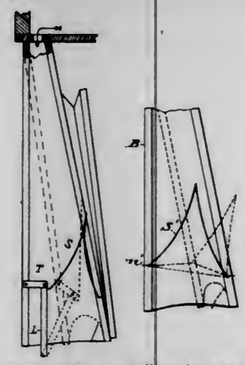
18. In a cable-railway, the combination with a track-structure having a grip-slot and with a cable-car grip supported in said slot, of a shiftable cable-carrier, shifting mechanism in connection with said cable-carrier and having an actuator member supported for movement in the path of movement of the cable-car grip, and a retracting-lever in operative connection with said actuator and in position for operation by said grip, substantially as described.

19. In a cable-railway, the combination with the track-structure having a grip-slot, a cable-car grip supported for movement in said slot, of a shiftable cable-carrier adjacent to said slot, shifting-mechanism in connection with said carrier, and two oppositely-disposed actuators supported in the path of movement of the cable-car grip one at each side of the carrier and operatively connected together and with the shifting-mechanism, substantially as described and for the purpose set forth.

20. In a cable-railway, the combination with the track-structure having a grip-slot, and with the grip of a cable-car, of a cable-carrier supported for intermittent reciprocatory movements transversely of the grip-slot, shifting-mechanism in connection with said cable-carrier and embodying an actuator supported in the path of movement of and adapted to be operated by the grip to shift the cable-carrier transversely to place the cable carried thereby into the cable-car grip, and a retracting-device in connection with and adapted for shifting the cable carrier in the opposite direction to withdraw the cable from said grip, substantially as described.

21. In a cable-railway, the combination with the track-structure having a grip-slot and with the grip of a cable-car, of a cable-carrier supported for transverse reciprocatory movements below the grip-slot, grip-actuated shifting mechanism in connection with and adapted for shifting the cable-carrier in one direction, transversely of the grip-slot and a spring actuated retracting-device in connection with and adapted for automatically shifting the cable-carrier in the opposite direction, substantially as described and for the purpose set forth.

546,956. ORGAN-BELLOWS TENSION-EVENER. ROBERT A. GALLY, Brooklyn, N. Y. Original application filed Feb. 13, 1895, Serial No. 538,122. Divided and this application filed July 18, 1895. Serial No. 556,358. (No model.)



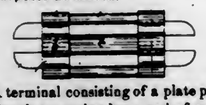
Claim.—1. A spring acting on a bellows by means of leverage, the movement of the bellows-board shifting the leverage to alter the force of the spring against the bellows to compensate the change of area or position of the bellows-fold or the increased tension of the spring.

2. A bellows spring having its bearing points on a line at an angle to the line described by the moving point, the angle being changed by the movement of the bellows, thereby altering the spring force against the bellows and compensating the change of area or position of the bellows-fold or the increased tension of the spring.

546,957. FUSE-CONNECTOR. ALFRED GARTNER, Newark, N. J., assignor to Charles H. McIntire, same place. Filed July 25, 1895. Serial No. 557,115. (No model.)

Claim.—1. A terminal consisting of a plate provided with a central raised portion forming a spring loop, said loop projecting from one side of said plate and perpendicular thereto, and of an extension integral with and lapped under said plate, substantially as and for the purposes described.

2. A terminal consisting of a plate provided with projecting fingers forming a slot, a spring loop centrally arranged on and by said plate and projecting perpendicular from one side thereof, and of an extension projecting from and lapped under said plate, substantially as and for the purposes described.



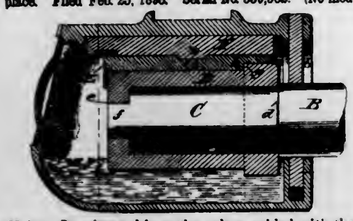
3. A terminal consisting of a plate provided with a central raised portion forming a spring loop, and of an extension on each side and lapped under said plate, each of said extensions forming an auxiliary spring loop, substantially as and for the purposes described.

4. A terminal consisting of a plate provided with projecting fingers, a spring loop centrally arranged on and formed by said plate, and of an extension on each side and lapped under said plate, each of said extensions forming an auxiliary spring loop, substantially as and for the purposes described.

5. A terminal consisting of a plate provided with a central raised portion forming a spring loop and of a series of auxiliary spring loops parallel with said centrally arranged spring loop and formed integral with said plate, substantially as and for the purposes described.

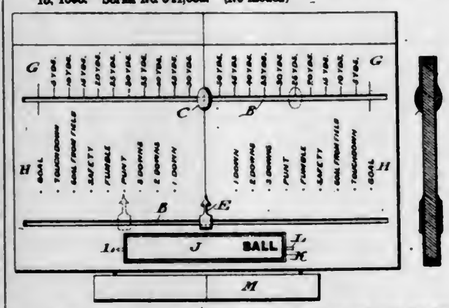
6. A terminal consisting of a plate provided with projecting fingers forming a slot, a spring loop centrally arranged on and formed by said plate, and of a series of auxiliary spring loops parallel with said central loop and formed integral with said plate, substantially as and for the purposes described.

546,958. SELF-LUBRICATING JOURNAL-BOX. MANALCUS G. KERRAN, Bloomington, Ill., assignor of one-fourth to John B. Fry, same place. Filed Feb. 25, 1895. Serial No. 539,582. (No model.)



Claim.—In a journal box, the axle provided with the journal C, and the shoulder *d*, the sleeve D, applied to the axle so as to remain stationary thereon, and provided with the shoulder *g*, and the brass E, placed upon the sleeve D, and provided with the shoulder *h*, and groove *i*, in its top, combined with the block F, having a tongue *k* to fit in the groove *i*, substantially as shown.

546,959. GAME-INDICATOR. JAMES S. LARKELEER, Philadelphia, Pa., assignor of one-half to M. Richards Muckle, same place. Filed Mar. 15, 1895. Serial No. 541,852. (No model.)



Claim.—1. A game indicator consisting of a board with the lines of game characteristics G and H on opposite sides thereof, the sliding indices on opposite sides of said board, pointing to said lines, slots in said board along said lines G and H, and necks connecting said indices, said parts being combined substantially as described.

2. A game indicator consisting of a board with the lines of game characteristics G and H, on opposite sides thereof, the sliding indices on opposite sides of said board, pointing to said lines, necks connecting said indices, and operating mechanism attached to said necks, said parts being combined substantially as described.

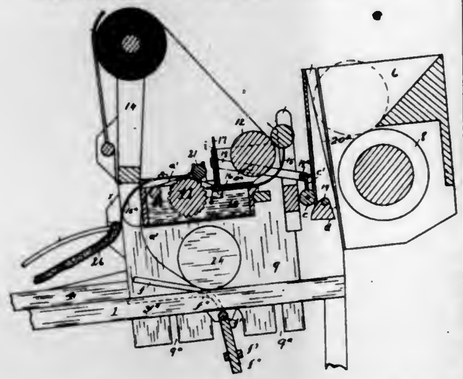
3. A game indicator consisting of a board with the lines of game characteristics on opposite sides thereof, the sliding indices on opposite sides of the board pointing to said lines, necks connecting said indices and guiding tongues on said necks, said parts being combined substantially as described.

4. A game indicator consisting of a board with lines of game characteristics on opposite sides, indices pointing toward said lines, devices for connecting said indices, and operating means connected with said devices, said parts being combined substantially as described.

546,960. COMPOUND FOR PRESERVING TIMBER. FREDERICK A. LOBERT, National City, assignor, by direct and mesne assignments, of two-thirds to Christ Schallberger and H. B. Rood, San Diego, Cal. Filed Feb. 14, 1895. Serial No. 538,421. (No specimens.)

Claim.—The herein described compound consisting of asphaltum, crude petroleum, creosote, sulfur, common salt, Portland cement, ground cinders, unslaked lime, asbestos, mica and ground copper, substantially as and in the proportions described.

546,961. LABELING-MACHINE. PERRY E. LORER, Dayton, Ohio, assignor of one-half to William H. Heinz, same place. Filed Sept. 28, 1894. Serial No. 524,414. (No model.)



Claim.—1. In a labeling machine, the combination of an upper and a lower incline, forming a —V— in side elevation; of an oscillating frame mounted on the upper incline; a can hopper mounted on said frame; label feeding and pasting mechanism actuated by the downward movement of said oscillating frame; label cutting mechanism actuated by the gravitating cans as said cans are delivered to the upper incline from the hopper, substantially as described.

2. The combination with an upper and lower inclined way intersecting and forming a —V— in side elevation, and over which the cans gravitate from and toward the operator, of an oscillating frame pivoted to the upper incline, a can hopper mounted on said frame, an adjustable casing mounted on the upper incline, mechanism for feeding and pasting labels from a roll, actuated by said oscillating frame; mechanism for cutting said labels after said feeding and pasting, said cutting mechanism actuated by the gravitating cans as they pass over the upper incline, substantially as described.

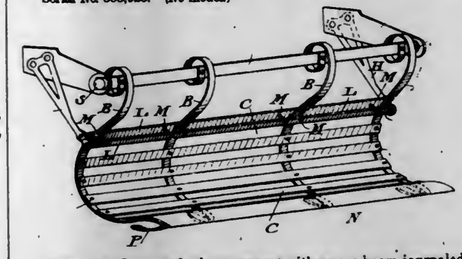
3. In a labeling machine, the combination with upper and lower inclines intersecting and forming a —V— in side elevation; of an adjustable case mounted on the upper incline; feed rollers journaled in said case; a paste trough, and a corrugated paste roller also mounted in said case; means for guiding the labels from said paste roller; mechanism for cutting said labels operated by the gravitating cans; and means for alternately actuating said feed and paste rollers, and delivering the cans to the upper incline, substantially as described.

4. The combination with the inclined ways described, of an adjustable casing, and an oscillating frame mounted on the upper one of said inclined ways, a paste trough and a corrugated and circumferentially grooved paste roller, fingers lying in said grooves, a tilting frame bearing a cutting blade to sever the labels, feed rollers and guides to direct the labels to and from said cutting blade and paste roller, and means for actuating said devices, substantially as herein described.

5. The combination with the inclined ways, and the oscillating frame supporting the can hopper, of a paste trough, a corrugated paste roller, a vibrating paste scraper adjacent to said paste roller, a cutting blade movable in slots and carried on a tilting frame, an adjustable anti-friction roller on said frame, a cam adjacent to said anti-friction roller adapted to be moved by the gravitating cans to impart movement to said tilting frame, feed rollers and guides for directing labels to the cutting blade and paste roller, and means for operating said rollers, substantially as is described.

6. The herein described means for applying labels to cylindrical bodies from a continuous roll, consisting of an adjustable casing, inclined ways, and a can hopper; an oscillating frame upon which said hopper is mounted in combination with a paste trough, a corrugated paste roller, a tilting frame carrying a cutting blade to sever said labels, an anti-friction roller mounted on said tilting frame, a cam in the path of said cylindrical bodies and movable against the anti-friction roller, and means for feeding said labels, substantially as described.

546,962. CAR-FENDER. EBEN J. MCLAUGHLIN, Essington, Pa., assignor of one-half to Irwin W. Duncan, same place. Filed Jan. 5, 1895. Serial No. 533,925. (No model.)



Claim.—1. In a car fender a support with ears, a beam journaled in said ears, spring arms secured to said beam and having their upper ends passing over the same, and their lower ends bent under the same forming shoes, slats connected with said arms, and brackets having cross bars between which the said arms pass, said brackets being secured to a suitable support, said parts being combined substantially as described.

2. A car fender formed of a body having depending arms, and cross slats connected therewith, and a support and brace between the ends of said arms consisting of cross bars, and bolts attached thereto, said arms freely occupying the spaces between said bars and bolts, substantially as described.

3. In a car fender, a support and brace for the body thereof, consisting of the cross bars L, and bolts M, within which said arms are freely passed, and the sustaining brackets H which are connected with said bars L, substantially as described.

4. A car fender having a body formed of arms and slats, and a brace and support therefor consisting of the cross bars L and the brackets H, the upper ends of said arms passing through said brackets, said arms and brackets being adapted to be secured to a beam on the car, substantially as described.

5. A car fender in combination with a beam to which the body of the same is attached, and ears in which said beam is removably held, and pins on said ears for retaining the beam in position, substantially as described.

546,963. MANUFACTURE OF BRONZE TINCTURE. HEINRICH SCHLENK, Nuremberg, Germany, assignor to the Firm of Carl Reich, same place. Filed Feb. 20, 1895. Serial No. 539,139. (No specimens.)

Claim.—1. The herein described process for producting non-inflammable bronze tincture, which consists in dissolving resin in tetra is open, will cover no more of the doorway than the amount norchloride of carbon, subsequently neutralizing the liquid and adding bronze color thereto, as specified.

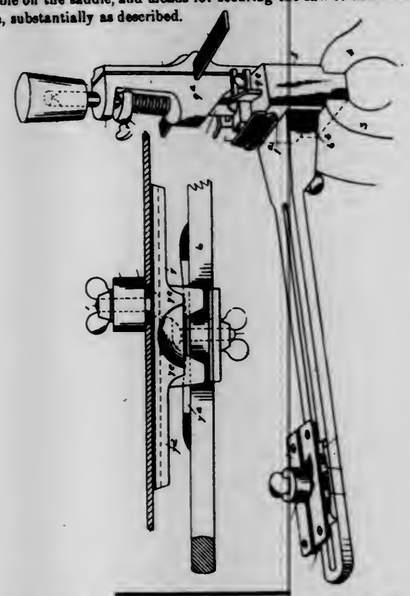
2. The new composition of matter herein described, consisting of bronze powder carried by a vehicle of a neutralized solution of tetra-chloride of carbon and gum resin, substantially as described.

546,964. SAW SET AND JOINTER. WILLIAM I. SIMMONS and RICHMOND C. SIMMONS, Northville, Mich.; said Richmond C. Simmons assignor to said William I. Simmons. Filed Mar. 15, 1895. Serial No. 541,944. (No model.)

Claim.—1. In a saw setting machine, the combination of an anvil and its support, with an upright arm adapted to carry a vertically moving setting punch, a track arm hinged to the anvil support and adjustable through a vertical angle with respect thereto, a saddle adjustable along the track arm, a plate carried by the saddle and adjustable with respect thereto through an angle in the same plane with that of the angular adjustment of the track arm, a reversible setting punch provided with facets on each end, and a collar on said punch having one side flattened and adapted to bear against the upright to prevent the punch from turning in its bearings, substantially as described.

2. In a saw set and jointer, the combination of a main support, a jointing file secured thereto, an arm hinged to the main support, a

lug projecting from the main support, a bearing screw adapted to adjust the angularity of the hinged arm, a centering device comprising a saddle adapted to slide along the hinged arm, a tabular piece adjustable on the saddle, and means for securing the saw to the tabular piece, substantially as described.



546,965. TELEPHONE. GEORGE A. TOWER, MAURICE HUNTER, and JOSEPH P. EASTWOOD, Richmond, Va., assignors of one-fourth to Maurice W. Thomas, same place. Filed Dec. 20, 1894. Serial No. 532,471. (No model.)

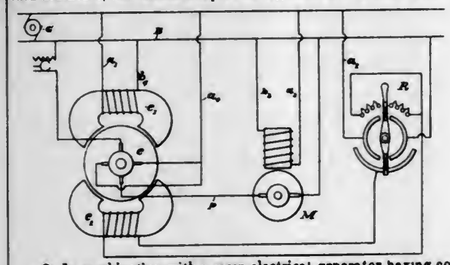


Claim.—In a telephone transmitter, the combination of a support having an opening, a plate of carbon secured rigidly over the opening and forming the diaphragm, a horizontal rod supported in the rear of the diaphragm, a series of pendent carbon electrodes pivotally hung from said rod and normally bearing against the diaphragm at or near its center, each of said pendants being approximately triangular in shape and having the supporting rod passing through it near its upper front corner, the perpendicular of the triangle being its front edge, the base its upper edge and the hypotenuse its rear edge, the preponderance of weight being disposed to the rear of its pivot, one of the conductors being connected to the diaphragm and the other to the rod supporting the pendant, substantially as described.

546,966. ELECTRICAL SYSTEM OF MOTOR REGULATION. MERLE J. WIGHTMAN, Johnstown, Pa. Filed Mar. 27, 1895. Serial No. 543,387. (No model.)

Claim.—1. In combination with a source of constant potential and a translating device, a counter electro-motive force regulator consisting of a dynamo, having a single simple armature, one portion of which armature is in shunt to the source of constant potential and another portion of which is in shunt to the source of constant potential and in series with the translating device.

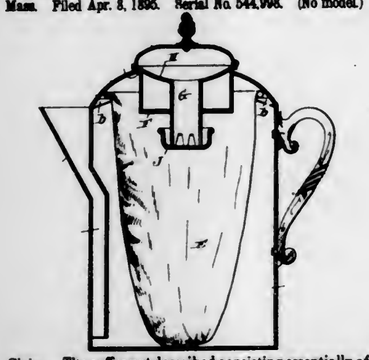
2. In combination with a source of constant potential and a translating device, a counter electro-motive force regulator consisting of a single simple armature one portion of which is in shunt to the source of constant potential and another portion of which is in shunt to the source of constant potential and in series with the translating device, a substantially constant field adapted to influence one portion of said armature, and a variable field adapted to influence another portion of said armature, and means adapted to regulate said variable field.



3. In combination with a main electrical generator having conductors leading therefrom and a translating device, a secondary simple armature, a substantially constant magnetic field embracing one portion of the armature, a variable and controllable magnetic field embracing another portion to the armature, connections between said armature and said conductors, whereby that portion of the armature affected by the constant field operates as a motor, and connections between said armature and the translating device, the current passing to said translating device being controlled by varying the aforesaid magnetic field.
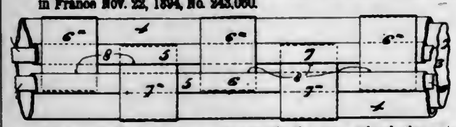
4. In combination with a main electrical generator having conductors leading therefrom and a translating device, a secondary electrical machine having a simple armature operating in a plurality of separate magnetic fields, said armature being in electrical connection with the main conductors and also in connection with the translating circuit and means for controlling a portion of the magnetic fields in which the secondary armature operates.

546,967. COFFEE OR TEA POT. WILLIAM P. WILSON, Boston, Mass. Filed Apr. 8, 1895. Serial No. 544,998. (No model.)



Claim.—The coffee pot described consisting essentially of the body having a top provided with a central opening *d*, and the removable attachment comprising the hot-water feed tube G, arranged in the pot and having the flange H, at its upper end arranged in the top opening *d*, and bearing upon the upper side of the top and also having its lower end notched, the cup J, having its bottom connected to the lower notched end of the tube G, and its side wall surrounding said notched end, the condensing receptacle F, surrounding the tube G, and connected to said tube and to the flange H, thereof, and the cap I, connected in a hinged manner to the flange H, of the tube G, all as and for the purpose set forth.

546,968. PNEUMATIC TIRE. CHARLES WOOLLEY, London, England. Filed Dec. 19, 1894. Serial No. 532,367. (No model.) Patented in France Nov. 22, 1894, No. 243,060.



Claim.—1. For securing a pneumatic tire on a wheel, the combination with two wires or rings carried by the tire cover, of two sets of hooks adapted to engage the exterior of the wheel at opposite sides thereof and to be pressed tightly thereagainst by the said wires or rings on the inflation of the tire, substantially as set forth.

2. For securing a pneumatic tire on a wheel, a device comprising two wires or rings carried by the tire-cover and two sets of angle pieces adapted to engage the exterior of the wheel at opposite sides thereof and on the inflation of the tire to be pressed tightly thereagainst and to be thereby locked in their fastening-position by the said wires or rings, substantially as set forth.

3. For securing a pneumatic tire on a vehicle wheel the combination with the tire, of two wires or rings carried by the tire-cover, two sets of angle pieces adapted to engage the exterior of the wheel at opposite sides thereof and to be pressed tightly thereagainst by the said wires or rings on the inflation of the tire, and a distance piece adapted to enter between the said wires or rings when the tire is inflated and thus to lock them in position, substantially as set forth.

4. A device for securing pneumatic tires on the wheels of vehicles, comprising two wires or rings secured to the tire-cover and two sets of angle pieces adapted to engage the exterior of the wheel at the opposite sides thereof and to be pressed tightly thereagainst by the said wires or strips on the inflation of the tire, each of said angle pieces being angled at both ends, one end being adapted to engage with one of the said wires or strips and the other with the exterior of the wheel, substantially as set forth.

5. The combination with a vehicle-wheel not specially modified for the purpose, of a pneumatic tire, two wires or rings secured to the said tire, and two series of angle pieces adapted to engage the exterior of the wheel at opposite sides thereof and to be pressed tightly thereagainst by the said wires or rings on the inflation of the tire, substantially as set forth.

6. For securing a pneumatic tire on a wheel, a band of angle pieces adapted to fit around and engage with a wheel and to receive and hold a pneumatic tire, said band of angle pieces consisting of two sets of plates flexibly connected together and adapted to engage with the exterior of the wheel on opposite sides thereof, each of the said plates being bent or angled at both ends, one end being adapted to engage with the tire and the other with the exterior of the wheel.

7. For securing a pneumatic tire on a wheel, a band of angle pieces adapted to fit around and engage with a wheel and to receive and hold a pneumatic tire, said band of angle pieces consisting of two sets of plates adapted to engage with the exterior of the wheel on opposite sides thereof, and endless tapes with which the said plates are interlaced, each of the said plates being bent or angled at both ends, one end being adapted to engage with the tire and the other end with the exterior of the wheel, substantially as described.

8. For securing a pneumatic tire on a wheel rim, a band of angle pieces adapted to fit around and engage with a wheel rim and to receive and hold a pneumatic tire, said band of angle pieces consisting of a series of plates bent or angled at each end in reverse directions and an outer flexible casing or cover in which said angle pieces are inclosed.

9. For securing a pneumatic tire on a wheel rim, a band of angle pieces adapted to fit around and engage with a wheel rim and to receive and hold a pneumatic tire, said band of angle pieces consisting of a series of plates bent or angled at each end in reverse directions, flexible connections to which said plates are attached, and an outer flexible casing or cover inclosing said plates and connections substantially as described.

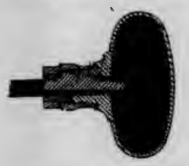
546,969. PERMUTATION-PADLOCK. STEFANO BOSANO, Mattapan, assignor of one-half to Pasqualina Caledonia, Boston, Mass. Filed July 22, 1895. Serial No. 556,677. (No model.)



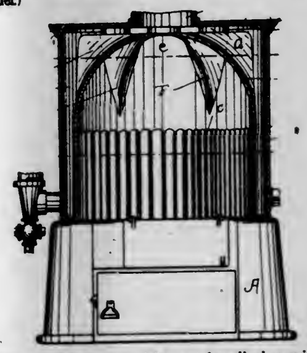
Claim.—In a permutation lock, in combination, an inclosing case, a pivoted bow B, a spring pressed pivoted end piece C, a stationary slitted sleeve F, a locking bolt G longitudinally adjustable in said sleeve and having side projections *g*, a series of lettered or numbered disks H journaled on said sleeves and having internal grooves *h* and a spring pressed hook lever I adapted to engage with the free end of the bow, substantially as and for the purpose set forth.

546,970. KNOB ATTACHMENT. CHARLES F. DOEBLER, Hartford, Conn. Filed Dec. 7, 1893. Serial No. 492,999. (No model.)

Claim.—In combination with the threaded hub of a knob, a spindle that is longitudinally divided by a V-shaped slit and is adapted to pass into an opening in the knob hub, the end of said opening having a portion of one wall outwardly inclined, a collar longitudinally movable on said spindle, a triangularly shaped latch increasing in thickness from one end backward, a perforation passing through a portion of the latch near its thicker end, a pivot pin passing through the collar and the perforation in the latch, a sleeve screwing on the threaded hub of the knob and having a shoulder that bears against the collar whereby when the sleeve is screwed upon the hub the collar is pushed inward and the latch caused to oscillate on its pivot and expand the separated parts of the spindle, substantially as specified.



546,971. HEATING APPARATUS. NEWLAND R. FROST, Boston, Mass., assignor, by mesne assignments, to Edward R. Pierce and William H. Thayer, same place. Filed June 3, 1895. Serial No. 551,518. (No model.)



Claim.—1. The improved fire-pot described, consisting of the annular water-containing wall and hollow top cast integral with the hollow water-containing ribs formed in the inner shell and arching inwardly and converging to a common center over the fire-chamber, and with vertical flue-openings between said ribs, substantially as set forth.

2. The improved fire-pot described, comprising the cylindrical outer wall B, the inner wall C vertically corrugated in its lower portion, the hollow top formed of upper and lower plates joined respectively to said walls, the inwardly curved hollow ribs F having sides springing from the wall C and top *e* and converging to a common center over the fire-chamber, forming with said hollow side walls and top a continuous water-space surrounding the fire-chamber and the flue-openings G, substantially as set forth.

3. The improved fire-pot described, consisting of an outer and inner shell cast integral, forming an inclosed annular water-chamber in the side walls and a water space in the top continuous therewith, and hollow ribs or arches formed in the inner shell and opening into and connecting said lateral and upper water spaces, said arches projecting into and converging to a center over the fire chamber, with a central water passage leading from the upper water space through the outer shell to the upper portion of the boiler, and with vertical flue-openings through the double top between said arches, substantially as set forth.

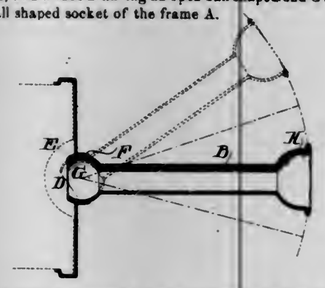
4. The integral fire pot described, having sides and top cast hollow, and hollow inwardly curved ribs F connected thereto, the upper, outermost corner of said fire-pot, having an annular recess 1 in combination with the annular saddle-piece H H′ fitting within said recess and along the adjacent exterior of the wall B and provided with the groove *h* in its upper surface, substantially as set forth.

564,972. TELEPHONIC ATTACHMENT. LOUIS J. GERSON, Philadelphia, Pa., assignor of one-half to Charles Heritage, same place. Filed Jan. 14, 1895. Serial No. 534,790. (No model.)

Claim.—1. A speaking attachment for telephones, consisting of an attaching frame, and a speaking tube connected therewith by a ball and socket joint, whereby the tube may be turned in any direction.

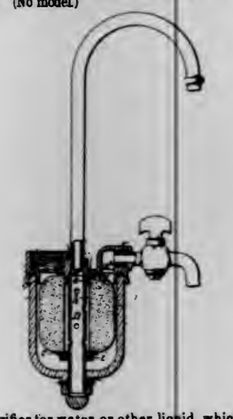
2. A speaking attachment for telephones, consisting of an attaching frame A having an aperture D, and a ball shaped socket about

the aperture, and a tube B having an open ball shaped end G adapted to fit the ball shaped socket of the frame A.



3. A speaking attachment for telephones, consisting of an attaching frame A having an aperture D and flanges E, F, in the inner and outer faces respectively forming a ball shaped socket, and the tube B having the ball end G adapted to fit the ball shaped socket composed of the flanges E, F.

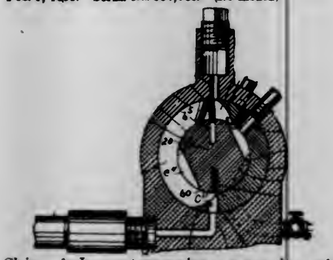
546,973. WATER-PURIFIER. HENRY E. GOULD, New York, N. Y., assignor of one-half to Theodore Linke, same place. Filed Oct. 3, 1894. Serial No. 525,219. (No model.)



Claim.—1. A purifier for water or other liquid, which consists of a top plate, A, formed with apertures, a, a', a^2, a central perforated tube, D, attached to the top plate, and screw threaded at its lower end, and an apertured block of filtering material placed upon said tube and closed at its ends, in combination with a bowl, E, formed with aperture, g, and a cap nut, G, on the lower end of the said tube, substantially as described.

2. The top plate A formed with apertures a, a', a^2 and having collars b, c and hood d formed upon its upper surface and formed with concentric flanges f f' at its edge in combination with the discharge tube B connected to collar c, faucet C connected in the hood d, a perforated tube D in line with the discharge tube B, a bowl E fitted to the said flanges f f', and perforated tube D, and a cap nut G screwed upon the protruding end of the said tube D, substantially as described.

546,974. ROTARY ENGINE. THOMAS M. KENNEY and CHARLES BULLOCK, Cambridge, Mass.; said Kenney assignor to said Bullock. Filed Feb. 9, 1895. Serial No. 537,740. (No model.)



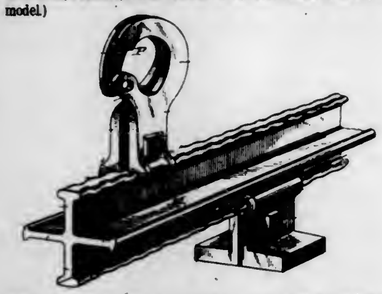
Claim.—1. In a rotary engine or motor, the combination of the following instrumentalities, viz:—a cylinder provided on its inner circumference with a segmental sleeve, an inlet passage or opening extended through said cylinder and segmental sleeve, a piston carrying roll located within the cylinder and embraced by or making contact with the segmental sleeve for the greater portion of its inner circumference, and provided with a depression or groove on its periphery forming with the inner circumference of the segmental sleeve a chamber or passage, and a radially moving piston carried by the said roll and located adjacent to the groove or depression to form with the said roll, cylinder and segmental sleeve a steam space, which for a portion of the revolution of the roll is directly connected to the steam inlet and then cut off therefrom by the said roll, substantially as described.

2. In a rotary engine or motor, the combination of the following instrumentalities, viz:—a cylinder provided with an inlet and an exhaust port or passage, a main shaft provided with an enlargement or roll within the said cylinder having diametrically opposite communicating slots or passageways, and provided with a groove or depression on its periphery, connected pistons or wings movable in said diametrically opposite slots or passageways, and a segmental sleeve within the cylinder having its inner circumference embracing or making contact with the roll and provided with cam-shaped ends to positively move one of said wings into its slot and to permit the other wing to be positively moved out of the diametrically opposite slot by the inward movement of the first mentioned piston or wing, substantially as described.

3. In a rotary engine or motor, the combination of the following instrumentalities, viz:—a cylinder provided with an inlet and an outlet port or opening, a solid roll fitted concentrically within the cylinder and provided with diametrically opposite slots in communication with each other, and with a depression or groove e^3 on its periphery, a wing or piston movable into and out of the said diametrical slots, a segmental sleeve in said cylinder between the cylinder and roll and provided with curved or cam-shaped ends co operating with the pistons or wings to force one wing into its slot and to permit the wing in the opposite slot to be forced out of its slot by the movement of the first wing into its slot, substantially as described.

4. In a rotary engine or motor, the combination of the following instrumentalities, viz:—a cylinder provided with an inlet port or passage, a segmental sleeve provided with an inlet port or passage registering with the cylinder inlet, the said sleeve having cam-shaped or inclined ends, a roll in said cylinder provided with a radial slot or passageway and with a groove or depression on its periphery separated from the said slot by a solid portion of the roll, and a piston or wing movable in said radial slot or passageway, the solid portion of the roll between the said radial slot and groove or depression forming a cut-off for the steam inlet, whereby the admission of steam into the steam space of the cylinder is prevented until the piston or wing has been moved outward from its slot, substantially as described.

546,975. HAY-CARRIER TRACK. WILLIAM LOUDEN and ROBERT B. LOUDEN, Fairfield, Iowa. Filed Feb. 9, 1895. Serial No. 537,743. (No model.)



Claim.—1. A metallic track rail consisting of horizontal wheel supporting flanges, and a vertical web having a notched or corrugated bead thereon for the attachment of clamping devices, substantially as and for the purpose set forth.

2. A metallic track rail consisting of horizontal wheel supporting flanges, an upper vertical web having a notched or corrugated bead thereon for the attachment of a suspending clamp, and a lower vertical web having a notched or corrugated bead thereon for the attachment of a clamping track stop, substantially as set forth.

3. The combination with a metallic track rail having horizontal wheel supporting flanges, and a vertical web having a notched or corrugated bead thereon, of a notched or corrugated clamping device adapted to fit on the bead of the rail, substantially as and for the purpose set forth.

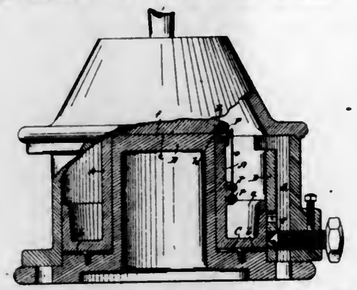
4. The combination with a metallic track rail having horizontal wheel supporting flanges, an upper and a lower vertical web, each of said vertical webs having a notched or corrugated bead thereon, of a notched or corrugated suspending clamp adapted to fit on the bead of the upper web and a notched or corrugated clamping track stop adapted to fit on the bead of the lower web, substantially as shown and described.

5. A suspending device for overhead tracks consisting of two parts adapted to embrace the web of a track rail, and means for holding the parts together, one of the parts being formed with a long pointed hook and the other with a short pointed hook and an upwardly extending finger, the openings of the hooks being on the same side, and the long pointed hook closing the opening of the short pointed hook and the finger closing the opening of the long pointed hook, substantially as described.

6. A suspending device for overhead tracks, consisting of two parts adapted to embrace the web of a track rail and means for holding said parts together, one of the parts being provided with a long pointed hook and the other with a short pointed hook and an upwardly extending finger, the openings of said hooks being on the same side, and the finger being provided with means for engaging the long-pointed hook and supporting it in position, substantially as described.

7. A metallic track rail for hay carriers, consisting of horizontal wheel supporting flanges ribbed on their outer edges and a vertical web having a notched or corrugated bead thereon for the attachment of a clamping device, substantially as described.

546,976. VACUUM DASH-POT FOR ENGINES. RICHARD H. RICE, Providence, R. I., assignor to the Rice & Sargent Engine Company, same place. Filed Apr. 27, 1895. Serial No. 547,402. (No model.)

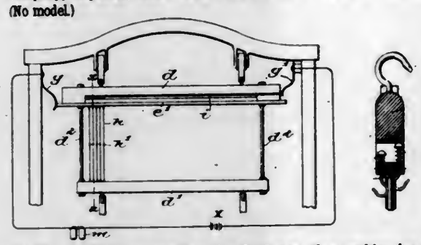


Claim.—1. In a vacuum dash-pot for closing the valves of an engine, the combination of the vacuum-cylinder with its plunger, and a relief-valve having a small air passage communicating with the interior of the vacuum-cylinder, and an extended area between the said air-passage and the valve-seat, for the action of the confined air, substantially as described.

2. In a vacuum dash-pot for closing the valves of an engine, the combination of the vacuum-cylinder, with its plunger, the bushing provided with a backwardly beveled annular valve-seat, and a relief-valve having a small air passage communicating with the interior of the vacuum-cylinder and an extended area between the said air-passage and the beveled annular valve-seat, substantially as described.

3. In a vacuum dash-pot for closing the valves of an engine, the relief-valve having a small passage communicating with the vacuum-cylinder, an extended area for the action of the accumulated pressure of the confined air, and the backwardly inclined annular valve-seat whereby the valve will present an increased area for the action of the confined air, when lifted from its seat, substantially as described.

546,977. WARP STOP-MOTION FOR LOOMS. OBERLIN SMITH, Bridgeton, N. J., assignor, by mesne assignments, to the Northrop Loom Company, Hopedale, Mass. Filed Feb. 29, 1892. Serial No. 423,226. (No model.)



Claim.—1. In a warp-stop motion for looms, the combination of the following instrumentalities, viz:—a heddle carrier; a series of heddles carried thereby; pins to which the upper ends of the said heddles are attached; springs to move the said pins to maintain the heddles taut; and a V-shaped contact strip to co-operate with the said pins, substantially as described.

2. In a warp-stop motion for looms, the combination of a series of heddles; a carrier therefor, the pins e having heads e^3, the conducting strip e', springs e^3, and contact strip i, all to operate, substantially as described.

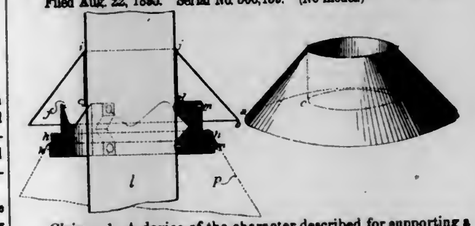
3. In a warp-stop motion for looms, the combination of the following instrumentalities, viz:—a series of heddles; a carrier therefor; a fixed contact strip on said carrier; movable contacts actuated by the tension of the warp-threads in said heddles; stopping mechanism for the loom; an electro-magnet to control the same in circuit with said fixed contact strip and movable contacts, and a device to interrupt the circuit of said magnet periodically, substantially as described.

4. In a loom the combination of the following instrumentalities, viz:—a series of heddles, a carrier therefor; a fixed contact on the said carrier; movable contacts actuated by the tension of the warp-threads in the said heddles; a stopping mechanism; an electro-magnet to control the same arranged in circuit with said fixed and movable contacts which circuit is normally broken at a point independently of the said movable contacts, and devices actuated by the carrier when it is raised to move the warp-threads into one plane of the shed to establish the continuity of the circuit of said magnet at the said point, substantially as described.

5. In a loom, the combination of the following instrumentalities, viz:—a series of heddles; a carrier therefor; a fixed contact on the said carrier; movable contacts actuated by the tension of the warp-threads in the said heddles; the springs g, g', magnet m in circuit therewith; and a stopping mechanism controlled by said magnet, substantially as described.

6. In a warp-stop motion for looms, the combination of the following instrumentalities, viz:—a lay; a series of heddles; a carrier therefor; and mechanism to move the carrier; an electro-magnet on the lay; devices controlled by the tension of the warp-threads in the said heddles to control the circuit of said magnet; an armature for the magnet, and a fork actuated thereby, substantially as described.

546,978. TENT-SUPPORT. CHARLES W. WILLIAMS, U. S. Army. Filed Aug. 22, 1895. Serial No. 560,139. (No model.)



Claim.—1. A device of the character described for supporting a tent, comprising a pipe and a collar provided on its interior with lugs for attachment to said pipe, and on its exterior, with detachable means for attachment to said tent, substantially as and for the purpose set forth.

2. A device of the character described for supporting a tent comprising a pipe and a collar, having attaching lugs cut away, and means for supporting said tent, substantially as and for the purpose set forth.

3. A metallic device of the character described for supporting a tent comprising a pipe, a collar serrated upon the upper edge and a cap supported on the pipe above the collar, substantially as and for the purpose set forth.

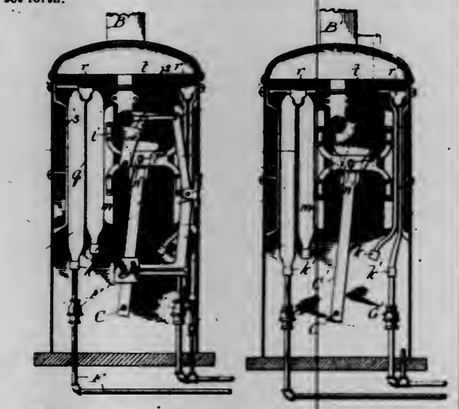
4. A metallic device of the character described consisting of a pipe, a cap with interior cylinder fitting the same and a collar attached to the same, substantially as and for the purpose set forth.

5. The combination of a collar having serrated edges and a cap having an interior cylinder, as heretofore described, with a pipe for supporting and ventilating the tent, substantially as and for the purpose set forth.

546,979. RAILWAY-GATE. JOHN W. MURRAY, Chicago, Ill. Filed Nov. 27, 1894. Serial No. 530,125. (No model.)

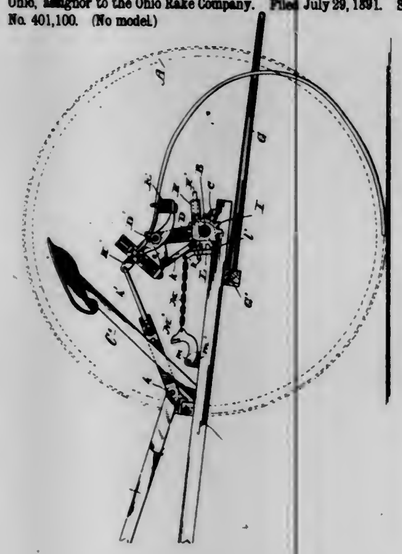
Claim.—1. In combination with a hollow casing forming a gate-post, and a swinging arm thereon, of stationary platens on opposite sides of the casing, a lever in the casing geared to the axis of the arm to operate it by turning on its fulcrum, platens on opposite sides of and carried by the lever, sliding carriers mounted at opposite sides of the lever, collapsible and expansible tubes suspended from the carriers and extending and confined between the said platens on the lever and the respectively adjacent stationary platens, air-pressure mechanism for directing air into said tubes, and means for venting the air from said tubes, substantially as and for the purpose set forth.

2. In combination with a hollow casing forming a gate-post, and a swinging arm thereon, of stationary platens at opposite sides of the casing, a lever in the casing geared to the axis of the arm to operate it by turning on its fulcrum, platens on opposite sides of and carried by the lever, sliding yoke-pieces on opposite sides of the lever, diaphragms suspended from said yoke-pieces, collapsible and expansible tubes suspended between their ends from the said yoke-pieces and extending across opposite sides of the said diaphragms between the platens on the lever and respectively adjacent stationary platens, and air-pressure mechanism for directing air into said tubes, and means for venting air from said tubes, substantially as and for the purpose set forth.



3. In combination with a hollow casing forming a gate-post, shaft B, swinging arm B' thereon, compressed air-supplier and means for turning the shaft to raise and lower the arm B' actuated from the said air-supplier, of a stop-projection B^3 on the shaft, and means for locking the shaft against rotation when the arm B' is raised, comprising a lever H pivotally mounted between its ends in the casing and having an arm *e* provided with a weight, and an arm *f* extending normally into the path of the said stop-projection, a platen *d* on the arm *e*, a platen *d* adjacent thereto on the casing, an expansible and collapsible tube *c* supported between the said platens and communicating with the said air-supplier, and means for directing air from the supplier into said tube and for exhausting the air from said tube, the arm *f* operating to engage the stop-projection B^3 when the arm B' is raised, and the tube *c* operating when expanded to bear against the platen *d* and swing the lever out of the path of the said stop-projection, substantially as described.

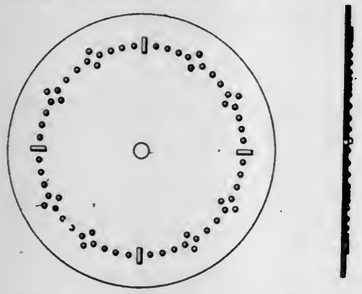
546,980. HORSE HAY-RAKE. GEORGE I. WEAVER, Dayton, Ohio, assignor to the Ohio Rake Company. Filed July 29, 1891. Serial No. 401,100. (No model.)



Claim.—The combination substantially as hereinbefore set forth, of the revolving through axle, the draft-frame connected with said axle by bearing boxes, the standards rising over said boxes, the rocker-frame pivoted upon a rod supported in said standards, the toothed wheel secured to the axle, the housing mounted loosely thereon alongside of the wheel, the link connecting said housing to the rocker-frame, the trip-dog and its spindle, the trip-lever pivoted to the housing and connected to the spindle of the dog, the treadle and a connection between said treadle and the trip-lever, arranged practically as described whereby the trip-dog is released by the action of the trip-lever as the connection between the latter and the treadle is drawn taut by the revolution of the axle.

DESIGNS.

24,689. WATCH-DIAL. JULIUS O. JACOT, Stockbridge, Mass. Filed Dec. 29, 1894. Serial No. 533,351. Term of patent 3½ years.



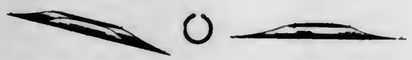
Claim.—The design for a watch dial or face herein shown and described.

24,690. RING. CHARLES KNAPP, New York, N. Y. Filed July 9, 1895. Serial No. 555,934. Term of patent 7 years.



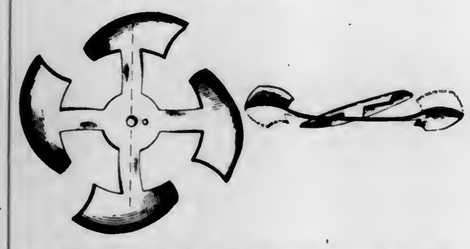
Claim.—The design for a ring as herein shown and described.

24,691. TOOTHPICK. EDWIN MCCHESNEY, Herman, Minn. Filed May 14, 1895. Serial No. 549,319. Term of patent 14 years.



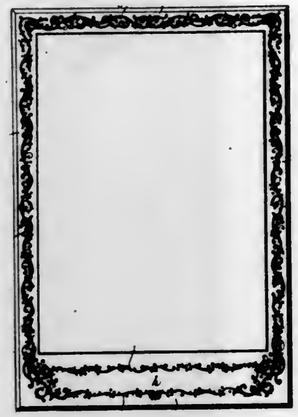
Claim.—The design for a tooth-pick herein shown and described.

24,692. FLIER FOR AERIAL TOPS. JAMES WILLIAM CAIN and WILLIAM A. SKINNER, Orlando, Fla., Filed Aug. 21, 1895. Serial No. 560,059. Term of patent 7 years.



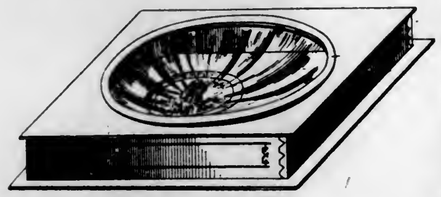
Claim.—The design for a flier for aerial tops, substantially as shown and described.

24,693. CARD-MOUNT. FREDERICK R. HASTINGS, Devon, assignor to the A. M. Collins Manufacturing Company, Philadelphia, Pa. Filed Aug. 26, 1895. Serial No. 560,604. Term of patent 7 years.



Claim.—The design for a card mount, substantially as described and as shown in the accompanying drawing.

24,694. RECEPTACLE FOR COINS. GEORGE BENER and WILLIAM BENER, New York, N. Y. Filed July 25, 1895. Serial No. 557,129. Term of patent 3½ years.



Claim.—The design for a receptacle for coins and other articles, substantially as shown and described.

24,695. BOTTLE. JULIUS PROBSER, Greensburg, Pa. Filed July 28, 1893. Serial No. 481,775. Term of patent 3½ years.



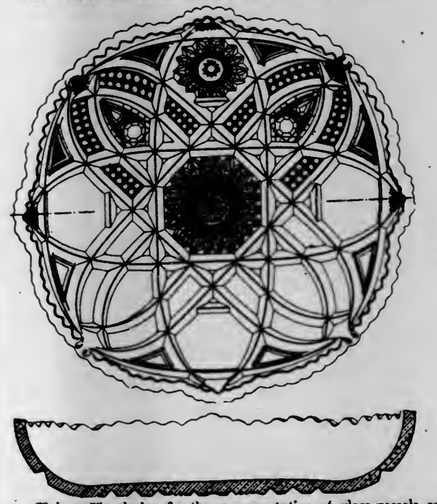
Claim.—The design for bottles and similar articles substantially as herein shown and described.

24,696. BOWL FOR TEA-SETS. CHARLES C. WIENTGE, Providence, R. I. (assignors to the Howard Sterling Company, same place. Filed June 26, 1895. Serial No. 554,142. Term of patent 7 years.



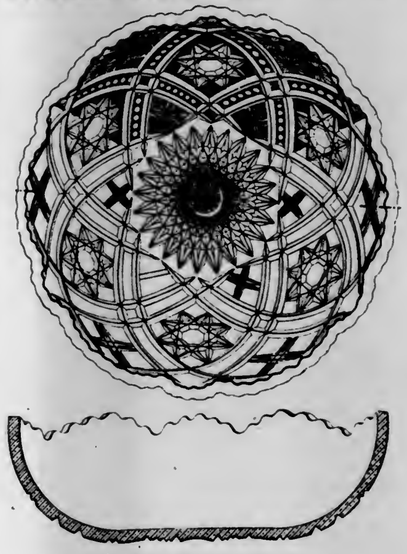
Claim.—The design for a bowl for tea-sets as herein shown and described.

24,697. GLASS VESSEL. HARRY T. BRODEN, Brooklyn, assignor to the Standard Cut Glass Company, New York, N. Y. Filed Aug. 9, 1895. Serial No. 558,788. Term of patent 7 years.



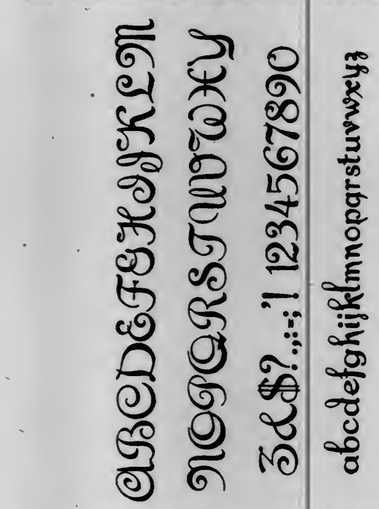
Claim.—The design for the ornamentation of glass vessels, substantially as herein shown and described.

24,698. GLASS VESSEL. HARRY T. BRODEN, Brooklyn, assignor to the Standard Cut Glass Company, New York, N. Y. Filed Aug. 9, 1895. Serial No. 558,789. Term of patent 7 years.



Claim.—The design for the ornamentation of glass-vessels, substantially as herein shown and described.

24,699. FONT OF PRINTING-TYPE. MAX ROSENOW and JULIUS SCHMOHL, Chicago, Ill., assignors to the Barnhart Bros. & Spindler, same place. Filed June 27, 1895. Serial No. 554,268. Term of patent 7 years.



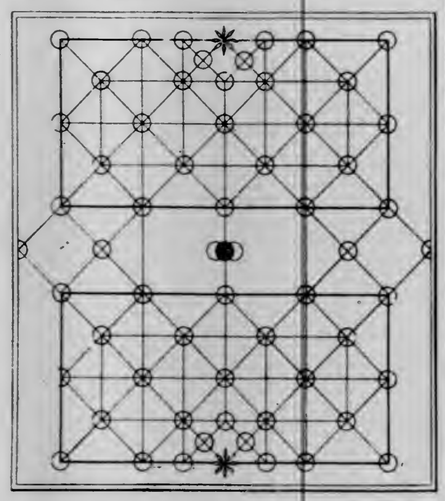
Claim.—The design for a font of type herein shown and described.

24,700. FONT OF PRINTING-TYPE. JOHN WEST, Chicago, Ill., assignor to the Barnhart Bros. & Spindler, same place. Filed June 27, 1895. Serial No. 554,269. Term of patent 7 years.



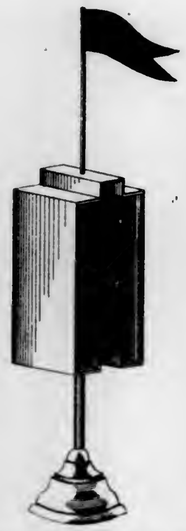
Claim.—The design for a font of type herein shown and described.

24,701. GAME-BOARD. THOMAS H. B. PIERCE, Dexter, Me. Filed Oct. 26, 1894. Serial No. 527,097. Term of patent 14 years.



Claim.—The design for a game board as herein shown and described.

24,702. DISPLAY-STAND. JEFFERSON DAVIS GODDARD, Kansas City, Mo. Filed Aug. 24, 1895. Serial No. 560,439. Term of patent 14 years.



Claim.—The design for a display stand herein shown and described.

24,703. TRUNK CORNER-IRON. JEROME M. SCHWERIN, Newark, N. J. Filed May 28, 1895. Serial No. 551,003. Term of patent 7 years.



Claim.—The design for a trunk corner iron, substantially as herein shown and described.

24,704. HANDLE-TUBE. GEORGE H. DIPPO, Chagrin Falls, Ohio, Filed Aug. 24, 1895. Serial No. 560,438. Term of patent 14 years.



Claim.—The design for a handle tube for a combined shovel and peen, as shown and described.

24,705. BROOM-FERRULE. ALPHONSO WALRATH, Fort Plain, N. Y. Filed July 17, 1895. Serial No. 556,293. Term of patent 7 years.



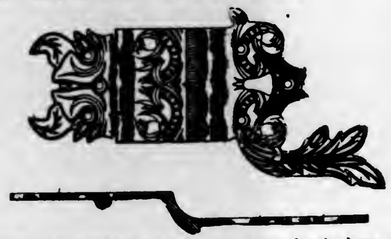
Claim.—The design for a broom-ferrule, substantially as herein shown and described.

24,706. SASH-LOCK. ADOLPHUS A. SHIELDS, Huntsville, Ala. Filed July 27, 1895. Serial No. 557,391. Term of patent 14 years.



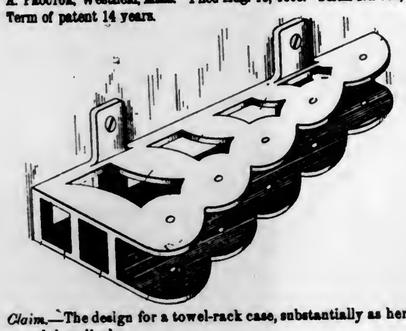
Claim.—The design for a sash-lock, as shown and described.

24,707. HINGE. FRED E. RANNEY, Greenville, Mich. Filed Aug. 23, 1895. Serial No. 560,291. Term of patent 3½ years.



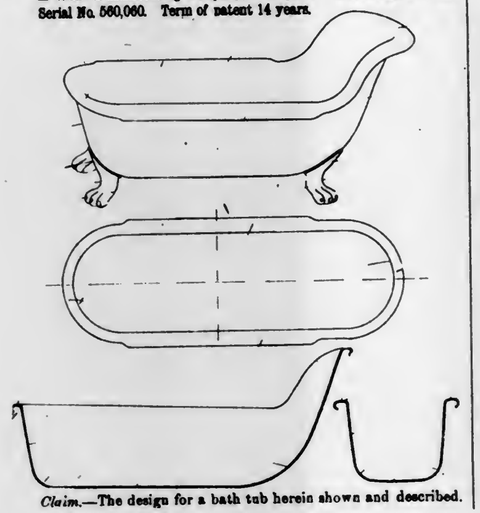
Claim.—The design for an ornamental hinge herein shown and described.

24,708. TOWEL-RACK CASE. GEORGE M. PROCTOR and WILLIAM A. PROCTOR, Westfield, Mass. Filed Aug. 16, 1895. Serial No. 559,558. Term of patent 14 years.



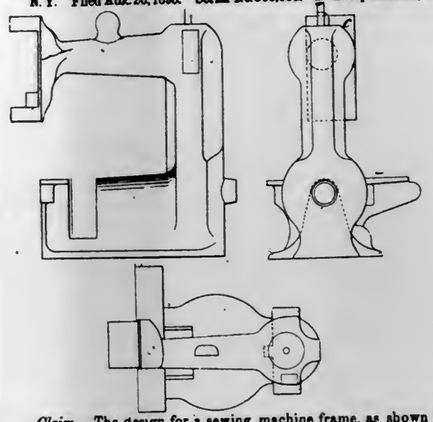
Claim.—The design for a towel-rack case, substantially as herein shown and described.

24,709. BATH-TUB. JOHN H. GAVIN, Chicago, Ill., assignor to the L. Wolff Manufacturing Company, same place. Filed Aug. 21, 1895. Serial No. 560,060. Term of patent 14 years.



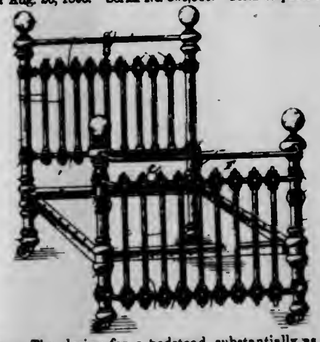
Claim.—The design for a bath tub herein shown and described.

24,710. SEWING-MACHINE FRAME. JAMES F. HARDY, New York, N. Y. Filed Aug. 26, 1895. Serial No. 560,606. Term of patent 14 years.



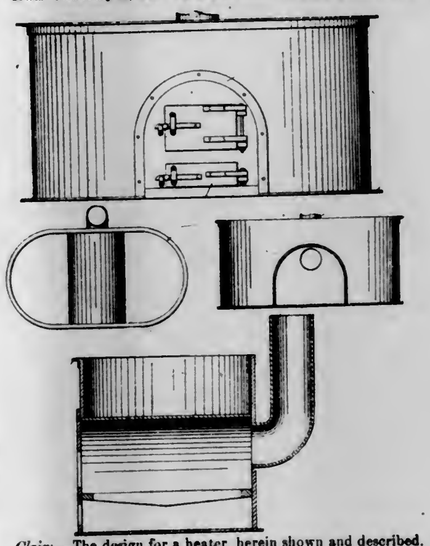
Claim.—The design for a sewing machine frame, as shown and described.

24,711. BEDSTEAD. OSCAR E. A. WIESSNER, South Brooklyn, N. Y. Filed Aug. 28, 1895. Serial No. 560,819. Term of patent 7 years.



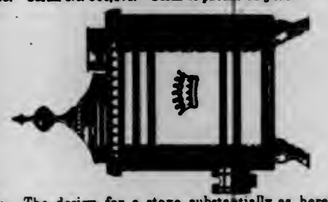
Claim.—The design for a bedstead, substantially as shown and described.

24,712. HEATER. JOHN T. CULLEN and LESLIE P. GRIMES, Clinton, Iowa. Filed July 19, 1895. Serial No. 556,515. Term of patent 14 years.



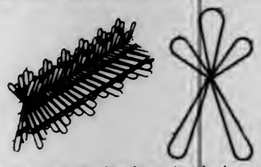
Claim.—The design for a heater, herein shown and described.

24,713. STOVE. HENRY GIVEN HAGEY, St. Louis, Mo. Filed Aug. 22, 1895. Serial No. 560,171. Term of patent 14 years.



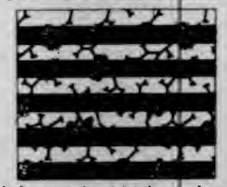
Claim.—The design for a stove, substantially as herein shown and described.

24,714. TRIMMING. FRIEDRICH HAMMERFLUG, New York, N. Y. Filed Aug. 20, 1895. Serial No. 559,959. Term of patent 7 years.



Claim.—The design for a trimming as herein shown and described.

24,715. PRINTED FABRIC. CHARLES M. PORTER, New York, N. Y. Filed Aug. 26, 1895. Serial No. 560,608. Term of patent 3½ years.



Claim.—The design for printed fabrics, as shown and described.

24,716. CARPET. NELSON SANFORD STEWART, Amsterdam, N. Y., assignor to Stephen Sanford & Sons, same place. Filed Aug. 23, 1895. Serial No. 560,294. Term of patent 3½ years.



Claim.—The design for carpets, substantially as shown in the illustration accompanying this specification.

24,717. CARPET. NELSON SANFORD STEWART, Amsterdam, N. Y., assignor to Stephen Sanford & Sons, same place. Filed Aug. 23, 1895. Serial No. 560,295. Term of patent 3½ years.



Claim.—The design for carpets, substantially as shown in the illustration accompanying this specification.

24,718. CARPET. NELSON SANFORD STEWART, Amsterdam, N. Y. assignor to Stephen Sanford & Sons, same place. Filed Aug. 23, 1895. Serial No. 560,296. Term of patent 3½ years.



Claim.—The design for carpets, substantially as shown in the illustration accompanying this specification.

24,719. CARPET. ALFRED BUNEL, Amsterdam, N. Y., assignor to Stephen Sanford & Sons, same place. Filed Aug. 23, 1895. Serial No. 560,292. Term of patent 3½ years.



Claim.—The design for carpets, substantially as shown in the illustration accompanying this specification.

24,720. CARPET. ALFRED BUNEL, Amsterdam, N. Y., assignor to Stephen Sanford & Sons, same place. Filed Aug. 23, 1895. Serial No. 560,293. Term of patent 3½ years.



Claim.—The design for carpets, substantially as shown in the illustration accompanying this specification.

TRADE-MARKS

REGISTERED SEPTEMBER 24, 1895.

27,083. BIBLES. NATIONAL PUBLISHING CO., Philadelphia, Pa. Filed Aug. 15, 1895.

COMBINATION.

Essential feature.—The word "COMBINATION." Used since August 8, 1895.

27,084. BOYS' WOOLEN KNEE-PANTS AND MEN'S VESTS. ISAAC SCHEINMAN, New York, N. Y. Filed July 17, 1895.



Essential feature.—The representation of a boy seated on a chair and holding in his hands a pair of trousers, associated with the words and letters, "THE I. S. NEVER RIP." Used since May 23, 1895.

27,085. LEATHER SHOES. GREGORY, SHAW & Co., Framingham, Mass. Filed Apr. 29, 1895.

NAKED TRUTH SHOE.

Essential feature.—The words "NAKED TRUTH SHOE." Used since November 1, 1888.

27,086. MATCHES. CONTINENTAL MATCH COMPANY, New York, N. Y. Filed June 7, 1895.

TRILBY

Essential feature.—The word "TRILBY." Used since April 15, 1895.

27,087. CIGARS, TOBACCO, AND CERTAIN NAMED GROCERIES. ALKIRE GROCER COMPANY, St. Louis, Mo. Filed Aug. 19, 1895.



Essential feature.—The word "CANARY" and the representation of a bird of that name. Used since August 16, 1895.

27,088. ALE. ANHEUSER-BUSCH BREWING ASSOCIATION, St. Louis, Mo. Filed Aug. 2, 1895.



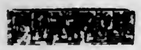
Essential feature.—The words "AMERICAN HOP ALE," arranged in white capitals on a horizontal red panel and surmounted by the capital letter "A," having the figure of an eagle with raised wings showing through the upper part of said letter. Used since June 14, 1895.

27,089. PASTE FOR REMOVING SPOTS AND STAINS. AUGUST FALK, Vienna, Austria-Hungary. Filed Aug. 19, 1895.



Essential feature.—The word "APHANIZON." Used since July 1, 1894.

27,090. CHEMICAL REFRIGERANTS. THE FREEZOL CO., St. Louis, Mo. Filed Aug. 21, 1895.



Essential feature.—The word "FREEZOL." Used since August 6, 1895.

27,091. REMEDIES FOR BLOOD, LIVER, STOMACH, SKIN, AND LUNG DISEASES. WILLIAM S. RICE, Smithville, N. Y. Filed Mar. 13, 1895.



Essential feature.—The words "HOME DOCTOR" and a monogrammatic arrangement of the letters "H D." Used since January 1, 1895.

27,092. CERTAIN NAMED MEDICINES. MOTHERS SALVE COMPANY, Chicago, Ill. Filed Oct. 22, 1894.



Essential feature.—The representation of a woman's head and shoulders, front view, and inclosed in a circle, with a background consisting of a scroll and the words "MOTHER'S" and "REMEDY" disposed on either side of the head. Used since March 1, 1894.

27,093. REMEDY FOR ALCOHOLISM AND NERVOUS DISEASES. ROBERT L. VAN DEVANTER, Hagerstown, Md. Filed June 15, 1895.



Essential feature.—The word "TRUE-TONIC" upon a band, through an opening in which palm-leaves extend. Used since May 1, 1895.

27,094. REMEDIES FOR INTERNAL AND EXTERNAL USE. EDWIN R. REYNOLDS, Chicago, Ill. Filed Aug. 16, 1895.

Electrene

Essential feature.—The word "ELECTRENE." Used since July 10, 1895.

27,095. MOUTH-WASHES AND DENTIFRICE. THE OAKLEY SOAP AND PERFUMERY COMPANY, New York, N. Y. Filed Aug. 9, 1895.

PROPHYLACTINE

Essential feature.—The word "PROPHYLACTINE." Used since June 15, 1895.

27,096. OINTMENTS, PILLS, PLASTERS, AND SPECIFICS FOR ALL AILMENTS. HENRY DAUBENY BRANDRETH, Birkenhead, England. Filed Apr. 16, 1895.

EXAINO

Essential feature.—The word "EXAINO." Used since March 1, 1895.

27,097. REMEDY FOR CORNS. JEFFERSON DAVIS GODDARD, Kansas City, Mo. Filed Aug. 24, 1895.

BOOTSHOES

Essential feature.—The word "BOOTSHOES." Used since April 1, 1895.

27,098. RASPBERRIES. JOSEPH T. THOMPSON, Oneida, N. Y. Filed July 17, 1895.



COLUMBIAN RASPBERRY

Essential feature.—A picture of a raspberry-bush with a lady standing on a chair picking fruit from the bush and the words "COLUMBIAN RASPBERRY." Used since August 1, 1891.

27,099. CANNED GOODS. SPRAGUE, WARNER & Co., Chicago, Ill. Filed July 8, 1895.

BATAVIA



Essential feature.—The word "BATAVIA" above a figure of a Japanese fan bearing thereon a monogram composed of the letters "BPCO." Used since January 1, 1882.

27,100. WHEAT-FLOUR. LAMBERT & SMITH, Delta, Ohio. Filed Aug. 14, 1895.



SILVER SPRAY

Essential feature.—The words "SILVER SPRAY," used in connection with a pictorial representation of a flowing fountain. Used since September 1, 1893.

27,101. KNIVES, RAZORS, SCISSORS, AND ALL KINDS OF CUTLERY AND EDGE-TOOLS. NEEDHAM, VEALL & TYZACK, Sheffield, England. Filed Apr. 15, 1895.



Essential feature.—The representation of an eye and the word "WITNESS" in conjunction with each other. Used since 1836.

27,102. HARDWARE, MACHINES, AND MISCELLANEOUS GOODS. MARSHALL-WELLS HARDWARE COMPANY, Duluth, Minn. Filed Aug. 1, 1895.



Essential feature.—A crescent-shaped circle with the figure of a star suspended in the center of opening at top and the word "ZENITH" written across the face. Used since March 1, 1894.

27,103. FURNACES AND FURNISHINGS THEREFOR. THE BRIGHTMAN FURNACE CO., Cleveland, Ohio. Filed Aug. 17, 1895.

BRIGHTMAN

Essential feature.—The word "BRIGHTMAN." Used since December 10, 1884.

ANDREW B. GRAHAM PHOTO-LITHOGRAPHER WASHINGTON, D. C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

MILLER AND MILLER *v.* LAMBERT.

Decided November 14, 1894.

1. INTERFERENCE—PRIORITY—LICENSE AGREEMENT.

Lambert brought to the Millers a can having the essential features of the first and second issues. Though the license agreement is not in evidence, the record shows that the Millers manufactured cans based upon Lambert's invention, and paid royalty to Lambert. *Held* that Lambert was the inventor of the first and second issues.

2. SAME—JOINT INVENTION.

It being clear that as to the third issue George Miller, and not Henry F. Miller and George Miller jointly, contributed all that is not the invention of Lambert, and the question of priority between George Miller and Lambert not having been presented upon the record, the decision upon the third is confined to this, that Henry F. Miller and George Miller are not joint inventors of the third issue.

APPEAL from the Board of Examiners-in-Chief.

CAN-CLOSURE.

Application of Henry F. Miller and George Miller filed November 2, 1894, No. 450,748. Application of Albert S. Lambert filed August 25, 1892, No. 444,098.

Mr. George P. Whittlesey for Miller and Miller.

Mr. George E. Lemon and *Messrs. Pennie & Goldsborough* for Lambert.

SEYMOUR, *Commissioner:*

Miller and Miller appeal from the decision of the Examiners-in-Chief awarding priority to Lambert on the following issues:

1. The combination with a can top having its mouth provided with depending cams, of a cover fitting into said mouth and provided with projecting lips each composed of a fold of metal integral with said cover, substantially as described.

2. The combination with a can top having its mouth provided with depending cams, of a cover having a countersunk central portion provided with projecting lips each composed of a fold in the metal of the cover, substantially as described.

Miller and Miller are box and can manufacturers in Baltimore. Lambert lives in Bridgeton, N. J. In April, 1891, Charles C. Garrett, a representative of Lambert, brought to the attention of the Millers a can-closure differing in certain details from the issues, but of which the mouth was provided with depending cams, the cover fitting into the mouth and provided with projecting nibs forced out from the countersunk side of the cover as if with a pointed instrument. Negotiations followed between Lambert and the Millers, by which this invention of Lambert's was to be manufactured by the Millers under a license agreement with Lambert. Details variant from the original specimen brought by Garrett were carried out, by which in place of the pointed nib in the cover a projecting lip was formed from a fold of metal integral with the cover.

Lambert took no testimony, relying upon his record date. The license agreement was not submitted by the Millers; but enough is disclosed to show that it was a construction of the parties put upon the acts of both at a time prior to any disagreements, and this, together with the circumstances under which the agreement was made and for some time carried out, the Millers paying a royalty to Lambert upon each can manufactured by them, leads to the conclusion that Lambert was the inventor of the subject-matter of the first and second issues.

As to the third issue, it is clear that George Miller, and not Henry F. Miller and George Miller jointly, contributed all that was not the invention of Lambert, if anything. Whether as between George Miller alone and Lambert, Lambert is also the original inventor, I do not decide, for the parties have not presented that question upon the record. All that need be decided here is that Henry F. Miller and George Miller are not the joint inventors of any part of the third issue.

Judgment of priority is therefore awarded to Lambert, and the decision of the majority of the Board of Examiners-in-Chief is affirmed.

MILLER *v.* LAMBERT.

Decided September 16, 1895.

1. INTERFERENCE—MOTION TO DISSOLVE FOR IRREGULARITY—PUBLIC USE—REJECTION ON RECORD OF FORMER INTERFERENCE.

The Primary Examiner should have considered whether or not the record of the former interference between Lambert and Henry F. Miller and George Miller established a *prima facie* case of public use against the subsequent application of George Miller.

2. SAME—SAME—OATH.

Rule 46 has all the force of a statute and it contemplates that the oath shall set forth that the invention has not been in public use or on sale in this country for more than two years prior to the filing of the complete application. Parts of Miller's application having been filed on February 3, 1894, and the application completed December 21, 1894, the interference dissolved to permit the Primary Examiner to require an oath applying to the later date.

3. SAME—FORMER INTERFERENCE—RES ADJUDICATA.

Though the former interference was between Lambert and Henry F. Miller and George Miller, it must be *Held* "that as George Miller was a party to the former interference; that as counts 1 and 2 of the issue were the same in the former interference as in the present interference, and that as the decision did not in any degree depend upon the questions of joint and sole inventorship, counts 1 and 2 are *res adjudicata*.

APPEAL on motion.

SHEET-METAL CANS.

Application of George Miller filed December 21, 1903

1894, No. 532,616. Application of Albert S. Lambert filed August 25, 1892, No. 444,098.

Mr. George P. Whittlesey for Miller.

Mr. George E. Lemon and *Messrs. Pennie & Goldsborough* for Lambert.

FISHER, *Acting Commissioner:*

This is an appeal by Miller from the decision of the Primary Examiner dissolving the above-entitled interference on the ground of irregularity in the declaration. The motion was brought by Lambert, and the following reasons in support thereof were offered by him:

(*a*) Because the declaration of the interference was not preceded by the rejection of the Miller application on the bar of public use established in the taking of testimony in the late interference between the application of Lambert and the application of Miller and Miller; (*b*) because the application of Miller when completed was not accompanied by an oath of that date or of approximately that date that the invention had not been in public use or on sale in this country for more than two years prior to the date of filing of said Miller application; (*c*) because the declaration of interference was not preceded by the requirement of such an oath from Miller; (*d*) that counts 1 and 2 of the issue herein have already been determined in favor of Lambert in the aforesaid interference, Miller and Miller *v.* Lambert, and that such counts are *res adjudicata*.

It appears that there was a former interference, Miller and Miller *v.* Lambert, No. 16,176, to which the present Miller was a party as a joint applicant. This interference was prosecuted to a hearing before the Commissioner, whose decision, as no appeal was taken, became final. Soon after this decision of the Commissioner, George Miller filed a sole application and the present interference was declared.

As to the first reason alleged by Lambert that the Miller application should have been rejected on the ground of prior public use, it may be said that as the alleged bar was based upon the testimony in the prior interference the Examiner should, if he had considered the bar to be established, have rejected for that reason. In this connection, however, it should be noted that the usual practice in an interference proceeding is to defer the question of public use until the question of priority has been finally settled. In the vast majority of cases it is found that testimony on the question of public use can be taken as well or better in connection with the testimony on the question of priority than it can in a separate proceeding, and, as said before, the usual practice does not favor such separate proceeding. It should also be noted that the evidence of public use, which in this case is the evidence taken in the former interference, should clearly establish a *prima facie* case, and that evidence of the manufacture of cans is not necessarily evidence of public use or sale of the same. This question, therefore, is left for the determination of the Examiner, with the direction that if there is any doubt in his mind as to the making out of a clear *prima facie* case he should not reject, but should leave that question to be determined in the interference proceeding.

The second objection by Lambert as to the insufficiency of the oath in the Miller application will now be considered. It appears that on February 3, 1894, Miller filed a petition, specification, and oath as an incomplete application, and that on December 21, 1894, he completed this application by filing a drawing and the first fee. The date, therefore, of his complete application is December 21, 1894. It is contended by Lambert that the oath filed February 3, 1894, is insufficient and that a new oath stating that the invention had not been in public use or on sale in this country for more than two years prior to December 21, 1894, should be required. Miller, on the other hand, strenuously contends that his oath is sufficient and that there is nothing in the law or rules or decisions of the courts to the effect that a new oath should be furnished. I am unable to concur in Miller's view of the case. Rule 46, which has all the force of a statute, plainly contemplates that the oath shall set forth that the invention has not been in public use for more than two years prior to the filing of the application, which, in my opinion, means the filing of a complete application. It is clear if this were not so that an applicant could put his invention in public use for four years before the filing of a complete application by filing an incomplete application just before the expiration of the first two years of public use and completing said application within two years thereafter. I think that this is clearly contrary to the intent of the law. Moreover, Rule 46 provides that an additional oath may be required if the application is not filed within a reasonable time after the execution of the original oath. This provision in the rule was made in order that the oath should state that the invention had not been in public use or on sale for more than two years prior to the filing of the application containing the oath and not two years prior to the execution of the oath. It seems to me that this principle applies exactly in the present case, for I cannot regard it as material whether the oath remains in the custody of the applicant or in the custody of the Office as forming a part of an incomplete application. It is, held, therefore that this contention of Lambert is sound, and on this point the decision of the Examiner dissolving the interference is affirmed.

The third reason also relates to the oath, and needs no further consideration.

The fourth reason is that counts 1 and 2 of the issue are *res adjudicata* in view of the decision of the Commissioner in the former interference. This decision was to the effect that—

Lambert was the inventor of the subject-matter of the first and second issues—

and that he communicated the same to the Millers. It seems obvious that this decision did not in any way depend upon the decision of the question whether the Millers were joint inventors or whether it was George Miller alone who was the inventor. It must be held that as George Miller was a party to the former interference, that as counts 1 and 2 of the issue were the same in the former interference as in the present interference, and that as the decision did not in any degree depend upon the questions of joint and sole inventorship counts 1 and 2 are *res adjudicata*, notwithstanding the numerous decisions of the Office to the effect that joint inventors are a different entity from one of them, and that the decision in an interference to which joint inventors are parties does not usually act as a bar in a subsequent interference in which one of the inventors is a party as a sole applicant.

The Examiner is therefore directed to dissolve the above-entitled interference; to require a new oath

from Miller covering the two years immediately preceding the date of his complete application, December 21, 1894; to reject the application of Miller if he is convinced that a clear case of public use has been made out by the testimony in the former interference, resolving any doubt, however, on that question in favor of Miller, and, finally, if the interference is redeclared to omit counts 1 and 2 from the issue.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Northern District of Missouri, Eastern Division.

ACME HARVESTER COMPANY *v.* FORBES *et al.*

Decided June 17, 1895.

1. KENAGA—HAY-RAKE—DISCLAIMER—INVALID.
Letters Patent No. 259,550, for improvements in hay-rakes, issued to Martin H. Kenaga June 13, 1882, *Held* to be invalid, notwithstanding the disclaimer filed in the Patent Office May 14, 1892.

2. DECISIONS AS TO VALIDITY AND INVALIDITY.
A decision declaring the validity of a patent is not entitled to the same consideration as a decision declaring a patent invalid.

Messrs. Peirce & Fisher for the complainant.

Messrs. Banning & Banning for the defendants.

ADAMS, *J.:*

This is an action for infringement of Letters Patent of the United States No. 259,550, issued June 13, 1882, to Martin H. Kenaga, for improvements in hay-rakes.

The complainant brings this action as assignee of the patentee.

It is claimed by the complainant that Kenaga invented a new and useful attachment for use on the ordinary horse hay rake or sweep of the class employed with stackers, and particularly on those rakes of this class which are drawn by horses hitched one at each end. This attachment consists of poles secured one to each end of the head of the rake, extending therefrom forward, upward, and outward in such a way as to permit horses attached to a singletree, one at each end of the rake-head, to be hitched by a breast-strap to the free front end of the poles, and thereby to afford facilities for backing the rake out from under its load instead of being required to turn the horses around and draw the rake out, as formerly. These poles are intended, also, to serve the purpose of guiding the horses while turning the rake and warding off or keeping the horses from stepping upon or becoming entangled in the teeth of the rake, which projects along the ground in front of the rake-head and between the two horses so attached to either end of the rake-head, as aforesaid.

Although reference is made in the specification of the patent and proof of the advantages of having the two horses so attached to the rake as to be driven by one boy from a seat behind, midway the head of the rake, yet it is admitted by complainant's counsel that the invention, if at all, consists only in the attachment of these two poles to the ends of the rake, extending therefrom forward, upward, and outward, for the purposes specified.

The record shows that complainant, prior to 1888, under its then name of Acme Harvester Company, instituted a suit in the Circuit Court of the United States for the Northern District of Illinois, on this same Kenaga patent, of like character and for like purpose as this, against Stephen Martin *et al.*, and that upon full hearing the court, Judge Blodgett presiding, on the 9th day of January, 1888, rendered and entered a final decree on the merits, dismissing the complainant's bill on the ground that the patent was invalid for want of invention and patentable novelty, and that the decree and judgment in said cause became and was final.

On dismissing the bill in that case Judge Blodgett filed an opinion which is published in volume 33, *Federal Reporter*, 249. From this opinion it will be seen that, in Judge Blodgett's judgment, there was no invention involved in the use of these particular poles. He assimilates them in principle to the ordinary thills which have been used time out of mind in connection with vehicles mounted on wheels to be drawn or propelled by animal-power, and in so doing he expressed the manifest meaning of the specification of the patent, which reads as follows:

If preferred, a pair of thills may be connected with each of the arms B B, in which the horse is hitched in the usual way, which construction would be the equivalent of that shown in the drawing. When thills are used, however, it will be advisable to employ the poles C, by which to hitch the horses' heads as an aid in guiding them, in which case said poles may be relatively light.

After the entry of final decree by Judge Blodgett in the Martin case the complainant, on the 14th day of May, 1892, filed in the United States Patent Office a disclaimer, in which, after reciting the grant of Letters Patent to Kenaga and the mesne assignment by which the complainant acquired the rights of the patentee, the following appears, namely:

And your petitioner further represents that it has reason to believe that, through inadvertence, accident or mistake, the specification and claim of said Letters Patent are too broad, including that of which the said Martin H. Kenaga was not the first inventor, and your petitioner hereby enters its disclaimer to the following matter occurring between line 67 and 77 of the specification of said patent, viz: "If preferred, a pair of thills may be connected with each of the arms B B, in which the horse is hitched in the usual way, which construction would be the equivalent of that shown in the drawing. When thills are used, however, it will be advisable to employ the poles C, by which to hitch the horses' heads as an aid in guiding them, in which case said poles may be relatively light." Your petitioner hereby disclaims a horse-rake having the horses independently attached at the ends of the rake and having the projecting draft-bars in combination with forwardly-projecting poles, except when such projecting poles are arranged so that the free front end of each is brought forward, upward and outward from the ends of the rake-head.

Besides the disclaimer complainant has produced some additional evidence beyond that taken in the Martin case tending to show that straight poles would not accomplish the functions contemplated by the Kenaga patent, and also showing that the attachment of the poles extending forward, upward, and outward, as in the Kenaga patent, serves a useful purpose.

Except as supplemented by the disclaimer and this additional evidence the case is submitted on the same proof as used in the Martin case.

Complainant insists that, by virtue of the disclaimer and additional evidence, the case as now presented is substantially different from that presented to Judge Blodgett.

By way of argument counsel for complainants say that Judge Blodgett obviously did not take into consideration the peculiar features of the poles now claimed by them to be novel, but, on the contrary, construed the claim of the Kenaga patent to cover, broadly, the mere attachment to the ends of an ordinary sweep-

rake of the ordinary poles such as are common to all vehicles.

On a careful consideration of Judge Blodgett's opinion I cannot agree with counsel on this point. The Kenaga patent, including a drawing of the rake, showing the attachment of the poles and their projection forward, upward, and outward, was before the court in the Martin case, and Judge Blodgett in his opinion makes manifest reference to these peculiar poles. He says:

> If a person using such a rake conceived the idea that it would e more convenient to handle the rake to some extent by means of a guiding-pole or backing-pole, like that shown by this patent, it seems to me that with the common knowledge which exists among all those who have been in the habit of using horse-rakes, that they had been backed and guided by means of a pole, there was no invention in applying a pole to rakes of this kind for that purpose.

The disclaimer therefore leaves the patent substantially as considered by Judge Blodgett, and the additional evidence taken in this case is cumulative in its character and relates more to the utility than the novelty of the device.

The case, therefore, now before the court is substantially the same as the one before Judge Blodgett.

The rule is well established that where a court of co-ordinate jurisdiction has, on full hearing, declared a patent invalid this court will not consider the case unless there was in the former adjudication manifest error in law or manifest mistake in fact. (*Meyer* v. *Goodyear India Rubber Co.*, 22 O. G., 681; 11 Fed. Rep., 891; *McCloskey* v. *Hamill*, 23 O. G., 2122; 15 Fed. Rep., 750; *Carey* v. *Lovell Manufacturing Co.*, 40 O. G., 1239; 31 Fed. Rep., 344; *Kidd* v. *Ransom*, 35 Fed. Rep., 588.)

I find no such manifest error or mistake. On the contrary, it seems to me that the conclusion reached by Judge Blodgett is correct.

The fact that, in a case instituted subsequent to the decision of the Martin case by this complainant against the Famous Manufacturing Company in the United States Circuit Court for the Southern District of Illinois on the patent now under consideration, the court overruled a demurrer to the bill of complaint does not, in my opinion, detract from the force and effect to be given to the decision upon the merits of the Martin case by Judge Blodgett.

Judge Allen, before whom this demurrer was heard, wrote no opinion, and it is impossible from the record entry overruling the demurrer to say that the court necessarily intended to rule that the patent was valid.

A ruling declaring the validity of a patent is not entitled to the same consideration as a ruling declaring the patent invalid.

In Robinson on Patents, volume 3, section 1184, it is said:

> Judgments against the patent are, for obvious reasons, of higher value and wider influence; since a patent invalid upon any ground is invalid against all the world, and, therefore, any decision declaring it void, though in a different tribunal and between other parties, affords a presumption of its invalidity which the plaintiff can with difficulty overcome.

For the foregoing reasons the opinion expressed by Judge Blodgett in the Martin case must be held to be the law of this circuit with respect to the patent under consideration until the appellate court rules otherwise.

The bill is accordingly dismissed.

U. S. Circuit Court—Eastern District of Pennsylvania.

NATIONAL COMPANY *et al. v.* BELCHER. NATIONAL COMPANY *et al. v.* MORSE *et al.*

Decided June 25, 1895.

1. HINCKLE—ELEVATORS—INVALID.

   Claim 1 of Letters Patent No. 183,055, granted October 10, 1876, to Phillip Hinckle, for an improvement in air-chambers for forcing water for operating elevators, construed and *Held* to be invalid.

2. OTIS—ELEVATORS—VALID—INFRINGED.

   Claims 3, 4, 6, and 7 of Letters Patent No. 228,107, granted May 25, 1880, to Charles R. Otis, for elevators, *Held* to be valid and infringed.

3. REYNOLDS—ELEVATORS—INVALID.

   Letters Patent No. 317,202, granted May 5, 1885; No. 456,122, granted July 14, 1891, and No. 458,917, granted September 1, 1891, to George H. Reynolds, for controlling devices for elevators, *Held* to be invalid. (*Crane Elevator Co.* v. *Standard Elevator Co.*, 64 O. G., 438, referred to.)

Mr. James H. Raymond and *Mr. Edwin H. Brown* for the complainants.

Mr. Ernest Howard Hunter for the defendants.

DALLAS, *J.*:

In pursuance of a stipulation filed these two cases have been heard together and upon the same proofs. They both involve the same five patents.

First. The patent to Phillip Hinckle, No. 183,055, dated October 10, 1876, is for an improvement in air-chambers for forcing water for operating elevators, etc. The claim in question in this suit is as follows:

> 1. In a hydraulic hoisting device, an air and water chamber, A, interposed between and communicating with the elevator-cylinder and a pressure-generator, substantially as described.

In the specification it is said:

> I may employ a pump of such construction that when there is a determined amount of pressure in the chamber A the pump shuts off, but when the pressure lowers the pump again starts.

This is the only mention which is anywhere made of any particular kind of pump or construction, and it amounts to nothing more than a suggestion, which may or may not be followed. Complainant's expert says that—

> the patentee proposes to provide a pump of such construction that a determined amount of pressure in the tank-chamber A will automatically stop the pump, the pump being started again when the pressure in the chamber becomes lower;

but for this statement there is no other foundation than the language which I have quoted from the specification. Whether the patentee, if he had in his claim specifically designated the automatically-acting pump here referred to, would have strengthened his position is, at least, doubtful; but as it is very plain that the claim does not call for any peculiar form or construction of "pressure-generator" inquiry as to whether a claim so constructed might have been made and sustained would have been profitless. As it stands, this claim has been met by overwhelming evidence of anticipation, and therefore I am constrained to hold that it is invalid.

Second. The patent to Charles R. Otis, No. 228,107, dated May 25, 1880, is for an invention which, as stated in the specification—

> consists in means * * * for preventing accidents from the breaking or slipping of the hoisting-rope of an elevating apparatus, or from the case acquiring an undue velocity from any cause, the invention further consisting in means for automatically restoring the parts to an operative position after the movement of the cage has been arrested or reduced.

Four of the seven claims in this patent are involved. These are as follows:

3. The combination, with an elevator-cage having appliances for arresting or retarding the movement thereof, of mechanism for throwing said appliances into operation on an undue increase of speed, and devices for automatically restoring the said appliances to their first position as the speed is reduced or motion arrested or reversed, substantially as set forth.

4. The combination, with a cage and its arresting appliances, of the cable *k*, connected thereto and traveling therewith, governor operated by said cable, and clamp operated by the governor to automatically grip and release the cable, substantially as set forth.

6. The combination of the cage, its detents, the cable *k* and its retarding appliances, and spring interposed between the operating-arm of the stopping or retarding devices and a bearing on the cable, substantially as set forth.

7. The combination of the cage, its arresting devices, operated from a crank or arm, a cable traveling with the cage and connected to said arm, governor operated by the movement of the cable, and jaws arranged adjacent to the cable, to act directly thereon, and connected to the governor, to be opened and closed thereby, substantially as set forth.

The ten prior patents discussed by the learned counsel of the defendants have been carefully examined. They certainly do show that before this Otis patent was applied for much thought had been directed to securing safety in the operation of elevators, and that the trend of the inventive efforts of others had been in the same general direction as that of Mr. Otis. His construction, however, though very nearly approached, has never been reached, and upon its introduction the contrivance of the patent in suit was adopted in preference to anything which had preceded it, and was and is largely used. His achievement, now that it has been realized, may not appear to have been a very difficult one to accomplish, but that it met a recognized want, and was regarded as being new as well as useful, is quite persuasively shown by its extensive adoption and the prolonged acquiescence of the trade in his monopoly. The claim which is most seriously attacked is the third, and the reference by which that attack is most plausibly maintained is to a patent issued to John Fenson, No. 151,014, dated May 19, 1874, for improvement in elevators. But by that patent, although its appliances for arresting the movement of the cage may, after service, fall out of operative position, there are disclosed no—

> devices for automatically restoring the said appliances to their first position, as the speed is reduced or motion arrested or reversed,

and the employment of such devices constitutes a material element of the third claim of the patent in suit.

Infringement has been clearly shown. These are all combination claims, and though some of the corresponding parts in the respondents' arrangement are not precisely identical with those of the patent, yet it is obvious that they have the same purpose in combination, and effect that purpose in substantially the same manner.

Upon authority of *Dunlap* v. *Schofield* (67 O. G., 139; 152 U. S., 244) I sustain the point made for respondents, that—

> there can be no recovery for damages and no accounting for profits, because the complainant has failed to allege in the bill of complaint either that the patented devices were marked "patented," or that actual notice of the fact was given to the defendants, as required by section 4900, Revised Statutes.

In *Allen* v. *Deacon* (21 Fed. Rep., 122) it was held in a suit in equity that in the absence of marking or notice neither damages nor profits can be recovered.

Third. The patent to George H. Reynolds, No. 317,202, dated May 5, 1885, is for means for controlling the operation of elevators. The only claim involved in this suit is as follows:

1. The combination, with the car or cab and its controlling-valve, of a lever or hand gear on the car or cab, and occupying a stationary position relatively thereto as it travels, sheaves *g g'*, and bearings therefor arranged at the bottom of the shaft and adapted to move upward and downward, other sheaves *h h*, at the top of the shaft, flexible connections passing around these sheaves from the top to the bottom of the shaft and connected at their one end with the said lever or hand gear on the car or cab, and connections between the valve and the movable bearings for the sheaves *g g'* at the bottom of the shaft, through which the movement of the lever or hand gear on the car and the rising movement of one or other of the sheaves *g g'* will effect the shifting of the valve, substantially as herein described.

This claim was before the Circuit Court for the Northern District of Illinois in the case of *Crane Elevator Co.* v. *Standard Elevator Co.*, (64 O. G., 438;) but the opinion filed by that court is silent upon the question of the patent's validity. That question is therefore an open one, and as such has now been considered. It is, however, unnecessary to discuss the evidence bearing upon it, except as it relates to a single matter upon which I have reached a decisive conclusion.

A German patent, No. 18,400, to D. Lampe for gearing for lifts, published June 3, 1882, contains this statement:

> For moving cocks, valves, slide-valves, and pistons, which have not a tendency to go into the cut-off position, the mechanism is doubled, whereby the loose rollers are set upon a two-armed lever, which then can act directly as a cock-key or beam.

That patent was placed in the hands of a machinist and model-maker, with instructions—

> merely to show by the construction of a model a modification, as described, of a double endless rope to operate the model as described in the specification according to his judgment as therein described, only to show the operation of the modification of doubling the hand-rope to move stop-valves or other devices at the bottom of the shaft as described in the specification.

He had no further instructions and received no drawings other than those which accompanied the Lampe patent, and upon information derived wholly from that patent and the specification annexed to it he constructed a model which fully discloses the invention claimed in the claim in suit. The learned counsel for the respondents contend that it is impossible that this model could have been produced by the exercise of mechanical skill merely and with no other instructions than to illustrate the modification suggested by Lampe, comprising double cables, and that, therefore, either the testimony to that effect is false, or else that the person by whom the model was made also made the same invention that Reynolds had made. I cannot accede to this. The evidence of the model-maker is not controverted otherwise than by argument, and is supported by the testimony of other witnesses. The ability he displayed in making this model may astonish the unskilled; but, in view of the positive and uncontradicted evidence, it cannot be regarded as transcending possibility; and that it was not inventive in character is, I think, beyond question by his own testimony that he did not—

> experience any difficulty in the mechanism—the drawings and specifications made it plain.

That he had himself made some inventions is true; but in doing this piece of work he was, as he tells us, a mere imitator. The drawings and specifications of Lampe, not his own inventive faculty, supplied all that was requisite for his purpose. The necessary result is that the Lampe patent must be regarded as establishing that the first claim of the Reynolds patent, No. 317,202, is void for lack of invention and patentable novelty of its subject-matter.

Fourth. The patent to George H. Reynolds, No. 456,122, dated July 14, 1891, is for controlling device for elevators. Its two claims, both of which are involved in this suit, are as follows:

1. In a controlling device for elevators, the combination of a car, two cables attached positively at each of their ends to travel with the car and connected with the controlling device, and an operating device upon the car to positively take up and pay out said cables to shift positively the controlling device, substantially as set forth.

2. In controlling devices for elevators, the combination of a car, traveling cables connected positively at each of their ends to the car and passing over stationary pulleys at one end of the well and around movable pulleys connected to the controlling device at the other end of the well, and means for positively contracting and relaxing the bights of the cables, substantially as set forth.

These claims were adjudged to be valid by the circuit court in Illinois in *Crane Elevator Co.* v. *Standard Elevator Co.* (*supra*); but I believe that if the additional evidence which has now been adduced had been submitted to that court its decision would have been different. The Lampe patent was produced in that case, but the model made thereunder, which I have already discussed, was not presented. This new matter is applicable to Patent No. 456,122 as well as to Patent No. 317, 202, and it shows that the Lampe patent supplied all the information necessary to enable a skilled mechanic to do all that was claimed by Reynolds in Patent No. 456,122. It is a complete anticipation of that patent also.

The patent to George H. Reynolds, No. 458,917, dated September 1, 1891, is for controlling device for elevators. Its second and third claims are involved in this suit and are as follows:

2. In an elevator-control mechanism having two control-cables attached to and running with the car, in combination with yieldingly supported pulleys, as F F, adapted to rise and fall together, substantially as described.

3. In a cable-operating mechanism for elevators, comprising two control-cables attached to the car, a weighted lever having sheaves over which the cables run for regulating and maintaining the tension of the cables, substantially as shown and described.

This patent, as to its claims 1 and 3, was adjudged invalid by the Circuit Court for the Northern District of Illinois. In another case between the Crane Co. and the Standard Co. claim 2 was not considered; but if the first and third claims are invalid it would seem that the second must necessarily be so. The brief of complainants seems to impliedly concede this, but insists that this case is "much stronger than the former case." As respects the argument and manner of presentation this may be so; but if any new evidence has been introduced here, which would, if presented in the Ilinois case, have affected its decision, it has not been pointed out, and I have not observed it. Therefore, following the judgment I have referred to and without expressing any independent opinion, I hold that this patent is invalid.

Let a decree be prepared in accordance with this opinion in each case.

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DIGEST OF DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS

IN THE MATTER OF

PATENTS, TRADE-MARKS, &c.

OFFICIAL GAZETTE—July-September, 1895.

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DIGEST OF DECISIONS.

[Decisions of the United States courts are indicated by an asterisk (*).]

ANALOGOUS DEVICES.

(See Construction of Specifications and Patents, 3; Particular Patents, 2, 17, 19.)

ANSWER TO BILL.

(See Marking Articles "Patented.")

ANTICIPATION.

(See Particular Patents, 3, 13, 28.)

APPEAL TO THE CIRCUIT COURT OF APPEALS.

INTERLOCUTORY DECREE—INJUNCTION.
As the decree of the circuit court was not final, *Held* that the only appeal which could be considered is from so much of such decree as grants an injunction.
[*Kilmer Manufacturing Company v. Griswold *et al.*, 1786.

APPEAL TO THE COURTS.

(See Suits under Section 4915, Revised Statutes.)

BILL IN EQUITY UNDER SECTION 4915, REVISED STATUTES.

(See Suits under Section 4915, Revised Statutes.)

BURDEN OF PROOF.

(See Interference, 5, 8, 9; Suits under Section 4915, Revised Statutes.)

CAVEATS.

(See Interference, 5, 6.)

CHANGE OF STRUCTURE.

(See Construction of Specifications and Patents, 3; Invention, 1; Particular Patents, 12, 17; Patentability.)

CLAIMS.

(See Construction of Specifications and Patents, 1; Particular Patents, 1, 2, 3, 4, 5, 9.)

1. FUNCTIONAL CLAIMS—DEFINITION.
Functional claims are, first, those covering a function, result, or effect not a product or composition of matter; second, those covering the function of a machine or apparatus; third, those reciting the functions of elements and not their structure, and, fourth, those defining sets of mechanism by statements of the results produced. [*Ex parte* Knudsen, 589.

2. SAME—PRACTICE.
Claims of the first class are usually participial in form. *Held* not to be patentable and should be rejected. (*Ex parte Simonds*, C. D., 1870, 23; *ex parte Hahn*, C. D., 1875, 107; Rob. on Pat., Vol. 2, sec. 518, notes.) [Id.

3. SAME—SAME.
Claims of the second class are in the form of methods or processes or equivalent expressions. *Held* should be rejected. (*Corning* v. *Burden*, 15 How., 252; Rob. on Pat., Vol. 2, sec 529, notes.) [Id.

4. SAME—SAME.
Claims of the third class define the construction as "means," "mechanism," or "devices" for effecting certain results or define certain named elements or the device by statements of function instead of structure. *Held* should be objected to if vague or indefinite or rejected on references disclosing the combination and the functional qualifications, or both. (*Ex parte Pacholder*, 51 O. G., 295; *Morley Sewing Machine Co. et al.* v. *Lancaster*, 47 O. G., 267; *ex parte Halfpenny*, 53 MS. Dec., 489.) [Id.

5. SAME—SAME.
Claims of the fourth class define sets of mechanism by the results produced. *Held* should be objected to and receive action on their merits. (*Smith & Egge Mfg. Co.* v. *Bridgeport Chain Co.*, 56 O. G., 1449.) [Id.

COMBINATION.

(See Construction of Specifications and Patents, 3; Infringement, 2; Invention, 4.)

CONCEPTION OF INVENTION.

(See Interference, 2, 3, 4, 10, 11; Priority of Invention.)

CONSTRUCTION OF RULES.

(See Interference, 15.)

CONSTRUCTION OF SPECIFICATIONS AND PATENTS.

(See Construction of Claims; Disclaimers; Former Decisions; Particular Patents; Patentability; Public Use and Sale.)

1. REJECTION BY PATENT OFFICE—RESTRICTED CLAIMS.
The rule is that where the applicant acquiesces in the rejection of claims by the Patent Office or in a construction which narrows or restricts them, and where the elements which go to make up the combination of the claim are mentioned specifically and by reference-letters, leaving no room for question as to what was intended, the claim must be confined and restricted to the particular device described. (*Knapp* v. *Morse*, 65 O. G., 1593; 150 U. S., 221.)
[*Lehigh Valley Railroad Company *v.* Kearney *et al.*, 139.

2. NEW USES—RIGHTS OF THE PUBLIC.
Under the doctrine that the patentee is entitled to all known and unknown uses to which his invention may be applied the public is entitled to all uses of devices covered in expired patents, and the discoverer that old means will do a new work is not entitled to a monopoly.
[*Wright & Colton Wire Cloth Company *v.* Clinton Wire-Cloth Company, 1046.

3. SAME—CHANGE OF STRUCTURE—PATENTABILITY.
If patentable at all, a combination of old means with improvements adapting it to new and non-analogous material and use, a patent will be limited to the combination modified by the improvements. [*Id.

CONSTRUCTION OF STATUTES

(See Copyrights, 2.)

CONTRACT.

(See Pleadings; Public Use and Sale.)

COPYRIGHTS.

1. WHAT IS LAWFUL NOTICE OF.
A notice of copyright in the following language, "Copyright, 1891. All rights reserved," is insufficient under the law, which requires the copyright notice to state the name of the person by whom the publication is copyrighted.
[*Osgood *v.* A. S. Aloe Instrument Company, 418.

2. SAME—SECTION 4956, UNITED STATES REVISED STATUTES, REQUISITE TO MAKE OUT A PRIMA FACIE CASE.
Under the provisions of section 4956 to make out a *prima facie* case of copyright it is only necessary for a complainant owner of a copyright to allege and show that he deposited with the Librarian of Congress on or before the date of publication a printed copy of the title-page of his book, also two copies of the book, and that he has given the lawful copyright notice.
[*Id.

DAMAGES AND PROFITS.

(See Marking Articles "Patented.")

1. DOUBLE DAMAGES—MANUFACTURER AND USER.
Damages can be collected from the manufacturer of a machine, and further damages from a subsequent purchaser and user of the same machine. The payment of damages for making an infringing machine does not give any right to the future use of the machine; but this may be restrained by injunction, and when the whole machine is an infringement it may be ordered to be delivered up and destroyed. (*Birdsell* v. *Shaliol*, 30 O G., 261; 112 U S., 485.)
[*United States Printing Company v. American Playing Card Company, 1499.

2. SAME—DECREE FOR PROFITS.
Where a patentee takes a decree for profits against a manufacturing infringer, he sets the manufactured machine free. The profits of the infringer are full compensation to the complainant for the wrong done him; but a judgment for damages covers only damages in the past and has no relation to the future.
[*Id.

DECISIONS OF THE COMMISSIONER OF PATENTS.

(See Suits under Section 4915, Revised Statutes.)

DECREE.

(See Appeal to the Circuit Court of Appeals.)

DEFENSE.

(See Marking Articles "Patented.")

DELAY.

(See Priority of Invention.)

DELAY IN FILING APPLICATION.

(See Interference, 10, 11.)

LONG DELAY IN APPLYING FOR PATENT.
Where an inventor delays four or five years in applying for a patent, "he assumes the chances of the field being occupied by other and more diligent designers more prompt to supplement their creative efforts by a reduction to practice."
[*Front Rank Steel Furnace Company v. Wrought Iron Range Company, 288.

DEMURRER.

DEMURRER.
When the patent sued on is void on its face, the right of the court to dispose of the case on demurrer is well settled; but the right should not be exercised unless the case is plain and the conduct of the parties warrant it. (*West* v. *Rae et al.*, 33 Fed. Rep., 45; *Studebaker Bros. Mfg. Co.* v. *Illinois Iron & Bolt Co.*, 42 Fed Rep., 51.)
[*American Fibre Chamois Company v. Williamson, executor, *et al.*, 143.

DILIGENCE.

(See Interference, 2, 3, 4, 10, 11; Priority of Invention.)

DISCLAIMERS.

(See Particular Patents, 15.)

1. EFFECT OF ON QUESTION OF NOVELTY.
Where a disclaimer has been filed by a patentee as a result of litigation, the validity of the patent as regards the question of novelty is to be tested not by its original terms and scope but by what remains after the disclaimer. In the same manner as if the matter disclaimed had never been a part of the patent. (*Dunbar* v. *Myers*, 11 O G., 35; 94 U S., 194.)
[*Schwarzwalder *et al.* v. New York Filter Company, 1043.

2. ENLARGING SCOPE OF PATENT—OPERATION OF.
The disclaimer of matter which is not a part of the description, but is merely a recital designed to enlarge the scope of the patent, operates merely to expunge from the claim what otherwise would, by force of the recital, be incorporated into it constructively.
[*Id.

ENLARGEMENT OF CLAIMS.

(See Particular Patents, 13, 14.)

EQUIVALENTS.

CONDUCT OF PARTIES.
Where it was contended that powdered asbestos was not the equivalent of powdered soapstone as a lubricant for electrical packings, and it appeared that when Pratt and Johns received an order from the Thomson-Houston Company for electrical packings they made use of powdered asbestos in place of powdered soapstone as the lubricant and that the product was accepted by the Thomson-Houston Company as answering every purpose of electrical insulation, and it further appears that Thomson set up in his preliminary statement that Pratt and Johns reduced the invention to practice in accordance with instructions given by him in this order, *Held* that powdered asbestos is the equivalent of powdered soapstone within the meaning of the issue.
[Pratt and Johns v. Thomson, 1347.

ESTOPPEL.

(See Interference, 4; Suits for Infringement, 5.)

EVIDENCE.

(See Suits for Infringement, 5.)

EXAMINATION OF APPLICATIONS.

(See Claims, 2, 3, 4, 5.)

EXAMINERS.

(See Interference, 9, 14, 15.)

EXPIRED PATENTS.

(See Construction of Specifications and Patents, 2; Suits for Infringement, 3, 4.)

FIRST AND ORIGINAL INVENTOR.

(See Interference, 2, 3, 4.)

FORMER DECISIONS.

DECISIONS AS TO VALIDITY AND INVALIDITY.
A decision declaring the validity of a patent is not entitled to the same consideration as a decision declaring a patent invalid.
[*Acme Harvester Company v. Forbes *et al.*, 1905.

FORMER DECISIONS REVERSED.

(See Particular Patents, 10.)

FUNCTIONAL CLAIM.

(See Claims.)

FUNCTIONS.

(See Particular Patents, 7, 17.)

IMPROVEMENTS.

(See Invention, 1, 5, 7.)

INFRINGEMENT.

(See Damages and Profits; Demurrer; Injunction; Marking Articles "Patented;" Particular Patents, 1, 2, 4, 5, 11, 12, 18, 19, 22, 23, 25, 32, 33, 35; Suits for Infringement.)

1. MATTER EXCLUDED BY THE PATENT OFFICE AS SEPARATE INVENTION CANNOT BE CLAIMED AS COVERED BY THIS PATENT.
Held that where a patentee during the pendency of his application presented matter whereby he described and sought to include a device substantially identical in form and in details of construction with that made by the defendants, which matter the Patent Office regarded as for an entirely distinct and independent invention from that embraced in the invention as originally filed, and which matter was for such reason excluded, and the applicant acquiesced in such ruling, he cannot be heard to insist that the matter so excluded is nevertheless covered by the patent.
[*Wells Glass Company *et al.* v. Henderson *et al.*, 285.

2. WHAT CONSTITUTES—MATERIAL ELEMENTS.
To constitute infringement of a combination the alleged infringing device must include every element of the combination as claimed. The fact that the omitted element is not of the essence of the invention is immaterial.
[*Kinzel v. Luttrell Brick Company *et al.*, 900.

3. INFRINGEMENT DOUBTFUL—PRELIMINARY INJUNCTION.
Whether the first claim of Letters Patent No. 376,837, dated January 24, 1888, to George Westinghouse, Jr., for an improvement in brake mechanism, is infringed is too doubtful to be resolved in favor of complainant upon a motion for a preliminary injunction, and should be reserved for disposition upon the final hearing of the cause.
[*Westinghouse Air Brake Company v. New York Air Brake Company *et al.*, 1350.

INFRINGING MACHINE.

(See Damages and Profits.)

INJUNCTION.

(See Appeal to the Circuit Court of Appeals; Damages and Profits; Infringement, 3.)

1. GRANTING—SECRET INVENTION.
Where the defendants do not intend to use a secret invention, an injunction cannot harm them; but if the injunction be refused and the secret be divulged all harm possible will be done and the law will be powerless to afford plaintiff any remedy.
[*Russell v. Lundeen *et al.*, 420.

2. ENFORCING.
The mere fact that the plaintiff may be injured by enforcing the injunction is not sufficient reason for refusing it.
[*Id.

3. USE OF INJUNCTION TO HARM DEFENDANTS.
Should plaintiff use the injunction to injure the defendants' business, without regard to their use of the invention, his standing in a court of equity will be destroyed and the injunction promptly dissolved.
[*Id.

INTERFERENCE.

(See Equivalents; Priority of Invention; Suits under Section 4915, Revised Statutes; Trade-marks, 6.)

1. PATENTEE AND APPLICANT.
A patent is of weight as evidence in favor of the patentee upon his contention that he is the first inventor, and it is a sound and recognized administrative rule that a second patent should not issue for the same invention to a rival claimant except in a clear case.
[La Flare v. Chase, 741.

2. SAME.
"Public policy and the settled practice of the Office alike forbid the issue of a second patent for the same invention in any but a clear case—clear beyond a reasonable doubt;" but the fact that one party has unjustly obtained a patent is not final, for the rule as applied to this case is that "he is the first inventor who first forms a complete mental conception of the improvement in question, as proved not merely by himself but by full and certain disclosure to another, and who, under all the circumstances of the case, proceeds with reasonable diligence to the construction of a full-sized machine embodying the improvement in working form, and that this is so although another with a later conception first fully reduces the invention to practice."
[Huson v. Yates, 1201.

3. SAME.
"Although Yates was the first to apply for a patent, and did so prior to the completion of Huson's machine, and subsequently received a patent thereon a few days before Huson made application, Huson was the first inventor; he was proceeding with reasonable diligence from April, 1891, to the completion of his invention on December 3, 1891, and was diligently engaged therein when Yates formed his first conception of this invention in October, 1891."
[Id.

4. PRELIMINARY STATEMENT—ESTOPPEL.
The fact that Huson in his preliminary statement placed his conception in 1883, while his proofs of diligence apply only to the period subsequent to the "second conception" in 1891, does not create an estoppel *in pais*, because Huson did nothing nor omitted anything upon which Yates relied in building up his own status or upon the faith of which he acted otherwise than he would.
[Id.

5. APPLICANT AND PATENTEE—NOTICE TO CAVEATOR.
The application which eventuated in the Mayhew patent was filed during the life of the Kelleher and Grimm caveat. Kelleher and Grimm made application after the expiration of the caveat and the grant of the Mayhew patent. The presumption is that the Office did its duty in notifying Kelleher and Grimm of the filing of the interfering application, and the burden was upon them to establish their allegation of no notice by adequate proof.
[Kelleher and Grimm v. Mayhew, 895.

6. SAME.
The patent to Mayhew may not be treated as an application, because the presumption is against the lack of notice to the caveator and because there is no direct evidence that Kelleher and Grimm did not know of the Mayhew application.
[Id.

7. PRIORITY OF INVENTION.
Priority awarded to Mayhew, because Kelleher and Grimm not original inventors, and, further, because Mayhew was the first to conceive and it was not clearly shown that he was not diligent in reducing to practice.
[Id.

8. PATENTEE VERSUS APPLICANT—BURDEN OF PROOF.
Pratt and Johns, in view of the issue of the patent to their opponent, have the burden of showing beyond a reasonable doubt that they are prior inventors and are entitled to a patent for the same subject-matter.
[Pratt and Johns v. Thomson, 1347.

9. SAME—SAME—PATENT INADVERTENTLY ISSUED—PRESUMPTION.
The record held not to show that Thomson's patent was inadvertently issued, or that Pratt and Johns's application was not before the Examiner who passed Thomson's application to issue, or that it was not done upon full consideration. In whatsoever division either application may have been, it is to be presumed that the Office in treating one knew of the other and that when the Thomson patent issued it was considered that he was justly entitled to his patent. The burden of proof is therefore on his opponent.
[Id.

10. PRIORITY—CONCEPTION—DATE OF APPLICATION.
Where it appears that S produced a sketch and described the invention to others on September 9, 1887, made and tried a model in April, 1888, and applied for a patent on June 19, 1888, and that K was not engaged upon the invention until December 1, 1887, but applied for a patent March 3, 1888, *Held* that S was the first inventor.
[Scribner v. Kellogg, 1495.

11. DILIGENCE—EXPERIMENTS BETWEEN CONCEPTION AND APPLICATION.
Where it appears that S was the first to conceive the invention, but he forbore to apply for a patent during the progress of his experiments and until he had perfected his invention and tested its value and sought and devised means of overcoming objections, *Held* that he was using reasonable diligence in adapting and perfecting the invention from the date of conception to the date of filing his application.
[Id.

12. PRIORITY—LICENSE AGREEMENT.
Lambert brought to the Millers a can having the essential features of the first and second issues. Though the license agreement is not in evidence, the record shows that the Millers manufactured cans based upon Lambert's invention and paid royalty to Lambert. *Held* that Lambert was the inventor of the first and second issues.
[Miller and Miller v. Lambert, 1903.

13. JOINT INVENTION.
It being clear that as to the third issue George Miller, and not Henry F. Miller and George Miller jointly, contributed all that is not the invention of Lambert, and the question of priority between George Miller and Lambert not having been presented upon the record, the decision upon the third is confined to this, that Henry F. Miller and George Miller are not joint inventors of the third issue.
[Id.

14. MOTION TO DISSOLVE FOR IRREGULARITY—PUBLIC USE—REJECTION ON RECORD OF FORMER INTERFERENCE.
The Primary Examiner should have considered whether or not the record of the former interference between Lambert and Henry F. Miller and George Miller established a *prima facie* case of public use against the subsequent application of George Miller.
[Miller v. Lambert, 1903.

15. SAME—OATH.
Rule 46 has all the force of a statute, and it contemplates that the oath shall set forth that the invention has not been in public use or on sale in this country for more than two years prior to the filing of the complete application. Parts of Miller's application having been filed on February 3, 1894, and the application completed December 21, 1894, the interference dissolved to permit the Primary Examiner to require an oath applying to the later date.
[Id.

16. Former Interference—Res Adjudicata.
Though the former interference was between Lambert and Henry F. Miller and George Miller, it must be *Held* "that as George Miller was a party to the former interference, that as counts 1 and 2 of the issue were the same in the former interference as in the present interference, and that as the decision did not in any degree depend upon the questions of joint and sole inventorship counts 1 and 2 are *res adjudicata*." [Id.

INVENTION.

(See Patentability.)

1. Solid Castings—Not Patentable.
The right to improve upon prior devices by making solid castings in lieu of construction of attached parts is so universal in the arts as to have become a common one.
[*Consolidated Electric Manufacturing Company *et al. v.* Holtzer, 415.

2. Mechanical Skill.
The lowest order of invention is something more than the highest mechanical skill, and the question is not whether a particular or every mechanic could make the improvement, but whether any mechanic might, without invention.
[*Johnson Company v. Pennsylvania Steel Company, 594.

3. Patentability—Article of Manufacture.
It is not sufficient that the patentee has produced a better or more merchantable article, but there must be some invention in the article itself.
[*Andrews *et al. v.* Thum *et al.*, 899.

4. Combination of Old Elements.
Where it appears that all the elements of the combination claimed in the patent are old, but a new and valuable result has been obtained, the safety and efficiency of the machine greatly enhanced, and the profits resulting from its operation greatly increased, *Held* that the combination itself displays invention.
[*United States Printing Company v. American Playing Card Company, 1499.

5. Process of Making Yeast—Omitting a Step—Patentability.
The change in a process of making yeast, the chief feature of the improvement consisting in treating grains of cereals whole or only slightly broken instead of reducing them to small fragments, *Held* to be invention. (*Lawther* v. *Hamilton*, 42 O. G., 487; 124 U. S., 1, wherein the step of "grinding" was omitted, discussed and followed.)
[*Ex parte* Blumer and Schlagenhaufer, 1783.

6. Same—Alkali Treatment—Patentability.
Claims which depend for novelty over the references upon treating a starch extract from which yeast is made with an alkali *Held* to be patentable. [Id.

7. Same—Different Temperature—Patentability.
Where it appears that certain advantages arise from treating a starch extract from which yeast is being made at a higher temperature than has been done heretofore and the claims including this feature are otherwise limited, *Held* that they may be allowed. [Id.

INVENTION COVERED BY EXPIRED PATENTS.

(See Construction of Specifications and Patents, 2.)

JOINT INVENTION.

(See Interference, 13, 16.)

JURISDICTION.

(See Suits for Infringement, 1, 2.)

LICENSE.

(See Interference, 12; Pleadings.)

LIMITATION IMPOSED BY THE UNITED STATES PATENT OFFICE.

(See Construction of Specifications and Patents, 1; Infringement, 1.)

MARKING ARTICLES "PATENTED."

Failure to Mark Patented Machine—Must be Pleaded.
Where it was objected that defendant was not liable because the patented machine was not marked with notice of the patent, *Held* that such defense to be available must be set up in the answer and established by proof. (Rob. on Pat., sec. 1046; *Goodyear* v. *Allyn*, 6 Blatchf., 33.)
[*United States Printing Company v. American Playing Card Company, 1499.

MECHANICAL SKILL.

(See Invention, 2, 3; Particular Patents, 7, 20, 21, 27.)

MOTION TO DISSOLVE INTERFERENCE.

(See Interference, 14, 15.)

NEW RESULTS.

(See Invention, 4.)

NEW TRIAL.

(See Rehearing.)

NEW USE.

(See Construction of Specifications and Patents, 2, 3.)

NEWLY-DISCOVERED EVIDENCE.

(See Rehearing.)

NOTICE TO CAVEATOR

(See Interference, 5, 6, 7.)

OATH.

(See Interference, 15.)

OLD DEVICES.

(See Construction of Specifications and Patents, 2.)

OLD ELEMENTS.

(See Invention, 4.)

OMISSION OF PARTS.

(See Invention, 5.)

PARTIAL USE.

(See Infringement, 2; Particular Patents, 14, 33, 35.)

PARTICULAR PATENTS.

1. Bonsack—Cigarette-Machine—Non-Infringement.
Claims 6 and 7 of Letters Patent No. 238,640, to James A. Bonsack, for a cigarette-machine, issued March 8, 1881, construed to contain the principle of operation of the "Emery belt-machine," with improvements, but *Held* not infringed.
[*Bonsack Machine Company *v.* Elliott *et al.*, 1654.

2. Brush—Electric Lamp—Infringement—Claims Construed.
The claims of the patent to Charles F Brush, No. 219,208, issued September 2, 1879, contain "the element of dissimultaneous or successive separations between the members of each pair of carbons for the purpose of forming the arc between the pair last separated. * * * It is, in other words, the characteristic feature of this lamp—the very purpose signified by its construction—that the position of the first arc shall be determined before lighting as between the two pairs of carbon: * * * Moreover, the feature of dissimultaneous arc-forming separations—referring here to the interval of hours between the arc-forming separation of the first pair to burn and the arc-forming separation between the added pair—is not in any one of the claims." *Held* that the lamps made under Patent No. 418,758, issued January 7, 1890, and Patents Nos. 502,535 and 502,536, issued August 1, 1893, to Charles E Scribner, do not contain mechanism constructed to cause the dissimultaneous initial separation of the carbons, and therefore do not infringe the Patent No. 219,208. (*C. F. Brush Elect. Co.* v. *Ft. Wayne Elect. Light Co.*, 50 O. G., 431, and *Ib.* v. *Western Elect. Light and Power Co.*, 52 O. G., 1950.)
[*Brush Electric Company v. Western Electric Company, 1203.

3. Campbell—Hot-Air Furnace.
The first and third claims of Patent No. 414,018, issued October 29, 1889, (the two sued on,) are anticipated and void.
[*Front Rank Steel Furnace Company *v.* Wrought Iron Range Company, 288.

4. Emery—Cigarette-Machine—No. 216,164—Non-Infringement.
Claims 10 and 12 of Letters Patent No. 216,164, to Charles G. and William H. Emery, for a cigarette-machine, issued June 3, 1879, are not entitled to a broad construction, and, as construed, not infringed.
[*Bonsack Machine Company *v.* Elliott *et al.*, 1654.

5. Same—Non-Patentability.
Claims 14 and 15 of same patent are for minor details of mechanism, and *Held* not to contain patentable improvements.
[*Id.

6. Emery—Cigarette-Machines—No. 308,556—Infringed.
Claims 1 and 2 of Letters Patent No. 308,556, to Charles G. Emery, as assignee, for a cigarette-machine, issued November 25, 1884, *Held* to be infringed. [*Id.

7. Henderson—Manufacturing Metallic Cross Bars and Rails for Window-Sashes—No. 412,751—Void.
Held that Letters Patent to William Henderson, No 412,751, of October 15, 1889, for a process of manufacturing metallic cross bars and rails for window-sash and analogous structures, are invalid on the ground that the process is purely mechanical, as there is involved no chemical or other elemental action which is separable from the functions of the several mechanical devices which are employed to effect the result.
[*Wells Glass Company *et al. v.* Henderson *et al.*, 285.

8. Same—Window-Sash Bar—No. 420,510—Construed and Restricted.
Held that Letters Patent No. 420,510, to William Henderson, of February 4, 1890, for improvements in window-sash bars, must, in view of the art, be restricted to the particular forms of construction described, which the defendants did not use.
[*Id.

9. Hinkle—Air-Chamber for Forcing Water for Operating Elevators, &c.—Invalid.
Claim 1 of Letters Patent No. 183,057, granted October 10, 1876, to Phillip Hinkle, for an improvement in air-chambers for forcing water for operating elevators, construed and *Held* to be invalid.
[*National Company *et al. v.* Belcher *et al.*, 1906.

10. Holtzer—Electric Battery—No Invention—Void.
Letters Patent No. 327,878, issued October 6, 1885, to C. W. Holtzer, for an electric battery, *Held* void as to claims 1 and 2 for want of invention. [Decree of circuit court (60 Fed. Rep., 748) reversed.]
[*Consolidated Electric Manufacturing Company *et al. v.* Holtzer, 415.

11. Hook—Cigarette-Machine—Primary Invention—Infringed.
Claim 2 of Letters Patent No. 184,207, to A. H. Hook, for a cigarette-machine, issued November 7, 1876, examined and *Held* to be for a patentable and primary invention, notwithstanding that in diverse and non-analogous arts an envelope had been wrapped around a core, and infringed.
[*Bonsack Machine Company *v.* Elliott *et al.*, 1654.

12. Hyatt—Method of Purifying Water—Valid—Infringed.
Letters Patent No. 293,740, for a method of purifying water, granted to Isaiah S. Hyatt February 19, 1884, construed in reference to the prior art and *Held* to be valid and infringed.
[*Schwarzwalder *et al. v.* New York Filter Company, 1043.

13. Kearney and Tronson—Spark-Arrester—Reissue—Invalid.
Reissued Letters Patent to Kearney and Tronson, No. 5,184, dated December 10, 1872, for an improvement in spark-arresters, examined and *Held* to be invalid, because not for same invention as covered by original patent and anticipated by certain patents cited.
[*Lehigh Valley Railroad Company *v.* Kearney *et al.*, 139.

14. Same—Same—Same—Infringement.
Reissued Letters Patent to Kearney and Tronson, No. 5,184, dated December 10, 1872, for an improvement in spark arresters, examined and *Held* not to be infringed, because not for a pioneer invention and the defendant did not use the specific features claimed in the patent. [*Id.

15. Kenaga—Hay-Rake—Disclaimer—Invalid.
Letters Patent No. 259,550, for improvements in hay-rakes, issued to Martin H. Kenaga June 13, 1882, *Held* to be invalid, notwithstanding the disclaimer filed in the Patent Office May 14, 1892.
[*Acme Harvester Company *v.* Forbes *et al.*, 1905.

16. Kilmer—Bale-Tie—Invalid.
Claim 2 of the patent to Irving A. Kilmer, No. 372,375, issued August 14, 1883, examined in view of the state of the art and *Held* void for want of patentable novelty.
[*Kilmer Manufacturing Company *v.* Griswold *et al.*, 1786.

17. Same—Patentable Novelty—Lack of—Similarity of Function.
While complainant's bale-tie is much simpler than the anticipating device and is applicable to all sizes of bale-ties, while the latter could probably be used to advantage only with "dimension" bale-ties, still the anticipating device shows the addition of a gripping action to a wedging action, and that, too, in a clasp for bale-ties, and not only might be made to accomplish the functions performed by the patent in suit, but was designed by its maker and adapted and actually used for the performance of such functions. [*Id.

18. Kinzel—Brick-Kiln—Non-Infringement.
The claim of Letters Patent No. 471,769, granted March 29, 1892, to John C. Kinzel, for brick-kilns, construed and *Held* not infringed.
[*Kinzel *v.* Luttrell Brick Company *et al*, 900.

19. Martin—Automatic Cash-Box System—Construction—Non-Infringement.
Letters Patent No 255,525, granted March 28, 1882, to Joseph C. Martin, for an automatic cash-box system, in view of the prior state of the art, *Held* not to be a pioneer patent, but to be limited to improvements in details of constructions. Hence claim 1 of said patent, which is limited to an endless track system, is not infringed by a system constructed under Patent No. 399,150, granted 5, 1889, March to Joseph C. Martin, for conveying apparatus comprising a double track.
[*Martin & Hill Cash-Carrier Company *v.* Martin, 744.

20. McLauchlin—Process of Softening Fibrous Sheets—Void.
Letters Patent No. 511,789, to John C. McLauchlin, for an improvement in processes of softening fibrous sheets, which consists in first moistening the sheets with a solution of gelatine and then pounding said sheets while in a moist condition. *Held* not to have gone out of the domain of common mechanical knowledge and to be absolutely void upon its face.
[*American Fibre Chamois Company *v.* Williamson, executor, *et al.*, 143.

21. Moxham—Railroad-Switch—Invalid.
The claim of Letters Patent No. 333,474, granted December 29, 1885, to Arthur J. Moxham, for a railroad-switch, compared with pre-existing switches and *Held* to exhibit mechanical skill only and to be invalid.
[*Johnson Company *v.* Pennsylvania Steel Company, 594.

22. Murray—Machine for Printing Cards—Valid and Infringed.
Letters Patent No 381,716, granted April 24, 1888, to Samuel J. Murray, for an improvement in a machine for printing cards, considered and *Held* valid and infringed.
[*United States Printing Company *v.* American Playing Card Company, 1499.

23. Otis—Elevator—Valid—Infringed.
Claims 3, 4, 6, and 7 of Letters Patent No. 228,107, granted May 25, 1880, to Charles R. Otis, for elevators, *Held* to be valid and infringed.
[*National Company *et al. v.* Belcher *et al.*, 1906.

24. Reynolds—Controlling Device for Elevators—Invalid.
Letters Patent No. 317,202, granted May 5, 1885; No. 456,122, granted July 14, 1891, and No. 458,917, granted September 1, 1891, to George H. Reynolds, for controlling devices for elevators, *Held* to be invalid. (*Crane Elevat r Co.* v. *Standard Elevator Co.*, 64 O. G., 438, referred to.) [*Id.

25. Rockwell—Bell—No. 456,062—Not Infringed
Letters Patent No. 456,062, for improvements in bells, granted to Edward D. Rockwell July 14, 1891, construed to be for a specific device and not infringed.
[*New Departure Bell Company *v.* Hardware Specialty Company *et al.*, 1351.

26. Same—Same—No. 471,982—Invalid.
Claim 2 of Letters Patent No 471,982, for improvements in bells, granted to Edward D. Rockwell March 29, 1892, construed in view of the prior art and *Held* to be invalid. [*Id.

27. Scott—Manufacture of Flexible Paper—Void.
Letters Patent No. 216,108, to T. Seymour Scott, issued June 3, 1879, for an improvement in manufacture of flexible paper, which consists in passing Manila or kindred paper through breaking-rolls and subsequently through calender-rolls and in the strong flexible paper produced thereby, *Held* not to have gone out of the domain of common mechanical knowledge and to be absolutely void upon its face.
[*American Fibre Chamois Company *v.* Williamson, executor, *et al.*, 143.

28. Smith—Middlings-Purifier—Invalid.
Letters Patent No. 187,923, granted February 27, 1877; No. 194,539, August 28, 1877; No 208,936, October 15, 1878; No. 236,101, December 28, 1880, and No. 258,142, May 16, 1882, to George T. Smith, for middlings-purifiers, *Held* invalid as being for indistinguishable inventions covered by earlier patents to the same party.
[*Russell *v.* Kern, 590.

29. Thompson—Curling-Iron—Void.
Letters Patent No. 460,709, granted October 6, 1891, to George L. Thompson, for an improvement in curling-irons, consisting, essentially, in the shape and location of the spring between the handles, is void for want of invention.
[*George L. Thompson Manufacturing Company *v.* Walbridge *et al*, 1788.

30. THUM—STICKY FLY-PAPER—No. 278,294—VOID.
The claim of Letters Patent No. 278,294, granted May 22, 1883, to Otto Thum, for sticky fly-paper, construed and *Held* void.
[*Andrews *et al.* v. Thum *et al.*, 899.

31. SAME—SAME—No 305,118—SAME.
Claim 3 of Letters Patent No. 305,118, granted September 16, 1884, to Otto Thum, for manufacture of fly-paper, construed and *Held* to be void. [*Id.

32. WESTINGHOUSE—BRAKE MECHANISM—INFRINGEMENT.
Claims 1, 2, and 4 of Letters Patent No. 360,070, dated March 29, 1887, to George Westinghouse, Jr., for an improvement in brake mechanism, infringed.
[*American Graphophone Company v. Edison Phonograph Works, 1350.

33. WHITTINGHAM—GASOLINE-STOVE—NARROW IMPROVEMENT—NOT INFRINGED BY A DEVICE DIFFERENT IN SEVERAL FEATURES.
Claim 1 in Patent No. 235,600, dated December 14, 1880, to Charles and Joseph Whittingham, for improvements in gasoline-stoves, examined and construed to be for a narrow invention, and *Held* not infringed by a device which departed from it in several features
[*Consolidated Vapor Stove Company v. Ellwood Gas Stove and Stamping Company, 416.

34. WRIGHT—ART OF WEAVING WIRE-CLOTH—No. 239,012—CONSTRUCTION.
The claim of Letters Patent No 239,012, granted March 15, 1881, to G. F. Wright, for art of weaving wire-cloth, should not, if sustained, be construed so broadly as to give a monopoly of all the means for straightening or swaging wire in the wire-weaving industry.
[*Wright & Colton Wire-Cloth Company v. Clinton Wire-Cloth Company, 1046.

35. SAME—SHUTTLE FOR WEAVING WIRE-CLOTH—No. 239,011—CONSTRUCTION—NON INFRINGEMENT.
Letters Patent No. 239,011, granted March 15, 1881, to G. F. Wright, for a shuttle for weaving wire-cloth, if it presents a patentable device, does not cover all means of swaging turns of twist into wire, and the defendant's device, covered by Letters Patent No. 299,895, granted June 3, 1884, to G. F. Wright, for a shuttle for weaving wire-cloth, in which old and well-known means are employed, does not infringe. [*Id.

PATENTABILITY.

(See Claims, 2, 3; Construction of Specifications and Patents, 3; Invention.)

PROPORTIONS—FORM.
Mere change of form and proportions is not patentable where no new result is produced.
[*Front Rank Steel Furnace Company v. Wrought Iron Range Company, 288.

PATENTS.

(See Construction of Claims; Construction of Specifications and Patents, 1; Disclaimers; Former Decisions.)

PLEADINGS.

REPLICATION—DOES NOT ADMIT SUFFICIENCY OF PLEA.
When the defendant interposed a plea, setting out at length certain contracts alleged to have been executed, and claiming, in virtue of said contracts, a license under the patents in suit, and complainant filed a general replication to the plea, *Held* that the replication did not merely put in issue the truth of the plea, admitting its sufficiency, if proved, but that the facts of the plea, if proved, will avail the defendant only so far as in law and equity they ought to avail him. (*Pearce* v. *Rice*, 142 U. S. 28.)
[*American Graphophone Company v. Edison Phonograph Works, 1350.

PRACTICE IN THE COURTS.

(See Demurrer; Injunction; Infringement, 3; Marking Articles "Patented;" Suits for Infringement; Suits under Section 4915, Revised Statutes, 1, 2, 3.)

EXTENSION OF TIME TO PLEAD—GENERAL APPEARANCE.
Where the defendant had obtained extension of time to plead, answer, demur, or take such other action as it may be advised, *Held* this is the equivalent to a general appearance.
[*Hupfeld v. Automaton Piano Co. *et al.*, 287.

PRACTICE IN THE PATENT OFFICE.

(See Claims; Interference, 1, 2, 5, 6, 8, 9, 10, 11, 14, 15, 16; Rehearing.)

PRELIMINARY STATEMENT.

(See Interference, 4.)

PRIORITY OF INVENTION.

(See Delay in Filing Application; Equivalents; Interference, 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13.)

INTERFERENCE—PRIORITY—DILIGENCE.
C and L both had the intellectual conception of the invention independently of each other. L left his thought in abeyance in the presence of the activities of C in reducing it to tangible form and incorporating it into a car. L did not proceed promptly after learning that C had obtained a patent for the improvement. He stood by and saw C reduce the invention to practice without any claim to the invention or for remuneration. The reduction and invention were C's.
[La Flare v. Chase, 741.

PROCESS.

(See Invention, 5, 6, 7.)

PUBLIC USE AND SALE.

(See Interference, 14.)

ON SALE—EXECUTORY CONTRACT.
Where it appears that a fire-alarm box was offered for sale in no other manner than as a part of a fire-alarm system to be installed by the seller and nothing was done evincing an intention on his part to transfer to the buyer a fire-alarm box except upon an executory contract containing conditions and requiring of the buyer much to be done precedent to the transfer of title, *Held* that the fire-alarm box was not on sale within the meaning of section 4886, Revised Statutes, although the box was completed, tested, and ready for immediate use at the date of the contract. (*Burton* v. *The Town of Greenville*, 18 O. G., 411; 3 Fed. Rep., 642, and other cases referred to.)
[Ruddick v. Milliken, 1651.

RECEIVER.

(See Suits for Infringement, 1.)

RECORD IN INTERFERENCE CASES.

(See Interference, 14, 15, 16.)

REDUCTION TO PRACTICE.

(See Delay in Filing Application; Interference, 2, 3, 4, 7, 10, 11.)

REFERENCE LETTERS.

(See Construction of Specifications and Patents, 1.)

REHEARING.

NEW TRIAL—NEWLY-DISCOVERED EVIDENCE.
A petition for a new trial, brought as a motion for rehearing, dismissed, it appearing that the evidence was not newly discovered, much less that it might not have been discovered prior to the previous hearing by the exercise of reasonable diligence. (*Spill* v. *Celluloid Co.*, 22 Blatchf., 441, 459; *Giant Powder Co.* v. *California Powder Co.*, 18 O. G., 1339; 5 Fed. Rep., 197, 201.)
[Bostad and Krabol v. Johnson, 898.

REISSUES.

(See Particular Patents, 13, 14.)

REJECTED CLAIMS.

(See Claims, 2, 3; Construction of Specifications and Patents, 1; Infringement, 1.)

RES ADJUDICATA.

(See Interference, 16.)

SEPARATE INVENTIONS.

(See Infringement, 1.)

SPECIFICATIONS.

(See Suits under Section 4915, Revised Statutes, 2.)

STATE COURTS.

(See Suits for Infringement, 1.)

SUBSEQUENT PATENTS.

(See Interference, 2, 3, 9.)

SUITS FOR INFRINGEMENT.

(See Demurrer; Infringement; Injunction.)

1. INFRINGEMENT BY RECEIVER—JURISDICTION OF.
Upon a motion to dismiss a bill in equity for infringement of a United States patent by a receiver appointed by a State court, upon the ground that the complainant had not obtained leave to sue from the court making the appointment, *Held* that the general rule that a court will not entertain jurisdiction of a suit against a receiver appointed by another court until the appointing court has given its consent does not apply when the jurisdiction of the court in which the receiver is sued is conferred by Federal laws.
[*Hupfeld v. Automaton Piano Co. *et al.*, 287.

2. SAME—SAME.
In a suit to restrain the infringement of a patent by a receiver appointed by a State court, *Held* that the Federal courts will entertain jurisdiction of such suit, without leave of the State court first obtained, to enjoin individuals, even though they be officers of a State court, from acts of infringement. [*Id.

3. SMITH—MIDDLINGS-PURIFIER—PATENTS EXPIRED BEFORE SUIT—NO EQUITABLE RELIEF.
Letters Patent Nos. 133,893, 137,495, 154,770, and 158,992, to George T. Smith, for middlings-purifiers, having expired prior to the commencement of the suit, afford no basis for equitable relief.
[*Russell v. Kern, 590.

4. SAME—SAME—PATENT EXPIRED AFTER FILING BILL, BUT BEFORE RETURN-DAY.
Letters Patent No. 164,050, granted June 1, 1875, to George T. Smith, for middlings-purifier, having expired after the filing of the original bill, but before the return-day of the subpœna, it was within the discretion of the court to dismiss the bill for want of equity. [*Id.

5. DEFENSES—ESTOPPEL OF ASSIGNOR.
In a suit for infringement brought by the assignee against the assignor of a patent the latter is estopped from denying its validity; but the prior state of the art is admissible in evidence to aid the court in the construction of the patent. (*Ball & Socket Fastener Co.* v. *Ball Glove Fastening Co.*, 58 Fed. Rep., 818; *Babcock* v. *Clarkson*, 69 O. G., 1773; 63 Fed. Rep., 607.)
[*Martin & Hill Cash-Carrier Company v. Martin, 741.

SUITS UNDER SECTION 4915, REVISED STATUTES.

1. WHAT CAN BE CONSIDERED.
When the suit was under section 4915, and not under section 4918, of the Revised Statutes, it is a continuation of the interference contest in the Patent Office, and the only question that can be considered is whether the complainant is entitled to receive a patent for the invention described in the bill and as specified in his claim filed in the Patent Office.
[*Standard Cartridge Company *et al.* v. Peters Cartridge Company, 742.

2. SAME—SUFFICIENCY OF SPECIFICATION.
Whether the specification in the patent issued to the defendant is sufficient is not involved in the case. It is wholly incompetent and cannot be inquired into. [*Id.

3. SAME—BURDEN OF PROOF.
The only question to be determined is the question of priority. The burden of proof is upon complainants, and they must establish their proof beyond a reasonable doubt. [*Id.

4. SAME—SAME—NEW EVIDENCE.
Where on a suit under section 4915, Revised Statutes, much additional testimony was introduced, but it was mostly either in corroboration or in contradiction of the testimony in the interference case in the Patent Office, *Held* that the decision of the Commissioner ought not be set aside upon merely cumulative or impeaching evidence, which is no ground for the granting of a new trial at law. [*Id.

TRADE-MARKS.

1. "ROSEBUD."
The representation of a rosebud and the word "Rosebud" are registrable in one application, it appearing that the trade-mark is a lawful common-law mark and the prescribed statutory requisites are present.
[*Ex parte* Kinney, 1349.

2. GEOGRAPHICAL NAME—"WAVERLEY"—REGISTRABLE.
The word "Waverley," while it is used to designate localities, yet it is not "merely a geographical name" in the sense employed by the Supreme Court in *Columbia Mill Co.* v. *Alcorn*, (65 O. G., 1916,) and may be registered.
[*Ex parte* Indiana Bicycle Company, 1654.

3. SAME—"CLOVERDALE"—NOT REGISTRABLE.
The word "Cloverdale" primarily has a geographical meaning and should not be registered. (*Columbia Mill Co.* v. *Alcorn*, 65 O. G., 1916, followed.)
[*Ex parte* Hendley, 1654.

4. SAME.
The classes of geographical names which may and may not be registered as trade-marks indicated. [Id.

5. "ELECTRIC"—"ELECTRIC LIGHT"—REGISTRABILITY.
The differences in appearance, as written or printed, in sound, and in meaning are sufficient to differentiate the words "Electric Light" from the word "Electric," and therefore the prior registration of the latter word does not bar the registration of the former words.
[Kirby v. McLaughlin & Co. v. Johnston, 1785.

6. INTERFERENCE—MOTION TO DISSOLVE.
A trade-mark consisting of the words "Electric Light" alone and another trade-mark consisting of these words accompanied by the representation of the upper part of an electric-light bulb with zigzag rays emanating from it conflict, the words being the "prominent, essential, and vital feature" of the marks, and a motion to dissolve the interference denied. [Id.

USE AND SALE OF PATENTED ARTICLES.

(See Construction of Specifications and Patents, 2; Damages and Profits.)

VALID PATENTS.

(See Particular Patents, 1, 2, 4, 8, 11, 12, 22, 23, 32, 33, 34, 35.)

VALIDITY OF PATENTS.

(See Former Decisions.)

VOID PATENTS.

(See Particular Patents, 3, 5, 7, 9, 10, 15, 16, 17, 20, 21, 24, 26, 27, 28, 29, 30, 31.)

ALPHABETICAL LIST OF PATENTEES

FOR

THE QUARTER ENDING SEPTEMBER 30, 1895.

[Claims and drawings of Designs do not appear in the Monthly Volumes. Separate indexes for Designs, Trade-Marks, and Disclaimers follow this.]

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Specification.	Drawing.	Volume.	Page.
A. A. Griffing Iron Company. (See McIlvrid and Hodge, assignors.)						
A. B. Dick Company. (See Dick, Albert B., assignor.)						
A. B. See Manufacturing Company. (See Lindstrom, Nils O., assignor.)						
A. M. Collins Manufacturing Company. (See Stinson, Samuel H., assignor.)						
Abbe, Ernst, assignor to Firm of C. Zeiss, Jena, Germany. Binocular telescope	546,871	Sept. 24	2472	592	72	1859
Abbott, Joseph W., Lockhart, Tex. Plow-stock	543,761	July 30	3452	805	72	705
Abdank-Abakanowicz, Bruno, St. Maur, France. Hysteresis-compensator	545,042	Aug. 27	2231	541	72	1209
Abell, Harry H., Port Ewen, N. Y. Fastening for cords or the like	544,076	Aug. 6	431	108	72	828
Abelson, Abraham, and L. Lesser, New York, N. Y. Automatic newspaper-selling apparatus	545,436	Sept. 3	1	1	72	1355
Abraham, Albert, Philadelphia, Pa. Nose-piece for eyeglasses	543,835	Aug. 6	1	1	72	749
Accles, James G. (See Pinfold, James, assignor.)						
Acheson, Edward G., Monongahela City, Pa. Producing pure electric-light carbon	542,982	July 23	2001	476	72	423
Acker, Andrew J. (See Lobdell, Emons H., assignor.)						
Ackerland, Max, Cincinnati, Ohio. Cloth-measuring device	543,203	July 23	2415	567	72	500
Ackerman, Jasper L., Monon, Ind. Measuring device	544,398	Aug. 13	1063	259	72	949
Acme Brass Co. (See Davis, George W., assignor.)						
Actien-Gesellschaft für Anilin Fabrikation. (See Moeller and Oelschlaegel, assignors.)						
Adams, Alfred N., Stockton, assignor of one-third to A. C. White, San Joaquin county, Cal., Piano	541,913	July 2	153	36	72	33
Adams, Daniel L., Reading, Pa. Radiator	544,875	Aug. 20	1943	465	72	1135
Adams, George E., New Britain, Conn. Garment-fastener	542,215	July 2	655	160	72	127
Adams, George E., New Britain, Conn. Clasp for garment-supporters	543,715	July 30	3392	781	72	688
Adams, George E., assignor to Trant & Hine Manufacturing Company, New Britain, Conn. Garment-supporter	544,944	Aug. 20	2065	493	72	1158
Adams, John K., and J. H. Sidden, Albany, Mo. Car-coupling	545,933	Sept. 10	865	209	72	1525
Adams, Oscar D., Springfield, Mass. Rotary grate	545,119	Aug. 27	2374	574	72	1237
Adams, Russell B. (See Bennett and Adams.)						
Adams, Robert P., Lexington, Ky. Device for handling packages in stores	544,555	Aug. 13	1328	323	72	1001
Adams, Samuel. (See Cochran and Adams.)						
Adams, Stephen J., Pittsburg, Pa. Forming sand molds	544,423	Aug. 13	1097	267	72	955
Adams, Thomas E., Cleveland, Ohio. Electric locomotive	542,036	July 2	361	87	72	72
Adams, Thomas E., Cleveland, Ohio. Carbon-holder for electric-arc lamps	545,755	Sept. 3	559	133	72	1456
Adams & Westlake Company. (See Emery, Plato G., assignor.)						
Adams, Willard G., Weedsport, N. Y. Rotary engine	542,456	July 9	1120	274	72	227
Addy, Richard T., Wallingford, Conn. Bicycle-brake	544,556	Aug. 13	1329	323	72	1002
Adelsberg, Johannes K., Liverpool, England, assignor to Walker's Engine Speed Indicator and Recorder Company, Limited, Durban, Natal. Ship's telegraphic apparatus	544,876	Aug. 20	1944	465	72	1135
Adkins, James. (See Yost, Baumhoff, Hagemeier, Fitzler, and Schmid, assignors.)						
Adler, Abraham S., Baltimore, Md. Shoemaker's measure	546,987	Sept. 17	1493	352	72	1661
Adler, Marcus A., New York, N. Y. System of testing samples of garments	544,202	Aug. 6	636	161	72	865
Adriance, Platt & Company. (See Thompson, Sumner C., assignor.)						
Adt, Elizabeth C., executrix. (See Adt, John.)						
Adt, John, deceased, New Haven, Conn.; E. C. Adt, executrix. Riveting-machine	545,756	Sept. 3	560	133 134	72	1456
Ahern, Maurice, London, England. Composition for enameling bricks, &c	545,757	Sept. 3	562	.....	72	1456
Aiken, Henry, Pittsburg, Pa. Frame for forging presses, &c	545,758	Sept. 3	563	134	72	1456
Aiken, Henry, Pittsburg, Pa. Shears	545,759	Sept. 3	564	135	72	1457
Aikin, Isaac D., New York, N. Y. Speed-regulator for electric cars	546,062	Sept. 10	1081	259	72	1567
Air Conveyor Company. (See Dodge, James M., assignor.)						
Aktiebolaget Inventor. (See Orling, Erik, assignor.)						
Aktiebolaget Separator. (See Ekenberg, Martin, assignor.)						
Alabama Blasting and Mining Company. (See Elliott and Carrington, assignors.)						
Albert, Charles D., assignor of one-half to H. B. Lind, Chicago, Ill. Two-compartment envelope	544,276	Aug. 13	783	200	72	903
Albert, Harry, New Albany, Ind. Mail-bag catcher	546,214	Sept. 10	1336	318	72	1614
Albert, Henry, Crescent City, Cal. Can-labeling machine	542,433	July 9	1068	262	72	219
Albertson, William R. (See Dodge, Carroll W., assignor.)						
Albrecht, John, Massillon, Ohio. Combined rail chair and tie	546,800	Sept. 24	2471	566	72	1839
Albright, George A., Burlington, N. C. Boiler	546,215	Sept. 10	1339	318	72	1615
Alcorn, Lucien C., Greensburg, Ky. Safety attachment for elevators	542,722	July 16	1577	377	72	327

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Aldrich, Albert E., Lexington, Ky. Apparatus for carbureting air	544,945	Aug. 20	2066	493	72	1158
Alexander, John L., Hazelrigg, Ind. Reverse-motion for steam-engines	545,437	Sept. 3	3	1	72	1355
Alexander, John R., New Albany, Ind. Electrical burglar-alarm	545,835	Sept. 3	686	167, 168	72	1480
Alexander, Julius A., Pine Bluff, Ark. Combined scraping, chopping, and cultivating machine	546,801	Sept. 24	2372	566, 567	72	1839
Alexander, Samuel, Hartford, Conn. Coin signal apparatus for telephone pay-stations	544,077	Aug. 6	433	108	72	828
Alexander, Samuel, Meriden, Conn. Liquid-controlling device	544,078	Aug. 6	434	108	72	828
Alexander, Samuel, Meriden, Conn. Automatic fluid-regulator	544,079	Aug. 6	436	108	72	829
Alfred, Ralph E., Weston, W. Va. Gate	544,716	Aug. 20	1645	394	72	1077
Alger, Edmund H., Holyoke, Mass. Attachment for ruling-machines	542,747	July 16	1627	389	72	335
Alimonda, Franz A. and N. von, Castello Alimonda, near Sagrado, Austria-Hungary. Elements of galvanic batteries	542,953	July 16	1953	464	72	397
Alimonda, Nino von. (See Alimonda, Franz A. and N. von.)						
Alison, Alexander. (See Roach and Tourville, assignors.)						
Allen, Everett P. (See Paige and Allen.)						
Allen, Frederick E., Lynn, Mass., assignor to Lynn Novelty Manufacturing Company, of Maine. Hair-crimper	542,216	July 2	656	161	72	127
Allen, James A., Adams, Mass. Scaffolding stand or support	545,438	Sept. 3	4	2	72	1355
Allen, Louisa. (See Dunn, James H., assignor.)						
Allen, Luther E., Detroit, Mich. Registering-machine	543,117	July 23	2752	650, 651	72	563
Allen, William C., Cambridge, N. Y. Cutter-bar for lawn-mowers	545,934	Sept. 10	866	209	72	1526
Allen, William P. (See Graham and Allen.)						
Allerton, Samuel E. (See Thomsen and Allerton.)						
Alliger, Jesse B., Chattanooga, Tenn. Shipping-package	541,830	July 2	1	1	72	3
Allis, Thomas V., New York, N. Y. Apparatus for twisting and reeling metallic strips	542,513	July 9	1217	296	72	245
Allis, Thomas V., New York, N. Y. Apparatus for galvanizing strips	543,822	July 30	3574	831, 832	72	728
Allis, Thomas V., New York, and J. H. Templin, Brooklyn, N. Y.; said Templin assignor to said Allis. Machine for splicing and rereeling fencing-strips	543,823	July 30	3576	832, 833	72	728
Almerantz, Gerhard, Chicago, Ill. Musical instrument	542,788	July 16	1693	403	72	347
Alsop, Charles R., Middletown, Conn. Automatic electrical railway-signal	544,647	Aug. 20	1501	361	72	1051
Altham, George J., Swansea, Mass. Governor	546,872	Sept. 24	2474	592, 593	72	1860
Altman, Henry J., assignor of one-half to M. H. Fischer, New York, N. Y. Electrodeposition of alloy	543,824	July 30	3580	.....	72	729
Aluminium Company. (See Burton, Frederick, assignor.)						
Aluminum Musical Instrument Company. (See Merrill, Neil, assignor.)						
Ambler, Smith, assignor to P. Smith & Son, Keighley, England. Machine for twisting or doubling yarn	544,203	Aug. 6	637	161, 162	72	866
Amend, Otto P., New York, N. Y. Tanning	542,971	July 16	1982	.....	72	403
American Bell Telephone Company. (See Arnold, Chester H., assignor.)						
American Bell Telephone Company. (See O Connell, Joseph J., assignor.)						
American Bell Telephone Company. (See Richards, Wilton L., assignor.)						
American Cotton Picker Company. (See Campbell, Angus, assignor.)						
American Electric Train and Switch Signal Company. (See Miller, George E., assignor.)						
American Harrow Company. (See Ovenshire, Elijah A., assignor.)						
American Lasting Machine Company. (See Lake, David, assignor.)						
American Lead Pencil Company. (See Fornander, Alfred, assignor.)						
American Pin Company. (See Waible and Willetts, assignors.)						
American Ship Windlass Company. (See Metcalf, Frederick, assignor.)						
American Steel Bolster Company. (See Goltra, Edward F., assignor.)						
American Stencil Machine Company. (See Hoff and Pickles, assignors.)						
American Stencil Machine Company. (See Pickles and Hoff, assignors.)						
American Tobacco Company. (See Moonelis, Adolph, assignor.)						
American Type Founders Company. (See Benton, Linn B., assignor.)						
American Type Founders Company. (See Marder, Walter S., assignor.)						
American Washboard Company. (See Joecken, Peter J., assignor.)						
American Washboard Company. (See Sargent, James T., assignor.)						
American Wood Decorating Machine Company. (See Davis, Spencer L., assignor.)						
Ames, Fisher, Newton, Mass. Tray-board for duplicate whist	542,748	July 16	1629	389	72	335
Ames, Timothy K., and E. A. Parker, Peterborough, N. H. Multiple electric circuit and mechanism for maintaining same	545,005	Aug. 20	2166	523	72	1176
Amet, Edward H., Waukegan, assignor to C. Dickinson, Chicago, Ill. Apparatus for reproducing phonograms	545,439	Sept. 3	5	2	72	1356
Amon, George M. (See Smith and Amon.)						
Ancoin, Numa, assignor of one-half to F. Richard, Delcambre, La. Sling for unloading sugar-cane	543,666	July 30	3274	761	72	672
Andersen, Richard C., Lincoln, Nebr. Domestic cooking-vessel	544,717	Aug. 20	1646	394, 395	72	1077
Anderson, Carl J. (See Lantan and Anderson.)						
Anderson, Gustaf A., assignor to Geiser Manufacturing Company, Waynesborough, Pa. Traction-wheel	543,075	July 23	2161	512	72	453
Anderson, James B., *et al.* (See Van Gilder, Lincoln, assignor.)						
Anderson, Nellie P., Chicago, Ill. Duplicating-machine	544,648	Aug. 20	1503	363	72	1051
Anderson, Stephen J., Chicago, Ill. Sash-lock	542,401	July 9	1011	249	72	208
Anderson, William E., *et al.* (See Graves, John W., assignor.)						
Anderton, John, Birmingham, England. Method by which pictures projected upon screens by magic lanterns are seen in relief	542,321	July 9	859	210	72	179
Andorff, Maximilian C. R., Markneukirchin, Germany. Attachment for zithers or other musical instruments	542,582	July 9	1331	322, 323	72	267
Andrén, Alban, Beverly, Mass. Drawing-knife	543,144	July 23	2287	542	72	476
Andrén, Alban, Beverly, Mass. Drawing-knife	544,946	Aug. 20	2071	494	72	1159
Andrew, James T., Montgomery, Ala. Device for starting race-horses	543,762	July 30	3453	805	72	706
Andrew, Oren, assignor of one-half to J. N. Gorman and R. D. Williams, Richmond, Va. Safety envelope	544,277	Aug. 13	784	200	72	903
Andrews, A. W., *et al.* (See Hitchcock, Wilber R., assignor.)						
Andrews, Charles S., New York, N. Y. Car-fender	545,186	Aug. 27	2495	604, 605	72	1260
Andrews, F. H., *et al.* (See Andrews, Matthew A., assignor.)						
Andrews, Joseph T., London, England. Stair-tread, landing, or the like	544,204	Aug. 6	638	162	72	866
Andrews, Matthew A., Northborough, Iowa, assignor of one-half to W. H. Bullock, W. R. and F. H. Andrews, Tarkio, Mo. Saw-sharpening machine	545,836	Sept. 3	688	168	72	1481

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Andrews, W. R., *et al.* (See Andrews, Matthew A., assignor.)						
Angell, C. B., *et al.* (See Crawford, John A., assignor.)						
Angerer, Victor. (See Samuel and Angerer.)						
Ann Arbor Manufacturing Company. (See Stevenson, John H., assignor.)						
Ansonia Clock Company. (See Davies, Walter D., assignor.)						
Anspach, Charles H., Cedar Grove, Ind. Thill coupling and support	544,205	Aug. 6	640	163	72	866
Antin, Max, *et al.* (See Barnes, John W., assignor.)						
Anzelewitz, Moses A., New York, N. Y. Ring-clamp	542,402	July 9	1013	249	72	208
Apache, Antonio, Chicago, Ill. Game apparatus	541,649	Aug. 20	1506	364	72	1052
Applegarth, Rufus W. (See Mershon, Frank A., assignor.)						
Applegate, William L., Little York, Ill. Combined hay and stock rack	544,718	Aug. 20	1647	395	72	1077
Appleton Manufacturing Company. (See Norris, Henry M., assignor.)						
Apsey, Frederick H., and T. E. Bell, Binghamton, N. Y. Cigar-bunching machine	544,650	Aug. 20	1507	364	72	1052
Arbuckle Brothers. (See Smyser, Henry E., assignor.)						
Arbuckle, Matthew, Indianapolis, Ind. Wheel-painting machine	546,216	Sept. 10	1340	319	72	1615
Arcade Manufacturing Company. (See Morgan, Charles, assignor.)						
Archer, John, and N. M. Frazier, Plainfield, Ind. Harrow	544,837	Aug. 20	1878	450	72	1123
Archibald, Harry A. (See Mitchell, Charles, assignor.)						
Armitage, William J., London, England. Floor-mat	544,557	Aug. 13	1330	323	72	1002
Armstrong, Albert H. (See Steinmetz and Armstrong.)						
Armstrong, Amasa A., Ionia, Mich. Wire-clamp	546,217	Sept. 10	1342	319	72	1615
Armstrong, Benjamin L. (See Schroeder, William C., assignor.)						
Armstrong, Benjamin L., New London, Conn. Thread-package	544,877	Aug. 20	1945	466	72	1135
Armstrong, Benjamin L., New London, Conn. Thread-package	546,127	Sept. 10	1193	284	72	1587
Armstrong, William H., Hagerstown, Md. Air-moistener	545,440	Sept. 3	6	2	72	1356
Arndt, William J., Detroit, Mich. Door-hanger	542,457	July 9	1122	274	72	228
Arnold, Albert J., National City, Cal. Fishing-reel	546,633	Sept. 17	2081	494	72	1773
Arnold, Alonzo B., assignor of one-half to D. M. Helfenstine, Le Grand, Iowa. Leather-folding machine	544,399	Aug. 13	1064	259	72	949
Arnold, Anna M. (See Arnold, Satterlee, assignor.)						
Arnold, Bion J., Chicago, Ill., assignor to Thomson-Houston Electric Company, of Connecticut. Running-gear for electric railways	542,617	July 16	1399	338	72	293
Arnold, Chester H., assignor to American Bell Telephone Company, Boston, Mass. Telephone relay or repeater	542,618	July 16	1401	338	72	293
Arnold, Chester H., assignor to American Bell Telephone Company, Boston, Mass. Telephonic repeating circuit and apparatus	542,619	July 16	1402	338	72	293
Arnold, Chester H., assignor to American Bell Telephone Company, Boston, Mass. Telephonic relay or repeating system	542,913	July 16	1891	448	72	385
Arnold, Engelbert, Zurich, Switzerland. Alternating-current motor	543,836	Aug. 6	2	1	72	749
Arnold, Satterlee, assignor to A. M. Arnold, Brooklyn, N. Y. Machine for sewing looped fabrics	543,795	July 30	3513	818, 819	72	716
Arnold, William B. (See Hyslop, John, assignor.)						
Arnold, William H. (See Parker, George W., assignor.)						
Arpin, A. L. (See McCourt, Peter, assignor.)						
Arthur, Frank D., Scarborough, N. Y. Bodkin	546,198	Sept. 10	1194	284	72	1587
Artmann, Richard, and R. Proehl, Mapleton, Minn. Corn harvester and binder	545,441	Sept. 3	7	2,3	72	1356
Asbury, Francis, *et al.* (See Cornell, Elijah B., assignor.)						
Ash, William N., Ashland, Ohio, assignor of one-half to B. F. Freeland, Middleburg, Ind. Mail-pouch	544,651	Aug. 20	1508	364	72	1052
Ashcroft, Edgar A., Broken Hill, New South Wales. Treating zinc-bearing ores	546,873	Sept. 24	2475	593	72	1860
Ashenden, Henry H. (See Atwood and Ashenden.)						
Ashley, George K., Washington, D. C. Line-clamp	545,760	Sept. 3	566	136	72	1457
Ashoff, Charles, Philadelphia, Pa. Doup-harness for cross-weaving	544,496	Aug. 13	1237	300	72	983
Ashoff, Charles, Philadelphia, Pa. Heddle for cross-weaving	544,497	Aug. 13	1240	300	72	984
Ashurst, Charles, assignor of two-thirds to E. B. January and N. Connell, Paris, Ky. Filter	542,914	July 16	1893	449	72	396
Ashworth, Albert W., St. Cloud, Minn. Operating-slide for breech mechanisms	542,983	July 23	2002	476	72	423
Aspinwall, Henry C. (See Whistler and Aspinwall.)						
Assenheimer, Jacob F., *et al.* (See Parker, Robert, assignor.)						
Assheton, William, *et al.* (See Carroll, Charles J., assignor.)						
Atherton, Robert, Paterson, N. J. Whirl for filler-frames	546,288	Sept. 17	1496	352	72	1661
Atherton, Robert, Paterson, N. J. Ribbon-blocking machine	546,289	Sept. 17	1496	353	72	1662
Atkins, Elias C., Indianapolis, Ind. Rotary plow	543,119	July 23	2214	532	72	468
Atkins, Elias C., Indianapolis, Ind., and N. H. Roberts, Pasadena, Cal. Rotary plow	543,118	July 23	2212	531, 532	72	468
Atkins, Georgestine A. R. (See Valiquet, Louis P., assignor.)						
Atkins, Harry C., London, England. Filtering machinery	546,634	Sept. 17	2082	494	72	1773
Atkinson, Henry T., assignor of five-twelfths to J. E. Morris, Oakland, Cal. Street-car brake	545,217	Aug. 27	2551	617	72	1272
Atlas Tack Corporation. (See Fraser, Peter, assignor.)						
Atterbury Glass Company. (See Cleis, George, assignor.)						
Atterbury, William W., Fort Wayne, Ind. Brake-beam	545,998	Sept. 10	977	236	72	1547
Attwood, William D., and W. B. St. John, New Edinburg, Ark. Hook	545,043	Aug. 27	2233	541	72	1209
Atwood, Benjamin S., Whitman, assignor of one-half to A. G. Smalley, Boston, Mass. Safety-case for bottles	542,356	July 9	929	228	72	192
Atwood, Isabelle L., Exeter, N. H. Sash-fastener	543,226	July 23	2452	576	72	506
Atwood, Lewis J., and H. H. Ashenden, assignors to Plume & Atwood Manufacturing Company, Waterbury, Conn. Drum for lamps	545,401	Aug. 27	2831	689	72	1325
Auburn Iron Works. (See Guilford, Russel W., assignor.)						
Auerbach-Woolverton Electric Company. (See Schefbauer, Rupert, assignor.)						
Austen, Peter T., Brooklyn, assignor to Wm. J. Matheson & Company, Limited, New York, N. Y. Making coloring-matter from logwood	542,403	July 9	1014	.....	72	209
Austin, Anna B. (See Bunnell, Morton G., assignor.)						
Austin, Frederick C. (See Bunnell, Morton G., assignor.)						
Austin, Frederick C. (See Miller, George N., assignor.)						
Austin, Josiah, Marion, Ohio. Automatic boiler skimmer and throttler	546,290	Sept. 17	1498	353	72	1662
Automatic Circuit Breaker Company. (See Kritzer, Charles C., assignor.)						
Automatic Electric Railway Signal Company. (See Blakey, Edwin, assignor.)						
Automatic Machinery Company. (See Whipple, Henry D., assignor.)						
Automatic Rubber Mixer Company. (See Bragg, Edward F., assignor.)						
Automatic Track Sanding Company. (See Sherburne, Charles W., assignor.)						
Automatic Water Tank Company. (See Sattelkau and Winkelmann, assignors.)						
Avis, Walter H., assignor to R. C. Fisher, Toronto, Canada. Cordage-machine	545,033	Aug. 20	2212	536, 537	72	1184
Ayer, William J., Boston, Mass., assignor to Standard Rivet Company, of New Hampshire. Setting-machine	545,044	Aug. 27	2234	541	72	1209

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Ayers, Joseph, administrator (See Maag, George.)						
Ayres & Sons, William M. (See Hand, James, assignor.)						
Ayrton, William E., and T. Mather, London, England. Screening electrical or other instruments and apparatus	546,802	Sept. 24	2374	567	72	1839
B. Shoninger Company. (See Bein, William A., assignor.)						
Babbitt, Elwin J., assignor of one-half to F. Summer, Jr., Defiance, Ohio. Musical instrument	546,374	Sept. 17	1654	393	72	1692
Babbitt, Isaac, Princeton, Ind. Churn	541,821	July 2	2	1	72	3
Babcock, Hiram W., *et al.* (See Baker, Andrew J., assignor.)						
Bacher, Joseph, Santa Monica, Cal. Envelope	543,120	July 23	2246	532	72	469
Bachman, Frank E. (See Ross and Bachman.)						
Bachman, Joseph A., and A. C. Goeth, Austin, Tex. Exhaust-steam condenser	544,652	Aug. 20	1509	365	72	1052
Bachmann, Gustav A., Newark, assignor of one-fourth to C. R. Myers, Atlantic City, N. J. Centrifugal filtering-machine	544,080	Aug. 6	438	109	72	829
Backhaus, Charles J., La Porte, Ind. Show case	542,227	July 9	679	167	72	147
Bacon, Henry A., and W. S. Duvall, assignors to E. B. and C. N. Stumph, Washington, D. C. Spring-bed	542,008	July 2	322	78	72	65
Bacon, Hiram A., Pontiac, Mich. Seed-planter	545,867	Sept. 10	745	182	72	1503
Bacon, James E., Richmond, Va. Pneumatic water elevator	542,620	July 16	1404	339	72	294
Bacon, James E., Richmond, Va. Pneumatic water-elevator	542,621	July 16	1406	339	72	294
Bacon, James E., Richmond, Va. Water-raising apparatus	542,622	July 16	1408	339	72	295
Bacon, Matthew L., and J. E. Finley, Memphis, Tenn. Currycomb	545,999	Sept. 10	978	236	72	1547
Badgley, Eugene F., San Francisco, Cal. Apparatus for treating bituminous compounds	542,701	July 16	1546	369, 370	72	321
Badische Anilin and Soda Fabrik. (See Berntsen and Julius, assignors.)						
Badische Anilin and Soda Fabrik. (See Bohn, René, assignor.)						
Badische Anilin and Soda Fabrik. (See Knietsch and Seidel, assignors.)						
Badische Anilin and Soda Fabrik. (See Müller, Carl L., assignor.)						
Badische Anilin and Soda Fabrik. (See Schraube, Conrad, assignor.)						
Badische Anilin and Soda Fabrik. (See Thiele, Johannes, assignor.)						
Badt, Francis B., assignor to Siemens & Halske Electric Company of America, Chicago, Ill. Electric rheostat	544,278	Aug. 13	785	200	72	903
Bahel, William. (See Pennington, Bahel, and Wehrt.)						
Bailey, A. Mott. (See Leighton, Leslie H., assignor.)						
Bailey, Charles G., York, Pa. Coal-sifter	542,514	July 9	1219	297	72	246
Bailey, Eben E., Lafayette, Ind. Railway-switch	541,822	July 2	3	1, 2	72	3
Bailey, May E. (See Millert, Edgar B., assignor.)						
Bailey, Reginald, Cumberland, Md. Annealing box and pan	545,868	Sept. 10	747	182	72	1503
Bailey, Samuel R., Amesbury, Mass. Carriage-axle	543,368	July 23	2678	632	72	548
Bailey, Thomas, New York, N. Y. Fireproof partition, ceiling, &c.	546,502	Sept. 17	1876	444, 445	72	1735
Bair, Winfield S., and S. M. Thompson, Huntingdon, Pa. Slate punching and dressing machine	541,823	July 2	6	2	72	4
Baird, Charles O., *et al.* (See Longbridge, Jacob E., assignor.)						
Baird, Clarence D., assignor of two-thirds to D. W. Dingee and J. R. Sneed, Alexandria, Tenn. Corn-planting attachment for plows	546,753	Sept. 24	2298	546	72	1825
Baird, James B., Elwood, Ind. Tinning-machine	546,571	Sept. 17	1990	472, 473	72	1756
Baird, John C. (See Bischoff and Baird.)						
Baird, John P., Lockport, N. Y. Hame or collar fastener	544,400	Aug. 13	1066	259	72	949
Baird, Melville B., Tulsa, Ind. Ter. Gate	545,330	Aug. 27	2724	661	72	1304
Baird, William F., Woonsocket, S. D. Insole for shoes	545,006	Aug. 20	2167	524	72	1176
Bake, Thomas H. L. (See Leverett, Henry A., assignor.)						
Baker, Adam J. (See Moody, Shawd, and Baker.)						
Baker, Allen J. (See Baker, Jacob S. and A. J.)						
Baker, Andrew J., assignor of three-fourths to H. W. Babcock, W. B. Thorpe, and A. P. Rich, Auburn, N. Y. Egg-holder	545,567	Sept. 3	231	56	72	1396
Baker, Cyrus N., Crawfordsville, Ind. Planter	545,837	Sept. 3	690	168	72	1481
Baker, Francis R., Harborne, assignor to L. Myers, Birmingham, England. Pocket-scissors	542,601	July 9	1359	329	72	272
Baker, Frederick H. (See Baker, Shevlin, and Baker.)						
Baker, Jacob S., Glen Rock, and A. J. Baker, Stewartstown, Pa. Cannon-pinion for watches	543,325	July 23	2614	614	72	537
Baker, James H., G. F. Shevlin, and F. H. Baker, Saratoga Springs, N. Y. Eccentric	543,667	July 30	3275	761	72	672
Baker, James S. (See Hooper, George W., assignor.)						
Baker, Joseph S. A., Washington, D. C. Car-signal	543,955	Aug. 6	223	53, 54	72	789
Baker, Warren J., assignor of one-half to A. Frantz, Salem, Ohio. Post for wire fences	546,000	Sept. 10	978	236	72	1547
Baker, William H., Detroit, Mich. Street-car bridge for bridging over fire-hose	543,437	Aug. 6	4	1	72	749
Baker, William H., Stilesborough, Ga. Combined planter and fertilizer-distributer	546,646	Sept. 24	2105	499	72	1791
Baldwin, Rollin A., South Norwalk, Conn. Electric-railway switch	545,870	Sept. 10	749	183	72	1503
Baldwin, Rollin A., assignor to himself and H. Rowland, South Norwalk, Conn. Rail-bond	545,869	Sept. 10	748	182	72	1503
Baldwin, Stephen G., Marion, Ind. Ink-well	544,558	Aug. 13	1331	323	72	1002
Ball, Charles W. W., New York, N. Y. Lock for screw studs	543,975	Aug. 6	252	62	72	794
Ball, Henry P., and C. A. Lieb, New York, assignors to General Electric Company, Schenectady, N. Y. Trolley breaker	542,228	July 9	680	167	72	147
Ball, Lorenzo D., assignor of two-thirds to G. Humphries and S. Kauffman, Canton, Ohio. Bread knife	542,583	July 9	1333	323	72	267
Ball, Seymour D., Lock Haven, Pa. Elevator fire guard	545,642	Sept. 3	359	88	72	1420
Ballack, Charles A., and P. B. Weston, St. Louis, Mo. Horse-collar	542,130	July 2	505	121	72	100
Ballard, Harlan H., Pittsfield, Mass. Device for filling or emptying tubes	545,898	Sept. 3	692	169	72	1481
Ballew, Tayler, Arlington, Mo. Steam-engine	546,266	Sept. 10	1441	341, 342	72	1633
Balsley, James R., Connellsville, Pa. Window-shade	543,763	July 30	3455	805, 806	72	706
Balsley, James R., Connellsville, Pa. Screw holder and driver	544,606	Aug. 13	1423	346	72	1018
Balsley, James R., Connellsville, Pa. Screw holder and driver	545,331	Aug. 27	2723	661	72	1305
Balzer, Stephen M., New York, N. Y., assignor of one-half to W. H. Humphrey, Norfolk, Conn. Car-fare register	544,081	Aug. 6	441	109, 110	72	830
Balzer, Stephen M., New York, N. Y., assignor to W. H. Humphrey, Norfolk, Conn. Register for counting operations of machines	545,034	Aug. 20	2216	537	72	1185
Bamford, Frank, assignor to Lister & Co., Limited, Bradford, England. Dyeing pile fabrics	545,420	Aug. 27	2876	700	72	1335
Bammann, Johann. (See Ulrich and Bammann.)						
Banderob, John, Oshkosh, Wis. Refrigerator	542,915	July 16	1895	449	72	385

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Bangerter, Fred, assignor, by mesne assignments, to C. H. Greene, San Francisco, Cal. Hair-clipper	543,668	July 30	3276	761	72	673
Banister, Arthur W., Boston, Mass. Apparatus for separating dust, shavings, &c., from air	543,796	July 30	3521	820	72	718
Banks, Walter F., Milford, Conn. Electrical indicating system for annunciators	546,874	Sept. 24	2480	593, 594	72	1861
Bannan, John R., Philadelphia, Pa., assignor to George P. Steel Iron Company, Camden, N. J. Sectional steam or hot-water boiler	544,245	Aug. 6	733	188	72	881
Bannatyne, Archibald, assignor to Waterbury Clock Company, Waterbury, Conn. Watch-carrier	542,458	July 9	1124	275	72	928
Bannister, Alfred F., Newark, N. J. Machine for grinding cutlery	543,076	July 23	2162	512, 513	72	453
Barber, Clarence M., Cleveland, Ohio. Feeding apparatus	542,623	July 16	1409	339	72	295
Bardsley, Edward E., assignor of two-thirds to W. S. Bardsley, W. H. Forster, and H. Baurmeister, Philadelphia, Pa. Attachment for fishing-lines	542,917	July 16	1897	450	72	386
Bardsley, Winfield S., *et al.* (See Bardsley, Edward E., assignor.)	545,839	Sept. 3	693	169	72	1481
Barfield, George W., Rome, Ga. Car-coupling						
Barham, John A., *et al.* (See Walker and Carter, assignors.)	543,369	July 23	2679	632	72	549
Barheine, Wilhelm, Magdeburg, Germany. Rod and pipe cutter	543,716	July 30	3363	781	72	688
Barker, Addison, Camanche, Iowa. Car-brake	546,218	Sept. 10	1343	319	72	1615
Barker, James, Philadelphia, Pa. Molder's flask						
Barker, James L., assignor of one-third to J. MacGowen, Minneapolis, Minn. Metallic rod-packing	545,761	Sept. 3	569	136	72	1457
Barker, John L., Racine, Wis. Band-cutter and feeder	545,935	Sept. 10	867	209	72	1526
Barker, John L., Racine, Wis. Band-cutter and feeder	546,291	Sept. 17	1499	353, 354	72	1662
Barker, Ruben F., Marinette, Wis. Saw-sharpening machine	542,548	July 9	1273	310	72	256
Barker, William. (See Dreses and Barker.)						
Barker, William, Philadelphia, Pa. Street-car fender	542,918	July 16	1899	450	72	387
Barlet, Samuel E., Red Bank, assignor of one-half to B. B. Matthews, Bound Brook, N. J. Switch-lock	542,182	July 2	586	142	72	115
Barling, Charles E., San Francisco, Cal. Concentrating or separating machine for minerals	546,001	Sept. 10	979	237	72	1547
Barlow, Edward W. (See Barlow, Robert and E. W.)						
Barlow, Robert and E. W., Chicago, Ill. Oil-gas-fuel generator	546,375	Sept. 17	1655	393	72	1692
Barnard, De Lonson E., Chicago, Ill. Windmill	545,840	Sept. 3	696	169	72	1482
Barnes, Albert H., *et al.* (See Finley, James R., assignor.)	546,803	Sept. 24	2376	567	72	1840
Barnes, John, assignor to W. F. & John Barnes Company, Rockford, Ill. Sawing-machine						
Barnes, John W., assignor of one half to S. Chase, G. Smith, M. Antin, A. Murrey, Rockland, and C. Stimpson, Thomaston, Me. Attachment for street-cars	542,037	July 2	364	87, 88	72	73
Barnes, William H., Rochester, N. Y. Apparatus for holding drawings	546,647	Sept. 24	2107	499	72	1791
Barney, Edwin E., assignor to Crandall Typewriter Company, Groton, N. Y. Type-writing machine	546,292	Sept. 17	1506	354, 355	72	1664
Barney, George L., assignor of one-half to J. L. Clough, Indianapolis, Ind. Door-knob lock	545,665	Sept. 3	393	96	72	1427
Barney, George L., assignor of one-half to J. L. Clough, Indianapolis, Ind. Door-knob lock	545,666	Sept. 3	395	97	72	1427
Barney, George L., assignor of one-half to J. L. Clough, Indianapolis, Ind. Door-knob lock	545,667	Sept. 3	398	97	72	1428
Barney, George L., and J. L. Clough, Indianapolis, Ind. Door-knob lock	545,668	Sept. 3	400	97	72	1428
Barney, Nathan, Brooklyn, N. Y. Dumping-car	544,020	Aug. 6	333	82	72	810
Barnum, William H., New York, N. Y. Garment-supporter	542,624	July 16	1411	340	72	295
Baron, Bernhard, New York, N. Y. Tobacco-feeder for cigarette-machines	543,838	Aug. 6	5	2	72	749
Baron, Bernhard, New York, N. Y. Continuous-cigarette machine	543,839	Aug. 6	7	2, 3	72	750
Baron, Bernhard, New York, N. Y. Cigarette-machine	543,840	Aug. 6	11	3, 4	72	751
Barr, Samuel W. (See Weaver and Barr.)						
Barr, Samuel W., Mansfield, Ohio. Pneumatic dispatch device	542,919	July 16	1901	450, 451	72	387
Barr, William C., Jersey City, N. J. Air-lock for caissons	545,332	Aug. 27	2724	661	72	1305
Barrett, Barker & Saunders Company. (See Barrett, Glenn J., assignor.)						
Barrett, Glenn J., assignor to Barrett, Barker & Saunders Company, Grand Rapids, Mich. Type-writing-machine attachment	545,035	Aug. 20	2218	538	72	1185
Barrett, James, Boston, Mass. Water-closet fitting	542,818	July 16	1743	414	72	356
Barrows, Frank L., Ironwood, Mich. Apparatus for playing duplicate whist	546,572	Sept. 17	1991	473	72	1756
Barry, James R., Syracuse, N. Y. Receptacle for shipping manufactured bake goods	542,789	July 16	1695	403	72	347
Barry, John, and M. L. Shaughnessy, Lenox, Iowa. Table-cutlery	546,376	Sept. 17	1656	393	72	1692
Barry, Nicholas, Jr., Muscatine, Iowa. Plumber's trap	542,868	July 16	1818	431	72	370
Barstow Fruit Jar Company. (See Deering, Mark L., assignor.)						
Barth, Henry, Cincinnati, Ohio. Type-casting machine	546,503	Sept. 17	1878	445	72	1735
Bartholomew, Albert W., assignor of one-half to C. M. Sprague, Boston, Mass. Stock for threading and cutting off rods	546,573	Sept. 17	1993	473	72	1756
Bartles, Phoebe A. (See Hillenbrand, Charles W., assignor.)						
Bartlett, George H., San Francisco, Cal. Paper can	544,525	Aug. 13	1279	309	72	991
Barton, Silas H. (See Young and Barton.)						
Bartram, William, *et al.* (See Deal, John M., assignor.)						
Bary, William B., St. Petersburg, Russia. Motor	546,481	Sept. 17	1843	436, 437	72	1729
Basanta y Baqué, Alejandro, Madrid, Spain. Electrical system for signaling between trains	542,916	July 16	1896	449, 450	72	386
Bascary, Arthur, Paris, France. Heating apparatus for carriages or railway-cars	545,442	Sept. 3	11	3	72	1357
Basch, David, New York, N. Y. Ear-muff	541,824	July 2	9	3	72	4
Basch, David, New York, N. Y. Dress-shield	543,282	July 23	2551	599	72	524
Basch, David, New York, N. Y. Combined slide-buckle and skirt-retainer	545,841	Sept. 3	698	170	72	1482
Baschy, Henri, Hamburg, Germany. Apparatus for removing incrustations, &c., from boiler-tubes	546,804	Sept. 24	2376	567	72	1840
Baskerville, Thomas H. (See McFarland, William J., assignor.)						
Bassfreund, Joseph, Hildesheim, Germany. Button	544,453	Aug. 13	1171	283	72	971
Batchelder, William W., assignor of one-half to E. B. Wood, Boston, Mass. Bicycle belt-holder	544,653	Aug. 20	1513	365	72	1053
Batchelor, Telford C. (See Butterfield and Batchelor.)						
Batchelor, Telford C., London, England. Machine for filling cartridge or other cases	542,322	July 9	861	211	72	179
Bate, Newton, Cleveland, Ohio. Dumping-wagon	543,167	July 23	2350	554	72	488
Bates, Henry H., Washington, D. C. Portable hook	543,121	July 23	2247	533	72	469
Bates, Henry H., Washington, D. C. Means and appliances for producing knobbed or ridged wrought-metal plates	543,607	July 30	3186	739	72	656
Bates, John E., Pittsburg, Pa. Hand-stamp	542,131	July 2	507	122	72	101
Bates, Lindon W., Chicago, Ill. Dredger	543,637	July 30	3233	749, 750	72	664

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Bates, Lindon W., Chicago, Ill. Dredger	545,762	Sept. 3	570	136, 137, 138	72	1457
Bates, Walter, Collins, Iowa. Windmill	545,045	Aug. 27	2235	541, 542	72	1209
Bateson, Robert, Fall River, Mass. Car-fender	542,749	July 16	1630	389, 390	72	335
Batsche, Peter, Dusseldorf, Germany. Apparatus for washing and sorting granular materials	544,607	Aug. 13	1424	346	72	1019
Bauer, Leonora E., Baltimore, Md. Stool	546,129	Sept. 10	1195	284	72	1588
Bauer, Richard, assignor to P. Pryibil, New York, N. Y. Saw-filing machine	543,204	July 23	2417	568	72	501
Baugh, Edward H., Mexia, Tex. Fence-wire stretcher	546,575	Sept. 17	1997	474	72	1757
Baugh, Frederick, and W. Murphy, assignors to J. C. Devine, Alliance, Ohio. Machine for shearing railway-ties	546,574	Sept. 17	1996	474	72	1757
Baumhoff, George W. (See Yost, Baumhoff, Hagemeier, Fitzler, and Schmid.)						
Baurmeister, Henry, *et al.* (See Bardsley, Edward E., assignor.)						
Baxter, David T., Hamilton, Canada. Autographic register	543,420	July 23	2757	652	72	564
Bayer, Karl J., Woburn, Mass. Producing potassium chlorate	543,326	July 23	2615	.....	72	537
Bayliss, William J. (See Hall and Bayliss.)						
Beach, Edgar B., Stony Creek, Conn. Saddle for bicycles, &c	545,421	Aug. 27	2877	701	72	1335
Beach, Edward S., *et al.* (See White, Frederick, assignor.)						
Beach Manufacturing Company. (See Roberts, Walter, assignor.)						
Beal, Edwin T., Hull, England, assignor, by mesne assignments, to G. M. Toobe, Brooklyn, N. Y. Preparing zinc plates for lithographic printing	543,638	July 30	3234	.....	72	664
Beal, Francis R., Northville, Mich. Combined water-cooler and refrigerator	542,217	July 2	658	161	72	127
Beal, Moses, Elyria, Ohio. Core-drilling machinery	543,227	July 23	2454	576, 577	72	506
Beale, George B., assignor to Brown & Sharpe Manufacturing Company, Providence, R. I. Rotary cutter	543,608	July 30	3187	739	72	656
Beall, Albert E., Hubbard, Iowa. Spring bed-bottom	546,293	Sept. 17	1507	355	72	1664
Beals, Thomas S., Jr. (See Holbrook and Beals.)						
Beam, Ira J. (See Gregory, Robert S., assignor.)						
Beamer, John H. (See Heath, Edgar H., assignor.)						
Beasley, William F., Baltimore, Md. Mail-bag and lock therefor	542,323	July 9	863	211, 212	72	179
Beattie, Frank, Leete Island, Conn. Lifting-dog for cranes	542,229	July 9	682	167	72	147
Beattie, Frank, Leete Island, Conn. Lifting-dog	542,230	July 9	683	168	72	148
Beattie, Frank, Leete Island, Conn. Lifting-dog	542,231	July 9	683	168	72	148
Beattie, Frank, Leete Island, Conn. Lifting-dog	542,232	July 9	685	168	72	148
Beattie, Robert. (See Mills, Edward A., assignor.)						
Beatty, David S. (See Walker and Beatty.)						
Beatty, Raymond M., Newark, N. J., assignor of three-fourths to M. Tracy, T. Gerehart, and W. J. Fransioli, Brooklyn, N. Y. Bicycle-alarm	543,418	July 23	2754	651	72	563
Beatty, Raymond M., Newark, N. J., assignor of three-fourths to M. Tracy, T. Gerehart, and W. J. Fransioli, Brooklyn, N. Y. Bicycle-bell	543,419	July 23	2756	651	72	563
Beaton, Allan J., assignor to Beaton & Bradley Company, Southington, Conn. Floor or ceiling plate	546,461	Sept. 17	1812	429	72	1723
Beaton, Allan J., assignor to Beaton & Bradley Company, Southington, Conn. Pipe-hanger	546,462	Sept. 17	1814	429	72	1723
Beaton & Bradley Company. (See Beaton, Allan J., assignor.)						
Beaudry, Augustin, Somerville, Mass. Power-hammer	545,763	Sept. 3	571	138	72	1458
Beaumier, Joseph, *et al.* (See Ginn, Moses M., assignor.)						
Beaumont, George H., Quincy, Ill. Nut-lock	541,825	July 2	10	3	72	5
Beaumont, Thomas C., assignor to Henry Huber Company, New York, N. Y. Lavatory-overflow	541,826	July 2	11	3	72	5
Becher, Carl, Hagen, Germany. Wrench	541,827	July 2	13	3	72	5
Beck, Ambroso J., Renovo, Pa. Lamp-chimney holder	546,411	Sept. 17	1715	406	72	1703
Beck, Paul J., *et al.* (See Kintzing, William F., assignor.)						
Beck, Sophus C., Philadelphia, Pa. Hair structure	544,559	Aug. 13	1332	324	72	1002
Beck, Uriah G. and W. F., Elmira, N. Y. Pass-book	544,279	Aug. 13	786	200	72	903
Beck, Uriah G. and W. F., Elmira, N. Y. Receptacle for holding coupons	544,280	Aug. 13	788	201	72	904
Beck, Warren F. (See Beck, Uriah G. and W. F.)						
Becker, Frank J., assignor to H. P. Deuscher Company, Hamilton, Ohio. Corn-planter	541,955	July 2	231	54, 55	72	47
Becker, Nicholas F., Cincinnati, Ohio. Sewing-machine	542,549	July 9	1275	311	72	257
Becker, Nikolaus, assignor to M. Schweiger, Fuerth, Germany. Heel	542,790	July 16	1696	403	72	348
Beckmann, Wilhelm, Munich, Germany. Colors	545,046	Aug. 27	2236	.....	72	1210
Beckwith, Nelson, Somerville, Mass. Elevator	545,146	Aug. 27	2424	588, 589	72	1246
Beckwith, Seth R., Orange, N. J. Electric battery and application thereof to medicinal purposes	542,459	July 9	1126	275	72	228
Bedell, William R., Jackson, Mich. Combination angle-cock and warning-signal	542,404	July 9	1015	249	72	209
Beebe, Walter A., King City, Cal. Tire-regulator	541,828	July 2	13	4	72	5
Beeby, John H., Milwaukee, Wis. Stove-grate	543,841	Aug. 6	13	5	72	751
Beecher, Ebenezer B., and J. P. Wright, New Haven, Conn., assignors to Diamond Match Company, Chicago, Ill. Method of and mechanism for filling match-boxes	543,717	July 30	3365	781, 782, 783	72	689
Beecher, Frank H., and R. G. Cornforth, Seymour, Conn. Crown-piece for bicycle-forks	544,082	Aug. 6	444	110	72	830
Beemer, Levi. (See Lyons, Michael J., assignor.)						
Behr, Hans C., San Francisco, Cal. Centrifugal pump	546,219	Sept. 10	1345	320	72	1616
Behringer, Anton, Braunschweig, Germany. Sifting apparatus	546,911	Sept. 24	2544	608	72	1873
Behrns, Herrman A., Orchard, Iowa. Guide-marker for corn-planters	544,947	Aug. 20	2072	494	72	1159
Bein, William A., assignor to B. Shoninger Company, New Haven, Conn. Muffler or damper for pianos	542,132	July 2	508	122	72	101
Belnker, William, *et al.* (See Hodges, John D., assignor.)						
Belcher, Warren J. (See Cicott, Belcher, and Billings.)						
Belcher, Warren J., Hartford, Conn. Trolley-line clamp	545,187	Aug. 27	2499	605	72	1262
Belknap Manufacturing Company. (See Belknap, William L., assignor.)						
Belknap, William L., assignor to Belknap Manufacturing Company, Bridgeport, Conn. Molding-machine	542,038	July 2	365	88	72	73
Bell, Oro A., Brooklyn, N. Y., assignor to Western Electric Company, Chicago, Ill. Multiple-switchboard system	544,341	Aug. 13	903	226	72	924
Bell Telephone Company of Missouri. (See Dean, William W., assignor.)						
Bell, Thomas, McAlester, and J. S. Williams, Krebs, Ind. Ter. Stop for elevators	545,764	Sept. 3	575	138, 139	72	1459
Bell, Thomas E. (See Apsey and Bell.)						
Belles, John W., Cedar Vale, Kans. Sulky for plows	545,765	Sept. 3	576	139	72	1459

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Bellis Cycle Company. (See Bellis, William K., assignor.)						
Bellis, William K., assignor to Bellis Cycle Company, Indianapolis, Ind. Bicycle-frame	544,021	Aug. 6	335	83	72	810
Benagh, Henry C., Nashville, Tenn. Railway-switch	546,635	Sept. 17	2085	494, 495	72	1774
Bender, Anthony. (See Bordner, Isaac A., assignor.)						
Benesh, Charles, Wahpeton, N. D., assignor, by mesne assignments, to H. E. Holmes and S. J. Carpenter, Minneapolis, Minn. Clothes-line fastener	546,754	Sept. 24	2301	547	72	1826
Benfield, Joseph, Walsall, England. Horseshoe-bar	541,956	July 2	236	55	72	48
Benfield, Joseph, Walsall, England. Soft-tread horseshoe	543,976	Aug. 6	253	62	72	795
Benham, Elijah B., Mystic, Conn. Carbonic-acid-gas engine	543,588	July 30	3086	724	72	643
Bénier, Léon, assignor to Compagnie Générale des Moteurs-Gazogénes Système Bénier, Paris, France. Furnace-grate	546,875	Sept. 24	2492	594	72	1863
Benjamin, Charles H. (See Glidden and Benjamin.)						
Benjumea, José D. de, New York, N. Y. Steam-boiler	544,152	Aug. 6	550	136, 137	72	850
Benner, Burnham R., Lowell, Mass. Bottle	545,147	Aug. 27	2427	589	72	1247
Benner, Elias A., Noblestown, Pa. Thill-coupling	543,977	Aug. 6	254	63	72	795
Benner, Lorenzo D. (See Evans, Louis C., assignor.)						
Benner, Lorenzo D., Peoria, Ill., assignor to Union Paper Bag Machine Company, Philadelphia, Pa. Bag	545,443	Sept. 3	12	4	72	1357
Benner, Lorenzo D., Peoria, Ill., assignor of one-half to L. C. Evans, Springfield, Ohio. Corn-planter	546,482	Sept. 17	1845	437, 438	72	1729
Bennett, Edwin G., Everett, Mass. Cheese or butter cutter	546,377	Sept. 17	1658	394	72	1693
Bennett, George W., Toledo, Ohio. Lock-clamp for seconring cranks to axles	543,283	July 23	2552	599	72	524
Bennett, Harwell L., and R. B. Adams, Westerville, Ohio. Wagon	542,324	July 9	867	212	72	180
Bennett, James, Greencastle, Ind. Running-gear for wagons	544,271	Aug. 6	774	197, 198	72	890
Bennett, Thomas G., assignor to Winchester Repeating Arms Company, New Haven, Conn. Magazine-gun	545,766	Sept. 3	577	139	72	1459
Bennett, Thomas H., El Paso, Tex. Bolster-standard	543,457	July 30	2847	667	72	597
Benoit, Oliver A., Worcester, Mass. Float	546,771	Sept. 24	2326	555	72	1830
Benson, August, assignor of one-half to G. Samuelson, Streator, Ill. Bottle-cutting apparatus	545,767	Sept. 3	579	140	72	1460
Bentall, Frank W., London, England. Teapot and strainer	545,936	Sept. 10	870	210	72	1527
Benton, John B. (See Kennelly, John J., assignor.)						
Benton, Linn B., Milwaukee, Wis., assignor to American Type Founders Company, New York, N. Y. Type	545,568	Sept. 3	233	56	72	1396
Bentzen, Peter, Newport, R. I., and C. F. Olsen, Attleborough, Mass. Tubulous boiler	541,829	July 2	15	4	72	6
Bentzen, Peter, Newport, and C. F. Olsen, Bristol, R. I. Boiler	541,830	July 2	19	5	72	6
Benz, Victor, Dexter, Mich. Gate	546,805	Sept. 24	2378	568	72	1840
Berditschewsky dit Apostoloff, Salomon, and M. Freudenberg, Paris, France. Self-acting commutator for telephones	546,725	Sept. 24	2235	533, 534, 535	72	1815
Berg, Ernst J., Schenectady, N. Y., assignor to General Electric Company, of New York. Frequency-changer	546,806	Sept. 24	2379	568	72	1840
Berg, Julian, Warsaw, Russia. Folding music-stand	544,022	Aug. 6	355	83	72	810
Berger, Henry A., Brooklyn, N. Y. Roller-bearing	542,669	July 16	1419	431	72	370
Berger, Henry A., Brooklyn, N. Y. Roller-bearing	543,718	July 30	3370	783	72	690
Berger, Richard A., Brooklyn, N. Y. Roller-bearing	543,719	July 30	3372	783	72	690
Berger, Richard A., Brooklyn, N. Y. Roller-bearing	543,720	July 30	3373	783	72	690
Bergh, Thorwald H., and A. M. Johnson, Minneapolis, Minn. Theodolite	543,122	July 23	2248	533	72	469
Bergman, Sigmund. (See Stark, Edgar E., assignor.)						
Berkley, George, Newark, N. J. Fender for street-cars	541,914	July 2	155	37	72	33
Berliner Kunstdruck und Verlags-Anstalt, vormals A. & C. Kaufmann. (See Mohs, Julius, assignor.)						
Bernard, John B., St. Paul, Minn. Shoe-blacking	546,876	Sept. 24	2492	.....	72	1863
Bernhard, Conrad, New York, N. Y. Power-transmitting mechanism	546,951	Sept. 24	2610	625	72	1885
Bernstein, Joseph, Philadelphia, Pa. Machine for attaching buttons	545,218	Aug. 27	2553	618	72	1272
Bernstein, Samuel. (See Wilson and Bernstein.)						
Bernstein, William F., Philadelphia, Pa. Caster	514,878	Aug. 20	1946	466	72	1136
Bernthsen, Heinrich A., Mannheim, and P. Julius, assignors to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Azo orange dye	545,333	Aug. 27	2725	.....	72	1305
Berry, David, Fish Rock, Cal. Rotary engine	542,920	July 16	1903	451	72	387
Berry, Joseph, Philadelphia, Pa. Machine for sharpening insertible saw-teeth	543,458	July 30	2847	667	72	597
Berry, Robert C., Indianapolis, Ind. Umbrella	544,838	Aug. 20	1859	450	72	1123
Berry, William E., and W. A. Medlin, Blue Mountain, Miss. Seed-planter	542,921	July 16	1904	451	72	388
Berry, William H., Hoosick Falls, N. Y. Steam-boiler	542,674	July 16	1501	359, 360	72	313
Bertels, Charles E., Wilkes-Barré, Pa. Dinner-pail	543,327	July 23	2616	615	72	537
Bertels, Charles E., Wilkes-Barré, Pa. Dinner-pail	545,007	Aug. 20	2168	524	72	1176
Bertels, Charles E., assignor of one-half to H. Pedlar, Wilkes-Barré, Pa. Telephone attachment	543,328	July 23	2617	615	72	537
Bertrand, Joseph E., Boston, assignor of one-half to M. Bray, Newton, Mass. Tack-pulling attachment for sewing-machines	544,669	Sept. 3	403	97	72	1429
Bertsch, Charles A., Cambridge City, Ind. Metal-shearing machine	514,281	Aug. 13	790	201	72	904
Besemfelder, Eduard R., Gross Mochbern, Germany. Decomposing substances by means of ammonia salts	543,284	July 23	2553	600	72	524
Besser, George, Minneapolis, Minn. Safety-switch	543,077	July 23	2164	513, 514	72	453
Best, Daniel, San Leandro, Cal. Gas engine and generator	544,879	Aug. 20	1947	466	72	1136
Best, Isaac, Lawrence, Mass. Tire for velocipedes	545,148	Aug. 27	2428	589	72	1247
Best, James, and C. J. Knox, Belfast, Ireland. Hat-mirror	542,405	July 9	1016	250	72	209
Best, Thomas J. (See Sullivan and Best.)						
Beswick, John T., Brooklyn, assignor to General Incandescent Arc Light Company, New York, N. Y. Connecting ends of electric conductors	543,919	Aug. 6	162	38	72	777
Betts, Charles W. (See Darragh, Betts, and Kilton.)						
Beury, Joseph L., and J. T. Cressey, Beury, W. Va. Mining-machine	544,424	Aug. 13	1098	267, 268	72	955
Bevin, Abner A., East Hampton, Conn. Toe-clip for bicycles	546,412	Sept. 17	1716	407	72	1703
Bex, Frederick, Brightwood, D. C. Burglar-alarm	545,008	Aug. 20	2169	524	72	1176
Beyer, Carl, New York, N. Y. Easel	544,083	Aug. 6	445	110	72	830
Beyer, Louis, Jr., Calumet Harbor, Wis. Swinging seat for agricultural implements	542,133	July 2	511	123	72	101
Beyer, Melvina, Philadelphia, Pa. Book-holder	544,948	Aug. 20	2073	494	72	1160
Beyerlein, John F., Chicago, Ill. Beer-pump attachment	541,831	July 2	21	5	72	7

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Bibb, Bowdan L., New Providence, assignor of one-half to J. I. Tippit, Legate, Tenn. Wagon-body	543,956	Aug. 6	224	54	72	780
Biddell, George W., Chattanooga, Tenn. Trolley	545,009	Aug. 20	2172	525	72	1177
Bien, Albert M., Deer Lodge, Mont. Mop holder and wringer	542,134	July 2	512	123	72	102
Bierbach, Charles F. and G. E., Milwaukee, Wis. Pavement or sidewalk scraper	543,920	Aug. 6	163	38	72	778
Bierbach, George E. (See Bierbach, Charles F. and G. E.)						
Biette, Henry C., Toronto, Canada. Autographic register	543,842	Aug. 6	15	5,6	72	751
Bigelow, Lyman G., St. Joseph, Mo. Flash-light machine	543,639	July 30	3234	750	72	664
Bigelow, N. E., *et al.* (See Sherwood and Lake, assignors.)						
Biggar, John S., San Francisco, Cal. Telephone	543,843	Aug. 6	20	6	72	752
Bigger, Harry N., and L. A., Dnshore, Pa. Saw-guide	544,282	Aug. 13	792	201	72	904
Bigger Leroy A. (See Bigger, Harry N. and L. A.)						
Biggs, H. C., *et al.* (See Lightner and Newsom, assignors.)						
Bigler, William H., Philadelphia, Pa. Car-fender	545,263	Aug. 27	2616	634	72	1285
Billings, Frederic C. (See Cicott, Belcher, and Billings.)						
Billings, Frederic C., and F. Lombard, assignors to Billings & Spencer Company, Hartford, Conn. Drop-hammer	545,188	Aug. 27	2501	605, 606	72	1262
Billings & Spencer Company. (See Billings and Lombard, assignors.)						
Billings & Spencer Company. (See Cicott, Belcher, and Billings, assignors.)						
Binder, Gottlob, Philadelphia, Pa. Ironing-machine	542,233	July 9	686	168, 169	72	148
Bingham, Abial M., Jesnp, Iowa. Combined churn and butter-worker	544,719	Aug. 20	1648	395	72	1078
Binkerd, Aaron T., Allegheny, Pa. Saw-clamp	542,819	July 16	1745	415	72	356
Binnie, Robert, Bolivar, Pa. Hand-drill	545,335	Aug. 27	2729	662	72	1306
Binns, Leedham, Philadelphia, Pa. Undergronnd trolley	542,434	July 9	1075	263	72	220
Binns, Leedham, Philadelphia, Pa. Woven chenille fabric	543,285	July 23	2555	600	72	525
Binns, Leedham, Philadelphia, Pa. Woven chenille fabric	545,334	Aug. 27	2726	662	72	1305
Bintner, Michael. (See Gerhard and Bintner.)						
Bird, William F., Bruceton Mills, W. Va. Combined corn-planter and fertilizer-distributer	543,459	July 30	2849	667, 668	72	597
Birkner, Ednard E., Crimmitzschan, Germany. Wood-cutting machine	546,294	Sept. 17	1509	356	72	1665
Birney, Frances J., Syracnse, N. Y. Shoulder-brace	542,009	July 2	324	78	72	65
Birrell, Belle W., *et al.* (See Regan, Daniel S., assignor.)						
Bischler, Angust, Zurich, Switzerland, assignor to Fabriques des Produits Chimiques de Thann et de Mulhouse. Artificial musk and making same	546,086	Sept. 10	1123	.....	72	1575
Bischoff, Frank R., New Castle, and J. C. Baird, Cheyenne, assignors to J. C. Spencer, New Castle, Wyo. Coupling for train-pipes	546,877	Sept. 24	2493	595	72	1863
Bishop & Babcock Company. (See Champ, Joseph H., assignor.)						
Bitner, Harry. (See Wiles and Bitner.)						
Bittenbender, Fred T. (See Bittenbender, George H., assignor.)						
Bittenbender, George H., Plymouth, assignor of one-half to F. T. Bittenbender, Nanticoke, Pa. Mining coal-drill bit for boring in coal, &c	544,206	Aug. 6	640	163	72	866
Bitterlich, Julius H., New Haven, Conn. Folding paper box	546,807	Sept. 24	2380	568	72	1840
Bittles, Elizabeth M. (See Camblos and Bittles, assignors.)						
Bittles, William. (See Camblos and Bittles.)						
Black, Christian, Green Cove Springs, Fla. Wrench	546,295	Sept. 17	1510	356	72	1665
Blackburn, Thomas, assignor of one-half to J. Lancaster, Dover, N. H. Adjustable head for warp-beams	546,878	Sept. 24	2494	595	72	1863
Blair, Thomas S., Jr., Allegheny, Pa. Process of and apparatus for manufacturing iron or steel	545,937	Sept. 10	871	210	72	1527
Blaisdell, Byron R., Plano, Ill. Moistener or softener for wall-paper, paints, &c	546,504	Sept. 17	1879	445	72	1736
Blaisdell, James M., May's Landing, N. J. Device for feeding fiber to fiber-treating machines	545,189	Aug. 27	2507	606	72	1263
Blake & Johnson. (See Taylor, Franklin A., assignor.)						
Blakeslee, George S., Chicago, Ill. Dish-cleaner	542,460	July 9	1127	275, 276	72	229
Blakesley, Gilbert H. (See Draher, John, assignor.)						
Blakey, Edwin, Bradford, assignor to Automatic Electric Railway Signal Company, Limited, Liverpool, England. Signaling on railways and means therefor	543,721	July 30	3375	784	72	691
Blankner, William, Aurora, Ill. Coffee pot construction	543,520	July 30	2972	697	72	620
Blendinger, Frederick. (See Blendinger and Geyser.)						
Blendinger, George and F., and J. B. Geyser, Allegheny, Pa.; said Geyser assignor to said George and F. Blendinger. Baker's oven	546,755	Sept. 24	2302	547, 548	72	1826
Blessing, John G., assignor to Western Clock Manufacturing Company, La Salle, Ill. Stem winding and setting watch	542,984	July 23	2003	476	72	423
Bleyney, John C., Newark, N. J., assignor to De La Vergne Bottle and Seal Company, of New Jersey. Corking-machine	545,190	Aug. 27	2509	606, 607	72	1263
Blinn, Daniel C. (See Blinn, George A. and D. C.)						
Blinn, George A., Tres Piedras, N. Mex. Ter., and D. C. Blinn, Denver, Colo., assignors of one-third to A. A. Carpenter, Tres Piedras, N. Mex. Ter. Amalgamator and separator	546,378	Sept. 17	1659	394	72	1693
Bliss, Henry H., Washington, D. C., assignor to J. A. Jeffrey, Columbus, Ohio. Electric tool and machine	545,569	Sept. 3	234	57	72	1397
Bliss, Henry H., Washington, D. C., assignor to J. A. Jeffrey, Columbus, Ohio. Electric coal or rock drill	545,570	Sept. 3	238	57, 58, 59, 60	72	1398
Bliven, John R., Daytona, Fla. Balance attachment for bicycle-pedals	543,841	Aug. 6	21	6	72	753
Block, Carl, St. Louis, Mo., assignor to Hameless Collar Company, of Missouri. Horse-collar	542,218	July 2	659	161	72	128
Block, Francis L., Sidney, Ill. Insect-trap	545,842	Sept. 3	699	170	72	1482
Blodgett, William A., assignor of one-half to T. E. Woodley, Chicago, Ill. Cigar-lighter	545,871	Sept. 10	750	183	72	1504
Bloom, Peter J. (See Rohder and Bloom.)						
Bloomheart, Billy. (See Nichols and Bloomheart.)						
Bloss, Clarence H., Miamisburg, Ohio. Stop mechanism for spinning-machines	545,768	Sept. 3	580	140	72	1460
Blosser, Theodore B., assignor to Victor Rubber Tire Company, Springfield, Ohio. Vehicle-tire	543,434	July 23	2796	657	72	573
Blount, Eugene I., Gardner, assignor to Blount Manufacturing Company, Boston, Mass. Door check and closer	542,791	July 16	1697	404	72	348
Blount, Eugene I., Gardner, Mass., assignor to Blount Manufacturing Company, Portland, Me. Door check and closer	542,840	July 16	1775	422	72	362
Blount Manufacturing Company. (See Blount, Eugene I., assignor.)						
Bluemcke, George, Brooklyn, N. Y. Life-boat	544,608	Aug. 13	1425	346, 347	72	1019
Blumer, James, Brooklyn, N. Y. Corrugating and cutting tool	542,435	July 9	1077	263	72	221

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Blun, Ferdinand S. M. (See Gaisman, Henry J., assignor.)						
Blundell, John C., Providence, assignor of one-half to C. D. Wood, Lincoln, R. I. Paper-box machine	545,219	Aug. 27	2554	618, 619, 620	72	1273
Blundell, John W. (See Jones and Blundell.)						
Blüthner, Julius, Leipsic, Germany. Repeating-action for grand pianos	543,370	July 23	2680	632, 633	72	549
Blüthner, Julius, Leipsic, Germany. Piano-action	543,371	July 23	2681	633	72	549
Blythe, Lynn M., Salem, Mass. Cuff-holder	542,820	July 16	1746	415	72	356
Board, Ellsworth M. (See McCormick, Francis J., assignor.)						
Boardman Arthur F., Somerville, assignor of one-half to J. D. Leatherbee, South Braintree, Mass. Telephone holder and cut-out	545,191	Aug. 27	2511	607	72	1264
Bobrick, Gabriel A., Boston, Mass. Inkstand	542,750	July 16	1631	390	72	336
Bock, Christian H. R., and E. M. A. Wacker, Leipsic-Gohlis, Germany. Damping device for music-boxes	543,286	July 23	2557	600	72	525
Bodenbach, Charles J. (See Kane, Robert A., assignor.)						
Boeckeler, Henry A. (See Friedrichs, Joseph, assignor.)						
Boegen, John E., South Bay City, Mich. Sectional nut	543,205	July 23	2419	568	72	501
Boekel & Co., William. (See Boekel, Julius, assignor.)	543,145	July 23	2288	542	72	477
Boekel, Julius, assignor to W. Boekel & Co., Philadelphia, Pa. Pocket-laryngoscope	544,454	Aug. 13	1171	283, 284	72	971
Boekler, Reinhold C., Brooklyn, N. Y. Water-gas generator	541,832	July 2	22	6	72	7
Boelte, Max, Los Angeles, Cal. Magazine-camera	543,372	July 23	2681	633	72	549
Boettcher, Emil, Leipsic, Germany. Secondary battery	546,912	Sept. 24	2545	608, 609	72	1873
Boettcher, Fridrich W. G., West Duluth, Minn. Display apparatus	542,461	July 9	1129	276	72	229
Bogert, John L., Flushing, N. Y. Milling-machine						
Bohls Cigarette Machine Company. (See Coffee, Robert W., assignor.)						
Bohm, Edward F. (See Gregg, Vincent E., assignor.)						
Bohn, René, Mannheim, assignor to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Black dye	545,336	Aug. 27	2730	.....	72	1306
Bohn, René, Mannheim, assignor to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Black dye	545,337	Aug. 27	2731	.....	72	1306
Bohn, René, Mannheim, assignor to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Black coloring-matter	546,576	Sept. 17	1998	.....	72	1757
Bolsinger, Cyrus W., Munhall, Pa. Lifting-tongs	542,085	July 23	2004	476	72	423
Bolzani, Anton, Berlin, Germany. Brake for lifting apparatus	543,287	July 23	2558	601	72	525
Boman, Claes W., assignor to Eagle Pencil Company, New York, N. Y. Pen and pencil case	544,609	Aug. 13	1426	347	72	1019
Boman, Claes W., assignor to Eagle Pencil Company, New York, N. Y. Pen and pencil case	545,010	Aug. 20	2173	525	72	1177
Bomar, William M., Spartanburg, S. C. Wheel-cultivator	544,839	Aug. 20	1880	450, 451	72	1123
Bomm, Joseph F., Evansville, Ind. Advertising device	541,915	July 2	157	37	72	34
Bond, Frederick W., assignor of one-half to B. F. Hobart, St. Louis, Mo. Railway-track joint	542,135	July 2	513	123	72	102
Bond, T. C. (See Gentry, William F. L., assignor.)						
Bond, Thomas J. (See Sullivan and Bond.)						
Bonenberger, George, Evansville, assignor to J. H. Keyes, Terre Haute, Ind. Mine trap-door	544,498	Aug. 13	1241	300	72	984
Bonsack Machine Company. (See Butler, William H., assignor.)						
Bonsack Machine Company. (See Hulse, William A., assignor.)						
Bonta, Arthur K., assignor to Bonta Manufacturing Company, Hoboken, N. J. Means for arresting motion of electric cars	543,435	July 23	2797	658	72	573
Bonta Manufacturing Company. (See Bonta, Arthur K., assignor.)						
Book, Valentine D. (See Steel, Robert, assignor.)	544,475	Aug. 13	1208	292	72	977
Booth, James J., and W. Flinn, Pittsburg, Pa. Measuring-tool	544,949	Aug. 20	2074	494, 495, 496, 497	72	1160
Booth, John, Bolton, England. Thread winding or spooling machine	542,136	July 2	515	124	72	102
Booth, John C., assignor to J. H. Williams & Co., Brooklyn, N. Y. Chain pipe-wrench	545,264	Aug. 27	2617	635	72	1285
Booth, William, Gladwyne, and S. Sturgis, West Manayunk, Pa. Dumping-wagon	546,577	Sept. 17	1999	474	72	1757
Boothman, Jonathan, Manchester, England. Cutter for nail making and driving machines	544,153	Aug. 6	532	137	72	850
Booz, Edward D. (See Terry, John P., assignor.)						
Borchers, Wilhelm, Duisburg, Germany. Vessel for electrolytic separation	543,168	July 23	2351	554	72	488
Bordner, Isaac A., assignor of one-half to A. Bender, Tiro, Ohio. Potato-seed cutter and dropper	545,192	Aug. 27	2512	607	72	1264
Borgersen, Hans, Chicago, Ill. Photograph holder and exhibitor	541,957	July 2	237	55	72	48
Borgfeldt & Co., George. (See Schlegelmilch, Reinhold, assignor.)	541,958	July 2	238	56	72	49
Borgner, Cyrus. (See Smith, Martin V., assignor.)	541,959	July 2	239	56	72	49
Borsch, Henry, Chicago, Ill. Nose-piece for eyeglasses	541,960	July 2	240	56	72	49
Borsch, Henry, Chicago, Ill. Nose-piece for eyeglasses	541,961	July 2	241	56	72	49
Borsch, Henry, Chicago, Ill. Nose-piece for eyeglasses	544,013	Aug. 6	322	80	72	808
Borsch, Henry, Chicago, Ill. Nose-piece for eyeglasses	542,966	July 23	2005	477	72	424
Bort, Katharine, (formerly Katharine Stephens,) Elgin, Ill. Hook and eye						
Borzell, Henry E. F. (See Rittenhouse, Benjamin F., assignor.)						
Bossard, John, Dubuque, Iowa. Electrodepositing device						
Boston Fast Color Eyelet Company. (See Kempshall, Eleazer, assignor.)						
Boston Woven Hose and Rubber Company. (See Davis, Joseph E., assignor.)						
Bateler, John W. Washington, D. C. Trunk-stand	543,373	July 23	2682	634	72	549
Bothwell, Henry R. (See Newman and Bothwell.)						
Botkin, George, Chambersburg, Mo. Cucumber-picker	546,913	Sept. 24	2547	609	72	1873
Bott, John, Youngstown, Ohio. Machine for cutting metal strips, rods, &c	546,726	Sept. 24	2251	535, 536	72	1816
Boucher, Alexandre, St. Petersburg, Russia. Steam-valve	544,950	Aug. 20	2077	497	72	1160
Bouk, James A., and C. R. Bushnell, Santa Cruz, Cal. Device for saving valuable and precious metals	544,880	Aug. 20	1949	467	72	1136
Bouldin, James W., Prescott, Ark. Plow-point	545,193	Aug. 27	2513	608	72	1264
Bourcey, Hippolyte. (See Moore and Bourcey.)						
Bontelle, Llewellyn W., Orange, Mass. Molder's flask	544,560	Aug. 13	1333	324	72	1002
Bontilier, Robert A. (See King and Bontilier.)						
Bouton, Charles, assignor to G. H. Grimm Manufacturing Company, Hudson, Ohio. Sap-bucket	546,648	Sept. 24	2108	500	72	1791

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Bowdoin, Rufus P., Wilmington, N. C. Scissors	542,183	July 2	588	142	72	115
Bowen, George R., San Antonio, Tex., assignor of one-half to W. W. Globs, Philadelphia, Pa. Plant for generating electricity	544,654	Aug. 20	1514	366	72	1057
Bowen, James, Philadelphia, Pa. Car-fender	545,872	Sept. 10	752	183	72	1504
Bowen, John W., and L. Flack, Sharon, N. C. Apparatus for canning fruits or vegetables	545,770	Sept. 3	583	141	72	1460
Bower, Louis O., Toledo, Ohio. Rope-clamp	544,342	Aug. 13	906	227	72	925
Bowie, George H., assignor of one-half to J. C. Roger, Ottawa, Canada. Automatic vending machine	545,338	Aug. 27	2733	662 / 663	72	1306
Bowles, Charles J., Ada, Ohio. Combined feed rack and trough	544,655	Aug. 20	1515	366	72	1054
Bowley Joseph H., assignor of one-half to J. W. Stockwell, Marengo, Ill. Knockdown rack	541,989	July 2	286	66	72	58
Bowman, Charles F., New Haven, Conn. Micrometer-gage	541,916	July 2	158	38	72	34
Bowman, John D., Altoona, Pa. Thermostatic regulator for gas-burners	542,234	July 9	690	169	72	149
Bowman, John D., Altoona, Pa. Plug-cock	545,769	Sept. 3	582	140	72	1460
Bowman, William M., Plymouth, Mass. Extinguisher for oil stoves or lamps	544,023	Aug. 6	336	83	72	811
Boyd, Nathaniel W., Carlisle, Pa. Automatic switch-stand	543,845	Aug. 6	22	7	72	753
Boyd, Thomas A., Glasgow, Scotland. Adjustable yarn-clearer	543,288	July 23	2560	601	72	525
Boyd-Wilson, John V., Glasgow, Scotland. Bridge flooring, decking, roofing, &c	542,325	July 9	868	212	72	180
Boyden, Frank S., Chicago, Ill. Card for displaying rings	542,751	July 16	1633	390	72	336
Boyer, Daniel, Cressona, Pa. Window-shade cornice	542,515	July 9	1221	297	72	246
Boyer, Daniel, Cressona, Pa. Window-shade cornice	546,296	Sept. 17	1511	356 / 357	72	1665
Boynton, Charles B., *et al.* (See Marshall, Aquila B., assignor.)						
Boyton, Samuel, Brooklyn, N. Y. Pick or like tool	546,505	Sept. 17	1582	415	72	1736
Bozano, Stefano, Mattapan, assignor of one-half to P. Caledonia, Boston, Mass. Permutation-padlock	546,969	Sept. 24	2637	632	72	1891
Bracewell, William E. (See Geary and Bracewell.)						
Brack, Johann J., Basle, Switzerland, assignor to L. Durand, Huguenin & Co., Basle, Switzerland, St. Fons, France, and Hüninger, Germany. Substantive cotton dye	542,073	July 2	426	.....	72	84
Brack, John H. (See Dinsmore, Edward W., assignor.)						
Brackett, John H., Wakefield, Mass. Guide for drawing and carding machines	545,220	Aug. 27	2558	620	72	1273
Braden, John B., assignor of one-half to D. Lamb, McDonald, Pa. Bailer for oil or like wells	546,267	Sept. 10	1443	342	72	1634
Braden, William A., assignor of one-third to J. S. Holmes, Chicago, Ill. Packing for pistons, valves, &c	542,137	July 2	516	124	72	102
Bradford, Henry B. (See Sellers, Strong, and Bradford.)						
Bradley, Benjamin C., and G. Ewing Ripley, Tenn. Saw-gummer	546,304	Sept. 17	1684	400	72	1698
Bradley, Charles S., Avon, N. Y. Electric condenser	543,978	Aug. 6	255	63	72	795
Bradley, Charles S., Avon, N. Y. Electric drill	546,002	Sept. 10	980	237	72	1547
Bradley, Charles S., Avon, N. Y. Production of displaced phases and rotary fields	546,756	Sept. 24	2304	548 / 549	72	1826
Bradley & Hubbard Mfg. Co. (See Jauch, Joseph, assignor.)						
Bradley, William H. (See Miller, Bradley, and Miller.)						
Bradshaw, William F. (See Scott and Bradshaw.)						
Bradt, Charles E., *et al.* (See Reynolds, Samuel D., assignor.)						
Bradt, Samuel E., *et al.* (See Reynolds, Samuel D., assignor.)						
Bradt, William H., Troy, N. Y. Electric alarm-gage	542,406	July 9	1017	250	72	209
Brady, Frank, Chicago, Ill. Railway-tricycle	542,326	July 9	869	212 / 213	72	180
Brady, Frank, Chicago, Ill. Railway-velocipede	542,327	July 9	871	213 / 214	72	181
Brady, Thomas H. (See Torrey, William W., assignor.)						
Brady, Thomas H., New Britain, Conn. Electric switch	544,781	Aug. 20	1779	425	72	1105
Bragg, Edward F., assignor to Automatic Rubber Mixer Company, Boston, Mass. Roll for rubber-mixing or other mills	544,782	Aug. 20	1780	425	72	1105
Bragg, Frederick A., North Adams, Mass., assignor of one-half to J. B. Thacher, Albany, N. Y. Automatic car-fender	545,339	Aug. 27	2735	663	72	1307
Braine, Bancroft G. (See Braine, Lawrence F. and B. G.)						
Braine, Lawrence F., Ridgewood, N. J., and B. G. Braine, Brooklyn, N. Y. Game-counter	544,907	Aug. 20	2008	479	72	1148
Brainerd, George S., Boston, Mass. Steam-trap	546,606	Sept. 17	2042	485	72	1766
Braisted, Edward W., *et al.* (See Kling, John P., assignor.)						
Braley, William J., Fall River, Mass. Insulating-shield for metallic poles	542,675	July 16	1503	360	72	313
Bramble, James E., Gainesville, Tex. Fire-hose supporter	544,951	Aug. 20	2079	498	72	1161
Bramwell, Clarence C., Hyde Park, Mass. Visual indicating device	544,024	Aug. 6	337	84	72	811
Bramwell, William C., Hyde Park, Mass. Wind-wheel	543,460	July 30	2851	668	72	598
Bramwell, William C., Hyde Park, Mass. Wind wheel	543,461	July 30	2852	668	72	598
Bramwell, William C., Hyde Park, Mass. Wind-engine	543,462	July 30	2854	668 / 669	72	598
Brand, Achill W., Salt Lake City, Utah Ter. Loop holder	542,357	July 9	930	228	72	193
Brand, William, Pittsburg, Pa. Boiler-furnace	546,772	Sept. 24	2327	555	72	1830
Brandau, Christina, assignor of one-fourth to F. P. Higby, Cohoes, N. Y. Automatic car-brake	546,808	Sept. 24	2382	569	72	1841
Brandly, Albert R., New York, N. Y. Eye-shade	546,636	Sept. 17	2086	495	72	1774
Brandon, Francis L. (See Roop, Brandon, and Hart.)						
Brandt, Edward J., Watertown, Wis. Coin-delivery apparatus	542,328	July 9	872	214 / 215	72	181
Brandt, Edward J., Watertown, Wis. Coin-delivery apparatus	542,329	July 9	876	215 / 216	72	182
Brandt, Edward J., Watertown, Wis. Coin-delivery apparatus	542,602	July 9	1360	329 / 330	72	272
Brantingham, Allen C., Toledo, Ohio, assignor to Nordyke & Marmon Company, Indianapolis, Ind. Proportional indicator for mill products	546,413	Sept. 17	1717	407	72	1703
Brann, John, Philadelphia, Pa. Lawn-mower	542,235	July 9	690	169	72	149
Brantigam, Joseph, Brooklyn, N. Y. Car-fender	542,841	July 16	1776	422	72	362
Bray, Ann E., Los Gatos, Cal. Sash-fastener	546,649	Sept. 24	2109	500	72	1791
Bray, Bernard B., Axtell, Tex. Dental bridgework	542,138	July 2	517	124	72	103
Bray, Mellen. (See Bertrand, Joseph E., assignor.)						
Bray, Mellen N., Boston, Mass. Machine for covering metallic articles with plastic material	544,656	Aug. 20	1518	366 / 367	72	1054
Breakspear, William H., O Spannaus, and C. Weisbecker, New York, N. Y. Sales-pad	543,329	July 23	2619	615	72	538
Breakspear, William H., O. Spannaus, and C. Weisbecker, New York, N. Y. Paper-roll for sales-pads	543,330	July 23	2621	615	72	538
Breitenkamm, Charles, Paterson, N. J. Device for coating confections	542,987	July 23	2008	477	72	424
Breitschwerth, Conrad, Syracuse, N. Y. Pottery-machine	546,297	Sept. 17	1513	357	72	1666
Bremer, George W. (See Francis, Alfred P., assignor.)						
Brennan, Andrew W., Towanda, Pa. Shaving-cabinet	545,265	Aug. 27	2618	635	72	1285

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Brennan & Co. Southwestern Agricultural Works. (See Dealtry, William J., assignor.)						
Bresler, Fred E., Bay City, Mich. Adjustable crank-clamp	545,843	Sept. 3	700	170 / 171	72	1483
Breanehan, Maurice V. (See Heys, John J., assignor.)						
Breul, Clemens, Barmen, Germany. Plaster-box	544,401	Aug. 13	1067	260	72	949
Breul, Richard A., Bridgeport, Conn. Street-car fender	545,047	Aug. 27	2237	542	72	1210
Breul, Richard A., Bridgeport, Conn. Chain-link	545,266	Aug. 27	2620	635	72	1286
Brewer, Cecelia A., La Porte, Ind. Washing-machine	544,246	Aug. 6	735	189	72	882
Brewer, Edward P., Norwich, Conn. Pipe-covering	545,340	Aug. 27	2736	663	72	1307
Brewer, Hugo, Duisburg, Germany. Utilizing waste lye	544,499	Aug. 13	1242	.....	72	984
Brewington, Henry S., Baltimore, Md. Garment-hook	544,952	Aug. 20	2080	498	72	1161
Brice, James, Columbus, Ohio. Pipe-joint clamp	546,298	Sept. 17	1515	358	72	1666
Bridegum, Cyrus W., Hainesport, N. J. Dumping-car	544,561	Aug. 13	1335	324 / 325	72	1003
Bridgeport Brass Company. (See Rhind, Frank, assignor.)						
Bridger, Henry C. (See Ginochio and Bridger.)						
Bridges, Christopher M., Seattle, Wash., assignor of one-half to J. S. Fanning, San Francisco, Cal. Self-measuring liquid-tank	543,169	July 23	2353	554 / 555	72	489
Bridgman, Henry L., Blue Island, Ill. Electrodepositing apparatus	546,483	Sept. 17	1849	438	72	1730
Brigg, William W., Atlanta, Ga. Churn	541,917	July 2	161	38	72	34
Briggs, Calvin. (See Broughton and Briggs.)						
Briggs, George S., Rockford, Ill. Tire-upsetter	543,073	July 23	2166	514	72	454
Briggs Manufacturing Company. (See Briggs, Thomas A., assignor.)						
Briggs, Orlando P., assignor to Western Electric Company, Chicago, Ill. Magnet-forming machine	544,343	Aug. 13	907	227 / 228	72	925
Briggs, Orlando P., assignor to Western Electric Company, Chicago, Ill. Wire-coiling machine	544,344	Aug. 13	910	228 / 229	72	925
Briggs, Orlando P., and W. R. Patterson, assignors to Western Electric Company, Chicago, Ill. Telegraph-receiver	545,938	Sept. 10	873	210	72	1527
Briggs Ship's Berth Company. (See Milligan, William T., assignor.)						
Briggs, Thomas A. (See Philpott and Briggs.)						
Briggs, Thomas A., Arlington, Mass., assignor to Briggs Manufacturing Company, Niagara Falls, N. Y. Paper-feeding machine	545,622	Sept. 3	320	79, 80	72	1413
Brightwood Box Machinery Company. (See Gay, Chauncey W., assignor.)						
Brunner, Thomas R., Baltimore, Md., assignor to North American Interior Telephone Company of Baltimore City. Telephone and return-call system	545,402	Aug. 27	2832	690	72	1326
Brinckle, Addington L., Philadelphia, Pa. Stamp-holding book	541,833	July 2	25	6	72	8
Brinckman, George, and F. Wiederholdt, St. Louis, Mo. Filter	545,221	Aug. 27	2559	620	72	1273
Brindle, James C., assignor of one-half to P. Westman, J. Myers, and G. A. Nicol, Ashland, Ohio. Steam shovel and dredge	545,939	Sept. 10	876	211	72	1528
Brindle, Joseph, Failsworth, assignor of two-thirds to J. Taylor and R. L. Reade, Sale, England. Spinning-frame	545,844	Sept. 3	702	171	72	1483
Briney, Benjamin C., and S. C. Geron, Paris, Tex. Fence-making machine	542,988	July 23	2009	477	72	424
Bringham, Friend J., assignor to Seamless Leather Company, Chicago, Ill. Seamless leather article	545,444	Sept. 3	13	4	72	1357
Bringham, Friend J., assignor to Seamless Leather Company, Chicago, Ill. Seamless leather article	545,577	Sept. 3	248	61	72	1400
Bringham, Friend J., Chicago, Ill., assignor to Seamless Leather Company, of Illinois. Skirt for double harness	545,445	Sept. 3	14	4	72	1357
Bringham, Friend J., Chicago, Ill., assignor to Seamless Leather Company, of Illinois. Hame-tug	545,446	Sept. 3	15	5	72	1357
Bringham, Friend J., Chicago, Ill., assignor to Seamless Leather Company, of Illinois. Buckle-chafe	545,447	Sept. 3	16	5	72	1358
Bringham, Friend J., Chicago, Ill., assignor to Seamless Leather Company, of Illinois. Sheath or case	545,448	Sept. 3	17	5	72	1358
Bringham, Friend J., Chicago, Ill., assignor to Seamless Leather Company, of Illinois. Joint for ends of leather straps	545,572	Sept. 3	244	60	72	1399
Bringham, Friend J., Chicago, Ill., assignor to Seamless Leather Company, of Illinois. Leather article	545,573	Sept. 3	245	60	72	1399
Bringham, Friend J., Chicago, Ill., assignor to Seamless Leather Company, of Illinois. Strap and buckle	545,574	Sept. 3	246	60	72	1399
Bringham, Friend J., Chicago, Ill., assignor to Seamless Leather Company, of Illinois. Shaft-tug loop	545,575	Sept. 3	246	61	72	1399
Bringham, Friend J., Chicago, Ill., assignor to Seamless Leather Company, of Illinois. Hame-tug	545,576	Sept. 3	247	61	72	1400
Brittin, William F., Allegan, assignor of one-half to E. N. Howe, Coldwater, Mich. Electric transformer	545,670	Sept. 3	404	98	72	1429
Britton, Abe, and J. H. Peterson, Philadelphia, Pa. Toy	544,526	Aug. 13	1281	309	72	991
Brizzi, Carlo, New York, N. Y. Indicator for piano-stools	544,154	Aug. 6	553	137	72	851
Broadbooks, Peter, assignor to himself and L. L. Tozier, Batavia, N. Y. Thill-coupling	546,268	Sept. 10	1444	342	72	1634
Broberg, Frans G. A., Emporium, Pa., assignor of one-half to D. L. Wildrick, Dover, N. J. Blasting-powder	542,723	July 16	1578	.....	72	327
Broberg, Frans G. A., Emporium, Pa., assignor of one-half to D. L. Wildrick, Dover, N. J. High explosive	542,724	July 16	1579	.....	72	327
Brock, William H., Brooklyn, N. Y. Flange-wrench	542,922	July 16	1906	451	72	388
Brodin, Axel, Warren, Pa. Extension-table	542,139	July 2	518	124 / 125	72	103
Brokaw, Norman H., Kaukauna, Wis. Machine for winding paper	545,449	Sept. 3	17	5	72	1358
Brokaw, Stephen H., and F. S. Nicholson, Hornellsville, N. Y. Thill-coupling	542,236	July 9	691	170	72	149
Brombacher, Emil, Buffalo, N. Y. Police-patrol signal-box	542,074	July 2	427	103	72	84
Brombacher, Emil, assignor of one-half to J. Elmer, Buffalo, N. Y. Door-operating device	543,979	Aug. 6	256	63	72	795
Brombacher, Max H. C. (See Oberle and Faller, assignors.)						
Bronson, Charles S. (See Morris, John W., assignor.)						
Brookfield, William. (See Kribs, Seraphin, assignor.)						
Brooks, James W., trustee. (See Glidden, Charles W., assignor.)						
Brooks, James W., trustee. (See Glidden and Benjamin, assignors.)						
Brooks, James W., trustee. (See Glidden and Small, assignors.)						
Brooks, James W., trustee. (See Goddu, Louis, assignor.)						
Brooks, James W., trustee. (See Heys and Glidden, assignors.)						
Brooks, James W., trustee. (See Keith and Clark, assignors.)						
Brooks, Jesse S., Cedar Bayou, Tex. Combination steel bar	542,989	July 23	2011	478	72	425
Brooks, John, assignor, by mesne assignments, to Potter Printing Press Company, Plainfield, N. J. Printing-press	546,414	Sept. 17	1719	407 / 408	72	1703
Brooks, Peter N., assignor of one-half to P. S. Cassidy, Philadelphia, Pa. Oil-filter	543,797	July 30	3523	820	72	718

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Brooks, Robert T., Newark, N. J. Non-conducting pipe-covering	544,954	Aug. 20	2083	499	72	1162
Brooks, Silas M., Burlington, assignor to C. A. Hart, P. F. Smith, Canton, Conn., and W. E. Simonds. Grafting-wax and making same	545,940	Sept. 10	877	.....	72	1528
Brooks, Silas M., Burlington, assignor to C. A. Hart, P. F. Smith, Canton, Conn., and W. E. Simonds. Grafting-wax	545,941	Sept. 10	878	....	72	1528
Brooks Thomas W., assignor to Dunham, Carrigan & Hayden Company, San Francisco, Cal. Air-valve	542,516	July 9	1223	297	72	246
Brooks, William. (See Carroll and Brooks.)						
Brooks, William D., Baltimore, Md. Can-soldering apparatus	544,953	Aug. 20	2081	498, 499	72	1161
Brott, Lucien A., and G. A. Kay, Brooklyn, N. Y. Composite type-bar and making same.	542,140	July 2	520	125	72	103
Bronghton, Henry S., and C. Briggs, Clymer, Oreg. Hop-trellis	542,821	July 16	1747	415	72	356
Brower, Abraham T. H., Chicago, Ill. Plug-stopper for cans	544,840	Aug. 20	1882	451	72	1123
Brower, William L., *et al.* (See Holbrook, David M., assignor.)						
Brown, Alexander T., Syracuse, N. Y. Vehicle-tire	542,752	July 16	1634	390, 391	72	336
Brown, Allen M., Goodland, Kans. Power-wheel	544,636	Aug. 13	1474	358	72	1028
Brown, Alva P., Hillsdale, Ind. Chair	543,640	July 30	3235	751	72	665
Brown, Alvah G., Jr., Brooklyn, N. Y. Game apparatus	543,463	July 30	2857	669	72	598
Brown, Benjamin B. (See Clark, William H., assignor.)						
Brown, Charles C. (See Camp, Wesley F. and B. G., assignors.)						
Brown, Charles F. (See Julian, Gideon, assignor.) (Reissue.)						
Brown, Charles H., Jackson, Mich. Frictional driving mechanism	546,650	Sept. 24	2110	500, 501	72	1792
Brown, Clarence D., *et al.* (See Daly, James H., assignor.)						
Brown & Co., John. (See Tresidder, Tolmie J., assignor.)						
Brown, Edward R., Tallahassee, Fla. Car-coupling	542,141	July 2	520	125	72	103
Brown, Edward W., Bay City, Mich. Wood-hog	542,075	July 2	429	103	72	84
Brown, Eleazer P., Flushing, N. Y. Artificial denture	542,436	July 9	1079	261	72	221
Brown, Frank C., Highland Lake, Colo. Head-gate-operating mechanism	542,218	July 9	694	171	72	150
Brown, Frank H. (See Gorman, Thomas, assignor.)						
Brown, George M., Galesburg, Ill., assignor of one-half to J. J. McKee, Bethlehem, Pa. Railway block-signal system	542,550	July 9	1279	311, 312	72	258
Brown, Gilman W., assignor of one-half to H. Brown, West Newbury, Mass. Fire-alarm signaling apparatus	544,084	Aug. 6	446	111	72	831
Brown, Gilman W., assignor of one-half to H. Brown, West Newbury, Mass. Apparatus for stopping engines	544,085	Aug. 6	449	111	72	831
Brown, Harold P., assignor to Edison General Electric Company New York, N. Y. Manufacturing electromagnets	546,220	Sept. 10	1346	320	72	1616
Brown, Haydn. (See Brown, Gilman W., assignor.)						
Brown, Hugh. (See Sellers, Will P., assignor.)						
Brown, James O., Chicago, Ill. Electric insulating material	542,462	July 9	1133	.....	72	230
Brown, John H. (See Miller, James, assignor.)						
Brown, John Q., Jr., San Francisco, Cal. Game apparatus	543,722	July 30	3378	784	72	691
Brown, Joseph B., Salem, Oreg. Steam-cooker	545,450	Sept. 3	19	6	72	1358
Brown, Mary, *et al.* (See Brown, Theodore H., assignor.)						
Brown, Mary L., Oriskany Falls, N. Y. Fastening device	546,578	Sept. 17	2000	475	72	1757
Brown, Nellie, Pueblo, Colo. Bag-fastener	546,484	Sept. 17	1850	438	72	1730
Brown, Perry, Wilmington, Del. Car-coupling	542,237	July 9	692	170	72	150
Brown, Perry, Wilmington, Del. Saw-handle	543,289	July 23	2560	601	72	526
Brown, Philip C., Washington, D. C. Car-coupling	542,603	July 9	1363	331	72	273
Brown, Robert I., New York, N. Y. Belting for transmission of power	543,123	July 23	2249	533, 534	72	469
Brown, Robert I., Brooklyn, N. Y. Belting for transmission of power	543,124	July 23	2251	534	72	470
Brown, Robert I. Brooklyn, N. Y. Means for fastening parallel wires together	543,125	July 23	2253	534	72	470
Brown & Sharpe Manufacturing Company. (See Beale, George B., assignor.)						
Brown & Sharpe Manufacturing Company. (See Worsley, Samuel L., assignor.)						
Brown, Theodore H., assignor to M. Brown and W. E. Casson, Viroqua, Wis. Sheathing lath.	546,221	Sept. 10	1349	320	72	1617
Brown, William B., assignor of one-half to F. M. North, Labadie, Mo. Car-coupling	543,921	Aug. 6	164	38	72	778
Brown, William H., Indianapolis, Ind. Fireproof floor and ceiling	545,873	Sept. 10	753	184	72	1504
Brown, William M., assignor to Johnson Company, Johnstown, Pa. Clamp for use in welding railway-rails	546,773	Sept. 24	2328	555	72	1831
Brown, William R., New Market, Ind. Eccentric gear	546,757	Sept. 24	2307	549	72	1827
Brown, Wistar P., Philadelphia, Pa. Vulcanizing-flask	545,341	Aug. 27	2737	664	72	1307
Browne, Douglas L. V., Denver, Colo. Signaling	542,142	July 2	523	125	72	104
Browning, James C., Crum Elbow, N. Y. Sales-book	543,669	July 30	3277	761	72	673
Browning, John M., Ogden, Utah Ter. Means for automatically removing unconsumed products from gun-barrels	543,567	July 30	3053	713	72	637
Browning, John M., Ogden, Utah Ter. Gas-operated machine-gun	544,657	Aug. 20	1520	367, 368	72	1054
Browning, John M., Ogden, Utah Ter. Gas-operated machine-gun	544,658	Aug. 20	1526	368, 369	72	1055
Browning, John M., Ogden, Utah Ter. Gas-operated machine gun	544,659	Aug. 20	1531	369	72	1056
Browning, John M., Ogden, Utah Ter. Gas-operated firearm	544,661	Aug. 20	1544	371	72	1058
Browning, John M., Ogden, Utah Ter., assignor to Winchester Repeating Arms Company, New Haven, Conn. Magazine-firearm	545,671	Sept. 3	409	99	72	1429
Browning, John M., Ogden, Utah Ter., assignor to Winchester Repeating Arms Company, New Haven, Conn. Box-magazine bolt-gun	545,672	Sept. 3	412	99, 100	72	1430
Browning, John M. and M. S., Ogden, Utah Ter. Gas-operated breech-loading gun	544,660	Aug. 20	1535	370	72	1057
Browning, Matthew S. (See Browning, John M. and M. S.)						
Bruce, George, and C. L. Van Buskirk, Lodi, Cal. Flood-gate	544,425	Aug. 13	1102	268	72	955
Bruckman, Ernest G., *et al.* (See Verstraete, Edmond, assignor.)						
Bruckman, Samuel E., *et al.* (See Verstraete, Edmond, assignor.)						
Brucksch, Emil, Niederschönbrunn, Germany. Device for preventing persons falling from ladders	543,464	July 30	2858	669, 670	72	599
Brule, Joseph A., *et al.*, trustees. (See Jeannotte, Joseph, assignor.)						
Brune, George A. (See Tate and Brune.)						
Brunner, Charles, Peru, Ill. Carburetor	545,048	Aug. 27	2239	543	72	1210
Brunner, Joseph A., Fort Wayne, Ind. Swing-actuating mechanism	545,451	Sept. 3	20	6	72	1359
Bruno Nordberg Company. (See Nordberg, Bruno V., assignor.)						
Bruno Nordberg Company. (See Nordberg and Shadall, assignors.)						
Brunswick-Balke-Collender Company. (See Cunningham, Patrick M., assignor.)						
Brunswick-Balke-Collender Company. (See McIntire, Jacob N., assignor.)						
Brush, Egbert, Smithtown Branch, N. Y. Bilge-water alarm	542,301	July 9	824	202	72	172

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bryan, James, Lynn, Mass. Gas-engine	542,972	July 16	1983	469, 470	72	403
Bryan Manufacturing Company. (See Bryan, Thomas A., assignor.)						
Bryan, Thomas A., assignor to Bryan Manufacturing Company, Baltimore, Md. Gas-stove for heating	543,568	July 30	3055	713	72	637
Bryant, Benjamin N., Dallas, Tex. Jetty	546,758	Sept. 24	2308	550	72	1827
Bryant, Philemon A., Sonora, N. Y. Gate	545,942	Sept. 10	878	211	72	1528
Bryden, Edward O., Chicago, Ill., assignor of one-half to W. F. Combs, Reno City, Okla. Ter. Hub	542,330	July 9	859	216	72	182
Buchanan, Charles F., Alpena, Mich. Thill-coupling	545,874	Sept. 10	755	184	72	1505
Buchanan, John W., Smithville, Ohio. Wire fence	545,194	Aug. 27	2514	608	72	1265
Buehner, David. (See Carlie, George F., assignor.)						
Buckeye Engine Company. (See Mansfield, Albert K., assignor.)						
Buckeye Manufacturing Company. (See Lambert, Christian H., assignor.)						
Buckingham, Charles L., New York, N. Y. Printing-telegraph	544,345	Aug. 13	912	229, 230	72	926
Buckingham, Charles L., New York, and E. Germann, Brooklyn, N. Y.; said Germann assignor to said Buckingham. Printing-telegraph	544,346	Aug. 13	920	231, 232, 233, 234, 235	72	927
Buckingham, Charles L., New York, and E. Germann, Brooklyn, N. Y.; said Germann assignor to said Buckingham. Printing-telegraph	544,347	Aug. 13	945	235, 236, 237	72	930
Buckingham, Charles L., New York, and E. Germann, Brooklyn, N. Y.; said Germann assignor to said Buckingham. Printing-telegraph	544,348	Aug. 13	961	237, 238	72	932
Buckland, Amos B., Rochester, N. Y. Music-support	541,834	July 2	26	7	72	[illegible]
Buckley, Minerva R., Cherry Vale, Kans. Filter	543,922	Aug. 6	165	39	72	778
Buckley, Samuel Y., Philadelphia, Pa. Machine for tinning or coating sheet-metal plates	544,500	Aug. 13	1244	301	72	984
Buckner, James, assignor of one-half to F. E. Wingate, Allston, Mass. Pneumatic tire	542,842	July 16	1778	423	72	363
Buell, Edward W., and S. Moe, Chicago, Ill., assignors to Troy Laundry Machinery Company, Limited, Troy, N. Y. Doffer mechanism	543,126	July 23	2254	535	72	470
Buffalo Dental Manufacturing Company. (See Lewis, Theodore G., assignor.)						
Buffalo Dental Manufacturing Company. (See Richards, Frank J., assignor.) (Reissue.)						
Buffinton, Elisha W., assignor of one-half to A. F. Dow, Fall River, Mass. Cleat for holding electric wires	544,501	Aug. 13	1246	301	72	984
Buford, L. N., *et al.* (See Smith, Norbourn H., assignor.)						
Buhl Stamping Company. (See Forster, Thomas W., assignor.)						
Buhl Stamping Company. (See Lynch, George W., assignor.)						
Bulson, Jean M., Lyons, France. Wire-drawing apparatus	543,465	July 30	2860	670	72	599
Bulkley, Joseph N., Ridgway, Pa., assignor, by mesne assignments, to General Electric Company, of New York. Insulating-support for electric wires	546,837	Sept. 24	2427	581	72	1850
Bullard, Chandler G., Kalamazoo, Mich. Preservation of celery	544,455	Aug. 13	1174	284	72	971
Bullin, Anna A. E. (See Gustine, Franklin J., assignor.)						
Bullock, Charles. (See Kenney and Bullock.)						
Bullock, W. H., *et al.* (See Andrews, Matthew A., assignor.)						
Bundy Manufacturing Company. (See Bundy, Willard L., assignor.)						
Bundy, Willard L., assignor to Bundy Manufacturing Company, Binghamton, N. Y. Workman's time-recorder	546,222	Sept. 10	1349	320, 321, 322	72	1617
Bunker, Le Roy S., Webster City, Iowa. Sheet-metal radiator	545,036	Aug. 20	2220	538	72	1186
Bunnell, Morton G., assignor to F. C. Austin, Chicago, Ill. Machine for making and repairing roads	543,923	Aug. 6	166	39	72	778
Bunnell, Morton G., Chicago, Ill., assignor, by mesne assignments, to A. B. Austin. Machine for making and repairing roads	544,272	Aug. 6	776	198	72	890
Bunting, Jere, Jr., *et al.* (See Smith, Norbourn H., assignor.)						
Bunting, Lindsay, *et al.* (See Smith, Norbourn H., assignor.)						
Burchell, Norval L., Washington, D. C. Telephone	543,798	July 30	3525	820, 821	72	718
Burchell, Walter W., Sutherland, Iowa. Planter	543,764	July 30	3458	806	72	706
Burden, Henry, Troy, N. Y. Car guard or fender	542,303	July 9	826	203	72	172
Burden, Howard H., New York, assignor to Trojan Car Coupler Company, Troy, N. Y. Car-coupling	542,437	July 9	1080	263, 264	72	221
Burden, William H., Cleveland, Ohio. Curtain blower for grates or stoves	542,302	July 9	825	202	72	172
Burdick, Alfred, and H. T. Wetzel, Hubbell, Nebr. Spring-motor for vehicles	544,955	Aug. 20	2084	499	72	1162
Burg, Lewis, Dallas City, Ill. Fifth-wheel for vehicles	542,076	July 2	430	103	72	84
Burgess, James C., Yountsville, assignor of three-fourths to T. Nading, St. Louis Crossing, Ind. Pipe-wrench	543,331	July 23	2622	616	72	538
Burgess, Neilson, Highlands, N. J. Aerostatic advertising apparatus	542,792	July 16	1699	404	72	348
Burgess, Neilson, Highlands, N. J. Advertising illuminated sign	542,793	July 16	1700	404	72	348
Burgin, Kate, San Francisco, Cal. Shoe-lace fastener	544,349	Aug. 13	968	239	72	932
Burke, Charles L. (See Maloney, Benjamin P., assignor.)						
Burke, Stephen E., Edon, Ohio. Feed-trough	545,673	Sept. 3	416	100	72	1431
Burkholder, John H., Ashland, Ohio. Hay-carrier	545,343	Sept. 10	879	212	72	1528
Burley, George H., Tyrone, Pa. Steam-boiler	544,841	Aug. 20	1883	451, 452	72	1124
Burlington Blanket Company. (See Ransom, Albert F., assignor.)						
Burnham, Dorr B. (See Burnham, Frank A., assignor.)						
Burnham, Frank A., assignor of one-half to D. B. Burnham, Battle Creek, Mich. Steam-engine	544,476	Aug. 13	1209	292, 293	72	978
Burnham, George W. (See Seelye, Lawrence C., assignor.)						
Burns, George J., Ayer, Mass. Apparatus for coating and drying paper	545,674	Sept. 3	418	101	72	1431
Burns, Henry, Charlevoix, Mich. Globe-valve	542,039	July 2	368	88, 89	72	74
Burpee, Augustus R., Lakeport, N. H. Mitten	545,875	Sept. 10	756	184	72	1505
Burr, Doctor T., Detroit, Mich. Steam-engine	544,477	Aug. 13	1210	293	72	978
Burr, Melbourne C., assignor to Wernicke Co., Minneapolis, Minn. Clothes-drier	542,040	July 2	370	89	72	74
Burrell & Co., D. H. (See Feldmeier, Harvey, assignor.)						
Burrell & Co., D. H. (See Lundstrom, Carl J., assignor.)						
Burroughs, Charles E., and N. P. Otis, Yonkers, assignors to Otis Brothers & Company, New York, N. Y. Safety device for elevators	543,641	July 30	3236	751	72	665
Burroughs, Charles E., and N. P. Otis, Yonkers, assignors to Otis Brothers & Company, New York, N. Y. Safety device for elevators	543,642	July 30	3238	751, 752	72	665
Burrows, Thomas A., and H. Martienssen, Johannesburg, South African Republic. Stamp-battery	543,846	Aug. 6	24	7	72	753

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Burt, Frank. (See High, Frederick P., assignor.)						
Burt, George H., Milburn, N. J. Constructing pool-balls	545,578	Sept. 3	250	61	72	1400
Burton, Frederick, assignor to Aluminium Company, Limited, London, England. Purifying oils or fats	543,079	July 23	2167	.....	72	454
Burton, John S., Danville, Ill. Gable ornament for buildings	542,517	July 9	1224	298	72	247
Burton, Otto A., Atlanta, Ga. Gate-latch	542,753	July 16	1635	391	72	337
Burton, Rufus G., Bluefield, W. Va. Railway-switch	545,845	Sept. 3	704	172	72	1484
Busenbenz, Jacob J., Chicago, Ill. Time-stamp	546,651	Sept. 24	2113	501, 502	72	1792
Bushnell, Charles R. (See Bouk and Bushnell.)						
Bushnell Manufacturing Company. (See Dryer, George W., assignor.)						
Bushnell, Robert S., New York, N. Y. Necktie-retainer	545,876	Sept. 10	757	184	72	1505
Buskirk, Thomas B. (See Hackney, Samuel H., assignor.)						
Busse, Karl, Lüneburg, Germany. Self-acting fire-guard for shafts	545,049	Aug. 27	2241	543	72	1210
Bustin, Robert, assignor of one-half to R. K. Jones, St. John, Canada. Life-saving apparatus	544,956	Aug. 20	2086	500	72	1162
Bustin, Robert, Boston, Mass., assignor of two-thirds to W. Vanwart, Fredericton, and J. R. McConnell, Marysville, Canada. Car-fender	545,579	Sept. 3	251	62	72	1400
Bustin, Robert, Boston, Mass., assignor of two-thirds to W. Vanwart, Fredericton, and J. R. McConnell, Marysville, Canada. Safety attachment or fender for cable, electric, or other cars	545,771	Sept. 3	584	141	72	1461
Butcher, Robert, New York, N. Y. Machine for heating and mixing asphalt	546,444	Sept. 17	1772	421, 422	72	1714
Butler, Edward E., assignor of one-half to R. P. Horton, Atlanta, Ga. Gas-engine	546,110	Sept. 10	1162	277	72	1582
Butler Hard Rubber Company. (See Gurnee, Isaac Q., assignor.)						
Butler Hard Rubber Company. (See Kiel, William, assignor.)						
Butler, Henry G., Kenosha, Wis. Scraper-operating apparatus	543,332	July 23	2623	616	72	538
Butler, Henry G., Kenosha, Wis. Distributing apparatus	546,692	Sept. 24	2184	519, 520, 521	72	1804
Butler, Lewis R., Lamanda Park, Cal. Nut or fruit washer	542,438	July 9	1082	264	72	222
Butler, William H., Brooklyn, N. Y., assignor to Bonsack Machine Company, Salem, Va. Method of and machine for making cigarettes	546,637	Sept. 17	2087	495	72	1774
Butler, William H., Brooklyn, N. Y., assignor to Bonsack Machine Company, Salem, Va. Cigarette-machine	546,638	Sept. 17	2090	496	72	1775
Butterfield, Charles A. (See Latham, William A., assignor.)						
Butterfield, Edwin G., assignor of one-half to J. F. Preston, Lowell, Mass. Music holder and turner	544,842	Aug. 20	1884	452	72	1124
Butterfield, John C., and T. C. Batchelor, London, England. Cartridge-case	542,041	July 2	371	89	72	75
Butterworth, Charles, Oldham, England. Revolving-flat carding-engine	542,383	July 9	980	242	72	202
Button, Jesse, Springfield, Mass., assignor to G. D. Loomis, Tiffin, Ohio. Well-drilling machine	542,725	July 16	1580	377	72	327
Butts, Frank C. (See Hair, Josiah T., assignor.)						
Butzer, Albert, Deer Park, Wash. Pocket-gopher trap	543,206	July 23	2421	569	72	501
Byers, Thomas J., Eganville, Canada. Carrying-case	543,127	July 23	2256	535	72	470
Byrd, Charles A., Drain, Oreg. Cutting device	546,607	Sept. 17	2043	485	72	1766
Byrne, Harry, Chicago, Ill. Apparatus for tunneling rock	545,675	Sept. 3	419	101	72	1431
Byrne, William H., Piedmont, Wyo. Thill-coupling	542,923	July 16	1907	452	72	388
Bystrom, John, Chicago, Ill. Micrometer-calipers	542,676	July 16	1504	360	72	314
C. E. Woods Company. (See Woods, Clinton E., assignor.)						
C. F. Zimmerman Company. (See Owen and Crowell, assignors.)						
Caberti, Luigi. (See Lauber and Caberti.)						
Cabirau, Henri F., Paris, France. Carbon for electric lamps	542,025	July 16	1412	340	72	295
Cabrero y Echeandia, Emelio, Las Marias, Porto Rico. Drier	544,570	Aug. 13	1352	329	72	1006
Cady, Oscar L., Lincoln, Nebr. Garment-fastening device	542,239	July 9	997	171	72	151
Cahill, Patrick J., Utica, N. Y. Water-closet seat	542,551	July 9	1284	312	72	259
Cahill, Thomas P., *et al.* (See Swift, William A., assignor.)						
Cairnes, Alexander B., San Diego, Cal. Extension fire-ladder and truck	545,643	Sept. 3	360	89	72	1421
Cairney, Douglas. (See Stelfox, Walker, Cairney, and Purvis.)						
Calder, George, Jr., Lancaster, Pa. Cash register and Indicator	543,980	Aug. 6	258	64, 65	72	795
Caledonia, Pasqualina. (See Bozano, Stefano, assignor.)						
Calhoun, Alfred, Hardy, Ohio. Grain-harvester	543,466	July 30	2662	670	72	599
California Powder Works. (See Peyton, William C., assignor.)						
Calkins, Grant J. (See Leroy, Charles, assignor.)						
Calloch, Charles E., and H. C. Delcroix, La Flèche, France. Clutch specially adapted for cable-driving pulleys	542,143	July 2	524	126	72	104
Cambles, William P., and W. Bittles, assignors to E. M. Bittles, Philadelphia, Pa. Nailless horseshoe	546,693	Sept. 24	2186	521	72	1805
Cambridge City Punch, Shear and Roll Company. (See Guild, George, assignor.)						
Cameron, George W., assignor to Cameron & Norwood, Garfield, Tex. Grubber	542,843	July 16	1780	423	72	363
Cameron & Norwood. (See Cameron, George W., assignor.)						
Camp, Berry G. (See Camp, Wesley F. and B. G.)						
Camp, Wesley F., Rome, and B. G. Camp, Nannie, assignors to C. C. Brown, Tilton, Ga. Hot-air heater	545,772	Sept. 3	586	141	72	1461
Campbell, Albert, Noroton, Conn. Flexible joint	545,268	Aug. 27	2025	636	72	1286
Campbell, Albert M. (See Campbell, James and A. M.)						
Campbell, Angus, assignor to American Cotton Picker Company, Chicago, Ill. Cotton-picking machine	542,794	July 16	1702	405, 406	72	348
Campbell, Colin E., London, England. Apparatus for indicating telepathic messages	546,299	Sept. 17	1516	358	72	1666
Campbell, Francis M. (See Davis, William H., assignor.)						
Campbell, Frank J. (See Carroll, John E., assignor.)						
Campbell, George G., Milwaukee, Wis. Catch-basin cover	545,343	Aug. 27	2741	664	72	1307
Campbell, Hardy W., Putney, S. D. Cultivator	545,267	Aug. 27	2622	635, 636	72	1286
Campbell, Hardy W., Putney, S. D. Subsurface-packer	545,342	Aug. 27	2739	664	72	1307
Campbell, Henry, and J. Marr, Baltimore, Md. Cooper's hoop-dog	544,843	Aug. 20	1886	452	72	1124
Campbell, Horace G. (See Ponnay, Richard, assignor.)						
Campbell, James and A. M., Harrison, Ohio. Seed-drill	545,050	Aug. 27	2241	543	72	1211
Campbell, James B., Pittsburg, Pa. Car-coupling	541,962	July 2	242	57	72	49
Campbell, James B., Pittsburg, Pa. Car-fender	543,924	Aug. 6	167	39	72	779
Campbell, Jeremiah, Chelsea, Mass. System for handling coal	542,077	July 2	432	103, 104	72	84
Campbell, Jeremiah, Chelsea, Mass. Self-registering scale	544,207	Aug. 6	641	163, 164	72	866

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Name, residence, and invention.	No.	Date.	Monthly Volume. Spec.	Monthly Volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Campbell, Jerome, East Windham, N. Y. Wagon-jack	546,652	Sept. 24	2118	503	72	1793
Campbell, L. W. (See Patterson, Warren A., assignor.)						
Campbell Printing Press and Manufacturing Company. (See Hawkins, John T., assignor.)						
Campbell, R. J., *et al.* (See Thomas, Eddy T., assignor.)						
Campbell, Robert G., assignor of one-half to F. J. Murdoch, Salisbury, N. C. Top roll for textile-machines	546,639	Sept. 17	2093	496	72	1776
Campbell, Thomas C., New York, N. Y. Penholder	542,144	July 2	527	127	72	104
Campbell, Thomas H. (See Colin and Campbell.)						
Canet, Jean B. G. A., Paris, France. Breech-loading ordnance	545,773	Sept. 3	587	142	72	1461
Canners Supply Company. (See Kruse, Charles M., assignor.)						
Canning, A. D., *et al.* (See Ogden, Albert B., assignor.)						
Canode, Benjamin F., Mount Morris, Ill. Gate	543,957	Aug. 6	225	55	72	789
Cantelo, John S., Boston, Mass. Drawing-knife	543,146	July 23	2389	543	72	477
Capital Cash Register Company. (See Watrous, Earl G., assignor.)						
Capps, Frank L., Newark, N. J. Conduit for electric conductors for railways	544,283	Aug. 13	793	201, 202	72	905
Carbonelle, Henri, Brussels, Belgium. Microphone	542,822	July 16	1748	415	72	357
Cardwell, Charles E., Commercial Point, Ky. Gate	544,957	Aug. 20	2089	500	72	1162
Cardwell, William C., Rice, Tex. Wire-stretcher	543,290	July 23	2561	602	72	526
Carfield, John R., assignor of one-half to A. N. Wilson, Indianapolis, Ind. Shaft-support for vehicles	544,527	Aug. 13	1281	309	72	991
Carlie, George F., assignor of three-fifths to D. Buchner, New York, N. Y. Cigarette-machine	546,063	Sept. 10	1082	259, 260	72	1567
Carlin, James E. (See Sanders, Carlin, and Fitzpatrick.)						
Carlinet, John G., Philadelphia, Pa. Pneumatic tool	546,223	Sept. 10	1351	322	72	1618
Carlisle, Harry, Shutesbury, assignor to Holyoke Card and Paper Company, Springfield, Mass. Machine for pasting and mounting sheets	546,506	Sept. 17	1884	446	72	1736
Carlisle, William K., *et al.* (See Trott, Joseph S., assignor.)						
Carlson, Androv. (See Stromberg and Carlson.)						
Carlson, Androv. (See Stromberg, Carlson, and Knight.)						
Carlson, Carl P. (See Olson and Carlson.)						
Carmany, Charles A., Middletown, Pa. Support for incandescent lights	544,502	Aug. 13	1246	301, 302	72	985
Carnes, Homer S. (See Stewart and Carnes.)						
Carpenter, Albert A. (See Blinn, George A. and D. C., assignors.)						
Carpenter, Albert F., assignor of two-thirds to B. Kimball, St. Louis, Mo., and Manufacturers' Automatic Sprinkler Company, Syracuse, N. Y. Automatic fire-sprinkler	546,087	Sept. 10	1124	268	72	1575
Carpenter, Charles F., Louisville, Ky. Electromagnetic tool	545,149	Aug. 27	2429	590	72	1247
Carpenter, Charles W., *et al.* (See Crowell, Luther C., assignor.)						
Carpenter, Charles W., *et al.* (See Spalckhaver, William, assignor.)						
Carpenter, Henry L., Minneapolis, Minn. Hat-fastener	543,170	July 23	2354	555	72	469
Carpenter, James, Brooklyn, N. Y. Combined cutting-tool	541,963	July 2	243	57	72	49
Carpenter, Rolla C., Ithaca, N. Y. Viscosimeter	542,604	July 9	1368	331	72	275
Carpenter, Samuel J., *et al.* (See Benesh, Charles, assignor.)						
Carr, James, Adrian, Mich. Sash-holder	545,344	Aug. 27	2743	665	72	1308
Carr, John A., *et al.* (See Pirtle, Mike P., assignor.)						
Carrey, John, De Soto, Mo. Corn-breaker and cornstalk-shredder	541,964	July 2	244	57	72	50
Carrington, John B. (See Elliott and Carrington.)						
Carroll, Charles J., assignor of two-thirds to D. Stewart and W. Assbeton, Baltimore, Md. Cash-register	544,247	Aug. 6	737	189	72	882
Carroll, Houston M. (See Johnston and Carroll.)						
Carroll, James A., and W. Brooks, Brooklyn, N. Y. Stove	543,291	July 23	2563	602	72	526
Carroll, John E., assignor of one-half to F. J. Campbell, Philadelphia, Pa. Chair-brace	544,025	Aug. 6	340	84	72	811
Carroll, William T., Worcester, Mass. Spindle-bearing	544,805	Aug. 20	1815	435	72	1112
Carruthers, George L., Cotton Valley, La. Row-marker for gardens	546,653	Sept. 24	2120	503	72	1793
Carson, John R., and J. H. Denman, Jr., Chaso, Tex. Sulky-frame for agricultural implements	545,051	Aug. 27	2242	543, 544	72	1211
Carter, Byron B. (See Frye and Carter.)						
Carter, Charles D., Spring Arbor, Mich. Implement for transplanting	542,584	July 9	1334	323	72	267
Carter, Charles S., Mansfield, Ohio. Folding table	543,609	July 30	2189	739	72	656
Carter-Crume Company. (See Carter, John R., assignor.)						
Carter-Crume Company. (See Kirby, Crume, Grimes, and Clark, assignors.)						
Carter-Crume Company. (See Knobeloch, Frank, assignor.)						
Carter-Crume Company. (See Meisel, Francis, assignor.)						
Carter, John F. (See Walker and Carter.)						
Carter, John R., Boston, Mass., assignor to Carter-Crume Company, Niagara Falls, N. Y. Numbering-machine	542,358	July 9	931	228, 229, 230	72	193
Carter, John R., Boston, Mass., assignor to Carter-Crume Company, Niagara Falls, N. Y. Manifold sales-book	545,676	Sept. 3	422	102	72	1432
Carter, John R., Boston, Mass., assignor to Carter-Crume Company, Niagara Falls, N. Y. Manifold sales-book	545,677	Sept. 3	424	102	72	1432
Carter, Rodney F., Hardwick, Vt. Mausoleum	544,086	Aug. 6	453	112	72	892
Carter, Sanford W., assignor of one-half to T. E. Donovan, Denver, Colo. Folding seat chair	543,333	July 23	2624	616	72	539
Cartwright, Aaron S., Birmingham, England. Pneumatic-tire-repairing patch	544,562	Aug. 13	1336	325	72	1003
Carty, Robert F., and W. A. Downes, Detroit, Mich. Toy pistol	545,345	Aug. 27	2744	665	72	1308
Carver, James W., Granville, N. Y. Ax	542,973	July 16	1957	470	72	403
Cary, Charles S. (See Cary, Spencer C., assignor.)						
Cary Manufacturing Company. (See Cary, Spencer C., assignor.)						
Cary, Nathaniel S., Mapleville, R. I. Faucet	542,795	July 16	1710	407	72	350
Cary, Spencer C., Baldwin, N. Y., assignor to C. S. Cary. Fastening device	546,838	Sept. 24	2428	582	72	1850
Cary, Spencer C., Brooklyn, N. Y., assignor to Cary Manufacturing Company, of New York. Box-fastener	546,839	Sept. 24	2430	582	72	1850
Cary, Spencer C., Brooklyn, N. Y., assignor to Cary Manufacturing Company, of New York. Pail-hook	546,840	Sept. 24	2431	582	72	1850
Casaday, William L., South Bend, Ind. Wheel or gang plow	544,284	Aug. 13	795	202	72	905
Case, Charles F., Akron, Ohio. House-wiring fixture	542,924	July 16	1908	452	72	389
Case, Estella. New York, N. Y. Pin-shield	543,171	July 23	2355	555	72	469
Case, Frank E., Schenectady, N. Y., assignor to General Electric Company, of New York. Four-motor reversing-switch	543,650	July 30	3278	762	72	673
Case, Henry, Gloversville, N. Y. Trimming attachment for sewing-machines	543,847	Aug. 6	25	7 8	72	753
Case, Henry J., Owasco, assignor to Johnston Harvester Company, Batavia, N. Y. Horse-whipping device	542,463	July 9	1133	277	72	230

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Case, Henry J., Owasco, assignor to Johnston Harvester Company, Batavia, N. Y. Transporting-truck	545,195	Aug. 27	2515	608	72	1265
Casey & Hedges Manufacturing Company. (See Casey, James F., assignor.)						
Casey James, London, England. Port-hole stopper	546,914	Sept. 24	2548	609, 610	72	1873
Casey, James F., assignor to Casey & Hedges Manufacturing Company, Chattanooga, Tenn. Water-tube boiler	544,285	Aug. 13	796	203	72	905
Casey, James G., assignor of one-fourth to F. Phillips, Lehigh, Ind. Ter. Device for stopping runaway horses	546,694	Sept. 24	2187	521	72	1805
Cashin, Andrew, Handsworth, England. Hasp-lock	542,518	July 9	1225	298, 299	72	947
Cassidy, P. S. (See Brooks, Peter N., assignor.)						
Casson, W. E., *et al.* (See Brown, Theodore H., assignor.)						
Castan, Gustav, Berlin, Germany. Mirror-maze	545,678	Sept. 3	427	102, 103	72	1433
Castner, Hamilton Y., London, England. Process of and apparatus for making alkali cyanids	543,643	July 30	3240	752	72	666
Caswell, George, *et al.* (See Moulton, William E., assignor.)						
Caswell, Henry H., Newport, Vt. Window-fastener	543,374	July 23	2687	634	72	550
Cavallaro, Francesco, and J. N. Sturm, San José, Cal. Cleansing sink or drain pipes	546,445	Sept. 17	1777	422	72	1715
Cavanaugh, Edward, Lowell, Mass. Rein-holder	543,172	July 23	2357	556	72	489
Cavert, George B., Albany, N. Y. Safe	543,334	July 23	2625	616, 617	72	539
Cayce, Henry P., McGregor, Tex. Sash-balance	543,848	Aug. 6	28	8	72	754
Caylor, Jacob, Ridgeville, Ind. Fence-picket fastener	542,585	July 9	1334	323	72	967
Cebfus, John, Albany, N. Y. Clothes-line connector	543,467	July 30	2862	671	72	599
Celluloid Company. (See Stevens, John H., assignor.)						
Celluloid Company. (See Stevens and Harrison, assignors.)						
Celluloid Company. (See Thurber and Schaefer, assignors.)						
Chace, Edward, assignor of one-half to A. J. and G. W. Sanford, Jr., Washington, D. C. Game apparatus	544,208	Aug. 6	645	164	72	867
Chace, John B., Orange, Mass. Box-setting machine	546,841	Sept. 24	2432	582	72	1850
Chaffee, Noah P., Athens, Pa. Burglar-alarm	542,407	July 9	1018	250	72	909
Challen, Stephen W., Birmingham, England. Machine for finishing cast hollow ware	546,044	Sept. 10	1053	252	72	1561
Chalmers, James, Perth Amboy, N. J. Door-fastener	543,981	Aug. 6	261	65	72	796
Chalompka, August G., Charlevoix, Mich. Can-opener	541,054	Aug. 6	402	101	72	823
Chamberlain, Charles S., Oakland, Cal. Fruit-crate	544,881	Aug. 20	1951	467	72	1136
Chamberlain, Frank W. (See Mefford, David M., assignor.)						
Chamberlain, John C., Bridgeport, Conn. Machine for blocking and stretching hats	546,640	Sept. 17	2094	496, 497	72	1776
Chambers, David H., Pittsburg, Pa. Refining kaolin, &c.	543,292	July 23	2564	.....	72	526
Chambers, Frank G., Syracuse, N. Y. Wire-tying machine	546,727	Sept. 24	2252	536	72	1817
Chambers, John A., Newburg, assignor of one-half to R. Meriwether, Rolla, Mo. Hand-planter	544,720	Aug. 20	1650	396	72	1078
Champ, Joseph H., assignor to Bishop & Babcock Company, Cleveland, Ohio. Hydraulic air-compressor	544,456	Aug. 13	1175	284, 285	72	971
Champ, Joseph H., assignor to Bishop & Babcock Company, Cleveland, Ohio. Hydraulic air-compressor	544,457	Aug. 13	1177	285	72	971
Champ, Joseph H., assignor to Bishop & Babcock Company, Cleveland, Ohio. Hydraulic air-compressor	544,458	Aug. 13	1179	286	72	972
Champ, Joseph H., assignor to Bishop & Babcock Company, Cleveland, Ohio. Hydraulic air-compressor	544,459	Aug. 13	1181	286, 287	72	973
Champane, Edmund, assignor of one-half to A. F., P. T., and J. C. Stoughton, Whitefield, N. H. Wrench	545,944	Sept. 10	881	212	72	1529
Champion Punching Machine Company. (See Troxler, Gustavus, Jr., assignor.)						
Champney, William P., Cleveland, Ohio. Fifth-wheel	544,155	Aug. 6	555	137	72	851
Chance Brothers & Co. (See Chance and Scott, assignors.)						
Chance, George F., West Smethwick, and J. E. Scott, West Bromwich, assignors to Chance Brothers & Co., Limited, West Smethwick, England. Flattening-stone for flattening plate-glass	542,552	July 9	1285	312	72	259
Chandler Adjustable Chair and Desk Company. (See Feely, Joseph J., assignor.)						
Chandler, George E., Chelmsford, and W. A. Chandler, Lowell, Mass. Yarn-separator for spinning-frames	544,286	Aug. 13	798	203	72	906
Chandler, Noël, Hednesford, England. Steam-engine	545,846	Sept. 3	706	172, 173	72	1484
Chandler, Walter A. (See Chandler, George E. and W. A.)						
Chapin, Lewis E., Brooklyn, N. Y. Stereotype-plate holder	544,958	Aug. 20	2090	500	72	1163
Chapin, William H. (See La Fave, Joseph H., assignor.)						
Chaplin, Fulton Manufacturing Company. (See Pulan, Oliver C., assignor.)						
Chapman, David S., Boston, Mass., assignor, by mesne assignments, to Thompson Fuel Saving and Smoke Consuming Company, Berwick, Me. Water-tube boiler	544,882	Aug. 20	1952	467	72	1137
Chapman, Frank M., assignor to S. F. Chapman, J. W. and T. Jefferson, New York, N. Y. Base-ball-indicating apparatus	546,003	Sept. 10	983	238	72	1548
Chapman, Henry P., Ivoryton, Conn. Machine for grinding bone	544,087	Aug. 6	454	112	72	832
Chapman, Matthew T., Aurora, Ill. Well-sinking apparatus	541,835	July 2	27	7, 8	72	8
Chapman, Stella F., *et al.* (See Chapman, Frank M., assignor.)						
Chapman, Theron W., Lakewood, Colo. Rock-drill	542,010	July 2	325	79	72	65
Chapman, Theron W., Lakewood, Colo. Hand rock-drill	543,293	July 23	2565	602	72	526
Chapon, Maximin, Lyons, France. Spindle for spinning, winding, and twisting machines	546,915	Sept. 24	2549	610	72	1874
Chappell, Florance J. D., deceased, (A. E. Slade, administratrix,) assignor of one-half to S. C. Slade, Baltimore, Md. Cigarette machine	542,974	July 16	1987	470, 471, 472	72	403
Chaquette, Ephraiem, Bridgeport, Conn. Power-motor	542,359	July 9	936	230, 231	72	193
Chaquette, Ephraiem, Bridgeport, Conn. Slack-adjuster	542,627	July 16	1414	340, 341	72	296
Charter, James A., Beloit, Wis., assignor of one-half to J. Charter, Sterling, Ill. Governor for gas-engines	542,043	July 2	373	90	72	75
Charter, John. (See Charter, James A., assignor.)						
Charter, John, Sterling, Ill. Clutch driving device for motors	542,042	July 2	371	89, 90	72	75
Chase, Charles A., Chicago, Ill., assignor to Chase Electric Cyclorama Company, of Illinois. Reprodncing device	545,422	Aug. 27	2878	701	72	1335
Chase, Charles A., Chicago, Ill., assignor to Chase Electric Cyclorama Company, of Illinois. Stereopticon panorama machine	545,423	Aug. 27	2879	701	72	1336

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Chase, Charles A., Chicago, Ill., assignor to Chase Electric Cyclorama Company, of Illinois. Stereopticon panorama machine	545,452	Sept. 3	22	6	72	1359
Chase, Charles T., St. Louis, Mo., assignor to himself, and F. Chase, Philadelphia, Pa. Ironing-table	543,468	July 30	2863	671	72	600
Chase Electric Cyclorama Company. (See Chase, Charles A., assignor.)						
Chase, Frank, Waterville, Me., assignor to Chase Lasting Machine Company, Boston, Mass. Lasting-machine	545,052	Aug. 27	2244	544, 545	72	1211
Chase, Frederick. (See Chase, Charles T., assignor.)						
Chase, George S., Cambridge, Mass. Insect-destroyer	542,464	July 9	1134	277	72	230
Chase Lasting Machine Company. (See Chase, Frank, assignor.)						
Chase, Nial N., Litchfield, Ill. Treadle fan attachment	545,453	Sept. 3	24	7	72	1359
Chase, Stephen, *et al.* (See Barnes, John W., assignor.)						
Chatfield, James M., Thomaston, Conn. Machine for cleaning or polishing sheet-brass or other sheet metal	546,114	Sept. 10	1167	279, 280	72	1583
Chavanne, Andre, Grass Valley, Cal. Nozzle-regulator	543,228	July 23	2455	577	72	507
Chelton, George W., assignor to himself, I. H. Coalbaum, and C. P. Lankford, Crisfield, Md. Roller-bearing	545,150	Aug. 27	2431	590	72	1248
Chemische Fabrik auf Aktien, vormals E. Schering, *et al.* (See Schmidt, Albrecht, assignor.)						
Cheney, Millard, Flint Stone, Md. Attachment for bottles	545,346	Aug. 27	2745	665	72	1308
Chenoweth, Joseph O., St. Louis, Mo. Lace-curtain stretcher	543,644	July 30	3241	752	72	666
Chicago Grain Door Company. (See Coleman, Francis W., assignor.)						
Chicago Hydraulic-Press Brick Company. (See Soper, Walter J., assignor.)						
Chicago Railway Equipment Company. (See Robischung, Henry B., assignor.)						
Chicago Stamping Company. (See Sturges, Lee, assignor.)						
Chick, George H., San Francisco, Cal. Amalgamator	545,011	Aug. 20	2174	525	72	1177
Childs, Orlando J., Utica, N. Y., assignor to National Harrow Company, of New Jersey. Harrow	546,224	Sept. 10	1356	322, 323	72	1619
Chisholm, Duncan, *et al.* (See Crawford, Middleton, assignor.)						
Chisholm, John A. (See Scott and Chisholm.)						
Chitty, Charles D., *et al.* (See Mantion and Shepherd, assignors.)						
Chouteau, Pierre. (See Rinsche, Frank C., assignor.)						
Christ, Frank J., Fort McPherson, Ga. Valve-gear	542,553	July 9	1287	312	72	259
Christ, Isaac. (See Thomas, William J., assignor.)						
Christensen, Christian, Racine, Wis. Steam-engine governor	542,702	July 16	1551	370	72	322
Christensen, Jorgen, San Francisco, Cal. Bicycle-brake	543,724	July 30	3179	785	72	691
Christensen, Jorgen, San Francisco Cal. Bicycle-brake	543,724	July 30	3380	785	72	692
Christensen, Lars. (See Wilson, Charles, assignor.)						
Christie, John T., Troy, N. Y. Hot-gas valve	541,990	July 2	286	67	72	58
Christmann, Albert J. (See Christmann, John, assignor.)						
Christmann, John, assignor to A. J. Christmann, Milwaukee, Wis. Device for hanging picture-moldings	546,507	Sept. 17	1887	446	72	1737
Christy, Hugh C. (See Davis and Christy.)						
Chubb, Alonzo, Jr., La Crosse, Wis. Slack adjuster	543,294	July 23	2567	603	72	527
Church, Duane H., Newton, Mass. Watch-balance	544,883	Aug. 20	1954	468	72	1137
Church, Frederick W., Belgium, N. Y. Apparatus for butter-making	542,465	July 9	1135	277, 278	72	230
Church, George E., and G. W. Ettenger, London, England. Means for binding together metal tubes serving for girders, pillars, &c.	542,145	July 2	528	127, 128	72	104
Church, James E. (See Read, D. Dean, assignor.)						
Churchill, Lemuel Three Oaks, Mich. Machine for drilling countersinks	542,925	July 16	1909	452	72	389
Churchward, Alexander J., Brooklyn, N. Y. Carbon brush holder for dynamo-electric machines	544,844	Aug. 20	1888	452	72	1125
Churchwell, Eli P. (See Duncan, John R., assignor.)						
Chuse, Joseph F., and R. Heap, Mattoon, Ill. Lubricating apparatus for engines	543,645	July 30	3242	752, 753	72	666
Cicott, Frank X., New York, N. Y., W. J. Belcher, and F. C. Billings, assignors to Billings & Spencer Company, Hartford, Conn. Insulated support for trolley-lines	545,151	Aug. 27	2431	590	72	1248
Cills, Richard S., Philadelphia, Pa. Remedial-powder-applying device	545,679	Sept. 3	428	103	72	1433
Cinnamon, John, New Brighton, N. Y. Heating and ventilating rooms or houses	546,842	Sept. 24	2433	583	72	1851
Clamer, George F., Philadelphia, Pa. Sash balance and holder	545,847	Sept. 3	708	173	72	1485
Clamer, Joseph, Trenton, N. J., assignor to Clamer Lever Bit Company, of New Jersey. Bit for horses	544,563	Aug. 13	1337	320	72	1003
Clamer Lever Bit Company. (See Clamer, Joseph, assignor.)						
Clancy, Charles A., and J. E. Crosley, Hubbard, Iowa. Loading apparatus	546,088	Sept. 10	1126	268	72	1576
Clapp, Alfred C. (See Davidson, Harry, assignor.)						
Claret, Jean, Lyons, and O. Wuillenmier, Clermont-Ferrand, France. Electric railway and tramway	544,209	Aug. 6	649	165, 166	72	867
Clarey, John E., Des Moines, Iowa. Furnace	543,982	Aug. 6	263	66	72	796
Clark, Clement, Sandusky, Ohio, assignor of one-half to J. S. Clark, Detroit, Mich. Device for preventing fraudulent refilling of bottles	542,814	July 16	1782	423	72	363
Clark, Daniel. (See Clark, Robert W., assignor.)						
Clark, Edgar O., *et al.* (See Seibold, Albert C., assignor.)						
Clark, Edward S., Boston, Mass. Steam-boiler and coupling	546,809	Sept. 24	2384	569, 570	72	1841
Clark, Edward W., assignor of two-thirds to E. M. Clark and Western Iron Works, Butte, Mont. Process of and apparatus for extracting ores by electrolysis	544,610	Aug. 13	1427	347	72	1019
Clark, Edwin M., *et al.* (See Clark, Edward W., assignor.)						
Clark, Emory A. (See Warren, Charles C., assignor.)						
Clark, Erastus J., Enid, Okla. Ter. Center fastening for breast-straps	546,300	Sept. 17	1517	358	72	1666
Clark, Frank M., Tilton, N. H., assignor of one-half to W. I. Holmes, Boston, Mass. Boiler-tube cleaner	544,908	Aug. 20	2010	480	72	1148
Clark, George H. (See Keith and Clark.)						
Clark, George H., assignor to Clark Manufacturing Company, Boston, Mass. Machine for holding boots or shoes while being operated upon	543,147	July 23	2291	543	72	477
Clark, George H., assignor to Clark Manufacturing Company, Boston, Mass. Fore part for boot or shoe trees	543,148	July 23	2294	543	72	478
Clark, George H., assignor to Clark Manufacturing Company, Boston, Mass. Boot or shoe tree	543,436	July 23	2301	658	72	573
Clark, Henry F., Danbury, Conn. Machine for making bandboxes from pasteboard	544,026	Aug. 6	341	84, 85, 86	72	811
Clark, Henry S., *et al.* (See Holbrook, David M., assignor.)						
Clark, Herbert E., assignor to Union Paper Company, New York, N. Y. Tube-forming machine	545,053	Aug. 27	2246	545, 546	72	1211

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Clark, James W., assignor to H. Palmer, Janesville, Wis. Book-holder	543,081	July 23	2170	514	72	454
Clark, James W., assignor to Clark Manufacturing Company, Janesville, Wis. Cash-carrier	545,152	Aug. 27	2434	590	72	1249
Clark, John A. (See Wyman and Clark.)						
Clark, John A., assignor to Crompton Loom Works, Worcester, Mass. Tuft-yarn carrier for looms	543,080	July 23	2168	514	72	454
Clark, John H., assignor to Whittier Machine Company, Boston, Mass. Valve-operating device for elevators	542,628	July 16	1416	341	72	296
Clark, John M. (See Kirby, Crume, Grimes, and Clark.)						
Clark, John S. (See Clark, Clement, assignor.)						
Clark, Leander, Greenville, Ohio. Wire-fence stay	546,045	Sept. 10	1054	252	72	1561
Clark, Leander, Greenville, Ohio. Wire-fence stay	546,046	Sept. 10	1055	252	72	1562
Clark, Leander, Greenville, Ohio. Fence-stay	546,301	Sept. 17	1519	359	72	1666
Clark Manufacturing Company. (See Clark, George H., assignor.)						
Clark Manufacturing Company. (See Clark, James W., assignor.)						
Clark, Robert W., assignor to D. Clark, Buffalo, N. Y. Pipe-hanger	545,774	Sept. 3	588	142	72	1462
Clark, Robert W., assignor to D. Clark, Buffalo, N. Y. Pipe-hanger and attachment	545,775	Sept. 3	589	142	72	1462
Clark, Rufus O., Marlborough, Mass. Car-fender	543,849	Aug. 6	29	8	72	754
Clark, Samuel Z., Rushville, Ill. Wire-fence machine	545,454	Sept. 3	95	7	72	1359
Clark, Theodore M., Newton, Mass. Safety device for elevators	543,569	July 30	3056	714	72	638
Clark, Thomas, Philadelphia, Pa. Holder for billiard or other cues	546,225	Sept. 10	1358	323	72	1619
Clark, Warren H., West Burlington, N. Y. Hop picker and cleaner	544,156	Aug. 6	555	138	72	851
Clark, William H., assignor of one-half to B. B. Brown, Erie, Pa. Cash register and indicator	544,426	Aug. 13	1104	268, 269	72	956
Clark, William N., *et al.* (See Holbrook, David M., assignor.)						
Clarke, William J., Trenton, Canada. Electric annunciator	542,926	July 16	1911	452, 453	72	389
Clas, Lucile, Milwaukee, Wis. Buckle	545,054	Aug. 27	2250	547	72	1212
Clawson, Albert. (See Wagle, John A., assignor.)						
Clawson, Clement C., Newark, N. J. Coin-controlled game apparatus	541,991	July 2	988	67	72	58
Clay, Harry C., Dayton, Ohio. Steam-engine governor	546,728	Sept. 24	2254	536	72	1817
Clay, William H., and J. H. Knowles, Philadelphia, Pa.; said Clay assignor to said Knowles. Metallic toothed cylinder for carding or similar machines	542,605	July 9	1371	332	72	275
Clayton, Frank. (See Piper, Edwin S., assignor.)						
Cleis, George, assignor to Atterbury Glass Company, Pittsburg, Pa. Glory-hole furnace	542,990	July 23	2012	478, 479	72	425
Clement, Walter, Adrian, Mich. Wire fence	543,610	July 30	3189	739	72	657
Clepper, Thomas J., Columbia, Pa. Ash-sifter	544,662	Aug. 20	1547	371	72	1059
Cleveland Foundry Company. (See Whittingham, Charles, assignor.)						
Cleveland, Judson A., Duluth, Minn. Window	542,726	July 16	1580	378	72	327
Cleveland School Furniture Company. (See Mess, Bernard, assignor.)						
Cliff, Edward, Newark, N. J. Car truck	546,774	Sept. 24	2329	555, 556	72	1831
Clifford, Hersey A., San Francisco, Cal. Voting-machine	545,848	Sept. 3	710	174	72	1485
Climax Manufacturing Company. (See Wells, John C., assignor.)						
Clingman, John, Dayton, Ohio. Carburetor	543,611	July 30	3191	740	72	657
Clot, John B., San Francisco, Cal. Machinery for forming and soldering bodies of metallic packing-cans	544,721	Aug. 20	1652	396, 397	72	1059
Clot, John B., San Francisco, Cal. Can-heading machine	544,722	Aug. 20	1656	398	72	1060
Cloud, William H., and J. W. Lappin, Kokomo Ind. Rotary wiper	541,992	July 2	991	68	72	59
Clough, John L. (See Barney, George L., assignor.)						
Clough, John L. (See Barney and Clough.)						
Clonser, William, Greenfield, Ohio. Embalming-couch	546,302	Sept. 17	1520	359	72	1667
Clouth, Franz, Cologne Germany. Insulated electric conductor	546,579	Sept. 17	2001	475	72	1757
Coalbaum, Isaac H., *et al.* (See Chelton, George W., assignor.)						
Coale, Joseph M., Baltimore, Md. Straightway valve	543,173	July 23	2358	556	72	490
Cobb, Leander B., Boston, Mass. Lacing-hook	544,287	Aug. 13	800	203	72	906
Cochran, Martin M., and S. Adams, Toll Gate, W. Va. Plow	541,845	Aug. 20	1889	453	72	1125
Cochran, Thomas J., *et al.* (See Manes, Ephraim, assignor.)						
Cochrane, Arthur H., London, England. Machine for stemming tobacco-leaves	546,843	Sept. 24	2435	583, 584	72	1851
Cochrane, James A., Ironton, Ohio. Parliamentary gong	546,111	Sept. 10	1164	278	72	1583
Cock, Frederic W. C., Erith, assignor to J. Day, Bath, England. Gas-engine	544,210	Aug. 6	655	166	72	868
Codding, Frederick W. (See Peirce, George, assignor.)						
Cody, Hope R. (See Houston, William T., assignor.)						
Coe, Charles T., New York, N. Y. Furnace-grate	543,589	July 30	3088	724	72	644
Coes, Frederick L., assignor to Coes Wrench Company, Worcester, Mass. Wrench	543,925	Aug. 6	169	40	72	779
Coes Wrench Company. (See Coes, Frederick L., assignor.)						
Coffee, Robert W., Bedford City, Va., assignor to Bohls Cigarette Machine Company, of Virginia. Continuous-cigarette machine	544,611	Aug. 13	1430	348, 349	72	1020
Coffin, Arthur W., San Francisco, Cal. Coin receptacle and register	542,796	July 16	1711	407	72	350
Coffin, Charles F., Eau Claire, Wis. Sawmill set-works	546,654	Sept. 24	2120	503	72	1793
Coffin, Charles L. (See Rae, Frank B., assignor.)						
Coffin, Charles L., Detroit, Mich. Commutator or collector brush	545,347	Aug. 27	2746	665	72	1308
Coghill, Aaron F., Auburn, Ky. Swinging gate	546,580	Sept. 17	2002	475	72	1758
Cohen, D. Solis, *et al.* (See Devlin, Thomas C., assignor.)						
Cohen, Nathan, *et al.* (See Silver, William, assignor.)						
Cohn, Even I., and T. H. Campbell, Seattle, Wash. Key-fastener	543,850	Aug. 6	31	9	72	755
Cohn, Moritz. (See Draher, John, assignor.)						
Colbert, John L., Jr., Ogden, Kans. Clevis	545,680	Sept. 3	429	103	72	1433
Colburn, Frederick H., Chicago, Ill. Sign-letter	541,564	Aug. 13	1339	326	72	1004
Colburn, Henry J., Toledo, Ohio. Safe	545,153	Aug. 27	2436	591	72	1249
Colburn, Henry J., Toledo, Ohio. Safe	545,154	Aug. 27	2438	591, 592	72	1249
Colby, Branch H., St. Louis, Mo. Slide-rule	543,612	July 30	3192	740	72	657
Cole, Edward M., Chicago, Ill. Tool for shoemaking	541,918	July 2	162	38	72	35
Cole, Edward M., Chicago, Ill. Last	543,375	July 23	2684	634	72	550
Cole, Edward M., Chicago, Ill. Tree-leg and tree-foot	543,376	July 23	2685	634	72	550
Cole, Edward M., Chicago, Ill. Manufacturing cork-sole shoes	543,377	July 23	2686	635	72	550
Cole, Henry W. N., Brooklyn, N. Y. Lathe for irregular shapes	544,288	Aug. 13	802	203, 204, 205	72	906
Cole, Sylvester, assignor of one-half to S. W. Smith, Pontiac, Mich. Trace-fastener	543,437	July 23	2802	658	72	574
Coleman, Clyde J., Chicago, Ill. Button-attaching machine	544,528	Aug. 13	1282	310	72	992

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Coleman, Francis W., Rodney, Miss., assignor to Chicago Grain Door Company, Chicago, Ill. Nut-lock	545,776	Sept. 3	590	142	72	1462
Collar, Allen P., *et al.* (See Hitchings, Arthur S., assignor.)						
Coller, Barzillia J., Detroit, Mich. Boiler	545,269	Aug. 27	2626	637	72	1287
Collett, Alfred M. (See Hall, Alvah W., assignor.)						
Colller, Septimus J., deceased; P. B. Turpin, Washington, D. C., administrator. Means for obtaining two speeds in bicycles	544,267	Aug. 6	770	196	72	889
Collins, Caleb G., Woodbury, A. C. Hilsinger, Killawog, and C. A. Stevens, New York, N. Y.; said Collins and Hilsinger assignors to said Stevens. Dredging apparatus	544,460	Aug. 13	1184	287, 288	72	973
Collins, Edmund T. (See Collins, Harry R. and E. T.)						
Collins, Harry R. and E. T., South Bethlehem, Pa. Bicycle	544,427	Aug. 13	1113	270	72	958
Collins, Henry E. (See Mather and Collins.)						
Collins, Herman B., Fulton, N. Y. Commutator-brush	541,919	July 2	162	38, 39	72	35
Collins, James E. (See Sparks and Collins.)						
Collins, James H., Harrisburg, Pa. Lubricator	544,960	Aug. 20	2092	501	72	1163
Collins, John F. (See Rebuschatis and Collins.)						
Collins, John T. and S. W., Kokomo, Ind. Band-cutter and feeder	543,174	July 23	2360	556, 557	72	490
Collins, Reuben G., and F. W. Foley, Dollar Bay, Mich. Insulator	544,959	Aug. 20	2091	501	72	1163
Collins, Samuel W. (See Collins, John T. and S. W.)						
Collinson, Frank J., Lynn, Ill. Means for operating swinging gates	545,681	Sept. 3	430	103, 104	72	1433
Collinson, Joshua, East Orange, N. J. Brace for wire fences	544,503	Aug. 13	1249	302	72	985
Collyer, William C., assignor of one-third to W. H. Perkins, Reading, Mass. Sewing-machine for lasting boots or shoes	546,695	Sept. 24	2189	521, 522	72	1805
Colman, Herrmann, San Francisco, assignor of one-half to J. Colman, Oakland, Cal. Ash and soot pan	542,797	July 16	1714	407	72	350
Colman, Julius. (See Colman, Herrmann, assignor.)						
Colorado Ore Concentrator Company. (See Darragh, Betts, and Kilton, assignors.)						
Colton, George A., Chicago, Ill. Transom-lifter	546,379	Sept. 17	1660	394	72	1693
Colton, George A., Chicago, Ill. Transom-lifter	546,380	Sept. 17	1661	394	72	1693
Columbian Clock Company. (See Scales, William S., assignor.)						
Combs, James M., Auburn, Nebr. Wheel	542,184	July 2	589	143	72	115
Combs, W. F. (See Bryden, Edward O., assignor.)						
Compagnie Générale des Moteurs-Gazogénes Système Bénier. (See Bénier, Léon, assignor.)						
Comparative Synoptical Chart Company. (See Sinton, Walter L., assignor.)						
Compton, Silas T., Troy, Tex. Harvester-platform and carrier	546,415	Sept. 17	1724	409	72	1705
Conchar, James W., Dubuque, Iowa. Door-hanger	546,729	Sept. 24	2255	537	72	1817
Conley, Henry. (See Craig, David, assignor.)						
Conlon, Frank J. (See Janvrin and Conlon.)						
Connell, Nicholas, *et al.* (See Ashurst, Charles, assignor.)						
Consolidated Car-Heating Company. (See McElroy, James F., assignor.)						
Consolidated Fastener Company. (See Hall, Frank E., assignor.)						
Constantin, Gaston E., *et al.* (See Girtler, John F., assignor.)						
Continental Match Company. (See Hutchinson, William F., assignor.)						
Converse, Edmund. (See Turner, William A., assignor.)						
Convert, Richard E., Chicago, Ill. Water-supply regulator	544,027	Aug. 6	346	86	72	812
Conway, Jesse, assignor of five-eighths to J. F. Morrison, Baltimore, Md. Trolley-wheel	544,157	Aug. 6	559	139	72	852
Cook, Benjamin B., *et al.* (See Moore, Allen D., assignor.)						
Cook, Francis L., and J. F. Cranston, Springfield, Mass.; said Cranston assignor to said Cook. Automatic cut-off for gas systems	542,870	July 16	1821	431	72	370
Cook, Hugo, Dayton, Ohio. Cash register and indicator	543,725	July 30	3381	785, 786, 787	72	692
Cook, Lewis M., Neenah, Wis. Snap-hook	546,236	Sept. 10	1359	323	72	1619
Cook, Milton H., and J. Houston, San Francisco, Cal. Leather-stretching machine	546,089	Sept. 10	1127	269	72	1516
Cooke, Charles H., Providence, R. I. Shirt-bosom stud	544,884	Aug. 20	1955	468	72	1137
Cookson, Charles L., Kansas City, Mo. Valve mechanism for hydraulic elevators	543,590	July 30	3089	724	72	644
Cookson, Thomas J., Chicago, Ill. Feed-water heater and purifier	542,331	July 9	880	216	72	187
Cooney, Sebern A., New York, N. Y., assignor of one-half to John A. Roebling's Sons Company, Trenton, N. J. Automatic switch	544,961	Aug. 20	2094	501, 502	72	1163
Cooper, Charles P., New York, N. Y. Door-fastener	546,064	Sept. 10	1090	261	72	1569
Cooper Lamp Company. (See Cooper, Sherman, assignor.)						
Cooper, Sherman, assignor to Cooper Lamp Company, Westfield, N. J. Carriage-lamp	543,438	July 23	2803	658, 659	72	574
Cooper, William. (See Frazer, Walter L., assignor.)						
Cooper, William S., Newport, R. I. Mechanical toy	542,727	July 16	1583	378	72	328
Cooperstein, Samuel. (See Gordon and Cooperstein.)						
Copland, Alexander W., Cincinnati, Ohio. Depositing-machine	544,962	Aug. 20	2096	502, 503	72	1164
Copeland, Charles A., Peabody, Mass. Safety attachment for driving-machines	546,416	Sept. 17	1725	409	72	1705
Copeland, Charles C., East Orange, N. J. Cuff	543,671	July 30	3280	762	72	673
Coppet, Frédéric de. (See Paccaud and de Coppet.)						
Copplelers, Evariste, San Francisco, Cal. Folding gate or screen	543,926	Aug. 6	170	40	72	779
Coram, John J., Springfield, Ohio. Fence-wire tension device	545,682	Sept. 3	433	104	72	1434
Corbett, C. E., *et al.* (See Crawford, John A., assignor.)						
Corbin Cabinet Lock Company. (See Horne, Henry, assignor.)						
Corcoran, Patrick W., Seneca, Ill. Weed-cutter for cultivators	545,945	Sept. 10	882	212	72	1529
Core, James H., Etna, Pa. Car-brake	545,849	Sept. 3	713	174	72	1485
Corey, Roswell F. (See Mowson and Corey.)						
Cornell, Albert. (See Towle, William H., assignor.)						
Cornell, Elijah B., assignor of five-sixths to S. T. Kerr, S. Harper, F. Asbury, Philadelphia, W. B. Solliday and A. H. R. Guiley, South Easton, Pa. Portable hydraulic punch	545,777	Sept. 3	592	143	72	1462
Cornell, John W. (See Cunningham, Patrick, assignor.)						
Cornely, Emile and R., Paris, France. Overedge sewing-machine	543,295	July 23	2568	603, 604	72	527
Cornely, Emile and R., Paris, France. Overedge sewing-machine	543,335	July 23	2626	617	72	539
Cornely, Emile and R., Paris, France. Embroidering-machine	544,723	Aug. 20	1660	398, 399	72	1060
Cornely, Robert. (See Cornely, Emile and R.)						
Cornforth, Robert G. (See Beecher and Cornforth.)						
Cornillie, Charles P. (See Cornillie, Edward A. and C. P.)						
Cornillie, Edward A. and C. P., Milwaukee, Wis. Refrigerator	546,112	Sept. 10	1165	278	72	1583

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Corrigan, James, New York, N. Y. Horse-collar	542,927	July 16	1913	453	72	390
Cost, C. F. (See Turnbull, Werd W., assignor.)						
Cotter, Hugh, Burlington, Canada Bag-supporting device	544,461	Aug. 13	1157	288	72	974
Cottier, John. (See Yerby, Ross B., assignor.)						
Cottom, James B., Dayton, Ohio. Curtain for vehicles	545,055	Aug. 27	2252	547	72	1212
Cotton, Frederick W., Dedham, assignor of one-half to C. M. Reed, Boston, Mass. Cut-off-actuating mechanism for gas or electric light systems	546,090	Sept. 10	1130	269	72	1576
Cotton, Hattie, and C. M. Miller, Evanston, Ill. Fire-escape	544,724	Aug. 20	1661	399	72	1080
Cotton, Houston K., Mount Vernon, Ohio. Name-plate for tombstones, &c	543,229	July 23	2457	577	72	507
Cotton, Scott R. (See Scurr and Cotton.)						
Coulson, Walter, executor. (See Sheridan and McNulty.)						
Coulston, J. Warren, *et al.* (See Loughridge, Jacob E., assignor.)						
Cotzhausen, Alfred von, Milwaukee, Wis. Translucent picture	541,836	July 2	34	.....	72	9
Cough, Adoniram B., Tremont, Me. Sash lock	545,778	Sept. 3	594	143	72	1463
Couhig, Bartholomew J., Youngstown, Ohio. Ink-well cover	541,965	July 2	245	57	72	50
Courtney, Clements, London, England. Valve for pneumatic tires or other articles	545,455	Sept. 3	27	7	72	1360
Contant, Oscar Z., Chicago, Ill. Railway-spike	546,269	Sept. 10	1445	342	72	1634
Covell, Edgar C. (See Pepper and Davis, assignors.)						
Covey, Hamilton S., Newark, N. J. Barrel-support	546,395	Sept. 17	1685	400	72	1698
Cowan, James, Honolulu, Hawaii. Automatic liquid measure	545,850	Sept. 3	715	174, 175	72	1486
Cowan, Lorenzo, *et al.* (See Lord, George W., assignor.)						
Cowan, William B., Guelph, Canada. Triturating and emulsifying machine	545,456	Sept. 3	28	8	72	1360
Cowles, Dennison Manufacturing Company. (See Dennison, Robert L., assignor.)						
Cowley, Benjamin T., New Boston, Tex. Turnstile-gate	545,457	Sept. 3	29	8	72	1360
Cox, David, Sacramento, Cal. Can-labeling machine	543,175	July 23	2362	557	72	490
Cox, Frank P., Lynn, Mass., assignor to General Electric Company, of New York. Electric meter	542,240	July 9	698	171	72	151
Cox, Harry B., Hartford, Conn. Thermo-electric generator	546,417	Sept. 17	1727	409	72	1705
Cox, John, Victoria, Canada. Edger	544,158	Aug. 6	560	139	72	852
Cox, William H., Virden, Ill. Dish-cleaner	544,211	Aug. 6	656	166, 167	72	869
Coy, Frederick W. (See Judd and Coy.)						
Crabtree, Thomas, McCook, Nebr. Metallic packing	545,580	Sept. 3	253	62	72	1400
Craig, David, Melrose, assignor of one-half to H. Conley, Boston, Mass. Tank-valve	543,570	July 30	3057	714	72	638
Craig, William H., assignor to E. C. Stearns & Co., Syracuse, N. Y. Loom-shuttle	545,196	Aug. 27	2516	609	72	1265
Craig, William H., assignor to E. C. Stearns & Co., Syracuse, N. Y. Stop-motion for looms	546,418	Sept. 17	1729	410	72	1706
Cramer, Joseph, Delano, Minn. Fence-post	542,241	July 9	700	171	72	151
Crancer, George A., Lincoln, Nebr. Combination-lock for bicycles	544,909	Aug. 20	2011	480	72	1148
Crandall, Jesse A., assignor of one-half to S. W. Leslie, Brooklyn, and R. Harding Kings county, N. Y. Hobby-horse	542,871	July 16	1822	431	72	371
Crandall, Lucien S., Parish, N. Y. Signaling apparatus	542,928	July 16	1914	453, 454	72	390
Crandall, Lucien S., Parish, N. Y. Bicycle	546,004	Sept. 10	987	238	72	1549
Crandall, Lucien S., Parish, assignor to C. G. Patterson, New York, N. Y. Gas heating and lighting apparatus	545,851	Sept. 3	717	175	72	1486
Crandall Typewriter Company. (See Barney, Edwin E., assignor.)						
Crane Company. (See Crane, Richard T., assignor.)						
Crane Elevator Company (See Reynolds, George H., assignor.)						
Crane, Frank M. (See Green, Nathaniel W., assignor.)						
Crane, Origen C., New York, N. Y. Portable hand-drill	544,402	Aug. 13	1067	260	72	949
Crane, Richard T., assignor to Crane Company, Chicago, Ill. Valve-seat	546,066	Sept. 10	1092	261	72	1569
Craney, Thomas, Bay City, Mich. Apparatus for manufacturing salt	542,044	July 2	375	90	72	75
Craney, Thomas, Bay City, Mich. Steam-generator	542,045	July 2	376	91	72	75
Craney, Thomas, Bay City, Mich. Evaporating apparatus	542,078	July 2	434	104	72	85
Craney, Thomas, Bay City, Mich. Apparatus for purifying water	546,844	Sept. 24	2436	584	72	1851
Cranston, James F. (See Cook and Cranston.)						
Crapo, Stanford T. (See Heginbottom, Samuel H., assignor.)						
Crary, Joseph M., Jersey City, N. J. Type-writing machine	545,458	Sept. 3	30	8, 9	72	1360
Craven, James, Hastings, Mich. Over-shoe retainer for felt boots	546,065	Sept. 10	1091	261	72	1569
Craw, David B., assignor of one-half to E. G. Tulledge, Oshkosh, Wis. Magazine-camera	543,439	July 23	2805	659	72	574
Craw, Joseph T., Jersey City, N. J. Advertising device	542,872	July 16	1823	432	72	371
Crawford, Edward S., assignor of one-half to L. D. Jones, Milford Ill. Windmill	542,146	July 2	540	129	72	105
Crawford, James, and J. H. Young, Boston, Mass. Ball-cock for water-closet valves	545,348	Aug. 27	2746	666	72	1309
Crawford, John A., assignor of one-half to C. B. Angell, Findlay, Ohio, and C. E. Corbett, Pittsburg, Pa. Hasp-lock	546,916	Sept. 24	2551	610	72	1874
Crawford, Middleton, assignor of three-fourths to T. C. Parrish, D. Chisholm, Colorado Springs, Colo., and J. Pourtales, Silesia, Germany. Extracting precious metals from their ores	543,672	July 30	3221	.....	72	673
Crawford, Middleton, assignor of three-fourths to T. C. Parrish, D. Chisholm, Colorado Springs, Colo., and J. Pourtales, Silesia, Germany. Extracting precious metals from their ores	543,673	July 30	3283	762	72	674
Crawford, Middleton, assignor of three-fourths to T. C. Parrish, D. Chisholm, Colorado Springs, Colo., and J. Pourtales, Silesia, Germany. Extracting precious metals from their ores	543,674	July 30	3286	....	72	674
Crawford, Middleton, assignor of three-fourths to T. C. Parrish, D. Chisholm, Colorado Springs, Colo., and J. Pourtales, Silesia, Germany. Apparatus for extracting precious metals from their ores	543,675	July 30	3288	763, 764	72	674
Crawford, Middleton, assignor of three-fourths to T. C. Parrish, D. Chisholm, Colorado Springs, Colo., and J. Pourtales, Silesia, Germany. Extracting precious metals from their ores	543,676	July 30	3291	.....	72	675
Creech, Jonathan, Paint Lick, Ky. Sliding bar for fences	543,296	July 23	2570	604	72	528
Creque, Josiah Jackson, Mich. Water-heater	544,663	Aug. 20	1548	371	72	1059
Crescent Automatic Caster Company. (See Gaffney, Charles H., assignor.)						
Crescent Fire Arms Company. (See Foster, Frank A., assignor.)						
Cress, Leonidas H. (See Darling, John, assignor.)						
Cressey, John T. (See Beury and Cressey.)						
Crist, Charles, assignor to Crist Machine Company, Dayton, Ohio. Paper-bag machine	543,571	July 30	3059	714, 715, 716	72	638
Crist Machine Company. (See Crist, Charles, assignor.)						
Critcher, John M., Bolivar, Mo., E. B. Webber, Collierville, Tenn., and O. H. Franklin, Indianapolis, Ind. Churn	541,837	July 2	37	9	72	9

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Crocker, Esmeralda, administratrix. (See Crocker, John.)						
Crocker, John, deceased; E. Crocker, administratrix, assignor to F. Leach, New York, N. Y. Box	544,462	Aug. 13	1188	288	72	974
Cromer, Henry M., Moscow, S. C. Hub-attaching device	545,946	Sept. 10	883	213	72	1529
Crommer, Robert, assignor of one-half to J. Stewart, Jr., Philadelphia, Pa. Trolley-pole for railway-cars	546,303	Sept 17	1522	359	72	1667
Crompton, Charles, assignor to Crompton Loom Works, Worcester, Mass. Loom for weaving tufted fabrics	543,825	July 30	3582	833	72	729
Crompton Loom Works. (See Clark, John A., assignor.)						
Crompton Loom Works. (See Crompton, Charles, assignor.)						
Crompton Loom Works. (See Wyman and Clark, assignors.)						
Cromwell, Jonas, assignor of one-half to M. Neilson, Erie, Pa. Paring and slicing knife	542,606	July 9	1376	332	72	276
Crone, Seth A., New York, N. Y. End support for cars	545,779	Sept. 3	596	143	72	1463
Crosby, Willis K., Jamestown, N. Y. Swing-bracket for book-holders	545,683	Sept. 3	434	104	72	1434
Croskery, Samuel M. W., Rockferry, England. Attachment for sextants	544,212	Aug. 6	658	167	72	869
Crosley, John E. (See Clancy and Crosley.)						
Cross Engine Company. (See Vezin, Oscar, assignor.)						
Cross, George A., *et al.* (See Hutchinson, Llewellyn H., assignor.)						
Cross, George W., Pittston, Pa. Screen	545,056	Aug. 27	2253	547	72	1213
Cross, John A., *et al.* (See Hutchinson, Llewellyn H., assignor.)						
Cross, Levi T., *et al.* (See Hutchinson, Llewellyn H., assignor.)						
Cross, Marlborough W., *et al.* (See Hutchinson, Llewellyn H., assignor.)						
Cross, Thomas A., Bardwell, Ky. Spring-motor	544,350	Aug. 13	909	239	72	932
Crossley, Atkinson, Talywain, England. Manufacturing zinc	544,612	Aug. 13	1433	.....	72	1020
Crouse, John. (See Hamilton, Miles E., assignor.)						
Crout, Sallie G., Philadelphia, Pa. Dress-shield	542,991	July 24	2014	479	72	425
Crowder, Samuel R., Richmond, Va. Base-ball-game-illustrating apparatus	543,851	Aug. 6	31	9	72	755
Crowder, Samuel R., Richmond, Va. Base-ball-game indicator	545,270	Aug. 27	2627	637	72	1287
Crowell, John H. (See Owen and Crowell.)						
Crowell, Luther C., Brooklyn, assignor to R. Hoe, T. H. Mead, and C. W. Carpenter, New York, N. Y. Mechanism for associating sheets	545,459	Sept. 3	34	9, 10	72	1361
Crum, James C., Ladiesburg, Md. Nut-lock	543,176	July 23	2364	557	72	491
Crume, William E. (See Kirby, Crume, Grimes, and Clark.)						
Cummer, Eliza E. (See Cummer, Franklin D., assignor.)						
Cummer, Franklin D., assignor to E. E. Cummer, Cleveland, Ohio. Mechanical drier	545,057	Aug. 27	2254	547, 548	72	1213
Cummer, Franklin D., assignor to E. E. Cummer, Cleveland, Ohio. Mechanical drier	545,058	Aug. 27	2256	548, 549	72	1213
Cummer, Franklin D., assignor to E. E. Cummer, Cleveland, Ohio. Drying apparatus	545,120	Aug. 27	2376	574, 575, 576	72	1237
Cummer, Franklin D., assignor to E. E. Cummer, Cleveland, Ohio. Drier	545,121	Aug. 27	2383	576, 577	72	1238
Cummer, Franklin D., assignor to E. E. Cummer, Cleveland, Ohio. Mechanical drier	546,655	Sept. 24	2122	501	72	1794
Cummings, Archibald G., Brooklyn, assignor to M. S. and E. H. Mosher, New York, N. Y. Fireproof construction of floors and ceilings	543,082	July 23	2171	515	72	454
Cummings & Engelman Conduit Company. (See Cummings, James F., assignor.)						
Cummings, Henry H., Malden, Mass., assignor to Reversible Rivet Company, Portland, Me. Making lacing-hooks	546,641	Sept. 17	2096	497	72	1776
Cummings, James F., assignor to Cummings & Engelman Conduit Company, Detroit, Mich. Manhole for underground conduits	543,613	July 30	3195	740	72	657
Cummings, James K., Ladonia, Tex. Coffee-pot	544,963	Aug. 20	2099	503	72	1164
Cummings, Samuel R., *et al.* (See Swift, William A., assignor.)						
Cummins, William G. (See Curl and Cummins.)						
Cunningham, John F., Rochester, N. Y. File	543,521	July 30	2973	698	72	620
Cunningham, Patrick, assignor of one-half to J. W. Cornell, New Bedford, Mass. Rail-bond	541,838	July 2	38	9	72	10
Cunningham, Patrick M., New York, N. Y., assignor to Brunswick-Balke-Collender Company, Chicago, Ill. Pool-counter	542,147	July 2	531	129	72	105
Cunningham, Richard H., Richmond, Va. Electric-arc lamp	544,529	Aug. 13	1284	310	72	992
Cunningham, Samuel, assignor of one-half to G. H. Harter, Sacramento, Cal. Horseshoeing-machine	541,920	July 2	166	39	72	36
Curl, John H., and W. G. Cummins, assignors of one-fourth to C. Faulkner, McMinnville, Tenn. Vehicle-axle	542,607	July 9	1377	333	72	276
Curlett, William, San Francisco, Cal. Faucet	542,798	July 16	1715	407	72	351
Curlett, William, San Francisco, Cal. Globe-valve	543,128	July 23	2257	535	72	470
Curlett, William, San Francisco, Cal. Pipe-coupling	545,877	Sept. 10	758	185	72	1505
Curran, James H., Cincinnati, Ohio. Operating-valve for hydraulic elevators	541,993	July 2	292	68	72	50
Curran, Patrick, Romeo, Ill. Pocket securing device for pocket-books, watches, &c	544,159	Aug. 6	562	140	72	852
Currie, Stanley C. C., New York, N. Y. System of electrical distribution	544,289	Aug. 13	808	205	72	907
Currier, Cyrus C. (See Holthaus, Emil, assignor.)						
Curry, Josephus W., Beda, Ky. Coffee surrogate	544,059	Aug. 6	404	.....	72	823
Curry, Michael J., assignor to N. O. Nelson Manufacturing Company, St. Louis, Mo. Water-closet or urinal	544,964	Aug. 20	2100	503, 504	72	1165
Curtin, Emmett R., St. Mary's, Ohio. Pumping-jack	542,873	July 16	1825	432	72	371
Curtin, James, Carlton, Victoria. Ventilation apparatus	542,554	July 9	1249	313	72	259
Curtis, Frank J. (See McConway, Kelso, and Curtis.)						
Curtis, Willard, Grand Rapids, Mich. Sawing-machine	545,780	Sept. 3	596	144	72	1463
Curtis, William A., *et al.* (See Weaver, William, assignor.)						
Curtis, William G., and J. D. Isaacs, San Francisco, Cal. Preserving timber	545,222	Aug. 27	2561	.....	72	1274
Cushman Paper Box Machine Company. (See Taylor, Eugene H., assignor.)						
Custer, George, Bremond, Tex. Horseshoe	546,227	Sept. 10	1360	324	72	1619
Custodis, Alphons, Dusseldorf, Germany. Electric registering apparatus	543,336	July 23	2628	618	72	530
Cutler, William, Birmingham, England. Apparatus for bending and shaping sheet-glass	544,248	Aug. 6	740	190	72	892
Dabney, Benjamin; Bonham, and W. I. Yopp, Houston, Tex. Apparatus for cooking cotton-seed meal	545,271	Aug. 27	2628	637, 638	72	1287
Daggett, William H., Somerville, Mass. Key	543,852	Aug. 6	33	9	72	755
Dahl, Magnus S. P., Chicago, Ill. Universal drill-shaft	543,083	July 23	2172	515	72	455
Dahl, Sarah A., *et al.* (See Edwards, Arthur, assignor.)						
Daiber, William F. (See Martin, Thomas N., assignor.)						
Dales, John H., Leeds, England. Automatic adjustment for brasses	544,213	Aug. 6	661	167, 168, 169	72	869
Dallis, Thomas N., Spartanburg, S. C. assignor of one-half to C. Gresham, Charlotte, N. C. Plow-doubletree	545,272	Aug. 27	2630	638	72	1287

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Dally, George W., Philadelphia, Pa. Reservoir attachment for pens	545,349	Aug. 27	2748	666	72	1309
Dalton, William M., assignor of two-thirds to L. L. Hammond, Alva, W. L. Nugent, and T. A. McWillie, Jackson, Miss. Artificial-stone composition and making same	543,572	July 30	3063	.....	72	639
Daly, James H., assignor of three-fourths to J. McLaren, C. D. Brown, and J. M. Stark, Detroit, Mich. Car-coupling	545,435	Aug. 27	2899	705	72	1339
Daly, William H., Bayonne, N. J. Water-bag	543,177	July 23	2365	558	72	491
Damm, Conrad, Cleveland, Ohio. Water-tower	544,478	Aug. 13	1211	293, 294	72	978
Daman, Louis W. (See Daman, Oscar and L. W.)						
Daman, Oscar and L. W., assignors of one-third to E. D. Perkins, Minneapolis, Minn. Standpipe for gasoline-burners	546,642	Sept. 17	2098	497	72	1776
Damon, George B., assignor of one-half to G. W. Pearson, Lowell, Mass. Electric-car brake	543,544	July 30	3015	705	72	629
Dana, Ezra O., *et al.* (See Wheeler, Andrew L., assignor.)						
Dance, Edward M. (See Tilford, William H., assignor.)						
Danforth, Cyrus L., assignor to W. B. McMaster and F. W. Weise, Leavenworth, Kans. Nut-lock	543,958	Aug. 6	226	55	72	790
Danforth, George C., and W. H. Sencenbaugh, Washington, assignors to said Danforth and W. C. Hart, Chicago, Ill. Apparatus for withdrawing gas from natural-gas wells, &c.	546,952	Sept. 24	2611	626	72	1885
Daniel, Robert L. (See Potts and Daniel.)						
Daniels, Charles A., Waterville, N. Y. Damper	545,947	Sept. 10	884	213	72	1529
Daniels, Thomas J., San Francisco, Cal. Awning-operating mechanism	546,730	Sept. 24	2256	537	72	1817
Dann, J. Lyman. (See Reid, Thomas J., assignor.)						
Dark, Daniel S., New York, N. Y. Paddle-wheel	542,992	July 23	2015	479	72	425
Darley, John W., Jr., assignor of one-half to M. Holzman, P. and L. Hamburger, Baltimore, Md. Piano-action	543,799	July 30	3531	821	72	720
Darling, John, London, England, assignor of one-half to L. H. Cress, Newton, Mass. Device for starting vehicles	544,088	Aug. 6	456	113	72	832
Darrach Car Fender Company. (See Darrach, Samuel A., assignor.)						
Darrach, Samuel A., assignor to Darrach Car Fender Company, Newark, N. J. Car fender	544,565	Aug. 13	1340	327	72	1004
Darragh, Frederick D., C. W. Betts, and J. A. Kilton, Denver, Colo., assignors to Colorado Ore Concentrator Company, of Colorado. Ore-concentrator	544,290	Aug. 13	809	205, 206	72	908
Dashiell, Robert B., U. S. Navy, assignor to Driggs Ordnance Company, Washington, D. C. Breech-loading ordnance	544,637	Aug. 13	1476	358, 359	72	1029
Davet, Joseph J. and J. F., North Madison, Ohio. Straddle-row hand-cultivator	543,178	July 23	2366	558	72	491
Davet, Julius F. (See Davet, Joseph J. and J. F.)						
Davey, William H. (See Davis and Davey.)						
Davidson, Augustus A., Victoria, Canada. Device for baby-food regulators	542,993	July 23	2016	479	72	426
Davidson, Benjamin H., Lynn, Mass. Shutter-hook	546,304	Sept. 17	1523	360	72	1667
Davidson, David J., assignor to Davidson, Martin Manufacturing Company, Port Huron, Mich. Purifier, separator, and grader	542,011	July 2	326	79	72	66
Davidson, David J., assignor to Davidson, Martin Manufacturing Company, Port Huron, Mich. Purifier, separator, and grader	543,927	Aug. 6	171	40, 41	72	779
Davidson, David J., assignor to Davidson, Martin Manufacturing Company, Port Huron, Mich. Adjustable cut-off separator and grader	545,581	Sept. 3	254	62, 63	72	1401
Davidson, Harry, assignor of one-half to A. C. Clapp, New York, N. Y. Corset-fastening	543,983	Aug. 6	264	66	72	797
Davidson, John M., Allegheny, assignor of two-thirds to C. Y. Mercer and Shook, Anderson Manufacturing Company, (Incorporated,) Pittsburg, Pa. Filter	544,291	Aug. 13	813	206	72	908
Davidson, John M., assignor of one-half to J. McNaugher, Jr., Allegheny, Pa. Filter	544,566	Aug. 13	1342	327	72	1004
Davidson, Martin Manufacturing Company. (See Davidson, David J., assignor.)						
Davidson, Otis E., Nashville, Tenn. Dumping-vehicle	544,060	Aug. 6	405	102	72	823
Davidson Samuel C., Belfast, Ireland. Centrifugal fan	544,758	Aug. 20	1706	411	72	1090
Davies, Edward. (See McLean and Davies.)						
Davies, John D., Butte, Mont. Matte and slag separating well	542,148	July 2	534	129	72	105
Davies, John R. (See Jarrett, Davies, and Edwards.)						
Davies, Walter D., Brooklyn, assignor to Ansonia Clock Company, New York, N. Y. Clock case	544,028	Aug. 6	347	87	72	812
Davis, Adolphus, Montreal, Canada. Filter	545,122	Aug. 27	2387	577	72	1239
Davis, Albert T. L. (See Pepper and Davis.)						
Davis, Benjamin A., New York, N. Y. Means for propelling vessels	543,179	July 23	2367	558	72	492
Davis, Charles H., Worcester, Mass. Dental-engine handpiece-coupling	543,854	Aug. 6	36	10	72	755
Davis, George B., Detroit, Mich. Clamp	544,292	Aug. 13	814	206	72	909
Davis, George H., New York, N. Y., assignor, by mesne assignments, to Electric Self-Playing Piano Company, of New Jersey. Electrical piano	546,582	Sept. 17	2005	476	72	1758
Davis, George L., and N. K. Wright, Chicago, Ill. Filter and cooler	543,677	July 30	3292	764, 765	72	675
Davis, George W., assignor to Acme Brass Co., Trenton, N. J. Conduit-coupling	546,953	Sept. 24	2613	626	72	1886
Davis, Henry K. B., Philadelphia, Pa. Depositing gold from its aqueous solutions	546,113	Sept. 10	1165	278, 279	72	1583
Davis, Isaac, Armadale, Victoria. Wheel and axle for carriages	544,664	Aug. 20	1549	371	72	1059
Davis, Isaac H., South Butte, assignor of one-half to A. Pincus, Butte, Mont. Combined headlight and sand-box	546,581	Sept. 17	2003	476	72	1758
Davis, Isaac H., and W. H. Davey, South Butte, Mont. Hanging caster	546,668	Sept. 17	2045	495	72	1766
Davis, James, and W. A. Thomas, Pittsburg, Pa. Rail	546,305	Sept. 17	1524	360	72	1667
Davis, Jesse R., assignor of one-third to C. A. Wade, Parkersburg, W. Va. Electric heating-rug	543,800	July 30	3535	822	72	720
Davis, Joseph E., Lynn, assignor to Boston Woven Hose and Rubber Company, Boston, Mass. Valve for pneumatic tires	543,297	July 23	2572	604	72	528
Davis, Mace, Robert Lee, Tex. House-moving truck	546,091	Sept. 10	1131	269	72	1577
Davis, Minor M., Brooklyn, N. Y. Duplex and diplex telegraphy	541,994	July 2	295	68	72	60
Davis, Ossian C., Racine, Wis. Boiler	541,839	July 2	39	9	72	10
Davis, Samuel H., Alfred Centre, N. Y. Awning-blind	546,759	Sept. 24	2308	550	72	1827
Davis, Simeon C., Cleveland, Ohio. Fence	543,853	Aug. 6	34	9	72	755
Davis, Spencer L., Chicago, Ill., assignor to American Wood Decorating Machine Company, New York, N. Y. Wood-decorating machine	545,059	Aug. 27	2266	549, 550	72	1216
Davis & Stevens Manufacturing Company. (See Lowe, Joseph H., assignor.)						
Davis, William H., assignor of one-half to F. M. Campbell, Lexington, Ind. Fertilizer-distributer	544,966	Aug. 20	2103	504	72	1165
Davis, Willie H. and H. C. Christy, Como, Colo. Signal-transmitter	546,228	Sept. 10	1362	324	72	1620
Davy, Andrew, Salineville, Ohio. Splice	544,965	Aug. 20	2102	504	72	1165
Davy, Ernest J. (See Davy, William and E. J.)						
Davy, William, Kenosha, Wis., and E. J. Davy, Chicago, Ill. Means for operating swinging beams of excavating-machines	544,479	Aug. 13	1213	294	72	978
Dawson, Charles L., Brooklyn, N. Y. Cloth-straightening machine	543,084	July 23	2173	515	72	455

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Dawson, Dennis E., Merrill, assignor to Edward P. Allis Company, Milwaukee, Wis. Sawmill machinery	545,644	Sept. 3	362	89	72	1421
Dawson, Henry G. and W. R., Chicago, Ill. Gas-burning fireplace	544,029	Aug. 6	348	87	72	813
Dawson, James, Broadland, S. D. Prairie-fire extinguisher	542,754	July 16	1636	391	72	337
Dawson, Richard H. (See Dawson, William J., R. H., and R. H.)						
Dawson, William J., R. H., and R. H., Cannington, Canada. Invalid-bed	542,994	July 23	2016	480	72	426
Dawson, William R. (See Dawson, Henry G. and W. R.)						
Day, David T., Washington, D. C., assignor of two-thirds to F. B. Squire, Cleveland, and A. Smith, Jr., Cincinnati, Ohio. Making phosphates soluble in dilute citric acid	542,080	July 2	434	.....	72	85
Day, Joseph. (See Cock, Frederic W. C., assignor.)						
Day, Joseph, Bath, England. Gas-engine	543,614	July 30	3196	741	72	658
Day, Joseph, Bath, England. Gas-engine	544,214	Aug. 6	663	169	72	869
Day, Joseph, Bath, England. Device for effecting air-tight closures for vessels	544,967	Aug. 20	2107	504, 505	72	1166
De Ball, Burton S., Chicago, Ill. Mechanism for giving reciprocating motion to canvas	542,995	July 23	2019	480	72	426
De La Matyr, Fred, Fremont, Nebr. Pole-tip	546,307	Sept. 17	1527	361	72	1668
De La Vergne Bottle and Seal Company. (See Blevney, John C., assignor.)						
De Lano, Charles S. (See Jacoby, Edward, assignor.)						
De Lany, William Cobourg, Canada. Bicycle	545,948	Sept. 10	885	213	72	1529
De Leeuw, Adolph L., assignor of one-third to P. E. Montanus, Springfield, Ohio. System for controlling railway-trains	546,308	Sept. 17	1528	361, 362, 363	72	1668
De Vault, Robert C., Philadelphia, Pa. Car-fender	542,242	July 9	701	172	72	151
De Wilde Prosper, Brussels, Belgium. Extracting gold	545,852	Sept. 3	718	.....	72	1487
Deal, John M., Fernwood, assignor to himself, S. Wadworth, Clifton, and W. Bartram, Lansdowne, Pa. Closed-conduit electric railway	546,130	Sept. 10	1196	285	72	1588
Dealtry, William J., assignor to Brennan & Co. Southwestern Agricultural Works, Louisville, Ky. Seeding-machine	543,573	July 30	3064	716	72	639
Deam, John, Shannon Harbour, Ireland. Valve-gear for engines	546,419	Sept. 17	1731	411	72	1706
Dean, Albert E. (See Salisbury and Dean.)						
Dean, William H., West Berkeley, Cal. Sash-fastener	542,555	July 9	1291	313	72	260
Dean, William W., assignor to Bell Telephone Company of Missouri, St. Louis, Mo. Electrical signaling apparatus	544,567	Aug. 13	1344	327, 328	72	1004
Dean, William W., assignor to Bell Telephone Company of Missouri, St. Louis, Mo. Telephone system	546,731	Sept. 24	2257	537	72	1818
Deaner, Lee H., Muskegon, Mich. Apparatus for adjusting garments	546,132	Sept. 10	1198	285	72	1588
Deardorff, John W., Waynesborough, Pa. Steam-engine	544,806	Aug. 20	1817	435	72	1112
Dearing, Anson C., assignor of one-half to J. Siegel, Detroit, Mich. Steam-generator	543,678	July 30	3294	765	72	675
Dearing, Samuel B., Roanoke, Va. Car-wheel	546,609	Sept. 17	2046	486	72	1766
Dearmont, Lee, Mound City, Mo. Sliding gate	546,306	Sept. 17	1525	360	72	1667
Decker, Bazel, Minatare, Nebr. Pump attachment	542,332	July 9	881	216	72	183
Decker Cycle Company. (See Decker, William L., assignor.)						
Decker, George, Montgomery, Pa. Faucet	544,403	Aug. 13	1070	260	72	950
Decker, William L., assignor to Decker Cycle Company, Worcester, Mass. Velocipede	546,954	Sept. 24	2614	626	72	1886
Deere & Company. (See Moore, Gilpin, assignor.)						
Deere & Company. (See Poole, Staley D., assignor.)						
Deering, Mark L., Brooklyn, N. Y. Machine for molding hollow ware from pulp	541,966	July 2	246	58	72	50
Deering, Mark L., Brooklyn, N. Y., assignor to Barstow Fruit Jar Company, Jersey City, N. J. Jar fastener	545,684	Sept. 3	435	105	72	1434
Déjardin, Jules A., Paris, France. Electric meter	546,917	Sept. 24	2552	611	72	1874
Delany, Patrick B., South Orange, N. J. Automatic telegraphy	541,967	July 2	249	58	72	51
Delcroix, Henri C. (See Calloch and Delcroix.)						
Delehanty, Daniel, Brooklyn, N. Y. Dumping-scow	542,408	July 9	1019	250, 251	72	209
Dellinger, Hiram M., Paradise, Pa. Clamp for barrel-heads	543,421	July 23	2761	652	72	564
Demeny, George, Levallois-Perret, France. Series photographic camera	544,480	Aug. 13	1215	294, 295	72	979
Deming, William B., S. W. Harman, and F. H. Romans, Bentonville, Ark. Mail-bag catcher and deliverer	544,865	Aug. 20	1955	468, 469	72	1137
Demnitz, Ernst F. H., Nieder-Sedlitz, Germany. Mechanism for propelling and steering vessels	546,309	Sept. 17	1536	364	72	1669
Demole, Eugène. (See Duhauron, Louis D., assignor.)						
Dempsey, William L., New Franklin, Mo. Display-case	542,029	July 16	1418	341	72	297
Denise, Obadiah H. (See McNeill and Denise.)						
Denison, Francis N., Toronto, Canada. Short-circuiting device for stopping dental motors	543,855	Aug. 6	38	10	72	756
Denman, Jackson H., Jr. (See Carson and Denman.)						
Denne, Mark T., Eastbourne, England. Cutter for trimming the edges of boot-soles	545,223	Aug. 27	2561	620	72	1274
Denning, Joseph M., Estherville, Iowa. Wire fence	542,185	July 2	591	143	72	116
Dennis Adolphus S., Des Moines, Iowa. Type writing machine	543,085	July 23	2174	516	72	455
Dennis, George W., assignor to T. A. Hagerty, H. L. Waterbury, and A. C. Hawes, Chicago, Ill. Cable-clamp	544,481	Aug. 13	1217	295	72	979
Dennis, John B., assignor of two-thirds to C. W. Major, Ottumwa, Iowa, and G. G. Major, Toledo, Ohio. Match-safe	544,968	Aug 20	2108	505	72	1166
Dennis, John B., assignor of two-thirds to C. W. Major, Ottumwa, Iowa, and G. G. Major, Toledo, Ohio. Match-box	546,583	Sept. 17	2007	477	72	759
Dennis Joseph, Hot Springs, S. D. Lock	543,679	July 30	3295	765	72	676
Dennison, Robert L., assignor to Cowles, Dennison Manufacturing Company, Kansas City, Mo. Steam-engine	542,360	July 9	939	231	72	194
Dennison, John, Fort Wayne, Ind. Disintegrating-tool for sugar in barrels	545,578	Sept. 10	759	185	72	1505
Denotovich, Antony C., and J. Porteous, Fresno, Cal.; said Denotovich assignor to said Porteous. Press for packing fruit	544,886	Aug. 20	1960	469	72	1138
Denton, Whitley, Centreville, Mich. Sleeping-garment	541,935	July 2	297	69	72	61
Derr, William R., Baltimore, Md. Brush	544,030	Aug. 6	350	87	72	813
Desailly, Louis J., Boulogne-sur-Seine, and J. Fraisse, Paris, assignors to E. A. Thouar, Baives, France. Safety-hook for stables	544,568	Aug. 13	1350	329	72	1005
Desgoffe, Auguste, Odessa, Russia. Governor for engines	544,001	Aug. 6	406	102	72	824
Deshong, Edward D. (See Haskill, Lester, assignor.)						
Desmazures, Jean M. A. (See Roux, Marie A. J., assignor.)						
Desserich, Jacob, Denver, Colo. Packing device for beer-faucets	546,732	Sept. 24	2260	537	72	1818
Deters, Jerome H., and C. Kiechler, said Kiechler assignor to A. Dye, Cincinnati, Ohio. Street-car sign	544,504	Aug. 13	1250	302	72	986
Detrick, Benjamin J., assignor of one-half to M. Heineke, Springfield, Ill. Corn cutter and shocker	542,874	July 16	1827	432, 433	72	372

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Detroit Screw Works. (See Taylor, Harrison H., assignor.)						
Detwiler, John S., Philadelphia, Pa. Car-fender	544,404	Aug. 13	1071	260, 261	72	950
Dentschbein, Josef, Euskirchen, Germany. Pencil-sharpener	545,350	Aug 27	2748	666	72	1309
Devereaux, Eugène L., Owosso, Mich. Thill coupling	546,584	Sept. 17	2009	477	72	1759
Deville, Peter, Huntington, Ind. Frame for barns or other buildings	544,215	Aug. 6	664	170	72	870
Devine, John C. (See Baugh and Murphy, assignors.)						
Devlin, Thomas C., assignor of one half to D. S. Cohen and S. Grutze, Portland, Oreg. Stamp attaching and sealing machine	543,440	July 23	2806	659, 660	72	574
Devlin, Thomas C., assignor of one-half to D. S. Cohen and S. Grutze, Portland, Oreg. Stamp-affixing machine	543,441	July 23	2809	660	72	575
Devoe, Benjamin G., Lima, Ohio. Reversible hydrocarbon generator and burner	546,310	Sept. 17	1537	364	72	1669
Devries, John O., assignor to G. H. Miller, Baltimore, Md. Cork-extractor	544,463	Aug. 13	1189	289	72	974
Dewey, Charles J. (See Rohder and Bloom, assignors.)						
Dewhurst, John H., Sheffield, England. Steam-trap	542,149	July 2	535	130	72	105
Diamond Match Company. (See Beecher and Wright, assignors.)						
Diamond Match Company. (See Palmer, Charles H., assignor.)						
Diamond Match Company. (See Willard, Harry A., assignor.)						
Diamond Match Company. (See Wright, Jacob P., assignor.)						
Dibb, William, and A. Vickers, Syracuse, N. Y. Insulator	546,585	Sept. 17	2010	477	72	1759
Dibrell, Anthony, Uvalde, Tex. Thill-coupling	543,615	July 30	3198	741	72	658
Dice, Andrew F., Joliet, Ill. Oil-gas burner	544,160	Aug. 6	563	140	72	853
Dick, Albert B., assignor to A. B. Dick Company, Chicago, Ill. Type-writing machine	545,403	Aug. 27	2536	690, 691	72	1326
Dick, Joseph, Canton, Ohio. Conveyer for fodder-cutters	542,996	July 23	2020	480, 481	72	426
Dickens, Charles W., *et al.* (See Mason, Orlando P., assignor.)						
Dickerman, Charles, assignor to Pennsylvania Iron Works Company, Philadelphia, Pa. Valve for compressors	545,123	Aug. 27	2388	578	72	1239
Dickerson, Samuel H., and F. S. Gilbert, Cleveland, Ohio. Match-delivering device	542,333	July 9	882	217	72	183
Dickinson, Austin R. (See Nase, John, assignor.)						
Dickinson, Charles. (See Amet, Edward H., assignor.)						
Dickinson, Edwin E., *et al.* (See Marshall, Aquila B., assignor.)						
Dickinson Joseph H., Trenton, N. J. Aerial tramway	546,508	Sept. 17	1888	446, 447	72	1737
Dickson, William A., Bonniwell Mills, Minn. Wood-baling crate	542,845	July 16	1783	423	72	364
Diefenbach, John, Springfield, Ohio. Interlocking switch mechanism	544,089	Aug. 6	457	113	72	833
Diehl, Philip, Elizabeth, N. J., assignor to Singer Manufacturing Company, of New Jersey. Mechanical movement	541,840	July 2	40	9	72	10
Diehl, Samuel K., *et al.* (See Kintzing, William F., assignor.)						
Dierdorff, Henry B., Columbus, Ohio. Electrically-operated mine-car	545,404	Aug. 27	2840	691, 692	72	1327
Diesel, Rudolf, Berlin, Germany. Method of and apparatus for converting heat into work	542,846	July 16	1785	421, 425	72	364
Diestelhorst, William H., Redding, Cal. Dredger	546,586	Sept. 17	2012	478	72	1760
Dieterle, Wilhelm, Feuerbach, Germany. Apparatus for purifying nitric acid	543,826	July 30	3154	834	72	730
Dietz, Joseph A., St. Mary's, Pa. Animal-trap	546,918	Sept. 24	2555	612	72	1875
Difenderfer, James W., *et al.* (See McLaughlin, James F., assignor.)						
Diffenbach, William H. H., New York, N. Y. Car-fender	545,781	Sept. 3	599	144	72	1464
Diller, Williams D., Boiling Springs, Pa. Fence-stay	545,460	Sept. 3	41	10	72	1362
Dillon, Robert G. H., Long Point, Canada. Hand wheel-cultivator	543,378	July 23	2687	635	72	551
Dillon, William H., Virginia, Ill. Pegging-jack	546,587	Sept. 17	2015	478	72	1760
Dingee, William W., assignor to J. I. Case Threshing Machine Company, Racine, Wis. Journal bearing	544,482	Aug. 13	1218	295	72	979
Dinges, D. W., *et al.* (See Baird, Clarence D., assignor.)						
Dinkey, Alva C., Munhall, Pa. Crane-tongs	542,997	July 23	2023	481	72	427
Dinning, Henry M., Montreal, Canada. Sash-fastener	542,998	July 23	2024	481	72	427
Dinsmore, Edward W., assignor of one-half to J. H. Brack, Lynn, Mass. Distributing-bottle	545,012	Aug. 20	2175	525	72	1177
Dinsmore, Orin O., and L. G. Lord, Lewiston, Me. Tire-holder	543,726	July 30	3392	787	72	695
Dinsmore, Robert, assignor of one-half to M. Greenstein, Weston, W. Va. Car-coupling	542,608	July 9	1379	333	72	276
Dinsmore, Winfield L., Portland, Oreg. Machine for affixing stamps	546,588	Sept. 17	2015	478, 479	72	1760
Dion, Leon. (See Montgomery, Harry M., assignor.)						
Dion, Léon, Natick, Mass. Flexible conductor and inclosed conduit therefor	546,005	Sept 10	988	239	72	1549
Direct Automatic Stoker Syndicate. (See Williamson, Richard H., assignor.)						
Dise, Joseph, *et al.* (See Kintzing, William F., assignor.)						
Dixon, George E., Chicago, Ill. Radiator shield and frame	543,456	July 23	2841	666	72	580
Dixon, Henry A. (See Wood and Dixon.)						
Dixon, Robert M., East Orange, N. J., assignor to Safety Car Heating and Lighting Company, New York, N. Y. Cock	543,646	July 30	3243	753	72	666
Dixon, Thomas B., Henderson, Ky. Railway signaling system	543,591	July 30	3090	724, 725, 726, 727	72	644
Dixon, Thomas B., Henderson, Ky. Electrical railway signaling system	543,592	July 30	3118	727	72	646
Dixon, Thomas B., Henderson, Ky. Register	543,593	July 30	3125	728	72	647
Dixon, Thomas B., Henderson, Ky. Electrical railway signaling system	543,594	July 30	3130	728, 729	72	647
Dixon, Thomas B., Henderson, Ky. Electrical railway signaling system	543,595	July 30	3137	729, 730	72	649
Dixon, Thomas B., Henderson, Ky. Electrical railway signaling system	543,596	July 30	3149	731, 732	72	650
Dixon, Thomas B., Henderson, Ky. Track-instrument	543,597	July 30	3160	732, 733	72	652
Dixon, Thomas B., Henderson, Ky. System of multiplex telegraphy	543,984	Aug. 6	265	66, 67	72	797
Dixon, Thomas B., Henderson Ky. Relay	544,351	Aug. 13	971	239, 240	72	933
Dobert, Philip A. (See Grote and Dobert.)						
Dobson, Alexander, Beaverton, Canada. Cleaning attachment for dust-collectors	542,875	July 16	1828	433	72	372
Doddridge, William B., St. Louis, Mo. Railway-plow car	545,782	Sept. 3	600	145, 146	72	1464
Dodds, Rowan T. F., Louisville, Ohio. Brake for railway-cars	543,522	July 30	2977	698	72	681
Dodge, Carroll W., assignor to W. R. Albertson, Worcester, Mass. Marking-kit	545,949	Sept. 10	886	213	72	1530

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Dodge, James M., Philadelphia, Pa. Air-blast conveyer	544,969	Aug. 20	2109	505	72	1166
Dodge, James M., Philadelphia, Pa., assignor to Air Conveyor Company, Camden, N. J., and Nicetown, Pa. Process of and apparatus for conveying materials	544,970	Aug. 20	2110	505	72	1167
Dodge, James M., Philadelphia, Pa., assignor to Air Conveyor Company, Camden, N. J., and Nicetown, Pa. Process of and apparatus for conveying materials	545,013	Aug. 20	2176	526	72	1177
Dodge, Van Curtis, Sacramento, Cal. Folding table	544,846	Aug. 20	1891	453	72	1126
Doebler, Charles F., Hartford, Conn. Knob attachment	546,970	Sept. 24	2638	632	72	1891
Doehrer, John M., Bridgeport, Conn. Self-heating sad-iron	546,656	Sept. 24	2124	504, 505	72	1794
Doerfel, Max, Klingenthal, Germany. Harmonica	546,733	Sept. 24	2262	538	72	1818
Doerhoefer, Marcus, Louisville, Ky. Feed-water regulator	542,150	July 2	536	130	72	105
Doerhoefer, Marcus, Louisville, Ky. Gage for steam-boilers	546,589	Sept. 17	2018	479	72	1761
Doescher, Philip G. (See Gray and Doescher.)						
Dolber, John E., Manchester, N. H. Shuttle-threader	546,006	Sept. 10	990	239	72	1549
Dolese, John, *et al.* (See McKelvey, Samuel P., assignor.)						
Dolmetsch, William H., Elmira, N. Y. Mechanical movement	544,613	Aug. 13	1434	349, 350	72	1020
Dominici, Christopher. (See Scognamillo and Dominici.)						
Donard, Eugène, Rouen, France. Apparatus for extracting fatty substances	546,509	Sept. 17	1889	447	72	1737
Donham, W. W. (See Nutz, Leonard, assignor.)						
Donnell, John W. (See Friede, Samuel M., assignor.)						
Donnelly, Ellen, Hempstead, N. Y. Hook and eye	544,971	Aug. 20	2111	506	72	1167
Donovan, Edward J., Boston, Mass. Antirattler for windows	546,657	Sept. 24	2125	505	72	1794
Donovan, John E., Cincinnati, Ohio. Molding-machine	542,304	July 9	828	203, 204	72	172
Donovan, Joseph, Chicago, Ill. Registering-armor for boxers	543,086	July 23	2178	510	72	456
Donovan, Timothy E. (See Carter, Sanford W., assignor.)						
Dooley, Clarence H. and H. L., Bloomington, Ill. Combined check-row and drill. (Reissue)	11,504	July 23	2842	666	72	581
Dooley, Harry L. (See Dooley, Clarence H. and H. L.) (Reissue)						
Doran, Robert L., Bay City, Mich. Regulating device for lamps	546,282	Sept. 10	1480	349	72	1642
Dornitzer, Anna, New York, N. Y. Napkin-holder	546,658	Sept. 24	2126	505	72	1794
Douglas, Bruce E., Riverside, Cal. Tree-prop bracket	543,298	July 23	2573	605	72	528
Douglas, Charles H., Chicago, Ill. Saw	542,630	July 16	1419	342	72	297
Douglas, John, Elizabeth, N. J., assignor to Singer Manufacturing Company, of New Jersey. Stop mechanism for sewing-machines	543,442	July 23	2812	660, 661	72	575
Douglass, Heman F., and W. J. Slyder, assignors to Troy Carriage Sun Shade Co., Troy, Ohio. Folding top for vehicles	542,999	July 23	2025	482	72	428
Dover Stamping Company. (See Whitney, Horace E., assignor.)						
Dow, Albert F. (See Buffinton, Elisha W., assignor.)						
Dow, George B. N., Manchester, assignor to K. D. Pierce and C. M. Freeman, Hillsborough, N. H. Clothes-holder	542,677	July 16	1506	360	72	314
Dow, Willard E., Braintree, Mass. Internal illuminator and probe	543,616	July 30	3199	742	72	658
Dowling, Stonewall J., Greenville, Tex. Knee-pad	545,273	Aug. 27	2631	638	72	1288
Downes, Louis W., Providence, R. I. Manufacture of electrical conductors	541,921	July 2	168	39	72	36
Downes, Louis W., Providence, R. I. Apparatus for insulating electrical conductors	544,847	Aug. 20	1892	453	72	1126
Downes, William A. (See Carty and Downes.)						
Downing, William S., Kelso, Kans. Stand for band-cutters on thrashing-machines	545,060	Aug. 27	2269	550	72	1216
Downs, William D., assignor of three-eighths to D. W. Evans and A. W. Reitze, Denver, Colo. Sleeping-car berth	542,226	July 2	673	165	72	130
Downward, Alfred. (See Downward, William C., assignor.)						
Downward, William C., assignor of one-half to A. Downward, Wilmington, Del. Gas-regulator	546,131	Sept. 10	1197	285	72	1588
Doyle, John J., Franklin, Pa. Oil-well pumping-rig frame	543,545	July 30	3018	706	72	630
Doyle, William J., Penn, N. D. Transplanter	541,841	July 2	41	10	72	10
Draher, John, Waterbury, Conn., assignor to M. Cohn, New York, N. Y. Machine for making corset-stiffeners	543,856	Aug. 6	40	10, 11, 12	72	756
Draher, John, Waterbury, assignor of one-half to G. H. Blakesley, Bristol, Conn. Mechanical feeding device	544,665	Aug. 20	1550	372	72	1060
Drake, Arthur J. (See Weyman and Drake.)						
Drake, Harry T. (See MacCarthy, Daniel F., assignor.)						
Drake, James A. (See Weyman and Drake.)						
Drake, Jeremiah B., Bolivar, Mo. Coffee surrogate	543,299	July 23	2574	.....	72	529
Draper & Sons, George. (See Owen, Herbert W., assignor.)						
Draper & Sons, George. (See Roper, Charles F., assignor.)						
Draper & Sons, George. (See Whittum, Edward, assignor.)						
Draver, Emil R., assignor to F. N. Draver, Alliance, Nebr. Conveyer	544,031	Aug. 6	351	87, 88	72	813
Draver, Florence N. (See Draver, Emil R., assignor.)						
Dreier, William, *et al.* (See Durlacher, Jonas F., assignor.)						
Dreses, Henry, Cincinnati, Ohio. Metal-shaping machine	544,569	Aug. 13	1351	329	72	1006
Dreses, Henry, Cincinnati, Ohio, and W. Barker, Newport, Ky. Work-holding device for lathes	546,311	Sept. 17	1539	364, 365	72	1670
Dressler, Charles E., New York, N. Y. Gas-burner	545,783	Sept. 3	602	146	72	1465
Dreyfus, Bernhard, New York, N. Y. Garter	546,420	Sept. 17	1734	412	72	1707
Drie-bach, William, Williamsport, Pa. Pneumatic tire	543,337	July 23	2629	618	72	539
Driggs Ordnance Company. (See Dashiell, Robert B., assignor.)						
Droste, Henry, assignor to Stewart & Mattson Manufacturing Company, Philadelphia, Pa. Display-rack	544,216	Aug. 6	665	170	72	870
Drown, Otis E., Pawtucket, R. I. Cloth-stretching machine	546,092	Sept. 10	1132	270	72	1577
Drum, John, Spokane, Wash. Clothes-drier	542,556	July 9	1292	313	72	260
Drury, Robert, assignor of one-half to J. O. Thorn, Toronto, Canada. Bath	543,469	July 30	2864	671, 672	72	690
Dryer, George W., assignor to Bushnell Manufacturing Company, Easton, Pa. Car-seat	545,197	Aug. 27	2518	609	72	1265
Drzewiecki, Stephane, Paris, France. Apparatus for ejecting or launching torpedoes	542,876	July 16	1829	433, 434	72	373
Du Bois, Howard M., Philadelphia, Pa. Cushion-tire for vehicle-wheels	544,217	Aug. 6	666	170	72	870
Du Bois, James F., *et al.* (See Mason, Orlando P., assignor.)						
Du Bois-Reymond, Alard E., Berlin, Germany, assignor, by mesne assignments, to Siemens & Halske Electric Company of America, Chicago, Ill. Rotary field-motor	545,853	Sept. 3	719	175	72	1487
Du Pont, Thomas C., Johnstown, Pa. Railway-crossing	546,229	Sept. 10	1363	324	72	1620
Dubbs, Jesse A., Pittsburg, assignor of one-fourth to C. T. Russell, Allegheny, Pa. Sinking shafts	543,230	July 23	2458	577, 578	72	507
Dubuque Specialty Machine Works. (See Moseley, Charles S., assignor.)						
Ducas, Salomon, San Francisco, Cal. Voting-machine	544,218	Aug. 6	668	171	72	870

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Duckworth, Ormerod, Norristown, Pa. Apparatus for drying yarn	541,922	July 2	169	40	72	36
Duffield, William, London, Canada. Pencil-sharpener	543,727	July 30	3393	787	72	695
Dugdill, John, Manchester, assignor of two-thirds to Platt Brothers & Company Limited, Oldham, and J. Kershaw & Company, Brighouse, near Halifax, England. Machine for combing cotton, silk, or other fiber	545,014	Aug. 20	2179	526, 527	72	1178
Duhauron, Louis D., Algiers, Algeria, assignor to E. Demole, Geneva, Switzerland. Stereoscopic print	544,666	Aug. 20	1551	372	72	1060
Duisburg Eisen- und Stahlwerke. (See Friedrich and Schulte, assignors.)						
Duke, Fred W., Fort Dodge, Iowa. Soldering-clamp	546,421	Sept. 17	1735	412	72	1707
Dulligan, Lawrence, Rochester, N. Y. Life-saving net for cars	542,877	July 16	1832	434, 435	72	373
Duncan, Irwin W. (See McLaughlin, Eben J., assignor.)						
Duncan, John R., Pittsburg Landing, assignor of one-half to E. P. Churchwell, Savannah, Tenn. Fire-escape	545,155	Aug. 27	2440	592	72	1250
Duncan, Louis. (See Rowland, Henry A., assignor.)						
Dunham, Carrigan & Hayden Company. (See Brooks, Thomas W., assignor.)						
Dunham, Charles L., assignor of one-half to C. C. Stover, Centreview, Ohio. Pipe-wrench	542,012	July 2	328	79, 80	72	66
Dunkley, Samuel J., Kalamazoo, Mich. Celery-package	546,463	Sept. 17	1815	430	72	1721
Dunlap, William P., Maquoketa, Iowa. Combined wire-stretcher and carriage	546,696	Sept. 24	2192	522	72	1806
Dunman, William M., Rusk, Tex. Dumping-car	544,249	Aug. 6	741	190, 191	72	882
Dunn, Dennis, Mahanoy City, assignor of forty-nine one-hundredths to J. E. Reyburn, Philadelphia, Pa. Air-brake for railway-cars	546,510	Sept. 17	1892	447	72	1738
Dunn, Herbert O., Baltimore, Md. Anchor	543,129	July 23	2258	535	72	471
Dunn, James H., assignor of one-half to L. Allen, New York, N. Y. Cigarette and cheroot machine	542,615	July 9	1389	335, 336	72	279
Dunstan, George, Lorain, Ohio. Stench-trap	543,617	July 30	3201	742	72	658
Dupee, Henry D., *et al.* (See Rowell, Samuel C., assignor.)						
Durack, Patrick H., Pecos, Tex. Device for replacing derailed railway-cars	544,161	Aug. 6	564	140	72	853
Durafort, Victor E. J., Paris, France. Seltzogene	545,351	Aug. 27	2749	666, 667	72	1309
Durand, Huguenin & Co., L. (See Brack, Johann J., assignor.)						
Durham, Irvin W. (See Taylor, Francis, assignor.)						
Durlacher, Florence E., *et al.* (See Durlacher, Jonas F., assignor.)						
Durlacher, Jonas F., assignor to W. Dreier and F. E. Durlacher, New York, N. Y. Necktie-holder	543,928	Aug. 6	174	41	72	780
Durnbaugh, Joseph A., assignor of three-fourths to L. F. Stutz, Washington, D. C. Window-screen	546,643	Sept. 17	2098	497	72	1776
Dürr, Walther, Munich, Germany. Pressure-gage	542,631	July 16	1420	342	72	297
Dusang, John E., Larue, Ohio. Wire-stretcher	544,725	Aug. 20	1662	399	72	1081
Dustin, William H., Lawrenceburg, Tenn. Twine-holder	543,857	Aug. 6	41	12	72	757
Dutcher Temple Company. (See Hinchliffe, William, assignor.)						
Dutcher Temple Company. (See Stimpson, Edward S., assignor.)						
Dutcher Temple Company. (See Stimpson, Wallace I., assignor.)						
Dutchess Tool Company. (See Van Houten, Frank H., assignor.)						
Dutro, Oliver T., Buffalo, N. Y. Road-grading machine	545,623	Sept. 3	324	81	72	1414
Dutro, Oliver T., Buffalo, N. Y., and T. McFeely, Philadelphia, Pa. Machine for dressing surfaces of stone blocks	542,186	July 2	592	143	72	116
Duttera, John A., and J. F. Flickinger, Hanover, Pa. Sulky attachment for plows	546,919	Sept. 24	2556	612	72	1875
Duval, Charles L., Bayonne, N. J. Protective guard for paper-rolls	542,728	July 16	1584	378	72	328
Duvall, Richard L. (See Goddard, Charles F., assignor.)						
Duvall, William S. (See Bacon and Duvall.)						
Dvorkovitz, Paul, London, England. Apparatus for distilling liquid hydrocarbons	546,697	Sept. 24	2193	523	72	1806
Dwelle, Albert, assignor to Z. W. Tinker, E. C. Dwelle, St. Louis, Mo., C. W. and C. W. Dwelle, trustee, Denver, Colo. Boiler-furnace	542,187	July 2	594	144	72	116
Dwelle, Charles W., trustee, *et al.* (See Dwelle, Albert, assignor.)						
Dwelle, Emily C., *et al.* (See Dwelle, Albert, assignor.)						
Dwiggins, John W., assignor of two-thirds to L. Urmston and J. D. Gooding, Frankton, Ind. Wire-fence machine	545,854	Sept. 3	720	175, 176	72	1487
Dye, Amos. (See Deters and Kiechler, assignors.)						
Dyer, William E. (See Soley, Frank, assignor.)						
Dyson, James, and R. H. Williamson, Ashton-under-Lyne, England. Mold for casting screws	546,879	Sept. 24	2495	595, 596	72	1863
E. C. Stearns & Company. (See Craig, William H., assignor.)						
E. P. Gleason Manufacturing Company. (See Gennert, Emil F., assignor.)						
Eagle Horseshoe Company. (See Schwarting, John, assignor.)						
Eagle Lock Company. (See Roche, James, assignor.)						
Eagle Pencil Company. (See Boman, Claes W., assignor.)						
Eagle Pencil Company. (See Fischer, Frederick, J. W., assignor.)						
Eames, Owen A., Boston, Mass. Camera lantern	546,093	Sept. 10	1134	270, 271	72	1578
Earl, William, Norristown, Pa. Hose-coupling	545,352	Aug. 27	2751	667	72	1309
Earle, Albanus. (See Reed, Nathan F., assignor.)						
Earll, Charles I., New York, N. Y. Cable railway	546,955	Sept. 24	2615	627	72	1886
Earnshaw, Joseph C., Yonkers, assignor to P. R. Lewis, New York, N. Y. Shield for curling-irons	542,243	July 9	702	172	72	151
Easley, Clifton W. (See Hill and Easley.)						
Eassie, William, and O. Schmidt, Kealia, Kauai, Hawaii. Process of and apparatus for filtering saccharine juices	542,586	July 9	1335	324	72	267
Easterling, James O., Glennville, Ga. Sugar-cane press	544,972	Aug. 20	2112	506	72	1167
Eastman, Harvey L., Wahpeton, N. D. Bob-sleigh	542,557	July 9	1293	314	72	260
Eastwood, George, London, England. Manufacture of flongs for producing matrices for stereotyping	542,847	July 16	1790	.....	72	364
Eastwood, George, London, England. Platen press	544,887	Aug. 20	1962	470	72	1139
Eastwood, James N., Kansas City, Mo. Feed-mill	545,461	Sept. 3	42	11	72	1362
Eastwood, Joseph P. (See Tower, Hunter, and Eastwood.)						
Eastwood Wire Manufacturing Company. (See Frisbie, Henry R., assignor.)						
Eaton, W. Libbey. (See Smith, John D., assignor.)						
Eaton, William S., Sag Harbor, N. Y. Designing	545,624	Sept. 3	326	81	72	1414
Eberhard Manufacturing Company. (See Martell, Herbert C., assignor.)						
Eberhardt, William C. (See Peterson, Eberhardt and Piper.)						
Echols, Frank G., assignor to Plume & Atwood Manufacturing Company, Waterbury, Conn. Suspending device for lamps	544,505	Aug. 13	1252	302, 303	72	986

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Echternoch, John, *et al.* (See McIntyre, John W., assignor.)						
Eckels, George M., Chicago, Ill. Type-writing machine	544,571	Aug. 13	1354	330, 331	72	1006
Eckels, George M., Chicago, Ill. Type-writing machine	544,572	Aug. 13	1360	331, 332	72	1007
Eckert, Wesley, assignor of one-half to C. H. Freeman, Elk Point, S. D. Snap-hook	544,483	Aug. 13	1220	205	72	980
Economic Smoke Preventing Furnace Company. (See Murray, Alexander K., assignor.)						
Eddy, Arthur J., Chicago, Ill. Bicycle-saddle	545,224	Aug. 27	2563	621	72	1274
Edenborn, William, St. Louis, Mo. Reel	543,801	July 30	3536	822	72	721
Edgar, George, Jr., *et al.* (See Wilson, Luther, Jr., assignor.)						
Edgar, William M., *et al.* (See Rice, Kenesa F., assignor.)						
Edge Moor Iron Company. (See Sellers, Strong, and Bradford, assignors.)						
Edgerton, Edward M., Chicago, Ill. Electrical time-annunciator	543,000	July 23	2027	482	72	428
Edison Electric Light Company. (See Edison, Thomas A., assignor.)						
Edison General Electric Company. (See Brown, Harold P., assignor.)						
Edison, Thomas A., Llewellyn Park, N. J. Phonograph	541,923	July 2	171	40	72	37
Edison, Thomas A., Llewellyn Park, N. J. Phonograph	541,924	July 2	173	41	72	37
Edison, Thomas A., Llewellyn Park, N. J. System of electrical distribution	545,405	Aug. 27	2843	693	72	1328
Edison, Thomas A., Menlo Park, N. J., assignor to Edison Electric Light Company, New York, N. Y. Incandescent conductor for electric lamps	543,985	Aug. 6	273	.....	72	798
Edison, Thomas A., Menlo Park, N. J., assignor to Edison Electric Light Company, New York, N. Y. Process of treating and products derived from vegetable fibers	543,986	Aug. 6	274	.....	72	798
Edison, Thomas A., Menlo Park, N. J., assignor to Edison Electric Light Company, New York, N. Y. Filament for incandescent lamps	543,987	Aug. 6	274	.....	72	798
Edlund, Henry J., Brooklyn, N. Y. Saw	544,162	Aug. 6	566	141	72	853
Edsall, William H., and F. L. Lathrop, Brooklyn, assignors to H. L. Judd & Company, New York, N. Y. Central-draft lamp	545,462	Sept. 3	47	11	72	1363
Edson Manufacturing Company. (See King and Boutilier, assignors.)						
Edward P. Allis Company. (See Dawson, Dennis E., assignor.)						
Edward P. Allis Company. (See Gray, William D., assignor.)						
Edwards, Arthur, assignor of one-half to M. P. Smith and S. A. Dahl, Willow Springs, Mo. Cornstalk-puller	544,573	Aug. 13	1362	332	72	1008
Edwards, Charles D., Albert Lea, Minn. Stump-puller	546,511	Sept. 17	1893	447, 448	72	1738
Edwards, James, assignor to Peru Plow and Wheel Company, Peru, Ill. Cultivator	543,379	July 23	2688	635	72	551
Edwards, John. (See Jarrett, Davies, and Edwards.)						
Edwards, Reuben. (See Reese, John M., assignor.)						
Edwards, Victor E., assignor to Morgan Construction Company, Worcester, Mass. Wire-drawing machine	543,858	Aug. 6	45	12	72	757
Egan, Michael J., *et al.* (See Regan, Daniel S., assignor.)						
Egan, William J., Milwaukee, Wis. Steam-trap	544,464	Aug. 13	1190	289	72	974
Eggers, Hinrich F. H. (See Haddorf and Eggers.)						
Ehrhardt, Frank. (See Thiel and Ehrhardt.)						
Ehrhardt, Heinrich, Dusseldorf, Germany. Universal turning radial saw	543,574	July 30	3066	717, 718	72	639
Ehrlich, Paul, Gohlis, Germany. Music-sheet for mechanical instruments	546,133	Sept. 10	1201	286	72	1589
Eichenberger, Johan R., Burton City, Ohio. Sack-tie	542,465	July 9	1136	278	72	230
Eichholtz, George, Milton, Pa. Starching-machine	545,274	Aug. 27	2031	638	72	1288
Eichhorn, George J. (See Lipska, Edward, assignor.)						
Eimer, John. (See Brombacher, Emil, assignor.)						
Eisenhart, William H., assignor to J. C. Schmidt, York, Pa. Link for chains	544,759	Aug. 20	1708	412	72	1090
Ekehorn, Sven A., Milwaukee, Wis. Electric temperature-controlling device	543,929	Aug. 6	175	41, 42	72	780
Ekenberg, Martin, assignor to Aktiebolaget Separator, Stockholm, Sweden. Centrifugal machine for mixing gases with liquids	542,755	July 16	1637	391	72	337
Ekenberg, Martin, assignor to Aktiebolaget Separator, Stockholm, Sweden. Combined centrifugal emulsor and separator	542,756	July 16	1639	392	72	337
Ekhff, Andrew A., Detroit, Mich. Button-trimming machine with automatic knife-sharpener	545,275	Aug. 27	2632	639	72	1288
Elb, Max, Dresden, Germany. Box-iron	545,784	Sept. 3	604	146	72	1465
Euler, James M., Indianapolis, Ind. Automatic hatchway-door-operating device	544,667	Aug. 20	1553	372	72	1060
Electric Company. (See Hussey, Charles A., assignor.)						
Electric Gas Lighting Company. (See Galbraith, George J., assignor.)						
Electric Gas Lighting Company. (See Thomson, Henry C., assignor.)						
Electric Gas Lighting Company of Maine. (See Palmer, James W., assignor.)						
Electric Selector and Signal Company. (See Price, Benjamin, assignor.)						
Electric Self-Playing Piano Company. (See Davis, George H., assignor.)						
Electric Typographic Company. (See Lee and Lebrun, assignors.)						
Electrical Advertising and Sign Company. (See Woodbridge, Jonathan E., assignor.)						
Elgin National Watch Company. (See Hunter, George E., assignor.)						
Eller, James H. (See Hunker, Martin L., assignor.)	545,855	Sept. 3	722	176	72	1487
Ellett, Andrew L., Jr., Richmond, Va. Cigarette-box	546,512	Sept. 17	1895	448	72	1738
Ellingwood, Charles H., Harrison, Me. Wood-shaping machine	546,312	Sept. 17	1543	365	72	1670
Elliot, Henry, St. Louis, Mo. Railway-frog	542,151	July 2	537	130	72	106
Elliott, Robert H., and J. B. Carrington, Birmingham, Ala., assignors to Alabama Blasting and Mining Company, of Alabama. Conveyer for tamping materials	542,152	July 2	538	131	72	106
Elliott, Robert H., and J. B. Carrington, Birmingham, Ala., assignors to Alabama Blasting and Mining Company, of Alabama. Reamer for use in mining	542,153	July 2	540	131, 132	72	106
Elliott, Robert H., and J. B. Carrington, Birmingham, Ala., assignors to Alabama Blasting and Mining Company, of Alabama. Mining-drill	542,154	July 2	543	132	72	107
Elliott, Robert H., Birmingham, and J. B. Carrington, Jasper, Ala., assignors to Alabama Blasting and Mining Company, of Alabama. Cartridge-case for charging blast-holes	546,094	Sept. 10	1138	271	72	1578
Ellis, Edward, *et al.* (See Rowell, Samuel C., assignor.)						
Ellis, Ferrand F., Oneida, N. Y. Micrometer-calipers	545,785	Sept. 3	605	146	72	1465
Ellis Keystone Agricultural Works. (See Hoffman, Nathan, assignor.)						
Ellrich, Robert C., assignor to Peck, Stow & Wilcox Company, Southington, Conn. Meat-cutter	543,001	July 23	2029	482	72	428
Ellwood, Abram. (See Roadhouse, Levi, assignor.)						
Elmendorf, Albert, assignor of one-half to C. Weeks, Chicago, Ill. Automatic oiler for screw-cutting dies	546,513	Sept. 17	1897	448	72	1739
Elmendorf, Milton M. (See Wrigley, John, assignor.)						
Elmer, Irving A., Kansas City, Mo., and T. H. Johnson, Farlington, Kans. Spoke-socket	543,765	July 30	3460	806	72	707
Elsom, Thomas H. (See Hopkins and Elsom.)						
Elting, Irving, Saugerties, N. Y. Sash lock	545,582	Sept. 3	256	63, 64	72	1401
Elward, John H., Whitewater, Wis. Planter						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Elward, John H., Whitewater, Wis. Planter	545,583	Sept. 3	260	64	72	1402
Elward, John H., Whitewater, Wis. Planter	545,584	Sept. 3	262	65	72	1402
Elwood, Jefferson U., assignor to himself and D. P. Smith, McKeesport, Pa. Safety car-brake	544,574	Aug. 13	1363	332, 333	72	1008
Embury, Arthur D., Syracuse, N. Y. Device for supporting hammocks	544,293	Aug. 13	816	206, 207	72	909
Emerson, William B. (See Low and Emerson.)						
Emery, Charles B., assignor of three-fourths to W. A. Snow & Company, Boston, Mass. Stall-floor	542,632	July 16	1422	342	72	298
Emery, John G., Jr., Muskegon, Mich. Clamp	541,925	July 2	174	41	72	37
Emery, Plato G., Chicago, Ill., assignor to Adams & Westlake Company, of Illinois. Closet.	542,633	July 16	1424	343	72	298
Emmens, Stephen H., London, England. Making ferric sulfate	543,002	July 23	2030	.....	72	429
Emmert, Edwin G., Sherdahl, Kans. Railway cattle-guard	546,775	Sept. 24	2331	556	72	1632
Empson, John H., Longmont, Colo. Pea-shelling machine	546,095	Sept. 10	1139	272, 273	72	1578
Emrich, Frederick F., and J. Rollins, Little Rock, Ark. Device for attaching railway-rails to metal ties	546,810	Sept. 24	2385	570	72	1842
Engel, Godfrey, South Baltimore, Md. Steam-boiler	543,988	Aug. 6	275	67	72	798
Engelhard, Frank and F. H., Springfield Mass. Apparatus for electroplating	544,668	Aug. 20	1356	373	72	1061
Engelhard, Frederick H. (See Engelhard, Frank and F. H.)						
Engineering Improvement Company. (See Thomas, Benjamin A., assignor.)						
Engle, Robert H. (See Tatham, James, assignor.)						
English, Amos S., St. Paul, Minn. Fence-post	543,802	July 30	3537	822	72	721
English, William F., Philadelphia, Pa. Manifolding blank-book	542,467	July 9	1137	278	72	231
Engwall, Oscar F. (See Murphy, Engwall, and Tiden.)						
Eno, Annie C. (See Eno, Joseph A., assignor.)						
Eno, Joseph A., assignor to A. C. Eno, Newark, N. J. Envelope	546,760	Sept. 24	2310	550, 551	72	1827
Enos, Charles W., Peabody, and A. W. Pratt, Salem, Mass. Machine for coloring and polishing leather	542,439	July 9	1084	264	72	222
Epstein, Ludwig, London, England. Secondary voltaic battery	543,680	July 30	3297	766	72	676
Epstein, Moritz, Stolberg, Germany. Lamp-chimney	545,061	Aug. 27	2270	551	72	1216
Ergang, Richard, Magdeburg, Germany. Machine for dyeing skins	542,188	July 2	596	144	72	117
Ericson, John, Sabine Pass, Tex., and A. Phinney, Edgartown, Mass. Oil-distributer	546,485	Sept. 17	1851	438	72	1730
Ericsson, Eric, Wilmington, Del. Interfering-pad for horses	545,879	Sept. 10	761	185	72	1505
Erie Malleable Iron Company. (See Hay, John F., assignor.)						
Ernest, Juan W., Los Angeles, Cal. Folding voting-booth	543,422	July 23	2762	652, 653	72	564
Ernst, Clare, Bay City, Mich. Vise	542,244	July 9	703	172	72	152
Erwin, James B., Milwaukee, Wis. Steam-pump	546,313	Sept. 17	1544	365	72	1671
Eschweiler, Henry, assignor of one-fourth to E. J. Keller, San Francisco, Cal. Car brake and starter	544,888	Aug. 20	1964	471	72	1139
Esmond, William V., assignor to C. B. Sims and J. Ubrig, Chicago, Ill. Roll-holder camera and picture-exhibitor	542,334	July 9	884	217	72	183
Esperson, William E., Brooklyn, N. Y. Chimney-cap	542,757	July 16	1640	392	72	337
Estey Organ Company. (See Fuller, Levi K., assignor.)						
Ettenger, George W. (See Church and Ettenger.)						
Etter, Jacob R., Crawfordsville, Ind. Electromedical apparatus	543,003	July 23	2031	482	72	429
Eureka Stencil Machine Company. (See Hartog, Stephen D., Jr., assignor.)						
Evans, Bard P., Philadelphia, Pa. Non-fillable bottle	545,276	Aug. 27	2634	639	72	1288
Evans, Charles, San Francisco, Cal. Propelling and steering steamboats	545,950	Sept. 10	888	214	72	1530
Evans, D. Walter, *et al.* (See Downs, William D., assignor.)						
Evans, Edward. (See Hardy and Evans.)						
Evans, George L. (See Haskins and Evans.)						
Evans, Horace M., Valparaiso, Ind. Drinking-cup holder	542,468	July 9	1138	278	72	231
Evans, John, Kensington, South Australia. Fare receiver and register	544,973	Aug. 20	2113	506, 507	72	1167
Evans, John C., *et al.*, administrators. (See Kelly, William E.)						
Evans, John D., St. Louis, Mo. Grinding-mill	544,294	Aug. 13	816	207	72	909
Evans, Joshua H., assignor of one-half to J. E. Saunders, Callaway, Nebr. Disk-sharpener	544,889	Aug. 20	1967	471	72	1140
Evans, Louis C. (See Benner, Lorenzo D., assignor.)						
Evans, Louis C., Springfield, Ohio. Potato-planter	545,786	Sept. 3	606	147, 148	72	1465
Evans, Louis C., Springfield, Ohio. Potato-planter	545,787	Sept. 3	612	148, 149	72	1467
Evans, Louis C., Springfield, Ohio, assignor of one-half to L. D. Benner, Peoria, Ill. Corn-planter	546,486	Sept. 17	1852	439	72	1730
Evans, Payn D., and H. B. Tomkin, San Francisco, Cal. Call-bell	541,926	July 2	175	41	72	38
Evans, Thomas W., New Orleans, La. Fluid-pressure brake mechanism	546,134	Sept. 10	1202	286	72	1589
Evans, William M., *et al.* (See Richmond, Henry T., assignor.)						
Everett, James, Sault Ste. Marie, Mich. Clothes-drier	542,245	July 9	705	173	72	152
Everhard, Henry H., Massillon, Ohio. Kiln	545,463	Sept. 3	49	12	72	1364
Everton, David M., Austin, Tex. Automatic gate	546,381	Sept. 17	1662	395	72	1694
Evinof, Julius, London, England. Locking nuts	542,878	July 16	1834	435	72	374
Evinof, Julius, London, England. Nut-lock	542,879	July 16	1835	435	72	374
Ewart, William D., Chicago, Ill. Steam-boiler	545,464	Sept. 3	51	12	72	1364
Ewers, Frank H. (See Pyle, George C., assignor.)						
Ewing, George. (See Bradley and Ewing.)						
Ewing, Thomas, Jr., Yonkers, assignor to W. E. Gump, Brooklyn, N. Y. Writing-telegraph	543,231	July 23	2459	578	72	508
Excelsior Cigar Machine Company. (See Hagen and Wieland, assignors.)						
Evanson, George T., Philadelphia, Pa. Electric switch	542,848	July 16	1791	425	72	364
Eyster, Edward F., *et al.* (See Kintzing, William F., assignor.)						
Ezell, Henry C., Twilight, and B. A. George, Iron City, Ga. Cotton chopper and cultivator	545,880	Sept. 10	762	186	72	1505
Fabriques des Produits Chimiques de Thann et de Mulhouse. (See Bischler, August, assignor.)						
Fabriques des Produits Chimiques de Thann et de Mulhouse. (See Freyss, Georges A., assignor.)						
Fader, Elijah J., Calgary, Canada. Dredging-bucket	546,698	Sept. 24	2195	523	72	1806
Fagan, George W. (See Merten and Fagan.)						
Fair, Joseph R., *et al.*, trustees. (See Taylor, Charles H., assignor.)						
Fairbanks, Henry, and H. Parker, St. Johnsbury, Vt., assignors to Vacuum Wet Machine Company, of Vermont. Suction device for paper-making machines	545,788	Sept. 3	615	149	72	1467

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fairbanks, John A., Cambridge, Mass. Bell-buoy	546,135	Sept. 10	1205	287	72	1589
Fairmount Machine Company. (See Ingraham, Edmund, assignor.)						
Falk, Herman W. (See Hoffmann and Falk.)						
Faller, Ernst. (See Oberle and Faller.)						
Fanning, John S. (See Bridges, Christopher M., assignor.)						
Farbenfabriken, vormals Fr. Bayer & Co. (See Lauber and Caberti, assignors.)						
Farbenfabriken, vormals Fr. Bayer & Co. (See Pathe and Israel, assignors.)						
Farbenfabriken, vormals Fr. Bayer & Co. (See Reyher, Rudolf, assignor.)						
Farbenfabriken, vormals Fr. Bayer & Co. (See Ulrich and Bammann, assignors.)						
Farbenfabriken, vormals Fr. Bayer & Co., *et al.* (See Schmidt, Albrecht, assignor.)	546,284	Sept. 10	1485	350	72	1643
Fargo, Corydon A., Bald Butte, Mont. Stamp-stem guide for stamp-mills	542,880	July 16	1836	435, 436	72	374
Faris, John W., Round Rock, Tex. Harrow	544,295	Aug. 13	818	207	72	909
Farnam, Arlington I., Dunham, Canada. Fly-catcher for use on animals	542,823	July 16	1749	416	72	357
Farnam, Jean C., assignor to Star Knitting Company, La Crosse, Wis. Mitten and knitting same	544,296	Aug. 13	819	208	72	910
Farnham, William E., Blair, Nebr. Veterinary obstetrical forceps						
Farrand & Votey Organ Company. (See Votey, Edwin S., assignor.)						
Farrar, Frederick. (See Greenwood and Farrar.)						
Farrell, John R. (See Taylor, John T., assignor.)	546,314	Sept. 17	1546	365	72	1671
Farrey, Philip H., Amsterdam, N. Y. Pipe-coupling	545,951	Sept. 10	889	214	72	1530
Farwell, George L., St. Paul, Minn. Stove-grate						
Faulkner, Clay. (See Curl and Cummins, assignors.)						
Faulkner, James J., St. Louis, assignor of part to F. H. Paddelle, Bay City, and E. J. Fitzharris, Saginaw, Mich. Means for operating household devices	542,335	July 9	887	217	72	184
Faulkner, James J., Memphis, Tenn., assignor to Standard Cotton Seed Company, of Arkansas. Cotton-seed delinter	546,270	Sept. 10	1446	343	72	1634
Faulkner, James J., Memphis, Tenn., assignor to Standard Cotton Seed Company, of Arkansas. Cotton-seed delinter	546,271	Sept. 10	1449	343, 344	72	1635
Faulkner, James J., Memphis, Tenn., assignor to Standard Cotton Seed Company, of Arkansas. Cotton-seed delinter	546,272	Sept. 10	1452	344	72	1636
Faulkner, James J., Memphis, Tenn., assignor to Standard Cotton Seed Company, of Arkansas. Cotton-seed delinter	546,273	Sept. 10	1454	345	72	1636
Faulkner, James J., Memphis, Tenn., assignor to Standard Cotton Seed Company, of Arkansas. Cotton-seed delinter	546,274	Sept. 10	1459	346	72	1637
Faulkner, James J., Memphis, Tenn., assignor to Standard Cotton Seed Company, of Arkansas. Cotton-seed delinter	546,275	Sept. 10	1462	346	72	1638
Faulkner, James J., Memphis, Tenn., assignor to Standard Cotton Seed Company, of Arkansas. Cotton-seed delinter	546,276	Sept. 10	1464	347	72	1639
Faulkner, James J., Memphis, Tenn., assignor to Standard Cotton Seed Company, of Arkansas. Cotton-seed delinter	546,277	Sept. 10	1468	347	72	1639
Faulkner, James J., Memphis, Tenn., assignor to Standard Cotton Seed Company, of Arkansas. Cotton-seed delinter	546,278	Sept. 10	1470	348	72	1640
Faulkner, James J., Memphis, Tenn., assignor to Standard Cotton Seed Company, of Arkansas. Cotton-seed delinter	546,279	Sept. 10	1472	348	72	1640
Faulkner, James J., Memphis, Tenn., assignor to Standard Cotton Seed Company, of Arkansas. Cotton-seed delinter	546,280	Sept. 10	1475	349	72	1640
Faulkner, James J., Memphis, Tenn., assignor to Standard Cotton Seed Company, of Arkansas. Cotton-seed delinter	546,281	Sept. 10	1476	349	72	1640
Fawcett, Robert C., Carrollton, Ohio. Bicycler's tool	544,726	Aug. 20	1664	400	72	1081
Fawcett, Thomas C., Leeds, England. Brick-pressing machinery	542,729	July 16	1586	379	72	328
Febiger, John C., Jr., New Orleans, La. Water-closet seat	543,180	July 23	2068	492	72	492
Feder, George A., Belleville, Ill. Wire winding and distributing machine	543,470	July 30	2866	672	72	600
Feder, George A., Belleville, Ill. Wire winding and distributing machine	543,471	July 30	2868	672, 673	72	601
Feely, Joseph J., Walpole, assignor to Chandler Adjustable Chair and Desk Company, Boston, Mass. Standard for furniture	542,954	July 16	1954	464	72	398
Feely, Joseph J., Walpole, assignor to Chandler Adjustable Chair and Desk Company, Boston, Mass. Standard for furniture	542,955	July 16	1955	464	72	398
Feely, Joseph J., Walpole, assignor to Chandler Adjustable Chair and Desk Company, Boston, Mass. Chair	542,956	July 16	1956	464	72	398
Fefel, Henry H., New York, N. Y. Combined fabric and threads in overseam work	544,465	Aug. 13	1191	289	72	974
Fehl, Jean, Hanau, Germany. Handle for eyeglasses	543,803	July 30	3538	822	72	721
Fehr, Frank, Chicago, Ill. Device for lubricating journal-boxes	546,650	Sept. 24	2327	595	72	1794
Feinberg, Charles L., Brooklyn, N. Y. Box-lid raiser and fastener	545,277	Aug. 27	2635	640	72	1289
Feldmeier, Harvey, assignor to D. H. Burrell & Co., Little Falls, N. Y. Cheese-press	545,193	Aug. 27	2519	610	72	1266
Felger, Frank L., and R. D. Shafer, Fayette, Ohio. Pipe-wrench	545,424	Aug. 27	2881	702	72	1336
Fellenbaum, Henry C., Philadelphia, Pa. Portable garbage incinerator or destroyer	546,396	Sept. 17	1687	400, 401	72	1698
Fellenbaum, Henry C., Philadelphia, Pa. Fluid-fuel atomizing and burning apparatus	546,397	Sept. 17	1690	402	72	1699
Fellenbaum, John H., Bellefonte, Pa. Pinch-bar	542,634	July 16	1425	343	72	208
Fellman, Edward J. (See Romünder and Fellman.)						
Fellows, Olin S., Middletown, N. Y. Key for opening sheet-metal cans	543,004	July 23	2033	483	72	420
Fellows, Olin S., Middletown, N. Y. Sealed package	545,465	Sept. 3	54	13	72	1365
Fellows, Olin S., Middletown, N. Y. Sealed package	545,466	Sept. 3	55	13	72	1365
Fellows, Olin S., Middletown, N. Y. Sealed package	545,467	Sept. 3	57	13	72	1365
Felton, Frank, *et al.* (See Verner, William J., assignor.)						
Felton, Samuel M. (See Mansfield, Albert K., assignor.)						
Fenn, Albert P. (See Tillberg, Charles, assignor.)	544,910	Aug. 20	2014	480	72	1148
Fenn, George A., Watertown, Conn. Thill-coupling	546,811	Sept. 24	2387	570	72	1842
Fenn, Prosper D., Chicago, Ill. Folio-binder	544,575	Aug. 13	1365	333	72	1008
Fennell, Timothy H., East Hartford, Conn. Flanger	545,353	Aug. 27	2752	668	72	1309
Fenner, George P., New London, Conn. Universal joint						
Fenton Metallic Manufacturing Company. (See Foster, Charles E., assignor.)						
Fergerson, G. R. (See McElyea, James L., assignor.)						
Ferguson, Charles. (See Nicholson and Ferguson, assignors.)						
Ferguson, Ernest L., Chicago, Ill. Pneumatic-tire fastener	542,336	July 9	888	218	72	184
Ferguson, George C., assignor of one-half to M. Oswald, Odell, Nebr. Beehive	546,007	Sept. 10	991	239, 240	72	1549
Ferguson, M. M. (See Vosburgh, William, assignor.)						
Ferguson, Thomas G., Colby, Kans. Vote-register	542,881	July 16	1837	436, 437	72	374
Ferguson, Walter T., Fugate's Hill, Va. Conveyer	546,315	Sept. 17	1548	366	72	1671
Ferguson, William E., Little Rock, Ark. Thill-coupling	546,008	Sept. 10	992	240	72	1550

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Ferguson, William H. (See Nicholson and Ferguson.)						
Ferguson, William J., assignor of one-half to W. G. H. Stump, Baltimore, Md. Lubricator.	542,957	July 16	1957	465	72	398
Ferguson, William J., assignor of one-half to W. G. H. Stump, Baltimore, Md. Vacuum refrigerating-machine.	544,273	Aug. 6	778	198, 199	72	890
Ferguson William J., assignor of one-half to W. G. H. Stump, Baltimore, Md. Lubricator	544,274	Aug. 6	779	199	72	891
Ferguson, William P., *et al.* (See Nibelius, Axel W., assignor.)						
Fernald, Alexander B. (See Haines and Fernald.)						
Ferres, Jeffrey T., Anderson, Ind. Machine for corrugating and facing paper	545,354	Aug. 27	2753	668	72	1310
Ferrill, James G., Batesville, Ark. Rotary harrow	542,587	July 9	1336	324	72	268
Ferris, Henry L., Harvard, Ill. Clevis	543,087	July 23	2180	517	72	456
Ferris, William H., and J. P. Hart, Brownsville, Pa. Unchecking device for harness	546,514	Sept. 17	1897	449	72	1739
Ferro Cardozo, Daniel. P., New York, N. Y. Evaporating apparatus	542,626	July 16	1413	340	72	296
Fetch, Lewis, Van Buren, Ind. Potato-digger	543,859	Aug. 6	48	13	72	757
Fey, Martin, Tamaqua, Pa. Ice-cutting machine	544,163	Aug. 6	567	141, 142	72	854
Fickes, Emet S., Calumet, assignor to Stevenson & Co., Wellsville, Ohio. Pan-emptying machine	544,911	Aug. 20	2015	480	72	1149
Fiedler, Andrew, assignor of one-half to G. J. Fiedler, Jr., Chicago, Ill. Attachment for bath-tubs, washbasins, &c.	543,149	July 23	2295	544	72	478
Fiedler, George J., Jr. (See Fiedler, Andrew, assignor.)						
Field, Seymour, Quincy, assignor to Merrick Sewing Machine Company, Boston, Mass. Foot-power eyeleting-machine	545,468	Sept. 3	58	13, 14	72	1365
Fielding, William I., New Britain, Conn. Steamer-bedstead	544,783	Aug. 20	1782	426	72	1105
Fildes, John H., Chicago, Ill. Electrical signaling apparatus	545,469	Sept. 3	60	14	72	1366
Finfrock, Ira E. (See Lippy and Finfrock.)						
Fink, James T., assignor to himself and A. Stephan, Washington, D. C. Drill-chuck	546,761	Sept. 24	2311	551	72	1827
Finkelstein, Philip, New York, N. Y. Dye	542,046	July 2	377	.....	72	76
Finley, James R., assignor of one-half to A. H. Barnes and J. H. Lytle, Delphi, Ind. Ice-tonga	541,842	July 2	42	10	72	11
Finley, John E. (See Bacon and Finley.)						
Finley, John H., Morgantown, assignor of one-fourth to C. P. and G. M. Johnson, Reedyville, Ky. Burglar-alarm	543,618	July 30	3201	742, 743	72	659
Finley, Robert J., New York, N. Y. Printing illustrated letter-press	543,766	July 30	3461	807	72	707
Finsen, Niels R., Copenhagen, Denmark. Making hæmatin albumen	544,912	Aug. 20	2016	.....	72	1149
Firfield, William, Perth Amboy, N. J. Hasp	543,232	July 23	2465	578	72	509
Firm, Joseph L., Jersey City, N. J., assignor to Goss Printing Press Company, Chicago, Ill. Printing-press and folding mechanism	546,136	Sept. 10	1206	287, 288	72	1590
Firman, Henry S., New Brunswick, N. J. Vacuum evaporating apparatus	544,614	Aug. 13	1435	350	72	1021
Fischer, Christian, Kansas City, Kans. Heating apparatus	545,470	Sept. 3	61	15	72	1366
Fischer, Fred F., Pittsburg, Pa. Automatic lubricator for engines	545,279	Aug. 27	2638	640, 641	72	1289
Fischer, Frederick F., Pittsburg, Pa. Governor	542,013	July 2	330	80	72	67
Fischer, Frederick J. W., Jersey City, N. J., assignor to Eagle Pencil Company, New York, N. Y. Pen	546,515	Sept. 17	1899	449	72	1739
Fischer, Hermann C., assignor of one-half to A. T. Morrill, Boston, Mass. Button	545,278	Aug. 27	2637	640	72	1289
Fischer, Max H. (See Altman Henry J., assignor.)						
Fish, Samuel H., Hinsdale, assignor of one-half to H. C. Middaugh, Clarendon Hills, Ill. Potato-planting machine	545,471	Sept. 3	65	15, 16	72	1366
Fishback, James M., Goldsmith, Ind. Well or post auger	545,685	Sept. 3	436	105	72	1435
Fisher, Austin A., Allentown, Pa. Gearing	542,882	July 16	1844	437	72	376
Fisher, Charles A., Petersburg, Ill. Rotary engine	545,062	Aug. 27	2271	551, 552	72	1217
Fisher, Charles A., Petersburg, Ill. Rotary engine	545,063	Aug. 27	2274	552	72	1217
Fisher, Charles N. (See Moore, Albert R., assignor.)						
Fisher, Harvey L., Des Moines, Iowa. Printing-press	545,472	Sept. 3	69	17	72	1367
Fisher, Robert C. (See Avis, Walter H., assignor.)						
Fisher, William H., Cincinnati, Ohio. Tripod	544,466	Aug. 13	1192	289, 290	72	975
Fisher, William J. (See Fry and Fisher.)						
Fiske, Jonathan P. B., Alliance, Ohio. Starting or stopping device for electric motors	543,523	July 30	2978	699	72	621
Fiske, Jonathan P. B., Alliance, Ohio. Device for automatically operating brakes and rheostats	543,524	July 30	2981	699	72	622
Fiske, Jonathan P. B., Alliance, Ohio. Electric motor and brake mechanism therefor	543,525	July 30	2984	699, 700	72	623
Fitch, Ezra C., and E. A. Marsh, Newton, Mass. Watch-movement box	545,225	Aug. 27	2566	621	72	1275
Fitch, H. W. (See Rigby, Nicholas L., assignor.)						
Fitz-Gerald, Alice, Duarte, Cal. Hanging fernery	545,952	Sept. 10	891	215	72	1531
Fitzgerald, Patrick, Springfield, Mass. Elastic tire for vehicle-wheels	545,280	Aug. 27	2639	641	72	1290
Fitzharris, Edward J., *et al.* (See Faulkner, James J., assignor.)						
Fitzler, Frank. (See Yost, Baumhoff, Hagemeier, Fitzler, and Schmid.)						
Fitzpatrick, Hugh. (See Sanders, Carlin, and Fitzpatrick.)						
Fitzpatrick, John J. K., assignor to H. Strauss, Kemp, Tex. Tube-cutter	542,219	July 2	660	161	72	128
Fixler, Edgar L., and A. H. Williams, Delta, Ohio. Foul-seed extractor and recleaner	542,337	July 9	890	218, 219	72	184
Flack, Lavena. (See Bowen and Flack.)						
Flagg, John S., Baltimore, Md. Permanent coffin-lowering attachment	542,361	July 9	942	231	72	195
Flagg Manufacturing Company. (See St. John, John C., assignor.)						
Flanagan, Edward G., Pittsburg, Pa. Sash-operating mechanism	544,428	Aug. 13	1114	270	72	959
Flanders, Marcellus D., Hamilton, Iowa. Well-drilling machine	543,827	July 30	3585	834	72	730
Flanner, Joseph, *et al.* (See Young, George W., assignor.)						
Flather, Ernest J. (See Flather, Mark and E. J.)						
Flather, Mark and E. J., Nashua, N. H. Quick-return motion for shaping-machines	543,598	July 30	3168	733	72	653
Fleck, Richard, Berlin, Germany. Saw-sharpening machine	545,064	Aug. 27	2277	553, 554	72	1218
Fleece, James O., Wildwood, Fla. Mechanical fan	544,405	Aug. 13	1072	261	72	950
Fleetwood, Caleb V., Cincinnati, Ohio. Smoke-box	546,137	Sept. 10	1208	288	72	1590
Fleischer, Johannes, Frankfort-on-the-Main, Germany, assignor of one-half to J. Kohlsaat, Milwaukee, Wis. Cooler for condensing water	543,005	July 23	2035	483	72	430
Fletcher, Edwin J., New York, N. Y. Mailing-package	542,409	July 9	1020	251	72	209
Fletcher, John D., Murfreesborough, assignor of one-half to J. B. Ransom, Nashville, Tenn. Harness-saddle	542,929	July 16	1916	454	72	390
Flexible Door and Shutter Company. (See Spaulding, Algenon S., assignor.)						
Flickinger, Joshua F. (See Dittera and Flickinger.)						
Flickinger, William T., McPherson, Kans. Band-cutter and feeder	542,155	July 2	544	132	72	107

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Fliedner, Christopher, Portland, Oreg. Animal-trap	542,730	July 16	1587	380	72	329
Flinn, William (See Booth and Flinn.)						
Flint, William C., Chicago, Ill. Brush	543,006	July 23	2037	483	72	430
Flotron, Emile. (See Köhli, Fritz, assignor.)						
Flower, Samuel A., Newark, N. J. Machine for untwisting and picking ropes of curled fiber	546,661	Sept. 24	2129	506	72	1795
Flower, Samuel A., and W. S. Rhoades, Newark, N. J. Fiber-curling apparatus	546,660	Sept. 24	2128	506	72	1795
Flowers, Julius W., and M. J. Fox, Newport, Oreg. Propeller	543,860	Aug. 6	49	13	72	758
Flues, Emil, Bay City, Mich. Cocking and safety mechanism for breakdown guns	546,516	Sept. 17	1899	449	72	1739
Fluke, Joseph E., Covington, Ky. Boring-bar	544,250	Aug. 6	744	191	72	883
Flyckt, John J., St. Thomas, N. D. Combined bullet-mold and cartridge-loading implement	545,124	Aug. 27	2389	578	72	1239
Foley, Frank W. (See Collins and Foley.)						
Foley, Michael F. X. (See Foley, Peter R. and M. F. X.)	542,047	July 2	378	91	72	76
Foley, Peter R. and M. F. X., Philadelphia, Pa. Street-car fender	545,473	Sept. 3	73	17	72	1368
Folmer, William F., New York, N. Y. Cigar cutter and lighter	542,703	July 16	1552	370	72	322
Fontaine, Thomas A., Chicago, Ill. Means for attaching window-shades to rollers	546,316	Sept. 17	1550	366	72	1672
Ford, Andrew H., Orange, Tex. Steam-engine valve	546,517	Sept. 17	1901	450	72	1740
Ford, Charles, Lowell, Mass. Pile-wire	546,138	Sept. 10	1210	288, 289	72	1590
Ford, Eugene A., New York, N. Y. Type-writing machine	546,139	Sept. 10	1213	289	72	1591
Ford, Joseph, Grafton, N. D. Wrench	545,645	Sept. 3	363	89, 90	72	1422
Ford, Rebecca M., Oakland, Cal. Car-coupling	542,883	July 16	1845	437	72	376
Ford, William G., Tyler, Tex. Vehicle-axle point						
Fornander, Alfred, New York, N. Y., assignor to American Lead Pencil Company. Pencil-guard	544,429	Aug. 13	1114	270	72	959
Forrester, Peter C., Leavenworth, Kans. Scroll-former	543,233	July 23	2466	579	72	509
Forrester, Peter C., Leavenworth, Kans. Tool for binding metal strips	543,234	July 23	2467	579	72	509
Forrester, Peter C., Leavenworth, Kans. Automatic stop-valve	544,638	Aug. 13	1480	359	72	1029
Forslund, Hugo W., Chicago, Ill. Device for handling heavy projectiles and ammunition	543,728	July 30	3394	787	72	695
Forssell, Theodore, Vallejo, Cal. Device for handling heavy projectiles and ammunition	546,140	Sept. 10	1214	290	72	1591
Forster, Thomas W., assignor to Buhl Stamping Company, Detroit, Mich. Milk-can	545,881	Sept. 10	762	186	72	1506
Forster, William E., Lynn, Mass. Last for leveling-machines						
Forster, William E., and E. E. Winkley, Lynn, Mass.; said Winkley assignor to said Forster. Beating-out machine	542,958	July 16	1959	465	72	399
Forster, William H., *et al.* (See Bardsley, Edward E., assignor.)						
Forsyth, Henry H., Sr., and H. H., Jr., Chicago, Ill. Holding mechanism for spring-actuated shades	544,297	Aug. 13	821	208	72	910
Forsyth, Joseph E. (See White, William F., assignor.)						
Forsythe, James, Pittsburg, assignor of two-thirds to W. L. Newbaker and G. A. Jackson, Wilkinsburg, Pa. Lamp	543,443	July 23	2814	661	72	576
Fortier, Telesphore, Detroit, Mich. Reclining-chair	543,681	July 30	3297	766	72	676
Foster, Charles. (See Stein and Foster.)						
Foster Charles E., Washington, D. C., assignor to Fenton Metallic Manufacturing Company, Jamestown, N. Y. Rack for books	543,959	Aug. 6	227	55	72	790
Foster, Frank A., assignor to Crescent Fire Arms Company, Norwich, Conn. Safety device for breakdown guns	545,355	Aug. 27	2756	668	72	1310
Foster, George A., Fulton, assignor of one-half to M. B. Guthrie, Mexico, Mo. Oil-can	543,472	July 30	2869	673	72	691
Foulds, William C. (See Meyer and Foulds.)						
Fountain, Frederick, Appleton, Wis. Device for binding lumber on wagons	546,518	Sept. 17	1903	450	72	1740
Fournier, Louis J. B., Marseilles, France. Apparatus for molding wax-coated candles	544,913	Aug. 20	2017	481	72	1149
Fournier, Louis J. B., Marseilles, France. Apparatus for molding candles	545,356	Aug. 27	2757	669	72	1310
Fowler, Alfred B., and G. E. Warren, Pawtucket, R. I., assignors to Lincoln Sewing Machine Company, Exeter, N. H. Sewing-machine	545,625	Sept. 3	327	81	72	1414
Fowler, Charles I., New York, N. Y. Calendar-clock	543,235	July 23	2469	579, 580	72	510
Fowler, Charles I., New York, N. Y. Calendar-clock	543,236	July 23	2471	580	72	510
Fowler, Charles I., New York, N. Y. Calendar-clock	543,237	July 23	2474	581	72	511
Fowler Composing and Type Setting Company. (See Fowler, Joseph C., assignor.)						
Fowler, Henry A. (See Wright, Flint W., assignor.)						
Fowler, Joseph C., Washington, D. C., assignor to Fowler Composing and Type Setting Company, Chicago, Ill. Type-distributing rail	546,610	Sept. 17	2047	486	72	1766
Fowler, Levi N., Syracuse, N. Y. Window	543,380	July 23	2690	636	72	551
Fowler, Travis A., Hillsdale, Mich. Bicycle attachment	545,474	Sept. 3	74	18	72	1368
Fowler, William M., Stamford, Conn. Liquid-meter	546,317	Sept. 17	1551	367	72	1672
Fox, Daniel T., Mount Pleasant, Pa. Music leaf turner	546,519	Sept. 17	1904	450	72	1740
Fox, Ivan. (See Parker, Joseph E., assignor.)						
Fox Machine Company. (See Fox, William R., assignor.)						
Fox, Minor J. (See Flowers and Fox.)	542,469	July 9	1138	279	72	231
Fox, Philo L., Bridgeport, Conn. Scaffold-bracket	541,996	July 2	298	69	72	61
Fox, William R., assignor to Fox Machine Company, Grand Rapids, Mich. Quill-cutter						
Foxall, Howard E., and H. M. Storms, assignors to W. S. Russell, New York, N. Y. Copy-holder	546,734	Sept. 24	2264	538	72	1819
Fraisse, Jules. (See Desailly and Fraisse.)	542,189	July 2	597	145	72	117
Fraizer, Perry, New Castle, Ind. Document file and record cabinet						
Francis, Alfred P., assignor to G. W. Bremer, Wheeling, W. Va. Device for preventing refilling of bottles	546,590	Sept. 17	2018	479	72	1760
Frank, Fredrick H., New Britain, Conn. Right and left hand stop and waste cock	545,856	Sept. 3	724	176	72	1488
Frank, Max, Munich, Germany. Magneto-electrical telephone	544,890	Aug. 20	1968	472	72	1140
Franken, Selig, Jr., Arnhem, Netherlands. Powder-duster for cycles	545,475	Sept. 3	76	18	72	1369
Frankenberg, Julius, St. Louis, Mo. Locomotive valve-gear	543,474	July 30	2874	675, 676	72	692
Frankenberg, Julius, assignor of one-fourth to H. H. Stiebel, St. Louis, Mo. Locomotive valve-gear	543,473	July 30	2870	673, 674	72	691
Franklin, Oliver H. (See Critcher, Webber, and Franklin.)						
Fransioli, William J., *et al.* (See Beatty, Raymond M., assignor.)						
Frantz, Ananias. (See Baker, Warren J., assignor.)	543,575	July 30	3067	715	72	640
Frantz, Willis W., Waynesborough, Pa. Spittoon						
Frasch, Herman, Cleveland, Ohio, assignor to Sola Refining Company, of Ohio. Refining petroleum	542,849	July 16	1792	.....	72	365
Frasch, Herman, Cleveland, Ohio, assignor to Sola Refining Company, of Ohio. Refining Canadian or similar petroleum	543,619	July 30	3203	743	72	659
Fraser, Daniel, Edinburgh, Scotland, assignor to Scottish Golf Club Manufactoring Company, Limited. Machinery for shaping heads of wooden clubs	542,246	July 9	706	173, 174	72	152
Fraser, Edwin J., San Francisco, Cal. Process of and apparatus for treatment of precious metals	543,546	July 30	3019	706	72	630

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Fraser, Harvey, Beloit, Wis. Planer	543,475	July 30	2878	676, 677	72	603
Fraser, James. (See Silverwood and Fraser.)						
Fraser, Peter, East Whitman, assignor to Atlas Tack Corporation, Boston, Mass. Slat for bedsteads	544,615	Aug. 13	1437	350	72	1021
Fraser, Peter, East Whitman, assignor to Atlas Tack Corporation, Boston, Mass. Spring bed-bottom	544,616	Aug. 13	1438	351	72	1021
Fravéga, Charles J., and A. Janet, Toulon, France. Flexible shaft for driving mechanisms.	541,997	July 2	299	69, 70	72	61
Frazer, Walter L., assignor of one-half to W. Cooper, San Diego, Cal. Combined thill-support, antirattler, and coupling	545,065	Aug. 27	2281	554	72	1218
Frazier, Edward S., Aurora, Ill. Sulky	545,476	Sept. 3	77	19	72	1369
Frazier, Nereus M. (See Archer and Frazier.)						
Fredericks, Nelson. (See Fuller, Theodore M., assignor.)						
Fredrickson, John, Chicago, Ill. Window	544,506	Aug. 13	1254	303	72	986
Freeland, Buckner F. (See Ash, William N., assignor.)						
Freeman, Charles, Inglewood, Cal. Machine for lifting and loading hay, grain, &c	544,760	Aug. 20	1708	412, 413	72	1090
Freeman, Charles H. (See Eckert, Wesley, assignor.)						
Freeman, Charles M., *et al.* (See Dow, George B. N., assignor.)						
Freeman, Edwin. (See Freeman, William J. and E.)						
Freeman, William H., Hemlock, Ind. Corn-planter	546,141	Sept. 10	1215	290	72	1591
Freeman, William J. and E., London, England. Means for connecting soil-pipes	545,477	Sept. 3	78	19	72	1369
Freese, Francis J., Lowell, Mass. Wheel	542,678	July 16	1508	361	72	314
Fregeau, Johnnie A., North Brookfield, Mass. Hose-coupling	545,066	Aug. 27	2283	554	72	1219
Freiburghouse, Edward W., Hiawatha, assignor of one-half to E. Keim, Sabetha, Kans. Harrow	542,470	July 9	1140	279	72	231
French, Albert A., assignor of one-half to J. W. Kampen, Baileyville, Ill. Elevator	544,352	Aug 13	974	240	72	933
French, Alexander, Elizabethtown, Ky. Wire-fence stay	546,230	Sept. 10	1364	325	72	1620
French Charles A. (See Randel and French.)						
French, Zachary T., and W. C. Meyer, Boston, Mass. Machine for trimming edges of welts and uppers	546,851	Sept. 24	2445	586	72	1853
French, Zachary T., and W. C. Meyer, Boston, Mass. Machine for rounding and channeling soles	546,852	Sept. 24	2447	586, 587	72	1853
Freudenberg, Moise. (See Berditschewsky dit Apostoloff and Freudenberg.)						
Freund, Max, New York, N. Y. Belt and skirt attachment	546,920	Sept. 24	2558	612	72	1875
Freyss, Georges A., Mulhouse, Germany, assignor to Fabriques des Produits Chimiques de Thann et de Mulhouse. Purifying oils or fats	542,758	July 16	1641	.....	72	338
Friant, Thomas, *et al.* (See Raymond, Silas H., assignor.)						
Frick, William C., Danville, Pa. Threading split tubes	543,238	July 23	2476	581	72	511
Friede, Samuel M., assignor of one-third to J. W. Donnell, St. Louis, Mo. Pipe-wrench	546,142	Sept. 10	1216	290	72	1592
Friederich, Christian, Elizabeth, N. J., assignor to Singer Manufacturing Company, of New Jersey. Sewing-machine	545,882	Sept. 10	764	186, 187	72	1506
Friederich Christian, Elizabeth, N. J., assignor to Singer Manufacturing Company, of New Jersey. Mechanical movement	545,883	Sept. 10	766	187	72	1506
Friedrich, George A., San Francisco, Cal. Apparatus for drawing and serving steam-beer.	546,115	Sept. 10	1172	280	72	1584
Friedrich, Oscar, and W. Schulte, assignors to Duisburger Eisen- und Stahlwerke, Duisburg, Germany. Apparatus for drawing ribbed tubes	545,067	Aug. 27	2284	555	72	1219
Friedrich, Oscar, and W. Schulte, assignors to Duisburger Eisen- und Stahlwerke, Duisburg, Germany. Apparatus for making metal tubes	545,953	Sept. 10	892	215	72	1531
Friedrichs, Joseph, assignor of one-half to H. A. Boeckeler, St. Louis, Mo. Car-brake	545,226	Aug. 27	2368	621	72	1275
Friese, Hermann, Dortmund, Germany. Metallic packing for stuffing-boxes	543,300	July 23	2574	605	72	529
Frisbie, Dennis G., Dayton, Wyo. Gold-saving apparatus	545,015	Aug. 20	2180	527, 528	72	1178
Frisbie, Henry R., Newark, assignor to Eastwood Wire Manufacturing Company, Belleville, N. J. Lubricator	544,032	Aug. 6	353	88	72	813
Frisbie, Henry R., Newark, assignor to Eastwood Wire Manufacturing Company, Belleville, N. J. Gage-cock	544,033	Aug. 6	354	88	72	814
Fritsch, Benedict, Vincennes, Ind., assignor of one-half to R. Murphy, Cincinnati, Ohio. Window-cleaning attachment	546,812	Sept. 24	2387	571	72	1842
Fritts, Thomas W. (See Manes, Ephraim, assignor.)						
Fritz, Charles A., Johnstown, Pa. Water-closet connection	545,857	Sept. 3	725	176	72	1488
Frizell, Edward E., Larned, Kans. Pump	543,338	July 21	2630	618	72	539
Frizell, Joseph P., Boston, Mass. Compensating mechanism for direct-acting steam-pumps.	546,096	Sept. 10	1141	273	72	1578
Froehlich, David, New York, N. Y. Combined bed lounge and crib	542,759	July 16	1642	392	72	338
Froggatt, Thomas, London, England. Support for electrical batteries used on vehicles	544,430	Aug. 13	1115	271	72	959
Fronefield, Horace, Clifton, Pa., S. K. and J. F. Maxwell, Merchantville, N. J.; said S. K. Maxwell assignor to said Fronefield. Locking-stand for umbrellas	546,231	Sept. 10	1365	325	72	1620
Frost, Cicero H., Lee Centre, Ill. Potato hand dropping attachment	545,480	Sept. 3	82	20	72	1370
Frost, Newland E., assignor, by mesne assignments, to E. R. Pierce and W. H. Thayer, Boston, Mass. Heating apparatus	546,971	Sept. 24	2639	632	72	1891
Fruit Cleaning Co. (See La Due, George C., assignor.)						
Fry, Frank L., and W. J. Fisher, Philadelphia, Pa. Artificial-stone lintel and sill	545,884	Sept. 10	767	187	72	1506
Fry, Henry A., Portland, Oreg. Electric-railway system	546,143	Sept. 10	1217	291	72	1592
Fry, John B. (See Keenan, Manalcus G., assignor.)						
Frydmane, Jules, Paris, France. Apparatus for automatic registering of disbursements and receipts	546,880	Sept. 24	2496	596	72	1864
Frye, George V., Chicago, and B. B. Carter, Hinsdale, Ill. Machine for cutting candy	543,930	Aug. 6	179	42, 43	72	780
Frye, James, Philadelphia, Pa. Device for opening or closing doors of vehicles	543,476	July 30	2881	677	72	603
Frye, James, Philadelphia, Pa. Spigot	543,477	July 30	2881	677	72	603
Fuchs, Otto Buttstaedt, Germany. Sifting apparatus	542,884	July 16	1846	437, 438	72	376
Fuller, Daniel, Topsfield, Mass. Windmill	542,305	July 9	830	204	72	173
Fuller, Daniel, Topsfield, Mass. Storm-door for wagons	543,007	July 23	2037	484	72	430
Fuller Levi K., assignor to Estey Organ Company, Brattleborough, Vt. Organ	543,526	July 30	2986	700	72	623
Fuller, Theodore M., Paterson, assignor to himself and N. Fredericks, Haledon, N. J. Slat-operator for shutters	546,845	Sept. 24	2437	585	72	1852
Fullerton, Robert, Des Moines, Iowa. Medicine dose-indicator	545,481	Sept. 3	83	20	72	1370
Funk, Samuel W., Glendora, Cal. Berry-package	544,431	Aug. 13	1116	271	72	959
Furbeck George W., *et al* (See Nutting, Samuel E., assignor.)						
Furbish Zachry T., Augusta, Me. Trolley	545,686	Sept. 3	437	105	72	1435
Furman Frederick J., Geneva, N. Y. Generator	545,885	Sept. 10	769	187, 188	72	1507
Fuqua, Richard J. (See Sauvage and Fuqua.)						
G. H. Grimm Manufacturing Company. (See Bonton, Charles, assignor.)						
Gabrio, Alfred W., Hazleton, Pa. Car-brake	545,954	Sept. 10	894	215	72	1532

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Gaffney, Charles H., Gloucester, Mass. Ball-caster	545,789	Sept. 3	617	150	72	1468
Gaffney, Charles H., Gloucester, Mass., assignor to Crescent Automatic Caster Company, of Maine. Ball caster	545,068	Aug. 27	2287	555	72	1219
Gaffney, Charles H., Gloucester, Mass., assignor to Crescent Automatic Caster Company, of Maine. Ball-caster	545,858	Sept. 3	726	177	72	1488
Gagé, Severin A., Paris, France. Machine for making sandwiches	546,662	Sept. 24	2130	506, 507	72	1795
Gaines, Albert W., *et al.* (See Manes, Ephraim, assignor.)						
Gaisman, Henry J., Cincinnati, Ohio, assignor of one-half to F. S. M. Blun, New York, N. Y. Belt	542,306	July 9	831	204	72	173
Galbraith, George J., assignor to Electric Gas Lighting Company, Boston, Mass., Electric annunciator	545,069	Aug. 27	2288	555, 556	72	1220
Galbraith, Robert M., *et al.* (See Hughes, John E., assignor.)						
Gale, Burton L., assignor to Warren Extension Table Company, Warren, Pa. Extension-table.	516,097	Sept. 10	1144	273, 274	72	1579
Gale, Moses F., Brooklyn, N. Y. Carriage-washing apparatus	543,008	July 23	2038	484	72	430
Galinowsky, Hugo, assignor of one-half to I. Heffron, Galveston, Tex. Wood-preservative.	542,247	July 9	708	.....	72	152
Gallois, Charles F. (See Javaux and Gallois.)						
Gally, Robert A., Brooklyn, N. Y. Pneumatic musical instrument	545,156	Aug. 27	2441	592	72	1250
Gally, Robert A., Brooklyn, N. Y. Organ-bellows tension-evener	546,956	Sept. 24	2621	627	72	1888
Gamache, Frank M., St. Louis, Mo. Fluid-pressure regulator	542,635	July 16	1427	343	72	298
Gamewell Fire-Alarm Telegraph Company. (See Stack, John T., assignor.)						
Gamewell Fire-Alarm Telegraph Company. (See Suren, Nathan H., assignor.)						
Ganderton, George, H. J. O'Donnell, and J. A. Turnbull, Cleveland, Ohio. Refrigerator-lock.	545,955	Sept. 10	896	216	72	1532
Gandy, Charles L., Mount Auburn, assignor of one-half to N. Gandy, Taylorville, Ill. Wire-reel.	544,484	Aug. 13	1221	296	72	980
Gandy, N. (See Gandy, Charles L., assignor.)						
Gantner, Jacob M., Paschallville, Pa. Stool	544,974	Aug. 20	2115	507	72	1167
Ganzhorn, Philip, assignor of two-thirds to L. O. Lorenz and R. Renz, Streator, Ill. Display-stand	542,362	July 9	943	232	72	195
Garben, Adolph F. C., Chicago, Ill. Hobby-horse	542,850	July 16	1704	425	72	365
Gard, William E., Brooklyn, N. Y. Crank	542,885	July 16	1847	438	72	376
Gard, William E., Brooklyn, N. Y. Crank	546,520	Sept. 17	1906	450, 451	72	1740
Gardner, Charles J. (See Turner and Gardner.)						
Gardner, George H., Boston, Mass. Primary battery	543,931	Aug. 6	185	44	72	782
Gardner, William J., Montgomery, Ala. Non-fillable bottle	542,760	July 16	1643	392	72	338
Gardner, William J., Montgomery, Ala. Automatic bottle-stopper	544,617	Aug. 13	1439	351	72	1021
Garland Chain Co. (See Garland, John W., assignor.)						
Garland, John W., assignor to Garland Chain Co., Pittsburg, Pa. Chain-link	545,037	Aug. 20	2221	538	72	1186
Garland, Julia A. (See Garland, Michael, assignor.)						
Garland, Michael. (See Thomas, Edwin E., assignor.)						
Garland, Michael, assignor to J. A. Garland, Seabright, N. J. Water-closet bowl	544,251	Aug. 6	745	191	72	884
Garlick, Saul, Brooklyn, N. Y. Car-fender	543,239	July 23	2476	581, 582	72	511
Garner, William, America City, Kans. Iron railway-tie	545,687	Sept. 3	438	105	72	1435
Garnett, William H. (See Humphries, Edwin C. R., assignor.)						
Garrett, Enoch R., assignor of one-fourth to F. A. Luchsinger, Appleton City, Mo. Steamer.	545,790	Sept. 3	617	150	72	1468
Garrett, Winfield. (See Peter and Garrett.)						
Garrigus, Culberson S., Louisville, Ky. Boiler-cleaner	543,527	July 30	2990	700, 701	72	624
Gartner, Alfred, assignor to C. H. McIntire, Newark, N. J. Electric-wire joint	541,998	July 2	301	70	72	61
Gartner, Alfred, assignor to C. H. McIntire, Newark, N. J. Fuse-connector	546,957	Sept. 24	2621	628	72	1888
Garver, Abraham L., Roaring Spring, Pa. Machine for applying binding-strips to books	542,156	July 9	547	133	72	108
Gaskins, Thomas, Arcadia, Fla. Car-coupling	546,144	Sept. 10	1220	291	72	1592
Gates, Henry L., assignor to Utility Manufacturing Company, Milwaukee, Wis. Flaunging-machine	545,791	Sept. 3	619	150, 151	72	1468
Gatti, Tony C., assignor of one-half to E. Mitchell, Scranton, Miss. Prying-bar	546,521	Sept. 17	1908	451	72	1741
Gaudron, Edward N., assignor of one-half to I. G. Hewison, Brooklyn, N. Y. Funnel	542,248	July 9	708	174	72	152
Ganthier, Agile N., New Orleans, La. Watch-regulator	544,576	Aug. 13	1366	333	72	1008
Gavin, Edward F., New York, N. Y. Electric-lighting system	544,034	Aug. 6	356	88	72	814
Gavin, John H., assignor to L. Wolff Manufacturing Company, Chicago, Ill. Fixture for bath-tubs	541,843	July 2	43	10	72	11
Gay, Chauncey W., West Springfield, assignor, by mesne assignments, to Brightwood Box Machinery Company, Springfield, Mass. Paper-box machine	546,318	Sept. 17	1554	367, 368	72	1673
Gaynor, John J., assignor to Gaynor Straw Binder Company, Indianapolis, Ind. Self-binding attachment for reaping-machines	546,319	Sept. 17	1555	368, 369, 370	72	1673
Gaynor Straw Binder Company. (See Gaynor, John J., assignor.)						
Geary, Thomas F., and W. E. Bracewell, Brooklyn, assignors to New York Stencil Works, New York, N. Y. Numbering-machine	546,382	Sept. 17	1663	395	72	1694
Gehly, Theodore H., *et al.* (See McLaughlin, James F., assignor.)						
Geiser Manufacturing Company. (See Anderson, Gustaf A., assignor.)						
Geisler, Gabriel L., Paris, France. Machine for ruling paper	545,886	Sept. 10	771	188, 189	72	1507
Geistwite, Hiram G., Reading, Pa. Bicycle-chain lock	543,547	July 30	3020	706	72	630
Gelabert, William P., assignor of one-half to W. T. Prigmore, Sweet Springs, Mo. Hametug fastening	543,240	July 23	2478	582	72	511
General Electric Company. (See Ball and Lieb, assignors.)						
General Electric Company. (See Berg, Ernst J., assignor.)						
General Electric Company. (See Bulkley, Joseph N., assignor.)						
General Electric Company. (See Case, Frank E., assignor.)						
General Electric Company. (See Cox, Frank P., assignor.)						
General Electric Company. (See Harthan, Charles E., assignor.)						
General Electric Company. (See Holden, Frank, assignor.)						
General Electric Company. (See Potter, William B., assignor.)						
General Electric Company. (See Rice, Edwin W., Jr., assignor.)						
General Electric Company. (See Sperry, Elmer A., assignor.)						
General Electric Company. (See Steinmetz, Charles P., assignor.)						
General Electric Company. (See Steinmetz and Armstrong, assignors.)						
General Electric Company. (See Thomson, Elihu, assignor.)						
General Electric Company. (See Thomson and Harthan, assignors.)						
General Electric Company. (See Thomson and Rice, assignors.)						
General Electric Company. (See Wightman, Merle J., assignor.)						
General Electric Company. (See Wirt, Herbert C., assignor.)						
General Fire Extinguisher Company. (See Harkness, William, assignor.)						
General Incandescent Arc Light Company. (See Beswick, John T., assignor.)						
Geneux, Emile C., Jeanerette, La. Umbrella and cane	541,844	July 2	45	10	72	11

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Gennert, Emil F., Brooklyn, assignor to E. P. Gleason Manufacturing Company, New York, N. Y. Billiard or pool table shade and reflector	546,611	Sept. 17	2050	486	72	1767
Gentry, William F. L., Chapman, assignor of one-half to T. C. Bond, Miltonvale, Kans. Corn-cutter	545,956	Sept. 10	900	216	72	1533
Geo. F. Blake Manufacturing Company. (See Laval, George de, assignor.)						
Geoffroy, Joseph, *et al.*, trustees. (See Jeannotte, Joseph, assignor.)						
George, Berry A. (See Ezell and George.)						
George, Japhus, and C. M. Shortle, Ithaca, N. Y. Glass-annealing furnace	543,207	July 23	2422	569	72	501
George P. Steel Iron Company. (See Bannan, John R., assignor.)						
Gérard, Emile, Limoges, France. Decorated hard porcelain and making same	544,784	Aug. 20	1783	.....	72	1105
Gerehart, Thomas, *et al.* (See Beatty, Raymond M., assignor.)						
Gerehart, Thomas, *et al.* (See Whittingham, Harry M., assignor.)						
Gerhard, Franklin C., and M. Bintner, Minneapolis, Minn. Combined sheathing and lath machine	546,522	Sept. 17	1908	451, 452	72	1741
Germann, Emil. (See Buckingham and Germann.)						
Geron, Solomon C. (See Briney and Geron.)						
Gerson, Louis J., assignor of one-half to C. Heritage, Philadelphia, Pa. Telephonic attachment	546,972	Sept. 24	2640	633	72	1891
Gerstenlauer, Gottlelb, Williamsport, Pa. Insulator	546,383	Sept. 17	1665	395	72	1694
Gessner, David, Worcester, Mass. Cloth-stretching machine	546,762	Sept. 24	2303	551	72	1828
Gessner, Ernst, Ane, Germany. Cloth shearing or cropping machine	545,957	Sept. 10	901	216	72	1533
Getty, John K., Camden, N. J. Bicycle support	546,612	Sept. 17	2051	487	72	1767
Geyser, John B. (See Blendinger and Geyser.)						
Ghost, William C. (See Smith, Albert C., assignor.)						
Gibbons, Michael J., Dayton, Ohio. Sanitary plumbing	544,035	Aug. 6	360	89	72	814
Gibbs, Hiram H., Indianapolis, Ind. Cushioned horseshoe	546,145	Sept. 10	1221	292	72	1592
Gibbs, James E., and J. R. Shipman, Bridgewater, Va. Churn	543,861	Aug. 6	51	13	72	758
Gibbs, William W. (See Bowen, George R., assignor.)						
Gibson, Edward T., Minneapolis, Minn. Paper doll	543,767	July 30	3463	807	72	707
Gibson, James A. (See Wolfe and Gibson.)						
Gibson, T. D., *et al.* (See Richmond, Henry T., assignor.)						
Giese, James A., Irving Park, Ill. Knob attachment	542,048	July 2	379	92	72	76
Gieseke, Otto, Lake Charles, La. Lightning-arrester and cut-out	546,523	Sept. 17	1910	452	72	1741
Gifford, George H., Brockton, Mass. Cork-sole shoe	541,999	July 2	302	71	72	62
Gilbert, Charles E., Uniondale, Ind. Wire fence	543,620	July 30	3207	743	72	659
Gilbert, Frank S. (See Dickerson and Gilbert.)						
Gilbert, James, Sank Centre, Minn. Can-opener	546,813	Sept. 24	2389	571	72	1842
Gilcher, Henry J., Cleveland, Ohio. Basin-waste stop	541,845	July 2	45	11	72	11
Gilcher, Henry J., Cleveland, Ohio. Basin-faucet	544,727	Aug. 20	1665	400	72	1081
Gilfillan, Essington N., assignor of one-half to H. A. Wheeler, Chicago, Ill. Sash-pulley	545,425	Aug. 27	2483	702	72	1336
Gill, John L., Jr., Philadelphia, Pa. Steam-boiler furnace and tiles therefor	543,528	July 30	2992	701	72	624
Gill, William, Boston, Mass. Nursing-bottle-supporting apparatus	543,150	July 23	2297	544	72	479
Gill, William A., Leeds, England. Machine for molding and pressing bricks or the like	544,090	Aug. 6	460	113	72	833
Gillette, George D., Oswego, N. Y. Rotary cutter for woodworking	544,432	Aug. 13	1119	271	72	959
Gillette, George D., assignor to T. Kingsford, Oswego, N. Y. Rotary cutter for woodwork	542,886	July 16	1850	438	72	377
Gillette, George W., New York, N. Y. Lock or washer for nuts	544,507	Aug. 13	1255	303	72	986
Gillette, Webster, assignor to A. S. Williams, New York, N. Y. Electric signaling device	545,357	Aug. 27	2759	670	72	1311
Gilliam Manufacturing Company. (See Seaman, Benjamin S., assignor.)						
Gilliland Electric Company. (See Gilliland, James F., assignor.)						
Gilliland, James F., assignor to Gilliland Electric Company, Adrian, Mich. Telephone-switchboard	542,249	July 9	710	175	72	153
Gilliom, Daniel A., Berne, Ind. Cutter-bar	544,728	Aug. 20	1666	400	72	1081
Gilman, Arthur H., Aurelia, Iowa. Hinge	542,250	July 9	712	175	72	153
Gilman, Wilbert F., Springfield, Vt. Lathe for turning lasts, &c	544,891	Aug. 20	1970	472, 473	72	1140
Gilman, William H. (See Montgomery, Jordan, Soesbe, Gilman, and Hartman.)						
Gilmer, Abraham L., Quincy, Ill. Machine for polishing margins of cavities in teeth	544,433	Aug. 13	1120	271	72	960
Gilpin, Eli J., assignor of one half to C. and H. Taylor, Fowler, Ind. Well-bucket	541,846	July 2	46	11	72	12
Gilson, Levi W., Fremont, Ohio. Account-file	545,482	Sept. 3	84	20	72	1370
Ginn, Moses M., assignor of one-half to J. Beaumier and G. A. Shepherd, Brenham, Tex. Cotton elevator, cleaner, and distributer	544,036	Aug. 6	361	89	72	815
Ginochio, Noel B., New York, N. Y., and H. C. Bridger, Woodridge, N. J. Underground-trolley system	543,130	July 23	2259	536	72	471
Girtler, John F., assignor to himself, G. E. Constantin, A. Glaus, and F. Heinemann, Brooklyn, N. Y. Car-fender	546,524	Sept. 17	1911	452	72	1741
Given, Joshua, Elgin, Ill. Burglar-alarm	543,548	July 30	3021	707	72	631
Glaccum, James C., New York, N. Y. Moistener for cigar-boxes	543,989	Aug. 6	277	68	72	799
Gladman, George J., Syracuse, N. Y. Pessary	544,091	Aug. 6	461	114	72	833
Glaeser, Edward A., Hamilton, Ohio. Check-case	542,014	July 2	332	80	72	67
Glantzberg, Ernst. (See Underhill and Glantzberg.)						
Glascock, Charles O. and J. W., Muncie, Ind. Centrifugal butter-worker	544,848	Aug. 20	1894	453, 454	72	1126
Glascock, John W. (See Glascock, Charles O. and J. W.)						
Glatfelter, Israel, *et al.* (See Kintzing, William F., assignor.)						
Glauber, Joseph H., Cleveland, Ohio. Basin-cock	542,251	July 9	713	175	72	153
Glaus, Adolf, *et al.* (See Girtler, John F., assignor.)						
Gleason, Duane N., Brooklyn, N. Y. Electric fusible cut-out	546,613	Sept. 17	2053	487	72	1767
Gledhill, Benjamin H., assignor to M. H. and F. E. Masland, Philadelphia, Pa. Ingrain carpet fabric	543,208	July 23	2423	569	72	502
Glidden, Charles W. (See Hoys and Glidden.)						
Glidden, Charles W., Lynn, assignor to J. W. Brooks, trustee, Cambridge, Mass. Heeling-machine	543,682	July 30	3299	766, 767	72	676
Glidden, Charles W., Lynn, Mass., and C. H. Benjamin, Cleveland, Ohio, assignors to J. W. Brooks, trustee, Cambridge, Mass. Grinding-machine	543,647	July 30	3244	754	72	667
Glidden, Charles W., Lynn, and C. C. Small, Newton, assignors to J. W. Brooks, trustee, Petersham, Mass. Heel compressing and loading machine	543,804	July 30	3538	823	72	721
Glover, James D., *et al.* (See Lewis, David T., assignor.)						
Glover, Joseph, Paterson, N. J. Can-opening device	545,227	Aug. 27	2569	622	72	1276
Goddard, Charles F., Chicago, Ill. Steering mechanism for thrashing-machines	542,521	July 9	1234	301	72	248
Goddard, Charles F., Chicago, Ill. Thrashing-machine	542,522	July 9	1236	301, 302	72	249
Goddard, Charles F., assignor to R. L. Duvall, Chicago, Ill. Thrashing-machine	542,519	July 9	1227	299, 300	72	247

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Goddard, Charles F., assignor to R. L. Duvall, Chicago, Ill. Thrashing-machine	542,520	July 9	1232	300, 301	72	248
Goddard, George O., Brockton, Mass. Power attachment for foot-power eyeleting-machines	543,339	July 23	2631	618, 619	72	540
Goddard, Harry W., *et al.* (See Hobbs, Clarence W., assignor.)						
Goddu, Louis, Winchester, assignor to J. W. Brooks, trustee, Petersham, Mass. Sole-sewing machine	545,483	Sept. 3	85	21	72	1371
Goddu, Louis, Winchester, assignor to J. W. Brooks, trustee, Petersham, Mass. Sole-sewing machine	545,484	Sept. 3	92	22, 23	72	1372
Goddu, Louis, Winchester, assignor to J. W. Brooks, trustee, Petersham, Mass. Sewing-machine	545,486	Sept. 3	99	23, 24	72	1373
Goddu, Louis, Winchester, assignor to J. W. Brooks, trustee, Petersham, Mass. Nose-piece for loose nail-drivers	545,487	Sept. 3	105	25	72	1374
Goddu, Louis, Winchester, assignor to J. W. Brooks, Petersham, and F. F. Stanley, Swampscott, Mass, trustees. Adjustable support for electric or other lamps	545,485	Sept. 3	97	23	72	1373
Godet, Lucien G., Vincennes, France. Decanter for cooling liquids	544,219	Aug. 6	672	171	72	872
Goellner, Friedrich. (See Weber, Goellner, and Schweitzer.)						
Goeth, Adolf C. (See Bachman and Goeth.)						
Goethel, Gustav C., Milwaukee, Wis. Bath-chair	545,887	Sept. 10	774	189	72	1508
Goetter, Hermann. (See Leistner, Edward von, assignor.)						
Goff, Frank, Camden, and T. H. Joiner, Burlington, N. J. Car-fender	543,151	July 23	2300	544, 545	72	479
Gold and Bromine Separating Company. (See Hinman, Bertrand C., assignor.)						
Gold, Edward E., New York, N. Y. Thermostatic steam-trap	546,846	Sept. 24	2139	585	72	1852
Golden, Timothy J., Jacksonville, Fla. Hat-pin holder	546,881	Sept. 24	2498	596	72	1864
Golden, William E., Auburndale, Ohio. Electric-bath apparatus	542,471	July 9	1142	279, 280	72	231
Goldman, Henrietta, St. Louis, Mo. Show-top	541,927	July 2	176	41	72	38
Goldsmith, Nathaniel O., assignor to F. C. Weir, Cincinnati, Ohio. Combined reservoir and filter	543,805	July 30	3542	823	72	722
Goldstein, Harry, Boston, Mass. Cap	542,636	July 16	1428	344	72	299
Golinsky, Mark, St. George, Bermuda. Arrowhead-shaped vessel	546,921	Sept. 24	2559	613	72	1876
Goltra, Edward F., St. Louis, Mo. Car-truck bolster	543,621	July 30	3208	744	72	659
Goltra, Edward F., St. Louis, Mo., assignor to American Steel Bolster Company, Madison County, Ill. Car-truck bolster	545,792	Sept. 3	621	151	72	1468
Good, Thomas L., Edwardsville, Ill., assignor of one-half W. J. Good, St. Louis, Mo. Potato-planter	545,281	Aug. 27	2640	641	72	1290
Good, William J. (See Good, Thomas L., assignor.)						
Goodell, Albert D., Shelburne Falls, assignor to Langdon Miter Box Company, Miller's Falls, Mass. Miter-box	544,092	Aug. 6	463	114	72	834
Goodell Brothers. (See Lanfair, Herbert D., assignor.)						
Goodhue, Frank M. and J. E., St. Charles, assignors to Two-Speed Bicycle Company, Chicago, Ill. Bicycle	542,637	July 16	1429	344	72	299
Goodhue, James E. (See Goodhue, Frank M. and J. E.)						
Gooding, John D., *et al.* (See Dwiggins, John W., assignor.)						
Goodman, Isadore, Scranton, Pa. Eye-shade	542,015	July 2	332	81	72	67
Goodrich, Frank L., assignor to National Sewing Machine Company, Belvidere, Ill. Vehicle-wheel rim	546,320	Sept. 17	1561	370	72	1674
Goodwin, Charles J. (See Hanford, Melancthon, assignor.)						
Goodwin, Edward E. (See Soule, Winfield S., assignor.)						
Goodwin, Eugene G., Chicago, Ill. Water-heater	544,353	Aug. 13	975	240, 241	72	933
Goodwin, James B. (See Hampson, Thomas, assignor.)						
Goodyear, Charles, Jr., New York, N. Y. Attachment for magic lanterns or stereopticons	543,009	July 23	2040	484	72	430
Gorden, Eugene M. (See Holden and Gorden.)						
Gorder, Olaf M., Canby, Minn. Bob-sleigh	542,252	July 9	714	176	72	154
Gordon, Alexander D., Buffalo, N. Y. Water-heater	545,199	Aug. 27	2522	610	72	1266
Gordon, Angus C., assignor to Gordon Railway Signal Company, Rochester, N. Y. Electrical block-signal for railways	542,761	July 16	1643	393	72	338
Gordon, Elonso J., assignor of two-thirds to T. J. Potter and R. F. Sprague, Greenville, Mich. Combined potato-planter and marker	544,220	Aug. 6	673	172	72	872
Gordon, Harris. (See Gordon and Cooperstein, assignors.)						
Gordon, Morris, and S. Cooperstein, assignors of one-third to H. Gordon, Philadelphia, Pa. Combined stool and cane	542,609	July 9	1381	333	72	277
Gordon Railway Signal Company. (See Gordon, Angus C., assignor.)						
Gordon, Ralph W., Boston, Mass. Galvanic battery	542,049	July 2	380	92	72	76
Gordon, Thomas H., assignor to W. O. Wilcox, Liverpool, N. Y. Mail-bag	546,763	Sept. 24	2314	552	72	1828
Gordon, William. (See Morrison, Burton E., assignor.)						
Gore, Archibald M., Braddock, Pa. Apparatus for straightening rails	545,283	Aug. 27	2645	642	72	1291
Gore, John H., Linder, Ark. Fruit-evaporator	544,785	Aug. 20	1784	426	72	1105
Gore, Russell L., Carlisle, Ky. Meat-chopper	546,384	Sept. 17	1666	395	72	1695
Görges, Johannes H. F., Berlin, Germany, assignor, by mesne assignments, to Siemens & Halske Electric Company of America, Chicago, Ill. Means for indicating coincidence of phase of two alternating or polyphase current machines	545,282	Aug. 27	2643	642	72	1290
Gorman, John N., *et al.* (See Andrew, Oren, assignor.)						
Gorman, Thomas, Warren, assignor of one-half to F. H. Brown, Warwick, R. I. Support for spinning-spindles	543,622	July 30	3210	744	72	660
Gorman, Thomas, Warren, assignor of one-half to F. H. Brown, Warwick, R. I. Support for spinning-spindles	543,623	July 30	3211	744	72	660
Gorton, Robert, Plainfield, N. J. Hose-supporter	542,440	July 9	1088	265	72	222
Goss, Edward O., assignor to Scovill Manufacturing Company, Waterbury, Conn. Pneumatic-tire valve	542,472	July 9	1145	280	72	282
Goss, George W., Roxbury, Vt. Window-sash fastener	541,847	July 2	47	11	72	12
Goss Printing Press Company. (See Firm, Joseph L., assignor.)						
Goss Printing Press Company. (See Goss, Samuel G., assignor.)						
Goss, Samuel G., assignor to Goss Printing Press Company, Chicago, Ill. Folding and delivery device for printing-presses	544,354	Aug. 13	977	241	72	934
Gosse, Edward L., assignor of one-half to L. A. Laughlin, Kansas City, Mo. Stringing device for musical instruments	542,157	July 2	552	131	72	108
Gottwals, William O., Ottawa, Canada. Perforator	545,793	Sept. 3	622	151	72	1469
Gould, Charles E., assignor of one-half to G. Tate, Fremont, Mich. Bob-sleigh	544,221	Aug. 6	676	172	72	872
Gould, Demmon R., Glens Falls, N. Y. Coffin	543,152	July 23	2302	545	72	479
Gould, Harry G., Oshkosh, Wis. Gaiting device for horses	545,626	Sept. 3	392	82	72	1414

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Gould, Henry E., assignor of one-half to T. Linke, New York, N. Y. Water-purifier	546,973	Sept. 24	2641	633	72	1892
Gould, James, Jr., Berkeley, Cal. Can-crimping machine	542,441	July 9	1088	265	72	222
Gould, James, Jr., Berkeley, Cal. Machine for making and fitting tongues of key-opening cans	546,146	Sept. 10	1222	292	72	1593
Gould, John D., *et al.* (See Tisdale, Charles D., assignor.)						
Gould, John E., *et al.* (See Wilson, Luther, Jr., assignor.)						
Gould, William F., Des Moines, Iowa. Balanced valve	545,478	Sept. 3	79	19	72	1370
Gourlay, Charles B. (See Schoonmaker, John D., assignor.)						
Gousset, Cyprien, New York, N. Y. Apparatus for filling chocolate-dippers	546,525	Sept. 17	1912	453	72	1742
Graf, Louis, Cincinnati, Ohio. Machine for making medicinal tablets	543,599	July 30	3170	734	72	653
Graffin, George W., Allentown, Pa. Valve	546,922	Sept. 24	2560	613	72	1876
Graham, Albert E., Windsor, Conn. Window-sash catch	542,050	July 2	383	93	72	77
Graham, David F., Springfield, Ohio, and W. P. Allen, Chicago, Ill., assignors of one-third to O. S. Kelly, Springfield, Ohio. Underground electric railway	545,070	Aug. 27	2290	556	72	1220
Graham, Edward M., Chicago, Ill. Cycle-pedal	543,806	July 30	3544	821	72	722
Graham, James H. (See Graham, Walter W. and J. H.)						
Graham, John, Davenport, Iowa. Ordnance	544,914	Aug. 20	2018	481	72	1149
Graham, John H., Boston, Mass. Snow-plow for street-railways	541,928	July 2	178	42	72	38
Graham, Walter W. and J. H., Mayview, Mo. Fodder-binder	542,363	July 9	944	232	72	195
Grand Rapids Scalper, Grader and Purifier Company. (See Sewell, Delos, assignor.)						
Grand Rapids School Furniture Company. (See Linn and Lytle, assignors.)						
Grant, Albert E., Troy, N. Y. Machine for rolling points of collars	545,688	Sept. 3	439	106	72	1435
Grant, Arthur W., assignor to Rubber Tire Wheel Company, Springfield, Ohio. Antifriction-bearing	543,301	July 23	2575	605 606	72	529
Grant, Fred H. (See Loy and Grant.)						
Grant, Joseph. (See Lepley, Thomas B., assignor.)						
Grant, Lewis, and F. A. Mooney, Philadelphia, Pa. Apparatus for laying concrete on inclined surfaces	541,848	July 2	48	11	72	12
Grath, Walter P., St. Louis, Mo. Brick-kiln	546,776	Sept. 24	2332	556	72	1832
Grather, Charles F., New York, N. Y. Railway-brake	541,849	July 2	50	12	72	12
Grattarola, John B., New York, N. Y. Window	544,164	Aug. 6	568	142	72	854
Graves, Charles W. (See Verpillier and Graves.)						
Graves Elevator Company. (See Graves, Fred B., assignor.)						
Graves Elevator Company. (See Graves, Lorenzo S., assignor.)						
Graves, Fred B., assignor to Graves Elevator Company, Rochester, N. Y. Elevator-controller	543,011	July 23	2043	485	72	431
Graves, Frederick S., North Hancock, Me. Shutter-fastener	545,488	Sept. 3	106	25	72	1374
Graves, George A., assignor of one-half to J. C. McKee, Joplin, Mo. Bicycle	544,165	Aug. 6	570	142	72	854
Graves, John W., assignor to J. K. Jones, Little Rock, J. Lanigan, Fort Smith, Ark., (executrix of Thomas Lanigan, deceased,) and W. E. Anderson, Washington, D. C. Cylindrical cotton-bale and making same	546,009	Sept. 10	993	240	72	1550
Graves, Lorenzo S., assignor to Graves Elevator Company, Rochester, N. Y. Elevator-controller	543,010	July 23	2042	484	72	431
Gray, Christian H., Silvertown, England. Wheel-tire	543,862	Aug. 6	52	14	72	758
Gray, Gorham, Boston, Mass., assignor to Spiral Wire Company, Portland, Me. Electrical conductor	543,960	Aug. 6	229	56	72	790
Gray, Leonidas W. P., and P. G. Doescher, New Orleans, La. Trolley-controller for electric railways	545,358	Aug. 27	2762	670	72	1311
Gray, Thomas L., New Providence, Tenn. Combined grain-planter and tobacco-hiller	544,222	Aug. 6	677	172 173	72	872
Gray, W. S. (See Seys, Cornelius D., assignor.)						
Gray, William D., Milwaukee, Wis., assignor to Edward P. Allis Company, of Wisconsin. Bolting-machine	543,088	July 23	2181	517	72	456
Greathouse, William E., Mason, Ohio. Feed-box	546,010	Sept. 10	996	240	72	1551
Green, Alexander. (See Vernon, Alexander A., assignor.)						
Green, George B. and R. E., New York, N. Y. Mop	544,252	Aug. 6	746	191	72	884
Green, John, Renovo, Pa. Match-safe	544,093	Aug. 6	465	114	72	834
Green, John W., Cotati, Cal. Horse-breaking apparatus	545,228	Aug. 27	2570	622	72	1276
Green, Luther S. (See McDaniel, William D., assignor.)						
Green, Nathaniel W., assignor of one-half to F. M. Crane, Albert Lea, Minn. Tag-fastener	543,478	July 30	2882	678	72	603
Green, Rachel E. (See Green, George B. and R. E.)						
Green, Robert M., Philadelphia, Pa. Soda-water fountain	545,284	Aug. 27	2647	643	72	1291
Green, Walter N., St. Joseph, Mo. Oil-can	545,285	Aug. 27	2647	643	72	1291
Greene, Charles H. (See Bangerter, Fred, assignor.)						
Greene, David H., Savannah, Ga. Package for pulverulent materials	546,526	Sept. 17	1914	453	72	1742
Greene, Flemon R., Lakeland, Fla. Flour cabinet and sifter	545,489	Sept. 3	108	25	72	1375
Greene, Fred R., Amsterdam, N. Y. Stripping attachment for knitting-machines	544,849	Aug. 20	1896	454	72	1126
Greene, William F., Troy, N. Y. Handle	546,464	Sept. 17	1816	430	72	1723
Greene, William J., Cedar Rapids, Iowa. Automatic cut-out for electric converters	544,094	Aug. 6	466	115	72	834
Greenleaf, Clements A., Greencastle, assignor to Greenleaf & Wood, Indianapolis, Ind. Wood rim for vehicle-wheels	546,764	Sept. 24	2317	552	72	1898
Greenleaf & Wood. (See Greenleaf, Clements A., assignor.)						
Greenstein, Moris. (See Dinsmore, Robert, assignor.)						
Greenwood, William H., and F. Farrar, Bradford, England. Apparatus for cleaning edges of circular combs	543,381	July 23	2652	636	72	552
Greer, Robert, Westbrook, Me. Incandescent electric lamp	541,929	July 2	179	42	72	38
Gregg, Vincent E., assignor of one-half to E. F. Bohm, Cleveland, Ohio. Joist and wall hanger	546,147	Sept. 10	1226	293	72	1594
Gregory, Eugene J., Sacramento, Cal. Automatic photographic camera	544,669	Aug. 20	1558	373 374	72	1061
Gregory, George H., Somerville, Mass. Garment-stretcher	546,422	Sept. 17	1739	412	72	1708
Gregory, John D., Louisville, Ky. Baking-powder	544,975	Aug. 20	2116	.....	72	1168
Gregory, Robert S., assignor of one-half to I. J. Beam, Detroit, Mich. Curtain-pole socket	544,166	Aug. 6	571	143	72	854
Grenthal, Isaac. (See Grenthal, Michael and I.)						
Grenthal, Michael and I., New York, N. Y. Mourning hat-band	542,158	July 2	553	134	72	108
Gresham, Charles W. and L. T., Fredericksburg, Ind. Wheel-handling device	545,490	Sept. 3	109	26	72	1375
Gresham, Clarence. (See Dallis, Thomas N., assignor.)						
Gresham, Lafayette T. (See Gresham, Charles W. and L. T.)						
Greve, John B., Botkins, Ohio. Fence-post	544,577	Aug. 13	1367	334	72	1009
Grey, John D., Baltimore, Md. Apparatus for treating sheet-metal plates	542,159	July 2	554	134	72	109
Grier, Harry G., Philadelphia, Pa. Electric gas-lighter	542,959	July 16	1961	465	72	399
Griffin, Alonzo J., assignor of one-fourth to G. T. Griffin, Wilkes-Barré, Pa. Automatic railway-signal	542,638	July 16	1430	344 345	72	299
Griffin, Edward B., Somerville, Mass. Car-coupling	541,968	July 2	251	59	72	51

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Griffin, George T. (See Griffin, Alonzo J., assignor.)						
Griffin, Robert P. (See Jones, Sara F., assignor.)						
Griffin, Samuel, *et al.* (See McIntosh, Albert J., assignor.)						
Griffin, Samuel, Bath, England. Liquid-hydrocarbon motor	542,410	July 9	1021	251 252	72	210
Grifling, Charles M., *et al.* (See McIntosh, Albert J., assignor.)						
Griffith, John L., *et al.* (See Rawles, John, assignor.)						
Griffith, Thomas, U. S. Army. Ventilator	545,794	Sept. 3	624	151 152	72	1469
Griffith, Thomas, U. S. Army. Car-coupling	545,795	Sept. 3	625	152	72	1469
Griffith, Thomas R., Pittston, Pa. Conveyer attachment	544,434	Aug. 13	1123	272	72	960
Grimes, Charles D. (See Kirby, Crume, Grimes, and Clark.)						
Grimm, Alva S., St. Mary's, W. Va. Garment-supporter	546,735	Sept. 24	2265	539	72	1819
Grimmitt, Thomas, Rockford, Ill. Wagon running-gear	545,491	Sept. 3	110	26	72	1375
Grist, Benjamin W., assignor to Pennsylvania Iron Works Company, Philadelphia, Pa. Frame for engines or compressors	542,960	July 16	1962	466	72	399
Grist, Benjamin W., assignor to Pennsylvania Iron Works Company, Philadelphia, Pa. Vaporizer for gas-motors	545,125	Aug. 27	2391	578	72	1239
Griswold, Malcolm R., Hartford, Conn. Dental flask	544,095	Aug. 6	468	115	72	835
Griswold, Malcolm R., Hartford, Conn. Dental articulator	544,096	Aug. 6	469	115 116	72	835
Griswold, Malcolm R., Hartford, Conn. Press-holder and heater for dental flasks	546,465	Sept. 17	1818	431	72	1724
Groebbels, Paul, Weimar, Germany. Igniting apparatus	546,923	Sept. 24	2561	613	72	1876
Grondin, Diendonne J., Yamachiche, Canada. Evaporator	545,071	Aug. 27	2292	557	72	1220
Gross, George, assignor to Plymouth Cycle Manufacturing Company, Plymouth, Ind. Bicycle-frame and finishing same	546,446	Sept. 17	1778	423	72	1715
Gross, Mannin, Burlington, Kans. Wire-stretcher	541,850	July 2	51	12	72	13
Gross, Mannin, Burlington, Kans. Corn-planter	543,648	July 30	3246	754 755	72	667
Grote, Joseph C., Covington, Ky., and P. A. Dobert, Cincinnati, Ohio. Culinary grater and slicer	544,807	Aug. 20	1818	436	72	1112
Grugin, Hugh P., Bannack City, Mont. Adjustable rotary screen	546,447	Sept. 17	1779	423	72	1716
Gruhl, Bernhard A., Dresden, Germany. Apparatus for shaping designs on blown glass	541,851	July 2	52	12, 13	72	13
Grundmann, F. William. (See Kirchhoff, William G., assignor.)						
Grundy, James, Paterson, N. J., assignor to J. Mason, Bury, England, and J. C. Grundy, Paterson, N. J. Toy	543,828	July 30	3586	834 835	72	730
Grundy, Joseph C., *et al* (See Grundy, James, assignor.)						
Grutze, Sigel, *et al.* (See Devlin, Thomas C., assignor.)						
Gschwend, August, assignor of one-half to M. Sternfels, Portland, Oreg. Duplex piano-stool	546,614	Sept. 17	2054	487	72	1768
Guarantee Trust and Safe Deposit Company, trustee. (See Lowe, Thaddeus S. C., assignor.)	546,527	Sept. 17	1915	453	72	1742
Gudeman, Albert, Eureka, Ill. Filter	542,639	July 16	1435	346	72	300
Guéret, Célestin, assignor to Guéret Frères, Paris, France. Bottling apparatus						
Guéret Frères. (See Guéret, Célestin, assignor.)						
Guest, Louisa, *et al.* (See Taylor, William T., assignor.)						
Gugler, Henry, *et al.* (See Small, John F., assignor.)						
Guilbert, John M., Philadelphia, Pa. Neckwear-fastener	542,473	July 9	1146	280	72	232
Guild, George, assignor to Cambridge City Punch, Shear and Roll Company, Cambridge City, Ind. Steam-shears	542,190	July 2	598	145	72	117
Guile, Emerson J. (See Hillman and Guile.)						
Guiley, Augustus H. R., *et al.* (See Cornell, Elijah B., assignor.)						
Guilford, Russel W., assignor to Auburn Iron Works, Auburn, Ind. Steam-engine	542,930	July 16	1917	451	72	390
Guilford, William C., Chicopee, assignor of one-half to G. Nightingale, Holyoke, Mass. Clothes-supporting attachment for bedsteads	543,576	July 30	3068	718	72	640
Guilford, William C., Chicopee, assignor of one-half to G. Nightingale, Holyoke, Mass. Clothes-supporting attachment for bedsteads	543,577	July 30	3069	718	72	640
Guillou, Henri J. F., Paris, France. Reciprocating-motion crank	546,847	Sept. 24	2441	585	72	1852
Guldlin, Olaf N., Fort Wayne, Ind. Oil atomizing and carbureting apparatus for gas-generators	546,611	Sept. 10	997	241	72	1551
Gumbinner, Emil, New York, N. Y. Placket-closer	546,924	Sept. 24	2562	613	72	1876
Guinet, Victor. (See Pierard and Guinet.)						
Gump, William E. (See Ewing, Thomas, Jr., assignor.)						
Gump, William E. (See Robertson, James H., assignor.)						
Gump, William E., Brooklyn, N. Y. Writing-telegraph	543,241	July 23	2478	582	72	512
Gunz, Albert, Milwaukee, Wis. Spokeshave	546,321	Sept. 17	1562	370	72	1674
Gunning, Thomas, Pittsburg, Pa. Steam-boiler	544,618	Aug. 13	1440	351	72	1022
Gunther, George P. A., Philadelphia, Pa. Fish-tank or aquarium	546,882	Sept. 24	2499	597	72	1864
Gunther, George P. A., Schwenksville, Pa. Fish-tank or aquarium	546,883	Sept. 24	2500	597	72	1864
Günzburg, Isaac B., St. Petersburg, Russia. Railway passenger-car	544,892	Aug. 20	1974	473	72	1141
Gurnee, Isaac Q., Butler, N. J., assignor to Butler Hard Rubber Company, New York, N. Y. Syringe	543,829	July 30	3588	835	72	731
Gurney, Edward, Toronto, Canada. Boiler	542,799	July 16	1716	408	72	351
Gustaveson, Frank, Wabasha, Minn. Air-valve	544,167	Aug. 6	572	143	72	855
Gustine, Franklin J., assignor, by mesne assignments, to A. A. E. Bullin, New Orleans, La. Apparatus for carbureting air	545,859	Sept. 3	727	177	72	1468
Gutenkunst, Charles A. (See Gutenkunst, William and C. A.)						
Gutenkunst, William and C. A., Milwaukee, Wis. Feed-roller	545,286	Aug. 27	2648	643	72	1292
Guthrie, Martin B. (See Foster, George A., assignor.)						
Guthrie, Sebastian C., Evansville, Ind. Dispensing case or cabinet	543,423	July 23	2765	653	72	565
Gutmann, Ludwig, Pittsburg, Pa. Meter for alternating electric currents	543,089	July 23	2184	518	72	457
Guttery, Lewis C. (See Sellers and Guttery.)						
H. H. Perkins Manufacturing Company. (See Tunnicliff, John C., assignor.)						
H. H. Pierce Company. (See Pierce, Harry H., assignor.)						
H. L. Judd & Company. (See Edsall and Lathrop, assignors.)						
H. P. Deuscher Company. (See Becker, Frank J., assignor.)						
Haag, Adam W., Fleetwood, Pa. Grain-scalper	543,768	July 30	3468	808	72	708
Haas, Ludwig, Mayence, Germany. Coin-freed gas apparatus	542,762	July 16	1647	393	72	339
Haas, William, Lyndon, Kans. Washing-machine	546,487	Sept. 17	1855	439	72	1731
Hackenberg, Julius, Passaic, N. J. Tobacco-pipe	544,808	Aug. 20	1920	436	72	1113
Hackney, Samuel H., assignor of one-half to T. B. Buskirk, Paoli, Ind. Wrench	545,016	Aug. 20	2182	522	72	1179
Hadaway, John B., Brockton, Mass. Stitch-separating and indenting machine	543,012	July 23	2044	485 486	72	431
Hadden, Benjamin C., Watson Farm, Pa. Packing for oil or gas wells	545,072	Aug. 27	2292	557	72	1220

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Haddorf, Johann M. L. and H. F. H. Eggers, Lubeck, Germany. Stirrup	545,796	Sept. 3	627	152	72	1470
Haegler, Otto J. (See Pyott, Walter C., assignor.)						
Haeuagen, Fred W., Buffalo, N. Y. Trolley-wire clip	541,969	July 2	252	59	72	51
Hafgar, Magnus J., Chicago, Ill. Type-writer cabinet	546,322	Sept. 17	1563	370, 371	72	1674
Hagan, Henry. (See Van Cise, Fred E., assignor.)						
Hageman, Randolph F., New Madison, Ohio. Gate	544,915	Aug. 20	2020	482	72	1150
Hagemeier, August H. (See Yost, Baumhoff, Hagemeier, Fitzler, and Schmid.)						
Hagen, August, assignor to L. Wolff Manufacturing Company, Chicago, Ill. Automatic flushing-tank for water-closets, &c.	543,013	July 23	2049	486	72	432
Hagen, Claude L., New York, N. Y. Construction of theaters	546,528	Sept. 17	1916	454, 455	72	1742
Hagen, Ferdinand J., and L. Wieland, assignors, by mesne assignments, to Excelsior Cigar Machine Company, New York, N. Y. Cigar-bunching machine	543,600	July 30	3172	734, 735	72	653
Hageney, Patrick H., assignor of one-half to Phoenix Iron Works Company, Ashtabula, Ohio. Loading-machine	543,769	July 30	3470	809	72	708
Hagerty, Thomas A., *et al.* (See Dennis, George W., assignor.)						
Haggenmacher, Carl. (See Wörner, Jacob, assignor.)						
Hahn, Henry H., East Orange, N. J. Detachable sleigh-shoe	546,398	Sept. 17	1691	402	72	1699
Hain, Ralph B., Grand Rapids, Mich. Exhaust-muffler	546,814	Sept. 24	2390	571	72	1843
Hain, Ralph B., Grand Rapids, Mich. Carburetor	546,815	Sept. 24	2390	571	72	1843
Haines, John H. J., New York, N. Y., and A. B. Fernald, Jersey City, N. J. Electric-arc lamp	544,578	Aug. 13	1368	334	72	1009
Haines, John H. J., New York, N. Y., and A. B. Fernald, Jersey City, N. J. Electric-arc lamp	544,579	Aug. 13	1370	334	72	1009
Hainkel, Sigel, Quincy, Ill. Sash-fastener	546,423	Sept. 17	1740	413	72	1708
Hair, Josiah T., assignor of forty-nine one-hundredths to F. C. Butts, Chicago, Ill. Door-check	543,863	Aug. 6	54	14	72	758
Halss, George, New York, N. Y. Coal-elevating apparatus	542,558	July 9	1295	314	72	260
Hakes, Hudson W., Millbury, assignor to A. H. Hammond, Worcester, Mass. Octave-coupler	545,888	Sept. 10	776	189	72	1508
Halcyon Cycle Company. (See Weston, Milton T., assignor.)						
Hale, George C., assignor of one-half to J. J. Helm, Kansas City, Mo. Wheel	542,588	July 9	1338	324, 325	72	268
Hall, Albert H., Weston, Mich. Shears or scissors sharpener	546,012	Sept. 10	999	241	72	1551
Hall, Alvah W., assignor of one-half to A. M. Collett, New York, N. Y. Railway block-signal system	545,494	Sept. 3	114	27	72	1376
Hall, Bicknell, Taunton, assignor to Wainwright Manufacturing Company of Massachusetts, Boston, Mass. Tool for use in corrugating-machines	541,852	July 2	55	13	72	14
Hall, Edgar L., St. Louis, Mo. Automatic boiler-feeder	544,976	Aug. 20	2117	507	72	1168
Hall, Edward S., New York, N. Y. Brake	545,492	Sept. 3	112	26	72	1375
Hall, Frank E., Boston, Mass., assignor, by mesne assignments, to Consolidated Fastener Company, Portland, Me. Glove-fastener	545,493	Sept. 3	112	27	72	1375
Hall, Henry J., Wickford, R. I. Swing-back adjuster for cameras	542,887	July 16	1851	439	72	377
Hall, James, Chicago, Ill. Gravity measuring-tank	546,399	Sept. 17	1693	402	72	1699
Hall, John B. (See Walton, Dayton D., assignor.)						
Hall, John R., Jr., Fort Recovery, Ohio. Syringe	546,148	Sept. 10	1227	293	72	1594
Hall, Orlando C., assignor to C. L. Sheldon, Auburn, N. Y. Mill for rolling metal	542,016	July 2	333	81	72	67
Hall, Robert F., Moseley, England. Ball-bearing	544,406	Aug. 13	1074	261, 262	72	950
Hall-Shone Company. (See Shone, James W., assignor.)						
Hall, Walter T., and W. J. Bayliss, London, England. Draft-excluder for doors	543,932	Aug. 6	185	44	72	782
Halla, Siegmund, assignor to A. Randnitz, Vienna, Austria-Hungary. Furnace for manufacturing yellow prussiate of potash	544,580	Aug. 13	1373	335, 336	72	1010
Hallanger, Tobias N., assignor to Western Electric Company, Chicago, Ill. Apparatus for insulating wire	544,530	Aug. 13	1285	310, 311	72	992
Hallanger, Tobias N., assignor to Western Electric Company, Chicago, Ill. Insulated electric conductor	544,531	Aug. 13	1287	311	72	993
Hallowell, Albert, Lowell, Mass., assignor to Universal Barrel Tap Company, Charleston, W. Va. Combined tap-plug and faucet	542,081	July 2	436	105	72	85
Hallowell, William S., Wyncote, Pa. Steam-boiler	544,168	Aug. 6	573	143	72	855
Halsey, Edward S., South Evanston, assignor of one-half to W. J. Phelps, Chicago, Ill. Magneto-electric telephony	542,191	July 2	600	146	72	118
Halsey, James T., Philadelphia, Pa. Steam-engine	544,298	Aug. 13	824	208	72	910
Halsey, James T., Philadelphia, Pa. Engine	544,299	Aug. 13	827	209	72	911
Halstead, Charles, Brooklyn, N. Y. Coffee or tea pot or urn	542,731	July 16	1589	380	72	329
Halton, Thomas, Philadelphia, Pa. Jacquard machine for looms	544,532	Aug. 13	1288	311	72	993
Hamburger, Leon, *et al.* (See Darley, John W., Jr., assignor.)						
Hamburger, Phillip, *et al.* (See Darley, John W., Jr., assignor.)						
Hameless Collar Company. (See Block, Carl, assignor.)						
Hamill, Robert E., Marshall, Ill. Railway-switch	542,253	July 9	715	176	72	154
Hamilton, James W., and J. F. Siebenthall, Honey Grove, Tex. Knee-pad	543,864	Aug. 6	55	14	72	758
Hamilton, Miles E., assignor of one-half to J. Crouse, Auburn, N. Y. Egg-crate	546,149	Sept. 10	1228	293	72	1594
Hamilton, Thomas L., Sumner, assignor of one-half to H. D. Smith, Ashburn, Ga. Vise	542,442	July 9	1089	265	72	223
Hamley, Henry R. (See Rogers, George O., assignor.)						
Hammond, Andrew H. (See Hakes, Hudson W., assignor.)						
Hammond, Ernest W. (See Jones and Hammond.)						
Hammond, Lycurgus L., *et al.* (See Dalton, William M., assignor.)						
Hampson, Thomas, assignor of one-half to J. B. Goodwin, Anniston, Ala. Bobbin-shuttle	542,160	July 2	555	134	72	109
Hancock, Willis C., Albany, Ky. Leveling-machine	545,287	Aug. 27	2650	643	72	1292
Hand, James, assignor to W. M. Ayres & Sons, Philadelphia, Pa. Horse-blanket	542,931	July 16	1919	454	72	391
Hand, John S., assignor to L. Hand, San Francisco, Cal. Tailor's drafting-instrument	542,443	July 9	1090	266	72	223
Hand, Lillia. (See Hand, John S., assignor.)						
Handel, Philip J., Meriden, Conn. Lamp	544,893	Aug. 20	1976	474	72	1141
Handly, Thomas F., Allegheny, Pa. Fire-extinguisher	546,013	Sept. 10	1000	241	72	1551
Handy, William W., Lake Roland, Md. Electric governor	542,640	July 16	1439	346, 347	72	301
Hanes, Samuel L., *et al.* (See Jones, Horace D., assignor.)						
Hanford, Melancthon, Malden, assignor to C. J. Goodwin, Springfield, Mass. Support for overhead electric conductors	545,495	Sept. 3	115	27	72	1376
Hanlon, John F., assignor of one-half to M. B. Quimby, Concord, N. H. Universally-movable support for mirrors, &c	544,300	Aug. 13	830	209	72	912
Hanna, William C., Jr., New York, N. Y. Bonding and tying device	543,014	July 23	2051	486	72	432

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Hannes, George. (See Unsinger and Hannes.)						
Hannigan, Michael, and M. McKenna, Pittsburg, Pa. Reversible spray-nozzle	542,825	July 16	1753	416, 417	72	358
Hanscom, Adelbert P. (See Spencer, Alvah C., assignor.)						
Hanslick, Paul. (See Hlasko, Vatslav A., assignor.)						
Hanson, Charles A., *et al.* (See Tisdale, Charles D., assignor.)						
Hanson, Charles A., Rock Island, Ill. Hitching-post	543,624	July 30	3212	744	72	660
Hanson, Julius L., Omaha, Nebr. Trolley	545,073	Aug. 27	2294	557	72	1221
Harczyk, Maxymilian, Warschau, Russia. Press-mold for manufacturing Dutch tiles, &c.	544,786	Aug. 20	1786	426, 427	72	1106
Harder, Arthur J., Kingston, Pa. Detachable water-filtering bed	541,970	July 2	253	59	72	52
Hardin, Isaac G., and T. T. Watson, Savannah, Tenn. Broom	546,047	Sept. 10	1057	253	72	1562
Harding, Fred D., assignor to S. J. Harding, Baldwin, Me. Washing-machine	543,990	Aug. 6	278	68	72	799
Harding, Robert, *et al.* (See Crandall, Jesse A., assignor.)						
Harding, Simon J. (See Harding, Fred D., assignor.)						
Hardy, Asa, Manchester, and E. Evans, Manningham, England. Woven fabric	544,916	Aug. 20	2022	482	72	1150
Hardy, Clarence F., *et al.* (See Woodbury, Orson E., assignor.)						
Hardy, Edward A., *et al.* (See Woodbury, Orson E., assignor.)						
Hardy, William H., Jr., *et al.* (See Woodbury, Orson E., assignor.)						
Hare, A. J., *et al.* (See McClellan, Rolando G., assignor.)	545,017	Aug. 20	2184	528	72	1179
Hargraves, Robert F., Providence, R. I. Compression-coupling for shafts	544,894	Aug. 20	1978	474	72	1142
Harkness, William, New York, N. Y., assignor to General Fire Extinguisher Company, of New York. Fire-extinguisher	544,895	Aug. 20	1983	475	72	1143
Harkness, William, New York, N. Y., assignor to General Fire Extinguisher Company, of New York. Automatic fire-extinguisher	546,323	Sept. 17	1565	371	72	1675
Harland, George H., Detroit, Mich. Turned shoe	545,646	Sept. 3	365	90	72	1422
Harlow, George L., Somerville, Mass. Sewing-machine						
Harman, Samuel W. (See Deming, Harman, and Romans.)						
Harmison, Bion L. (See McCarty, Cornelius M., assignor.)						
Harmon, Benjamin S. (See Whistler and Aspinwall, assignors.)	542,559	July 9	1298	314	72	261
Harmon, William L., Mount Vernon, Wash. Wedge						
Harned, Frank P., assignor to Penn Chemical Works, Philadelphia, Pa. Safety-package	544,729	Aug. 20	1667	400	72	1082
Harold, Charles, New York, N. Y. Car signaling apparatus	545,585	Sept. 3	264	65	72	1402
Harper, Emsley, Lawrence, Ind. Earth-auger	546,529	Sept. 17	1919	455	72	1743
Harper, James M., Peoria, Ill. Sash-fastener	541,930	July 2	180	42	72	39
Harper, Smith, *et al.* (See Cornell, Elijah B., assignor.)						
Harper, Thomas, New Brunswick, N. J. Converter system for electric railways	544,037	Aug. 6	362	89, 90	72	815
Härpfer, Oskar, Nuremberg, Germany. Pencil-case	544,533	Aug. 13	1289	312	72	993
Harrington, Harry A. (See Turner and Harrington.)						
Harris, Agnes E., New York, N. Y. Garment-supporter	542,851	July 16	1795	425	72	365
Harris, Albert S., Minneapolis, Minn. Dynamo-telegraphy	546,324	Sept. 17	1566	371	72	1675
Harris, Benjamin S. H. (See Harris, William A. and B. S. H.)						
Harris, Edward, and T. Phelps, Brewster, N. Y. Dust-guard for car journal-boxes	542,852	July 16	1796	426	72	365
Harris, Grace H. D., Toronto, Canada. Rug-fastener	543,030	July 23	2187	518	72	457
Harris, Harvey R., Michigan City, Ind. Moistener and paper-weight	542,888	July 16	1852	439	72	377
Harris, Jesse, Lynn, Mass. Electric meter	543,865	Aug. 6	56	14, 15	72	759
Harris, John H. (See Henderson and Harris.)						
Harris, Samuel J., Millville, Mass., assignor of one-half to W. F. Steinbach, Mystic, Conn. Rubber boot	542,961	July 16	1962	466	72	369
Harris, William A. and B. S. H., Greenville, S. C. Air-brake coupling	541,253	Aug. 6	747	192	72	884
Harrison, Edwin D. (See Stevens and Harrison.)						
Harrison, Haydn T., London, England. Electric-arc lamp	545,359	Aug. 27	2764	670	72	1312
Harrison, Henry W., and L. B. Wadleigh, Clinton, Iowa. Mechanical toy	543,479	July 30	2883	678	72	603
Harrison, Walter H. (See Noyes, John B., assignor.)						
Harry, Simon J., Washington, D. C. Railway spike and tie	542,474	July 9	1117	280	72	242
Hart, Charles A., *et al.* (See Brooks, Silas M., assignor.)						
Hart, Charles N., Pittsford, Vt. Bridle-bit	544,917	Aug. 20	2023	482	72	1150
Hart, John E., *et al.* (See Hart, Joseph E., assignor.)						
Hart, John P. (See Ferris and Hart.)						
Hart, John S. (See Roop, Brandon, and Hart.)						
Hart, John W., assignor to J. F. Lewis, Pittsburg, Kans. Match-safe	541,853	July 2	56	13	72	14
Hart, Joseph E., assignor of six-sevenths to J. E. Hart, D. D. Jones, Briceville, H. M. Madden, Coal Creek, Tenn., and W. E. Thompson, Ironton, Ohio. Mining-drill	546,098	Sept. 10	1145	274	72	1579
Hart, Loren D. (See Jones and Hart.)						
Hart, William C. (See Damforth and Sencenbaugh, assignors.)						
Hart, William G., assignor of one-half to H. D. Warner, Bristol, Conn. Milk-vessel case	544,097	Aug. 6	471	116	72	835
Hart, William H., Jr., Philadelphia, Pa. Bicycle-support	544,223	Aug. 6	679	173	72	873
Harter, George H. (See Cunningham, Samuel, assignor.)						
Hartford, Isaac J., Savannah, Mo. Stock-watering tank	542,701	July 16	1553	371	72	322
Hartford Machine Screw Company. (See Witherell, George E., assignor.)						
Harthan, Charles E. (See Thompson and Harthan.)						
Harthan, Charles E., Lynn, Mass., assignor, by mesne assignments, to General Electric Company, Schenectady, N. Y. Electric-arc lamp	543,729	July 30	3395	788	72	695
Hartig, John C. (See Payment and Hartig.)						
Hartleb, Bernhard B., Baltimore, Md. Combined slate and scholar's companion	546,848	Sept. 24	2413	585	72	1852
Hartley, William, Jr., Pawtucket, R. I. Drying-machine	543,558	July 30	3071	719	72	640
Hartman, John C. (See Smith and Hartman.)						
Hartman, John M., Philadelphia, Pa. Valve	543,549	July 30	3023	707	72	631
Hartman, John M., Philadelphia, Pa. Pyrometer	543,550	July 30	3025	707	72	632
Hartman, Moses. (See Montgomery, Jordan, Soesbe, Gilman, and Hartman.)						
Hartness, James, Springfield, Vt. Metal-reducing tool	543,551	July 30	3027	708	72	632
Hartog, Stephen D., Jr., assignor to Eureka Stencil Machine Company, St. Louis, Mo. Stencil-character punch-machine	544,169	Aug. 6	577	144	72	855
Harton, Pembroke D., Philadelphia, Pa. Cake or biscuit machine	543,131	July 23	2260	536	72	971
Hartz, Johannes F., Detroit, Mich., assignor to E. J. Hussey & Co., New York, N. Y. Syringe	545,647	Sept. 3	366	90	72	1422
Harvey, George H., assignor to R. C. Woodward, Taunton, Mass. Berry-picking machine	545,648	Sept. 3	368	91	72	1423
Hasbrouck, George G., Nyack, N. Y. Pitman-rod	546,777	Sept. 24	2334	557	72	1832
Hasey, George H., assignor to R. C. Woodward, Taunton, Mass. Berry-picking machine	546,663	Sept. 24	2133	508	72	1796
Haskins, Melvin E., and G. L. Evans, Lowell, Ark. Water-wheel	543,770	July 30	3471	808, 809	72	709
Haskill, Lester, assignor to himself and E. D. Deshong, Fort Meade, Fla. Portable kitchen-cabinet	544,534	Aug. 13	1290	312	72	993
Haskitt, John P., Kinston, N. C. Hand-truck						

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Haslett, O. C., *et al.* (See Lightner and Newsom.)						
Hatch, James B. (See Niskern, Isaac, assignor.)						
Hatch, Thomas J., assignor of one-half to E. J. Nolds, Denver, Colo. Concentrator	544,254	Aug. 6	752	192, 193	72	885
Hatch, Walter P. (See Schipkowsky, Julius, assignor.)						
Haubtman, Leon F., New Orleans, La. Apparatus for evaporating liquids	546,530	Sept. 17	1920	455	72	1743
Hauff, Albert, Berlin, Germany. Recoil-operated firearm	545,496	Sept. 3	119	28	72	1376
Hanser, Isaiah L., Chicago, Ill. Burglar-alarm	545,426	Aug. 27	2884	702	72	1337
Hawes, Albert C., *et al.* (See Dennis, George W., assignor.)						
Hawkins, John T., Taunton, Mass., assignor to Campbell Printing Press and Manufacturing Company, New York, N. Y. Printing-machine for printing from rotary flat forms.	546,325	Sept. 17	1568	372	72	1675
Hay, Charles H., Carmi, Ill. Book-support	544,170	Aug. 6	579	144, 145	72	856
Hay, John F., assignor to Erie Malleable Iron Company, Limited, Erie, Pa. Molding apparatus	546,736	Sept. 24	2266	539	72	1819
Hayden, Henry A., Jersey City, N. J. Fastener for suspender-ends	546,424	Sept. 17	1741	413	72	1708
Hayden, James H., Denver, Colo. Pen-receptacle	545,497	Sept. 3	121	28	72	1377
Hayes, Friederick, Philadelphia, Pa. Combined knife and scissors sharpener	543,552	July 30	3028	708	72	632
Hayes, John J., Flushing, N. Y. Feeder for nailing-machines	543,683	July 30	3302	767, 768	72	677
Hayner, John H., Brooklyn, N. Y. Ash-sifter	543,122	July 23	2262	536	72	472
Haynes, John. (See Thorp, Marsh, and Haynes.)						
Hayward, Edwin, Brooklyn, N. Y. Sanitary vent and drain box	543,961	Aug. 6	230	56	72	790
Hazelton, Norman N., Lamoni, Iowa. Threshold and weather-strip for doors	544,977	Aug. 20	2118	508	72	1168
Hazletine & Perkins Drug Company. (See Hillhouse, Frank S., assignor.)						
Hazlett, John, Kingston, Canada. Steam-boiler	544,619	Aug. 13	1442	351, 352	72	1022
Heald, John, Springfield, Mass. Cornet	543,015	July 23	2052	4+7	72	433
Heap, David P., U. S. Army. Light-signal	543,730	July 30	3398	788, 789	72	696
Heap, Richard. (See Chase and Heap.)						
Heaps, Edward K., Sheffield, England. Cuff-holder	542,763	July 16	1648	393	72	339
Hearn, John W., Brooklyn, N. Y. Electric switch	543,181	July 23	2369	551	72	492
Heath, De Elbert P., Tomahawk, Wis. Automatic reverser and safety-check for mill-carriages	545,074	Aug. 27	2295	557, 558	72	1221
Heath, Edgar H., assignor of one-half to J. H. Beamer, Grand Rapids, Mich. Incandescent-lamp socket	543,016	July 23	2053	487	72	433
Heath, George E., Curtis, Nebr. Corn-planter	544,581	Aug. 13	1374	336, 337	72	1010
Heath, Thomas S., Cross Timbers, Mo. Sulky	544,918	Aug. 20	2024	483	72	1150
Heath, William S., Washington, D. C. Parallel-ruler	544,787	Aug. 20	1786	427	72	1106
Heaton, George E., Kalamazoo, Mich. Bicycle attachment	542,254	July 9	718	177	72	154
Heckmann, Gustav A., Barmen, Germany. Scarf-fastener	545,157	Aug. 27	2443	592	72	1251
Hecox, Hamden A., Centreville, Mich. Dry closet	546,531	Sept. 17	1922	456	72	1743
Hedenberg, William L., New York, N. Y. Puzzle	543,684	July 30	3304	768	72	677
Hedenberg, William L., New York, N. Y. Electric brake	545,498	Sept. 3	122	29	72	1377
Hedge, George H., New Bedford, assignor to Westport Manufacturing Company, Westport, Mass. Thread or twine holder	542,220	July 2	661	162	72	128
Hedges, Francis A., assignor of one-third to H. C. Hedges, Vera Cruz, Ind. Bundle-binder	546,326	Sept. 17	1570	373	72	1676
Hedges, Harry C. (See Hedges, Francis A., assignor.)						
Hedges, John W., Danville, Ky. Subsoil-plow	542,889	July 16	1454	439	72	378
Heffron, Isaac. (See Gallinowsky, Hugo, assignor.)						
Heggy, Frank A., Canton, Ohio. Flue-cap	545,499	Sept. 3	124	29	72	1377
Heginbottom, Samuel H., assignor of one-half to S. T. Crapo, Saginaw, Mich. Valve for air-brakes	546,664	Sept. 24	2134	508	72	1796
Hegstad, Ole E., Appleton, Minn. Hoisting-machine	545,500	Sept. 3	125	29	72	1377
Heikes, Edward C., Mechanicsburg, Pa. Bracket for curtain-rollers	542,017	July 2	334	81	72	67
Heim, Joseph J. (See Hale, George C., assignor.)						
Heimerdinger, Charles. (See Schleicher and Heimerdinger.)						
Heine, August, Silver Creek, N. Y. Dust-collector	543,133	July 23	2263	536, 537	72	472
Heineke, Martin. (See Detrick, Benjamin J., assignor.)						
Heinemann, Friedrich, *et al.* (See Girtler, John F., assignor.)						
Heinig, Frederick E., Louisville, Ky. Sheet-metal vessel	546,466	Sept. 17	1821	431	72	1724
Heinig, Frederick E., Louisville, Ky. Oil-can	546,467	Sept. 17	1822	431	72	1724
Heinig, Frederick E., Louisville, Ky. Sheet-metal-working machine	546,468	Sept. 17	1823	432	72	1725
Heinig, Frederick E., Louisville, Ky. Seaming covers to sheet-metal vessels	546,469	Sept. 17	1824	432	72	1725
Heinig, Johann, assignor to C. F. Weber, Chemnitz, Germany. Manufacture of gloves	546,150	Sept. 10	1229	293	72	1594
Heintz, Peter, Grand Island, Nebr. Subsoil-plow	546,884	Sept. 24	2501	597	72	1865
Heinz, John H., Sharpsburg, Pa. Vegetable-assorter	545,689	Sept. 3	440	106	72	1435
Heinz, William H. (See Loree, Perry E., assignor.)						
Held, Henry. (See Towle, William, assignor.)						
Helfenstine, D. M. (See Arnold, Alonzo B., assignor.)						
Heller, Adam, Baltimore, Md. Shutter-fastener	542,051	July 2	384	93	72	77
Helm, Charles, Indianapolis, Ind. Electric alarm-lock for tills	544,224	Aug. 6	680	173	72	873
Helme & McIlhenny. (See McIlhenny, John D., assignor.)						
Hembacher, Vitus, Fischach, Germany. Fire-escape	542,641	July 16	1442	347	72	301
Hemphill, Joshua D., Shelton, assignor of one-half to G. H. Radcliffe, Derby, Conn. Machine for cutting knitted fabrics	546,532	Sept. 17	1923	456	72	1745
Hempsted, Samuel W., Columbus, Ohio. Letter-press	543,731	July 30	3402	789	72	696
Henderson, H. L. (See Henderson and Harris, assignors.)						
Henderson, James, Osmaston, England. Retort-lid	543,866	Aug. 6	58	15	72	759
Henderson, James, assignor to Shetfield Car Company, Three Rivers, Mich. Latch	542,161	July 2	557	135	72	109
Henderson, James, and F. McConaughy, Somerville, N. J. Stone-lifter	543,017	July 23	2054	487	72	433
Henderson, John G. and R. H., Chicago, Ill. Machine for boring joists for electric-light wiring	543,625	July 30	3214	745	72	660
Henderson, Julius E., and J. H. Harris, assignors of one-third to H. L. Henderson, Iola, Kans. Car-coupling	545,501	Sept. 3	126	30	72	1378
Henderson, Robert H. (See Henderson, John G. and R. H.)						
Henderson, Thomas, Waverley, New South Wales. Steam-boiler	545,075	Aug. 27	2296	558	72	1221
Henderson, William M., Philadelphia, Pa. Drum-stop for steam-engine indicators	544,896	Aug. 20	1986	475	72	1143
Hendrickson, Sidney W., assignor to W. Hendrickson, New York, N. Y. Stationary wash-tub	543,480	July 30	2885	678	72	604

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Hendrickson, William. (See Hendrickson, Sidney W., assignor.)						
Hendry, Alice L., St. Paul, Minn. Adjustable skirt and belt fastener	544,407	Aug. 13	1075	262	72	951
Henkel, Charles, Brattleborough, Vt. Hook	542,255	July 9	721	177	72	155
Hennegin, Herbert H., St. Lodis, Mo. Gas-engine	545,502	Sept. 3	129	30, 31	72	1378
Hennig, Charles O., Philadelphia, Pa. Folding chair-commode	544,535	Aug. 13	1290	312	72	993
Hennig, Edward, Jr. (See Schuster, Paul, assignor.)						
Henry Huber Company. (See Beaumont, Thomas C., assignor.)						
Henry, John C., Westfield, N. J. Electric-railway system	543,3?2	July 23	2093	636	72	552
Henry, John C., Westfield, N. J. Electric signal for railway-trains	543,933	Aug. 6	186	44	72	782
Henry, John C., Westfield, N. J. Electric railway	545,158	Aug. 27	2444	593	72	1251
Henry, Joseph W., Kansas City, Mo. Gate	546,385	Sept. 17	1668	396	72	1695
Henry Pauk & Sons Manufacturing Company. (See Pauk, Henry E., Jr., assignor.)						
Henslein, Frank, Jr., assignor of one-third to L. I. Hoffman, Philadelphia, Pa. Car-brake	545,427	Aug. 27	2886	702	72	1337
Henssler, Charles. (See Robbins and Henssler.)						
Henszey, William P., Philadelphia, Pa. Locomotive	545,797	Sept. 3	028	152, 153	72	1470
Herbert, Charles F., Brooklyn, N. Y. Picture-frame	546,151	Sept. 10	1230	294	72	1594
Heritage, Charles. (See Gerson, Louis J., assignor.)						
Herman, George, *et al.* (See Rutkoskie, Casimir, assignor.)						
Herold, Charles, Fort Worth, Tex. Lubricator	542,826	July 16	1754	417	72	358
Herrmann, Kaspar, Columbus, Ohio. Water-closet tank	543,091	July 23	2188	519	72	457
Hertert, Lucien R., Pierce, Nebr. Thill-coupling	544,788	Aug. 20	1788	427	72	1106
Hertzler, Levi, Mechanicsburg, Pa. Rotary bolt	546,400	Sept. 17	1694	402	72	1700
Herzig, Hermann. (See Rockstroh, Teppig, and Herzig.)						
Herzing, Albert, St. Mary's, Ohio. Paper bag	546,853	Sept. 24	2450	587	72	1854
Hesse, Carl, Long Island City, N. Y. Dough-dividing machine	546,488	Sept. 17	1857	440	72	1731
Hesser, Isaac D., *et al.* (See Richmond, Edward J., assignor.)						
Hesser, Jacob Y., *et al.* (See Richmond, Edward J., assignor.)						
Hetherington, John, Porter, Ind. Insect-powder distributer	546,533	Sept. 17	1925	457	72	1744
Hetherington, Martin, assignor to J. W. Steere & Son, Springfield, Mass. Organ	542,221	July 2	663	162	72	128
Henblein, Charles M., Louisville, Ky. Coin-operated machine for selling and affixing postage-stamps	544,620	Aug. 13	1445	332, 333	72	1022
Hewison, Iona G. (See Gaudron, Edward N., assignor.)						
Hewitt, John W. (See Hewitt, Joseph F. and J. W.)						
Hewitt, Joseph F. and J. W., Allegheny, Pa. Fireplace-lining	543,553	July 30	3029	708	72	632
Hewitt, Peter C., New York, N. Y. Glue-stock cutter and feeder	545,288	Aug. 27	2651	644	72	1292
Hewlett, Alfred M., Kewanee, Ill. Furnace	543,018	July 23	2054	487, 488	72	433
Heyman, Charles, New York, N. Y. Stop-cock lock	542,642	July 16	1443	347	72	301
Heyman, Charles, New York, N. Y. Stop-cock lock	542,643	July 16	1445	348	72	302
Heys, John J., assignor of one-half to M. V. Bresnehan, Lynn, Mass. Beating-out machine	543,019	July 23	2057	488, 489	72	434
Heys, John J., assignor of one-half to M. V. Bresnahan, Lynn, Mass. Starting or stopping mechanism	543,242	July 23	2483	582, 583	72	512
Heys, John J., and C. W. Glidden, Lynn, Mass., assignor to J. W. Brooks, trustee. Heel-compressing machine	543,732	July 30	3403	790	72	697
Heysinger, Isaac W., Philadelphia, Pa. Construction and operation of electric railways and tramways	543,867	Aug. 6	59	15, 16	72	759
Heyward, James F. (See Thomas, David R., assignor.)						
Heywood Bros. & Co. (See Messmer, Alexander L. H., assignor.)						
Heywood Bros. & Co. (See Watkins, Edward G., assignor.)						
Heywood, Edwin C., Worcester, Mass. Bird-cage hook	545,159	Aug. 27	2446	593	72	1251
Hibbard, Angus S., Chicago, Ill. Telephone system	542,052	July 2	3?5	93	72	77
Hibbard, Harry H., assignor to G. Hibberd & Son, Wheeling, W. Va. Gas-burner	545,360	Aug. 27	2765	671	72	1312
Hibberd & Son, George. (See Hibberd, Harry H., assignor.)						
Hibbs, Weston J. (See Pedrick, Howard A., assignor.)						
Hickey, Peter J., and C. F. Norris, New York, N. Y. Manhole-cover	545,889	Sept. 10	777	190	72	1508
Hickey, William, Brookline, Mass. Window-fastener	542,033	July 2	389	94	72	78
Hickman, Samuel E. (See Moulder and Hickman.)						
Hickman, Hezekiah M., assignor of one-half to J. Stanb, Wellington, Kans. Wagon-bed attachment	544,225	Aug. 6	683	174	72	873
Hicks, Oliver H. (See Morgan and Hicks.)						
Hicks, Thomas H., Detroit, Mich. Dynamo-electric machine	541,854	July 2	58	14	72	14
Hicks, Thomas H., Detroit, Mich. Dynamo-electric machine	543,383	July 23	2695	637	72	552
Hickson, Theodore W., Melbourne, Victoria. Handle	541,855	July 2	60	14	72	15
Hield, Willard J., Minneapolis, Minn. Street-car gate	546,116	Sept. 10	1174	280	72	1584
Hieronymus, Jasper N., Fairbury, Ill. Fastener for wood-joints	546,152	Sept. 10	1231	294	72	1594
Higby, Frank P. (See Brandau, Christina, assignor.)						
Higgin, Henry, Newport, Ky. Hub-cap	544,171	Aug. 6	580	145	72	856
Higgins, Charles M., Brooklyn, N. Y. Adhesive paste	546,401	Sept. 17	1695	.....	72	1700
Higgins, Margaret, Pittsburg, Pa. Marking-tag	542,705	July 16	1554	371	72	322
High, Frederick P., Pittsburg, Pa., assignor of one-half to F. Burt, Mannington, W. Va. Valve mechanism	541,856	July 2	62	14, 15	72	15
Higham, Daniel, Boston, Mass. Electric-arc lamp	543,243	July 23	2485	583	72	513
Higham, Daniel, Boston, Mass., assignor to Higham Electric Company, Portland, Me. Electric-arc lamp	546,534	Sept. 17	1925	457	72	1744
Higham Electric Company. (See Higham, Daniel, assignor.)						
Higham, Howard H., Philadelphia, Pa. Nail-box for automatic nailing-machines	544,226	Aug. 6	684	174	72	874
Higham, Samuel, *et al.* (See Townsend, George, assignor.)						
Higinbotham, Elmer E., Chicago, Ill. Giant swing	545,406	Aug. 27	2845	693	72	1329
Hildebrandt, Edwin S. (See Hildebrandt, Frank M., E. S., and H. F.)						
Hildebrandt, Frank M., E. S., and H. F., Baltimore, Md. Electric-arc lamp	542,589	July 9	1341	325	72	268
Hildebrandt, Henry F. (See Hildebrandt, Frank M., E. S., and H. F.)						
Hildebrandt, Henry F., assignor of one-half to M. C. Rutherford, Rochester, N. Y. Trolley-arrester	545,649	Sept. 3	369	91	72	1423
Hill, Cyrus S., Rochester, N. H. Bolt-cutter	543,649	July 30	3248	735	72	667
Hill, Edward K., Worcester, Mass., and J. H. W. Hoadley, Chicago, Ill. Steam-engine	542,256	July 9	722	177, 178	72	135
Hill, George, New Brunswick, N. J. Thermostat	545,076	Aug. 27	2298	558	72	1221
Hill, Harry W., Cleveland, Ohio. Clutch-operating mechanism	546,327	Sept. 17	1571	373	72	1676
Hill, Joseph P., Worcester, Mass. Clothes-drier	541,485	Aug. 13	1222	296	72	980
Hill, Millard F., and C. W. Easley, Henrietta, said Easley assignor to W. B. Worsham, Clay county, Tex. Valve-gear	546,925	Sept. 24	2563	614	72	1876
Hill, Samuel G., and P. M. McCormick, St. Louis, Mo. Feed-water heater	542,890	July 16	1455	439	72	378

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Hillenbrand, Charles W., assignor of one-half to P. A. Bartles, Kansas City, Kans. Ironing-table	544,301	Aug. 13	831	210	72	912
Hillhouse, Frank S., Kalamazoo, assignor of one-half to Hazletine & Perkins Drug Company, Grand Rapids, Mich. Siphon	545,503	Sept. 3	132	31	72	1379
Hillman, Frank H., and E. J. Gnile, Greenwich, N. Y. Cow-milker	543,868	Aug. 6	70	16	72	761
Hills, James E., New York, N. Y. Cuff-button	543,244	July 23	2486	583	72	513
Hills, James E., New York, N. Y. Cuff-button	543,807	July 30	3545	824	72	723
Hilsinger, Alburtis C. (See Collins, Hilsinger, and Stevens.)						
Hilton, Thomas. (See Owen and Hilton.)						
Hinchliffe, William, Huntsville, Ala., assignor to Dutcher Temple Company, Hopedale, Mass. Loom-temple	546,778	Sept. 24	2335	557	72	1632
Hinman, Bertrand C., Brooklyn, N. Y., assignor to Gold and Bromine Separating Company, of West Virginia. Extracting gold	545,890	Sept. 10	778	190	72	1508
Hinman, Bertrand C., Brooklyn, N. Y., assignor to Gold and Bromine Separating Company, of West Virginia. Extracting gold from ores	545,891	Sept. 10	779	190	72	1509
Hinsch, Caroline A., and W. G. Price, Sioux City, Iowa. Skate	544,172	Aug. 6	581	145	72	856
Hinton, Edward C., and W. H. Stansfield, Owasco, N. Y. Rowing-machine	541,857	July 2	63	15	72	16
Hirschfeld, Leo, assignor of one-half to J. Stern and J. Saalberg, New York, N. Y. Bonbon-dipping machine	543,733	July 30	3406	790 / 791	72	697
Hirschfeld, Leo, assignor of one-half to J. Stern and J. Saalberg, New York, N. Y. Fork for dipping bonbons, &c	543,734	July 30	3408	791	72	697
Hirst, William, Trenton, N. J. Quick-action triple valve	545,289	Aug. 27	2653	644 / 645	72	1292
Hirt, Charles F., Erie, Pa. Car-ventilating apparatus	542,018	July 2	335	82	72	68
Hirt, Louis J., Boston, Mass. Journal-box	545,018	Aug. 20	2185	528 / 529	72	1179
Hiss, Annie A. (See Spofford, Charles, assignor.)						
Hitchcock, Dexter, *et al.* (See Weaver, William, assignor.)						
Hitchcock, Wilber R., Cornwall, Canada, assignor of one-half to A. W. Andrews and J. D. Miller, Wallingford, Vt. Insulator, conductor, and conduit for electrical wires and cables	546,232	Sept. 10	1366	325 / 326	72	1621
Hitchcock, William P., Lake, Iowa. Fence-post	542,853	July 16	1797	426	72	366
Hitchings, Arthur S., assignor to F. L. Stewart and A. P. Collar, Grand Rapids, Mich. Store-truck	546,117	Sept. 10	1176	281	72	1585
Hitzlberger, Karl, New York, N. Y. Blacksmith's forge	542,644	July 16	1448	348	72	302
Hlasko, Vatslav A., assignor of one-half to P. Hanslick, New York, N. Y. Revolving air-pump	543,245	July 23	2488	583	72	513
Hoadley, Henry M., Van Wert, Iowa. Horseshoe-nail cutter and clincher	546,665	Sept. 24	2137	508	72	1797
Hoadley, Joseph H. W. (See Hill and Hoadley.)						
Hoagland, John B., assignor of five-eighths to L. F. Ottofy and J. A. Lane, St. Louis, Mo. Car-fender	544,919	Aug. 20	2025	483	72	1151
Hoagland, John B., B. W. Thornhill, and J. M. Kinsey, St. Louis, Mo. Combined wheel and rail brake	544,302	Aug. 13	832	210	72	912
Hoare, William, Washington, D. C. Show-case	542,475	July 9	1148	281	72	233
Hobart, Byron F. (See Bond, Frederick W., assignor.)						
Hobart, Caleb E. P., Cherokee, Iowa. Planter	542,560	July 9	1299	315	72	261
Hobart, George M. (See Weaver, Albert S., assignor.)						
Hobbs, Clarence W., Lynn, assignor, by mesne assignments, to himself, R. Sugden, and H. W. Goddard, Spencer, Mass. Paper-box-covering machine	542,384	July 9	982	242	72	202
Hobbs, Clarence W., Lynn, assignor, by mesne assignments, to himself, R. Sugden, and H. W. Goddard, Spencer, Mass. Cutting mechanism for paper-box machines	542,385	July 9	984	242	72	202
Hobbs, Clarence W., Lynn, assignor, by mesne assignments, to himself, R. Sugden, and H. W. Goddard, Spencer, Mass. Paper-box machine	543,869	Aug. 6	72	16	72	762
Hobby, John B., New York, N. Y. Automatic animal-trap	542,610	July 9	1382	333 / 334	72	277
Hobercecht, Albert, Ensenada, Mexico. Surface condenser	544,621	Aug. 13	1451	353	72	1024
Hobson, Herbert W., *et al.* (See Taylor, William, assignor.)						
Hochspeier, William F., Jersey City, N. J. Game-counter	545,361	Aug. 27	2767	671	72	1312
Hocker, James M., Jr., assignor to N. L. Hocker and J. C. Rogers, Lexington, Ky. Pocket-companion	542,162	July 2	558	135	72	110
Hocker, Nannie L., *et al.* (See Hocker, James M., Jr., assignor.)						
Hodge, Perry Y. (See McIlvrid and Hodge.)						
Hodges, John D., Ellendale, assignor of two-thirds to W. Beinker and J. Shaw, St. Louis, Mo. Automatic car-fender	545,290	Aug. 27	2654	645	72	1292
Hodges, Martin E., Syracuse, N. Y. Fence-making machine	543,481	July 30	2887	679	72	604
Hodgman, Willis K. (See Huber and Hodgman.)						
Hodgson, Herbert E., Norfolk, Va. Key-holding device for pipe-organs	542,054	July 2	390	94	72	78
Hoe, Robert, *et al.* (See Crowell, Luther C., assignor.)						
Hoe, Robert, *et al.* (See Spalckhaver, William, assignor.)						
Hoefelmayr, Karl, Munich, Germany. Pad for water-closets	542,706	July 16	1534	371	72	322
Hoefer, Frederick W. (See Stover and Hoefer.)						
Hoefs, Otto, Alvin, Tex. Canal or ditch digging machine	544,850	Aug. 20	1897	455 / 456	72	1127
Hoehnen, Mathias. (See Hopfgartner and Hoehnen.)						
Hoepfner, Carl, Giessen, Germany. Anode for electrolytical apparatus	546,328	Sept. 17	1573	.....	72	1677
Hoff, John A. (See Pickles and Hoff.)						
Hoff, John A., and C. K. Pickles, St. Louis, Mo., assignors, by mesne assignments, to American Stencil Machine Company, East St. Louis, Ill. Stencil-cutting machine	544,227	Aug. 6	685	174 / 175	72	874
Hoffelt, Matt. (See Hoffelt, Michel and M.)						
Hoffelt, Michel and M., Springfield, Mo. Roofing-tile	544,303	Aug. 13	834	210	72	912
Hoffman, Henry R., Hamilton, Ohio. Draft-gate for tire-doors	544,038	Aug. 6	365	90	72	815
Hoffman, Lizzie I. (See Henslein, Frank, Jr., assignor.)						
Hoffman, Nathan, Pottstown, Pa., assignor to Ellis Keystone Agricultural Works, of Pennsylvania. Fodder-cutter	543,340	July 23	2632	619	72	540
Hoffmann, Albert, and H. W. Falk, Milwaukee, Wis. Rail-joint and forming same	545,040	Aug. 20	2227	539	72	1187
Hoffmann, Carl R., Kranschütz, Germany. Inflating device for pneumatic tires	546,329	Sept. 17	1574	374	72	1677
Hoffmann, Ernest G., assignor to Standard Caster and Wheel Company, New York, N. Y. Caster	543,870	Aug. 6	74	16	72	762
Hoffmann, Louis. (See Kliesach, Adolf, assignor.)						
Hoffmann, Tranb & Co. (See Lidy, Fritz, assignor.)						
Hoffmann, William A., New York, N. Y. Toy	545,958	Sept. 10	902	217	72	1533
Hogan, Thomas J., Pittsburg, assignor to Westinghouse Air Brake Company, Wilmerding, Pa. Air-brake	546,448	Sept. 17	1780	423 / 424	72	1716
Hogan, Thomas J., Pittsburg, assignor to Westinghouse Air Brake Company, Wilmerding, Pa. Air-brake	546,449	Sept. 17	1784	424	72	1717

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Hogan, Thomas W., *et al.* (See Whittington, Harry M., assignor.)						
Hogeland, Alexander, Lincoln, Nebr. Water-elevator	545,650	Sept. 3	370	91	72	1423
Hogue, Charles P., and J. W. Smith, Portland, Oreg. Lubricator	544,173	Aug. 6	582	145 / 146	72	856
Hohrath, Friedrich W., Barmen, Germany. Machine for enlarging tapes or laces	543,482	July 30	2889	680	72	605
Holahan, Harvey, Harvoy, Ill. Lifting-jack	542,257	July 9	726	179	72	156
Holbine, Gottlieb K., Eustis, Nebr. Grain measurer and register	543,483	July 30	2890	680	72	605
Holbrook, David M., Brooklyn, assignor to W. H. Schieffelin, W. N. Clark, W. S. Merserau, W. L. Brower, H. S. Clark, and W. J. Schieffelin, New York, N. Y. Coating pills	542,611	July 9	1384	334	72	278
Holbrook, David M., Brooklyn, assignor to W. H. Schieffelin, W. N. Clark, W. S. Merserau, W. L. Brower, H. S. Clark, and W. J. Schieffelin, New York, N. Y. Machine for coating pills	542,612	July 9	1385	334 / 335	72	278
Holbrook, Harry D., Utica, N. Y. Shoe	545,160	Aug. 27	2447	593	72	1251
Holbrook, Horace, and T. S. Beals, Jr., Coupeville, Wash. Pneumatic device for raising or lowering car-windows	546,854	Sept. 24	2451	587	72	1854
Holcomb, Charles M., Brooklyn, N. Y. Cutting-machine	544,851	Aug. 20	1901	456	72	1127
Holcomb, Henry I., Centreville, S. D. Musical instrument	542,561	July 9	1301	315	72	261
Holden, Cummings M., South West Harbor, Me., and E. M. Gorden, Malden, Mass. Computing-scale	542,523	July 9	1237	302	72	249
Holden, Frank, assignor, by mesne assignments, to General Electric Company, Schenectady, N. Y. Electrical measuring-instrument	542,258	July 9	728	179	72	156
Holland, George N., Hampden, Me. Potato-digger	545,229	Aug. 27	2571	622 / 623	72	1276
Holland, Henry P., San Francisco, Cal. Ore-roasting furnace	544,761	Aug. 20	1712	413	72	1090
Holland, Henry P., San Francisco, Cal. Furnace for roasting ores	546,450	Sept. 17	1787	424 / 425	72	1717
Holland, Timothy, New York, N. Y. Cottage-heater	543,092	July 23	2188	519	72	458
Holland, William, Manchester, England. Nap-raising machine	544,536	Aug. 13	1291	312	72	904
Hollar, William H., Philadelphia, Pa., G. L. Weaver, Boston, Mass., and A. Kennedy, Charlestown, W. Va.; said Weaver and Kennedy assignors to said Hollar. Electrically-controlled winding mechanism for time-locks	545,020	Aug. 20	2187	529 / 530	72	1180
Hollar, William H., Philadelphia, Pa., G. L. Weaver, Boston, Mass., and A. Kennedy, Charlestown, W. Va.; said Weaver and Kennedy assignors to said Hollar. Electric winder for time-locks	545,021	Aug. 20	2192	530 / 531	72	1180
Hollen, James H., Providence, R. I. Sanding apparatus for cars	546,099	Sept. 10	1147	274	72	1579
Hollinger, Isaac K., Greenville, Ohio. Gate	544,622	Aug. 13	1452	353	72	1024
Hollingsworth, Jeptha G., Kansas City, Mo. Tooth-facing	543,685	July 30	3306	768	72	678
Hollis, Thomas, Milton, Mass. Tooth-brush charger	543,934	Aug. 6	187	44	72	783
Holman, Frank J., *et al.* (See Stellmann, Louis H., assignor.)						
Holman, James A., Salida, Colo. Railway lifting-jack	542,645	July 16	1449	348	72	302
Holman, William A., Philadelphia, Pa. Combined album and writing-desk	543,209	July 23	2425	570	72	502
Holman, William J., Minneapolis, Minn. Attachment for locomotive-engines	546,153	Sept. 10	1242	294 / 295	72	1595
Holmes, Bettie F., Avondale, Ohio. Clothes-drier	543,020	July 23	2060	480	72	434
Holmes, H. E., *et al.* (See Benesh, Charles, assignor.)						
Holmes, James S. (See Braden, William A., assignor.)						
Holmes, John, Boston, Mass. Knitted garment and making the same	545,479	Sept. 3	80	20	72	1370
Holmes, John B., Chicago, Ill. Hanger for stone-sawing machines	545,977	Aug. 27	298	559	72	1222
Holmes, William, assignor to F. W. Morgan and R. Wright, Chicago, Ill. Mandrel for forming pneumatic tires	543,093	July 23	2190	519 / 520	72	458
Holmes, William I. (See Clark, Frank M., assignor.)						
Holmes, William W., assignor to Q and C Company, Chicago, Ill. Sliding door and hanger therefor	541,971	July 2	254	59, 60	72	52
Holst, Lodewyk J. R., Amsterdam, Netherlands. Photographic shutter	542,764	July 16	1649	394	72	339
Holt, Henry P., London, England. Brake apparatus for gas traction-cars	545,362	Aug. 27	2768	671	72	1313
Holt, Henry P., London, England. Reversing valve-gear for gas or oil motor engines	545,363	Aug. 27	2769	672	72	1313
Holt, Robert C., Troy, N. Y. Thread-guide for electrical stop-motions	543,686	July 30	3307	769	72	678
Holthaus, Emil, Canarsie, N. Y., assignor to C. C. Currier, Newark, N. J. Rendering and drying apparatus	543,384	July 23	2697	637	72	553
Holthaus, Emil, Canarsie, N. Y., assignor to C. C. Currier, Newark, N. J. Rendering apparatus	545,892	Sept. 10	779	190	72	1509
Holthaus, Emil, Canarsie, N. Y., assignor to C. C. Currier, Newark, N. J. Gas-extractor for tank-water, &c	545,893	Sept. 10	781	191	72	1510
Holtmann, Charles, Pittsburg, Pa. Air-valve	544,978	Aug. 20	2119	508	72	1168
Holyoke Card and Paper Company. (See Carlisle, Harry, assignor.)						
Holzman, Michael, *et al.* (See Darley, John W., Jr., assignor.)						
Homestead Manufacturing Company. (See Keyes, Harry E., assignor.)						
Hone, George J., London, England. Grab for excavating and elevating clay, coal, &c	546,885	Sept. 24	2503	597 / 598	72	1865
Honigmann, Friedrich, Aix-la-Chapelle, Germany. Sinking bore-holes and shafts in water-logged ground	542,765	July 16	1653	394	72	340
Hood, William C., Racine, Wis. Furniture-joint	546,816	Sept. 24	2391	572	72	1843
Hood, William C., Racine, Wis. Furniture-joint	546,817	Sept. 24	2392	572	72	1843
Hooker, James J. (See Putnam and Hooker.)						
Hooker, Thomas, Syracuse, N. Y. Dynamo-electric machine	543,021	July 23	2061	490	72	434
Hooper, George W., assignor to J. S. Baker, Rochester, N. Y. Electric trolley	543,529	July 30	2893	701	72	625
Hoover, Edward, Nemaha City, Nebr. Animal-trap	546,886	Sept. 24	2504	598	72	1865
Hoover, Francis M., Brookville, assignor to I. Kinsey and L. E. Ward, Milton, Ind. Saw-guard	545,504	Sept. 3	134	32	72	1379
Hopfgartner, Paul, and M. Hoehnen, assignors of one-fourth to H. Tell and J. Renss, Pocatello, Idaho. Temporary lock	545,019	Aug. 20	2185	529	72	1179
Hopkins, Charles B., *et al.* (See Stellmann, Louis H., assignor.)						
Hopkins, Charles B., and T. H. Elsom, Spokane, Wash. Coin-controlled telephone	542,679	July 16	1508	361	72	344
Hopkins, Linton C., Atlanta, Ga. Paper-feeding machine	545,863	Sept. 3	734	178 / 179	72	1489
Hopkins, Linton C., Atlanta, Ga. Paper-feeding machine	545,864	Sept. 3	736	179 / 180	72	1490
Hopkins, Nelson S., Williamsville, N. Y. Motor for bicycles	543,094	July 23	2192	520 / 521	72	458
Hopkins, William P., Lawrence, assignor to F. F. Stanley, trustee, Swampscott, Mass. Heating apparatus for wax-thread sewing-machines	544,639	Aug. 13	1483	360	72	1030
Hopper, Henry S., Detroit, Mich. Windmill	544,228	Aug. 6	668	175	72	874

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Horn, August P. (See Krohn, Georg F., assignor.)						
Horne, Henry, assignor to Corbin Cabinet Lock Company, New Britain, Conn. Safe-deposit lock	545,161	Aug. 27	2448	593	72	1251
Horner, Summers M., Potterville, Mich. Weather-strip	544,355	Aug. 13	980	211	72	934
Horr, Norton T., *et al.*, trustees. (See Pettee, Simon E., assignor.)						
Horscroft, John, Moberly, Mo. Potato-planter	546,535	Sept. 17	1927	457	72	1744
Horst, George C., assignor to J. A. Jeffrey, Columbus, Ohio. Water-elevator	545,300	Aug. 27	2525	611	72	1267
Horst, Samuel W., Hummelstown, Pa. Fence-building tool	542,827	July 16	1755	417	72	358
Horton, James A., Reading, assignor to Mossberg Manufacturing Company, Attleborough, Mass. Drop-hammer	543,302	July 23	2578	606, 607	72	530
Horton, Joseph and W., Copley, England. Cloth-stretching machine	544,098	Aug. 6	472	116, 117	72	835
Horton, Robert P. (See Butler, Edward E., assignor.)						
Horton, William. (See Horton, Joseph and W.)						
Hoskins, William P., Birmingham, England. Ship's berth	544,979	Aug. 20	2120	508, 509, 510	72	1168
Hoskins, William P., Birmingham, England. Ship's berth	544,980	Aug. 20	2122	511, 512	72	1169
Hoskins, William P., Birmingham, England. Ship's berth	544,981	Aug. 20	2126	512, 513, 514	72	1169
Hoskins, William P., Birmingham, England. Sofa-berth	544,982	Aug. 20	2129	514, 515	72	1169
Hostetter, John F. (See Leary and Hostetter.)						
Hostler, John T., Kalamazoo, Mich. Coupling device	543,935	Aug. 6	187	45	72	783
Hough, James. (See Laughlin and Hough.)						
Hough, William S., Temple, Tex. Lifting-jack	544,304	Aug. 13	835	210	72	913
Houghton, Stephen C., San Francisco, Cal. Fare-register	545,291	Aug. 27	2657	645	72	1293
Houghton, Thomas, Phfladelphia, Pa. Car-fender	543,687	July 30	3108	769	72	672
House, James A., Bridgeport, Conn. Knitting-machine	542,055	July 2	392	94, 95, 96, 97	72	78
House, John, Davis, W. Va. Combined picture-hanger, wall-pocket, and hat-rack	543,735	July 30	3409	791	72	698
House, Warren D., Kansas City, Mo. Flour-sifter	542,476	July 9	1150	281	72	233
Houston, George A., Beloit, Wis. Water-heater	543,246	July 23	2490	584	72	514
Houston, John. (See Cook and Houston.)						
Houston, William T., assignor of one-half to H. R. Cody, Anstin, Ill. Apparatus for steaming and renovating plushes, velvets, or other fabrics	544,807	Aug. 20	1988	475	72	1144
Houze, Leon J., Hartford City, Ind. Hose-coupler	543,871	Aug. 6	78	17	72	702
Hovell, Thomas M., Elstree, England. Animal-trap	544,983	Aug. 20	2131	515	72	1170
Howard, Andrew D., Atlanta, Ga. Mechanism for discharging liquids	546,615	Sept. 17	2055	487	72	1768
Howard, George C., Waltham, Mass. Lamp-heater	545,651	Sept. 3	371	91	72	1423
Howard, James, New York, N. Y. Brake-beam	544,435	Aug. 13	1124	272	72	909
Howard, John M., Chicago, Ill. Hoisting-machine	543,936	Aug. 6	188	45	72	783
Howard, Lyman D., assignor to J. A. Jeffrey, Columbus, Ohio. Device for lowering and delivering coal	545,201	Aug. 27	2527	611	72	1267
Howdon, William R., Anniston, Ala. Angle-cock	545,865	Sept. 3	740	180	72	1490
Howe, Edwin N. (See Brittin, William F., assignor.)						
Howe, Elmer P. (See Winkley and Phillips, assignors.)						
Howe, Frank P., assignor to William Wharton, Jr., & Company, Incorporated, Philadelphia, Pa. Rail structure	545,798	Sept. 3	629	153	72	1470
Howe, Orwin E., Winfield, Kans. Subsoil sulky-plow	546,330	Sept. 17	1577	374	72	1677
Howe, Solon G., assignor of one-half to D. Inglis, Detroit, Mich. Pipe-joint	545,586	Sept. 3	265	65, 66	72	1402
Howell, Charles C., Red Rock, Pa. Bleeder for steam-pipes	543,444	July 23	2515	661	72	576
Howell, William E., Los Angeles, Cal., assignor of one-half to C. D. Stingle, Philipsburg, Mont. Lunch-can	543,095	July 23	2196	521	72	459
Howells, Charles, New York, N. Y. Paper-tube machine	542,192	July 2	602	146, 147	72	118
Howland, Charles E., Providence, R. I., assignor to Reversible Brush Company, of Rhode Island. Brush	545,691	Sept. 3	443	107	72	1436
Hoykendorf, Peter, *et al.* (See La Cour, Paul, assignor.)						
Hoyt, Ezra S., Detroit, Mich. Gas-burner	546,765	Sept. 24	2318	552	72	1829
Hoyt, Ezra S., assignor to Hoyt-Speer Compound Gas Company, Limited, Detroit, Mich. Manufacturing gas	546,014	Sept. 10	1002	241	72	1552
Hoyt, George W., Chicago, Ill. Underwaist	542,891	July 16	1856	440	72	378
Hoyt, James T., New York, N. Y. Device for distributing paper, circulars, &c	546,154	Sept. 10	1236	295	72	1595
Hoyt-Speer Compound Gas Company. (See Hoyt, Ezra S., assignor.)						
Hoyt, William E., Ravenswood, W. Va. Car-coupling	545,202	Aug. 27	2528	611, 612	72	1268
Hubbard, Edward R. (See Wells and Hubbard.)						
Hubbell, A. C. (See McAllister, James, assignor.)						
Huber, Allen J., Minneapolis, Minn. Kerosene-gas burner	546,644	Sept. 17	2101	498	72	1777
Huber, Berthold, and W. K. Hodgman, assignors to Huber Printing Press Company, Taunton, Mass. Printing-press	544,809	Aug. 20	1821	436	72	1113
Huber, Edward, and J. W. Miller, Marion, Ohio. Piston-rod packing	545,292	Aug. 27	2661	645	72	1293
Huber Printing Press Company. (See Huber and Hodgman, assignors.)						
Hudson, Charles A., Schroon Lake, N. Y. Baking-pan	542,707	July 16	1555	372	72	322
Hueg, Herman F. W., Long Island City, N. Y. Bake-oven	542,338	July 9	894	219, 220	72	185
Huffman, John O. (See Jordan and Huffman.)						
Hufhand, George D., Pittsburg, Pa. Street-sweeper	545,652	Sept. 3	372	92	72	1423
Hughes, Charles C., Baltimore, Md. Telephonic transmitter	542,444	July 9	1092	266	72	223
Hughes, George W. H., and W. Smith, New Haven, Conn.: said Smith assignor to said Hughes. Fire-extinguisher	543,341	July 23	2634	620	72	540
Hughes, Henry F., Brooklyn, assignor to W. K. Jewett, New York, N. Y. Fare-register	545,627	Sept. 3	329	82, 83	72	1415
Hughes, John E., assignor of two-thirds to S. W. Kenward and R. M. Galbraith, Pine Bluff, Ark. Equalizing means for locomotive-engines	545,628	Sept. 3	333	83	72	1415
Hughes, Samuel, Lindsay, Canada. Berth-curtain	542,056	July 2	401	97	72	79
Hughes, Samuel, assignor of one-half to W. H. Richardson, Charleston, S.C. Toilet-paper case	546,849	Sept. 24	2443	586	72	1853
Hulett, George H., Cleveland, Ohio. Device for unloading cars	545,293	Aug. 27	2662	646	72	1294

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hulin, Léon P., Modane, France. Electrolytic process and apparatus	542,057	July 2	402	97	72	79
Hull, Charles T. (See Thompson, Hull, and Willman.)						
Hull, William J., Cambridge City, Ind. Station-indicator	542,193	July 2	606	147	72	119
Hull, William S., Dallas, Tex. Garbage-furnace	543,134	July 23	2267	537, 538	72	472
Hull, William S., Dallas, Tex. Electric alarm	545,653	Sept. 3	373	92	72	1423
Hulman, Anton, Terre Haute, Ind. Shutter-fastener	543,247	July 23	2493	584	72	514
Hulse, William A., Rochester, N. Y., assignor to Bonsack Machine Company, of Virginia. Method of and mechanism for making tobacco cigarettes	546,451	Sept. 17	1789	425	72	1718
Hulse, William A., Rochester, N. Y., assignor to Bonsack Machine Company, of Virginia. Cigarette-machine	546,452	Sept. 17	1795	425	72	1719
Hultin, Gustaf A., Chicago, Ill. Cutter for welt-trimmers	542,562	July 9	1302	315	72	262
Hultz, Levi A., Napoleon, Ohio. Interchangeable pump	542,766	July 16	1654	395	72	340
Hummel, Theodore F., and W. S. Morse, Fremont, Nebr. Machine for chamfering and crozing tubs	546,155	Sept. 10	1238	296	72	1595
Humphrey, William H. (See Balzer, Stephen M., assignor.)						
Humphries, Edwin C. R., Lexington, Va., assignor of one-half to W. H. Garnett. Spark-arrester	546,156	Sept. 10	1239	296	72	1596
Humphries, George, *et al.* (See Ball, Lorenzo D., assignor.)						
Hungerford, Henry H., Chicago, Ill. Boiler-furnace	544,898	Aug. 20	1990	476	72	1144
Hunker, Martin L., assignor to J. H. Eller, Canton, Ohio. Eaves-trough hanger	542,222	July 2	665	162	72	129
Hunt, Charles W., West New Brighton, N. Y. Cut-off device for chutes and hoppers for delivery of coal, ore, &c	543,182	July 23	2371	559	72	492
Hunt, Herbert E., Pittsburg, Pa. Air-brake-valve apparatus	543,022	July 23	2063	490	72	435
Hunt, Herbert E., Pittsburg, Pa. Air-brake system	545,295	Aug. 27	2666	647	72	1295
Hunt, Herbert E., Pittsburg, Pa. Pump-valve	546,591	Sept. 17	2019	479	72	1761
Hunt, John F., Weymouth, Mass. Clamp	542,767	July 16	1656	395	72	341
Hunter, Ernest H., assignor to Keystone Watch Case Company, Philadelphia, Pa. Watch-bow fastener	544,039	Aug. 6	366	90	72	816
Hunter, George E., Elgin, assignor to Elgin National Watch Company, Chicago, Ill. Dead-center lathe	545,692	Sept. 3	444	107, 108	72	1436
Hunter, John W., Macon, Miss. Baling-press	544,255	Aug. 6	754	193	72	886
Hunter, Lemont, Chicago, Ill. Ice-elevator chain	545,690	Sept. 3	442	107	72	1435
Hunter, Maurice. (See Tower, Hunter and Eastwood.)						
Hunter, William H., Bloomington, Ill. Method of and apparatus for forming designs in color in blocks of ice-cream	545,291	Aug. 27	2664	646	72	1294
Huonker, Martin. (See McKim and Wilson, assignors.)						
Hurd, Freeman A., Red Bank, N. J. Composition for dressing leather	545,505	Sept. 3	135	.....	72	1379
Hurlburt, H. Duane. (See Thompson, Walter, assignor.)						
Hurlbut, Daniel N., New York, N. Y. Railway-rail joint	544,099	Aug. 6	472	117	72	835
Hurley, Charles A., Boston, Mass. Ash-barrel	543,937	Aug. 6	189	45	72	783
Hurley, Daniel J., assignor to New Haven Clock Company, New Haven, Conn. Finishing metals	543,303	July 23	2582	.....	72	531
Hurst, George, Canso, Canada. Lobster-trap	544,100	Aug. 6	474	117	72	836
Hurst, George I. (See Read and Hurst.)						
Huskisson, William M., London, England. Submarine mine	542,732	July 16	1590	380, 381	72	329
Hussey, Charles A., assignor, by mesne assignments, to Electric Company, New York, N. Y. Means for varying light for incandescent electric lamps	546,666	Sept. 24	2138	509	72	1797
Hussey & Co., E. J. (See Hartz, Johannes F., assignor.)						
Hussey, Joseph, Madison, Wis. Range-boiler	546,737	Sept. 24	2268	540	72	1819
Huston, John N., Petersburg, Va. Grate	544,408	Aug. 13	1076	262, 263	72	951
Huston, William D., *et al.* (See Loree, Manfierd U., assignor.)						
Hutchins, Adelbert E., Detroit, Mich. Automatic safety appliance for electric conductors	544,436	Aug. 13	1125	272	72	961
Hutchins, Adelbert E., Detroit, Mich. Safety appliance for electric conductors	545,629	Sept. 3	334	83	72	1415
Hutchins, George F., assignor to Knowles Loom Works, Worcester, Mass. Loom	544,356	Aug. 13	981	242	72	935
Hutchinson, Edmund K., Cleveland, Ohio. Convertible patrol-wagon and ambulance	546,855	Sept. 24	2453	587	72	1855
Hutchinson, Fred, Bird City, Kans. Fire-escape	545,428	Aug. 27	2887	703	72	1337
Hutchinson, Llewellyn H., assignor to M. W., G. A., L. T., and J. A. Cross, Northfield, Vt. Detergent compound	542,524	July 9	1239	.....	72	250
Hutchinson, Samuel P., Philadelphia, Pa. Furnace for metallurgical purposes	541,931	July 2	181	42	72	39
Hutchinson, William F., New York, N. Y. Machine for assembling match-splints	544,538	Aug. 13	1294	314, 315	72	994
Hutchinson, William F., New York, N. Y. Stave-machine	544,539	Aug. 13	1297	315, 316	72	995
Hutchinson, William F., Passaic, N. J., assignor to Continental Match Company, of New Jersey. Match-splint machine	544,537	Aug. 13	1292	313, 314	72	994
Hutin, Maurice, and M. Leblanc, assignors to Société Anonyme pour la Transmission de la Force par l'Electricité, Paris, France. Asynchronous motor	545,693	Sept. 3	446	108	72	1436
Hyde, Henry L. W. (See Purves, James, assignor.)						
Hyde, Thomas I., Jr., Clifton Forge, Va. Tongue-support	545,364	Aug. 27	2769	672	72	1313
Hyller, Knud L., Chicago, Ill. Miter-box	546,887	Sept. 24	2505	598	72	1865
Hymans, Joseph. (See Laube, Godfried, assignor.)						
Hyslop, John, Abington, assignor of one-half to W. B. Arnold, North Abington, Mass. Hand magazine tack-driving machine	543,135	July 23	2269	538, 539	72	473
Hyzer, Jacob B., Janesville, Wis. Plant-duster	544,174	Aug. 6	585	146	72	857
Iddings, Frank A., Warren, Ohio. Sifter	544,256	Aug. 6	756	193	72	886
Iddings, Frank A., Warren, Ohio. Sifter	544,257	Aug. 6	757	194	72	886
Ideal Manufacturing Company. (See Whittingham, David L., assignor.)						
Iliowizi, Henry, Philadelphia, Pa. Air moistening and purifying attachment for hot-air registers	544,175	Aug. 6	585	146	72	857
Ill, Henry, Newark, N. J. Caster	544,101	Aug. 6	475	118	72	836
Illfelder & Co., B. (See Jesselson, Samuel, assignor.)						
Immel, Johannes, Geisweid, Germany. Combined plate, platinum, and sheet heating furnace	546,100	Sept. 10	1148	274	72	1580
Inch, Philip, U. S. Navy. Paint	546,888	Sept. 24	2508	.....	72	1866
Ingalls, Albert M., Duluth, Minn. Capsule-filler	545,365	Aug. 27	2770	672	72	1313
Ingels, John R., Hiawatha, Kans. Straw-carrier	541,932	July 2	182	43	72	39
Ingelsson, August W., Torshalla, Sweden. Pipe-tongs	546,101	Sept. 10	1149	275	72	1580
Inger, Frank B., Kansas City, Mo. Kitchen-cabinet table	541,858	July 2	65	15	72	16
Ingersoll-Sergeant Drill Company. (See Sergeant, Henry C., assignor.)						
Ingison, Marion, Mallory, N. Y. Cider-press	544,670	Aug. 20	1562	374	72	1062
Ingleton, Edward, Pottstown, Pa. Lawn-mower	543,736	July 30	3410	791	72	698

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Inglis, Charles A., *et al.* (See Rothenberger, Daniel M., assignor.)						
Inglis, David. (See Howe, Solon G., assignor.)						
Ingraham, Edmund, assignor of one-half to Fairmount Machine Company, Philadelphia, Pa. Drop-box mechanism for looms	544,229	Aug. 6	691	176	72	875
Inman, D. M. (See McCapes and Quinn, assignors.)						
Insinger, Alfred, Philadelphia, Pa. Batten for narrow-ware looms	542,386	July 9	986	243	72	203
International Filter Company. (See Richter, Harry J., assignor.)						
International Steam Power Company. (See Moore, Hollis W., assignor.)						
Irving, James. (See Willson, Walter V. H., assignor.)						
Irwin, Alexander T., Pittsburg, Pa. Railway-track lubricator	542,828	July 16	1756	417	72	359
Irwin, James W. (See Thau, Henry, assignor.)						
Isaacs, John D. (See Curtis and Isaacs.)						
Isburgh, Charles H., Melrose, Mass. Game-counter	544,582	Aug. 13	1375	337	72	1010
Israel, Adolf. (See Pathe and Israel.)						
Ives, Frederic E., Philadelphia, Pa. Photochromoscope and photochromoscope-camera	546,889	Sept. 24	2569	599	72	1866
J. G. Brill Company. (See Omensetter, Robert L., assignor.)						
J. I. Case Threshing Machine Company. (See Dingee, William W., assignor.)						
Jacks, Richard, Quincy, Cal. Bandage	544,062	Aug. 6	409	102	72	824
Jacks, Richard, Quincy, Cal. Bootjack	544,063	Aug. 6	410	103	72	825
Jackson, Charles E., Kings, Ill. Potato-digger	542,259	July 9	730	179, 180	72	156
Jackson, Charles H., St. Joseph, Mo. Check-row planter and drill	543,530	July 30	2994	701, 702	72	625
Jackson, Charles S., Bridgelnrg, Canada. Railway-switch	545,587	Sept. 3	267	66	72	1403
Jackson, George A., *et al.* (See Forsythe, James, assignor.)						
Jackson, James, Mansfield, Ohio. Car-coupling	545,162	Aug. 27	2450	594	72	1252
Jackson, Johiel, Columbus, Wis. Side-spring vehicle	542,019	July 2	337	82	72	68
Jackson, John L. (See McGregor and Jackson.)						
Jackson, Joseph H., Galveston, Ind. Gate	546,667	Sept. 24	2140	509	72	1797
Jackson, William, Pittsburg, assignor of one-half to R. S. Stephenson, Economy, Pa. Manufacture of tapered wrought-metal tubing	545,022	Aug. 20	2195	531, 532	72	1181
Jacoby, Edward, assignor of one-half to C. S. De Lano, Los Angeles, Cal. Tailpiece for banjos	546,536	Sept. 17	1927	458	72	1744
Jacquot, Albert, Wilmington, Del. Harness	543,737	July 30	3411	792	72	698
Jahr, Rudolf H., Opladen, Germany. Electric-arc lamp	545,694	Sept. 3	449	108	72	1437
Jaisohn, Philip, assignor to A. A. Smith, Washington, D. C. Thermometer-case	545,366	Aug. 27	2771	673	72	1313
Jamme, Bernard E., New Brighton, N. Y. Folding invalid-chair	545,695	Sept. 3	451	109	72	1437
James, George L. (See Miller, James G., assignor.)						
James, John E., assignor of one-half to J. M. Williams, Worthington, Pa. Safety-bicycle	543,484	July 30	2891	680, 681	72	605
James, Le Roy. (See Newman and James.)						
James, Nelson. (See Young, Adam, assignor.)						
James, Theodore, North Adams, assignor to W. H. Wilkinson & Co., Boston, Mass. Oil-cup	542,854	July 16	1799	426	72	366
Jamison, D. A. (See Jamison, James W., assignor.)						
Jamison, James W., assignor of one-third to D. A. Jamison, Ackworth, Iowa. Fodder-fork	544,357	Aug. 13	985	243	72	935
Janda, James, Korbel, Cal. Lubricator	544,040	Aug. 6	367	91	72	816
Jandus Electric Company. (See Seymour, Henry A., assignor.)						
Jandus, William, Cleveland, Ohio. Electric-arc lamp	543,445	July 23	2816	661, 662	72	576
Janes, George P., Roselle, N. J. Pulverizer	541,972	July 2	256	60	72	52
Janes, Henry D., and L. D. Hart, Dickens, Iowa. Corn-harvester	543,485	July 30	2892	681	72	605
Janet, Armand. (See Fravéga and Janet.)						
January, Ephriam B., *et al.* (See Ashurst, Charles, assignor.)						
Janvrin, George T., and F. J. Conlon, Brooklyn, N. Y. Switch-actuating apparatus	542,980	July 16	1998	475	72	405
Janvrin, George T., and F. J. Conlon, Brooklyn, N. Y. Automatic switch for electric or cable railways	545,230	Aug. 27	2574	623	72	1277
Jarboe, Walter S., Pittsburg, Pa., assignor to Time Transfer Printer Manufactnring Company, Chicago, Ill. Time-stamp	543,248	July 23	2494	584, 585, 586	72	514
Jardine, Charles K., Georgetown, British Guiana. Electric time-check receiver	545,696	Sept. 3	452	109	72	1437
Jarrett, John, Pittsburg, J. R. Davies, Duquesne, and J. Edwards, Homestead, Pa. Car-coupling	544,852	Aug. 20	1903	456, 457	72	1128
Jauch, Joseph, assignor to Bradley & Hubbard Mfg. Co., Meriden, Conn. Filling nipple and cap	544,409	Aug. 13	1078	263	72	951
Javaux, Emile, and C. F. Gallois, Paris, France. Refining sugar by electrolysis	543,249	July 23	2497	586	72	515
Jeannotte, Joseph, assignor to J. Geoffroy and J. A. Brule, trustees, Worcester, Mass. Hame-tug attachment	545,588	Sept. 3	268	66	72	1403
Jefferson, Joseph W., *et al.* (See Chapman, Frank M., assignor.)						
Jefferson, Thomas, *et al.* (See Chapman, Frank M., assignor.)						
Jeffrey, Joseph A. (See Bliss, Henry H., assignor.)						
Jeffrey, Joseph A. (See Horst, George C., assignor.)						
Jeffrey, Joseph A. (See Howard, Lyman D., assignor.)						
Jeffrey, Joseph A. (See Sheldrick, David J., assignor.)						
Jenkins, Henry C., New York, N. Y. Chain fastener for doors	546,102	Sept. 10	1150	275	72	1580
Jenkins, Thomas M., Pittsburg, Pa. Socket for checking-posts	545,231	Aug. 27	2574	623, 624	72	1277
Jenkins, Thomas W., Philadelphia, Pa. Feeding shavings to furnaces	542,477	July 9	1152	281	72	233
Jenks, George, *et al.* (See Woodward, Alonzo S., assignor.)						
Jennings, George F., Fall River, Mass. Hoisting mechanism	544,041	Aug. 6	368	91	72	816
Jennings, Samuel A., assignor of one-third to E. C. Meissner, St. Louis, Mo. Bell-ringing valve	543,250	July 23	2493	586	72	515
Jensen, Hans P., and H. Larsen, Newell, Iowa. Chain stanchion	545,203	Aug. 27	2531	612	72	1268
Jerzmanowski, Erazm J., New York, N. Y. Process of and apparatus for producing gas	542,855	July 16	1800	426, 427	72	366
Jeschke, Charles W. and E., Vickery, Ohio. Tile-ditching machine	544,258	Aug. 6	759	194	72	887
Jeschke, Edward. (See Jeschke, Charles W. and E.)						
Jesse, Elmer C. (See Shuster, Mathias L., assignor.)						
Jesselson, Samuel, assignor to B. Illfelder & Co., New York, N. Y. Harmonica	546,157	Sept. 10	1241	296	72	1596
Jessup, Joseph, Woodbury, N. J. Game apparatus	543,251	July 23	2500	586	72	515
Jessup, Nathan C., Westhampton, N. Y. Vessel	543,210	July 23	2426	571	72	502
Jeter, Samuel L., Montgomery, Ala. Grate	544,176	Aug. 6	586	146	72	857
Jewell, Omar H., Chicago, Ill. Filter	546,738	Sept. 24	2269	540	72	1820
Jewett, Americus V., Abilene, Kans. Lock	542,563	July 9	1303	315	72	262

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Jewett, W. Kennon. (See Hughes, Henry F., assignor.)						
Jobbins, William F. (See Van Rnymbeke, Joseph, assignor.)						
Joecken, Peter J., assignor to American Washboard Company, Cleveland, Ohio. Washboard	543,738	July 30	3412	792	72	698
John A. Neukum & Company. (See Stever, Charles, assignor.)						
John A. Roebling's Sons Company. (See Cooney, Sebern A., assignor.)						
Johnason, John L., Marquette, Mich. Cutter-head for woodworking-machines	545,654	Sept. 3	374	92	72	1424
Johnson, Andrew M. (See Bergh and Johnson.)						
Johnson, Arthur H. (See Keeler, Thaddens B., assignor.)						
Johnson, Charles E., Mount Jackson, assignor to Johnson Novelty Company, Indianapolis, Ind. Bicyclo lock and brake	545,959	Sept. 10	903	217	72	1533
Johnson, Charles E., Mount Jackson, assignor to Johnson Novelty Company, Indianapolis, Ind. Ribbon-feed-reversing mechanism	546,067	Sept. 10	1092	261, 262	72	1569
Johnson, Charles H., *et al.* (See Verner, William J., assignor.)						
Johnson, Charles H., San José, Cal. Conduit electric railway	545,204	Aug. 27	2532	612, 613	72	1268
Johnson, Charles N., San Francisco, Cal. Dish-drainer	542,734	July 16	1602	382	72	331
Johnson, Charlie H., Marshall, Minn. Padlock	542,194	July 2	607	147	72	119
Johnson, Clay P., *et al.* (See Finley, John H., assignor.)						
Johnson Company. (See Brown, William M., assignor.)						
Johnson, Edgar H. (See Wilson, Merrick F., assignor.)						
Johnson, Frank A., Philadelphia, Pa., assignor to Tachytype Manufactnring Company, Minneapolis, Minn. Machine for making controllers for composing-machines	545,697	Sept. 3	454	109, 110, 111, 112	72	1438
Johnson, Frank S., New Bedford, Ill. Car-brake	545,507	Sept. 3	137	32	72	1379
Johnson, George J., St. Paul, Minn. Hat-holder	546,402	Sept. 17	1698	403	72	1700
Johnson, George M., *et al.* (See Finley, John H., assignor.)						
Johnson, Gustaf, Denver, Colo. Bale-tie machine	544,762	Aug. 20	1714	413	72	1091
Johnson, James L., Fort Madison, Iowa. Metallic fastener for pneumatic tires	545,506	Sept. 3	136	32	72	1379
Johnson, James W., Truckee, Cal. Crossent-saw	542,856	July 16	1801	427	72	366
Johnson, John, and J. H. Robertson, Brooklyn, N. Y. Making porous plates or electrodes	546,739	Sept. 24	2271	.....	72	1820
Johnson, Leander. (See Le Blanc and Johnson.)						
Johnson, Lewis C. (See Jones, Walter, assignor.)						
Johnson, Louisiana P. (See Johnson, Reuben, assignor.)						
Johnson, May A. S. (See Start and Johnson.)						
Johnson, Moses, Harrisburg, Ill. Hame	544,984	Aug. 20	2133	516	72	1170
Johnson, Moses C., Hartford, Conn. Drilling-tool	542,223	July 2	666	163	72	129
Johnson, Moses C., Danbury, Conn., assignor to T. & B. Tool Company, Danbury, Conn., and Portland, Me. Twist-drill body-clearing machine	543,486	July 30	2895	682, 683	72	606
Johnson Novelty Company. (See Johnson, Charles E., assignor.)						
Johnson, Reuben, assignor to L. P. Johnson, Northumberland, Pa. Nail-machine	543,447	July 23	2826	661	72	578
Johnson, Robert W., New Brunswick, N. J. Case for surgical instruments	543,991	Aug. 6	920	68	72	799
Johnson, Samuel A., Penn Yan, N. Y. Manufacturing fancy confectionery	545,698	Sept. 3	463	112	72	1438
Johnson, Samuel W., Newport News, Va. Valve for gas or air compressors	543,446	July 23	2825	662	72	577
Johnson, Thomas H. (See Elmer and Johnson.)						
Johnson, Walter, assignor of one-half to C. Twist and F. J. Sterner, Denver, Colo. Bicycle	546,668	Sept. 24	2141	510	72	1797
Johnson, Warren S., Milwaukee, Wis. Mechanical movement	542,708	July 16	1555	372	72	323
Johnson, Warren S., Milwaukee, Wis. Heat-regulating apparatus	542,733	July 16	1594	381, 382	72	330
Johnson, William L., *et al.* (See Verner, William J., assignor.)						
Johnston, George A., and H. M. Carroll, San Antonio, Tex. Artificial teeth	546,331	Sept. 17	1578	374	72	1678
Johnston Harvester Company. (See Case, Henry J., assignor.)						
Johnston, John P., Dublin, Ireland. Saddle for cycles	542,613	July 9	1387	335	72	278
Johnston, John S., Chicago, Ill., assignor to Pottier & Stymus Company, New York, N. Y. Car-seat	542,411	July 9	1024	252	72	210
Johnston, John S., assignor to Pottier & Stymus Company, New York, N. Y. Seat	542,412	July 9	1029	253	72	212
Johnston, Robert, Wilkes-Barré, Pa. Inflatable puncture-plug for pneumatic tires	545,232	Aug. 27	2575	624	72	1277
Johnston, Thomas, Newburg, N. Y. Clutch mechanism	545,894	Sept. 10	783	191	72	1510
Joiner, Thomas H. (See Goff and Joiner.)						
Jones, Addison W. (See Swift, Horace E., assignor.)						
Jones, Alfred M., Elmwood, Nebr. Cultivator	542,339	July 9	897	220	72	186
Jones, Athelstan O., Zanesville, Ohio. Street-curbing	546,332	Sept. 17	1579	375	72	1678
Jones, Daniel A., Oshkosh, Wis. Foot-hook for horses	544,540	Aug. 13	1299	316	72	995
Jones, David D., *et al.* (See Hart, Joseph E., assignor.)						
Jones, Eliza A. (See Jones and Blundell.)						
Jones, Francis W., New York, N. Y. Pneumatic-transfer-tube system	543,184	July 23	2373	560	72	493
Jones, Frank L., Utica, N. Y. Cheese hoop and follower	544,508	Aug. 13	1257	303	72	987
Jones, Fremont C., Lewis, Iowa. Stock-watering trough	542,260	July 9	731	180	72	157
Jones, Gary M. (See Lansing and Jones.)						
Jones, Horace D., assignor of two-thirds to S. B. McKerrihan and S. L. Hanes, Portsmouth, Ohio. Fan	543,252	July 23	2502	587	72	515
Jones, James K., *et al.* (See Graves, John W., assignor.)						
Jones, James T. C., Starr, S. C. Bedstead-bracing	543,211	July 23	2428	571	72	502
Jones, James W., Belfast, Me. Screwdriver	543,096	July 23	2197	521	72	459
Jones, Joseph J., Brooklyn, N. Y. Toy chair or sofa	544,305	Aug. 13	837	211	72	913
Jones, Kinsey, Galesville, Wis. Combined hay and stock rack	546,158	Sept. 10	1243	297	72	1596
Jones, Lewis D. (See Crawford, Edward S., assignor.)						
Jones, Mary and E. A., and J. W. Blundell, Nottingham, England. Machine for manufacture of cigar or other boxes	542,768	July 16	1658	395, 396	72	341
Jones, Reuben, Kirkwood, Ga. Plow-point	542,981	July 16	1999	475	72	405
Jones, Robert K. (See Bustin, Robert, assignor.)						
Jones, Samuel M., Toledo, Ohio. Coupling for rods or pipes	543,183	July 23	2372	560	72	493
Jones, Samuel M., Toledo, and E. W. Hammond, Lima, Ohio. Pumping apparatus for oil-wells	542,646	July 16	1450	349	72	303
Jones, Sara F., assignor to R. P. Griffin, Cartersville, Ga. Window-ventilator	545,655	Sept. 3	375	92	72	1424
Jones-Swift Manufacturing Company. (See Swift, Horace E., assignor.)						
Jones, T. F. (See Tanquary, Levi J., assignor.)						
Jones, Walter, assignor to himself and L. C. Johnson, Bowling Green, Ky. Gate	542,647	July 16	1451	349	72	303
Jones, William E., *et al.* (See Urban, Joseph S., assignor.)						
Jones, William H. (See Martin and Jones.)						
Jonish, Florien, Little Falls, Minn. Button	545,799	Sept. 3	630	153	72	1470

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Jordan, George W., Worcester, Mass. Planer-chuck	545,895	Sept. 10	784	191	72	1510
Jordan, Henry C. (See Montgomery, Jordan, Soesbe, Gilman, and Hartman.)						
Jordan, Louis W., Boston, Mass. Blind-fastening	543,808	July 30	3547	824	72	723
Jordan, Philip H., Chicago, Ill., and J. O. Huffman, Cleveland, Ohio. Rack	542,735	July 16	1603	382, 383	72	331
Jordan, Philip H., Chicago, Ill., and J. O. Huffman, Cleveland, Ohio. Umbrella or cane receiving cabinet	542,736	July 16	1605	383	72	331
Joy, Charles L., New Haven, assignor of one-half to M. S. Tracy, Glastonbury, Conn. Scratch-brush	543,097	July 23	2200	522	72	460
Joy, Russell T., Tacoma, Wash. Lawn-sprinkler	546,537	Sept. 17	1928	458	72	1744
Joy, Russell T., Tacoma, Wash. Bedclothes-holder	546,538	Sept. 17	1929	458	72	1745
Judd & Co., H. L. (See Lathrop and Walsh, assignors.)						
Judd, Edward C. (See McArdle, Fred W., assignor.)						
Judd, Edward C., Boston, Mass. Sole-leveling machine	543,385	July 23	2699	637, 638	72	553
Judd, Edward C., Boston, Mass. Sole-leveling machine	545,038	Aug. 20	2221	538, 539	72	1186
Judd, Edward C., and F. W. Coy, Boston, Mass.; said Coy assignor to said Judd. Variable-motion mechanism for sole-leveling or other machines	545,407	Aug. 27	2846	693, 694	72	1329
Judson, Charles K., Washington, D. C. Device for forming belt-lacing	544,177	Aug. 6	587	147	72	857
Julian, Gideon, Boston, assignor to C. F. Brown, trustee, Reading, Mass. Sole rounding machine. (Reissue)	11,501	July 2	674	165, 166	72	130
Julian, William, Rochester, N. Y. Governor for fluid-motors	545,367	Aug. 27	2772	673	72	1313
Julius, Paul. (See Bernthsen and Julius.)						
June, Henry R., Elmira, N. Y. Mud-pan	544,064	Aug. 6	411	103	72	825
Jung, Julius, Stuttgart, Germany. Scrubber	544,259	Aug. 6	760	194	72	887
Junker, George J., Mount Vernon, Ill. Commutator-brush holder	544,358	Aug. 13	986	243	72	935
Jurnick, Frederick M. (See Kallusch and Jurnick.)						
Just, Paul C., assignor to A. G. Wheeler, Chicago, Ill. Conductor for electric railways	544,306	Aug. 13	838	211	72	913
Kadlowec, Alois. (See Urban and Kadlowec.)						
Kahn & Bros., F. & L. (See Kahn, Lazard, assignor.)						
Kahn, Lazard, assignor to F. & L. Kahn & Bros., Hamilton, Ohio. Gas-stove	544,307	Aug. 13	840	211	72	914
Kalamazoo Knitting Company. (See Sedmihradsky, Adolph, assignor.)						
Kalle & Co. (See Krecke and Rosenberg, assignors.)						
Kallusch, Frederick W., and F. M. Jurnick, Rochester, N. Y. Sole-rounding machine	543,304	July 23	2583	607, 608	72	531
Kampen, John W. (See French, Albert A., assignor.)						
Kane, Patrick J., assignor to C. P. Mooney, Boston, Mass. Method of and apparatus for making brushes	541,973	July 2	258	60, 61	72	53
Kane, Robert A., assignor of one-half to C. J. Bodenbach, Milwaukee, Wis. Telescopic joint.	546,699	Sept. 24	2196	523	72	1806
Kansas City Hay Press Company. (See Punteney and Sooy, assignors.)						
Kant, William N. (See Marriner and Kant.)						
Kantorovitz, Harris, assignor of one-half to G. Retzer, Walla Walla, Wash. Device for measuring garments	543,253	July 23	2502	587, 588	72	515
Karass, Charles. (See Karass, Gustav and C.)						
Karass, Gustav and C., Milwaukee, Wis. Clothes-pounder	544,853	Aug. 20	1905	457	72	1128
Karnatz, Frederick H., assignor of one-half to E. J. Schall, St. Louis, Mo. Apparatus for protecting cars from burglars	546,890	Sept. 24	2511	599	72	1866
Karns, William E., Parker's Landing, Pa. Pencil-holder	544,671	Aug. 20	1566	374	72	1063
Karns, William E., Parker's Landing, Pa. Vehicle	544,672	Aug. 20	1567	375	72	1063
Kasschau, Jacob, assignor to Rousseau & Co., New York, N. Y. Shoe-string fastener	542,413	July 9	1033	253	72	213
Katz, Edmund E., San Bernardino, Cal. Alarm-clock	546,103	Sept. 10	1151	275	72	1580
Kauffman, Samuel, *et al.* (See Ball, Lorenzo D., assignor.)						
Kauffman, William J., Miamisburg, Ohio. Singletree-coupling	542,892	July 16	1857	440	72	379
Kauffman, William J., Miamisburg, Ohio. Bracket for attaching springs to vehicles	542,893	July 16	1858	440	72	379
Kauffmann, Otto, Sacramento, Cal. Electrical annunciating-target	545,699	Sept. 3	463	112	72	1439
Kaufman, Daniel, Boiling Springs, Pa. Wire fence	544,920	Aug. 20	2027	483	72	1151
Kay, George A. (See Brott and Kay.)						
Keahey, William A., assignor to J. Whisenhunt, Garnett, Ark. Car-coupling	546,539	Sept. 17	1931	458	72	1745
Kean, Thomas J., Philadelphia, Pa. Means for analytically recording gait of horses	546,700	Sept. 24	2197	524	72	1807
Kearney, John S. (See Turner, Edward H., assignor.)						
Keasbey, Henry G., Ambler, Pa. Feed-water heater	543,688	July 30	3310	769	72	678
Keasbey, Henry G., Ambler, Pa. Feed-water heater	543,689	July 30	3312	769	72	679
Keasbey, Henry G., Ambler, Pa. Feed-water heater	543,690	July 30	3313	770	72	679
Keats Featherweight Spool Company. (See Keats, John, assignor.)						
Keats, John, Bagnall, assignor to Keats Featherweight Spool Company, Limited, London, England. Machine for winding thread upon star-shaped holders	543,185	July 23	2376	560, 561, 562	72	493
Keats Maschinen-Gesellschaft. (See Segelhorst, Johann B. M., assignor.)						
Keedy, Charles C., Mount Morris, Ill. Fence-stay	543,902	Aug. 6	231	56	72	790
Keeler, Thaddeus B., assignor to A. H. Johnson, Rahway, N. J. Electric signal apparatus.	542,769	July 16	1660	396	72	341
Keeley, Michael, Waterbury, Conn. Swinging scaffold	544,486	Aug. 13	1224	296	72	980
Keely, Robert L. (See Rietzinger, Christian, assignor.)						
Keep, William J., Detroit, Mich., assignor to Michigan Stove Company, of Michigan. Stove.	543,305	July 23	2590	608	72	532
Keeran, Manalcus G., assignor of one-fourth to J. B. Fry, Bloomington, Ill. Self-lubricating journal-box	546,958	Sept. 24	2622	628	72	1868
Keim, Ephraim. (See Freiburghouse, Edward W., assignor.)						
Keirsted, Edwin J., Lausingburg, N. Y. Attachable window-seat	542,648	July 16	1452	349	72	303
Keith, Charles H., New York, N. Y. Copying attachment for type-writing machines	545,233	Aug. 27	2576	624	72	1277
Keith, Thomas K., Boston, and G. H. Clark, Allston, assignors to J. W. Brooks, trustee, Petersham, Mass. Nail assorting and delivering mechanism	542,616	July 9	1392	336, 337	72	279
Keith, William, Alloa, Scotland. Testing and flushing drain-pipes, &c.	546,766	Sept. 24	2319	553	72	1829
Kelder, Howard J., Ellenville, N. Y. Can-opener	543,306	July 23	2591	609	72	532
Kell, Seai, Los Angeles, Cal. Baby-walker	546,333	Sept. 17	1580	375	72	1678
Keller, Eugene J. (See Eschweiler, Henry, assignor.)						
Keller, Henry, Woodburn, Ind. Corn-planter	542,261	July 9	733	180, 181	72	157
Keller, John, Brooklyn, N. Y. Printing-machine	544,763	Aug. 20	1719	414	72	1092
Keller, Moses A., Batavia, N. Y., assignor to McCormick Harvesting Machine Company, Chicago, Ill. Self-binding harvester	542,737	July 16	1608	383, 384	72	332
Kelley, Charles, Toronto, Canada. Envelope	546,048	Sept. 10	1058	253	72	1562
Kelley, Elbridge G., Peabody, Mass. Sheet-holder and winch	544,260	Aug. 6	761	194, 195	72	887
Kellner, Carl, Vienna, Austria-Hungary. Producing cellulose	542,932	July 16	1920	455	72	391

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Kellogg, Milo G., Chicago, Ill. Multiple switchboard for telephone-exchanges	542,262	July 9	735	181	72	157
Kellum, John L., Jr., near Bryson, Tenn. Measuring-machine	542,195	July 2	608	148	72	119
Kelly, Frank H., *et al.*, trustees. (See Pettee, Simon E., assignor.)						
Kelly, Henry W., Chicago, Ill. Separating gold	545,205	Aug. 27	2533	.....	72	1289
Kelly, John E., Johnsonburg, Pa. Steam-exhaust head	544,810	Aug. 20	1823	437	72	1113
Kelly, John E., Johnsonburg, Pa. Trap	546,616	Sept. 17	2055	488	72	1768
Kelly, John H., Detroit, Mich. Advertising-sign	546,285	Sept. 10	1486	350	72	1643
Kelly, Kate A., *et al.*, administrators. (See Kelly, William E.)						
Kelly, O. S. (See Neer, Harry M., assignor.)						
Kelly, Oliver S. (See Graham and Allen, assignors.)						
Kelly, Samuel, *et al.* (See Saltz and McKee, assignors.)						
Kelly, Willam E., deceased, New Brunswick, N. J.; K. A. Kelly and J. C. Evans, administrators. Door	544,985	Aug. 20	2134	516	72	1170
Kelly, William J., assignor of one-half to E. T. Whitelow, Manchester, England. Stoppering bottles	544,178	Aug. 6	588	147	72	857
Kelsey, Orlando, Blackwood, N. J. Steam-generator	544,811	Aug. 20	1824	437, 438	72	1113
Kelso, William. (See McConway, Kelso, and Curtis.)						
Kelso, William, assignor to McConway & Torley Company, Pittsburg, Pa. Car-coupling	546,779	Sept. 24	2335	557, 558	72	1832
Kemler, William H., Ashland, Ky. Metallic alloy	546,780	Sept. 24	2337	.....	72	1833
Kemp, Horace L., Camden, N. J., assignor to Philadelphia Barring Machine Company, Camden, N. J., and Philadelphia, Pa. Sewing-machine for barring and tacking	542,196	July 2	614	148, 149	72	120
Kempshall, Eleazer, Sharon, assignor to Boston Fast Color Eyelet Company, Boston, Mass. Making two-pronged rivets	542,800	July 16	1717	408	72	351
Kempshall, Eleazer, Sharon, assignor to T. King, trustee, Boston, Mass. Eyelet	545,800	Sept. 3	630	153	72	1470
Kendall Automatic Oil Pump Company. (See Kendall, Webber G., assignor.)						
Kendall, John A., Maysville, Mo. Heating-stove	546,926	Sept. 24	2565	614	72	1877
Kendall, Webber G., Lowell, Mass., assignor to Kendall Automatic Oil Pump Company, Nashua, N. H. Measuring-pump	543,872	Aug. 6	79	17	72	763
Kennedy, Albert H., Rockport, Ind. Ball-bat	546,540	Sept. 17	1932	459	72	1745
Kennedy, Anthony. (See Hollar, Weaver, and Kennedy.)						
Kennedy, Emi H., Oakland, and W. Mathews, Alameda, Cal.; said Mathews assignor to said Kennedy. Lantern	543,691	July 30	3314	770	72	679
Kennedy, John S. (See Riddle, Henry A., assignor.)						
Kennedy, John S., Chambersburg, Pa. Machine for breaking pig-iron	543,771	July 30	3473	809	72	709
Kennedy, Julian, Pittsburg, Pa. Apparatus for piling metal bars	546,159	Sept. 10	1245	297	72	1597
Kennedy, Moses R., Chicago, Ill. Door-check	544,730	Aug. 20	1668	401	72	1082
Kennedy, Patrick, Brooklyn, N. Y., assignor to F. G. Otto & Sons, Jersey City, N. J. Machine for punching note-plates or note-barrels	545,896	Sept. 10	786	191, 192, 193	72	1510
Kennedy, Thomas C., Dayton, Ohio. Car-door fastener	546,541	Sept. 17	1932	459	72	1745
Kennelly, John J., assignor of one-half to J. B. Benton, New York, N. Y. Fare-register	545,802	Sept. 3	633	154	72	1471
Kenney, Alphonso E., Somerville, Mass. Metallic mattress-frame	545,801	Sept. 3	632	154	72	1470
Kenney, Thomas M., and C. Bullock, Cambridge, Mass.; said Kenney assignor to said Bullock. Rotary engine	546,974	Sept. 24	2642	633	72	1892
Kenney, Thomas P., Hartford City, Ind. Glass-melting tank	545,630	Sept. 3	335	84	72	1416
Kenward, Spencer W., *et al.* (See Hughes, John E., assignor.)						
Kerfoot, Thomas, Manchester, England. Preparing granular effervescent compounds	543,601	July 30	3175	.....	72	654
Kernodle, Benjamin F. (See Linsey, Kernodle, and Shelley.)						
Kerr, Samuel T., *et al.* (See Cornell, Elijah B., assignor.)						
Kershaw & Company, John *et al.* (See Dugdill, John, assignor.)						
Kerslake, Harry A. (See Sweeting, Harry W., assignor.)						
Ketcham, William, Dallas, Tex. Dry-kiln furnace	543,531	July 30	2997	702	72	625
Kettlestrings, Joseph, *et al.* (See Nutting, Samuel E., assignor.)						
Keyes, Harry E., assignor to Homestead Manufacturing Company, Limited, Homestead, Pa. Valve	543,692	July 30	3316	770	72	680
Keyes, Harry E., assignor to Homestead Manufacturing Company, Limited, Homestead, Pa. Straightway valve	543,693	July 30	3318	770	72	680
Keyes, Harry E., assignor to Homestead Manufacturing Company, Limited, Homestead, Pa. Valve	543,694	July 30	3320	771	72	680
Keyes, James J., Peru, Ind. Basket	543,023	July 23	2065	490	72	435
Keyes, Jay H. (See Bonenberger, George, assignor.)						
Keys, James C., Blackville, S. C., and C. L. Pagonhart, Augusta, Ga. Smoke and gas consumer for furnaces	542,933	July 16	1922	455, 456	72	391
Keystone Manufacturing Company. (See Packer, George W., assignor.)						
Keystone Watch Case Company. (See Hunter, Ernest H., assignor.)						
Kidd, Kittie. (See Moore, William H., assignor.)						
Kidder Elevator Interlock Company. (See Kidder, Wellington P., assignor.)						
Kidder, Joshua R., assignor of one-half to S. Mecham, Dawson, Mo. Merry-go-round	544,230	Aug. 6	693	176, 177	72	875
Kidder, Wellington P., Boston, Mass., assignor to Kidder Elevator Interlock Company, New York, N. Y. Safety device for elevators	543,153	July 23	2303	545, 546	72	480
Kiechler, Charles. (See Deters and Kiechler.)						
Kiefer, Karl, Cincinnati, Ohio. Bottle-stopper	545,897	Sept. 10	791	193	72	1511
Kiel, William, Butler, N. J., assignor to Butler Hard Rubber Company, New York, N. Y. Bridle-blinder	542,263	July 9	738	181	72	158
Kiel, William, Butler, N. J., assignor to Butler Hard Rubber Company, New York, N. Y. Syringe	545,234	Aug. 27	2578	265	72	1277
Kihn, John L., and W. T. Reed, Hamilton, Ohio. Bottle-washer	544,308	Aug. 13	841	212	72	914
Kilborn, Frank B., and A. B. Taplin, Lawrence, Mass. Picker-check for looms	544,467	Aug. 13	1195	290	72	975
Kilgore, Frederick O., Minneapolis, Minn. Power-crane	545,589	Sept. 3	269	67	72	1403
Kilgore, Frederick O., Minneapolis, Minn. Log-carriage cushion	546,118	Sept. 10	1177	281	72	1585
Kilgore, John S., Salida, Colo. Folding seat	543,487	July 30	2900	683	72	607
Kilgour, John, Cincinnati, Ohio. Street-car curtain	543,098	July 23	2200	522	72	460
Kilian, Conrad J., Milwaukee, Wis. Axle	542,264	July 9	739	181	72	158
Kilton, James A. (See Darragh, Betts, and Kilton.)						
Kimball, Benjamin, *et al.* (See Carpenter, Albert F., assignor.)						
Kimball, Charles E., Council Bluffs, Iowa. Elevating-machine	542,975	July 16	1991	473	72	404
Kimball, Joseph E., Abington, Mass. Machine for turning irregular forms	546,160	Sept. 10	1246	298, 299	72	1597
Kimball, William H., Jonesville, Mich. Fence-post	546,161	Sept. 10	1250	299	72	1597
Kindl, Frederick H., Pittsburg, Pa. Construction of Z-bar columns	546,781	Sept. 24	2337	558	72	1833
Kindscher, Emil, Brooklyn, N. Y. Rowing apparatus	542,197	July 2	618	149	72	121

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
King, Arthur A., Aurora, Ill. Pneumatic tire	543,386	July 23	2701	638	72	554
King, Arthur S., *et al.* (See White, Alfred, assignor.)						
King, Charles A., Meriden, Conn. Gun-stock	545,898	Sept. 10	791	194	72	1512
King, De Witt C., and R. A. Bontilier, assignors to Edson Manufacturing Company, Boston, Mass. Fog signaling apparatus	546,163	Sept. 10	1253	300	72	1598
King, Frank, London, England. Secondary battery	544,673	Aug. 20	1568	375	72	1063
King, John F. H., New York, N. Y. Screening apparatus	546,891	Sept. 24	2513	600	72	1867
King, Leicester P., Cincinnati, Ohio. Apparatus for sterilizing and purifying liquids	546,015	Sept. 10	1004	242	72	1552
King, Phineas F., assignor of part to C. E. Stanley, Chicago, Ill. Safe	545,163	Aug. 27	2451	594	72	1252
King, Theodore E., Westport, Conn. Miter-box	544,042	Aug. 6	370	91, 92	72	817
King, Theophilus, trustee. (See Kempshall, Eleazer, assignor.)						
King, William L., Winston, N. C., assignor of one-half to Phœnix Manufacturing Company, Newark, N. J. Separable button	546,162	Sept. 10	1252	299	72	1598
Kingsbury, Jere G., Bridgeport, Conn. Engraving-machine	546,542	Sept. 17	1933	459	72	1746
Kingsford, Thomson. (See Gillette, George D., assignor.)						
Kingsland & Douglas Manufacturing Company. (See Schulze, Andrew, assignor.)						
Kinnear, William R., Columbus, Ohio. Lock-hinge	546,856	Sept. 24	2454	588	72	1855
Kinnear, William R., Columbus, Ohio. Fireproof shutter	546,857	Sept. 24	2454	588	72	1855
Kinnear, William R., Columbus, Ohio. Rolling fireproof blind or partition	546,858	Sept. 24	2455	588	72	1855
Kinner, Harmon C., Fredonia, N. Y. Cultivator	546,334	Sept. 17	1582	375	72	1678
Kinsey, Isaac, *et al.* (See Hoover, Francis M., assignor.)						
Kinsey, Jacob M. (See Hoagland, Thornhill, and Kinsey.)						
Kinsman, Richard, Galt, Canada. Quoin	543,488	July 30	2901	683	72	607
Kintner, Charles J., New York, N. Y. Electric conduit	545,296	Aug. 27	2667	647	72	1295
Kintzing, William F., assignor, by mesne assignments, to W. C. Kohler, P. J. Beck, I. Glatfelter, W. J. Reider, J. Dise, S. K. Diehl, E. F. Eyster, and A. S. Norrish, Glen Rock, Pa. Shuttle-motion for looms	542,525	July 9	1240	303	72	250
Kinzer, John J., Jr., Pittsburg, Pa. Brake-shoe	542,414	July 9	1034	254	72	243
Kinzer, John J., Jr., Pittsburg, Pa. Brake-shoe connection	546,701	Sept. 24	2201	525	72	1807
Kinzlberger & Co. (See Koreff, Richard, assignor.)						
Kirby, John, Jr., W. E. Crume, C. D. Grimes, and J. M. Clark, Dayton, Ohio, assignors, by mesne assignments, to Carter-Crume Company. Autographic register	543,342	July 23	2636	620	72	541
Kirby, Robert G. (See Turner and Kirby.)						
Kirchhoff, William G., assignor to F. W. Grundmann, St. Louis, Mo. Hat-fastener	542,082	July 2	437	105	72	85
Kirkham, John J., Terre Haute, Ind. Process of and apparatus for manufacture of gas	543,992	Aug. 6	280	68, 69	72	799
Kirkness, John J., Baltimore, Md. Car-fender	544,854	Aug. 20	1905	457	72	1128
Kirkwood, William, Chicago, Ill. Vacuum-pump	546,617	Sept. 17	2056	488	72	1768
Kirlin, Jesse, Stuart, Iowa. Automatic wagon-brake	543,532	July 30	2999	703	72	626
Kirry, Walter. (See Van Dozer and Kirry.)						
Kirsch, Bernhard, Vienna, Austria-Hungary. Rope-coupling	544,731	Aug. 20	1669	401	72	1082
Kirshman, John W., California, Mo. Clover-huller	545,297	Aug. 27	2670	648	72	1296
Kissell, Isaac P. (See Kissell, Jonas and I. P.)						
Kissell, Jonas and I. P., McComb, Ohio. Machine for applying wrappers to newspapers	543,873	Aug. 6	81	17, 18	72	763
Kissell, Martin L., assignor to P. P. Mast & Company, Springfield, Ohio. Cultivator	544,102	Aug. 6	475	118	72	836
Kist, William, Hoboken, N. J. Electric alarm-clock	546,016	Sept. 10	1006	242	72	1553
Kittrell, Felix H., Loco, Tenn. Horse checking or unchecking device	543,307	July 23	2592	609	72	532
Klaber, Augustus D., New York, N. Y., assignor to Neostyle Company, of New Jersey. Stand for duplicating apparatus	543,630	July 30	3588	835	72	731
Klaber, Augustus D., New York, N. Y., assignor to Neostyle Company, of New Jersey. Inking device	543,631	July 30	3589	836	72	731
Klauberg, Charles, New Haven, Conn. Tumbler-washer	544,855	Aug. 20	1907	458	72	1129
Kleemann & Co. (See Kleemann, Fritz A., assignor.)						
Kleemann, Fritz A., assignor to Kleemann & Co., Berlin, Germany. Apparatus for sterilization of milk or other liquids	544,437	Aug. 13	1126	272, 273	72	961
Kleesples, Charles J., Hartwell, Ohio. Filter and cut-off for rain-water	542,934	July 16	1925	456	72	392
Klein, August. (See Thompson and Zuver, assignors.)						
Klein, Charles C., Philadelphia, Pa. Friction-clutch	545,078	Aug. 27	2300	559	72	1222
Klenze, Henry G., Great Falls, Mont., assignor of two-thirds to T. C. Simpson and O. F. Wadsworth, Jr. Animal trap	542,963	July 16	1964	466	72	400
Klick, Charles G., Columbus, Ohio. Vehicle-shaft supporter	545,508	Sept. 3	138	32	72	1780
Klietsch, Adolf, assignor of one-half to L. Hoffmann, Görlitz, Germany. Vehicle-brake	544,309	Aug. 13	844	212	72	914
Kline, Abraham, Manheim, Pa. Twin-pointed pen	544,179	Aug. 6	580	147	72	858
Klose, Karl A., Richfield, Minn. Pipe-wrench	542,265	July 9	740	182	72	158
Klots, Henry D., New York, N. Y. Spinning-spindle	542,857	July 16	1803	427	72	367
Klots, Henry D., New York, N. Y. Spinning-spindle	545,590	Sept. 3	273	67	72	1404
Klug, John P., assignor to M. Klug and E. W. Braisted, St. Louis, Mo. Paper-bag and envelope cabinet	545,803	Sept. 3	636	155	72	1471
Klug, Mary, *et al.* (See Klug, John P., assignor.)						
Knapp, E. B. (See Shultz, Jacob F., assignor.)						
Knapp, Judson N., Onondaga, N. Y. Tapping apparatus	543,024	July 23	2065	491	72	435
Knietsch, Rudolph, and P. Seidel, assignors to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Indoxylic acid and making it	546,165	Sept. 10	1256	.....	72	1599
Knight, Charles A., and G. W. Thode, Glasgow, Scotland. Steam-generator	546,119	Sept. 10	1178	281	72	1585
Knight, Edward M., New York, N. Y. Filter	546,335	Sept. 17	1583	375, 376	72	1678
Knight, Herbert L. (See Stromberg, Carlson, and Knight.)						
Knight, John C., New York, N. Y. Carbon-holder	543,186	July 23	2379	562	72	491
Knight, Oswald, assignor of one-half to C. B. McAdams, Richmond, Va. Shutter-fastener	546,164	Sept. 10	1255	300	72	1598
Knipe, Oliver C., Norristown, Pa. Ball-bearing	546,818	Sept. 24	2393	572	72	1843
Knobeloch, Frank, Dayton, Ohio, assignor to Carter-Crume Company, Niagara Falls, N. Y. Paper box	546,767	Sept. 24	2320	553	72	1829
Knoefel, Ludwig, New York, N. Y. Picture	544,921	Aug. 20	2027	483	72	1151
Knopf, Frederick, Chicago, Ill. Display rack	543,025	July 23	2069	491	72	436
Knowlden, Isaac, Brooklyn, N. Y., assignor to Pope Manufacturing Company, Portland, Me., and Hartford, Conn. Bicycle-stand	545,631	Sept. 3	337	84	72	1416
Knowles, George A., South Attleborough, Mass. Tuning-peg for stringed instruments	544,812	Aug. 20	1825	438	72	1113
Knowles, John H. (See Clay and Knowles.)						
Knowles, John H., Philadelphia, Pa. Paper-feeding machine	544,764	Aug. 20	1721	414, 415, 416	72	1092
Knowles Loom Works. (See Hutchins, George F., assignor.)						
Knowles Loom Works. (See Stafford, George W., assignor.)						
Knowles Loom Works. (See Wattie, William, assignor.)						
Knowles, Mortimer L., Detroit, Mich. Harness	544,310	Aug. 13	846	213	72	915

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Knowles, William H., Danbury, Conn. Machine for sizing, felting, and pinning out hats	546,453	Sept. 17	1799	426	72	1720
Knowlton, Elza A., and J. H. Warehime, Lee, Ohio. Budding-tool	542,478	July 9	1153	282	72	233
Knox, Charles J. (See Best and Knox.)						
Knox, Orville M., Oneida, N. Y. Wire fence	544,509	Aug. 13	1258	304	72	987
Kobert, Eduard R., Dorpat, Russia. Medicinal preparation from blood	541,931	July 2	184	.....	72	39
Koch, Charles E., Dunkirk, N. Y. Device for carrying spittoons	544,350	Aug. 13	987	243	72	936
Koch, Julius, Münden, Germany. Oil press	543,343	July 23	2641	621, 622	72	541
Kochenderfer, John H., Galion, Ohio. Portable bath-cabinet	542,163	July 2	558	135	72	110
Kochka, Thomas, Jersey City, N. J. Shutter-worker	542,059	July 2	405	98	72	79
Kock & Wieser. (See Reichardt, Henry C., assignor.)						
Koedding, William, St. Louis, Mo. Electric brake	546,120	Sept. 10	1180	282	72	1586
Koerner, Charles A., Evansville, Ind. Line-reel	542,564	July 9	1305	316	72	262
Kohler, Bernhard. (See Kott, Gustav E., assignor.)						
Kohler, Frederick E., Canton, Ohio. Lawn-sprinkler	543,993	Aug. 6	282	69	72	800
Kohler, Joseph, Cincinnati, Ohio. Combination compasses and glass-cutter	546,669	Sept. 24	2143	510	72	1797
Kohler, W. C., *et al.* (See Kintzing, William F., assignor.)						
Köhli, Fritz, Bienne, assignor to E. Flotron, Madretsch, Switzerland. Watchcase	546,543	Sept. 17	1935	460	72	1746
Kohlsaat, James. (See Fleischer, Johannes, assignor.)						
Kohn, Jacob W., Newark, assignor to G. C. Steiger, New Brunswick, N. J. Alarm-lock	542,479	July 9	1154	282, 283	72	234
Koneman, William A., Chicago, Ill. Process of and apparatus for manufacture of gas	546,702	Sept. 24	2201	525	72	1808
Konigslow, Ernest, *et al.* (See Melzer, Josef, assignor.)						
Konigslow, Otto, Cleveland, Ohio. Pneumatic dispatch system	546,859	Sept. 24	2456	588, 589	72	1856
Konrad, Franz, Niedergrund, Austria-Hungary. Preparing blanks for the manufacture of horn buttons	545,079	Aug. 27	2303	.....	72	1222
Koopman, Elias B., Brooklyn, N. Y. Belt attachment	544,856	Aug. 20	1908	458	72	1129
Kootz, William, Milwaukee, Wis. Fly-net	546,860	Sept. 24	2459	589	72	1857
Kopp, August, assignor, by mesne assignments, to A. Kopp, L. Miller, and P. Tieck, Hamilton, Ohio. Apparatus for drawing beer	542,264	July 9	945	232	72	195
Köppen, Lothar von, Munich, Germany. Dividing apparatus	546,336	Sept. 17	1586	376	72	1679
Koreff, Richard, Prague, Austria-Hungary. Azo dyo	543,212	July 23	2429	.....	72	503
Koreff, Richard, assignor to Kinzlberger & Co., Prague, Austria-Hungary. New amido base and colors therefrom	541,859	July 2	67	.....	72	16
Korsmeyer, Ernst H., Higginsville, Mo. Steam-generator	541,934	July 2	185	43	72	39
Korten, Henry, Burlington, Iowa. Steam-boiler furnace	543,739	July 30	3113	702	72	699
Koschtial, Franz, Hoboken, N. J. Guiding attachment for sewing-machines	542,858	July 16	1804	427, 428	72	367
Kott, Gustav E., assignor to B. Kohler, Chemnitz, Germany. Sewing-machine	543,832	July 30	3590	836, 837, 838	72	731
Kottcamp, Philip J., York, Pa. Adjustable rod and box for water or other pipes	544,410	Aug. 13	1079	263	72	251
Krah, Armin, Berlin, Germany. Letter-file	544,231	Aug. 6	694	177	72	876
Kramer, Otto E. H., St. Louis, Mo. Electric motor	545,591	Sept. 3	274	67	72	1404
Kramer, Otto E. H., St. Louis, Mo. Electric motor	545,592	Sept. 3	276	68	72	1404
Krank, Alfred J., St. Paul, Minn. Joint for shears	543,026	July 23	2070	492	72	436
Kratochwil, Lorenz. (See Reinisch and Kratochwil.)						
Kray, John A., Lancaster, Pa. Shoe	544,583	Aug. 13	1377	337	72	1011
Krecke, Friedrich, and I. Rosenberg, assignors to Kalle & Co., Biebrich, Germany. Blue-black disazo dyo	546,068	Sept. 10	1096	.....	72	1570
Krecke, Friedrich, and I. Rosenberg, assignors to Kalle & Co., Biebrich, Germany. Blue-black disazo dyo	546,069	Sept. 10	1097	.....	72	1570
Krecke, Friedrich, and I. Rosenberg, assignors to Kalle & Co., Biebrich, Germany. Blue-black dyo	546,070	Sept. 10	1098	.....	72	1570
Krehbiel, John, Cleveland, Ohio. Convertible seat and berth	544,510	Aug. 13	1259	304	72	987
Krentzberg, August F. (See Stymus and Krentzberg.)						
Kribs, Seraphin, Brooklyn, assignor to W. Brookfield, New York, N. Y. Press for making screw-insulators	542,565	July 9	1306	316	72	262
Kridler, John, Grand Rapids, Mich. Lubricator	543,489	July 30	2902	683	72	608
Krieger, Andrew, Indianapolis, Ind. Detachable-tooth saw	544,438	Aug. 13	1131	274	72	961
Kriel, William J. (See Sigler, Elias V., assignor.)						
Kritzer, Charles C., Grand Rapids, assignor to Automatic Circuit Breaker Company, Newaygo, Mich. Automatic electrical cut-out	546,233	Sept. 10	1368	326	72	1621
Krohn, Georg F., Altona, assignor to A. P. Horn, Hamburg, Germany. Polishing wood	545,235	Aug. 27	2379	.....	72	1278
Krull, Charles M., Des Moines, Iowa. Stovepipe-fastener	544,674	Aug. 20	1569	376	72	1063
Krupp, Frank, New Orleans, La. Safety lock-hinge	543,533	July 30	3001	703	72	626
Kruse, Charles M., assignor to Canners Supply Company, Bridgeton, N. J. Can-capping machine	542,198	July 2	620	150, 151	72	121
Kruse, Edward W., Higginsville, Mo. Plow-clevis	546,645	Sept. 17	2103	498	72	1778
Kuechler, Jacob L., Knechler's Roost, Pa. Provision-safe	542,859	July 16	1805	428	72	367
Kuchmsted, Armin O., Oshkosh, Wis. Display-form for clothing	543,344	July 23	2642	622	72	542
Kugler & Co. (See Schuppisser, Hermann, assignor.)						
Kuhlewind, Cornelius, Rochester, Pa. Glass-press	543,154	July 23	2305	546	72	480
Kuhlman, Gustave C., Cleveland, Ohio. Construction of railway-cars	546,592	Sept. 17	2020	480	72	1762
Kuhlmann, John P. F., Seattle, Wash. Cable-coupling	545,164	Aug. 27	2453	594	72	1252
Kuhns Brothers. (See Kuhns, George F., assignor.)						
Kuhns Brothers. (See Miller, Allen T., assignor.)						
Kuhns, George F., assignor to Kuhns Brothers, Dayton, Ohio. Catch-basin	543,740	July 30	3415	703	72	699
Kuner, Oscar R., Ebersbach, Germany. Belt-shifting device	546,618	Sept. 17	2058	488	72	1769
Kusserow, Reinhold, Berlin, Germany. Poultice	545,593	Sept. 3	278	.....	72	1404
Kwarneberg, Paul, Chicago, Ill. Paint compound	543,308	July 23	2593	.....	72	533
Kynett, William H. (See Tuttle, Ira J., assignor.)						
L. Wolff Manufacturing Company. (See Gavin, John H., assignor.)						
L. Wolff Manufacturing Company. (See Hagen, August, assignor.)						
La Belle, Thomas F., Holyoke, Mass. Bicycle-bearing	542,526	July 9	1242	303	72	250
La Casse, Henry, Rochester, N. Y. Bottle-washer	546,017	Sept. 10	1007	242, 243	72	1553
La Cour, Paul, Askovshus, Denmark, assignor to K. V. Tuxen Brooklyn and P. Hoykendorf, New York, N. Y. Telegraphic vibrator	546,892	Sept. 24	2514	600, 601	72	1867
La Due, George C., assignor to Fruit Cleaning Co., Brooklyn, N. Y. Mechanism for seeding fruit	543,833	July 30	3594	838, 839	72	732
La Due, George C., assignor to Fruit Cleaning Co., Brooklyn, N. Y. Mechanism for seeding fruit	543,834	July 30	3598	839	72	732

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La Fave, Joseph H., Toledo, Ohio, assignor of one-half to W. H. Chapin, Springfield, Mass. Knife-grinding device	542,388	July 9	987	343, 344	72	203
La Fountain, Maxim Jr., Springfield, Vt. Power-transmitting mechanism	545,165	Aug. 27	2455	595	72	1252
La Tour, Joseph R. (See Mitchell, Marcus L., assignor.)						
Labofish, Charles S., Troy, N. Y. Calculating-machine	544,360	Aug. 13	988	214	72	936
Lachance, Joseph, St. François, Canada. Nut-lock	543,027	July 23	2071	492	72	436
Lainson, Alfred T., Aurora, Nebr. Mop-wringer	541,935	July 2	187	43	72	40
Laird, Robert H., St. Louis, Mo., assignor to W. H. Laird, New York, N. Y. Oil-burner	545,236	Aug. 27	2579	625	72	1278
Laird, William H. (See Laird, Robert H., assignor.)						
Lake, Amariah, Pleasantville, N. J. Theatrical device for producing illusory effects	546,927	Sept. 24	2567	615	72	1877
Lake, David. (See Lake, Leon and D.)						
Lake, David, Philadelphia, Pa., assignor to American Lasting Machine Company, Camden, N. J. Lasting-machine	542,199	July 2	623	151, 152, 153	72	122
Lake, Hattie I. (See Lake, Leon and D., assignors.)						
Lake, Jesse S., Pleasantville, N. J. Revolving gravity-railway	546,386	Sept. 17	1670	396	72	1095
Lake, Leon and D.; said D. Lake assignor to H. I. Lake, Philadelphia, Pa. Machine for cutting key-seats	543,309	July 23	2593	609, 610	72	593
Lake, Lorenzo. (See Sherwood and Lake.)						
Lakin, James A., Westfield, Mass. Audiphone	544,732	Aug. 20	1670	401	72	1082
Lally, John, Waltham, Mass. Fireplace-throat	544,857	Aug. 20	1909	458	72	1129
Lamarche, Rudolph, Hamburg, Germany. Contrivance for disinfecting telephone apparatus	543,490	July 30	2903	684	72	608
Lamb, David. (See Braden, John B., assignor.)						
Lamb, George B., assignor to Waterbury Farrel Foundry and Machine Company, Waterbury, Conn. Hydraulic-pressure valve	543,772	July 30	3476	810	72	709
Lambert, Christian H., assignor to Buckeye Manufacturing Company, Anderson, Ind. Neck-yoke	542,200	July 2	627	153	72	122
Lambert, Joseph W., Kansas City, Mo. Device for manufacturing wooden dishes	542,365	July 9	947	233	72	196
Lamont, Robert P., Chicago, Ill. Bridge	544,733	Aug. 20	1671	402	72	1082
Lamson & Sessions Company. (See Wood, Norman B., assignor.)						
Lancaster, John. (See Blackburn, Thomas, assignor.)						
Landers, Clyde, Tacoma, Wash. Rheostat controller	543,963	Aug. 6	232	57	72	791
Landgrebe, Johann H., Cassel, Germany. Tap for water or other liquids	543,254	July 23	2507	588	72	516
Landis, Abraham B., Waynesborough, Pa. Grinding-machine	544,439	Aug. 13	1132	274, 275	72	902
Landis, Frank F., Waynesborough, Pa. Pneumatic straw-stacker	541,936	July 2	188	13, 44	72	40
Landis, Frank F., Waynesborough, Pa. Grain-cleaning device	544,043	Aug. 6	371	92	72	817
Landis, Frank F., Waynesborough, Pa. Thrashing-machine	544,044	Aug. 6	373	93	72	817
Landis, Frank F., Waynesborough, Pa. Grain-cleaning device	544,045	Aug. 6	378	93	72	818
Lane, Almeron M., Meriden, Conn. Clock-winding mechanism	546,782	Sept. 24	2339	550	72	1833
Lane, Almeron M., Meriden, Conn. Clock	546,819	Sept. 24	2394	572, 573	72	1844
Lane, James A., *et al.* (See Hoagland, John B., assignor.)						
Lanfair, Herbert D., Westminster, Cal., assignor to Goodell Brothers, Greenfield, Mass. Hand-drill	544,411	Aug. 13	1080	263	72	951
Langdon Miter Box Company. (See Goodell, Albert D., assignor.)						
Langelier, Antoine J., Providence, R. I. Swaging-machine	542,020	July 2	339	82	72	68
Langelier, Antoine J., Providence, R. I. Swaging-machine	542,021	July 2	340	82	72	68
Langen, Eugen, Cologne, Germany. Overhead railway with suspended vehicles	546,928	Sept. 24	2572	615, 616	72	1879
Langer, Theodor, Vienna, Austria-Hungary. Smoke-consuming apparatus for furnaces	544,765	Aug. 20	1747	417, 418	72	1098
Langer, Theodor, Vienna, Austria-Hungary. Smoke-consuming apparatus	544,766	Aug. 20	1751	418	72	1099
Langer, Theodor, Vienna, Austria-Hungary. Smoke-consuming apparatus	544,767	Aug. 20	1752	418	72	1099
Langford, Josiah W., and W. M. Washburn, Gibsland, La. Fish or mole trap	545,960	Sept. 10	905	217	72	1534
Langill, Charles H., Everett, Mass. Heel-trimming machine	543,491	July 30	2904	684	72	608
Lanigan, Jane, executrix, *et al.* (See Graves, John W., assignor.)						
Lankford, Clarence P., *et al.* (See Chelton, George W., assignor.)						
Lannen, Bernard C., Amboy, Ill. Corn or seed planter	545,700	Sept. 3	465	113	72	1439
Lansing, Robert, and G. M. Jones, Watertown, N. Y. Type-writer attachment	545,509	Sept. 3	139	33	72	1380
Lantau, Karl A., and C. J. Anderson, Chicago, Ill.; said Anderson assignor to said Lantau. Arc-lamp mechanism	546,403	Sept. 17	1699	403	72	1700
Lapham, Charles, *et al.* (See Weaver, William, assignor.)						
Lappin Brake Shoe Company. (See Wohlfarth, Charles F., assignor.)						
Lappin, John W. (See Cloud and Lappin.)						
Laraway, Ransom K., Battle Creek, Mich. Collapsible boat	542,340	July 9	898	220	72	186
Lariew, John R., Elmira, N. Y. Wire bed-bottom	543,994	Aug. 6	284	69, 70	72	800
Larkin, Francis, Jr., *et al.* (See Thomas, Eddy T., assignor.)						
Larner, Matthias, Milltown, Canada. Yarn-protector attachment for spinning-machines	545,510	Sept. 3	141	33	72	1380
Larrabee, Charles E., Berkeley, Cal. Advertising-caster	543,938	Aug. 6	190	45	72	783
Larsen, Hans. (See Jensen and Larsen.)						
Larson, Alfrid, Wausau, Wis. Cuspidor-cleaner	546,893	Sept. 24	2516	601	72	1867
Larson, Charles A., Stillwater, Minn. Gambrel	544,858	Aug. 20	1911	458, 459	72	1129
Larson, Swante P., Chicago, Ill. Type-writing machine	545,594	Sept. 3	278	68, 69	72	1404
Larzelere, James S., assignor of one-half to M. R. Mucklé, Philadelphia, Pa. Game-indicator	546,959	Sept. 24	2623	628	72	1888
Lassam, Harry C., London, England. Glazing-bar for roofs, skylights, &c.	545,237	Aug. 27	2580	625	72	1278
Latham, Albert, Springfield, Mass. Hook and stud for shoes	542,415	July 9	1035	254	72	213
Latham, Albert, Springfield, Mass. Eyelet	544,311	Aug. 13	818	213	72	915
Latham, William A., assignor of one-half to C. A. Butterfield, De Witt, Iowa. Cistern, well, or tank cleaner	541,937	July 2	190	44	72	40
Lathrop, Frank L. (See Edsall and Lathrop.)						
Lathrop, Frank L., and H. C. H. Walsh, Brooklyn, assignors to H. L. Judd & Co., New York, N. Y. Ring	541,974	July 2	260	61	72	53
Latrige, Paul B., St. Etienne, France. Breech-loading gun	543,939	Aug. 6	191	46	72	784
Latter, Lawrence L., Falmouth, Mass. Pipe-wrench	542,416	July 9	1036	254	72	213
Lattig, Jacob W., West Bethlehem, Pa. Semaphore-signal for railways	545,701	Sept. 3	467	113	72	1439
Latty, John W., St. Louis, Mo. Velocipede hobby-horse	543,874	Aug. 6	84	19	72	764
Laube, Godfried, Huron, S. D., assignor of one-half to J. Hymans, Del Rio, Tex. Vehicle-wheel	543,310	July 23	2595	610	72	533
Laube, Godfried, Huron, S. D., assignor of one-half to J. Hymans, Del Rio, Tex. Vehicle-wheel	543,311	July 23	2596	610	72	535

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Lauber, Eduard, Torre-Pellice, and L. Caberti, Messina, Italy, assignors to Farbenfabriken, vormals Fr. Bayer & Co., Elberfeld, Germany. Dyeing	542,022	July 2	341	.....	72	69
Laubscher, Alexander, assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Ruffler for sewing-machines	546,670	Sept. 24	2144	510	72	1798
Laughlin, L. A. (See Gosse, Edward L., assignor.)						
Laughlin, Samuel J., and J. Hough, Guelph, Canada. Drawing, sketching, and designing table	543,492	July 30	2907	684, 685	72	608
Laurent, Joseph B., New York, N. Y. Gas-stove	544,275	Aug. 6	780	199	72	891
Lanter, Herman, Indianapolis, Ind. Desk for type-writing machines	543,940	Aug. 6	193	46	72	784
Laux, Isaac R., Orrville, Ohio. Injector	543,554	July 30	3030	708, 709	72	632
Laval, Carl G. P. de, Stockholm, Sweden. Device for suspending mechanical milking apparatus upon cows	544,813	Aug. 20	1827	438, 439	72	1114
Laval, George de, Warren, Mass., assignor to Geo. F. Blake Manufacturing Company, New York, N. Y. Valve for pumps	542,083	July 2	438	105	72	86
Laval, George de, Warren, Mass., assignor to Geo. F. Blake Manufacturing Company, New York, N. Y. Compensating pumping-engine	542,084	July 2	439	106	72	86
Lavalle, Albert H. (See Lavalle, Louis R. and A. H.)						
Lavalle, Louis R. and A. H., Holyoke, Mass. Conduit electric railway	542,164	July 2	559	135, 136	72	110
Lavigne, Louis, Marinette, Wis. Runner attachment for vehicles	543,387	July 23	2703	638	72	554
Law, Emerson W., *et al.* (See White, Frederick, assignor.)						
Law, Myron D., Washington, D. C., assignor to A. G. Wheeler, Chicago, Ill. Trolley for underground electric railways	544,312	Aug. 13	849	213, 214	72	915
Lawler, Patrick F. (See Smith and Lawler.)						
Lawrence, Martha J. (See Lawrence, William S., assignor.)						
Lawrence, William S., assignor to M. J. Lawrence, Kalamazoo, Mich. Lever cultivator	542,614	July 9	1387	335	72	278
Laws, Frank, Tama, Iowa. Tooth-brush	543,028	July 23	2072	492	72	436
Lawton, Benjamin F., Riverdale, N. J. Hydrocarbon-burner	545,595	Sept. 3	282	69	72	1405
Lawver, George F., Uniontown, Kans. Triple ladder	542,085	July 2	441	106	72	86
Layeux, Esery, New Bedford, Mass. Mechanical movement	545,166	Aug. 27	2456	595	72	1253
Layman, Estes H., Des Moines, Iowa. Egg-tester	543,493	July 30	2910	685	72	609
Le Blanc, Gustave, and L. Johnson, Mead, Nebr. Wheel for bicycles	546,593	Sept. 17	2022	480	72	1762
Le Fevre, Nevin B., Littlestown, Pa. Bicycle-stand	542,964	July 16	1966	467	72	400
Le Sueur, Ernest A., Ottawa, Canada. Means for counterbalancing end-pressure in steam-turbines	545,238	Aug. 27	2582	626	72	1278
Leach, Frederick. (See Crocker, John, assignor.)						
Leach, John S., Hartford City, Ind. Swing	544,734	Aug. 20	1672	402	72	1083
Leary, William A., Norfolk, and J. F. Hostetter, Suffolk, Va. Conveyer and assorter	546,166	Sept. 10	1257	300	72	1599
Leather, Joseph, Liverpool, England. Ventilator	543,995	Aug. 6	285	70	72	800
Leatherbee, James D. (See Boardman, Arthur F., assignor.)						
Leathers, William T., Mount Eagle, Pa. Roofing paint	542,086	July 2	442	.....	72	87
Lebel, Florian, Montreal, Canada. Hub-attaching device	545,126	Aug. 27	2393	579	72	1240
Leblanc, Alfredo, Stamford, Conn. Button	543,029	July 23	2073	492	72	437
Leblanc, Maurice. (See Hutin and Leblanc.)						
Lebrun, Edmond. (See Lee and Lebrun.)						
Lechner, Francis M., Columbus, Ohio. Antifriction-bearing	543,875	Aug. 6	85	19	72	764
Lechner, Francis M., Columbus, Ohio. Ball-bearing	543,876	Aug. 6	86	19	72	764
Lechner Manufacturing Company. (See Legg, Benjamin A., assignor.)						
Lederer, Leonhard, Munich, Germany. Producing phenoxacetic anilids, &c	543,579	July 30	3072	.....	72	641
Lee, Cyrus H. (See Lee, Thomas E. and C. H.)						
Lee, Ellen J. (See Sheridan and McNulty, assignors.)						
Lee, Fred E. (See Mosher, Herbert L., assignor.)						
Lee, Homer, New York, N. Y., and E. Lebrun, Newark, N. J., assignors to Electric Typographic Company, of West Virginia. Matrix-making and printing-bar-casting machine	542,224	July 2	667	163	72	120
Lee, John E., Conshohocken, Pa. Thermocanter	546,894	Sept. 24	2517	601	72	1868
Lee, Thomas E. and C. H., Silver Creek, Nebr. Wire-fence machine	544,814	Aug. 20	1828	440	72	1114
Leetham, Edwin S., *et al.* (See Mantion and Shepherd, assignors.)						
Legg, Albert, Allendale, N. J., and F. H. Treacy, Brooklyn, assignors to Self-Threading Sewing-Machine Company, New York, N. Y. Sewing-machine	546,768	Sept. 24	2321	553	72	1820
Legg, Benjamin A., assignor to Lechner Manufacturing Company, Columbus, Ohio. Coal or rock drill	545,596	Sept. 3	284	70	72	1406
Lehnbeuter, Joseph, St. Louis, Mo. File	542,266	July 9	741	182	72	158
Lehr, Harry, assignor of one-half to Meerbott Manufacturing Company, New York, N. Y. Manufacture of finger-rings	545,597	Sept. 3	287	70	72	1406
Lehr, Joseph W., *et al.* (See Sheanfeld, William C., assignor.)						
Lehr, Nicholas P., *et al.* (See Sheanfeld, William C., assignor.)						
Leightham, Joseph, assignor of one-half to W. H. Slichter, Reading, Pa. Car-fender	542,480	July 9	1157	283	72	234
Leightham, Joseph, assignor of one-half to W. H. Slichter, Reading, Pa. Car-fender	542,481	July 9	1158	284	72	234
Leightham, Joseph, assignor of one-half to W. H. Slichter, Reading, Pa. Snow-plow	544,623	Aug. 13	1454	353, 354	72	1024
Leighton, Leslie H., Glens Falls, assignor of one-half to A. M. Bailey, Ticonderoga, N. Y. Lamp-chimney holder	546,861	Sept. 24	2460	589	72	1857
Leistner, Edward von, New York, N. Y., assignor of one-half to H. Goetter, Arlington, N. J. Building set	543,580	July 30	3073	719, 720	72	641
Lembke, Assar C. (See Nyström and Lembke.)						
Lemmon, George F., Canton, Ohio. Bolt or rivet	545,961	Sept. 10	906	217	72	1534
Lemos, Leon, San Francisco, Cal. Combined whistle and cigar-holder	542,366	July 9	950	233	72	196
Lenhart, Philip F., Brooklyn, N. Y. Backwater and sewer-gas trap	542,417	July 9	1038	254	72	214
Lentz, Charles R., Indianapolis, Ind. Surgeon's operating-table	542,060	July 2	405	98, 99	72	90
Leo, James, Jersey City, N. J. Paper-box-covering machine	546,489	Sept. 17	1858	440	72	1731
Leonard, Arthur G., New York, N. Y. Device for uniting cars	543,030	July 23	2074	493, 494	72	437
Leonard, Arthur G., New York, N. Y. Car-platform	543,031	July 23	2083	494	72	438
Leonard, Arthur G., New York, N. Y. Device for uniting cars	543,032	July 23	2085	494	72	439
Leonard, Newton, Washington Mills, N. Y. Barley-fork	546,740	Sept. 24	2272	540	72	1820
Leonard, Newton, assignor of one-half to D. S. Prentice, Washington Mills, N. Y. Plant-support	546,167	Sept. 10	1260	301	72	1599
Leonard, Samuel B., Denver, Colo. Bicycle tool-box	544,640	Aug. 13	1457	360	72	1031
Leonhardt Wagon Manufacturing Company. (See Leonhardt, William, assignor.)						
Leonhardt, William, assignor to Leonhardt Wagon Manufacturing Company, Baltimore, Md. Delivery-wagon	544,232	Aug. 6	695	177	72	876
Leovy, Henry, New Orleans, La. Camp-stool	546,895	Sept. 24	2518	601	72	1868
Lepley, Thomas B., assignor of one-half to J. Grant, Zuck, Ohio. Napkin holder	542,267	July 9	742	182	72	159

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Lepper, Fred W., Washington, D. C. Drawing-pen	546,850	Sept. 24	2444	586	72	1853
Leppert, Henry, assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Transom-rod holder	545,080	Aug. 27	2304	559	72	1222
Leroux, George P., assignor of one-half to L. V. Stone, Conneaut, Ohio. Nut-lock	543,695	July 30	3321	771	72	681
Leroy, Charles, assignor of one-half to G. J. Calkins, Dayesville, N. Y. Powder-duster	544,735	Aug. 20	1674	402	72	1083
Lesem, Samuel. (See Pickett, George W., assignor.)						
Leslie, Schuyler W., *et al.* (See Crandall, Jesse A., assignor.)						
Lesna, Al, assignor of one-half to F. Meyer, Oconomowoc, Wis. Bridge-gate	541,860	July 2	69	16	72	16
Lesser, Louis. (See Abelson and Lesser.)						
Lester, Frank, Panhandle, Tex. Port-regulating valve	545,081	Aug. 27	2304	560	72	1223
Lester, James S., Atlanta, Ga. Faucet	542,201	July 2	628	153	72	122
Lesuer, Joseph B., Somerville, assignor of one-fourth to F. E. Reed, Medford, Mass. Heel-nail-feeding machine	541,861	July 2	71	16, 17	72	17
Levan, Samuel, Saginaw, Mich. Miter-box	542,738	July 16	1613	385	72	332
Leverett, Henry A., assignor of one-fourth to T. H. L. Bake, London, England. Process of and apparatus for tanning	542,680	July 16	1511	361	72	315
Levy, Lionel E., New York, N. Y. Leggin	545,702	Sept. 3	468	113	72	1439
Lewis, David T., assignor of five-eighths to W. F. McKelvy and J. D. Glover, Pittsburg, Pa. Method of and apparatus for coating pipe	545,429	Aug. 27	2888	703	72	1337
Lewis, David T., assignor of five-eighths to W. F. McKelvy and J. D. Glover, Pittsburg, Pa. Method of and apparatus for coating pipe	545,430	Aug. 27	2892	703	72	1338
Lewis, Frank, Pleasanton, Cal. Nozzle for garden-hose	545,656	Sept. 3	376	93	72	1424
Lewis, George W., Chicago, Ill. Motor for traction-engines	545,962	Sept. 10	907	218	72	1534
Lewis, Harry J., assignor to himself and W. B. Neely, Rusk, Tex. Nail-holding attachment for hammers	543,255	July 23	2508	588	72	516
Lewis, Hartwell T., Calumet, Mich. Hub-attaching device	544,191	Aug. 6	592	148	72	858
Lewis, J. F. (See Hart, John W., assignor.)						
Lewis, Paul R. (See Earnshaw, Joseph C., assignor.)						
Lewis, Percy D., Rochester, N. Y. Insect-trap	544,624	Aug. 13	1456	354	72	1025
Lewis, Theodore G., assignor to Buffalo Dental Manufacturing Company, Buffalo, N. Y. Lubricator	545,598	Sept. 3	289	70	72	1496
Lewis, Thomas T., Philadelphia, Pa. Machine for making battery-plates	544,180	Aug. 6	591	142	72	858
Lewis, Wilfred. (See Sellers and Lewis.)						
Lewis, William E., Corry, Pa. Ink well or holder	542,482	July 9	1160	284	72	235
Lewis, William M., Walnut, Ind. Land-marker	543,877	Aug. 6	88	19	72	764
Libbey, Hosea W., Boston, Mass. Transmitting and receiving attachment for telephones	543,626	July 30	3215	745	72	661
Libbey, Winfield S., Lewiston, Me. Water-wheel governor	545,599	Sept. 3	290	71	72	1407
Libby, William F., Gorham, Me. Banjo	542,165	July 2	562	136	72	110
Lidback, John A., Portland, Me. Window-curtain	544,815	Aug. 20	1832	440	72	1114
Lieb, Charles A. (See Ball and Lieb.)						
Ligget, Alexander, Philadelphia, Pa. Stretcher for underwear	543,996	Aug. 6	286	70	72	801
Light, Samuel E., Lebanon, Pa. Steam generator	541,938	July 2	192	44	72	41
Lightner, H. L., *et al.* (See Lightner and Newsom, assignors.)						
Lightner, Henry L., San Francisco, and J. A. Newsom, Oakland, assignors, by mesne assignments, to H. L. Lightner, H. C. Biggs, O. C. Haslett, San Francisco, and J. L. Newsom, Oakland, Cal. Crushing and grinding mill	542,087	July 2	442	106	72	87
Lilienthal, Otto, Berlin, Germany. Flying-machine	544,816	Aug. 20	1833	440	72	1115
Lillard, William B., New Orleans, La. Key for type-writers	546,896	Sept. 24	2519	602	72	1868
Lilley, Hugh H. V., Milford, Mass. Bone-cutting machine	543,033	July 23	2088	495	72	439
Lincoln, Clinton E., Morehead City, N. C. Work-stand	544,182	Aug. 6	593	148	72	858
Lincoln Sewing Machine Company. (See Fowler and Warren, assignors.)						
Lind, Henry B. (See Albert, Charles D., assignor.)						
Lind, Jacob P., Columbus, Ohio. Metallic helmet	542,389	July 9	990	244, 245	72	203
Lindemann, August, Milwaukee, Wis. Domestic oven	545,511	Sept. 3	142	33, 34	72	1380
Lindenthal, Gustav, New York, N. Y. Cable for bridges	542,829	July 16	1757	418	72	359
Lindgren, August, Moline, Ill., assignor to Moline Plow Company, of Illinois. Cultivator	541,975	July 2	261	61	72	53
Lindsay, Thomas J., Lafayette, Ind. Bicycle driving mechanism	545,408	Aug. 27	2852	694	72	1330
Lindsley, Charles E. (See Lindsley, Edward and C. E.)						
Lindsley, Edward and C. E., Cleveland, Ohio, assignors to Lindsley Terminal Equipment Company, of Illinois. Transferring apparatus for coal	544,103	Aug. 6	477	119, 120	72	836
Lindsley Terminal Equipment Company. (See Lindsley, Edward and C. E., assignors.)						
Lindström, Charles, Altoona, assignor of one-half to M. R. Loughridge, Philadelphia, Pa. Slack-adjuster	545,860	Sept. 3	730	178	72	1489
Lindstrom, Nils O., Union Course, assignor to A. B. See Manufacturing Company, Brooklyn, N. Y. Electric elevator	544,768	Aug. 20	1756	419	72	1100
Ling, Jacob H., Detroit, Mich. Key attachment for stringed instruments	545,963	Sept. 10	913	218	72	1535
Linke, Theodore. (See Gould, Henry E., assignor.)						
Linke, Theodore, New York, N. Y. Valve	542,709	July 16	1557	372	72	323
Linn, Allen D., and A. A. Lytle, assignors to Grand Rapids School Furniture Company, Grand Rapids, Mich. Machine for turning and boring brush-heads	542,681	July 16	1513	362	72	315
Linn, Allen D., and A. A. Lytle, assignors to Grand Rapids School Furniture Company, Grand Rapids, Mich. Sanding-machine	543,155	July 23	2307	546, 547	72	481
Linn, Samuel H., Rochester, N. Y. Surgeon's operating apparatus	542,390	July 9	992	245	72	204
Linsey, Joseph T., B. F. Kernodle, and I. Shelley, Jamestown, Ind. Gate-hinge	546,234	Sept. 10	1372	327	72	1622
Linthicum, Asa S., Wellham's Cross Roads, Md. Combined land marker, coverer, and furrower	542,391	July 9	993	245	72	204
Linthicum, Sweetser, Jr., Wellham's Cross Roads, Md. Combined land marker, furrower, and coverer	542,483	July 9	1161	284	72	235
Linton, George E., Worcester, Mass. Electric switch	546,820	Sept. 24	2395	573	72	1844
Linton, George E., Worcester, Mass. Electric switch	546,821	Sept. 24	2397	573	72	1844
Lippy, David, and I. E. Finfrock, Mansfield, Ohio. Driving-gear for bicycles	516,703	Sept. 24	2203	525, 526	72	1808
Lipschitz, Bernard, assignor to J. Lipschitz, East Albany, N. Y. Device for hanging garments	545,600	Sept. 3	293	71	72	1407
Lipschitz, Jenny. (See Lipschitz, Bernard, assignor.)						
Lipska, Edward, assignor of one-half to G. J. Eichborn, Dubuque, Iowa. Hand-truck	545,239	Aug. 27	2783	626	72	1278
Lispenard, George, Brooklyn, N. Y. Picker-stem guard for cotton-harvesters	545,431	Aug. 27	2895	703, 704	72	1338
Lister & Co. (See Bamford, Frank, assignor.)						
Littauer, Lucius N. (See Murphy, William B., assignor.)						
Little, Charles H., Saginaw, Mich. Kitchen-cabinet	542,341	July 9	900	221	72	186
Little, Charles W. G. (See Little, William G. and C. W. G.)						
Little, William G., London, and C. W. G. Little, Heckington, England. Apparatus for recording the power of steam-engines	546,897	Sept. 24	2520	602	72	1868

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Lloyd, Edwin L., Philadelphia, Pa. Bottle for preventing fraudulent refilling	544,675	Aug. 20	1570	376	72	1063
Lloyd, Marshall B., assignor to White Manufacturing Company, Minneapolis, Minn. Woven-wire fabric	545,964	Sept. 10	914	219	72	1536
Lloyd, Willmer D., Beaver Falls, Pa. Barrel-swing	543,388	July 23	2703	638	72	574
Lobdell, Emons H., assignor of one-half to A. J. Acker, Mecosta, Mich. Sack	546,168	Sept. 10	1261	301	72	1600
Lobert, Frederick A., National City, assignor of two-thirds to C. Schallberger and H. R. Rood, San Diego, Cal. Compound for preserving timber	546,960	Sept. 24	2624	.....	72	1889
Locke, Nathaniel C., Salem, Mass. Hydrostatic pump-governor and tank-filler	545,082	Aug. 27	2306	560	72	1223
Locke, Nathaniel C., Salem, Mass. Boiler feed-pump regulator	545,083	Aug. 27	2307	561	72	1223
Lockwood, Amos, Halifax, England. Jacquard machine for looms	545,240	Aug. 27	2584	626, 627	72	1279
Lockwood Scale and Elevator Manufacturing Company. (See Lockwood, William W., assignor.)						
Lockwood, William W., assignor to Lockwood Scale and Elevator Manufacturing Company, Winfield, Kans. Grain-elevator	542,418	July 9	1039	255	72	214
Lodetti, Frank E., Rondout, N. Y. Magazine for repeating-firearms	545,512	Sept. 3	144	34	72	1381
Loetscher, Christian, Dubuque, Iowa. Doweling-machine	545,298	Aug. 27	2672	648, 649	72	1296
Loew, Charles H., Cleveland, Ohio. Filtering apparatus	543,389	July 23	2704	639	72	554
Loewenbach, Hugo, *et al.* (See Young, George W., assignor.)						
Löfhjelm, Karl, Uleaborg, Finland. Apparatus for distilling tar and refining turpentine	546,018	Sept. 10	1010	243	72	1553
Logan, John E., Manchester, N. H. Eaves-trough hanger	546,019	Sept. 10	1012	243	72	1554
Logan, Swift & Brigham Envelope Company. (See Swift, Henry D. and D. W., assignors.)						
Lohlein, Leonard J., assignor of one-half to J. L. Rector, Lusk, Wyo. Sheep-shears	541,862	July 2	75	17	72	18
Lohstroh, John F., Cincinnati, Ohio. Game-counter	545,601	Sept. 3	294	72	72	1408
Lohstroh, John F., Cincinnati, Ohio, and J. H. Lohstroh, Newport, Ky. Register for oil delivered	543,941	Aug. 6	195	46	72	784
Lohstroh, John H. (See Lohstroh, John F. and J. H.)						
Lombard, Frank. (See Billings and Lombard.)						
Long & Allstatter Company. (See Long, John M. W., assignor.)						
Long, Eben W., Chicago, Ill. Automatic water-regulator	543,034	July 23	2090	495	72	439
Long, John M. W., assignor to Long & Allstatter Company, Hamilton, Ohio. Seeder	545,703	Sept. 3	469	113	72	1440
Long, John M. W., assignor to Long & Allstatter Company, Hamilton, Ohio. Cultivator	546,020	Sept. 10	1012	244	72	1554
Long, William A., Steubenville, Ohio. Process of glazing earthenware and apparatus therefor	543,741	July 30	3415	793	72	699
Longley, John, Rockland, Me. Ladder-truck	544,986	Aug. 20	2134	516	72	1170
Loomis, Charles B., Andover, Conn. Rim-wrench	546,490	Sept. 17	1860	441	72	1732
Loomis, Ellsworth A., Chicago, Ill. Automatic railway-switch	543,156	July 23	2308	547, 548	72	481
Loomis, George D. (See Button, Jesse, assignor.)						
Loomis, Gilbert J., Westfield, Mass. Bicycle-wheel	543,099	July 23	2202	522	72	460
Loomis, Harry T., assignor to National Casket Company, Oneida, N. Y. Arm-support	541,863	July 2	76	17	72	18
Loomis, Harry T., assignor to National Casket Company, Oneida, N. Y. Bottle-support	541,864	July 2	77	17	72	18
Looney, John J., Columbiana, Ohio. Burning petroleum	542,590	July 9	1344	325	72	269
Looney, Morrell M., La Crosse, Wis. Device for cleaning out channels	545,602	Sept. 3	295	72	72	1408
Lorah, Mahlon B., Reading, Pa. Split pulley	542,166	July 2	563	137	72	111
Lorah, Mahlon B., Reading, Pa. Sectional pulley	544,987	Aug. 20	2135	517	72	1171
Lord, George W., assignor to himself, F. M. Wing, L. Cowan, Boston, and W. A. Smith, Chelsea, Mass. Air-forcing device	545,023	Aug. 20	2199	532	72	1181
Lord, John L., Medford, Mass. Counter-seat	545,804	Sept. 3	637	155	72	1471
Lord, Lonville G. (See Dinsmore and Lord.)						
Lorenz, Ludwig O., *et al.* (See Ganzhorn, Philip, assignor.)						
Loree, Manfierd U., Miamisburg, assignor of two-thirds to E. A. Ohmer and W. D. Huston, Dayton, Ohio. Folding boat	544,676	Aug. 20	1571	376	72	1064
Loree, Perry E., assignor of one-half to W. H. Heinz, Dayton, Ohio. Labeling-machine	546,961	Sept. 24	2625	628, 629	72	1889
Lorrain, James G. (See Mootham, Orby C., assignor.)						
Louden, Robert B. (See Louden, William and R. B.)						
Louden, William and R. B., Fairfield, Iowa. Hay-carrier track	546,975	Sept. 24	2646	634	72	1892
Loughridge, Jacob E., deceased, (M. R. Loughridge, executrix,) assignor of five-eighths to J. W. Coulston, J. W. Coulston, trustee, C. Watson, C. O. Baird, and A. S. Patterson, Philadelphia, Pa. Slack-adjuster	545,084	Aug. 27	2308	561	72	1224
Loughridge, Mary R. (See Lindström, Charles, assignor.)						
Loughridge, Mary R., executrix. (See Loughridge, Jacob E.)						
Lounsbury, Fred C., Plainfield, N. J. Folding mailable match-receiver	542,527	July 9	1243	303	72	250
Loustalot, Louis M. G. J., Paris, France. Corking bottles	546,169	Sept. 10	1262	301	72	1600
Love Electric Traction Company. (See Love, John C., assignor.)						
Love, John C., Philadelphia, Pa., assignor to Love Electric Traction Company, Chicago, Ill. Traveling contact device for electric railways	544,313	Aug. 13	853	214	72	916
Love, John L., Medford, Mass. Plasterer's hawk	542,419	July 9	1042	256	72	215
Lovejoy, Fred W., *et al.* (See Woodward, Alonzo S., assignor.)						
Lovell, Benjamin S. (See Twombly, Willard L., assignor.)						
Loveridge, Frederick H., Coldwater, Mich. Construction and method of operating dynamo-electric machines	544,361	Aug. 13	993	244, 245	72	937
Low, Everett M., assignor, by mesne assignments, to Worcester Envelope Company, Worcester, Mass. Envelope-machine	544,315	Aug. 13	859	215, 216	72	917
Low, Everett M., and W. B. Emerson, assignors, by mesne assignments, to Worcester Envelope Company, Worcester, Mass. Envelope-machine	544,314	Aug. 13	856	214, 215	72	916
Lowe, Frederick W., Philadelphia, Pa. Skate-sharpening device	546,929	Sept. 24	2573	616	72	1879
Lowe, Joseph H., Baltimore, Md., assignor to Davis & Stevens Manufacturing Company, Seneca Falls, N. Y. Gas-pressure regulator	543,448	July 23	2828	663	72	578
Lowe, Thaddeus S. C., Norristown, assignor to Guarantee Trust and Safe Deposit Company, trustee, Philadelphia, Pa. Apparatus for manufacture of water-gas	542,566	July 9	1308	316, 317	72	263
Lowry, John, assignor of one-half to S. McClure, Tecumseh, Mich. Sandpapering-machine	543,878	Aug. 6	89	20	72	765
Loy, William H., and F. H. Grant, What Cheer, Iowa. Heating-stove	543,742	July 30	3417	793	72	699
Luchsinger, Fred A. (See Garrett, Enoch R., assignor.)						
Luckenbach, Royer, Philadelphia, Pa., assignor to Waterbury Button Company, Waterbury, Conn. Toy	546,021	Sept. 10	1013	244	72	1554
Ludlow, Frank K., Madisonville, Ohio. Automatically-operated fire-alarm	543,879	Aug. 6	91	20, 21	72	765
Lüdy, Fritz, assignor to Hoffmann, Traub & Co., Basle, Switzerland. Bismuth oxyiodidgallate and preparing same	544,104	Aug. 6	483	.....	72	837
Luff, Henry J., Cleveland, Ohio. Flushing tank or reservoir for water-closets	542,061	July 2	408	99	72	80
Luigart, John, Lexington, Ky. Bin or sample-case	544,817	Aug. 20	1834	441	72	1115

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Lukis, Ernest D., assignor of two-thirds to R. J. Whann and R. W. Tyler, New Orleans, La. Conveyer for coal or other material	546,671	Sept. 24	2146	510, 511	72	1598
Lundell, Robert, Brooklyn, N. Y. Alternating-current motor	544,261	Aug. 6	762	195	72	887
Lundqvist, Richard, Laguna de Terminos, Mexico. Wind-motor	544,922	Aug. 20	2028	484	72	1151
Lundholm, Erik M., St. Paul, Minn. Shut-off clamp for hose	541,865	July 2	78	18	72	18
Lundstrom, Carl J., assignor to D. H. Burrell & Co., Little Falls, N. Y. Centrifugal separator	543,213	July 23	2431	571	72	503
Lundstrom, Carl J., assignor to D. H. Burrell & Co., Little Falls, N. Y. Cheese-press	545,206	Aug. 27	2536	613	72	1269
Luther, William T. Providence, R. I. Surgical table	546,235	Sept. 10	1373	327	72	1622
Lutz, Anton, *et al.* (See Schon, Hubert, assignor.)						
Lutz, John, assignor of one-half to G. K. Noher, Albuquerque, N. Mex. Ter. Sash-fastener	543,880	Aug. 6	94	21	72	765
Lydon, Martin W., Wallingford, Conn. Measuring or registering valve or faucet	543,942	Aug. 6	196	47	72	785
Lyford Car Fender Company. (See Lyford, Jay B., assignor.)						
Lyford, Jay B., Bridgeport, Conn., assignor to Lyford Car Fender Company, Boston, Mass. Safety-fender for street-cars	545,704	Sept. 3	470	114	72	1440
Lyman, Ceylon E. and G. N., Jr., Minneapolis, Minn. Flax-working mechanism	542,770	July 16	1661	386, 397	72	311
Lyman, Edwin A., Ottumwa, Iowa. Copy-holder for type-writers	541,939	July 2	194	45	72	41
Lyman, George N., Jr. (See Lyman, Ceylon E. and G. N., Jr.)						
Lynch, George W., assignor to Buhl Stamping Company, Detroit, Mich. Tubular lantern	542,567	July 9	1311	317	72	263
Lynde, Charles C., Buffalo, N. Y. Trolley-tinder	542,591	July 9	1345	325	72	269
Lyndon, Lamar, Athens, Ga. Hot-box indicator for railway-cars	543,743	July 30	3419	794	72	700
Lynen, Leo V. J., London, England. Process of and apparatus for extraction of zinc	543,256	July 23	2509	589	72	516
Lynn, John M., Weldon, Tex. Lifting-jack	546,704	Sept. 24	2204	526	72	1808
Lynn Novelty Manufacturing Company. (See Allen, Frederick E., assignor.)						
Lynott, John P., Louisiana, Mo. Heating-stove	544,046	Aug. 6	380	94	72	818
Lyons, Michael J., assignor of one-fourth to L. Beemer, Duluth, Minn. Bath-brush apparatus	544,362	Aug. 13	998	245	72	937
Lyons, Robert, Lucky Valley, Iowa. Corn-cultivator	544,736	Aug. 20	1675	403	72	1083
Lytle, Alton A. (See Linn and Lytle.)						
Lytle, John H., *et al.* (See Finley, James R., assignor.)						
M. Garland Company. (See Thomas, Edwin E., assignor.)						
M. A. Furbush & Son Machine Company. (See Meyer, Benjamin F., assignor.)						
Maag, August, Baltimore, Md. Cover for ice-cream cans	542,484	July 9	1163	285	72	235
Maag, George, deceased, Newark, N. J.; J. Ayers, administrator. Trolley-arm and attachment therefor	544,677	Aug. 20	1573	377	72	1064
MacCarthy, Daniel F., assignor of one-half to H. T. Drake, St. Paul, Minn. Seal	546,619	Sept. 17	2060	489	72	1769
MacGowen, James. (See Barker, James L., assignor.)						
Macdonald, Alice, London, England. Obtaining metallic lead and white-lead pigments from lead sulfides	544,584	Aug. 13	1378	.....	72	1011
Macdonald, Charles, Chicago, Ill. Cushioned sole for footwear	545,705	Sept. 3	471	114	72	1440
Macdonald, Norman D., Boston, Mass. Pipe-wrench	543,494	July 30	2912	686	72	610
Machalosky, Felix J., and J. Stawarz, Pittsburg, Pa. Car-coupling	543,035	July 23	2092	495	72	440
Machette, Frank, Philadelphia, Pa. Vignetter	544,859	Aug. 20	1913	459	72	1130
Machut, John. (See Zalikowski, Johan, assignor.)						
Mackay, John W., Jr., *et al.* (See Nibelius, Axel W., assignor.)						
Maconiber, William, Buffalo, N. Y. Folding table	545,603	Sept. 3	296	72, 73	72	1408
Madden, H. M., *et al.* (See Hart, Joseph E., assignor.)						
Madsen, Frederik S., Jersey City, N. J. Sink and washtub	544,105	Aug. 6	484	120	72	837
Maertens, Emile, Providence, R. I. Process of and apparatus for removing fatty matters from wool	545,899	Sept. 10	792	194	72	1512
Maertens, Emile, Providence, R. I. Process of and apparatus for extracting with volatile solvents	545,900	Sept. 10	805	195	72	1514
Maertens, Emile, Providence, R. I. Ball-bearing for spinning and twisting machine spindles	546,022	Sept. 10	1014	244	72	1554
Magee, David A., Trenton, N. J. Spraying attachment for hose-nozzles	544,412	Aug. 13	1081	264	72	952
Magee, Frank A., Wenham, assignor to Magee Furnace Company, Boston, Mass. Hot-water heater	544,440	Aug. 13	1136	275	72	962
Magee Furnace Company. (See Magee, Frank A., assignor.)						
Magee Furnace Company. (See Van Stone, Edwin D., assignor.)						
Magee, William G., Hudson, N. Y. Chair	543,741	July 30	3420	794	72	700
Mahaffey, Joseph C., Tingley, Iowa. Harvesting hook	545,299	Aug. 27	2675	649	72	1296
Maher, John, Bay City, Mich. Water-tube boiler	544,316	Aug. 13	864	216, 217	72	918
Maher, John P., Philadelphia, Pa. Construction of railway-cars	546,544	Sept. 17	1937	460, 461	72	1746
Mahon, Ormsby L., Baltimore, Md. Button	543,312	July 23	2597	611	72	533
Maier, John G., Washington D. C. Necktie-slide	543,881	Aug. 6	95	21	72	765
Maierhofer, Fritz, Chicago, Ill. Bird-trap	546,491	Sept. 17	1861	441	72	1732
Maillonx, Cyprien O., New York, N. Y. Electrical controlling system for elevators	543,495	July 30	2913	686	72	610
Main, William, Brooklyn, N. Y. Brake for railway-cars	541,866	July 2	79	18	72	18
Maitland, Henry R. S., Bath, England. Alarm or bronchitis kettle	544,233	Aug. 6	697	178	72	876
Majert, Wilhelm, Berlin, Germany. Aromatic glycocol derivative	543,214	July 23	2432	.....	72	503
Major, C. W., *et al.* (See Dennis, John B., assignor.)						
Major, Emanuel, Rochester, N. Y. Lubricator	543,696	July 30	3321	771	72	681
Major, Guy G., *et al.* (See Dennis, John B., assignor.)						
Makin, Edward, Jr., Manchester, England. Steam-generator	546,170	Sept. 10	1264	302	72	1600
Mallin, Isaac H., Chicago, Ill. Spacing rule or gage	543,997	Aug. 6	288	70	72	801
Malm, Alexander, Brooklyn, N. Y. Self-clamping paper-cutting machine	546,454	Sept. 17	1801	426, 427	72	1720
Malm, Louis, Cleveland, Ohio. Elevator-indicator	545,127	Aug. 27	2394	579	72	1240
Malmendier, Carl. (See Uhlich, Otto, assignor.)						
Maloney, Benjamin P., assignor of one-half to C. L. Burke, New Market, Va. Thill-coupling	543,534	July 30	3001	703	72	626
Malsness, Harvey C., Stratford, Canada. Automatic dust-collector	545,167	Aug. 27	2456	595, 596	72	1253
Maltby, Albert E., Slipping Rock, Pa. Modeling-board	542,528	July 9	1244	303	72	250
Mandt, Targe G., Stoughton, Wis., assignor to S. F. Pearl, Ovid, Mich. Neck-yoke center	543,627	July 30	3215	745	72	661
Manes, Ephraim, Sherman Heights, Tenn., assignor of two-thirds to T. J. Cochran, Inverness, Fla., and A. W. Gaines, Chattanooga, Tenn. Buckle	544,678	Aug. 20	1575	377	72	1064
Manes, Ephraim, Sherman Heights, assignor of one-half to T. W. Fritts, Chattanooga, Tenn. Snap-hook	545,966	Sept. 10	917	219	72	1536
Manley, Horace A., Boston, assignor to W. N. Osgood, Malden, Mass. Coin-controlled advertising-machine	545,632	Sept. 3	338	85	72	1416

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Manley, Horace A., Boston, assignor to W. N. Osgood, Malden, Mass. Coin-controlled advertising-machine	545,633	Sept. 3	341	85	72	1417
Manley, Horace A., Boston, assignor to W. N. Osgood, Malden, Mass. Coin-controlled mechanism	545,634	Sept. 3	343	86	72	1417
Manley, Horace A., Boston, assignor to W. N. Osgood, Malden, Mass. Coin-controlled advertising machine	545,965	Sept. 10	915	219	72	1536
Mann, Alexander, Berkshire, Mich. Ditching-machine	543,257	July 23	2510	590	72	517
Mann, Bridget R., Holyoke, Mass. Dish-cleaner	543,215	July 23	2435	572	72	503
Mann, William B., Baltimore, Md. Head-rest	544,106	Aug. 6	485	120, 121	72	837
Mannes, Peder K., St. Paul, Minn. Paddle	545,706	Sept. 3	472	114	72	1440
Mannesmann, Max, Remscheid, Germany. Flexible coupling for shafting	545,085	Aug. 27	2011	561	72	1224
Mannesmann, Max, Remscheid, Germany. Apparatus for rolling seamless metallic tubes	545,513	Sept. 3	145	31	72	1381
Mannesmann, Max, and R., Remscheid, Germany; said Max Mannesmann assignor to said R. Mannesmann. Art of and machine for rolling seamless metallic tubes	542,801	July 16	1719	408, 409	72	351
Mannesmann, Reinhard. (See Mannesmann, Max and R.)						
Mannesmann, Reinhard, New York, N. Y., assignor to Mannesmann Tube Company, Jersey City, N. J. Tubular pole for telegraph or other purposes	545,901	Sept. 10	808	195	72	1515
Mannesmann Tube Company. (See Mannesmann, Reinhard, assignor.)						
Mannewitz, Maximilian, Abilene, Tex. Cotton-planter	544,737	Aug. 20	1676	403	72	1083
Mansfield, Albert K., assignor of one-half to Buckeye Engine Company, Salem, Ohio. Means for holding eccentrics	544,511	Aug. 13	1260	304, 305	72	987
Mansfield, Albert K., Salem, assignor of one-half to S. M. Felton, Cincinnati, Ohio. Car-truck	545,409	Aug. 27	2853	695	72	1320
Mansfield, Albert K., Salem, assignor of one-half to S. M. Felton, Cincinnati, Ohio. Switch and signal apparatus	546,172	Sept. 10	1266	302	72	1600
Manson, George S., Chicago, Ill. Clutch mechanism for bicycles	542,392	July 9	995	246	72	274
Mantel, Florian J., Syracuse, N. Y. Combined puzzle and toy	546,171	Sept. 10	1265	302	72	1600
Mantion, John D., Hull, and E. G. Shepherd; said Mantion assignor and said Shepherd assignor of two-thirds to E. S. Leetham and C. D. Chitty, Ottawa, Canada. Match-racking machine	545,086	Aug. 27	2012	562	72	1225
Manufacturers' Automatic Sprinkler Company. (See Siver, Charles W., assignor.)						
Manufacturers' Automatic Sprinkler Company *et al.* (See Carpenter, Albert F., assignor.)						
March, Jacob M., Narberth, Pa. Weather-strip	546,236	Sept. 10	1375	327	72	1622
Marchal, Charles A., Paris, France. Machine for making paper cigarette-tubes	546,404	Sept. 17	1701	403, 404	72	1700
Marchese, Leonidas, Springfield, Mass. Roach-trap	544,183	Aug. 6	595	149	72	859
Marder, Walter S., St. Louis, Mo., assignor to American Type Founders' Company, of New Jersey. Type-casting machine	544,317	Aug. 13	865	217, 218	72	918
Marin, Eugène J., Vincennes, France. Safety appliance for railways	544,921	Aug. 20	2030	484, 485	72	1152
Mark, Roscoe L., assignor to Mark Stock Keeper Co., Davenport, Iowa. Stock-indicator	544,988	Aug. 20	2136	517	72	1171
Mark Stock Keeper Co. (See Mark, Roscoe L., assignor.)						
Markel, Henry, Spencerville, Ind. Ratchet-wrench	546,672	Sept. 24	2150	511	72	1799
Markham, Samuel H., Pittsburg, Pa. Inside bevel	542,367	July 9	951	240	72	196
Marks, Benjamin F., *et al.* (See Silver, William, assignor.)						
Marks, George E., New York, N. Y., and W. L. Marks, Sound Beach, Conn. Artificial foot	546,405	Sept. 17	1704	404	72	1701
Marks, William L. (See Marks, George E. and W. L.)						
Marnell, Thomas, Syracuse, N. Y. Hoisting apparatus	545,514	Sept. 3	147	35	72	1381
Marr, Charles K., London, assignor to J. Redman, Salem Mills, Hebden Bridge, England. Apparatus for automatically displaying advertisements	542,802	July 16	1721	410	72	352
Marr, John. (See Campbell and Marr.)						
Marriner, William M., and W. N. Kant, Birmingham, Ala. Cylinder printing-press	543,882	Aug. 6	96	21, 22	72	766
Marsh, Edward A. (See Fitch and Marsh.)						
Marsh, Edward A., Newton, Mass. Device for securing dials to watch-movements	543,628	July 30	3217	745	72	661
Marsh, Edward C. (See Monroe, Stephen R., assignor.)						
Marsh, Thomas G. (See Thorp, Marsh, and Haynes.)						
Marshall, Aquila B., assignor of two-thirds to E. E. Dickinson, New York, N. Y., and C. B. Boynton, Newark, N. J. Air-pump for bicycles	545,306	Aug. 27	2055	640	72	1296
Marshall, Waldo H., Chicago, Ill. Slack-adjuster	543,390	July 23	2706	639	72	554
Marshall, Waldo H., Chicago, Ill. Slack-adjuster	543,391	July 23	2707	639	72	554
Martell, Herbert C., Columbus, assignor to Eberhard Manufacturing Company, Cleveland, Ohio. Concealed joint for carriage-tops	546,705	Sept. 24	2206	526	72	1808
Martiensen, Herman. (See Burrows and Martiensen.)						
Martin, Bernard, McPherson, Kans. Storm-curtain for buggies	545,707	Sept. 3	473	115	72	1441
Martin, Charles M., *et al.* (See Shaw, Henry F., assignor.)						
Martin, Henry J., Chicago, Ill., assignor to Whitman & Barnes Manufacturing Company, Akron, Ohio. Wrench	544,738	Aug. 20	1678	403	72	1084
Martin, Henry J., Chicago, Ill., assignor to Whitman & Barnes Manufacturing Company, Akron, Ohio. Wrench	544,739	Aug. 20	1679	404	72	1084
Martin, James P., and W. P. McFeat, Montreal, Canada. Hand device for affixing postage-stamps	546,769	Sept. 24	2202	554	72	1830
Martin, John M., Jr., Martin, Fla. Nut-lock	546,173	Sept. 10	1269	303	72	1601
Martin, Morris, Malden, Mass. Thermostatic instrument	544,363	Aug. 13	999	245	72	937
Martin, Morris, Malden, assignor of one-half to B. W. Wells, Boston, Mass. Electroprotective system for locks	542,268	July 9	744	183	72	159
Martin, Nathan E., Greenfield, Mass. Die for cutting screw-threads	543,136	July 23	2273	539	72	474
Martin, Samuel H., and W. H. Jones, Lincoln, Ill. Open fireplace water-heating apparatus	541,867	July 2	81	18, 19	72	19
Martin, Swan, Oklahoma, Okla. Ter. Album	546,337	Sept. 17	1587	356	72	1679
Martin, Thomas N., assignor of one-third to W. F. Daiber, Cheyenne, Wyo. Hame fastener	545,861	Sept. 3	732	178	72	1489
Masland, Frank E., *et al.* (See Gledhill, Benjamin H., assignor.)						
Masland, Maurice H., *et al.* (See Gledhill, Benjamin H., assignor.)						
Mason, Arthur, Taunton, Mass. Separator for spinning frames	542,649	July 16	1453	350	72	304
Mason, James, *et al.* (See Grundy, James, assignor.)						
Mason, John. (See Wiseheart, Jacob H., assignor.)						
Mason, Orlando P., assignor of one-half to J. F. Du Bois and C. W. Dickens, Bellaire, Ohio. Fender for fireplaces	542,062	July 2	409	99	72	80
Mason, William, assignor to Winchester Repeating Arms Company, New Haven, Conn. Box-magazine bolt-gun	545,708	Sept. 3	475	115, 116	72	1441
Massachusetts Mohair Plush Company. (See Poole, George, assignor.)						
Massey, Albert P., Watertown, N. Y. Pipe-coupling	543,602	July 30	3176	735	72	654
Massey, Charles C., Birmingham, Ala. Boiler connection for valves	543,773	July 30	3478	810	72	710

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Master, John H., Minersville, assignor of one-half to J. W. Sallade, Pottsville, Pa. Printing-press	543,036	July 23	2094	496	72	440
Masterman Car Equipment Company. (See Masterman, William H., assignor.)						
Masterman, William H., assignor of one-half to W. M. Rank, Oakland, Cal. Brake-lever	542,088	July 2	444	106	72	87
Masterman, William H., Oakland, Cal., assignor to Masterman Car Equipment Company. Car-brake	542,089	July 2	446	107	72	87
Mather, Allan G., and H. E. Collins, Milwaukee, Wis. Drying apparatus	544,679	Aug. 20	1576	377, 378	72	1065
Mather, Thomas. (See Ayrton and Mather.)						
Mather, William, Manchester, England. Apparatus for damping textile fabrics	546,930	Sept. 24	2574	616	72	1879
Mathews, Asa. (See Smith, Charles H., assignor.)						
Mathews, George C., Jacksonville, Fla. Canopy for bicycles	546,104	Sept. 10	1155	276	72	1581
Mathews, Joseph H., Canton, Ohio. Hydrocarbon-burner	543,037	July 23	2096	497	72	410
Mathews, William. (See Kennedy and Mathews.)						
Mathieson Alkali Works. (See Rosenbaum, William A., assignor.)						
Mathis, John J., Portageville, Mo. Fruit-picker	546,247	Sept. 10	1376	327	72	1622
Mattes, Henry, Philadelphia, Pa. Coin controlled vending apparatus	542,000	July 2	303	71	72	62
Matthews, Benjamin B. (See Barlet, Samuel E., assignor.)						
Matthews, Charles R., Charlie Hope, Va. Mechanical power	543,392	July 23	2709	640	72	555
Matthews, Pierre B., St. Galmier, France. Machine for manufacturing bottles, &c	546,931	Sept. 24	2575	617	72	1879
Maussier, Pierre B., St. Galmier, France. Machine for manufacturing bottles, &c	546,931	Sept. 24	2575	617	72	1879
Maw, John, Hamilton, Canada. Chain ladder	544,860	Aug. 20	1915	459	72	1130
Maxfield, William, Brooklyn, N. Y. Cigarette-machine	544,818	Aug. 20	1836	441, 442	72	1115
Maxfield, William, Brooklyn, N. Y. Cigarette-machine	545,805	Sept. 3	638	155, 156	72	1472
Maxim, Hiram S., Bexley, and L. Silverman, Crayford, England. Tripod stand for guns	544,364	Aug. 13	1000	246	72	937
Maxim, Hudson, New York, N. Y. High explosive	544,924	Aug. 20	2033	.....	72	1152
Maxon, Fred J. (See Walters and Maxon.)						
Maxwell, John A., Calvary, Ga. Saw cotton-gin	541,868	July 2	84	19	72	20
Maxwell, Joseph F. (See Fronefield and Maxwell.)						
Maxwell, Stacy K. (See Fronefield and Maxwell.)						
Maxwell, Theodore L., New York, and W. F. Maxwell, Brooklyn, N. Y. Bird-cage	543,345	July 23	2643	622	72	542
Maxwell, William F. (See Maxwell, Theodore L. and W. F.)						
Mayer, Frederick, Baltimore, Md. Apparatus for manufacture of oil-gas	542,269	July 9	756	184, 185	72	160
Mayer, Herman, Bradford, Pa. Sole	546,932	Sept. 24	2578	617	72	1880
Mayer, Wilhelmina, New York, N. Y. Drying-frame	541,869	July 2	84	19	72	20
Mayers, Albert W., *et al.* (See Melzer, Josef, assignor.)						
Mayes, Robert M., San Antonio, Tex. Dental-chair attachment	541,940	July 2	195	45	72	42
Maynard, George H., Boston, Mass. Automatic car-ventilator	543,581	July 30	3075	720	72	641
Mayo, Alexander, Sheffield, Ill. Sack-holder	544,585	Aug. 13	1379	337	72	1011
McAdams, George B. (See Knight, Oswald, assignor.)						
McAdams, John, New York, N. Y. Controlling device for elevators	546,406	Sept. 17	1705	405	72	1701
McAlister, Normon J., Pelzer, S. C. Cotton-seed crusher, planter, and distributer	544,741	Aug. 20	1682	404	72	1084
McAllister, James, assignor of one-half to A. C. Hubbell, South Manistique, Mich. Off-setting device for sawmill-carriages	545,303	Aug. 27	2680	650	72	1297
McAnulty, John A., assignor to J. A. McAnulty, Manheim, J. H. Small, and W. T. Nelson, York, Pa. Actuating mechanism for flour-bolts	546,240	Sept. 10	1381	329	72	1624
McAnulty, John A., assignor to J. A. McAnulty, Manheim, J. H. Small, and W. T. Nelson, York, Pa. Flour-bolt	546,241	Sept. 10	1384	329, 330	72	1624
McArdle, Fred W. (See Sherman and McArdle.)						
McArdle, Fred W., assignor to E. C. Judd, Boston, Mass. Sole-leveling machine	542,570	July 9	1315	318	72	263
McArthur, Harry E., Saginaw, Mich. Certificate-holder	544,993	Aug. 20	2142	518	72	1172
McBerty, Frank R., Downer's Grove, assignor to Western Electric Company, Chicago, Ill. Strong-current arrester	544,368	Aug. 13	1007	247	72	939
McBerty, Frank R., Downer's Grove, assignor to Western Electric Company, Chicago, Ill. Plug and cord for telephone-switchboards	544,369	Aug. 13	1009	247	72	939
McBerty, Frank R., Downer's Grove, assignor to Western Electric Company, Chicago, Ill. Automatic signaling device for telephone-switchboards	544,370	Aug. 13	1010	248	72	939
McCabe, Bernard, Boston, Mass. Electrical high or low water alarm	543,965	Aug. 6	234	57, 58	72	791
McCabe, George M. (See Turner, Joseph E., assignor.)						
McCann, William B., Philadelphia, Pa. Ice-cream freezer	542,596	July 9	1352	327	72	270
McCapes, Delbert B., and E. D. Quinn, assignors of one-half to D. M. Inman, Vermillion, S. D. Curtain-fixture	545,371	Aug. 27	2779	674	72	1315
McCarter, Louis N., Norristown, Pa. Pickling-machine	545,412	Aug. 27	2857	696	72	1331
McCarty, Cornelius M., assignor of one-half to B. L. Harmison, Romney, W. Va. Coin-operated picture-exhibitor	544,790	Aug. 20	1790	428	72	1106
McClellan, R. B., *et al.* (See McClellan, Rolando G., assignor.)						
McClellan, Rolando G., San Francisco, assignor to A. J. Hare and R. B. McClellan, Alameda county, Cal. Hinge	544,413	Aug. 13	1082	264	72	952
McClure, George W., Pittsburg, Pa. Furnace-valve	545,244	Aug. 27	2591	628	72	1280
McClure, George W., Pittsburg, Pa. Ingot-tilter	545,245	Aug. 27	2592	628	72	1280
McClure, Samuel. (See Lowry, John, assignor.)						
McConaughy, Francis. (See Henderson and McConaughy.)						
McConnell, John, Cleveland, Ohio. Bowl or box for household purposes	546,706	Sept. 24	2207	526	72	1809
McConnell, John R., *et al.* (See Bustin, Robert, assignor.)						
McConnell, William H. (See Thayer and McConnell.)						
McConway & Torley Company. (See Kelso, William, assignor.)						
McConway & Torley Company. (See McConway, Kelso, and Curtis, assignors.)						
McConway, William, W. Kelso, and F. J. Curtis, assignors to McConway & Torley Company, Pittsburg, Pa. Car-coupling	546,783	Sept. 24	2340	559	72	1833
McCord, Alvin C., Chicago, Ill. Car-coupling	543,158	July 23	2313	548, 549	72	482
McCord, Ralph, Springfield, Ill. Valve for pneumatic cycle-tires	544,487	Aug. 13	1225	296	72	980
McCormick, Edwin J., Syracuse, N. Y. Fire-protective window-shutter	545,209	Aug. 27	2540	614, 615	72	1270
McCormick, Francis J., Sr. (See Rogers, Timothy, assignor.)						
McCormick, Francis J., assignor to E. M. Board, Chicago, Ill. Windmill	546,425	Sept. 17	1742	413	72	1708
McCormick Harvesting Machine Company. (See Keller, Moses A., assignor.)						
McCormick, Preston M. (See Hill and McCormick.)						
McCourt, Peter, assignor of one-half to A. L. Arpin, Arpin, Wis. Cutting-tool for dove-tail-grooves	542,344	July 9	903	222	72	187
McCoy, James, Baltimore, Md. Traveling crane	546,426	Sept. 17	1743	413, 414	72	1709

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
McCoy, Josiah R., Marshalltown, Iowa. Fire-alarm	542,775	July 16	1675	399	72	344
McCoy, Walter, Conway, Kans. Combined clamp and wrench for tire-bolts	545,969	Sept. 10	922	221	72	1537
McCoy, Washington K., Washington, D. C. Curtain-fixture	546,743	Sept. 24	2276	541	72	1820
McCulloch, Thomas, *et al.* (See Smith, Norbourn H., assignor.)						
McCurdy, Robert, Philadelphia, Pa. Game apparatus	545,246	Aug. 27	2592	629	72	1280
McDaniel, William D., assignor of one-half to L. S. Green, Philadelphia, Pa. Trolley-restoring attachment	542,002	July 2	306	71	72	62
McDonald, Alexander. (See McDonald, Robert M. and A.)						
McDonald, Charles B., assignor to National Key-Opening Can Company, Chicago, Ill. Key-opening can	543,347	July 23	2645	623	72	542
McDonald, Robert M. and A., Dalmuir, Scotland. Electric battery	543,885	Aug. 6	101	23	72	767
McDowell, Francis, Philadelphia, Pa. Car-fender	544,742	Aug. 20	1683	405	72	1085
McDowell, John D., Evergreen, Pa. Railway-tie	546,744	Sept. 24	2277	541	72	1821
McDuffee, A. J. (See Sunderland, Jesse W., assignor.)						
McDuffee, John I., trustee. (See Schlesinger, William M., assignor.)						
McElheny, Victor K., Pittsburg, Pa. Smoke-consuming furnace	543,424	July 23	2767	653	72	565
McElroy, Harry, Palestine, Tex. Wrench	542,938	July 16	1929	457	72	393
McElroy, James F., assignor to Consolidated Car Heating Company, Albany, N. Y. Storage-heater for street-cars	541,871	July 2	87	20	72	20
McElvain, George H., *et al.* (See Rawles, John, assignor.)						
McElyea, James L., assignor of one-half to G. R. Fergerson, Nona, Tex. Adding-machine	545,089	Aug. 27	2319	563	72	1226
McEwan, William W., Whippany, N. J. Paper vessel and making same	546,170	Sept. 10	1276	304	72	1602
McFarland, John, Austin, Canada. Car-moving bar	545,372	Aug. 27	2781	675	72	1315
McFarland, William J., assignor to himself and T. H. Baskerville, New York, N. Y. Automatic railway-switch	546,051	Sept. 10	1062	254	72	1563
McFeat, William P. (See Martin and McFeat.)						
McFeely, Thomas. (See Dutro and McFeely.)						
McGahey, Calvert R., Elkton, Va. Churn	543,537	July 30	3004	704	72	627
McGahey, Calvert R., Elkton, Va. Churn	544,000	Aug. 6	292	71	72	802
McGarry, Thomas F. (See Whiteside, Sidney B., assignor.)						
McGehe, William J., Bushnell, Ill. Metal-drill	541,980	July 2	268	62, 63	72	54
McGenniss, David, Amsterdam, assignor of one-half to G. W. Potter, New York, N. Y. Device for napping textile fabrics	544,682	Aug. 20	1583	379, 380	72	1066
McGill, James W., Peoria, Ill. Mounting for mining or similar cars	542,345	July 9	904	222	72	187
McGrath, Thomas C., Bolivar, N. Y. Pressure-regulator	545,714	Sept. 3	489	119	72	1444
McGregor, James, and J. L. Jackson, Saginaw, Mich. Water-tube boiler	544,414	Aug. 13	1083	264	72	952
McGrew, Alonzo, Madisonville, Ky. Calculator attachment for scales	544,415	Aug. 13	1084	265	72	952
McGurthy, David S., Decatur, Ill. Scoop-board	546,707	Sept. 24	2208	527	72	1809
McHugh, Joseph P., New York, N. Y. Producing grille or scroll work	544,109	Aug. 6	491	122	72	839
McIlhenny, John D., assignor to Helme & McIlhenny, Philadelphia, Pa. Gas-valve	542,024	July 2	342	83	72	69
McIlvrid, William, and P. Y. Hodge, assignors to A. A. Griffing Iron Company, Jersey City, N. J. Tapping, facing, and reaming machine	542,307	July 9	834	205	72	174
McIntire, Charles H. (See Gartner, Alfred, assignor.)						
McIntire, Jacob N., New York, N. Y., assignor to Brunswick-Balke-Collender Company, Chicago, Ill. Cue-trimmer	546,121	Sept. 10	1182	282	72	1586
McIntosh, Albert J., Sag Harbor, assignor of two-thirds to S. Griffin, River Head, and C. M. Griffing, Shelter Island, N. Y. Smoke-consuming furnace	542,371	July 9	958	236	72	198
McIntosh, Peter E., Chicago, Ill. Window-screen	542,274	July 9	765	188	72	162
McInturff, Malree W., Prosperity, Mo. Anvil	543,397	July 23	2720	642	72	557
McIntyre, John C., assignor to Sprague Manufacturing Company, Farnham, N. Y. Soldering-iron	546,470	Sept. 17	1825	432	72	1725
McIntyre, John W., assignor of one-half to C. E. Taylor and J. Echternoch, Philadelphia, Pa. Vise	544,683	Aug. 20	1587	380	72	1066
McKay, James W., Chicago, Ill. Dough-dividing machine	545,636	Sept. 3	347	86, 87	72	1418
McKay, John M. (See Patton, James M., assignor.)						
McKechnie, James H., Granby, Canada. Footwear	545,130	Aug. 27	2398	580	72	1241
McKee, Alexander P., *et al.* (See Urban, Joseph S., assignor.)						
McKee, Frederick W. (See Saitz and McKee.)						
McKee, J. J. (See Brown, George M., assignor.)						
McKee, John C. (See Graves, George A., assignor.)						
McKelvey, Samuel P., assignor of one-half to J. Dolese and J. H. Shepard, Chicago, Ill. Apparatus for forming concrete curbs and gutters	544,235	Aug. 6	708	181, 182, 183	72	877
McKelvy, Wilbur F., *et al.* (See Lewis, David T., assignor.)						
McKenna, Michael. (See Hannigan and McKenna.)						
McKerns, Thomas, Greason, Pa. Wire fence	544,001	Aug. 6	294	72	72	802
McKerrihan, Sample B., *et al.* (See Jones, Horace D., assignor.)						
McKim, George W., and A. R. Wilson, assignors of one-third to M. Huonker, Martin's Ferry, Ohio. Glass-polishing machine	546,025	Sept. 10	1022	245, 246	72	1556
McKissack, Wright, Bridgeport, Ala. Guard for railway-switches	545,373	Aug. 27	2782	675	72	1315
McKittrick, Fredrick S., and W. Wilkson, Johannesburg, South African Republic. Combined spice holder, grinder, nail-puller, and gas-wrench	545,690	Aug. 27	2321	563	72	1226
McLachlan, Duncan, Groton, N. Y. Roll-paper holder and cutter	546,339	Sept. 17	1590	377	72	1680
McLain, Jackson H., Pursley, Tex. Cultivator or plow standard	543,886	Aug. 6	102	23	72	767
McLaren, James, *et al.* (See Daly, James H., assignor.)						
McLaughlin, Eben J., assignor of one-half to I. W. Duncan, Essington, Pa. Car-fender	546,962	Sept. 24	2627	630	72	1889
McLaughlin, James F., Philadelphia, Pa. Applying power at a distance by means of electricity	544,861	Aug. 20	1916	459, 460	72	1130
McLaughlin, James F., Philadelphia, Pa. Electric railway	544,862	Aug. 20	1919	460	72	1131
McLaughlin, James F., Philadelphia, Pa. Electric railway	544,863	Aug. 20	1923	460, 461	72	1131
McLaughlin, James F., assignor to J. W. Difenderfer, Philadelphia, and T. H. Gehly, York, Pa. Electric time-switch	546,674	Sept. 24	2153	512, 513	72	1799
McLaughlin, John K. (See Stevenson, Roberts, and McLaughlin.)						
McLean, Charles E., Powersville, Mo. Device for loading wagons	544,543	Aug. 13	1302	317, 318	72	996
McLean, William, and E. Davies, Tie Siding, Wyo. Saw-gummer	544,067	Aug. 6	414	104	72	825
McLendon, Willis M., Woodbury, Ga. Plow	543,651	July 30	3251	755	72	668
McLeran, Alvord M., St. Louis, Mo. Tool-sharpener	544,514	Aug. 13	1304	318	72	996
McLoon, Silas W., Rockland, Me. Limekiln	546,935	Sept. 24	2582	618, 619	72	1880
McMahon, Michael, Toledo, Ohio. Blind-stop	542,965	July 16	1968	467	72	400
McMahon, William, Rahway, N. J. Dumping-car-operating mechanism	541,981	July 2	270	63, 64	72	55

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
McMaster, William B., *et al.* (See Danforth, Cyrus L., assignor.)						
McMillen, Robert, Pittsburg, Pa. Sash-balance	542,025	July 2	345	83	72	69
McMillin, Francis C., *et al.* (See Melzer, Josef, assignor.)						
McNaugher, Joseph, Jr. (See Davidson, John M., assignor.)						
McNeill, Solomon, and O. H. Denise, Burlington, Iowa. Cartridge-loading implement	545,811	Sept. 3	650	158	72	1474
McNeill, Wilson, *et al.* (See Tiner, John F., assignor.)						
McNelly, Mathias F., Sterling, Ill. Wire fence	545,970	Sept. 10	923	221	72	1537
McNicoll, Andrew J., San Francisco, Cal. Elevator cut-out-valve attachment	542,421	July 9	1044	256	72	215
McNulty, John W. (See Sheridan and McNulty.)						
McPherson, Henry, assignor of one-half to W. Sleicher, Jr., Troy, N. Y. Sand-box for cars	542,832	July 16	1763	419	72	360
McPherson, James J. L., Silver Leaf, N. D. Apparatus for destroying weeds	544,542	Aug. 13	1301	317	72	995
McSherer, Jerome B., Lansing, Mich. Combined step and extension ladder	542,308	July 9	836	205	72	174
McTammany, John, Spencer, Mass. Voting-machine	546,076	Sept. 10	1108	264, 265	72	1572
McWhirter, William H., Pontotoc, Miss. Animal-trap	543,263	July 23	2521	592	72	518
McWillie, Thomas A., *et al.* (See Dalton, William M., assignor.)						
Mead, Frank S., Montreal, Canada. Gas or oil engine	544,586	Aug. 13	1380	338	72	1011
Mead, Frank S., Montreal, Canada. Gas-engine	545,709	Sept. 3	479	117	72	1442
Mead, Frank S., Montreal, Canada. Electric igniter for gas-engines	546,248	Sept. 10	1377	328	72	1623
Mead, Theodore H., *et al.* (See Crowell, Luther C., assignor.)						
Mead, Theodore H., *et al.* (See Spalckhaver, William, assignor.)						
Mead, William J., Mapleton, Minn. Stock-loader	543,393	July 23	2710	640	72	555
Meadows, George B., Toronto, Canada. Treating wire cloth for screens	542,393	July 9	996	246	72	204
Meaker, John W., Evanston, Ill. Trolley-wire support	545,806	Sept. 3	641	156	72	1472
Mecham, Samuel. (See Kidder, Joshua R., assignor.)						
Medlin, William A. (See Berry and Medlin.)						
Medsger, Joseph E. S., New Florence, Pa. Mechanical movement	543,258	July 23	2512	590	72	517
Mecker, Stephen J., Newark, N. J. Car-coupling	545,604	Sept. 3	297	73	72	1408
Meeks, William J., Oxford, Fla. Weed-turner	543,697	July 30	3324	771	72	681
Meenach, Ulysses G., Alton, Ill. Railway-switch mechanism	542,167	July 2	564	137	72	111
Meenach, Ulysses G., Alton, Ill. Switch-stand	542,168	July 2	566	138	72	111
Meelbott Manufacturing Company. (See Lehr, Harry, assignor.)						
Mefford, David M., assignor to F. W. Chamberlain, Toledo, Ohio. Pie-plant-cutting machine	545,432	Aug. 27	2896	704	72	1339
Mehl, Henry, Bushton, Kans. Pump	543,394	July 23	2713	640	72	555
Meinder, Robert C., Pittsburg, Pa. Folding poultry-coop	544,680	Aug. 20	1580	378, 379	72	1065
Meisel, Francis, Boston, Mass., assignor to Carter-Crume Company, Niagara Falls, N. Y. Numbering-machine	542,368	July 9	952	233, 234	72	196
Meisel, Francis, Boston, Mass., assignor to Carter-Crume Company, Niagara Falls, N. Y. Numbering-attachment for printing-machines	542,369	July 9	954	234, 235	72	197
Meisselbach, August F. and W., Newark, N. J. Collapsible landing-net frame	546,023	Sept. 10	1016	244	72	1555
Meisselbach, William. (See Meisselbach, August F. and W.)						
Meissner, Edward C. (See Jennings, Samuel A., assignor.)						
Meissner, William O., Chicago, Ill. Rheostat	544,047	Aug. 6	380	94	72	819
Mellen, George E., Des Moines, Iowa. Hook and eye	543,496	July 30	2917	687	72	610
Mellor, John E., New York, N. Y. Registering savings-bank	544,819	Aug. 20	1841	442	72	1116
Mellstrom, Charles G., London, England. Breech mechanism for ordnance	545,902	Sept. 10	810	195, 196, 197	72	1515
Melville, George W., Washington, D. C. Automatic gravity-closing water-tight door	542,169	July 2	567	138	72	111
Melville, George W., Washington, D. C. Steam garbage-scow	546,545	Sept. 17	1941	461	72	1747
Melvin, Josiah W., Houston, Tex. Cut-off valve	543,259	July 23	2514	591	72	517
Melzer, Josef, Saaz, Austria-Hungary, assignor of eleven-sixteenths to E. Konigslow, F. C. McMillin, and A. W. Mayers, Cleveland, Ohio. Multiple-fuse switch	544,318	Aug. 13	867	218	72	918
Menaugh, Robert, Victoria, Canada. Manner of obtaining power by rise and fall of tide	545,241	Aug. 27	2588	627	72	1279
Menzenhauer, Fredrick, Jersey City, N. J. Metallophone-zither	546,174	Sept. 10	1270	303	72	1601
Menzies, John, New Haven, Conn. Valve for water-closets	542,485	July 9	1164	285, 286	72	235
Mercer, C. Y., *et al.* (See Davidson, John M., assignor.)						
Mergenthaler Linotype Company. (See Mergenthaler, Ottmar, assignor.)						
Mergenthaler Linotype Company. (See Pentz, Alfred D., assignor.)						
Mergenthaler, Ottmar, Baltimore, Md., assignor to Mergenthaler Linotype Company, New York, N. Y. Linotype-machine	543,497	July 30	2918	687, 688	72	611
Meriwether, Robert. (See Chambers, John A., assignor.)						
Merrell, William E., Ravenna, Ohio. Sash-weight	546,862	Sept. 24	2461	589	72	1857
Merrick Sewing Machine Company. (See Field, Seymour, assignor.)						
Merrill, Neil, Oshkosh, Wis., assignor to Aluminum Musical Instrument Company, Pittsburg, Pa. Banjo	541,976	July 2	262	61	72	53
Merritt, Furbush G., Brockport, N. Y. Portable window-balcony	545,242	Aug. 27	2589	627	72	1279
Merrow, Joseph M., Hartford, Conn. Sewing-machine	541,977	July 2	263	62	72	54
Merrow, Joseph M., Mansfield, Conn. Work-feeding mechanism for crocheting or overedge sewing-machines	542,830	July 16	1758	418	72	359
Merserean, William S., *et al.* (See Holbrook, David M., assignor.)						
Mershon, Frank A., Sparrows Point, assignor of one-half to R. W. Applegarth, Baltimore, Md. Nut-lock	545,515	Sept. 3	149	36	72	1382
Mershon, Frank A., Sparrows Point, assignor of one-half to R. W. Applegarth, Baltimore, Md. Nut lock	545,516	Sept. 3	151	36	72	1382
Mershon, Ralph D., Pittsburg, Pa. Synchronism-indicator	544,365	Aug. 13	1001	246	72	938
Merten, John C., and G. W. Fagan, Oshkosh, Wis.; said Fagan assignor to said Merten. Mop-wringer	544,641	Aug. 13	1487	360	72	1031
Mery, Michael L., Chico, Cal. Explosive-engine	543,157	July 23	2310	548	72	481
Mery, Michael L., Chico, Cal. Gas-generator	540,175	Sept. 10	1271	303	72	1601
Mesinger, Frederick. (See Mesinger, Henry and F.)						
Mesinger, Henry and F., New York, N. Y. Bicycle-saddle	543,260	July 23	2517	591	72	518
Mesnard, Luther B., Norwalk, Ohio. Fence-post	542,976	July 16	1992	473	72	404
Mess, Bernard, Cleveland, Ohio, assignor to Cleveland School Furniture Company, of Ohio. Seat-hinge	543,883	Aug. 6	98	22	72	766
Messmer, Alexander L. H., Gardner, Mass., assignor to Heywood Bros. & Co. Vehicle-spring	543,038	July 23	2097	497	72	440
Metcalf, Frederick, assignor to American Ship Windlass Company, Providence, R. I. Towing-machine	542,710	July 16	1558	372, 373	72	323
Metcalfe, Samuel. (See Sharp and Metcalfe.)						
Metz, Charles H., Waltham, Mass. Bicycle-pedal	546,071	Sept. 10	1099	262	72	1571

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Metzger, Iabon, Louisa county, Iowa. Journal and bearing therefor	543,187	July 23	2380	562	72	494
Metzler, Charles O., Holden, Mo. Hub	546,052	Sept. 10	1101	263	72	1571
Meyenberg, Julia E., Chicago, Ill. Building-block	543,582	July 30	3076	720	72	641
Meyer, Benjamin F., Camden, N. J., assignor to M. A. Furbush & Son Machine Company, of New Jersey. Self-acting spinning-mule	544,234	Aug. 6	699	178, 179, 180, 181	72	876
Meyer, Ferdinand. (See Lesna, Al, assignor.)						
Meyer, Frederick F., Newark, N. J. Platform-scale	546,673	Sept. 24	2151	511	72	1799
Meyer, John J., New York, N. Y. Pipe-closer	543,745	July 30	3421	794	72	760
Meyer, Robert, and W. C. Foulds, Philadelphia, Pa. Tom-tom	545,710	Sept. 3	483	117	72	1443
Meyer, William C. (See French and Meyer.)						
Michaelson, Joseph, New Brighton, Pa., and W. Reid, Geneva, N. Y. Heater	543,039	July 23	2098	497, 498	72	441
Michaud, Jules, Paris, France. Method of and apparatus for production of plates for color-printing	543,040	July 23	2099	498	72	441
Michell, Henry C., Toronto, Canada. Boiler-covering	543,964	Aug. 6	233	57	72	791
Michell, Henry C., Toronto, Canada. Manufacture of flake-mica for boiler-coverings, &c.	545,605	Sept. 3	298	73	72	1409
Michigan Stove Company. (See Keep, William J., assignor.)						
Middaugh, Henry C. (See Fish, Samuel H., assignor.)						
Middleton, Arthur R. (See White and Middleton.)						
Mietz, August. (See Weiss, Carl W., assignor.)						
Miles, Jackson B., Lincolnton, assignor of one-half to T. H. Remsen, Lincoln county, Ga.: Plow	542,894	July 16	1858	440	72	379
Miles, William J., Jr., Marion, Ohio. Cementation compound	546,933	Sept. 24	2579	.....	72	1880
Mill, Anton, Cincinnati, Ohio. Drilling-machine	543,395	July 23	2714	641, 642	72	556
Millen, Henry, *et al.* (See Taylor, Charles H., assignor.)						
Millen, Henry, *et al.*, trustees. (See Taylor, Charles H., assignor.)						
Miller, Allen T., assignor to Kuhns Brothers, Dayton, Ohio. Valve for motors	545,368	Aug. 27	2775	673	72	1314
Miller, Arthur W. (See Miller, Bradley, and Miller.)						
Miller, Cassius M. and E. E., Canton, Ohio. Duplex steam-engine	542,342	July 9	901	221	72	187
Miller, Charles B., Canton, Ohio. Combined wagon and velocipede	545,517	Sept. 3	153	36	72	1383
Miller, Charles M. (See Cotton and Miller.)						
Miller, Conrad, Leadville, Colo. Hub-attaching device	546,176	Sept. 10	1272	303	72	1602
Miller, David L., Wilson, Kans. Rub-iron	544,989	Aug. 20	2137	517	72	1171
Miller, David W., Harrisburg, Pa. Window-scaffold	542,895	July 16	1859	441	72	379
Miller, Edgar E. (See Miller, Cassius M. and E. E.)						
Miller, Edward, Jr., Evansville, Ind. Rail-chair and nut-lock	543,998	Aug. 6	290	71	72	801
Miller, Ferdinand J., assignor of one-half to A. Mueller and J. Pfeiffer, New York, N. Y. Bath-tub	545,243	Aug. 27	2590	628	72	1279
Miller, Frank C., Easton, Pa. Adjustable window-screen	543,261	July 23	2518	591	72	518
Miller, George E., assignor to American Electric Train and Switch Signal Company, Boston Mass. Electric signaling apparatus	545,903	Sept. 10	814	197	72	1516
Miller, George E., Stoneham, assignor to American Electric Train and Switch Signal Company, Boston, Mass. Electric signaling	545,904	Sept. 10	816	197	72	1516
Miller, George H. (See Devries, John O., assignor.)						
Miller, George N., Utica, N. Y., assignor to F. C. Austin, Chicago, Ill. Stone-crusher	543,041	July 23	2102	499	72	441
Miller, Horace G., Punxsatawney, Pa. Perforator	545,711	Sept. 3	484	117	72	1443
Miller, Jacob W. (See Huber and Miller.)						
Miller, James, assignor to J. H. Brown, Detroit, Mich. Registering-alarm	543,449	July 23	2830	663	72	578
Miller, James C. (See Wood and Miller.)						
Miller, James G., assignor of one-half to G. L. James, Philadelphia, Pa. Automatic railway-switch	544,769	Aug. 20	1758	419	72	1100
Miller, John B., New Windsor, N. Y. Muzzle	545,207	Aug. 27	2538	614	72	1269
Miller, John D., *et al.* (See Hitchcock, Wilbur R., assignor.)						
Miller, John H., Batavia, Ill. Windmill-tower	546,620	Sept. 17	2061	489	72	1769
Miller, John P., Santa Cruz, Cal. Combined stopple and hand-hold	544,990	Aug. 20	2138	517	72	1171
Miller, John W., *et al.* (See Pirtle, Mike P., assignor.)						
Miller, Julius C., Syracuse, Nebr. Inkstand	546,338	Sept. 17	1588	377	72	1679
Miller, Leonhard, *et al.* (See Kopp, August, assignor.)						
Miller, Lewis F., Canton, N. C. Planter	544,184	Aug. 6	596	149	72	859
Miller, Theodore E., Leando, Iowa. Knife-handle	542,568	July 9	1312	318	72	263
Miller, Thomas M., Manitowoc, Wis. Opera-chair	544,541	Aug. 13	1300	316, 317	72	995
Miller, Thomas S., South Orange, N. J. Conveying apparatus	545,807	Sept. 3	643	156	72	1472
Miller, Thomas S., South Orange, N. J. Hoisting and conveying apparatus	546,239	Sept. 10	1378	328, 329	72	1623
Miller, William F., Boston, Mass. Trunk-fastener	543,216	July 23	2436	572	72	503
Miller, William G., W. H. Bradley, and A. W. Miller, Allegheny, Pa.; said Bradley and A. W. Miller assignors to said William G. Miller. Stove and range and attachment for stoves	544,048	Aug. 6	381	94, 95	72	819
Miller, William H., Lock Sevep, W. Va. Gage for side-filing saws	545,518	Sept. 3	154	36	72	1383
Miller, William M., Richmond, Va. Drop-light	545,087	Aug. 27	2314	562	72	1225
Millert, Edgar B., Walla Walla, Wash., assignor to M. E. Bailey, Portland, Oreg. Temporary binder	546,492	Sept. 17	1862	441	72	1732
Milligan, William T., Boston, Mass., assignor, by mesne assignments, to Briggs Ship's Berth Company, Portland, Me. Self-leveling berth	544,065	Aug. 6	412	103	72	825
Milliken, Charles H., Mechanic Falls, Me. Salesman's duplicating memorandum device	544,991	Aug. 20	2139	518	72	1171
Milliken, Foster, New York, N. Y. Construction of arches, partitions, &c	545,301	Aug. 27	2676	649, 650	72	1267
Milliken, George E., Montone, Cal. Ice-cutting machine	546,283	Sept. 10	1481	350	72	1642
Mills, Charles, assignor to Pettee Machine Works, Newton, Mass. Stand for grinding rolls of carding-engines	542,270	July 9	758	186	72	160
Mills, Edward A., assignor to R. Beattie, Little Falls, N. J. Lapping-machine	543,774	July 30	3479	840	72	710
Mills, George F., Brookly, assignor to W. Mills & Son, New York, N. Y. Wrapper for fish-hooks	542,394	July 9	997	246	72	205
Mills & Son, William. (See Mills, George F., assignor.)						
Mills, William R., Chicago, Ill. Smoke-preventer	545,967	Sept. 10	918	220	72	1537
Milton, Charles J. (See Roberts, Charles F., assignor.)						
Mingus, John H., Guthrie Centre, Iowa. Stovepipe drum and furnace	542,650	July 16	1455	350	72	304
Minter, Walter J., assignor of one-half to J. Sanders, London, England. Pocket-knife	543,943	Aug. 6	198	47	72	785
Mishler, Abel, Philadelphia, Pa. Finger-guard	545,410	Aug. 27	2855	695	72	1330
Mitchell, Ardon M., Brooklyn, N. Y. Automatic valve for gas-burners	545,302	Aug. 27	2578	650	72	1267
Mitchell, Charles, assignor of five-eighths to H. A. Archibald, Yonkers, N. Y. Trolley-wheel	543,042	July 23	2104	499	72	441

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Mitchell, Edmund. (See Gatti, Tony C., assignor.)						
Mitchell, Hugh, Duluth, Minn. Duplicate-whist board	543,746	July 30	3422	794	72	700
Mitchell, James H., Philadelphia, Pa. Drive-chain	542,486	July 9	1168	286	72	236
Mitchell, James O., assignor of one-half to S. E. Rankin, Basic City, Va. Wire-working tool	543,100	July 23	2204	523	72	461
Mitchell, Jonas L., Chicago, Ill., assignor to Sullivan Machinery Company, Chicago, Ill., and Claremont, N. H. Mining-machine	545,168	Aug. 27	2459	596, 597	72	1253
Mitchell, Marcus L., assignor of one-fourth to J. R. La Tour, St. Louis, Mo. Water-filter	544,262	Aug. 6	763	195	72	888
Mix, Judd W., Byron, Ill. Combined liquid-cement receptacle and scraper	546,073	Sept. 10	1103	263	72	1571
Mlotkowski, Jozef, Pittsburg, Pa. Lock	542,001	July 2	305	71	72	62
Modemann, George H., New York, N. Y. Car-fender	543,775	July 30	3481	811	72	710
Moe, Sivert. (See Buell and Moe.)						
Moeller, Louis K. (See Morton, Ellis S., assignor.)						
Moeller, Max, and C. Oelschlaegel, assignors to Actien-Gesellschaft für Anilin Fabrikation, Berlin, Germany. Black azo dye	543,747	July 30	3423	.....	72	701
Moeller, Max, and C. Oelschlaegel, assignors to Actien-Gesellschaft für Anilin Fabrikation, Berlin, Germany. Black azo dye	543,748	July 30	3425	.....	72	701
Moeslein, Valentine, New York, N. Y. Metallic ceiling	542,569	July 9	1313	318	72	263
Moffatt, Ansil, Indianapolis, Ind. Forming starch into coherent masses	541,941	July 2	196	.....	72	42
Moffatt, Ansil, Indianapolis, Ind. Manufacture of starch	545,128	Aug. 27	2395	.....	72	1240
Mohn, Henry P., Ashland, Ohio. Valve	545,519	Sept. 3	155	37	72	1383
Mohn, John, Detroit, Mich. Tap and bushing	542,063	July 2	410	100	72	80
Mohr, Jens J. H., New Haven, Conn. Curtain-fixture	544,899	Aug. 20	1992	476	72	1145
Mohs, Julius, Dresden, assignor to Berliner Kunstdruck und Verlags-Anstalt, vormals A. & C. Kaufmann, Berlin, Germany. Box-staying machine	545,808	Sept. 3	644	156, 157	72	1473
Molé, Charles, Boston, Mass. Necktie-fastener	544,820	Aug. 20	1843	443	72	1116
Molinari, Anton, Wood Ridge, N. J. Syringe	544,512	Aug. 13	1261	305	72	988
Moline Plow Company. (See Lindgren, August, assignor.)						
Mollring, Arnold F., Nebraska City, Nebr. Automatic flush-tank	543,776	July 30	3483	811	72	711
Monbeck, Samuel A., Vorhees, Ohio. Roofer's truck	543,498	July 30	2922	688	72	611
Mond, Ludwig, London, England. Apparatus for producing gas	546,049	Sept. 10	1059	253	72	1562
Mond, Ludwig, London, England. Grate for circular gas-producers	546,050	Sept. 10	1061	254	72	1563
Monroe, Stephen R., assignor to E. C. Marsh, Bristol, Vt. Adjustable harness-loop	546,455	Sept. 17	1804	427	72	1721
Montague, John R., Syracuse, N. Y. Velocipede-seat	544,625	Aug. 13	1457	354	72	1025
Montanus, Philip E. (See De Leeuw, Adolph L., assignor.)						
Montgomery, Charles A., Brooklyn, N. Y. Pin-wheel blank	546,456	Sept. 17	1805	427	72	1721
Montgomery, Harry M., New York, N. Y., assignor, by mesne assignments, to L. Dion, Boston, Mass. Electric railway	546,546	Sept. 17	1942	461	72	1747
Montgomery, John T., H. C. Jordan, J. Soesbe, W. H. Gilman, and M. Hartman, Battle Creek, Iowa. Apparatus for handling earth and grading	543,408	July 23	2737	646, 647	72	559
Montgomery-Moore, Alexander W., London, England. Mechanism for closing bulkhead-doors on shipboard	542,935	July 16	1925	456	72	392
Moody, James T., W. Shawd, and A. J. Baker, Springfield, Ohio. Trolley-guard	545,520	Sept. 3	157	37	72	1383
Moonelis, Adolph, New York, N. Y., assignor, by mesne assignments, to American Tobacco Company, of New Jersey. Cigarette-machine	546,822	Sept. 24	2399	574, 575	72	1841
Moonelis, Adolph, New York, N. Y., assignor, by mesne assignments, to American Tobacco Company, of New Jersey. Cigarette-machine	546,823	Sept. 24	2403	575, 576	72	1845
Moonelis, Adolph, New York, N. Y., assignor, by mesne assignments, to American Tobacco Company, of New Jersey. Cigarette-machine	546,824	Sept. 24	2405	576, 577	72	1845
Mooney, Charles P. (See Kane, Patrick J., assignor.)						
Mooney, Frank A. (See Grant and Mooney.)						
Moore, Aimée K. O., London, England, and A. Bourcey, Paris, France; said Bourcey assignor to said Moore. Apparatus for sketching	544,642	Aug. 13	1489	361	72	1031
Moore, Albert R., assignor of one-tenth to C. N. Fisher, Houston, Tex. Mechanism for operating railway-switches	542,090	July 2	447	107	72	88
Moore, Alexander D., Moore, Pa. Mail and parcel pipe express	542,682	July 16	1514	362, 363	72	316
Moore, Allen D., Montpelier, assignor to J. A. Smith, W. E. Whitcomb, and B. B. Cook, Barre, Vt. Stone-polishing machine	541,978	July 2	265	62	72	54
Moore, Casains F., Chicago, Ill. Type-holder	545,635	Sept. 3	347	86	72	1418
Moore, Edward Y., Milwaukee, Wis. Automatic brake for pulley-blocks	545,088	Aug. 27	2415	562	72	1225
Moore, Emma E., Chicago, Ill. Underground electric railway	545,208	Aug. 27	2539	614	72	1269
Moore, George R., *et al.* (See Moore, William H., assignor.)						
Moore, George R., assignor of one-fourth to C. C. Strong, East Springfield, Pa. Mail-bag catching and delivering mechanism	544,900	Aug. 20	1993	476	72	1145
Moore, Gilpin, assignor to Deere & Company, Moline, Ill. Stagger-wheel axle-box for agricultural implements	545,129	Aug. 27	2396	580	72	1240
Moore, Hollis W., assignor to International Steam Power Company, Olean, N. Y. Combined shears, punch, and tire-shrinker	543,809	July 30	3548	824, 825	72	723
Moore, James A., Lancaster, Cal. Wave-motor	543,137	July 23	2274	539, 540	72	474
Moore, John, St. Louis, Mo. Drive-chain wheel	542,936	July 16	1927	457	72	392
Moore, John T., Schriever, La. Sugar-cane hook	546,741	Sept. 24	2273	540	72	1820
Moore, Joseph H. (See Trisler, John R., assignor.)						
Moore, Leland, assignor of one-half to J. C. Reilly, Brooklyn, N. Y. Magneto-electric bell	544,107	Aug. 6	487	121	72	838
Moore, Robert J. (See Tillett, Tarpley, and Moore.)						
Moore, William, Long Island City, N. Y. Plumb and level	544,587	Aug. 13	1385	338	72	1012
Moore, William H., assignor of one-half to K. Kidd, Deadwood, S. D. Ore-concentrator	543,013	July 23	2106	499	72	442
Moore, William H., Gardiner, Me., assignor to G. R. Moore, F. C., E. S., and H. N. Plaisted, Boston, Mass. Reinforcement for mattresses	543,044	July 23	2108	500	72	442
Moorfield, Frank, Newark, N. J. Watchcase-pendant	546,547	Sept. 17	1943	462	72	1747
Moorfield, Frank, Newark, N. J. Die for making watchcase-pendants	546,548	Sept. 17	1944	462	72	1747
Moorman, Charles A., *et al.* (See Moorman, Charles T., assignor.)						
Moorman, Charles T., assignor of two-thirds to C. A. Moorman, Packwood, and E. W. Moorman, Ioka, Iowa. Device for oiling vehicle-axles	542,064	July 2	411	100	72	81
Moorman, Eli W., *et al.* (See Moorman, Charles T., assignor.)						
Mootham, Orby C., Bournemouth, assignor of one-fourth to J. G. Lorrain, London, England. Disengaging-clutch	545,411	Aug. 27	2456	595	72	1330
More, Walter H., New Orleans, La. Adjustment for type-writing machines	545,169	Aug. 27	2464	597	72	1254
Morehouse, Cyrus E., assignor to Morehouse Manufacturing Company, Milwaukee, Wis. Temporary binder	543,101	July 23	2205	523	72	461
Morehouse Manufacturing Company. (See Morehouse, Cyrus E., assignor.)						
Morey, Edward I., assignor of one-fourth to F. W. Smith, Durango, Colo. Wrench	542,592	July 9	1346	326	72	269
Morgan Air System Company. (See Morgan, John B., assignor.)						
Morgan, Charles, assignor to Arcade Manufacturing Company, Freeport, Ill. Mop-head	542,343	July 9	902	221	72	187

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Morgan, Charles H. (See Ryan and Murphy, assignors.)						
Morgan, Charles H., Worcester, Mass. Wire-reeling machine	543,884	Aug. 6	99	23	72	766
Morgan Construction Company. (See Edwards, Victor E., assignor.)						
Morgan, Elisha, Springfield, Mass. Paper-roll holder and cutter	543,555	July 30	3033	709	72	633
Morgan, Elisha, Springfield, Mass., and O. H. Hicks, Chicago, Ill., assignors to Morgan Envelope Company, Springfield, Mass. Toilet-paper fixture	543,556	July 30	3034	709	72	633
Morgan Envelope Company. (See Morgan and Hicks, assignors.)						
Morgan, Fred W., *et al.* (See Holmes, William, assignor.)						
Morgan, Fred W., Chicago, Ill. Manufacturing inflatable air-tubes for pneumatic tires	544,626	Aug. 13	1458	354, 355	72	1025
Morgan, Fred W., Chicago, Ill. Manufacturing inner elastic air-tubes for pneumatic tires	544,627	Aug. 13	1462	355	72	1026
Morgan, George W., St. Thomas, Canada. Elevator-door	542,023	July 2	342	83	72	69
Morgan, John B., Rockland, assignor to Morgan Air System Company, Boston, Mass. Rotary steam-joint	543,045	July 23	2109	500	72	442
Morgan, John B., Rockland, Mass., assignor to Morgan Air System Company, of Maine. Water-lubricated steam-joint	543,046	July 23	2111	500	72	443
Morgan, John R., *et al.* (See Morgan, Thomas R., Sr., assignor.)						
Morgan, John R., *et al.* (See Morgan, William H., assignor.)						
Morgan, Thomas R., Sr., *et al.* (See Morgan, William H., assignor.)						
Morgan, Thomas R., Sr., assignor of three-fourths to T. R., Jr., J. R., and W. H. Morgan, Alliance, Ohio. Overhead traveling crane	543,557	July 30	3036	710	72	634
Morgan, William H., *et al.* (See Morgan, Thomas R., Sr., assignor.)						
Morgan, William H., assignor of three-fourths to T. R. Morgan, Sr. and Jr., and J. R. Morgan, Alliance, Ohio. Clutch-operating device	545,369	Aug. 27	2777	674	72	1314
Morgan & Wright. (See Wright and Parker, assignors.)						
Morgan & Wright. (See Young, Ernest W., assignor.)						
Morrell, Rudolph, Winona, Minn. Saw-swage	541,942	July 2	197	45, 46	72	42
Morrill, Alvin T. (See Fischer, Hermann C., assignor.)						
Morris, George M., Cincinnati, Ohio. Autographic register	542,091	July 2	448	107	72	88
Morris, J. E. (See Atkinson, Henry T., assignor.)						
Morris, John H., Bridgeton, N. J. Apparatus for preventing condensation on window-panes	543,749	July 30	3425	795	72	701
Morris, John H., Maquoketa, Iowa. Gate	545,521	Sept. 3	158	37	72	1384
Morris, John W., assignor of one-half to C. S. Bronson, Indianapolis, Ind. Crossent-saw	542,420	July 9	1043	256	72	215
Morris, Samuel F., St. Louis, Mo. Skate-sharpener	544,992	Aug. 20	2141	518	72	1172
Morrison, Burton E., Haverhill, assignor to W. Gordon, Boston, Mass. Machine for molding spring-heels	542,092	July 2	451	108	72	88
Morrison, Georgia A., executrix. (See Morrison, John H.)						
Morrison, Harley J., Clifton, Ohio. Recovering glycerin from soap-underlye	544,366	Aug. 13	1003	.....	72	938
Morrison, Jacob W., Adairville, Ky. Arm-rest	544,821	Aug. 20	1844	443	72	1116
Morrison, James F. (See Conway, Jesse, assignor.)						
Morrison, John H., deceased, Salida, Colo.; G. A. Morrison, executrix. Surgical pad	542,202	July 2	630	153	72	123
Morrison, Joshua H., Connersville, Ind. Folding bed	543,499	July 30	2923	688	72	611
Morrison, Thomas W., North Plainfield, N. J. Method of and apparatus for printing in colors	546,024	Sept. 10	1017	245	72	1555
Morrison, Wheeler M., West Union, Ohio. Storm-curtain for buggies	545,713	Sept. 3	488	118	72	1444
Mors, Joshua, *et al.* (See Moulton, William E., assignor.)						
Morse, Orville M., Jackson, Mich. Separating-machine. (Reissue)	11,507	Sept. 10	1488	351	72	1644
Morse, William S. (See Hummel and Morse.)						
Mortland, Chittick B., assignor of one-half to J. C. Somerville, St. Louis, Mo. Photographic retoucher	544,681	Aug. 20	1581	379	72	1066
Morton, Ellis S, assignor of one-half to L. K. Moeller, Galena, Kans. Convertible wagon, perambulator, rocker, and swing	545,712	Sept. 3	486	118	72	1443
Morton, John M., Cedar Rapids, Iowa. Combined mat and scraper	543,999	Aug. 6	200	71	72	802
Morton, William F., New Haven, Conn. Body-loop bearing for spring-vehicles	543,698	July 30	3325	772	72	681
Moscicki, Kajetan, Warsaw, Russia. Valve-gear for engines	546,770	Sept. 24	2325	554	72	1830
Moseley, Charles S., assignor to Dubuque Specialty Machine Works, Dubuque, Iowa. Endless-chain-cutter mortising-machine	542,593	July 9	1348	326	72	270
Moser, Gabriel, Pierceton, Ind. Heating attachment for stoves	544,789	Aug. 20	1789	428	72	1106
Moses, William S., Tracy, Minn. Substituting and transposing keyboard for pianos or organs	542,271	July 9	759	186	72	160
Moses, William S., Tracy, Minn. Keyboard for pianos or organs	542,272	July 9	762	187	72	161
Mosher, Charles P., and N. R. Streeter, Groton, N. Y. Mirror	542,594	July 9	1349	326	72	270
Mosher, Edwin H., *et al.* (See Cummings, Archibald G., assignor.)						
Mosher, Herbert L., assignor of one-half to F. E. Lee, Dowagiac, Mich. Heating-stove	542,595	July 9	1351	327	72	270
Mosher, John A., Chicago, Ill. Electric transformer	543,346	July 23	2643	621	72	542
Mosher, John A., Chicago, Ill. Electric-arc lamp	544,066	Aug. 6	413	103	72	825
Mosher, Merton S., *et al.* (See Cummings, Archibald G., assignor.)						
Mosher, Sylvenus D., Storm King, N. Y. Picking-machine	544,185	Aug. 6	597	149	72	859
Moskowitz, Morris, Newark, N. J., assignor to National Electric Car Lighting Company, of West Virginia. Electric-lighting system and dynamo therefor	542,487	July 9	1169	286, 287	72	236
Moskowitz, Morris, Newark, N. J., assignor to National Electric Car Lighting Company, of West Virginia. Means for generating electricity from car-wheel axles	542,771	July 16	1664	397	72	342
Moskowitz, Morris, Newark, N. J., assignor to National Electric Car Lighting Company, of West Virginia. Make-and-break switch	542,772	July 16	1668	397, 398	72	343
Moskowitz, Morris, Newark, N. J., assignor to National Electric Car Lighting Company, of West Virginia. Polarized compound switch	542,773	July 16	1671	398	72	343
Mossberg, Frank, Attleborough, Mass. Antifriction-bearing	543,262	July 23	2520	592	72	518
Mossberg Manufacturing Company. (See Horton, James A., assignor.)						
Mossop, Clement S., Philadelphia, Pa. Reversible window-sash	542,488	July 9	1172	287	72	237
Mott, Jordan L., Jr., New York, N. Y. Pigeon-trap	544,186	Aug. 6	599	150	72	859
Moulder, James H., and S. E. Hickman, Boston, Mass. Soap-holding attachment for faucets	545,905	Sept. 10	818	197	72	1517
Moulton, Luther V., Grand Rapids, Mich. Marine velocipede	546,105	Sept. 10	1157	276	72	1581
Moulton, William E., assignor of one-half to J. Mors and G. Caswell, West Troy, N. Y. Car-fender	542,774	July 16	1674	399	72	344
Mounce, Thomas, Toronto, Canada. Hasp-lock	543,535	July 30	3002	704	72	627
Mount, Voorhees F., Homer, Mich. Fence-wire fastener	542,370	July 9	957	235	72	197
Mowson, Harry K., and R. F. Corey, Scottsville, N. Y. Bolting-cloth brush	542,093	July 2	452	108	72	88
Moyer, William, Lykens, Pa. Air-compressor	541,979	July 2	267	62	72	54
Muckle, M. Richards. (See Larzelere, James S., assignor.)						
Muehleisen, Carl, Baltimore, Md. Gearing	542,094	July 2	453	108	72	89
Muehleisen, Carl, Baltimore, Md. Changeable-speed gearing	542,095	July 2	455	108, 109	72	89
Muehlenbeck, Charles F. W., Cleveland, Ohio. Cartographic machine	544,367	Aug. 13	1005	247	72	938

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Mueller, Adolph, *et al.* (See Miller, Ferdinand J., assignor.)						
Mueller, Hieronymus, Decatur, Ill. Tapping-machine	545,968	Sept. 10	920	220	72	1537
Muir, Daniel H., Lincoln, Nebr. Shoe-buttoner	542,711	July 16	1560	373	72	323
Muir, James assignor to Phenix Iron Foundry, Providence, R. I. Expansion-pulley	541,870	July 2	85	20	72	20
Müller, Adelbert O., Fremont, Nebr. Fuel-feeding apparatus for boilers	544,187	Aug. 6	602	150	72	860
Müller, Carl, Eberswalde, Germany. Watchman's time-recorder	542,445	July 9	1094	266, 267	72	223
Müller, Carl L., assignor to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Brown-yellow dye	546,177	Sept. 10	1273	.....	72	1602
Müller-Landsmann, Jakob R., Lotzwijl, Switzerland. Steam-boiler	545,370	Aug. 27	2778	674	72	1315
Müller, Rudolph, Christiania, Norway. Steam-boiler furnace	544,108	Aug. 6	488	121, 122	72	838
Mullinix, Arthur M., Marshalltown, Iowa. Attachment for cableway-dumps	546,074	Sept. 10	1104	263, 264	72	1571
Mulvihill, Daniel C., Marquette, Mich. Ore-car	542,831	July 16	1763	419	72	359
Mumford, Norman W., Jaffery, Fla. Bicycle-case	542,096	July 2	457	109	72	89
Mumma, William G., Warrensburg, Mo. Meat-tenderer	544,188	Aug. 6	604	151	72	860
Munger, Andrew, Evansville, Wis. Gate-hanger	542,937	July 16	1928	457	72	393
Munger, Andrew J., Antwerp, Ohio. Wire-fence machine	544,740	Aug. 20	1680	404	72	1084
Munger, J. P., *et al.* (See Richmond, Henry T., assignor.)						
Munro, Alexander R. (See Munro, James H. and A. R.)						
Munro, James H. and A. R., New Glasgow, Canada. Combined Paper-cutter, book-marker, and fastener	542,273	July 9	761	188	72	161
Murdoch, F. J. (See Campbell, Robert G., assignor.)						
Murdock, John G., Cincinnati, Ohio. Hydrant	546,075	Sept. 10	1106	264	72	1572
Murlless, Herbert B., Rockville, Conn. Hitching device	546,742	Sept. 24	2274	541	72	1820
Murphy, James A. (See Ryan and Murphy.)						
Murphy, Jeremiah, O. F. Engwall, and C. A. Tiden, Chicago, Ill. Opera-glass and handle therefor	544,643	Aug. 13	1491	361	72	1031
Murphy, John, Brooklyn, N. Y. Manufacturing multicolored patterns of vulcanized rubber	543,583	July 30	3078	720	72	641
Murphy, Richard. (See Fritsch, Benedict, assignor.)						
Murphy, Thomas J., Cincinnati, Ohio. Bow-facing oar	543,650	July 30	3250	755	72	668
Murphy, William. (See Baugh and Murphy.)						
Murphy, William B, Brooklyn, assignor to L. N. Littauer, New York, N. Y. Fastening device for gloves	545,906	Sept. 10	820	198	72	1517
Murray, Alexander K., assignor to Economic Smoke Preventing Furnace Company, Chicago, Ill. Furnace	546,178	Sept. 10	1274	304	72	1602
Murray, Archie J., Unity, Oreg. Folding stock for firearms	543,138	July 23	2276	540	72	474
Murray, George, Cambridge, Mass. Piston and cut-off valve for steam-engines	546,504	Sept. 17	2023	480, 481	72	1762
Murray, John, St. Louis, Mo. Barrel-cover	543,396	July 23	2718	642	72	556
Murray, John W., Chicago, Ill. Railway-gate	546,979	Sept. 24	2653	635, 636	72	1893
Murrey, Alfred, *et al.* (See Barnes, John W., assignor.)						
Musgrove, Charles M., and A. Smith, Pittsfield, Mass.; said Smith assignor to said Musgrove. Knitting-machine	545,809	Sept. 3	647	157	72	1473
Musser, Frank P., Beaver Falls, Pa. Car-brake	545,810	Sept. 3	649	157, 158	72	1474
Muth, George, *et al.* (See Schon, Hubert, assignor.)						
Myers, Charles R. (See Bachmann, Gustav A., assignor.)						
Myers, George A., Port Byron, N. Y., assignor to T. B. Myers, St. Paul, Minn. Spraying-machine	542,712	July 16	1561	373, 374	72	324
Myers, James, *et al.* (See Brindle, James C., assignor.)						
Myers, Leopold. (See Baker, Francis R., assignor.)						
Myers, Martin J., Philadelphia, Pa. Hook and eye	543,536	July 30	3003	704	72	627
Myers, Theodore B. (See Myers, George A., assignor.)						
Myers, Thomas L., St. Louis, Mo. Brick-kiln	546,934	Sept. 24	2580	618	72	1880
N. O. Nelson Manufacturing Company. (See Curry, Michael J., assignor.)						
Nading, Tunis. (See Burgess, James C., assignor.)						
Nafe, William, Waterloo, Canada. Flower-stand	546,745	Sept. 24	2278	541	72	1821
Nappin, Ira, Farmington, Ill. End-gate for wagons	544,822	Aug. 20	1845	443	72	1117
Nasahl, Arnold J., St. Louis, Mo. Base for barbers' chairs	543,047	July 23	2114	501	72	443
Nase, John, assignor of one-half to A. R. Dickinson, Syracuse, N. Y. Bicycle-tire	542,683	July 16	1519	363	72	316
Nateez, Felix K., Brooklyn, N. Y. Piano attachment	543,538	July 30	3005	704	72	627
Nathan, Gustav. (See Ortmann, Paul, assignor.)						
National Casket Company. (See Loomis, Harry T., assignor.)						
National Cotton Seed Oil and Huller Company. (See Washburn, George W., assignor.)						
National Electric Car Lighting Company. (See Moskowitz, Morris, assignor.)						
National Harrow Company. (See Childs, Orlando J., assignor.)						
National Key Opening Can Company. (See McDonald, Charles B., assignor.)						
National Malleable Castings Company. (See Sullivan, Charles L., assignor.)						
National Railway Spring Company. (See Sloan and Shea, assignors.)						
National Sewing Machine Company. (See Goodrich, Frank L., assignor.)						
Naumann, Friedrich W., assignor to C. H. Zimmermann, Leipsic, Germany. Shaving apparatus	543,348	July 23	2647	623	72	543
Neal, John N. (See Right, Frederick T., assignor.)						
Neal, Stephens, Talbotton, Ga. Vehicle-wheel	545,522	Sept. 3	161	38	72	1384
Needham Joseph, Braddock, Pa. Apparatus for scouring and polishing wire	542,529	July 9	1245	304	72	251
Neely, Benjamin F., Colton, Cal. Bottom for cots, hammocks, &c.	541,872	July 2	88	20	72	20
Neely, Wade B. (See Lewis, Harry J., assignor.)						
Neer, Alonzo W. (See Neer, Charles F., assignor.)						
Neer, Charles F., Mechanicsburg, assignor of one-half to A. W. Neer, Catawba, Ohio. Horse-collar attachment	544,628	Aug. 13	1464	356	72	1026
Neer, Harry M., assignor to O. S. Kelly, Springfield, Ohio. Store-service apparatus	544,002	Aug. 6	295	72, 73, 74	72	802
Neher, George K. (See Lutz, John, assignor.)						
Neher, Jules E., assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Connector for terminals of electric circuits	546,471	Sept. 17	1826	432	72	1725
Neidl, William J., New Britain, Conn. Sash-fastener	546,784	Sept. 24	2342	559	72	1834
Neilen, Nels, Sioux City, Iowa. Sash-balance	543,500	July 30	2-25	689	72	612
Neilsen, Anders C., Tyler, Minn. Revolving flower-stand	542,346	July 9	905	222	72	187
Neilson, Martin. (See Cromwell, Jonas, assignor.)						
Neimeyer, John, Trenton, Ohio. Shears	546,493	Sept. 17	1863	441	72	1732

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Nelon, Michael D., Cincinnati, Ohio. Combined desk and seat	541,982	July 2	273	64	72	55
Nelson, Andrew. (See Nelson, Carl L., assignor.)						
Nelson, Carl L, Seattle, assignor to A. Nelson, Kirkland, Wash. Duster and curtain-pole lifter	545,606	Sept. 3	299	74	72	1409
Nelson, Edward, Providence, R. I. Making seamless plated wire	542,422	July 9	1045	236	72	215
Nelson, Elihu, New York, N. Y. Cable-grip	542,489	July 9	1174	287	72	237
Nelson, Herbert E., Brooklyn, N. Y. Puzzle	543,188	July 23	2383	563	72	494
Nelson, Jabez C., and F. E. Smith, assignors to Smith Sons Gin and Machine Company, Birmingham, Ala. Cotton-press	546,242	Sept. 10	1365	331	72	1624
Nelson, John E., Evansville, Minn. Pipe-tongs	545,304	Aug. 27	2681	651	72	1297
Nelson, Peter A., Wyanet, Ill. Device for sharpening disk harrows	546,077	Sept. 10	1112	265	72	1573
Nelson, W. T., *et al.* (See McAnulty, John A., assignor.)						
Nelson, Walton, Pottsville, Pa. Hammer-stem extractor	545,374	Aug. 27	2783	675	72	1316
Neostyle Company. (See Klaber, Augustus D., assignor.)						
Nesom, Thomas, assignor, by mesne assignments, to Union Embossing Machine Company, Indianapolis, Ind. Embossing-machine	546,621	Sept. 17	2062	489	72	1769
Netrefa, John, Cleveland, Ohio. Slicing and paring machine	542,097	July 2	458	109, 110	72	90
Neumann, Herman, New York, N. Y. Hair-curler	546,898	Sept. 24	2521	602	72	1868
New Haven Clock Company. (See Hurley, Daniel J., assignor.)						
New Haven Clock Company. (See Porter, Wilson E., assignor.)						
New York Stencil Works. (See Geary and Bracewell, assignors.)						
Newbaker, William L., *et al.* (See Forsythe, James, assignor.)						
Newell, Darius E., New York, N. Y. Pulley	543,887	Aug. 6	102	23	72	767
Newell, Michael. (See Stoll, Daniel H., assignor.)						
Newlee, Redman. (See Persell and Newlee.)						
Newman, Aurelius E., and L. James, Ospur, Ill. Fence-post	543,398	July 23	2720	643	72	557
Newman, John J., Elkhart, Ind. Rotary screen	546,899	Sept. 24	2522	602, 603	72	1869
Newman, Samuel, and H. R. Bothwell, Cincinnati, Ohio. Seat for bath-tubs	546,180	Sept. 10	1279	305	72	1603
Newning, Charles A. (See Parker, William S., assignor.)						
Newsom, Jessie L., *et al.* (See Lightner and Newsom, assignors.)						
Newsom, John J. (See Lightner and Newsom.)						
Newton, Ella J., *et al.* (See Tiner, John F., assignor.)						
Ney, Henry J., Pottsville, Pa. Bed-clamp	544,823	Aug. 20	1846	443	72	1117
Nial, Daniel F., Troy, N. Y. Car-fender	543,264	July 23	2522	592	72	519
Nibelius, Axel W., Hackettstown, N. J., assignor of two-thirds to J. W. Mackay, Jr., New York, and W. P. Ferguson, Brooklyn, N. Y. Extracting aluminium oxid	544,319	Aug. 13	869	.....	72	918
Nichols, Benito, New York, N. Y. Means for detecting withdrawal of bottle-stoppers	543,217	July 23	2437	572	72	504
Nichols, Marshall C., Viroqua, Wis. Lathing	542,098	July 2	460	110	72	90
Nichols, Wilbur F., and B. Bloomheart, San Francisco, Cal. Grinding apparatus	542,099	July 2	461	110	72	90
Nicholson, Floyd S. (See Brokaw and Nicholson.)						
Nicholson, Francis T., assignor to C. Wolf, Philadelphia, Pa. Machine for making and gumming envelopes	542,003	July 2	307	72, 73, 74	72	62
Nicholson, Joseph, and W. H. Ferguson, assignors to C. Ferguson, London, Canada. Vacuum-can	544,791	Aug. 20	1792	428	72	1107
Nicol, George A., *et al.* (See Brindle, James C., assignor.)						
Nicolai, Ludwig. (See Saltzkorn and Nicolai.)						
Nielsen, Mads, New York, N. Y. Oyster-dredge	546,181	Sept. 10	1280	305	72	1603
Niemand, Wilhelm, Newport, Ky. Curtain-stretcher frame	544,049	Aug. 6	385	95	72	819
Nies, Frederick H., Brooklyn, N. Y. Means for repairing breaks in pneumatic tires	544,189	Aug. 6	605	151	72	861
Nightingale, George. (See Guilford, William C., assignor.)						
Niles, Walter L. C., Saugus, Mass. Pattern-binding machine	543,777	July 30	3485	811, 812	72	711
Nilson, Nils, Minneapolis, Minn. Trap	544,743	Aug. 20	1684	405, 406	72	1085
Nilson, Nils, Minneapolis, Minn. Steam-trap	544,744	Aug. 20	1686	406	72	1085
Nims, Oscar H., assignor of one-half to C. P. Randolph, Los Angeles, Cal. Adjustable window-shade holder	546,472	Sept. 17	1827	433	72	1726
Niskern, Isaac, assignor of one-half to J. B. Hatch, Milwaukee, Wis. Hose-bridge	546,387	Sept. 17	1671	396	72	1696
Nixon, William G., *et al.* (See Shaw, Henry F., assignor.)						
Noble, Oscar L., Boston, Mass. Heel-trimming machine	543,349	July 23	2647	624	72	543
Nolan, John J., and J. H. Wilkie, Pawtucket, R. I. Mouthpiece for loom shuttle-boxes	543,629	July 30	3218	746	72	661
Nolds, Elisha J. (See Hatch, Thomas J., assignor.)						
Noonan, John, Oconto, Wis. Head-block for sawmill-carriages	545,907	Sept. 10	821	198	72	1517
Noppel, Emil, Philadelphia, Pa. Lift and force pump	546,863	Sept. 24	2462	590	72	1857
Norcross, George A., assignor of two-thirds to G. R. and J. O. Sullivan, San Antonio, Tex. Autographic register	546,427	Sept. 17	1746	414, 415	72	1709
Nordberg, Bruno V., assignor to Bruno Nordberg Company, Milwaukee, Wis. Feed-water heater	542,004	July 2	312	74, 75	72	63
Nordberg, Bruno V., and C. E. Shadall, assignors to Bruno Nordberg Company, Milwaukee, Wis. Apparatus for producing motive power	543,501	July 30	2926	689, 690	72	612
Nordyke & Marmon Company. (See Brantingham, Allen C., assignor.)						
Nordyke & Marmon Company. (See Warrington, Jesse, assignor.)						
Noriega, Eloy, Mexico, Mexico. Process of and apparatus for working argentiferous or auriferous ores	544,925	Aug. 20	2034	485	72	1152
Noriega, Eloy, Mexico, Mexico. Machine for packing cigarettes	544,926	Aug. 20	2035	485, 486	72	1152
Norman, S. A. (See Williams, Thomas P., assignor.)						
Norman, William W., Allenville, Mo. Purifying-pump	542,530	July 9	1247	304	72	251
Norris, Albert F., Boston, Mass. Piano-pedal action	544,110	Aug. 6	492	122	72	839
Norris, Charles F. (See Hickey and Norris.)						
Norris, Henry M., Philadelphia, Pa., assignor to Appleton Manufacturing Company, of Pennsylvania. Grinding and polishing attachment for sewing-machines	544,190	Aug. 6	607	151	72	861
Norris, James A. (See Young and Norris.)						
Norrish, A. S., *et al.* (See Kintzing, William F., assignor.)						
North American Interior Telephone Company of Baltimore City. (See Brimner, Thomas R., assignor.)						
North, Frank M. (See Brown, William B., assignor.)						
Northrop Loom Company. (See Smith, Oberlin, assignor.)						
Northrup, Joel, Otisville, N. Y. Game apparatus	544,111	Aug. 6	493	123	72	839
Norton, Ambrose L., Attica, N. Y. Spring-bed	542,170	July 2	569	138	72	112

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Norton, Frederick H., Gouverneur, N. Y. Harrow	546,549	Sept. 17	1946	462, 463	72	1748
Norton, Homer F., Seattle, Wash. Fish or seal spear	546,428	Sept. 17	1749	415	72	1710
Norton, William, Lynn, Mass. Boot or shoe	544,263	Aug. 6	764	195	72	888
Nowell, Melvin A. (See Prescott and Nowell.)						
Noxon, Townsend W., St. Louis, Mo. Mirror attachment for dressers, &c.	542,860	July 16	1806	428	72	367
Noyes, John B., assignor to W. H. Harrison, Baltimore, Md. Machine for making and driving wire nails	545,523	Sept. 3	162	38	72	1384
Nuckolls, James T., Fort Mitchell, Ala. Plow-fender	546,675	Sept. 24	2158	513	72	1799
Nugent, William L., *et al.* (See Dalton, William M., assignor.)						
Nunamaker, John W., Chicago, Ill. Alarm-watch	543,048	July 23	2115	501	72	443
Nutt, William, Crawfordsville, Ind. Circuit-closer	543,966	Aug. 6	236	58	72	791
Nutting, Lorenzo H., Davenport, Iowa. Electrically-controlled weighing apparatus	544,745	Aug. 20	1688	406, 407	72	1086
Nutting, Samuel E., Oak Park, assignor to G. W. Furbeck and J. Kettlestrings, Chicago, Ill. Electric-arc lamp	542,490	July 9	1176	288	72	238
Nutting, Samuel E., Oak Park, assignor to G. W. Furbeck and J. Kettlestrings, Chicago, Ill. Electric-arc lamp	543,399	July 23	2721	643	72	557
Nutting, Samuel E., assignor to G. W. Furbeck and J. Kettlestrings, Chicago, Ill. Electric-arc lamp	543,502	July 30	2930	690	72	613
Nutz, Leonard, assignor of one-half to W. W. Donham, Springfield, Mo. Stove	546,026	Sept. 10	1025	246	72	1556
Nyström, Gustaf M., and A. C. Lembke, Malmo, Sweden. Oil-tank	544,416	Aug. 13	1086	265	72	953
O. C. White Company. (See White, Otis C., assignor.)						
O'Brien, Thomas, Jr., Philadelphia, Pa. Insulating railway-joints for electrical signals	546,494	Sept. 17	1864	442	72	1732
O'Connell, Joseph J., Chicago, Ill., assignor to American Bell Telephone Company, Boston, Mass. Signaling apparatus for telephone-exchange circuits	543,559	July 30	3038	711	72	634
O'Connell, Joseph J., Chicago, Ill., assignor, by mesne assignments, to American Bell Telephone Company, Boston, Mass. Signal apparatus for telephone-exchanges	544,545	Aug. 13	1305	318	72	997
O'Connell, Joseph J., Chicago, Ill., assignor, by mesne assignments, to American Bell Telephone Company, Boston, Mass. Apparatus for telephone-exchanges	544,546	Aug. 13	1309	319	72	998
O'Connell, Joseph J., Chicago, Ill., assignor, by mesne assignments, to American Bell Telephone Company, Boston, Mass. Telephone-exchange apparatus	544,901	Aug. 20	1996	477	72	1145
O'Connor, James H., Boston, Mass. Spring-bed	541,873	July 2	89	21	72	21
O'Donnell, Hugh J. (See Ganderton, O'Donnell, and Turnbull.)						
O'Kain, Domenec C., Wilkinsburg, assignor to Union Switch and Signal Company, Swissvale, Pa. Switch and signal mechanism	543,778	July 30	3489	812	72	712
O'Mahony, Daniel, Jersey City, N. J. Car-fender	542,276	July 9	771	190	72	163
O'Neall, Nathaniel S., Cumberland, Md. Cylindrical trunk	546,429,	Sept. 17	1750	415, 416	72	1710
O'Neil, Hugh J., Rochester, N. Y. Kneeling or foot bench	544,112	Aug. 6	494	123	72	839
O'Neil, John, New York, N. Y. Electric motor	545,524	Sept. 3	164	38, 39	72	1385
O'Reilly, Henry M., Almonte, Canada. Tie-holder for collars	546,676	Sept. 24	2159	514	72	1800
O'Reilly, Michael J., Buffalo, N. Y. Gas-burner	546,340	Sept. 17	1591	377, 378	72	1680
O'Toole, Edward F., St. Louis, Mo. Sheet-metal receptacle for fire-extinguishing chemicals	542,491	July 9	1178	288	72	238
Oakes, Victor, Brule, Wis. Table	545,812	Sept. 3	652	158	72	1474
Oakley, Charles F., London, England. Sensitive non-halation plate	543,503	July 30	2934	.....	72	613
Oakman, Thomas C. (See Rushton, William L., assignor.)						
Ober, William Y., Lynn, Mass. Paving-machine	544,746	Aug. 20	1690	407	72	1086
Oberle, Charles, and E. Faller, assignors to M. H. C. Brombacher, North Tarrytown, N. Y. Pipe-forming machine	543,558	July 30	3037	710	72	634
Obernolte, Aug. G. (See Porter, William C., assignor.)						
Oefinger, Jacob, Meriden, Conn. Knife-sharpener	542,372	July 9	959	236	72	198
Oehring, August J., Chicago, Ill. Driving mechanism for multiple drills	544,068	Aug. 6	416	104	72	825
Oelman, Curt E., Detroit, Mich. Machine for mixing dough	546,182	Sept. 10	1281	305	72	1603
Oelschlaegel, Carl. (See Moeller and Oelschlaegel.)						
Oettinger, Herbert C., and J. Wallenstein, Cincinnati, Ohio. Sash-fastener	543,450	July 23	2830	664	72	578
Offenbacher, Max, Fürth, Germany. Machine for grinding flat facets	544,513	Aug. 13	1263	305	72	988
Ogden, Albert B., assignor of three-fourths to J. H. Reddin, I. F. Williams, and A. D. Canning, Denver, Colo. Beer-pipe cleaner	544,191	Aug. 6	608	152	72	861
Ogle, John W., Arcadia, Ill. Culvert or bridge	542,531	July 9	1248	305	72	251
Ohio Rake Company. (See Weaver, George L., assignor.)						
Ohler, John, New Orleans, La. Shears for tinners' use	545,131	Aug. 27	2398	580, 581	72	1241
Ohmer, Eugene A., *et al.* (See Loree, Manfierd U., assignor.)						
Ohnemus, Anton, Quincy, Ill. Radiator	543,560	July 30	3043	711	72	635
Oldman, William N., Buffalo, N. Y. Upright marine boiler	544,792	Aug. 20	1793	429	72	1107
Olds, Eugene H., Fort Wayne, Ind. Rim for vehicle-wheels	545,375	Aug. 27	2784	675	72	1316
Olendorf, Garret J., Cooperstown, N. Y. Hand seed-sower and weeder	543,699	July 30	3326	772	72	682
Olinger, Jacob M., Vienna Cross Roads, Ohio. Gasoline-injector	541,874	July 2	90	21	72	21
Oliver, Thomas, Epworth, Iowa. Type-writing machine	542,275	July 9	766	188, 189	72	162
Olivos, Estanislao C. de los, New York, N. Y. Aerial navigation	542,100	July 2	462	110	72	90
Ollagnier, Christophe, Geneva, Switzerland. Cigarette-machine	543,189	July 23	2384	563	72	494
Olsen, Christian F. (See Bentzen and Olsen.)						
Olson, Hans O., Two Harbors, Minn. Exhaust-nozzle	546,495	Sept. 17	1865	442	72	1733
Olson, John W., Chicago, Ill. Annunciator	542,833	July 16	1765	420	72	360
Olson, Ole, and C. P. Carlson, Ruthton, Minn. Heating-stove	543,561	July 30	3044	711, 712	72	635
Olson, Olof P., Oshkosh, Wis. Pump	542,939	July 16	1930	457	72	393
Olson, Olof P., Oshkosh, Wis. Double-acting force-pump	544,861	Aug. 20	1926	461	72	1131
Omensetter, Robert L., assignor to J. G. Brill Company, Philadelphia, Pa. Brake for railway-cars	541,983	July 2	276	64	72	56
Oppy, Abraham B., Payne, Ohio. Ice-cream freezer	546,243	Sept. 10	1388	331	72	1625
Orell, Olof W., St. Louis Park, Minn. Hitching device	543,888	Aug. 6	103	24	72	767
Orewiler, Benjamin F., Shelby, Ohio. Ribbon-holder	542,834	July 16	1766	420	72	360
Orling, Erik, assignor to Aktiebolaget Inventor, Stockholm, Sweden. Electric gas-lighter	544,514	Aug. 13	1264	305	72	988
Ormerod, George C., assignor of one-half to E. Stout, Asbury Park, N. J. Pile-supporter	543,400	July 23	2723	643	72	557
Orr, John F., Cincinnati, Ohio. Process of and apparatus for making tufted upholstery	543,218	July 23	2438	572	72	504
Orrell, Leslie C., Bellevue, Ky. Fuse-holder	542,713	July 16	1563	374	72	324
Orrison, J. Edgar. (See Pohlman, William J., assignor.)						
Ortmann, Paul, Zittau, assignor to G. Nathan, Leipsic, Germany. Window-blind	544,371	Aug. 13	1013	248	72	940
Osborne, Charles R., Danbury, Conn. Turn-table for locomotives	541,943	July 2	199	46	72	42

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Osgood, William N. (See Manley, Horace A., assignor.)						
Oswald, Mathias. (See Ferguson, George C., assignor.)						
Otis Brothers & Company. (See Burroughs and Otis, assignors.)						
Otis Brothers & Company. (See Otis, Norton P., assignor.)						
Otis, Norton P. (See Burroughs and Otis.)						
Otis, Norton P., Yonkers, assignor to Otis Brothers & Company, New York, N. Y. Elevator	543,630	July 30	3219	746	72	661
Ottenberg, Simon, *et al.* (See Sexton, Michael, assignor.)						
Otto, Friedrich E., Dortmund, Germany. Drying apparatus	545,715	Sept. 3	490	119	72	1444
Otto & Sons, F. G. (See Kennedy, Patrick, assignor.)						
Ottofy, L. Frank, *et al.* (See Hoagland, John B., assignor.)						
Ousley, John N. *et al.* (See Ousley, Newdaygate B., assignor.)						
Ousley, Newdaygate B., assignor to R. N. and J. N. Ousley, Poulan, Ga. Sulky-plow carriage	545,525	Sept. 3	167	39	72	1385
Ousley, Robert N., *et al.* (See Ousley, Newdaygate B., assignor.)						
Ovens, John S., Buffalo Centre, Iowa. Oil-cake trimmer	545,716	Sept. 3	492	119	72	1444
Ovenshire, Elijah A., Detroit, Mich. Cultivator	543,451	July 23	2832	664	72	579
Ovenshire, Elijah A., assignor to American Harrow Company, Detroit, Mich. Ball-bearing for disk harrows	545,210	Aug. 27	2542	615	72	1270
Overhiser, Fred W., Cold Spring, N. Y. Ribbon mechanism for type-writing machines	542,532	July 9	1249	305	72	251
Overman, Joseph S., Canton, Ohio. Air-brush	545,526	Sept. 3	168	39	72	1385
Overstreet, J. W., *et al.* (See Taylor, William T., assignor.)						
Owen, Frederick W., Toronto, Canada. Bill-file	546,244	Sept. 10	1390	332	72	1625
Owen, Herbert W., Millbury, assignor to G. Draper & Sons, Hopedale, Mass. Thread-tension device for loom-shuttles	546,677	Sept. 24	2160	514	72	1800
Owen, James D. (See Vandervort, Owen, and Vandervort.)						
Owen, John, Pittsburg, Pa. Slag-ballast machine	542,446	July 9	1096	267	72	223
Owen, Richard W., Chicago, Ill. Ceiling	542,651	July 16	1457	350	72	305
Owen, William, and T. Hilton, Birmingham, England. Boot or shoe	546,183	Sept. 10	1282	306	72	1603
Owen, William B., New York, N. Y., and J. H. Crowell, Vineyard Haven, Mass., assignors to C. F. Zimmerman Company, Dolgeville, N. Y. Stringed musical instrument	542,533	July 9	1252	305	72	252
Owens, Charles T., Snow, assignor to S. P. Owens, Ardmore, Mo. Steam cooking-vessel	546,678	Sept. 24	2202	514	72	1800
Owens, S. P. (See Owens, Charles T., assignor.)						
P. P. Mast & Company. (See Kissell, Martin L., assignor.)						
Paccaud, Emile, and F. de Coppet, Lausanne, Switzerland. Liquid-meter	544,113	Aug. 6	495	123	72	839
Packer, George W., Rock Falls, assignor to Keystone Manufacturing Company, Sterling, Ill. Corn-harvester	541,875	July 2	92	21	72	21
Packer, George W., Rock Falls, assignor to Keystone Manufacturing Company, Sterling, Ill. Combined corn-husker and fodder-shredder	546,550	Sept. 17	1947	463	72	1748
Paddelle, Fred H., *et al.* (See Faulkner, James J., assignor.)						
Padfield, Harry V., assignor to Padfield Wood and Iron Nut Lock Company, St. Louis, Mo. Nut-lock	546,184	Sept. 10	1282	306	72	1603
Padfield Wood and Iron Nut Lock Company. (See Padfield, Harry V., assignor.)						
Padgitt Brothers. (See Padgitt, Jesse D., assignor.)						
Padgitt, Jesse D., assignor to Padgitt Brothers, Dallas, Tex. Girth-rigging for side-saddles	542,373	July 9	961	236	72	198
Padgitt, Jesse D., assignor to Padgitt Brothers, Dallas, Tex. Riding-saddle	542,940	July 16	1931	458	72	393
Paffrath, Theodor. (See Schnasse and Paffrath.)						
Pagenhart, Charles L. (See Keys and Pagenhart.)						
Paige, Arthur E., Philadelphia, Pa. Telephoning	543,190	July 23	2386	563	72	495
Paige, Charles F., and E. P. Allen, Denver, Colo. Air-valve	541,876	July 2	94	21	72	21
Paige, Charles F., and E. P. Allen, Denver, Colo. Air-valve	543,889	Aug. 6	107	24	72	768
Paini, Silvio, St. Louis, Mo. Decorating glass plates	543,750	July 30	3426	795, 796	72	701
Painter, Francis M., Chicago, Ill. Hose-tower and fire-escape	544,192	Aug. 6	610	152	72	862
Pairpoint Manufacturing Company. (See Ratcliff, Frederick, assignor.)						
Paisley, John W., East Randolph, N. Y. Railway-tie	543,265	July 23	2524	593	72	519
Palm, George, Butler, Pa. Casing-cutter	543,652	July 30	3253	756	72	668
Palm, John H., Chicago, Ill. Hand shell-extractor for firearms	542,896	July 16	1861	441	72	379
Palmer, Charles H., Akron, Ohio, assignor to Diamond Match Company, Chicago, Ill. Apparatus for and process of making colored matches	543,603	July 30	3177	736	72	654
Palmer, Frank A., Dayton, Ohio. Time-keeping check-board	542,803	July 16	1722	410	72	352
Palmer, George E., Elmira, N. Y. Set-line snap						
Palmer, Henry. (See Clark, James W., assignor.)						
Palmer, Henry U., Brooklyn, N. Y. Hoop-making machine	546,052	Sept. 10	1065	255	72	1564
Palmer, Henry U., Brooklyn, N. Y. Hoop-making machine	546,053	Sept. 10	1067	255	72	1564
Palmer, Isaac E., Middletown, Conn. Loom for weaving valances	545,607	Sept. 3	300	74	72	1409
Palmer, James W., Nashua, N. H., assignor to Electric Gas Lighting Company of Maine. Electric gas-lighting apparatus	545,091	Aug. 27	2321	563	72	1227
Palmer, Norman A., Clarksburg, Ohio. Vehicle-gear	546,430	Sept. 17	1752	416	72	1711
Palmer, Samuel D., Rockford, Ill. Churn	541,877	July 2	96	22	72	22
Palmer, Samuel D., Rockford, Ill. Churn	541,944	July 2	201	46, 47	72	43
Palmer, Samuel D., Rockford, Ill. Churn	541,945	July 2	202	47	72	43
Palmer, Samuel D., Rockford, Ill. Metallic churn	542,026	July 2	316	83, 84	72	69
Palmer, Theron H., San Bernardino, Cal. Broom	542,861	July 16	1808	429	72	368
Pape, Jean, and M. Wermann, Dresden, Germany. Automatic-changing tablet on post-boxes, &c.	545,527	Sept. 3	169	40	72	1385
Parcells, Henry A., Delta, Colo. Shuffle-hoe	543,266	July 23	2526	593	72	519
Park, Edward C. (See Van Tuyl, Andrew P., Jr., assignor.)						
Park, Harvey S., Chicago, Ill. Fluid-pressure brake	543,102	July 23	2206	523, 524	72	461
Park, William, Fredonia, N. Y. Current-wheel	546,185	Sept. 10	1283	306	72	1604
Parker, Alfred W., Washington, D. C. Tablet and note-book for stenographers' use	544,684	Aug. 20	1588	381	72	1067
Parker, Edgar C., assignor of one-half to J. R. Watson, London, England. Telephone	546,027	Sept. 10	1026	246	72	1556
Parker, Elbert A. (See Ames and Parker.)						
Parker, Frank L., Worcester, Mass. Index	542,684	July 16	1520	363, 364	72	317
Parker, George W., assignor to W. H. Arnold, New York, N. Y. Book stand or holder	543,810	July 30	3549	825	72	723
Parker, Harry, Sr., E. Scanlin, H. Parker, Jr., and H. H. Skevington, Philadelphia, Pa. Car-coupling	546,864	Sept. 24	2463	590	72	1857
Parker, Harry L., Princeton, Ill. Compression-pump	544,927	Aug. 20	2037	486	72	1153
Parker, Howard. (See Fairbanks and Parker.)						
Parker, John E. (See Wright and Parker.)						
Parker, Joseph E., assignor to I. Fox, Philadelphia, Pa. Spectacles or eyeglasses	542,534	July 9	1253	305	72	252
Parker, Lew, Brooklyn, assignor of one-fourth to W. J. Quinlan, Port Richmond, N. Y. Life-saving apparatus for ships	545,092	Aug. 27	2321	564	72	1227

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Parker, Robert, assignor to J. F. Assenheimer and D. White, Philadelphia, Pa. Spring rocking-chair	542,941	July 16	1933	458	72	394
Parker, William S., assignor of one-half to C. A. Newning, Austin, Tex. Culvert	546,245	Sept. 10	1391	332	72	1625
Parmenter, George A., Cambridge, Mass. Street-car buffer	545,908	Sept. 10	823	198	72	1517
Parmly, Samuel P., assignor, by mesne assignments, to Standard Electric Company, Chicago, Ill. Electric-arc lamp	546,388	Sept. 17	1673	397	72	1696
Parrish, Thomas C., *et al.* (See Crawford, Middleton, assignor.)						
Parsneau, George M. (See Stephens and Parsneau.)						
Passmore, Charles L., assignor of one-half to E. L. Passmore, Fulton, Ill. Knee-spreader for horses	545,413	Aug. 27	2859	697	72	1331
Passmore, Edwin L. (See Passmore, Charles L., assignor.)						
Passmore, George B., Malvern, Pa. Embalming-table	545,608	Sept. 3	301	74	72	1409
Pathe, Karl, and A. Israel, assignors to Farbenfabriken, vormals Fr. Bayer & Co., Elberfeld, Germany. Brown azo dye	543,539	July 30	3006	.....	72	627
Patric, Charles E., assignor to Superior Drill Company, Springfield, Ohio. Grain-drill	543,049	Jnly 23	2117	501, 502	72	444
Patrick, Zorah E., Chicago, Ill. Telephone-transmitter	543,313	July 23	2598	611	72	534
Patterson, Abraham S., *et al.* (See Loughridge, Jacob E., assignor.)						
Patterson, Alwyn, Denver, Colo. Spraying attachment for nozzles	544,928	Aug. 20	2039	487	72	1153
Patterson, C. Godfrey. (See Crandall, Lucien S., assignor.)						
Patterson, Warren A., assignor of three-eighths to L. W. Campbell, Waco, Tex. Fiber unwinder and mixer	543,584	July 30	3078	721, 722	72	641
Patterson, William R. (See Briggs and Patterson.)						
Patterson, William R., assignor to Western Electric Company, Chicago, Ill. Manufacture of electric cables	544,372	Aug. 13	1014	248, 249	72	930
Patterson, William R., assignor to Western Electric Company, Chicago, Ill. Drying cores of electric cables	544,374	Aug. 13	1016	249	72	940
Patterson, William R., Chicago, and C. H. Rudd, Evanston, assignors to Western Electric Company, Chicago, Ill. Drying electric cables	544,373	Aug. 13	1015	249	72	940
Pattiani, William L., Alameda, Cal. Toilet-paper holder	544,588	Aug. 13	1387	338	72	1012
Patton, James M., assignor of one-half to J. M. McKay, Chico, Tex. Flour-bin	546,473	Sept. 17	1829	433	72	1726
Pauk, Henry E., Jr., assignor to Henry Pauk & Sons Manufacturing Company, St. Louis, Mo. Sandpapering-machine	541,878	July 2	97	22, 23	72	22
Paul, Ernst, Wiesbaden, Germany. Knife-attachment for revolvers	545,528	Sept. 3	170	40	72	1386
Pauly, Peter J., Sr., St. Louis, Mo. Bookcase	542,277	July 9	774	190	72	163
Pauly, Peter J., Jr., St. Louis, Mo. Sealed receptacle	544,902	Aug. 20	1999	477	72	1146
Pavia, Giuseppe, Paterson, N. J. Jacquard mechanism for looms	541,879	July 2	100	23, 24	72	22
Payment, François X., and J. C. Hartig, Chicago, Ill. Sash-balance	545,609	Sept. 3	302	74	72	1410
Payne, Thomas J., Tecumseh, Okla. Ter. Cultivator	544,114	Aug. 6	497	123	72	840
Peabody, Henry O., Boston, Mass. Chin and shoulder rest	544,003	Aug. 6	299	74	72	803
Peabody, Hiram B. (See Pearsall and Peabody.)						
Peache, James C., London, England. Steam-engine	546,900	Sept. 24	2525	603, 604	72	1869
Pearce, William, Plantsville, Conn. Thill-coupling	542,652	July 16	1457	351	72	305
Pearl, John, Bucyrus, Ohio. Adjustable support for school furniture	542,862	July 16	1809	429	72	368
Pearl, Samuel F. (See Mandt, Targe G., assignor.)						
Pearsall, Charles W., Union, and H. B. Peabody, Vestal, N. Y. Apparatus for placing torpedoes on rails	546,028	Sept. 10	1027	247	72	1557
Pearson, Benjamin, Redlands, Cal. Flume-gate	544,069	Aug. 6	418	105	72	826
Pearson, Gardner W. (See Damon, George B., assignor.)						
Pearson, Henry, Springfield, Mass. Railway-car	543,050	July 23	2120	503	72	445
Pearson, Henry, Springfield, Mass. Railway sleeping-car	544,547	Aug. 13	1315	319	72	999
Pearson, Henry, and E. A. Rice, Springfield, Mass. Illuminated sign for street-cars	545,717	Sept. 3	493	119	72	1444
Pearson, Richard, London, England. Thermometric circuit-closer	546,551	Sept. 17	1950	464	72	1748
Peck, Daniel A., Lobelia, W. Va. Gate	542,347	July 9	907	223	72	188
Peck, Frederick A. (See Peck, William A. and F. A.)						
Peck, Judson R., Atlanta, N. Y. Wire fence	543,890	Aug. 6	109	24	72	768
Peck, Mattie L., New York, N. Y. Bicycle and walking costume	546,496	Sept. 17	1866	442	72	1793
Peck, Stow & Wilcox Company. (See Ellrich, Robert C., assignor.)						
Peck, William A. and F. A., Providence, R. I.; said F. A. Peck assignor to said William A. Peck. Chain-machine	543,944	Aug. 6	199	47, 48, 49	72	785
Pedlar, Hedley. (See Bertels, Charles E., assignor.)						
Pedrick, Howard A., assignor of one-half to W. J. Hibbs, Philadelphia, Pa. Air-compressor	544,548	Aug. 13	1316	320	72	999
Peelle, Charles F., Richmond, Ind. Safety-gate for elevators	542,348	July 9	908	223	72	188
Peers, Kester J., Boston, Mass. Inkstand	545,247	Aug. 27	2594	629	72	1280
Peiffer, Peter. (See Toobe, Heinrich L. B., assignor.)						
Peirce, Christopher A. (See Weeks, John W., assignor.)						
Peirce, George, assignor of one-half to F. W. Codding, Worcester, Mass. Heating apparatus	544,515	Aug. 13	1265	306	72	988
Pellet, George W., Jr., Syracuse, N. Y. Dumping-wagon	546,341	Sept. 17	1593	378	72	1680
Pellet, Monsuet, New York, N. Y. Heating, ventilating, or other apparatus	543,811	July 30	3550	825, 826	72	723
Pelton, John C., Jr., San Francisco, Cal. Construction of buildings	542,203	July 2	632	154	72	123
Pelton, John C., San Francisco, Cal. Construction of buildings	542,204	July 2	633	154	72	123
Pelton, William A., Meriden, Conn. Plant-holder	542,942	July 16	1933	458	72	394
Penberthy, William, Denver, Colo. Blast-furnace	545,718	Sept. 3	494	120	72	1445
Pence, Robert S., and C. H. Scott, Kearney, Mo. Oscillating seat for reapers, mowers, &c.	545,529	Sept. 3	172	41	72	1386
Pendergrass, Asa N., Cleveland, Tenn. Wagon-brake	545,719	Sept. 3	496	120, 121	72	1445
Pendergrass, John B., *et al.* (See Rice, Keness F., assignor.)						
Pendleton, Albert M., Salt Lake City, Utah Ter. Bridle	546,785	Sept. 24	2343	560	72	1834
Pendleton, Gurdon, Jr., New York, N. Y., assignor to Pendleton Manufacturing Company. Bobbin	542,835	July 16	1767	420	72	360
Pendleton Manufacturing Company. (See Pendleton, Gurdon, Jr., assignor.)						
Penn Chemical Works. (See Harned, Frank P., assignor.)						
Penney, Herbert E., Minneapolis, Minn. Fire-engine heater	542,065	July 2	413	100	72	81
Penney, Loren W., assignor to Petteo Machine Works, Newton, Mass. Apparatus for grinding cards	544,441	Aug. 13	1138	276	72	963
Pennington, Steve, W. Babel, and E. Webrt, Lake Charles, La. Bicycle-support	541,880	July 2	103	24	72	23
Pennock, Frederick M., and G. Webster, Charlestown, W. Va. Road-scraping machine	544,320	Aug. 13	870	218, 219	72	919

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Pennsylvania Iron Works Company. (See Dickerman, Charles, assignor.)						
Pennsylvania Iron Works Company. (See Grist, Benjamin W., assignor.)						
Penny, William H., assignor of one-half to H. H. Turner, Danbury, Conn. Track-sweeping attachment for street-cars	542,977	July 16	1993	473, 474	72	404
Pentz, Albert D., Brooklyn, assignor to Mergenthaler Linotype Company, New York, N. Y. Linotype-machine	545,530	Sept. 3	173	41	72	1386
Pentz, Albert D., Brooklyn, assignor to Mergenthaler Linotype Company, New York, N. Y. Linotype-machine	546,054	Sept. 10	1069	256	72	1564
Pepper, William H., and A. T. L. Davis, Lake Village, assignors to E. C. Covell, Laconia, N. H. Straight-knitting machine	542,653	July 16	1458	351, 352	72	305
Peregrine, Seymour W., Grand Rapids, Mich. School desk and seat	542,654	July 16	1466	352	72	306
Perkins, Amos H., assignor to United States Repair and Guaranty Company, Chicago, Ill. Apparatus for repairing asphalt pavements	542,349	July 9	910	223, 224	72	188
Perkins, Eben, St. John, Canada. Machine for making horseshoe-nail blanks	542,739	July 16	1614	385	72	333
Perkins, Edward D. (See Daman, Oscar and L. W., assignors.)						
Perkins, Francis S., Lowell, Mass. Engine-lathe	544,115	Aug. 6	498	124	72	840
Perkins, Gaius W., *et al.* (See Raymond, Silas H., assignor.)						
Perkins, Oliver B., Marquez, Tex. Combined fireplace-lining and andiron-support	545,531	Sept. 3	175	41	72	1386
Perkins, William H. (See Collyer, William C., assignor.)						
Perkins, Willis J. (See Weeks, Henry A., assignor.)						
Perrier, Odilon, Paris, France. Method of and apparatus for continuous distillation of crude hydrocarbons, &c	544,516	Aug. 13	1267	306	72	989
Perrins, Thomas A., Ansonia, Conn. Machine for setting lacing-studs	542,492	July 9	1179	288, 289	72	238
Perron, Joseph Z., Red Lake Falls, Minn. Grain-separator for thrashing-machines	546,246	Sept. 10	1393	332	72	1625
Persell, William, and R. Newlee, Wellsville, Mo. Automatic car-coupling	545,305	Aug. 27	2682	651	72	1298
Peru Plow and Wheel Company. (See Edwards, James, assignor.)						
Peter, Joseph M., and W. Garrett, Cincinnati, Ohio. Street-car sign	545,366	Aug. 27	2684	651	72	1298
Petermann, John H., Trenton, N. J. Wrist-support for violin-players	542,278	July 9	775	190	72	163
Peters, Gershom M., Cincinnati, Ohio. Closing-disk for blasting-cartridges	542,101	July 2	463	111	72	91
Peters, Gershom M., Cincinnati, Ohio. Blasting-cartridge	542,102	July 2	464	111	72	91
Peters, Gershom M., Cincinnati, Ohio. Making blasting-cartridges	542,104	July 2	465	111	72	91
Peters, Howard G., Douglas, Wyo. Machine for making loops	545,657	Sept. 3	377	93	72	1424
Petersen, Edward A. C., Chicago, Ill. Bake-oven	543,779	July 30	3490	812	72	712
Petersen, Ernest, London, England. Tubular boiler	545,376	Aug. 27	2784	676, 677	72	1316
Petersen, Fred J., W. C. Eberhardt, Plymouth, and G. A. Piper, Sheboygan, Wis. Cash-register	546,342	Sept. 17	1595	378, 379	72	1681
Petersen, Herluf A. F., Milwaukee, Wis. Underground conduit for electric railways	546,389	Sept. 17	1674	397, 398	72	1697
Peterson, Albert, Cambridge, Ill. Corn-sheller	544,589	Aug. 13	1388	339	72	1013
Peterson, Andrew J., Stroudsburg, S. D. Spark-arrester	544,865	Aug. 20	1927	461	72	1132
Peterson, Jacob, Two Harbors, Minn. Oar-lock	543,314	July 23	2600	611	72	534
Peterson, John H. (See Britton and Peterson.)						
Petithomme, Joseph, Oakland, Cal. Car-axle box	545,720	Sept. 3	498	121	72	1446
Petrie, Enos B., Buffalo, N. Y. Drill-brace	543,267	July 23	2527	593	72	519
Pettee Machine Works. (See Mills, Charles, assignor.)						
Pettee Machine Works. (See Penney, Loren W., assignor.)						
Pettee, Simon E., Cleveland, Ohio, assignor to F. H. Kelly and N. T. Horr, trustees. Paper-bag machine	542,447	July 9	1097	267, 268, 269, 270, 271	72	224
Petterson, Ludwig, Chicago, Ill. Machine for soldering end seams of sheet-metal cans	543,401	July 23	2724	643, 644, 645	72	558
Pettey, Frank D., Hampshire, Ill. Fish-hook	543,268	July 23	2529	593	72	520
Pettingell, Benjamin C., assignor to J. Pettingell, Victoria, Canada. Blasting-powder	546,552	Sept. 17	1951	.....	72	1749
Pettingell, Joanna. (See Pettingell, Benjamin C., assignor.)						
Pettit, Charles, Tacoma, Wash. Bracket	542,535	July 9	1254	306	72	252
Peyton, William C., Santa Cruz, assignor to California Powder Works, San Francisco, Cal. Process of and apparatus for making gunpowder	544,517	Aug. 13	1270	306	72	989
Pfaff, Valentine, San Francisco, Cal. Car-coupling	542,597	July 9	1354	327	72	271
Pfeiffer, Jacob, *et al.* (See Miller, Ferdinand J., assignor.)						
Pfenninger, John J., St. Louis, Mo. Machine for cutting dough	543,504	July 30	2935	690, 691	72	614
Pfleegor, Thomas L., Burlingame, Pa. Vehicle-seat lock	542,536	July 9	1256	306	72	253
Pflueger, Ernest F., Akron, Ohio. Heater attachment for lamps	544,116	Aug. 6	499	124	72	840
Pfouts, Leroy S., Canton, Ohio. Trolley-wire bracket	546,407	Sept. 17	1707	405	72	1701
Pfouts, Leroy S., Canton, Ohio. Metal pole	546,622	Sept. 17	2064	489	72	1770
Pfützner, Hermann, Leipsic, Germany. Rendering apparatus	543,350	July 23	2650	624	72	543
Phelan, Louis, San Francisco, Cal. Trunk-strap loop	544,070	Aug. 6	418	105	72	826
Phelps, James H., Sharon, Wis. Pianoforte	543,505	July 30	2939	691	72	614
Phelps, Joseph, Newark, N. J. Automatic attachment for switching cars	542,655	July 16	1468	352, 373	72	306
Phelps, Lucius J., Belmont, Mass. Wheel-tire	543,315	July 23	2601	612	72	534
Phelps, Theodore. (See Harris and Phelps.)						
Phelps, William J. (See Halsey, Edward S., assignor.)						
Phenix Iron Foundry. (See Muir, James, assignor.)						
Philadelphia Barring Machine Company. (See Kemp, Horace L., assignor.)						
Philadelphia Barring Machine Company. (See Thomson, Robert W., assignor.)						
Philbrook, Emmeline W., Boston, Mass. Friction-hinge	544,071	Aug. 6	420	105	72	826
Philbrook, George F., Lisbon Falls, Me. Telegraph-key	545,532	Sept. 3	176	42	72	1387
Philippe, Louis A., Paris, France. Mechanical or bag filter	546,343	Sept. 17	1601	380, 381, 382	72	1682
Philippsohn, Jacob, Berlin, Germany. Cloth-cutting machine	546,746	Sept. 24	2279	542	72	1821
Phillips, Benjamin. (See Winkley and Phillips.)						
Phillips, Felix. (See Casey, James G., assignor.)						
Phillips, George, Victoria, Canada. Sanitary grate	544,375	Aug. 13	1017	248	72	941
Phillips, George R., Providence, R. I. Drying-cylinder	543,051	July 23	2122	503	72	445
Phillips, William B., Birmingham, Ala. Dephosphorizing iron ores	542,171	July 2	570	.....	72	142
Phillips, William H., Perry, Mo. Spark-arrester	544,629	Aug. 13	1465	356	72	1026

Alphabetical list of patentees, July to September, inclusive—Continued.

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Philpott, William A., Jr., Niagara Falls, N. Y., and T. A. Briggs, Niagara, Canada. Wire-stitching machine	542,005	July 2	314	75, 76, 77	72	64
Phinney, Adelbert. (See Ericson and Phinney.)						
Phoenix Iron Works Company. (See Haggney, Patrick H., assignor.)						
Phœnix Mannfacturing Company. (See King, William L., assignor.)						
Piaget, Henry V., Jersey City, N. J. Optical toy	542,804	July 16	1723	410	72	352
Pickel, Jacob, and W. Schmale, Baltimore, Md. Fan attachment for rocking-chairs	545,721	Sept. 3	500	122	72	1446
Pickering, Barton, Dayton, Ohio. Arc-light support	542,279	July 9	776	191	72	164
Pickett, George W., assignor of nine-sixteenths to S. Lesem, Denver, Colo. Attachment for electric generators	546,901	Sept. 24	2528	604	72	1869
Pickles, Charles K. (See Hoff and Pickles.)						
Pickles, Charles K., and J. A. Hoff, St. Louis, Mo., assignors, by mesne assignments, to American Stencil Machine Company, East St. Louis, Ill. Stencilling-machine	543,891	Aug. 6	110	25	72	768
Pickles, Charles K., and J. A. Hoff, St. Louis, Mo., assignors, by mesne assignments, to American Stencil Machine Company, East St. Louis, Ill. Stencil-cutting machine	544,193	Aug. 6	611	152, 153	72	802
Pierard, Gedeon, and V. Guinet, Montreal, Canada. High or low water alarm for steam-boilers	543,139	July 23	2277	540	72	474
Pierce, Charles E., Cambridge, Mass. Can-closing device	546,078	Sept. 10	1113	265	72	1573
Pierce, Charles W. and C. S., Union City, Ind. Sash-holder	546,186	Sept. 10	1285	306	72	1604
Pierce, Clarence S. (See Pierce, Charles W. and C. S.)						
Pierce, Edward R., *et al.* (See Frost, Newland E., assignor.)						
Pierce, Harry H., assignor, by mesne assignments, to H. H. Pierce Company, Toledo, Ohio. Treating lime	543,452	July 23	2833	.....	72	579
Pierce, Kirk D., *et al.* (See Dow, George B. N., assignor.)						
Pierce, Walter S., New York, N. Y. Oil extractor and drier	546,708	Sept. 24	2209	527	72	1809
Pierron, Louis M., Milwaukee, Wis. Water-cooler	544,518	Aug. 13	1271	307	72	989
Pietsch, Albert, St. Louis, Mo. Attachment for stringed instruments	546,457	Sept. 17	1806	428	72	1721
Pilkington, Joseph H., Waterbury, Conn. Stocking-supporter	542,805	July 16	1724	410	72	352
Pilkington, Thomas, San Francisco, Cal. Amalgamating apparatus for extracting gold	546,079	Sept. 10	1115	266	72	1574
Pincus, Adolph. (See Davis, Isaac H., assignor.)						
Pine, Charles C., New York, N. Y. String-fastener	543,751	July 30	3430	796	72	702
Pineo, Aubrey M., Gardner, Mass. Saw-guide	542,656	July 16	1469	353	72	306
Pinfold, Arthur G. and G. V., Cleckheaton, England. Apparatus for enlarging or reducing finger-rings	542,350	July 9	911	224	72	189
Pinfold, George V. (See Pinfold, Arthur G. and G. V.)						
Pinfold, James, Aston, assignor of one-half to J. G. Accles, Perry-Barr, England. Cartridge-case	546,936	Sept. 24	2583	619	72	1880
Pink, Edward, Stanton, England. Bow-facing oar	541,946	July 2	203	47	72	43
Pinkham, Frederick S., Everett, assignor, by mesne assignments, to A. J. Robinson, Boston, Mass. Machine for smocking cloth	546,474	Sept. 17	1830	433, 434	72	1726
Pinkney, Charles W., Smethwick, assignor of one-half to Tangyes, Limited, Soho, England. Apparatus for the manufacture of gas	544,824	Aug. 20	1847	444	72	1117
Pinner, John W., Cherry Creek, N. Y. Ironing-table	545,971	Sept. 10	925	221	72	1538
Piper, Edwin S., assignor of one-half to F. Clayton, Bristol, Conn. Bicycle-whistle	546,122	Sept. 10	1184	282	72	1586
Piper, Gustav A. (See Petersen, Eberhardt, and Piper.)						
Pirch, August, Los Angeles, Cal. Plow	544,994	Aug. 20	2143	519	72	1172
Pirtle, Mike P., assignor of two-thirds to J. W. Miller and J. A. Carr, Louisville, Ky. Door-fastener	545,533	Sept. 3	177	42	72	1387
Pisko, Emanuel, New York, N. Y. Machine for branding cigars	544,519	Aug. 13	1272	307	72	990
Pitkin, George, Washington, D. C. Operating table or chair	544,117	Aug. 6	500	124	72	840
Pitt, William A., Manhassett, N. Y. Steam-engine	546,055	Sept. 10	1070	256	72	1565
Pitt, William A., Manhassett, N. Y. Valve-gear for steam-engines	546,056	Sept. 10	1072	267	72	1565
Plaisted, Edwin S., *et al.* (See Moore, William H., assignor.)						
Plaisted, Franck C., *et al.* (See Moore, William H., assignor.)						
Plaisted, Howard N., *et al.* (See Moore, William H., assignor.)						
Platt Brothers & Company *et al.* (See Dugdill, John, assignor.)						
Platt, George W., Denver, Colo. Combination desk-easel and pencil-case	543,812	July 30	3552	826	72	724
Platt, Irving G., Waterbury, Conn. Button	546,431	Sept. 17	1754	416	72	1711
Player, John, Topeka, Kans. Seal-lock	544,004	Aug. 6	300	74	72	803
Playford, George, assignor, by mesne assignments, to Playford Stoker Company, Cleveland, Ohio. Boiler-furnace	542,493	July 9	1183	289	72	239
Playford Stoker Company. (See Playford, George, assignor.)						
Plean, Henry J., Nashua, N. H. Rim-lock	541,947	July 2	204	48	72	43
Plume & Atwood Manufactnring Company. (See Atwood and Ashenden, assignors.)						
Plume & Atwood Manufacturing Company. (See Echols, Frank G., assignor.)						
Plymouth Cycle Manufacturing Company. (See Gross, George, assignor.)						
Plymptou, Lucian F., North Bend, Ohio. Roofing-tile	544,770	Aug. 20	1759	419	72	1100
Poage, Herbert E., Newton, Iowa. Corn harvester and shocker	545,534	Sept. 3	178	42, 43	72	1387
Pohlman, William J., Woodbrook, assignor of one-half to J. E. Orrison, Baltimore, Md. Controlling-switch for electric motors	541,236	Aug. 6	714	183	72	879
Pohlmann, Theodore, *et al.* (See Small, John F., assignor.)						
Poindexter, Robert E., Indianapolis, Ind. Machine for shaping and setting saw-teeth	543,752	July 30	3430	797	72	702
Politsky, Simon A., Boston, Mass. Water-supply apparatus	546,595	Sept. 17	2024	481	72	1702
Polk, William R., Jr., Atlanta, Ga. Safety electric motor	544,118	Aug. 6	502	124	72	841
Polleys, Charles G., assignor of one-half to J. T. Reagan, Newport, R. I. Device for cleaning bicycle-chains	545,972	Sept. 10	926	221	72	1538
Pometoy, Charles T. and E., Newark, N. J. Prepared sheet for stencils	545,093	Aug. 27	2325	.....	72	1227
Pomeroy, Eltweed. (See Pomeroy, Charles T. and E.)						
Ponce, Fernando, Tulancingo, Mexico. Bath	546,937	Sept. 24	2584	619, 620	72	1881
Ponnay, Richard, assignor of one-half to H. G. Campbell, Portland, Oreg. Rotary steam-moto	546,080	Sept. 10	1116	266	72	1574
Pool, Howard F., Lynn, Mass. Pipe-trap	545,307	Aug. 27	2685	651	72	1298
Poole, George, Lowell, assignor to Massachusetts Mohair Plush Company, Boston, Mass. Stopping mechanism for pile-wire looms	542,806	July 16	1725	411	72	352
Poole, Staley D., assignor to Deere & Company, Moline, Ill. Subsoil attachment for gang-plows	545,170	Aug. 27	2465	597	72	1254
Pooley, Edward F. and F. D., Philadelphia, Pa. Lid-desk	545,813	Sept. 3	653	158	72	1475
Pooley, Frank D. (See Pooley, Edward F. and F. D.)						
Pope, Henry. (See Randall, Edison E., assignor.)						
Pope, Joseph H., Brockton, and H. H. Waugh, Whitman, Mass. Heel-nailing-machine attachment	542,205	July 2	635	155	72	124

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Pope Manufacturing Company. (See Knowlden, Isaac, assignor.)						
Poppens, Valborg E., North Melbourne, Victoria. Commode or sanitary pail	543,402	July 23	2730	645	72	558
Porteous, James. (See Denotovich and Porteous.)						
Porter, Albert, Chicago, Ill. Car wheel and axle	544,468	Aug. 13	1197	290	72	976
Porter, Edwin H., Radford, Va. Electric locomotive	544,685	Aug. 20	1590	381	72	1067
Porter, Finlay R., Southampton, N. Y. Combined drive-well and pump	544,376	Aug. 13	1018	250	72	941
Porter & Gardiner. (See Wellman, Alexander R., assignor.)						
Porter, Joseph E., Ottawa, Ill. Street-sweeper	544,929	Aug. 20	2040	487	72	1153
Porter, William C., assignor of one-half to A. G. Obernolte, Arlington, Minn. Electric calculator	546,553	Sept. 17	1953	464, 465	72	1749
Porter, Wilson E., assignor to New Haven Clock Company, New Haven, Conn. Escapement-crutch for clocks	542,863	July 16	1811	429	72	369
Pott, John N., Chicago, Ill. Screen for coal or other material	543,780	July 30	3491	813	72	712
Post George E., Newark, N. J. Mold and operating mechanism therefor	544,686	Aug. 20	1590	382	72	1067
Potter, George D., Wallace, Idaho. Rebound and ejecting mechanism for breakdown guns	542,494	July 9	1183	290	72	239
Potter, George W. (See McGenniss, David, assignor.)						
Potter, Henry N., Allegheny, assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Fuse-block	546,475	Sept. 17	1834	434	72	1727
Potter, John A., Pittsburg, Pa. Casting metal	543,700	July 30	3328	772	72	682
Potter, John A., Cleveland, Ohio. Rolling-mill feed-table	546,623	Sept. 17	2065	490	72	1770
Potter Printing Press Company. (See Brooks, John, assignor.)						
Potter Printing Press Company. (See Titsworth, David E., assignor.)						
Potter, Thomas J., *et al.* (See Gordon, Elonso J., assignor.)						
Potter, Thomas P., near Clifton City, Mo. Automatic cut-off for watering-tanks	544,377	Aug. 13	1019	250	72	941
Potter, William B., Schenectady, N. Y., assignor to General Electric Company, of New York. Electric brake	542,309	July 9	838	206	72	175
Potter William B., Schenectady, N. Y., assignor to General Electric Company, of New York. Electric brake	543,351	July 23	2650	625	72	543
Potter, William B., Schenectady, N. Y., assignor to General Electric Company, of New York. Safety appliance for electric cars	543,352	July 23	2653	625	72	544
Potter, William B., Schenectady, N. Y., assignor to General Electric Company, of New York. Electric-brake shoe	543,653	July 30	3254	756	72	668
Potter, William B., assignor, by mesne assignments, to General Electric Company, Schenectady, N. Y. Method of and means for extinguishing electric arcs	543,892	Aug. 6	113	25	72	769
Potter, William B., Schenectady, N. Y., assignor, by mesne assignments, to General Electric Company, of New York. Electric brake	546,247	Sept. 10	1395	333, 334	72	1626
Pottier & Stymus Company. (See Johnston, John S., assignor.)						
Pottier & Stymus Company. (See Stymus and Kreutzberg, assignors.)						
Potts, Warren C., and R. L. Daniel, Prescott, Ariz. Car-coupling	542,495	July 9	1180	290	72	240
Poulsen, Britton, Fort Wayne, Ind. Road-grader	543,191	July 23	2388	564	72	495
Poulson, John, Phillipsburg, N. J. Grinding-mill	543,967	Aug. 6	238	58	72	772
Pourtales, James, *et al.* (See Crawford, Middleton, assignor.)						
Powell, Edwin, Pittsburg, Pa. Boiler-furnace	543,631	July 30	3220	746, 747	72	662
Powell, Phanor P., Coleman, Tex. Copy-holder for record-books, &c	543,781	July 30	3493	813	72	712
Powers, James J., Cortlandt, N. Y. Apparatus for making chlorin	544,119	Aug. 6	501	125	72	841
Powers, William T., Udall, Kans. Land-marker	544,825	Aug. 20	1849	441	72	1117
Prade, Julien, Waco, Tex. Nut-sheller	542,104	July 2	466	112	72	91
Prasse, Theodor, Leitsweiler, Germany. Gun-stock	546,344	Sept. 17	1604	382	72	1682
Pratt, Albert W. (See Enos and Pratt.)						
Pratt, Nathaniel P., Atlanta, Ga. Process of and apparatus for making sulfuric acid	546,596	Sept. 17	2025	481, 482	72	1763
Pratten, Charles, Sydney, New South Wales. Press for molding plastic materials	544,687	Aug. 20	1593	382	72	1068
Premo, Albert, Springfield, Mass. Antivibrating attachment for woodworking-machines	543,219	July 23	2440	573	72	504
Prentice, Don S. (See Leonard, Newton, assignor.)						
Prescott, Edwin, Arlington, Mass. Clothes-drier	545,658	Sept. 3	379	93	72	1425
Prescott, George D. B., and M. A. Nowell, assignors to Prescott Piano Company, Concord, N. H. Piano-frame	545,814	Sept. 3	654	159	72	1475
Prescott, Joseph D., Boston, Mass. Metallic tire for bicycles	543,782	July 30	3495	813	72	713
Prescott Piano Company. (See Prescott and Nowell, assignors.)						
Pressley, Leonides C., San Francisco, Cal. Conduit electric railway	542,105	July 2	467	112	72	92
Preston, Albert F., Boston, Mass., assignor, by mesne assignments, to Preston Lasting Company. Hand tacking-machine	545,909	Sept. 10	824	198, 199	72	1518
Preston, George H., Shortsville, N. Y. Machine for sowing grass-seed	544,005	Aug. 6	301	74, 75	72	803
Preston, James F. (See Butterfield, Edwin G., assignor.)						
Preston, James H., Francestown, N. H. Door lock and latch	543,506	July 30	2941	691	72	615
Preston Lasting Company. (See Preston, Albert F., assignor.)						
Price, Benjamin, Baltimore, Md., assignor to Electric Selector and Signal Company, of West Virginia. Electric signaling apparatus	545,815	Sept. 3	655	159	72	1475
Price, George M., *et al.* (See Stewart, Scott, assignor.)						
Price, H. J., *et al.* (See Stewart, Scott, assignor.)						
Price, William G. (See Hinsch and Price.)						
Price, William G., Frackville, Pa. Miner's lamp	541,948	July 2	205	48	72	44
Priest, Augustus F., Duluth, Minn. Locomotive snow or ice flanger	544,120	Aug. 6	504	125	72	841
Prigmore, William T. (See Gelabert, William P., assignor.)						
Princess Plow Company. (See Sefton, William E., assignor.)						
Printz, Jonas, Omaha, Nebr. Railway-car wheel	542,310	July 9	839	206	72	175
Prior, James V. (See Verpillier and Prior.)						
Proehl, Rinhart. (See Artmann and Proehl.)						
Prolhac, Adrien, Fils, Allègre, France. Reversing-valve for engines	545,132	Aug. 27	2400	581	72	1241
Provine, Albert G., Puyallup, Wash. Sprayer	544,930	Aug. 20	2042	487, 488	72	1154
Pruden, Caleb C., Elizabeth, N. J. Boiler-furnace	546,029	Sept. 10	1028	247	72	1557
Prnefer, Gustav F., Providence, R. I. Clarinet	545,610	Sept. 3	303	75	72	1410
Prufrock, Harry, St. Louis, Mo. Bed	544,488	Aug. 13	1226	297	72	981
Prust, Charles H., and J. Watkins, Columbus, Ohio. Annealing-furnace	546,432	Sept. 17	1754	416, 417	72	1711
Pryibil, Paul. (See Bauer, Richard, assignor.)						
Pudan, Oliver C., assignor to Chaplin Fulton Manufacturing Company, Pittsburg, Pa., Gas-meter	545,816	Sept. 3	658	159, 160	72	1475
Pugh, William J., Muscatine, Iowa. Shingle-planing machine	544,121	Aug. 6	507	125	72	842
Pulbrook, Anthony, London, England. Frictional surface for cycle-wheels, &c	544,688	Aug. 20	1595	382	72	1068

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Pullman's Palace Car Company. (See Sessions, Henry H., assignor.)						
Punteney, Archiebald, and E. C. Sooy, assignors to Kansas City Hay Press Company, Kansas City, Mo. Corn-planter	542,351	July 9	912	224	72	189
Purdy, William B., Corsica, Pa. Music-leaf turner	545,659	Sept. 3	381	94	72	1425
Purinton, John L., Hartford, Conn. Lamp-wick trimmer	542,027	July 2	347	84	72	70
Purple, George E., Chicago, Ill. Lock for fruit-jar covers	545,171	Aug. 27	2468	598	72	1255
Purves, James, assignor of three-tenths to H. L. W. Hyde, Pittsburg, Pa. Process of making gas and apparatus therefor	545,973	Sept. 10	927	222	72	1538
Purvis, William (See Stelfox, Walker, Carney, and Purvis.)						
Pntegnat, Joseph L., Brownsville, Tex. Syringe	545,817	Sept. 3	659	160	72	1475
Putman, John E., Chicago, Ill. Means for operating elevators	544,378	Aug. 13	1020	250	72	942
Putnam, Benjamin W. and J. J. Hooker, Cincinnati, Ohio. Twine-holder	546,187	Sept. 10	1285	307	72	1604
Putnam, Doula C., Wayne Centre, N. Y. Stave-crozing machine	543,893	Aug. 6	115	26	72	769
Putnam, John G. P., Claremont, N. H. Ash-sifter	545,094	Aug. 27	2327	564	72	1227
Putnam, Samuel J., Prince's Bay, N. Y. Urinal	543,945	Aug. 6	203	49	72	786
Pyle, Edwin L., Bridgeport, Conn. Window-curtain fixture	543,946	Aug. 6	205	49, 50	72	786
Pyle, George C., assignor one-half to F. H. Ewers, Indianapolis, Ind. Steam-turbine	543,701	July 30	3329	773	72	682
Pym, Charles F., Windsor, assignor of one-half to J. F. Sedgwick, Cottam, Canada. Lasting-jack	546,188	Sept. 10	1286	307	72	1604
Pyott, Louis T., Ardmore, assignor to D. A. Waters and W. G. Vernon, Philadelphia, Pa. Double or sectional planing-machine	542,598	July 9	1355	328	72	271
Pyott, Louis T., assignor of one-half to D. A. Waters and W. G. Vernon, Philadelphia, Pa. Street-railway car	542,776	July 16	1677	400	72	344
Pyott, Louis T., assignor of one-half to D. E. Waters and W. G. Vernon, Philadelphia, Pa. Truck for street-railway cars	544,417	Aug. 13	1087	265, 266	72	953
Pyott, Walter C., assignor to himself and O. J. Haegler, Philadelphia, Pa. Car-wheel	546,248	Sept. 10	1405	334	72	1627
Q and C Company. (See Holmes, William W., assignor.)						
Q and C Company. (See Reece, Benjamin, assignor.)						
Quaintance, Brough P., Golden, Colo. Rotary flour-sifter	544,689	Aug. 20	1597	383	72	1068
Quigley, George B., Braddock, Pa. Cover for jars	542,807	July 16	1727	411	72	353
Quimby, Maurice B. (See Hanlon, John F., assignor.)						
Quina, William J., New Orleans, La. Combined thimble and knife	544,379	Aug. 13	1022	251	72	942
Quincy, Charles F., Chicago, Ill., assignor to Servis Railroad Tie-Plate Company, New York, N. Y. Combined tie-plate and rail-brace	542,352	July 9	915	225	72	189
Quinlan, William J. (See Parker, Lew, assignor.)						
Quinn, Edward D. (See McCapes and Quinn.)						
R. Hoehn Company. (See Rosenbush, Joseph, assignor.)						
Raasch, Ferdinand, Milwaukee, Wis. Bridge-gate	541,881	July 2	104	24	72	23
Rabon, Edward O., Philadelphia, Pa. Culinary utensil	546,554	Sept. 17	1962	465	72	1750
Radcliffe, George H. (See Hemphill, Joshua D., assignor.)						
Rae, Frank B., assignor to C. L. Coffin, Detroit, Mich. Electric soldering-iron	543,654	July 30	3255	756	72	669
Rafter, Joseph J., Hartford, Conn. Chase for printing-presses	543,562	July 30	3045	712	72	636
Rahbar, Christian W., Masaba, Minn. Derailing-switch and safety-frog	542,028	July 2	348	84	72	70
Ramapo Iron Works. (See Snow, William W., assignor.)						
Rand, Charles A. A., Chicago, Ill. Automatic self-binder	545,172	Aug. 27	2469	598, 599	72	1255
Rand, Charles N., *et al.* (See Tibbitts, Henry B., assignor.)						
Randall, Edison E., Joliet, assignor of one-half to H. Pope, Chicago, Ill. Knitting-machine	542,311	July 9	840	206	72	175
Randall, Isaac, Milwaukee, Wis. Bank-check, draft, or analogous monetary instrument	546,825	Sept. 24	2108	578	72	1846
Randel, William, Elizabeth, N. J., and C. A. French, Boston, Mass. Window-casing and means for securing sash therein	544,050	Aug. 6	387	95, 96	72	819
Randles, Joseph K., Quincy, Ill. Flue-stopper	546,555	Sept. 17	1963	466	72	1751
Randolph, Clabeorn P. (See Nims, Oscar H., assignor.)						
Randolph, John H., Baton Rouge, La. Horse-rake	543,563	July 30	3047	712	72	636
Rank, W. M. (See Masterman, William H., assignor.)						
Rankin, Sarah E. (See Mitchell, James O., assignor.)						
Ransom, Albert F., assignor to Burlington Blanket Company, Burlington, Wis. Horse-blanket	544,590	Aug. 13	1390	339	72	1013
Ransom, Albert F., assignor to Burlington Blanket Company, Burlington, Wis. Extensible horse-blanket	544,591	Aug. 13	1391	339	72	1013
Ransom, George F., assignor of one-half to H. G. Underwood, Milwaukee, Wis. Watchman's time-recorder	543,655	July 30	3256	756, 757	72	669
Ransom, John B. (See Fletcher, John D., assignor.)						
Ransome, Ernest L., Chicago, Ill. Concrete-iron construction	542,206	July 2	636	155	72	124
Ransome, Ernest L., Chicago, Ill. Manhole for electric-cable or other subways	544,747	Aug. 20	1692	407	72	1087
Ransome, Ernest L., Chicago, Ill. Concrete pipe	545,133	Aug. 27	2402	581	72	1242
Ransome, Ernest L., Chicago, Ill. Refuse-destructor	545,975	Sept. 10	933	223	72	1539
Ransome, Ernest L., Chicago, Ill. Manufacture of electric or other conduits	545,976	Sept. 10	934	223, 224	72	1539
Ransome, Ernest L., Chicago, Ill. Subway construction	545,977	Sept. 10	936	224	72	1540
Ransome, Ernest L., Chicago, Ill. Lining tunnels	545,978	Sept. 10	937	224, 225	72	1540
Ransome, Ernest L., Oakland, Cal. Mold	545,974	Sept. 10	932	223	72	1539
Ratcliff, Frederick, assignor to Fairpoint Manufacturing Company, New Bedford, Mass. Coffin-handle	545,722	Sept. 3	501	122	72	1446
Ratcliffe, Henry, Lynchburg, Va. Ironing-board	546,556	Sept. 17	1965	466	72	1751
Rathbun, Frank C., Ethan, S. D. Windmill-regulator	542,537	July 9	1257	306	72	253
Rau, Emanuel, Brooklyn, N. Y. Envelope-machine	546,433	Sept. 17	1756	417	72	1711
Rau, Will O. (See Wentzell, Clande W., assignor.)						
Raudnitz, Anton. (See Halla, Siegmund, assignor.)						
Rauschenberger, William, Milwaukee, Wis. Plume-holder for harness	542,496	July 9	1190	290	72	240
Rawles, Frank W., *et al.* (See Rawles, John, assignor.)						
Rawles, John, Randall, assignor of three-fourths to J. L. Griffith, G. H. McElvain, Bushnell, Ill., and F. W. Rawles, Vicksburg, Miss. Car-coupling	542,685	July 16	1521	364	72	317
Rawson, Albert E., Chicago, Ill. Type-writing machine	544,826	Aug. 20	1850	444, 445	72	1118
Raymond, Freeborn F., 2d, Newton, Mass. Heel compressing and loading machine	544,771	Aug. 20	1760	420	72	1100
Raymond, George W., Seneca, Ill. Draft-equalizer	542,569	July 9	1357	329	72	271
Raymond, Lewis C., Rutland, Vt. Plumb-level	544,321	Aug. 13	874	220	72	919
Raymond, Silas H., assignor to T. S. White, T. Friant, G. W. Perkins, and C. J. Reed, Grand Rapids, Mich. Carpet-sweeper	542,207	July 2	637	155	72	124
Raymond, Ward, Johnstown, Pa. Chuck for machine-tools	544,006	Aug. 6	303	75	72	804

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Raynsford, Edward L., Susquehanna, Pa. Metallic packing	542,106	July 2	469	113	72	92
Read, D. Dean, assignor to J. E. Church, Hackensack, N. J. Furnace	545,723	Sept. 3	502	122	72	1446
Read, John C. C., Harborne, and G. I. Hurst, London, England. Apparatus for drawing corks from bottles	546,902	Sept. 24	2530	604, 605	72	1870
Read, Lawson O., Chattanooga, Tenn. Refrigerator	542,714	July 16	1565	374	72	324
Reade, Richard L., *et al.* (See Brindle, Joseph, assignor.)						
Reagan, James, Philadelphia, Pa. Circulating water-bar and shaking grate	545,979	Sept. 10	938	225, 226	72	1540
Reagan, John T. (See Polleys, Charles G., assignor.)						
Reagan, Robert F., New Brighton, N. Y. Street-sweeper	542,808	July 16	1728	411, 412	72	353
Ream, Charles W. (See Walter, Anton W., assignor.)						
Rebuschatis, William W., and J. F. Collins, Des Moines, Iowa. Printer's galley	541,882	July 2	105	25	72	23
Recht, Leaney, Platte City, Mo. Automatic fan	543,140	July 23	2278	540	72	474
Rector, James L. (See Loblein, Leonard J., assignor.)						
Reddin, John H., *et al.* (See Ogden, Albert B., assignor.)						
Redlinger, Matthias, Jr. (See Redlinger, Michael and M., Jr.)						
Redlinger, Michael and M., Jr., Freeport, Ill. Cork-extractor	546,747	Sept. 24	2280	542, 543	72	1821
Redman, Jonathan. (See Marr, Charles K., assignor.)						
Redmon, Alfred P., Adrian, Kans. Car-coupling	544,194	Aug. 6	615	153	72	863
Redmond, Edmond, Rochester, N. Y. Apparatus for trimming ships	545,095	Aug. 27	2328	564	72	1227
Redmond, Thomas B., Chattanooga, Tenn., and S. Z. Ruff, Atlanta, Ga. Grading and excavating device	544,051	Aug. 6	389	96, 97, 98	72	820
Reece, Benjamin, assignor to Q and C Company, Chicago, Ill. Railway-tie plate	541,984	July 2	277	65	72	56
Reece, John, Boston, Mass. Buttonhole stitching or overseaming machine	544,827	Aug. 20	1852	445, 446	72	1118
Reed, Adam, St. Joseph, Mo., assignor of one-half to G. J. Winter, Buffalo, N. Y. Shoe	544,748	Aug. 20	1693	407	72	1087
Reed, Charles J., *et al.* (See Raymond, Silas H., assignor.)						
Reed, Charles M. (See Cotton, Frederick W., assignor.)						
Reed, Frank E. (See Lesner, Joseph B., assignor.)						
Reed, George M., Waltham, Mass. Separator or concentrator for ores or other similar materials	544,828	Aug. 20	1862	446, 447	72	1120
Reed, Nathan F., Johnson, assignor of one-half to A. Earle, Eden, Vt. Potato-digger	543,702	July 30	3331	773	72	683
Reed, William T. (See Kilin and Reed.)						
Reed, Winfield S., and F. R. Stevenson, Galion, Ohio. Automatic oil-feeder	545,108	Aug. 27	2353	569	72	1233
Rees, Thomas H., E. D. T. Sheffield, and L. A. Tallerman, London, England; said Rees assignor to said Sheffield and Tallerman. Medical dry bath	544,442	Aug. 13	1140	276	72	963
Reese, John M., Blakeslee, assignor of one-half to R. Edwards, Miners Mills, Pa. Stop-valve	546,189	Sept. 10	1287	307	72	1604
Reeve, Henry E., Brooklyn, N. Y. Drilling apparatus	545,611	Sept. 3	304	75	72	1410
Regan, Daniel S., assignor of two-thirds to B. W. Birrell, San Francisco, Cal., and M. J. Egan, Brooklyn, N. Y. Power-transmitter	546,249	Sept. 10	1407	334, 335	72	1627
Rehfuss, George, J. G., and M. O., Philadelphia, Pa. Rotary copying-machine	542,497	July 9	1191	291	72	210
Rehfuss, John G. (See Rehfuss, George, J. G., and M. O.)						
Rehfuss, Martin O. (See Rehfuss, George, J. G., and M. O.)						
Rehse, Carl, Striegau, Germany. Brush-making machine	545,910	Sept. 10	927	199	72	1518
Reich, Firm of Carl. (See Schlenk, Heinrich, assignor.)						
Reichardt, Henry C., Pottsville, Pa., assignor to Kock & Wieser, Brooklyn, N. Y. Tracker for mechanical musical instruments	544,322	Aug. 13	875	220	72	920
Reid, Arthur B., Chicago, Ill. Copy-holder	542,809	July 16	1730	412	72	353
Reid, Graham, and C. Stevenson, Philadelphia, Pa. Circular-knitting machine	544,995	Aug. 20	2147	519, 520	72	1173
Reid, Thomas J., Washington Court-House, assignor of one-half to J. L. Dann, Columbus, Ohio. Ball-bearing	546,557	Sept. 17	1966	466	72	1751
Reid, Thomas J., Washington Court-House, assignor of one-half to J. L. Dann, Columbus, Ohio. Ball-bearing	546,558	Sept. 17	1968	466, 467	72	1751
Reid, William. (See Michaelson and Reid.)						
Reider, William J., *et al.* (See Kintzing, William F., assignor.)						
Reiffenstein, Henry, Syracuse, N. Y. Ladder-support	544,520	Aug. 13	1274	308	72	990
Reilly, Edward D., *et al.* (See Rothenberger, Daniel M., assignor.)						
Reilly, John C. (See Moore, Leland, assignor.)						
Reilly, Michael E., Wallace, Idaho. Detachable broom-handle	545,911	Sept. 10	830	200	72	1519
Reilly, Thomas D., Helena, Mont. Spring-back folding camp-chair	542,395	July 9	998	246	72	205
Reinisch, Anton, and L. Kratochwil, Vienna, Austria-Hungary. Pedometer	542,107	July 2	470	113	72	92
Reisel, Henry, Galveston, Tex. Hydraulic compressor	546,938	Sept. 24	2586	620	72	1881
Reitze, Albert W., *et al.* (See Downs, William D., assignor.)						
Remsen, Thomas H. (See Miles, Jackson B., assignor.)						
Remy, Benjamin P., Peru, Ind. Electric motor	544,749	Aug. 20	1694	408	72	1087
Renfroe, John H., Willow Springs, Mo. Portable stove	542,280	July 9	778	191	72	164
Renshaw, James, Denver, Colo. Surface condenser	545,612	Sept. 3	305	75	72	1410
Renshaw, William F., *et al.* (See Wheeler, Andrew L., assignor.)						
Renz, Robert, *et al.* (See Ganzhorn, Philip, assignor.)						
Ressler, Carthon H., Hagerstown, Ind. Mail-bag holder	545,308	Aug. 27	2686	652	72	1298
Retzer, George. (See Kantorovitz, Harris, assignor.)						
Reuss, Joseph, *et al.* (See Hopfgartner and Hoehnen, assignors.)						
Reversible Brush Company. (See Howland, Charles E., assignor.)						
Reversible Rivet Company. (See Cummings, Henry H., assignor.)						
Rew, Ida M., New York, N. Y. Athletic suit for ladies	545,173	Aug. 27	2473	599	72	1255
Reyburn, John E. (See Dunn, Dennis, assignor.)						
Reyer, Emil, South Bend, Ind. Funnel-holding bracket	546,081	Sept. 10	1118	266	72	1574
Reyher, Rudolf, assignor to Farbenfabriken, vormals Fr. Bayer & Co., Elberfeld, Germany. Azin dye and making same	543,894	Aug. 6	116	.....	72	769
Reynolds, Andrew J., assignor of one-half to C. S. Yeaw, Worcester, Mass. Street-sweeper	542,571	July 9	1316	310	72	264
Reynolds, George H., New York, N. Y., assignor to Crane Elevator Company, Chicago, Ill. Elevator	545,980	Sept. 10	943	226, 227	72	1541
Reynolds, George H., New York, N. Y., assignor to Crane Elevator Company, Chicago, Ill. Safety device for elevators	545,981	Sept. 10	945	227	72	1541
Reynolds, Lavern, Kansas City, Mo. Starching-machine	545,134	Aug. 27	2402	582	72	1242
Reynolds, Samuel D., Rochelle, assignor to C. E. Bradt, M. D. Shipman, and S. E. Bradt, De Kalb, Ill. Spring for vehicles	546,345	Sept. 17	1604	382	72	1682
Reynolds, Samuel D., Rochelle, assignor to C. E. Bradt, M. D. Shipman, and S. E. Bradt, De Kalb, Ill. Wagon	546,346	Sept. 17	1606	383	72	1683

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Reynolds, Stephen A. D., Girard, Ill. Breast-strap coupling	545,724	Sept. 3	503	123	72	1447
Rhind, Frank, Meriden, Conn. Apparatus for hydrocarbon lighting	545,309	Aug. 27	2687	652	72	1299
Rhind, Frank, assignor to Bridgeport Brass Company, Bridgeport, Conn. Harp-ring for lamps	546,597	Sept. 17	2030	482	72	1763
Rhoades, William S. (See Flower and Rhoades.)						
Rhodes, Anthony, Shenandoah, Iowa. Lifting-jack	544,264	Aug. 6	706	196	72	888
Rhodes, Robert D. (See Van Cleve and Rhodes.)						
Ribyn, George T., Keokuk, Iowa. Sprocket-chain	542,686	July 16	1523	364	72	317
Rice, Alfred L. and G. M., 2d, Worcester, Mass. Separating wool from silk	546,434	Sept. 17	1757	.....	72	1711
Rice, Duane L., assignor to W.W. Kimball Company, Chicago, Ill. Piano frame and bridge	546,709	Sept. 24	2210	527	72	1809
Rice, Edwin W., Jr. (See Thomson and Rice.)						
Rice, Edwin W., Jr., Lynn, Mass., assignor to Thomson-Houston Electric Company, of Connecticut. Regulator for alternating-current dynamos	546,190	Sept. 10	1289	307, 308	72	1605
Rice, Edwin W., Jr., Schenectady, N. Y., assignor to General Electric Company, of New York. Electric locomotive	546,191	Sept. 10	1292	308	72	1605
Rice, Elizabeth A. (See Pearson and Rice.)						
Rice, George M., 2d. (See Rice, Alfred L. and G. M., 2d.)						
Rice, Henry W., Nottingham, England. Tapping casks, &c	545,377	Aug. 27	2788	677	72	1317
Rice, Keness F., assignor of one-half to J. B. Pendergrass, Eureka Springs, and W. M. Edgar, Lockwood, Mo. Washing-machine	545,311	Aug. 27	2689	652	72	1299
Rice, Richard H., assignor to Rice & Sargent Engine Company, Providence, R. I. Vacuum dash-pot for engines	546,976	Sept. 24	2647	634	72	1893
Rice & Sargent Engine Company. (See Rice, Richard H., assignor.)						
Rice & Sargent Engine Company. (See Sargent, John W., assignor.)						
Rich, Adelbert P., *et al.* (See Baker, Andrew J., assignor.)						
Rich, Henry M., Athol, and E. L. Taft, Gardner, Mass. Machine for knitting rattan	544,443	Aug. 13	1142	277, 278, 279, 280	72	963
Rich, Wilfrid B. (See Wyand, William, assignor.)						
Richard, Felix. (See Ancoin, Numa, assignor.)						
Richard, Frank, New York, N. Y. Buoy	546,057	Sept. 10	1074	257	72	1566
Richards, David, London, England. Sewing-machine	543,507	July 30	2943	692	72	615
Richards, Francis H., Hartford, Conn. Registering mechanism	516,748	Sept. 24	2282	543, 544, 545	72	1822
Richards, Frank, New York, N. Y. Carpet-cleaner	545,310	Aug. 27	2688	652	72	1299
Richards, Frank J., Williamsport, Pa., assignor to Buffalo Dental Manufacturing Company, Buffalo, N. Y. Dental plugger. (Reissue)	11,502	July 2	676	166	72	131
Richards, William C., St. Louis, Mo. Tray for carrying straw hats in sample-trunks	543,947	Aug. 6	206	50	72	736
Richards, Wilton L., Malden, assignor to American Bell Telephone Company, Boston, Mass. Telephone relay apparatus	542,657	July 16	1470	353	72	307
Richards, Wilton L., Malden, assignor to American Bell Telephone Company, Boston, Mass. Telephone repeating-circuit and appliances	542,658	July 16	1473	353	72	307
Richardson, Dwight S., Brooklyn, N. Y. Boiler-furnace	544,323	Aug. 13	877	220	72	920
Richardson, Joseph F., Birk's City, Ky. Rocking churn	542,659	July 16	1475	354	72	308
Richardson, Julius C., Auburn, N. Y. Punch	545,613	Sept. 3	307	75	72	1410
Richardson, William H. (See Hughes, Samuel, assignor.)						
Richmond, Edward J., assignor of one-half to I. D. and J. Y. Hesser, Carthage, Mo. Washing-machine	544,903	Aug. 20	2000	477	72	1146
Richmond, Henry T., assignor of three-fourths to W. M. Evans, T. D. Gibson, and J. P. Munger, Malvern, Iowa. Cerrycomb	541,883	July 2	106	25	72	24
Richmond, Henry T., assignor of three-fourths to W. M. Evans, T. D. Gibson, and J. P. Munger, Malvern, Iowa. Combined hook and buckle	541,884	July 2	106	25	72	24
Richmond Mica Company. (See Skelton, John G., assignor.)						
Richter, Harry J., Chicago, Ill., assignor, by mesne assignments, to International Filter Company, of Illinois. Filter	546,082	Sept. 10	1119	267	72	1574
Richter, Hermann. (See Thuringer, Franz, assignor.)						
Richter, John L., Alameda, Cal. Gas-regulator	545,725	Sept. 3	504	123	72	1447
Riddle, Henry A., assignor of one-fourth to J. S. Kennedy, Chambersburg, Pa. Railway-ticket	544,052	Aug. 6	394	99	72	821
Ridgway, John J., Brooklyn, N. Y. Lock	542,777	July 16	1479	400	72	344
Rieper, John A., New York, N. Y. Bowling-alley	543,141	July 23	2279	541	72	475
Riess, Frederick W., Philadelphia, Pa. Trolley-arm and wire-finder	544,794	Aug. 20	1798	430	72	1108
Rietzinger, Christian, assignor of one-half to R. L. Keely, Philadelphia, Pa. Rail joint or chair for railways	544,521	Aug. 13	1275	308	72	990
Rigby, Nicholas L., Los Angeles, Cal. Stand for lawn-sprinklers	542,029	July 2	350	85	72	70
Rigby, Nicholas L., Los Angeles, Cal., assignor to H. W. Fitch, Englewood, Ill. Lawn sprinkler and fountain	544,122	Aug. 6	508	126	72	842
Riggins, George B., Brooklyn, N. Y. Car-fender	542,778	July 16	1681	400	72	345
Right, Frederick T., Fort Wayne, Ind., assignor of one-half to J. N. Neal, Coldwater, Mich. Wire fence	542,966	July 16	1970	467	72	401
Riley & Co., Wm. B. (See Riley, William B., assignor.)						
Riley, Michael, London, Ohio. Life-guard for street-railway cars	542,836	July 16	1768	421	72	360
Riley, Robert, *et al.* (See Rutkoskie, Casimir, assignor.)						
Riley, William B., assignor to W. B. Riley & Co., Philadelphia, Pa. Horse-blanket	542,967	July 16	1971	468	72	401
Rinsche, Frank C., assignor to P. Chouteau, St. Louis, Mo. Engine	542,498	July 9	1194	291	72	241
Rinsche, Frank C., assignor to P. Chouteau, St. Louis, Mo. Attachment for engines	542,499	July 9	1195	291	72	241
Rinsche, Frank C., assignor to P. Chouteau, St. Louis, Mo. Engine	543,052	July 23	2124	503	72	445
Ripking, Rudolph H., Aurora, Ind. Extension-table	543,053	July 23	2124	504	72	446
Ripley, Daniel C., Pittsburg, Pa. Manufacture of glassware	543,656	July 30	3259	757, 758	72	670
Risch, Isidor von, Postelberg, Austria Hungary. Hitching-strap	542,500	July 9	1196	292	72	241
Rites, Francis M. Pittsburg, Pa. Valve-gear	542,423	July 9	1046	237	72	216
Rites, Francis M., Pittsburg, Pa. Valve-gear	542,424	July 9	1049	257, 258	72	216
Rites, Francis M., Pittsburg, Pa. Means for elastic-fluid compression	542,425	July 9	1053	259	72	217
Rites, Francis M., Pittsburg, Pa. High-speed fluid-compressor	542,426	July 9	1057	259, 260	72	217
Rittenhouse, Benjamin F., assignor of one-half to H. E. F. Borzell, Philadelphia, Pa. Indicator	545,726	Sept. 3	506	123	72	1447
Rittenhouse, Charles H., Kendallville, Ind. Train-annunciator	542,108	July 2	471	113, 114	72	93
Ritzwoller, Max H., Peoria Ill. Hoop-flaring machine	542,572	July 9	1318	319	72	264

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Rivett, Edward, Boston, Mass. Drawing-in spindle for head-stocks	545,312	Aug. 27	2690	653	72	1299
Roach, William H., and A. J. Tourville, assignors of one-third to A. Alison, Seattle, Wash. Preparing soap-sheets	545,614	Sept. 3	309	76	72	1411
Roadhouse, Levi, assignor to A. Ellwood, De Kalb, Ill. Cultivator	545,174	Aug. 27	2474	599, 600	72	1256
Robbins, Edward I., and C. Henssler, Trenton, N. J. Garment-supporter	543,353	July 23	2655	025	72	544
Robbins, Joseph T., Newton, Iowa. Hot-water furnace	545,912	Sept. 10	830	200	72	1519
Robbins, Samuel F., Langhorne, Pa. Gage-knife	546,058	Sept. 10	1075	258	72	1566
Roberts, Charles F., assignor of one-fourth to C. J. Milton, Bridgeport, Conn. Safety device for lock-bolts	543,142	July 23	2280	541	72	475
Roberts, Clarence V. (See Stevenson, Roberts, and McLaughlin.)						
Roberts, James R., Keokuk, Iowa. Signal-light for locomotives	543,354	July 23	2656	625, 626	72	544
Roberts, Nate H. (See Atkins and Roberts.)						
Roberts, Walter, Beacon Falls, assignor to Beach Manufacturing Company, Hartford, Conn. Warp-knitting machine	542,208	July 2	638	155, 156, 157, 158	72	124
Roberts, Walter, Beacon Falls, assignor to Beach Manufacturing Company, Hartford, Conn. Cam mechanism	544,380	Aug. 13	1022	251	72	942
Robertson, James, Woburn, Mass. Grinding adjustment for belt-knife leather-splitting machines	542,740	July 16	1616	386	72	333
Robertson, James H. (See Johnson and Robertson.)						
Robertson, James H., assignor to W. E. Gump, Brooklyn, N. Y. Writing-telegraph	543,425	July 23	2767	654	72	565
Robertson, James H., assignor to W. E. Gump, Brooklyn, N. Y. Writing-telegraph	543,426	July 23	2780	654	72	569
Robertson, James H., assignor to W. E. Gump, Brooklyn, N. Y. Writing-telegraph	543,427	July 23	2782	655	72	569
Robertson, James H., assignor to W. E. Gump, Brooklyn, N. Y. Writing-telegraph	543,428	July 23	2789	656	72	571
Robertson, James H., assignor to W. E. Gump, Brooklyn, N. Y. Writing-telegraph	543,429	July 23	2791	656	72	572
Robertson, Judah T., New York, N. Y. Plate-printing press	541,985	July 2	278	65	72	56
Robertson, Ronald J., Chelsea, Mass. Lamp	545,313	Aug. 27	2692	653	72	1300
Robinson, Andrew J. (See Pinkham, Frederick S., assignor.)						
Robinson, Charles M., Toledo, Ohio. Combined hot-air cabinet and screen	546,865	Sept. 24	2465	590	72	1858
Robinson, David E., Arden, W. Va. Means for opening of closing furnace-doors	543,968	Aug. 6	240	58	72	792
Robinson, George W., Albany, N. Y. Apparatus for coloring ale, &c., under pressure	546,458	Sept. 17	1807	428	72	1721
Robinson, John H., Holly Springs, Miss. Prescription-file for pharmacists	543,813	July 30	3553	826	72	724
Robinson, William H., assignor to himself and W. M. Treglown, New York, N. Y. Means for flushing water-closets	546,679	Sept. 24	2163	514	72	1801
Robinson, William W., Ripon, Wis. Ventilator	542,501	July 9	1196	292	72	241
Robischung, Henry B., Kalamazoo, Mich., assignor to Chicago Railway Equipment Company, Chicago, Ill. Hanger for brake-beams	543,703	July 30	3332	773	72	683
Robischung, Henry B., Kalamazoo, Mich., assignor to Chicago Railway Equipment Company, Chicago, Ill. Testing-machine	544,007	Aug. 6	304	75, 76	72	804
Robischung, Henry B., Kalamazoo, Mich., assignor to Chicago Railway Equipment Company, Chicago, Ill. Finger-guard for brake-beams	544,418	Aug. 13	1089	266	72	954
Robischung, Henry B., Kalamazoo, Mich., assignor to Chicago Railway Equipment Company, Chicago, Ill. Finger-guard clamp for brake-beams	544,690	Aug. 20	1598	383	72	1068
Roche, James, assignor to Eagle Lock Company, Terryville, Conn. Desk-lock	543,316	July 23	2603	612	72	534
Roche, Morgan, Newark, N. Y. Horseshoe-calk-bending device	542,396	July 9	999	247	72	205
Rock Island Plow Company. (See Waterman, Lewis E., assignor.)						
Rockstroh, Fritz, M. Teppig, and H. Herzig, Goerlitz, Germany. Water-gage	545,727	Sept. 3	507	123, 124	72	1447
Rockwell, Albert F., Bristol, Conn. Registering mechanism for cyclometers	543,948	Aug. 6	207	50	72	736
Rockwell, Edward D. (See Rodriguez and Rockwell.)						
Rockwell, Edward D., Bristol, Conn. Bell	545,378	Aug. 27	2789	678	72	1317
Rockwood, Charles B., Indianapolis, Ind. Composition of matter for covering walls, &c	542,172	July 2	571	.....	72	112
Rockwood, Charles B., Indianapolis, Ind. Composition of matter for covering walls, &c	542,173	July 2	572	.....	72	112
Rodde, Alfred, Lubeck, Germany. Drying apparatus for shoes	545,818	Sept. 3	660	100, 101	72	1475
Rodger, Joseph B., Lamoni, Iowa. Pump	545,379	Aug. 27	2791	678	72	1317
Rodgers, George H., Somerville, assignor of one-half to N. Schloss, Boston, Mass. Cigar-tip cutter	542,502	July 9	1197	292	72	242
Rodier, Edward, New York, N. Y. Thill-support	544,592	Aug. 13	1393	339	72	1014
Rodig, Adolf, Laband, Germany. Manufacturing bimetallic plates, slabs, &c	543,192	July 23	2396	565	72	498
Rodriguez, Alfred M., Brooklyn, N. Y., and E. D. Rockwell, Bristol, Conn. Electric-wire-containing hat or cap band	544,419	Aug. 13	1091	266	72	954
Roger, John, Denver, Colo. Roasting-furnace	542,715	July 16	1567	375	72	325
Roger, John C. (See Bowie, George H., assignor.)						
Rogers, Amory H., Portland, Me. Dump-sled	544,265	Aug. 6	767	196	72	888
Rogers, George O., assignor of one-half to H. R. Hamley, St. Louis, Mo. Soap-holder	545,024	Aug. 20	2200	532	72	1182
Rogers, George T., North Plainfield, N. J. Ventilator for railway-cars	544,904	Aug. 20	2001	478	72	1146
Rogers, Homer D., Chicago, Ill. Sectional boiler	542,281	July 9	779	191	72	164
Rogers, James C., *et al.* (See Hocker, James M., Jr., assignor.)						
Rogers, Joseph P., Toronto, Canada. Oil-can and lamp-filler	543,054	July 23	2127	504	72	446
Rogers, Merritt L., Exeter, Nebr. Sulky-harrow	542,943	July 16	1935	459	72	394
Rogers, Orville D., Shoals, Ind. Railway mail-delivery device	545,248	Aug. 27	2595	629	72	1281
Rogers, Orville D., Shoals, Ind. Railway mail crane and catcher	545,249	Aug. 27	2597	630	72	1281
Rogers, Orville D., Shoals, Ind. Railway mail-crane	545,250	Aug. 27	2598	630	72	1282
Rogers, Orville D., Shoals, Ind. Railway mail-catcher	545,251	Aug. 27	2600	631	72	1282
Rogers, Timothy, assignor to F. J. McCormick, Sr., Dayton, Ohio. Windmill-tower	546,710	Sept. 24	2211	527	72	1809
Rogers, William A., Omaha, Nebr. Coin-operated toll collector and annunciator	542,109	July 2	474	114	72	93
Rohan, James J., St. Louis, Mo. Steam-generator	546,786	Sept. 24	2346	560	72	1835
Rohder, Carl A., and P. J. Bloom, assignors of one-fourth to C. J. Dewey, Denver, Colo. Lifting device	543,814	July 30	3554	826	72	724
Rolfe, Charles A., Chicago, Ill. Fire-alarm box	543,103	July 23	2210	524	72	462
Rolfe, Charles A., Chicago, Ill. Fire-alarm box	543,104	July 23	2211	524, 525	72	462
Rolfe, Charles A., Chicago, Ill. Electric signaling system	544,123	Aug. 6	509	126	72	842
Rolfe, Charles A., Chicago, Ill. Fountain ink-roller for telegraph-registers	544,644	Aug. 13	1494	362	72	1032
Rolfe, Charles A., Chicago, Ill. Ink-roller for telegraph-registers	544,645	Aug. 13	1495	362	72	1032
Rollins, Jason. (See Emrich and Rollins.)						
Romans, Freeland H. (See Deming, Harman, and Romans.)						
Romünder, William, and E. J. Fellman, Milwaukee, Wis. Combined window-screen and awning	542,312	July 9	844	207	72	176
Ronemus, William H., Cedar Rapids, Iowa. Railway-car construction	545,096	Aug. 27	2329	565	72	1228

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Roney, Charles, Bethany, Ill. Drain-tiling	545,535	Sept. 3	180	43	72	1357
Ronner, John H. J., New York, N. Y. Garment hanger and stretcher	543,403	July 23	2731	645	72	559
Rood, Charles P., La Fargeville, N. Y. Saw-sharpening tool	542,282	July 9	780	191	72	164
Rood, H. R., *et al.* (See Lobert, Frederick A., assignor.)						
Rood, William I., Spencer, Iowa. Photographic developing-tray	546,347	Sept. 17	1607	383	72	1683
Roome, William G., Jersey City, N. J. Block-signal for railways	541,949	July 2	207	48	72	44
Rooney, John J., Brooklyn, N. Y. Secondary-battery plate	543,055	July 23	2129	504	72	446
Roop, Amos, F. L. Brandon, and J. S. Hart, Hicksville, Ohio. Baling-press	543,632	July 30	3223	748	72	662
Roosevelt, James A., assignor of one-half to T. H. Wheless, Austin, Tex. Draft-rigging for railway-cars	542,110	July 2	476	114; 115	72	94
Root, Arthur, Alexandria, Va. Car-coupling	542,779	July 16	1682	400; 401	72	345
Root, Dexter A., Bay City, Mich. Lock	543,404	July 23	2732	645	72	559
Roper, Charles F., assignor to G. Draper & Sons, Hopedale, Mass. Warp stop-motion for looms	545,728	Sept. 3	508	124	72	1448
Rosch, Joseph, Wurtsborough, N. Y. Tool for clinching horseshoe-nails	544,931	Aug. 20	2044	488	72	1154
Rosenbaum, William A., Montclair, N. J., assignor to Mathieson Alkali Works, of Virginia. Electrolytic apparatus	546,348	Sept. 17	1609	383; 384	72	1683
Rosenberg, Ignaz. (See Krecke and Rosenberg.)						
Rosenberg, Isaac, Cincinnati, Ohio. Display attachment for counters	543,657	July 30	3261	758	72	670
Rosenbuah, Joseph, Montrose, N. J., assignor to R. Hoehn Company, of New York. Combined box and rack	545,175	Aug. 27	2477	600	72	1256
Rosenthal, August, Reedsburg, Wis. Feed-cutter and corn-husker	546,390	Sept. 17	1677	398	72	1697
Rösle, Adolf, Heidenheim, Germany. Gear-cutting apparatus	545,913	Sept. 10	834	201	72	1519
Ross, Elmer A., and F. E. Bachman, Buffalo, N. Y. Traction-cable support	545,729	Sept. 3	511	125	72	1448
Ross, Henry W., Springfield, Mass. Valved nozzle for fire-hose	543,220	July 23	2441	573	72	504
Ross, Walter T., *et al.* (See Taylor, Charles H., assignor.)						
Rossberg, Godfrey, Brooklyn, N. Y. Button	546,598	Sept. 17	2031	482	72	1763
Rothenberger, Daniel M., assignor of two-thirds to C. A. Inglis and E. D. Reilly, Lancaster, Pa. Electric insulator	545,819	Sept. 3	661	161	72	1476
Rothrock, Oscar, New York, N. Y. Car-fender	543,405	July 23	2734	646	72	559
Rothwell, Joseph A., Brooklyn, N. Y. Tool-holder for lathes	545,314	Aug. 27	2693	653	72	1300
Rouse, Michael, Lopez, Pa. Die for cutting screw-threads	542,006	July 2	318	77	72	64
Rouse, Seymour A., Chicago, Ill. Pump	545,730	Sept. 3	513	125; 126	72	1448
Rousseau & Co. (See Kasachau, Jacob, assignor.)						
Rousseau, Harry H., Pittsburg, Pa. Plate-girder	542,283	July 9	781	192	72	165
Routh, John E., Jeffersonville, Ind. Mail-bag catcher	546,599	Sept. 17	2032	482; 483	72	1764
Roux, Marie A. J., assignor of one-half to J. M. A. Desmazures, Paris, France. Process of and apparatus for separating metals	543,753	July 30	3432	797	72	702
Rowand, Lewis G., assignor to Universal Fire Alarm Company, Camden, N. J. Automatic safety device for electric circuits	542,030	July 2	352	85, 86	72	71
Rowell, Benton C., Boston, Mass., assignor to Rowell-Potter Safety Stop Company, Portland, Me. Safety apparatus for railways	542,313	July 9	846	207	72	176
Rowell, John R., Emory, Tex. Car-coupling	542,944	July 16	1935	459	72	394
Rowell-Potter Safety Stop Company. (See Rowell, Benton C., assignor.)						
Rowell, Samuel C., assignor of one-fourth to H. D. Dupee and E. Ellis, Boston, Mass. Bottle	544,324	Aug. 13	879	221	72	920
Rowland, Heavlon. (See Baldwin, Rollin A., assignor.)						
Rowland, Henry A., assignor of one-half to L. Duncan, Baltimore, Md. Electric meter	542,945	July 16	1936	459	72	391
Rowlett, Jacob V., Richmond, Ind. Hand wheel-plow	544,124	Aug. 6	512	126	72	843
Rowley, William M., Cuba, N. Y. Clothes-drier	546,559	Sept. 17	1970	467	72	1752
Rubber Tire Wheel Company. (See Grant, Arthur W., assignor.)						
Ruberg, Nelson C., East Bridgewater, Mass., assignor to Suffolk Shank Company, Portland, Me. Shank-stiffener machine	542,032	July 2	356	86	72	71
Rudd, Charles H. (See Patterson and Rudd.)						
Rudebock, Holcombe, Newark, N. J. Weather-strip for doors	542,007	July 2	320	77	72	65
Rudolph, Alexander J., San Francisco, Cal. Tire for vehicles	543,704	July 30	3334	773; 774	72	683
Rue, George C., Harrodsburg, Ky. Lifting-jack	545,914	Sept. 10	935	201	72	1520
Rue, Ross, Alliance, Ohio. Ditching-jack	543,056	July 23	2130	505	72	447
Ruebekam, Charles A., assignor to L. E. Woodward, Owosso, Mich. Lid for burial-caskets	545,176	Aug. 27	2478	600; 601	72	1257
Ruf, Otto, Los Angeles, Cal. Combined bridle-front and winker-brace	544,829	Aug. 20	1865	447	72	1120
Ruff, Abraham L. (See Smith and Ruff.)						
Ruff, Alexander D., Owingsville, Ky. Cyclometer	543,269	July 23	2530	594	72	520
Ruff, Solon Z. (See Redmond and Ruff.)						
Ruff, William J., Quincy, Ill. Lubricator	542,946	July 16	1939	460	72	395
Rupprecht, Richard E., Tacony, Pa. Match-box appliance	544,691	Aug. 20	1599	383	72	1069
Rush, William M., Jr., St. Joseph, Mo. Watchcase	543,317	July 23	2604	612	72	535
Rushton, William L., assignor of one-half to T. C. Oakman, Chicago, Ill. Barrel attachment	546,680	Sept. 24	2164	515	72	1801
Russ, Alamando B., Chicago, Ill. Car-fender	544,932	Aug. 20	2045	488	72	1154
Russell, Albert H., Mount Washington, Md. Staple puller	545,537	Sept. 3	182	44	72	1388
Russell, Charles A., Otsego, Mich. Fork attachment	545,535	Sept. 3	181	43	72	1387
Russell, Charles T. (See Dubbs, Jesse A., assignor.)						
Russell & Erwin Manufacturing Company. (See Leppert, Henry, assignor.)						
Russell, George A., Newport, England. Diving-chamber	544,238	Aug. 6	720	184	72	879
Russell, George H., Milwaukee, Wis. Necktie-fastener	542,031	July 2	355	86	72	71
Russell, Ira M., Lewiston, Me. Funnel-holder	545,915	Sept. 10	837	201	72	1520
Russell, John, New York N. Y. Scow	542,111	July 2	479	115	72	94
Russell, Lewis A., St. Louis, Mo. Guard attachment for beds, &c	544,381	Aug. 13	1024	251; 252	72	942
Russell, Samuel T., Springfield, Ohio. Hay-loader	546,681	Sept. 24	2165	515	72	1801
Russell, Winfield S. (See Foxall and Storms, assignors.)						
Ruth, Linford F., Connellsville, Pa. Means for utilizing air-cushions on railway-cars	542,112	July 2	481	115	72	95
Rutherford, Martin C. (See Hildebrandt, Henry F., assignor.)						
Rutkoskie, Casimir, assignor to R. Riley, Benton Harbor, and G. Herman, St. Joseph, Mich. Hydrocarbon-gas-generating heater	544,593	Aug. 13	1304	340	72	1014
Ryan, John, New York, N. Y. Lineman's vise	546,903	Sept. 24	2531	605	72	1870
Ryan, William J., and J. A. Murphy, assignors of one-third to C. H. Morgan, Holyoke, Mass. Elastic tire for vehicle-wheels	544,237	Aug. 6	719	184	72	879
Ryder & Company. (See Sutcliffe, Tom, assignor.)						
S. S. White Dental Manufacturing Company. (See Wishart, Edward, assignor.)						
Sa-Vilson, Max, New York, N. Y. Automatically-operated fan	543,508	July 30	2945	692	72	615

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Saalberg, Jacob, *et al.* (See Hirschfeld, Leo, assignor.)						
Sabroe, Thomas T., Aarhuus, Denmark. Cream-elevator	545,177	Aug. 27	2479	601	72	1257
Sachs, Carl, Zabrze, Germany. Watering-pot sprinkler with detachable rose	543,783	July 30	3497	814	72	713
Sacksteder, Louis E. (See Welter and Sacksteder.)						
Saddler, Isaac N., Perrysburg, Ohio. Railway-switch	543,705	July 30	3337	774	72	683
Safety Bottle and Ink Company. (See Thomas, Levi H., assignor.)						
Safety Car Heating and Lighting Company. (See Dixon, Robert M., assignor.)						
Sage, Henry J., Chicago, Ill. Electric-arc lamp	543,355	July 23	2658	626	72	544
Saitz, John F., and F. W. McKee, assignors to F. W. McKee and S. Kelly, Pittsburg, Pa. Car-fender	544,692	Aug. 20	1600	384	72	1060
Salay, John, South Bend, Ind. Axle-skein	544,325	Aug. 13	880	221	72	921
Salisbury, Edgar E., and A. E. Dean, Tacoma, Wash. Combined district telegraph and telephone system	546,904	Sept. 24	2532	605	72	1870
Sallade, James W. (See Master, John H., assignor.)						
Sallee, Charles M. (See Sallee, William H., assignor.)						
Sallee, William H., assignor of one-half to C. M. Sallee, Columbia, Ky. Rat-trap	546,250	Sept. 10	1408	335	72	1628
Saltzkorn, Emil, and L. Nicolai, Dresden, Germany. Apparatus for manufacture of cardboard boxes	542,660	July 16	1476	354	72	308
	543,453	July 23	2834	664; 665	72	579
Saltzkorn, Emil, and L. Nicolai, Dresden, Germany. Machine for riveting cardboard	543,754	July 30	3433	797	72	702
Sample, Charles, Valley Grove, W. Va. Brake mechanism for vehicles	546,030	Sept. 10	1030	248	72	1557
Sampson, George H., Medford, Mass. Blasting-cap	545,821	Sept. 3	663	161; 162	72	1476
Samuel, Edward, assignor to William Wharton, Jr., & Company, Incorporated, Philadelphia, Pa. Track structure						
Samuel, Edward, and V. Augerer, assignors to William Wharton, Jr., & Company, Incorporated, Philadelphia, Pa. Railway-switch	545,820	Sept. 3	662	161	72	1476
Samuelson, Gustav. (See Benson, August, assignor.)						
Sanborn, Sherburn, Chicago, Ill. Railway-signal	544,008	Aug. 6	307	76	72	804
Sanders, John. (See Minter, Walter J., assignor.)						
Sanders, John H., New York, J. E. Carlin, Brooklyn, N. Y., and H. Fitzpatrick, Easton, Pa., assignors to said Sanders and Carlin. Carrotting-machine	544,693	Aug. 20	1601	384; 385	72	1069
Sanders, John M., Dalton, Ga. Baling-press	542,314	July 9	847	208	72	176
Sanders, Richard D., Easthourne, England. Apparatus for manufacture of wire	541,986	July 2	281	65	72	57
Sandow, Eugen, New York, N. Y. Combined bath-tub and trunk	546,711	Sept. 24	2213	528	72	1810
Sands, William B. O. (See Wickham, Orson F., assignor.)						
Sanford, Andrew J., *et al.* (See Chace, Edward, assignor.)						
Sanford, George W., Jr., *et al.* (See Chace, Edward, assignor.)						
Sanguinette, David, St. Louis, Mo. Device for spearing frogs, &c	542,315	July 9	849	208	72	177
Santee, Elmer V., Watertown, N. Y. Fountain shaving-brush	543,969	Aug. 6	241	59	72	792
Sapp, Isaac H., Bucyrus, Ohio. Device for securing drum or similar heads	544,125	Aug. 6	513	127	72	843
Sargent & Company. (See Wright, Granville W., assignor.)						
Sargent, James T., assignor to American Washboard Company, Cleveland, Ohio. Washboard	543,706	July 30	3339	775	72	684
Sargent, John W., assignor to Rice & Sargent Engine Company, Providence, R. I. Exhaust-valve for steam-engines	545,414	Aug. 27	2861	697	72	1331
Sargent, Ransom H., Titusville, Pa. Fluid-fuel burner	544,646	Aug. 13	1497	362	72	1032
Sarver, Jacob, La Junta, Colo. Portable derrick	545,731	Sept. 3	516	126	72	1449
Sattelkau, Paul, and H. R. Winkelmann, Philadelphia, Pa. Locomotive-tender	545,866	Sept. 3	741	180	72	1490
Sattelkau, Paul, Brooklyn, and H. R. Winkelmann, New York, N. Y., assignors to Automatic Water Tank Company, Jersey City, N. J. Steam-vacuum water-elevator	545,822	Sept. 3	664	162	72	1477
Sattes, John C., St. Albans, W. Va., assignor of one-half to P. R. R. M. Sattes, Washington, D. C. Boom-hitch and loop-swing	542,503	July 9	1199	292	72	242
Sattes, P. R. R. M. (See Sattes, John C., assignor.)						
Sauer, Philip, Jobs, Ohio. Detachable and adjustable locked cut-off powder-spout	543,540	July 30	3008	705	72	627
Sauerbier, Johann F. and K. M., Independence, Mo. Combined bed, table, stretcher, and chair	542,374	July 9	962	236; 237	72	198
Sauerbier, Karl M. (See Sauerbier, Johann F. and K. M.)						
Saunders, Benjamin P., Dye, Mo. Culvert	542,978	July 16	1995	474	72	404
Saunders, Ira J., New York, N. Y. Metallic fastener for attaching buttons to shoes, &c	546,349	Sept. 17	1612	384	72	1684
Saunders, Joseph E. (See Evans, Joshua H., assignor.)						
Saundersen, Saunder, Northwood, N. D. Windmill	544,594	Aug. 13	1397	340; 341	72	1014
	544,830	Aug. 20	1868	447	72	1121
Sauvage, William H., and R. J. Fuqua, Durango, Colo. Brake-block	542,897	July 16	1864	442	72	380
Savery, Thomas H., Wilmington, Del. Compound driving-gear				798; 799; 800; 801; 802		
Savorgnan, Detalmo di B., Rome, Italy. Coin-controlled registering-machine	543,755	July 30	3435		72	703
Sayers, William B., Bearsden, Scotland. Construction of armatures for dynamo-electric machines	543,895	Aug. 6	118	26, 27	72	769
Sayre, Marcus. (See Vanderhoof, Richard and H., assignors.)						
Scales, William S., Everett, assignor to Columbian Clock Company, Boston, Mass. Electric clock-winding mechanism	543,707	July 30	3339	775	72	684
	545,823	Sept. 3	665	162	72	1477
Scamman, Charles F., Deering, Me. Machine for beveling veneer strips	545,732	Sept. 3	520	126	72	1449
Scanlin, Edward. (See Parker, Scanlin, Parker, and Skevington.)						
Schade, Edmund A., New Britain, Conn. Plane	543,897	Aug. 6	121	27	72	770
Schaefer, Christian W. (See Thurber and Schaefer.)	543,898	Aug. 6	122	28	72	770
Schaer, Arnold, Warren, R. I. Graduated cloth-weight templet	543,899	Aug. 6	123	28	72	770
Schaer, Arnold, Warren, R. I. Graduated yarn-templet						
Schaer, Arnold, Warren, R. I. Cloth and yarn calculating rule						
Schall, Edward J. (See Karnatz, Frederick H., assignor.)						
Schallberger, Christ, *et al.* (See Lobert, Frederick A., assignor.)						
Schannen, Ernst, Buda-Pesth, Austria-Hungary. Cravat-fastening	543,318	July 23	2606	612	72	535
Scharnweber, William, St. Louis, Mo. Window-sash ventilator	542,837	July 16	1769	421	72	361
Schecher, Conrad, Cleveland, Tex. Animal-stock	545,415	Aug. 27	2462	697	72	1332
Schefbauer, Rupert, Paterson, N. J., assignor to Auerbach-Woolverton Electric Company, New York, N. Y. Electric-arc lamp	546,826	Sept. 24	2409	578	72	1846
Schefbauer, Rupert, Paterson, N. J., assignor to Auerbach-Woolverton Electric Company, New York, N. Y. Electric-arc lamp	546,827	Sept. 24	2412	578	72	1846
Schefbauer, Rupert, Paterson, N. J., assignor to Auerbach-Woolverton Electric Company, New York, N. Y. Electric-arc lamp	546,828	Sept. 24	2414	579	72	1847
Scheible, Albert, Chicago, Ill. Apparatus for exterminating vegetation	546,682	Sept. 24	2167	515; 516	72	1801

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Scheiblich, Eduard, Kibitzberg, Germany. Machine for scattering manure	545,097	Aug. 27	2330	565	72	1228
Scheier, Frank, Milwaukee, Wis., assignor of one-half to J. Schulte, Cleveland, Ohio. Bung attachment for barrels	542,316	July 9	850	209	72	177
Schelly, Joel P. (See Yost, Beynard W., assignor.)						
Schenck, Samuel G., New York, N. Y. Shirt	545,615	Sept. 3	310	76	72	1411
Scherer, Maria C., New York, N. Y. Bedstead	544,630	Aug. 13	1467	356	72	1027
Schied, Michael, Rochester, N. Y. Stove	546,624	Sept. 17	2067	490	72	1770
Schieffelin, William H., *et al.* (See Holbrook, David M., assignor.)						
Schieffelin, William J., *et al.* (See Holbrook, David M., assignor.)						
Schild, Charles C., Ionia, Mich. Device for prevention of feather-pulling in fowls	546,905	Sept. 24	2534	606	72	1870
Schill, Joseph, Crestline, Ohio. Door for stoves	544,772	Aug. 20	1763	421	72	1101
Schill, Joseph, Crestline, Ohio. Door for stove-ovens	544,773	Aug. 20	1764	421	72	1102
Schilling, Charles R. (See Schraubstadter and Schilling.)						
Schilling, Charles R., St. Louis, Mo. Wrapping-machine	546,193	Sept. 10	1296	309, 310	72	1606
Schipkowsky, Julius, assignor of one-half to W. P. Hatch, Milwaukee, Wis. Pneumatic tire	543,319	July 23	2607	613	72	535
Schlared, Charles, Columbus, Ohio. Compound steam-engine	543,057	July 23	2131	505	72	447
Schlegelmilch, Reinhold, Suhl, Germany, assignor to G. Borgfeldt & Co., New York, N. Y. Clock-case	542,780	July 16	1684	401	72	345
Schleicher, Robert, and C. Heimerdinger, Louisville, Ky. Cutting-machine	542,898	July 16	1868	443	72	381
Schleicher, William A., Cleveland, Ohio. Snap-hook	544,126	Aug. 6	515	127	72	843
Schlenk, Heinrich, assignor to Firm of C. Reich, Nuremberg, Germany. Manufacture of bronze tincture	546,963	Sept. 24	2628	.....	72	1889
Schlesinger, William M., assignor to J. I. McDuffee, trustee, Philadelphia, Pa. Electric railway	546,059	Sept. 10	1076	258	72	1566
Schley, Eleanor A., Milwaukee, Wis. Hoof	541,886	July 2	110	26	72	94
Schlieper, John E., Allegheny, Pa. Feed-water heater	545,660	Sept. 3	382	94	72	1425
Schloss, Henry W., New York, N. Y. Refrigerator	545,098	Aug. 27	2331	565	72	1228
Schloss, Nathan. (See Rodgers, George H., assignor.)						
Schmale, William. (See Pickel and Schmale.)						
Schmaltz, Paul S., New York, N. Y. Stuffing-box for rotary shafts	546,106	Sept. 10	1158	276	72	1582
Schmid, Otto. (See Yost, Bamnhoff, Hagemeier, Fitzler, and Schmid.)						
Schmidt, Albrecht, Berlin, Germany. Production of protocatechuic aldehyde-meta-alkyl ethers	543,193	July 23	2398	.....	72	498
Schmidt, Albrecht, Berlin, Germany. Protocatechuic aldehyde-meta-alkyl ethers and making same	545,099	Aug. 27	2331	.....	72	1228
Schmidt, Albrecht, assignor to Chemische Fabrik auf Aktien, vormals E. Schering, Berlin, and Farbenfabriken, vormals Fr. Bayer & Co., Elberfeld, Germany. Citrate of ethenylethylenamidin and obtaining same	544,933	Aug. 20	2048	.....	72	1155
Schmidt, Charles R., Baltimore, Md. Water-closet connection	545,733	Sept. 3	522	126	72	1450
Schmidt, Cornils F. (See Schmidt, Richard and C. F.)						
Schmidt, Frank. (See Skatulla, Coelestin, assignor.)						
Schmidt, Henry, Elgin, Ill. Hoop-shaving machine	544,382	Aug. 13	1026	252	72	943
Schmidt, John C. (See Eisenhart, William H., assignor.)						
Schmidt, John C., York, Pa. Chain-link	543,356	July 23	2060	626	72	545
Schmidt, John C., York, Pa. Chain-link	546,713	Sept. 24	2215	528	72	1810
Schmidt, Otto. (See Eassie and Schmidt.)						
Schmidt, Paul F., Levallois-Perret, France. Propeller	546,712	Sept. 24	2214	528	72	1810
Schmidt, Reimar, Hayton, Wis. Windmill	543,194	July 23	2400	565	72	498
Schmidt, Richard and C. F., Leavenworth, Kans. Bottle or can labeling machine	544,127	Aug. 6	515	127, 128	72	843
Schmittle, George, Philipsburg, Pa. Fly-trap	544,831	Aug. 20	1869	447	72	1121
Schnasse, Gottlieb, Jr., and T. Paffrath, Elwood, Ind. Pneumatic press	544,128	Aug. 6	518	128	72	844
Schnauder, Maurice B., Chicago, Ill. Paper-holding clamp	546,102	Sept. 10	1294	308, 309	72	1606
Schneider, Paul, Detroit, Mich. Printing-press attachment	543,058	July 23	2132	505	72	447
Schnitzler, Earnest, Asbury Park, N. J. Roundabout and observatory	544,866	Aug. 20	1928	461, 462	72	1132
Schoen, Charles, Rhinelander, Wis. Device for setting up matchers for planing-mill machinery	544,129	Aug. 6	519	128	72	844
Schoen, Charles T., Allegheny, Pa. Pressed-steel truck-frame for cars	542,427	July 9	1061	260	72	218
Schoff, Henry W., Oak Park, Ill. Nutmeg-grater	543,633	July 30	3225	748	72	663
Schofield, James D., Dallas, Tex. Planter	545,824	Sept. 3	666	162, 163	72	1477
Scholl, John, Brooklyn, N. Y. Manufacture of marbleized leather	545,734	Sept. 3	523	.....	72	1450
Schon, Hubert, assignor to himself, A. Lutz, and G. Muth, Allegheny, Pa. Diving apparatus	543,756	July 30	3444	802	72	704
Schoonmaker, John D., assignor to C. B. Gourlay, Chicago, Ill. Curling-iron	546,031	Sept. 10	1031	248	72	1557
Scherr, Ernest, Detroit, Mich. Self-sealing bottle	545,982	Sept. 10	946	228	72	1541
Schott, Mathilde, Brooklyn, N. Y. Bottle-stopper	542,687	July 16	1524	364	72	317
Schouler, William W., Bloomfield, N. J. Stall for horses	544,444	Aug. 13	1157	280	72	968
Schraube, Conrad, assignor to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Yellow dye	543,784	July 30	3497	.....	72	713
Schraubstadter, Carl, Jr., and C. R. Schilling, St. Louis, Mo., assignors to Western Engravers' Supply Company, of Missouri. Beveling-machine	542,504	July 9	1200	293	72	242
Schraubstadter, Carl, Jr., and C. R. Schilling, assignors to Western Engravers' Supply Company, St. Louis, Mo. Routing-machine	545,380	Aug. 27	2792	678	72	1317
Schreuder, Jens G., Edgewood Park, assignor to Union Switch and Signal Company, Swissvale, Pa. Railway signaling	543,785	July 30	3498	814	72	713
Schriek, Walter C., Newark, N. J. Harness-saddle	544,445	Aug. 13	1160	280	72	968
Schröder, Carl F. F., Berlin, Germany. Mounting for artificial teeth	545,211	Aug. 27	2543	615	72	1270
Schroeder, Anton, St. Paul, Minn. Hinge-hanger	543,105	July 23	2212	525	72	462
Schroeder, Richard F., Sacramento, Cal. Can-filler for ice-machines	543,159	July 23	2315	549	72	482
Schroeder, William C., La Porte, Ind. Skein-thread holder	546,251	Sept. 10	1410	335	72	1628
Schroeder, William C., La Porte, Ind., assignor to B. L. Armstrong, New London, Conn. Thread-package	546,123	Sept. 10	1185	283	72	1586
Schroyer, Charles A., Chicago, Ill. Draft-rigging for railway-cars	544,009	Aug. 6	307	76, 77	72	805
Schuler, Johann, Schwabach, Germany. Tool for making frames	544,072	Aug. 6	421	105	72	826
Schülke, Julius, Berlin, Germany. Regenerative hydrocarbon-lamp	542,899	July 16	1870	443	72	381
Schulte, Joseph. (See Scheier, Frank, assignor.)						
Schulte, Wilhelm. (See Friedrich and Schulte.)						
Schultz, Andrew G. (See Schultz, Harry C. and A. G.)						
Schultz, Harry C. and A. G., Philadelphia, Pa. Washing-machine	544,996	Aug. 20	2153	520	72	1173

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Schulze, Andrew, Lott, Tex., assignor to Kingsland & Douglas Manufacturing Company, St. Louis, Mo. Automatic weighing-scale	542,284	July 9	783	192	72	165
Schulze, Andrew, Lott, Tex., assignor to Kingsland & Douglas Manufacturing Company, St. Louis, Mo. Automatic cotton-weighing scale	542,285	July 9	786	192, 193	72	165
Schuppisser, Hermann, assignor to Kugler & Co., Zurich, Switzerland. Axle-box for carriage-wheels	543,320	July 23	2608	613	72	535
Schulte, Wilhelm. (See Friedrich and Schulte.)						
Schuster, Carl G., Markneukirchen, Germany. Mouthpiece for metal musical instruments	546,939	Sept. 24	2387	620	72	1881
Schuster, Paul, assignor of one-half to E. Hennig, Jr., New York, N. Y. Car-arrester	543,270	July 23	2534	594	72	521
Schwab, Gustave, assignor to H. Schwab, New York, N. Y. Support for photographic albums	542,113	July 2	482	116	72	95
Schwab, Helene. (See Schwab, Gustave, assignor.)						
Schwab, Rudolph J., Milwaukee, Wis. Hot-air furnace	546,714	Sept. 24	2216	528, 529	72	1811
Schwarting, John, assignor to Eagle Horse Shoe Company, Milwaukee, Wis. Horseshoe-creasing ring	546,787	Sept. 24	2348	560	72	1835
Schwarz, Charles L., Philadelphia, Pa. Spoke-fastener for wheels	545,916	Sept. 10	837	201	72	1520
Schweiger, Michael. (See Becker, Nikolaus, assignor.)						
Schweiter, Johann, Horgen, Switzerland. Cloth-rubbing apparatus	545,252	Aug. 27	2601	631	72	1282
Schweitzer, Albert. (See Weber, Goellner, and Schweitzer.)						
Schweuker, Henry F., *et al.* (See Wilson, Robert L., assignor.)						
Schwerin, Amelia, executrix. (See Tate, Martin L., assignor.)						
Scofield, Charles F., Bridgeport, Ala. Fire-alarm	543,896	Aug. 6	120	27	72	770
Scognamillo, Salvatore, and C. Dominici, Richmond, Va. Rotary engine	544,595	Aug. 13	1399	341, 342	72	1015
Scoles, Charles R., Hillsborough, Canada. Excavating-machine	542,375	July 9	965	237, 238	72	199
Scott, Charles F., assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Electric converter	546,476	Sept. 17	1835	434	72	1727
Scott, Charles H. (See Ponce and Scott.)						
Scott, Jacob R., Chicago, Ill. Machine for molding boot or shoe counters	545,381	Aug. 27	2793	679	72	1318
Scott, Joseph E. (See Chance and Scott.)						
Scott, Orchard G., and W. F. Bradshaw, San Francisco, Cal. Disinfecting apparatus	542,376	July 9	967	238	72	200
Scott, Robert P., Cadiz, Ohio. Pneumatic tire	542,811	July 16	1732	412	72	353
Scott, Robert P., Cadiz, Ohio, and J. A. Chisholm, Oakville, Canada. Cleaning green peas	542,810	July 16	1730	412	72	353
Scottish Golf Club Manufacturing Company. (See Fraser, Daniel, assignor.)						
Scovill Manufacturing Company. (See Goss, Edward O., assignor.)						
Scoville, Elijah U., Manlius, N. Y. Faucet	543,634	July 30	3228	748, 749	72	663
Scranton, James B., New Haven, Conn. Automatic safety-trolley	544,774	Aug. 20	1765	421	72	1102
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Annunciator-circuit for telephone-switchboards	542,066	July 2	415	101	72	82
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Village telephone system	543,106	July 23	2213	525	72	462
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Electric-arc lamp	543,900	Aug. 6	124	28	72	771
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Telephone-exchange system	543,901	Aug. 6	126	28	72	771
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Apparatus for telephone-switchboards	543,902	Aug. 6	129	29	72	772
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Electric grounding-switch	544,383	Aug. 13	1029	252, 253	72	943
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Single-cord grounded-circuit system for multiple switchboards	544,384	Aug. 13	1031	253	72	944
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Test-signal for multiple switchboards	544,385	Aug. 13	1033	253	72	944
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Telephone-switchboard apparatus	544,386	Aug. 13	1036	254	72	944
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Electromagnetic signal	544,387	Aug. 13	1039	254	72	945
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Telephone-exchange system	544,388	Aug. 13	1040	254	72	945
Scurr, James M., and S. R. Cotton, Creston, Iowa, assignors to Simplex Car Coupler Company, St. Joseph, Mo. Car-coupling	545,802	Sept. 3	733	178	72	1489
Seaman, Benjamin S., assignor to Gilliam Manufacturing Company, Canton, Ohio. Bicycle-saddle support	544,795	Aug. 20	1800	430	72	1108
Seaman, Benjamin S., assignor to Gilliam Manufacturing Company, Canton, Ohio. Bicycle-saddle	546,032	Sept. 10	1032	248	72	1557
Seaman, Benjamin S., assignor to Gilliam Manufacturing Company, Canton, Ohio. Bicycle-saddle	546,350	Sept. 17	1612	384	72	1684
Seamans, Irving M., Buffalo, N. Y. Automatic water-heater	545,735	Sept. 3	524	127	72	1450
Seamless Leather Company. (See Bringham, Friend J., assignor.)						
Searles, Walter E., Marlborough, Mass. Heel-cup	546,083	Sept. 10	1120	267	72	1575
Seattle Meter Co. (See Williams, Hugh W., assignor.)						
Sedgwick, John F. (See Pym, Charles F., assignor.)						
Sedmihradsky, Adolph, assignor to Kalamazoo Knitting Company, Milwaukee, Wis. Yarn-changing device for knitting-machines	545,135	Aug. 27	2406	582	72	1242
See, Horace, New York, N. Y. Water-tube boiler	546,715	Sept. 24	2218	529, 530	72	1811
Seeger, William M., Louisville, Ky. Artificial tooth-crown	544,389	Aug. 13	1042	255	72	946
Seel, Carl, Berlin, Germany. Bunsen burner	545,917	Sept. 10	839	202	72	1520
Seely, Thomas, Marshall, Ind. Saw-swage	543,509	July 30	2946	693	72	616
Seelye, Lawrence C., Fort Edward, assignor of one-half to G. W. Burnham, Luzerne, N. Y. Trolley stand and pole	543,271	July 23	2535	595	72	521
Sefton, William E., assignor to Princess Plow Company, Canton, Ohio. Plow	543,786	July 30	3500	814	72	714
Segassie, Edward, New Orleans, La. Spinning-top	543,787	July 30	3501	815	72	714
Segelhorst, Johann B. M., assignor to Keats Maschinen-Gesellschaft, Frankfort-on-the-Main, Germany. Sewing-machine	543,604	July 30	3178	736, 737	72	655
Segerdahl, Rudolph, Chicago, Ill. Electric-arc lamp	545,736	Sept. 3	526	127	72	1451
Segschneider, Gustave, assignor to J. T. Waring, Yonkers, N. Y. Pile-wire for looms	545,737	Sept. 3	527	127	72	1451
Seibert, David, Sr., Petoskey, Mich. Device for overcoming dead-centers	543,903	Aug. 6	132	29	72	772
Seibold, Albert C., Mount Vernon, assignor of one-third to E. O. Clark and W. Sowdon, New York, N. Y. Arc lamp	542,505	July 9	1202	293	72	243
Seidel, George A., Norristown, Pa. Car-coupling	544,420	Aug. 13	1093	266	72	954

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Seidel, Paul. (See Knietsch and Siedel.)						
Seip, Jacob W. (See Zanger, Theodor, assignor.)						
Seitz, Edward, Peoria, Ill. Beer-cooler	545,382	Aug. 27	2795	679	72	1318
Self-Threading Sewing-Machine Company. (See Legg and Treacy, assignors.)						
Sellers, Stanley M., and L. C. Guttery, Lebanon, Ohio. Harvester-truck	542,067	July 2	418	101	72	82
Sellers, Will P., assignor of one-third to H. Brown, Kokomo, Ind. Table-leg fastening	545,538	Sept. 3	183	44	72	1388
Sellers, William, and W. Lewis, assignors to William Sellers & Company, Incorporated, Philadelphia, Pa. Bending-roll	543,815	July 30	3557	827	72	725
Sellers, William, Philadelphia, Pa., G. S. Strong, New York, N. Y., and H. B. Bradford, Wilmington, assignors to Edge Moor Iron Company, Edge Moor, Del. Steam-boiler	544,130	Aug. 6	521	129	72	844
Sencenbaugh, William H. (See Danforth and Sencenbaugh.)						
Senderling, Martin L., Jersey City, N. J. Supporting-strap for cars, &c	542,838	July 16	1770	421	72	361
Senior, Joseph, Millburn, N. J. Smoke-helmet for firemen	544,632	Aug. 20	1870	448	72	1121
Sergeant, Henry C., Westfield, N. J., assignor to Ingersoll-Sergeant Drill Company, New York, N. Y. Valve for direct-action engines	545,738	Sept. 3	529	127	72	1451
Sergeant, Henry C., Westfield, N. J., assignor to Ingersoll-Sergeant Drill Company, New York, N. Y. Air-heating apparatus	546,866	Sept. 24	2466	590	72	1858
Sérullas, Hippolyte E., Fort de l'Eau, Algeria. Extracting and purifying gutta-percha	544,934	Aug. 20	2048	489	72	1155
Serve, Jean P., Lyons, France. Locomotive feed-heater	546,683	Sept. 24	2169	516	72	1802
Servis Railroad Tie-Plate Company. (See Quincy, Charles F., assignor.)						
Sessions, Henry H., assignor to Pullman's Palace Car Company, Chicago, Ill. Postal-car letter-case	544,131	Aug. 6	523	130	72	845
Sewall, Minott W., New York, N. Y. Valve for pneumatic cannons	542,174	July 2	373	139	72	112
Sewell, Delos, Buffalo, N. Y., assignor to Grand Rapids Scalper, Grader, and Purifier Company, Grand Rapids, Mich. Separator	546,252	Sept. 10	1412	335, 336	72	1028
Sexton, Michael, assignor of one-half to C. L. Steuerwald and S. Ottenberg, New York, N. Y. Pipe joint	546,906	Sept. 24	2535	606	72	1871
Seybold, Christian, Zweibrücken, Germany. Variable-speed friction-gear	546,060	Sept. 10	1078	259	72	1567
Seybold, William, Fort Wayne, Ind. Reed-organ	545,100	Aug. 27	2333	566	72	1228
Seymour Cash Register Company. (See Seymour, Frederick H., assignor.)						
Seymour, Frederick H., assignor to Seymour Cash Register Company, Limited, Detroit, Mich. Cash register and indicator	541,885	July 2	107	25, 26	72	24
Seymour, Henry A., Washington, D. C., assignor to Jandus Electric Company, Cleveland, Ohio. Electric-arc lamp	546,625	Sept. 17	2068	490, 491	72	1770
Seys, Cornelius D., assignor of one half to W. S. Gray, Corpus Christi, Tex. Lantern	544,833	Aug. 20	1871	448	72	1121
Shackleford, William H., Lake Wier, Fla. Portable shower-bath	542,688	July 16	1526	365	72	317
Shadall, Charles E. (See Nordberg and Shadall.)						
Shaeffer, Edmond M., Amberly, Va. Fence	543,321	July 23	2609	613	72	536
Shafer, Robert D. (See Felger and Shafer.)						
Shaffer, Henry E., assignor to Shaffer Lamp Company, Rochester, N. Y. Air-distributer for lamps	542,781	July 16	1685	401	72	346
Shaffer, Henry E., assignor to Shaffer Lamp Company, Rochester, N. Y. Lamp	546,435	Sept. 17	1759	417	72	1712
Shaffer Lamp Company. (See Shaffer, Henry E., assignor.)						
Shafto, John G., Dupont, N. J. Bridle	541,950	July 2	211	49	72	44
Shank, John A., assignor of one-half to H. R. Wolpert, Lancaster, Pa. Car-fender	544,750	Aug. 20	1694	408	72	1087
Shannon, Cyrus N., St. Cloud, Minn. Chimney-cowl	544,390	Aug. 13	1043	255	72	946
Sharp, Alexander N., and S. Metcalfe, Bingley, England. Combing-machine	546,600	Sept. 17	2033	483	72	1764
Sharp, Benjamin F. (See Weinmann and Sharp.)						
Sharp, Warren M., Binghamton, N. Y. Dental mouth-glass	546,195	Sept. 10	1307	311	72	1608
Sharpe, James F., Toronto, Canada. Boot or shoe	542,175	July 2	577	139, 140	72	113
Shattuck, Cerelle. (See Shattuck, Leander L., assignor.)						
Shattuck, Leander L., assignor to C. Shattuck, Titusville, Pa. Target-trap and bird therefor	542,377	July 9	968	238	72	200
Shaughnessy, Micheal L. (See Barry and Shaughnessy.)						
Shaver, Amy R. (See Shaver, George F., assignor.)						
Shaver, George F., assignor to A. R. Shaver, Yonkers, N. Y. Combined telephone-receiver support and switch	545,253	Aug. 27	2604	632	72	1283
Shaver, George F., assignor to A. R. Shaver, Yonkers, N. Y. Telephone	545,416	Aug. 27	2864	698	72	1332
Shaw, Charles J., Owosso, Mich. Land-roller	546,194	Sept. 10	1305	311	72	1608
Shaw, George F., Dedham, Mass. Truck for street-cars	544,489	Aug. 13	1227	297	72	981
Shaw, Henry F., assignor of one-half to C. M. Martin, Boston, and W. G. Nixon, Braintree, Mass. Gearing	544,796	Aug. 20	1801	430	72	1108
Shaw, John, *et al.* (See Hodges, John D., assignor.)						
Shaw, Noah, Eau Claire, Wis. Band-saw-mill attachment	544,694	Aug. 20	1604	385	72	1070
Shaw, William, Brooklyn, N. Y. Apparatus for printing carpet-yarns	543,510	July 30	2948	693	72	616
Shaw, William, Brooklyn, N. Y. Apparatus for printing carpet-yarns	543,512	July 30	2958	694, 695	72	618
Shaw, William, Ithaca, Mich. Rasp	545,739	Sept. 3	530	128	72	1451
Shaw, William, Brooklyn, and F. Trombley, Yonkers, N. Y. Apparatus for printing carpet-yarns	543,511	July 30	2952	694	72	617
Shawd, William. (See Moody, Shawd, and Baker.)						
Shea, Daniel E., Watertown, assignor of one-fourth to T. J. Shea, Charlotte, N. Y. Railway-frog	546,351	Sept. 17	1613	384, 385	72	1684
Shea, Thomas A. (See Sloan and Shea.)						
Shea, Thomas J. (See Shea, Daniel E., assignor.)						
Shea, William J., Hartford, Conn. Wrench	542,317	July 9	852	209	72	178
Sheanfeld, William C., assignor of one-half to N. P. and J. W. Lehr, Fremont, Ohio. Pumping-jack	546,626	Sept. 17	2069	491	72	1771
Sheffield Car Company. (See Henderson, James, assignor.)						
Sheffield, Evelyn D. T. (See Rees, Sheffield, and Tallerman.)						
Sheffield, William B., Kansas City, Mo. Cutting-stick for paper-cutting machines	542,689	July 16	1527	365	72	318
Sheldrick, David J., assignor to J. A. Jeffrey, Columbus, Ohio. Chain	545,178	Aug. 27	2481	601	72	1257
Sheldon, Charles L. (See Hall, Orlando C., assignor.)						
Sheldon, Lewis W., Bloomfield, N. J. Cable-buffer	546,788	Sept. 24	2349	561	72	1836
Shellaberger, Edward F., De Kalb, Ill. Gate	546,829	Sept. 24	2416	579	72	1847
Shelley, Isaac. (See Linsey, Kernodle, and Shelley.)						
Shenton, Enoch, Nashua, N. H. Hot-air register or ventilator	542,716	July 16	1568	375	72	325
Shepard, Jason H., *et al.* (See McKelvey, Samuel P., assignor.)						
Shepard, Jerry W., Aurora, Ill. Bottle-holder	546,033	Sept. 10	1033	248	72	1557
Shepard, William A., New York, N. Y. Method of and apparatus for preparing fertilizers	546,716	Sept. 24	2219	530	72	1811
Shepherd, Alexander and J. M., Edinburgh, Scotland. Lift	545,315	Aug. 27	2694	653, 654	72	1300

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Shepherd, Edmund G. (See Mantion and Shepherd.)						
Shepherd, Edwin W., Chicago, Ill. Hose-coupling	544,469	Aug. 13	1198	290	72	976
Shepherd, George A., *et al.* (See Ginn, Moses M., assignor.)						
Shepherd, John M. (See Shepherd, Alexander and J. M.)						
Shepherd, Thomas H., Kellis' Store, Miss. Brace and clamp for bedsteads	545,383	Aug. 27	2797	680	72	1318
Sherburne, Charles W., Boston, Mass., assignor to Automatic Track Sanding Company, Boston, Mass., and Portland, Me. Track-sanding apparatus	544,073	Aug. 6	422	106	72	827
Sheridan, James, and J. W. McNulty, deceased; W. Coulson, executor; said Coulson assignor to E. J. Lee, Lawrence, Mass. Combination-chair	545,417	Aug. 27	2866	698, 699	72	1332
Sherman, Asa S., assignor of one-half to A. J. Warner, Canastota, N. Y. Lock-joint crate	544,695	Aug. 20	1605	386	72	1070
Sherman, Frank H., and F. W. McArdle, Boston, Mass. Machine for inserting shirring-strings into bags	546,940	Sept. 24	2588	621	72	1881
Sherman, Henry S., Danville, Ill. Gate	543,406	July 23	2735	646	72	559
Sherman, Richard E., Chicago, Ill. Electric transportation system	543,357	July 23	2661	627	72	545
Sherman, Silas H., Weymouth, Mass. Hoof-pad	544,797	Aug. 20	1802	431	72	1109
Sherry, Arthur, Fayette, Miss. Suspension-bridge	545,825	Sept. 3	670	163	72	1478
Sherwood, Earl, and L. Lake, assignors of one-half to W. A. Wood and N. E. Bigelow, Honesdale, Pa. Lifting-jack	543,407	July 23	2736	646	72	559
Sherwood, Lorenzo H., Mount Vernon, N. Y. Electric-railway conduit system	544,391	Aug. 13	1044	255	72	946
Shevlin, George F. (See Baker, Shevlin, and Baker.)						
Shibata, Wada Y., San Francisco, Cal. Telephone-exchange	543,160	July 23	2316	549, 550	72	482
Shibata, Wada Y., San Francisco, Cal. Telephone-exchange	543,708	July 30	3342	775, 776	72	685
Shilling, Jesse, Jr., Troy, Ohio. Mail-bag	546,717	Sept. 24	2220	530	72	1812
Shimer, Elmer S., Milton, Pa. Type-writing machine	545,316	Aug. 27	2696	655	72	1300
Shimer, Elmer S., Milton, Pa. Type-writing machine. (Reissue)	11,506	Sept. 3	741	180, 181	72	1490
Shimer, Elmer S., Milton, Pa. Type-bar supporter	545,740	Sept. 3	531	128	72	1451
Shipman, James R. (See Gibbs and Shipman.)						
Shipman, Madison D., *et al.* (See Reynolds, Samuel D., assignor.)						
Shirk, George W., Van Orin, Ill. Calendar	542,538	July 9	1258	306, 307	72	253
Shoemaker, Charles F., Chicago, Ill. Car-brake	544,936	Aug. 20	2052	489, 490	72	1155
Shoemaker, George E., Philadelphia, Pa. Car-fender and wheel-guard	544,195	Aug. 6	616	153, 154	72	863
Shoemaker, Lockert N., Greenfield, Ohio. Cash receiving, delivering, and registering machine	545,101	Aug. 27	2334	566, 567	72	1229
Shoenberger, John H., Philadelphia, Pa. Rotary fender for railway-cars	542,573	July 9	1319	319, 320	72	265
Shollenberger, Daniel A., Montgomery, Pa. Sash-stile-dovetailing machine	546,253	Sept. 10	1414	336	72	1629
Shone, James W., assignor to Hall-Shone Company, Rochester, N. Y. Mud-guard for bicycles	544,935	Aug. 20	2050	489	72	1155
Shook, Anderson Manufacturing Company *et al.* (See Davidson, John M., assignor.)						
Shoots, James D., Horseheads, N. Y. Lock for bicycles	544,132	Aug. 6	525	130	72	845
Short, Sidney H., Cleveland, Ohio. Electric locomotive	546,560	Sept. 17	1971	467, 468	72	1752
Shortle, Christopher M. (See George and Shortle.)						
Shuey, George E., Lawtey, Fla. Buffer and continuous-draft device for cars	546,561	Sept. 17	1975	468	72	1753
Shull, Benjamin F., Osnaburg, Ohio. Combined velocipede, baby-walker, and coach	541,887	July 2	111	26, 27	72	25
Shull, John H., Wellesley, assignor of one-half to F. W. Stevens, Newton, Mass. Housing for sash-pulleys	544,196	Aug. 6	617	154	72	863
Shultz, Jacob F., assignor of one-half to E. B. Knapp, San Jacinto, Cal. Axle-setting device	543,059	July 23	2133	506	72	447
Shuman, Frank, Philadelphia, Pa. Apparatus for removing obstructions from car-tracks	542,539	July 9	1261	307	72	254
Shuman, Frank, Philadelphia, Pa. Ladle for dipping glass	545,826	Sept. 3	671	163	72	1478
Shuman, Frank, Philadelphia, Pa. Apparatus for embedding wire in glass	546,196	Sept. 10	1308	311	72	1608
Shupert, Clayton O., Miamisburg, Ohio. Shelving	542,114	July 2	483	116	72	95
Shuster, Mathias L., assignor of one-half to E. C. Jesse, Mineral Point, Ohio. Insertible saw-tooth	542,378	July 9	970	238	72	200
Shutters, David H., Greenwood, Ind. Device for lifting invalids	545,741	Sept. 3	532	128	72	1452
Siccardi, Giovanni B., New York, N. Y. Snow-cleaning machine	542,209	July 2	646	158	72	125
Sichler, Charles, Berne, Switzerland. Clasp	545,384	Aug. 27	2799	680	72	1319
Sickles, Bert, Covington, Ky., assignor of three-eighths to J. S. Wohlgemuth, Cincinnati, Ohio. Car-brake	543,904	Aug. 6	133	29	72	772
Sidden, John H. (See Adams and Sidden.)						
Siebenthall, John F. (See Hamilton and Siebenthall.)						
Siegel, Jacob. (See Dearing, Anson C., assignor.)						
Siemens, Georg W. von, Berlin, Germany. System of electrical distribution	542,979	July 16	1996	474	72	405
Siemens & Halske Electric Company of America. (See Badt, Francis B., assignor.)						
Siemens & Halske Electric Company of America. (See Du Bois-Reymond, Alard E., assignor.)						
Siemens & Halske Electric Company of America. (See Görges, Johannes H. F., assignor.)						
Sievers, Henry F. W., Cheyenne, Wyo. Cooking stove or range	543,454	July 23	2839	665	72	580
Sigler, Elias V., assignor of one-half to W. J. Kriel, New York, N. Y. Support for ironing-boards	543,658	July 30	3263	758	72	670
Silcott, London, Mount Vernon, Ohio. Screwing and boring hand-tool	545,827	Sept. 3	672	164	72	1478
Silfversparre, Arent, Bofors, Sweden. Breech mechanism for ordnance	542,379	July 9	971	239, 240	72	200
Silver, Charles T. (See Silver, David and C. T.)						
Silver, David and C. T., Tamworth, New South Wales. Sheep-shearing machine	543,905	Aug. 6	134	29	72	773
Silver, William, assignor of three-fourths to N. Cohen, Tamworth, and B. F. Marks, Sydney, New South Wales. Animal-shears	542,380	July 9	974	240	72	201
Silverman, Louis. (See Maxim and Silverman.)						
Silverwood, Charles H., and J. Fraser, Philadelphia, Pa. Operating throttle-valves of engines	544,867	Aug. 20	1929	462	72	1132
Silvis, Sankey S., Newport, Minn. Stanchion	542,176	July 2	378	140	72	113
Simmons, Morgan. (See Swift, Oliver, assignor.)						
Simmons, Richmond C. (See Simmons, William I. and R. C.)						
Simmons, Rosa C., East Tawas, Mich. Door-check	544,053	Aug. 6	396	99	72	821
Simmons, Samuel J. and W. O., Boston, Mass. Garment-supporter	544,596	Aug. 13	1403	342	72	1016
Simmons, William I. and R. C., Northville, Mich.; said R. C. Simmons assignor to said William I. Simmons. Saw set and jointer	546,964	Sept. 24	2629	630	72	1889

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Simmons, William O. (See Simmons, Samuel J. and W. O.)						
Simms, John R., Milton, Cal. Vehicle	545,136	Aug. 27	2408	582	72	1242
Simonds, William E., *et al.* (See Brooks, Silas M., assignor.)						
Simonet, William F., Massillon, Ohio. Attachment for incandescent gas-burners	544,834	Aug. 20	1873	448	72	1122
Simons, Alfred S., Port Chester, N. Y. Gage for hemming	543,195	July 23	2401	585	72	498
Simons, Henry, Chicago, Ill. Tooth-cleaning implement	542,782	July 16	1686	401	72	346
Simons, Joseph W., Port Chester, N. Y. Hemming-gage for sewing-machines	544,751	Aug. 20	1697	408	72	1088
Simplex Car Coupler Company. (See Scurr and Cotton, assignors.)						
Simpson, Albert H., Leeds, England. Apparatus for training horses or other animals	544,868	Aug. 20	1932	462	72	1133
Simpson, Benjamin L. (See Simpson, Joseph and B. L.)						
Simpson, Charles A., Saratoga Springs, N. Y. Vehicle-washing device	543,709	July 30	3347	776, 777	72	685
Simpson, Isaiah H., Brunswick, Me. Pneumatic firing device for firearms	542,540	July 9	1264	308	72	254
Simpson, Joseph and B. L., Columbus, Ohio. Flagstaff-holder	545,385	Aug. 27	2800	680	72	1319
Simpson, Peter L., Chicago, Ill. Preparing clay	541,888	July 2	112	27	72	25
Simpson, Peter L., Chicago, Ill. Plunger for brick-presses	544,054	Aug. 6	397	100	72	822
Simpson, Rufus A., Ferndale, Cal. Butter-box	544,997	Aug. 20	2154	521	72	1174
Simpson, Thomas C., *et al.* (See Kleuze, Henry G., assignor.)						
Simpson, William P., Overbrook, Pa. Cloth-winding machine	542,034	July 2	357	87	72	72
Simpson, William S., London, England. Apparatus for drying hair	546,352	Sept. 17	1615	385	72	1684
Sims, C. B., *et al.* (See Esmond, William V., assignor.)						
Sinclair, George M., *et al.* (See Sparks and Collins, assignors.)						
Sinding-Larsen, Alf, Christiania, Norway. Electrolytic apparatus	546,353	Sept. 17	1615	385	72	1685
Singer, Albert E., Dayton, assignor of one-half to J. M. Singer, Lewisburg, Ohio. Automatic car-coupling	546,601	Sept. 17	2034	484	72	1764
Singer, J. M. (See Singer, Albert E., assignor.)						
Singer Manufacturing Company. (See Friederich, Christian, assignor.)						
Singer Manufacturing Company. (See Diehl, Philip, assignor.)						
Singer Manufacturing Company. (See Douglas, John, assignor.)						
Singer Manufacturing Company. (See Vannette, Jasper assignor.)						
Singre, François, Paris, France. Power transmission	542,428	July 9	1064	261	72	218
Sinning, Charles, assignor to Sinning Lasting Machine Company, St. Louis, Mo. Pressure device	546,354	Sept. 17	1618	386	72	1685
Sinning Lasting Machine Company. (See Sinning, Charles, assignor.)						
Sinton, Walter L., assignor to Comparative Synoptical Chart Company, Limited Liability, Victoria, Canada. Map or chart stand	544,835	Aug. 20	1875	448, 449	72	1122
Siver, Charles W., assignor to Manufacturers' Automatic Sprinkler Company, Syracuse, N. Y. Pipe-hanger	544,631	Aug. 13	1468	356	72	1027
Siverd, William, Portageville, N. Y. Wagon-brake	542,397	July 9	1000	247	72	205
Sjoholm, Carl E., Pullman, Ill. Table-fastener	542,318	July 9	854	209	72	178
Skall, Max A., New York, N. Y. Valve-stopper for bottles	542,068	July 2	419	101	72	82
Skatulla, Coelestin, Brooklyn, assignor of one-half to F. Schmidt, New York, N. Y. Type and matrix	543,272	July 23	2537	595	72	522
Skelton, John G., assignor to Richmond Mica Company, Richmond, Va. Mill for grinding mica	546,197	Sept. 10	1309	312	72	1608
Skevington, Henry H. (See Parker, Scanlin, Parker, and Skevington.)						
Skinner, Halcyon, Yonkers, N. Y. Tufted woven fabric	543,659	July 30	3264	758	72	671
Skinner, Taber, Philadelphia, Pa. Lamp-burner	542,506	July 9	1203	293	72	243
Skoglund, Jean V., Stockholm, Sweden. Making smokeless powder	542,812	July 16	1733	.....	72	354
Slade, Amelia E., administratrix. (See Chappell, Florance J. D.)						
Slade, S. C. (See Chappell, Florance J. D., assignor.)						
Slama, John A., Chicago, Ill. Trunk caster and corner-shield	542,574	July 9	1321	320	72	265
Slattery, Frank S., assignor of one-half to L. W. Young, Bradford, Pa. Machine for sifting pulverized clay	543,221	July 23	2143	573, 574	72	505
Slayton, Samuel, San Francisco, Cal. Photographic shutter	546,108	Sept. 10	1311	312	72	1609
Sleem, David H., New York, N. Y. Surgical applicator	545,102	Aug. 27	2343	568	72	1231
Sleem, David H., New York, N. Y. Moistening apparatus	545,103	Aug. 27	2345	568	72	1231
Sleicher, William, Jr. (See McPherson, Henry, assignor.)						
Slichter, William H. (See Leightham, Joseph, assignor.)						
Sloan, George B., Jr., and T. A. Shea, assignors to National Railway Spring Company, Oswego, N. Y. Sectional band for springs	545,137	Aug. 27	2409	583	72	1243
Slyder, William J. (See Douglass and Slyder.)						
Slyder, William J., assignor to Troy Carriage Sun Shade Co., Troy, Ohio. Umbrella-holder	541,951	July 2	211	49	72	44
Small, Chester C. (See Glidden and Small.)						
Small, J. Hamilton, *et al.* (See McAnulty, John A., assignor.)						
Small, John F., Oak Park, Ill., assignor to H. Gugler, Milwaukee, Wis., and T. Pohlmann, Chicago, Ill. Box-bordering machine	544,440	Aug. 13	1161	280, 281	72	968
Smalley, Albert G. (See Atwood, Benjamin S., assignor.)						
Smart, Walter J., Brooklyn, N. Y. Lamp	542,286	July 9	789	193	72	166
Smart, Walter J., Brooklyn, N. Y. Lamp	542,287	July 9	791	194	72	166
Smith, Albert C., assignor of one-half to T. Wilkinson, Blair, Nebr. Automatic vehicle-brake	542,741	July 16	1617	386	72	333
Smith, Albert C., assignor of one-fourth to W. C. Ghost, Denver, Colo. Oil-can	546,254	Sept. 10	1415	336	72	1629
Smith, Albert U., Seymour, assignor of one-half to E. C. Smith, Westport, Conn. Automatic computing-scale	545,616	Sept. 3	311	76, 77	72	1411
Smith, Alfred A. (See Jaisohn, Philip, assignor.)						
Smith, Alvin, Cincinnati, Ohio. Horse-collar fastener	543,430	July 23	2793	656	72	572
Smith, Amor, Jr., *et al.* (See Day, David T., assignor.)						
Smith, Andrew, Traverse City, Mich. Bow-rowing device	546,942	Sept. 24	2595	622	72	1883
Smith, Arnold E., Ogdensburg, N. Y. Apparatus for retarding congelation of fluids	545,104	Aug. 27	2346	568	72	1231
Smith, Augustine. (See Musgrove and Smith.)						
Smith, Augustus E., Brookville, Pa. Controlling device for tank supply-valves	542,900	July 16	1872	444	72	381
Smith, Benjamin Utica, N. Y. Safety gas-burner	546,941	Sept. 24	2594	622	72	1882
Smith, Benjamin F., *et al.* (See Suverkrop, John P., assignor.)						
Smith, Benjamin F., Somerville, Mass. Sand and air separator for Arteslan or driven wells	545,026	Aug. 20	2209	533	72	1182
Smith, Charles A., Chicago, Ill. Scoop or shovel for excavating-machines	545,025	Aug. 20	2201	532	72	1182
Smith, Charles G., *et al.* (See Suverkrop, John P., assignor.)						
Smith, Charles H., assignor of one-half to A. Mathews, Toronto, Canada. Child's safety-skate	544,490	Aug. 13	1228	297	72	981
Smith, Duane P. (See Elwood, Jefferson U., assignor.)						
Smith, Edmond C. (See Smith, Albert U., assignor.)						
Smith, Edward A., Greeley, Colo. Potato-sorting machine	543,060	July 23	2135	506	72	448
Smith, Edward S., Waterbury, Conn. Pocket pencil-holder	544,392	Aug. 13	1046	255	72	946
Smith, Ferdinand E. (See Nelson and Smith.)						
Smith, Frank L., Blue Island, assignor of one-half to W. J. Wiley, Chicago, Ill. Boiler-cleaner	543,541	July 30	3010	705	72	628

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Smith, Frank W., St. Louis, Mo. Device for hoisting or lowering lamps	545,539	Sept. 3	184	44	72	1388
Smith, Fred E., Moscow, Vt. Machine for making butter-boxes	544,775	Aug. 20	1767	422	72	1102
Smith, Frederick W. (See Morey, Edward I., assignor.)						
Smith, George, *et al.* (See Barnes, John W., assignor.)						
Smith, Henry D. (See Hamilton, Thomas L., assignor.)						
Smith, Henry V., Hartford, Conn. Bit-stock	542,448	July 9	1104	271	72	225
Smith, Ira D., Pittsburg, Pa. Telephone	546,357	Sept. 17	1622	387	72	1686
Smith, Isaac, Nottingham, England. Rotary water-meter	545,254	Aug. 27	2605	632	72	1283
Smith, James A., *et al.* See Moore, Allen D., assignor.)						
Smith, James M., Galt, Canada Truss	546,355	Sept. 17	1620	386	72	1685
Smith, John D., Dalton, assignor of two-thirds to W. L. Eaton, Holyoke, Mass. Closure for hand-holes of boilers	546,789	Sept. 24	2351	561	72	1836
Smith, John G., St. Louis, Mo. Spiral spring	544,597	Aug. 13	1404	342	72	1016
Smith, John M., West Bromwich, England. Pressure-indicating inflator or air-pump	544,998	Aug. 20	2155	521	72	1174
Smith, Joseph W. (See Hogue and Smith.)						
Smith, Kingsland, St. Paul, Minn. Unifying flour, &c.	546,830	Sept. 24	2417	579	72	1848
Smith, Lucien T. (See Squires, William H., assignor.)						
Smith, Martin V., Pittsburg, assignor of one-half to C. Borgner, Philadelphia, Pa. Garbage-furnace	546,497	Sept. 17	1867	443	72	1733
Smith, Mat P., *et al.* (See Edwards, Arthur, assignor.)						
Smith, Melven J., Bayport, Mich. Potato-planter	543,107	July 23	2215	526	72	463
Smith, Morris F., assignor to William Cramp & Sons Ship and Engine Building Company, Philadelphia, Pa. Hydraulic-recoil gun-carriage	545,540	Sept. 3	186	44, 45	72	1388
Smith, Noah P., Ransom, and P. F. Lawler, Pittston, Pa. Chimney-cleaning apparatus	544,522	Aug. 13	1276	308	72	990
Smith, Norbourn H., assignor of three-fourths to J., Jr., and L. Bunting, T. McCulloch, and L. N. Buford, Bristol, Tenn. Vacuum fire-kindler	546,356	Sept. 17	1620	386	72	1685
Smith, Oberlin, Bridgeton, N. J., assignor, by mesne assignments, to Northrop Loom Company, Hopedale, Mass. Warp stop-motion for looms	546,977	Sept. 24	2649	634, 635	72	1893
Smith, Phelps F., *et al.* (See Brooks, Silas M., assignor.)						
Smith, Philip G., and A. L. Ruff, Dickerson Run, Pa. Holder for miners' safety-lamps	545,918	Sept. 10	840	202	72	1521
Smith, Ray D., Greenwood, N. Y. Milk-pail attachment	542,575	July 9	1322	320	72	265
Smith, Reuben A., East Weare, N. H. Toy	545,541	Sept. 3	189	45	72	1389
Smith, Samuel J., Franklin, Pa. Vegetable-cutting machine	545,983	Sept. 10	948	228	72	1542
Smith, Samuel W. (See Cole, Sylvester, assignor.)						
Smith, Seth H., Hillsdale, Mich. Hitching-post	545,984	Sept. 10	950	228	72	1542
Smith & Son, Prince. (See Ambler, Smith, assignor.)						
Smith Sons' Gin and Machine Company. (See Nelson and Smith, assignors.)						
Smith, Thomas. (See Symons and Smith.)						
Smith, Thomas, *et al.* (See Sparks and Collins, assignors.)						
Smith, Thomas C., Bridgeport, Conn. Detonating locking device	543,062	July 23	2137	506	72	448
Smith, Thomas D., Wilkes-Barré, Pa. Draining-valve for steam-cylinders	546,907	Sept. 24	2536	606	72	1871
Smith, Thomas J., New York, and G. M. Amon, Brooklyn, N. Y. Plumber's wiping implement	542,541	July 9	1264	308	72	254
Smith, William. (See Hughes and Smith.)						
Smith, William, Glasgow, Scotland. Type-case frame	544,055	Aug. 6	397	100	72	822
Smith, William A., *et al.* (See Lord, George W., assignor.)						
Smith, William N., Chicago, Ill. Dynamometric governor	514,696	Aug. 20	1606	386, 387	72	1070
Smith, William R., Norwich, Conn. Furnace-regulator	543,061	July 23	2136	506	72	448
Smith, William R., Norwich, Conn. Furnace-regulator	545,542	Sept. 3	190	45	72	1389
Smith, William T., and J. C. Hartman, Creston, Iowa. Car-door	544,131	Aug. 6	526	130	72	845
Smoot, William H., assignor of one-half to N. Stonestreet, Pleasant Home, Ky. Horse-detacher	545,828	Sept. 3	673	164	72	1478
Smyser, Henry E., Philadelphia, Pa., assignor to Arbuckle Brothers, New York, N. Y. Package making and filling machinery	544,697	Aug. 20	1611	387	72	1071
Snapp, John F., Frichton, Ind. Fire-alarm device	542,783	July 16	1688	402	72	346
Sneed, J. R., *et al.* (See Baird, Clarence D., assignor.)						
Snow, William H., Wirksworth, England. Mud-guard for cycles	545,212	Aug. 27	2544	616	72	1270
Snow, William W., assignor of one-half to Ramapo Iron Works, Hillburn, N. Y. Brake-shoe	543,273	July 23	2538	595	72	522
Snowden, Edward P., St. Joseph, Mo. Safety device for handling electric-arc lamps	542,210	July 2	648	159	72	126
Snyder, Charles W., Bloomsburg, Pa. Adjustable pattern	546,199	Sept. 10	1314	312	72	1609
Snyder, William D., Chicago, Ill. Revolving furniture	545,985	Sept. 10	951	228, 229	72	1542
Société Anonyme pour la Transmission de la Force par l'Electricité. (See Hutin and Leblanc, assignors.)						
Soesbe, James. (See Montgomery, Jordan, Soesbe, Gilman, and Hartman.)						
Solar Refining Company. (See Frasch, Herman, assignor.)						
Soley, Frank, assignor of one-half to W. E. Dyer, Philadelphia, Pa. Lock	545,418	Aug. 27	2867	699	72	1333
Solliday, Wilson B., *et al.* (See Cornell, Elijah B., assignor.)						
Somers, Robert W., Fremont, Nebr. Staging-support	543,513	July 30	2963	695	72	618
Somers, William E., Sag Harbor, N. Y. Music-leaf turner	546,908	Sept. 24	2537	606, 607	72	1871
Somerville, Jason C. (See Mortland, Chittick B., assignor.)						
Sommer, John, Tremont, Ill. Spool-carrying frame	546,358	Sept. 17	1623	387	72	1686
Sone, Charles W., Terrell, Tex. Harness-pad hook	546,034	Sept. 10	1034	249	72	1558
Sooy, Ephraim C. (See Punteney and Sooy.)						
Soper, Clinton P., Bloomington, Ill. Shaking and dumping grate	543,222	July 23	2445	574	72	505
Soper, Walter J., assignor to Chicago Hydraulic-Press Brick Company, Chicago, Ill. Brick-machine	545,543	Sept. 3	191	46	72	1389
Souder, Howell W., Tamaqua, Pa. Velocipede	544,776	Aug. 20	1768	422, 423	72	1103
Soule, Winfield S., assignor of one-half to E. E. Goodwin, Brockton, Mass. Machine for marking leather	545,919	Sept. 10	841	202, 203	72	1521
South, Newell, Humphrey, Nebr. Thill-coupling	546,477	Sept. 17	1837	434	72	1728
Southard, Frank E., Toledo, Ohio. Tricycle	545,105	Aug. 27	2349	568	72	1232
Sowdon, William, *et al.* (See Seibold, Albert C., assignor.)						
Spalckhaver, William, Brooklyn, assignor to R. Hoe, T. H. Mead, and C. W. Carpenter, New York, N. Y. Routing-machine	544,010	Aug. 6	310	78	72	805
Spalckhaver, William, Brooklyn, assignor to R. Hoe, T. H. Mead, and C. W. Carpenter, New York, N. Y. Routing-machine	544,011	Aug. 6	314	78, 79	72	806
Spalckhaver, William, Brooklyn, assignor to R. Hoe, T. H. Mead, and C. W. Carpenter, New York, N. Y. Web-printing machine	545,138	Aug. 27	2411	583, 584, 585	72	1243
Spalckhaver, William, Brooklyn, assignor to R. Hoe, S. D. Tucker, T. H. Mead, and C. W. Carpenter, New York, N. Y. Sheet-associating mechanism	545,544	Sept. 3	193	47, 48	72	1390

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Spangler, Jacob W., deceased, York, Pa.; L. S. Spangler, executrix. Paris-green or fertilizer distributer	544,012	Aug. 6	317	79, 80	72	807
Spangler, Laura S., executrix. (See Spangler, Jacob W.)						
Spannaus, Otto. (See Breakspear, Spannaus, and Weisbecker.)						
Sparks, Elmer U. (See Sparks, Lorenzo H., assignor.)						
Sparks, Lorenzo H., assignor of one-half to E. U. Sparks, Warren, Ohio. Boiler	545,386	Aug. 27	2801	680	72	1319
Sparks, William A., and J. E. Collins, assignors of one-half to G. M. Sinclair and T. Smith, Mount Vernon, Wash. Car-coupling	544,598	Aug. 13	1406	343	72	1016
Spaulding, Algenon S., Worcester, Mass., assignor to Flexible Door and Shutter Company, Portland, Me. Hospital-screen	543,906	Aug. 6	135	30	72	773
Spear, Willie A., Byron, N. Y. Cabinet	542,901	July 16	1874	444	72	382
Speer, George F., Tyler, Tex. Valve	543,274	July 23	2540	596	72	522
Spellier, Louis H., deceased, Philadelphia, Pa.; H. Trumbore, executor. Electric clock-winding mechanism	543,358	July 23	2663	627	72	546
Spencer, Alexander, London, England. India-rubber buffer and bearing spring	546,359	Sept. 17	1625	387	72	1686
Spencer, Alfred G., London, England. Car-spring	546,831	Sept. 24	2419	580	72	1848
Spencer, Alvah C., Boston, assignor of one-half to A. P. Hanscom, West Medford, Mass. Machine for inseam-trimming and beating out welts	542,813	July 16	1733	413	72	354
Spencer, Joseph C. (See Bischoff and Baird, assignors.)						
Spencer, Oliver H. P. G., Mount Carmel, Ill. Detachable hinge	546,909	Sept. 24	2542	607	72	1872
Sperry, Barton E., Batavia, Ill. Spider	542,449	July 9	1106	271	72	225
Sperry, Elmer A., Cleveland, Ohio, assignor to General Electric Company, of New York. Power-transmitting device	545,920	Sept. 10	842	203	72	1521
Spicer, Charles R., and J. B. Wilson, Helena, Mont. Gold sluice-box	545,106	Aug. 27	2350	569	72	1232
Spilker, Bernard J., Cincinnati, Ohio. Joint-cutter	541,952	July 2	212	49	72	45
Spilman, Thomas M., Washington, D. C. Egg-tester	543,970	Aug. 6	243	59	72	793
Spiral Wire Company. (See Gray, Gorham, assignor.)						
Spiro, Charles, New York, N. Y. Type-writing machine	543,111	July 23	2224	527	72	464
Spiro, Charles, New York, N. Y. Type-writing machine	543,112	July 23	2227	527	72	465
Spiro, Charles, New York, N. Y. Type-writing machine	544,599	Aug. 13	1408	343, 344	72	1016
Spiro, Charles, New York, N. Y. Teletyper	545,637	Sept. 3	350	87	72	1419
Spitzenberg, Georg K., Frankfurter Niederlage, Germany. Dibbling-machine	545,545	Sept. 3	260	48, 49	72	1391
Spofford, Charles, New York, N. Y., assignor to A. A. Hiss, East Orange, N. J. Process of and apparatus for making dishes of wood or wood pulp	545,179	Aug. 27	2483	601, 602	72	1258
Spohr, Peter, Gleasen, Germany. Bridle-bit	544,777	Aug. 20	1774	423	72	1103
Spoore, Ransom R., Newark, N. Y. Fence-post	545,107	Aug. 27	2351	569	72	1232
Sprague, Chester M. (See Bartholomew, Albert W., assignor.)						
Sprague, Jacob R., St. Louis, Mo. Automatic egg-boiling apparatus	546,255	Sept. 10	1417	337	72	1629
Sprague, James F., Riverside, R. I., assignor to Standard Pearl Button Company, Limited, Detroit, Mich. Machine for turning articles of pearl, &c.	544,698	Aug. 20	1615	388	72	1071
Spragne Manufacturing Company. (See McIntyre, John C., assignor.)						
Sprague, Rufus F., *et al.* (See Gordon, Elonso J., assignor.)						
Spriegel, John W., Magazine, W. Va. Nut-lock	545,742	Sept. 3	533	128	72	1412
Spring, George H., Lemars, Iowa. Sash-fastener	544,326	Aug. 13	881	221	72	921
Springsteen, Benjamin F., San Francisco, Cal. Water-bandage	546,436	Sept. 17	1760	418	72	1712
Springstube, Henry, Allentown, Pa. Sand-box	544,327	Aug. 13	883	221, 222	72	921
Sproat, Clinton, and E. N. Tarr, Taunton, Mass. Insulator for electric or other wires	544,778	Aug. 20	1775	424	72	1104
Sproule, Robert F., Kittsbury, Berkhampstead, England. Printing-machine	545,387	Aug. 27	2802	681	72	1319
Squire, F. B., *et al.* (See Day, David T., assignor.)						
Squires, William H., assignor of one-third to L. T. Smith, The Plains, Va. Car-coupling	544,491	Aug. 13	1228	298	72	981
St. John, John C., Boston, Mass. Harp	542,576	July 9	1323	320	72	265
St. John, John C., Boston, Mass., assignor to Flagg Manufacturing Company, Portland, Me. Attachment for stringed instruments	546,408	Sept. 17	1708	405	72	1701
St. John, William B. (See Attwood and St. John.)						
Stack, John T., Chicago, Ill., assignor to Gamewell Fire-Alarm Telegraph Company, New York, N. Y. Fire-alarm box	543,063	July 23	2138	507	72	448
Stafford, George W., Providence, R. I., assignor to Knowles Loom Works, Worcester, Mass. Jacquard machine	545,661	Sept. 3	384	94, 95	72	1425
Standard Caster and Wheel Company. (See Hoffmann, Ernest G., assignor.)						
Standard Cotton Seed Company. (See Faulkner, James J., assignor.)						
Standard Electric Company. (See Parmly, Samuel P., assignor.)						
Standard Pearl Button Company. (See Sprague, James F., assignor.)						
Standard Rivet Company. (See Ayer, William J., assignor.)						
Standring, Arthur, Harpurhey, Manchester, England. Letter or numeral for shop-fronts, offices, signs, &c.	542,947	July 16	1941	460	72	395
Stanhope, John B., Philadelphia, Pa. Barrel-heading machine	545,388	Aug. 27	2803	681, 682	72	1320
Stanley, C. E. (See King, Phineas F., assignor.)						
Stanley, Frank F., trustee. (See Hopkins, William P., assignor.)						
Stanley, Frank F., *et al.*, trustees. (See Goddu, Louis, assignor.)						
Stanley, John W., Blue Springs, Mo. Hame-fastener	542,288	July 9	792	194	72	166
Stansfield, William H. (See Hinton and Stansfield.)						
Staples, Elias W. (See Staples, Elisha S., assignor.)						
Staples, Elisha S., Norwich, assignor of three-eighths to E. W. Staples, Essex, Conn. Bag machine	544,197	Aug. 6	618	154, 155, 156	72	863
Staples, John A., Newburg, N. Y. Upholstery	542,115	July 2	484	116, 117	72	96
Star Knitting Company. (See Farnam, Jean C., assignor.)						
Stark, Edgar E., assignor to S. Bergman, New York, N. Y. Reactive coil	543,564	July 30	3049	714	72	636
Stark, James M., *et al.* (See Daly, James H., assignor.)						
Starke, Eric A., San Francisco, Cal. Making neutral alkaline sulfates from bisulfates	542,429	July 9	1064	261	72	218
Starr, Fred, Chicago, Ill. Hydraulic engine	546,943	Sept. 24	2597	622, 623	72	1883
Start, Sampson S., Jr., and M. A. S. Johnson, Luverne, Minn. Garment-measure	545,139	Aug. 27	2413	585	72	1244
Staub, Heinrich, Potsdam, Germany. Receptacle for toothpicks	545,546	Sept. 3	201	49	72	1391
Staub, John. (See Hickman, Hezekiah M., assignor.)						
Staude, Edwin G., Kempton, N. D. Mowing-machine	546,200	Sept. 10	1316	313	72	1610
Stauffer, Henry S., Farmersville, Pa. Wire fence	545,255	Aug. 27	2606	632	72	1283
Stawarz, John. (See Machalosky and Stawarz.)						
Stearns & Co., E. C. (See Craig, William H., assignor.)						
Steck, Ernst F., Chicago, Ill. Water-tower	546,627	Sept. 17	2070	491	72	1771

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Steedman, George F., St. Louis, Mo. Air-brake system	542,948	July 16	1942	460, 461	72	396
Steel, Robert, assignor of one-half to V. D. Book, Philadelphia, Pa. Merry-go-round	542,690	July 16	1528	365	72	318
Steen, James H., Canton Ohio. Luggage-carrier	541,889	July 2	115	27	72	25
Steere & Son, J. W. (See Hetherington, Martin, assignor.)						
Stege, Julius A., Louisville, Ky. Writing pen and stylus	545,140	Aug. 27	2415	585	72	1244
Steiger, George C. (See Kohn, Jacob W., assignor.)						
Steigert, Leopold, Cincinnati, Ohio. Meat-cutting machine	545,180	Aug. 27	2484	602	72	1258
Steigert, Leopold, Cincinnati, Ohio. Meat-cutting machine	546,437	Sept. 17	1761	418	72	1712
Stein, Emil G. H., New York, N. Y. Spring-operated motor or apparatus	542,839	July 16	1772	422	72	361
Stein, Emil G. H., and C. Foster, New York, N. Y. Non-fillable bottle	542,691	July 16	1529	365	72	318
Steinbach, William F. (See Harris, Samuel J., assignor.)						
Steinle, Ferdinand, New York, N. Y. Drain for stalls	546,478	Sept. 17	1639	435	72	1728
Steinmetz, Charles P., Lynn, assignor to General Electric Company, Boston, Mass. Controlling phase relations	543,907	Aug. 6	136	30	72	773
Steinmetz, Charles P., and A. H. Armstrong, assignors to General Electric Company, Schenectady, N. Y. Regulator for alternating electric circuits	542,968	July 16	1972	468	72	401
Stelfox, William, Manchester, England, J. W. O. Walker, D. Cairney, and W. Purvis, Glasgow, Scotland. Tire for vehicle-wheels	545,547	Sept. 3	203	49	72	1391
Stellmann, Louis H., assignor of twenty-seven fiftieths to F. J. Holman, Brattleborough, Vt., and C. B. Hopkins, Hinsdale, N. H. Machine for wiring paper packets	545,419	Aug. 27	2869	699, 700	72	1333
Stephan, Albert. (See Fink, James T., assignor.)						
Stephens, James F., and G. M. Parsneau, assignors of one-third to G. Tileston, St. Cloud, Minn. Cleaner for dust-collectors	546,944	Sept. 24	2601	623	72	1884
Stephens, Katharine. (See Bort, Katharine.)						
Stephenson, Edwin N., Waco, Tex. Machine for tufting mattresses	542,289	July 9	794	194, 195, 196, 197, 198	72	166
Stephenson, Edwin N., Waco, Tex. Machine for stuffing mattresses	544,393	Aug. 13	1047	256, 257, 258	72	946
Stephenson, Robert S. (See Jackson, William, assignor.)						
Stephenson, William J., Edna, Kans. Wagon-brake	542,116	July 2	486	117	72	96
Sterling Cycle Works. (See Timm, Charles, assignor.)						
Sterling Incandescent Gas Light Company. (See Voelker, William L., assignor.)						
Stern, Julius, *et al.* (See Hirschfeld, Leo, assignor.)						
Sternberg, Francis C. E. von, Brooklyn, N. Y. Electric train-signal	544,937	Aug. 20	2054	490	72	1156
Sternberg, Max, Crefeld, Germany. Railway-velocipede	545,746	Sept. 3	538	129	72	1453
Sterner, Frederick J., *et al.* (See Johnson, Walter, assignor.)						
Sternfels, Morris. (See Gachwend, August, assignor.)						
Stendel, Carl H. H., Dresden, Germany. Driving-gear for cycles	544,239	Aug. 6	721	184, 185	72	879
Steuerwald, Catherine L. (See Sexton, Michael, assignor.)						
Stevens, Calvin A. (See Collins, Hilsinger, and Stevens.)						
Stevens, F. W. (See Shull, John H., assignor.)						
Stevens, John H., Jr., Cambridge, Mass. Leg for bath-tubs or other articles	543,196	July 23	2403	566	72	499
Stevens, John H., assignor to Celluloid Company, Newark, N. J. Manufacture of solid or massive compounds of pyroxyline	542,692	July 16	1530	.....	72	319
Stevens, John H., assignor, by mesne assignments, to Celluloid Company, Newark, N. J. Manufacture of solid or massive compounds of pyroxylin	543,108	July 23	2215	.....	72	463
Stevens, John H., Newark, N. J., assignor to Celluloid Company, New York, N. Y. Compound of pyroxylin	543,197	July 23	2404	.....	72	499
Stevens, John H., Newark, and E. D. Harrison, Irvington, N. J., assignors to Celluloid Company, New York, N. Y. Production of imitation onyx from pyroxylin compound	546,360	Sept. 17	1626	387, 388	72	1687
Stevens, Paul R., Portland, Me. Pen-guard for ruling purposes	544,600	Aug. 13	1416	344	72	1017
Stevens, Robert L., Vineland, N. J. Combined telescope, microscope, and camera	545,743	Sept. 3	534	129	72	1452
Stevenson, Charles. (See Reid and Stevenson.)						
Stevenson, Charles S., Washington, D. C. Receptacle for pulverized soap	546,684	Sept. 24	2170	516	72	1802
Stevenson & Co. (See Fickes, Emet S., assignor.)						
Stevenson, Fred R. (See Reed and Stevenson.)						
Stevenson, John H., assignor to Ann Arbor Manufacturing Company, Ann Arbor, Mich. Curtain-support	546,832	Sept. 24	2421	580	72	1848
Stevenson, William H. H., Mount Washington, Md. Can-testing machine	544,905	Aug. 20	2002	478	72	1147
Stevenson, Walter S., C. V. Roberts, and J. K. McLaughlin, assignors to Thomas Roberts Stevenson Company, Philadelphia, Pa. Air-heating furnace	545,829	Sept. 3	674	164, 165	72	1478
Stever, Charles, assignor of one-half to John A. Neukum & Company, St. Louis, Mo. Vehicle-brake	545,548	Sept. 3	204	50	72	1391
Steward, Demetrius M., Chattanooga, Tenn. Cleansing material and process of producing same	544,601	Aug. 13	1417	.....	72	1017
Stewart, Alace, San Francisco, Cal. Steam cooking apparatus	545,745	Sept. 3	536	129	72	1452
Stewart, David, *et al.* (See Carroll, Charles J., assignor.)						
Stewart, David P., Buffalo, N. Y. Feed-water heater	545,181	Aug. 27	2486	602	72	1258
Stewart, Duncan D., Manistique, Mich. Combined sash-lock and ventilator	546,256	Sept. 10	1419	337	72	1630
Stewart, Frank L., *et al.* (See Hitchings, Arthur S., assignor.)						
Stewart, James, Jr. (See Crommer, Robert, assignor.)						
Stewart, John W., York, Nebr. Waste-paper basket	545,662	Sept. 3	386	95	72	1426
Stewart, Joseph B., Haverstraw, N. Y. Railway-signal	543,322	July 23	2610	613	72	536
Stewart & Mattson Manufacturing Company. (See Droste, Henry, assignor.)						
Stewart, Scott, assignor of two-thirds to G. M. and H. J. Price, Rivesville, W. Va. Copy-holder	543,109	July 23	2219	526	72	463
Stewart, Simeon, and H. S. Carnes, Lima, Ohio. Hydrocarbon-burner	545,744	Sept. 3	534	129	72	1452
Stewart, William W., Brooklyn, N. Y. Fountain-pen	542,450	July 9	1107	271, 272	72	225
Stey, Valentine, Youngstown, Ohio. Sewing-machine attachment	542,290	July 9	807	198	72	168
Stickley, Gustave, Syracuse, N. Y. Wood-bending machine	541,890	July 2	116	28	72	26
Stiebel, Henry G., Jr., St. Louis, Mo. Weighing-scoop	541,891	July 2	118	28	72	26
Stiebel, Hiram H. (See Frankenburg, Julius, assignor.)						
Stille, George H. and T. J., St. Louis, Mo. Article of confectionery	544,394	Aug. 13	1054	258	72	947
Stille, Theodore J. (See Stille, George H. and T. J.)						
Stimpson, Charles, *et al.* (See Barnes, John W., assignor.)						
Stimpson, Edward S., assignor to Dutcher Temple Company, Hopedale, Mass. Loom-temple	543,788	July 30	3503	815	72	714

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Stimpson, Wallace I., Milford, assignor to Dutcher Temple Company, Hopedale, Mass. Temple-roll	543,789	July 30	3503	815	72	714
Stimpson, Wallace I., Milford, assignor to Dutcher Temple Company, Hopedale, Mass. Loom-temple	545,638	Sept. 3	355	87	72	1420
Stimpson, Walter F., Milan, Mich. Computing-scale	543,323	July 23	2612	614	72	536
Stimson, Charles W., New York, N. Y. Garment-supporter	542,211	July 2	649	159	72	126
Stingle, Charles D. (See Howell, William E., assignor.)						
Stinson, Samuel H., assignor to A. M. Collins Manufacturing Company, Philadelphia, Pa. Apparatus for applying sheets to photographic cardboard	543,064	July 23	2140	507	72	449
Stites, George, assignor of five-eighths to J. B. Thomas, Philadelphia, and C. C. Thomas, Wayne, Pa. Portable drilling-machine	546,628	Sept. 17	2072	492	72	1771
Stites, Samuel T. (See Weldon and Stites.)						
Stitz, Karl H. A., Halle-on-the-Saale, Germany. Sifting and sorting apparatus	546,562	Sept. 17	1976	469	72	1753
Stitzer, Charles A., Central City, Nebr. Electrically-controlled voting-machine	543,065	July 23	2142	508, 509	72	449
Stitzer, Charles A., Central City, Nebr. Voting-machine	543,816	July 30	3559	827, 828	72	725
Stock, John, New York, N. Y. Photographic-plate holder	543,585	July 30	3081	722	72	642
Stockholm, Frank C., Hartford, Conn. Printing-press	546,718	Sept. 24	2222	530, 531	72	1812
Stockwell, John W. (See Bowley, Joseph H., assignor.)						
Stoll, Daniel H., assignor of one-half to M. Newell, Buffalo, N. Y. Machine for forming sheet-metal pipe-blanks	543,971	Aug. 6	245	59, 60	72	793
Stone, Charles S., Erving, Mass. Portable shelf	543,949	Aug. 6	209	51	72	787
Stone, Frederick R. (See Walters and Stone.)						
Stone, John T., Oakland, Cal. Door latch or bolt fastening	543,908	Aug. 6	138	30	72	773
Stone, John W., Merrill, Iowa. Hopper and means for moving and elevating same	542,693	July 16	1533	366	72	319
Stone, Laurel V. (See Leroux, George P., assignor.)						
Stoner, Jacob G., Waynesborough, Pa. Log-turning machine	543,757	July 30	3445	803	72	704
Stonestreet, Nancy. (See Smoot, William H., assignor.)						
Storey Electric Drill and Power Company. (See Storey, Imle E., assignor.)						
Storey, Imle E., Boulder, Colo., assignor to Storey Electric Drill and Power Company, of Colorado. Rock-drill	545,109	Aug. 27	2354	569	72	1233
Storms, Henry M. (See Foxall and Storms.)						
Stoughton, Alexander F., *et al.* (See Champane, Edmund, assignor.)						
Stoughton, James C., *et al.* (See Champane, Edmund, assignor.)						
Stoughton, Peter T., *et al.* (See Champane, Edmund, assignor.)						
Stout, Elisha. (See Ormerod, George C., assignor.)						
Stout, Howard B., assignor to Stout Manufacturing Company, Chicago, Ill. Curling-iron	546,833	Sept. 24	2422	580	72	1848
Stout Manufacturing Company. (See Stout, Howard B., assignor.)	542,814	July 16	1735	413	72	354
Stout, Stephen, Axtell, Kans. Fodder-loader						
Stover, Cochran C. (See Dunham, Charles L., assignor.)						
Stover, Daniel C., and F. W. Hoefer, assignors to Stover Novelty Works, Freeport, Ill. Drilling-machine	542,694	July 16	1536	366	72	319
Stover, Daniel C., and F. W. Hoefer, assignors to Stover Novelty Works, Freeport, Ill. Drilling-machine	542,695	July 16	1537	366, 367	72	320
Stover Novelty Works. (See Stover and Hoefer, assignors.)						
Stowe, Lorenzo, Rome, Tenn. Back-band hook	543,514	July 30	2964	695	72	618
Stowell, William A., Montpelier, Vt. Combined carriage jack and wrench	543,660	July 30	3265	759	72	671
Stowell, William A., Montpelier, Vt. Combined carriage jack and wrench	543,661	July 30	3267	759	72	671
Strack, Mathias, Milwaukee, Wis. Coin-holder	542,815	July 16	1737	413	72	354
Strait, Eli B., *et al.* (See Younkin, George B., assignor.)						
Strait, Newton A., *et al.* (See Younkin, George B., assignor.)						
Straley, Henry C., Cleveland, Ohio. Lawn-sprinkler	544,134	Aug. 6	527	131	72	846
Strater, Herman, Boston, Mass. Barrel-valve	544,752	Aug. 20	1698	409	72	1088
Stranss, Alexander. (See Weil, Adolf, assignor.)						
Stranss, Herman. (See Fitzpatrick, John J. K., assignor.)						
Street, Augustus F., Zanesville, Ohio. Car-coupling	542,117	July 2	487	117	72	96
Streeter, Nelson R. (See Mosher and Streeter.)						
Strimban, Louis, New York, N. Y. Gas-stove	542,717	July 16	1569	375	72	325
Strobel, Frederick, Marion, Ohio. Washing-machine	544,869	Aug. 20	1933	462, 463	72	1133
Strobridge Lithographing Company. (See Vine, James S., assignor.)	545,549	Sept. 3	206	50	72	1392
Strodel, John C. and W., Huntington, Ind. Twine-rack						
Strodel, William. (See Strodel, John C. and W.)						
Strom, Axel A., Austin, assignor to Strom Manufacturing Company, Chicago, Ill. Railway-switch	543,605	July 30	3181	738	72	655
Strom Manufacturing Company. (See Strom, Axel A., assignor.)						
Stromberg, Alfred, and A. Carlson, Chicago, Ill. Telephone apparatus	545,922	Sept. 10	845	204	72	1522
Stromberg, Alfred, A. Carlson, and H. L. Knight, Chicago, Ill.; said Knight assignor to said Stromberg and Carlson. Telephone-exchange apparatus	545,921	Sept. 10	843	203, 204	72	1521
Strömdal, Georg, Christiania, Norway. Cryptograph	546,035	Sept. 10	1036	249	72	1558
Strong, Charles C. (See Moore, George R., assignor.)						
Strong, George S. (See Sellers, Strong, and Bradford.)						
Strong, William J., *et al.* (See Trott, Joseph S., assignor.)	544,135	Aug. 6	528	131	72	846
Strout, Joseph M., Portland, Me. Dental clamp	545,389	Aug. 27	2806	682	72	1320
Strout, Joseph M., Portland, Me. Dental matrix	542,291	July 9	869	198	72	169
Stubbins, Ancel B., Wellsville, Ohio. Car-coupling	543,409	July 23	2739	647	72	560
Stuebner, Henry, Philadelphia, Pa. Electrical switch	542,177	July 2	579	140	72	114
Stukey, Franklin P., Lancaster, Ohio. Anal bougie						
Stump, William G. H. (See Ferguson, William J., assignor.)						
Stumph, C. N., *et al.* (See Bacon and Duvall, assignors.)						
Stumph, E. B., *et al.* (See Bacon and Duvall, assignors.)						
Sturges, Lee, assignor to Chicago Stamping Company, Chicago, Ill. Milk-can cover	546,498	Sept. 17	1871	443	72	1733
Sturgis, Herbert M., St. Louis, Mo. Adjustable window-curtain fixture	544,938	Aug. 20	2056	490	72	1156
Sturgis, Samuel. (See Booth and Sturgis.)						
Sturm, Joseph N. (See Cavallaro and Sturm.)						
Stutz, Louis F. (See Durnbaugh, Joseph A., assignor.)						
Stymus, William P., Jr., and A. F. Kreutzberg, assignors to Pottier & Stymus Company, New York, N. Y. Car-seat	542,398	July 9	1005	248	72	206
Suffolk Shank Company. (See Ruberg, Nelson C., assignor.)						
Sugden, Richard, *et al.* (See Hobbs, Clarence W., assignor.)						
Sullivan, Charles A., and T. J. Best, Montreal, Canada. Hot-water-circulating boiler	542,292	July 9	810	199	72	169

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Sullivan, Charles L., Chicago, Ill., assignor to National Malleable Castings Company, Cleveland, Ohio. Uncoupling lever-bracket	546,201	Sept. 10	1320	313	72	1611
Sullivan, Cornelius, Newark, N. J. Car-fender	543,972	Aug. 6	248	60, 61	72	794
Sullivan, Daniel E., Green River, Wyo. Packing for reciprocating valve-stems	544,523	Aug. 13	1277	308	72	990
Sullivan, G. R., *et al.* (See Norcross, George A., assignor.)						
Sullivan, J. O., *et al.* (See Norcross, George A., assignor.)						
Sullivan Machinery Company. (See Mitchell, Jonas L., assignor.)						
Sullivan, Michael, and T. J. Bond, Newport, R. I. Protector-guard for street-railway cars	546,257	Sept. 10	1421	337	72	1630
Sullivan, Michael J. (See Weston and Sullivan.)						
Sulzer-Vogt Machine Company. (See Vogt, Henry, assignor.)						
Summer, Frank, Jr. (See Babbitt, Elwin J., assignor.)						
Sunderland, Jesse W., assignor of one-half to A. J. McDuffee, Chicago, Ill. Washing-machine	545,747	Sept. 3	539	130	72	1453
Sunderland, Lucius A., Madison, Ohio. Dish-cleaner	542,430	July 9	1065	261	72	219
Sunderland, William, Lehi City, Utah Ter. Manufacturing alloy	544,753	Aug. 20	1701	.....	72	1088
Superior Drill Company. (See Patric, Charles E., assignor.)						
Suren, Nathan H., assignor to Gamewell Fire-Alarm Telegraph Company, New York, N. Y. Signal-box	545,639	Sept. 3	356	88	72	1420
Suren, Nathan H., assignor to Gamewell Fire-Alarm Telegraph Company, New York, N. Y. Signal-box	546,036	Sept. 10	1037	249	72	1558
Suren, Nathan H., assignor to Gamewell Fire-Alarm Telegraph Company, New York, N. Y. Signal-box	546,037	Sept. 10	1040	250	72	1558
Susemihl, Francis G., and A. Torrey, Detroit, Mich. Car side bearing	545,256	Aug. 27	2608	632, 633	72	1283
Sutcliffe, Tom, assignor to Ryder & Company, Limited, London, England. Filling and stoppering machine for bottling	543,113	July 23	2229	528	72	465
Sutherland, Charles N., *et al:* (See White, Alfred, assignor.)						
Sutherland, Robert W., *et al.* (See Taylor, Charles H., assignor.)						
Sutton, Harry. (See White, Henry, assignor.)						
Suverkrop, John P., assignor to B. F. and C. G. Smith, Boston, Mass. Tube or pipe stopper for Artesian or driven wells	546,258	Sept. 10	1422	337	72	1631
Swan, Henry C., Oshkosh, Wis. Vehicle-step	544,136	Aug. 6	530	131	72	846
Swartwout, Walter R., Chicago, Ill. Type-writer cleaner	541,892	July 2	119	29	72	26
Swartz, Samuel, Detroit, Mich. Machine for bending wood	544,754	Aug. 20	1702	409	72	1088
Swedlund, Erick J., Atwater, Minn. Sprocket chain and wheel	545,213	Aug. 27	2546	616	72	1271
Swedlund, Erick J., Atwater, Minn. Sprocket-chain	545,214	Aug. 27	2547	617	72	1271
Sweet, William E., Dowagiac, Mich. Lubricator	542,118	July 2	488	117, 118	72	97
Sweeting, Harry W., assignor of one-half to H. A. Kerslake, Auburn, N. Y. Bicycle-umbrella	544,632	Aug. 13	1469	657	72	1027
Swenson, Ole and W., Cresco, Iowa. Hay-loader	546,602	Sept. 17	2036	484	72	1765
Swenson, William. (See Swenson, Ole and W.)						
Swift, Daniel W. (See Swift, Henry D. and D. W.)						
Swift, Henry D. and D. W., assignors to Logan, Swift & Brigham Envelope Company, Worcester, Mass. Envelope-machine	542,353	July 9	916	225, 226, 227	72	189
Swift, Henry D. and D. W., assignors to Logan, Swift & Brigham Envelope Company, Worcester, Mass. Envelope-machine	542,354	July 9	926	227	72	191
Swift, Henry D. and D. W., assignors of Logan, Swift & Brigham Envelope Company, Worcester, Mass. Envelope-machine	542,355	July 9	928	228	72	192
Swift, Henry D. and D. W., assignors to Logan, Swift & Brigham Envelope Company, Worcester, Mass. Envelope-machine	545,317	Aug. 27	2697	655	72	1300
Swift, Horace E., assignor of one-half to A. W. Jones, Boston, Mass. Price-computing scale	542,816	July 16	1738	414	72	355
Swift, Horace E., Boston, Mass., assignor to Jones-Swift Manufacturing Company, Portland, Me. Price-computing scale	542,969	July 16	1973	468, 469	72	401
Swift, Horace E., Boston, Mass., assignor to Jones-Swift Manufacturing Company, Portland, Me. Price-computing scale	542,970	July 16	1977	469	72	402
Swift, Horace E., Boston, Mass., assignor to Jones-Swift Manufacturing Company, Portland, Me. Price-computing apparatus	545,110	Aug. 27	2355	570	72	1234
Swift, Oliver, assignor to himself and M. W. Simmons, Aberdeen, S. D. Wire-fastener	543,758	July 30	3448	804	72	705
Swift, William A., Russellville, assignor to S. R. Cummings and T. P. Cahill, Philadelphia, Pa. Tether	544,447	Aug. 13	1163	281	72	969
Swindell, John C. (See Swindell, William and J. C.)						
Swindell, William, Allegheny, Pa. Valve for furnaces	544,799	Aug. 20	1805	432	72	1109
Swindell, William, Allegheny, Pa. Gas-producer	544,800	Aug. 20	1806	432, 433	72	1110
Swindell, William, Allegheny, Pa. Garbage-furnace	546,438	Sept. 17	1763	418, 419	72	1712
Swindell, William and J. C., Allegheny, Pa. Gas-producer	544,798	Aug. 20	1803	431	72	1109
Sykes, Benjamin J., Troutville, Pa. Neck-yoke attachment	542,119	July 2	490	118	72	97
Symonds, George W., Buffalo, N. Y. Routing-machine	543,110	July 23	2220	526	72	463
Symonds, Thomas, Leominster, Mass. Rock-drill	542,542	July 9	1265	308	72	254
Symons, Frank H., Boston, Mass. Apparatus for reloading coal	546,790	Sept. 24	2352	561, 562	72	1836
Symons, George, Sheridan, Ind. Device for separating liquid from gas	545,550	Sept. 3	207	50	72	1392
Symons, Josiah E., Boise City, Idaho. Water elevator and motor	544,755	Aug. 20	1702	409, 410	72	1088
Symons, Wilson E., Raton, N. Mex. Ter. Variable exhaust-nozzle	541,893	July 2	120	29	72	26
Symons, Wilson E., and T. Smith, Raton, N. Mex. Ter. Metallic packing	541,894	July 2	121	29, 30	72	27
T. & B. Tool Company. (See Johnson, Moses C., assignor.)						
Taafel, William G., Newark, Ohio. Pressure-regulator	544,395	Aug. 13	1055	258	72	948
Tachytype Manufacturing Company. (See Johnson, Frank A., assignor.)						
Tackaberry, John A., New York, N. Y. Door-movement for street-cars	542,069	July 2	420	101	72	83
Tackaberry, Robert D., Lewiston, Me. Pliers for trimming electric-arc lamps	546,361	Sept. 17	1628	388	72	1687
Tafel, Herman C., Louisville, Ky. Locking device for bicycles	542,507	July 9	1205	293	72	243
Taft, Edward L. (See Rich and Taft.)						
Tagliabue, Charles J., Brooklyn, N. Y. Syringe-piston	546,603	Sept. 17	2039	484	72	1765
Tallerman, Lewis A. (See Rees, Sheffield, and Tallerman.)						
Tangyes, Limited. (See Pinkney, Charles W., assignor.)						
Tanquary, Levi J., assignor of one-half to T. F. Jones, Walnut, Kans. Bag-holder	545,551	Sept. 3	208	51	72	1392
Taplin, Alden B. (See Kilborn and Taplin.)						
Tarpley, Thomas D. (See Tillett, Tarpley, and Moore.)						
Tarr, Edward N. (See Sproat and Tarr.)						
Tate, George. (See Gould, Charles E., assignor.)						
Tate, John M., and G. A. Brune, New York, N. Y.; said Brune assignor to said Tate. Combined envelope folding and embossing machine	546,685	Sept. 24	2171	516	72	1802

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Tate, Martin L., assignor to A. Schwerin, executrix of Emanuel Schwerin, deceased, Philadelphia, Pa. Coal-shovel	543,710	July 30	3348	777	72	686
Tatham, James, assignor of one-half to R. H. Engle, Philadelphia, Pa. Medical induction-coil	544,266	Aug. 6	768	196	72	889
Tatum, Charles A., assignor to Whitall, Tatum & Co., New York, N. Y. Tablet-machine	541,895	July 2	123	30	72	27
Taylor, Augustus G., assignor of one-half to S. G. White, Peterborough, N. H. Groove-cutting attachment for sewing-machines	543,431	July 23	2794	656	72	572
Taylor, Benjamin F., Newark, N. J., assignor to Taylor Improved Draught Company, of New Jersey. Method of and apparatus for promoting combustion	546,259	Sept. 10	1424	338	72	1631
Taylor, Charles, *et al.* (See Gilpin, Eli J., assignor.)						
Taylor, Charles E., *et al.* (See McIntyre, John W., assignor.)						
Taylor, Charles H., assignor of one-half to W. T. Ross, R. W. Sutherland, and H. Millen, Montreal, Canada. Hydraulic air-compressing apparatus	543,410	July 23	2741	647	72	561
Taylor, Charles H., assignor to J. R. Fair and H. Millen, trustees, Montreal, Canada. Hydraulic air-compressing apparatus	543,411	July 23	2742	648	72	561
Taylor, Charles H., assignor to J. R. Fair and H. Millen, trustees, Montreal, Canada. Hydraulic air-compressing apparatus	543,412	July 23	2744	648	72	562
Taylor, Enoch L., assignor of one-half to H. Wood, Philadelphia, Pa. Railway-rail guard and support	544,137	Aug. 6	531	131, 132	72	846
Taylor, Eugene H., Lynn, Mass. Paper-box-making machine	541,953	July 2	214	50, 51, 52, 53	72	45
Taylor, Eugene H., Lynn, Mass., assignor to Cushman Paper Box Machine Company, Portland, Me. Machine for manufacture of paper boxes	542,225	July 2	669	163, 164, 165	72	130
Taylor, Francis, assignor of one-half to I. W. Durham, Charlotte, N. C. Electric railway	544,198	Aug. 6	624	156, 157	72	864
Taylor, Franklin A., assignor to Blake & Johnson, Waterbury, Conn. Book-holder	542,293	July 9	813	199	72	169
Taylor, Harrison H., Detroit, Mich. Steam-boiler	541,897	July 2	128	31	72	28
Taylor, Harrison H., assignor to Detroit Screw Works, Detroit, Mich. Steam-boiler	541,896	July 2	124	30, 31	72	27
Taylor, Henry, *et al.* (See Gilpin, Eli J., assignor.)						
Taylor, Henry J. and W. J., Philadelphia, Pa. Plumber's torch	542,451	July 9	1112	272	72	226
Taylor, Herbert, Newark, N. J. Ring for curtains	544,448	Aug. 13	1164	281	72	969
Taylor Improved Draught Company. (See Taylor, Benjamin F., assignor.)						
Taylor, James, Louisville, Ky. Safety-stop for elevators	543,359	July 23	2666	627	72	546
Taylor, John, *et al.* (See Brindle, Joseph, assignor.)						
Taylor, John T., Hudson, assignor to J. R. Farrell, Boston, Mass. Waterproof coat	543,662	July 30	3268	759	72	671
Taylor, M. G., *et al.* (See Taylor, William T., assignor.)						
Taylor, Orin J., Washington, D. C. Syringe	544,549	Aug. 13	1318	320	72	999
Taylor, Robert T., Philadelphia, Pa. Cushioned stop for picker-sticks	546,563	Sept. 17	1977	469	72	1753
Taylor, Thomas S., *et al.* (See Taylor, William, assignor.)						
Taylor, William, assignor of two-thirds to T. S. Taylor and H. W. Hobson, Leicester, England. Engraving-machine	542,902	July 16	1875	444, 445	72	382
Taylor, William J. (See Taylor, Henry J. and W. J.)						
Taylor, William R., Rochester, England. Apparatus for burning cement-making materials and process of obtaining carbon dioxid	545,552	Sept. 3	209	51	72	1392
Taylor, William S., Rensselaer, Ind. Hog-ringer	542,718	July 16	1571	376	72	325
Taylor, William T., assignor to M. G. Taylor, J. W. Overstreet, St. Louis, Mo., and L. Guest, Vandalia, Ill. Self-detaching holdback for vehicles	546,061	Sept. 10	1080	259	72	1567
Tell, Henry, *et al.* (See Hopfgartner and Hoehnen, assignors.)						
Templin, Joseph H. (See Allis and Templin.)						
Tenney, William R. M., Boston, Mass. Toy gun	542,212	July 2	650	159	72	126
Teppig, Max. (See Rockstroh, Teppig, and Herzig.)						
Terramorse, Frank, San Francisco, Cal. Continuous-flow syringe	544,014	Aug. 6	323	80	72	808
Terrell, Henry D., Covington, Ga. Heel-sweep for plows	545,041	Aug. 20	2229	540	72	1187
Terrill, Reuben B., Newtown, Conn. Note-book holder	542,784	July 16	1690	402	72	346
Terry, John P., assignor to E. D. Booz, Baltimore, Md. Hose-bridge	544,240	Aug. 6	723	185	72	880
Thacher, John B. (See Bragg, Frederick A., assignor.)						
Thackray, George E., Westmont, Pa. Metal-drawing die	546,202	Sept. 10	1321	314	72	1611
Thatcher, Frederick B., Providence, R. I. Machine for stoppling bottles	541,898	July 2	131	32	72	29
Thatcher, Walter R., Oskaloosa, Iowa. Combined ice-cream freezer and churn	546,945	Sept. 24	2603	624	72	1874
Thau, Henry, assignor to J. W. Irwin, New York, N. Y. Electric igniting apparatus for gas-engines	545,553	Sept. 3	212	52	72	1393
Thayer, Otis A. and W. T., and W. H. McConnell, Charleston, W. Va. Car-loading mechanism	542,381	July 9	976	241, 242	72	201
Thayer, Sanders M., Jamestown, N. Y. Road-scraper	545,748	Sept. 3	543	130	72	1454
Thayer, William H., *et al.* (See Frost, Newland E., assignor.)						
Thayer, William T. (See Thayer and McConnell.)						
Theberath, John H., Newark, N. J. Belt	544,328	Aug. 13	885	222	72	921
Theisen, Eduard, Baden-Baden, Germany. Surface condenser	546,946	Sept. 24	2604	624	72	1884
Theobald, Cornelius, Plainwell, Mich. Water-tank	546,564	Sept. 17	1978	469	72	1753
Thiel, Frederick, and F. Ehrhardt, Chicago, Ill. Attachment for lawn-mowers	542,696	July 16	1540	367	72	320
Thiele, Johannes, Munich, assignor to Badische Anilin und Soda Fabrik, Ludwigshafen, Germany. Amido-tetrazotic acid and making same	546,604	Sept. 17	2039	.....	72	1765
Thielemann, Robert H., Lichtenstein, Germany. Furniture	542,661	July 16	1479	354, 355	72	308
Thieme, Bruno, Siegburg, Germany. Making nitropentaerythrit	541,899	July 2	132	.....	72	29
Thierry, Alphonso de, Washington, D. C. Saddle	544,602	Aug. 13	1418	345	72	1018
Thode, George W. (See Knight and Thode.)						
Thomas, Benjamin A., assignor to Engineering Improvement Company, Chicago, Ill. Smokeless furnace	542,294	July 9	814	200	72	170
Thomas, Charles C., *et al.* (See Stites, George, assignor.)						
Thomas, David R., assignor of one-half to J. F. Heyward, Baltimore, Md. Handsaw	546,686	Sept. 24	2174	517	72	1803
Thomas, Eddy T., assignor of two-thirds to R. J. Campbell, New York, and F. Larkin, Jr., Sing Sing, N. Y. Ship-cleaning apparatus	545,923	Sept. 10	848	205	72	1522
Thomas, Edwin E., assignor to M. Garland, Bay City, Mich. Band-saw mill	544,999	Aug. 20	2157	521	72	1174
Thomas, Edwin E., assignor to M. Garland, Bay City, Mich. Band-saw mill	545,000	Aug. 20	2158	521, 522	72	1174
Thomas Edwin E., assignor to M. Garland Company, Bay City, Mich. Offsetting mechanism for sawmill-carriages	546,124	Sept. 10	1186	283	72	1587
Thomas, Eleazer, Rock, Mass. Fertilizer and seed distributer	544,470	Aug. 13	1199	291	72	976
Thomas, George B., Durango, Colo. Bicycle	543,515	July 30	2965	696	72	619
Thomas, George L., Brooklyn, N. Y. Electrically-controlled motor	542,543	July 9	1266	308	72	257

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Thomas, Henry O., Chicago, Ill. Double-acting pump	546,362	Sept. 17	1629	388	72	1687
Thomas, James and W. R., Catasauqua, Pa. Conduit system for electric railways	544,056	Aug. 6	398	100, 101	72	822
Thomas, James B., *et al.* (See Stites, George, assignor.)						
Thomas, John W., Jr., Nashville, Tenn. Pneumatic apparatus for handling railway-switches	545,750	Sept. 3	549	131, 132	72	1454
Thomas, John W., Jr., Nashville, Tenn. Pneumatic apparatus for handling railway-switches	545,830	Sept. 3	675	165, 166	72	1479
Thomas, Levi H., Chicago, Ill., assignor to Safety Bottle and Ink Company, of New Jersey. Inkstand-stopper	542,399	July 9	1008	248	72	207
Thomas, Maurice W. (See Tower, Hunter, and Eastwood, assignors.)						
Thomas Roberts Stevenson Company. (See Stevenson, Roberts, and McLaughlin, assignors.)						
Thomas, William A. (See Davis and Thomas.)						
Thomas, William J., assignor of one-half to I. Christ, Tamaqua, Pa. Steam and air blower for furnaces	542,864	July 16	1811	429	72	369
Thomas, William R. (See Thomas, James and W. R.)						
Thompson, Courtenay W., London, England. Valve for steam-engines	544,199	Aug. 6	626	157, 158	72	864
Thompson, Edgar, and F. W. Zuver, San Francisco, Cal., assignors to A. Klein, Gloversville, N. Y. Glove-fastening	543,432	July 23	2794	657	72	572
Thompson Fuel Saving and Smoke Consuming Company. (See Chapman, David S., assignor.)						
Thompson Fuel Saving and Smoke Consuming Company. (See Thompson, Samuel R., assignor.)						
Thompson, Samuel M. (See Bair and Thompson.)						
Thompson, Samuel R., Winchester, Mass., assignor to Thompson Fuel Saving and Smoke Consuming Company, Berwick, Me. Combustion device for stoves or other heaters	544,870	Aug. 20	1935	463	72	1133
Thompson, Stephen L., Kingfield, Me. Folding table	544,603	Aug. 13	1419	345	72	1018
Thompson, Sumner C., assignor of one-half to Adriance, Platt & Company, Poughkeepsie, N. Y. Grain-binder	542,742	July 16	1619	386, 387	72	334
Thompson, Tylar B., C. T. Hull, Missoula, Mont., and J. H. Willman, San Francisco, Cal. Tea-chest	542,544	July 9	1268	309	72	255
Thompson, W. E., *et al.* (See Hart, Joseph E., assignor.)						
Thompson, Walter, Chicago, Ill., assignor to H. D. Hurlburt, Paterson, N. J. Screw-propeller	543,909	Aug. 6	139	31	72	773
Thompson, Walter N., St. Louis, Mo. Air-brake-controlling mechanism	545,749	Sept. 3	544	130, 131	72	1454
Thoms, Ernest L., Ashby, Minn. Sleigh	546,363	Sept. 17	1632	388	72	1687
Thomsen, Max, and S. E. Allerton, Chicago, Ill. Music-leaf turner	541,900	July 2	133	32	72	29
Thomson, Elihu, Swampscott, Mass. Alternating-current generator or motor	545,554	Sept. 3	214	52	72	1393
Thomson, Elihu, Swampscott, Mass., assignor to General Electric Company, of New York. Transformer for alternating-current systems	542,295	July 9	815	200	72	170
Thomson, Elihu, Swampscott, Mass., assignor to General Electric Company, of New York. Electric measuring-instrument	542,663	July 16	1484	355, 356	72	309
Thomson, Elihu, Swampscott, Mass., assignor to General Electric Company, of New York. Winding of dynamo-electric machines or motors	544,396	Aug. 13	1058	258	72	918
Thomson, Elihu, Swampscott, assignor to General Electric Company, Boston, Mass. System of electric distribution	543,950	Aug. 6	210	51	72	787
Thomson, Elihu, Swampscott, and C. E. Harthan, Lynn, Mass., assignors to General Electric Company, Schenectady, N. Y. Electric-arc lamp	542,662	July 16	1480	355	72	309
Thomson, Elihu, Swampscott, and E. W. Rice, Jr., Lynn, Mass., assignors to Thomson-Houston Electric Company, of Connecticut. Electric-current distributer	543,198	July 23	2407	566	72	499
Thomson, Elihu, and E. W. Rice, Jr., Swampscott, assignors to General Electric Company, Boston, Mass. Means for synchronizing electric motors	545,111	Aug. 27	2358	570	72	1234
Thomson, Henry C., Boston, Mass., assignor to Electric Gas Lighting Company, Portland, Me. Electric annunciator	542,664	July 16	1485	356	72	310
Thomson-Houston Electric Company. (See Arnold, Bion J., assignor.)						
Thomson-Houston Electric Company. (See Rice, Edwin W., Jr., assignor.)						
Thomson-Houston Electric Company. (See Thomson and Rice, assignors.)						
Thomson, Robert W., Lynn, Mass., assignor to Philadelphia Barring Machine Company, Camden, N. J. Sewing-machine	545,391	Aug. 27	2808	682, 683	72	1321
Thorn, John O. (See Drury, Robert, assignor.)						
Thorne, Leonard C., Granville, N. Y. Detachable horseshoe	546,203	Sept. 10	1323	314	72	1611
Thornhill, Benjamin W. (See Hoagland, Thornhill, and Kinsey.)						
Thornton, Owen V., St. Joseph, Mo. Embalming-instrument	541,901	July 2	136	32	72	30
Thorp, Thomas, Whitefield, T. G. Marsh, Manchester, and J. Haynes, Liverpool, England. Prepayment gas-meter	543,951	Aug. 6	213	51, 52	72	787
Thorpe, William B., *et al.* (See Baker, Andrew J., assignor.)						
Thouar, Emile A. (See Desailly and Fraisse, assignors.)						
Thunderbolt, Edward, Melbourne, Victoria. Automatic adjustable governor	544,397	Aug. 13	1060	259	72	948
Thurber, Charles H., East Orange, and C. W. Schaefer, assignors to Celluloid Company, Newark, N. J. Celluloid article and manufacturing same	542,452	July 9	1113	272	72	226
Thuringer, Franz, assignor to H. Richter, Nuremberg, Germany. Producing colored gelatine pictures	542,785	July 16	1691	.....	72	347
Tibbitts, Henry B., assignor to C. N. Rand, Geneva, and E. G. Wetherbee, Painesville, Ohio. Organ-reed milling-machine	545,831	Sept. 3	681	166	72	1479
Tiden, Charles A. (See Murphy, Engwall, and Tiden.)						
Tieck, Paul, *et al.* (See Kopp, August, assignor.)						
Tiedemann, Adolf C., New York, N. Y. Support for water-closet seats	543,952	Aug. 6	217	52	72	788
Tileston, George. (See Stephens and Parsneau, assignors.)						
Tilford, William H., assignor to himself and E. M. Dance, Wartrace, Tenn. Well-bucket	542,120	July 2	491	118	72	98
Tillberg, Charles, assignor of one-half to A. P. Fenn, Tell City, Ind. Egg-cooker	543,199	July 23	2408	566	72	499
Tillett, Henry A., T. D. Tarpley, and R. J. Moore, Abilene, Tex. Combined hook and hammer	542,178	July 2	581	140	72	114
Tilley, Dillingham B., Petersburg, Ky. Wood-stain	545,182	Aug. 27	2488	.....	72	1259
Timby, Theodore F., Alma, Mich. Lubricator	545,986	Sept. 10	954	229	72	1543
Time Transfer Printer Manufacturing Company. (See Jarboe, Walter S., assignor.)						
Timm, Charles, assignor to Sterling Cycle Works, Chicago, Ill. Bicycle-crank	546,260	Sept. 10	1427	338, 339	72	1631
Timmis, Illins A., London, England. Secondary battery	545,390	Aug. 27	2808	682	72	1320
Tiuer, Blanche J., *et al.* (See Tiner, John F., assignor.)						
Tiner, John F., assignor of three-fourths to B. J. Tiner, Sutherland Springs, and W. McNeill and E. J. Newton, Austin, Tex. Car-coupling	545,751	Sept. 3	554	132	72	1455

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Tinker, Zach W., *et al.* (See Dwelle, Albert, assignor.)						
Tippit, J. I. (See Bibb, Bowdan L., assignor.)						
Tisdale, Charles D., Boston, Mass., assignor of two-thirds to J. D. Gould, Brooklyn, and C. A. Hanson, New York, N. Y. Automatic electric fire-alarm	546,261	Sept. 10	1428	339	72	1631
Tisdale, Charles D., Boston, Mass., assignor of two-thirds to J. D. Gould, Brooklyn, and C. A. Hanson, New York, N. Y. Automatic electric fire-alarm	546,262	Sept. 10	1430	339	72	1632
Titsworth, David E., assignor to Potter Printing Press Company, Plainfield, N. J. Apparatus for severing rolled webs	542,121	July 2	492	118, 119	72	98
Titus, Silas W., Brooklyn, N. Y. Compressed-air water-elevator	546,038	Sept. 10	1043	250	72	1559
Titus, Silas W., Brooklyn, N. Y. Strainer for well-tubes	546,039	Sept. 10	1045	250	72	1560
Titus, Silas W., Brooklyn, N. Y. Elevating water by compressed air	546,125	Sept. 10	1189	283	72	1587
Titus, Silas W., Brooklyn, N. Y. Retarding the flow of subterranean water-courses	546,126	Sept. 10	1192	284	72	1587
Tolles, Charles L., Eau Claire, Wis. Rut-cutter	543,542	July 30	3013	705	72	628
Tomkin, Henry B. (See Evans and Tomkin.)						
Tomlinson, James G., Meridian, Miss. Draft-rigging	545,555	Sept. 3	216	53	72	1393
Tommasi, Donato, Paris, France. Apparatus for extracting, separating, and refining metals by electrolysis	546,364	Sept. 17	1633	389	72	1638
Toobe, Grace M. (See Beal, Edwin T., assignor.)						
Toobe, Heinrich L. B., Brooklyn, N. Y., assignor, by mesne assignments, to P. Peiffer, Newark, N. J. Preparing metal plates for lithographic printing	542,382	July 9	979	.....	72	202
Toquet, Benjamin L., Westport, Conn. Hoisting mechanism	542,545	July 9	1270	309	72	255
Torr, Joseph E., Philadelphia, Pa. Snow-shovel	543,910	Aug. 6	140	31	72	774
Torrey, Augustus. (See Susemihl and Torrey.)						
Torrey, William W., assignor of one half to T. H. Brady, Hartford, Conn. Sash-fastener	545,215	Aug. 27	2548	617	72	1272
Torstrick, William H., Oyster Bay N. Y. Shaft-bearing	541,902	July 2	137	33	72	30
Tourville, Alphonse J. (See Roach and Tourville.)						
Tower, Daniel L., Brooklyn, N. Y. Mechanical movement	542,179	July 2	582	141	72	114
Tower, George A., M. Hunter, and J. P. Eastwood, assignors of one-fourth to M. W. Thomas, Richmond, Va. Telephone	546,965	Sept. 24	2630	631	72	1890
Towle, William, assignor of one-half to H. Held, Brooklyn, N. Y. Vault-light	546,365	Sept. 17	1635	389	72	1688
Towle, William H., assignor of one-fourth to A. Cornell, Minneapolis, Minn. Governor	546,040	Sept. 10	1047	251	72	1560
Towne, William W., Danville, Canada. Heating-stove	543,360	July 23	2667	627, 628	72	546
Townsend, George, assignor of two-thirds to S. Higham and W. A. Trask, Jr., New Bedford, Mass. Stop-motion for cotton-combing machines	541,903	July 2	139	33, 34	72	30
Townsend, George E., Wellington, Ohio. Road-roller	542,949	July 16	1947	462	72	396
Tozier, Lemuel L. (See Broadbooks, Peter, assignor.)						
Tracy, Michael, *et al.* (See Beatty, Raymond M., assignor.)						
Tracy, Milton S. (See Joy, Charles L., assignor.)						
Tracy, William, Leavenworth, Kans. Gas washer and scrubber	545,392	Aug. 27	2811	683	72	1321
Tramblay, Felix, Chicago, Ill. Holding-clip for box-files	545,556	Sept. 3	218	53	72	1394
Trapp, Carlea C., Port Washington, Wis. Revolving chair	543,361	July 23	2668	629	72	546
Trask, William A., Jr., *et al.* (See Townsend, George, assignor.)						
Traut & Hine Manufacturing Company. (See Adams, George E., assignor.)						
Treacy, Frank H. (See Legg and Treacy.)						
Trefethen, Charles G., Taunton, Mass. Carriage-washing device	546,366	Sept. 17	1636	389	72	1688
Treglown, William M. (See Robinson, William H., assignor.)						
Tresidder, Tolmie J., assignor to J. Brown & Co., Limited, Sheffield, England. Apparatus for indicating warping, &c., of armor-plates, &c., during process of chilling	543,362	July 23	2669	629, 630	72	547
Trimby, Thomas W., Rochester, N. Y. Turned shoe	546,629	Sept. 17	2076	402	72	1772
Trisler, John R., Westwood, assignor of one-half to J. H. Moore, Cincinnati, Ohio. Switch-movement	541,054	July 2	229	54	72	47
Trisler, John R., Westwood, assignor of one-half to J. H. Moore, Cincinnati, Ohio. Guard and guide for electric trolleys	545,393	Aug. 27	2812	684	72	1321
Trojan Car Coupler Company. (See Burden, Howard H., assignor.)						
Trombley, Frank. (See Shaw and Trombley.)						
Trott, Joseph S., assignor of two-thirds to W. K. Carlisle and W. J. Strong, Chicago, Ill. Car-brake apparatus	545,663	Sept. 3	388	95	72	1426
Troxler, Gustavus, Jr., assignor to Champion Punching Machine Company, Newark, N. J. Coin-controlled striking and testing machine	546,392	Sept. 17	1679	399	72	1697
Troy Carriage Sun Shade Co. (See Douglass and Slyder, assignors.)						
Troy Carriage Sun Shade Co. (See Slyder, William J., assignor.)						
Troy Laundry Machinery Company. (See Buell and Moe, assignors.)						
Truax, Charles H., Chicago, Ill. Box	542,903	July 16	1877	445	72	382
Truax, George E., Denver, Colo. Ore-car	545,433	Aug. 27	2897	704	72	1339
Trudeau, Joseph A. G., Ottawa, Canada. Alternating electric motor	543,223	July 23	2446	574, 575	72	505
Truman, Charles, Toledo, Ohio. Jonrnal for bicycles or other vehicles	546,719	Sept. 24	2226	532	72	1813
Trumbore, Henry, executor. (See Spellier, Louis H.)						
Tucker, Stephen D., *et al.* (See Spalckhaver, William, assignor.)						
Tucker, William W., Hartford, Conn. Chuck	546,439	Sept. 17	1764	419	72	1713
Tuerk, Frederick W., Jr., Fulton, N. Y. Ventilating-fan	546,630	Sept. 17	2077	493	72	1772
Tufts, John M., Wampsville, N. Y. Weeder attachment for horse-rakes	546,440	Sept. 17	1767	419	72	1713
Tulledge, Everett G. (See Craw, David B., assignor.)						
Tunnicliff, John C., Galesburg, assignor to H. H. Perkins Manufacturing Company, Kewanee, Ill. Corn planter check-rower	546,409	Sept. 17	1709	406	72	1702
Tunsted, John, assignor of one-half to J. A. Vincent, Allentown, N. Y. Adjustable auger-handle	543,413	July 23	2745	649	72	562
Turnbull, James A. (See Ganderton, O'Donnell, and Turnbull.)						
Turnbull, Werd W., Bellefontaine, assignor of one-half to C. F. Cost, Springfield, Ohio. Machine for compressing and molding popcorn	545,832	Sept. 3	683	167	72	1480
Turner, Daniel, and C. J. Gardner, Philadelphia, Pa. Automatic sprinkler	542,122	July 2	494	119	72	98
Turner, Edward H., assignor to J. S. Kearney, Minneapolis, Minn. Permanent salvage device for protecting goods on display-counters, &c	544,871	Aug. 20	1936	463, 464	72	1133
Turner, George A., San Francisco, Cal. Curling-iron holder	545,557	Sept. 3	219	53	72	1394
Turner, George A., Roanoke, Va. Tobacco-granulating machine	546,565	Sept. 17	1979	470	72	1754
Turner, Henry H. (See Penny, William H., assignor.)						
Turner, James B., and H. A. Harrington, Condersport, Pa. Bay-window	544,242	Aug. 6	725	186	72	880
Turner, Joseph E., assignor of one-half to G. M. McCabe, Burgin, Ky. Kicking-hopple	544,241	Aug. 6	724	185	72	880
Turner, Moses R., and R. G. Kirby, Adams, Ind. Pump	544,801	Aug. 20	1808	433	72	1110
Turner, William A., assignor to E. Converse, Worcester, Mass. Die-press	543,711	July 30	3349	777	72	686
Turpin, Perry B., administrator. (See Collier, Septimus J.)						
Tuttle, Ira J., assignor to W. H. Kynett, Morrice, Mich. Carpet-loom	545,318	Aug. 27	2700	656	72	1301
Tuttle, Josiah S., Burns, Kans. Horse-power	543,066	July 23	2147	509	72	450

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Tuttle, Washington I., Baltimore, Md. Bag-packing machine	543,114	July 23	2231	528, 529, 530	72	465
Tuxen, Karsten V., *et al.* (See La Cour, Paul, assignor.)						
Twiss, Robert A., Fremont, Nebr. Pressure-regulator	543,911	Aug. 6	141	31	72	774
Twist, Charles, *et al.* (See Johnson, Walter, assignor.)						
Two-Speed Bicycle Company. (See Goodhue, Frank M. and J. E., assignors.)						
Twombly, Willard I., Portland, Me., assignor of one-half to B. S. Lovell, Boston, Mass. Motor for vehicles	542,319	July 9	856	210	72	178
Tyberg, Oluf, Brooklyn, N. Y. Twist-drill	546,041	Sept. 10	1050	251	72	1561
Tyler, Radolphus D. S., Detroit, Mich. Lock	546,286	Sept. 10	1487	351	72	1644
Tyler, Robert W., *et al.* (See Lukis, Ernest D., assignor.)						
Tynes, Jefferson D., Fort Smith, Ark. Nut-lock	545,617	Sept. 3	313	77	72	1411
Uehling, Edward A., Birmingham, Ala. Treating molten metal	543,115	July 23	2234	530	72	466
Uhlich, Otto, assignor to C. Malmendier, Cologne, Germany. Continuous-acting apparatus for production of sparkling drinks, &c	545,394	Aug. 27	2814	684	72	1322
Uhrig, Joseph, *et al.* (See Esmond, William V., assignor.)	542,904	July 16	1878	446	72	382
Ullman, Joseph H., New Haven, Conn. Apparatus for steaming velvets, &c	544,138	Aug. 6	532	132	72	847
Ullrich, Peter, Cedar Rapids, Iowa. Cabinet	544,699	Aug. 20	1619	.....	72	1072
Ulrich, Moritz, and J. Bammann, assignors to Farbenfabriken, vormals Fr. Bayer & Co., Elberfeld, Germany. Blue dye and making same	544,760	Aug. 20	1620	.....	72	1073
Ulrich, Moritz, and J. Bammann, assignors to Farbenfabriken, vormals Fr. Bayer & Co., Elberfeld, Germany. Blue dye and making same	544,015	Aug. 6	324	80, 81	72	809
Underhill, George H., and E. Glantzberg, Boston, Mass.; said Glantzberg assignor to said Underhill. Temperature-regulator	542,743	July 16	1622	387	72	334
Underwood, Frank M., Upper Sandusky, Ohio. Cylinder-head for gas or gasoline engines	545,752	Sept. 3	556	132	72	1455
Underwood, George M., Orange, Mass. Advertising device						
Underwood, Harold G. (See Ransom, George F., assignor.)						
Underwood, John R., Columbus, assignor of one-half to J. G. Zellers, Camp Chase, Ohio. Washing-machine	544,550	Aug. 13	1319	320, 321	72	1000
Underwood, Joseph B., Fayetteville, N. C. Tobacco-stemming machine	543,143	July 23	2281	541, 542	72	475
Union Embossing Machine Company. (See Nesom, Thomas, assignor.)						
Union Paper Bag Machine Company. (See Benner, Lorenzo D., assignor.)						
Union Paper Company. (See Clark, Herbert E., assignor.)						
Union Switch and Signal Company. (See O'Kain, Domenec C., assignor.)						
Union Switch and Signal Company. (See Schreuder, Jens G., assignor.)						
Union Switch and Signal Company. (See Young, John V., assignor.)						
United States Repair and Guaranty Company. (See Perkins, Amos H., assignor.)						
Universal Barrel Tap Company. (See Hallowell, Albert, assignor.)						
Universal Fire Alarm Company. (See Rowand, Lewis G., assignor.)						
Unsinger, Peter, and G. Hannes, Fremont, Ohio. Bulb or tube stretcher or expander	544,268	Aug. 6	772	197	72	889
Upham, Andrew, Sycamore, Ill. Wire-stretcher	542,296	July 9	816	201	72	170
Upton, Colcord, Salem, Mass. Bucket or grip for dredging or other purposes	542,905	July 16	1879	446	72	383
Urban, Joseph S., assignor of two-thirds to A. P. McKee and W. E. Jones, Anderson, Ind. Fan attachment for rocking-chairs	544,421	Aug. 13	1094	267	72	954
Urban, Theodore, and A. Kadlowec, Cleveland, Ohio. Window-cleaner	542,906	July 16	1880	446	72	383
Urbanek, Joseph, Schuyler, Nebr. Corn-planter	544,939	Aug. 20	2058	490, 491	72	1157
Urie, George M., San Francisco, Cal. Amalgamator	546,749	Sept. 24	2294	545	72	1824
Urmston, Leroy, *et al.* (See Dwiggins, John W., assignor.)						
Utility Manufacturing Company. (See Gates, Henry L., assignor.)						
Vacuum Wet Machine Company. (See Fairbanks and Parker, assignors.)						
Valiant, Joseph W., Baltimore, Md. Brake for railway-cars	545,112	Aug. 27	2361	571	72	1234
Valiquet, Louis P., assignor, by mesne assignments, to G. A. R. Atkins, New York, N. Y. Sealing contrivance	545,395	Aug. 27	2815	684	72	1322
Vallat, Justus, Milwaukee, Wis. Gasket	542,431	July 9	1067	261	72	219
Van Brunt & Wilkins Manufacturing Company. (See Van Brunt, Willard A., assignor.)						
Van Brunt, Willard A., assignor to Van Brunt & Wilkins Manufacturing Company, Horicon, Wis. Cultivator or grain-drill tooth	545,987	Sept. 10	956	229, 230	72	1543
Van Buskirk, Charles L. (See Bruce and Van Buskirk.)						
Van Cise, Fred E., assignor of one-half to H. Hagan, Lancaster, N. Y. Machine for dressing car-wheels	543,161	July 23	2322	550, 551	72	483
Van Cleve, Charles M., El Paso, Tex., and R. D. Rhodes, Leadville, Colo. Process of treating slag and furnace therefor	545,001	Aug. 20	2160	522	72	1175
Van Deusen, William A., Sprout Brook, N. Y. Seeder attachment for harrows	541,904	July 2	142	34	72	31
Van Deusen, William A., Sprout Brook, N. Y. Silo	546,204	Sept. 10	1324	314, 315	72	1611
Van Deusen, William A., Brooklyn, N. Y. Filtering pot or urn	544,140	Aug. 6	534	132	72	847
Van Duzer, Albert, and W. Kirry, Scotia, Cal. Log-hauling device	545,319	Aug. 27	2703	657	72	1301
Van Gilder, Lincoln, assignor to himself, J. B. Anderson, Philadelphia, Pa., T. E. and V. Van Gilder, Ocean View, N. J. Can-washing machine	546,205	Sept. 10	1326	315	72	1612
Van Gilder, Thompson E., *et al.* (See Van Gilder, Lincoln, assignor.)						
Van Gilder, Volney, *et al.* (See Van Gilder, Lincoln, assignor.)	546,867	Sept. 24	2467	591	72	1858
Van Gilder, William H., and A. H. Wilson, Perrysville, Ohio. Curtain-shade holder	545,321	Aug. 27	2707	658	72	1302
Van Hoose, George W., Tuscaloosa, Ala. War-ship						
Van Horn, Charles F. (See Van Stavoren, Samuel J., assignor.)						
Van Horn, James M., Cambridge, Mass. Eaves-trough or gutter-shield	546,042	Sept. 10	1050	251	72	1561
Van Houten, Frank H., assignor to Dutchess Tool Company, Fishkill-on-the-Hudson, N. Y. Machine for cutting and tenoning window-blind slats	543,712	July 30	3351	777, 778	72	686
Van-Kleeck, William, Lansingburg, N. Y. Brush	544,141	Aug. 6	536	133	72	848
Van Ruymbeke, Joseph, assignor of one-half to W. F. Jobbins, Chicago, Ill. Evaporator	542,907	July 16	1882	446, 447	72	383
Van Sickle, John P., Pasadena, Cal. Lawn-sprinkler or irrigator	545,320	Aug. 27	2705	657	72	1301
Van Stavoren, Samuel J., deceased, (C. F. Van Horn, executor,) assignor of one-half to C. F. Van Horn, Philadelphia, Pa. Car-axle-box pedestal	544,701	Aug. 20	1622	388, 389	72	1073
Van Stone, Edwin D., Albion, N. Y., assignor to Magee Furnace Company, Boston, Mass. Hot-water heater	544,450	Aug. 13	1166	282	72	970
Van Tuyl, Andrew P., Jr., assignor to himself and E. C. Park, Brooklyn, N. Y. Medical electrode	542,508	July 9	1806	294	72	243
Van Wert, William, Irene, Ill. Brace for fence-posts	542,908	July 16	1885	447	72	384
Vanbriggle, Lewis and P., Groomsville, Ind. Anchor for fence-posts	545,558	Sept. 3	220	54	72	1394
Vanbriggle, Philip. (See Vanbriggle, Lewis and P.)						
Vandegrift, Charles M., Philadelphia, Pa. Car-fender	544,139	Aug. 6	533	132	72	847

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Vanderburg, Robert B., Long Beach, Cal. Saucepan	545,183	Aug. 27	2488	603	72	1259
Vanderhei, Henry, Vesper, Wis. Logging-sled	543,067	July 23	2149	509	72	450
Vanderhoof, Harry. (See Vanderhoof, Richard and H.)						
Vanderhoof, Richard and H., Hamburg, assignors to M. Sayre, South Orange, N. J. Lime-kiln	543,433	July 23	2796	657	72	573
Vanderpool, Albion A., Newark, N. J. Burglar-alarm circuit-closer	542,697	July 16	1541	367	72	320
Vandervort, Arthur L. (See Vandervort, Owen, and Vandervort.)						
Vandervort, John, J. D. Owen, and A. L. Vandervort, Laceyville, Pa. Device for rolling logs	542,817	July 16	1742	414	72	355
Vannette, Jasper, Tiffin, Ohio, assignor to Singer Manufacturing Company, of New Jersey. Feeding mechanism for sewing-machines	543,068	July 23	2150	509, 510	72	450
Vannette, Jasper, Tiffin, Ohio, assignor to Singer Manufacturing Company, of New Jersey. Sewing-machine	545,924	Sept. 10	849	205	72	1523
Vansize, William B., New York, N. Y. Railway-signal	544,802	Aug. 20	1809	434	72	1110
Vanwart, Wesley, *et al.* (See Bustin, Robert, assignor.)						
Varga, Howard A. (See Varga, Lionel J. and H. A.)						
Varga, Lionel J. and H. A., Austin, Tex. Harness-saddle	546,687	Sept. 24	2175	517	72	1803
Vanclain, Samuel M., Philadelphia, Pa. Riveting-machine	543,324	July 23	2613	614	72	536
Vaughan, Edwin W. (See Watson and Vaughan.)						
Vaughan, Edwin W., Worcester, Mass. Machine for swaging wire	542,213	July 2	651	159, 160	72	126
Vaughen, Samuel W., Coopersdale, Pa. Apparatus for stopping tapping-holes of furnaces	544,551	Aug. 13	1320	321	72	1000
Vaughn, Ira, Salem, Mass., assignor to Vaughn Machine Company, Portland, Me. Buffing and whitening machine	546,263	Sept. 10	1432	339, 340	72	1632
Vaughn, Ira, Salem, Mass., assignor to Vaughn Machine Company, Portland, Me. Finishing-roll	546,868	Sept. 24	2468	591	72	1858
Vaughn, John W., Los Angeles, Cal. Obstetric bed-pan	543,516	July 30	2967	696	72	619
Vaughn Machine Company. (See Vaughn, Ira, assignor.)						
Verner, William J., assignor of five-eighths to F. Felton, C. S. Wallace, W. L. and C. H. Johnson, New Castle, Pa. Annealing-furnace	542,698	July 16	1542	367	72	320
Vernet, Joseph A., Dijon, France. Shears	543,275	July 23	2540	596	72	522
Vernon, Alexander A., assignor to himself and A. Green, Owen Sound, Canada. Napkin-holder	546,566	Sept. 17	1983	470	72	1754
Vernon, Archer T., Greensborough, N. C. Water-motor	542,453	July 9	1114	272	72	226
Vernon, William G., *et al.* (See Pyott, Louis T., assignor.)						
Vernon, William L., Danville, Va. Automatic railway-gate	543,414	July 23	2746	649	72	562
Verpillier, Emil, and C. W. Graves, Newark, N. J. Joint for dolls, &c	546,791	Sept. 24	2353	562	72	1836
Verpillier, Henry E., and J. V. Prior, Newark, N. J. Blacking-receptacle for blacking-brushes	543,200	July 23	2409	566	72	499
Verstraete, Edmond, assignor of one-third to E. G. and S. E. Bruckman, St. Louis, Mo. Trolley wheel and bearing	544,471	Aug. 13	1200	291	72	976
Vetorskey, Anthony, Buffalo, N. Y. Dividing-instrument	545,396	Aug. 27	2816	685	72	1322
Vetter, Frederick, Rochester, N. Y. Type-writer cabinet	544,836	Aug. 20	1876	449	72	1122
Vezin, Oscar, New York, N. Y., assignor to Cross Engine Company, of West Virginia. Multiple-cylinder engine	545,988	Sept. 10	958	230	72	1544
Vezin, Oscar, New York, N. Y., assignor to Cross Engine Company, of West Virginia. Multiple-cylinder engine	545,989	Sept. 10	960	230, 231	72	1544
Vezin, Oscar, New York, N. Y., assignor to Cross Engine Company, of West Virginia. Multiple-cylinder engine	545,990	Sept. 10	962	231, 232	72	1544
Vickers, Albert. (See Dibb and Vickers.)						
Victor Rubber Tire Company. (See Blosser, Theodore B., assignor.)						
Vincent, James A. (See Tunsted, John, assignor.)						
Vincent, Joseph A., *et al.* (See Walker and Carter, assignors.)						
Vine, James S., assignor of one-half to Strobridge Lithographing Company, Cincinnati, Ohio. Device for amusement and advertising	546,264	Sept. 10	1437	340	72	1633
Viney, Josephine D., Philadelphia, Pa. Gas-meter bellows	546,947	Sept. 24	2605	624	72	1884
Vizet, Victor, New Rochelle, N. Y. Combined pile-wire holder and cutter for looms	544,142	Aug. 6	537	133	72	848
Voelker, Joseph, Pittsburg, Pa. Game-counter	545,322	Aug. 27	2709	658	72	1302
Voelker, William L., Elko, Va., assignor, by mesne assignments, to Sterling Incandescent Gas Light Company, of West Virginia. Filamentary hood or grating	546,792	Sept. 24	2355	.....	72	1837
Vogel & Bros., William. (See Vogel, Henry J., assignor.)						
Vogel, Henry J., assignor to W. Vogel & Bros., Brooklyn, N. Y. Oil-can	544,756	Aug. 20	1701	410	72	1089
Vogelius, Peter C., Philadelphia, Pa. Drier	543,912	Aug. 6	142	31, 32	72	774
Vogt, Henry, Louisville, Ky., assignor to Sulzer-Vogt Machine Company, of Kentucky. Piston	546,441	Sept. 17	1768	420	72	1713
Vojacek, Ladislav, Prague, Austria-Hungary. Rotary-disk motor	546,688	Sept. 24	2177	517, 518	72	1803
Vollmer, Gustave C., St. Louis, Mo. Bottle-stopper	546,720	Sept. 24	2227	532	72	1813
Vosburgh, William, assignor of one-half to M. M. Ferguson, Des Moines, Iowa. Automatic stock-watering trough	546,793	Sept. 24	2356	562	72	1837
Vose, Abby S., Providence, R. I. Buttonhole-cutter	543,635	July 30	3229	749	72	663
Vose, Ambrose S., Boston, Mass. Rotary cutter	545,618	Sept. 3	314	77	72	1411
Vose, Ambrose S., Boston, Mass. Knife for rotary trimmers	546,750	Sept. 24	2295	545	72	1825
Vose, William E., Chicago, Ill. Devices for stopping runaway horses	546,794	Sept. 24	2357	563	72	1837
Vosmer, Charles W., Oakland, Cal. Bicycle name-plate	544,524	Aug. 13	1279	309	72	991
Votey, Edwin S., assignor to Farrand & Votey Organ Company, Detroit, Mich. Electro-magnet for pipe-organs	546,834	Sept. 24	2423	580	72	1849
W. A. Snow & Company. (See Emery, Charles B., assignor.)						
W. F. & John Barnes Company. (See Barnes, John, assignor.)						
W. W. Kimball Company. (See Rice, Duane L., assignor.)						
Wächter, Henry, Bielefeld, Germany. Bleaching and cleaning composition	546,206	Sept. 10	1328	.....	72	1612
Wacker, Emil M. A. (See Bock and Wacker.)						
Wade, Charles A. (See Davis, Jesse R., assignor.)						
Wadleigh, Le Roi B. (See Harrison and Wadleigh.)						
Wadsworth, Oliver F., Jr., *et al.* (See Klenze, Henry G., assignor.)						
Wadworth, Samuel *et al.* (See Deal, John M., assignor.)						
Wagle, John A., assignor of one-half to A. Clawson, Avonmore, Pa. Water-heating stove	546,367	Sept. 17	1637	390	72	1688
Wagner, Charles, New York, N. Y. Atomizer	544,143	Aug. 6	538	133	72	848
Wagner, Herman, Stuttgart, Germany. Piano-action	541,905	July 2	143	35	72	31
Wagner, Jacob. (See Wagner, Nickolaus and J.)						
Wagner, Julius, Reading, Pa. Vegetable cutter and grater	543,201	July 23	2410	567	72	500
Wagner, Nickolaus and J., Helena, Mont. Power mechanism	544,757	Aug. 20	1705	410	72	1089
Wagner, William F., Massillon, Ohio. Roller-bearing for carriage-spindles	544,451	Aug. 13	1168	283	72	970

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wähner, Emanuel, Vienna, Austria-Hungary. String for musical instruments	542,719	July 16	1572	376	72	326
Waible, Frederik, and W. R. Willetts, assignors to American Pin Company, Waterbury, Conn. Machine for heading rivets of chains	542,451	July 9	1115	273	72	227
Waight, David, Beaver Falls, Pa. Boiler-cleaning device	544,144	Aug. 6	540	134	72	848
Wainwright Manufacturing Company of Massachusetts. (See Hall, Bicknell, assignor.)						
Wait, Henry H., assignor to Western Electric Company, Chicago, Ill. Commutator connection for dynamo-electric machines	544,329	Aug. 13	886	222	72	922
Wait, Henry W., assignor of one-third to E. S. Willett, Iowa, La. Safety express-car	544,702	Aug. 20	1623	389	72	1073
Waitt, George L., Philadelphia, Pa. Combined ruler and blotter	545,027	Aug 20	2203	533	72	1182
Waitzfelder, Albert S., New York, N. Y. Dress-protector	545,257	Aug. 27	2609	633	72	1284
Wakefield, John E., Worcester, Mass. Pipe-wrench	545,323	Aug. 27	2711	659	72	1302
Wakefield, John E., Worcester, Mass. Clamping-jaw for pipe-vises	545,324	Aug. 27	2713	659	72	1303
Wakfer, William H., London, England. Nailless horseshoe	545,559	Sept. 3	221	54	72	1394
Walborn, John F., Winfield, Pa. Draft-equalizer	546,043	Sept. 10	1052	252	72	1561
Walbridge, Henry B., Washington, D. C. Fastening for garments	545,991	Sept. 10	963	232	72	1544
Waldecker, Max, Albany, N. Y. Piano fall-board	545,926	Sept. 10	853	206	72	1523
Waldstein, Martin E., New York, N. Y. Extracting gold or silver from ores	543,543	July 30	3014	.....	72	629
Walicki, Maxymiljan, Koluszki, Russia. Car-coupling	545,925	Sept. 10	851	205, 206	72	1523
Walker, Albert J., Jacksonville, Fla. Spring-horseshoe	542,546	July 9	1271	309	72	256
Walker, Dwight F., Philadelphia, Pa. Attachment for paper-holding stands	544,016	Aug. 6	328	81	72	809
Walker, Edward H., Somerset, Pa. Mail-bag fastener	546,795	Sept. 24	2358	563	72	1837
Walker, Edwin, Erie, Pa. Cork-puller	543,224	July 23	2449	575, 576	72	506
Walker, Elkanah H., Augusta, Me. Coin-delivering apparatus	544,330	Aug. 13	888	223	72	922
Walker, James W. O. (See Stelfox, Walker, Cairney, and Purvis.)						
Walker, John, Chicago, Ill. Crushing-mill	544,872	Aug. 20	1938	464	72	1134
Walker, Oakley S., Worcester, Mass. Counter-shaft	543,913	Aug. 6	144	32	72	774
Walker, Robert H., and D. S. Beatty, Washington, Iowa. Plow	543,276	July 23	2541	596, 597	72	522
Walker, Thomas, and J. F. Carter, assignors to J. A. Barham and J. A. Vincent, Philadelphia, Pa. Separator	545,258	Aug. 27	2610	633	72	1284
Walker, Thomas B., Honolulu, Hawaii. Knee-protector	543,759	July 30	3449	804	72	705
Walker's Engine Speed Indicator and Recorder Company. (See Adelsberg, Johannes K., assignor.)						
Wallace, Charles S., *et al.* (See Verner, William J., assignor.)						
Wallace, Roger W., London, England. Gripping mechanism for cable traction	543,760	July 30	3451	804	72	705
Wallenstein, Jacob. (See Oettinger and Wallenstein.)						
Walls, Washington F., Greencastle, Ind. Harness	546,567	Sept. 17	1984	471	72	1754
Walrath, Alphonso, Fort Plain, N. Y. Machine for separating broom-corn	545,619	Sept. 3	316	78	72	1412
Walsh, Harry C. H. (See Lathrop and Walsh.)						
Walsh, John E., assignor to M. A. Walsh, New York, N. Y. Adjustable portable frame	542,297	July 9	817	201	72	170
Walsh, Mary A. (See Walsh, John E., assignor.)						
Walsh, Thomas, Montreal, Canada. Fire-alarm box	545,141	Aug. 27	2416	585, 586	72	1244
Walsh, William L., Easton, Pa. Barrel-cover	546,207	Sept. 10	1328	315	72	1612
Waltenbaugh, George W., San Francisco, Cal. Gas-engine igniting apparatus	543,116	July 23	2237	530	72	467
Walter, Anton W., assignor of one-half to C. W. Ream, Canton, Ohio. Insertible saw-tooth	542,577	July 9	1325	321	72	265
Walter, Charles, Locust Corner, Ohio. Combined step-ladder and ironing-board	543,565	July 30	3050	713	72	636
Walter, Charles F. (See Walter, Henry G. and C. F.)						
Walter, George C., Hastings, Mich. Depilating hides	545,560	Sept. 3	223	.....	72	1394
Walter, Henry G. and C. F., Scranton, Pa. Cash-indicator	543,162	July 23	2333	551, 552	72	485
Walter, William, Bridgeport, Pa. Conduit for sewers, &c	542,865	July 16	1813	430	72	369
Walters, Eugene A., and F. J. Maxon, Walworth, Wis. Automatic grip-release	545,002	Aug. 20	2163	522	72	1175
Walters, Samuel, Warren, Pa. Car-coupling	544,492	Aug. 13	1230	298	72	982
Walters, William M., and F. R. Stone, Liverpool, England. Manufacture of preservative coatings for iron or steel	543,636	July 30	3232	.....	72	664
Walton, Dayton D., assignor of one-half to J. B. Hall, Grand Rapids, Mich. Elevator-hoist	545,028	Aug. 20	2204	533	72	1183
Walton, Frederick, London, England. Seasoning floor-cloth, &c. (Reissue)	11,505	Aug. 20	2230	.....	72	1188
Walton, John T., Walker, Mo. Corn-planter	544,906	Aug. 20	2006	479	72	1147
Wands, John C., St. Louis, Mo. Car-bolster	542,909	July 16	1886	447	72	384
Wanner, Albert, Jr., Hoboken, N. J. Metal frame and stock therefor	542,547	July 9	1272	309, 310	72	256
Ward, Frank, Rockford, Ill. Tire-upsetter	546,721	Sept. 24	2229	532	72	1814
Ward, George R., Pittsburg, Pa. Wrapping-machine	545,397	Aug. 27	2817	665, 666, 667	72	1323
Ward, Lewis E., *et al.* (See Hoover, Francis M., assignor.)						
Ware, Edwin O., and J. B. Willaman, Salem, Ohio. Truss	545,640	Sept. 3	357	88	72	1420
Warehime, John H. (See Knowlton and Warehime.)						
Waring, John T. (See Segschneider, Gustave, assignor.)						
Warner, A. J. (See Sherman, Asa S., assignor.)						
Warner, De Ver H., Bridgeport, Conn. Dress-stay	543,069	July 23	2151	510	72	454
Warner, De Ver H., Bridgeport, Conn. Garment-supporter	543,277	July 23	2542	597	72	523
Warner, Ernest P., assignor to Western Electric Company, Chicago, Ill. Globe-netting for arc lamps	544,331	Aug. 13	889	223	72	922
Warner, Ernest P., assignor to Western Electric Company, Chicago, Ill. Electromagnetic damper for measuring-instruments	544,332	Aug. 13	890	223	72	922
Warner, Ernest P., assignor to Western Electric Company, Chicago, Ill. Combination-dynamo	544,633	Aug. 13	1470	357	72	1027
Warner, Henry D. (See Hart, William G., assignor.)						
Warner, Jasper P., Decatur, Mich. Nut-lock and rail-joint	546,107	Sept. 10	1159	276	72	1582
Warren, Charles C., assignor of one-half to E. A. Clark, Chicago, Ill. System and apparatus for generating, accumulating, and distributing power and heat	546,796	Sept. 24	2360	563, 564	72	1837
Warren Extension Table Company. (See Gale, Burton L., assignor.)						
Warren, Frank, New York, N. Y. Apparatus for signaling vehicles by numbers	546,499	Sept. 17	1872	443, 444	72	1734
Warren, George E. (See Fowler and Warren.)						
Warriner, Chester G., Arlington, N. J., assignor to Wyckoff, Seamans & Benedict, New York, N. Y. Type-writing machine	543,117	July 23	2238	530, 531	72	467
Warrington, Jesse, assignor of one-half to Nordyke & Marmon Company, Indianapolis, Ind. Hominy-mill	544,145	Aug. 6	541	134	72	848
Wartman, Horace A., Sydenham, Canada. Fence-post	544,146	Aug. 6	543	135	72	819

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Washburn, George W., assignor to National Cotton Seed Oil and Huller Company, Memphis, Tenn. Machine for delinting cotton-seed	543,202	July 23	2412	567	72	500
Washburn, John M., Attica, Ind. Baling-press	543,278	July 23	2544	597	72	523
Washburn & Moen Manufacturing Company. (See Watson and Vaughan, assignors.)						
Washburn, William M. (See Langford and Washburn.)						
Waterbury Button Company. (See Luckenbach, Royer, assignor.)						
Waterbury Clock Company. (See Bannatyne, Archibald, assignor.)						
Waterbury Farrel Foundry and Machine Company. (See Lamb, George B., assignor.)						
Waterbury, Henry L., *et al.* (See Dennis, George W., assignor.)						
Waterman, Lewis E., Moline, assignor to Rock Island Plow Company, Rock Island, Ill. Disk cultivator	541,906	July 2	144	35	72	32
Waters, Daniel A., *et al.* (See Pyott, Louis T., assignor.)						
Watkins, Edward G., assignor to Heywood Bros. & Co., Gardner, Mass. Adjustable chair-support	544,472	Aug. 13	1202	291	72	976
Watkins, James. (See Prust and Watkins.)						
Watrous, Earl G., Hoosick Falls, assignor to Capital Cash Register Company, Troy, N. Y. Cash register and indicator	544,243	Aug. 6	727	186, 187	72	880
	545,142	Aug. 27	2419	586	72	1245
Watson, Alfred B., Paterson, N. J. Car-fender						
Watson, Charles, *et al.* (See Longbridge, Jacob E., assignor.)						
Watson, Edwin J., and E. W. Vaughan, assignors to Washburn & Moen Manufacturing Company, Worcester, Mass. Machine for manufacture of swaged-wire spokes	543,914	Aug. 6	146	32, 33, 34	72	775
Watson, James R. (See Parker, Edgar C., assignor.)						
Watson, Jeremiah M., Boston, Mass. Shank-stiffener	542,070	July 2	421	102	72	83
Watson, Thomas T. (See Hardin and Watson.)						
Watson, William C., Paterson, N. J. Car-coupling	541,907	July 2	148	36	72	32
Watt Mining Car Wheel Company. (See Watt, Stewart, assignor.)						
Watt, Stewart, assignor to Watt Mining Car Wheel Company, Barnesville, Ohio. Core and chill for casting journal-boxes	546,948	Sept. 24	2606	624, 625	72	1884
	544,703	Aug. 20	1625	390	72	1074
Wattie, William, assignor to Knowles Loom Works, Worcester, Mass. Loom						
Waugh, Henry H. (See Pope and Waugh.)						
Way, George W., Portland, Me. Cuff-holder	545,927	Sept. 10	854	206	72	1524
Weaver, George L., Dayton, Ohio, assignor to Ohio Rake Company. Horse hay-rake	546,980	Sept. 24	2656	636	72	1894
Weatherly, Charles S., Grand Rapids, Mich. Bath-water heater	544,704	Aug. 20	1628	390, 391	72	1074
Weaver, Albert S., Hamilton, Canada. Bicycle	543,070	July 23	2152	510, 511	72	451
Weaver, Albert S., assignor of one-half to G. M. Hobart, Providence, R. I. Eyeglasses	543,363	July 23	2672	630	72	547
Weaver, George L. (See Hollar, Weaver, and Kennedy.)						
Weaver, Henry M., and S. W. Barr, Mansfield, Ohio. Cash and package carrier apparatus	542,950	July 16	1948	462, 463	72	396
Weaver, Loren M. Bethel, Mich. Corn-cutter	543,517	July 30	2968	696	72	619
Weaver, William, Philadelphia, Pa. Pea or bean huller	545,003	Aug. 20	2164	523	72	1175
Weaver, William, assignor of four-fifths to W. A. Curtis, D. Hitchcock, A. C. Wheeler, and C. Lapham, Norwalk, Conn. Pipe-coupling	541,908	July 2	149	36	72	32
Webb, Edwin D. Ypsilanti, Mich. Rein-holder	546,084	Sept. 10	1121	267	72	1575
Webb, Frank A., assignor of five-eighths to R. H. Woodbury and J. B. Webb, Beverly, Mass. Electric-lighting attachment for gas-burners	544,634	Aug. 13	1471	357	72	1027
Webb, George H., Pawtucket, R. I. Steam-pipe fitting	544,147	Aug. 6	544	135	72	849
Webb, John B., *et al.* (See Webb, Frank A., assignor.)						
Webber, Edward B. (See Critcher, Webber, and Franklin.)						
Weber, Carl F. (See Heinig, Johann, assignor.)						
Weber, Conrad, F. Goellner, and A. Schweitzer, Allegheny, Pa. Electric-arc lamp	546,689	Sept. 24	2178	518, 519	72	1803
Weber, George A., New York, N. Y., assignor to Weber Railway Joint Manufacturing Company, of West Virginia. Rail-joint	542,866	July 16	1815	430	72	370
Weber, Mary L., Denver, Colo. Ear-compress	543,455	July 23	2840	666	72	580
Weber Railway Joint Manufacturing Company. (See Weber, George A., assignor.)						
Weber, William Philadelphia, Pa. Balancing and leveling device for millstones	546,500	Sept. 17	1874	444	72	1735
Webster, Albert W., New Haven, Conn. Portable baby-carrier	544,074	Aug. 6	424	106	72	827
Webster, Guy. (See Pennock and Webster.)						
Webster, William A., Monmouth, Ill. Rotary engine	546,368	Sept. 17	1638	390	72	1689
Weed, Hiram, Lloyd, N. Y. Basket-cover	543,279	July 23	2545	598	72	523
Weeden, Henry C., Quincy, Mass. Pipe-hanger	545,561	Sept. 3	224	54	72	1395
Weeks, Clinton. (See Elmendorf, Albert, assignor.)						
Weeks, Henry A., Lake Geneva, Wis., assignor to W. J. Perkins, Grand Rapids, Mich. Gas-engine	543,818	July 30	3565	829	72	726
Weeks, John W., assignor to C. A. Peirce, Providence, R. I. Oil-gas-burning apparatus	545,325	Aug. 27	2714	659	72	1303
Wehrt, Edward. (See Pennington, Bagel, and Wehrt.)						
Weida, Peter W., Philadelphia, Pa. Creeper-shoe for horses	543,415	July 23	2748	649	72	562
Weightman, David B., Grand Rapids, Mich. Hot-air furnace	546,732	Sept. 24	2229	532	72	1814
Weil, Adolf, assignor to A. Strauss, Frankfort-on-the-Main, Germany. Truss	546,949	Sept. 24	2607	625	72	1885
Weil, Joseph, New York, N. Y. Fastening-pin for neckwear	545,326	Aug. 27	2716	660	72	1303
Weill, Jules, Chicago, Ill. Automatic railway-gate	542,123	July 2	495	119	72	99
Weinmann, Joseph, and B. F. Sharp, Philadelphia, Pa. Life-saving guard and fender for trolley-cars, &c	545,039	Aug. 20	2225	539	72	1186
Weir, Fred C. (See Goldsmith, Nathaniel O., assignor.)						
Weisbecker, Charles. (See Breakspear, Spannaus, and Weisbecker.)						
Weise, Frank W., *et al.* (See Danforth, Cyrus L., assignor.)						
Weismantel, August, Brooklyn, N. Y. Car-fender	544,873	Aug. 20	1940	464	72	1136
Weiss, Carl W., Brooklyn, assignor to himself, and A. Mietz, New York, N. Y. Explosive engine	543,163	July 23	2340	552	72	486
Weiss, Carl W., Brooklyn, assignor to himself, and A. Mietz, New York, N. Y. Typewriting machine	543,164	July 23	2345	553	72	487
Weiss, Carl W., Brooklyn, assignor to himself, and A. Mietz, New York, N. Y. Explosive engine	543,165	July 23	2347	553	72	488
	545,992	Sept. 10	964	232	72	1545
Weiss, Dawalt F., Bloomsburg, Pa. Tie-hook	542,951	July 16	1951	463	72	397
Weiss, Jean L. R., Suresnes, France. Means for promoting perspiration, &c	542,720	July 16	1573	376	72	326
Weiss, Morris, New York, N. Y. Car-fender	545,562	Sept. 3	225	54	72	1395
Welch, George A., Malden, Mass. Lamp-chimney holder	545,753	Sept. 3	557	132, 133	72	1454
Weldon, Richard W., and S. T. Stites, Rockford, Ill. Starching-machine	545,563	Sept. 3	225	55	72	1395
Wellman, Alexander R., assignor to Porter & Gardiner, Worcester, Mass. Combined last and tree						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wells, Benjamin W. (See Martin, Morris, assignor.)						
Wells, Edward P., Highlands, and E. R. Hubbard, Walden, Colo. Time-recorder for water-gages	542,910	July 16	1888	447	72	384
Wells, John C., assignor to Climax Manufacturing Company, East Hampton, Conn. Saddle.	544,333	Aug. 13	891	223, 224	72	923
Welter, Henry J., and L. E. Sacksteder, Tiffin, Ohio. Device for cleaning out tubed wells.	544,148	Aug. 6	545	135	72	849
Welton, William H., Akron, Ohio. Track-cleaner for street-railways	545,993	Sept. 10	966	232	72	1545
Wennersten John P., Chicago, Ill. Coin-controlled strength-testing machine	543,586	July 30	3082	722, 723	72	642
Wentzell, Claude W., assignor of one-half to W. O. Rau, Harper's Ferry, W. Va. Railway-switch	544,705	Aug. 20	1630	391	72	1074
Wenzelmann, Gustave, Missal, Ill. Cross-sill support and bracket-clamp	543,663	July 30	3269	760	72	671
Wermann, Max. (See Pape and Wermann.)						
Wernicke Co. (See Burr, Melbourne C., assignor.)						
Werthen, Isaak, Charlottenburg, Germany. Pillar photograph-stand	546,751	Sept. 24	2296	546	72	1825
Wesson, Daniel B., Springfield, Mass. Rebound and cocking mechanism for revolvers	542,744	July 16	1623	388	72	334
Wesson, Daniel B., Springfield, Mass. Limiting-stop for revolver-cylinders	542,745	July 16	1625	388	72	335
West, Caldwell & Co. (See West, Charles, assignor.)						
West, Charles, assignor to West, Caldwell & Co., Englewood, N. J. Sash-holder	544,635	Aug. 13	1473	357	72	1028
West, Frank P., Carroll, Mont. Device for carrying dishes, &c	546,208	Sept. 10	1329	316	72	1613
Western Clock Manufacturing Company. (See Blessing, John G., assignor.)						
Western Electric Company. (See Bell, Oro A., assignor.)						
Western Electric Company. (See Briggs, Orlando P., assignor.)						
Western Electric Company. (See Briggs and Patterson, assignors.)						
Western Electric Company. (See Hallanger, Tobias N., assignor.)						
Western Electric Company. (See McBerty, Frank R., assignor.)						
Western Electric Company. (See Patterson, William R., assignor.)						
Western Electric Company. (See Patterson and Rudd, assignors.)						
Western Electric Company. (See Scribner, Charles E., assignor.)						
Western Electric Company. (See Wait, Henry H., assignor.)						
Western Electric Company. (See Warner, Ernest P., assignor.)						
Western Engravers' Supply Company. (See Schranbstadter and Schilling, assignors.)						
Western Iron Works *et al.* (See Clark, Edward W., assignor.)						
Westinghouse Air Brake Company. (See Hogan, Thomas J., assignor.)						
Westinghouse Electric and Manufacturing Company. (See Neher, Jules E., assignor.)						
Westinghouse Electric and Manufacturing Company. (See Potter, Henry N., assignor.)						
Westinghouse Electric and Manufacturing Company. (See Scott, Charles F., assignor.)						
Westinghouse, George, Jr., Pittsburg, Pa. Incandescent electric lamp	543,280	July 23	2516	598	72	523
Westinghouse, George, Jr., Pittsburg, Pa. Draw-gear and buffing apparatus	543,915	Aug. 6	154	34, 35, 36	72	776
Westinghouse, George, Jr., Pittsburg, Pa. Draw-gear and buffing apparatus	545,994	Sept. 10	967	233	72	1545
Westlake, William, Brooklyn, N. Y. Machine for clinching sheet metal of stove-boards	542,071	July 2	422	102	72	83
Westman, Perry, *et al.* (See Brindle, James C., assignor.)						
Weston, Clinton H., and M. J. Sullivan, La Crosse, Wis. Keyhole-guard	544,334	Aug. 13	893	224	72	923
Weston, Milton T., assignor to Halcyon Cycle Company, Kenton, Ohio. Electric target	545,327	Aug. 27	2717	660	72	1303
Weston, Percy B. (See Ballack and Weston.)						
Westphal, Henry, Indianapolis, Ind. Plow	544,017	Aug. 6	329	81	72	809
Westport Manufacturing Company. (See Hedge, George H., assignor.)						
Wetherbee, Emery G., *et al.* (See Tibbitts, Henry B., assignor.)						
Wetherbee, Frederick B., Walpole, Mass. Railway-signal	542,699	July 16	1543	368	72	321
Wetzel, Henry T. (See Burdick and Wetzel.)						
Weyman, James E., A. J. and J. A. Drake, Guildford, England. Gas or other like motor	542,124	July 2	497	120	72	99
Whalen, Richard F., Rochester, N. Y. Dissolver	545,259	Aug. 27	2611	633	72	1284
Whann, Robert J., *et al.* (See Lukis, Ernest D., assignor.)						
Wharfe, Joseph, London, England. Hook for toasting, &c	543,916	Aug. 6	159	36	72	776
Wheat, John B., Hubbard City, Tex. Metallic buttonhole-eyelet	544,149	Aug. 6	546	135	72	849
Wheatley, Thomas, Syracuse, N. Y. Vent-plug	542,298	July 9	818	201	72	171
Wheeler, Albert G. (See Just, Paul C., assignor.)						
Wheeler, Albert G. (See Law, Myron D., assignor.)						
Wheeler, Andrew L., assignor of two-thirds to E. O. Dana, Freeport, and W. F. Renshaw, Chicago, Ill. Air-brake	546,835	Sept. 24	2424	581	72	1849
Wheeler, Arthur C., *et al.* (See Weaver, William, assignor.)						
Wheeler, Clarence L. (See Wheeler, Elonzo S., assignor.)						
Wheeler, Elonzo S., Saugatuck, Conn., assignor of one-half to C. L. Wheeler, Marion, Ind. Bond for electric railways	545,833	Sept. 3	684	167	72	1480
Wheeler, Harris A. (See Gilfillan, Essington N., assignor.)						
Wheeler, Henry F., Peterborough, N. H. Magazine-pistol	546,369	Sept. 17	1639	390, 391	72	1689
Wheeler & Wilson Manufacturing Company. (See Laubscher, Alexander, assignor.)						
Wheelwright, Thomas S., Highland Park, Ill. Car-seal	545,260	Aug. 27	2613	634	72	1284
Wheless, Thomas H. (See Roosevelt, James A., assignor.)						
Whidden, Joseph E., Whitman, Mass. Thill-coupling	543,166	July 23	2349	554	72	488
Whigham, William, Munhall, Pa. Regulating chord of curved plates	543,917	Aug. 6	159	36, 37	72	777
Whigham, William, Munhall, Pa. Hardening apparatus	543,973	Aug. 6	250	61	72	794
Whinery, Samuel, Wyoming, Ohio. Concrete-mixing machine	542,700	July 16	1545	368, 369	72	321
Whipple, Charles L., Los Angeles, Cal. Book-holder and advertising device	546,479	Sept. 17	1840	435	72	1728
Whipple, Henry D., Rochester, assignor to Automatic Machinery Company, Port Byron, N. Y. Feeding attachment for packing and wrapping machines	545,564	Sept. 3	227	55	72	1395
Whisenhunt, John. (See Keahey, William A., assignor.)						
Whistler, Garland N., Fort Wadsworth, and H. C. Aspinwall, West New Brighton, assignors, by mesne assignments, to B. S. Harmon, New York, N. Y. Smokeless powder	541,909	July 2	150	.....	72	33
Whistler, Garland N., Fort Wadsworth, and H. C. Aspinwall, West New Brighton, assignors, by mesne assignments, to B. S. Harmon, New York, N. Y. Smokeless gunpowder	541,910	July 2	150	.....	72	33
Whistler, Garland N., Fort Wadsworth, and H. C. Aspinwall, West New Brighton, assignors, by mesne assignments, to B. S. Harmon, New York, N. Y. Smokeless powder	541,911	July 2	151	.....	72	33
Whitacre Air Brake Company. (See Whitacre, William C., assignor.)						
Whitacre, Harvey H., and A. C. Wolfe, Wellsville, Ohio. Separating metals from foreign substances	542,911	July 16	1889	448	72	385
Whitacre, William C., St. Louis, Mo. Air-pump	544,473	Aug. 13	1203	292	72	977
Whitacre, William C., St. Louis, Mo., assignor to Whitacre Air Brake Company, East St. Louis, Ill. Triple valve	542,509	July 9	1207	294	72	244

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Whitall, Tatum & Co. (See Tatum, Charles A., assignor.)						
Whitcomb, William E., *et al.* (See Moore, Allen D., assignor.)						
White, Alfred, assignor of two-thirds to C. N. Sutherland, Toronto, and A. S. King, Ottawa, Canada. Skeleton lettering	545,143	Aug. 27	2420	587	72	1245
White, Avery C. (See Adams, Alfred N., assignor.)						
White, Charles, and A. R. Middleton, Baltimore, Md. Gas-engine	545,995	Sept. 10	971	233, 234	72	1546
White, Charles E., Kansas City, Mo. Apparatus for producing incandescent light from hydrocarbon oil	545,398	Aug. 27	2821	687	72	1324
White, David S., Northfield, Minn. Combined heating and ventilating apparatus	545,113	Aug. 27	2363	571	72	1235
White, Dennis, *et al.* (See Parker, Robert, assignor.)						
White, Frederick, assignor to E. S. Beach, Boston, and E. W. Law, Cambridge, Mass. Bicycle-tire	545,114	Aug. 27	2365	572	72	1235
White, Henry, North Andover, assignor of one-half to H. Sutton, Salem, Mass. Balling-machine	544,941	Aug. 20	2060	491, 492	72	1157
White Manufacturing Company. (See Lloyd, Marshall B., assignor.)						
White, Otis C., assignor to O. C. White Company, Worcester, Mass. Adjustable joint	546,459	Sept. 17	1809	428	72	1722
White, Otis C., assignor to O. C. White Company, Worcester, Mass. Universal joint	546,631	Sept. 17	2077	493	72	1773
White, Samuel G. (See Taylor, Augustus G., assignor.)						
White, T. Stewart, *et al.* (See Raymond, Silas H., assignor)						
White, William F., assignor to J. E. Forsyth, Chicago, Ill. Car-coupling	543,071	July 23	2154	511	72	451
Whitehead, William M., Philadelphia, Pa. Lamp-support	542,455	July 9	1119	274	72	227
Whiteley, William N., Springfield, Ohio. Drive-chain	542,952	July 16	1952	463	72	397
Whitelow, Edward T. (See Kelly, William J., assignor.)						
Whitely, Alexander A., St. Louis, Mo. Exercising-machine	546,568	Sept. 17	1984	471	72	1755
Whiteside, Sidney B., New York, N. Y., assignor to T. F. McGarry, Pasadena, Cal. Bill and letter file	544,057	Aug. 6	400	101	72	822
Whiteside, Thomas F., Peru, Ind. Cement cistern	541,987	July 2	282	66	72	57
Whiteside, William E., Midway, W. Va. Car-coupling	544,604	Aug. 13	1420	345	72	1018
Whiting, Jasper, Chicago, Ill. Manufacture of cement	544,706	Aug. 20	1632	.....	72	1075
Whiting, Phineas S., Des Moines, Iowa, assignor to Wilson-Whiting-Davis Oiling Company, of New Jersey. Lubricator	543,918	Aug. 6	160	37, 38	72	777
Whitlock Machine Company. (See Whitlock, Sturges, assignor.)						
Whitlock, Sturges, Shelton, assignor to Whitlock Machine Company, Birmingham, Conn. Printing-press	544,075	Aug. 6	425	106, 107	72	827
Whitman & Barnes Manufacturing Company. (See Martin, Henry J., assignor.)						
Whitmore, David, Scotch Ridge, Ohio. Compensator	546,569	Sept. 17	1987	472	72	1755
Whitmore, Erwin W., Lynn, Mass. Lead-pipe coupling	545,928	Sept. 10	856	206, 207	72	1524
Whitmyre, William H., Schenectady, N. Y. Ring, rod, and bar for repairing leaks in water-closet bowls	541,912	July 2	152	36	72	33
Whitney, Artemas W. (See Whitney, Frank A. and A. W.)						
Whitney, Charles A., Waltham, Mass. Pendant for stem-winding watches	543,566	July 30	3052	713	72	637
Whitney, Frank A. and A. W., Sugar Grove, Ill. Pipe wrench and cutter	543,953	Aug. 6	220	53	72	788
Whitney, Frank R., Lewiston, Me. Telephone-switch	544,335	Aug. 13	894	224	72	923
Whitney, Horace E., Cambridge, assignor to Dover Stamping Company, Boston, Mass. Match-safe	544,018	Aug. 6	330	81, 82	72	809
Whitney, Ruel W., Cleveland, Ohio. Fountain-pen	544,707	Aug. 20	1634	391	72	1075
Whittemore, Benjamin B., Boston, Mass. Protective apparatus	542,072	July 2	424	102	72	83
Whittier, Charles R., New York, N. Y. Elevator	542,665	July 16	1486	356	72	310
Whittier Machine Company. (See Clark, John H., assignor.)						
Whittingham, Charles, assignor to Cleveland Foundry Company, Cleveland, Ohio. Gas cooking-stove	544,708	Aug. 20	1635	392	72	1077
Whittingham, David L., assignor to Ideal Manufacturing Company, Detroit, Mich. Sewing-machine treadle	544,940	Aug. 20	2060	491	72	1157
Whittington, Harry M., assignor of two-thirds to T. W. Hogan, New York, and T. Gerehart, Brooklyn, N. Y. Car-coupling	542,299	July 9	819	201, 202	72	171
Whittum, Edward, Fall River, assignor to G. Draper & Sons, Hopedale, Mass. Spinning-frame	546,460	Sept. 17	1810	428, 429	72	1722
Whitwood, William J., Wellsville, N. Y. Bill-holder	542,125	July 2	498	120	72	99
Wickenberg, Alfred M., Minneapolis, Minn. Bellows	546,370	Sept. 17	1644	391	72	1690
Wickham, Orson F., assignor of one-half to W. B. O. Sands, Pentwater, Mich. Rail-joint	542,666	July 16	1490	357	72	310
Widmer, Charles A., New York, N. Y., assignor to Widmer Time Recorder Company, of New Jersey. Workman's time-recorder	542,578	July 9	1326	321	72	266
Widmer Time Recorder Company. (See Widmer, Charles A., assignor.)						
Wiebke, Charles, Jr., Newark, N. J. Wheel-brush	545,029	Aug. 20	2205	534	72	1183
Wieczorek, Joseph N. Boston, Mass. Car-fender	544,779	Aug. 20	1776	424	72	1104
Wiederholdt, Ferdinand. (See Brinckman and Wiederholdt.)						
Wieland, Ludwig. (See Hagen and Wieland.)						
Wiggin, William H., Worcester, Mass. Process of and apparatus for refining metals electrolytically	545,328	Aug. 27	2718	660	72	1304
Wiggins, George B., Saginaw, Mich. Motor	546,723	Sept. 24	2231	533	72	1814
Wightman, Merle J., Johnstown, Pa. Electric system	546,724	Sept. 24	2233	533	72	1815
Wightman, Merle J., Johnstown, Pa. Electrical system of motor regulation	546,966	Sept. 24	2631	631	72	1890
Wightman, Merle J., Scranton Pa., assignor to General Electric Company, of New York. Regulation of continuous-current motors	542,667	July 16	1491	357	72	311
Wigle, Jeduthun N., Ruthven, Canada. Magazine-camera	544,493	Aug. 13	1231	298	72	982
Wilcox, Darius, Mechanicsburg, Pa. Wrench	544,709	Aug. 20	1636	392	72	1075
Wilcox, Darius, Mechanicsburg, Pa. Clip king-bolt for vehicles	544,710	Aug. 20	1638	393	72	1076
Wilcox, Ernest C., Meriden, Conn. Telephone switch and system	544,711	Aug. 20	1639	393	72	1076
Wilcox, William O. (See Gordon, Thomas H., assignor.)						
Wilde, Charles, Philadelphia, Pa. Fastener for shoe-laces	542,432	July 9	1068	262	72	219
Wilde, Daniel, Washington, Iowa. Grain-meter	544,803	Aug. 20	1811	434	72	1111
Wilder, Harlan P., Gardner, Mass. Wick-raiser	542,579	July 9	1328	322	72	266
Wilder, William H., Northampton, Mass. Oil-stove	543,790	July 30	3503	815	72	714
Wilder, William H., Northampton, Mass. Oil-stove	545,004	Aug. 20	2165	523	72	1176
Wildermuth, La Fayette, Columbus, Ohio. Wire-coiling machine	545,144	Aug. 27	2431	587	72	1246
Wildman, Andrew, H., and W., Chicago, Ill. Water-tube boiler	544,474	Aug. 13	1205	292	72	977
Wildman, Henry. (See Wildman, Andrew, H., and W.)						
Wildman, James W., North Andover, Wis. Automatic brake for wagons	545,565	Sept. 3	228	55	72	1395
Wildman, William. (See Wildman, Andrew, H., and W.)						
Wildrick, David L. (See Broberg, Frans G. A., assignor.)						
Wiles, John E., Milwaukee, Wis. Electrotherapeutic appliance	544,552	Aug. 13	1323	322	72	1000
Wiles, Robert H., Freeport, and H. Bitner, Chicago, Ill. Kettle	545,434	Aug. 27	2898	705	72	1339

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Wiley, William J. (See Smith, Frank L., assignor.)						
Wilken, Alfred, Bremen, Germany. Scarf-pin guard	546,210	Sept. 10	1331	316	72	1613
Wilkie, James H. (See Nolan and Wilkie.)						
Wilkinson & Co., William H. (See James, Theodore, assignor.)						
Wilkinson, Thomas. (See Smith, Albert C., assignor.)						
Wilkson, William. (See McKittrick and Wilkson.)						
Willaman, Joseph B. (See Ware and Willaman.)						
Willard, Harry A., Oswego, N. Y., assignor to Diamond Match Company, Chicago, Ill. Mechanism for constructing paper boxes	543,819	July 30	3368	830	72	726
Willett, Euello S. (See Wait, Henry W., assignor.)						
Willetts, William R. (See Waible and Willetts.)						
Willever, George O. (See Willever, Thomas D., assignor.)						
Willever, Thomas D., Irvington, assignor of one-half to G. O. Willever, Phillipsburg, N. J. Seal-press	542,035	July 2	360	87	72	72
Willey, Leonard E., Barre, Vt. Bake-pan	545,216	Aug. 27	2550	617	72	1272
William Cramp & Sons Ship and Engine Building Company. (See Smith, Morris F., assignor.)						
William Sellers & Company. (See Sellers and Lewis, assignors.)						
William Wharton, Jr., & Company, Incorporated. (See Howe, Frank P., assignor.)						
William Wharton, Jr., & Company, Incorporated. (See Samuel, Edward, assignor.)						
William Wharton, Jr., & Company, Incorporated. (See Samuel and Angerer, assignors.)						
Williams, Alexander S. (See Gillette, Webster, assignor.)						
Williams, Anson H. (See Fixler and Williams.)						
Williams, Bernard T., Glastonbury, Conn. Display-box	542,786	July 16	1691	402	72	347
Williams, Charles A., Van Buren, Ind. Combined window-shade and curtain-pole hanger	542,510	July 9	1209	294	72	244
Williams, Charles W., U. S. Army. Tent-support	546,978	Sept. 24	2652	635	72	1893
Williams & Co., J. H. (See Booth, John C., assignor.)						
Williams, Edwin F., New York, N. Y. Fluid-pressure motor	544,804	Aug. 20	1813	434, 435	72	1111
Williams, Eugene L. and J. S., Jerseyville, Ill. Wire-tightener	542,668	July 16	1493	357	72	311
Williams, Frank H., Greene, N. Y. Electric motor	546,442	Sept. 17	1769	420	72	1714
Williams, Hugh W., assignor to Seattle Meter Co., Seattle, Wash. Prepayment attachment for meters	546,265	Sept. 10	1438	341	72	1633
Williams, Ina F., *et al.* (See Ogden, Albert B., assignor.)						
Williams, Jane P. (See Wright, Arthur W., assignor.)						
Williams, John F., Wassaic, N. Y. Fence-post and socket	544,942	Aug. 20	2063	492	72	1158
Williams, John F., Harrisburg, Pa. Car	545,929	Sept. 10	857	207	72	1524
Williams, John M. (See James, John E., assignor.)						
Williams, John S. (See Bell and Williams.)						
Williams, John S. (See Williams, Eugene L. and J. S.)						
Williams, Milton F., St. Louis, Mo. Disintegrator or crusher	544,336	Aug. 13	895	224	72	923
Williams, Ralph D., *et al.* (See Andrew, Oren, assignor.)						
Williams, Thomas P., assignor of one-half to S. A. Norman, Troup, Tex. Fruit-picker	546,950	Sept. 24	2608	625	72	1885
Williams, William F., London, England. Traveling-bag	544,150	Aug. 6	547	136	72	849
Williamson, David C., New York, N. Y. Type-writing machine	544,337	Aug. 13	896	225	72	923
Williamson, Leroy A., Hartford, Conn. Ball-bearing shears	545,834	Sept. 3	686	167	72	1480
Williamson, Richard H. (See Dyson and Williamson.)						
Williamson, Richard H., Ashton-under-Lynn, assignor to Direct Automatic Stoker Syndicate, Limited, Manchester, England. Automatic stoking apparatus	546,371	Sept. 17	1645	391, 392	72	1690
Willis, Edward J., Richmond, Va. Planimeter	542,511	July 9	1210	295	72	244
Willman, John H. (See Thompson, Hull, and Willman.)						
Wilson, Thomas L., New York, N. Y., Process of and apparatus for making gas	542,320	July 9	858	210	72	179
Wilson, Walter V. H., assignor of one-half to J. Irving, Brunswick, N. Y. Curtain-stop	543,664	July 30	3270	760	72	672
Wilson, Amos R. (See McKim and Wilson.)						
Wilson, Andrew H. (See Van Gilder and Wilson.)						
Wilson, Arthur N. (See Carfield, John R., assignor.)						
Wilson, Charles, assignor of one-half to L. Christensen, Chicago, Ill. Mop-wringer	546,209	Sept. 10	1330	316	72	1613
Wilson, Charles F., Brooklyn, N. Y. Railway-switch	544,874	Aug. 20	1941	465	72	1134
Wilson, George, and S. Bernstein, Chicago, Ill. Water-heater	544,019	Aug. 6	331	82	72	810
Wilson, George E., Stillwater, Minn. Thrashing-machine	546,372	Sept. 17	1648	392	72	1691
Wilson, James S., Chelsea, Mass. Machine for making tubing	543,587	July 30	3084	723	72	643
Wilson, Jeremiah M. (See Wilson, Robert B., assignor.)						
Wilson, John B. (See Spicer and Wilson.)						
Wilson, John C., Boston, Mass. Time-recording apparatus	543,416	July 23	2749	650	72	562
Wilson, Luther, Jr., assignor of two-thirds to J. E. Gould and G. Edgar, Jr., Louisville, Ky. Pump	545,399	Aug. 27	2822	688	72	1324
Wilson, Maggie, *et al.* (See Wilson, Robert L., assignor.)						
Wilson, Merrick F., Chicago, Ill., assignor to E. H. Johnson, Marion, Ind. Machine for applying staying-strips to box-corners	545,996	Sept. 10	972	234, 235	72	1516
Wilson, Mima A., Kansas City, Kans. Blinder for bridles	546,690	Sept. 24	2180	519	72	1804
Wilson, Robert B., Cincinnati, Ohio, assignor of one-half to J. M. Wilson, Washington, D. C. Electric-railway system	542,512	July 9	1214	295, 296	72	245
Wilson, Robert L., assignor of two-thirds to H. F. Schwenker and M. Wilson, St. Louis, Mo. Revolving steel-dome attachment for mail or express cars	544,338	Aug. 13	899	225	72	924
Wilson-Whiting-Davis Oiling Company. (See Whiting, Phineas S., assignor.)						
Wilson, William, Greenville, N. J. Gage-cock	545,115	Aug. 27	2366	572	72	1235
Wilson, William, Gloversville, N. Y. Pencil-holder	545,641	Sept. 3	358	88	72	1420
Wilson, William P., Boston, Mass. Coffee or tea pot	546,967	Sept. 24	2633	631	72	1890
Winchester Repeating Arms Company. (See Bennett, Thomas G., assignor.)						
Winchester Repeating Arms Company. (See Browning, John M., assignor.)						
Winchester Repeating Arms Company. (See Mason, William, assignor.)						
Wing, Frank M., *et al.* (See Lord, George W., assignor.)						
Wingate, Frank E. (See Buckner, James, assignor.)						
Winkelmann, Herman R. (See Sattelkau and Winkelmann.)						
Winkley, Erastus E. (See Forster and Winkley.)						
Winkley, Erastus E., Lynn, Mass. Sole-leveling machine	541,988	July 2	283	66	72	57
Winkley, Erastus E., and B. Phillips, Lynn, assignors to E. P. Howe, Boston, Mass. Sole-leveling machine	546,211	Sept. 10	1332	317	72	1613
Winslow, Orlando R., Marshfield, Mo. Latch	546,373	Sept. 17	1652	393	72	1692
Winter, George J. (See Reed, Adam, assignor.)						
Winterbotham, Joseph, Joliet, Ill. Barrel-washer	542,669	July 16	1494	357	72	311
Winters, Jacob R., Clinton, Mo. Recoil-pad for guns	544,269	Aug. 6	772	197	72	889
Winters, John C., Mount Morris, N. Y. Electric elevator	544,780	Aug. 20	1777	424, 425	72	1104

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Winther, Charles A. G., Somerville, Mass. Gage-cock	542,126	July 2	499	120	72	100
Wirt, Herbert C., Schenectady, N. Y., assignor to General Electric Company, of New York. Testing-circuit for alternating-current systems of distribution	543,364	July 23	2673	630	72	547
Wirt, Paul E., Bloomsburg, Pa. Pencil	544,712	Aug. 20	1641	393	72	1076
Wirt, Reuben D., Independence, Mo. Gas-manufacturing apparatus	544,151	Aug. 6	548	136	72	850
Wirtz, William, Newark, N. J. Apparatus for pasteurization of beer	546,393	Sept. 17	1683	399	72	1698
Wiseheart, Jacob H., Sacramento, assignor to J. Mason, Petaluma, Cal. Trace connection for vehicle-shafts	543,225	July 23	2451	576	72	506
Wiselogel, Frederick G., Indianapolis, Ind. Sewage-filtering apparatus	545,030	Aug. 20	2207	534	72	1183
Wishart, Edward, assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Teeth-separator	545,754	Sept. 3	558	133	72	1455
Wistrand, Peter E., Kewanee, Ill. Pump	543,954	Aug. 6	221	53	72	789
Witherell, George E., assignor to Hartford Machine Screw Company, Hartford, Conn. Screw-machine	545,400	Aug. 27	2825	688, 689	72	1324
Witt, Julius F., Chicago, Ill. Detachable umbrella-cover	543,365	July 23	2674	630	72	548
Witte, Frank, Cheviot, Ohio. Mechanical toy	545,031	Aug. 20	2208	535	72	1184
Witzenmann, Heinrich, Pforzheim, Germany. Flexible tube of metal	542,300	July 9	823	202	72	171
Wm. J. Matheson & Company. (See Austen, Peter T., assignor.)						
Wohlfarth, Charles F., Bloomfield, N. J., assignor to Lappin Brake Shoe Company. Brake-shoe	543,072	July 23	2155	511	72	451
Wohlgemuth, Joseph S. (See Sickles, Bert, assignor.)						
Wojidkow, Louis, Brooklyn, N. Y. Lid for alcohol-lamps	546,108	Sept. 10	1161	277	72	1582
Wojidkow, Louis, Brooklyn, N. Y. Alcohol-lamp	546,632	Sept. 17	2079	493	72	1773
Wolf, Clarence. (See Nicholson, Francis T., assignor.)						
Wolf, Jonathan E., Welda, Kans. Draft attachment	545,997	Sept. 10	975	235, 236	72	1546
Wolfe, Andrew C. (See Whitacre and Wolfe.)						
Wolfe, George W., and J. A. Gibson, North Baltimore, Ohio. Gate	542,180	July 2	583	141	72	114
Wolff, Julius, New York, N. Y. Folding crate	545,930	Sept. 10	858	207	72	1524
Wolhaupter, Benjamin, Morgan Park, Ill. Tie-plate	542,787	July 16	1692	403	72	347
Wolpert, Henry R. (See Shank, John A., assignor.)						
Wood, Charles D. (See Blundell, John C., assignor.)						
Wood, Charles F., Richmond, Va. Automatic electric weighing-scale. (Reissue)	11,503	July 9	1395	337	72	280
Wood, Ephraim B. (See Batchelder, William W., assignor.)						
Wood, Henry. (See Taylor, Enoch L., assignor.)						
Wood, Horatio G., Newport, R. I. Panoramic camera	543,281	July 23	2547	598, 599	72	523
Wood, James F., and H. A. Dixon, Woodyard, Ohio. Washing-machine	542,181	July 2	585	142	72	115
Wood, John B., Danville, Va. Freezing-plate for ice-machines	546,085	Sept. 10	1122	268	72	1575
Wood, Joseph W., Baraboo, Wis. Binder for newspapers or the like	546,910	Sept. 24	2543	608	72	1872
Wood, Montraville M., Chicago, Ill. Cleat for electric wires	545,620	Sept. 3	318	79	72	1412
Wood, Norman B., assignor to Lamson & Sessions Company, Cleveland, Ohio. Nut-tapping machine	544,494	Aug. 13	1233	299	72	982
Wood, Robina, Glasgow, Scotland. Dish-drainer	542,912	July 16	1890	448	72	385
Wood, Stephen W., New York, N. Y. Condensing-pump	545,032	Aug. 20	2210	535	72	1184
Wood, Sylvester A., Manitowoc, Wis. Chimney-cleaner	543,791	July 30	3505	816	72	715
Wood, Walter A., *et al.* (See Sherwood and Lake, assignors.)						
Wood, William H., Media, Pa. Circular-flanging machine	542,127	July 2	501	120	72	100
Wood, William M., and J. C. Miller, Elmira, N. Y., assignors of one-third to C. F. Wright, Susquehanna, Pa. Cable railway	542,670	July 16	1495	358	72	312
Woodard, Charles H. Kaneville, Ill. Milk-heater	542,400	July 9	1010	248	72	208
Woodard, Theodore, Garland, Kans. Subsoil attachment for plows	544,553	Aug. 13	1326	322	72	1001
Woodbridge, Jonathan E., Duluth, Minn., assignor to Electrical Advertising and Sign Company, of Maine. Electric-light display system	546,799	Sept. 24	2369	565, 566	72	1839
Woodbridge, William E., Washington, D. C. Car-fender	546,797	Sept. 24	2363	565	72	1838
Woodbridge, William E., Washington, D. C. Car-fender	546,798	Sept. 24	2366	565	72	1838
Woodbury, Orson E., assignor to E. A. Hardy, Madison, W. H., Jr., and C. F. Hardy, Waukesha, Wis. Spring-hinge	544,339	Aug. 13	901	226	72	924
Woodbury, Rufus H., *et al.* (See Webb, Frank A., assignor.)						
Woodcock, John C., Upper Sandusky, Ohio. Grinding-mill	546,869	Sept. 24	2469	591	72	1859
Woodley, Thomas E. (See Blodgett, William A., assignor.)						
Woods, Clinton E., assignor to C. E. Woods Company, Chicago, Ill. Continuous-current rectilinear motor	546,691	Sept. 24	2182	519	72	1804
Woods, John W., Merriam, Kans. Potato-digger	545,145	Aug. 27	2422	587, 588	72	1246
Woodside, James L., Hawarden, Iowa. Pipe-joint cover	544,943	Aug. 20	2061	492	72	1158
Woodward, Alonzo S., assignor of one-half to G. Jenks and F. W. Lovejoy, Pepperell, Mass. Pressure-controlled apparatus for calendering rolls	546,480	Sept. 17	1841	435, 436	72	1728
Woodward, Lyman E. (See Riebekam, Charles A., assignor.)						
Woodward, Robert C. (See Hasey, George H., assignor.)						
Woodyard, Jacob F., Parkersburg, W. Va. Device for heating, aerating, and cooling milk	543,713	July 30	3355	778	72	687
Woolcock, William, Shamokin, Pa. Nut-lock	544,605	Aug. 13	1422	345	72	1018
Woolley, Charles, London, England. Pneumatic tire	546,968	Sept. 24	2634	631, 632	72	1890
Woolworth, Herbert G., Troy, N. Y. Check-pad	542,128	July 2	502	121	72	100
Worcester Envelope Company. (See Low, Everett M., assignor.)						
Worcester Envelope Company. (See Low and Emerson, assignors.)						
Work, Joseph A., Springfield, Ohio. Apparatus for manipulating grave-vaults	543,073	July 23	2156	511	72	452
Wörner, Jacob, assignor to C. Haggenmacher, Buda-Pesth, Austria-Hungary. Ball-and-socket hanger for sieves, &c.	545,931	Sept. 10	860	208	72	1524
Worrest, Alfred H., Lancaster, Pa. Thill-coupling	542,671	July 16	1497	358	72	312
Worsham, William B. (See Hill and Easley, assignors.)						
Worsley, Samuel L., Taunton, Mass., assignor to Brown & Sharpe Manufacturing Company, Providence, R. I. Metal-screw machine	543,606	July 30	3182	738	72	655
Worster, Lyndon, Hannibal, N. Y. Fire-kindler	545,621	Sept. 3	319	79	72	1412
Worthington, George C. (See Zweigbergk, Thorsten von, assignor.)						
Wright, Alfred C., Birmingham, England. Lamp for advertising purposes	546,836	Sept. 24	2426	581	72	1850
Wright, Arthur W., assignor of one-thirtieth to J. P. Williams, Detroit, Mich. Car-axle lubricator	542,214	July 2	654	160	72	127
Wright, Charles F. (See Wood and Miller, assignors.)						
Wright, Edward, Worcester, Mass. Pipe-wrench	543,665	July 30	3272	760	72	672
Wright, Edward, Worcester, Mass. Pipe-wrench	546,443	Sept. 17	1771	421	72	1714
Wright, Flint W., assignor of one-third to H. A. Fowler, Worcester, Mass. Mailing-wrapper	544,270	Aug. 6	773	197	72	889

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wright, Frank. (See Wright, James, assignor.)						
Wright, Frank P., Chicago, Ill. Inhaler	544,340	Aug. 13	902	226	72	924
Wright, Granville W., assignor to Sargent & Company, New Haven, Conn. Door-check	542,129	July 2	503	121	72	100
Wright, Jacob P. (See Beecher and Wright.)						
Wright, Jacob P., New Haven, Conn., assignor to Diamond Match Company, Chicago, Ill. Mechanism for making match-boxes	543,714	July 30	3357	778, 779, 780	72	688
Wright, Jacob R., Wilkes-Barré, Pa. Railway-fusee placer	546,605	Sept. 17	2041	485	72	1765
Wright, James, assignor of one-half to F. Wright, Montreal, Canada. Steam-engine-indicator reducing-gear	545,184	Aug. 27	2489	603	72	1259
Wright, John A., Indianapolis, Ind. Tack-catcher for bicycles	542,672	July 16	1498	359	72	312
Wright, Nightingale K. (See Davis and Wright.)						
Wright, Rufus, *et al.* (See Holmes, William, assignor.)						
Wright, Rufus, and J. E. Parker, assignors to Morgan & Wright, Chicago, Ill. Machine for perforating hollow or pneumatic tires	543,792	July 30	3507	816, 817	72	715
Wrigley, John, assignor of one-half to M. M. Elmendorf, Elmira, N. Y. Water-closet-flushing apparatus	545,566	Sept. 3	229	56	72	1396
Wuillenmier, Olivier. (See Claret and Wuillenmier.)						
Wyand, William, assignor, by mesne assignments, to W. B. Rich, Atlantic City, N. J. Coin-controlled vending-machine	546,410	Sept. 17	1712	406	72	1702
Wyckoff, Seamans & Benedict. (See Warriner, Chester G., assignor.)						
Wyeth, Frank L., Manchester, N. H. Shirt	545,261	Aug. 27	2614	634	72	1284
Wyman, Frank, St. Louis, Mo. Evaporator for hot-air pipes	546,212	Sept. 10	1334	317	72	1614
Wyman, Horace, Worcester, Mass. Loom for weaving tufted fabrics	543,820	July 30	3569	830, 831	72	727
Wyman, Horace, and J. A. Clark, assignors to Crompton Loom Works, Worcester, Mass. Needle-loom	543,821	July 30	3572	831	72	727
Wyman, Theodore H., Sebec, Me. Sectional boiler	544,554	Aug. 13	1327	322	72	1001
Wyman, William H., Washington, D. C. Street-scraper	542,867	July 16	1816	430	72	370
Wynkoop, Jehiel F., Muscatine, Iowa. Display-rack	544,713	Aug. 20	1642	393	72	1076
Yagn, Nicholas, St. Petersburg, Russia. Apparatus for sterilization of water	545,116	Aug. 27	2367	572	72	1235
Yeaw, Curtis S. (See Reynolds, Andrew J., assignor.)						
Yerby, Ross B., assignor of nine-twentieths to J. Cottier, Brooklyn, N. Y. Bottle	543,518	July 30	2969	697	72	619
Yopp, William I. (See Dabney and Yopp.)						
York, Richard A., Auburn, Ind. Washing-machine	545,269	Aug. 27	2615	634	72	1285
Yorke, Eugene H., Boston, Mass. Gas-burner	544,422	Aug. 13	1095	267	72	955
Yorke, Harry W., Gros Puits, Isle of Jersey, England. Educational appliance	544,714	Aug. 20	1643	394	72	1077
Yost, Beynard W., Lancaster, assignor of one-half to J. P. Schelly, Philadelphia, Pa. Coffee-cleaner	545,185	Aug. 27	2493	604	72	1260
Yost, Casper S., G. W. Baumhoff, A. H. Hagemeier, F. Fitzler, and O. Schmid, assignors of one-sixth to J. Adkins, St. Louis, Mo. Street-car fender or guard	544,244	Aug. 6	732	187, 188	72	881
Young, Adam, assignor of one-half to N. James, Berkley, Md. Paper-machine wire-cloth protector	542,581	July 9	1330	322	72	266
Young, Charles A., and S. H. Barton, Enon, Ohio. Ejecting and cocking mechanism for breakdown guns	543,366	July 23	2675	631	72	548
Young, Ernest W., Austin, assignor to Morgan & Wright, Chicago, Ill. Pneumatic tire	543,074	July 23	2158	512	72	452
Young, Ernest W., assignor to Morgan & Wright, Chicago, Ill. Process of and apparatus for vulcanizing air-tubes for pneumatic tires	545,118	Aug. 27	2372	573, 574	72	1236
Young, Estelle, Brooklyn, N. Y. Hair-pin	546,109	Sept. 10	1162	277	72	1582
Young, Eugene J., Monroe, Ky. Fire-dog	544,715	Aug. 20	1644	394	72	1077
Young, George W., assignor of two-thirds to J. Flanner and H. Loewenbach, Milwaukee, Wis. Cotton-picker	545,117	Aug. 27	2371	573	72	1236
Young, John G., Hyde Park, Mass. Draw-knife	542,721	July 16	1575	377	72	326
Young, John V., Boston, Mass., assignor to Union Switch and Signal Company, Swissvale, Pa. Switch and signal mechanism	543,793	July 30	3510	817	72	716
Young, Jonas F., Niagara Falls, N. Y. Adjustable book-rest	546,570	Sept. 17	1988	472	72	1755
Young, Joseph H. (See Crawford and Young.)						
Young, Lemuel W. (See Slattery, Frank S., assignor.)						
Young, McClintock, Frederick, Md. Adjustable bearing	542,580	July 9	1329	322	72	266
Young, McClintock, Frederick, Md. Brush-machine	544,200	Aug. 6	629	158	72	865
Young, McClintock, Frederick, Md. Brush-machine	544,201	Aug. 6	631	159, 160, 161	72	865
Young, Samuel L., and J. A. Norris, East Liverpool, Ohio. Fountain mucilage-holder	544,452	Aug. 13	1169	283	72	970
Young, Wesley, Dayton, Ohio. Lattice hedge fence and method of plashing	542,600	July 9	1358	329	72	272
Young, Wesley A., Jefferson, Iowa. Kitchen-cabinet	543,519	July 30	2970	697	72	620
Younkin, George B., Williamsport, assignor to E. B. Strait, Jersey Shore, Pa., and N. A. Strait, Washington, D. C. Beater for carpets or like articles	545,870	Sept. 24	2471	591	72	1859
Yount, Albert R., Yountsville, Ind. Axle-nut wrench	546,752	Sept. 24	2297	546	72	1825
Zalikowski, Johan, assignor of one-half to J. Machut, Chicago, Ill. Extension-table	543,794	July 30	3511	817	72	716
Zanger, Theodor, assignor to J. W. Seip, Erie, Pa. Magnetic pendulum-level	546,501	Sept. 17	1875	444	72	1735
Zaretzky, Rudolph L., Chicago, Ill. Fastener for trousers	546,213	Sept. 10	1335	318	72	1614
Zeiss, Firm of Carl. (See Abbe, Ernst, assignor.)						
Zellers, Jacob G. (See Underwood, John R., assignor.)						
Zerbe, James S., Brooklyn, N. Y. Fire-box construction for burning hydrocarbon oils	542,673	July 16	1499	359	72	312
Zielke, Wilhelm, Thorn, Germany. Accordion or similar musical instrument	543,367	July 23	2677	631, 632	72	548
Zimmerman, Casper, Chicago, Ill. Passenger-car	542,746	July 16	1626	388	72	335
Zimmerman, John F., Washington Centre, Mo. Combined match-igniting safe and cigar-cutter	545,932	Sept. 10	862	208	72	1525
Zimmermann, Christian H. (See Naumann, Friedrich W., assignor.)						
Zinzen, Friedrich, Düsseldorf, Germany. Drilling-machine	544,495	Aug. 13	1236	299	72	983
Zucchini, Ferdinand, New York, N. Y. Oyster-opening machine	545,329	Aug. 27	2720	660	72	1304
Zuver, Frank W. (See Thompson and Zuver.)						
Zwack, John, Albany, N. Y. Casket	543,974	Aug. 6	251	62	72	794
Zweigbergk, Thorsten von, Cleveland, assignor of one-half to G. C. Worthington, Elyria, Ohio. Method of and apparatus for controlling currents for electric motors	545,664	Sept. 3	319	96	72	1427

ALPHABETICAL LIST OF PATENTEES OF DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette. Volume	Page.
A. M. Collins Manufacturing Company. (See Hastings, Frederick E., assignor.)				
Abram Cox Stove Company. (See Rankin, Thomas T., assignor.)				
Acme Shear Company. (See Wheeler, David C., assignor.)				
Alland, Samuil Boston, Mass. Toy	24,529	Aug. 6	72	892
American Type Founders Company. (See Beeler, Charles H., Jr., assignor.)				
American Type Founders Company. (See Quentell, William P., assignor.)				
Anderson, William E., Washington, D. C. Cotton-bale	24,686	Sept. 17	72	1779
Armstrong, Thomas. (See Webb, William G., assignor.)				
Art Stove Company. (See Miller, Theodore, assignor.)				
Babcock, Alfred P., Brooklyn, N. Y. Bottle	24,578	Aug. 20	72	1183
Bailey, Charles A., Cromwell, Conn. Toy money-bank	24,501	July 23	72	583
Bailey, Charles A., Cromwell, Conn. Toy stove	24,519	July 30	72	736
Baker Forge Company. (See Baker, James H., assignor.)				
Baker, James H., Allegheny, assignor to Baker Forge Company, Ellwood City, Pa. Box-strap bolt	24,638	Aug. 27	72	1341
Ball, Webster C., Cleveland, Ohio. Hand for timepieces	24,446	July 2	72	132
Barler, Augustus C., Chicago, Ill. Stove	24,602	Aug. 20	72	1192
Barnhart Bros. & Spindler. (See Rosenow and Schmohl, assignors.)				
Barnhart Bros. & Spindler. (See West, John, assignor.)				
Bayer, Adolph, Brooklyn, N. Y. Thermometer	24,538	Aug. 13	72	1033
Beeler, Charles H., Jr., Philadelphia, Pa., assignor to American Type Founders Company, Newark, N. J. Font of printing-type	24,589	Aug. 20	72	1190
Beeler, Charles H., Jr., Philadelphia, Pa., assignor to American Type Founders Company, Newark, N. J. Font of type	24,684	Sept. 17	72	1779
Benze, George and W., New York, N. Y. Receptacle for coins	24,694	Sept. 24	72	1895
Benze, William. (See Benze, George and W.)				
Bergen, James D., Hartford, assignor to J. D. Bergen Company, Meriden, Conn. Glass vessel	24,511	July 30	72	734
Berkey, Julius, Grand Rapids, Mich. Hook	24,539	Aug. 13	72	1033
Bernhard, Morris. (See Cronenberg, Bertha, assignor.)				
Bickel, Christian, Springfield, Ohio. Curtain-hook	24,540	Aug. 13	72	1034
Bigelow Carpet Company. (See Brown, William F., assignor.)				
Bigelow Carpet Company. (See Merry, John, assignor.)				
Blakslee, Ella A., Rock Island, Ill. Stove	24,460	July 2	72	133
Bohner, Joseph E., Ansonia, Conn. Lamp-fonnt holder	24,451	July 2	72	132
Boller, Joseph, Brooklyn, N. Y. Bat	24,641	Aug. 27	72	1341
Bower, William C., Birmingham, Ala. Badge	24,532	Aug. 13	72	1033
Bower, William C., Birmingham, Ala. Badge	24,630	Aug. 27	72	1340
Brabant, Augustus F., New York, N. Y. Needle-book	24,541	Aug. 13	72	1034
Bridgman, William H., Brooklyn, N. Y. Razor-wiper	24,635	Aug. 27	72	1340
Broden, Harry T., Brooklyn, assignor to Standard Cut Glass Company, New York, N. Y. Glass vessel	24,697	Sept. 24	72	1895
Broden, Harry T., Brooklyn, assignor to Standard Cut Glass Company, New York, N. Y. Glass vessel	24,698	Sept. 24	72	1895
Brooks, George, Haverhill, Mass. Tray	24,656	Sept. 3	72	1491
Brown, Edwin L. (See Richardson, George F., assignor.)				
Brown, John W., Jr., Philadelphia, Pa. Casing for fruit-presses	24,592	Aug. 20	72	1190
Brown, John W., Jr., Philadelphia, Pa. Frame for raisin-seeders	24,593	Aug. 20	72	1191
Brown, John W., Jr., assignor to Enterprise Manufacturing Company of Pennsylvania, Philadelphia, Pa. Frame or casing for meat-choppers	24,681	Sept. 17	72	1778
Brown, William F., Newark, N. J., assignor to Bigelow Carpet Company, of Massachusetts. Carpet and border	24,569	Aug. 13	72	1038
Bruning, Henry, Brooklyn, assignor to Schener & Brother, New York, N. Y. Hand-bag	24,543	Aug. 13	72	1034
Brunswick-Balke-Collender Company. (See Ringold, Edwin, assignor.)				
Bunel, Alfred, assignor to S. Sanford & Sons, Amsterdam, N. Y. Carpet	24,719	Sept. 24	72	1899
Bunel, Alfred, assignor to S. Sanford & Sons, Amsterdam, N. Y. Carpet	24,720	Sept. 24	72	1899
Buttler, William, Redkey, Ind. Lamp-chimney	24,471	July 16	72	406
Buttler, William, Redkey, Ind. Lamp-chimney	24,472	July 16	72	407
Cain, James W., and W. A. Skinner, Orlando, Fla. Flier for aerial tops	24,692	Sept. 24	72	1894
Caldwell, Edward F., Brooklyn, N. Y. Chandelier	24,549	Aug. 13	72	1035
Calleson, Amos, Brooklyn, N. Y. Holder for ears of corn	24,668	Sept. 10	72	1646
Casseneuve, Charles, West Hoboken, N. J., assignor to Lowell Manufacturing Company, of Massachusetts. Carpet	24,648	Aug. 27	72	1342
Champion Nailing Machine Company. (See Daggett, John C., assignor.)				
Clark, William F. (See Smith and Clark.)				
Clausen, Fred. (See Clausen Hans N. and F.)				
Clausen, Hans N. and F., Stacyville, Iowa. Scouring-box	24,669	Sept. 10	72	1646
Codman, William C., assignor to Gorham Manufacturing Company, Providence, R. I. Spoon, &c	24,508	July 30	72	733
Coe, Charles T., New York, N. Y. Grate	24,504	July 23	72	583
Cole, Lucien D., assignor to Towle Manufacturing Company, Newburyport, Mass. Handle for spoons	24,495	July 23	72	582
Consolidated Car-Heating Company. (See McElroy, James F., assignor.)				
Cooperative Foundry Company. (See King and Kennedy, assignors.)				
Corscaden, Thomas, assignor to Stanley Works, New Britain, Conn. Brace for shelf-brackets	24,517	July 30	72	735
Covert, James C., West Troy, N. Y. Hook	24,664	Sept. 10	72	1645
Crocker, Samuel H., London, England. Paper-fastener	24,633	Aug. 27	72	1340
Cronenberg, Bertha, assignor to M. Bernhard, Buffalo, N. Y. Portière-rope	24,531	Aug. 6	72	892
Crosby, Joseph H. (See Greenleaf and Crosby.)				
Cullen, John T., and L. P. Grimes, Clinton, Iowa. Heater	24,712	Sept. 24	72	1897
Daggett, John C., Boston, Mass., assignor to Champion Nailing Machine Company. Nail or slug	24,483	July 16	72	408
Davis, William W., Chicago, Ill. Show-case	24,599	Aug. 20	72	1192
Davison, Alexander H., Athens, Ga. Fan-rack	24,680	Sept. 17	72	1778
De Lue, Clarence E., Boston, Mass. Hat-pin	24,677	Sept. 17	72	1778

Alphabetical list of patentees of designs, July to September, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
De Witt, Charles, Baltimore, Md. Bottle	24,464	July 9	72	281
Devlin, John, Detroit, Mich. Clip	24,663	Sept. 10	72	1645
Dickinson, Austin R., assignor to Syracuse Specialty Manufacturing Company, Syracuse, N. Y. Currycomb	24,546	Aug. 13	72	1034
Dike, May, Boston, Mass. Paper-weight	24,662	Sept. 10	72	1645
Dippo, George H., Chagrin Falls, Ohio. Handle-tube	24,704	Sept. 24	72	1896
Dreyer, Henry H., New York, N. Y. Sign-board	24,505	July 23	72	583
Dryfoos, Alphons, New York, N. Y. Bottle	24,500	July 23	72	583
E. & T. Fairbanks & Company. (See Hazen, Perley F., assignor.)				
Eagle Lock Company. (See Roche, James, assignor.)				
Eclipse Chemical Company. (See Harrison, William M., assignor.)				
Elliott, Sterling, Newton, Mass. Sulky frame or axle	24,590	Aug. 20	72	1190
Enterprise Manufacturing Company of Pennsylvania. (See Brown, John W., Jr., assignor.)				
Evans, James B., Springfield, Mo. Button or badge	24,629	Aug. 27	72	1339
Farnsworth, Andrew C., assignor to Imperial Ball Bearing Axle Company, Chicago, Ill. Vehicle-hub cap	4,489	July 16	72	409
Fatton, Henry, New York, N. Y. Box	24,502	July 23	72	583
Fessenden & Co. (See Manchester, Silas H., assignor.)				
Flanagen, James L., Philadelphia, Pa. Handle-bracket	24,682	Sept. 17	72	1779
Fownes, F. & A. (See Hughes, Edward R., assignor.)				
Friant, Thomas, *et al.* (See Gohlke, Louis, assignor.)				
Garlic, Marx, Philadelphia, Pa. Tray for bicycle-cases	24,488	July 16	72	409
Gault, John H., Philadelphia, Pa. Bottle	24,468	July 16	72	406
Gault, John H., assignor to Hero Fruit Jar Company, Philadelphia, Pa. Bottle-stopper	24,577	Aug. 20	72	1188
Gavin, John H., assignor to L. Wolff Manufacturing Company, Chicago, Ill. Bath-tub	24,709	Sept. 24	72	1897
Gedney, Charles F., Brooklyn, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,561	Aug. 13	72	1037
Gedney, Charles F., Brooklyn, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,625	Aug. 20	72	1196
Gedney, Charles F., Brooklyn, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,649	Aug. 27	72	1342
Gobeille, Joseph L., Cleveland, Ohio, assignor to Indianapolis Stove Company, Indianapolis, Ind. Stove	24,643	Aug. 27	72	1341
Gobeille, Joseph L., Cleveland, Ohio, assignor to Joliet Stove Works, Joliet, Ill. Stove	24,671	Sept. 10	72	1646
Goddard, Jefferson D., Kansas City, Mo. Display-stand	24,702	Sept. 24	72	1896
Goetz, Charles, assignor to Ohio Valley China Company, Wheeling, W. Va. Covered dish	24,512	July 30	72	734
Gohlke, Louis, assignor to T. S. White, T. Friant, G. W. Perkins, and C. J. Reed, Grand Rapids, Mich. Carpet-sweeper casing	24,591	Aug. 20	72	1190
Gooding, Cora A., Brookline, Mass. Spoon	24,639	Sept. 10	72	2645
Gooding, Josiah C., Covington, Ind. Desk and seat	24,600	Aug. 20	72	1192
Goodrich, Benjamin F. (See Merritt, James M., assignor.)				
Goodwill, Robert, Shamokin, Pa. Bed-warmer	24,583	Aug. 20	72	1189
Gordon, Ralph W., Boston, Mass. Battery-zinc	24,551	Aug. 13	72	1035
Gorham Manufacturing Company. (See Codman, William C., assignor.)				
Graham, William H., St. Louis, Mo. Bracket for washstands	24,665	Sept. 10	72	1645
Grant, Arthur W., Springfield, Ohio. Vehicle-wheel	24,555	Aug. 13	72	1036
Greenleaf, Damon, and J. H. Crosby, Jacksonville, Fla. Knife-handle	24,450	July 2	72	132
Grimes, Leslie P. (See Cullen and Grimes.)				
Hager, Henry G., St. Louis, Mo. Stove	24,713	Sept. 24	72	1898
Hamilton, Douglas E., Lawrence, Kans. Bulletin-board	24,559	Aug. 13	72	1036
Hamman, Charles R., Springfield, Ohio. Commode	24,687	Sept. 17	72	1779
Hardy, James F., New York, N. Y. Sewing-machine frame	24,710	Sept. 24	72	1897
Harris, Charles R., Williamsport, Pa. Buckle	24,574	Aug. 20	72	1188
Harrison, William M., assignor, by mesne assignments, to Eclipse Chemical Company, New York, N. Y. Cylinder for hand fire-extinguishers	24,587	Aug. 20	72	1190
Hassenpflug, Friedrich, New York, N. Y. Trimming	24,714	Sept. 24	72	1898
Hassenpflug, Friedrich, assignor to H. Maul & Co., New York, N. Y. Trimming	24,615	Aug. 20	72	1194
Hastings, Frederick E., Devon, assignor to A. M. Collins Manufacturing Company, Philadelphia, Pa. Card-mount	24,693	Sept. 24	72	1895
Hause, Elmer, Tecumseh, Mich. Window-fastening strip	24,516	July 30	72	735
Haviland, Charles E., Limoges, France. Dish	24,634	Aug. 27	72	1340
Haviland, Theodore, Ambazac, France. Platter	24,513	July 30	72	735
Hazen, Perley F., assignor to E. & T. Fairbanks & Company, St. Johnsbury, Vt. Scale-beam	24,480	July 16	72	408
Heaton, Harry, Jr., King's Norton, assignor to C. K. Welch, Coventry, England. Tire-cover for bicycles	24,455	July 2	72	133
Hendrick, William H., St. Louis, Mo., assignor to N. O. Nelson Manufacturing Company, of Missouri. Valve-casing	24,639	Aug. 27	72	1341
Henry, William D., Allegheny, Pa. Tile	24,636	Aug. 27	72	1340
Hensel, Otto A., Pittsburg, Pa. Egg-beater	24,545	Aug. 13	72	1034
Henszey, William P., Philadelphia, Pa. Frame for locomotives	24,628	Aug. 20	72	1196
Hero Fruit Jar Company. (See Gault, John H., assignor.)				
Higby, Luther L., Fort Worth, Tex. Display-banner	24,521	July 30	72	736
Hill, Lebbeus, Lynn, Mass. Shoe	24,666	Sept. 10	72	1646
Hills, James E., Brooklyn, N. Y. Shank for link cuff-buttons	24,509	July 30	72	734
Hills, James E., Brooklyn, N. Y. Link cuff-button	24,510	July 30	72	734
Hilpert, George, Otway, Ohio. Pendant	24,494	July 23	72	582
Hirsch, Isaac, Chicago, Ill. Fork	24,534	Aug. 13	72	1033
Hirsh, John R., Syracuse, N. Y. Hat-supporter	24,469	July 16	72	406
Hofmann, Charles, Chicago, Ill. Cuspidor-case	24,530	Aug. 6	72	892
Horan, Henry, East Orange, N. J., assignor to Lowell Manufacturing Company, of Massachusetts. Carpet	24,647	Aug. 27	72	1342
Howard Sterling Company. (See Wientge, Charles C., assignor.)				
Hubbell, Eugene, St. Paul, Minn. Rectal dilator	24,547	Aug. 13	72	1035
Hughes, Edward R., Liverpool, assignor to F. & A. Fownes, Worcester, England. Button	24,445	July 2	72	131
Imperial Ball Bearing Axle Company. (See Farnsworth, Andrew C., assignor.)				
Indianapolis Stove Company. (See Gobeille, Joseph L., assignor.)				
Israel, Earl H., assignor to L. M. Rumsey Manufacturing Company, St. Louis, Mo. Water-closet cover	24,642	Aug. 27	72	1341
J. D. Bergen Company. (See Bergen, James D., assignor.)				
Jacot, Julius O., Stockbridge, Mass. Watch-dial	24,689	Sept. 24	72	1894
Jennings, Abraham G., *et al.* (See Sharpe, Herbert O., assignor.)				
Jennings, Abraham G., Brooklyn, N. Y. Ornamental fabric	24,522	July 30	72	737
Jennings, Abraham G., Brooklyn, N. Y. Ornamental fabric	24,560	Aug. 13	72	1037
Jennings, Albert G., *et al.* (See Sharpe, Herbert O., assignor.)				
Johnston, Walter T., Macon, Ga. Handled wrench-head	24,518	July 30	72	736
Joliet Stove Works. (See Gobeille, Joseph L., assignor.)				
Jones, Edward F., Binghamton, N. Y. Standard or base for scales	24,479	July 16	72	408

Alphabetical list of patentees of designs, July to September, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Kahn & Bros., F. & L. (See Kahn and Speck, assignors.)				
Kahn, Lazard, Hamilton, Ohio, and A. Speck, Detroit, Mich., assignors to F. & L. Kahn & Bros., Hamilton, Ohio. Gas-radiator	24,556	Aug. 13	72	1036
Kahn, Lazard, Hamilton, Ohio, and A. Speck, Detroit, Mich., assignor to F. & L. Kahn & Bros., Gas-radiator	24,557	Aug. 13	72	1036
Keeler, Herbert E., New York, N. Y., and W. S. Hamm, Chicago, Ill., assignors to Adams & Westlake Company, of Illinois. Lamp	24,496	July 23	72	582
Keeler, Herbert E., New York, N. Y., and W. S. Hamm, Chicago, Ill., assignors to Adams & Westlake Company, of Illinois. Lamp	24,497	July 23	72	582
Keeler, Herbert E., New York, N. Y., and W. S. Hamm, Chicago, Ill., assignors to Adams & Westlake Company, of Illinois. Lamp	24,498	July 23	72	582
Keeler, Herbert E., New York, N. Y., and W. S. Hamm, Chicago, Ill., assignors to Adams & Westlake Company, of Illinois. Lamp	24,499	July 23	72	582
Kennedy, Thomas R. (See King and Kennedy.)				
Kent, Thomas M., Baltimore, Md. Picture-frame	24,453	July 2	72	132
King, Edward J., and T. R. Kennedy, assignors to Cooperative Foundry Company, Rochester, N. Y. Cooking-stove	24,477	July 16	72	407
Kinner, Gustav, Paterson, N. J. Shoe-tip	24,667	Sept. 10	72	1646
Knapp, Charles, New York, N. Y. Ring	24,690	Sept. 24	72	1894
Kratky, Matej, Hemingford, Nebr. Follower for culinary vessels	24,481	July 16	72	408
L. M. Rumsey Manufacturing Company. (See Israel, Earl H., assignor.)				
L. Wolff Manufacturing Company. (See Gavin, John H., assignor.)				
La Rue, George W., New York, N. Y. Sewing-machine frame	24,550	Aug. 13	72	1035
Langenbach, Edward A., Canton, Ohio. Ceiling-plate	24,456	July 2	72	133
Langenbach, Edward A., Canton, Ohio. Molding	24,485	July 16	72	409
Langenbach, Edward A., Canton, Ohio. Metallic siding-plate	24,486	July 16	72	409
Langenbach, Edward A., Canton, Ohio. Metallic ceiling-plate	24,487	July 16	72	409
Lantermier, Alfred A., Limoges, France. Dish	24,544	Aug. 13	72	1034
Lowell Manufacturing Company. (See Casseneuve, Charles, assignor.)				
Lowell Manufacturing Company. (See Horan, Henry, assignor.)				
Lowell Manufacturing Company. (See Sauer, Emil G., assignor.)				
Lowrey, William W., Staten Island, N. Y. Glass stopper for bottles	24,447	July 2	72	132
Lowrey, William W., Staten Island, N. Y. Bottle	24,579	Aug. 20	72	1188
Lowrey, William W., Staten Island, N. Y. Bottle	24,580	Aug. 20	72	1189
Lowrey, William W., Staten Island, N. Y. Bottle	24,581	Aug. 20	72	1189
Lowrey, William W., Staten Island, N. Y. Bottle	24,582	Aug. 20	72	1189
Lunt, George C., assignor to A. F. Towle & Son Company, Greenfield, Mass. Spoon or fork	24,442	July 2	72	131
Lyttle, George H., Cleveland, Ohio. Badge	24,533	Aug. 13	72	1033
Macphail, James, Blue Island, Ill. Shelf-supporting bracket	24,490	July 16	72	410
Macphail, James, Blue Island, assignor to Plano Manufacturing Company, Chicago, Ill. Swinging bracket	24,588	Aug. 20	72	1190
Manchester, Silas H., assignor to Fessenden & Co., Providence, R. I. Handle for spoons	24,572	Aug. 20	72	1188
Markham, William F., Plymouth, Mich. Frame for pistols	24,448	July 2	72	132
Maul & Co., Hugo. (See Hassenpflug, Friedrich, assignor.)				
Maynard, William C., Canton, Ohio. Meat-chopper	24,482	July 16	72	408
McCabe, John M., Fairmount, Ill. Roofing-tile	24,491	July 16	72	410
McCallum, Irving, *et al.* (See Reddie, Archibald F., assignor.)				
McCallum, William H., *et al.* (See Reddie, Archibald F., assignor.)				
McChesney, Edwin, Herman, Minn. Toothpick	24,691	Sept. 24	72	1894
McElroy, James F., assignor to Consolidated Car-Heating Company, Albany, N. Y. Electric-heater case	24,459	July 2	72	133
McFaddin, Harrison D., East Orange, N. J. Electric-light shade	24,473	July 16	72	407
McTernen, Andrew, Andover, Mass. Safety-band for pocket-books	24,542	Aug. 13	72	1034
Meriden Bronze Company. (See Yokel, Franz, assignor.)				
Merritt, James M., assignor of one-half to B. F. Goodrich, Homer, Mich. Cigar-holder	24,449	July 2	72	132
Merry, John, New York, N. Y., assignor to Bigelow Carpet Company, of Massachusetts. Carpet and border	24,570	Aug. 13	72	1038
Merry, John, New York, N. Y., assignor to Bigelow Carpet Company, of Massachusetts. Carpet and border	24,571	Aug. 13	72	1038
Miller, Theodore, assignor to Art Stove Company, Detroit, Mich. Stove	24,558	Aug. 13	72	1036
Mohring, John, Scranton, Pa. Bretzel-case	24,598	Aug. 20	72	1192
Morgan, James T., assignor to Morgan Silver Plate Company, Winsted, Conn. Casket-handle	24,484	July 16	72	409
Morgan Silver Plate Company. (See Morgan, James T., assignor.)				
Mullins, William H., Salem, Ohio. Roofing-plate	24,596	Aug. 20	72	1191
Mullins, William H., Salem, Ohio. Roof-finial	24,597	Aug. 20	72	1191
Murphy, William T., New York, N. Y. Change plate or tray	24,586	Aug. 20	72	1189
N. O. Nelson Manufacturing Company. (See Hendrick, William H., assignor.)				
Neil, John B., New York, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,562	Aug. 13	72	1037
Neil, John B., New York, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,675	Sept. 10	72	1647
Neil, John B., New York, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,676	Sept. 10	72	1647
Obst, Curt, assignor of one-half to E. Scholl, New York Mills, N. Y. Grate-bar	24,640	Aug. 27	72	1341
Ohio Valley China Company. (See Goetz, Charles, assignor.)				
Oliver, William W. (See Svensson, Claes A., assignor.)				
Oppenheimer, Milton E., New York, N. Y. Cluster-setting for gems	24,678	Sept. 17	72	1778
Packard, James W., Warren, Ohio. Fuse-block box	24,465	July 9	72	281
Perkins, Gaius W., *et al.* (See Gohlke, Louis, assignor.)				
Perky, Henry D., Boston, Mass. Biscuit	24,688	Sept. 17	72	1779
Perry, William H., Concord, N. H. Monument	24,461	July 2	72	134
Pierce, Thomas H. B., Dexter, Me. Game-board	24,701	Sept. 24	72	1896
Pirtle, Alfred, Louisville, Ky. Spoon	24,467	July 16	72	406
Plano Manufacturing Company. (See Macphail, James, assignor.)				
Poindexter, Robert E., Indianapolis, Ind. Fence-panel	24,514	July 30	72	735
Porter, Charles H., Rockford, Ill. Frame for fire-grates	24,478	July 16	72	408
Porter, Charles M., New York, N. Y. Printed fabric	24,715	Sept. 24	72	1898
Preston, Andrew P., Portsmouth, N. H. Bottle	24,655	Sept. 3	72	1491
Proctor, George M. and W. A., Westfield, Mass. Towel-rack case	24,708	Sept. 24	72	1897
Proctor, William A. (See Proctor, George M. and W. A.)				
Proeger, Julius, Greensburg, Pa. Bottle	24,695	Sept. 24	72	1895
Quentell, William P., Kansas City, Mo., assignor to American Type Founders Company, Newark, N. J. Font of type	24,683	Sept. 17	72	1779
R. H. Smith Manufacturing Company. (See Smith and Clark, assignors.)				
Raker, Clinton W., Shamokin, Pa. Hook	24,573	Aug. 20	72	1188
Rankin, Thomas I., assignor to Abram Cox Stove Company, Philadelphia, Pa. Range	24,603	Aug. 20	72	1192
Ranney, Fred E., Greenville, Mich. Hinge	24,707	Sept. 24	72	1897

Alphabetical list of patentees of designs, July to September, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Reddie, Archibald F., Philadelphia, Pa., assignor to W. H. and I. McCallum. Carpet	24,616	Aug. 20	72	1194
Reddie, Archibald F., Philadelphia, Pa., assignor to W. H. and I. McCallum. Carpet	24,617	Aug. 20	72	1194
Reddie, Archibald F., Philadelphia, Pa., assignor to W. H. and I. McCallum. Carpet	24,618	Aug. 20	72	1194
Reddie, Archibald F., Philadelphia, Pa., assignor to W. H. and I. McCallum. Carpet	24,619	Aug. 20	72	1195
Reddie, Archibald F., Philadelphia, Pa., assignor to W. H. and I. McCallum. Carpet	24,620	Aug. 20	72	1195
Reddie, Archibald F., Philadelphia, Pa., assignor to W. H. and I. McCallum. Carpet	24,621	Aug. 20	72	1195
Reddie, Archibald F., Philadelphia, Pa., assignor to W. H. and I. McCallum. Carpet	24,622	Aug. 20	72	1195
Reddie, Archibald F., Philadelphia, Pa., assignor to W. H. and I. McCallum. Carpet	24,623	Aug. 20	72	1195
Reddie, Archibald F., Philadelphia, Pa., assignor to W. H. and I. McCallum. Carpet	24,624	Aug. 20	72	1195
Reed, Charles J., *et al.* (See Gohlke, Louis, assignor.)				
Richardson, George F., assignor to E. L. Brown, Martinsville, Ind. Chair	24,554	Aug. 13	72	1035
Ringold, Edwin, Cincinnati, Ohio, assignor to Brunswick-Balke-Collender Company, of Ohio. Main entrance for bar-rooms	24,685	Sept. 17	72	1779
Roche, James, assignor to Eagle Lock Company, Terryville, Conn. Padlock	24,584	Aug. 20	72	1189
Rose, Arthur M., Yonkers, assignor to W. & J. Sloane, New York, N. Y. Carpet-body	24,462	July 2	72	134
Rose, Arthur M., Yonkers, assignor to W. & J. Sloane, New York, N. Y. Carpet-border	24,463	July 2	72	134
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,492	July 16	72	410
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,493	July 16	72	410
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,523	July 30	72	737
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,524	July 30	72	737
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet-border	24,525	July 30	72	737
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet-border	24,526	July 30	72	737
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,527	July 30	72	737
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,563	Aug. 13	72	1037
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,564	Aug. 13	72	1037
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,565	Aug. 13	72	1037
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,566	Aug. 13	72	1037
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet-border	24,567	Aug. 13	72	1038
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet-border	24,568	Aug. 13	72	1038
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,626	Aug. 20	72	1196
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,627	Aug. 20	72	1196
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,650	Aug. 27	72	1342
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,651	Aug. 27	72	1342
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,652	Aug. 27	72	1342
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,653	Aug. 27	72	1343
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,654	Aug. 27	72	1343
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,673	Sept. 10	72	1647
Rose, Arthur M., Yonkers, N. Y., assignor to M. J. Whittall, Worcester, Mass. Carpet	24,674	Sept. 10	72	1647
Rosenow, Max, and J. Schmohl, assignors to Barnhart Bros. & Spindler, Chicago, Ill. Font of printing-type	24,699	Sept. 24	72	1896
Rosenstock, Hessy S., Baltimore, Md. Knife and fork polisher	24,466	July 16	72	406
Runkel, Louis, New York, N. Y. Chocolate cake	24,658	Sept. 10	72	1645
Saalbach, Edward, Washington, D. C. Box	24,452	July 2	72	132
Sanford & Sons, Stephen. (See Bunel, Alfred, assignor.)				
Sanford & Sons, Stephen. (See Stewart, Nelson S., assignor.)				
Sauer, Emil G., Brooklyn, N. Y., assignor to Lowell Manufacturing Company, of Massachusetts. Carpet	24,640	Aug. 27	72	1342
Sauer, Emil G., Brooklyn, N. Y., assignor to Lowell Manufacturing Company, of Massachusetts. Carpet	24,672	Sept. 10	72	1647
Schener & Brother. (See Bruning, Henry, assignor.)				
Schmohl, Julius. (See Rosenow and Schmohl.)				
Schofield, Albert B., Brooklyn, N. Y. Box-opener	24,585	Aug. 20	72	1189
Scholl, Ernst. (See Obst, Curt, assignor.)				
Schwerin, Jerome M., Newark, N. J. Trunk corner-iron	24,703	Sept. 24	72	1896
Scovill Manufacturing Company. (See Sperry, Mark L., assignor.)				
Sessler, Arnold, New York, N. Y. Bicyclist's stocking	24,637	Aug. 27	72	1340
Sharpe, Herbert O., assignor to A. G. and A. G. Jennings, Brooklyn, N. Y. Pattern for lace	24,645	Aug. 27	72	1342
Shepherd, Thomas J., Rainey, Okla. Ter. Cabinet	24,475	July 16	72	407
Shields, Adolphus A., Huntsville, Ala. Sash-lock	24,706	Sept. 24	72	1897
Skinner, William A. (See Cain and Skinner.)				
Smethurst, William A., Philadelphia, Pa. Game-board	24,454	July 2	72	132
Smirl, Charles H. and F. L., Craig, Mo. Picture-frame	24,474	July 16	72	407
Smirl, Fred L. (See Smirl, Charles H. and F. L.)				
Smith, Alfred H., Wilmington, Del. Side drier-frame	24,594	Aug. 20	72	1191
Smith, Frank W., Gardner, Mass. Spoon	24,660	Sept. 10	72	1645
Smith, Richard H., and W. F. Clark, assignors to R. H. Smith Manufacturing Company, Springfield, Mass. Font of printing-type	24,515	July 30	72	735
Spadone, Amadee, New York, N. Y. Belt	24,679	Sept. 17	72	1778
Speck, Adam. (See Kahn and Speck.)				
Sperry, Mark L., assignor to Scovill Manufacturing Company, Waterbury, Conn. Body for oil-cans	24,670	Sept. 10	72	1646
Standard Cut Glass Company. (See Broden, Harry T., assignor.)				
Stanley Works. (See Corscaden, Thomas, assignor.)				
Starrett, Laroy S., Athol, Mass. Try-square	24,503	July 23	72	583
Steck, Ernst F., Chicago, Ill. Water-tower frame	24,595	Aug. 20	72	1191
Stevenson, Walter S., Philadelphia, Pa. Furnace-grate	24,458	July 2	72	133
Stewart, David, Philadelphia, Pa. Cake or cracker	24,441	July 2	72	132
Stewart, Nelson S., assignor to S. Sanford & Sons, Amsterdam, N. Y. Carpet	24,716	Sept. 24	72	1898
Stewart, Nelson S., assignor to S. Sanford & Sons, Amsterdam, N. Y. Carpet	24,717	Sept. 24	72	1898
Stewart, Nelson S., assignor to S. Sanford & Sons, Amsterdam, N. Y. Carpet	24,718	Sept. 23	72	1898
Stone, David, New York, N. Y. Buckle	24,444	July 2	72	131
Strich & Zeidler. (See Zeidler, Paul M., assignor.)				
Sullivan, Michael J., Chicago, Ill. Badge	24,443	July 2	72	131
Svensson, Claes A., assignor of one-half to W. W. Oliver, Buffalo, N. Y. Side frame for lathes	24,552	Aug. 13	72	1035
Syracuse Specialty Manufacturing Company. (See Dickinson, Austin R., assignor.)				
Thurber, Charles H., East Orange, N. J., assignor to Wiebusch & Hilger, Limited, New York, N. Y. Razor-handle	24,661	Sept. 10	72	1645
Tilton, George P., assignor to Towle Manufacturing Company, Newburyport, Mass. Spoon	24,598	Aug. 6	72	892
Torrance, Francis J., Allegheny, Pa. Bath-tub	24,520	July 30	72	736
Towle Manufacturing Company. (See Tilton, George P., assignor.)				
Turner, Jessee W., Louisiana, Mo. Display-stand	24,476	July 16	72	407
Vrooman, Emeline B., Chicago, Ill. Sink-strainer	24,457	July 2	72	133
W. & J. Sloane. (See Rose, Arthur M., assignor.)				
Walrath, Alphonso, Fort Plain, N. Y. Broom-ferrule	24,705	Sept. 25	72	1896
Walther, Charles F., Buffalo, N. Y. Radiator	24,644	Aug. 27	72	1341

Alphabetical list of patentees of designs, July to September, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Warren, Robert H., Newark, N. J. Stair-carpet button	24,631	Aug. 27	72	1340
Warren, Robert H., Newark, N. J. Stair-carpet button	24,632	Aug. 27	72	1340
Washburn, Henry E., Plymouth, Mass. Handle for spoons	24,535	Aug. 13	72	1033
West, Augustine C., Boston, Mass. Gas or oil stove	24,601	Aug. 20	72	1192
West, John, assignor to Barnhart Bros. & Spindler, Chicago, Ill. Font of printing-type	24,700	Sept. 24	72	1896
Webb, William G., assignor to T. Armstrong, Baltimore, Md. Cake or bar of soap	24,506	July 30	72	733
Welch, Charles K. (See Heaton, Harry, Jr., assignor.)				
Wheeler, David C., assignor to Acme Shear Company, Bridgeport, Conn. Scissors or shears	24,575	Aug. 20	72	1188
White, T. Stewart, *et al.* (See Gohlke, Louis, assignor.)				
Whiteman, Louis P., New York, N. Y. Receptacle for matches, &c.	24,576	Aug. 20	72	1188
Whittall, Matthew J. (See Gedney, Charles F., assignor.)				
Whittall, Matthew J. (See Neil, John B., assignor.)				
Whittall, Matthew J. (See Rose, Arthur M., assignor.)				
Wiebusch & Hilger. (See Thurber, Charles H., assignor.)				
Wiedersheim, Theodore E., Jr., Philadelphia, Pa. Box	24,470	July 16	72	406
Wientge, Charles C., assignor to Howard Sterling Company, Providence, R. I. Spoon	24,507	July 30	72	733
Wientge, Charles C., assignor to Howard Sterling Company, Providence, R. I. Handle for spoons	24,536	Aug. 13	72	1033
Wientge, Charles C., assignor to Howard Sterling Company, Providence, R. I. Back for brushes	24,537	Aug. 13	72	1033
Wientge, Charles C., assignor to Howard Sterling Company, Providence, R. I. Bowl for tea-sets	24,696	Sept. 24	72	1895
Wiessner, Oscar E. A., South Brooklyn, N. Y. Bedstead	24,711	Sept. 24	72	1897
Winfield, Charles D., Brooklyn, N. Y. Candle-holder and pendant	24,548	Aug. 13	72	1035
Wolff, Aaron H., New York, N. Y. Gas-stove	24,657	Sept. 3	72	1491
Yokel, Franz, assignor to Meriden Bronze Company, Meriden, Conn. Base for lamps	24,604	Aug. 20	72	1192
Yokel, Franz, assignor to Meriden Bronze Company, Meriden, Conn. Base for lamps	24,605	Aug. 20	72	1192
Yokel, Franz, assignor to Meriden Bronze Company, Meriden, Conn. Base for lamps	24,606	Aug. 20	72	1193
Yokel, Franz, assignor to Meriden Bronze Company, Meriden, Conn. Base for lamps	24,607	Aug. 20	72	1193
Yokel, Franz, assignor to Meriden Bronze Company, Meriden, Conn. Base for lamps	24,608	Aug. 20	72	1193
Yokel, Franz, assignor to Meriden Bronze Company, Meriden, Conn. Base for lamps	24,609	Aug. 20	72	1193
Yokel, Franz, assignor to Meriden Bronze Company, Meriden, Conn. Base for lamps	24,610	Aug. 20	72	1193
Yokel, Franz, assignor to Meriden Bronze Company, Meriden, Conn. Lamp-fount holder	24,611	Aug. 20	72	1193
Yokel, Franz, assignor to Meriden Bronze Company, Meriden, Conn. Lamp-fount holder	24,612	Aug. 20	72	1193
Yokel, Franz, assignor to Meriden Bronze Company, Meriden, Conn. Lamp-fount holder	24,613	Aug. 20	72	1193
Yokel, Franz, assignor to Meriden Bronze Company, Meriden, Conn. Lamp-fount holder	24,614	Aug. 20	72	1194
Zeidler, Paul M., assignor to Strich & Zeidler, New York, N. Y. Upper frame for pianos	24,553	Aug. 13	72	1035

ALPHABETICAL LIST OF REGISTRANTS OF TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
A. F. Towle & Son Company. (See Lunt, George C., assignor.)				
A. H. Motley Company, Reidsville, N. C. Every form of tobacco for smoking or chewing	27,045	Sept. 10	72	1648
A. H. Motley Company, Reidsville, N. C. Every form of tobacco for smoking or chewing	27,046	Sept. 10	72	1648
A. H. Motley Company, Reidsville, N. C. Every form of tobacco for smoking or chewing	27,047	Sept. 10	72	1648
"A. M. C." Medicine Co., Montreal, Canada. Remedy for women's diseases	27,039	Sept. 3	72	1494
Adams & Co., J. J., New York, N. Y. Brushes	26,880	July 30	72	738
Adams & Co., J. J., New York, N. Y. Brushes	26,911	Aug. 6	72	894
Adams & Westlake Company. (See Keeler and Hamm, assignors.)				
Afta Pharmacy Co., St. Louis, Mo. Certain named medical compound	26,903	Aug. 6	72	894
Akron Smoking Pipe Company, Akron, Ohio. Smoking-pipes	27,028	Sept. 3	72	1493
Alkire Grocer Company, St. Louis, Mo. Cigars, tobacco, and certain named groceries	27,087	Sept. 24	72	1900
American Burner Company, Providence, R. I. Burners for lamps, lanterns, oil-stoves, and kindred articles	27,080	Sept. 17	72	1781
American Chemical Company, Minneapolis, Minn. Soap	26,907	Aug. 6	72	894
American Optical Company, Southbridge, Mass. Optical goods, including spectacles, lenses, test-cases, and gages	26,919	Aug. 13	72	1039
American Wringer Company, Providence and Woonsocket, R. I., New York and Auburn, N. Y., and Erie, Pa. Wringers and parts thereof	26,776	July 2	72	138
American Wringer Company, Providence and Woonsocket, R. I., New York and Auburn, N. Y., and Erie, Pa. Wringers and parts thereof	26,777	July 2	72	138
American Wringer Company, Providence, R. I., New York and Auburn, N. Y., and Erie, Pa. Clothes-wringers	26,778	July 2	72	138
Anheuser-Busch Brewing Association, St. Louis, Mo. Ale	27,088	Sept. 24	72	1900
Apohaqui Alkaline Spring Water Company, New York, N. Y. Medicinal beverages	26,854	July 23	72	585
Apperly, Carson & Co., D. C., London, England. Wool goods in the piece	26,810	July 16	72	411
Appleton, Machin & Smiles, London, England. Teas	27,005	Aug. 27	72	1345
Appleton, Machin & Smiles, London, England. Teas	27,006	Aug. 27	72	1345
Bailey, Harriet E., Danielsonville, Conn. Stomach and bowel medicine	26,935	Aug. 13	72	1041
Baker, Harry H., Chicago, Ill. Puzzle	27,017	Sept. 3	72	1492
Balay & Cie., Guillaume, St. Etienne, France. Velvet ribbons	27,019	Sept. 3	72	1492
Bamberg & Co., J., New York, N. Y. Ribbons and velvets	26,928	Aug. 13	72	1040
Barnes, Junius, Burlington, Vt. Liniment	26,861	July 23	72	586
Barrows Music Company, Saginaw, Mich. Musical instruments	26,850	July 23	72	585
Bartlett & Villinger, Augusta, Ga. Remedy for coughs, colds, and pulmonary complaints	26,858	July 23	72	586
Beltaire, Lurch & Co., New York, N. Y. Boys' and men's fur hats	26,841	July 23	72	584
Berry, Hall & Co., Burlington, Vt. Tea	27,072	Sept. 17	72	1780
Bonyman, Frederick E., Boston, Mass. Remedy for rheumatism and diphtheria	27,037	Sept. 3	72	1494
Boss & Son, C. D., New London, Conn. Baking-powder	26,795	July 9	72	283
Bragonier & Co., A. C., Baltimore, Md. Oils	27,078	Sept. 17	72	1781
Brand & Co., London, England. Sauces or relishes for use with food	26,824	July 16	72	412
Brandreth, Henry D., Birkenhead, England. Ointments, pills, plasters, and specifics for all ailments	27,096	Sept. 24	72	1901
Brightman Furnace Co., Cleveland, Ohio. Furnaces and furnishings therefor	27,103	Sept. 24	72	1902
Brown, Barton L., Philadelphia, Pa. Remedy for headache	26,813	July 16	72	411
Brown & Sons, John S., Belfast, Ireland, and New York, N. Y. Certain named linen goods	26,893	Aug. 6	72	893
Browne, Lucy A., Oakland, Cal. Specific for rheumatism	27,051	Sept. 10	72	1649
Bruno & Son, C., New York, N. Y. Mouth-harmonicas	27,010	Sept. 3	72	1492
Bush & Co., Worcester, Mass. Medical compound for the treatment of fevers, neuralgia, and rheumatism	26,990	Aug. 27	72	1344
Butler Hard Rubber Company, New York, N. Y. Syringes	26,789	July 9	72	282
Butler Hard Rubber Company, New York, N. Y. Toilet combs	26,910	Aug. 6	72	894
Cadwallader, Charles F., Benton, Kans. Herb teas, oils, and liniments	26,993	Aug. 27	72	1344
Campbell Bros., Austin, Minn. Wheat-flour	26,865	July 23	72	587
Carr & Sons, James, Manchester, England. Blind-ladder tapes	26,891	Aug. 6	72	893
Charrot & Henry, Brooklyn, N. Y. Whisky	27,029	Sept. 3	72	1493
Christy Knife Company, Fremont, Ohio. Knives, shears, scissors, and cutlers' tools	26,889	July 30	72	740
Cole, Henry A., Liverpool, England. Beltings of all kinds	26,927	Aug. 13	72	1040
Collier Drug Company, Birmingham, Ala. Certain named chemical and pharmaceutical and toilet preparations	26,905	Aug. 6	72	894
Colony, Laurence D., and B. S. Osgood, Keene, N. H. Polishing and cleaning preparation	26,787	July 9	72	282
Colony, Laurence D., and B. S. Osgood, Keene, N. H. Infusorial earth for cleaning and polishing purposes	26,868	July 23	72	587
Conti, Ugo, Leghorn, Italy. Olive laundry soap	26,972	Aug. 20	72	1198
Continental Match Company, New York, N. Y. Matches	26,999	Aug. 27	72	1345
Continental Match Company, New York, N. Y. Matches	27,000	Aug. 27	72	1345
Continental Match Company, New York, N. Y. Matches	27,086	Sept. 24	72	1900
Coulter, Frank E., Omaha, Nebr. Laundry soap	26,829	July 16	72	413
Cox, Abraham G., Carlisle, Ind. Liniments for wounds of horses and cattle	26,974	Aug. 20	72	1199
Crane, Z. & W. M., Dalton, Mass. Writing-paper and envelopes	26,782	July 9	72	282
Crocker Fertilizer and Chemical Company, Buffalo, N. Y. Artificial fertilizers	26,952	Aug. 13	72	1042
Crowell Manufacturing Company, Boston, Mass. Paper and fabric provided with an abrading or polishing surface	26,924	Aug. 13	72	1040
Culver Brothers, Howell, Mich. Cigars	26,963	Aug. 20	72	1198
Curran, John, Minneapolis, Minn. Tonic remedy for nervous affections and general debility	26,934	Aug. 13	72	1040
Delmonico Manufacturing Co., Baltimore, Md. Table-salt, spices, and macaroni	26,938	Aug. 13	72	1041
Denman & Co., James L., London, England. Whisky	26,791	July 9	72	283
Denman & Co., James L., London, England. Whisky	26,792	July 9	72	283
Diamantstahl Werk, Altchemnitz, Germany. Abradant consisting of crushed steel	23,886	July 30	72	739
Diamond Match Company, Chicago, Ill., Wilmington, Del., Detroit, Mich., and Westville, Conn. Matches	26,828	July 16	72	413
Donaldson, Robert B., Washington, D. C. Dental instruments	26,779	July 2	72	138

Alphabetical list of registrants of trade-marks, July to September, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Doscher Bros., Cincinnati, Ohio. Chewing-gum	26,962	Aug. 20	72	1197
Dr. D. P. Ordway Plaster Company, Camden, Me. Medical plasters	26,758	July 2	72	136
Dueber Watch Case Manufacturing Company, Canton, Ohio. Watchcases and movements	26,848	July 23	72	584
Dueber Watch Case Manufacturing Company, Canton, Ohio. Watchcases	26,954	Aug. 20	72	1197
Dumon et Cie., Brussels and Cournay, Belgium. Portland cement	26,985	Aug. 20	72	1200
Dumon & Co., Brussels and Cournay, Belgium. Portland cement	27,062	Sept. 10	72	1650
Eagle Square Manufacturing Company, Shaftsbury, Vt. Mechanics' squares and rules	26,874	July 23	72	588
Eckardstein, Ernst von, Prötzel, Germany. Natural mineral water	26,994	Aug. 27	72	1344
Eclipse Paper Manufacturing Co., Charleston, S. C. Toilet-paper	27,001	Aug. 27	72	1345
Eggebrecht & Bernhardt, New York, N. Y. Kid and lambskin gloves	27,022	Sept. 3	72	1492
Elgin National Watch Company, Chicago, Ill. Watches	26,914	Aug. 13	72	1039
Elliott, Anstin, Kansas City, Kans. Remedy for heart failure and pneumonia	26,992	Aug. 27	72	1344
Emig, Levi, Woodview, Ohio. Sheep-wash	26,830	July 16	72	413
Evans, George B., Philadelphia, Pa. Remedy for catarrh and other nasal, head, and throat affections	26,814	July 16	72	411
Evansville Woolen Mill Company, Evansville, Ind. Doeskins, jeans, and cheviots	26,877	July 30	72	748
Faber, Firm of Eberhard, New York, N. Y. Lead-pencils	27,042	Sept. 10	72	1648
Falk, August, Vienna, Austria-Hungary. Paste for removing spots and stains	27,089	Sept. 24	72	1900
Faultless Chemical Company, Baltimore, Md. Chewing-gum	26,947	Aug. 13	72	1042
Felten & Guilleaume, Mülheim-on-the-Rhine, Germany. Metal and wire goods, chains, cables, conductors, hard spelter, and certain rubber goods	26,769	July 2	72	137
Ferris Bros., New York, N. Y. Corsets	26,931	Aug. 13	72	1040
Filkins, Louise, New York, N. Y. Remedy for rheumatism	26,991	Aug. 27	72	1344
Fletcher, Augusta W., New York, N. Y. Books, pamphlets, circulars, and periodical publications	26,876	July 30	72	738
Flomerfelt, James A., New York, N. Y. Link cuff-buttons	26,846	July 23	72	584
Flomerfelt, James A., New York, N. Y. Link cuff-buttons	26,915	Aug. 13	72	1039
Folkner, Cummins H., Murray, Iowa. Dandruff cure	27,068	Sept. 17	72	1780
Fraenckel, Firm of Richard H., New York, N. Y. Silk-warp dress goods	26,989	Aug. 27	72	1344
Freezol Co., St. Louis, Mo. Chemical refrigerants	27,090	Sept. 24	72	1900
Frohlich, Edward, Detroit, Mich., and Toledo, Ohio. Glass and paints	27,079	Sept. 17	72	1781
Gennert, Gottlieb, Greenville, N. J. Photographic paper	26,925	Aug. 13	72	1040
George Frost Company, Boston, Mass. Button hose-supporters	26,745	July 2	72	135
Gill Brothers & Co., Steubenville, Ohio. Chimneys, lantern-globes, and reflectors	26,770	July 2	72	137
Gill Brothers & Co., Steubenville, Ohio. Chimneys, lantern-globes, and reflectors	26,771	July 2	72	137
Gill Brothers & Co., Steubenville, Ohio. Chimneys, lantern-globes, and reflectors	26,772	July 2	72	137
Gill Brothers & Co., Steubenville, Ohio. Chimneys, lantern-globes, and reflectors	26,773	July 2	72	137
Gill Brothers & Co., Steubenville, Ohio. Glass chimneys, lantern-globes, and reflectors	26,981	Aug. 20	72	1199
Gill Brothers & Co., Steubenville, Ohio. Chimneys, lantern-globes, and reflectors	27,063	Sept. 10	72	1650
Girand, Ignazio, Pavia, Italy. Chartreuse cordial	26,964	Aug. 20	72	1198
Glidden Varnish Company, Cleveland, Ohio. Varnish	26,951	Aug. 13	72	1042
Goddard, Jefferson D., Kansas City, Mo. Remedy for corns	27,097	Sept. 24	72	1901
Goldberg, Bowen & Lebenbaum, San Francisco, Cal. Rice	26,970	Aug. 20	72	1198
Gonzales, Laura M. Va. de, Mexico, Mexico. Remedy for fevers	27,038	Sept. 3	72	1494
Grant, James L., Liverpool, England. Butter and cheese	26,799	July 9	72	283
Graves, Everett A., Boston, Mass. Powdered substance for relief of headache	26,763	July 2	72	137
Gregory, John D., Louisville, Ky. Baking-powder	26,756	July 2	72	136
Gregory, Shaw & Co., Framingham, Mass. Leather shoes	27,095	Sept. 24	72	1900
Guano & Raggio, Philadelphia, Pa. Maccaroni	26,797	July 9	72	283
Guano & Raggio, Philadelphia, Pa. Maccaroni	26,798	July 9	72	283
H. Davidson Company, Union City, Conn., and New York, N. Y. Hooks and eyes	27,018	Sept. 3	72	1492
Haddad, Ameen F., New York, N. Y. Perfumery	27,054	Sept. 10	72	1649
Halstead & Co., New York, N. Y. Cured hams	26,883	July 30	72	739
Hamilton, Brown Shoe Company, St. Louis, Mo. School-shoes	26,843	July 23	72	584
Hamilton, Brown Shoe Company, St. Louis, Mo. School-shoes	26,844	July 23	72	584
Hamm, William S. (See Keeler and Hamm.)				
Hampden Watch Company, Canton, Ohio. Watch-movements	26,835	July 16	72	414
Hampden Watch Company, Canton, Ohio. Watch-movements	26,887	July 30	72	739
Hampden Watch Company, Canton, Ohio. Watch-movements	26,888	July 30	72	739
Harding, Whitman & Co., Boston, Mass. Duck	26,894	Aug. 6	72	893
Hartman, Firm of John, Philadelphia, Pa. Biscuit-crackers	26,943	Aug. 13	72	1042
Hepton Bros., Leeds, England. Waterproof fabrics	26,811	July 16	72	411
Hickok & Co., J. J., Richmond, Va. Smoking and chewing tobacco	26,815	July 16	72	411
Hickok & Co., J. J., Richmond, Va. Smoking and chewing tobacco	26,816	July 16	72	411
Hickok, Elbert E., St. Louis, Mo. Scarf-pins	26,847	July 23	72	584
Hildreth, Herbert L., Boston, Mass., and Old Orchard, Me. Confectionery, ice-cream, and beverages	26,946	Aug. 13	72	1042
Hils, Albert, and C. H. Hunt, Canton, Mo. Starch	27,007	Aug. 27	72	1345
Hirsch & Sons, Joseph, New York, N. Y. Cotton and jute dress goods, sheetings, shirtings, and similar goods	26,988	Aug. 27	72	1341
Hirsh, Edward H., Philadelphia, Pa. Cane-sheaths for umbrellas	26,849	July 23	72	585
His, Imboden & Co., Murgenthal, Switzerland. Knit underwear	26,929	Aug. 13	72	1040
Holmstrom, Tolson & Co., Boston, Mass. Mohair, wool, wool shoddy, tops, noils, and yarn	27,021	Sept. 3	72	1492
Home Rubber Company, Trenton, N. J. Rubber hose, belting, and packing	26,879	July 30	72	738
Hot Springs Medical Company, Alexandria, Va., and New York, N. Y. Remedy for diseases of the blood	26,977	Aug. 20	72	1199
Howard Fibre Ware Company, Providence, R. I. Fiber-ware, including signs, panels, dadoes, centerpieces, tile, and table-tops	26,804	July 9	72	284
Hoyt & Co., George W., Chicago, Ill. Waist and hose supporters	26,987	Aug. 27	72	1344
Hubbard, Jeremiah, Afton, Ind. Ter. Salve	26,862	July 23	72	586
Hubinger Bros. Co., J. C., Keokuk, Iowa, and New Haven, Conn. Starch	26,882	July 30	72	739
Hunt, Charles H. (See Hils and Hunt.)				
Illinois Canning Co., Hoopeston, Ill. Canned beans	26,800	July 9	72	283
Imperial Company, Cincinnati, Ohio, Chicago, Ill., and New York, N. Y. Certain musical instruments	26,982	Aug. 20	72	1199
Imperial Hygenique Fluid Company, New York, N. Y., New Haven, Conn., and Newark, N. J. Specific for use as a disinfectant, deodorizer, wash, germicide, and headache remedy	26,975	Aug. 20	72	1199
Indiana Bicycle Company, Indianapolis, Ind. Bicycles	27,082	Sept. 17	72	1782
Ingram Interlining Company, New York, N. Y. Soft crinkled paper	26,959	Aug. 20	72	1197
Isaac Prouty & Co., Incorporated, Spencer and Boston, Mass. Boots and shoes	27,041	Sept. 10	72	1648
Jacob Dold Packing Company, Wichita, Kans., Buffalo, N. Y., Harrisburg, Pa., and Kansas City, Mo. Leaf-lard	27,071	Sept. 17	72	1780
Jno. S. Brittain D. G. Company, St. Joseph, Mo. Gloves and hosiery	26,930	Aug. 13	72	1040
Johnston Tin Foil and Metal Company, St. Louis, Mo. Tin or lead foil	26,979	Aug. 20	72	1199
Johnston Tin Foil and Metal Company, St. Louis, Mo. Tin or lead foil	27,059	Sept. 10	72	1649
Jones Brothers & Co., Manchester, England. Dusters and polishing-cloths	26,895	Aug. 6	72	893

Alphabetical list of registrants of trade-marks, July to September, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Jones of Binghamton, Binghamton, N. Y. Portable weighing-scales	26,803	July 9	72	284
Juno, John S., Schenectady, N. Y. Water-bug and roach exterminator	26,767	July 2	72	137
Kampfe Bros., New York, N. Y. Safety-razors	26,980	Aug. 20	72	1199
Kathreiner's Malzkaffee-Fabriken mit Beschränkter Haftung, Munich, Germany. Malt coffee	26,944	Aug. 13	72	1042
Kempshall, Eleazer, Boston, Mass. Lacing-hooks, eyelets, and rivets	26,768	July 2	72	137
Kendall, Daniel A., East Orange, N. J., and New York, N. Y. Soaps for use upon fabrics, leather, and other materials	26,866	July 23	72	587
Ketchum, John J., Rutherford, N. J. Certain named remedies	26,902	Aug. 6	72	894
Keystone Plaster Company, Chester, Pa. Calcined plaster	26,871	July 23	72	587
King Philip Mills, Fall River, Mass. Cotton piece goods	26,746	July 2	72	135
Kinney, Marshall J., Astoria, Oreg. Canned salmon	27,010	Aug. 27	72	1346
Klingbeil, Bartelt & Schroter, New York, N. Y. Remedy for stomach, liver, and bowel troubles	27,050	Sept. 10	72	1648
Knoll & Co., Liesthal, Switzerland. Remedy for anemia, chlorosis, megrim, and neuralgia	26,860	July 23	72	586
Knoxville Knitting Mills Company, Knoxville, Tenn. Certain named knitted goods	27,020	Sept. 3	72	1492
Kola Chemical Company, Cleveland, Ohio. Chewing-gum	26,753	July 2	72	136
Krebbiel, Louisa A., Dayton, Ohio. Blood-purifier	26,760	July 2	72	136
Lambert & Smith, Delta, Ohio. Wheat-flour	27,100	Sept. 24	72	1902
Landers, Frary & Clark, New Britain, Conn. Butchers' knives and analogous tools	27,004	Aug. 27	72	1345
Lariat Manufacturing Company, Jersey City, N. J., and Boston, Mass. Cleaning and disinfecting preparation for materials and fabrics	26,766	July 2	72	137
Laurent & Cie., Veuve, Tours, France. Champagnes	26,819	July 16	72	412
Lavery, Charles E., Newton's Corners, N. Y. Medicinal remedy for dyspepsia	26,759	July 2	72	136
Lemke, Herman C., Chicago, Ill. Remedy for colic, cholera, dysentery, diarrhea, cramps, and similar troubles	26,936	Aug. 13	72	1041
Libbey, Laura J., Brooklyn and New York, N. Y. Printed music and songs and works of fiction	27,066	Sept. 17	72	1780
Lichty, Norman B., Des Moines, Iowa. Remedy for headache	26,904	Aug. 6	72	894
Lohmeyer, Henry L., Pittsburg, Pa. Liniment	26,783	July 9	72	282
Lohmeyer, Henry L., Pittsburg, Pa. Condition-powders for horses	26,786	July 9	72	282
Lord, Loren B., Burlington, Vt. Horse washing or cleaning preparation	26,869	July 23	72	587
Lord, William H., Dedham, Mass. Prepared codfish	26,827	July 16	72	413
Louisville Paper Company, Louisville, Ky. Roofing-paper	26,926	Aug. 13	72	1040
Lubszynski & Co., Berlin, Germany. Polishing compound for metal goods	27,061	Sept. 10	72	1649
Maass, William F., Brooklyn, N. Y. Tonics	26,785	July 9	72	282
Macy & Co., R. H., New York, N. Y. Bicycles	27,065	Sept. 10	72	1650
Maltonic Co., Bath, Me. Pure extract of malt	26,966	Aug. 20	72	1198
Mandelberg & Co., Limited, J., Manchester and London, England, Paris, France, and New York, N. Y. Rubber garments	26,932	Aug. 13	72	1040
Mansfield & Co., C. W., Greenville, Ala. Mineral water	27,073	Sept. 17	72	1781
Maris & Co., John M., Philadelphia, Pa. Corks	27,060	Sept. 10	72	1649
Marshall-Wells Hardware Company, Duluth, Minn. Hardware, machines, and miscellaneous goods	27,102	Sept. 24	72	1902
Matthes, Percy E., Newark, N. J. Bicycle-signals	27,064	Sept. 10	72	1650
Mayo, John P., Columbus, Miss. Soda-water sirups	26,898	Aug. 6	72	893
McClurg, James A., New York, N. Y. Candy	26,754	July 2	72	136
McGlaughlin, William, Sharpsburg, Pa. Washing-powders	26,867	July 23	72	587
McNab & Co., Andrew, Leith, Scotland. Whisky	26,751	July 2	72	135
Mendleson & Sons, A., Albany, N. Y. Potash and lye	26,908	Aug. 6	72	894
Meyer, Frederick, Lafayette, Ind. Soaps and washing compounds	27,008	Aug. 27	72	1345
Middlemore, Thomas, Birmingham and Coventry, England. Saddlery and harness, bags, and other leather goods	27,023	Sept. 3	72	1492
Mohawk Condensed Milk Company, Rochester, N. Y. Condensed milk	27,011	Aug. 27	72	1346
Mohawk Condensed Milk Company, Rochester, N. Y. Condensed milk	27,034	Sept. 3	72	1493
Mohawk Condensed Milk Company, Rochester, N. Y. Condensed milk	27,055	Sept. 10	72	1649
More, James, Wick, Scotland. Salted herring	26,939	Aug. 13	72	1041
Moses Risk & Sons, Limited, Glasgow, Scotland. Whisky	27,030	Sept. 3	72	1493
Mothers Salve Company, Chicago, Ill. Certain named medicines	27,092	Sept. 24	72	1901
Myers & Co., Toronto, Canada, and Buffalo, N. Y. An effervescing powder to be used as a tonic	27,052	Sept. 10	72	1649
Myers & Co., S. F., New York, N. Y. Bicycles and attachments	26,836	July 16	72	414
National Distilling Company, Milwaukee, Wis. Gin	26,752	July 2	72	136
National Mercantile Company, New York, N. Y. Certain named vehicles and their attachments and parts	26,913	Aug. 6	72	894
National Pharmacy Co., Montreal, Canada. Proprietary medicine for indigestion and similar diseases	27,049	Sept. 10	72	1648
National Publishing Co., Philadelphia, Pa. Bibles	27,083	Sept. 24	72	1900
Needham, Veall & Tyzack, Sheffield, England. Knives, razors, scissors, and all kinds of cutlery and edge-tools	27,101	Sept. 24	72	1902
Netherlands Steam Distillery Co., Limited, New York, N. Y. Gin	26,965	Aug. 20	72	1198
Neudecker, Leonard H., Baltimore, Md. Plug-tobacco	26,998	Aug. 27	72	1345
Neuville, Adolph, St. Louis, Mo. Ladies' and boys' waists	26,781	July 9	72	282
New York Stamping Company, Brooklyn, N. Y. Currycombs	27,002	Aug. 27	72	1345
Neynaber, William F. A., Chicago, Ill. Salve	26,863	July 23	72	586
Nichols Chemical Company, New York, N. Y. Cream of tartar substitute	26,899	Aug. 6	72	893
Noback, Alfred, Rahway, N. J. Disinfectants	26,788	July 9	72	283
North Dakota Milling Company, Grand Forks, N. D. Flour, breakfast foods, cracked wheat, grits, farina, and purified middlings	26,968	Aug. 20	72	1198
North Packing and Provision Company, Boston, Mass. Sausage-meat	26,757	July 2	72	136
North Packing and Provision Company, Boston, Mass. Hams	26,801	July 9	72	283
O'Donnell, Winnie G., Lewiston, Me. Blood-purifier and remedy for rheumatism	26,859	July 23	72	586
Oakley Soap and Perfumery Company, New York, N. Y. Toilet soap	26,948	Aug. 13	72	1042
Oakley Soap and Perfumery Company, New York, N. Y. Mouth-washes and dentifrice	27,095	Sept. 24	72	1901
Oberholtz, Frank C., Washington, D. C. Chewing-gum	26,794	July 9	72	282
Olmsted, Allen S., Le Roy, N. Y. Worm-powders	27,040	Sept. 3	72	1494
Omaha Lubricator Company, Omaha, Nebr. Axle-grease	27,014	Aug. 27	72	1346
Oppermann, Estate of Frederick, Jr., New York, N. Y. Lager-beer	26,852	July 23	72	585
Oriental Flour Company, Danville, Ill. Filler or dressing for cotton fabrics	26,950	Aug. 13	72	1042
Osborne, Owen, Philadelphia, Pa. Knitted fabrics and garments	26,892	Aug. 6	72	893
Osgood, Benjamin S. (See Colony and Osgood.)				
Oussani, Joseph, New York, N. Y. Tobacco, cigars, and cigarettes	26,818	July 16	72	412
Ozone Company, New York and Brooklyn, N. Y. Ozonized cod-liver oil	26,901	Aug. 6	72	894
Ozone Company, New York and Brooklyn, N. Y. Ozonized vegetable oils	26,973	Aug. 20	72	1199
Pacific Steam Whaling Company, San Francisco, Cal. Salmon put up in cans, cases, or other packages	26,940	Aug. 13	72	1041
Passow & Sons, Chas., Chicago, Ill. Cushions for billiard or pool tables	26,922	Aug. 13	72	1039
Paton, Son & Co., John, Alloa, Scotland. Yarns of wool, worsted, or hair	26,840	July 23	72	584
Pearsall & Co., Jas., London, England. Embroidery-silk	26,839	July 23	72	584

Alphabetical list of registrants of trade-marks, July to September, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Peterson, Andrew, Newark, N. J. Cigars	26,997	Aug. 27	72	1345
Pfaffmann, George A., Cleveland, Ohio. Noodles	27,033	Sept. 3	72	1493
Phoenix Telephone Company, New York, N. Y. Telephones and telephonic instruments	26,780	July 2	72	138
Pierce, Gerald, Minneapolis, Minn. Cigars	26,897	Aug. 6	72	893
Pierce, Henry L., Boston, Mass. Chocolate, cocoa, and preparations thereof	27,056	Sept. 10	72	1649
Pierce, Henry L., Boston, Mass. Chocolate, cocoa, and preparations thereof	27,057	Sept. 10	72	1649
Pillsbury-Washburn Flour Mills Company, (Limited.) Minneapolis, Minn. Wheat-flour	26,826	July 16	72	412
Place & Terry Manufacturing Company, Montclair, N. J., and New York, N. Y. Bicycle lamps or lanterns	27,003	Aug. 27	72	1345
Pretty & Son, William, Ipswich, England. Corsets and corset-waists	26,956	Aug. 20	72	1197
Pritchard, Robert B., Middle Granville, N. Y. Roofing-slate	27,081	Sept. 17	72	1782
Providence Athletic Association, Providence, R. I. Certain named merchandise	26,890	July 30	72	740
Pschorr, Firm of G., Munich, Germany. Lager-beer	26,821	July 16	72	412
Pschorr, Firm of G., Munich, Germany, and New York, N. Y. Lager-beer	26,853	July 23	72	585
Quell, John H., New York, N. Y. Whisky	27,074	Sept. 17	72	1781
R. Wallace & Sons Manufacturing Company, Wallingford, Conn. Knives, forks, spoons, and other articles of table-service made of steel and tinned	26,912	Aug. 6	22	893
Ransom Bros. Company, Albert Lea, Minn. Teas, coffees, spices, and soap	26,796	July 9	72	283
Ray, Charles R., Chicago, Ill. Certain named medical compounds	26,856	July 23	72	586
Raymond & Campbell Manufacturing Company, Middletown, Pa. Steam-boilers and water-heaters	26,806	July 9	72	284
Red Seal Remedy Company, Rockland, Me. Certain named toilet preparations and medicinal remedies, soap, lining, and mucilage	26,765	July 2	72	137
Reeves, Poole & Co., Washington, D. C. Whisky	26,820	July 16	72	412
Regina Flour Mill Company, St. Louis, Mo. Wheat-flour	27,070	Sept. 17	72	1780
Reynolds, Edwin R., Chicago, Ill. Remedies for internal and external use	27,094	Sept. 24	72	1901
Rhenish Corset Manufacturing Co., New York, N. Y. Corsets	26,957	Aug. 20	72	1197
Rice & Hutchins, Incorporated, Boston, Mass. Boots and shoes and leather for uppers of same	26,807	July 9	72	284
Rice & Hutchins, Incorporated, Boston, Mass. Boots and shoes	26,842	July 23	72	584
Rice, William S., Smithville, N. Y. Remedies for blood, liver, stomach, skin, and lung diseases	27,091	Sept. 24	72	1900
Richardson & De Long Bros., Philadelphia, Pa. Hair-pins	26,916	Aug. 13	72	1039
Richardson & De Long Bros., Philadelphia, Pa. Hair-pins	26,917	Aug. 13	72	1039
Richardson & De Long Bros., Philadelphia, Pa. Hair-pins	26,918	Aug. 13	72	1039
Riley & Co., William B., Philadelphia, Pa. Horse-blankets	26,808	July 9	72	284
Ritter Dental Manufacturing Company, Rochester, N. Y. Dental chairs and dental-office furniture and attachments for same	26,921	Aug. 13	72	1039
Rochester Brewing Company, Rochester, N. Y. Lager-beer	26,996	Aug. 27	72	1344
Rosenheimer, Julius T., New York, N. Y. Pins	26,955	Aug. 20	72	1197
Rothenberg, Sara B., Oakland, Cal. Magen bitters	26,855	July 23	72	585
Russell Counter Company, Woburn, Mass. Counters for boots or shoes	26,986	Aug. 27	72	1344
Salomon, Abram L., New York, N. Y. Writing-pens	27,043	Sept. 10	72	1648
Sanders, Archibald H., Minneapolis, Minn. Preparations for the treatment of the feet	26,933	Aug. 13	72	1040
Sanger, John S. and R. M., Orange, N. J. Tooth-powder and receptacles for same	26,764	July 2	72	137
Sanger, Roderick M. (See Sanger, John S. and R. M.)				
Santa Rosa, Augustin B., Key West, Fla. Cigars	26,793	July 9	72	283
Scheinman, Isaac, New York, N. Y. Boys' woolen knee-pants and men's vests	27,084	Sept. 24	72	1900
Schieren & Co., Charles A., New York, N. Y. Leather belting	26,748	July 2	72	135
Schonland Bros., Portland, Me. Sausages	27,013	Aug. 27	72	1346
Schrafft & Sons, W. F., Boston, Mass. Confectionery	27,031	Sept. 3	72	1493
Schulz, Ernst L. C., Boston, Mass. Leather	27,024	Sept. 3	72	1492
Schulz, Ernst L. C., Boston, Mass. Tanned hides and skins	27,067	Sept. 17	72	1780
Scudder, Conn & Brown, Chicago, Ill. Maple sirup	27,012	Aug. 27	72	1346
Searles, Charles J., St. Louis, Mo. Plug chewing-tobacco	27,044	Sept. 10	72	1648
Seelenfreund, William, Lincoln, Nebr. Cigars	27,075	Sept. 17	72	1781
Seely Manufacturing Co., Detroit, Mich. Toilet soap	27,015	Sept. 3	72	1492
Seneca Falls Manufacturing Company, Seneca Falls, N. Y. Lathes and their parts and attachments	26,953	Aug. 13	72	1042
Shauer Bros. & Co., Chicago, Ill. Trousers	26,809	July 16	72	411
Short, Hettie and J., San Angelo, Tex. Cough sirup	26,976	Aug. 20	72	1199
Short, Joe. (See Short, Hettie and J.)				
Siegbert & Bro., Louis, New York, N. Y. Cotton goods	26,878	July 30	72	738
Siegle & Co., G., Stuttgart, Germany. Chemicals and colors	26,909	Aug. 6	72	894
Sinnock & Sherrill, New York, N. Y. Combs and other tortoise-shell ornaments	26,845	July 23	72	584
Sites, William A., Baltimore, Md. Pills	26,978	Aug. 20	72	1199
Slotkin & Praglin, New York, N. Y. Sewing-machine treadles	26,802	July 9	72	284
Smith Bros. & Company, Limited, New Orleans, La. Coffee	26,823	July 16	72	412
Smith, George E., Galveston, Tex. Mineral water and other named beverages	26,995	Aug. 27	72	1344
Smith, John R., Bartlett, Tex. Remedy for catarrh	27,048	Sept. 10	72	1648
Smith, Joshua C., Conowingo, Md., and New York, N. Y. Mechanically-softened fiber paper	26,960	Aug. 20	72	1197
Société Anonyme Union Fraternelle, Calonne, lez Antoing, Belgium. Portland cement	26,832	July 16	72	413
Société Anonyme Union Fraternelle, Calonne, lez Antoing, Belgium. Portland cement	26,833	July 16	72	413
Southard, Robertson & Co., Peckskill, N. Y. Stoves, ranges, and heaters	26,837	July 16	72	414
Southern Manufacturing Company, Richmond, Va. Baking-powder	26,864	July 23	72	587
Sparks Milling Company, Alton, Ill. Wheat-flour	26,969	Aug. 20	72	1198
Speakman, Caroline E., Smyrna, Del. Canned tomatoes	27,058	Sept. 10	72	1649
Speyer & Grund, Frankfort-on-the-Main, Germany. Antiseptics	26,906	Aug. 6	72	894
Sprague, Warner & Co., Chicago, Ill. Tea	26,967	Aug. 20	72	1198
Sprague, Warner & Co., Chicago, Ill. Canned goods	27,099	Sept. 24	72	1901
Spyer, Joseph, New York, N. Y. Dental adhesive plates	26,920	Aug. 13	72	1039
Stamford Foundry Company, Stamford, Conn. Stoves and ranges	26,838	July 16	72	414
Standard Clothing Company, Boston, Mass. Coats and pantaloons	26,958	Aug. 20	72	1197
Starr Manufacturing Company, Limited, Dartmouth, Canada. Skates	26,872	July 23	72	588
Steuernagel, Firm of J. H., Frankfort-on-the-Main, Germany. Wines	26,790	July 9	72	283
Stevens, Augustus P., Brooklyn, N. Y. Cream of petroleum for the toilet	27,053	Sept. 10	72	1649
Stewart, David, Philadelphia, Pa. Cakes and crackers	26,755	July 2	72	136
Stiles' Sons, R. B., Norristown, Pa. Cough drops	27,069	Sept. 17	72	1780
Stowe, Benjamin L., Jersey City, N. J. Woven-fabric hose	26,812	July 16	72	411
Supplee Hardware Company, Philadelphia, Pa. Bicycles	26,983	Aug. 20	72	1200
Supplee Hardware Company, Philadelphia, Pa. Bicycles	26,984	Aug. 20	72	1200
T. H. Garrett & Company, Louisville, Ky. Snuff	26,851	July 23	72	585
Tellery, Silasko J., Delhi, Calcutta, Bombay, and Simla, India. Indian art wares of metallic or textile material or a combination of metallic and textile materials	26,923	Aug. 13	72	1039
Tetlow, Henry, Philadelphia, Pa. Powder for toilet and nursery purposes	26,971	Aug. 20	72	1198
Thayer, Paul W., Philadelphia, Pa. Gelatine, baking-powder, and flavoring extracts	26,900	Aug. 6	72	893
Thompson, Joseph T., Oneida, N. Y. Raspberries	27,098	Sept. 24	72	1901

Alphabetical list of registrants of trade-marks, July to September, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Threefoot Bros. & Co., Meridian, Miss. Smoking-tobacco	26,817	July 16	72	411
Threefoot Bros. & Co., Meridian, Miss. Bag granulated smoking-tobacco	26,896	Aug. 6	72	893
Tonawanda Tripoli Company, Tonawanda, N. Y. Soap	26,949	Aug. 13	72	1042
Torres, Charles, New York, N. Y. Flour	27,035	Sept. 3	72	1493
Tourtellotte, George M., Worcester, Mass. Medicinal plaster, lotion, ointment, tooth preparation, and a toilet soap	26,884	July 30	72	739
Towle Manufacturing Company. (See Cole, Lucien D., assignor.)				
Union Bag and Paper Company, Chicago, Ill. Paper bags	26,747	July 2	72	135
Union Bag and Paper Company, Chicago, Ill. Paper bags	26,961	Aug. 20	72	1197
Union Special Sewing Machine Company, Chicago, Ill. Certain named wearing-apparel	26,742	July 2	72	135
Union Special Sewing Machine Company, Chicago, Ill. Certain named wearing-apparel	26,743	July 2	72	135
Union Special Sewing Machine Company, Chicago, Ill. Certain named wearing-apparel	26,744	July 2	72	135
Union Special Sewing Machine Company, Chicago, Ill. Sewing-machines and parts thereof	26,774	July 2	72	138
Union Special Sewing Machine Company, Chicago, Ill. Sewing-machines and parts thereof	26,775	July 2	72	138
United States Baking Company, Pittsburg, Allegheny, and Williamsport, Pa., Cincinnati, Columbus, Zanesville, Dayton, Newark, Cleveland, Toledo, Mansfield, Akron, and Springfield, Ohio., Detroit, Bay City, Jackson, Muskegon, and Lansing, Mich., Indianapolis, Fort Wayne, Richmond, Evansville, and Terre Haute, Ind., Wheeling, W. Va., Buffalo and Rochester, N. Y., Boston, Mass., and Louisville, Ky. Crackers, cakes, and bread	26,825	July 16	72	412
United States Brewing Company of Chicago, Chicago, Ill. Lager-beer	26,750	July 2	72	135
Valentin Blatz Brewing Company, Milwaukee, Wis. Bottled lager-beer	26,749	July 2	72	135
Van Devanter, Robert L., Hagerstown, Md. Remedy for alcoholism and nervous diseases	27,093	Sept. 24	72	1901
Van Vleet-Mansfield Drug Company, Memphis, Tenn. Cough balsam	26,761	July 2	72	136
Vereinigte Chininfabriken Zimmer & Co., Frankfort-on-the-Main, Germany. Chemical and medical products	26,784	July 9	72	282
Veronica Mineral Water Company, Santa Barbara, Cal. Mineral waters	26,822	July 16	72	412
Vogelgesang, Theodore J., Buffalo, N. Y. Liniment	26,885	July 30	72	739
Walrath, Mary J., Minneapolis, Minn. Remedies for asthma, bronchitis, catarrh, hay-fever, and similar affections	26,937	Aug. 13	72	1041
Walter M. Lowney Company, Boston, Mass. Chocolates and other bonbons	26,881	July 30	72	738
Wells, Alfred H., Hyattsville, Md. Certain named medical compound	26,857	July 23	72	586
Welsbach Light Company, Gloucester City, N. J., and Philadelphia, Pa. Gas-burners and their accessories and parts	26,875	July 23	72	588
Wenz, Henry, Boston, Mass. Chocolate, cocoa, broma, and similar products from the cocoa-bean	26,945	Aug. 13	72	1042
Wetmore, Clarence J., San Francisco, Cal. Pickled olives	27,032	Sept. 3	72	1493
Weyman, Benjamin F., Pittsburg, Pa., and New York, N. Y. Chewing-tobacco	27,025	Sept. 3	72	1492
Weyman, Benjamin F., Pittsburg, Pa., and New York, N. Y. Smoking-tobacco	27,026	Sept. 3	72	1493
Weyman, Benjamin F., Pittsburg, Pa., and New York, N. Y. Smoking-tobacco	27,027	Sept. 3	72	1493
Weyman, Benjamin F., Pittsburg, Pa., and New York, N. Y. Smoking-tobacco	26,805	July 9	72	284
Wightman, Thomas, Pittsburg, Pa. Window-glass and glassware	26,834	July 16	72	413
Wightman, Thomas, Pittsburg, Pa. Window-glass and glassware	27,076	Sept. 17	72	1781
William Edge & Sons, Limited, Bolton, England. Dyes	27,077	Sept. 17	72	1781
William Edge & Sons, Limited, Bolton, England. Laundry blue	27,009	Aug. 27	72	1346
William Listman Milling Company, Superior, Wis. Wheat-flour	26,941	Aug. 13	72	1041
William Steinmeyer Company, Milwaukee, Wis. Canned goods	27,036	Sept. 3	72	1494
Williams & Co., R. C., New York, N. Y. Graham flour and prepared oats	26,942	Aug. 13	72	1041
Wilson, Fred M., Salem, Ohio. Butter	26,831	July 16	72	413
Winsor & Newton, Limited, London, England, and New York, N. Y. White pigment	26,762	July 2	72	137
Zem Zem Medicine Company, Fort Worth, Tex. Certain named medicinal remedies	26,873	July 23	72	588
Zimmerman Manufacturing Company, Freehold, N. J. Bicycles and accessories thereto	26,870	July 23	72	587
Zunz, Charles, New York, N. Y. Imported cement				

DISCLAIMERS.

Name, residence, and invention.	No.	Filed.	Official Gazette. Volume.	Pages.
Fowler, Thaddeus, Bridgeport, Conn.; disclaimer filed by assignees. Saw	328,019	July 18, 1895	72	421
Kinzel, John C., Knoxville, Tenn.; disclaimer filed by patentee. Brick-kiln	471,769	July 24, 1895	72	595
Tesla, Nikola, New York, N. Y.; disclaimer filed by assignees. Electrical transmission of power	382,280	July 17, 1895	72	421

ALPHABETICAL LIST OF INVENTIONS.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Accordion or similar musical instrument	W. Zielke	543,367	July 23	2677	631, 632	72	548
Acid and making it. Indoxylic	R. Knietsch and P. Seidel	546,165	Sept. 10	1256	.....	72	1509
Acid and making same. Amido-tetrazotic	J. Thiele	546,604	Sept. 17	2039	.....	72	1765
Acid. Apparatus for purifying nitric	W. Dieterle	543,826	July 30	3584	834	72	730
Acid. Process of and apparatus for making sulfuric	N. P. Pratt	546,596	Sept. 17	2025	481, 482	72	1763
Adding-machine	J. L. McElyea	545,089	Aug. 27	2319	563	72	1226
Adjustable joint	O. C. White	546,459	Sept. 17	1809	428	72	1722
Advertisements. Apparatus for automatically displaying	C. K. Marr	542,802	July 16	1721	410	72	352
Advertising apparatus. Aerostatic	N. Burgess	542,792	July 16	1699	404	72	348
Advertising-caster	C. E. Larrabee	543,938	Aug. 6	190	45	72	783
Advertising device	J. F. Bomm	541,915	July 2	157	37	72	34
Advertising device	J. T. Craw	542,872	July 16	1823	432	72	371
Advertising device	G. M. Underwood	545,752	Sept. 3	556	132	72	1455
Advertising-lamp	A. C. Wright	546,836	Sept. 24	2426	581	72	1850
Advertising-machine. Coin-controlled	H. A. Manley	545,632	Sept. 3	338	85	72	1416
Advertising-machine. Coin-controlled	H. A. Manley	545,633	Sept. 3	341	85	72	1417
Advertising-machine. Coin-controlled	H. A. Manley	545,965	Sept. 10	915	219	72	1536
Aerial navigation	E. C. de los Ólivos	542,100	July 2	462	110	72	90
Agricultural implements. Sulky-frame for	J. R. Carson and J. H. Denman, Jr.	545,051	Aug. 27	2242	543, 544	72	1211
Agricultural implements. Swinging seat for	L. Beyer, Jr	542,133	July 2	511	123	72	101
Air-blast conveyer	J. M. Dodge	544,969	Aug. 20	2109	505	72	1166
Air-brake	T. J. Hogan	546,448	Sept. 17	1780	423, 424	72	1716
Air-brake	T. J. Hogan	546,449	Sept. 17	1784	424	72	1717
Air-brake	A. L. Wheeler	546,835	Sept. 24	2424	581	72	1849
Air-brake-controlling mechanism	W. N. Thompson	545,749	Sept. 3	544	130, 131	72	1454
Air-brake coupling	W. A. and B. S. H. Harris	544,253	Aug. 6	747	192	72	884
Air-brake. Railway-car	D. Dunn	546,510	Sept. 17	1892	447	72	1738
Air-brake system	H. E. Hunt	545,295	Aug. 27	2666	647	72	1295
Air-brake system	G. F. Steedman	542,948	July 16	1942	460, 461	72	396
Air-carbureting apparatus	A. E. Aldrich	544,945	Aug. 20	2066	493	72	1158
Air-compressing apparatus. Hydraulic	C. H. Taylor	543,410	July 23	2741	647	72	561
Air-compressing apparatus. Hydraulic	C. H. Taylor	543,411	July 23	2742	648	72	561
Air-compressing apparatus. Hydraulic	C. H. Taylor	543,412	July 23	2744	648	72	562
Air-compressor	W. Moyer	541,979	July 2	267	62	72	54
Air-compressor	H. A. Pedrick	544,548	Aug. 13	1316	320	72	999
Air-compressor. Hydraulic	J. H. Champ	544,456	Aug. 13	1175	284, 285	72	971
Air-compressor. Hydraulic	J. H. Champ	544,457	Aug. 13	1177	285	72	971
Air-compressor. Hydraulic	J. H. Champ	544,458	Aug. 13	1179	286	72	972
Air-compressor. Hydraulic	J. H. Champ	544,459	Aug. 13	1181	286, 287	72	973
Air-forcing device	G. W. Lord	545,023	Aug. 20	2199	532	72	1181
Air-heating apparatus	H. C. Sergeant	546,866	Sept. 24	2466	590	72	1858
Air-moistener	W. H. Armstrong	545,440	Sept. 3	6	2	72	1356
Alarm: *See* Bicycle-alarm. Bilge-water alarm. Burglar-alarm. Electric alarm. Fire-alarm. High or low water alarm. Registering-alarm.							
Alarm-gage. Electric	W. H. Bradt	542,406	July 9	1017	250	72	209
Alarm-lock	J. W. Kohn	542,479	July 9	1154	282, 283	72	234
Alarm-lock for tills. Electric	C. Helm	544,224	Aug. 6	680	173	72	873
Album	S. Martin	546,337	Sept. 17	1587	376	72	1679
Album and writing-desk. Combined	W. A. Holman	543,209	July 23	2425	570	72	502
Album support. Photographic	G. Schwab	542,113	July 2	482	116	72	95
Albumen. Making hæmatin	N. R. Finsen	544,912	Aug. 20	2016	.....	72	1149
Ale, &c., under pressure. Apparatus for coloring	G. W. Robinson	546,458	Sept. 17	1807	428	72	1721
Alkalicyanids. Process of and apparatus for making	H. Y. Castner	543,643	July 30	3240	752	72	666
Alkaline sulfates from bisulfates. Making neutral	E. A. Starke	542,429	July 9	1064	261	72	218
Alloy. Electrodeposition of	H. J. Altman	543,824	July 30	3580	.....	72	729
Alloy. Manufacturing	W. Sunderland	544,753	Aug. 20	1701	.....	72	1088
Alloy. Metallic	W. H. Kemler	546,780	Sept. 24	2337	.....	72	1833
Aluminium oxid. Extracting	A. W. Nibelius	544,319	Aug. 13	869	.....	72	918
Amalgamating apparatus for extracting gold	T. Pilkington	546,079	Sept. 10	1115	266	72	1574
Amalgamator	G. H. Chick	545,011	Aug. 20	2174	525	72	1177
Amalgamator	G. M. Urie	546,749	Sept. 24	2294	545	72	1824
Amalgamator and separator	G. A. and D. C. Blinn	546,378	Sept. 17	1659	394	72	1693
Amido base and colors therefrom. New	R. Koreff	541,859	July 2	67	.....	72	16
Amusement and advertising device	J. S. Vine	546,264	Sept. 10	1437	340	72	1633
Anchor	H. O. Dunn	543,129	July 23	2258	535	72	471

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Animal-shears	W. Silver	542,380	July 9	974	240	72	201
Animal-trap	J. A. Dietz	546,918	Sept. 24	2555	612	72	1875
Animal-trap	C. Fliedner	542,730	July 16	1587	380	72	329
Animal-trap	E. Hoover	546,986	Sept. 24	2504	598	72	1865
Animal-trap	T. M. Hovell	544,983	Aug. 20	2131	515	72	1170
Animal-trap	H. G. Klenze	542,963	July 16	1964	466	72	400
Animal-trap	W. H. McWhirter	543,263	July 23	2521	592	72	518
Animal-trap. Antomatic	J. B. Hobby	542,610	July 9	1382	333, 334	72	277
Annealing box and pan	R. Bailey	545,868	Sept. 10	747	182	72	1503
Annealing-furnace	C. H. Prust and J. Watkins	546,432	Sept. 17	1754	416, 417	72	1711
Annealing-furnace	W. J. Verner	542,698	July 16	1542	367	72	320
Annunciator	J. W. Olson	542,833	July 16	1765	420	72	360
Annunciator. Electric	W. J. Clarke	542,926	July 16	1911	452, 453	72	389
Annunciator. Electric	G. J. Galbraith	545,069	Aug. 27	2288	555, 556	72	1220
Annunciator. Electric	H. C. Thomson	542,664	July 16	1485	356	72	310
Annunciator. Electrical time-	E. M. Edgerton	543,000	July 23	2027	482	72	428
Annunciator. Train-	C. H. Rittenhouse	542,108	July 2	471	113, 114	72	93
Annunciators. Electrical indicating system for	W. F. Banks	546,874	Sept. 24	2480	593, 594	72	1861
Anode for electrolytical apparatus	C. Hoepfner	546,328	Sept. 17	1573		72	1677
Anvil	M. W. McInturff	543,397	July 23	2720	642	72	557
Arc-light support	B. Pickering	542,279	July 9	776	101	72	164
Arches, partitions, &c. Construction of	F. Milliken	545,301	Aug. 27	2676	649, 650	72	1297
Arm-rest	J. W. Morrison	544,821	Aug. 20	1844	443	72	1116
Arm-support	H. T. Loomis	541,863	July 2	76	17	72	18
Armatures for dynamo-electric machines. Construction of	W. B. Sayers	543,895	Aug. 6	118	26, 27	72	769
Armor for boxers. Registering-	J. Donovan	543,086	July 23	2178	516	72	456
Armor-plates, &c., during process of chilling. Apparatus for indicating warping, &c., of	T. J. Tresidder	543,362	July 23	2669	629, 630	72	547
Ash and soot pan	H. Colman	542,797	July 16	1714	407	72	350
Asphalt heating and mixing machine	R. Butcher	546,444	Sept. 17	1772	421, 422	72	1714
Asynchronous motor	M. Hutin and M. Leblanc	545,693	Sept. 3	446	108	72	1436
Athletic suit. Lady's	I. M. Rew	545,173	Aug. 27	2473	599	72	1255
Atomizer	C. Wagner	544,143	Aug. 6	538	133	72	848
Atomizing and burning apparatus. Fluid-fuel	H. C. Fellenbaum	546,397	Sept. 17	1690	402	72	1699
Audiphone	J. A. Lakin	544,732	Aug. 20	1670	401	72	1082
Auger. Earth-	E. Harper	546,529	Sept. 17	1919	455	72	1743
Auger-handle. Adjustable	J. Tunsted	543,413	July 23	2745	649	72	562
Auger. Well or post	J. M. Fishback	545,685	Sept. 3	436	105	72	1435
Autographic register	D. T. Baxter	543,420	July 23	2757	652	72	564
Autographic register	H. C. Biette	543,842	Aug. 6	15	5, 6	72	751
Autographic register	J. Kirby, Jr., W. E. Crume, C. D. Grimes, and J. M. Clark.	543,342	July 23	2636	620	72	541
Autographic register	G. M. Morris	542,091	July 2	448	107	72	88
Autographic register	G. A. Norcross	546,427	Sept. 17	1746	414, 415	72	1709
Automatic gate	D. M. Everton	546,381	Sept. 17	1602	395	72	1694
Automatic sprinkler	D. Turner and C. J. Gardner	542,122	July 2	494	119	72	98
Automatic switch	S. A. Cooney	544,961	Aug. 20	2094	501, 502	72	1163
Awning-operating mechanism	T. J. Daniels	546,730	Sept. 24	2256	537	72	1817
Ax	J. W. Carver	542,973	July 16	1987	470	72	403
Axle	C. J. Kilian	542,264	July 9	739	181	72	158
Axle-box. Car	J. Petithomme	545,720	Sept. 3	498	121	72	1446
Axle-box. Carriage-wheel	H. Schuppisser	543,320	July 23	2608	613	72	535
Axle-box for agricultural implements. Stagger-wheel	G. Moore	545,129	Aug. 27	2396	580	72	1240
Axle-box pedestal. Car-	S. J. Van Stavoren	544,701	Aug. 20	1622	388, 389	72	1073
Axle. Carriage-	S. R. Bailey	543,368	July 23	2678	632	72	548
Axle lubricator. Car-	A. W. Wright	542,214	July 2	654	160	72	127
Axle point. Vehicle-	W. G. Ford	542,883	July 16	1845	437	72	376
Axle-setting device	J. F. Shultz	543,059	July 23	2133	506	72	447
Axle-skein	J. Salay	544,325	Aug. 13	880	221	72	921
Axle. Vehicle-	J. H. Curl and W. G. Cummins	542,607	July 9	1377	333	72	276
Axles. Lock-clamp for securing cranks to	G. W. Bennett	543,283	July 23	2552	599	72	524
Baby-carrier. Portable	A. W. Webster	544,074	Aug. 6	424	106	72	827
Baby-walker	S. Kell	546,333	Sept. 17	1580	375	72	1678
Back-band hook	L. Stowe	543,514	July 30	2964	695	72	618
Backwater and sewer-gas trap	P. F. Lenhart	542,417	July 9	1038	254	72	213
Bag: *See* Mail-bag. Traveling-bag. Paper bag. Water-bag.							
Bag	L. D. Benner	545,443	Sept. 3	12	4	72	1357
Bag-fastener	N. Brown	546,484	Sept. 17	1850	438	72	1730
Bag-holder	L. J. Tanquary	545,551	Sept. 3	908	51	72	1392
Bag-machine	E. S. Staples	544,197	Aug. 6	618	154, 155, 156	72	863
Bag-packing machine	W. I. Tuttle	543,114	July 23	2231	528, 529, 530	72	465
Bag-supporting device	H. Cotter	544,461	Aug. 13	1187	288	72	974
Bags. Machine for inserting shirring-strings into	F. H. Sherman and F. W. McArdle	546,940	Sept. 24	2588	621	72	1881
Bake-pan	L. E. Willey	545,216	Aug. 27	2350	617	72	1272
Baking-pan	C. A. Hudson	542,707	July 16	1555	379	72	322

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Baking-powder	J. D. Gregory	544,975	Aug. 20	2116		72	1168
Balcony. Portable window-	F. G. Merritt	545,242	Aug. 27	2589	627	72	1279
Bale and making same. Cylindrical cotton-	J. W. Graves	546,009	Sept. 10	903	240	72	1550
Bale-tie machine	G. Johnson	544,762	Aug. 20	1714	413	72	1091
Baling-press	J. W. Hunter	544,255	Aug. 6	754	193	72	886
Baling-press	A. Roop, F. L. Brandon, and J. S. Hart.	543,632	July 30	3223	748	72	662
Baling-press	J. M. Sanders	542,314	July 9	847	208	72	176
Baling-press	J. M. Washburn	543,278	July 23	2544	597	72	523
Ball-and-socket hanger for sieves, &c.	J. Wörner	545,931	Sept. 10	860	208	72	1524
Ball-bearing shears	L. A. Williamson	545,834	Sept. 3	686	167	72	1480
Ball-indicating apparatus. Base-	F. M. Chapman	546,003	Sept. 10	983	238	72	1518
Balling-machine	H. White	544,941	Aug. 20	2060	491, 492	72	1157
Band-cutter and feeder	J. L. Barker	545,935	Sept. 10	867	209	72	1526
Band-cutter and feeder	J. L. Barker	546,291	Sept. 17	1499	353, 354	72	1662
Band-cutter and feeder	J. T. and S. W. Collins	543,174	July 23	2360	556, 557	72	490
Band-cutter and feeder	W. T. Flickinger	542,155	July 2	544	132	72	107
Bandage	R. Jacks	544,062	Aug. 6	409	102	72	824
Banjo	W. F. Libby	542,165	July 2	502	136	72	110
Banjo	N. Merrill	541,976	July 2	262	61	72	53
Banjo-tailpiece	E. Jacoby	546,536	Sept. 17	1927	458	72	1744
Bank. Registering savings-	J. E. Mellor	544,819	Aug. 20	1841	442	72	1116
Bar: *See* Boring-bar. Cutter-bar. Car-moving bar.							
Barley-fork	N. Leonard	546,740	Sept. 24	2272	540	72	1820
Barns or other buildings. Frame for	P. Deville	544,215	Aug. 6	664	170	72	870
Barrel. Ash-	C. A. Hurley	543,937	Aug. 6	189	45	72	783
Barrel attachment	W. L. Rushton	546,680	Sept. 24	2164	515	72	1801
Barrel-cover	J. Murray	543,396	July 23	2718	642	72	556
Barrel-cover	W. L. Walsh	546,207	Sept. 10	1328	315	72	1612
Barrel-head clamp	H. M. Dellinger	543,421	July 23	2761	652	72	564
Barrel-heading machine	J. B. Stanhope	545,388	Aug. 27	2803	681	72	1320
Barrel-support	H. S. Covey	546,395	Sept. 17	1695	400	72	1698
Barrel-swing	W. D. Lloyd	543,388	July 23	2703	638	72	554
Barrel-washer	J. Winterbotham	542,669	July 16	1494	357	72	311
Basin. Catch-	G. F. Kuhna	543,740	July 30	3415	793	72	699
Basin cover. Catch-	G. G. Campbell	545,343	Aug. 27	2741	664	72	1307
Basin-waste stop	H. J. Gilcher	541,845	July 2	45	11	72	11
Basket	J. J. Keyes	543,023	July 23	2065	490	72	435
Basket-cover	H. Weed	543,279	July 23	2545	598	72	523
Basket. Waste-paper	J. W. Stewart	545,662	Sept. 3	386	95	72	1426
Bat. Ball-	A. H. Kennedy	546,540	Sept. 17	1932	459	72	1745
Bath: *See* Medical dry bath. Shower-bath.							
Bath	R. Drury	543,469	July 30	2864	671, 672	72	600
Bath	F. Ponce	546,937	Sept. 24	2584	619, 620	72	1881
Bath apparatus. Electric-	W. E. Golden	542,471	July 9	1142	279, 280	72	231
Bath-brush apparatus	M. J. Lyons	544,362	Aug. 13	998	245	72	937
Bath-cabinet. Portable	J. H. Kochenderfer	542,163	July 2	558	135	72	110
Bath-chair	G. C. Goethel	545,887	Sept. 10	774	189	72	1508
Bath-tub	F. J. Miller	545,243	Aug. 27	2590	628	72	1279
Bath-tub and trunk. Combined	E. Sandow	546,711	Sept. 24	2213	528	72	1810
Bath-tub fixture	J. H. Gavin	541,843	July 2	43	10	72	11
Bath-tub seat	S. Newman and H. R. Bothwell	546,180	Sept. 10	1279	305	72	1603
Bath-tubs, &c. Leg for	J. H. Stevens, Jr.	543,196	July 23	2403	566	72	499
Bath-tubs, washbasins, &c. Attachment for	A. Fiedler	543,149	July 23	2295	544	72	478
Batteries used on vehicles. Support for electrical	T. Froggatt	544,430	Aug. 13	1115	271	72	959
Battery: *See* Electric battery. Secondary battery. Galvanic battery. Stamp-battery. Primary battery. Voltaic battery.							
Battery elements. Galvanic-	F. A. and N. von Alimonda	542,953	July 16	1953	464	72	397
Battery plate. Secondary-	J. J. Rooney	543,055	July 23	2129	504	72	446
Battery-plates. Machine for making	T. T. Lewis	544,180	Aug. 6	591	148	72	858
Bearing. Adjustable	M. Young	542,580	July 9	1329	322	72	266
Bearing. Antifriction-	A. W. Grant	543,301	July 23	2575	605, 606	72	529
Bearing. Antifriction-	F. M. Lechner	543,875	Aug. 6	85	19	72	764
Bearing. Antifriction-	F. Mossberg	543,262	July 23	2520	592	72	518
Bearing. Ball-	R. F. Hall	544,406	Aug. 13	1074	261, 262	72	950
Bearing. Ball-	O. C. Knipe	546,818	Sept. 24	2393	572	72	1843
Bearing. Ball-	F. M. Lechner	543,876	Aug. 6	86	19	72	764
Bearing. Ball-	T. J. Reid	546,557	Sept. 17	1966	466	72	1751
Bearing. Ball-	T. J. Reid	546,558	Sept. 17	1968	466, 467	72	1751
Bearing for carriage-spindles. Roller-	W. F. Wagner	544,451	Aug. 13	1168	283	72	970
Bearing for spring-vehicles. Body-loop	W. F. Morton	543,698	July 30	3325	772	72	681
Bearing. Roller-	H. A. Berger	542,869	July 16	1819	431	72	370
Bearing. Roller-	H. A. Berger	543,718	July 30	3370	783	72	690
Bearing. Roller-	R. A. Berger	543,719	July 30	3372	783	72	690
Bearing. Roller-	R. A. Berger	543,720	July 30	3373	783	72	690
Bearing. Roller-	G. W. Chelton	545,150	Aug. 27	2431	590	72	1248
Bearing. Shaft-	W. H. Torstrick	541,902	July 2	137	33	72	30
Beating-out machine	W. E. Forster and E. E. Winkley	542,958	July 16	1959	465	72	399
Beating-out machine	J. J. Heys	543,019	July 23	2057	488, 489	72	434

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bed	B. Prufrock	544,488	Aug. 13	1226	297	72	981
Bed-bottom. Spring	A. E. Beall	546,293	Sept. 17	1507	355	72	1664
Bed-bottom. Spring	P. Fraser	544,616	Aug. 13	1438	651	72	1021
Bed-bottom. Wire	J. R. Lariew	543,994	Aug. 6	284	69, 70	72	800
Bed-clamp	H. J. Ney	544,823	Aug. 20	1846	443	72	1117
Bedclothes-holder	R. T. Joy	546,538	Sept. 17	1929	458	72	1745
Bed. Folding	J. H. Morrison	543,499	July 30	2923	688	72	611
Bed. Invalid	W. J., R. H., and R. H. Dawson	542,994	July 23	2016	4-0	72	426
Bed-lounge and crib. Combined	D. Froehlich	542,759	July 16	1642	392	72	338
Bed-pan. Obstetric	J. W. Vaughn	543,516	July 30	2967	696	72	619
Bed. Spring	H. A. Bacon and W. S. Duvall	542,008	July 2	322	78	72	65
Bed. Spring	A. L. Norton	542,170	July 2	569	138	72	112
Bed. Spring	J. H. O'Connor	541,873	July 2	89	21	72	21
Bed, table, stretcher, and chair. Combined	J. F. and K. M. Sauerbier	542,374	July 9	962	236, 237	72	198
Beds, &c. Guard attachment for	L. A. Russell	544,381	Aug. 13	1024	251, 252	72	942
Bedstead	M. C. Scherer	544,630	Aug. 13	1467	356	72	1027
Bedstead brace and clamp	T. H. Shepherd	545,383	Aug. 27	2797	680	72	1318
Bedstead-bracing	J. T. C. Jones	543,211	July 23	2428	571	72	502
Bedstead clothes-supporting attachment	W. C. Guilford	543,576	July 30	3068	718	72	640
Bedstead clothes-supporting attachment	W. C. Guilford	543,577	July 30	3069	718	72	640
Bedstead-slat	P. Fraser	544,615	Aug. 13	1437	350	72	1021
Bedstead. Steamer	W. I. Fielding	544,783	Aug. 20	1782	426	72	1105
Beehive	G. C. Ferguson	546,007	Sept. 10	991	239, 240	72	1549
Beer. Apparatus for drawing and serving steam	G. A. Friedrich	546,115	Sept. 10	1172	280	72	1584
Beer. Apparatus for pasteurization of	W. Wirtz	546,393	Sept. 17	1683	399	72	1698
Beer-cooler	E. Seitz	545,382	Aug. 27	2795	679	72	1318
Beer-drawing apparatus	A. Kopp	542,364	July 9	945	232	72	195
Beer-pipe cleaner	A. B. Ogden	544,191	Aug. 6	608	152	72	861
Bell	E. D. Rockwell	545,378	Aug. 27	2789	678	72	1317
Bell. Bicycle	R. M. Beatty	543,419	July 23	2756	651	72	563
Bell. Call	P. D. Evans and H. B. Tomkin	541,926	July 2	175	41	72	38
Bell. Magneto-electric	L. Moore	544,107	Aug. 6	487	121	72	838
Bell-ringing valve	S. A. Jennings	543,250	July 23	2498	586	72	515
Bellows	A. M. Wickenberg	546,370	Sept. 17	1644	391	72	1690
Belt	H. J. Gaisman	542,306	July 9	831	204	72	173
Belt	J. H. Theberath	544,328	Aug. 13	885	222	72	921
Belt and skirt attachment	M. Freund	546,920	Sept. 24	2558	612	72	1825
Belt attachment	E. B. Koopman	544,856	Aug. 20	1908	458	72	1129
Belt-lacing. Device for forming	C. K. Judson	544,177	Aug. 6	587	147	72	857
Belt-shifting device	O. R. Kuner	546,618	Sept. 17	2058	488	72	1769
Belting for transmission of power	R. I. Brown	543,123	July 23	2249	533, 534	72	469
Belting for transmission of power	R. I. Brown	543,124	July 23	2251	534	72	470
Bench: *See* Kneeling or foot bench.							
Bending-roll	W. Sellers and W. Lewis	543,815	July 30	3557	827	72	725
Berry-package	S. W. Funk	544,431	Aug. 13	1116	271	72	959
Berry-picking machine	G. H. Hasey	546,777	Sept. 24	2334	557	72	1832
Berth. Self-leveling	W. T. Milligan	544,065	Aug. 6	412	103	72	825
Berth. Ship's	W. P. Hoskins	544,979	Aug. 20	2120	508, 509, 510	72	1168
Berth. Ship's	W. P. Hoskins	544,980	Aug. 20	2122	511, 512	72	1169
Berth. Ship's	W. P. Hoskins	544,981	Aug. 20	2126	512, 513, 514	72	1169
Berth. Sleeping-car	W. D. Downs	542,226	July 2	673	165	72	130
Berth. Sofa	W. P. Hoskins	544,982	Aug. 20	2129	514, 515	72	1169
Bevel. Inside	S. H. Markham	542,367	July 9	951	233	72	196
Beveling-machine	C. Schraubstadter, Jr., and C. R. Schilling.	542,504	July 9	1200	293	72	242
Beveling veneer strips. Machine for	C. F. Seamman	545,823	Sept. 3	665	162	72	1477
Bicycle	H. R. and E. T. Collins	544,427	Aug. 13	1113	270	72	958
Bicycle	L. S. Crandall	546,004	Sept. 10	987	238	72	1549
Bicycle	W. De Lany	545,948	Sept. 10	885	213	72	1529
Bicycle	F. M. and J. E. Goodhue	542,637	July 16	1429	344	72	299
Bicycle	G. A. Graves	544,165	Aug. 6	570	142	72	854
Bicycle	W. Johnson	546,668	Sept. 24	2141	510	72	1797
Bicycle	G. B. Thomas	543,515	July 30	2965	696	72	619
Bicycle	A. S. Weaver	543,070	July 23	2152	510, 511	72	451
Bicycle air-pump	A. B. Marshall	545,300	Aug. 27	2675	649	72	1296
Bicycle-alarm	R. M. Beatty	543,418	July 23	2754	651	72	563
Bicycle attachment	T. A. Fowler	545,474	Sept. 3	74	18	72	1368
Bicycle attachment	G. E. Heaton	542,254	July 9	718	177	72	154
Bicycle-bearing	T. F. La Belle	542,526	July 9	1242	303	72	250
Bicycle belt-holder	W. W. Batchelder	544,653	Aug. 20	1513	365	72	1053
Bicycle-brake	R. T. Addy	544,556	Aug. 13	1329	323	72	1002
Bicycle-brake	J. Christensen	543,723	July 30	3379	785	72	691
Bicycle-brake	J. Christensen	543,724	July 30	3380	785	72	692
Bicycle-canopy	G. C. Mathews	546,104	Sept. 10	1155	276	72	1581
Bicycle-case	N. W. Mumford	542,096	July 2	457	109	72	89
Bicycle-chain lock	H. G. Geistwite	543,547	July 30	3020	706	72	630
Bicycle-chains. Device for cleaning	C. G. Polleys	545,972	Sept. 10	926	221	72	1538
Bicycle clutch mechanism	G. S. Manson	542,392	July 9	995	246	72	204
Bicycle-crank	C. Timm	546,260	Sept. 10	1427	338, 339	72	1631
Bicycle driving-gear	D. Lippy and I. E. Finfrock	546,703	Sept. 24	2203	525, 526	72	1808

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bicycle driving mechanism	T. J. Lindsay	545,408	Aug. 27	2852	694	72	1330
Bicycle-fork crown-piece	F. H. Beecher and R. G. Cornforth	544,082	Aug. 6	444	110	72	830
Bicycle-frame	W. K. Bellis	544,021	Aug. 6	335	83	72	810
Bicycle-frame and finishing same	G. Gross	546,446	Sept. 17	1778	423	72	1715
Bicycle-lock	J. D. Shoots	544,132	Aug. 6	525	130	72	845
Bicycle lock and brake	C. E. Johnson	545,959	Sept. 10	903	217	72	1533
Bicycle-lock. Combination	G. A. Crancer	544,909	Aug. 20	2011	480	72	1148
Bicycle locking device	H. C. Tafel	542,507	July 9	1205	293	72	243
Bicycle-motor	N. S. Hopkins	543,094	July 23	2192	520, 521	72	458
Bicycle mud-guard	J. W. Shone	544,935	Aug. 20	2050	489	72	1155
Bicycle-pedal	C. H. Metz	546,071	Sept. 10	1099	262	72	1571
Bicycle-pedal balance attachment	J. R. Bliven	543,844	Aug. 6	21	6	72	753
Bicycle-saddle	A. J. Eddy	545,224	Aug. 27	2563	621	72	1274
Bicycle-saddle	H. and F. Mesinger	543,260	July 23	2517	591	72	518
Bicycle-saddle	B. S. Seaman	546,032	Sept. 10	1032	248	72	1557
Bicycle-saddle	B. S. Seaman	546,350	Sept. 17	1612	384	72	1684
Bicycle-saddle	B. S. Seaman	544,795	Aug. 20	1800	430	72	1108
Bicycle-saddle support	J. E. James	543,484	July 30	2891	680, 681	72	605
Bicycle. Safety	I. Knowlton	45,631	Sept. 3	337	84	72	1416
Bicycle-stand	N. B. Le Fevre	542,964	July 16	1966	467	72	400
Bicycle-stand	J. K. Getty	546,612	Sept. 17	2051	487	72	1767
Bicycle-support	W. H. Hart, Jr.	544,223	Aug. 6	679	173	72	873
Bicycle-support	S. Pennington, W. Babel, and E. Wehrt.	541,880	July 2	103	24	72	23
Bicycle tack-catcher	J. A. Wright	542,672	July 16	1498	359	72	312
Bicycle toe-clip	A. A. Bevin	546,412	Sept. 17	1716	407	72	1703
Bicycle tool-box	S. B. Leonard	544,640	Aug. 13	1487	360	72	1031
Bicycle-wheel	G. Le Blanc and L. Johnson	546,593	Sept. 17	2022	480	72	1762
Bicycle-wheel	G. J. Loomis	543,099	July 23	2202	522	72	460
Bicycles. Obtaining two speeds in	S. J. Collier	544,267	Aug. 6	770	196	72	889
Bicycles, &c. Saddle for	E. B. Beach	545,421	Aug. 27	2877	701	72	1335
Bicycler's tool	R. C. Fawcett	544,726	Aug. 20	1664	400	72	1081
Bilge-water alarm	E. Brush	542,301	July 9	824	202	72	172
Bill-holder	W. J. Whitwood	542,125	July 2	498	120	72	99
Billiard or other cues. Holder for	T. Clark	546,225	Sept. 10	1358	323	72	1619
Billiard or pool table shade and reflector	E. F. Gennert	546,611	Sept. 17	2050	486	72	1767
Bimetallic plates, slabs, &c. Manufacturing	A. Rodig	543,192	July 23	2396	565	72	498
Bin: *See* Flour-bin.							
Bin or sample-case	J. Luigart	544,817	Aug. 20	1834	441	72	1115
Binder. Automatic self	C. A. A. Rand	545,172	Aug. 27	2469	598, 599	72	1255
Binder. Bundle	F. A. Hedges	546,326	Sept. 17	1570	373	72	1676
Binder. Folio	P. D. Fenn	546,811	Sept. 24	2387	570	72	1842
Binder for newspapers or the like	J. W. Wood	546,910	Sept. 24	2543	608	72	1872
Binder. Temporary	E. B. Millert	546,492	Sept. 17	1862	441	72	1732
Binder. Temporary	C. E. Morehouse	543,101	July 23	2205	523	72	461
Bird-cage	T. L. and W. F. Maxwell	543,345	July 23	2643	622	72	542
Bird-cage hook	E. C. Heywood	545,159	Aug. 27	2446	593	72	1251
Bird-trap	F. Maierhofer	546,491	Sept. 17	1861	441	72	1732
Bismuth oxyiodidgallate and preparing same	F. Lüdy	544,104	Aug. 6	483	.....	72	837
Bit: *See* Bridle-bit. Horse-bit. Drill-bit.							
Bit-stock	H. V. Smith	542,448	July 9	1104	271	72	225
Bituminous compounds. Apparatus for treating	E. F. Badgley	542,701	July 16	1546	369, 370	72	321
Blacking-receptacle for blacking-brushes	H. E. Verpillier and J. V. Prior	543,200	July 23	2409	566	72	499
Blacking. Shoe	J. B. Bernard	546,876	Sept. 24	2492	.....	72	1863
Blast-furnace	W. Penberthy	545,718	Sept. 3	494	120	72	1445
Blasting-powder	F. G. A. Broberg	542,723	July 16	1578	.....	72	327
Blasting-powder	B. C. Pettingell	546,552	Sept. 17	1951	.....	72	1749
Bleaching and cleaning composition	H. Wächter	546,206	Sept. 10	1328	.....	72	1612
Blind. Awning	S. H. Davis	546,759	Sept. 24	2308	550	72	1827
Blind-fastening	L. W. Jordan	543,808	July 30	3547	824	72	723
Blind slats. Machine for cutting and tenoning window	F. H. Van Houten	543,712	July 30	3351	777, 778	72	686
Blind-stop	M. McMahon	542,965	July 16	1968	467	72	400
Blind. Window	P. Ortmann	544,371	Aug. 13	1013	248	72	940
Block: *See* Brake-block. Building-block.							
Blower for furnaces. Steam and air	W. J. Thomas	542,864	July 16	1811	429	72	369
Blower for grates or stoves. Curtain	W. H. Burden	542,302	July 9	825	202	72	172
Board: *See* Modeling-board.							
Boat: *See* Collapsible boat. Life-boat. Folding boat.							
Bobbin	G. Pendleton, Jr.	542,835	July 16	1767	420	72	360
Bodkin	F. D. Arthur	546,128	Sept. 10	1194	284	72	1527
Boiler: *See* Hot-water-circulating boiler. Sectional boiler. Marine boiler. Steam-boiler. Range-boiler. Tubulous boiler. Water-tube boiler.							
Boiler	G. A. Albright	546,215	Sept. 10	1339	318	72	1615
Boiler	P. Bentzen and C. F. Olsen	541,830	July 2	19	5	72	6
Boiler	B. J. Coller	545,269	Aug. 27	2626	637	72	1227
Boiler	O. C. Davis	541,839	July 2	39	9	72	10
Boiler	E. Gurney	542,799	July 16	1716	408	72	351
Boiler	L. H. Sparks	545,386	Aug. 27	2801	680	72	1319

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Boiler-cleaner	C. S. Garrigus	543,527	July 30	2990	700, 701	72	624
Boiler-cleaner	F. L. Smith	543,541	July 30	3010	705	72	628
Boiler-cleaning device	D. Waight	543,144	Aug. 6	540	134	72	848
Boiler-covering	H. C. Michell	543,964	Aug. 6	233	57	72	791
Boiler-feeder. Automatic	E. L. Hall	544,976	Aug. 20	2117	507	72	1168
Boiler fuel-feeding apparatus	A. O. Müller	544,187	Aug. 6	602	150	72	860
Boiler-furnace	W. Brand	546,772	Sept. 24	2327	555	72	1830
Boiler-furnace	A. Dwelle	542,187	July 2	594	144	72	116
Boiler-furnace	H. H. Hungerford	544,898	Aug. 20	1990	476	72	1144
Boiler-furnace	G. Playford	542,493	July 9	1183	289	72	239
Boiler-furnace	E. Powell	543,631	July 30	3220	746, 747	72	662
Boiler-furnace	C. C. Pruden	546,029	Sept. 10	1028	247	72	1557
Boiler-furnace	D. S. Richardson	544,323	Aug. 13	877	220	72	920
Boiler furnace and tiles therefor. Steam-	J. L. Gill, Jr	543,528	July 30	2992	701	72	624
Boiler furnace. Steam-	H. Korten	543,739	July 30	3413	792	72	699
Boiler furnace. Steam-	R. Müller	544,108	Aug. 6	488	121, 122	72	838
Boiler gage. Steam-	M. Doerhoefer	546,589	Sept. 17	2018	479	72	1761
Boiler hand-holes. Closure for	J. D. Smith	546,789	Sept. 24	2351	561	72	1836
Boiler skimmer and throttler. Automatic	J. Austin	546,290	Sept. 17	1498	353	72	1662
Boiler-tube cleaner	F. M. Clark	544,908	Aug. 20	2010	480	72	1148
Boiler-tubes. Apparatus for removing incrustations, &c., from	H. Baschy	546,804	Sept. 24	2376	567	72	1840
Boilers. High or low water alarm for steam-	G. Pierard and V. Guinet	543,139	July 23	2277	540	72	474
Bolster-standard	T. H. Bennett	543,457	July 30	2847	667	72	597
Bolt: *See* Rotary bolt.							
Bolt cutter	C. S. Hill	543,649	July 30	3248	755	72	667
Bolt or rivet	G. F. Lemmon	545,961	Sept. 10	906	217	72	1534
Bolting-cloth brush	H. K. Mowson and R. F. Corey	542,093	July 2	452	108	72	88
Bolting-machine	W. D. Gray	543,088	July 23	2181	517	72	456
Bonbon-dipping machine	L. Hirschfeld	543,733	July 30	3406	790, 791	72	697
Bonding and tying device	W. C. Hanna, Jr	543,014	July 23	2051	486	72	432
Bone-cutting machine	H. H. V. Lilley	543,033	July 23	2088	495	72	439
Bone-grinding machine	H. P. Chapman	544,087	Aug. 6	454	112	72	832
Bookcase	P. J. Pauly, Sr	542,277	July 9	774	190	72	163
Book-holder	M. Beyer	544,948	Aug. 20	2073	494	72	1160
Book-holder	J. W. Clark	543,081	July 23	2170	514	72	454
Book-holder	F. A. Taylor	542,293	July 9	813	199	72	169
Book-holder and advertising device	C. L. Whipple	546,479	Sept. 17	1840	435	72	1728
Book holder. Note-	R. B. Terrill	542,784	July 16	1690	402	72	346
Book-holders. Swing-bracket for	W. K. Crosby	545,663	Sept. 3	434	104	72	1434
Book. Manifold sales-	J. R. Carter	545,676	Sept. 3	422	102	72	1432
Book. Manifold sales-	J. R. Carter	545,677	Sept. 3	424	102	72	1432
Book. Manifolding blank-	W. F. English	542,467	July 9	1137	278	72	231
Book. Pass-	U. G. and W. F. Beck	544,279	Aug. 13	786	200	72	903
Book-rack	C. E. Foster	543,959	Aug. 6	227	55	72	790
Book-rest. Adjustable	J. F. Young	546,570	Sept. 17	1988	472	72	1755
Book. Sales-	J. C. Browning	543,669	July 30	3277	761	72	673
Book. Stamp-holding	A. L. Brinckle	541,833	July 2	25	6	72	8
Book stand or holder	G. W. Parker	543,810	July 30	3349	825	72	723
Book-support	C. H. Hay	544,170	Aug. 6	579	144, 145	72	856
Books. Machine for applying binding-strips to	A. L. Garver	542,156	July 2	547	133	72	108
Boom-hitch and loop-swing	J. C. Sattes	542,503	July 9	1199	292	72	242
Bootjack	R. Jacks	544,063	Aug. 6	410	103	72	825
Boot or shoe	W. Norton	544,263	Aug. 6	764	195	72	888
Boot or shoe	W. Owen and T. Hilton	546,183	Sept. 10	1282	306	72	1603
Boot or shoe	J. F. Sharpe	542,175	July 2	577	139, 140	72	113
Boot or shoe counters. Machine for molding	J. R. Scott	545,381	Aug. 27	2793	679	72	1318
Boot or shoe tree	G. H. Clark	543,436	July 23	2801	658	72	573
Boot or shoe trees. Fore part for	G. H. Clark	543,148	July 23	2294	543	72	478
Boots or shoes while being operated upon. Machine for holding	G. H. Clark	543,147	July 23	2291	543	72	477
Bore-holes and shafts in water-logged ground. Sinking	F. Honigmann	542,765	July 16	1653	394	72	340
Boring-bar	J. E. Fluke	544,250	Aug. 6	744	191	72	883
Boring joists for electric-light wiring. Machine for	J. G. and R. H. Henderson	543,625	July 30	3214	745	72	660
Bottle	B. R. Benner	545,147	Aug. 27	2427	589	72	1247
Bottle	S. C. Rowell	544,324	Aug. 13	879	221	72	920
Bottle	R. B. Yerby	543,518	July 30	2969	697	72	619
Bottle attachment	M. Cheney	545,346	Aug. 27	2745	665	72	1308
Bottle-cutting apparatus	A. Benson	545,767	Sept. 3	579	140	72	1460
Bottle. Distributing-	E. W. Dinsmore	545,012	Aug. 20	2175	525	72	1177
Bottle for preventing fraudulent refilling	E. L. Lloyd	544,675	Aug. 20	1570	376	72	1063
Bottle-holder	J. W. Shepard	546,033	Sept. 10	1033	248	72	1557
Bottle. Non-fillable	B. P. Evans	545,276	Aug. 27	2634	639	72	1288
Bottle. Non-fillable	W. J. Gardner	542,760	July 16	1643	392	72	338
Bottle. Non-fillable	E. G. H. Stein and C. Foster	542,691	July 16	1529	365	72	318
Bottle or can labeling machine	R. and C. F. Schmidt	544,127	Aug. 6	515	127, 128	72	843
Bottle safety-case	B. S. Atwood	542,356	July 9	929	228	72	192
Bottle. Self-sealing	E. Schorr	545,982	Sept. 10	946	228	72	1541
Bottle-stopper	K. Kiefer	545,897	Sept. 10	791	193	72	1511
Bottle-stopper	M. Schott	542,687	July 16	1524	364	72	317
Bottle-stopper	G. C. Vollmer	546,720	Sept. 24	2227	532	72	1813
Bottle-stopper. Automatic	W. J. Gardner	544,617	Aug. 13	1439	351	72	1021
Bottle-stoppers. Means for detecting withdrawal of	B. Nichols	543,217	July 23	2437	572	72	504
Bottle-stoppling machine	F. B. Thatcher	541,898	July 2	131	32	72	29
Bottle-support	H. T. Loomis	541,864	July 2	77	17	72	18

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Bottle-supporting apparatus. Nursing-	W. Gill	543,150	July 23	2297	544	72	479
Bottle valve-stopper	M. A. Skall	542,068	July 2	419	101	72	82
Bottle-washer	J. L. Kihn and W. T. Reed	544,308	Aug. 13	841	212	72	914
Bottle-washer	H. La Casse	546,017	Sept. 10	1007	242, 243	72	1553
Bottles. Corking	L. M. G. J. Loustalot	546,169	Sept. 10	1262	301	72	1600
Bottles. Device for preventing fraudulent refilling of	C. Clark	542,844	July 16	1782	423	72	363
Bottles. Device for preventing refilling of	A. P. Francis	546,590	Sept. 17	2018	479	72	1761
Bottles, &c. Machine for manufacturing	P. B. Maussier	546,931	Sept. 24	2575	617	72	1879
Bottles. Stoppering	W. J. Kelly	544,178	Aug. 6	588	147	72	857
Bottling apparatus	C. Guéret	542,639	July 16	1435	346	72	300
Bottling. Filling and stoppering machine for	T. Sutcliffe	543,113	July 23	2229	528	72	465
Bougie. Anal	F. P. Stukey	542,177	July 2	579	140	72	114
Bowl or box for household purposes	J. McConnell	546,706	Sept. 24	2207	526	72	1809
Bowling-alley	J. A. Rieper	543,141	July 23	2279	541	72	475
Box: *See* Annealing-box. Axle-box. Bicycle tool-box. Butter-box. Cigarette-box. Display-box. Feed-box. Fire-alarm box. Gold sluice-box. Journal-box. Miter-box. Paper box. Sand-box. Signal-box. Stuffing-box. Watch-movement box.							
Box	J. Crocker	544,462	Aug. 13	1188	288	72	974
Box	C. H. Truax	542,903	July 16	1877	445	72	382
Box and rack. Combined	J. Rosenbush	545,175	Aug. 27	2477	600	72	1256
Box-bordering machine	J. F. Small	544,446	Aug. 13	1161	280, 281	72	968
Box-corners. Machine for applying staying-strips to	M. F. Wilson	545,996	Sept. 10	972	234, 235	72	1546
Box-fastener	S. C. Cary	546,839	Sept. 24	2430	582	72	1850
Box-iron	M. Elb	545,784	Sept. 3	604	146	72	1465
Box-lid raiser and fastener	C. L. Feinberg	545,277	Aug. 27	2635	640	72	1289
Box-making machine. Butter-	F. E. Smith	544,775	Aug. 20	1767	422	72	1102
Box-setting machine	J. B. Chace	546,841	Sept. 24	2432	582	72	1850
Box-staying machine	J. Mohs	545,808	Sept. 3	644	156, 157	72	1473
Boxes. Machine for manufacture of cigar or other	M. and E. A. Jones and J. W. Blundell	542,768	July 16	1658	395, 396	72	341
Boxes. Mechanism for making match-	J. P. Wright	543,714	July 30	3357	778, 779, 780	72	688
Brace: *See* Bedstead-brace. Chair-brace. Drill-brace. Fence-brace.							
Bracket: *See* Curtain-roller bracket. Funnel-holding bracket. Lever-bracket. Scaffold-bracket.							
Bracket	C. Pettit	542,535	July 9	1254	306	72	252
Brake: *See* Air-brake. Bicycle-brake. Car-brake. Electric brake. Lifting-apparatus brake. Pressure-brake. Railway-brake. Vehicle-brake. Wagon-brake. Wheel and rail brake.							
Brake	E. S. Hall	545,492	Sept. 3	112	26	72	1375
Brake-beam	W. W. Atterbury	545,998	Sept. 10	977	236	72	1547
Brake-beam	J. Howard	544,435	Aug. 13	1124	272	72	960
Brake-beam finger-guard	H. B. Robischung	544,418	Aug. 13	1089	266	72	954
Brake-beam hanger	H. B. Robischung	543,703	July 30	3332	773	72	683
Brake-beams. Finger-guard clamp for	H. B. Robischung	544,690	Aug. 20	1598	383	72	1068
Brake-block	W. H. Sauvage and R. J. Fuqua	544,830	Aug. 20	1868	447	72	1121
Brake-lever	W. H. Masterman	542,088	July 2	444	106	72	87
Brake mechanism. Fluid-pressure	T. W. Evans	546,134	Sept. 10	1202	285	72	1589
Brake-shoe	J. J. Kinzer, Jr	542,414	July 9	1034	254	72	213
Brake-shoe	W. W. Snow	543,273	July 23	2538	595	72	522
Brake-shoe	C. F. Wohlfarth	543,072	July 23	2155	511	72	451
Brake-shoe	W. B. Potter	543,653	July 30	3254	756	72	668
Brake shoe. Electric-	J. J. Kinzer, Jr	546,701	Sept. 24	2201	525	72	1807
Brake-shoe connection	J. P. B. Fiske	543,524	July 30	2981	699	72	622
Brakes and rheostate. Device for automatically operating	J. M. Chatfield	546,114	Sept. 10	1167	279, 280, 167, 168, 169	72	1583
Brass or other sheet metal. Machine for cleaning or polishing sheet-	J. H. Dales	544,213	Aug. 6	661		72	869
Brasses. Automatic adjustment for	L. D. Ball	542,583	July 9	1333	323	72	267
Bread-knife	E. J. Clark	546,300	Sept. 17	1517	358	72	1666
Breast-straps. Center fastening for	A. W. Ashworth	542,983	July 23	2002	476	72	423
Breech mechanism operating-slide	W. P. Grath	546,776	Sept. 24	2332	556	72	1832
Brick-kiln	T. L. Myers	546,934	Sept. 24	2580	618	72	1880
Brick-kiln	W. J. Soper	545,543	Sept. 3	191	46	72	1389
Brick-machine	P. L. Simpson	544,054	Aug. 6	397	100	72	822
Brick-press plunger	T. C. Fawcett	542,729	July 16	1586	379	72	328
Brick-pressing machinery	W. A. Gill	544,090	Aug. 6	460	113	72	833
Bricks, &c. Machine for molding and pressing	R. P. Lamont	544,733	Aug. 20	1671	402	72	1082
Bridge	G. Lindenthal	542,829	July 16	1757	418	72	359
Bridge-cable	J. V. Boyd-Wilson	542,325	July 9	868	212	72	180
Bridge flooring, decking, roofing, &c	A. Lesna	541,860	July 2	69	16	72	16
Bridge-gate							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bridge-gate	F. Raasch	541,681	July 2	104	24	72	23
Bridge. Suspension-	A. Sherry	545,825	Sept. 3	670	163	72	1478
Bridle	A. M. Pendleton	546,785	Sept. 24	2343	560	72	1834
Bridle	J. G. Shafto	541,950	July 2	211	49	72	44
Bridle-bit	C. N. Hart	544,917	Aug. 20	2023	482	72	1150
Bridle-bit	P. Spohr	544,777	Aug. 20	1774	423	72	1103
Bridle-blinder	W. Kiel	542,263	July 9	738	181	72	158
Bridle-blinder	M. A. Wilson	546,690	Sept. 24	2160	519	72	1804
Bridle-front and winker-brace. Combined	O. Ruf	544,829	Aug. 20	1865	447	72	1120
Bronze tincture. Manufacture of	H. Schlenk	546,963	Sept. 24	2628	.....	72	1889
Broom	I. G. Hardin and T. T. Watson	546,047	Sept. 10	1057	253	72	1562
Broom	T. H. Palmer	542,861	July 16	1808	429	72	368
Broom-corn separating-machine	A. Walrath	545,619	Sept. 3	316	76	72	1412
Broom-handle. Detachable	M. E. Reilly	545,911	Sept. 10	830	200	72	1519
Brush	W. R. Derr	544,030	Aug. 6	350	87	72	813
Brush	W. C. Flint	543,006	July 23	2037	483	72	430
Brush	C. E. Howland	545,691	Sept. 3	443	107	72	1436
Brush	W. Van Kleeck	544,141	Aug. 6	536	133	72	848
Brush. Air-	J. S. Overman	545,526	Sept. 3	168	39	72	1385
Brush charger. Tooth-	T. Hollis	543,934	Aug. 6	187	44	72	783
Brush. Fountain shaving-	E. V. Santee	543,969	Aug. 6	241	59	72	792
Brush-heads. Machine for turning and boring	A. D. Linn and A. A. Lytle	542,681	July 16	1513	362	72	315
Brush-machine	M. Young	544,200	Aug. 6	629	158	72	865
Brush-machine	M. Young	544,201	Aug. 6	631	159, 160, 161	72	865
Brush-making machine	C. Rehse	545,910	Sept. 10	827	199	72	1518
Brush. Scratch-	C. L. Joy	543,097	July 23	2200	522	72	460
Brush. Tooth-	F. Laws	543,028	July 23	2072	492	72	436
Brush. Wheel-	C. Welbke, Jr	545,029	Aug. 20	2205	534	72	1183
Brushes. Method of and apparatus for making	P. J. Kane	541,973	July 2	258	60, 61	72	53
Bucket. Sap-	C. Bouton	546,648	Sept. 24	2108	500	72	1791
Bucket. Well-	E. J. Gilpin	541,846	July 2	46	11	72	12
Bucket. Well-	W. H. Tilford	542,120	July 2	491	120	72	98
Buckle	L. Clas	545,054	Aug. 27	2250	547	72	1212
Buckle	E. Manes	544,678	Aug. 20	1575	377	72	1064
Buckle and skirt-retainer. Combined slide-	D. Basch	545,841	Sept. 3	698	170	72	1482
Buckle-chafe	F. J. Bringham	545,447	Sept. 3	16	5	72	1358
Budding-tool	E. A. Knowlton and J. H. Warehime	542,478	July 9	1153	282	72	233
Buffing and whitening machine	I. Vaughn	546,263	Sept. 10	1432	339, 340	72	1632
Buggies. Storm-curtain for	B. Martin	545,707	Sept. 3	473	115	72	1441
Buggies. Storm-curtain for	W. M. Morrison	545,713	Sept. 3	488	118	72	1444
Building-block	J. E. Meyenberg	543,582	July 30	3076	720	72	641
Building set	E. von Leistner	543,580	July 30	3073	719, 720	72	641
Buildings. Construction of	J. C. Pelton, Jr	542,203	July 2	632	154	72	123
Buildings. Construction of	J. C. Pelton	542,204	July 2	633	154	72	123
Buildings. Gable ornament for	J. S. Burton	542,517	July 9	1224	298	72	247
Bulb or tube stretcher or expander	P. Unsinger and G. Hannes	544,268	Aug. 6	772	197	72	889
Bullet-mold and cartridge-loading implement. Combined	J. J. Flyckt	545,124	Aug. 27	2389	578	72	1239
Bunsen burner	C. Seel	545,017	Sept. 10	839	202	72	1520
Bung attachment for barrels	F. Scheier	542,316	July 9	850	209	72	177
Buoy	F. Richard	546,057	Sept. 10	1074	257	72	1566
Buoy. Bell-	J. A. Fairbanks	546,135	Sept. 10	1205	287	72	1589
Burglar-alarm	F. Bex	545,008	Aug. 20	2169	524	72	1176
Burglar-alarm	N. P. Chaffee	542,407	July 9	1018	250	72	209
Burglar-alarm	J. H. Finley	543,618	July 30	3201	742, 743	72	659
Burglar-alarm	J. Given	543,548	July 30	3021	707	72	631
Burglar-alarm	I. L. Hauser	545,426	Aug. 27	2884	702	72	1337
Burglar-alarm circuit-closer	A. A. Vanderpool	542,697	July 16	1541	367	72	320
Burglar-alarm. Electrical	J. R. Alexander	545,835	Sept. 3	686	167, 168	72	1480
Burial-casket lid	C. A. Ruebekam	545,176	Aug. 27	2478	600, 601	72	1257
Burner: *See* Bunsen burner. Fluid-fuel burner. Gas-burner. Hydrocarbon-burner. Oil-burner.							
Burning petroleum	J. J. Looney	542,590	July 9	1344	325	72	269
Butter-box	R. A. Simpson	544,997	Aug. 20	2154	521	72	1174
Butter-making apparatus	F. W. Church	542,465	July 9	1135	277, 278	72	230
Butter-worker. Centrifugal	C. O. and J. W. Glascock	544,848	Aug. 20	1894	453, 454	72	1196
Button	J. Bassfreund	544,453	Aug. 13	1171	283	72	971
Button	H. C. Fischer	545,278	Aug. 27	2637	640	72	1289
Button	F. Jonish	545,799	Sept. 3	630	153	72	1470
Button	A. Leblanc	543,029	July 23	2073	492	72	437
Button	O. L. Mahon	543,312	July 23	2597	611	72	533
Button	I. G. Platt	546,431	Sept. 17	1754	416	72	1711
Button-attaching machine	G. Rossberg	546,598	Sept. 17	2031	482	72	1763
Button-attaching machine	J. Bernstein	545,218	Aug. 27	2553	618	72	1272
Button. Cuff-	C. J. Coleman	544,528	Aug. 13	1982	310	72	992
Button. Cuff-	J. E. Hills	543,244	July 23	2486	583	72	513
Button. Separable	J. E. Hills	543,807	July 30	3545	824	72	723
Button-trimming machine with automatic knife-sharpener	W. L. King	546,162	Sept. 10	1252	299	72	1598
Buttons. Preparing blanks for the manufacture of horn	A. A. Ekliff	545,275	Aug. 27	2632	639	72	1288
Buttons to shoes, &c. Metallic fastener for attaching	F. Konrad	545,079	Aug. 27	2303	.....	72	1222
	I. J. Saunders	546,349	Sept. 17	1612	384	72	1684

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Buttoner. Shoe-	D. H. Muir	542,711	July 16	1560	373	72	323
Buttonhole-cutter	A. S. Vose	543,635	July 30	3229	749	72	663
Cabinet	W. A. Spear	542,901	July 16	1874	444	72	382
Cabinet	P. Ullrich	544,138	Aug. 6	532	132	72	847
Cable-buffer	L. W. Sheldon	546,788	Sept. 24	2349	561	72	1836
Cable-clamp	G. W. Dennis	544,481	Aug. 13	1217	295	72	979
Cable-coupling	J. P. F. Kuhlmann	545,164	Aug. 27	2453	594	72	1252
Cable-grip	E. Nelson	542,489	July 9	1174	287	72	237
Cable support. Traction-	E. A. Ross and F. E. Bachman	545,729	Sept. 3	511	125	72	1448
Cable traction. Gripping mechanism for	R. W. Wallace	543,760	July 30	3451	804	72	705
Cableway-dump attachment	A. M. Mullinix	546,074	Sept. 10	1104	263, 264	72	1571
Caissons. Air-lock for	W. C. Barr	545,332	Aug. 27	2724	661	72	1305
Cake or biscuit machine	P. D. Harton	543,131	July 23	2260	536	72	471
Calculating-machine	C. S. Labofish	544,360	Aug. 13	988	244	72	936
Calculator. Electric	W. C. Porter	546,553	Sept. 17	1953	464, 465	72	1749
Calendar	G. W. Shirk	542,538	July 9	1258	306, 307	72	253
Calendering-rolls. Pressure-controlled apparatus for	A. S. Woodward	546,480	Sept. 17	1841	435, 436	72	1728
Calipers. Micrometer-	J. Bystrom	542,676	July 16	1504	360	72	314
Calipers. Micrometer-	F. F. Ellis	546,094	Sept. 10	1138	271	72	1578
Cam mechanism	W. Roberts	544,380	Aug. 13	1022	251	72	942
Camera: *See* Magazine-camera. Panoramic camera. Photographic camera. Roll-holder camera.							
Camera swing-back adjuster	H. J. Hall	542,887	July 16	1851	439	72	377
Camp-chair. Spring-back folding	T. D. Reilly	542,395	July 9	998	246	72	205
Can: *See* Key-opening can. Lunch-can. Milk-can. Oil-can. Paper can. Vacuum-can.							
Can-capping machine	C. M. Kruse	542,198	July 2	620	150, 151	72	121
Can-closing device	C. E. Pierce	546,078	Sept. 10	1113	265	72	1573
Can-crimping machine	J. Gould, Jr	542,441	July 9	1088	265	72	222
Can-heading machine	J. B. Clot	544,722	Aug. 20	1656	398	72	1080
Can-labeling machine	H. Albert	542,433	July 9	1068	262	72	219
Can-labeling machine	D. Cox	543,175	July 23	2362	557	72	490
Can-opener	A. G. Chaloupka	544,058	Aug. 6	402	101	72	823
Can-opener	J. Gilbert	546,813	Sept. 24	2389	571	72	1842
Can-opener	H. J. Kelder	543,306	July 23	2301	609	72	532
Can-opener	J. Glover	545,227	Aug. 27	2569	622	72	1276
Can-opening device	W. H. H. Stevenson	544,905	Aug. 20	2002	478	72	1147
Can-testing machine	L. Van Gilder	546,205	Sept. 10	1326	315	72	1612
Can-washing machine	O. S. Fellows	543,004	July 23	2033	483	72	429
Cans. Key for opening sheet-metal	J. B. Clot	544,721	Aug. 20	1652	396, 397	72	1079
Cans. Machinery for forming and soldering bodies of metallic packing-	J. Gould, Jr	546,146	Sept. 10	1222	292	72	1593
Cans. Machine for making and fitting tongues of key-opening	A. T. H. Brower	544,840	Aug. 20	1882	451	72	1123
Cans. Plug-stopper for	J. W. Bowen and L. Flack	545,770	Sept. 3	583	141	72	1460
Canning fruits or vegetables. Apparatus for	L. J. B. Fournier	545,356	Aug. 27	2757	669	72	1310
Candle-molding apparatus	L. J. B. Fournier	544,913	Aug. 20	2017	481	72	1149
Candles. Apparatus for molding wax-coated	G. V. Frye and B. B. Carter	543,930	Aug. 6	179	42, 43	72	780
Candy-cutting machine	J. T. Moore	546,741	Sept. 24	2273	540	72	1820
Cane hook. Sugar-	N. Ancoin	543,666	July 30	3274	761	72	672
Cane. Sling for unloading sugar-	M. W. Sewall	542,174	July 2	573	139	72	112
Cannon valve. Pneumatic-	B. S. De Ball	542,995	July 23	2019	480	72	426
Canvas. Mechanism for giving reciprocating motion to	H. Goldstein	542,636	July 16	1428	344	72	299
Cap	G. H. Sampson	546,030	Sept. 10	1030	248	72	1557
Cap. Blasting-	A. M. Ingalls	545,365	Aug. 27	2770	672	72	1313
Capsule-filler	J. F. Williams	545,929	Sept. 10	857	207	72	1524
Car	P. Schuster	543,270	July 23	2534	594	72	521
Car-arrester	J. W. Barnes	542,037	July 2	364	87, 88	72	73
Car attachment. Street-	J. C. Wands	542,909	July 16	1886	447	72	384
Car-bolster	A. Barker	543,716	July 30	3363	781	72	688
Car-brake	J. H. Core	545,849	Sept. 3	713	174	72	1485
Car-brake	J. Friedrichs	545,226	Aug. 27	2568	621	72	1275
Car-brake	A. W. Gabrio	545,954	Sept. 10	894	215	72	1532
Car-brake	F. Henslein, Jr	545,427	Aug. 27	2886	702	72	1337
Car-brake	F. S. Johnson	545,507	Sept. 3	137	32	72	1379
Car-brake	W. H. Masterman	542,089	July 2	446	107	72	87
Car-brake	F. P. Musser	545,810	Sept. 3	649	157, 158	72	1474
Car-brake	C. F. Shoemaker	544,936	Aug. 20	2052	489, 490	72	1155
Car-brake	B. Sickles	543,904	Aug. 6	133	29	72	772
Car brake and starter	H. Eschweiler	544,888	Aug. 20	1964	471	72	1139
Car-brake apparatus	J. S. Trott	545,663	Sept. 3	388	95	72	1426
Car-brake. Automatic	C. Brandau	546,808	Sept. 24	2382	569	72	1841
Car brake. Electric-	G. B. Damon	543,544	July 30	3015	705	72	629
Car brake. Railway-	R. T. F. Dodds	543,522	July 30	2977	698	72	621
Car brake. Railway-	W. Main	541,866	July 2	79	18	72	18
Car brake. Railway-	R. L. Omensetter	541,983	July 2	276	64	72	56
Car brake. Railway-	J. W. Valiant	545,112	Aug. 27	2361	571	72	1234
Car-brake. Safety	J. U. Elwood	544,574	Aug. 13	1363	332, 333	72	1008
Car brake. Street-	H. T. Atkinson	545,217	Aug. 27	2551	617	72	1272
Car buffer and continuous-draft device	G. E. Shuey	546,561	Sept. 17	1975	468	72	1753
Car buffer. Street-	G. A. Parmenter	545,908	Sept. 10	823	198	72	1517
Car construction. Railway-	W. H. Ronemus	545,096	Aug. 27	2329	565	72	1228

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Car-coupling	J. K. Adams and J. H. Sidden	545,933	Sept. 10	865	209	72	1525
Car-coupling	G. W. Barfield	545,839	Sept. 3	693	169	72	1481
Car-coupling	E. R. Brown	542,141	July 2	520	125	72	103
Car-coupling	P. Brown	542,237	July 9	692	170	72	150
Car-coupling	P. C. Brown	542,603	July 9	1363	331	72	273
Car-coupling	W. B. Brown	543,921	Aug. 6	164	38	72	778
Car-coupling	H. H. Burden	542,437	July 9	1080	263, 264	72	221
Car-coupling	J. B. Campbell	541,962	July 2	242	57	72	49
Car-coupling	J. H. Daly	545,435	Aug. 27	2899	705	72	1339
Car-coupling	R. Dinsmore	542,608	July 9	1379	333	72	276
Car-coupling	R. M. Ford	545,615	Sept. 3	363	89, 90	72	1422
Car-coupling	T. Gaskins	546,144	Sept. 10	1220	291	72	1592
Car-coupling	E. B. Griffin	541,968	July 2	251	59	72	51
Car-coupling	T. Griffith	545,795	Sept. 3	625	152	72	1409
Car-coupling	J. E. Henderson and J. H. Harris	545,501	Sept. 3	126	30	72	1378
Car-coupling	W. E. Hoyt	545,202	Aug. 27	2328	611, 612	72	1368
Car-coupling	J. Jackson	545,162	Aug. 27	2450	594	72	1252
Car-coupling	J. Jarrett, J. R. Davies, and J. Edwards.	544,852	Aug. 20	1903	456, 457	72	1128
Car-coupling	W. A. Keahey	546,539	Sept. 17	1931	458	72	1745
Car-coupling	W. Kelso	546,779	Sept. 24	2335	557, 558	72	1832
Car-coupling	F. J. Machalosky and J. Stawarz	543,035	July 23	2092	495	72	440
Car-coupling	W. McConway, W. Kelso, and F. J. Curtis.	546,783	Sept. 24	2340	559	72	1833
Car-coupling	A. C. McCord	543,158	July 23	2313	548, 549	72	482
Car-coupling	S. J. Meeker	545,604	Sept. 3	297	73	72	1408
Car-coupling	H. Parker, Sr., E. Scanlin, H. Parker, Jr., and H. H. Skevington.	546,864	Sept. 24	2463	590	72	1857
Car-coupling	V. Pfaff	542,597	July 9	1354	327	72	271
Car-coupling	W. C. Potts and R. L. Daniel	542,495	July 9	1189	290	72	240
Car-coupling	J. Rawles	542,685	July 16	1521	364	72	317
Car-coupling	A. P. Redmon	544,194	Aug. 6	615	153	72	863
Car-coupling	A. Root	542,779	July 16	1682	400, 401	72	345
Car-coupling	J. R. Rowell	542,944	July 16	1935	459	72	394
Car-coupling	J. M. Scurr and S. R. Cotton	545,862	Sept. 3	733	178	72	1489
Car-coupling	G. A. Seidel	544,420	Aug. 13	1093	266	72	954
Car-coupling	W. A. Sparks and J. E. Collins	544,598	Aug. 13	1406	343	72	1016
Car-coupling	W. H. Squires	544,491	Aug. 13	1228	298	72	981
Car-coupling	A. F. Street	542,117	July 2	487	117	72	96
Car-coupling	A. B. Stubbins	542,291	July 9	809	198	72	169
Car-coupling	J. F. Tiner	545,751	Sept. 3	554	132	72	1455
Car-coupling	M. Walicki	545,925	Sept. 10	851	205, 206	72	1523
Car-coupling	S. Walters	544,492	Aug. 13	1230	298	72	982
Car-coupling	W. C. Watson	541,907	July 2	148	36	72	32
Car-coupling	W. F. White	543,071	July 23	2154	511	72	451
Car-coupling	W. E. Whiteside	544,604	Aug. 13	1420	345	72	1018
Car-coupling	H. M. Whittington	542,299	July 9	819	201, 202	72	171
Car-coupling. Automatic	W. Persell and R. Newlee	545,305	Aug. 27	2682	651	72	1298
Car-coupling. Automatic	A. E. Singer	546,601	Sept. 17	2034	484	72	1764
Car curtain. Street	J. Kilgour	543,098	July 23	2200	522	72	460
Car-door	W. T. Smith and J. C. Hartman	544,133	Aug. 6	526	130	72	845
Car-door fastener	T. C. Kennedy	546,541	Sept. 17	1932	459	72	1745
Car door-movement. Street	J. A. Tackaberry	542,069	July 2	420	101	72	83
Car draft-rigging. Railway	J. A. Roosevelt	542,110	July 2	476	114, 115	72	94
Car draft-rigging. Railway	C. A. Schroyer	544,009	Aug. 6	307	76, 77	72	805
Car. Dumping	N. Barney	544,020	Aug. 6	333	82	72	810
Car. Dumping	C. W. Bridegum	544,561	Aug. 13	1335	324, 325	72	1003
Car. Dumping	W. M. Dunman	544,249	Aug. 6	741	190, 191	72	882
Car. Electrically-operated mine	H. B. Dierdorff	545,404	Aug. 27	2840	691, 692	72	1327
Car-fender	C. S. Andrews	545,186	Aug. 27	2495	604, 605	72	1260
Car-fender	R. Bateson	542,749	July 16	1630	389, 390	72	335
Car-fender	W. H. Bigler	545,263	Aug. 27	2616	634	72	1285
Car-fender	J. Bowen	545,872	Sept. 10	752	183	72	1504
Car-fender	J. Brautigam	542,841	July 16	1776	422	72	362
Car-fender	R. Bustin	545,579	Sept. 3	251	62	72	1400
Car-fender	J. B. Campbell	543,924	Aug. 6	167	39	72	779
Car-fender	R. O. Clark	543,849	Aug. 6	29	8	72	754
Car-fender	S. A. Darrach	544,565	Aug. 13	1340	327	72	1004
Car-fender	R. C. De Vault	542,242	July 9	701	172	72	151
Car-fender	J. S. Detwiler	544,404	Aug. 13	1071	260, 261	72	950
Car-fender	W. H. H. Diffenbaugh	545,781	Sept. 3	599	144	72	1464
Car-fender	S. Garlick	543,239	July 23	2476	581, 582	72	511
Car-fender	J. F. Girtler	546,524	Sept. 17	1911	452	72	1741
Car-fender	F. Goff and T. H. Joiner	543,151	July 23	2300	544, 545	72	479
Car-fender	J. B. Hoagland	544,919	Aug. 20	2025	483	72	1151
Car-fender	T. Houghton	543,687	July 30	3308	769	72	678
Car-fender	J. J. Kirkness	544,854	Aug. 20	1905	457	72	1128
Car-fender	J. Leightham	542,480	July 9	1157	283	72	234

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Car-fender	J. Leightham	542,481	July 9	1158	284	72	234
Car-fender	F. McDowell	544,742	Aug. 20	1683	405	72	1085
Car-fender	E. J. McLaughlin	546,962	Sept. 24	2627	630	72	1889
Car-fender	G. H. Modemann	543,775	July 30	3421	811	72	710
Car-fender	W. E. Moulton	542,774	July 16	1674	399	72	344
Car-fender	D. F. Nial	543,264	July 23	2522	592	72	519
Car-fender	D. O'Mahony	542,276	July 9	771	190	72	163
Car-fender	G. B. Riggins	542,778	July 16	1681	400	72	345
Car-fender	O. Rothrock	543,405	July 23	2734	646	72	559
Car-fender	A. B. Rues	544,932	Aug. 20	2045	488	72	1154
Car-fender	J. F. Saltz and F. W. McKee	544,692	Aug. 20	1600	384	72	1069
Car-fender	J. A. Shank	544,750	Aug. 20	1694	408	72	1087
Car-fender	C. Sullivan	543,972	Aug. 6	248	60, 61	72	794
Car-fender	C. M. Vandegrift	544,139	Aug. 6	533	132	72	847
Car-fender	A. B. Watson	545,142	Aug. 27	2419	586	72	1245
Car-fender	A. Weismantel	544,873	Aug. 20	1940	464	72	1134
Car-fender	M. Weiss	542,720	July 16	1573	376	72	326
Car-fender	J. N. Wieczorek	544,779	Aug. 20	1776	424	72	1104
Car-fender	W. E. Woodbridge	546,797	Sept. 24	2361	565	72	1838
Car-fender	W. E. Woodbridge	546,798	Sept. 24	2366	565	72	1838
Car-fender and wheel-guard	G. E. Shoemaker	544,195	Aug. 6	616	153, 154	72	863
Car-fender. Automatic	F. A. Bragg	545,339	Aug. 27	2735	663	72	1307
Car-fender. Automatic	J. D. Hodges	545,290	Aug. 27	2654	645	72	1292
Car fender or guard. Street	C. S. Yost, G. W. Baumhoff, A. H. Hagemeier, F. Fitzler, and O. Schmid.	544,244	Aug. 6	732	187, 188	72	881
Car fender. Street	W. Barker	542,918	July 16	1899	450	72	387
Car fender. Street	G. Berkley	541,914	July 2	155	37	72	33
Car fender. Street	R. A. Breul	545,047	Aug. 27	2237	542	72	1210
Car fender. Street	P. R. and M. F. X. Foley	542,047	July 2	378	91	72	76
Car fender. Street	W. J. Hield	546,116	Sept. 10	1174	280	72	1584
Car gate. Street	H. Burden	542,303	July 9	826	203	72	172
Car guard or fender	L. Lyndon	543,743	July 30	3419	794	72	700
Car hot-box indicator. Railway	E. Harris and T. Phelps	542,852	July 16	1796	426	72	365
Car journal-boxes. Dust-guard for	H. H. Sessions	544,131	Aug. 6	523	130	72	845
Car letter-case. Postal	M. Riley	542,836	July 16	1768	421	72	360
Car life-guard. Street	L. Dulligan	542,877	July 16	1832	434, 435	72	373
Car life-saving net	O. A. and W. T. Thayer and W. H. McConnell.	542,381	July 9	976	241, 242	72	201
Car-loading mechanism	J. McFarland	545,372	Aug. 27	2781	675	72	1315
Car-moving bar	W. McMahon	541,961	July 2	270	63, 64	72	55
Car-operating mechanism. Dumping	D. C. Mulvihill	542,831	July 16	1763	419	72	359
Car. Ore	G. E. Truax	545,433	Aug. 27	2897	704	72	1339
Car. Ore	C. Zimmerman	542,746	July 16	1626	388	72	335
Car. Passenger	A. G. Leonard	543,031	July 23	2083	494	72	458
Car-platform	M. Sullivan and T. J. Bond	546,257	Sept. 10	1421	337	72	1630
Car protector guard. Street	H. Pearson	543,050	July 23	2120	503	72	445
Car. Railway	I. B. Günzburg	544,892	Aug. 20	1974	473	72	1141
Car. Railway plow	W. B. Doddridge	545,782	Sept. 3	600	145, 146	72	1464
Car. Railway sleeping	H. Pearson	544,547	Aug. 13	1315	319	72	999
Car safety appliance. Electric	W. B. Potter	543,352	July 23	2653	625	72	544
Car. Safety express	H. W. Wait	544,702	Aug. 20	1623	389	72	1073
Car safety-fender. Street	J. B. Lyford	545,704	Sept. 3	470	114	72	1440
Car sand-box	H. McPherson	542,832	July 16	1763	419	72	360
Car-sanding apparatus	J. H. Hollen	546,099	Sept. 10	1147	274	72	1579
Car-seat	G. W. Dryer	545,197	Aug. 27	2518	609	72	1265
Car-seat	J. S. Johnston	542,411	July 9	1024	252	72	210
Car-seat	W. P. Stymus, Jr., and A. F. Kreutzberg.	542,398	July 9	1005	248	72	206
Car side bearing	F. G. Susemihl and A. Torrey	545,256	Aug. 27	2608	632, 633	72	1283
Car-signal	J. S. A. Baker	543,955	Aug. 6	223	53, 54	72	789
Car-signaling apparatus	C. Harold	545,585	Sept. 3	264	65	72	1402
Car speed-regulator. Electric	I. D. Aikin	546,062	Sept. 10	1081	259	72	1567
Car-spring	A. G. Spencer	546,831	Sept. 24	2419	580	72	1848
Car. Street-railway	L. T. Pyott	542,776	July 16	1677	400	72	344
Car track-sweeping attachment. Street	W. H. Penny	542,977	July 16	1993	473, 474	72	404
Car-tracks. Apparatus for removing obstructions from	F. Shuman	542,539	July 9	1261	307	72	254
Car-unloading device	G. H. Hulett	545,293	Aug. 27	2662	646	72	1294
Car-ventilating apparatus	C. F. Hirt	542,018	July 2	335	82	72	68
Car-ventilator. Automatic	G. H. Maynard	543,581	July 30	3075	720	72	641
Car ventilator. Railway	G. T. Rogers	544,904	Aug. 20	2001	478	72	1146
Car-wheel	S. B. Dearing	546,609	Sept. 17	2046	486	72	1766
Car-wheel	W. C. Pyott	546,248	Sept. 10	1405	334	72	1627
Car wheel and axle	A. Porter	544,468	Aug. 13	1197	290	72	976
Car-wheel-dressing machine	F. E. Van Cise	543,161	July 23	2322	550, 551	72	483
Car wheel. Railway	J. Printz	542,310	July 9	839	206	72	175
Car-windows. Pneumatic device for raising or lowering	H. Holbrook and T. S. Beals, Jr	546,854	Sept. 24	2451	587	72	1854
Cars. Automatic attachment for switching	J. Phelps	542,655	July 16	1468	352, 353	72	306
Cars. Brake apparatus for gas traction	H. P. Holt	545,362	Aug. 27	2768	671	72	1313
Cars. Construction of railway	G. C. Kuhlman	546,592	Sept. 17	2020	480	72	1762
Cars. Construction of railway	J. P. Maher	546,544	Sept. 17	1937	460, 461	72	1746
Cars. Device for replacing derailed railway	P. H. Durack	544,161	Aug. 6	564	140	72	853
Cars. Device for uniting	A. G. Leonard	543,030	July 23	2074	493, 494	72	437
Cars. Device for uniting	A. G. Leonard	543,032	July 23	2085	494	72	439

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cars. End support for	S. A. Crone	545,779	Sept. 3	596	143	72	1463
Cars from burglars. Apparatus for protecting	F. H. Karnatz	546,890	Sept. 24	2511	599	72	1866
Cars, &c. Life-saving guard and fender for trolley	J. Weinmann and B. F. Sharp	545,039	Aug. 20	2225	539	72	1186
Cars. Means for arresting motion of electric	A. K. Bonta	542,435	July 23	2797	658	72	573
Cars. Means for utilizing air-cushions on railway	L. F. Ruth	542,112	July 2	481	115	72	95
Cars. Mounting for mining or similar	J. W. McGill	542,345	July 9	904	222	72	187
Cars. Revolving steel-dome attachment for mail or express	R. L. Wilson	544,338	Aug. 13	899	225	72	924
Cars. Rotary fender for railway	J. H. Shoenberger	542,573	July 9	1319	319, 320	72	265
Cars. Safety attachment or fender for cable, electric, or other	R. Bustin	545,771	Sept. 3	584	141	72	1461
Cars. Storage-heater for street	J. F. McElroy	541,871	July 2	87	20	72	20
Cars, &c. Supporting-strap for	M. L. Senderling	542,838	July 16	1770	421	72	361
Carbon. Electric-lamp	H. F. Cabirau	542,625	July 16	1412	340	72	295
Carbon-holder	J. C. Knight	543,186	July 23	2179	562	72	494
Carbon. Producing pure electric-light	E. G. Acheson	542,982	July 23	2001	476	72	423
Carbureting apparatus. Air-	F. J. Gustine	545,859	Sept. 3	727	177	72	1488
Carburetor	C. Brunner	545,048	Aug. 27	2239	543	72	1210
Carburetor	J. Clingman	543,611	July 30	3191	740	72	657
Carburetor	R. B. Hain	546,815	Sept. 24	2390	571	72	1843
Cardboard boxes. Apparatus for manufacture of	E. Saltzkorn and L. Nicolai	542,660	July 16	1476	354	72	308
Card-grinding apparatus	L. W. Penney	544,441	Aug. 13	1138	276	72	963
Carding-engine. Revolving-flat	C. Butterworth	542,383	July 9	980	242	72	202
Carding-engines. Stand for grinding-rolls of	C. Mills	542,270	July 9	758	186	72	160
Carding or similar machines. Metallic toothed cylinder for	W. H. Clay and J. H. Knowles	542,605	July 9	1371	332	72	275
Carpet-cleaner	F. Richards	545,310	Aug. 27	2688	652	72	1299
Carpet fabric. Ingrain	B. H. Gledhill	543,208	July 23	2423	569	72	502
Carpet-sweeper	S. H. Raymond	542,207	July 2	637	155	72	124
Carpets, &c. Beater for	G. B. Younkin	546,870	Sept. 24	2471	591	72	1859
Carriage jack and wrench. Combined	W. A. Stowell	543,660	July 30	3265	759	72	671
Carriage jack and wrench. Combined	W. A. Stowell	543,661	July 30	3267	759	72	671
Carriage-tops. Concealed joint for	H. C. Martell	546,705	Sept. 24	2206	526	72	1808
Carriage-washing apparatus	M. F. Gale	543,008	July 23	2038	484	72	430
Carriage-washing device	C. G. Trefethen	546,366	Sept. 17	1636	389	72	1688
Carriage wheel and axle	I. Davis	544,664	Aug. 20	1549	371	72	1059
Carrier: *See* Baby-carrier. Cash-carrier.							
Carrying-case	T. J. Byers	543,127	July 23	2256	535	72	470
Carrotting-machine	J. H. Sanders, J. E. Carlin, and H. Fitzpatrick.	544,693	Aug. 20	1601	384, 385	72	1069
Cartographic machine	C. F. W. Muehlenbeck	544,367	Aug. 13	1005	247	72	938
Cartridge. Blasting-	G. M. Peters	542,102	July 2	464	111	72	91
Cartridge-case	J. C. Butterfield and T. C. Batchelor	542,041	July 2	371	89	72	75
Cartridge-case	J. Pinfold	546,936	Sept. 24	2583	619	72	1880
Cartridge-case for charging blast-holes	R. H. Elliott and J. B. Carrington	542,154	July 2	543	132	72	107
Cartridge-loading implement	S. McNeill and O. H. Denise	545,811	Sept. 3	650	158	72	1474
Cartridge or other cases. Machine for filling	T. C. Batchelor	542,322	July 9	861	211	72	179
Cartridges. Closing-disk for blasting	G. M. Peters	542,101	July 2	463	111	72	91
Cartridges. Making blasting	G. M. Peters	542,103	July 2	465	111	72	91
Case: *See* Bicycle-case. Bookcase. Bottle safety-case. Car letter-case. Carrying-case. Cartridge-case. Check-case. Clock-case. Dispensing-case. Display-case. Milk-vessel case. Paper case. Pen and pencil case. Pencil-case. Show-case. Thermometer-case.							
Cash and package carrier apparatus	H. M. Weaver and S. W. Barr	542,950	July 16	1948	462, 463	72	396
Cash-carrier	J. W. Clark	545,152	Aug. 27	2434	590	72	1249
Cash-indicator	H. G. and C. F. Walter	543,162	July 23	2333	551, 552	72	485
Cash receiving, delivering, and registering machine	L. N. Shoemaker	545,101	Aug. 27	2334	566, 567	72	1229
Cash-register	C. J. Carroll	544,247	Aug. 6	737	189	72	882
Cash-register	F. J. Petersen, W. C. Eberhardt, and G. A. Piper.	546,342	Sept. 17	1595	378, 379	72	1681
Cash register and indicator	G. Calder, Jr.	543,980	Aug. 6	258	64, 65	72	795
Cash register and indicator	W. H. Clark	544,426	Aug. 13	1104	268, 269	72	956
Cash register and indicator	H. Cook	543,725	July 30	3381	785, 786, 787	72	692
Cash register and indicator	F. H. Seymour	541,885	July 2	107	25, 26	72	24
Cash register and indicator	E. G. Watrous	544,243	Aug. 6	727	186, 187	72	880
Casing-cutter	G. Palm	543,265	July 23	2524	593	72	519
Casket	J. Zwack	543,974	Aug. 6	251	62	72	704
Cast hollow ware. Machine for finishing	S. W. Challen	546,044	Sept. 10	1053	252	72	1561
Caster	W. F. Bernstein	544,878	Aug. 20	1946	466	72	1136
Caster	E. G. Hoffmann	543,870	Aug. 6	74	16	72	762
Caster	H. Ill	544,101	Aug. 6	475	118	72	806
Caster. Ball	C. H. Gaffney	545,068	Aug. 27	2287	555	72	1219
Caster. Ball	C. H. Gaffney	545,789	Sept. 3	617	150	72	1468
Caster. Ball	C. H. Gaffney	545,858	Sept. 3	726	177	72	1488
Caster. Hanging	I. H. Davis and W. H. Davey	546,608	Sept. 17	2045	485	72	1766
Casting journal-boxes. Core and chill for	S. Watt	546,948	Sept. 24	2606	624, 625	72	1884
Casting metal	J. A. Potter	543,700	July 30	3328	772	72	682
Casting mold. Screw-	J. Dyson and R. H. Williamson	546,879	Sept. 24	2495	595, 596	72	1863
Ceiling	R. W. Owen	542,651	July 16	1457	350	72	305

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Ceiling. Metallic	V. Moeslein	542,569	July 9	1313	318	72	263
Celery-package	S. J. Dunkley	546,463	Sept. 17	1815	430	72	1723
Celery. Preservation of	C. G. Bullard	544,455	Aug. 13	1174	284	72	971
Celluloid articles and manufacturing same	C. H. Thurber and C. W. Schaefer	542,452	July 9	1113	272	72	226
Cellulose. Producing	C. Kellner	542,932	July 16	1920	455	72	391
Cement-making materials and process of obtaining carbon dioxid. Apparatus for burning	W. R. Taylor	545,552	Sept. 3	209	51	72	1392
Cement. Manufacture of	J. Whiting	544,706	Aug. 20	1632	.....	72	1075
Cement receptacle and scraper. Combined liquid	J. W. Mix	546,073	Sept. 10	1103	263	72	1571
Cementation compound	W. J. Miles, Jr.	546,933	Sept. 24	2579	.....	72	1880
Centrifugal separator	C. J. Lundstrom	543,213	July 23	2431	571	72	503
Certificate-holder	H. E. McArthur	544,993	Aug. 20	2142	518	72	1172
Chain	D. J. Sheldrick	545,178	Aug. 27	2481	601	72	1257
Chain and wheel. Sprocket	E. J. Swedlund	545,213	Aug. 27	2546	616	72	1271
Chain Drive	J. H. Mitchell	542,486	July 9	1168	286	72	236
Chain. Drive	W. N. Whiteley	542,952	July 16	1952	463	72	397
Chain-link	R. A. Breul	545,266	Aug. 27	2620	635	72	1286
Chain-link	W. H. Eisenhart	544,759	Aug. 20	1708	412	72	1090
Chain-link	J. W. Garland	545,037	Aug. 20	2221	538	72	1186
Chain-link	J. C. Schmidt	543,356	July 23	2660	626	72	545
Chain-link	J. C. Schmidt	546,713	Sept. 24	2215	528	72	1810
Chain-machine	W. A. and F. A. Peck	543,944	Aug. 6	199	47, 48, 49	72	785
Chain. Sprocket	G. T. Ribyn	542,686	July 16	1523	364	72	317
Chain. Sprocket	E. J. Swedlund	545,214	Aug. 27	2547	617	72	1271
Chain wheel. Drive	J. Moore	542,936	July 16	1927	457	72	392
Chair: *See* Bath-chair. Camp-chair. Combination-chair. Folding-seat chair. Invalid-chair. Opera-chair. Rail-chair. Reclining-chair. Revolving chair. Rocking-chair. Toy chair.							
Chair	A. P. Brown	543,640	July 30	3235	751	72	665
Chair	J. J. Feely	542,956	July 16	1956	464	72	398
Chair	W. G. Magee	543,744	July 30	3420	794	72	700
Chair base. Barber's	A. J. Nasahl	543,047	July 23	2114	501	72	443
Chair-brace	J. E. Carroll	544,025	Aug. 6	340	84	72	811
Chair fan attachment. Rocking	J. Pickel and W. Schmale	545,721	Sept. 3	500	122	72	1446
Chair fan attachment. Rocking	J. S. Urban	544,421	Aug. 13	1094	267	72	954
Chair-support. Adjustable	E. G. Watkins	544,472	Aug. 13	1202	291	72	976
Channel-cleaning device	M. M. Looney	545,602	Sept. 3	295	72	72	1408
Check-case	E. A. Glaeser	542,014	July 2	332	80	72	67
Check-pad	H. G. Woolworth	542,128	July 9	502	121	72	100
Check-row and drill. Combined	C. H. and H. L. Dooley. (Reissue)	11,504	July 23	2842	666	72	581
Check, draft, &c. Bank	I. Randall	546,825	Sept. 24	2408	578	72	1846
Cheese hoop and follower	F. L. Jones	544,508	Aug. 13	1257	303	72	987
Cheese or butter cutter	E. G. Bennett	546,377	Sept. 17	1658	394	72	1693
Cheese-press	H. Feldmeier	545,198	Aug. 27	2519	610	72	1266
Cheese-press	C. J. Lundstrom	545,206	Aug. 27	2536	613	72	1269
Chenille fabric. Woven	L. Binns	543,285	July 23	2555	600	72	525
Chenille fabric. Woven	L. Binns	545,334	Aug. 27	2726	662	72	1305
Chimney-cap	W. E. Esperson	542,757	July 16	1640	392	72	337
Chimney-cleaner	S. A. Wood	543,791	July 30	3505	816	72	715
Chimney-cleaning apparatus	N. P. Smith and P. F. Lawler	544,522	Aug. 13	1276	308	72	990
Chimney-cowl	C. N. Shannon	544,390	Aug. 13	1043	255	72	946
Chin and shoulder rest	H. O. Peabody	544,003	Aug. 6	299	74	72	803
Chlorin. Apparatus for making	J. J. Powers	544,119	Aug. 6	503	125	72	841
Chocolate-dippers. Apparatus for filling	C. Gousset	546,525	Sept. 17	1912	453	72	1742
Chopper: *See* Cotton-chopper. Meat-chopper.							
Chuck	W. W. Tucker	546,439	Sept. 17	1764	419	72	1713
Chuck. Drill	J. T. Fink	546,761	Sept. 24	2311	551	72	1827
Chuck. Planer	G. W. Jordan	545,895	Sept. 10	784	191	72	1510
Chuck. Machine-tool	W. Raymond	544,006	Aug. 6	303	75	72	804
Churn	I. Babbitt	541,821	July 2	2	2	72	3
Churn	W. W. Brigg	541,917	July 2	161	38	72	34
Churn	J. M. Critcher, E. B. Webber, and O. H. Franklin.	541,837	July 2	37	9	72	9
Churn	J. E. Gibbs and J. R. Shipman	543,861	Aug. 6	51	13	72	758
Churn	C. R. McGahey	543,537	July 30	3004	704	72	622
Churn	C. R. McGahey	544,000	Aug. 6	292	71	72	802
Churn	S. D. Palmer	541,877	July 2	96	22	72	22
Churn	S. D. Palmer	541,944	July 2	201	46, 47	72	43
Churn	S. D. Palmer	541,945	July 2	202	47	72	43
Churn	S. D. Palmer	544,719	Aug. 20	1648	395	72	1078
Churn and butter-worker. Combined	A. M. Bingham	542,026	July 2	346	83, 84	72	69
Churn. Metallic	S. D. Palmer	542,659	July 16	1475	354	72	308
Churn. Rocking	J. F. Richardson	543,182	July 23	2371	559	72	492
Chutes and hoppers for delivery of coal, ore, &c. Cut-off device for	C. W. Hunt	544,670	Aug. 20	1562	374	72	1062
Cider-press	M. Ingison	543,989	Aug. 6	277	68	72	799
Cigar-box moistener	J. C. Glaccum	544,519	Aug. 13	1272	307	72	990
Cigar-branding machine	E. Pisko	544,650	Aug. 20	1507	364	72	1052
Cigar-bunching machine	F. H. Apsey and T. E. Bell	543,600	July 30	3172	734, 735	72	653
Cigar-bunching machine	F. J. Hagen and L. Wieland	545,473	Sept. 3	73	17	72	1368
Cigar cutter and lighter	W. F. Folmer	545,871	Sept. 10	750	183	72	1504
Cigar-lighter	W. A. Blodgett	542,502	July 9	1197	292	72	242
Cigar-tip cutter	G. H. Rodgers	542,615	July 9	1389	335, 336	72	279
Cigarette and cheroot machine	J. H. Dunn	545,855	Sept. 3	722	176	72	1487
Cigarette-box	A. L. Ellett, Jr	543,840	Aug. 6	11	3, 4	72	751
Cigarette-machine	B. Baron						

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cigarette-machine	W. H. Butler	546,638	Sept. 17	2090	496	72	1775
Cigarette-machine	G. F. Carlie	546,063	Sept. 10	1082	259, 260	72	1567
Cigarette-machine	F. J. D. Chappell	542,974	July 16	1967	470, 471, 472	72	403
Cigarette-machine	W. A. Hulse	546,452	Sept. 17	1795	425	72	1719
Cigarette-machine	W. Maxfield	544,818	Aug. 20	1836	441, 442	72	1115
Cigarette-machine	W. Maxfield	545,805	Sept. 3	638	155, 156	72	1472
Cigarette-machine	A. Moonelis	546,822	Sept. 24	2399	574, 575	72	1844
Cigarette-machine	A. Moonelis	546,823	Sept. 24	2403	575, 576	72	1845
Cigarette-machine	A. Moonelis	546,824	Sept. 24	2405	576, 577	72	1845
Cigarette-machine	C. Ollagnier	543,189	July 23	2384	563	72	494
Cigarette machine. Continuous-	B. Baron	543,839	Aug. 6	7	2, 3	72	750
Cigarette machine. Continnous-	R. W. Coffee	544,611	Aug. 13	1430	348, 349	72	1020
Cigarette-machines. Tobacco-feeder for	B. Baron	543,838	Aug. 6	5	2	72	749
Cigarette-tubes. Machine for making paper	C. A. Marchal	546,404	Sept. 17	1701	403, 404	72	1700
Cigarette-packing machine	E. Noriega	544,926	Aug. 20	2035	485, 486	72	1152
Cigarettes. Method of and machine for making	W. H. Butler	546,637	Sept. 17	2087	495	72	1774
Cigarettes. Method of and mechanism for making tobacco	W. A. Hulse	546,451	Sept. 17	1789	425	72	1718
Circuit-closer	W. Nutt	543,966	Aug. 6	236	58	72	791
Circuit for alternating-current systems of distribution. Testing-	H. C. Wirt	543,364	July 23	2673	630	72	547
Cistern. Cement	T. F. Whiteside	541,987	July 2	282	66	72	57
Cistern, well, or tank cleaner	W. A. Latham	541,937	July 2	190	44	72	40
Citrate of ethenylethylenamidin and obtaining same	A. Schmidt	544,933	Aug. 20	2048	.....	72	1155
Clamp: *See* Barrel-head clamp. Pipe-joint clamp. Bed-clamp. Ring-clamp. Cable-clamp. Rope-clamp. Crank-clamp. Saw-clamp. Dental clamp. Soldering-clamp. Hose shut-off clamp. Trolley-line clamp. Line-clamp. Wire clamp. Paper-holding clamp.							
Clamp	G. B. Davis	544,292	Aug. 13	814	206	72	909
Clamp	J. G. Emery, Jr	541,925	July 2	174	41	72	37
Clamp	J. F. Hunt	542,767	July 16	1656	395	72	341
Clarinet	G. F. Pruefer	545,610	Sept. 3	303	75	72	1410
Clasp: *See* Garment-supporter clasp.							
Clasp	C. Sichler	545,384	Aug. 27	2799	680	72	1319
Clay. Preparing	P. L. Simpson	541,888	July 2	112	27	72	25
Cleaner: *See* Beer-pipe cleaner. Coffee-cleaner. Boiler-tube cleaner. Cuspidor-cleaner. Carpet-cleaner. Dust-collector cleaner.							
Cleansing material and producing same	D. M. Steward	544,601	Aug. 13	1417	.....	72	1017
Cleat for electric wires	M. M. Wood	545,620	Sept. 3	318	79	72	1412
Cleat for holding electric wires	E. W. Buffinton	544,501	Aug. 13	1246	301	72	985
Clevis	J. L. Colbert, Jr	545,680	Sept. 3	429	103	72	1433
Clevis	H. L. Ferris	543,087	July 23	2180	517	72	456
Clevis. Plow-	E. W. Kruse	546,645	Sept. 17	2103	498	72	1778
Clipper. Hair-	F. Bangerter	543,668	July 30	3276	761	72	673
Clock	A. M. Lane	546,819	Sept. 24	2394	572, 573	72	1844
Clock. Alarm-	E. E. Katz	546,103	Sept. 10	1151	275	72	1580
Clock. Calendar-	C. I. Fowler	543,235	July 23	2469	579, 580	72	510
Clock. Calendar-	C. I. Fowler	543,236	July 23	2471	580	72	510
Clock. Calendar-	C. I. Fowler	543,247	July 23	2474	581	72	511
Clock-case	W. D. Davies	544,028	Aug. 6	347	87	72	812
Clock-case	R. Schlegelmilch	542,780	July 16	1684	401	72	345
Clock. Electric alarm-	W. Kist	546,016	Sept. 10	1006	242	72	1553
Clock escapement-crutch	W. E. Porter	542,863	July 16	1811	429	72	369
Clock-winding mechanism	A. M. Lane	546,782	Sept. 24	2339	559	72	1833
Clock-winding mechanism. Electric	W. S. Scales	543,707	July 30	3339	775	72	684
Clock-winding mechanism. Electric	L. H. Spellier	543,358	July 23	2663	627	72	546
Closet: *See* Dry closet. Water-closet.							
Closet	P. G. Emery	542,633	July 16	1424	343	72	298
Closures for vessels. Device for effecting air-tight	J. Day	544,967	Aug. 20	2107	504, 505	72	1166
Cloth and yarn calculating rulo	A. Schaer	543,899	Aug. 6	123	28	72	770
Cloth-cutting machine	J. Philippsohn	546,746	Sept. 24	2279	542	72	1821
Cloth-rubbing apparatus	J. Schweiter	545,252	Aug. 27	2601	631	72	1252
Cloth shearing or cropping machine	E. Gessner	545,957	Sept. 10	901	216	72	1533
Cloth-straightening machine	C. L. Dawson	543,084	July 23	2173	515	72	455
Cloth-stretching machine	O. E. Drown	546 092	Sept. 10	1132	270	72	1577
Cloth-stretching machine	D. Gessner	546,762	Sept. 24	2313	551	72	1828
Cloth-stretching machine	J. and W. Horton	544,098	Aug. 6	472	116, 117	72	835
Clothes-drier	M. C. Burr	542,040	July 2	370	89	72	74
Clothes drier	J. Drum	542,556	July 9	1292	313	72	260
Clothes-drier	J. Everett	542,245	July 9	705	173	72	152

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Clothes-drier	J. P. Hill	544,485	Aug. 13	1222	296	72	980
Clothes-drier	B. F. Holmes	543,020	July 23	2060	489	72	434
Clothes-drier	E. Prescott	545,658	Sept. 3	379	93	72	1425
Clothes-drier	W. M. Rowley	546,559	Sept. 17	1970	467	72	1752
Clothes-holder	G. B. N. Dow	542,677	July 16	1506	360	72	314
Clothes-line connection	J. Cehfus	543,467	July 30	2862	671	72	599
Clothes-line fastener	C. Benesh	546,754	Sept. 24	2301	547	72	1826
Clothes-pounder	G. and C. Karass	544,853	Aug. 20	1905	457	72	1129
Clover-huller	J. W. Kirshman	545,297	Aug. 27	2670	648	72	1296
Clutch. Disengaging-	O. C. Mootham	545,411	Aug. 27	2856	695	72	1330
Clutch driving device for motors	J. Charter	542,042	July 2	371	89, 90	72	75
Clutch. Friction-	C. C. Klein	545,078	Aug. 27	2300	559	72	1222
Clutch mechanism	T. Johnston	545,894	Sept. 10	783	191	72	1510
Clutch-operating device	W. H. Morgan	545,369	Aug. 27	2777	674	72	1314
Clutch-operating mechanism	H. W. Hill	546,327	Sept. 17	1571	373	72	1676
Clutch specially adapted for cable-driving pulleys	C. E. Calloch and H. C. Delcroix	542,143	July 2	524	126	72	104
Coal. Apparatus for reloading	F. H. Symons	546,790	Sept. 24	2352	561, 562	72	1836
Coal-elevating apparatus	G. Haiss	542,558	July 9	1295	314	72	260
Coal lowering and delivering device	L. D. Howard	545,201	Aug. 27	2527	611	72	1267
Coal or rock drill	B. A. Legg	545,596	Sept. 3	284	70	72	1406
Coal or rock drill. Electric	H. H. Bliss	545,570	Sept. 3	238	57, 58, 59, 60	72	1398
Coal-shovel	M. L. Tate	543,710	July 30	3348	777	72	686
Coal. System for handling	J. Campbell	542,077	July 2	432	103, 104	72	84
Coal-transferring apparatus	E. and C. E. Lindsley	544,103	Aug. 6	477	119, 120	72	836
Coatings for iron or steel. Manufacture of preservative	W. M. Walters and F. R. Stone	543,636	July 30	3232	.....	72	664
Cock	R. M. Dixon	543,646	July 30	3243	753	72	666
Cock and warning-signal. Combination angle-	W. R. Bedell	542,404	July 9	1015	249	72	209
Cock. Angle-	W. R. Howdon	545,865	Sept. 3	740	180	72	1490
Cock. Basin-	J. H. Glauber	542,251	July 9	713	175	72	153
Cock for water-closet valves. Ball-	J. Crawford and J. H. Young	545,348	Aug. 27	2746	666	72	1309
Cock. Gage-	H. R. Frisbie	544,033	Aug. 6	354	88	72	814
Cock. Gage-	W. Wilson	545,115	Aug. 27	2366	572	72	1235
Cock. Gage-	C. A. G. Winther	542,126	July 2	499	120	72	100
Cock lock. Stop-	C. Heyman	542,642	July 16	1443	347	72	301
Cock lock. Stop-	C. Heyman	542,643	July 16	1445	348	72	302
Cock. Plug-	J. D. Bowman	545,769	Sept. 3	582	140	72	1460
Cock. Right and left hand stop and waste	F. H. Frank	545,856	Sept. 3	724	176	72	1488
Coffee-cleaner	B. W. Yost	545,185	Aug. 27	2493	604	72	1260
Coffee or tea pot	W. P. Wilson	546,967	Sept. 24	2633	631	72	1890
Coffee or tea pot or urn	C. Halstead	542,731	July 16	1589	380	72	329
Coffee-pot	J. K. Cummings	544,963	Aug. 20	2099	503	72	1164
Coffee-pot construction	W. Blankner	543,520	July 30	2972	697	72	620
Coffee surrogate	J. W. Curry	544,059	Aug. 6	404	.....	72	823
Coffee surrogate	J. B. Drake	543,299	July 23	2374	.....	72	529
Coffin	D. R. Gould	543,152	July 23	2302	545	72	479
Coffin-handle	F. Ratcliff	545,722	Sept. 3	501	122	72	1446
Coffin-lowering attachment. Permanent	J. S. Flagg	542,361	July 9	942	231	72	195
Coil. Reactive	E. E. Stark	543,564	July 30	3049	712	72	636
Coin-controlled mechanism	H. A. Manley	545,634	Sept. 3	343	86	72	1417
Coin-delivering apparatus	E. H. Walker	544,330	Aug. 13	888	223.	72	922
Coin-delivery apparatus	E. J. Brandt	542,328	July 9	872	214, 215	72	181
Coin-delivery apparatus	E. J. Brandt	542,329	July 9	876	215, 216	72	182
Coin-delivery apparatus	E. J. Brandt	542,602	July 9	1360	329, 330	72	272
Coin-holder	M. Strack	542,815	July 16	1737	413	72	354
Coin receptacle and register	A. W. Coffin	542,796	July 16	1711	407	72	350
Collapsible boat	R. K. Laraway	542,340	July 9	898	220	72	186
Collar attachment. Horse-	C. F. Neer	544,628	Aug. 13	1464	356	72	1026
Collar fastener. Horse-	A. Smith	543,430	July 23	2793	656	72	572
Collar. Horse-	C. A. Ballack and P. B. Weston	542 130	July 2	505	121	72	100
Collar. Horse-	C. Block	542,218	July 2	659	161	72	128
Collar. Horse-	J. Corrigan	542,927	July 16	1913	453	72	390
Collar-points. Machine for rolling	A. E. Grant	545,688	Sept. 3	439	106	72	1435
Coloring-matter. Black	R. Bohn	546,576	Sept. 17	1998	.....	72	1757
Coloring-matter from logwood. Making	P. T. Austen	542,403	July 9	1014	.....	72	209
Colors	W. Beckmann	545,046	Aug. 27	2236	.....	72	1210
Columns. Construction of Z-bar	F. H. Kindl	546,781	Sept. 24	2337	558	72	1833
Combination-chair	J. Sheridan and J. W. McNulty	545,417	Aug. 27	2866	698, 699	72	1332
Combing cotton, silk, or other fiber. Machine for	J. Dugdill	545,014	Aug. 20	2179	526, 527	72	1178
Combing-machine	A. N. Sharp and S. Metcalfe	546,600	Sept. 17	2033	483	72	1764
Combing machines. Stop-motion for cotton-	G. Townsend	541,903	July 2	139	33, 34	72	30
Combs. Apparatus for cleaning edges of circular	W. H. Greenwood and F. Farrar	543,381	July 23	2692	636	72	552
Combustion. Method of and apparatus for promoting	B. F. Taylor	546,259	Sept. 10	1424	338	72	1631
Commode. Folding chair-	C. O. Hennig	544,535	Aug. 13	1290	312	72	993
Commode or sanitary pail	V. E. Poppens	543,402	July 23	2730	645	72	558
Commutator-brush	H. B. Collins	541,919	July 2	162	38, 39	72	35
Commutator-brush holder	G. J. Junker	544,358	Aug. 13	906	243	72	935
Commutator connection for dynamo-electric machines	H. H. Wait	544,339	Aug. 13	886	222	72	923
Commutator or collector brush	C. L. Coffin	545,347	Aug. 27	2746	665	72	1308
Compasses and glass-cutter. Combination	J. Kohler	546,669	Sept. 24	2143	510	72	1797
Compensator	D. Whitmore	546,569	Sept. 17	1987	472	72	1755
Compensator. Hysteresis-	B. Abdank-Abakanowicz	545,042	Aug. 27	2231	541	72	1209

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Composing-machines. Machine for making controllers for	F. A. Johnson	545,697	Sept. 3	454	109, 110, 111, 112	72	1438
Compressor. Hydraulic	H. Reisel	546,938	Sept. 24	2586	620	72	1881
Computing apparatus. Price-	H. E. Swift	545,110	Aug. 27	2355	570	72	1234
Concentrator	T. J. Hatch	544,254	Aug. 6	752	192, 193	72	885
Concrete-mixing machine	S. Whinery	542,700	July 16	1545	368, 369	72	321
Concrete on inclined surfaces. Apparatus for laying	L. Grant and F. A. Mooney	541,848	July 2	48	11	72	19
Concrete pipe	E. L. Ransome	545,133	Aug. 27	2402	581	72	1242
Condenser. Exhaust-steam	J. A. Bachman and A. C. Goeth	544,652	Aug. 20	1509	365	72	1052
Condenser. Surface	A. Hoberecht	544,621	Aug. 13	1451	353	72	1024
Condenser. Surface	J. Renshaw	545,612	Sept. 3	305	75	72	1410
Condenser. Surface	E. Thelsen	546,946	Sept. 24	2604	624	72	1884
Conductor and closed conduit therefor. Flexible	L. Dion	546,005	Sept. 10	988	239	72	1549
Conduit-coupling	G. W. Davis	546,953	Sept. 24	2613	626	72	1886
Conduit. Electric	C. J. Kintner	545,296	Aug. 27	2667	647	72	1295
Conduit for sewers, &c	W. Walter	542,865	July 16	1813	430	72	369
Conduits. Manhole for underground	J. F. Cummings	543,613	July 30	3195	740	72	657
Conduits. Manufacture of electric or other	E. L. Ransome	545,976	Sept. 10	934	223, 224	72	1539
Confectionery. Article of	G. H. and T. J. Stille	544,394	Aug. 13	1054	258	72	947
Confectionery. Manufacturing fancy	S. A. Johnson	545,698	Sept. 3	463	112	72	1438
Confections. Device for coating	C. Breitenkamm	542,987	July 23	2008	477	72	424
Conveyer	E. R. Draver	544,031	Aug. 6	351	87, 88	72	813
Conveyer	W. T. Ferguson	546,315	Sept. 17	1548	366	72	1671
Conveyer and assorter	W. A. Leary and J. F. Hostetter	546,166	Sept. 10	1257	300	72	1599
Conveyer attachment	T. R. Griffith	544,434	Aug. 13	1123	272	72	960
Conveyer for coal, &c	E. D. Lukis	546,671	Sept. 24	2146	510, 511	72	1798
Conveyer for tamping materials	R. H. Elliott and J. B. Carrington	542,151	July 2	537	130	72	106
Conveying apparatus	T. S. Miller	545,807	Sept. 3	643	156	72	1472
Conveying material. Process of and apparatus for	J. M. Dodge	544,970	Aug. 20	2110	505	72	1167
Conveying materials. Process of and apparatus for	J. M. Dodge	545,013	Aug. 20	2176	526	72	1177
Cooker. Egg-	C. Tillberg	543,199	July 23	2408	566	72	499
Cooker. Steam-	J. B. Brown	545,450	Sept. 3	19	6	72	1358
Cooking apparatus. Steam-	A. Stewart	545,745	Sept. 3	536	129	72	1452
Cooking cotton-seed meal. Apparatus for	B. Dabney and W. I. Yopp	545,271	Aug. 27	2628	637, 638	72	1287
Cooking-vessel. Domestic	R. C. Andersen	544,717	Aug. 20	1646	394, 395	72	1077
Cooking-vessel. Steam	C. T. Owens	546,678	Sept. 24	2162	514	72	1800
Cooler. *See* Beer-cooler. Water-cooler.							
Cooler for condensing water	J. Fleischer	543,005	July 23	2035	483	72	430
Coop. Folding poultry-	R. C. Meinder	544,680	Aug. 20	1580	378, 379	72	1065
Copy-holder	H. E. Foxall and H. M. Storms	546,734	Sept. 24	2264	538	72	1819
Copy-holder	A. B. Reid	542,809	July 16	1730	412	72	353
Copy-holder	S. Stewart	543,109	July 23	2219	526	72	463
Copy-holder for record-books, &c	P. P. Powell	543,781	July 30	3493	813	72	712
Copying-machine. Rotary	G., J. G., and M. O. Rehfuss	542,497	July 9	1191	291	72	240
Cordage-machine	W. H. Avis	545,033	Aug. 20	2212	536, 537	72	1184
Cork-extractor	J. O. Devries	544,463	Aug. 13	1189	289	72	974
Cork-extractor	M. and M. Redlinger, Jr	546,747	Sept. 24	2280	542, 543	72	1821
Cork-puller	E. Walker	543,224	July 23	2449	575, 576	72	506
Corks from bottles. Apparatus for drawing	J. C. C. Read and G. I. Hurst	546,902	Sept. 24	2530	604, 605	72	1870
Corking-machine	J. C. Blevney	545,190	Aug. 27	2509	606, 607	72	1263
Corn-breaker and cornstalk-shredder	J. Carrey	541,964	July 2	244	57	72	50
Corn-cutter	W. F. L. Gentry	545,956	Sept. 10	900	216	72	1533
Corn-cutter	L. M. Weaver	543,517	July 30	2968	696	72	619
Corn cutter and shocker	B. J. Detrick	542,874	July 16	1827	432, 433	72	372
Corn-husker and fodder-shredder. Combined	G. W. Packer	546,550	Sept. 17	1947	463	72	1748
Corn-sheller	A. Peterson	544,589	Aug. 13	1388	339	72	1013
Cornstalk-puller	A. Edwards	544,573	Aug. 13	1362	332	72	1008
Cornet	J. Heald	543,015	July 23	2052	487	72	433
Cornice. Window-shade	D. Boyer	542,515	July 9	1221	297	72	240
Cornice. Window-shade	D. Boyer	546,296	Sept. 17	1511	356, 357	72	1665
Corrugating and cutting tool	J. Blumer	542,435	July 9	1077	263	72	221
Corrugating-machine tool	B. Hall	541,852	July 2	55	13	72	14
Corset-fastening	H. Davidson	543,983	Aug. 6	264	66	72	797
Corset-stiffeners. Machine for making	J. Draher	543,856	Aug. 6	40	10, 11, 12	72	756
Costume. Bicycle and walking	M. L. Peck	546,496	Sept. 17	1866	442	72	1733
Cots, hammocks, &c. Bottom for	B. F. Neely	541,872	July 2	88	20	72	20
Cottage-heater	T. Holland	543,092	July 23	2188	519	72	458
Cotton chopper and cultivator	H. C. Ezell and B. A. George	545,880	Sept. 10	762	186	72	1505
Cotton elevator, cleaner, and distributer	M. M. Ginn	544,036	Aug. 6	361	89	72	815
Cotton-gin. Saw	J. A. Maxwell	541,868	July 2	84	19	72	20
Cotton-picker	G. W. Young	545,117	Aug. 27	2371	573	72	1236
Cotton-picking machine	A. Campbell	542,794	July 16	1702	405, 406	72	348
Cotton-press	J. C. Nelson and F. E. Smith	546,242	Sept. 10	1385	331	72	1624
Counter-seat	J. L. Lord	545,804	Sept. 3	637	155	72	1471

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Coupling: *See* Air-brake coupling. Cable-coupling. Car-coupling. Conduit-coupling. Hose-coupling. Pipe-coupling. Rod or pipe coupling. Rope-coupling. Shaft-coupling. Singletree-coupling. Strap-coupling. Thill-coupling.							
Coupling device	J. T. Hostler	543,935	Aug. 6	187	45	72	783
Coupons. Receptacle for holding	U. G. and W. F. Beck	544,280	Aug. 13	788	201	72	904
Cover. Milk-can	L. Sturges	546,498	Sept. 17	1871	443	72	1733
Crane. Overhead traveling	T. R. Morgan, Sr	543,557	July 30	3036	710	72	634
Crane. Power-	F. O. Kilgore	545,589	Sept. 3	269	67	72	1403
Crane. Traveling	J. McCoy	546,426	Sept. 17	1743	413, 414	72	1709
Crank	W. E. Gard	542,685	July 16	1847	438	72	376
Crank	W. E. Gard	546,520	Sept. 17	1906	450, 451	72	1740
Crank-clamp. Adjustable	F. E. Bresler	545,843	Sept. 3	700	170, 171	72	1483
Crank. Reciprocating-motion	H. J. F. Guillou	546,847	Sept. 24	2441	585	72	1852
Crate. Egg-	M. E. Hamilton	546,149	Sept. 10	1228	293	72	1594
Crate. Folding	J. Wolff	545,930	Sept. 10	858	207	72	1524
Crate. Fruit-	C. S. Chamberlain	544,681	Aug. 20	1951	467	72	1136
Crate. Lock-joint	A. S. Sherman	544,695	Aug. 20	1695	386	72	1070
Crate. Wood-baling	W. A. Dickson	542,845	July 16	1783	423	72	364
Cravat-fastening	E. Schannen	543,318	July 23	2066	612	72	535
Cream-elevator	T. T. Sabroe	545,177	Aug. 27	2479	601	72	1257
Crocheting or overedge sewing-machines. Work-feeding mechanism for	J. M. Merrow	542,830	July 16	1758	418	72	359
Cross-sill support and bracket-clamp	G. Wenzelmann	543,663	July 30	3269	760	72	671
Crusher. *See* Seed-crusher. Stone-crusher.							
Crushing and grinding mill	H. L. Lightner and J. J. Newsom	542,087	July 2	442	106	72	87
Crushing-mill	J. Walker	544,872	Aug. 20	1938	464	72	1134
Cryptograph	G. Strömdal	540,035	Sept. 10	1036	249	72	1558
Cucumber-picker	G. Botkin	546,913	Sept. 24	2547	609	72	1873
Cue-trimmer	J. N. McIntire	546,121	Sept. 10	1182	282	72	1586
Cuff	C. C. Copeland	543,671	July 30	3260	762	72	673
Cuff-holder	L. M. Blythe	542,820	July 16	1746	415	72	356
Cuff-holder	E. K. Heaps	542,763	July 16	1648	393	72	339
Cuff-holder	G. W. Way	545,927	Sept. 10	854	206	72	1524
Culinary utensil	E. O. Rabon	546,554	Sept. 17	1962	465	72	1750
Cultivator	H. W. Campbell	545,267	Aug. 27	2622	635, 636	72	1286
Cultivator	J. Edwards	543,379	July 23	2688	635	72	551
Cultivator	A. M. Jones	542,339	July 9	897	220	72	186
Cultivator	H. C. Kinner	546,334	Sept. 17	1582	375	72	1678
Cultivator	M. L. Kissell	544,102	Aug. 6	475	118	72	836
Cultivator	A. Lindgren	541,975	July 2	261	61	72	53
Cultivator	J. M. W. Long	546,020	Sept. 10	1012	244	72	1554
Cultivator	E. A. Ovenshire	543,451	July 23	2832	664	72	579
Cultivator	T. J. Payne	544,114	Aug. 6	497	123	72	840
Cultivator	L. Roadhouse	545,174	Aug. 27	2474	599, 600	72	1256
Cultivator. Corn-	R. Lyons	544,736	Aug. 20	1675	403	72	1083
Cultivator. Disk	L. E. Waterman	541,906	July 2	144	35	72	32
Cultivator. Hand wheel-	R. G. H. Dillon	543,378	July 23	2687	635	72	551
Cultivator. Lever	W. S. Lawrence	542,614	July 9	1387	335	72	278
Cultivator or grain-drill tooth	W. A. Van Brunt	545,987	Sept. 10	956	229, 230	72	1543
Cultivator or plow standard	J. H. McLain	543,886	Aug. 6	102	23	72	767
Cultivator. Straddle-row hand-	J. J. and J. F. Davet	543,178	July 23	2366	558	72	491
Cultivator weed-cutter	P. W. Corcoran	545,945	Sept. 10	882	212	72	1529
Cultivator. Wheel-	W. M. Bomar	544,839	Aug. 20	1880	450, 451	72	1123
Culvert	W. S. Parker	546,245	Sept. 10	1391	332	72	1625
Culvert	B. P. Saunders	542,978	July 16	1995	474	72	404
Culvert or bridge	J. W. Ogle	542,531	July 9	1248	305	72	251
Curbing. Street-	A. O. Jones	546,332	Sept. 17	1579	375	72	1678
Curbs and gutters. Apparatus for forming concrete	S. P. McKelvey	544,235	Aug. 6	708	181, 182, 183	72	877
Curling-iron	J. D. Schoonmaker	546,031	Sept. 10	1031	248	72	1557
Curling-iron	H. B. Stout	546,833	Sept. 24	2422	580	72	1848
Curling-iron holder	G. A. Turner	545,557	Sept. 3	219	53	72	1394
Curling-iron shield	J. C. Earnshaw	542,243	July 9	702	172	72	151
Current arrester. Strong-	F. R. McBerty	544,368	Aug. 13	1007	247	72	939
Current generator or motor. Alternating-	E. Thomson	545,554	Sept. 3	214	52	72	1393
Current machines. Means for indicating coincidence of phase of two alternating or polyphase	J. H. F. Görges	545,282	Aug. 27	2643	642	72	1290
Current motor. Alternating-	E. Arnold	543,836	Aug. 6	2	1	72	749
Current motor. Alternating-	R. Lundell	544,261	Aug. 6	762	195	72	887
Current rectilinear motor. Continuous-	C. E. Wood	546,691	Sept. 24	2182	519	72	1804
Current-wheel	W. Park	546,185	Sept. 10	1283	306	72	1604
Currycomb	M. L. Bacon and J. E. Finley	545,999	Sept. 10	978	236	72	1547
Currycomb	H. T. Richmond	541,883	July 2	106	25	72	24
Curtain. Berth-	S. Hughes	542,056	July 2	401	97	72	79
Curtain-fixture	D. B. McCapes and E. D. Quinn	545,371	Aug. 27	2779	674	72	1315
Curtain-fixture	W. K. McCoy	546,743	Sept. 24	2276	541	72	1820
Curtain-fixture	J. J. H. Mohr	544,899	Aug. 20	1992	476	72	1145
Curtain fixture. Adjustable window-	H. M. Sturgis	544,938	Aug. 20	2056	490	72	1156
Curtain fixture. Window-	E. I. Pyle	543,946	Aug. 6	205	49, 50	72	788
Curtain-pole socket	R. S. Gregory	544,166	Aug. 6	571	143	72	854
Curtain-ring	H. Taylor	544,448	Aug. 13	1164	281	72	969

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Curtain-roller bracket	E. C. Heikes	542,017	July 2	334	81	72	67
Curtain-stop	W. V. H. Willson	543,664	July 30	3270	760	72	672
Curtain-stretcher frame	W. Niemand	544,049	Aug. 6	385	95	72	819
Curtain stretcher. Lace-	J. O. Chenoweth	543,644	July 30	3241	752	72	666
Curtain-support	J. H. Stevenson	546,832	Sept. 24	2421	580	72	1848
Curtain. Window-	J. A. Lidback	544,815	Aug. 20	1832	440	72	1114
Cuspidor-cleaner	A. Larson	546,893	Sept. 24	2516	601	72	1867
Cut-off separator and grader. Adjustable	D. J. Davidson	545,581	Sept. 3	254	62, 63	72	1401
Cut-out. Electric fusible	D. N. Gleason	546 613	Sept. 17	2053	487	72	1767
Cutlery. Table-	J. Barry and M. L. Shaughnessy	546,376	Sept. 17	1656	393	72	1692
Cutter:							
See Band-cutter. Bolt-cutter. Buttonhole-cutter. Casing-cutter. Cheese or butter cutter. Cigar-cutter. Cigar-tip cutter. Corn-cutter. Feed-cutter. Fodder-cutter. Glue-stock cutter. Joint-cutter. Meat-cutter. Paper-cutter. Potato-seed cutter. Quill-cutter. Rod and pipe cutter. Rotary cutter. Rut-cutter. Tube-cutter. Vegetable-cutter. Welt-trimmer cutter.							
Cutter-bar	D. A. Gilliom	544,728	Aug. 20	1666	400	72	1081
Cutter-head for woodworking-machines	J. L. Johnason	545,634	Sept. 3	374	92	72	1424
Cutting device	C. A. Byrd	546,607	Sept. 17	2043	485	72	1766
Cutting-machine	C. M. Holcomb	544,851	Aug. 20	1901	456	72	1127
Cutting-machine	R. Schleicher and C. Heimerdinger	542,898	July 16	1868	443	72	381
Cutting-tool. Combined	J. Carpenter	541,963	July 2	243	57	72	49
Cycle driving-gear	C. H. H. Steudel	544,239	Aug. 6	721	184, 185	72	879
Cycle mud-guard	W. H. Snow	545,212	Aug. 27	2544	616	72	1270
Cycle-pedal	E. M. Graham	543,806	July 30	3544	824	72	722
Cycle-saddle	J. P. Johnston	542,613	July 9	1387	335	72	278
Cycle-wheels, &c. Frictional surface for	A. Pulbrook	544,688	Aug. 20	1595	382	72	1068
Cycles. Powder-duster for	S. Franken, Jr	545,475	Sept. 3	76	18	72	1369
Cyclometer	A. D Ruff	543,269	July 23	2530	594	72	520
Cyclometer registering mechanism	A. F. Rockwell	543,948	Aug. 6	207	50	72	786
Damper	C. A. Daniels	545,947	Sept. 10	884	213	72	1529
Damping textile fabrics. Apparatus for	W. Mather	546,930	Sept. 24	2574	616	72	1879
Dead-centers. Device for overcoming	D. Seibert, Sr	543,903	Aug. 6	132	29	72	772
Decanter for cooling liquids	L. G. Godet	544,219	Aug. 6	672	171	72	872
Decomposing substances by means of ammonia salts	E. R. Besemfelder	543,284	July 23	2553	600	72	524
Dental articulator	M. R. Griswold	544,096	Aug. 6	469	115, 116	72	835
Dental bridgework	B. B. Bray	542,138	July 2	517	124	72	103
Dental-chair attachment	R. M. Mayes	541,940	July 2	195	45	72	42
Dental clamp	J. M. Strout	544,135	Aug. 6	528	131	72	846
Dental-engine handpiece-coupling	C. H. Davis	543,854	Aug. 6	36	10	72	755
Dental flask	M. R. Griswold	544,095	Aug. 6	468	115	72	835
Dental-flask press-holder and heater	M. R. Griswold	546,465	Sept. 17	1818	431	72	1724
Dental matrix	J. M. Strout	545,389	Aug 27	2206	682	72	1320
Dental motors. Short-circuiting device for stopping	F. N. Denison	543,855	Aug. 6	38	10	72	756
Dental mouth-glass	W. M. Sharp	546,195	Sept. 10	1307	311	72	1608
Dental plugger	F. J. Richards. (Reissue)	11,502	July 2	676	166	72	131
Denture. Artificial	E. P. Brown	542,436	July 9	1079	263	72	221
Depositing-machine	A. W. Copland	544,962	Aug. 20	2096	502, 503	72	1164
Derailing-switch and safety-frog	C. W. Rahbar	542,028	July 2	348	84	72	70
Derrick. Portable	J. Sarver	545,731	Sept. 3	516	126	72	1449
Designing. Method of	W. S. Eaton	545,624	Sept. 3	326	81	72	1414
Desk and seat. Combined	M. D. Nelon	541,982	July 2	273	64	72	55
Desk and seat. School	S. W. Peregrine	542,634	July 16	1466	352	72	306
Desk. Lid-	E. F. and F. D. Pooley	545,813	Sept. 3	653	158	72	1475
Desk-lock	J. Roche	543,316	July 23	2603	612	72	534
Detergent compound	L. H. Hutchinson	542,524	July 9	1239	.....	72	250
Dibbling-machine	G. K. Spitzenberg	545,545	Sept. 3	200	48, 49	72	1391
Die:							
See Metal-drawing die. Screw-thread-cutting die.							
Die-press	W. A. Turner	543,711	July 30	3349	777	72	686
Digger:							
See Potato-digger.							
Digging machine. Canal or ditch	O. Hoefs	544,850	Aug. 20	1897	455, 456	72	1127
Dish-cleaner	G. S. Blakeslee	542,460	July 9	1127	275, 276	72	229
Dish-cleaner	W. H. Cox	544,211	Aug. 6	656	166, 167	72	869
Dish-cleaner	B. R. Mann	543,215	July 23	2435	572	72	503
Dish-cleaner	L. A. Sanderland	542,430	July 9	1065	261	72	219
Dish-drainer	C. N. Johnson	542,734	July 16	1602	382	72	331
Dish-drainer	R. Wood	542,912	July 16	1890	448	72	385
Dishes, &c. Device for carrying	F. P. West	546,208	Sept. 10	1329	316	72	1613
Disinfecting apparatus	O. G. Scott and W. F. Bradshaw	542,376	July 9	967	238	72	200
Disinfecting telephone apparatus. Contrivance for	R. Lamarche	543,490	July 30	2903	684	72	608
Disintegrator or crusher	M. F. Williams	544,336	Aug. 13	895	224	72	923
Disk-sharpener	J. H. Evans	544,889	Aug. 20	1967	471	72	1140
Dispensing case or cabinet	S. C. Guthrie	543,423	July 23	2765	653	72	565
Display apparatus	F. W. G. Boettcher	546,912	Sept. 24	2545	608, 609	72	1873
Display attachment. Counter	I. Rosenberg	543,657	July 30	3261	758	72	670
Display-box	B. T. Williams	542,786	July 16	1691	402	72	347
Display-case	W. L. Dempsey	542,629	July 16	1418	341	72	297
Display-rack	H. Droste	544,216	Aug. 6	665	170	72	870

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Display-rack	F. Knopf	543,025	July 23	2069	491	72	436
Display-rack	J. F. Wynkoop	544,713	Aug. 20	1642	393	72	1076
Display-stand	P. Ganzhorn	542,362	July 9	943	232	72	195
Displaying card. Ring-	F. S. Boyden	542,751	July 16	1633	390	72	336
Dissolver	R. F. Whalen	545,259	Aug. 27	2611	631	72	1284
Distillation of crude hydrocarbons, &c. Method of and apparatus for continuous	O. Perrier	544,516	Aug. 13	1267	306	72	989
Distilling liquid hydrocarbons. Apparatus for	P. Dvorkovitz	546,697	Sept. 24	2193	523	72	1806
Distilling tar and refining turpentine. Apparatus for	K. Löfhjelm	546,018	Sept. 10	1010	243	72	1553
Distributing apparatus	H. G. Butler	546,692	Sept. 24	2184	519, 520, 521	72	1804
Ditching-jack	R. Rue	543,056	July 23	2130	505	72	447
Ditching-machine	A. Mann	543,257	July 23	2510	590	72	517
Ditching machine. Tile-	C. W. and E. Jeschke	544,258	Aug. 6	759	194	72	887
Dividing apparatus	L. von Köppen	546,336	Sept. 17	1586	376	72	1679
Dividing-instrument	A. Vetorskey	545,396	Aug. 27	2816	685	72	1322
Diving apparatus	H. Schon	543,756	July 30	3444	802	72	704
Diving-chamber	G. A. Russell	544,238	Aug. 6	720	184	72	879
Doffer mechanism	E. W. Buell and S. Moe	543,126	July 23	2254	535	72	470
Dolls, &c. Joint for	E. Verpillier and C. W. Graves	546,791	Sept. 24	2453	562	72	1836
Door	W. E. Kelly	544,985	Aug. 20	2134	516	72	1170
Door and hanger therefor. Sliding	W. W. Holmes	541,971	July 2	254	59, 60	72	52
Door. Automatic gravity-closing water-tight	G. W. Melville	542,169	July 2	567	138	72	111
Door chain fastener	H. C. Jenkins	546,102	Sept. 10	1150	275	72	1580
Door-check	J. T. Hair	543,863	Aug. 6	54	14	72	758
Door-check	M. R. Kennedy	544,730	Aug. 20	1668	401	72	1082
Door-check	R. C. Simmons	544,033	Aug. 6	396	99	72	821
Door-check	G. W. Wright	542,129	July 2	503	121	72	100
Door check and closer	E. I. Blount	542,791	July 16	1697	404	72	348
Door check and closer	E. I. Blount	542,840	July 16	1775	422	72	362
Door-fastener	J. Chalmers	543,981	Aug. 6	261	65	72	796
Door-fastener	C. P. Cooper	546,064	Sept. 10	1090	261	72	1569
Door-fastener	M. P. Pirtle	545,533	Sept. 3	177	42	72	1387
Door-hanger	W. J. Arndt	542,457	July 9	1122	274	72	228
Door-hanger	J. W. Conchar	546,729	Sept. 24	2255	537	72	1817
Door lock and latch	J. H. Preston	543,506	July 30	2941	691	72	615
Door-operating device	E. Brombacher	543,979	Aug. 6	256	63	72	795
Door-operating device. Automatic hatchway-	J. M. Elder	544,667	Aug. 20	1553	372	72	1060
Doors. Threshold and weather-strip for	N. N. Hazelton	544,977	Aug. 20	2118	508	72	1168
Dough-cutting machine	J. J. Pfenninger	543,504	July 30	2935	690, 691	72	614
Dough-dividing machine	C. Hesse	546,488	Sept. 17	1857	440	72	1731
Dough-dividing machine	J. W. McKay	545,636	Sept. 3	347	86, 87	72	1418
Dough-mixing machine	C. E. Oelman	546,182	Sept. 10	1281	305	72	1603
Dovetailing machine. Sash-stile-	D. A. Shollenberger	546,253	Sept. 10	1414	336	72	1629
Doweling-machine	C. Loetscher	545,298	Aug. 27	2672	648, 649	72	1296
Draft attachment	J. E. Wolf	545,997	Sept. 10	975	235, 236	72	1546
Draft-equalizer	G. W. Raymond	542,599	July 9	1357	329	72	271
Draft-equalizer	J. F. Walborn	546,043	Sept. 10	1052	252	72	1561
Draft-excluder for doors	W. T. Hall and W. J. Bayliss	543,932	Aug. 6	185	44	72	782
Draft-rigging	J. G. Tomlinson	545,555	Sept. 3	216	53	72	1393
Drafting-instrument. Tailor's	J. S. Hand	542,443	July 9	1090	266	72	223
Drain. Stall-	F. Steinle	546,478	Sept. 17	1839	435	72	1728
Draw-gear and buffing apparatus	G. Westinghouse, Jr	543,915	Aug. 6	154	34, 35, 36	72	776
Draw-gear and buffing apparatus	G. Westinghouse, Jr	545,994	Sept. 10	967	233	72	1545
Draw-knife	J. G. Young	542,721	July 16	1575	377	72	326
Drawing and carding machines. Guide for	J. H. Brackett	545,220	Aug. 27	2558	620	72	1273
Drawing-knife	A. Andrén	543,144	July 23	2287	542	72	476
Drawing-knife	A. Andrén	544,996	Aug. 20	2071	494	72	1159
Drawing-knife	J. S. Cantelo	543,146	July 23	2289	543	72	477
Drawing, sketching, and designing table	S. J. Laughlin and J. Hough	543,492	July 30	2907	684, 685	72	608
Drawings. Apparatus for holding	W. H. Barnes	546,647	Sept. 24	2107	499	72	1791
Dredger	L. W. Bates	543,637	July 30	3233	749, 750	72	664
Dredger	L. W. Bates	545,762	Sept. 3	570	136, 137, 138	72	1457
Dredger	W. H. Diestelhorst	546,586	Sept. 17	2012	478	72	1760
Dredging apparatus	C. G. Collins, A. C. Hilsinger, and C. A. Stevens.	544,460	Aug. 13	1184	287, 288	72	973
Dredging-bucket	E. J. Fader	546,698	Sept. 24	2195	523	72	1806
Dredging, &c. Bucket or grip for	C. Upton	542,905	July 16	1879	446	72	383
Dress-protector	A. S. Waltzfelder	545,257	Aug. 27	2609	633	72	1284
Dress-shield	D. Basch	543,282	July 23	2551	599	72	524
Dress-shield	S. G. Crout	542,991	July 23	2014	479	72	425
Drier:							
See Clothes-drier. Mechanical drier.							
Drier	E. Cabrero y Echeandia	544,570	Aug. 13	1352	329	72	1006
Drier	F. D. Cummer	545,121	Aug. 27	2383	576, 577	72	1238
Drier	P. C. Vogelius	543,912	Aug. 6	142	31, 32	72	774
Dry closet	H. A. Hecox	546,531	Sept. 17	1922	456	72	1743
Dry-kiln furnace	W. Ketcham	543,531	July 30	2997	702	72	625
Drying apparatus	F. D. Cummer	545,120	Aug. 27	2376	574, 575, 576	72	1237
Drying apparatus	A. G. Mather and H. E. Collins	544,679	Aug. 20	1576	377, 378	72	1065

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Drying apparatus	F. E. Otto	545,715	Sept. 3	490	119	72	1414
Drying-cylinder	G. R. Phillips	543,051	July 23	2122	503	72	445
Drying-frame	W. Mayer	541,869	July 2	84	19	72	20
Drying-machine	W. Hartley, Jr	543,578	July 30	3071	719	72	640
Drill: *See* Coal or rock drill. Electric drill. Grain-drill. Hand-drill. Metal-drill. Mining-drill. Rock-drill. Seed-drill. Twist-drill.							
Drill bit for boring in coal, &c. Mining coal	G. H. Bittenbender	544,206	Aug. 6	640	163	72	866
Drill body-clearing machine. Twist-	M. C. Johnson	543,486	July 30	2895	682, 683	72	606
Drill-brace	E. B. Petrie	543,267	July 23	2527	593	72	519
Drills. Driving mechanism for multiple	A. J. Oehring	544,068	Aug. 6	416	104	72	825
Drilling apparatus	H. E. Reeve	545,611	Sept. 3	304	75	72	1410
Drilling-machine	A. Mill	543,395	July 23	2714	641, 642	72	556
Drilling-machine	D. C. Stover and F. W. Hoefer	542,694	July 16	1536	366	72	319
Drilling-machine	D. C. Stover and F. W. Hoefer	542,695	July 16	1537	366, 367	72	320
Drilling-machine	F. Zinzen	544,495	Aug. 13	1236	299	72	983
Drilling machine. Countersink-	L. Churchill	542,925	July 16	1909	452	72	389
Drilling-machine. Portable	G. Stites	546,628	Sept. 17	2072	492	72	1771
Drilling machinery. Core-	M. Beal	543,227	July 23	2454	576, 577	72	506
Drilling-tool	M. C. Johnson	542,223	July 2	666	163	72	129
Drinking-cup holder	H. M. Evans	542,468	July 9	1138	278	72	231
Drinks, &c. Continuous-acting apparatus for production of sparkling	O. Uhlich	545,394	Aug. 27	2814	684	72	1322
Driving-machine safety attachment	C. A. Copeland	546,416	Sept. 17	1725	409	72	1705
Driving mechanism. Frictional	C. H. Brown	546,650	Sept. 24	2110	500, 501	72	1792
Drop-light	W. M. Miller	545,087	Aug. 27	2314	562	72	1225
Drum and furnace. Stovepipe	J. H. Mingus	542,650	July 16	1455	350	72	304
Drum or similar heads. Device for securing	I. H. Sapp	544,125	Aug. 6	513	127	72	843
Duplicating apparatus stand	A. D. Klaber	543,830	July 30	3588	835	72	731
Duplicating-machine	N. P. Anderson	544,648	Aug. 20	1503	363	72	1051
Dust-collector	A. Heine	543,133	July 23	2263	536, 537	72	472
Dust-collector. Automatic	H. C. Malsness	545,167	Aug. 27	2456	595, 596	72	1253
Dust-collector cleaner	J. F. Stephens and G. M. Parsneau	546,944	Sept. 24	2601	623	72	1884
Dust-collector cleaning attachment	A. Dolson	542,875	July 16	1828	433	72	372
Dust, shavings, &c., from air. Apparatus for separating	A. W. Banister	543,796	July 30	3521	820	72	718
Duster and curtain-pole lifter	C. L. Nelson	545,606	Sept. 3	299	74	72	1409
Dye	P. Finkelstein	542,046	July 2	377	.....	72	76
Dye and making same. Azin	R. Reyher	543,891	Aug. 6	116	.....	72	769
Dye and making same. Blue	M. Ulrich and J. Bammann	544,699	Aug. 20	1619	.....	72	1072
Dye and making same. Blue	M. Ulrich and J. Bammann	544,700	Aug. 20	1620	.....	72	1073
Dye. Azo	R. Koreff	543,212	July 23	2429	.....	72	503
Dye. Azo orange	H. A. Bernthsen and P. Julius	545,333	Aug. 27	2725	.....	72	1305
Dye. Black	R. Bohn	545,336	Aug. 27	2730	.....	72	1306
Dye. Black	R. Bohn	545,337	Aug. 27	2731	.....	72	1306
Dye. Black azo	M. Moeller and C. Oelschlaegel	543,747	July 30	3423	.....	72	701
Dye. Black azo	M. Moeller and C. Oelschlaegel	543,748	July 30	3425	.....	72	701
Dye. Blue-black	F. Krecke and I. Rosenberg	546,070	Sept. 10	1098	.....	72	1570
Dye. Blue-black disazo	F. Krecke and I. Rosenberg	546,068	Sept. 10	1096	.....	72	1570
Dye. Blue-black disazo	F. Krecke and I. Rosenberg	546,069	Sept. 10	1097	.....	72	1570
Dye. Brown azo	K. Pathe and A. Israel	543,539	July 30	3006	.....	72	627
Dye. Brown-yellow	C. L. Müller	546,177	Sept. 10	1273	.....	72	1602
Dye. Substantive cotton	J. J. Brack	542,073	July 2	426	.....	72	84
Dye Yellow	C. Schraube	543,784	July 30	3497	.....	72	713
Dyeing	E. Lauber and L. Caberti	542,022	July 2	341	.....	72	69
Dyeing machine. Skin-	R. Ergang	542,188	July 2	596	144	72	117
Dyeing pile fabrics	F. Bamford	545,420	Aug. 27	2676	700	72	1335
Dynamo. Combination-	E. P. Warner	544,633	Aug. 13	1470	357	72	1027
Dynamos. Regulator for alternating-current	E. W. Rice, Jr	546,190	Sept. 10	1289	307, 308	72	1605
Ear-compress	M. L. Weber	543,455	July 23	2340	666	72	580
Ear-muff	D. Basch	541,824	July 2	9	3	72	4
Earth handling and grading apparatus	J. T. Montgomery, H. C. Jordan, J. Soesbe, W. H. Gilman, and M. Hartman.	543,408	July 23	2737	646, 647	72	559
Earthenware. Process of and apparatus for glazing	W. A. Long	543,741	July 30	3415	793	72	699
Easel	C. Beyer	544,083	Aug. 6	445	110	72	830
Easel and pencil-case. Combination desk-	G. W. Platt	543,812	July 30	3552	826	72	724
Eaves-trough hanger	M. L. Hunker	542,222	July 2	665	162	72	129
Eaves-trough hanger	J. E. Logan	546,019	Sept. 10	1012	243	72	1554
Eaves trough or gutter shield	J. M. Van Horn	546,042	Sept. 10	1050	251	72	1561
Eccentric	J. H. Baker, G. F. Shevlin, and F. H. Baker.	543,667	July 30	3275	761	72	672
Eccentric gear	W. R. Brown	546,757	Sept. 24	2307	549	72	1827
Eccentrics. Means for holding	A. K. Mansfield	544,511	Aug. 13	1260	304, 305	72	987
Edger	J. Cox	544,158	Aug. 6	560	139	72	852
Educational appliance	H. W. Yorke	544,714	Aug. 20	1643	394	72	1077
Effervescent compounds. Preparing granular	T. Kerfoot	543,601	July 30	3175	.....	72	654
Egg-boiling apparatus. Automatic	J. R. Sprague	546,255	Sept. 10	1417	337	72	1629
Egg-holder	A. J. Baker	545,567	Sept. 3	231	56	72	1396
Egg-tester	E. H. Layman	543,493	July 30	2910	685	72	609
Egg-tester	T. M. Spilman	543,970	Aug. 6	243	59	72	793
Electric alarm	W. S. Hull	545,653	Sept. 3	373	92	72	1423

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Electric arcs. Method of and means for extinguishing	W. B. Potter	543,892	Aug. 6	113	25	72	769
Electric battery	R. M. and A. McDonald	543,885	Aug. 6	101	23	72	767
Electric battery and application thereof to medicinal purposes.	S. R. Beckwith	542,459	July 9	1126	275	72	228
Electric brake	W. L. Hedenberg	545,498	Sept. 3	122	29	72	1377
Electric brake	W. Koedding	546,120	Sept. 10	1180	282	72	1586
Electric brake	W. B. Potter	542,309	July 9	838	206	72	175
Electric brake	W. B. Potter	543,351	July 23	2650	625	72	543
Electric brake	W. B. Potter	546,247	Sept. 10	1395	333, 334	72	1626
Electric cables. Drying	W. R. Patterson and C. H. Rudd	544,373	Aug. 13	1015	249	72	940
Electric cables. Drying cores of	W. R. Patterson	544,374	Aug. 13	1016	249	72	940
Electric cables. Manufacture of	W. R. Patterson	544,372	Aug. 13	1014	248, 249	72	940
Electric circuit and mechanism for maintaining same. Multiple	T. K. Ames and E. A. Parker	545,005	Aug. 20	2166	523	72	1176
Electric-circuit regulator. Alternating-	C. P. Steinmetz and A. H. Armstrong	542,968	July 16	1972	468	72	401
Electric circuits. Automatic safety device for	L. G. Rowand	542,030	July 2	352	85, 86	72	71
Electric circuits. Connector for terminals of	J. E. Neher	546,471	Sept. 17	1826	432	72	1725
Electric condenser	C. S. Bradley	543,978	Aug. 6	255	63	72	795
Electric conductor safety appliance	A. E. Hutchins	545,629	Sept. 3	334	83	72	1415
Electric conductors. Automatic safety appliance for	A. E. Hutchins	544,436	Aug. 13	1125	272	72	961
Electric conductors. Connecting ends of	J. T. Beswick	543,919	Aug. 6	102	38	72	778
Electric conductors. Support for overhead	M. Hanford	545,495	Sept. 3	115	27	72	1376
Electric converter	C. F. Scott	546,476	Sept. 17	1835	434	72	1727
Electric-current distributer	E. Thomson and E. W. Rice, Jr	543,198	July 23	2407	566	72	499
Electric-distribution system	E. Thomson	543,950	Aug. 6	210	51	72	787
Electric drill	C. S. Bradley	546,002	Sept. 10	980	237	72	1547
Electric elevator	N. O. Lindstrom	544,768	Aug. 20	1756	419	72	1100
Electric elevator	J. C. Winters	544,780	Aug. 20	1777	424, 425	72	1104
Electric-generator attachment	G. W. Pickett	546,901	Sept. 24	2528	604	72	1869
Electric generator. Thermo-	H. B. Cox	546,417	Sept. 17	1727	409	72	1705
Electric grounding-switch	C. E. Scribner	544,383	Aug. 13	1029	252, 253	72	943
Electric-light display system	J. E. Woodbridge	546,799	Sept. 24	2369	565, 566	72	1839
Electric-lighting system	E. F. Gavin	544,034	Aug. 6	356	88	72	814
Electric-lighting system and dynamo therefor	M. Moskowitz	542,487	July 9	1169	286, 287	72	236
Electric machine. Dynamo-	T. H. Hicks	541,854	July 2	58	14	72	14
Electric machine. Dynamo-	T. H. Hicks	543,383	July 23	2695	637	72	552
Electric machine. Dynamo-	T. Hooker	543,021	July 23	2061	490	72	434
Electric machines. Carbon-brush holder for dynamo	A. J. Churchward	544,844	Aug. 20	1888	452	72	1125
Electric machines. Construction and method of operating dynamo-	F. H. Loveridge	544,361	Aug. 13	993	244, 245	72	937
Electric machines or motors. Winding of dynamo-	E. Thomson	544,396	Aug. 13	1058	258	72	948
Electric meter	F. P. Cox	542,240	July 9	698	171	72	151
Electric meter	J. A. Déjardin	546,917	Sept. 24	2552	611	72	1874
Electric meter	J. Harris	543,865	Aug. 6	56	14, 15	72	759
Electric meter	H. A. Rowland	542,945	July 16	1936	459	72	394
Electric motor	O. E. H. Kramer	545,591	Sept. 3	274	67	72	1404
Electric motor	O. E. H. Kramer	545,592	Sept. 3	276	68	72	1404
Electric motor	J. O'Neil	545,524	Sept. 3	164	38, 39	72	1385
Electric motor	B. P. Remy	544,749	Aug. 20	1694	408	72	1087
Electric motor	F. H. Williams	546,442	Sept. 17	1769	420	72	1714
Electric motor. Alternating	J. A. G. Trudeau	543,223	July 23	2446	574, 575	72	505
Electric motor and brake mechanism therefor	J. P. B. Fiske	543,525	July 30	2984	699, 700	72	623
Electric motor. Safety	W. R. Polk, Jr	544,118	Aug. 6	502	124	72	841
Electric-motor starting or stopping device	J. P. B. Fiske	543,523	July 30	2978	699	72	621
Electric motors. Controlling-switch for	W. J. Pohlman	544,236	Aug. 6	714	183	72	879
Electric motors. Means for synchronizing	E. Thomson and E. W. Rice, Jr	545,111	Aug. 27	2358	570	72	1234
Electric motors. Method of and apparatus for controlling currents for	T. von Zweigbergk	545,064	Sept. 3	389	96	72	1427
Electric switch	T. H. Brady	544,781	Aug. 20	1779	425	72	1105
Electric switch	G. T. Evanson	542,848	July 16	1791	425	72	364
Electric switch	J. W. Hearn	543,181	July 23	2369	559	72	492
Electric switch	G. E. Linton	546,820	Sept. 24	2395	573	72	1844
Electric switch	G. E. Linton	546,821	Sept. 24	2397	573	72	1844
Electric system	M. J. Wightman	546,724	Sept. 24	2233	533	72	1815
Electric time-switch	J. F. McLaughlin	546,674	Sept. 24	2153	512, 513	72	1799
Electric tool and machine	H. H. Bliss	545,569	Sept. 3	234	57	72	1397
Electric transformer	W. F. Brittin	545,670	Sept. 3	404	98	72	1429
Electric transformer	J. A. Mosher	543,346	July 23	2643	623	72	542
Electric-wire joint	A. Gartner	541,998	July 2	301	70	72	61
Electrical conductor	G. Gray	543,960	Aug. 6	229	56	72	790
Electrical conductors. Manufacture of	L. W. Downes	541,921	July 2	168	39	72	36
Electrical converters. Automatic cut-out for	W. J. Greene	544,094	Aug. 6	466	115	72	834
Electrical cut-out. Automatic	C. C. Kritzer	546,243	Sept. 10	1368	326	72	1621
Electrical-distribution system	S. C. C. Currie	544,289	Aug. 13	808	205	72	907
Electrical-distribution system	T. A. Edison	545,405	Aug. 27	2843	693	72	1328
Electrical-distribution system	G. W. von Siemens	542,979	July 16	1906	474	72	405
Electrical or other instruments and apparatus. Screening	W. E. Ayrton and T. Mather	546,802	Sept. 24	2374	567	72	1839
Electrical switch	H. Stuebner	543,409	July 23	2739	647	72	560
Electrical system of motor regulation	M. J. Wightman	546,966	Sept. 24	2631	631	72	1890
Electrically-controlled motor	G. L. Thomas	542,543	July 9	1266	308	72	255
Electricity from car-wheel axles. Means for generating	M. Moskowitz	542,771	July 16	1664	397	72	342
Electricity. Plant for generating	G. R. Bowen	544,654	Aug. 20	1514	366	72	1053

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Electrodepositing apparatus	H. L. Bridgman	546,463	Sept. 17	1849	438	72	1730
Electrodepositing device	J. Bossard	542,986	July 23	2005	477	72	424
Electrolytic apparatus	W. A. Rosenbaum	546,348	Sept. 17	1609	383, 384	72	1683
Electrolytic apparatus	A. Sinding-Larsen	546,353	Sept. 17	1615	385	72	1685
Electrolytic process and apparatus	L. P. Hulin	542,057	July 2	402	97	72	79
Electrolytic separation. Vessel for	W. Borchers	544,153	Aug. 6	552	137	72	850
Electromagnetic signal	C. E. Scribner	544,387	Aug. 13	1039	254	72	945
Electromagnetic tool	C. F. Carpenter	545,149	Aug. 27	2429	590	72	1247
Electroplating apparatus	F. and F. H. Engelhard	544,668	Aug. 20	1556	373	72	1061
Elevating-machine	C. E. Kimball	542,975	July 16	1991	473	72	404
Elevator: *See* Cotton-elevator. Cream-elevator. Grain-elevator. Electric elevator. Water-elevator.							
Elevator	N. Beckwith	545,146	Aug. 27	2424	588, 589	72	1246
Elevator	A. A. French	544,352	Aug. 13	974	240	72	933
Elevator	N. P. Otis	543,630	July 30	3219	746	72	661
Elevator	G. H. Reynolds	545,980	Sept. 10	943	226, 227	72	1541
Elevator	C. R. Whittier	542,665	July 16	1486	356	72	310
Elevator-controller	F. B. Graves	543,011	July 23	2043	485	72	431
Elevator-controller	L. S. Graves	543,010	July 23	2042	484	72	431
Elevator controlling device	J. McAdams	546,406	Sept. 17	1705	405	72	1701
Elevator cut-out-valve attachment	A. J. McNicoll	542,421	July 9	1044	256	72	215
Elevator door	G. W. Morgan	542,023	July 2	342	83	72	69
Elevator-hoist	D D Walton	545,028	Aug. 20	2204	533	72	1183
Elevator indicator	L. Malm	545,127	Aug. 27	2394	579	72	1240
Elevator safety attachment	L. C. Alcorn	542,722	July 16	1577	377	72	327
Elevator safety device	C. E. Burroughs and N. P. Otis	543,641	July 30	3236	751	72	665
Elevator safety device	C. E. Burroughs and N P. Otis	543,642	July 30	3238	751, 752	72	665
Elevator safety device	T. M. Clark	543,509	July 30	3056	714	72	638
Elevator safety device	W. P. Kidder	543,153	July 23	2303	545, 546	72	480
Elevator safety device	G. H. Reynolds	545,981	Sept. 10	945	227	72	1541
Elevator safety-gate	C. F. Peelle	542,348	July 9	908	223	72	188
Elevator safety stop	J. Taylor	543,359	July 21	2666	627	72	546
Elevator stop	T. Bell and J. S. Williams	545,764	Sept. 3	575	138, 139	72	1459
Elevator valve-operating device	J. H. Clark	542,628	July 16	1416	341	72	296
Elevators. Electrical controlling system for	C. O. Mailloux	543,495	July 30	2913	686	72	610
Elevators. Means for operating	J. E. Putman	544,378	Aug. 13	1020	250	72	942
Elevators. Operating-valve for hydraulic	J. H. Curran	541,993	July 2	292	68	72	59
Elevators. Valve mechanism for hydraulic	C. L. Cookson	543,590	July 30	3089	724	72	644
Embalming-couch	W. Clouser	546,302	Sept. 17	1520	359	72	1667
Embalming-instrument	O. V. Thornton	541,901	July 2	136	32	72	30
Embalming-table	G. B. Passmore	545,608	Sept. 3	301	74	72	1469
Embossing-machine	T. Nesom	546,021	Sept. 17	2062	489	72	1769
Embroidering-machine	E. and R. Cornely	544,723	Aug. 20	1660	398, 399	72	1080
Emulsor and separator. Combined centrifugal	M. Ekenberg	542,756	July 16	1639	392	72	337
Enameling bricks, &c. Composition for	M. Ahern	545,757	Sept. 3	502	.....	72	1456
End-gate. Wagon	I. Nappin	544,822	Aug. 20	1845	443	72	1117
Engine: *See* Carding-engine. Explosive engine. Gas-engine. Gas or oil engine. Hydraulic engine. Multiple-cylinder engine. Pumping-engine. Rotary engine. Steam-engine. Wind-engine.							
Engine	J. T. Halsey	544,299	Aug. 13	827	289	72	911
Engine	F. C. Rinsche	542,498	July 9	1194	291	72	241
Engine	F. C. Rinsche	543,052	July 23	2124	503	72	445
Engine attachment	F. C. Rinsche	542,499	July 9	1195	291	72	241
Engine attachment. Locomotive	W. J. Holman	546,153	Sept. 10	1232	294, 295	72	1395
Engine igniting apparatus. Gas	G. W. Waltenbaugh	543,116	July 23	2237	530	72	467
Engine indicator reducing-gear. Steam	J. Wright	545,184	Aug. 27	2489	603	72	1259
Engine indicators. Drum-stop for steam	W. M. Henderson	544,896	Aug. 20	1966	475	72	1143
Engine-lubricating apparatus	J. F. Chuse and R. Heap	543,645	July 30	3242	752, 753	72	666
Engine-lubricator. Automatic	F. F. Fischer	545,379	Aug. 27	2638	640, 641	72	1289
Engine motor. Traction	G. W. Lewis	545,962	Sept. 10	907	218	72	1534
Engine or compressor frame	B. W. Grist	542,960	July 16	1962	466	72	399
Engine reverse motion. Steam	J. L. Alexander	545,437	Sept. 3	3	1	72	1355
Engine-stopping apparatus	G. W. Brown	544,085	Aug. 6	449	111	72	831
Engines. Apparatus for recording the power of steam	W. G. and C. W. G. Little	546,897	Sept. 24	2520	602	72	1868
Engines. Cylinder-head for gas or gasoline	F. M. Underwood	542,743	July 16	1622	387	72	334
Engines. Electric igniter for gas	F. S. Mead	546,238	Sept. 10	1377	328	72	1623
Engines. Electric igniting apparatus for gas	H. Thau	545,553	Sept. 3	212	52	72	1393
Engines. Equalizing means for locomotive	J. E. Hughes	545,628	Sept. 3	333	83	72	1415
Engines. Vacuum dash-pot for	R. H. Rice	546,976	Sept. 24	2647	634	72	1893
Engraving machine	J. G. Kingsbury	546,542	Sept. 17	1933	459	72	1746
Engraving-machine	W. Taylor	542,902	July 16	1875	444, 445	72	382
Envelope	J. Bacher	543,120	July 23	2246	532	72	469
Envelope	J. A. Eno	546,760	Sept. 24	2310	550, 551	72	1827
Envelope	C. Keller	546,048	Sept. 10	1058	253	72	1562
Envelope folding and embossing machine. Combined	J. M. Tate and G. A. Brune	546,685	Sept. 24	2171	516	72	1862

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Envelope-machine	E. M. Low	544,315	Aug. 13	859	215, 216	72	917
Envelope-machine	E. M. Low and W. B. Emerson	544,314	Aug. 13	856	214, 215	72	916
Envelope-machine	E. Rau	546,433	Sept. 17	1756	417	72	1711
Envelope-machine	H. D. and D. W. Swift	542,353	July 9	916	225, 226, 227	72	189
Envelope-machine	H. D. and D. W. Swift	542,354	July 9	926	227	72	191
Envelope-machine	H. D. and D. W. Swift	542,355	July 9	928	228	72	192
Envelope-machine	H. D. and D. W. Swift	545,317	Aug. 27	2697	655	72	1300
Envelope making and gumming machine	F. T. Nicholson	542,003	July 2	307	72, 73, 74	72	62
Envelope. Safety	O. Andrew	544,277	Aug. 13	784	200	72	903
Envelope. Two-compartment	C. D. Albert	544,276	Aug. 13	783	200	72	903
Ethers and making same. Protocatechuic aldehyde-meta-alkyl	A. Schmidt	545,099	Aug. 27	2331	.....	72	1228
Evaporating apparatus	T. Craney	542,078	July 2	434	104	72	85
Evaporating apparatus	D. P. Ferro Cardozo	542,626	July 16	1413	340	72	296
Evaporating apparatus. Liquid	L. F. Haubtman	546,530	Sept. 17	1920	455	72	1743
Evaporating apparatus. Vacuum	H. S Firman	544,614	Aug. 13	1435	350	72	1021
Evaporator	D. J. Grondin	545,071	Aug. 27	2292	557	72	1220
Evaporator	J. Van Ruymbeke	542,907	July 16	1882	446, 447	72	383
Evaporator for hot-air pipes	F. Wyman	546,212	Sept. 10	1334	317	72	1614
Evaporator. Fruit	J. H. Gore	544,785	Aug. 20	1784	426	72	1105
Excavating-machine	C. R. Scoles	542,375	July 9	965	237, 238	72	199
Excavating-machines. Means for operating swinging beams of	W. and E. J. Davy	544,479	Aug. 13	1213	294	72	978
Exercising-machine	A. A. Whitely	546,568	Sept. 17	1984	471	72	1755
Exhibitor. Coin-operated picture	C. M. McCarty	544,790	Aug. 20	1790	428	72	1106
Explosive engine	M. L. Mery	543,157	July 23	2310	548	72	481
Explosive engine	C. W. Weiss	543,163	July 23	2340	552	72	486
Explosive engine	C. W. Weiss	543,165	July 23	2347	553	72	488
Explosive. High	F. G. A. Broberg	542,724	July 16	1579	.....	72	327
Explosive. High	H. Maxim	544,924	Aug. 20	2033	.....	72	1152
Extension-table	A. Brodin	542,139	July 2	518	124, 125	72	103
Extension-table	B. L. Gale	546,097	Sept. 10	1144	273, 274	72	1579
Extension-table	R. H. Ripking	543,053	July 23	2124	504	72	446
Extension-table	J. Zalikowski	543,794	July 30	3511	817	72	716
Extracting with volatile solvents. Process of and apparatus for	E. Maertens	545,900	Sept. 10	805	195	72	1514
Extractor: *See* Cork-extractor. Oil-extractor. Seed-extractor.							
Eye-shade	A. R. Brandly	546,636	Sept. 17	2086	495	72	1774
Eye-shade	I. Goodman	542,015	July 2	332	81	72	67
Eyeglass-handle	J. Fehl	543,803	July 30	3538	822	72	721
Eyeglass nose-piece	A. Abraham	543,835	Aug. 6	1	1	72	749
Eyeglass nose-piece	H. Borsch	541,957	July 2	237	55	72	48
Eyeglass nose-piece	H. Borsch	541,958	July 2	238	56	72	49
Eyeglass nose-piece	H. Borsch	541,959	July 2	239	56	72	49
Eyeglass nose-piece	H. Borsch	541,960	July 2	240	56	72	49
Eyeglass nose-piece	F. Borsch	541,961	July 2	241	56	72	49
Eyeglasses	A. S. Weaver	543,363	July 23	2672	630	72	547
Eyelet	E. Kempshall	545,800	Sept. 3	630	153	72	1470
Eyelet	A. Latham	544,311	Aug. 13	848	213	72	915
Eyelet. Metallic buttonhole	J. B. Wheat	544,149	Aug. 6	546	135	72	849
Eyeleting-machine. Foot-power	S. Field	545,468	Sept. 3	58	13, 14	72	1365
Eyeleting-machines. Power attachment for foot-power	G. O. Goddard	543,339	July 23	2631	618, 619	72	540
Fabric: *See* Chenille fabric. Tufted woven fabric. Woven fabric.							
Fabrics. Device for napping textile	D. McGenniss	544,682	Aug. 20	1583	379, 380	72	1066
Fan	H. D. Jones	543,252	July 23	2502	587	72	515
Fan attachment. Treadle	N. N. Chase	545,453	Sept. 3	24	7	72	1359
Fan. Automatic	L. Recht	543,140	July 23	2378	540	72	474
Fan. Automatically-operated	M. Sa-Vilson	543,508	July 30	2545	692	72	615
Fan. Centrifugal	S. C. Davidson	544,758	Aug. 20	1706	411	72	1090
Fan. Mechanical	J. O. Fleece	544,405	Aug. 13	1072	261	72	930
Fan. Ventilating	F. W. Tuerk, Jr	546,630	Sept. 17	2077	493	72	1772
Fare receiver and register	J. Evans	544,973	Aug. 20	2113	506, 507	72	1167
Fare-register	S. C. Houghton	545,291	Aug. 27	2657	645	72	1293
Fare-register	H. F. Hughes	545,627	Sept. 3	329	82, 83	72	1415
Fare-register	J. J. Kennelly	545,802	Sept. 3	633	154	72	1471
Fare register. Car	S. M. Balzer	544,081	Aug. 6	441	109, 110	72	830
Fastening device	M. L. Brown	546,578	Sept. 17	2000	475	72	1757
Fastening device	S. C. Cary	546,838	Sept. 24	2428	582	72	1850
Fastening for cords or the like	H. H. Abell	544,076	Aug. 6	431	108	72	828
Fatty substances. Apparatus for extracting	E. Donard	546,509	Sept. 17	1889	447	72	1737
Faucet	N. S. Cary	542,795	July 16	1710	407	72	350
Faucet	W. Curlett	542,798	July 16	1715	407	72	351
Faucet	G. Decker	544,403	Aug. 13	1070	260	72	950
Faucet	J. S. Lester	542,201	July 2	628	153	72	122
Faucet	E. U. Scoville	543,634	July 30	3228	748, 749	72	663

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Faucet. Basin	H. J. Gilcher	544,727	Aug. 20	1665	400	72	1081
Faucet soap-holding attachment	J. H. Moulder and S. E. Hickman	545,905	Sept. 10	818	197	72	1517
Faucets. Packing device for beer-	J. Desserich	546,732	Sept. 24	2260	537	72	1818
Feather-pulling in fowls. Device for prevention of.	C. C. Schild	546,905	Sept. 24	2534	606	72	1870
Feed-box	W. E. Greathouse	546,010	Sept. 10	996	240	72	1351
Feed-cutter and corn-husker	A. Rosenthal	546,390	Sept. 17	1677	398	72	1697
Feed-mill	J. N. Eastwood	545,461	Sept. 3	42	11	72	1362
Feed rack and trough. Combined	C. J. Bowles	544,655	Aug. 20	1515	366	72	1054
Feed-roller	W. and C. A. Gutenkunst	545,286	Aug. 27	2648	643	72	1292
Feed-trough	S. E. Burke	545,673	Sept. 3	416	100	72	1431
Feed-water heater	S. G. Hill and P. M. McCormick	542,890	July 16	1855	439	72	378
Feed-water heater	H. G. Keasbey	543,688	July 30	3310	769	72	678
Feed-water heater	H. G. Keasbey	543,689	July 30	3312	769	72	679
Feed-water heater	H. G. Keasbey	543,690	July 30	3313	770	72	679
Feed-water heater	B. V. Nordberg	542,004	July 2	312	74, 75	72	63
Feed-water heater	J. E. Schlieper	545,660	Sept. 3	382	94	72	1425
Feed-water heater	D. P Stewart	545,181	Aug. 27	2486	602	72	1252
Feed-water heater and purifier	T. J. Cookson	542,331	July 9	880	216	72	183
Feed-water regulator	M. Doerhoefer	542,150	July 2	536	130	72	105
Feeding apparatus	C. M. Barber	542,623	July 16	1409	339	72	295
Feeding device. Mechanical	J. Draher	544,665	Aug. 20	1550	372	72	1060
Fence	S. C. Davis	543,853	Aug. 6	34	9	72	755
Fence	E. M. Shaeffer	543,321	July 23	2609	613	72	536
Fence and method of plashing. Lattice hedge	W. Young	542,600	July 9	1358	320	72	272
Fence-bar. Sliding	J. Creech	543,296	July 23	2570	604	72	528
Fence brace. Wire-	J. Collinson	544,503	Aug. 13	1249	302	72	995
Fence-building tool	S. W. Horst	542,827	July 16	1755	417	72	358
Fence machine. Wire-	S. Z. Clark	545,454	Sept. 3	25	7	72	1359
Fence machine. Wire-	J. W. Dwiggins	545,854	Sept. 3	720	175, 176	72	1487
Fence machine. Wire-	T. E. and C. H. Lee	544,814	Aug. 20	1828	440	72	1114
Fence machine. Wire-	A. J. Munger	544,740	Aug. 20	1680	404	72	1084
Fence-making machine	B. C. Briney and S. C. Geron	542,988	July 23	2009	477	72	424
Fence-making machine	M. E. Hodges	543,481	July 30	2887	679	72	604
Fence-picket fastener	J. Caylor	542,585	July 9	1334	323	72	267
Fence-post	J. Cramer	542,241	July 9	700	171	72	151
Fence-post	A. S. English	543,802	July 30	3537	822	72	721
Fence-post	J. B. Greve	544,577	Aug. 13	1367	334	72	1009
Fence-post	W. P. Hitchcock	542,853	July 16	1797	426	72	366
Fence-post	W. H. Kimball	546,161	Sept. 10	1250	299	72	1597
Fence-post	L. B. Mesnard	542,976	July 16	1992	473	72	404
Fence-post	A. E. Newman and L. James	543,398	July 23	2720	643	72	557
Fence-post	R. R. Spoore	545,107	Aug. 27	2351	569	72	1232
Fence-post	H. A. Wartman	544,146	Aug. 6	543	135	72	849
Fence-post anchor	L. and P. Vanbriggle	545,558	Sept. 3	220	54	72	1394
Fence-post and socket	J. F. Williams	544,942	Aug. 20	2063	492	72	1158
Fence-post brace	W. Van Wert	542,908	July 16	1885	447	72	384
Fence post. Wire-	W. J. Baker	546,000	Sept. 10	978	236	72	1547
Fence-stay	L. Clark	546,301	Sept. 17	1519	359	72	1666
Fence-stay	W. D. Diller	545,460	Sept. 3	41	10	72	1362
Fence-stay	C. C. Keedy	543,962	Aug. 6	231	56	72	790
Fence stay. Wire-	L. Clark	546,045	Sept. 10	1054	252	72	1561
Fence stay. Wire-	L. Clark	546,046	Sept. 10	1055	252	72	1562
Fence stay. Wire-	A. French	546,230	Sept. 10	1364	325	72	1620
Fence. Wire	J. W. Buchanan	545,194	Aug. 27	2514	608	72	1265
Fence. Wire	W. Clement	543,610	July 30	3189	739	72	657
Fence. Wire	J. M. Denning	542,185	July 2	591	143	72	116
Fence. Wire	C. E. Gilbert	543,620	July 30	3207	743	72	659
Fence. Wire	D. Kaufman	544,920	Aug. 20	2027	483	72	1151
Fence. Wire	O. M. Knox	544,509	Aug. 13	1258	304	72	987
Fence. Wire	T. McKerns	544,001	Aug. 6	294	72	72	802
Fence. Wire	M. F. McNelly	545,970	Sept. 10	923	221	72	1537
Fence. Wire	J. R. Peck	543,890	Aug. 6	109	24	72	768
Fence. Wire	F. T. Right	542,966	July 16	1970	467	72	401
Fence. Wire	H. S. Stauffer	545,255	Aug. 27	2606	632	72	1283
Fence-wire fastener	V. F. Mount	542,370	July 9	957	235	72	197
Fence-wire stretcher	E. H. Baugh	546,575	Sept. 17	1997	474	72	1757
Fence-wire-tension device	J. J. Coram	545,682	Sept. 3	433	104	72	1434
Fencing-strips. Machine for splicing and reeeling	T. V. Allis and J. H. Templin	543,823	July 30	3576	832, 833	72	728
Fender: *See* Car-fender. Fireplace-fender. Car safety-fender. Plow-fender.							
Fernery. Hanging	A. Fitz-Gerald	545,952	Sept. 10	891	215	72	1531
Ferric sulfate. Making	S. H. Emmens	543,002	July 23	2030	.....	72	429
Fertilizer and seed distributer	E. Thomas	544,470	Aug. 13	1199	291	72	976
Fertilizer-distributer	W. H. Davis	544,966	Aug. 20	2103	504	72	1165
Fertilizers. Method of and apparatus for preparing.	W. A. Shepard	546,716	Sept. 24	2219	530	72	1811
Fiber-curling apparatus	S. A. Flower and W. S. Rhoades	546,660	Sept. 24	2128	506	72	1795
Fiber. Machine for untwisting and picking ropes of.	S. A. Flower	546,661	Sept. 24	2129	506	72	1795
Fiber-treating machines. Device for feeding fiber to.	J. M. Blaisdell	545,189	Aug. 27	2507	606	72	1263
Fiber unwinder and mixer	W. A. Patterson	543,584	July 30	3078	721, 722	72	641
Fibers. Process of treating and products derived from vegetable	T. A. Edison	543,986	Aug. 6	274	.....	72	798
Fifth-wheel	W. P. Champney	544,155	Aug. 6	555	137	72	851
Fifth-wheel. Vehicle	L. Burg	542,076	July 2	430	103	72	84
Filamentary hood or grating	W. L. Voelker	46,792	Sept. 24	2355	.....	72	1837
File	J. F. Cunningham	543,521	July 30	2973	698	72	629
File	J. Lehnbeuter	542,266	July 9	741	182	72	158
File. Account	L. W. Gilson	545,482	Sept. 3	84	20	72	1370
File and record cabinet. Document	P. Fraizer	542,189	July 2	597	145	72	117
File. Bill	F. W. Owen	546,244	Sept. 10	1390	332	72	1625
File. Bill and letter	S. B. Whiteside	544,057	Aug. 6	400	101	72	822

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File for pharmacists. Prescription-	J. H. Robinson	543,813	July 30	3553	896	72	724
File. Letter-	A. Krah	544,231	Aug. 6	694	177	72	876
Files. Holding-clip for box-	F. Tramblay	545,556	Sept. 3	218	53	72	1394
Filter	C. Ashurst	542,914	July 16	1893	449	72	386
Filter	G. Brinckman and F. Wiederholdt	545,221	Aug. 27	2359	620	72	1273
Filter	M. R. Buckley	543,922	Aug. 6	165	39	72	778
Filter	J. M. Davidson	544,291	Aug. 13	813	206	72	908
Filter	J. M. Davidson	544,566	Aug. 13	1342	327	72	1004
Filter	A. Davis	545,122	Aug. 27	2387	577	72	1239
Filter	A. Gudeman	546,527	Sept. 17	1915	453	72	1742
Filter	O. H. Jewell	546,738	Sept. 24	2269	540	72	1820
Filter	E. M. Knight	546,335	Sept. 17	1583	375, 376	72	1678
Filter	H. J. Richter	546,082	Sept. 10	1119	267	72	1574
Filter and cooler	G. L. Davis and N. K. Wright	543,677	July 30	3292	764, 765	72	675
Filter and cut-off for rain-water	C. J. Kleespies	542,934	July 16	1925	456	72	392
Filter. Mechanical or bag	L. A. Philippe	546,343	Sept. 17	1601	380, 381, 382	72	1682
Filter. Oil	P. N. Brooks	543,797	July 30	3523	820	72	718
Filter. Water-	M. L. Mitchell	544,262	Aug. 6	763	195	72	888
Filtering apparatus	C. H. Loew	543,389	July 23	2704	639	72	554
Filtering apparatus. Sewage-	F. G. Wiselogel	545,030	Aug. 20	2207	534	72	1183
Filtering bed. Detachable water-	A. J. Harder	541,970	July 2	253	59	72	52
Filtering-machine. Centrifugal	G. A. Bachmann	544,080	Aug. 6	438	109	72	820
Filtering machinery	H. C. Atkins	546,634	Sept. 17	2082	494	72	1773
Filtering pot or urn	W. A. Van Deusen	544,140	Aug. 6	534	132	72	847
Filtering saccharine juices. Process of and apparatus for	W. Eassie and O. Schmidt	542,586	July 9	1335	324	72	267
Finger-guard	A. Mishler	545,410	Aug. 27	2355	695	72	1330
Finger-ring enlarging or reducing apparatus	A. G. and G. V. Pinfold	542,350	July 9	911	224	72	189
Finishing-roll	I. Vaughn	546,868	Sept. 24	2468	591	72	1856
Fire-alarm	J. R. McCoy	542,775	July 16	1675	399	72	344
Fire-alarm	C. F. Scofield	543,896	Aug. 6	120	27	72	770
Fire-alarm. Automatic electric	C. D. Tisdale	546,261	Sept. 10	1428	339	72	1631
Fire-alarm. Automatic electric	C. D. Tisdale	546,262	Sept. 10	1430	339	72	1632
Fire-alarm. Automatically-operated	F. K. Ludlow	543,879	Aug. 6	91	20, 21	72	765
Fire-alarm box	C. A. Rolfe	543,103	July 23	2210	524	72	462
Fire-alarm box	C. A. Rolfe	543,104	July 23	2211	524, 525	72	462
Fire-alarm box	J. T. Stack	543,063	July 23	2138	507	72	448
Fire-alarm box	T. Walsh	545,141	Aug. 27	2416	585, 586	72	1244
Fire-alarm device	J. F. Snapp	542,783	July 16	1688	402	72	346
Fire-alarm signaling apparatus	G. W. Brown	544,084	Aug. 6	446	111	72	831
Firearm folding stock	A. J. Murray	543,138	July 23	2276	540	72	474
Firearm. Gas-operated	J. M. Browning	544,661	Aug. 20	1544	371	72	1058
Firearm. Magazine-	J. M. Browning	545,671	Sept. 3	409	99	72	1429
Firearm. Recoil-operated	A. Hauff	545,496	Sept. 3	119	28	72	1376
Firearms. Hand shell-extractor for	J. H. Palm	543,652	July 30	3253	756	72	668
Firearms. Pneumatic firing device for	I. H. Simpson	542,540	July 9	1264	308	72	254
Fire-box construction for burning hydrocarbon oils	J. S. Zerbe	542,673	July 16	1499	359	72	312
Fire-dog	E. J. Young	544,715	Aug. 20	1644	394	72	1077
Fire-door draft-gate	H. R. Hoffman	544,038	Aug. 6	365	90	72	815
Fire-engine heater	H. E. Penney	542,065	July 2	413	100	72	81
Fire-escape	H. Cotton and C. M. Miller	544,724	Aug. 20	1661	390	72	1060
Fire-escape	J. R. Duncan	545,155	Aug. 27	2440	592	72	1250
Fire-escape	V. Hembacher	542,641	July 16	1442	347	72	301
Fire-escape	F. Hutchinson	545,428	Aug. 27	2887	703	72	1337
Fire-extinguisher	T. F. Handly	546,013	Sept. 10	1000	241	72	1551
Fire-extinguisher	W. Harkness	544,894	Aug. 20	1978	474	72	1142
Fire-extinguisher	G. W. H. Hughes and W. Smith	543,341	July 23	2634	620	72	540
Fire-extinguisher. Automatic	W. Harkness	544,895	Aug. 20	1983	475	72	1143
Fire extinguisher. Prairie-	J. Dawson	542,754	July 16	1636	391	72	337
Fire-extinguishing chemicals. Sheet-metal receptacle for	E. F. O'Toole	542,491	July 9	1178	288	72	238
Fire-guard. Elevator	S. D. Ball	545,642	Sept. 3	359	88	72	1420
Fire-guard for shafts. Self-acting	K. Busse	546,049	Aug. 27	2241	543	72	1210
Fire-hose supporter	J. E. Bramble	544,951	Aug. 20	2079	498	72	1161
Fire-hose valved nozzle	H. W. Ross	543,220	July 23	2441	573	72	504
Fire-kindler	L. Worster	545,621	Sept. 3	319	79	72	1412
Fire-kindler. Vacuum	N. H. Smith	546,356	Sept. 17	1620	386	72	1685
Firemen. Smoke-helmet for	J. Senior	544,832	Aug. 20	1870	448	72	1121
Fireplace-fender	O. P. Mason	542,062	July 2	409	99	72	80
Fireplace. Gas-burning	H. G. and W. R. Dawson	544,029	Aug. 6	348	87	72	813
Fireplace-lining	J. F. and J. W. Hewitt	543,553	July 30	3029	708	72	632
Fireplace-lining and andiron-support. Combined	O. B. Perkins	545,531	Sept. 3	175	41	72	1386
Fireplace-throat	J. Lally	544,857	Aug. 20	1909	458	72	1129
Fireplace water-heating apparatus. Open-	S. H. Martin and W. H. Jones	541,867	July 2	81	18, 19	72	19
Fireproof blind or partition. Rolling	W. R. Kinnear	546,858	Sept. 24	2455	588	72	1855
Fireproof construction of floors and ceilings	A. G. Cummings	543,082	July 23	2171	515	72	454
Fireproof floor and ceiling	W. H. Brown	545,873	Sept. 10	753	184	72	1504
Fireproof partition, ceiling, &c	T. Bailey	546,502	Sept. 17	1876	441, 445	72	1735
Fireproof shutter	W. R. Kinnear	546,857	Sept. 24	2454	588	72	1855
Fire-sprinkler. Automatic	A. F. Carpenter	546,087	Sept. 10	1124	268	72	1575
Fish-hook	F. D. Pettey	543,268	July 23	2529	593	72	520
Fish-hook wrapper	G. F. Mills	542,394	July 9	997	246	72	205
Fish or mole trap	J. W. Langford and W. M. Washburn.	545,960	Sept. 10	905	217	72	1534
Fish-tank or aquarium	G. P. A. Gunther	546,882	Sept. 24	2499	597	72	1864
Fish-tank or aquarium	G. P. A. Gunther	546,883	Sept. 24	2500	597	72	1864
Fishing-line attachment	E. E. Bardsley	542,917	July 16	1897	450	72	386

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Fishing-reel	A. J. Arnold	546,633	Sept. 17	2081	494	72	1773
Flagstaff-holder	J. and B. L. Simpson	545,385	Aug. 27	2800	680	72	1319
Flange-wrench	W. H. Brock	542,922	July 16	1906	451	72	388
Flanger	T. H. Fennell	544,575	Aug. 13	1365	333	72	1008
Flanging-machine	H. L. Gate	545,791	Sept. 3	619	150, 151	72	1468
Flanging machine. Circular	W. H. Wood	542,127	July 2	501	120	72	100
Flash-light machine	L. G. Bigelow	543,639	July 30	3234	750	72	664
Flask: *See* Dental flask. Vulcanizing-flask. Molder's flask.							
Flax-working mechanism	C. E. and G. N. Lyman, Jr	542,770	July 16	1661	396, 397	72	341
Flexible joint	A. Campbell	545,268	Aug. 27	2625	636	72	1286
Float	O. A. Benoit	546,771	Sept. 24	2326	555	72	1830
Flood-gate	G. Bruce and C. L. Van Buskirk	544,425	Aug. 13	1102	268	72	955
Floor-cloth, &c. Seasoning	F. Walton. (Reissue)	11,505	Aug. 20	2230	.....	72	1188
Floor-mat	W. J. Armitage	544,557	Aug. 13	1330	323	72	1002
Floor or ceiling plate	A. J. Beaton	546,461	Sept. 17	1812	429	72	1723
Flour-bin	J. M. Patton	546,473	Sept. 17	1820	433	72	1726
Flour-bolt	J. A. McAnulty	546,241	Sept. 10	1382	329, 330	72	1624
Flour-bolt actuating mechanism	J. A. McAnulty	546,240	Sept. 10	1381	329	72	1624
Flour cabinet and sifter	F. R. Greene	545,489	Sept. 3	108	25	72	1375
Flour, &c. Unifying	K. Smith	546,830	Sept. 24	2417	579	72	1848
Flower-stand	W. Nafe	546,745	Sept. 24	2278	541	72	1821
Flower-stand. Revolving	A. C. Nielsen	542,346	July 9	905	222	72	187
Flue-cap	F. A. Heggy	545,499	Sept. 3	124	29	72	1377
Flue-stopper	J. K. Randles	546,555	Sept. 17	1963	466	72	1751
Fluid compression. Means for elastic	F. M. Rites	542,425	July 9	1053	259	72	217
Fluid-compressor. High-speed	F. M. Rites	542,426	July 9	1057	259, 260	72	217
Fluid-fuel burner	R. H. Sargent	544,646	Aug. 13	1497	362	72	1032
Fluid-pressure motor	E. F. Williams	544,804	Aug. 20	1813	434, 435	72	1111
Fluid-regulator. Automatic	S. Alexander	544,079	Aug. 6	436	108	72	829
Fluids. Apparatus for retarding congelation of	A. E. Smith	545,104	Aug. 27	2346	568	72	1231
Flume-gate	B. Pearson	544,069	Aug. 6	418	105	72	826
Flush-tank. Automatic	A. F. Mollring	543,776	July 30	3483	811	72	711
Flushing-tank for water-closets, &c. Automatic	A. Hageu	543,013	July 23	2049	486	72	432
Fly-catcher for use on animals	A. I. Farnam	544,295	Aug. 13	818	207	72	909
Fly-trap	G. Schmittle	544,831	Aug. 20	1869	447	72	1121
Flying-machine	O. Lilienthal	544,816	Aug. 20	1833	440	72	1115
Fodder-binder	W. W. and J. H. Graham	542,363	July 9	944	232	72	195
Fodder-cutter	N. Hoffman	543,340	July 23	2632	619	72	510
Fodder-cutter conveyer	J. Dick	542,996	July 23	2020	480, 481	72	426
Fodder-fork	J. W. Jamison	544,357	Aug. 13	985	243	72	935
Fodder-loader	S. Stout	542,814	July 16	1735	413	72	354
Folding boat	M. U. Loree	544,676	Aug. 20	1571	376	72	1064
Folding gate or screen	E. Coppieters	543,926	Aug. 6	170	40	72	779
Folding seat	J. S. Kilgore	543,487	July 30	2900	683	72	607
Folding-seat chair	S. W. Carter	543,333	July 23	2624	616	72	539
Folding table	C. S. Carter	543,009	July 30	3189	739	72	656
Folding table	V. Dodge	544,846	Aug. 20	1891	453	72	1126
Folding table	W. Macomber	545,603	Sept. 3	296	72, 73	72	1408
Folding table	S. L. Thompson	544,603	Aug. 13	1419	345	72	1018
Food regulators. Device for baby	A. A. Davidson	542,993	July 23	2016	479	72	426
Foot. Artificial	G. E. and W. L. Marks	546,405	Sept. 17	1704	404	72	1701
Footwear	J. H. McKechnie	545,130	Aug. 27	2398	580	72	1241
Forge. Blacksmith's	K. Hitzlberger	542,644	July 16	1448	348	72	302
Forging-press, &c. Frame for	H. Aiken	545,758	Sept. 3	563	134	72	1456
Fork: *See* Barley-fork. Fodder-fork.							
Fork attachment	C. A. Russell	545,536	Sept. 3	181	43	72	1387
Fork for dipping bonbons, &c	L. Hirschfeld	543,734	July 30	3408	791	72	697
Form for clothing. Display	A. O. Kuehnsted	543,344	July 23	2642	622	72	542
Fountain: *See* Soda-water fountain.							
Frame: *See* Bicycle-frame. Metal frame. Curtain-stretcher frame. Portable frame. Type-case frame.							
Frame-making tool	J. Schuler	544,072	Aug. 6	421	105	72	826
Frequency-changer	E. J. Berg	546,806	Sept. 24	2379	568	72	1840
Fruit-packing press	A. C. Denotovich and J. Porteous	544,866	Aug. 20	1960	469	72	1138
Fruit-picker	J. J. Mathis	546,237	Sept. 10	1376	327	72	1622
Fruit-picker	T. P. Williams	546,950	Sept. 24	2608	625	72	1885
Funnel	E. N. Gaudron	542,248	July 9	708	174	72	152
Funnel-holder	I. M. Russell	545,915	Sept. 10	857	201	72	1520
Funnel-holding bracket	E. Reyer	546,081	Sept. 10	1118	266	72	1574
Furnace: *See* Annealing-furnace. Heating-furnace. Blast-furnace. Hot-air furnace. Boiler-furnace. Ore-roasting furnace. Dry-kiln furnace. Roasting-furnace. Garbage-furnace. Smoke-consuming furnace. Glass-annealing furnace. Smokeless furnace. Glory-hole furnace.							
Furnace	J. E. Clarey	543,982	Aug. 6	263	66	72	796
Furnace	A. M. Hewlett	543,018	July 23	2054	487, 488	72	433
Furnace	A. K. Murray	546,178	Sept. 10	1274	304	72	1602

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Furnace	D. D. Read	545,723	Sept. 3	502	122	72	1446
Furnace. Combined plate, platinum, and sheet heating	J. Immel	546,100	Sept. 10	1148	274	72	1580
Furnace-doors. Means for opening or closing	D. E. Robinson	543,968	Aug. 6	240	58	72	792
Furnace for metallurgical purposes	S. P. Hutchinson	541,931	July 2	181	42	72	39
Furnace-grate	L. Bénier	546,875	Sept. 24	2492	594	72	1863
Furnace-grate	C. T. Coe	543,589	July 30	3088	734	72	644
Furnace-regulator	W. R. Smith	543,061	July 23	2136	506	72	448
Furnace-regulator	W. R. Smith	545,542	Sept. 3	190	45	72	1389
Furnace smoke and gas consumer	J. C. Keys and C. L. Pagenhart	542,933	July 16	1922	455, 456	72	391
Furnace-valve	G. W. McClure	545,244	Aug. 27	2591	628	72	1280
Furnaces. Apparatus for stopping tapping-holes of	S. W. Vaughen	544,551	Aug. 13	1321	321	72	1000
Furnaces. Feeding shavings to	T. W. Jenkins	542,477	July 9	1152	281	72	233
Furniture	R. H. Thielemann	542,661	July 16	1479	354, 355	72	308
Furniture. Adjustable support for school	J. Péard	542,862	July 16	1809	429	72	368
Furniture-joint	W. C. Hood	546,816	Sept. 24	2391	572	72	1843
Furniture-joint	W. C. Hood	546,817	Sept. 24	2392	572	72	1843
Furniture. Revolving	W. D. Snyder	545,985	Sept. 10	951	228, 229	72	1542
Furniture-standard	J. J. Feely	542,054	July 16	1954	464	72	398
Furniture-standard	J. J. Feely	542,955	July 16	1955	464	72	398
Fuse-block	H. N. Potter	546,475	Sept. 17	1834	434	72	1727
Fuse-connector	A. Gartner	546,957	Sept. 24	2621	628	72	1888
Fuse-holder	L. C. Orrell	542,713	July 16	1563	374	72	324
Fuse switch. Multiple	J. Melzer	544,318	Aug. 13	867	218	72	918
Fusee placer. Railway	J. R. Wright	546,605	Sept. 17	2041	485	72	1765
Gage: *See* Alarm-gage. Pressure-gage. Boiler-gage. Sewing-machine hemming-gage. Hemming-gage. Micrometer-gage. Water-gage.							
Gage-knife	S. F. Robbins	546,058	Sept. 10	1075	258	72	1566
Galvanic battery	R. W. Gordon	542,049	July 2	380	92	72	76
Galvanizing strips. Apparatus for	T. V. Allis	543,822	July 30	3574	831, 832	72	732
Gambrel	C. A. Larson	544,858	Aug. 20	1911	458, 459	72	1129
Game apparatus	A. Apache	544,649	Aug. 20	1506	364	72	1052
Game apparatus	A. G. Brown, Jr	543,463	July 30	2857	669	72	598
Game apparatus	J. Q. Brown, Jr	543,722	July 30	3378	784	72	691
Game apparatus	E. Chace	544,908	Aug. 6	645	164	72	867
Game apparatus	J. Jessup	543,251	July 23	2500	586	72	515
Game apparatus	R. McCurdy	545,246	Aug. 27	2592	629	72	1280
Game apparatus	J. Northrup	544,111	Aug. 6	493	123	72	839
Game apparatus. Coin-controlled	C. C. Clawson	541,991	July 2	288	67	72	58
Game-counter	L. F. and B. G. Braine	544,907	Aug. 20	2008	479	72	1148
Game-counter	W. F. Hochspeier	545,361	Aug. 27	2767	671	72	1312
Game-counter	C. H. Isburgh	544,582	Aug. 13	1375	337	72	1010
Game-counter	J. F. Lobstroh	545,601	Sept. 3	291	72	72	1408
Game-counter	J. Voelker	545,322	Aug. 27	2709	658	72	1302
Game-illustrating apparatus. Base-ball	S. R. Crowder	543,851	Aug. 6	31	9	72	755
Game-indicator	J. S. Larzelere	546,959	Sept. 24	2623	628	72	1888
Game indicator. Base-ball	S. R. Crowder	545,270	Aug. 27	2627	637	72	1287
Garbage-furnace	W. S. Hull	543,134	July 23	2267	537, 538	72	472
Garbage-furnace	M. V. Smith	546,497	Sept. 17	1867	443	72	1733
Garbage-furnace	W. Swindell	546,438	Sept. 17	1763	418, 419	72	1712
Garbage incinerator or destroyer. Portable	H. C. Fellenbaum	546,396	Sept. 17	1687	400, 401	72	1698
Garment-adjusting apparatus	L. H. Deaner	546,132	Sept. 10	1198	285	72	1568
Garment-fastener	G. E. Adams	542,215	July 2	655	160	72	127
Garment-fastening	H. B. Walbridge	545,991	Sept. 10	963	232	72	1544
Garment-fastening device	O. L. Cady	542,239	July 9	697	171	72	151
Garment hanger and stretcher	J. H. J. Ronner	543,403	July 23	2731	645	72	559
Garment-hanging device	B. Lipschitz	545,600	Sept. 3	293	71	72	1407
Garment-hook	H. S. Brewington	544,952	Aug. 20	2080	498	72	1161
Garment. Sleeping	W. Denton	541,995	July 2	297	69	72	61
Garment-stretcher	G. H. Gregory	546,422	Sept. 17	1739	412	72	1708
Garment-supporter	G. E. Adams	544,944	Aug. 20	2065	493	72	1158
Garment-supporter	W. H. Barnum	542,624	July 16	1411	340	72	295
Garment-supporter	A. S. Grimm	546,735	Sept. 24	2265	539	72	1819
Garment-supporter	A. E. Harris	542,851	July 16	1795	425	72	365
Garment-supporter	E. I. Robbins and C. Henssler	543,353	July 23	2655	625	72	544
Garment-supporter	S. J. and W. O. Simmons	544,596	Aug. 13	1403	342	72	1016
Garment-supporter	C. W. Stimson	542,211	July 2	649	159	72	126
Garment-supporter	D. H. Warner	543,277	July 23	2542	597	72	523
Garment-supporter clasp	G. E. Adams	543,715	July 30	3362	781	72	688
Garter	B. Dreyfus	546,420	Sept. 17	1734	412	72	1707
Gas apparatus. Coin-freed	L. Haas	542,762	July 16	1647	393	72	339
Gas. Apparatus for manufacture of oil	F. Mayer	542,269	July 9	756	184, 185	72	160
Gas. Apparatus for manufacture of water	T. S. C. Lowe	542,566	July 9	1308	316, 317	72	263
Gas. Apparatus for producing	L. Mond	546,049	Sept. 10	1059	253	72	1562
Gas. Apparatus for the manufacture of	C. W. Pinkney	544,824	Aug. 20	1847	444	72	1117
Gas-burner	C. E. Dressler	545,783	Sept. 3	602	146	72	1465
Gas-burner	H. H. Hibberd	545,360	Aug. 27	2765	671	72	1312
Gas-burner	E. S. Hoyt	546,765	Sept. 24	2318	552	72	1829
Gas-burner	M. J. O'Reilly	546,340	Sept. 17	1591	377, 378	72	1680
Gas-burner	E. H. Yorke	544,422	Aug. 13	1095	267	72	955

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Gas-burner attachment. Incandescent	W. F. Simonet	544,834	Aug. 20	1873	448	72	1122
Gas burner. Kerosene	A. J. Huber	546,644	Sept. 17	2101	498	72	1777
Gas burner. Oil	A. F. Dice	544,160	Aug. 6	563	140	72	853
Gas-burner. Safety	B. Smith	546,941	Sept. 24	2594	622	72	1882
Gas-burners. Automatic valve for	A. M. Mitchell	545,302	Aug. 27	2678	650	72	1297
Gas-burners. Electric-lighting attachment for	F. A. Webb	544,634	Aug. 13	1471	357	72	1027
Gas-burners. Thermostatic regulator for	J. D. Bowman	542,234	July 9	690	169	72	149
Gas-burning apparatus. Oil	J. W. Weeks	545,325	Aug. 27	2714	659	72	1303
Gas. Device for separating liquid from	G. Symons	545,550	Sept. 3	207	50	72	1392
Gas-engine	J. Bryan	542,972	July 16	1983	469, 470	72	403
Gas-engine	E. E. Butler	546,110	Sept. 10	1162	277	72	1582
Gas-engine	F. W. C. Cock	544,210	Aug. 6	655	166	72	868
Gas-engine	J. Day	543,614	July 30	3196	741	72	656
Gas-engine	J. Day	544,214	Aug. 6	663	169	72	865
Gas-engine	H. H. Hennegin	545,502	Sept. 3	129	30, 31	72	1378
Gas-engine	F. S. Mead	545,709	Sept. 3	479	117	72	1442
Gas-engine	H. A. Weeks	543,818	July 30	3565	829	72	726
Gas-engine	C. White and A. R. Middleton	545,995	Sept. 10	971	233, 234	72	1546
Gas engine and generator	D. Best	544,670	Aug. 20	1947	466	72	1136
Gas-engine. Carbonic-acid	E. B. Benham	543,5?8	July 30	3086	724	72	643
Gas-extractor for tank-water, &c	E. Holthaus	545,893	Sept. 10	781	191	72	1510
Gas from natural-gas wells, &c. Apparatus for withdrawing	G. C. Danforth and W. H. Sencenbaugh.	546,952	Sept. 24	2611	626	72	1885
Gas-fuel generator. Oil	R. and E. W. Barlow	546,375	Sept. 17	1655	393	72	1692
Gas-generating heater. Hydrocarbon	C. Rutkoskie	544,593	Aug. 13	1394	340	72	1014
Gas-generator	M. L. Mery	546,175	Sept. 10	1271	303	72	1601
Gas generator. Water	R. C. Boeklen	544,454	Aug. 13	1171	283, 284	72	971
Gas-generators. Oil atomizing and carbureting apparatus for	O. N. Guldlin	546,011	Sept. 10	997	241	72	1551
Gas heating and lighting apparatus	L. S. Crandall	545,851	Sept. 3	717	175	72	1486
Gas-lighter. Electric	H. G. Grier	542,959	July 16	1961	465	72	309
Gas-lighter. Electric	E. Orling	544,514	Aug. 13	1264	305	72	988
Gas-lighting apparatus. Electric	J. W. Palmer	545,091	Aug. 27	2321	563	72	1227
Gas. Manufacturing	E. S. Hoyt	546,014	Sept. 10	1002	241	72	1552
Gas-manufacturing apparatus	R. D. Wirt	544,151	Aug. 6	548	136	72	850
Gas-meter	O. C. Pndan	545,816	Sept. 3	658	159, 160	72	1475
Gas-meter bellows	J. D. Viney	546,947	Sept. 24	2605	624	72	1884
Gas-meter. Prepayment	T. Thorp, T. G. Marsh, and J. Haynes.	543,951	Aug. 6	213	51, 52	72	787
Gas-motor vaporizer	B. W. Griat	545,125	Aug. 27	2391	578	72	1239
Gas or electric light systems. Cut-off actuating mechanism for	F. W. Cotton	546,090	Sept. 10	1130	269	72	1576
Gas or oil engine	F. S. Mead	544,586	Aug. 13	1380	338	72	1011
Gas or other like motor	J. E. Weyman, A. J. and J. A. Drake	542,124	July 2	497	120	72	99
Gas-pressure regulator	J. H. Lowe	543,448	July 21	2828	663	72	578
Gas. Process of and apparatus for making	J. Purves	545,973	Sept. 10	927	222	72	1538
Gas. Process of and apparatus for making	T. L. Willson	542,320	July 9	858	210	72	179
Gas. Process of and apparatus for manufacture of	J. J. Kirkham	543,992	Aug. 6	280	68, 69	72	799
Gas. Process of and apparatus for manufacture of	W. A. Koneman	546,702	Sept. 24	2201	525	72	1808
Gas. Process of and apparatus for producing	E. J. Jerzmanowski	542,855	July 16	1800	426, 427	72	366
Gas-producer	W. Swindell	544,800	Aug. 20	1806	432, 433	72	1110
Gas-producer	W. and J. C. Swindell	544,798	Aug. 20	1803	431	72	1109
Gas-producers. Grate for circular	L. Mond	546,050	Sept. 10	1061	254	72	1563
Gas-regulator	W. C. Downward	546,131	Sept. 10	1197	285	72	1588
Gas-regulator	J. L. Richter	545,725	Sept. 3	504	123	72	1447
Gas systems. Automatic cut-off for	F. L. Cook and J. F. Cranston	542,870	July 16	1821	431	72	370
Gas washer and scrubber	W. Tracy	545,392	Aug. 27	2811	683	72	1321
Gases with liquids. Centrifugal machine for mixing	M. Ekenberg	542,755	July 16	1637	391	72	337
Gasket	J. Vallat	542,431	July 9	1067	261	72	219
Gasoline-burners. Stand-pipe for	O. and L. W. Daman	546,642	Sept. 17	2098	497	72	1776
Gate *See* Automatic gate. Flume-gate. Bridge-gate. Folding gate. Car-gate. Railway-gate. Elevator safety-gate. Sliding gate. End-gate. Swinging gate. Flood-gate. Turnstile-gate.	R. E. Alfred	544,716	Aug. 20	1645	394	72	1077
Gate	M. B. Baird	545,330	Aug. 27	2722	661	72	1304
Gate	V. Benz	546,805	Sept. 24	2378	568	72	1840
Gate	P. A. Bryant	545,942	Sept. 10	878	211	72	1528
Gate	B. F. Canode	543,957	Aug. 6	225	55	72	789
Gate	C. E. Cardwell	544,957	Aug. 20	2089	500	72	1162
Gate	R. F. Hageman	544,915	Aug. 20	2020	482	72	1150
Gate	J. W. Henry	546 385	Sept. 17	1668	396	72	1695
Gate	I. K. Hollinger	544,622	Aug. 13	1452	353	72	1024
Gate	J. H. Jackson	546,667	Sept. 24	2140	509	72	1797
Gate	W. Jones	542,647	July 16	1451	349	72	303
Gate	J. H. Morris	545,521	Sept. 3	158	37	72	1384
Gate	D. A. Peck	542,347	July 9	907	223	72	188
Gate	E. F. Shellaberger	546,829	Sept. 24	2416	579	72	1847
Gate	H. S. Sherman	543,406	July 23	2735	646	72	559
Gate	G. W. Wolfe and J. A. Gibson	542,180	July 2	583	141	72	114
Gate-hanger	A. Munger	542,937	July 16	1928	457	72	393
Gates. Means for operating swinging	F. J. Collinson	545,681	Sept. 3	430	103, 104	72	1433
Gear. Compound driving	T. H. Savery	542,897	July 16	1864	442	72	360
Gear-cutting machine	A. Rösle	545,913	Sept. 10	834	201	72	1519

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Gear. Variable-speed friction	C. Seybold	546,060	Sept. 10	1078	259	72	1567
Gearing	A. A. Fisher	542,882	July 16	1844	437	72	376
Gearing	C. Muehleisen	542,094	July 2	453	108	72	89
Gearing	H. F. Shaw	544,796	Aug. 20	1801	430	72	1108
Gearing. Changeable-speed	C. Muehleisen	542,095	July 2	455	108, 109	72	89
Generator: *See* Current-generator. Gas-fuel generator. Electric generator. Hydrocarbon-generator. Gas-generator. Steam-generator.							
Generator	F. J. Furman	545,885	Sept. 10	769	187, 188	72	1507
Girder. Plate	H. H. Rousseau	542,283	July 9	781	192	72	165
Girders, pillars, &c. Means for binding together metal tubes serving for	G. E. Church and G. W. Ettenger	542,145	July 2	528	127, 128	72	104
Glass: *See* Opera-glass.							
Glass-annealing furnace	J. George and C. M. Shortle	543,207	July 23	2422	569	72	501
Glass. Apparatus for bending and shaping sheet	W. Cutler	544,248	Aug. 6	740	190	72	8-2
Glass. Apparatus for embedding wire in	F. Shuman	546,196	Sept. 10	1308	311	72	1608
Glass. Apparatus for shaping designs on blown	B. A. Gruhl	541,851	July 2	59	12, 13	72	13
Glass. Flattening-stone for flattening plate	G. F. Chance and J. E. Scott	542,552	July 9	1285	312	72	250
Glass. Ladle for dipping	F. Shuman	545,826	Sept. 3	671	163	72	1478
Glass-melting tank	T. P. Kenney	545,630	Sept. 3	335	84	72	1416
Glass plates. Decorating	S. Paini	543,889	Aug. 6	107	24	72	768
Glass-polishing machine	G. W. McKim and A. R. Wilson	546,025	Sept. 10	1022	245, 246	72	1556
Glass-press	C. Kuhlewind	543,154	July 23	2305	546	72	480
Glassware. Manufacture of	D. C. Ripley	543,656	Jnly 30	3259	757, 758	72	670
Glazing-bar for roofs, skylights, &c	H. C. Lassam	545,237	Aug. 27	2580	625	72	1278
Glory-hole furnace	G. Cleis	542,990	July 23	2012	478, 479	72	425
Glove-fastener	F. E. Hall	545,493	Sept. 3	112	27	72	1375
Glove-fastening	E. Thompson and F. W. Zuver	543,432	July 23	2704	657	72	572
Glove-fastening device	W. B. Murphy	545,906	Sept. 10	820	198	72	1517
Gloves. Manufacture of	J. Heinig	546,150	Sept. 10	1229	293	72	1594
Glue-stock cutter and feeder	P. C. Hewitt	545,288	Aug. 27	2651	644	72	1292
Glycerin from soap-underlye. Recovering	H. J. Morrison	544,366	Aug. 13	1003	.....	72	938
Glycocol derivative. Aromatic	W. Majert	543,214	July 23	2432	.....	72	503
Gold. Extracting	P. De Wilde	545,852	Sept. 3	718	.....	72	1487
Gold. Extracting	B. C. Hinman	545,890	Sept. 10	778	190	72	1508
Gold from its aqueous solutions. Depositing	H. K. B. Davis	546,113	Sept. 10	1165	278, 279	72	1583
Gold from ores. Extracting	B. C. Hinman	545,891	Sept. 10	779	190	72	1509
Gold or silver from ores. Extracting	M. E. Waldstein	543,543	July 30	3014	.....	72	629
Gold-saving apparatus	D. G. Frisbie	545,015	Aug. 20	2180	527, 528	72	1178
Gold. Separating	H. W. Kelly	545,205	Aug. 27	2533	.....	72	1269
Gold sluice-box	C. R. Spicer and J. B. Wilson	545,106	Aug. 27	2350	569	72	1232
Gong. Parliamentary	J. A. Cochrane	546,111	Sept. 10	1164	278	72	1583
Goods on display-counters, &c. Permanent salvage device for	E. H. Turner	544,871	Aug. 20	1936	463, 464	72	1133
Gopher trap. Pocket	A. Butzer	543,206	July 23	2421	569	72	501
Governor	G. J. Altham	546,872	Sept. 24	2474	592, 593	72	1860
Governor	F. F. Fischer	542,013	July 2	330	80	72	67
Governor	W. H. Towle	546,040	Sept. 10	1047	251	72	1560
Governor. Automatic adjustable	E. Thunderbolt	544,397	Aug. 13	1060	259	72	948
Governor. Dynamometric	W. N. Smith	544,696	Aug 20	1606	386, 387	72	1070
Governor. Electric	W. W. Handy	542,640	July 16	1439	346, 347	72	301
Governor. Engine	A. Desgoffe	544,061	Aug. 6	406	102	72	824
Governor for fluid-motors	W. Julian	545,367	Aug. 27	2772	673	72	1313
Governor. Gas-engine	J. A Charter	542,043	July 2	373	90	72	75
Governor. Steam-engine	C. Christensen	542,702	July 16	1551	370	72	322
Governor. Steam-engine	H. C. Clay	546,728	Sept. 24	2254	536	72	1817
Grab for excavating and elevating clay, coal, &c	G. J. Hone	546,885	Sept. 24	2503	597, 598	72	1865
Grader. Road	B. Poulson	543,191	July 23	2388	564	72	495
Grading and excavating device	T. B. Redmond and S. Z. Ruff	544,051	Aug. 6	389	96, 97, 98	72	820
Grading machine. Road	O. T. Dutro	545,623	Sept. 3	324	81	72	1414
Grain-binder	S. C. Thompson	542,742	July 16	1619	386, 387	72	334
Grain-cleaning device	F. F. Landis	544,043	Aug. 6	371	92	72	817
Grain-cleaning device	F. F. Landis	544,045	Aug. 6	378	93	72	818
Grain-drill	C. E. Patric	543,049	July 23	2117	501, 502	72	444
Grain-elevator	W. W. Lockwood	542,418	July 9	1039	255	72	214
Grain-meter	D. Wilde	544,803	Aug. 20	1811	434	72	1111
Grain-scalper	A. W. Haag	543,768	July 30	3468	808	72	708
Granular materials. Apparatus for washing and sorting	P. Batsche	544,607	Aug. 13	1424	346	72	1019
Grate	J. N. Huston	544,408	Aug. 13	1076	262, 263	72	951
Grate	S. L. Jeter	544,176	Aug. 6	586	146	72	857
Grate. Circulating water-bar and shaking	J. Reagan	545,979	Sept. 10	938	225, 226	72	1540
Grate. Rotary	O. D. Adams	545,119	Aug. 27	2374	574	72	1237
Grate. Sanitary	G. Phillips	544,375	Aug. 13	1017	249	72	941
Grate. Shaking and dumping	C. P. Soper	543,222	July 23	2445	574	72	505

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Grater and slicer. Culinary	J. C. Groto and P. A. Dobert	544,807	Aug. 20	1818	436	72	1112
Grater. Nutmeg	H. W. Schoff	543,633	July 30	3225	748	72	663
Grave-vaults. Apparatus for manipulating	J. A. Work	543,073	July 23	2156	511	72	452
Grille or scroll work. Producing	J. P. McHugh	544,109	Aug. 6	491	122	72	839
Grinding apparatus	W. F. Nichols and B. Bloomheart	542,099	July 2	461	110	72	90
Grinding device. Knife	J. H. La Fave	542,388	July 9	987	243, 244	72	203
Grinding flat facets. Machine for	M. Offenbacher	544,513	Aug. 13	1263	305	72	988
Grinding-machine	C. W. Glidden and C. H. Benjamin	543,647	July 30	3244	754	72	667
Grinding-machine	A. B. Landis	544,439	Aug. 13	1132	274, 275	72	962
Grinding machine. Cutlery	A. F. Bannister	543,076	July 23	2162	512, 513	72	453
Grinding-mill	J. D. Evans	544,294	Aug. 13	816	207	72	909
Grinding-mill	J. Poulson	543,967	Aug. 6	238	58	72	792
Grinding-mill	J. C. Woodcock	546,869	Sept. 24	2469	591	72	1859
Grip-release. Automatic	E. A. Walters and F. J. Maxon	545,002	Aug. 20	2163	522	72	1175
Grooves. Cutting-tool for dovetail	P. McCourt	542,344	July 9	903	222	72	187
Grubber	G. W. Cameron	542,843	July 16	1780	423	72	363
Guard: *See* Bicycle mud-guard. Brake-beam finger-guard. Cycle mud-guard. Finger-guard. Fire-guard. Keyhole-guard. Pen-guard. Pencil-guard. Railway-rail guard. Trolley-guard.							
Gun-barrels. Means for automatically removing unconsumed products from	J. M. Browning	543,567	July 30	3053	713	72	637
Gun. Box-magazine bolt	J. M. Browning	545,672	Sept. 3	412	99, 100	72	1430
Gun. Box-magazine bolt	W. Mason	545,708	Sept. 3	475	115, 116	72	1441
Gun. Breech-loading	P. B. Latrige	543,939	Aug. 6	191	46	72	784
Gun carriage. Hydraulic-recoil	M. F. Smith	545,540	Sept. 3	186	44, 45	72	1388
Gun. Gas-operated breech-loading	J. M. and M. S. Browning	544,660	Aug. 20	1335	370	72	1057
Gun. Gas-operated machine	J. M. Browning	544,657	Aug. 20	1520	367, 368	72	1054
Gun. Gas-operated machine	J. M. Browning	544,658	Aug. 20	1526	368, 369	72	1055
Gun. Gas-operated machine	J. M. Browning	544,659	Aug. 20	1531	369	72	1056
Gun. Magazine	T. G. Benuett	545,766	Sept. 3	577	139	72	1459
Gunpowder. Process of and apparatus for making	W. C. Peyton	544,517	Aug. 13	1270	306	72	989
Gunpowder. Smokeless	G. N. Whistler and H. C. Aspinwall	541,910	July 2	150	.....	72	33
Gun recoil-pad	J. R. Winters	544,269	Aug. 6	772	197	72	889
Gun-stock	C. A. King	545,898	Sept. 10	791	194	72	1512
Gun-stock	T. Prasse	546,344	Sept. 17	1604	382	72	1682
Gun tripod stand	H. S. Maxim and L. Silverman	544,364	Aug. 13	1000	246	72	037
Guns. Cocking and safety mechanism for breakdown	E. Flues	546,516	Sept. 17	1899	449	72	1739
Guns. Ejecting and cocking mechanism for breakdown	C. A. Young and S. H. Barton	543,306	July 23	2675	631	72	548
Guns. Rebound and ejecting mechanism for breakdown	G. D. Potter	542,494	July 9	1183	290	72	239
Guns. Safety device for breakdown	F. A. Foster	545,355	Aug. 27	2756	668	72	1310
Gutta-percha. Extracting and purifying	H. E. Sérullas	544,934	Aug. 20	2048	489	72	1155
Hair-crimper	F. E. Allen	542,216	July 2	656	161	72	127
Hair-curler	H. Neumann	546,598	Sept. 24	2521	602	72	1868
Hair-drying apparatus	W. S. Simpson	546,352	Sept. 17	1615	385	72	1684
Hair-pin	E. Young	546,109	Sept. 10	1162	277	72	1582
Hair structure	S. C. Beck	544,559	Aug. 13	1332	324	72	1002
Hame	M. Johnson	544,984	Aug. 20	2133	516	72	1170
Hame-fastener	T. N. Martin	545,861	Sept. 3	732	178	72	1469
Hame-fastener	J. W. Stanley	542,288	July 9	792	194	72	166
Hame or collar fastener	J. P. Baird	544,400	Aug. 13	1066	259	72	949
Hammer. Drop	F. C. Billings and F. Lombard	545,188	Aug. 27	2501	605, 606	72	1262
Hammer. Drop	J. A. Horton	543,302	July 23	2578	606, 607	72	530
Hammer nail-holding attachment	H. J. Lewis	543,255	July 23	2508	588	72	516
Hammer. Power	A. Beaudry	545,763	Sept. 3	571	138	72	1458
Hammer-stem extractor	W. Nelson	545,374	Aug. 27	2783	675	72	1316
Hammock-supporting device	A. D. Embury	544,293	Aug. 13	816	206, 207	72	909
Hand-drill	R. Binnie	545,335	Aug. 27	2729	662	72	1306
Hand-drill	H. D. Lanfair	544,411	Aug. 13	1080	263	72	951
Hand-drill. Portable	O. C. Crane	544,402	Aug. 13	1067	260	72	949
Handle: *See* Coffin-handle.							
Handle	W. F. Greene	546,464	Sept. 17	1816	430	72	1723
Handle	T. W. Hickson	541,855	July 2	60	14	72	15
Hanger: *See* Ball-and-socket hanger. Eaves-trough hanger. Garment-hanger. Joist and wall hanger. Pipe-hanger.							
Hardening apparatus	W. Whigham	543,973	Aug. 6	250	61	72	794
Harmonica	M. Doerfel	546,733	Sept. 24	2262	538	72	1818
Harmonica	S. Jesselson	546,157	Sept. 10	1241	296	72	1596
Harness	A. Jacquot	543,737	July 30	3411	792	72	698
Harness	M. L. Knowles	544,310	Aug. 13	846	213	72	915
Harness	W. F. Walls	546,567	Sept. 17	1984	471	72	1754
Harness-loop. Adjustable	S. R. Monroe	546,455	Sept. 17	1804	427	72	1721
Harness-pad hook	C. W. Sone	546,034	Sept. 10	1034	249	72	1558
Harness plume-holder	W. Rauschenberger	542,496	July 9	1190	290	72	240
Harness. Skirt for double	F. J. Bringham	545,445	Sept. 3	14	4	72	1357

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Harness-unchecking device	W. H. Ferris and J. P. Hart	546,514	Sept. 17	1897	449	72	1739
Harp	J. C. St. John	542,576	July 9	1323	320	72	265
Harrow	J. Archer and N. M. Frazier	544,837	Aug. 20	1878	450	72	1123
Harrow	O. J. Childs	546,224	Sept. 10	1356	322, 323	72	1619
Harrow	J. W. Faris	542,880	July 16	1836	435, 436	72	374
Harrow	E. W. Freiburghouse	542,470	July 9	1140	279	72	231
Harrow	F. H. Norton	546,549	Sept. 17	1946	462, 463	72	1748
Harrow. Rotary	J. G. Ferrill	542,587	July 9	1336	324	72	268
Harrow seeder attachment	W. A. Van Densen	541,904	July 2	142	34	72	31
Harrow. Sulky	M. L. Rogers	542,943	July 16	1935	459	72	394
Harrows. Ball-bearing for disk	E. A. Ovenshire	545,210	Aug. 27	2542	615	72	1270
Harrows. Device for sharpening disk	P. A. Nelson	546,077	Sept. 10	1112	265	72	1573
Harvester and binder. Corn	R. Artmann and R. Proehl	545,441	Sept. 3	7	2	72	1356
Harvester and shocker. Corn	H. E. Poage	545,534	Sept. 3	178	42, 43	72	1387
Harvester. Corn	H. D. Janes and L. D. Hart	543,485	July 30	2892	681	72	605
Harvester. Corn	G. W. Packer	541,855	July 2	92	21	72	21
Harvester. Grain	A. Calhoun	543,466	July 30	2862	670	72	599
Harvester-platform and carrier	S. T. Compton	546,415	Sept. 17	1724	409	72	1705
Harvester. Self-binding	M. A. Keller	542,737	July 16	1608	383, 384	72	332
Harvester-truck	S. M. Sellers and L. C. Guttery	542,067	July 2	418	101	72	82
Harvesters. Picker-stem guard for cotton	G. Lispenard	545,431	Aug. 27	2895	703, 704	72	1338
Hasp	W. Firfield	543,232	July 23	2465	578	72	509
Hasp-lock	A. Cashin	542,518	July 9	1225	298, 299	72	247
Hasp-lock	J. A. Crawford	546,916	Sept. 24	2551	610	72	1874
Hasp-lock	T. Mounce	543,535	July 30	3002	704	72	627
Hat-band. Mourning	M. and I. Grenthal	542,158	July 2	553	134	72	108
Hat blocking and stretching machine	J. C. Chamberlain	546,640	Sept. 17	2094	496, 497	72	1776
Hat-fastener	H. L. Carpenter	543,170	July 23	2354	555	72	489
Hat-fastener	W. G. Kirchhoff	542,082	July 2	437	105	72	85
Hat-holder	G. J. Johnson	546,402	Sept. 17	1698	403	72	1700
Hat or cap band. Electric-wire-containing	A. M. Rodriguez and E. D. Rockwell	544,419	Aug. 13	1091	266	72	954
Hat-pin holder	T. J. Golden	546,881	Sept. 24	2498	596	72	1864
Hat sizing, felting, and pinning-out machine	W. H. Knowles	546,453	Sept. 17	1799	426	72	1720
Hay and stock rack. Combined	W. L. Applegate	544,718	Aug. 20	1647	395	72	1077
Hay and stock rack. Combined	K. Jones	546,158	Sept. 10	1243	297	72	1596
Hay-carrier	J. H. Burkholder	545,943	Sept. 10	870	212	72	1528
Hay-carrier track	W. and R. B. Louden	546,975	Sept. 24	2646	634	72	1892
Hay, grain, &c. Machine for lifting and loading	C. Freeman	544,760	Aug. 20	1708	412, 413	72	1090
Hay-loader	S. T. Russell	546,681	Sept. 24	2165	515	72	1801
Hay-loader	O. and W. Swenson	546,602	Sept. 17	2036	484	72	1765
Hay-rake. Horse	G. L. Weaver	546,980	Sept. 24	2656	636	72	1894
Head-gate-operating mechanism	F. C. Brown	542,238	July 9	694	171	72	150
Headlight and sand box. Combined	I. H. Davis	546,581	Sept. 17	2003	476	72	1758
Head-rest	W. B. Mann	544,106	Aug. 6	485	120, 121	72	837
Heat into work. Method of and apparatus for converting	R. Diesel	542,846	July 16	1785	424, 425	72	364
Heat-regulating apparatus	W. S Johnson	542,733	July 16	1594	381, 382	72	330
Heater: *See* Cottage-heater. Feed-water heater. Fire-engine heater. Gas-generating heater. Hot-air heater. Hot-water heater. Lamp-heater. Locomotive feed-heater. Milk-heater. Water-heater.							
Heater	J. Michaelson and W. Reid	543,039	July 23	2098	497, 498	72	441
Heating and ventilating apparatus. Combined	D. S. White	545,113	Aug. 27	2363	571	72	1235
Heating and ventilating rooms or houses	J. Cinnamon	546,842	Sept. 24	2433	583	72	1851
Heating apparatus	C. Fischer	545,470	Sept. 3	61	15	72	1366
Heating apparatus	N. E. Frost	546,971	Sept. 24	2639	632	72	1891
Heating apparatus	G. Peirce	544,515	Aug. 13	1265	306	72	988
Heating apparatus for carriages or railway-cars	A. Bascary	545,442	Sept. 3	11	3	72	1357
Heating furnace. Air	W. S. Stevenson, C. V. Roberts, and J. K. McLaughlin.	545,829	Sept. 3	674	164, 165	72	1478
Heating, ventilating, or other apparatus	M. Pellet	543,811	July 30	3550	825, 826	72	723
Heddle for cross-weaving	C. Ashoff	544,497	Aug. 13	1240	300	72	984
Heel	N. Becker	542,790	July 16	1696	401	72	348
Heel compressing and loading machine	C. W. Glidden and C. C. Small	543,801	July 30	3538	823	72	721
Heel compressing and loading machine	F. F. Raymond, 2d	544,771	Aug. 20	1760	420	72	1100
Heel-compressing machine	J. J. Heys and C. W. Glidden	543,732	July 30	3403	700	72	697
Heel-cup	W. E. Searles	546,083	Sept. 10	1120	267	72	1575
Heel-nail-feeding machine	J. B. Lesuer	541,861	July 2	71	16, 17	72	17
Heel-nailing-machine attachment	J. H. Pope and H. H. Waugh	542,205	July 2	635	155	72	124
Heel-trimming machine	C. H. Langill	543,491	July 30	2904	684	72	608
Heel-trimming machine	O. L. Noble	543,349	July 23	2647	624	72	543
Heels. Machine for molding spring	B. E. Morrison	542,092	July 2	451	108	72	88
Heeling-machine	C. W. Glidden	543,682	July 30	3299	766, 767	72	676
Helmet. Metallic	J. P. Lind	542,380	July 9	990	244, 245	72	203
Hemming-gage	A. S. Simons	543,195	July 23	2401	565	72	498
Hides. Depilating	G. C. Walter	545,560	Sept. 3	223	.....	72	1394
High or low water alarm. Electrical	B. McCabe	543,965	Aug. 6	234	57, 58	72	791

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Hinge	A. H. Gilman	542,250	July 9	712	175	72	153
Hinge	R. G. McClellan	544,413	Aug. 13	1082	264	72	952
Hinge. Detachable	O. H. P. G. Spencer	546,909	Sept. 24	2542	607	72	1672
Hinge. Friction	E. W. Philbrook	544,071	Aug. 6	420	105	72	826
Hinge. Gate	J. T. Linsey, B. F. Kernodle, and I. Shelley.	546,234	Sept. 10	1372	327	72	1022
Hinge-hanger	A. Schroeder	543,105	July 23	2212	525	72	462
Hinge. Lock	W. R. Kinnear	546,856	Sept. 24	2454	588	72	1855
Hinge. Safety-lock	F. Krupp	543,533	July 30	3001	703	72	626
Hinge. Seat	B. Mess	543,883	Aug. 6	98	92	72	766
Hinge. Spring	O. E. Woodbury	544,339	Aug. 13	901	226	72	924
Hitching device	H. B. Murlless	546,742	Sept. 24	2274	541	72	1820
Hitching device	O. W. Orell	543,888	Aug. 6	103	24	72	767
Hitching-post	C. A. Hanson	543,624	July 30	3212	744	72	660
Hitching-post	S. H. Smith	545,984	Sept. 10	950	228	72	1542
Hitching-strap	I. von Risch	542,500	July 9	1196	292	72	241
Hobby-horse	J. A. Crandall	542,871	July 16	1822	431	72	371
Hobby-horse	A. F. C. Garben	542,850	July 16	1794	425	72	365
Hoe. Shuffle	H. A. Parcells	543,266	July 23	2526	593	72	519
Hog-ringer	W. S. Taylor	542,718	July 16	1571	376	72	325
Hoisting and conveying apparatus	T. S. Miller	546,239	Sept. 10	1378	{328 329}	72	1623
Hoisting apparatus	T. Marnell	545,514	Sept. 3	147	35	72	1381
Hoisting-machine	O. E. Hegstad	545,500	Sept. 3	125	29	72	1377
Hoisting-machine	J. M. Howard	543,936	Aug. 6	188	45	72	783
Hoisting mechanism	G. F. Jennings	544,041	Aug. 6	368	91	72	816
Hoisting mechanism	B. L. Toquet	542,545	July 9	1270	309	72	255
Holdback for vehicles. Self-detaching	W. T. Taylor	546,061	Sept. 10	1080	259	72	1567
Hominy-mill	J. Warrington	544,145	Aug. 6	541	134	72	848
Hoof-pad	S. H. Sherman	544,797	Aug. 20	1802	431	72	1109
Hook: *See* Back-band hook. Bird-cage hook. Cane-hook. Fish-hook. Garment-hook. Harness-pad hook. Horse foot-hook. Lacing-hook. Pail-hook. Portable hook. Shoe-hook. Shutter-hook. Snap-hook. Stable safety-hook. Tie-hook. Tug-hook.							
Hook	W. D. Atwood and W. B. St. John	545,043	Aug. 27	2233	541	72	1209
Hook	C. Henkel	542,255	July 9	721	177	72	155
Hook	E. A. Schley	541,886	July 2	110	26	72	24
Hook and buckle. Combined	H. T. Richmond	541,884	July 2	106	25	72	24
Hook and eye	K. Bort	544,013	Aug. 6	322	80	72	808
Hook and eye	E. Donnelly	544,971	Aug. 20	2111	506	72	1167
Hook and eye	G. E. Mellen	543,496	July 30	2917	687	72	610
Hook and eye	M. J. Myers	543,536	July 30	3003	704	72	627
Hook and hammer. Combined	H. A. Tillett, T. D. Tarpley, and R. J. Moore.	542,178	July 2	581	140	72	114
Hook for toasting, &c	J. Wharfe	543,916	Aug. 6	159	36	72	776
Hoop: *See* Cheese-hoop.							
Hoop-dog. Cooper's	H. Campbell and J. Marr	544,843	Aug. 20	1886	452	72	1124
Hoop-flaring machine	M. H. Ritzwoller	542,572	July 9	1318	319	72	264
Hoop-making machine	H. U. Palmer	546,052	Sept. 10	1065	255	72	1564
Hoop-making machine	H. U. Palmer	546,053	Sept. 10	1067	255	72	1564
Hoop-shaving machine	H. Schmidt	544,382	Aug. 13	1026	252	72	943
Hop picker and cleaner	W. H. Clark	544,156	Aug. 6	555	138	72	851
Hopper and means for moving and elevating same	J. W. Stone	542,693	July 16	1533	366	72	319
Hopple. Kicking	J. E. Turner	544,241	Aug. 6	724	185	72	880
Horse-bit	J. Clamer	544,563	Aug. 13	1337	326	72	1003
Horse-blanket	J. Hand	542,931	July 16	1919	454	72	391
Horse-blanket	A. F. Ransom	544,590	Aug. 13	1390	339	72	1013
Horse-blanket	W. B. Riley	542,967	July 16	1971	468	72	401
Horse-blanket. Extensible	A. F. Ransom	544,591	Aug. 13	1391	339	72	1013
Horse-breaking apparatus	J. W. Green	545,228	Aug. 27	2570	622	72	1276
Horse checking or unchecking device	F. H. Kittrell	543,307	July 23	2592	609	72	532
Horse creeper-shoe	P. W. Weida	543,415	July 23	2748	649	72	562
Horse-detacher	W. H. Smoot	545,828	Sept. 3	673	164	72	1478
Horse foot-hook	D. A. Jones	544,540	Aug. 13	1299	316	72	995
Horse interfering-pad	E. Ericson	545,879	Sept. 10	761	185	72	1505
Horse knee-spreader	C. L. Passmore	545,413	Aug. 27	2850	697	72	1331
Horse-power	J. S. Tuttle	543,066	July 23	2147	509	72	450
Horse-rake	J. H. Randolph	543,563	July 30	3047	712	72	636
Horse-whipping device	H. J. Case	542,463	July 9	1133	277	72	230
Horses. Device for starting race	J. T. Andrew	543,762	July 30	3453	805	72	706
Horses. Device for stopping runaway	J. G. Casey	546,694	Sept. 24	2187	521	72	1805
Horses. Device for stopping runaway	W. E. Vose	546,794	Sept. 24	2357	563	72	1837
Horses. Gaiting device for	H. G. Gould	545,626	Sept. 3	328	82	72	1414
Horses. Means for analytically recording gait of	T. J. Kean	546,700	Sept. 24	2197	534	72	1807
Horses or other animals. Apparatus for training	A. H. Simpson	544,868	Aug. 20	1932	462	72	1133
Horseshoe	G. Custer	546,227	Sept. 10	1360	324	72	1619
Horseshoe-bar	J. Benfield	541,956	July 2	236	55	72	48
Horseshoe-calk-bending device	M. Roche	542,396	July 9	999	247	72	205
Horseshoe-creasing ring	J. Schwarting	546,787	Sept. 24	2348	560	72	1835
Horseshoe. Cushioned	H. H. Gibbs	546,145	Sept. 10	1221	292	72	1592
Horseshoe. Detachable	L. C. Thorne	546,203	Sept. 10	1323	314	72	1611
Horseshoe-nail blanks. Machine for making	E. Perkins	542,739	July 16	1614	385	72	333
Horseshoe-nail cutter and clincher	H. M. Hoadley	540,665	Sept. 24	2137	508	72	1797
Horseshoe-nails. Tool for clinching	J. Rosch	544,931	Aug. 20	2044	488	72	1154
Horseshoe. Nailless	W. P. Camblos and W. Bittles	546,893	Sept. 24	2186	521	72	1805
Horseshoe. Nailless	W. H. Wakfer	545,559	Sept. 3	221	54	72	1394
Horseshoe. Soft-tread	J. Benfield	543,976	Aug. 6	253	62	72	795
Horseshoe. Spring	A. J. Walker	542,546	July 9	1271	309	72	256

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Horseshoeing-machine	S. Cunningham	541,920	July 2	166	39	72	36
Hose shut-off clamp	E. M. Lundholm	541,865	July 2	78	18	72	18
Hose-bridge	I. Niskern	546,387	Sept. 17	1671	396	72	1696
Hose-bridge	J. P. Terry	541,240	Aug. 6	723	185	72	880
Hose-bridge. Street-car	W. H. Baker	543,837	Aug. 6	4	1	72	749
Hose-coupler	L. J. Houze	543,871	Aug. 6	78	17	72	762
Hose-coupling	W. Earl	545,352	Aug. 27	2751	667	72	1309
Hose-coupling	J. A. Fregeau	545,066	Aug. 27	2283	554	72	1219
Hose-coupling	E. W. Shepherd	544,469	Aug. 13	1198	290	72	976
Hose nozzle. Garden	F. Lewis	545,656	Sept. 3	376	93	72	1424
Hose-nozzle spraying attachment	D. A. Magee	544,412	Aug. 13	1081	264	72	952
Hose-supporter	R. Gorton	542,440	July 9	1088	265	72	222
Hose-tower and fire-escape	F. M. Painter	543,750	July 30	3426	{795 796}	72	701
Hospital-screen	A. S. Spaulding	543,906	Aug. 6	135	30	72	773
Hot-air cabinet and screen. Combined	C. M. Robinson	546,865	Sept. 24	2465	590	72	1858
Hot-air furnace	R. J. Schwab	546,714	Sept. 24	2216	{528 529}	72	1811
Hot-air furnace	D. B. Weightman	546,722	Sept. 24	2229	532	72	1814
Hot-air heater	W. F. and B. G. Camp	545,772	Sept. 3	586	141	72	1461
Hot-air register or ventilator	E. Shenton	542,716	July 16	1568	375	72	325
Hot-air registers. Air moistening and purifying attachment for	H. Illowizi	544,175	Aug. 6	585	146	72	857
Hot-water-circulating boiler	C. A. Sullivan and T. J. Best	542,292	July 9	810	199	72	169
Hot-water furnace	J. T. Robbins	545,912	Sept. 10	830	200	72	1519
Hot-water heater	F. A. Magee	544,440	Aug. 13	1136	275	72	962
Hot-water heater	E. D. Van Stone	544,450	Aug. 13	1166	282	72	970
Household devices. Means for operating	J. J. Faulkner	542,335	July 9	887	217	72	184
Hub	E. O. Bryden	542,330	July 9	879	216	72	182
Hub	C. O. Metzler	546,072	Sept. 10	1101	263	72	1571
Hub-attaching device	H. M. Cromer	545,946	Sept. 10	883	213	72	1529
Hub-attaching device	F. Lebel	545,126	Aug. 27	2303	579	72	1240
Hub-attaching device	H. T. Lewis	544,181	Aug. 6	592	148	72	858
Hub-attaching device	C. Miller	546,176	Sept. 10	1272	303	72	1602
Hub-cap	H. Higgin	544,171	Aug. 6	580	145	72	856
Huller: *See* Clover-huller. Pea or bean huller.							
Hydrant	J. G. Murdock	546,075	Sept. 10	1106	264	72	1572
Hydraulic engine	F. Starr	546,943	Sept. 24	2597	{622 623}	72	1883
Hydrocarbon-burner	B. F. Lawton	545,595	Sept. 3	282	69	72	1405
Hydrocarbon-burner	J. H. Mathews	543,037	July 23	2096	497	72	440
Hydrocarbon-burner	S. Stewart and H. S. Carnes	545,744	Sept. 3	534	129	72	1452
Hydrocarbon generator and burner. Reversible	B. G. Devoe	546,310	Sept. 17	1537	364	72	1669
Hydrocarbon motor. Liquid	S. Griffin	542,410	July 9	1021	{251 252}	72	210
Ice-cream-can cover	A. Maag	542,484	July 9	1163	285	72	235
Ice-cream freezer	W. B. McCann	542,596	July 9	1352	327	72	270
Ice-cream freezer	A. B. Oppy	546,243	Sept. 10	1388	331	72	1625
Ice-cream freezer and churn. Combined	W. R. Thatcher	546,945	Sept. 24	2603	624	72	1884
Ice-cream. Method of and apparatus for forming designs in color in blocks of	W. H. Hunter	545,294	Aug. 27	2664	646	72	1294
Ice-cutting machine	M. Fey	544,163	Aug. 6	567	{141 142}	72	854
Ice-cutting machine	G. E. Milliken	546,283	Sept. 10	1481	350	72	1642
Ice-elevator chain	L. Hunter	545,690	Sept. 3	442	107	72	1435
Ice-machine can-filler	R. F. Schroeder	543,159	July 23	2315	549	72	482
Ice-machine freezing-plate	J. B. Wood	546,085	Sept. 10	1122	268	72	1575
Ice-tongs	J. R. Finley	541,842	July 2	42	10	72	11
Igniting apparatus	P. Groebbels	546,923	Sept. 24	2561	613	72	1876
Illuminator and probe. Internal	W. E. Dow	543,616	July 30	3199	742	72	658
Incandescent-light support	C. A. Carmany	544,502	Aug. 13	1246	{301 302}	72	985
Index	F. L. Parker	542,684	July 16	1520	{363 364}	72	317
Indicating device. Visual	C. C. Bramwell	544,024	Aug. 6	337	84	72	811
Indicator: *See* Cash-indicator. Elevator-indicator. Game-indicator. Medicine dose-indicator. Station-indicator. Stock-indicator. Stool-indicator. Synchronism-indicator.							
Indicator	B. F. Rittenhouse	545,726	Sept. 3	506	123	72	1447
Inflator or air-pump. Pressure-indicating	J. M. Smith	544,998	Aug. 20	2155	521	72	1174
Ingot-tilter	G. W. McClure	545,245	Aug. 27	2592	628	72	1280
Inhaler	F. P. Wright	544,340	Aug. 13	902	226	72	924
Injector	I. R. Laux	543,554	July 30	3030	709	72	632
Injector. Gasoline	J. M. Olinger	541,874	July 2	90	21	72	21
Inkstand	G. A. Bobrick	542,750	July 16	1631	390	72	336
Inkstand	J. C. Miller	546,338	Sept. 17	1588	377	72	1679
Inkstand	K. J. Peers	545,247	Aug. 27	2594	629	72	1280
Inkstand-stopper	L. H. Thomas	542,399	July 9	1008	248	72	207
Ink-well	S. G. Baldwin	544,558	Aug. 13	1331	323	72	1002
Ink-well cover	B. J. Couhig	541,965	July 2	245	57	72	50
Ink well or holder	W. E. Lewis	542,482	July 9	1160	284	72	235
Inking device	A. D. Klaber	543,831	July 30	3589	836	72	731
Inseam-trimming and beating out welts. Machine for	A. C. Spencer	542,813	July 16	1733	413	72	354
Insect-destroyer	G. S. Chase	542,464	July 9	1134	277	72	230
Insect-powder distributer	J. Hetherington	546,533	Sept. 17	1925	457	72	1744
Insect-trap	F. L. Block	545,842	Sept. 3	699	170	72	1482
Insect-trap	P. D. Lewis	544,624	Aug. 13	1456	354	72	1025
Insulated electric conductor	F. Clouth	546,579	Sept. 17	2001	475	72	1757
Insulated electric conductor	T. N. Hallanger	544,531	Aug. 13	1287	311	72	993

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Insulating apparatus. Wire-	T. N. Hallanger	544,530	Aug. 13	1285	310, 311	72	992
Insulating electrical conductors. Apparatus for	L. W. Downes	544,847	Aug. 20	1892	453	72	1126
Insulating material. Electric	J. O. Brown	542,462	July 9	1133	.....	72	230
Insulating railway-joints for electrical signals	T. O'Brien, Jr	546,494	Sept. 17	1864	442	72	1732
Insulating-shield for metallic poles	W. J. Braley	542,675	July 16	1503	360	72	313
Insulating-support for electric wires	J. N. Bulkley	546,837	Sept. 24	2427	581	72	1850
Insulator	R. G. Collins and F. W. Foley	544,959	Aug. 20	2091	501	72	1163
Insulator	W Dibb and A. Vickers	546,585	Sept. 17	2010	477	72	1759
Insulator	G. Gerstenlaner	546,383	Sept. 17	1665	395	72	1694
Insulator, conductor, and conduit for electrical wires and cables	W. R. Hitchcock	546,232	Sept. 10	1366	325, 326	72	1621
Insulator. Electric	D. M. Rothenberger	545,819	Sept. 3	661	161	72	1476
Insulator for electric or other wires	C. Sproat and E. N. Tarr	544,778	Aug. 20	1775	424	72	1104
Insulators. Press for making screw-	S. Kribs	542,565	July 9	1306	316	72	262
Invalid-chair. Folding	B. E. Jamme	545,695	Sept. 3	451	109	72	1437
Invalids. Device for lifting	D. H. Shutters	545,741	Sept. 3	532	138	72	1452
Iron: *See* Rub-iron.							
Iron construction. Concrete-	E. L. Ransome	542,206	July 2	636	155	72	124
Iron. Machine for breaking pig-	J. S. Kennedy	543,771	July 30	3473	809	72	709
Iron or steel. Process of and apparatus for manufacturing	T. S. Blair, Jr	545,937	Sept. 10	871	210	72	1527
Ironing-board	H. Ratcliffe	546,556	Sept. 17	1965	466	72	1751
Ironing-board support	E. V. Sigler	543,658	July 30	3263	758	72	670
Ironing-machine	G. Binder	542,233	July 9	686	168, 169	72	148
Ironing-table	C. T. Chase	543,468	July 30	2863	671	72	600
Ironing-table	C. W. Hillenbrand	544,301	Aug. 13	831	210	72	912
Ironing-table	J. W. Pinner	545,971	Sept. 10	925	221	72	1538
Jack: *See* Bootjack. Pegging jack. Carriage-jack. Pumping-jack. Ditching-jack. Railway lifting-jack. Lasting-jack. Wagon-jack. Lifting-jack.							
Jacquard machine	G. W. Stafford	545,661	Sept. 3	384	94, 95	72	1425
Jar-cover	G. B. Quigley	542,807	July 16	1727	411	72	353
Jar-cover lock. Fruit-	G. E. Purple	545,171	Aug. 27	2468	598	72	1255
Jar-fastener	M. L. Deering	545,684	Sept. 3	435	105	72	1434
Jetty	B. N. Bryant	546,758	Sept. 24	2308	550	72	1827
Joint: *See* Adjustable joint. Rail-joint. Electric-wire joint. Railway rail-joint. Flexible joint. Railway-track joint. Furniture-joint. Steam-joint. Pipe-joint. Universal joint.							
Joint-cutter	B. J. Spilker	541,952	July 2	212	49	72	45
Joist and wall hanger	V. E. Gregg	546,147	Sept. 10	1226	293	72	1504
Journal and bearing therefor	I. Metzger	543,187	July 23	2380	562	72	494
Journal-bearing	W. W. Dingee	544,482	Aug. 13	1218	295	72	979
Journal-box	L. J. Hirt	545,018	Aug. 20	2185	528, 529	72	1179
Journal-box. Self-lubricating	M. G. Keeran	546,958	Sept. 24	2622	628	72	1888
Journal-boxes. Device for lubricating	F. Fehr	546,659	Sept. 24	2127	505	72	1794
Journal for bicycles or other vehicles	C. Truman	546,719	Sept. 24	2226	532	72	1813
Kaolin, &c. Refining	D. H. Chambers	543,292	July 23	2564	.....	72	526
Kettle	R. H. Wiles and H. Bitner	545,434	Aug. 27	2498	705	72	1339
Kettle. Alarm or bronchitis	H. R. S. Maitland	544,233	Aug. 6	697	178	72	276
Key	W. H. Daggett	543,852	Aug. 6	33	9	72	755
Key-fastener	E. I. Cohn and T. H. Campbell	543,850	Aug. 6	31	9	72	755
Keyhole-guard	C. H. Weston and M. J. Sullivan	544,334	Aug. 13	893	224	72	923
Key-opening can	C. B. McDonald	543,347	July 23	2645	623	72	542
Key-seat-cutting machine	L. and D. Lake	543,309	July 23	2593	609, 610	72	532
Kiln: *See* Brick-kiln. Limekiln.							
Kiln	H. H. Everhard	545,463	Sept. 3	49	12	72	1364
Kitchen-cabinet	C. H. Little	542,341	July 9	900	221	72	186
Kitchen-cabinet	W. A. Young	543,519	July 30	2970	697	72	620
Kitchen-cabinet. Portable	L. Haskill	543,770	July 30	3471	808, 809	72	709
Kitchen-cabinet table	F. B. Inger	541,858	July 2	65	15	72	16
Knee-pad	S. J. Dowling	545,273	Aug. 27	2631	638	72	1288
Knee-pad	J. W. Hamilton and J. F. Siebenthall	543,864	Aug. 6	55	14	72	758
Knee-protector	T. B. Walker	543,759	July 30	3449	804	72	705
Kneeling or foot bench	H. J. O'Neil	544,112	Aug. 6	494	123	72	839
Knife: *See* Bread-knife. Gage-knife. Draw-knife. Paring and slicing knife. Drawing-knife. Pocket-knife.							
Knife attachment for revolvers	E. Paul	545,528	Sept. 3	170	40	72	1386
Knife for rotary trimmers	A. S. Vose	546,750	Sept. 24	2295	545	72	1825
Knife-handle	T. E. Miller	542,568	July 9	1312	318	72	263
Knitted fabrics. Machine for cutting	J. D. Hemphill	546,532	Sept. 17	1923	456	72	1743
Knitted garment and making same	J. Holmes	545,479	Sept. 3	80	20	72	1370
Knitting-machine	J. A. House	542,055	July 2	392	94, 95, 96, 97	72	78
Knitting-machine	C. M. Musgrove and A. Smith	545,809	Sept. 3	647	157	72	1473
Knitting-machine	E. E. Randall	542,311	July 9	840	206	72	175
Knitting machine. Circular-	G. Reid and C. Stevenson	544,995	Aug. 20	2147	519, 520	72	1173

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Invention.	Name	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Knitting machine. Straight-	W. H. Pepper and A. T. L. Davis	542,653	July 16	1858	351, 352	72	305
Knitting machine. Warp-	W. Roberts	542,208	July 2	638	155, 156, 157, 158	72	124
Knitting-machine yarn-changing device	A. Sedmihradsky	545,135	Aug. 27	2406	582	72	1242
Knitting-machines. Striping attachment for	F. R. Greene	544,849	Aug. 20	1896	454	72	1126
Knob attachment	C. F. Doebler	546,970	Sept. 24	2632	632	72	1891
Knob attachment	J. A. Giese	542,048	July 2	379	92	72	76
Knob lock. Door-	G. L. Barney	545,665	Sept. 3	393	96	72	1427
Knob lock. Door-	G. L. Barney	545,666	Sept. 3	395	97	72	1427
Knob lock. Door-	G. L. Barney	545,667	Sept. 3	398	97	72	1428
Knob lock. Door-	G. L. Barney and J. L. Clough	545,668	Sept. 3	400	97	72	1428
Knockdown rack	J. H. Bowley	541,989	July 2	286	66	72	58
Labeling-machine	P. E. Loree	546,961	Sept. 24	2625	628, 629	72	1889
Lace fastener. Shoe-	K. Burgin	544,349	Aug. 13	968	239	72	932
Lace fastener. Shoe-	C. Wilde	542,432	July 9	1068	262	72	219
Lacing-hook	L. B. Cobb	544,287	Aug. 13	800	203	72	906
Lacing-hooks. Making	E. H. Cummings	546,611	Sept. 17	2096	497	72	1776
Lacing-stud-setting machine	T. A. Perrins	542,492	July 9	1179	288, 289	72	238
Ladder and ironing-board. Combined step-	C. Walter	543,565	July 30	3050	713	72	636
Ladder and truck. Extension fire-	A. B. Cairnes	545,643	Sept. 3	360	89	72	1421
Ladder. Chain	J. Maw	544,860	Aug. 20	1915	459	72	1130
Ladder. Combined step and extension	J. B. McSherer	542,208	July 9	836	205	72	174
Ladder-support	H. Reiffenstein	544,320	Aug. 13	1274	308	72	990
Ladder. Triple	G. F. Lawver	542,085	July 2	441	106	72	86
Ladders. Device for preventing persons falling from	E. Brucksch	543,464	July 30	2858	669, 670	72	599
Lamp	J. Forsythe	543,443	July 23	2814	661	72	576
Lamp	P. J. Handel	544,893	Aug. 20	1976	474	72	1141
Lamp	R. J. Robertson	545,313	Aug. 27	2692	653	72	1300
Lamp	H. E. Shaffer	546,435	Sept. 17	1759	417	72	1712
Lamp	W. J. Smart	542,286	July 9	789	193	72	166
Lamp	W. J. Smart	542,287	July 9	701	194	72	166
Lamp. Alcohol-	L. Wojidkow	546,632	Sept. 17	2079	493	72	1773
Lamp. Arc-	A. C. Selbold	542,505	July 9	1202	293	72	243
Lamp-burner	T. Skinner	542,506	July 9	1203	293	72	243
Lamp. Carriage-	S. Cooper	543,438	July 23	2803	658, 659	72	574
Lamp. Central-draft	W. H. Edsall and F. L. Lathrop	545,402	Sept. 3	47	11	72	1363
Lamp-chimney	M. Epstein	545,061	Aug. 27	2270	551	72	1216
Lamp-chimney holder	A. J. Beck	546,411	Sept. 17	1715	406	72	1703
Lamp-chimney holder	L. H. Leighton	546,861	Sept. 24	2460	589	72	1857
Lamp-chimney holder	G. A. Welch	545,562	Sept. 3	225	54	72	1395
Lamp-drum	L. J. Atwood and H. H. Asbenden	545,401	Aug. 27	2831	689	72	1325
Lamp. Electric-arc	R. H. Cunningham	544,529	Aug. 13	1284	310	72	992
Lamp. Electric-arc	J. H. J. Haines and A. B. Fernald	544,578	Aug. 13	1368	334	72	1009
Lamp. Electric-arc	J. H. J. Haines and A. B. Fernald	544,579	Aug. 13	1370	334	72	1009
Lamp. Electric-arc	H. T. Harrison	545,359	Aug. 27	2764	670	72	1312
Lamp. Electric-arc	C. E. Harthan	543,729	July 30	3395	788	72	695
Lamp. Electric-arc	D. Higham	543,243	July 23	2485	583	72	513
Lamp. Electric-arc	D. Higham	546,534	Sept. 17	1925	457	72	1744
Lamp. Electric-arc	F. M., E. S. and H. F. Hildebrandt	542,589	July 9	1341	325	72	268
Lamp. Electric-arc	R. H. Jahr	545,694	Sept. 3	449	108	72	1437
Lamp. Electric-arc	W. Jandus	543,445	July 23	2816	661, 662	72	576
Lamp. Electric-arc	J. A. Mosher	544,066	Aug. 6	413	103	72	825
Lamp. Electric-arc	S. E. Nutting	542,490	July 9	1176	288	72	238
Lamp. Electric-arc	S. E. Nutting	543,399	July 23	2721	643	72	557
Lamp. Electric-arc	S. E. Nutting	543,502	July 30	2930	690	72	613
Lamp. Electric-arc	S. P. Parmly	546,388	Sept. 17	1673	397	72	1696
Lamp. Electric-arc	H. J. Sage	543,355	July 23	2658	626	72	544
Lamp. Electric-arc	R. Schefbauer	546,826	Sept. 24	2409	578	72	1846
Lamp. Electric-arc	R. Schefbauer	546,827	Sept. 24	2412	578	72	1846
Lamp. Electric-arc	R. Schefbauer	546,828	Sept. 24	2414	579	72	1847
Lamp. Electric-arc	C. E. Scribner	543,900	Aug. 6	124	28	72	771
Lamp. Electric-arc	R. Segerdahl	545,736	Sept. 3	526	127	72	1451
Lamp. Electric-arc	H. A. Seymour	546,625	Sept. 17	2068	490, 491	72	1770
Lamp. Electric-arc	E. Thomson and C. E. Harthan	542,662	July 16	1480	355	72	309
Lamp. Electric-arc	C. Weber, F. Goellner, and A. Schweitzer.	546,689	Sept. 24	2178	518, 519	72	1803
Lamp filament. Incandescent-	T. A. Edison	543,987	Aug. 6	274	.....	72	798
Lamp harp-ring	F. Rhind	546,597	Sept. 17	2030	492	72	1763
Lamp-heater	G. C. Howard	545,651	Sept. 3	371	91	72	1423
Lamp heater attachment	E. F. Pflueger	544,116	Aug. 6	499	124	72	840
Lamp hoisting or lowering device	F. W. Smith	545,539	Sept. 3	184	44	72	1388
Lamp holder. Miners' safety-	P. G. Smith and A. L. Ruff	545,918	Sept. 10	840	209	72	1521
Lamp. Incandescent electric	R. Greer	541,929	July 2	179	42	72	38
Lamp. Incandescent electric	G. Westinghouse, Jr	543,240	July 23	2546	598	72	523
Lamp lid. Alcohol-	L. Wejidkow	546,108	Sept. 10	1161	277	72	1562
Lamp mechanism. Arc-	K. A. Lantau and C. J. Anderson	546,403	Sept. 17	1699	403	72	1700
Lamp. Miner's	W. G. Price	541,948	July 2	205	48	72	44
Lamp. Regenerative hydrocarbon	J. Schülke	542,999	July 16	1670	443	72	281
Lamp-regulating device	R. L. Doran	546,282	Sept. 10	1480	349	72	1642
Lamp socket. Incandescent-	E. H. Heath	543,016	July 23	2053	487	72	433
Lamp-support	W. M. Whitehead	542,455	July 9	1119	274	72	227
Lamp-suspending device	F. G. Echols	544,505	Aug. 13	1252	302, 303	72	986
Lamps. Adjustable support for electric or other	L. Goddu	545,485	Sept. 3	97	23	72	1373

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Lamps. Air-distributer for	H. E. Shaffer	542,781	July 16	1685	401	72	346
Lamps. Carbon-holder for electric-arc	T. E. Adams	545,755	Sept. 3	559	133	72	1456
Lamps. Globe-netting for arc	E. P. Warner	544,331	Aug. 13	8-9	223	72	922
Lamps. Incandescent conductor for electric	T. A. Edison	543,985	Aug. 6	273	.....	72	798
Lamps. Means for varying light for incandescent electric	C. A. Hussey	546,666	Sept. 24	2138	509	72	1797
Lamps. Pliers for trimming electric-arc	R. D. Tackaberry	546,361	Sept. 17	1628	389	72	1687
Lamps. Safety device for handling electric-arc	E. P. Snowden	542,210	July 2	648	159	72	126
Land-roller	C. J. Shaw	546,194	Sept. 10	1305	311	72	1608
Lantern	E. H. Kennedy and W. Mathews	543,691	July 30	3314	770	72	679
Lantern	C. D. Seys	544,833	Aug. 20	1871	448	72	1121
Lantern. Camera	O. A. Eames	546,093	Sept. 10	1134	270, 271	72	1577
Lantern. Tubular	G. W. Lynch	542,567	July 9	1311	317	72	263
Lanterns or stereopticons. Attachment for magic	C. Goodyear, Jr	543,009	July 23	2040	484	72	430
Lapping-machine	E. A. Mills	543,774	July 30	3479	810	72	710
Laryngoscope. Pocket	J. Boekel	543,145	July 23	2288	542	72	477
Last	E. M. Cole	543,375	July 23	2684	634	72	550
Last and tree. Combined	A. R. Wellman	545,563	Sept. 3	225	55	72	1395
Last for leveling-machines	W. E. Forster	545,881	Sept. 10	762	186	72	1506
Lasting-jack	C. F. Pym	546,188	Sept. 10	1286	307	72	1604
Lasting-machine	F. Chase	545,052	Aug. 27	2244	544, 545	72	1211
Lasting-machine	D. Lake	542,199	July 2	623	151, 152, 153	72	122
Latch	J. Henderson	542,161	July 2	557	135	72	109
Latch	O. R. Winslow	546,373	Sept. 17	1652	393	72	1692
Latch. Gate	O. A. Burton	542,753	July 16	1635	391	72	337
Latch or bolt fastening. Door	J. T. Stone	543,908	Aug. 6	138	30	72	773
Lath. Sheathing	T. H. Brown	546,221	Sept. 10	1349	320	72	1617
Lathing	M. C. Nichols	542,098	July 2	460	110	72	90
Lathe. Dead-center	G. E. Hunter	545,692	Sept. 3	444	107, 108	72	1436
Lathe. Engine	F. S. Perkins	544,115	Aug. 6	498	124	72	840
Lathe for irregular shapes	H. W. N. Cole	544,288	Aug. 13	802	203, 204, 205	72	906
Lathe for turning lasts, &c	W. F. Gilman	544,891	Aug. 20	1970	472, 473	72	1140
Lathe tool-holder	J. A. Rothwell	545,314	Aug. 27	2693	653	72	1300
Lathe work-holding device	H. Dreses and W. Barker	546,311	Sept. 17	1539	364, 365	72	1610
Lavatory-overflow	T. C. Beaumont	541,826	July 2	11	3	72	5
Lawn-sprinkler	R. T. Joy	546,537	Sept. 17	1928	458	72	1744
Lawn-sprinkler	F. E. Kohler	543,993	Aug. 6	282	69	72	800
Lawn-sprinkler	H. C. Straley	544,134	Aug. 6	527	131	72	946
Lawn sprinkler and fountain	N. L. Rigby	544,122	Aug. 6	508	126	72	842
Lawn-sprinkler or irrigator	J. P. Van Sickle	545,320	Aug. 27	2705	657	72	1301
Lawn-sprinkler stand	N. L. Rigby	542,029	July 2	350	85	72	70
Lead and white-lead pigments from lead sulfides. Obtaining metallic	A. Macdonald	544,584	Aug. 13	1378	.....	72	1011
Leather article	F. J. Bringham	545,573	Sept. 3	245	60	72	1399
Leather article. Seamless	F. J. Bringham	545,444	Sept. 3	13	4	72	1357
Leather article. Seamless	F. J Bringham	545,577	Sept. 3	248	61	72	1400
Leather coloring and polishing machine	C. W. Enos and A. W. Pratt	542,439	July 9	1084	264	72	222
Leather-dressing composition	F. A. Hurd	545,505	Sept. 3	135	.....	72	1379
Leather-folding machine	A. B. Arnold	544,399	Aug. 13	1064	259	72	940
Leather. Manufacture of marbleized	J. Scholl	545,734	Sept. 3	523	.....	72	1450
Leather-marking machine	W. S. Soule	545,919	Sept. 10	841	202, 203	72	1521
Leather-splitting machines. Grinding adjustment for belt-knife	J. Robertson	542,740	July 16	1616	386	72	333
Leather-stretching machine	M. H. Cook and J. Houston	546,089	Sept. 10	1127	269	72	1576
Leggin	L. E. Levy	545,702	Sept. 3	468	113	72	1439
Letter or numeral for shop-fronts, offices, signs, &c	A. Standring	542,947	July 16	1941	460	72	395
Letter-press	S. W. Hempsted	543,731	July 30	3402	789	72	696
Letter. Sign	F. H. Colburn	544,564	Aug. 13	1339	326	72	1004
Lettering. Skeleton	A. White	545,143	Aug. 27	2420	587	72	1245
Level. Magnetic pendulum	T. Zanger	546,501	Sept. 17	1875	444	72	1735
Level. Plumb	L. C. Raymond	544,321	Aug. 13	874	220	72	919
Leveling-machine	W. C. Hancock	545,287	Aug. 27	2650	643	72	1292
Lever-bracket. Uncoupling	C. L. Sullivan	546,201	Sept. 10	1320	313	72	1611
Life-boat	G. Bluemcke	544,608	Aug. 13	1425	346, 347	72	1019
Life-saving apparatus	R. Bustin	544,956	Aug. 20	2086	500	72	1162
Life-saving apparatus for ships	L. Parker	545,092	Aug. 27	2323	564	72	1227
Lift	A. and J. M. Shepherd	545,315	Aug. 27	2694	653, 654	72	1300
Lifter: *See* Stone-lifter. Transom-lifter.							
Lifting-apparatus brake	A. Bolzani	543,287	July 23	2558	601	72	525
Lifting device	C. A. Rohder and P. J. Bloom	543,814	July 30	3554	826	72	724
Lifting-dog	F. Beattie	542,230	July 9	683	168	72	148
Lifting-dog	F. Beattie	542,231	July 9	683	168	72	148
Lifting-dog	F. Beattie	542,232	July 9	685	168	72	148
Lifting-dog for cranes	F. Beattie	542,229	July 9	682	167	72	147
Lifting-jack	H. Holahan	542,257	July 9	726	179	72	156
Lifting-jack	W. S. Hough	544,304	Aug. 13	835	210	72	913
Lifting-jack	J. M. Lynn	546,704	Sept. 24	2204	526	72	1808
Lifting-jack	A. Rhodes	544,264	Aug. 6	766	196	72	888
Lifting-jack	G. C. Rue	545,914	Sept. 10	835	201	72	1520
Lifting-jack	E. Sherwood and L. Lake	543,407	July 23	2736	646	72	559

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Light: *See* Drop-light.							
Light-signal	D. P. Heap	543,730	July 30	3398	788, 789	72	696
Lighting apparatus. Hydrocarbon	F. Rhind	545,309	Aug. 27	2687	652	72	1299
Lightning-arrester and cut-out	O. Gieseke	546,523	Sept. 17	1910	452	72	1741
Limekiln	S. W. McLoon	546,935	Sept. 24	2582	618, 619	72	1880
Limekiln	R. and H. Vanderhoof	543,433	July 23	2706	657	72	573
Lime. Treating	H. H. Pierce	543,452	July 23	2833	.....	72	579
Line-clamp	G. K. Ashley	545,760	Sept. 3	566	136	72	1457
Line-reel	C. A. Koerner	542,564	July 9	1305	316	72	262
Linotype-machine	O. Mergenthaler	543,497	July 30	2918	687, 688	72	611
Linotype-machine	A. D. Pentz	545,530	Sept. 3	173	41	72	1386
Linotype-machine	A. D. Pentz	546,054	Sept. 10	1069	256	72	1565
Liquid-controlling device	S. Alexander	544,078	Aug. 6	434	108	72	828
Liquid-discharging mechanism	A. D. Howard	546,615	Sept. 17	2055	487	72	1768
Liquid-meter	W. M. Fowler	546,317	Sept. 17	1551	367	72	1672
Liquid-meter	E. Paccaud and F. de Coppet	544,113	Aug. 6	495	123	72	839
Liquid-tank. Self-measuring	C. M. Bridges	543,169	July 23	2353	554, 555	72	489
Loading apparatus	C. A. Clancy and J. E. Crosley	546,088	Sept. 10	1126	268	72	1576
Loading-machine	P. H. Hageney	543,769	July 30	3470	808	72	708
Lobster-trap	G. Hurst	544,100	Aug. 6	474	117	72	836
Lock: *See* Alarm-lock. Bicycle-lock. Bicycle-chain lock. Desk-lock. Door-lock. Hasp-lock. Jar-cover lock. Knob-lock. Nut-lock. Refrigerator-lock. Rim-lock. Safe-deposit lock. Sash-lock. Seal-lock. Stud-lock. Switch-lock. Temporary lock. Vehicle-seat lock.							
Lock	J. Dennis	543,679	July 30	3395	765	72	676
Lock	A. V. Jewett	542,563	July 9	1303	315	72	262
Lock	J. Mlotkowski	542,001	July 2	305	71	72	62
Lock	J. J. Ridgway	542,777	July 16	1679	400	72	344
Lock	D. A. Root	543,404	July 23	2732	645	72	559
Lock	F. Soley	545,418	Aug. 27	2807	699	72	1333
Lock	R. D. S. Tyler	546,286	Sept. 10	1487	351	72	1644
Lock-bolts. Safety device for	C. F. Roberts	543,142	July 23	2280	541	72	475
Locks. Electric winder for time	W. H. Hollar, G. L. Weaver, and A. Kennedy.	545,021	Aug. 20	2192	530, 531	72	1180
Locks. Electrically-controlled winding mechanism for time	W. H. Hollar, G. L. Weaver, and A. Kennedy.	545,020	Aug. 20	2187	529, 530	72	1180
Locks. Electroprotective system for	M. Martin	542,268	July 9	744	183	72	159
Locking device. Detonating	T. C. Smith	543,062	July 23	2137	506	72	448
Locomotive	W. P. Henazey	545,797	Sept. 3	628	152, 153	72	1470
Locomotive. Electric	T. E. Adams	542,036	July 2	361	87	72	72
Locomotive. Electric	E. H. Porter	544,685	Aug. 20	1590	381	72	1067
Locomotive. Electric	E. W. Rice, Jr	546,191	Sept. 10	1292	308	72	1605
Locomotive. Electric	S. H. Short	546,560	Sept. 17	1971	467, 468	72	1752
Locomotive feed-heater	J. P. Serve	546,683	Sept. 24	2169	516	72	1802
Locomotive signal-light	J. R. Roberts	543,354	July 23	2656	625, 626	72	544
Locomotive snow or ice flanger	A. F. Priest	544,120	Aug. 6	504	125	72	841
Locomotive-tender	P. Sattelkau and H. R. Winkelmann	545,866	Sept. 3	741	180	72	1490
Locomotive turn-table	C. R. Osborne	541,943	July 2	199	46	72	42
Log-carriage cushion	F. O. Kilgore	546,118	Sept. 10	1177	281	72	1585
Log-hauling device	A. Van Duzer and W. Kirry	545,319	Aug. 27	2703	657	72	1301
Log-rolling device	J. Vandervort, J. D. Owen, and A. L. Vandervort.	542,817	July 16	1742	414	72	355
Log-turning machine	J. G. Stoner	543,757	July 30	3445	803	72	704
Loom	G. F. Hutchins	544,356	Aug. 13	981	242	72	935
Loom	W. Wattie	544,703	Aug. 20	1625	390	72	1074
Loom. Carpet	I. J. Tuttle	545,318	Aug. 27	2700	656	72	1301
Loom drop-box mechanism	E. Ingraham	544,229	Aug. 6	691	176	72	875
Loom for weaving tufted fabrics	C. Crumpton	543,825	July 30	3582	833	72	729
Loom for weaving tufted fabrics	H. Wyman	543,820	July 30	3569	830, 831	72	727
Loom for weaving valances	I. E. Palmer	545,607	Sept. 3	300	74	72	1409
Loom Jacquard machine	T. Halton	544,532	Aug. 13	1288	311	72	993
Loom Jacquard machine	A. Lockwood	545,240	Aug. 27	2584	626, 627	72	1278
Loom Jacquard mechanism	G. Pavia	541,879	July 2	100	23, 24	72	22
Loom. Needle	H. Wyman and J. A. Clark	543,821	July 30	3572	831	72	727
Loom picker-check	F. B. Kilborn and A. B. Taplin	544,467	Aug. 13	1195	290	72	975
Loom pile-wire	G. Segschneider	545,737	Sept. 3	527	127	72	1451
Loom-shuttle	W. H. Craig	545,196	Aug. 27	2516	609	72	1265
Loom-shuttle boxes. Mouthpiece for	J. J. Nolan and J. H. Wilkie	543,629	July 30	3218	746	72	661
Loom shuttle-motion	W. F. Kintzing	542,525	July 9	1240	303	72	250
Loom-shuttle thread-tension device	H. W. Owen	546,677	Sept. 24	2160	514	72	1800
Loom stop-motion	W. H. Craig	546,418	Sept. 17	1729	410	72	1706
Loom-temple	W. Hinchliffe	546,778	Sept. 24	2335	557	72	1832
Loom-temple	E. S. Stimpson	543,788	July 30	3502	815	72	714
Loom-temple	W. I. Stimpson	545,638	Sept. 3	355	87	72	1420
Loom tuft-yarn carrier	J. A. Clark	543,080	July 23	2168	514	72	454
Loom warp stop-motion	C. F. Roper	545,728	Sept. 3	508	129	72	1448
Loom warp stop-motion	O. Smith	546,977	Sept. 24	2649	634, 635	72	1893

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Looms. Batten for narrow-ware	A. Insinger	542,386	July 9	986	243	72	203
Looms. Combined pile-wire holder and cutter for	V. Vizet	544,142	Aug. 6	537	133	72	848
Looms. Stopping mechanism for pile-wire	G. Poole	542,806	July 16	1725	411	72	352
Loop-holder	A. W. Brand	542,357	July 9	930	228	72	193
Loop-making machine	H. G. Peters	545,657	Sept. 3	377	93	72	1424
Lubricator: *See* Axle-lubricator. Railway-track lubricator. Engine-lubricator.							
Lubricator	J. H. Collins	544,960	Aug. 20	2092	501	72	1163
Lubricator	W. J. Ferguson	542,957	July 16	1957	465	72	398
Lubricator	W. J. Ferguson	544,274	Aug. 6	779	199	72	891
Lubricator	H. R. Frisbie	544,032	Aug. 6	353	88	72	813
Lubricator	C. Herold	542,826	July 16	1754	417	72	358
Lubricator	C. P. Hogue and J. W. Smith	544,173	Aug. 6	582	145, 146	72	856
Lubricator	J. Janda	544,040	Aug. 6	367	91	72	816
Lubricator	J. Kridler	543,489	July 30	2902	683	72	608
Lubricator	T. G. Lewis	545,598	Sept. 3	289	70	72	1406
Lubricator	E. Major	543,696	July 30	3321	771	72	681
Lubricator	W. J. Ruff	542,946	July 16	1939	460	72	395
Lubricator	W. E. Sweet	542,118	July 2	488	117, 118	72	97
Lubricator	T. F. Timby	545,986	Sept. 10	954	229	72	1543
Lubricator	P. S. Whiting	543,918	Aug. 6	160	37, 38	72	777
Luggage-carrier	J. H. Steen	541,889	July 2	115	27	72	25
Lumber on wagons. Device for binding	F. Fountain	546,518	Sept. 17	1903	450	72	1740
Lunch-can	W. E. Howell	543,095	July 23	2196	521	72	459
Lye. Utilizing waste	H. Brewer	544,499	Aug. 13	1242	.....	72	984
Magazine-camera	M. Boelte	541,832	July 2	22	6	72	7
Magazine-camera	D. B. Craw	543,439	July 23	2805	659	72	574
Magazine-camera	J. N. Wigle	544,493	Aug. 13	1231	298	72	982
Magazine for repeating firearms	F. E. Lodetti	545,512	Sept. 3	144	34	72	1381
Magnet-forming machine	O. P. Briggs	544,343	Aug. 13	907	227, 228	72	925
Magnets. Manufacturing electro-	H. P. Brown	546,220	Sept. 10	1346	320	72	1616
Mail and parcel pipe-express	A. D. Moore	542,682	July 16	1514	362, 363	72	316
Mail-bag	T. H. Gordon	546,763	Sept. 24	2314	552	72	1828
Mail-bag	J. Shilling, Jr	546,717	Sept. 24	2220	530	72	1812
Mail-bag and lock therefor	W. F. Beasley	542,323	July 9	863	211, 212	72	179
Mail-bag catcher	H. Albert	546,214	Sept. 10	1336	318	72	1614
Mail-bag catcher	J. E. Routh	546,599	Sept. 17	2032	482, 483	72	1764
Mail-bag catcher and deliverer	W. B. Deming, S. W. Harman, and F. H. Romans.	544,885	Aug. 20	1955	468, 469	72	1137
Mail-bag catching and delivering mechanism	G. R. Moore	544,900	Aug. 20	1993	476	72	1145
Mail-bag fastener	E. H. Walker	546,795	Sept. 24	2358	563	72	1837
Mail-bag holder	C. H. Ressler	545,308	Aug. 27	2686	652	72	1298
Mail-catcher. Railway	O. D. Rogers	545,251	Aug. 27	2600	631	72	1282
Mail crane and catcher. Railway	O. D. Rogers	545,249	Aug. 27	2597	630	72	1281
Mail-crane. Railway	O. D. Rogers	545,250	Aug. 27	2598	630	72	1282
Mail-delivery device. Railway	O. D. Rogers	545,248	Aug. 27	2595	629	72	1281
Mail-pouch	W. N. Ash	544,651	Aug. 20	1508	364	72	1052
Mailing-package	E. J. Fletcher	542,409	July 9	1020	251	72	209
Make-and-break switch	M. Moskowitz	542,772	July 16	1668	397, 398	72	343
Manhole-cover	P. J. Hickey and C. F. Norris	545,889	Sept. 10	777	190	72	1508
Manhole for electric-cable or other subways	E. L. Ransome	541,747	Aug. 20	1692	407	72	1087
Manure-scattering machine	E. Scheiblich	545,097	Aug. 27	2330	565	72	1228
Map or chart stand	W. L. Sinton	544,835	Aug. 20	1875	448, 449	72	1122
Marine boiler. Upright	W. N. Oldman	544,792	Aug. 20	1793	429	72	1107
Marker, coverer, and furrower. Combined land	A. S. Linthicum	542,391	July 9	993	245	72	204
Marker for gardens. Row-	G. L. Carruthers	546,653	Sept. 24	2120	503	72	1793
Marker, furrower, and coverer. Combined land	S. Linthicum, Jr	542,483	July 9	1161	284	72	235
Marker. Land-	W. M. Lewis	543,877	Aug. 6	88	19	72	764
Marker. Land-	W. T. Powers	544,825	Aug. 20	1849	444	72	1117
Marking-kit	C. W. Dodge	545,949	Sept. 10	886	213	72	1530
Mat: *See* Floor-mat.							
Mat and scraper. Combined	J. M. Morton	543,999	Aug. 6	290	71	72	802
Match-box	J. B. Dennis	546,583	Sept. 17	2007	477	72	1759
Match-box appliance	R. E. Rupprecht	544,691	Aug. 20	1599	383	72	1069
Match-boxes. Method of and mechanism for filling	E. B. Beecher and J. P. Wright	543,717	July 30	3365	781, 782, 783	72	689
Match-delivering device	S. H. Dickerson and F. S. Gilbert	542,333	July 9	882	217	72	183
Match-igniting safe and cigar-cutter. Combined	J. F. Zimmerman	545,932	Sept. 10	862	208	72	1525
Match-racking machine	J. D. Mantion and E. G. Shepherd	545,086	Aug. 27	2312	562	72	1225
Match-receiver. Folding mallable	F. C. Lounsbury	542,527	July 9	1243	303	72	250
Match-safe	J. B. Dennis	544,968	Aug. 20	2108	505	72	1166
Match-safe	J. Green	544,093	Aug. 6	465	114	72	834
Match-safe	J. W. Hart	541,853	July 2	56	13	72	14
Match-safe	H. E. Whitney	544,018	Aug. 6	330	81, 82	72	809
Match-splint machine	W. F. Hutchinson	544,537	Aug. 13	1292	313, 314	72	994
Match-splints. Machine for assembling	W. F. Hutchinson	544,538	Aug. 13	1294	314, 315	72	994
Matches. Apparatus for and process of making colored	C. H. Palmer	542,896	July 16	1861	441	72	379
Matrices for stereotyping. Manufacture of flongs for producing	G. Eastwood	542,847	July 16	1790	.....	72	364
Matrix-making and printing-bar-casting machine	H. Lee and E. Lebrun	542,224	July 2	667	163	72	129

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Matte and slag separating well	J. D. Davies	542,148	July 2	534	129	72	105
Mattress-frame. Metallic	A. E. Kenney	545,801	Sept. 3	632	154	72	1470
Mattress-reinforcement	W. H. Moore	543,044	July 23	2108	500	72	442
Mattress-stuffing machine	E. N. Stephenson	544,393	Aug. 13	1047	256, 257, 258	72	946
Mattress-tufting machine	E. N. Stephenson	542,289	July 9	794	194, 195, 196, 197, 198	72	166
Mausoleum	R. F. Carter	544,086	Aug. 6	453	112	72	832
Measure. Automatic liquid-	J. Cowan	545,850	Sept. 3	715	174, 175	72	1486
Measure. Garment-	S. S Start, Jr., and M. A. S. Johnson	545,139	Aug. 27	2413	585	72	1244
Measure. Shoemaker's	A. S. Adler	546,287	Sept. 17	1493	352	72	1661
Measurer and register. Grain	G. K. Holbine	543,483	July 30	2890	680	72	605
Measuring device	J. L. Ackerman	544,398	Aug. 13	1063	259	72	949
Measuring device. Cloth-	M. Ackerland	543,203	July 23	2415	567	72	500
Measuring device. Garment-	H. Kantorovitz	543,253	July 23	2502	587, 588	72	515
Measuring-instrument. Electric	E. Thomson	542,663	July 16	1484	355, 356	72	309
Measuring-instrument. Electrical	F. Holden	542,258	July 9	728	174	72	156
Measuring-instruments. Electromagnetic damper for	E. P. Warner	544,332	Aug. 13	890	223	72	922
Measuring-machine	J. L. Kellum, Jr	542,195	July 2	603	148	72	119
Measuring-tank. Gravity	J. Hall	546,399	Sept. 17	1693	402	72	1699
Measuring-tool	J. J. Booth and W. Flinn	544,475	Aug. 13	1208	292	72	977
Meat-chopper	R. L. Gore	546,384	Sept. 17	1666	395	72	1695
Meat-cutter	R. C. Ellrich	545,785	Sept. 3	605	140	72	1465
Meat-cutting machine	L. Steigert	545,180	Aug. 27	2484	602	72	1258
Meat-cutting machine	L. Steigert	546,437	Sept. 17	1761	418	72	1712
Meat-tenderer	W. G. Mumma	544,188	Aug. 6	604	151	72	860
Mechanical drier	F. D. Cummer	545,057	Aug. 27	2254	547, 548	72	1213
Mechanical drier	F. D. Cummer	545,058	Aug. 27	2256	548, 549	72	1213
Mechanical drier	F. D. Cummer	540,655	Sept. 24	2122	504	72	1794
Mechanical movement	P. Diehl	541,840	July 2	40	9	72	10
Mechanical movement	W. H. Dolmetsch	544,613	Aug. 13	1434	349, 350	72	1020
Mechanical movement	C Friederich	545,883	Sept. 10	766	187	72	1506
Mechanical movement	W. S. Johnson	542,708	July 16	1555	372	72	323
Mechanical movement	E. Layeux	545,166	Aug. 27	2456	595	72	1253
Mechanical movement	J. E. S. Medsger	543,258	July 23	2512	590	72	517
Mechanical movement	D. L. Tower	542,179	July 2	582	141	72	114
Mechanical power	C. R. Matthews	543,392	July 23	2709	640	72	555
Medical apparatus. Electro-	J. R. Etter	543,003	July 23	2031	482	72	429
Medical dry bath	T. H. Rees, E. D. T. Sheffield, and L. A. Tallerman.	544,442	Aug. 13	1140	276	72	963
Medical electrode	A. P. Van Tuyl, Jr	542,508	July 9	1206	294	72	243
Medical induction-coil	J. Tatham	544,266	Aug. 6	768	196	72	889
Medicinal preparation from blood	E. R. Kobert	541,933	July 2	184	.....	72	39
Medicinal tablets. Machine for making	L. Graf	543,599	July 30	3170	734	72	653
Medicine dose-indicator	R. Fullerton	545,481	Sept. 3	83	20	72	1370
Memorandum device. Salesman's duplicating	C. H. Milliken	544,991	Aug. 20	2139	518	72	1171
Merry-go-round	J. R. Kidder	544,230	Aug. 6	693	176, 177	72	875
Merry-go-round	R. Steel	542,690	July 16	1528	365	72	318
Metal bars. Apparatus for piling	J Kennedy	546,159	Sept. 10	1245	297	72	1597
Metal-drawing die	G E. Thackray	546,202	Sept. 10	1321	314	72	1611
Metal-drill	W. J. McGehe	541,980	July 2	268	62, 63	72	54
Metal frame and stock therefor	A. Wanner, Jr	542,547	July 9	1272	309, 310	72	256
Metal plates. Means and appliances for producing knobbed or ridged wrought	H. H. Bates	543,607	July 30	3186	739	72	656
Metal-reducing tool	J. Hartness	543,551	July 30	3027	708	72	632
Metal-shaping machine	H. Dreses	544,569	Aug. 13	1351	329	72	1006
Metal-shearing machine	C. A. Bertsch	544,281	Aug. 13	790	201	72	904
Metal strips, rods, &c. Machine for cutting	J. Bott	546,726	Sept. 24	2251	535, 536	72	1816
Metal strips. Tool for binding	P. C. Forrester	543,234	July 23	2467	579	72	509
Metal. Treating molten	E. A. Uehling	543,115	July 23	2234	530	72	466
Metal tube. Flexible	H. Witzenmann	542,300	July 9	823	202	72	171
Metal tubes. Apparatus for making	O. Friedrich and W. Schulte	545,953	Sept. 10	892	215	72	1531
Metals by electrolysis. Apparatus for extracting, separating, and refining	D. Tommasi	546,364	Sept. 17	1633	389	72	1688
Metals. Device for saving valuable and precious	J. A. Bouk and C. R. Bushnell	544,880	Aug. 20	1949	467	72	1136
Metals electrolytically. Process of and apparatus for refining	W. H. Wiggin	545,328	Aug. 27	2718	660	72	1304
Metals. Finishing	D. J. Hurley	543,303	July 23	2582	.....	72	531
Metals from foreign substances. Separating	H. H. Whitacre and A. C. Wolfe	542,911	July 16	1889	448	72	385
Metals. Process of and apparatus for separating	M. A. J. Roux	547,753	July 30	3432	797	72	702
Metallic strips. Apparatus for twisting and reeling	T. V. Allis	542,513	July 9	1217	296	72	245
Meter: *See* Electric meter. Liquid-meter. Gas-meter. Water-meter. Grain-meter.							
Meter for alternating electric currents	L. Gutmann	543,089	July 23	2184	518	72	457
Meter-prepayment attachment	H. W. Williams	546,265	Sept. 10	1438	341	72	1633
Mica for boiler-coverings, &c. Manufacture of flake-	H. C. Michell	545,605	Sept. 3	298	73	72	1409
Mica-grinding mill	J. G. Skelton	546,197	Sept. 10	1309	312	72	1608
Micrometer-gage	C. F. Bowman	541,916	July 2	158	38	72	34

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Microphone	H. Carbonelle	542,822	July 16	1748	415	72	357
Milk-can	T. W. Forster	546,140	Sept. 10	1214	290	72	1591
Milk-heater	C. H. Woodard	542,400	July 9	1010	248	72	208
Milk heating, aerating, and cooling device	J. F. Woodyard	543,713	July 30	3355	778	72	687
Milk-vessel case	W. G. Hart	544,097	Aug. 6	471	116	72	835
Milker. Cow-	F. H. Hillman and E. J. Guile	543,868	Aug. 6	70	16	72	761
Milking apparatus upon cows. Device for suspending mechanical	C. G. P. de Laval	544,813	Aug. 20	1827	438, 439	72	1114
Mill: *See* Crushing-mill. Hominy-mill. Crushing and grinding mill. Mica-grinding mill. Feed-mill. Rolling-mill. Grinding-mill. Sawmill. Windmill.							
Mill-carriages. Automatic reverser and safety-check for	D. P. Heath	545,074	Aug. 27	2295	557, 558	72	1221
Mill products. Proportional indicator for	A. C. Brantingham	546,413	Sept. 17	1717	407	72	1703
Milling-machine	J. L. Bogert	542,461	July 9	1129	276	72	229
Millstone balancing and leveling device	W. Weber	546,500	Sept. 17	1874	444	72	1735
Mine. Submarine	W. M. Huskisson	542,732	July 16	1590	380, 381	72	329
Mine trap-door	G. Bonenberger	544,498	Aug. 13	1241	300	72	984
Mineral concentrating or separating machine	C. E. Barling	546,001	Sept. 10	979	237	72	1547
Mining-drill	R. H. Elliott and J. B. Carrington	542,153	July 2	540	131, 132	72	106
Mining-drill	J. E. Hart	546,098	Sept. 10	1145	274	72	1579
Mining-machine	J. L. Beury and J. T. Cressey	544,424	Aug. 13	1098	267, 268	72	955
Mining-machine	J. L. Mitchell	545,168	Aug. 27	2459	596, 597	72	1253
Mirror	C. P. Mosher and N. R. Streeter	542,594	July 9	1349	326	72	270
Mirror attachment for dressers, &c	T. W. Noxon	542,860	July 16	1806	428	72	367
Mirror. Hat-	J. Best and C. J. Knox	542,405	July 9	1016	250	72	209
Mirror-maze	G. Castan	545,678	Sept. 3	427	102, 103	72	1433
Mirrors, &c. Universally-movable support for	J. F. Hanlon	544,300	Aug. 13	830	209	72	912
Miter-box	A. D. Goodell	548,092	Aug. 6	463	114	72	834
Miter-box	K. L. Hyller	546,887	Sept. 24	2505	598	72	1865
Miter-box	T. E. King	544,042	Aug. 6	370	91, 92	72	817
Miter-box	S. Levan	542,738	July 16	1613	385	72	332
Mitten	A. R. Burpee	545,875	Sept. 10	756	184	72	1505
Mitten and knitting same	J. C. Farnam	542,823	July 16	1749	416	72	357
Modeling-board	A. E. Maltby	542,528	July 9	1244	303	72	250
Moistener and paper-weight	H. R. Harris	542,888	July 16	1852	479	72	377
Moistening apparatus	D. H. Sleem	545,103	Aug. 27	2345	568	72	1231
Mold: *See* Bullet-mold. Casting-mold.							
Mold	E. L. Ransome	545,974	Sept. 10	932	223	72	1539
Mold and operating mechanism therefor	G. E. Post	544,686	Aug. 20	1590	381, 382	72	1067
Molds. Forming sand	S. J. Adams	544,423	Aug. 13	1097	267	72	955
Molder's flask	J. Barker	546,218	Sept. 10	1343	319	72	1615
Molder's flask	L. W. Bontelle	544,560	Aug. 13	1333	324	72	1002
Molding apparatus	J. F. Hay	546,736	Sept. 24	2266	539	72	1819
Molding-machine	W. L. Belknap	542,038	July 2	365	88	72	73
Molding-machine	J. E. Donovan	542,304	July 9	828	203, 204	72	172
Mop	G. B. and R. E. Green	544,252	Aug. 6	746	191	72	884
Mop-head	C. Morgan	542 343	July 9	902	221	72	187
Mop holder and wringer	A. M. Bien	542,134	July 2	512	123	72	102
Mop-wringer	A. T. Lainson	541,935	July 2	187	43	72	40
Mop-wringer	J. C. Merten and G. W. Fagan	544,641	Aug. 13	1487	360	72	1031
Mop-wringer	C. Wilson	546,209	Sept. 10	1330	316	72	1613
Mortising-machine. Endless-chain cutter	C. S. Moseley	542,593	July 9	1348	326	72	270
Motor: *See* Asynchronous motor. Hydrocarbon-motor. Bicycle-motor. Power-motor. Current-motor. Rotary-disk motor. Electric motor. Spring-motor. Electrically-controlled motor. Spring-operated motor. Engine-motor. Steam-motor. Fluid-pressure motor. Vehicle-motor. Gas or other like motor. Water-motor. Wave-motor. Wind-motor.							
Motor	W. B. Bary	546,481	Sept. 17	1843	436, 437	72	1729
Motor	G. B. Wiggins	546,723	Sept. 24	2231	533	72	1814
Motor reversing-switch. Four-	F. E. Case	543,670	July 30	3278	762	72	673
Motors. Regulation of continuous-current	M. J. Wightman	542,667	July 16	1491	357	72	311
Mower attachment. Lawn-	F. Thiel and F. Ehrhardt	542,696	July 16	1540	367	72	320
Mower cutter-bar. Lawn-	W. C. Allen	545,934	Sept. 10	866	209	72	1526
Mower. Lawn-	J. Braun	542,235	July 9	690	169	72	149
Mower. Lawn-	E. Ingleton	543,736	July 30	3410	791	72	698
Mowing-machine	E. G. Staude	546,200	Sept. 10	1316	313	72	1610
Mucilage-holder. Fountain	S. L. Young and J. A. Norris	544,452	Aug. 13	1169	283	72	970
Mud-pan	H. R. June	544,064	Aug. 6	411	103	72	825
Muffler. Exhaust-	R. B. Hain	546,814	Sept. 24	2390	571	72	1843
Multiple-cylinder engine	O. Vezin	545,988	Sept. 10	958	230	72	1544
Multiple-cylinder engine	O. Vezin	545 989	Sept. 10	960	230, 231	72	1544
Multiple-cylinder engine	O. Vezin	545,990	Sept. 10	962	231, 232	72	1544

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Music-box damping device	C. H. R. Bock and E. M. A. Wacker	543,286	July 23	2557	600	72	525
Music holder and turner	E. G. Butterfield	544,842	Aug. 20	1864	452	72	1124
Music-leaf turner	D. T. Fox	546,519	Sept. 17	1904	450	72	1740
Music-leaf turner	W. B. Purdy	545,659	Sept. 3	381	94	72	1425
Music-leaf turner	W. E. Somers	546,908	Sept. 24	2537	606, 607	72	1871
Music-leaf turner	M. Thomsen and S. E. Allerton	541,900	July 2	133	32	72	29
Music-sheet for mechanical instruments	P. Ehrlich	546,133	Sept. 10	1201	296	72	1589
Music-stand. Folding	J. Berg	544,022	Aug. 6	335	83	72	810
Music-support	A. B. Buckland	541,834	July 2	96	7	72	8
Musical instrument	G. Almcrantz	542,788	July 16	1693	403	72	347
Musical instrument	E. J. Babbitt	546,374	Sept. 17	1654	393	72	1692
Musical instrument	H. I. Holcomb	542,561	July 9	1301	315	72	261
Musical instrument. Pneumatic	R. A. Gally	545,156	Aug. 27	2441	592	72	1250
Musical-instrument string	E. Wähner	542,719	July 16	1572	376	72	336
Musical instrument. Stringed	W. B. Owen and J. H. Crowell	542,533	July 9	1252	305	72	252
Musical-instrument stringing device	E. L. Gosse	542,157	July 2	552	134	72	108
Musical instruments. Mouthpiece for metal	C. G. Schuster	546,939	Sept. 24	2587	620	72	1861
Musical instruments. Tracker for mechanical	H. C. Reichardt	544,322	Aug. 13	875	220	72	930
Musk and making same. Artificial	A. Bischler	546,086	Sept. 10	1123	.....	72	1575
Muzzle	J. B. Miller	545,307	Aug. 27	2538	614	72	1269
Nail assorting and delivering mechanism	T. K. Keith and G. H. Clark	542,616	July 9	1392	336, 337	72	279
Nail drivers. Nose-piece for loose-	L. Goddu	545,487	Sept. 3	105	25	72	1374
Nail-machine	R. Johnson	543,447	July 23	2826	663	72	578
Nail making and driving machine cutter	J. Boothman	546,577	Sept. 17	1999	474	72	1757
Nails. Machine for making and driving wire	J. B. Noyes	545,523	Sept. 3	162	38	72	1384
Nailing-machine feeder	J. J. Hayes	543,683	July 30	3302	767, 768	72	677
Nailing-machines. Nail-box for automatic	H. H. Higham	544,226	Aug. 6	684	174	72	874
Name-plate. Bicycle	C. W. Vosmer	544,524	Aug. 13	1279	309	72	991
Name-plate for tombstones, &c	H. K. Cotton	543,229	July 23	2457	577	72	507
Nap-raising machine	W. Holland	544,536	Aug. 13	1291	312	72	994
Napkin-holder	A. Dormitzer	546,658	Sept. 24	2196	505	72	1794
Napkin-holder	T. B. Lepley	542,267	July 9	742	182	72	159
Napkin-holder	A. A. Vernon	546,566	Sept. 17	1983	470	72	1754
Necktie-fastener	C. Molé	544,820	Aug. 20	1843	443	72	1116
Necktie-fastener	G. H. Russell	542,031	July 2	355	86	72	71
Necktie-holder	J. F. Durlacher	543,928	Aug. 6	174	41	72	780
Necktie-retainer	R. S. Bushnell	545,876	Sept. 10	757	184	72	1505
Necktie-slide	J. G. Maier	543,881	Aug. 6	95	21	72	765
Neckwear-fastener	J. M. Guilbert	542,473	July 9	1146	280	72	232
Neckwear-fastening pin	J. Weil	545,326	Aug. 27	2716	660	72	1303
Net. Fly-	W. Kootz	546,860	Sept. 24	2459	589	72	1857
Net-frame. Collapsible landing	A. F. and W. Meisselbach	546,023	Sept. 10	1016	244	72	1555
Newspaper-selling apparatus. Automatic	A. Abelson and L. Lesser	545,436	Sept. 3	1	1	72	1355
Nipple and cap. Filling	J. Jauch	544,409	Aug. 13	1078	263	72	951
Nitropentaerythrit. Making	B. Thieme	541,899	July 2	132	.....	72	29
Note-plates or note-barrels. Machine for punching	P. Kennedy	545,896	Sept. 10	786	191, 192, 193	72	1510
Nozzle. Exhaust-	H. O. Olson	546,495	Sept. 17	1865	442	72	1733
Nozzle-regulator	A. Chavanne	543,228	July 23	2455	577	72	507
Nozzle spraying attachment	A. Patterson	544,928	Aug. 20	2039	487	72	1153
Nozzle. Reversible spray-	M. Hannigan and M. McKenna	542,825	July 16	1753	416, 417	72	358
Nozzle. Variable exhaust-	W. E. Symons	541,893	July 2	120	29	72	26
Numbering-machine	J. R. Carter	542,358	July 9	931	228, 229, 230	72	193
Numbering-machine	T. F. Geary and W. E. Bracewell	546,382	Sept. 17	1663	395	72	1694
Numbering-machine	F. Meisel	542,368	July 9	952	233, 234	72	196
Nut-lock	G. H. Beaumont	541,825	July 2	10	3	72	5
Nut-lock	F. W. Coleman	545,776	Sept. 3	590	142	72	1462
Nut-lock	J. C. Crum	543,176	July 23	2364	557	72	491
Nut-lock	C. L. Danforth	543,958	Aug. 6	226	55	72	790
Nut-lock	J. Evinof	542,879	July 16	1635	435	72	374
Nut-lock	J. Lachance	543,027	July 23	2071	492	72	436
Nut-lock	G. P. Leroux	543,695	July 30	3321	771	72	681
Nut-lock	J. M. Martin, Jr	546,173	Sept. 10	1269	303	72	1601
Nut-lock	F. A. Mershon	545,515	Sept. 3	149	36	72	1382
Nut-lock	F. A. Mershon	545,516	Sept. 3	151	36	72	1382
Nut-lock	H. V. Padfield	546,184	Sept. 10	1282	306	72	1603
Nut-lock	J. W. Spriegel	545,742	Sept. 3	533	138	72	1452
Nut-lock	J. D. Tynes	545,617	Sept. 3	313	77	72	1411
Nut-lock	W. Woolcock	544,605	Aug. 13	1422	345	72	1018
Nut-lock and rail-joint	J. P. Warner	546,107	Sept. 10	1159	276	72	1582
Nut lock or washer	G. W. Gillette	544,507	Aug. 13	1255	303	72	986
Nut or fruit washer	L. R. Butler	542,438	July 9	1082	264	72	222
Nut. Sectional	J. E. Boegen	543,205	July 23	2419	568	72	501
Nut-sheller	J. Prade	542,104	July 2	406	112	72	91
Nut-tapping machine	N. B. Wood	544,494	Aug. 13	1233	299	72	982
Nut wrench. Axle-	A. R. Yount	546,752	Sept. 24	2207	546	72	1825
Nuts. Locking-	J. Evinof	542,878	July 16	1634	435	72	374
Oar. Bow-facing	T. J. Murphy	543,650	July 30	3250	755	72	668
Oar. Bow-facing	E. Pink	541,946	July 2	203	47	72	43
Oar-lock	J. Peterson	543,314	July 23	2600	611	72	534
Octave-coupler	H. W. Hakes	545,888	Sept. 10	776	189	72	1508
Oil. Apparatus for producing incandescent light from hydrocarbon	C. E. White	545,398	Aug. 27	2821	687	72	1324
Oil-burner	R. H. Laird	545,236	Aug. 27	2579	625	72	1278
Oil-cake trimmer	J. S. Ovens	545,716	Sept. 3	492	119	72	1444
Oil-can	G. A. Foster	543,472	July 30	2869	673	72	601

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Oil-can	W. N. Green	545,285	Aug. 27	2647	643	72	1291
Oil-can	F. E. Heinig	546,467	Sept. 17	1822	431	72	1724
Oil-can	A. C. Smith	546,254	Sept. 10	1415	336	72	1629
Oil-can	H. J. Vogel	544,756	Aug. 20	1704	410	72	1089
Oil-can and lamp-filler	J. P. Rogers	543,054	July 23	2127	504	72	446
Oil-cup	T. James	542,854	July 16	1799	426	72	366
Oil-distributer	J. Ericson and A. Phinney	546,485	Sept. 17	1851	438	72	1730
Oil extractor and drier	W. S. Pierce	546,708	Sept. 24	2209	527	72	1809
Oil-feeder. Automatic	W. S. Reed and F. R. Stevenson	545,108	Aug. 27	2353	569	72	1233
Oil-press	J. Koch	543,343	July 23	2641	621, 622	72	541
Oil-tank	G. M. Nyström and A. C. Lembke	544,416	Aug. 13	1086	265	72	953
Oils or fats. Purifying	F. Burton	543,079	July 23	2167	.....	72	454
Oils or fats. Purifying	G. A. Freyss	542,758	July 16	1641	.....	72	338
Oiler for screw-cutting dies. Automatic	A. Elmendorf	543,001	July 23	2029	482	72	428
Oiling vehicle-axles. Device for	C. T. Moorman	542,064	July 2	411	100	72	81
Onyx from pyroxylin compound. Production of imitation	J. H. Stevens and E. D. Harrison	546,360	Sept. 17	1626	387, 388	72	1687
Opera-chair	T. M. Miller	544,541	Aug. 13	1300	316, 317	72	995
Opera-glass and handle therefor	J. Murphy, O. F. Engwall, and C. A. Tiden.	544,643	Aug. 13	1491	361	72	1031
Operating table or chair	G. Pitkin	544,117	Aug. 6	500	124	72	840
Ordnance	J. Graham	544,914	Aug. 20	2018	481	72	1149
Ordnance. Breech-loading	J. B. G. A. Canet	545,773	Sept. 3	587	142	72	1461
Ordnance. Breech-loading	R. B. Dashiell	544,637	Aug. 13	1476	358, 359	72	1029
Ordnance breech mechanism	C. G. Mellstrom	545,902	Sept. 10	810	195, 196, 197	72	1515
Ordnance breech mechanism	A. Silfversparre	542,379	July 9	971	239, 240	72	200
Ore-concentrator	F. D. Darragh, C. W. Betts, and J. A. Kilton.	544,290	Aug. 13	809	205, 206	72	908
Ore-concentrator	W. H. Moore	543,043	July 23	2106	499	72	442
Ore-roasting furnace	H. P. Holland	544,761	Aug. 20	1712	413	72	1090
Ore-roasting furnace	H. P. Holland	546,450	Sept. 17	1787	424, 425	72	1717
Ores by electrolysis. Process of and apparatus for extracting	E. W. Clark	544,610	Aug. 13	1427	347	72	1019
Ores. Dephosphorizing iron	W. B. Phillips	542,171	July 2	570	.....	72	112
Ores or other similar materials. Separator or concentrator for	G. M. Reed	544,828	Aug. 20	1862	446, 447	72	1120
Ores. Process of and apparatus for working argentiferous or auriferous	E. Noriega	544,925	Aug. 20	2034	485	72	1152
Ores. Treating zinc-bearing	E. A. Ashcroft	546,873	Sept. 24	2475	593	72	1800
Organ	L. K. Fuller	543,526	July 30	2986	700	72	623
Organ	M. Hetherington	542,221	July 2	663	162	72	128
Organ-bellows tension-evener	R. A. Gally	546,956	Sept. 24	2621	627	72	1888
Organ. Reed	W. Seybold	545,100	Aug. 27	2333	566	72	1228
Organ-reed-milling machine	H. B. Tibbitts	545,831	Sept. 3	681	166	72	1479
Organs. Electromagnet for pipe	E. S. Votey	546,834	Sept. 24	2423	580	72	1849
Organs. Key-holding device for pipe	H. E. Hodgson	542,054	July 2	390	94	72	78
Oven. Bake	H. F. W. Hueg	542,338	July 9	894	219, 220	72	185
Oven. Bake	E. A. C. Petersen	543,779	July 30	3490	812	72	712
Oven. Baker's	G. and F. Blendinger and J. B. Geyser.	546,755	Sept. 24	2302	547, 548	72	1826
Oven. Domestic	A. Lindemann	545,511	Sept. 3	142	33, 34	72	1380
Overseam work. Combined fabric and threads in	H. H. Fefel	544,465	Aug. 13	1191	289	72	974
Overshoe-retainer for felt boots	J. Craven	546,065	Sept. 10	1091	261	72	1569
Oyster-dredge	M. Nielsen	546,181	Sept. 10	1280	305	72	1603
Oyster-opening machine	F. Zucchini	545,329	Aug. 27	2720	660	72	1304
Package for pulverulent materials	D. H. Greene	546,526	Sept. 17	1914	453	72	1742
Package making and filling machinery	H. E. Smyser	544,697	Aug. 20	1611	387	72	1071
Package. Safety	F. P. Harned	544,729	Aug. 20	1667	400	72	1082
Package. Sealed	O. S. Fellows	545,465	Sept. 3	54	13	72	1365
Package. Sealed	O. S. Fellows	545,466	Sept. 3	55	13	72	1365
Package. Sealed	O. S. Fellows	545,467	Sept. 3	57	13	72	1365
Package. Shipping	J. B. Alliger	541,820	July 2	1	1	72	3
Packages in stores. Device for handling	R. P. Adams	544,555	Aug. 13	1328	323	72	1001
Packer. Subsurface	H. W. Campbell	545,342	Aug. 27	2730	664	72	1307
Packing and wrapping machines. Feeding attachment for	H. D. Whipple	545,564	Sept. 3	227	55	72	1395
Packing for pistons, valves, &c.	W. A. Braden	542,137	July 2	516	124	72	102
Packing for reciprocating valve-stems	D. E. Sullivan	544,523	Aug. 13	1277	308	72	990
Packing for stuffing-boxes. Metallic	H. Friese	543,300	July 23	2574	605	72	529
Packing. Metallic	T. Crabtree	545,580	Sept. 3	253	62	72	1400
Packing. Metallic	E. L. Raynsford	542,106	July 2	469	113	72	92
Packing. Metallic	W. E. Symons and T. Smith	541,894	July 2	121	29, 30	72	27
Packing. Metallic rod	J. L. Barker	545,761	Sept. 3	569	136	72	1457
Packing. Piston-rod	E. Huber and J. W. Miller	545,292	Aug. 27	2661	645	72	1293
Pad: *See* Check-pad, Gun recoil-pad, Hoof-pad, Horse interfering-pad, Knee-pad, Surgical pad.							
Paddle	P. K. Mannes	545,706	Sept. 3	472	114	72	1440
Paddle-wheel	D. S. Dark	542,992	July 23	2015	479	72	425
Padlock	C. H. Johnson	542,194	July 2	607	147	72	119
Padlock. Permutation	S. Bozano	546,969	Sept. 24	2637	632	72	1891
Pail attachment. Milk	R. D. Smith	542,575	July 9	1322	320	72	265
Pail. Dinner	C. E. Bertels	543,327	July 23	2616	615	72	537
Pail. Dinner	C. E. Bertels	545,007	Aug. 20	2168	524	72	1476
Pail-hook	S. C. Cary	546,840	Sept. 24	2431	582	72	1850

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Paint	P. Inch	546,888	Sept. 24	2508	.....	72	1866
Paint compound	P. Kwarneberg	543,308	July 23	2593	.....	72	533
Paint. Roofing	W. T. Leathers	542,086	July 2	442	.....	72	87
Painting machine. Wheel	M. Arbuckle	546,216	Sept. 10	1340	319	72	1615
Pan: *See* Ash and soot pan, Bake-pan, Baking-pan, Mud-pan, Saucepan.							
Pan-emptying machine	E. S. Fickes	544,911	Aug. 20	2015	480	72	1149
Panoramic camera	H. G. Wood	543,281	July 23	2547	598, 599	72	523
Paper bag	A. Herzing	546,853	Sept. 24	2450	587	72	1854
Paper-bag and envelope cabinet	J. P. Klug	545,903	Sept. 3	636	155	72	1471
Paper-bag machine	C. Crist	543,571	July 30	3059	714, 715, 716	72	638
Paper-bag machine	S. E. Pettee	542,447	July 9	1097	267, 268, 269, 270, 271	72	224
Paper box	F. Knobeloch	546,767	Sept. 24	2320	553	72	1829
Paper-box-covering machine	C. W. Hobbs	542,384	July 9	982	242	72	202
Paper-box-covering machine	J. Leo	546,489	Sept. 17	1858	440	72	1731
Paper box. Folding	J. H. Bitterlich	546,807	Sept. 24	2380	568	72	1840
Paper-box machine	J. C. Blundell	545,219	Aug. 27	2554	618, 619, 620	72	1273
Paper-box machine	C. W. Gay	546,318	Sept. 17	1554	367, 368	72	1673
Paper-box machine	C. W. Hobbs	543,869	Aug. 6	72	16	72	762
Paper-box machines. Cutting mechanism for	C. W. Hobbs	542,385	July 9	984	242	72	202
Paper-box-making machine	E. H. Taylor	541,953	July 2	214	50, 51, 52, 53	72	45
Paper boxes. Machine for manufacture of	E. H. Taylor	542,225	July 2	669	163, 164, 165	72	130
Paper boxes. Mechanism for constructing	H. A. Willard	543,819	July 30	3568	830	72	736
Paper can	G. H. Bartlett	544,525	Aug. 13	1279	309	72	991
Paper case. Toilet	S. Hughes	546,849	Sept. 24	2443	586	72	1853
Paper, circulars, &c. Device for distributing	J. T. Hoyt	546,154	Sept. 10	1236	295	72	1595
Paper coating and drying apparatus	G. J. Burns	545,674	Sept. 3	418	101	72	1431
Paper corrugating and facing machine	J. T. Ferree	545,354	Aug. 27	2753	668	72	1310
Paper-cutter, book-marker, and fastener combined	J. H. and A. R. Munro	542,273	July 9	764	188	72	161
Paper-cutting machine. Self-clamping	A. Malm	546,454	Sept. 17	1801	426, 427	72	1720
Paper-cutting machines. Cutting-stick for	W. B. Sheffield	542,689	July 16	1527	365	72	318
Paper doll	E. T. Gibson	543,767	July 30	3463	807	72	707
Paper-feeding machine	T. A. Briggs	545,622	Sept. 3	320	79, 80	72	1413
Paper-feeding machine	L. C. Hopkins	545,863	Sept. 3	734	178, 179, 180	72	1489
Paper-feeding machine	L. C. Hopkins	545,864	Sept. 3	736	179, 180	72	1490
Paper-feeding machine	J. H. Knowles	544,764	Aug. 20	1721	414, 415, 416	72	1092
Paper fixture. Toilet	E. Morgan and O. H. Hicks	543,556	July 30	3034	709	72	633
Paper holder and cutter. Roll	D. McLachlan	546,339	Sept. 17	1590	377	72	1680
Paper holder. Toilet	W. L. Pattiani	544,588	Aug. 13	1387	338	72	1012
Paper-holding clamp	M. B. Schnauder	546,192	Sept. 10	1294	308, 309	72	1606
Paper-holding-stand attachment	D. F. Walker	544,016	Aug. 6	328	81	72	809
Paper-machine wire-cloth protector	A. Young	542,581	July 9	1330	322	72	266
Paper-making machines. Suction device for	H. Fairbanks and H. Parker	545,788	Sept. 3	615	149	72	1467
Paper packets. Machine for wiring	L. H. Stellmann	545,419	Aug. 27	2869	699, 700	72	1332
Paper-roll for sales-pads	W. H. Breakspear, O. Spannaus, and C. Weisbecker.	543,330	July 23	2621	615	72	538
Paper-roll holder and cutter	E. Morgan	543,555	July 30	3033	709	72	633
Paper-rolls. Protective guard	C. L. Duval	542,728	July 16	1584	378	72	328
Paper-tube machine	C. Howells	542,192	July 2	602	146, 147	72	118
Paper vessel and making same	W. W. McEwan	546,179	Sept. 10	1276	304	72	1602
Paper-winding machine	N. H. Brokaw	545,449	Sept. 3	17	5	72	1358
Paring and slicing knife	J. Cromwell	542,606	July 9	1376	332	72	276
Paris-green or fertilizer distributer	J. W. Spangler	544,012	Aug. 6	317	79, 80	72	807
Paste. Adhesive	C. M. Higgins	546,401	Sept. 17	1695	.....	72	1700
Pasteboard bandboxes. Machine for making	H. F. Clark	544,026	Aug. 6	341	84, 85, 86	72	811
Pasting and mounting sheets. Machine for	H. Carlisle	546,506	Sept. 17	1884	446	72	1736
Pattern. Adjustable	C. W. Snyder	546,199	Sept. 10	1314	312	72	1609
Pattern-binding machine	W. L. C. Niles	543,777	July 30	3485	811, 812	72	711
Pavements. Apparatus for repairing asphalt	A. H. Perkins	542,349	July 9	910	223, 224	72	188
Paving-machine	W. Y. Ober	544,746	Aug. 20	1690	407	72	1086
Pea or bean huller	W. Weaver	545,003	Aug. 20	2164	523	72	1175
Pea shelling machine	J. H. Empson	546,095	Sept. 10	1139	272, 273	72	1578
Peas. Cleaning green	R. P. Scott and J. A. Chisholm	542,810	July 16	1730	412	72	353
Pedometer	A. Reinisch and L. Kratochwil	542,107	July 2	470	113	72	92

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Pegging-jack	W. H. Dillon	546,587	Sept. 17	2015	478	72	1760
Pen	F. J. W. Fischer	546,515	Sept. 17	1899	449	72	1739
Pen and pencil case	C. W. Boman	544,609	Aug. 13	1426	347	72	1019
Pen and pencil case	C. W. Boman	545,010	Aug. 20	2173	525	72	1177
Pen and stylus. Writing	J. A. Stege	545,140	Aug. 27	2415	585	72	1244
Pen. Drawing	F. W. Lepper	546,850	Sept. 24	2444	586	72	1853
Pen. Fountain	W. W. Stewart	542,450	July 9	1107	271, 272	72	225
Pen. Fountain	R. W. Whitney	544,707	Aug. 20	1634	391	72	1075
Pen-guard for ruling purposes	P. R. Stevens	544,600	Aug. 13	1416	344	72	1017
Penholder	T. C. Campbell	542,144	July 2	527	127	72	104
Pen-receptacle	J. H. Hayden	545,497	Sept. 3	121	28	72	1377
Pen reservoir attachment	G. W. Dally	545,349	Aug. 27	2748	666	72	1309
Pen. Twin-pointed	A. Kline	544,179	Aug. 6	589	147	72	858
Pencil	P. E. Wirt	544,712	Aug. 20	1641	393	72	1076
Pencil-case	O. Härpfer	544,533	Aug. 13	1289	312	72	993
Pencil-guard	A. Fornander	544,429	Aug. 13	1114	270	72	950
Pencil-holder	W. E. Karns	544,671	Aug. 20	1566	374	72	1063
Pencil-holder	W. Wilson	545,641	Sept. 3	358	88	72	1420
Pencil-holder. Pocket	E. S. Smith	544,392	Aug. 13	1046	255	72	946
Pencil-sharpener	J. Deutschbein	545,350	Aug. 27	2748	666	72	1309
Pencil-sharpener	W. Duffield	543,727	July 30	3393	787	72	695
Perforator	W. O. Gottwals	545,793	Sept. 3	622	151	72	1469
Perforator	H. G. Miller	545,711	Sept. 3	485	117	72	1443
Perspiration, &c. Means for promoting	J. L. R. Weiss	542,951	July 16	1951	463	72	397
Pessary	G. J. Gladman	544,091	Aug. 6	461	114	72	833
Petroleum. Refining	H. Frasch	542,849	July 16	1792	.....	72	365
Petroleum. Refining Canadian or similar	H. Frasch	543,619	July 30	3203	743	72	659
Phase relations. Controlling	C. P. Steinmetz	543,907	Aug. 6	136	30	72	773
Phases and rotary fields. Production of displaced	C. S. Bradley	546,756	Sept. 24	2304	548, 549	72	1826
Phenoxacetic anilids, &c. Producing	L. Lederer	543,579	July 30	3072	.....	72	641
Phonogram-reproducing apparatus	E. H. Amet	545,439	Sept. 3	5	2	72	1356
Phonograph	T. A. Edison	541,923	July 2	171	40	72	37
Phonograph	T. A. Edison	541,924	July 2	173	41	72	37
Phosphates soluble in dilute citric acid. Making	D. T. Day	542,080	July 2	434	.....	72	85
Photochromoscope and photochromoscope-camera	F. E. Ives	546,889	Sept. 24	2509	599	72	1866
Photograph holder and exhibitor	H. Borgersen	545,192	Aug. 27	2512	607	72	1264
Photograph-stand. Pillar	I. Werthen	546,751	Sept. 24	2296	546	72	1825
Photographic camera. Automatic	E. J. Gregory	544,669	Aug. 20	1558	373, 374	72	1061
Photographic camera. Series	G. Demeny	544,480	Aug. 13	1215	294, 295	72	979
Photographic cardboard. Apparatus for applying sheets to	S. H. Stinson	543,064	July 23	2140	507	72	449
Photographic developing-tray	W. I. Rood	546,347	Sept. 17	1607	383	72	1683
Photographic-plate holder	J. Stock	543,585	July 30	3081	722	72	642
Photographic retoucher	C. B. Mortland	544,681	Aug. 20	1581	379	72	1066
Photographic shutter	L. J. R. Holst	542,764	July 16	1649	394	72	339
Photographic shutter	S. Slayton	546,198	Sept. 10	1311	312	72	1609
Piano	A. N. Adams	541,913	July 2	153	36	72	33
Piano-action	J. Blüthner	543,371	July 23	2681	633	72	549
Piano-action	J. W. Darley, Jr	543,799	July 30	3531	821	72	720
Piano-action	H. Wagner	541,905	July 2	143	35	72	31
Piano attachment	F. K. Natecz	543,538	July 30	3005	704	72	627
Piano. Electrical	G. W. Davis	546,582	Sept. 17	2005	476	72	1758
Piano fall-board	M. Waldecker	545,926	Sept. 10	853	206	72	1523
Pianoforte	J. H. Phelps	543,505	July 30	2939	691	72	614
Piano-frame	G. D. B. Prescott and M. A. Nowell	545,814	Sept. 3	654	159	72	1475
Piano frame and bridge	D. L. Rice	546,709	Sept. 24	2210	527	72	1809
Piano muffler or damper	W. A. Bein	542,132	July 2	508	122	72	101
Piano-pedal action	A. F. Norris	544,110	Aug. 6	492	122	72	839
Pianos or organs. Keyboard for	W. S. Moses	542,272	July 9	762	187	72	161
Pianos or organs. Substituting and transposing keyboard for	W. S. Moses	542,271	July 9	759	186	72	160
Pianos. Repeating-action for grand	J. Blüthner	543,370	July 23	2680	632, 633	72	549
Pick or like tool	S. Boyton	546,505	Sept. 17	1882	445	72	1736
Picker: *See* Cotton-picker. Fruit-picker. Cucumber-picker. Hop-picker.							
Picker-sticks. Cushioned stop for	R. T. Taylor	546,563	Sept. 17	1977	469	72	1753
Picking-machine	S. D. Mosher	544,185	Aug. 6	597	149	72	859
Pickling-machine	L. N. McCarter	545,412	Aug. 27	2857	696	72	1331
Picture	L. Knoefel	544,921	Aug. 20	2027	483	72	1151
Picture-frame	C. F. Herbert	546,151	Sept. 10	1230	294	72	1594
Picture-hanger, wall-pocket, and hat-rack. Combined	J. House	543,735	July 30	3409	791	72	698
Picture-moldings. Device for hanging	J. Christmann	546,507	Sept. 17	1887	446	72	1737
Picture. Translucent	A. von Cotzhausen	541,836	July 2	34	.....	72	9
Pictures. Producing colored gelatine	F. Thuringer	542,785	July 16	1691	.....	72	347
Pictures projected upon screens by magic lanterns are seen in relief. Method by which	J. Anderton	542,321	July 9	859	210	72	179
Pie-plant-cutting machine	D. M. Mefford	545,432	Aug. 27	2896	704	72	1339
Pigeon-trap	J. L. Mott, Jr	544,186	Aug. 6	599	150	72	859
Pile-supporter	G. C. Ormerod	543,400	July 23	2723	643	72	557
Pile-wire	C. Ford	546,517	Sept. 17	1901	450	72	1740
Pill-coating machine	D. M. Holbrook	542,612	July 9	1385	334, 335	72	278
Pills. Coating	D. M. Holbrook	542,611	July 9	1384	334	72	278
Pin: *See* Neckwear-fastening pin.							
Pin-shield	E. Case	543,171	July 23	2355	555	72	489
Pin-wheel blank	C. A. Montgomery	546,456	Sept. 17	1805	427	72	1721

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Invention	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Pinch-bar	J. H. Fellenbaum	542,634	July 16	1425	343	72	298
Pipe: *See* Concrete pipe. Tobacco-pipe.							
Pipe bleeder. Steam	C. C. Howell	543,444	July 23	2815	661	72	576
Pipe-closer	J. J. Meyer	543,745	July 30	3421	794	72	700
Pipe-coupling	W. Curlett	545,877	Sept. 10	758	185	72	1505
Pipe-coupling	P. H. Farrey	546,314	Sept. 17	1546	365	72	1671
Pipe-coupling	A. P. Massey	543,602	July 30	3176	735	72	654
Pipe-coupling	W. Weaver	541,908	July 2	149	36	72	32
Pipe coupling. Lead	E. W. Whitmore	545,928	Sept. 10	856	206, 207	72	1524
Pipe coupling. Train	F. R. Bischoff and J. C. Baird	546,877	Sept. 24	2493	595	72	1863
Pipe-covering	E. P. Brewer	545,340	Aug. 27	2736	663	72	1307
Pipe-covering. Non-conducting	R. T. Brooks	544,954	Aug. 20	2083	499	72	1162
Pipe fitting. Steam	G. H. Webb	544,147	Aug. 6	544	135	72	840
Pipe-forming machine	C. Oberle and E. Faller	543,558	July 30	3037	710	72	634
Pipe-hanger	A. J. Beaton	546,462	Sept. 17	1814	420	72	1724
Pipe-hanger	R. W. Clark	545,774	Sept. 3	588	142	72	1462
Pipe-hanger	C. W. Siver	544,631	Aug. 13	1468	356	72	1027
Pipe-hanger	H. C. Weeden	545,561	Sept. 3	224	54	72	1395
Pipe-hanger and attachment	R. W. Clark	545,775	Sept. 3	589	142	72	1462
Pipe-joint	S. G. Howe	545,586	Sept. 3	265	65, 66	72	1402
Pipe-joint	M. Sexton	546,906	Sept. 24	2535	606	72	1871
Pipe-joint clamp	J. Brice	546,298	Sept. 17	1515	358	72	1666
Pipe-joint cover	J. L. Woodside	544,943	Aug. 20	2064	492	72	1158
Pipe. Method of and apparatus for coating	D. T. Lewis	545,429	Aug. 27	2888	703	72	1337
Pipe. Method of and apparatus for coating	D. T. Lewis	545,430	Aug. 27	2892	703	72	1338
Pipe-trap	H. F. Pool	545,307	Aug. 27	2685	651	72	1298
Pipe-wrench	J. C. Burgess	543,331	July 23	2622	616	72	538
Pipe-wrench	C. L. Dunham	542,012	July 2	328	79, 80	72	66
Pipe-wrench	F. L. Felger and R. D. Shafer	545,494	Aug. 27	2881	702	72	1336
Pipe-wrench	S. M. Friede	546,142	Sept. 10	1216	290	72	1592
Pipe-wrench	K. A. Klose	542,265	July 9	740	182	72	158
Pipe-wrench	L. L. Latter	542,416	July 9	1036	254	72	213
Pipe-wrench	N. D. Macdonald	543,494	July 30	2912	686	72	610
Pipe-wrench	J. E. Wakefield	545,323	Aug. 27	2711	659	72	1302
Pipe-wrench	E. Wright	543,665	July 30	3272	760	72	672
Pipe-wrench	E. Wright	546,443	Sept. 17	1771	421	72	1714
Pipe wrench and cutter	F. A. and A. W. Whitney	543,053	Aug. 6	290	53	72	786
Pipe-wrench. Chain	J. C. Booth	542,136	July 2	515	124	72	102
Pipes. Adjustable rod and box for water or other	P. J. Kottcamp	544,410	Aug. 13	1079	263	72	951
Pipes. Cleansing sink or drain	F. Cavallaro and J. N. Sturm	546,445	Sept. 17	1777	422	72	1715
Pipes. Means for connecting soil	W. J. and E. Freeman	545,477	Sept. 3	78	19	72	1369
Pipes, &c. Testing and flushing drain	W. Keith	546,766	Sept. 24	2319	553	72	1829
Pistol. Magazine	H. F. Wheeler	546,369	Sept. 17	1639	390, 391	72	1689
Piston	H. Vogt	546,441	Sept. 17	1768	420	72	1713
Piston and cut-off valve for steam-engines	G. Murray	546,594	Sept. 17	2023	480, 481	72	1762
Piston. Syringe	C. J. Tagliabue	546,603	Sept. 17	2039	484	72	1765
Pitman-rod	G. G. Hasbrouck	545,648	Sept. 3	368	91	72	1423
Placket-closer	E. Gumbinner	546,924	Sept. 24	2502	613	72	1876
Plane	E. A. Schade	545,732	Sept. 3	520	126	72	1449
Planer	H. Fraser	543,475	July 30	2878	676, 677	72	603
Planimeter	E. J. Willis	542,511	July 9	1210	295	72	244
Planing-machine. Double or sectional	L. T. Pyott	542,598	July 9	1355	328	72	271
Planing-mill machinery. Device for setting up matchers for	C. Schoen	544,129	Aug. 6	519	128	72	844
Plant-duster	J. B. Hyzer	544,174	Aug. 6	585	140	72	857
Plant-holder	W. A. Pelton	542,942	July 16	1933	458	72	394
Plant-support	N. Leonard	546,167	Sept. 10	1260	301	72	1599
Planter	C. N. Baker	545,837	Sept. 3	690	168	72	1481
Planter	W. W. Burchell	543,764	July 30	3458	806	72	706
Planter	J. H. Elward	545,582	Sept. 3	256	63, 64	72	1401
Planter	J. H. Elward	545,583	Sept. 3	260	64	72	1402
Planter	J. H. Elward	545,584	Sept. 3	262	65	72	1402
Planter	C. E. P. Hobart	542,560	July 9	1299	315	72	261
Planter	L. F. Miller	544,184	Aug. 6	596	140	72	859
Planter	J. D. Schofield	545,824	Sept. 3	686	162, 163	72	1477
Planter and drill. Check-row	C. H. Jackson	543,530	July 30	2994	701, 702	72	625
Planter and fertilizer-distributer. Combined	W. H. Baker	546,646	Sept. 24	2105	499	72	1791
Planter and fertilizer-distributer. Combined corn	W. F. Bird	543,459	July 30	2849	667, 668	72	597
Planter and marker. Combined potato	E. J. Gordon	544,220	Aug. 6	673	172	72	872
Planter and tobacco-hiller. Combined grain	T. L. Gray	544,222	Aug. 6	677	172, 173	72	872
Planter check-rower. Corn	J. C. Tunnicliff	546,409	Sept. 17	1709	406	72	1702
Planter. Corn	F. J. Becker	541,955	July 2	231	54, 55	72	47
Planter. Corn	L. D. Benner	546,482	Sept. 17	1845	437, 438	72	1729
Planter. Corn	L. C. Evans	546,486	Sept. 17	1852	439	72	1730
Planter. Corn	W. H. Freeman	546,141	Sept. 10	1215	290	72	1591
Planter. Corn	M. Gross	543,648	July 30	3246	754, 755	72	667
Planter. Corn	G. E. Heath	544,581	Aug. 13	1374	336, 337	72	1010
Planter. Corn	H. Keller	542,261	July 9	733	180, 181	72	157
Planter. Corn	A. Punteney and E. C. Sooy	542,351	July 9	912	224	72	189
Planter. Corn	J. Urbanek	544,939	Aug. 20	2058	490, 491	72	1157

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Planter. Corn-	J. T. Walton	544,906	Aug. 20	2006	479	72	1147
Planter. Corn or seed	B. C. Lannen	545,700	Sept. 3	465	113	72	1439
Planter. Cotton-	M. Mannewitz	544,737	Aug. 20	1676	403	72	1083
Planter. Hand-	J. A. Chambers	544,720	Aug. 20	1650	396	72	1078
Planter. Potato-	L. C. Evans	545,786	Sept. 3	606	147, 148	72	1465
Planter. Potato-	L. C. Evans	545,787	Sept. 3	612	148, 149	72	1467
Planter. Potato-	T. L. Good	545,281	Aug. 27	2640	641	72	1290
Planter. Potato-	J. Horscroft	546,535	Sept. 17	1927	457	72	1744
Planter. Potato-	M. J. Smith	543,107	July 23	2215	526	72	463
Planter. Seed-	H. A. Bacon	545,867	Sept. 10	745	182	72	1503
Planter. Seed-	W. E. Berry and W. A. Medlin	542,921	July 16	1904	451	72	388
Planters. Guide-marker for corn-	H. A. Behrns	544,947	Aug. 20	2072	494	72	1150
Planting machine. Potato-	S. H. Fish	545,471	Sept. 3	65	15, 16	72	1366
Plaster-box	C. Breul	544,401	Aug. 13	1067	260	72	949
Plasterer's hawk	J. L. Love	542,419	July 9	1042	256	72	215
Plastic material. Machine for covering metallic articles with	M. N. Bray	544,656	Aug. 20	1518	366, 367	72	1054
Plastic materials. Press for molding	C. Pratten	544,687	Aug. 20	1593	382	72	1068
Platen press	G. Eastwood	544,887	Aug. 20	1962	470	72	1139
Platee. Regulating chord of curved	W. Whigham	543,917	Aug. 6	159	36, 37	72	777
Plow	M. M. Cochran and S. Adams	544,845	Aug. 20	1889	453	72	1125
Plow	W. M. McLendon	543,651	July 30	3221	755	72	668
Plow	J. B. Miles	542,894	July 16	1858	440	72	379
Plow	A. Pirch	544,994	Aug. 20	2143	519	72	1172
Plow	W. E. Sefton	543,786	July 30	3500	814	72	714
Plow	R. H. Walker and D. S. Beatty	543,276	July 23	2541	596, 597	72	522
Plow	H. Westphal	544,017	Aug. 6	329	81	72	809
Plow carriage. Sulky-	N. B. Ousley	545,525	Sept. 3	167	39	72	1385
Plow corn-planting attachment	C. D. Baird	546,753	Sept. 24	2298	546	72	1825
Plow-doubletree	T. N. Dallis	545,272	Aug. 27	2640	638	72	1287
Plow-fender	J. T. Nuckolls	546,675	Sept. 24	2158	513	72	1799
Plow. Hand wheel-	J. V. Rowlett	544,124	Aug. 6	512	126	72	843
Plow-point	J. W. Bouldin	545,193	Aug. 27	2513	608	72	1264
Plow-point	R. Jones	542,981	July 16	1999	475	72	405
Plow. Rotary	E. C. Atkins	543,119	July 23	2244	532	72	468
Plow. Rotary	E. C. Atkins and N. H. Roberts	543,118	July 23	2242	531, 532	72	468
Plow-stock	J. W. Abbott	543,761	July 30	3452	805	72	705
Plow. Subsoil-	J. W. Hedges	542,889	July 16	1854	439	72	378
Plow. Subsoil-	P. Heintz	546,884	Sept. 24	2501	597	72	1865
Plow subsoil attachment	T. Woodard	544,553	Aug. 13	1326	322	72	1001
Plow subsoil attachment. Gang-	S. D. Poole	545,170	Aug. 27	2465	597	72	1254
Plow. Subsoil sulky-	O. E. Howe	546,330	Sept. 17	1577	374	72	1677
Plow-sulky	J. W. Bellen	545,765	Sept. 3	576	139	72	1459
Plow sulky attachment	J. A. Duttera and J. F. Flickinger	546,919	Sept. 24	2556	612	72	1875
Plow. Wheel or gang-	W. L. Casaday	544,284	Aug. 13	795	202	72	905
Plows. Heel-sweep for	H. D. Terrell	545,041	Aug. 20	2229	540	72	1187
Plug. Vent-	T. Wheatley	542,298	July 9	818	201	72	171
Plumb and level	W. Moore	544,587	Aug. 13	1385	338	72	1012
Plumber's trap	N. Barry, Jr	542,868	July 16	1818	431	72	370
Plumber's wiping implement	T. J. Smith and G. M. Amon	542,541	July 9	1264	308	72	254
Plumbing. Sanitary	M. J. Gibbons	544,035	Aug. 6	360	89	72	814
Plushes, velvets, or other fabrics. Apparatus for steaming and renovating	W. T. Houston	544,897	Aug. 20	1988	475	72	1144
Pneumatic dispatch device	S. W. Barr	542,919	July 16	1901	450, 451	72	387
Pneumatic dispatch system	O. Konigslow	546,859	Sept. 24	2456	588, 589	72	1856
Pneumatic press	G. Schnasse, Jr., and T. Paffrath	544,128	Aug. 6	518	128	72	844
Pneumatic tool	J. G. Carlinet	546,223	Sept. 10	1354	322	72	1618
Pneumatic-transfer-tube system	F. W. Jones	543,184	July 23	2373	560	72	493
Pocket-companion	J. M. Hocker, Jr	542,162	July 2	558	135	72	110
Pocket-knife	W. J. Minter	543,943	Aug. 6	198	47	72	785
Pocket securing device for pocket-books, watches, &c.	P. Curran	544,159	Aug. 6	562	140	72	852
Polarized compound switch	M. Moskowitz	542,773	July 16	1671	398	72	343
Pole for telegraph or other purposes. Tubular	R. Mannesmann	545,901	Sept. 10	808	195	72	1515
Pole. Metal	L. S. Pfoute	546,622	Sept. 17	2064	489	72	1770
Pole-tip	F. De La Matyr	546,307	Sept. 17	1527	361	72	1668
Pool-balls. Constructing	G. H. Burt	545,578	Sept. 3	250	61	72	1400
Pool-counter	P. M. Cunningham	542,147	July 2	531	129	72	105
Popcorn compressing and molding machine	W. W. Turnbull	545,832	Sept. 3	683	167	72	1480
Porcelain and making same. Decorated hard	E. Gérard	544,784	Aug. 20	1783	.....	72	1105
Porous plates or electrodes. Making	J. Johnson and J. H. Robertson	546,739	Sept. 24	2271	.....	72	1820
Portable frame. Adjustable	J. E. Walsh	542,297	July 9	817	201	72	170
Portable hook	H. H. Bates	543,121	July 23	2247	533	72	469
Port-hole stopper	J. Casey	546,914	Sept. 24	2548	609, 610	72	1873
Post: *See* Fence-post. Hitching-post.							
Pot: *See* Coffee-pot. Filtering-pot.							
Potash. Furnace for manufacturing yellow prussiate of	S. Halla	544,580	Aug. 13	1373	335, 336	72	1010
Potassium chlorate. Producing	K. J. Bayer	543,326	July 23	2615	.....	72	537
Potato-digger	L. Fetch	543,859	Aug. 6	48	13	72	757
Potato-digger	G. N. Holland	545,229	Aug. 27	2571	622, 623	72	1276
Potato-digger	C. E. Jackson	542,259	July 9	730	179, 180	72	156
Potato-digger	N. F. Reed	543,702	July 30	3331	773	72	683

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Potato-digger	J. W. Woods	545,145	Aug. 27	2422	587, 588	72	1946
Potato hand dropping attachment	C. H. Frost	545,480	Sept. 3	82	20	72	1370
Potato-seed cutter and dropper	I. A. Bordner	543,168	July 23	2351	554	72	488
Potato-sorting machine	E. A. Smith	543,060	July 23	2135	506	72	448
Pottery-machine	C. Breitschwerth	546,297	Sept. 17	1513	357	72	1666
Poultice	R. Kusserow	545,593	Sept. 3	278	.....	72	1404
Powder: *See* Blasting-powder. Smokeless powder. Gunpowder.							
Powder-applying device. Remedial-	R. S. Cills	545,679	Sept. 3	428	103	72	1433
Powder-duster	C. Leroy	544,735	Aug. 20	1674	402	72	1083
Powder. Making smokeless	J. V. Skoglund	542,812	July 16	1733	.....	72	354
Powder-spout. Detachable and adjustable locked cut-off	P. Sauer	543,540	July 30	3008	705	72	627
Power: *See* Horse-power. Mechanical power.							
Power and heat. System and apparatus for generating, accumulating, and distributing	C. C. Warren	546,796	Sept. 24	2360	563, 564	72	1837
Power. Apparatus for producing motive	B. V. Nordberg and C. E. Shadall	543,501	July 30	2926	689, 690	72	612
Power at a distance by means of electricity. Applying	J. F. McLaughlin	544,861	Aug. 20	1916	459, 460	72	1130
Power by rise and fall of tide. Manner of obtaining	R. Menaugh	545,241	Aug. 27	2588	627	72	1279
Power mechanism	N. and J. Wagner	544,757	Aug. 20	1705	410	72	1089
Power-motor	E. Chaquette	542,359	July 9	936	230, 231	72	193
Power transmission	F. Singre	542,428	July 9	1064	261	72	218
Power-transmitter	D. S. Regan	546,249	Sept. 10	1407	334, 335	72	1627
Power-transmitting device	E. A. Sperry	545,920	Sept. 10	842	203	72	1521
Power-transmitting mechanism	C. Bernhard	546,951	Sept. 24	2610	625	72	1885
Power-transmitting mechanism	M. La Fountain, Jr	545,165	Aug. 27	2455	595	72	1252
Power-wheel	A. M. Brown	544,636	Aug. 13	1474	358	72	1028
Precious metals from their ores. Apparatus for extracting	M. Crawford	543,675	July 30	3288	763, 764	72	674
Precious metals from their ores. Extracting	M. Crawford	543,672	July 30	3281	.....	72	673
Precious metals from their ores. Extracting	M. Crawford	543,673	July 30	3283	762	72	674
Precious metals from their ores. Extracting	M. Crawford	543,674	July 30	3286	.....	72	674
Precious metals from their ores. Extracting	M. Crawford	543,676	July 30	3291	.....	72	675
Precious metals. Process of and apparatus for treatment of	E. J. Fraser	543,546	July 30	3019	706	72	630
Press: *See* Baling-press. Oil-press. Cheese-press. Platen press. Cider-press. Pneumatic press. Cotton-press. Printing-press. Die-press. Seal-press. Fruit-packing press. Sugar-cane press. Glass-press.							
Pressure brake. Fluid-	H. S. Park	543,102	July 23	2206	523, 524	72	461
Pressure device	C. Sinning	546,354	Sept. 17	1618	386	72	1685
Pressure-gage	W. Dürr	542,631	July 16	1420	342	72	297
Pressure-regulator	T. C. McGrath	545,714	Sept. 3	489	119	72	1444
Pressure-regulator	W. G. Taafel	544,395	Aug. 13	1055	258	72	948
Pressure-regulator	R. A. Twiss	543,911	Aug. 6	141	31	72	774
Pressure regulator. Fluid-	F. M. Gamache	542,635	July 16	1427	343	72	298
Primary battery	G. H. Gardner	543,931	Aug. 6	185	44	72	782
Printer's galley	W. W. Rebuschatis and J. F. Collins.	541,882	July 2	105	25	72	23
Printing carpet-yarns. Apparatus for	W. Shaw	543,510	July 30	2948	693	72	616
Printing carpet-yarns. Apparatus for	W. Shaw	543,512	July 30	2958	694, 695	72	618
Printing carpet-yarns. Apparatus for	W. Shaw and F. Trombley	543,511	July 30	2952	694	72	617
Printing illustrated letter-press	R. J. Finley	543,766	July 30	3461	807	72	707
Printing in colors. Method of and apparatus for	T. W. Morrison	546,024	Sept. 10	1017	245	72	1555
Printing-machine	J. Keller	544,763	Aug. 20	1719	414	72	1092
Printing-machine	R. F. Sproule	545,387	Aug. 27	2402	681	72	1319
Printing-machine for printing from rotary flat forms	J. T. Hawkins	546,325	Sept. 17	1568	372	72	1675
Printing-machine numbering attachment	F. Meisel	542,369	July 9	954	234, 235	72	197
Printing machine. Web-	W. Spalckhaver	545,138	Aug. 27	2411	583, 584, 585	72	1243
Printing. Method of and apparatus for production of plates for color-	J. Michaud	543,040	July 23	2099	498	72	441
Printing. Preparing metal plates for lithographic	H. L. B. Toobe	542,382	July 9	979	.....	72	202
Printing. Preparing zinc plates for lithographic	E. T. Beal	543,638	July 30	3234	.....	72	664
Printing-press	J. Brooks	546,414	Sept. 17	1719	407, 408	72	1703
Printing-press	H. L. Fisher	545,472	Sept. 3	69	17	72	1367
Printing-press	B. Huber and W. K. Hodgman	544,809	Aug. 20	1821	436	72	1113
Printing-press	J. H. Master	543,036	July 23	2094	496	72	440
Printing-press	F. C. Stockholm	546,718	Sept. 24	2222	530, 531	72	1812
Printing-press	S. Whitlock	544,075	Aug. 6	425	106, 107	72	827
Printing-press and folding mechanism	J. L. Firm	546,136	Sept. 10	1206	287, 288	72	1590
Printing-press attachment	P. Schneider	543,058	July 23	2132	505	72	447
Printing-press chase	J. J. Rafter	543,562	July 30	3045	712	72	636
Printing-press. Cylinder	W. M. Marriner and W. N. Kant	543,822	Aug. 6	96	21, 22	72	766
Printing-press folding and delivery device	S. G. Goss	544,354	Aug. 13	977	241	72	934

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Printing press. Plate	J. T. Robertson	541,985	July 2	278	65	72	56
Projectiles and ammunition. Device for handling heavy	T. Forssell	543,728	July 30	3394	787	72	695
Propeller	J. W. Flowers and M. J. Fox	543,860	Aug. 6	49	13	72	758
Propeller	P. F. Schmidt	546,712	Sept. 24	2214	528	72	1810
Propeller. Screw	W. Thompson	543,909	Aug. 6	139	31	72	773
Propelling and steering steamboats	C. Evans	545,950	Sept. 10	888	214	72	1530
Propelling and steering vessels. Mechanism for	E. F. H. Demnitz	546,309	Sept. 17	1536	364	72	1669
Propelling vessels. Means for	B. A. Davis	543,179	July 23	2367	558	72	492
Protective apparatus	B. B. Whittemore	542,072	July 2	424	102	72	83
Protector: *See* Dress-protector.							
Protocatechuic aldehyde-meta-alkyl ethers. Production of	A. Schmidt	543,193	July 23	2398	.....	72	498
Prying-bar	T. C. Gatti	546,521	Sept. 17	1908	451	72	1741
Puller: *See* Cork-puller. Staple-puller. Cornstalk-puller. Stump-puller.							
Pulley	D. E. Newell	543,887	Aug. 6	102	23	72	767
Pulley-blocks. Automatic brake for	E. Y. Moore	545,088	Aug. 27	2315	562	72	1225
Pulley. Expansion	J. Muir	541,870	July 2	85	20	72	20
Pulley housing. Sash	J. H. Shull	544,196	Aug. 6	617	154	72	863
Pulley. Sash	E. N. Gilfillan	545,425	Aug. 27	2883	702	72	1336
Pulley. Sectional	M. B. Lorah	544,987	Aug. 20	2135	517	72	1171
Pulley. Split	M. B. Lorah	542,166	July 2	563	137	72	111
Pulp. Machine for molding hollow ware from	M. L. Deering	541,966	July 2	246	58	72	50
Pulverizer	G. P. Janes	541,972	July 2	256	60	72	52
Pump	E. E. Frizell	543,338	July 23	2630	618	72	539
Pump	H. Mehl	543,394	July 23	2713	640	72	555
Pump	O. P. Olson	542,939	July 16	1930	457	72	393
Pump	J. B. Rodger	545,379	Aug. 27	2791	678	72	1317
Pump	S. A. Rouse	545,730	Sept. 3	513	125, 126	72	1448
Pump	M. R. Turner and R. G. Kirby	544,801	Aug. 20	1808	433	72	1110
Pump	L. Wilson, Jr.	545,399	Aug. 27	2822	688	72	1324
Pump	P. E. Wistrand	543,954	Aug. 6	221	53	72	789
Pump. Air	W. C. Whitacre	544,473	Aug. 13	1203	292	72	977
Pump attachment	B. Decker	542,332	July 9	881	216	72	183
Pump attachment. Beer	J. F. Beyerlein	541,831	July 2	21	5	72	7
Pump. Centrifugal	H. C. Behr	546,219	Sept. 10	1345	320	72	1616
Pump. Compression	H. L. Parker	544,927	Aug. 20	2037	486	72	1153
Pump. Condensing	S. W. Wood	545,032	Aug. 20	2210	535	72	1184
Pump. Double-acting	H. O. Thomas	546,362	Sept. 17	1629	388	72	1687
Pump. Double-acting force	O. P. Olson	544,864	Aug. 20	1926	461	72	1131
Pump-governor and tank-filler. Hydrostatic	N. C. Locke	545,082	Aug. 27	2306	560	72	1223
Pump. Interchangeable	L. A. Hultz	542,766	July 16	1654	395	72	340
Pump. Lift and force	E. Noppel	546,863	Sept. 24	2462	590	72	1857
Pump. Measuring	W. G. Kendall	543,872	Aug. 6	79	17	72	763
Pump. Purifying	W. W. Norman	542,530	July 9	1247	304	72	251
Pump regulator. Boiler-feed	N. C. Locke	545,083	Aug. 27	2307	561	72	1223
Pump. Revolving air	V. A. Hlasko	543,245	July 23	2489	583	72	513
Pump. Steam	J. B. Erwin	546,313	Sept. 17	1544	365	72	1671
Pump. Vacuum	W. Kirkwood	546,617	Sept. 17	2056	488	72	1768
Pump-valve	H. E. Hunt	546,591	Sept. 17	2019	479	72	1761
Pump-valve	G. de Laval	542,083	July 2	438	105	72	86
Pumps. Compensating mechanism for direct-acting steam	J. P. Frizell	546,096	Sept. 10	1141	273	72	1578
Pumping apparatus. Oil-well	S. M. Jones and E. W. Hammond	542,646	July 16	1450	349	72	303
Pumping-engine. Compensating	G. de Laval	542,084	July 2	439	106	72	86
Pumping-jack	E. R. Curtin	542,873	July 16	1825	432	72	371
Pumping-jack	W. C. Sheanfeld	546,626	Sept. 17	2069	491	72	1771
Pumping-rig frame. Oil-well	J. J. Doyle	543,545	July 30	3018	706	72	630
Punch	J. C. Richardson	545,613	Sept. 3	307	75	72	1410
Punch-machine. Stencil-character	S. D. Hartog, Jr.	544,169	Aug. 6	577	144	72	855
Punch. Portable hydraulic	E. B. Cornell	545,777	Sept. 3	592	143	72	1462
Purifier, separator, and grader	D. J. Davidson	542,011	July 2	326	79	72	66
Purifier, separator, and grader	D. J. Davidson	543,927	Aug. 6	171	40, 41	72	779
Puzzle	W. L. Hedenberg	543,684	July 30	3304	768	72	677
Puzzle	H. E. Nelson	543,188	July 23	2383	563	72	494
Puzzle and toy. Combined	F. J. Mantel	546,171	Sept. 10	1265	302	72	1600
Pyrometer	J. M. Hartman	543,550	July 30	3025	707	72	632
Pyroxylin compound	J. H. Stevens	543,197	July 23	2404	.....	72	499
Pyroxylin. Manufacture of solid or massive compounds of	J. H. Stevens	542,692	July 16	1530	.....	72	319
Pyroxylin. Manufacture of solid or massive compounds of	J. H. Stevens	543,108	July 23	2215	.....	72	463
Quill-cutter	W. R. Fox	541,996	July 2	298	69	72	61
Quoin	R. Kinsman	543,488	July 30	2901	683	72	607
Rack: *See* Book-rack. Hay and stock rack. Display-rack. Knockdown rack. Feed-rack. Twine-rack.							
Rack	P. H. Jordan and J. O. Huffman	542,735	July 16	1603	382, 383	72	331
Radiator	D. L. Adams	544,875	Aug. 20	1943	465	72	1135
Radiator	A. Ohnemus	543,560	July 30	3043	711	72	636
Radiator. Sheet-metal	L. S. Bunker	545,036	Aug. 20	2220	538	72	1186
Radiator shield and frame	G. E. Dixon	543,456	July 23	2841	666	72	580
Rail	J. Davis and W. A. Thomas	546,305	Sept. 17	1524	360	72	1667
Rail-bond	R. A. Baldwin	545,869	Sept. 10	748	182	72	1503
Rail-bond	P. Cunningham	541,838	July 2	38	9	72	10
Rail-chair and nut-lock	E. Miller, Jr.	543,998	Aug. 6	290	71	72	801
Rail chair and tie. Combined	J. Albrecht	546,800	Sept. 24	2371	586	72	1839
Rail-joint	G. A. Weber	542,866	July 16	1815	430	72	37[illegible]

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Rail-joint	O. F. Wickham	542,666	July 16	1490	357	72	310
Rail-joint and forming same	A. Hoffmann and H. W. Falk	545,040	Aug. 20	2227	539	72	1187
Rail-straightening apparatus	A. M. Gore	545,283	Aug. 27	2645	642	72	1291
Rail structure	F. P. Howe	545,798	Sept. 3	629	153	72	1470
Railway and tramway. Electric	J. Claret and O. Wuilleumier	544,209	Aug. 6	649	165, 166	72	867
Railway block-signal	W. G. Roome	541,949	July 2	207	48	72	44
Railway block-signal system	G. M. Brown	542,550	July 9	1279	311, 312	72	258
Railway block-signal system	A. W. Hall	545,494	Sept. 3	114	27	72	1376
Railway bond. Electric	E. S. Wheeler	545,833	Sept. 3	684	167	72	1480
Railway-brake	C. F. Grather	541,840	July 2	50	12	72	12
Railway. Cable	C. I. Earll	546,955	Sept. 24	2615	627	72	1886
Railway. Cable	W. M. Wood and J. C. Miller	542,670	July 16	1495	358	72	312
Railway cattle-guard	E. G. Emmert	546,775	Sept. 24	2331	556	72	1832
Railway. Closed-conduit electric	J. M. Deal	546,130	Sept. 10	1196	285	72	1588
Railway conductor. Electric	P. C. Just	544,306	Aug. 13	838	211	72	913
Railway. Conduit electric	C. H. Johnson	545,204	Aug. 27	2532	612, 613	72	1268
Railway. Conduit electric	L. R. and A. H. Lavalle	542,164	July 2	539	135, 136	72	110
Railway. Conduit electric	L. C. Pressley	542,105	July 2	467	112	72	92
Railway conduit system. Electric	L. H. Sherwood	544,391	Aug. 13	1044	255	72	946
Railway converter system. Electric	T. Harper	544,037	Aug. 6	362	89, 90	72	815
Railway-crossing	T. C. Du Pont	546,229	Sept. 10	1363	324	72	1620
Railway. Electric	J. C. Henry	545,158	Aug. 27	2444	593	72	1251
Railway. Electric	J. F. McLaughlin	544,862	Aug. 20	1919	460	72	1131
Railway. Electric	J. F. McLaughlin	544,863	Aug. 20	1923	460, 461	72	1131
Railway. Electric	H. M. Montgomery	546,546	Sept. 17	1942	461	72	1747
Railway. Electric	W. M. Schlesinger	546,059	Sept. 10	1076	258	72	1566
Railway. Electric	F. Taylor	544,198	Aug. 6	624	156, 157	72	864
Railway-frog	H. Elliot	546,312	Sept. 17	1543	365	72	1670
Railway-frog	D. E. Shea	546,351	Sept. 17	1613	384, 385	72	1684
Railway-gate	J. W. Murray	546,979	Sept. 24	2653	635, 636	72	1893
Railway-gate. Automatic	W. L. Vernon	543,414	July 23	2746	649	72	562
Railway-gate. Automatic	J. Weill	542,123	July 2	495	119	72	99
Railway lifting-jack	J. A. Holman	542,645	July 16	1449	348	72	302
Railway-rail guard and support	E. L. Taylor	544,137	Aug. 6	531	131, 132	72	846
Railway-rail joint	D. N. Hurlbut	544,099	Aug. 6	472	117	72	835
Railway rail joint or chair	C. Rietzinger	544,531	Aug. 13	1275	308	72	990
Railway-rails. Clamp for welding	W. M. Brown	546,773	Sept. 24	2328	555	72	1831
Railway-rails to metal ties. Device for attaching	F. F. Emrich and J. Rollins	546,810	Sept. 24	2385	570	72	1842
Railway. Revolving gravity	J. S. Lake	546,386	Sept. 17	1670	396	72	1695
Railway running-gear. Electric	B. J. Arnold	542,617	July 16	1399	338	72	293
Railway safety apparatus	B. C. Rowell	542,313	July 9	846	207	72	176
Railway safety appliance	E. J. Marin	544,923	Aug. 20	2030	484, 485	72	1152
Railway semaphore-signal	J. W. Lattig	545,701	Sept. 3	467	113	72	1439
Railway-signal	S. Sanborn	544,008	Aug. 6	307	76	72	804
Railway-signal	J. B. Stewart	543,322	July 23	2610	613	72	536
Railway-signal	W. B. Vansize	544,802	Aug. 20	1809	434	72	1110
Railway-signal	F. B. Wetherbee	542,699	July 16	1543	368	72	321
Railway-signal. Automatic	A. J. Griffin	542,638	July 16	1430	344, 345	72	299
Railway-signal. Automatic electrical	C. R. Alsop	544,647	Aug. 20	1501	363	72	1051
Railway-signal. Electric	J. C. Henry	543,933	Aug. 6	186	44	72	787
Railway signaling	J. G. Schreuder	543,785	July 30	3498	814	72	713
Railway signaling and means therefor	E. Blakey	543,721	July 30	3375	784	72	691
Railway signaling system	T. B. Dixon	543,591	July 30	3090	724, 725, 726, 727	72	644
Railway signaling system. Electrical	T. B. Dixon	543,592	July 30	3118	727	72	646
Railway signaling system. Electrica	T. B. Dixon	543,594	July 30	3130	728, 729	72	647
Railway signaling system. Electrical	T. B. Dixon	543,595	July 30	3137	729, 730	72	649
Railway signaling system. Electrical	T. B. Dixon	543,596	July 30	3149	731, 732	72	650
Railway-spike	O. Z. Contant	546,269	Sept. 10	1445	342	72	1634
Railway spike and tie	S. J. Harry	542,474	July 9	1147	280	72	232
Railway-switch	E. E. Bailey	541,822	July 2	3	1, 2	72	3
Railway-switch	H. C. Benagh	546,635	Sept. 17	2085	494, 495	72	1774
Railway-switch	R. G. Burton	545,845	Sept. 3	704	172	72	1484
Railway-switch	R. E. Hamill	542,253	July 9	715	176	72	154
Railway-switch	C. S. Jackson	545,587	Sept. 3	267	66	72	1403
Railway-switch	I. N. Saddler	543,705	July 30	3337	774	72	683
Railway-switch	E. Samuel and V. Angerer	545,820	Sept. 3	662	161	72	1476
Railway-switch	A. A. Strom	543,605	July 30	3181	738	72	655
Railway-switch	C. W. Wentzell	544,705	Aug. 20	1630	391	72	1074
Railway-switch	C. F. Wilson	544,874	Aug. 20	1941	465	72	1134
Railway-switch. Automatic	E. A. Loomis	543,156	July 23	2308	547, 548	72	421
Railway-switch. Automatic	W. J. McFarland	546,051	Sept. 10	1062	254	72	1563
Railway-switch. Automatic	J. G. Miller	544,769	Aug. 20	1758	419	72	1100
Railway switch. Electric	R. A. Baldwin	545,870	Sept. 10	749	183	72	1503
Railway-switch guard	W. McKissack	545,373	Aug. 27	2782	675	72	1315

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Railway-switch mechanism	U. G. Meenach	542,167	July 2	564	137	72	111
Railway-switch-operating mechanism	A. R. Moore	542,090	July 2	447	107	72	88
Railway-switches. Pneumatic apparatus for handling	J. W. Thomas, Jr	545,750	Sept. 3	549	131, 132	72	1454
Railway-switches. Pneumatic apparatus for handling	J. W. Thomas, Jr	545,830	Sept. 3	675	165, 166	72	1479
Railway system. Electric-	H. A. Fry	546,143	Sept. 10	1217	291	72	1592
Railway system. Electric-	J. C. Henry	543,382	July 23	2693	636	72	552
Railway system. Electric-	R. B. Wilson	542,512	July 9	1214	295, 296	72	245
Railway-tie	J. D. McDowell	546,744	Sept. 24	2277	541	72	1821
Railway-tie	J. W. Paisley	544,192	Aug. 6	610	152	72	862
Railway-tie. Iron	W. Garner	545,687	Sept. 3	438	105	72	1435
Railway-tie plate	B. Reece	541,984	July 2	277	65	72	56
Railway-tie-shearing machine	F. Baugh and W. Murphy	546,574	Sept. 17	1996	474	72	1757
Railway track-cleaner. Street-	W. H. Welton	545,993	Sept. 10	966	232	72	1545
Railway-track joint	F. W. Bond	542,135	July 2	513	123	72	102
Railway-track lubricator	A. T. Irwin	542,828	July 16	1756	417	72	359
Railway-trains. System for controlling	A. L. De Leeuw	546,308	Sept. 17	1528	361, 362, 363	72	1668
Railway. Underground electric	D. F. Graham and W. P. Allen	545,070	Aug. 27	2290	556	72	1220
Railway. Underground electric	E. E. Moore	545,208	Aug. 27	2539	614	72	1269
Railway with suspended vehicles. Overhead	E. Langen	546,928	Sept. 24	2572	615, 616	72	1879
Railways and tramways. Construction and operation of electric	I. W. Heysinger	543,867	Aug. 6	59	15, 16	72	759
Railways. Automatic switch for electric or cable	G. T. Janvrin and F. J. Conlon	545,230	Aug. 27	2574	623	72	1277
Railways. Conduit for electric conductors for	F. L. Capps	544,283	Aug. 13	793	201, 202	72	905
Railways. Conduit system for electric	J. and W. R. Thomas	544,056	Aug. 6	398	100, 101	72	822
Railways. Electric block-signal for	A. C. Gordon	542,761	July 16	1645	393	72	338
Railways. Traveling contact device for electric	J. C. Love	544,313	Aug. 13	853	214	72	916
Railways. Trolley-controller for electric	L. W. P. Gray and P. G. Doescher	545,358	Aug. 27	2762	670	72	1311
Railways. Trolley for underground electric	M. D. Law	544,312	Aug. 13	849	213, 214	72	915
Railways. Underground conduit for electric	H. A. F. Petersen	546,389	Sept. 17	1674	397, 398	72	1697
Rake: *See* Hay-rake. Horse-rake.							
Rakes. Weeder attachment for horse-	J. M. Tufts	546,440	Sept. 17	1767	419	72	1713
Range-boiler	J. Hussey	546,737	Sept. 24	2268	540	72	1819
Rasp	W. Shaw	545,739	Sept. 3	530	138	72	1451
Rat-trap	W. H. Sallee	546,250	Sept. 10	1408	335	72	1628
Ratchet-wrench	H. Markel	546,672	Sept. 24	2150	511	72	1799
Rattan-knitting machine	H. M. Rich and E. L. Taft	544,443	Aug. 13	1142	277, 278, 279, 280	72	963
Reamer for use in mining	R. H. Elliott and J. B. Carrington	542,152	July 2	538	131	72	106
Reapers, mowers, &c. Oscillating seat for	R. S. Pence and C. H. Scott	545,529	Sept. 3	172	41	72	1386
Reaping-machine self-binding attachment	J. J. Gaynor	546,319	Sept. 17	1555	368, 369, 370	72	1673
Receptacle for shipping manufactured bake goods	J. R. Barry	542,780	July 16	1695	403	72	347
Reclining-chair	T. Fortier	543,681	July 30	3207	766	72	676
Recorder: *See* Time-recorder. Water-gage time-recorder.							
Reel: *See* Fishing-reel. Wire-reel. Line-reel.							
Reel	W. Edenborn	543,801	July 30	3536	822	72	721
Refrigerating-machine. Vacuum	W. J. Ferguson	544,273	Aug. 6	778	198, 199	72	890
Refrigerator	J. Banderob	542,915	July 16	1895	449	72	386
Refrigerator	E. A. and C. P. Cornillie	546,112	Sept. 10	1165	278	72	1583
Refrigerator	L. O. Read	542,714	July 16	1565	374	72	394
Refrigerator	H. W. Schloss	545,098	Aug. 27	2331	565	72	1228
Refrigerator-lock	G. Ganderton, H. J. O'Donnell, and J. A. Turnbull.	545,955	Sept. 10	896	216	72	1532
Refuse-destructor	E. L. Ransome	545,975	Sept. 10	933	223	72	1539
Register: *See* Autographic register. Fare-register. Hot-air register. Cash-register. Vote-register.							
Register	T. B. Dixon	543,593	July 30	3125	728	72	647
Register for counting operations of machines	S. M. Balzer	545,034	Aug. 20	2216	537	72	1185
Register for oil delivered	J. F. and J. H. Lohstroh	543,941	Aug. 6	195	46	72	784
Registering-alarm	J. Miller	543,449	July 23	2830	663	72	578
Registering apparatus. Electric	A. Custodis	543,336	July 23	2628	618	72	539
Registering-machine	L. E. Allen	543,417	July 23	2752	650, 651	72	563
Registering-machine. Coin-controlled	D. di B. Savorgnan	543,755	July 30	3435	798, 799, 800, 801, 802	72	703
Registering mechanism	F. H. Richards	546,748	Sept. 24	2282	543, 544, 545	72	1822
Registering of disbursements and receipts. Apparatus for automatic	J. Frydmane	546,880	Sept. 24	2496	596	72	1864

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Regulator: *See* Fluid-regulator. Pressure-regulator. Furnace-regulator. Pump-regulator. Gas-regulator. Temperature-regulator. Gas-pressure regulator. Watch-regulator. Water-regulator. Nozzle-regulator. Water-supply regulator.							
Rein-holder	E. Cavanaugh	543,172	July 23	2357	556	72	489
Rein-holder	E. D. Webb	546,084	Sept. 10	1121	267	72	1575
Relay	T. B. Dixon	544,351	Aug. 13	971	239, 240	72	933
Rendering and drying apparatus	E. Holthaus	543,384	July 23	2697	637	72	553
Rendering apparatus	E. Holthaus	545,892	Sept. 10	779	190	72	1509
Rendering apparatus	H. Pfützner	543,350	July 23	2650	624	72	543
Reproducing device	C. A. Chase	545,422	Aug. 27	2878	701	72	1335
Reservoir and filter. Combined	N. O. Goldsmith	543,805	July 30	3542	823	72	722
Retort-lid	J. Henderson	543,866	Aug. 6	58	15	72	759
Revolver-cylinders. Limiting-stop for	D. B. Wesson	542,745	July 16	1625	388	72	335
Revolvers. Rebound and cocking mechanism for	D. B. Wesson	542,744	July 16	1623	388	72	334
Revolving chair	C. C. Trapp	543,361	July 23	2668	629	72	546
Rheostat	W. O. Meissner	544,047	Aug. 6	380	94	72	819
Rheostat-controller	C. Landers	543,963	Aug. 6	232	57	72	791
Rheostat. Electric	F. B. Badt	544,278	Aug. 13	785	200	72	903
Ribbon-blocking machine	R. Atherton	546,289	Sept. 17	1496	353	72	1662
Ribbon-feed-reversing mechanism	C. E. Johnson	546,067	Sept. 10	1092	261, 262	72	1569
Ribbon-holder	B. F. Orewiler	542,834	July 16	1766	420	72	360
Rim-lock	H. J. Pleau	541,947	July 2	204	48	72	43
Rim-wrench	C. B. Loomis	546,490	Sept. 17	1860	441	72	1732
Ring: *See* Curtain-ring.							
Ring	F. L. Lathrop and H. C. H. Walsh	541,974	July 2	260	61	72	53
Ring-clamp	M. A. Anzelewitz	542,402	July 9	1013	249	72	208
Rings. Manufacture of finger-	H. Lehr	545,597	Sept. 3	287	70	72	1406
Riveting-machine	J. Adt	545,756	Sept. 3	560	133, 134	72	1456
Riveting-machine	S. M. Vauclain	543,324	July 23	2613	614	72	536
Riveting machine. Cardboard-	E. Saltzkorn and L. Nicolai	543,453	July 23	2834	664, 665	72	579
Rivets. Making two-pronged	E. Kempshall	542,800	July 16	1717	408	72	351
Rivets of chains. Machine for heading	F. Waible and W. R. Willetts	542,454	July 9	1115	273	72	227
Roach-trap	L. Marchese	544,183	Aug. 6	595	149	72	859
Road making and repairing machine	M. G. Bunnell	543,923	Aug. 6	166	39	72	778
Road making and repairing machine	M. G. Bunnell	544,272	Aug. 6	776	198	72	890
Road-roller	G. E. Townsend	542,949	July 16	1947	462	72	396
Roasting-furnace	J. Roger	542,715	July 16	1567	375	72	325
Rock-drill	T. W. Chapman	542,010	July 2	325	79	72	65
Rock-drill	I. E. Storey	545,109	Aug. 27	2354	569	72	1233
Rock-drill	T. Symonds	542,542	July 9	1265	308	72	254
Rock-drill. Hand	T. W. Chapman	543,293	July 23	2565	602	72	526
Rocking-chair. Spring	R. Parker	542,941	July 16	1933	458	72	394
Rod and pipe cutter	W. Barheine	543,369	July 23	2679	632	72	549
Rod or pipe coupling	S. M. Jones	543,183	July 23	2372	560	72	493
Roll-holder camera and picture-exhibitor	W. V. Esmond	542,334	July 9	884	217	72	183
Roller: *See* Land-roller. Road-roller.							
Rolling-mill feed-table	J. A. Potter	546,623	Sept. 17	2065	490	72	1770
Rolling mill. Metal-	O. C. Hall	542,016	July 2	333	81	72	67
Rolling seamless metallic tubes. Apparatus for	M. Mannesmann	545,513	Sept. 3	145	34	72	1381
Rolling seamless metallic tubes. Art of and machine for	M. and R. Mannesmann	542,801	July 16	1719	408, 409	72	351
Roofer's truck	S. A. Monbeck	543,498	July 30	2922	688	72	611
Rope-clamp	L. O. Bower	544,342	Aug. 13	906	227	72	925
Rope-coupling	B. Kirsch	544,731	Aug. 20	1669	401	72	1092
Rotary bolt	L. Hertzler	546,400	Sept. 17	1694	402	72	1700
Rotary cutter	G. B. Beale	543,608	July 30	3187	739	72	656
Rotary cutter	A. S. Vose	545,618	Sept. 3	314	77	72	1411
Rotary disk motor	L. Vojacek	546,688	Sept. 24	2177	517	72	1803
Rotary engine	W. G. Adams	542,456	July 9	1120	274	72	227
Rotary engine	D. Berry	542,920	July 16	1903	451	72	387
Rotary engine	C. A. Fisher	545,062	Aug. 27	2271	551, 552	72	1217
Rotary engine	C. A. Fisher	545,063	Aug. 27	2274	552	72	1217
Rotary engine	T. M. Kenney and C. Bullock	546,974	Sept. 24	2642	633	72	1892
Rotary engine	S. Scoguamillo and C. Dominici	544,595	Aug. 13	1399	341, 342	72	1015
Rotary engine	W. A. Webster	546,368	Sept. 17	1638	390	72	1689
Rotary field-motor	A. E. Du Bois-Reymond	545,853	Sept. 3	719	175	72	1487
Rotary screen	J. J. Newman	546,899	Sept. 24	2522	602, 603	72	1869
Rotary screen. Adjustable	H. P. Grugin	546,447	Sept. 17	1779	423	72	1716
Roundabout and observatory	E. Schnitzler	544,866	Aug. 20	1928	461, 462	72	1132
Routing-machine	C. Schraubstadter, Jr., and C. R. Schilling.	545,380	Aug. 27	2792	678	72	1317
Routing-machine	W. Spalckhaver	544,010	Aug. 6	310	78	72	805
Routing-machine	W. Spalckhaver	544,011	Aug. 6	314	78, 79	72	806
Routing-machine	G. W. Symonds	543,110	July 23	2220	526	72	463
Rowing apparatus	E. Kindscher	542,197	July 2	618	149	72	121
Rowing device. Bow-	A. Smith	546,942	Sept. 24	2595	622	72	1883
Rowing-machine	E. C. Hinton and W. H. Stansfield	541,857	July 2	63	15	72	16
Rub-iron	D. L. Miller	544,989	Aug. 20	2137	517	72	1171
Rubber boot	S. J. Harris	542,961	July 16	1962	466	72	399

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Rubber. Manufacturing multicolored patterns of vulcanized	J. Murphy	543,583	July 30	3078	720	72	641
Rubber-mixing or other mills. Roll for	E. F. Bragg	544,782	Aug. 20	1780	425	72	1105
Rug. Electric heating	J. R. Davis	543,8 0	July 30	3535	822	72	720
Rug-fastener	G. H. D. Harris	543,090	July 23	2187	518	72	457
Rule or gage. Spacing	I. H. Mallin	543,997	Aug. 6	288	70	72	801
Rule. Slide	B. H. Colby	543,612	July 30	3192	740	72	657
Ruler and blotter. Combined	G. L. Waltz	545,027	Aug. 20	2203	533	72	1182
Ruler. Parallel	W. S. Heath	544,787	Aug. 20	1786	427	72	1106
Ruling-machine attachment	E. H. Alger	542,747	July 16	1627	389	72	335
Ruling machine. Paper	G. L. Geisler	545,886	Sept. 10	771	188, 189	72	1507
Rut-cutter	C. L. Tolles	543,542	July 30	3013	705	72	628
Sack	E. H. Lobdell	546,168	Sept. 10	1261	301	72	1600
Sack-holder	A. Mayo	544,585	Aug. 13	1379	337	72	1011
Sack-tie	J. R. Eichenberger	542,466	July 9	1136	278	72	230
Sad-iron. Self-heating	J. M. Doehrer	546,656	Sept. 24	2124	504, 505	72	1794
Saddle	A. de Thierry	544,602	Aug. 13	1418	345	72	1018
Saddle	J. C. Wells	544,333	Aug. 13	891	223, 224	72	923
Saddle girth-rigging. Side	J. D. Padgitt	542,373	July 9	961	236	72	198
Saddle. Harness	J. D. Fletcher	542,929	July 16	1916	454	72	390
Saddle. Harness	W. C. Schriek	544,445	Aug. 13	1160	280	72	908
Saddle. Harness	L. J. and H. A. Varga	546,687	Sept. 24	2175	517	72	1803
Saddle. Riding	J. D. Padgitt	542,940	July 16	1931	458	72	393
Safe	G. B. Cavert	543,334	July 23	2625	616, 617	72	539
Safe	H. J. Colburn	545,153	Aug. 27	2436	591	72	1249
Safe	H. J. Colburn	545,154	Aug. 27	2438	591, 592	72	1249
Safe	P. F. King	545,163	Aug. 27	2451	594	72	1252
Safe-deposit lock	H. Horne	545,161	Aug. 27	2448	593	72	1251
Safe. Provision	J. L. Knechler	542,859	July 16	1805	428	72	367
Safety-switch	G. Besser	543,077	July 23	2164	513, 514	72	453
Sales-pad	W. H. Breakspear, O. Spannaus, and C. Weisbecker.	543,329	July 23	2619	615	72	538
Salt. Apparatus for manufacturing	T. Craney	542,044	July 2	375	90	72	75
Sand-box	H. Springstube	544,327	Aug. 13	883	221, 222	72	921
Sanding-machine	A. D. Linn and A. A. Lytle	543,155	July 23	2307	516, 547	72	481
Sandpapering-machine	J. Lowry	543,878	Aug. 6	89	20	72	765
Sandpapering-machine	H. E. Pauk, Jr	541,878	July 2	97	22, 23	72	22
Sandwiches. Machine for making	S. A Gagé	546,662	Sept. 24	2130	506, 507	72	1795
Sash-balance	H. P. Cayce	543,848	Aug. 6	28	8	72	754
Sash-balance	R. McMillen	542,025	July 2	345	83	72	69
Sash-balance	F. X. Payment and J. C. Hartig	545,609	Sept. 3	302	74	72	1410
Sash-balance	N. Neilen	543,500	July 30	2925	689	72	612
Sash balance and holder	G. F. Clamer	545,847	Sept. 3	708	173	72	1485
Sash catch. Window	A. E. Graham	542,050	July 2	383	93	72	77
Sash-fastener	I. L. Atwood	543,226	July 23	2452	576	72	506
Sash-fastener	A. E. Bray	546,649	Sept. 24	2109	500	72	1791
Sash-fastener	W. H. Dean	542,555	July 9	1291	313	72	260
Sash-fastener	H. M. Dinning	542,998	July 23	2024	481	72	427
Sash-fastener	S. Hainkel	546,423	Sept. 17	1740	413	72	1708
Sash-fastener	J. M. Harper	541,930	July 2	180	42	72	39
Sash-fastener	J. Lutz	543,880	Aug. 6	94	21	72	765
Sash-fastener	W. J. Neidl	546,784	Sept. 24	2342	559	72	1634
Sash-fastener	H. C. Oettinger and J. Wallenstein	543,450	July 23	2830	664	72	578
Sash-fastener	G. H. Spring	544,326	Aug. 13	881	221	72	921
Sash-fastener	W. W. Torrey	545,215	Aug. 27	2548	617	72	1272
Sash fastener. Window	G. W. Goss	541,847	July 2	47	11	72	12
Sash-holder	J. Carr	545,344	Aug. 27	2743	665	72	1308
Sash-holder	C. W. and C. S. Pierce	546,186	Sept. 10	1285	306	72	1604
Sash-holder	C. West	544,635	Aug. 13	1473	357	72	1028
Sash-holder	S. J. Anderson	542,401	July 9	1011	249	72	208
Sash-lock	A. B. Cough	545,778	Sept. 3	594	143	72	1463
Sash-lock	I. Elting	543,765	July 30	3460	806	72	707
Sash-lock and ventilator. Combined	D. D. Stewart	546,256	Sept. 10	1419	337	72	1630
Sash-operating mechanism	E. G. Flanagan	544,428	Aug. 13	1114	270	72	959
Sash. Reversible window	C. S. Mossop	542,488	July 9	1172	287	72	237
Sash ventilator. Window	W. Scharnweber	542,837	July 16	1769	421	72	361
Sash-weight	W. E. Merrell	546,862	Sept. 24	2461	589	72	1857
Saucepan	R. B. Vanderburg	545,183	Aug. 27	2488	603	72	1259
Saw	C. H. Douglas	542,630	July 16	1419	342	72	297
Saw	H. J. Edlund	544,162	Aug. 6	566	141	72	853
Saw-clamp	A. T. Binkerd	542,819	July 16	1745	415	72	356
Saw. Crosscut	J. W. Johnson	542,856	July 16	1801	427	72	366
Saw. Crosscut	J. W. Morris	542,420	July 9	1043	256	72	215
Saw. Detachable-tooth	A. Krieger	544,438	Aug. 13	1131	274	72	961
Saw-filing machine	R. Bauer	543,204	July 23	2417	508	72	501
Saw-guard	F. M. Hoover	545,504	Sept. 3	134	32	72	1379
Saw-guide	H. N. and L. A. Bigger	544,282	Aug. 13	792	201	72	904
Saw-guide	A. M. Pineo	542,656	July 16	1469	353	72	306
Saw-gummer	B. C. Bradley and G. Ewing	546,394	Sept. 17	1684	400	72	1698
Saw-gummer	W. McLean and E. Davies	544,067	Aug. 6	414	104	72	825
Saw. Hand	D. R. Thomas	546,686	Sept. 24	2174	517	72	1803
Saw-handle	P. Brown	543,289	July 23	2560	601	72	526
Saw-mill attachment. Band	N. Shaw	544,694	Aug. 20	1604	385	72	1070
Saw mill. Band	E. E. Thomas	544,999	Aug. 20	2157	521	72	1174

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Saw mill. Band	E. E. Thomas	545,000	Aug. 20	2158	521, 522	72	1174
Sawmill-carriage offsetting mechanism	E. E. Thomas	546,124	Sept. 10	1186	283	72	1587
Sawmill-carriages. Head-block for	J. Noonan	545,907	Sept. 10	821	198	72	1517
Sawmill-carriages. Off-etting device for	J. McAllister	545,303	Aug. 27	2680	650	72	1297
Sawmill machinery	D. E. Dawson	545,644	Sept. 3	362	89	72	1421
Sawmill set-works	C. F. Coffin	546,654	Sept. 24	2120	503	72	1793
Saw set and jointer	W. I. and R. C. Simmons	546,964	Sept. 24	2629	630	72	1889
Saw-sharpening machine	M. A. Andrews	545,836	Sept. 3	688	168	72	1481
Saw-sharpening machine	R. F. Barker	542,548	July 9	1273	310	72	256
Saw-sharpening machine	R. Fleck	545,064	Aug. 27	2277	553, 554	72	1218
Saw-sharpening tool	C. P. Rood	542,282	July 9	780	191	72	164
Saw-swage	R. Morrell	541,942	July 2	197	45, 46	72	42
Saw-swage	T. Seely	543,509	July 30	2940	693	72	616
Saw-teeth. Machine for sharpening insertible	J. Berry	543,458	July 30	2847	667	72	597
Saw-tooth. Insertible	M. L. Shuster	542,378	July 9	970	238	72	200
Saw-tooth. Insertible	A. W. Walter	542,577	July 9	1325	321	72	265
Saw-tooth shaping and setting machine	R. E. Poindexter	543,752	July 30	3430	797	72	702
Saw. Universal turning radial	H. Ehrhardt	543,574	July 30	3066	717, 718	72	639
Saws. Gage for side-filing	W. H. Miller	545,518	Sept. 3	154	36	72	1383
Sawing-machine	J. Barnes	546,803	Sept. 24	2376	567	72	1840
Sawing-machine	W. Curtis	545,780	Sept. 3	596	144	72	1463
Scaffold-bracket	P. L. Fox	542,469	July 9	1138	279	72	231
Scaffold. Swinging	M. Keeley	544,486	Aug. 13	1224	296	72	980
Scaffold. Window	D. W. Miller	542,895	July 16	1859	441	72	379
Scaffolding stand or support	J. A. Allen	545,438	Sept. 3	4	2	72	1355
Scale. Automatic computing	A. U. Smith	545,616	Sept. 3	311	76, 77	72	1411
Scale. Automatic cotton-weighing	A. Schulze	542,285	July 9	786	192, 193	72	165
Scale. Automatic electric weighing	C. F. Wood. (Reissue)	11,503	July 9	1395	237	72	280
Scale. Automatic weighing	A. Schulze	542,284	July 9	783	192	72	165
Scale calculator attachment	A. McGrew	544,415	Aug. 13	1084	265	72	952
Scale. Computing	C. M. Holden and E. M. Gorden	542,523	July 9	1237	302	72	249
Scale. Computing	W. F. Stimpson	543,323	July 23	2612	614	72	536
Scale. Platform	F. F. Meyer	546,673	Sept. 24	2151	511	72	1799
Scale. Price-computing	H. E. Swift	542,816	July 16	1738	414	72	355
Scale. Price-computing	H. E. Swift	542,969	July 16	1973	468, 469	72	401
Scale. Price-computing	H. E. Swift	542,970	July 16	1977	469	72	402
Scale. Self-registering	J. Campbell	544,207	Aug. 6	641	163, 164	72	866
Scarf-fastener	G. A. Heckmann	545,157	Aug. 27	2443	592	72	1251
Scarf-pin guard	A. Wilken	546,210	Sept. 10	1331	316	72	1613
Scissors	R. P. Bowdoin	542,183	July 2	588	142	72	115
Scissors. Pocket	F. R. Baker	542,601	July 9	1359	329	72	272
Scoop-board	D. S. McGurthy	546,707	Sept. 24	2208	527	72	1809
Scoop or shovel for excavating-machines	C. A. Smith	545,025	Aug. 20	2201	532	72	1182
Scoop. Weighing	H. G. Stiebel, Jr	541,891	July 2	118	28	72	26
Scow	J. Russell	542,111	July 2	479	115	72	94
Scow. Dumping	D. Delehanty	542,408	July 9	1019	250, 251	72	209
Scow. Steam garbage	G. W. Melville	546,545	Sept. 17	1941	461	72	1747
Scraper-operating apparatus	H. G. Butler	543,332	July 23	2623	616	72	538
Scraper. Pavement or sidewalk	C. F. and G. E. Bierbach	543,920	Aug. 6	163	38	72	778
Scraper. Road	S. M. Thayer	545,748	Sept. 3	543	130	72	1454
Scraper. Street	W. H. Wyman	542,867	July 16	1816	430	72	370
Scraping, chopping, and cultivating machine. Combined	J. A. Alexander	546,801	Sept. 24	2372	566, 567	72	1839
Scraping machine. Road	F. M. Pennock and G. Webster	544,320	Aug. 13	870	218, 219	72	919
Screen: *See* Hospital-screen. Window-screen. Rotary screen.							
Screen	G. W. Cross	545,056	Aug. 27	2253	517	72	1213
Screen for coal or other material	J. N. Pott	543,780	July 30	3491	813	72	712
Screening apparatus	J. F. H. King	546,891	Sept. 24	2513	600	72	1867
Screwdriver	J. W. Jones	543,096	July 23	2197	521	72	459
Screw holder and driver	J. R. Balsley	544,606	Aug. 13	1423	346	72	1018
Screw holder and driver	J. R. Balsley	545,331	Aug. 27	2723	661	72	1305
Screw-machine	G. E. Witherell	545,400	Aug. 27	2825	688, 689	72	1324
Screw machine. Metal	S. L. Worsley	543,606	July 30	3182	738	72	655
Screw-thread-cutting die	N. E. Martin	543,136	July 23	2273	539	72	474
Screw-threads. Die for cutting	M. Rouse	542,006	July 2	318	77	72	63
Screwing and boring hand-tool	L. Silcott	545,827	Sept. 3	672	164	72	1478
Scroll-former	P. C. Forrester	543,233	July 23	2466	579	72	509
Scrubber	J. Jung	544,259	Aug. 6	760	194	72	887
Seal	D. F. MacCarthy	546,619	Sept. 17	2060	489	72	1760
Seal. Car	T. S. Wheelwright	545,260	Aug. 27	2613	634	72	1284
Seal-lock	J. Player	544,004	Aug. 6	300	74	72	803
Seal-press	T. D. Willever	542,035	July 2	360	87	72	72
Sealed receptacle	P. J. Panly, Jr	544,902	Aug. 20	1999	477	72	1146
Sealing contrivance	L. P. Valiquet	545,395	Aug. 27	2815	684	72	1322
Seaming covers to sheet-metal vessels	F. E. Heinig	546,469	Sept. 17	1824	432	72	1725
Seat: *See* Car-seat. Folding seat. Counter-seat. Velocipede-seat.							
Seat	J. S. Johnston	542,412	July 9	1029	253	72	212
Seat and berth. Convertible	J. Krehbiel	544,510	Aug. 13	1259	304	72	987
Secondary battery	E. Boettcher	543,372	July 23	2681	633	72	549
Secondary battery	F. King	544,673	Aug. 20	1568	375	72	1063
Secondary battery	I. A. Timmis	545,390	Aug. 27	2808	682	72	1320

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Sectional boiler	H. D. Rogers	542,281	July 9	779	191	72	164
Sectional boiler	T. H. Wyman	544,554	Aug. 13	1327	322	72	1001
Seed crusher, planter, and distributer. Cotton-	N. J. McAlister	544,741	Aug. 20	1682	404	72	1024
Seed delinter. Cotton-	J. J. Faulkner	546,270	Sept. 10	1446	343	72	1634
Seed delinter. Cotton-	J. J. Faulkner	546,271	Sept. 10	1449	343, 344	72	1635
Seed delinter. Cotton-	J. J. Faulkner	546,272	Sept. 10	1452	344	72	1636
Seed delinter. Cotton-	J. J. Faulkner	546,273	Sept. 10	1454	345	72	1636
Seed delinter. Cotton-	J. J. Faulkner	546,274	Sept. 10	1459	346	72	1637
Seed delinter. Cotton-	J. J. Faulkner	546,275	Sept. 10	1462	346	72	1638
Seed delinter. Cotton-	J. J. Faulkner	546,276	Sept. 10	1464	347	72	1639
Seed delinter. Cotton-	J. J. Faulkner	546,277	Sept. 10	1468	347	72	1639
Seed delinter. Cotton-	J. J. Faulkner	546,278	Sept. 10	1470	348	72	1640
Seed delinter. Cotton-	J. J. Faulkner	546,279	Sept. 10	1472	348	72	1640
Seed delinter. Cotton-	J. J. Faulkner	546,280	Sept. 10	1475	349	72	1641
Seed delinter. Cotton-	J. J. Faulkner	546,281	Sept. 10	1476	349	72	1641
Seed-delinting machine. Cotton-	G. W. Washburn	543,202	July 23	2412	567	72	500
Seed-drill	J. and A. M. Campbell	545,050	Aug. 27	2241	543	72	1211
Seed extractor and recleaner. Foul-	E. L. Fixler and A. H. Williams	542,337	July 9	890	218, 219	72	184
Seeder	J. M. W. Long	545,703	Sept. 3	469	113	72	1440
Seeding-machine	W. J. Dealtry	543,573	July 30	3064	716	72	639
Seeding mechanism. Fruit-	G. C. La Due	543,833	July 30	3594	838, 839	72	732
Seeding mechanism. Fruit-	G. C. La Due	534,834	July 30	3598	839	72	732
Seltzogene	V. E. J. Durafort	545,351	Aug. 27	2749	666, 667	72	1309
Sensitive non-halation plate	C. F. Oakley	543,503	July 30	2934	.....	72	613
Separating-machine	O. M. Morse. (Reissue)	11,507	Sept. 10	1488	351	72	1644
Separator: *See* Centrifugal separator. Spinning-frame yarn-separator. Cut-off separator. Tooth-separator.							
Separator	D. Sewell	546,252	Sept. 10	1412	335, 336	72	1628
Separator	T. Walker and J. F. Carter	545,258	Aug. 27	2610	633	72	1284
Set-line snap	G. E. Palmer	542,803	July 16	1722	410	72	352
Setting-machine	W. J. Ayer	545,044	Aug. 27	2234	541	72	1209
Sewing looped fabrics. Machine for	S. Arnold	543,795	July 30	3513	818, 819	72	716
Sewing-machine	N. F. Becker	542,549	July 9	1275	311	72	257
Sewing-machine	A. B. Fowler and G. E. Warren	545,625	Sept. 3	327	81	72	1414
Sewing-machine	C. Friederich	545,882	Sept. 10	764	186, 187	72	1506
Sewing-machine	L. Goddu	545,486	Sept. 3	99	23, 24	72	1373
Sewing-machine	G. L. Harlow	545,646	Sept. 3	365	90	72	1422
Sewing-machine	G. E. Kott	543,832	July 30	3590	836, 837, 838	72	731
Sewing-machine	A. Legg and F. H. Treacy	546,768	Sept. 24	2321	553	72	1829
Sewing-machine	J. M. Merrow	541,977	July 2	263	62	72	54
Sewing-machine	D. Richards	543,507	July 30	2943	692	72	615
Sewing-machine	J. B. M. Segelhorst	543,604	July 30	3178	736, 737	72	655
Sewing-machine	R. W. Thomson	545,391	Aug. 27	2808	682, 683	72	1321
Sewing-machine	J. Vannette	545,924	Sept. 10	849	205	72	1523
Sewing-machine attachment	V. Stey	542,290	July 9	807	198	72	168
Sewing-machine feeding mechanism	J. Vannette	543,068	July 23	2150	509, 510	72	450
Sewing-machine for barring and tacking	H. L. Kemp	542,196	July 2	614	148, 149	72	120
Sewing-machine for lasting boots or shoes	W. C. Collyer	546,695	Sept. 24	2189	521, 522	72	1805
Sewing-machine grinding and polishing attachment	H. M. Norris	544,190	Aug. 6	607	151	72	861
Sewing-machine groove-cutting attachment	A. G. Taylor	543,431	July 23	2791	656	72	572
Sewing-machine guiding attachment	F. Koschtial	542,858	July 16	1804	427, 428	72	367
Sewing-machine hemming-gage	J. W. Simons	544,751	Aug. 20	1697	408	72	1088
Sewing-machine. Overedge	E. and R. Cornely	543,295	July 23	2568	603, 604	72	527
Sewing-machine. Overedge	E. and R. Cornely	543,335	July 23	2626	617	72	539
Sewing-machine ruffler	A. Laubscher	546,670	Sept. 24	2144	510	72	1798
Sewing machine. Sole-	L. Goddu	545,483	Sept. 3	85	21	72	1371
Sewing machine. Sole-	L. Goddu	545,484	Sept. 3	92	22, 23	72	1372
Sewing-machine stop mechanism	J. Douglas	543,442	July 23	2812	660, 661	72	575
Sewing-machine tack-pulling attachment	J. E. Bertrand	545,669	Sept. 3	403	97	72	1429
Sewing-machine treadle	D. L. Whittingham	544,940	Aug. 20	2060	491	72	1157
Sewing-machine trimming attachment	H. Case	543,847	Aug. 6	25	7, 8	72	753
Sewing-machines. Heating apparatus for wax-thread	W. P. Hopkins	544,639	Aug. 13	1483	360	72	1030
Sextant attachment	S. M. W. Croskery	544,212	Aug. 6	658	167	72	869
Shade and curtain-pole hanger. Combined window-	C. A. Williams	542,510	July 9	1209	294	72	244
Shade holder. Adjustable window-	O. H. Nims	546,472	Sept. 17	1827	433	72	1726
Shade holder. Curtain-	W. H. Van Gilder and A. H. Wilson	546,867	Sept. 24	2467	591	72	1858
Shade. Window-	J. R. Balsley	543,763	July 30	3455	805, 806	72	706
Shades. Holding mechanism for spring-actuated	H. H., Sr., and H. H. Forsyth, Jr.	544,297	Aug. 13	821	208	72	910
Shades to rollers. Means for attaching window-	T. A. Fontaine	542,703	July 16	1552	370	72	322
Shaft. Counter-	O. S. Walker	543,913	Aug. 6	144	32	72	774
Shaft-coupling. Compression	R. F. Hargraves	545,017	Aug. 20	2184	528	72	1179
Shaft for driving mechanisms. Flexible	C. J. Fravéga and A. Janet	541,997	July 2	299	69, 70	72	61
Shaft-support. Vehicle	J. R. Carfield	544 527	Aug. 13	1281	309	72	991
Shaft supporter. Vehicle-	C. G. Klick	545,508	Sept. 3	138	32	72	1380

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Shaft trace connection. Vehicle-	J. H. Wiseheart	543,225	July 23	2451	576	72	506
Shaft. Universal drill-	M. S. P. Dahl	543,083	July 23	2172	515	72	455
Shafts. Sinking	J. A. Dubbs	543,230	July 23	2458	577, 578	72	507
Shafting. Flexible coupling for	M. Mannesmann	545,085	Aug. 27	2311	561	72	1224
Shank-stiffener	J. M. Watson	542,070	July 2	421	102	72	83
Shank-stiffener machine	N. C. Ruberg	542,038	July 2	356	86	72	71
Shaping-machines. Quick-return motion for	M. and E. J. Flather	543,598	July 30	3168	733	72	653
Sharpener. Combined knife and scissors	F. Hayes	543,552	July 30	3028	702	72	632
Sharpener. Knife-	J. Oefinger	542,372	July 9	959	236	72	198
Sharpener. Shears or scissors	A. H. Hall	546,012	Sept. 10	999	241	72	1551
Shaving apparatus	F. W. Naumann	543,348	July 23	2647	623	72	543
Shaving-cabinet	A. W. Brennan	545,265	Aug. 27	2618	635	72	1285
Shears: *See* Animal-shears. Steam-shears. Ball-bearing shears. Tinner's shears. Sheep-shears.							
Shears	H. Aiken	545,759	Sept. 3	564	135	72	1457
Shears	J. Neimeyer	546,493	Sept. 17	1863	441	72	1732
Shears	J. A. Vernet	543,275	July 23	2540	596	72	522
Shears-joint	A. J. Krank	543,026	July 23	2070	492	72	436
Shears, punch, and tire-shrinker. Combined	H. W. Moore	543,809	July 30	3548	824, 825	72	723
Sheath or case	F. J. Bringham	545,448	Sept. 3	17	5	72	1358
Sheathing and lath machine. Combined	F. C. Gerhard and M. Bintner	546,522	Sept. 17	1908	451, 452	72	1741
Sheep-shearing machine	D. and C. T. Silver	543,905	Aug. 6	134	29	72	773
Sheep-shears	L. J. Loblein	541,862	July 2	75	17	72	18
Sheet-associating mechanism	L. C. Crowell	545,459	Sept. 3	34	9, 10	72	1361
Sheet-associating mechanism	W. Spalckhaver	545,544	Sept. 3	193	47, 48	72	1390
Sheet-holder and winch	E. G. Kelley	544,260	Aug. 6	761	194, 195	72	887
Sheet metal of stove-boards. Machine for clinching	W. Westlake	542,071	July 2	422	102	72	83
Sheet-metal pipe-blanks. Machine for forming	D. H. Stoll	543,971	Aug. 6	245	59, 60	72	703
Sheet-metal plates. Apparatus for treating	J. D. Grey	542,159	July 2	554	134	72	109
Sheet-metal vessel	F. E. Heinig	546,466	Sept. 17	1821	431	72	1724
Sheet-metal-working machine	F. E. Heinig	546,468	Sept. 17	1823	432	72	1725
Shelf. Portable	C. S. Stone	543,949	Aug. 6	209	51	72	787
Sheller: *See* Corn-sheller. Nut-sheller.							
Shelving	C. O. Shupert	542,114	July 2	483	116	72	95
Shingle-planing machine	W. J. Pugh	544,121	Aug. 6	507	125	72	842
Shipboard. Mechanism for closing bulkhead-doors on	A. W. Montgomery-Moore	542,935	July 16	1925	456	72	392
Ship-cleaning apparatus	E. T. Thomas	545,923	Sept. 10	848	205	72	1522
Ship. War-	G. W. Van Hoose	545,321	Aug. 27	2707	658	72	1302
Ships. Apparatus for trimming	E. Redmond	545,095	Aug. 27	2328	564	72	1227
Shirt	S. G. Schenck	545,615	Sept. 3	310	76	72	1411
Shirt	F. L. Wyeth	545,261	Aug. 27	2614	634	72	1284
Shoe	H. D. Holbrook	545,160	Aug. 27	2447	593	72	1251
Shoe	J. A. Kray	544,583	Aug. 13	1377	337	72	1011
Shoe	A. Reed	544,748	Aug. 20	1693	407	72	1087
Shoe. Cork-sole	G. H. Gifford	541 999	July 2	302	71	72	62
Shoe-drying apparatus	A. Rodde	545,818	Sept. 3	660	160, 161	72	1475
Shoe hook and stud	A. Latham	542,415	July 9	1035	254	72	213
Shoemaking-tool	E. M. Cole	541,918	July 2	162	38	72	35
Shoe. Turned	G. H. Harland	546,323	Sept. 17	1565	371	72	1675
Shoe. Turned	T. W. Trimby	546,629	Sept. 17	2076	492	72	1772
Shoes. Insole for	W. F. Baird	545,066	Aug. 20	2167	524	72	1176
Shoes. Manufacturing cork-sole	E. M. Cole	543,377	July 23	2686	635	72	550
Shoestring-fastener	J. Kasschau	542,413	July 9	1033	253	72	213
Shoulder-brace	F. J. Birney	542,009	July 2	324	78	72	65
Shovel: *See* Coal-shovel. Steam-shovel. Snow-shovel.							
Show-case	C. J. Backhaus	542,227	July 9	679	167	72	147
Show-case	W. Hoare	542,475	July 9	1148	281	72	233
Show-top	H. Goldman	541,927	July 2	176	41	72	38
Shower-bath. Portable	W. H. Shackleford	542,688	July 16	1526	365	72	317
Shutter-fastener	F. S. Graves	545,488	Sept. 3	106	27	72	1374
Shutter-fastener	A. Heller	542,051	July 2	384	93	72	77
Shutter-fastener	A. Huiman	543,247	July 23	2493	584	72	514
Shutter-fastener	O. Knight	546,164	Sept. 10	1255	300	72	1598
Shutter. Fire-protective window-	E. J. McCormick	545,209	Aug. 27	2540	614, 615	72	1270
Shutter-hook	B. H. Davidson	546,304	Sept. 17	1523	360	72	1667
Shutter-slat operator	T. M. Fuller	546,845	Sept. 24	2437	585	72	1852
Shutter-worker	T. Kochka	542,059	July 2	405	98	72	79
Shuttle. Bobbin-	T. Hampson	542,160	July 2	555	134	72	109
Shuttle-threader	J. E. Dolber	546,006	Sept. 10	990	239	72	1549
Sifting and sorting apparatus	K. H. A. Stitz	546,562	Sept. 17	1976	469	72	1753
Sifter	F. A. Iddings	544,256	Aug. 6	756	193	72	886
Sifter	F. A. Iddings	544,257	Aug. 6	757	194	72	886
Sifter. Ash-	T. J. Clepper	544,662	Aug. 20	1547	371	72	1059
Sifter. Ash-	J. H. Hayner	543,132	July 23	2262	536	72	472
Sifter. Ash-	J. G. P. Putnam	545,094	Aug. 27	2327	564	72	1227
Sifter. Coal-	C. G. Bailey	542,514	July 9	1219	297	72	246
Sifter. Flour-	W. D. House	542,476	July 9	1150	281	72	233
Sifter. Rotary flour-	B. P. Quaintance	544,689	Aug. 20	1597	383	72	1068
Sifting apparatus	A. Behringer	546,911	Sept. 24	2544	608	72	1873
Sifting apparatus	O. Fuchs	542,884	July 16	1816	437, 438	72	376
Sifting pulverized clay. Machine for	F. S. Slattery	543,221	July 23	2443	573, 574	72	565

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Sign. Advertising	J. H. Kelly	546,285	Sept. 10	1486	350	72	1643
Sign. Advertising illuminated	N. Burgess	542,793	July 16	1700	404	72	348
Sign for street-cars. Illuminated	H. Pearson and E. A. Rice	543,717	Sept. 3	493	119	72	1444
Sign. Street-car	J. H. Deters and C. Kiechler	544,504	Aug. 13	1250	302	72	986
Sign. Street-car	J. M. Peter and W. Garrett	545,306	Aug. 27	2684	651	72	1298
Signal: *See* Car-signal. Railway-signal. Electromagnetic signal. Railway block-signal. Train-signal. Light-signal.							
Signal apparatus. Electric	T. B. Keeler	542,769	July 16	1660	396	72	341
Signal-box	N. H. Suren	545,639	Sept. 3	356	88	72	1420
Signal-box	N. H. Suren	546,036	Sept. 10	1037	249	72	1538
Signal-box	N. H. Suren	546,037	Sept. 10	1040	250	72	1538
Signal-box. Police-patrol	E. Brombacher	542,074	July 2	427	103	72	84
Signal-transmitter	W. H. Davis and H. C. Christy	546,228	Sept. 10	1362	324	72	1620
Signaling	D. L. V. Browne	542,142	July 2	523	125	72	104
Signaling apparatus	L. S. Crandall	542,922	July 16	1014	453, 454	72	390
Signaling apparatus. Electric	G. E. Miller	545,003	Sept. 10	814	197	72	1516
Signaling apparatus. Electric	B. Price	545,815	Sept. 3	655	159	72	1475
Signaling apparatus. Electrical	W. W. Dean	544,567	Aug. 13	1344	327, 328	72	1004
Signaling apparatus. Electrical	J. H. Fildes	545,469	Sept. 3	60	14	72	1366
Signaling apparatus. Fog	D. C. King and R. A. Boutilier	546,163	Sept. 10	1253	300	72	1598
Signaling between trains. Electrical system for	A. Basanta y Baqué	542,916	July 16	1896	449, 450	72	386
Signaling device. Electric	W. Gillette	545,357	Aug. 27	2759	670	72	1311
Signaling. Electric	G. E. Miller	545,904	Sept. 10	816	197	72	1516
Signaling system. Electric	C. A. Rolfe	544,123	Aug. 6	509	126	72	842
Signaling vehicles by numbers. Apparatus for	F. Warren	546,499	Sept. 17	1872	443, 444	72	1734
Silo	W. A. Van Densen	546,204	Sept. 10	1324	314, 315	72	1611
Singletree-coupling	W. J. Kauffman	542,892	July 16	1857	440	72	379
Sink and washtub	F. S. Madsen	544,105	Aug. 6	484	120	72	837
Siphon	F. S. Hillhouse	545,503	Sept. 3	132	31	72	1379
Skate	C. A. Hinsch and W. G. Price	544,172	Aug. 6	581	145	72	556
Skate. Child's safety	C. H. Smith	544,490	Aug. 13	1228	297	72	981
Skate-sharpener	S. F. Morris	544,992	Aug. 20	2141	518	72	1172
Skate-sharpening device	F. W. Lowe	546,929	Sept. 24	2573	616	72	1879
Sketching apparatus	A. K. O. Moore and H. Bourcey	544,642	Aug. 13	1489	361	72	1031
Skirt and belt fastener. Adjustable	A. L. Hendry	544,407	Aug. 13	1075	262	72	951
Slack-adjuster	E. Chaquette	542,627	July 16	1414	340, 341	72	296
Slack-adjuster	A. Chubb, Jr	543,294	July 23	2567	603	72	527
Slack-adjuster	J. E. Loughridge	545,084	Aug. 27	2308	561	72	1224
Slack-adjuster	C. Lindström	545,860	Sept. 3	730	178	72	1489
Slack-adjuster	W. H. Marshall	543,390	July 23	2706	639	72	554
Slack-adjuster	W. H. Marshall	543,391	July 23	2707	639	72	554
Slag and furnace therefor. Process of treating	C. M. Van Cleve and R. D. Rhodes	545,001	Aug. 20	2160	522	72	1175
Slag-ballast machine	J. Owen	542,446	July 9	1096	267	72	223
Slate and scholar's companion. Combined	B. B. Hartleb	546,848	Sept. 24	2443	585	72	1852
Slate punching and dressing machine	W. S. Bair and S. M. Thompson	541,823	July 2	6	2	72	4
Sled. Dump	A. H. Rogers	544,265	Aug. 6	767	196	72	888
Sled. Logging	H. Vanderhei	543,067	July 23	2149	509	72	450
Sleigh	E. L. Thoms	546,363	Sept. 17	1632	388	72	1687
Sleigh. Bob	H. L. Eastman	542,557	July 9	1293	314	72	260
Sleigh. Bob	O. M. Gorder	542,252	July 9	714	176	72	154
Sleigh. Bob	C. E. Gould	541,221	Aug. 6	676	172	72	872
Sleigh-shoe. Detachable	H. H. Hahn	546,398	Sept. 17	1691	402	72	1699
Slicing and paring machine	J. Netrefa	542,097	July 2	458	109, 110	72	90
Sliding gate	L. Dearmont	546,306	Sept. 17	1525	360	72	1667
Smocking machine. Cloth	F. S. Pinkham	546,474	Sept. 17	1830	433, 434	72	1726
Smoke-box	C. V. Fleetwood	546,137	Sept. 10	1208	288	72	1590
Smoke-consuming apparatus	T. Langer	544,766	Aug. 20	1751	418	72	1099
Smoke-consuming apparatus	T. Langer	544,767	Aug. 20	1752	418	72	1099
Smoke-consuming apparatus for furnaces	T. Langer	544,765	Aug. 20	1747	417, 418	72	1098
Smoke-consuming furnace	V. K. McElheny	543,424	July 23	2767	653	72	565
Smoke-consuming furnace	A. J. McIntosh	542,371	July 9	958	236	72	198
Smoke-preventer	W. R. Mills	545,967	Sept. 10	918	220	72	1537
Smokeless furnace	B. A. Thomas	542,294	July 9	814	200	72	170
Smokeless powder	G. N. Whistler and H. C. Aspinwall	541,909	July 2	150	.....	72	33
Smokeless powder	G. N. Whistler and H. C. Aspinwall	541,911	July 2	151	.....	72	33
Snap-hook	L. M. Cook	546,226	Sept. 10	1359	323	72	1619
Snap-hook	W. Eckert	514,483	Aug. 13	1220	295	72	980
Snap-hook	E. Manes	545,966	Sept. 10	917	219	72	1536
Snap-hook	W. A. Schleicher	544,126	Aug. 6	515	127	72	843
Snow-cleaning machine	G. B. Siccardi	542,209	July 2	646	158	72	125
Snow-plow	J. Leightham	544,623	Aug. 13	1454	353, 354	72	1024
Snow-plow for street-railways	J. H. Graham	541,928	July 2	178	42	72	38
Snow-shovel	J. E. Torr	543,910	Aug. 6	140	31	72	774
Soap-holder	G. O. Rogers	545,024	Aug. 20	2200	532	72	1182
Soap receptacle. Pulverized	C. S. Stevenson	546,684	Sept. 24	2170	516	72	1802
Soap-sheets. Preparing	W. H. Roach and A. J. Tourville	545,614	Sept. 3	309	76	72	1411
Socket for checking-posts	T. M. Jenkins	545,231	Aug. 27	2574	623, 624	72	1277
Soda-water fountain	R. M. Green	545,284	Aug. 27	2647	643	72	1291
Soldering apparatus. Can	W. D. Brooks	544,953	Aug. 20	2081	498, 499	72	1161

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Soldering-clamp	F. W. Duke	546,421	Sept. 17	1735	412	72	1707
Soldering end seams of sheet-metal cans. Machine for	L. Petterson	543,401	July 23	2724	643, 644, 645	72	558
Soldering-iron	J. C. McIntyre	546,470	Sept. 17	1825	432	72	1725
Soldering-iron. Electric	F. B. Rae	543,654	July 30	3255	756	72	689
Sole	H. Mayer	546,932	Sept. 24	2578	617	72	1880
Sole for footwear. Cushioned	C. Macdonald	545,705	Sept. 3	471	114	72	1440
Sole-leveling machine	E. C. Judd	543,385	July 23	2699	637, 638	72	553
Sole-leveling machine	E. C. Judd	545,038	Aug. 20	2221	538, 539	72	1186
Sole-leveling machine	F. W. McArdle	542,570	July 9	1315	318	72	263
Sole-leveling machine	E. E. Winkley	541,988	July 2	283	66	72	57
Sole-leveling machine	E. E. Winkley and B. Phillips	546,211	Sept. 10	1332	317	72	1613
Sole-leveling or other machines. Variable-motion mechanism for	E. C. Judd and F. W. Coy	545,407	Aug. 27	2840	693, 694	72	1329
Sole rounding and channeling machine	Z. T. French and W. C. Meyer	546,852	Sept. 24	2447	586, 587	72	1853
Sole-rounding machine	G. Julian. (Reissue)	11,501	July 2	674	165, 166	72	130
Sole-rounding machine	F. W. Kallusch and F. M. Jurnick	543,304	July 23	2583	607, 608	72	531
Soles. Cutter for trimming the edges of boot	M. T. Denne	545,223	Aug. 27	2561	620	72	1274
Sower and weeder. Hand seed	G. J. Olendorf	543,699	July 30	3326	772	72	682
Sowing machine. Grass-seed	G. H. Preston	544,005	Aug. 6	301	74, 75	72	803
Spark-arrester	E. C. R. Humphries	546,156	Sept. 10	1239	296	72	1596
Spark-arrester	A. J. Peterson	544,865	Aug. 20	1927	461	72	1132
Spark-arrester	W. H. Phillips	544,629	Aug. 13	1465	350	72	1026
Spear. Fish or seal	H. F. Norton	546,428	Sept. 17	1749	415	72	1710
Spearing frogs, &c. Device for	D. Sanguinette	542,315	July 9	849	208	72	177
Spectacles or eyeglasses	J. E. Parker	542,534	July 9	1253	305	72	252
Spice holder, grinder, nail-puller, and gas-wrench	F. S. McKittrick and W. Wilkson	545,090	Aug. 27	2321	563	72	1226
Spider	B. E. Sperry	542,449	July 9	1106	271	72	225
Spigot	J. Frye	543,477	July 30	2881	677	72	603
Spindle-bearing	W. T. Carroll	544,805	Aug. 20	1815	435	72	1112
Spindle for head-stocks. Drawing-in	E. Rivett	545,312	Aug. 27	2690	652	72	1299
Spinning and twisting machine spindles. Ball-bearing for	E. Maertens	546,022	Sept. 10	1014	244	72	1554
Spinning-frame	J. Brindle	545,844	Sept. 3	702	171	72	1483
Spinning-frame	E. Whittum	546,460	Sept. 17	1810	428, 429	72	1722
Spinning-frame separator	A. Mason	542,649	July 16	1453	350	72	304
Spinning-frame yarn-separator	G. E. and W. A. Chandler	544,286	Aug. 13	798	203	72	906
Spinning-machine stop-mechanism	C. H. Bloss	545,768	Sept. 3	580	140	72	1460
Spinning-machines. Yarn-protector attachment for	M. Larner	545,510	Sept. 3	141	33	72	1380
Spinning-mule. Self-acting	B. F. Meyer	544,234	Aug. 6	699	178, 179, 180, 181	72	876
Spinning-spindle	H. D. Klotz	542,857	July 16	1803	427	72	367
Spinning-spindle	H. D. Klotz	545,590	Sept. 3	273	67	72	1404
Spinning-spindle support	T. Gorman	543,622	July 30	3210	744	72	660
Spinning-spindle support	T. Gorman	543,623	July 30	3211	744	72	660
Spinning, winding, and twisting machine spindle	M. Chapon	546,915	Sept. 24	2549	610	72	1874
Spiral spring	J. G. Smith	544,597	Aug. 13	1404	342	72	1016
Spittoon	W. W. Frantz	543,575	July 30	3067	718	72	640
Spittoon-carrying device	C. E. Koch	544,359	Aug. 13	987	243	72	936
Splice	A. Davy	544,965	Aug. 20	2102	504	72	1165
Spoke-fastener for wheels	C. L. Schwarz	545,916	Sept. 10	837	201	72	1520
Spokeshave	A. Gumz	546,321	Sept. 17	1562	370	72	1674
Spoke-socket	I. A. Elmer and T. H. Johnson	546,513	Sept. 17	1897	448	72	1739
Spool-carrying frame	J. Sommer	546,358	Sept. 17	1623	387	72	1686
Sprayer	A. G. Provine	544,930	Aug. 20	2042	487, 488	72	1154
Spraying-machine	G. A. Myers	542,712	July 16	1561	373, 374	72	324
Spring: *See* Car-spring. Vehicle-spring. Spiral spring.							
Spring. India-rubber buffer and bearing	A. Spencer	546,359	Sept. 17	1625	387	72	1686
Spring-motor	T. A. Cross	544,350	Aug. 13	969	239	72	932
Spring-motor for vehicles	A. Burdick and H. T. Wetzel	544,955	Aug. 20	2084	499	72	1162
Spring-operated motor or apparatus	E. G. H. Stein	542,839	July 16	1772	422	72	361
Springs. Sectional band for	G. B. Sloan, Jr., and T. A. Shea	545,137	Aug. 27	2409	583	72	1243
Sprinkler: *See* Automatic sprinkler. Lawn-sprinkler. Fire-sprinkler. Watering-pot sprinkler.							
Stable safety-hook	L. J. Desailly and J. Fraisse	544,568	Aug. 13	1350	329	72	1005
Staging-support	R. W. Somers	543,513	July 30	2963	695	72	618
Stair-tread, landing, or the like	J. T. Andrews	544,204	Aug. 6	638	162	72	866
Stall-floor	C. B. Emery	542,632	July 16	1422	342	72	298
Stall. Horse	W. W. Schouler	544,444	Aug. 13	1157	280	72	968
Stamp-affixing machine	T. C. Devlin	543,441	July 23	2809	660	72	575
Stamp-affixing machine	W. L. Dinsmoor	546,588	Sept. 17	2015	478, 479	72	1760
Stamp-attaching and sealing machine	T. C. Devlin	543,440	July 23	2806	659, 660	72	574
Stamp-battery	T. A. Burrows and H. Martienssen	543,846	Aug. 6	24	7	72	753
Stamp. Hand	J. E. Bates	542,131	July 2	507	122	72	101
Stamp-mill stamp-stem guide	C. A. Fargo	546,281	Sept. 10	1485	350	72	1643
Stamp. Time	J. J. Busenbenz	546,651	Sept. 24	2113	501, 502	72	1792

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Stamp. Time	W. S. Jarboe	543,248	July 23	2494	584, 585	72	514
Stamps. Coin-operated machine for selling and affixing postage	C. M. Heublein	544,620	Aug. 13	1445	352, 353	72	1022
Stamps. Hand device for affixing postage	J. P. Martin and W. P. McFeat	546,769	Sept. 24	2322	554	72	1830
Stanchion	S. S. Silvis	542,176	July 2	578	140	72	113
Stanchion. Chain	H. P. Jensen and H. Larsen	545,203	Aug. 27	2531	612	72	1268
Stand: *See* Book-stand. Music-stand. Display-stand. Photograph-stand. Flower-stand. Switch-stand. Gun tripod stand. Umbrella locking-stand. Map or chart stand. Work-stand.							
Staple-puller	A. H. Russell	545,537	Sept. 3	182	44	72	1368
Starch into coherent masses. Forming	A. Moffatt	541,941	July 2	196	.....	72	42
Starch. Manufacture of	A. Moffatt	545,128	Aug. 27	2395	.....	72	1240
Starching-machine	G. Eichholtz	545,274	Aug. 27	2631	638	72	1288
Starching-machine	L. Reynolds	545,134	Aug. 27	2402	562	72	1242
Starching-machine	R. W. Weldon and S. T. Stites	545,753	Sept. 3	557	132, 133	72	1455
Starting or stopping mechanism	J. J. Heya	543,242	July 23	2483	582, 583	72	512
Station-indicator	W. J. Hull	542,193	July 2	606	147	72	119
Stave-crozing machine	D. C. Putnam	543,893	Aug. 6	115	26	72	769
Stave-machine	W. F. Hutchinson	544,539	Aug. 13	1297	315, 316	72	995
Stay. Dress-	D. H. Warner	543,069	July 23	2151	510	72	451
Steam-boiler	J. D. de Benjumea	544,152	Aug. 6	550	136, 137	72	850
Steam-boiler	W. H. Berry	542,674	July 16	1501	359, 360	72	313
Steam-boiler	G. H. Burley	544,841	Aug. 20	1883	451, 452	72	1124
Steam-boiler	G. Engel	543,988	Aug. 6	275	67	72	798
Steam-boiler	W. D. Ewart	545,464	Sept. 3	51	12	72	1364
Steam-boiler	T. Gunning	544,618	Aug. 13	1440	351	72	1022
Steam-boiler	W. S. Hallowell	544,168	Aug. 6	573	143	72	855
Steam-boiler	J. Hazlett	544,619	Aug. 13	1442	351, 352	72	1022
Steam-boiler	T. Henderson	545,075	Aug. 27	2296	558	72	1221
Steam-boiler	J. R. Müller-Landsmann	545,370	Aug. 27	2778	674	72	1315
Steam-boiler	W. Sellers, G. S. Strong, and H. B. Bradford.	544,130	Aug. 6	521	120	72	844
Steam-boiler	H. H. Taylor	541,896	July 2	124	30, 31	72	27
Steam-boiler	H. H. Taylor	541,897	July 2	128	31	72	28
Steam-boiler and coupling	E. S. Clark	546,809	Sept. 24	2384	569, 570	72	1841
Steam-engine	T. Ballew	546,266	Sept. 10	1441	341, 342	72	1633
Steam-engine	F. A. Burnham	544,476	Aug. 13	1209	292, 293	72	978
Steam-engine	D. T. Burr	544,477	Aug. 13	1210	293	72	978
Steam-engine	N. Chandler	545,846	Sept. 3	706	172, 173	72	1484
Steam-engine	J. W. Deardorff	544,806	Aug. 20	1817	435	72	1112
Steam-engine	R. L. Dennison	542,360	July 9	939	231	72	194
Steam-engine	R. W. Guilford	542,930	July 16	1917	454	72	390
Steam-engine	J. T. Halsey	544,298	Aug. 13	824	208	72	910
Steam-engine	E. K. Hill and J. H. W. Hoadley	542,256	July 9	722	177, 178	72	155
Steam-engine	J. C. Peache	546,900	Sept. 24	2525	603, 604	72	1869
Steam-engine	W. A. Pitt	546,035	Sept. 10	1070	256	72	1565
Steam-engine. Compound	C. Schlared	543,057	July 23	2131	505	72	447
Steam-engine. Duplex	C. M. and E. E. Miller	542,342	July 9	901	221	72	187
Steam-exhaust head	J. E. Kelly	544,810	Aug. 20	1823	437	72	1113
Steam-generator	T. Craney	542,045	July 2	376	91	72	75
Steam-generator	A. C. Dearing	543,678	July 30	3294	765	72	675
Steam-generator	O. Kelsey	544,811	Aug. 20	1824	437, 438	72	1113
Steam-generator	C. A. Knight and G. W. Thode	546,119	Sept. 10	1178	281	72	1585
Steam-generator	E. H. Korsmeyer	541,934	July 2	185	43	72	39
Steam-generator	S. E. Light	541,938	July 2	192	44	72	41
Steam-generator	E. Makin, Jr	546,170	Sept. 10	1264	302	72	1600
Steam-generator	J. J. Rohan	546,786	Sept. 24	2346	560	72	1835
Steam-generator	J. B. Morgan	543,045	July 23	2109	500	72	442
Steam-generator	J. B. Morgan	543,046	July 23	2111	500	72	443
Steam-joint. Rotary	R. Ponnay	546,080	Sept. 10	1116	266	72	1574
Steam-joint. Water-lubricated	J. R. Bannan	544,245	Aug. 6	733	188	72	881
Steam-motor. Rotary	G. Guild	542,190	July 2	598	145	72	117
Steam or hot-water boiler. Sectional	J. C. Brindle	545,939	Sept. 10	876	211	72	1528
Steam-shears	G. S. Brainerd	546,606	Sept. 17	2042	485	72	1766
Steam shovel and dredge	J. H. Dewhurst	542,149	July 2	535	130	72	105
Steam-trap	W. J. Egan	544,464	Aug. 13	1190	289	72	974
Steam-trap	N. Nilson	544,744	Aug. 20	1686	406	72	1085
Steam-trap. Thermostatic	E. E. Gold	546,846	Sept. 24	2439	585	72	1852
Steamer	E. R. Garrett	545,790	Sept. 3	617	150	72	1468
Steaming velvets, &c. Apparatus for	J. H. Ullman	542,904	July 16	1878	446	72	382
Steel bar. Combination	J. S. Brooks	542,989	July 23	2011	478	72	425
Stench-trap	G. Dunstan	543,617	July 30	3201	742	72	658
Stencil-cutting machine	J. A. Hoff and C. K. Pickles	544,227	Aug. 6	685	174, 175	72	874

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Stencil-cutting machine	C. K. Pickles and J. A. Hoff	544,193	Aug. 6	611	152, 153	72	862
Stencils. Prepared sheet for	C. T. and E. Pomeroy	545,093	Aug. 27	2325	.....	72	1227
Stenciling-machine	C. K. Pickles and J. A. Hoff	543,891	Aug. 6	110	25	72	768
Stereopticon panorama machine	C. A. Chase	545,423	Aug. 27	2379	701	72	1336
Stereopticon panorama machine	C. A. Chase	545,452	Sept. 3	22	6	72	1359
Stereoscopic print	L. D. Duhauron	544,666	Aug. 20	1551	372	72	1060
Stereotype-plate holder	L. E. Chapin	544,958	Aug. 20	2090	500	72	1163
Sterilization of milk or other liquids. Apparatus for	F. A. Kleemann	544,437	Aug. 13	1126	272, 273	72	961
Sterilization of water. Apparatus for	N. Yagn	545,116	Aug. 27	2367	572	72	1235
Sterilizing and purifying liquids. Apparatus for	L. P. King	546,015	Sept. 10	1004	242	72	1552
Stitch-separating and indenting machine	J. B. Hadaway	543,012	July 23	2044	485, 486	72	431
Stitching machine. Wire	W. A. Philpott, Jr., and T. A. Briggs	542,005	July 2	314	75, 76, 77	72	64
Stitching or overseaming machine. Buttonhole	J. Reece	544,827	Aug. 20	1852	445, 446	72	1118
Stirrup	J. M. L. Haddorf and H. F. H. Eggers.	545,796	Sept. 3	627	152	72	1470
Stock. Animal	C. Schecher	545,415	Aug. 27	2862	697	72	1332
Stock for threading and cutting off rods	A. W. Bartholomew	546,573	Sept. 17	1993	473	72	1756
Stock-indicator	R. L. Mark	544,988	Aug. 20	2136	517	72	1171
Stock-loader	W. J. Mead	543,393	July 23	2710	640	72	555
Stocking-supporter	J. H. Pilkington	542,805	July 16	1724	410	72	352
Stoking apparatus. Automatic	R. H. Williamson	546,371	Sept. 17	1645	391, 392	72	1090
Stone blocks. Machine for dressing surfaces of	O. T. Dutro and T. McFeely	542,186	July 2	592	143	72	116
Stone composition and making same. Artificial	W. M. Dalton	543,572	July 30	3063	...	72	639
Stone-crusher	G. N. Miller	543,041	July 23	2102	499	72	441
Stone-lifter	J. Henderson and F. McConaughy	543,017	July 23	2054	487	72	433
Stone lintel and sill. Artificial	F. L. Fry and W. J. Fisher	545,884	Sept. 10	767	187	72	1506
Stone-polishing machine	A. D. Moore	541,978	July 2	265	62	72	54
Stone-sawing machines. Hanger for	J. B. Holmes	545,077	Aug. 27	2298	559	72	1222
Stool	L. E. Baner	546,129	Sept. 10	1195	284	72	1588
Stool	J. M. Gantner	544,974	Aug. 20	2115	507	72	1167
Stool and cane. Combined	M. Gordon and S. Cooperstein	542,609	July 9	1381	333	72	277
Stool. Camp	H. Leovy	546,895	Sept. 24	2518	601	72	1868
Stool. Duplex piano	A. Gschwend	546,614	Sept. 17	2054	487	72	1768
Stool indicator. Piano	C. Brizzi	544,154	Aug. 6	553	137	72	851
Stopper: *See* Bottle-stopper. Inkstand-stopper. Bottle valve-stopper. Port-hole stopper. Flue-stopper.							
Stopple and hand-hold. Combined	J. P. Miller	544,990	Aug. 20	2138	517	72	1171
Store-service apparatus	H. M. Neer	544,002	Aug. 6	295	72, 73, 74	72	802
Stove	J. A. Carroll and W. Brooks	543,291	July 23	2563	602	72	526
Stove	W. J. Keep	543,305	July 23	2590	608	72	532
Stove	L. Nutz	546,026	Sept. 10	1025	246	72	1556
Stove	M. Schied	546,624	Sept. 17	2067	490	72	1770
Stove and range and attachment for stoves	W. G. Miller, W. H. Bradley, and A. W. Miller.	544,048	Aug. 6	381	94, 95	72	819
Stove-door	J. Schill	544,772	Aug. 20	1763	421	72	1101
Stove for heating. Gas	T. A. Bryan	543,568	July 30	3055	713	72	637
Stove. Gas	L. Kahn	544,307	Aug. 13	840	211	72	914
Stove. Gas	J. B. Laurent	544,275	Aug. 6	780	199	72	891
Stove. Gas	L. Strimban	542,717	July 16	1569	375	72	325
Stove. Gas cooking	C. Whittingham	544,708	Aug. 20	1635	392	72	1075
Stove-grate	J. H. Beeby	543,841	Aug. 6	13	5	72	751
Stove-grate	G. L. Farwell	545,951	Sept. 10	889	214	72	1530
Stove. Heating	J. A. Kendall	546,926	Sept. 24	2565	614	72	1877
Stove. Heating	W. H. Loy and F. H. Grant	543,742	July 30	3417	793	72	699
Stove. Heating	J. P. Lynott	544,046	Aug. 6	380	94	72	818
Stove. Heating	H. L. Mosher	542,595	July 9	1351	327	72	270
Stove. Heating	O. Olson and C. P. Carlson	543,561	July 30	3044	711, 712	72	635
Stove. Heating	W. W. Towne	543,360	July 23	2867	627, 628	72	546
Stove heating attachment	G. Moser	544,789	Aug. 20	1789	428	72	1106
Stove. Oil	W. H. Wilder	543,790	July 30	3503	815	72	714
Stove. Oil	W. H. Wilder	545,004	Aug. 20	2165	523	72	1176
Stove or range. Cooking	H. F. W. Sievers	543,454	July 23	2539	665	72	580
Stove-oven door	J. Schill	544,773	Aug. 20	1764	421	72	1102
Stovepipe-fastener	C. M. Krull	544,674	Aug. 20	1569	376	72	1063
Stove. Portable	J. H. Renfroe	542,280	July 9	778	191	72	164
Stove. Water-heating	J. A. Wagle	546,367	Sept. 17	1637	390	72	1688
Stoves or lamps. Extinguisher for oil	W. M. Bowman	544,023	Aug. 6	336	83	72	811
Stoves or other heaters. Combustion device for	S. R. Thompson	544,870	Aug. 20	1935	463	72	1133
Strap: *See* Hitching-strap.							
Strap and buckle	F. J. Bringham	545,574	Sept. 3	246	60	72	1399
Strap coupling. Breast	S. A. D. Reynolds	545,724	Sept. 3	503	123	72	1447
Straps. Joint for ends of leather	F. J. Bringham	545,572	Sept. 3	244	60	72	1399
Straw-carrier	J. R. Ingels	541,932	July 2	182	43	72	39
Straw-stacker. Pneumatic	F. F. Landis	541,936	July 2	188	43, 44	72	40
Street-sweeper	G. D. Hufhand	545,652	Sept. 3	372	92	72	1423
Street-sweeper	J. E. Porter	544,929	Aug. 20	2040	487	72	1153
Street-sweeper	R. F. Reagan	542,808	July 16	1728	411, 412	72	353
Street-sweeper	A. J. Reynolds	542,571	July 9	1316	319	72	264

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Strength-testing machine. Coin-controlled	J. P. Wennersten	543,586	July 30	3082	722, 723	72	642
Striking and testing machine. Coin-controlled	G. Troxler, Jr	546,392	Sept. 17	1679	399	72	1697
String-fastener	C. C. Pine	543,751	July 30	3430	796	72	702
Stringed-instrument attachment	A. Pietsch	546,457	Sept. 17	1806	428	72	1721
Stringed-instrument attachment	J. C. St. John	546,408	Sept. 17	1708	405	72	1701
Stringed instruments. Key attachment for	J. H. Ling	545,963	Sept. 10	913	218	72	1535
Stud lock. Screw	C. W. W. Ball	543,975	Aug. 6	252	62	72	794
Stud. Shirt-bosom	C. H. Cooke	544,884	Aug. 20	1955	468	72	1137
Stuffing-box for rotary shafts	P. S. Schmaltz	546,106	Sept. 10	1158	276	72	1582
Stump-puller	C. D. Edwards	546,511	Sept. 17	1893	447, 448	72	1738
Subway construction	E. L. Ransome	545,977	Sept. 10	936	224	72	1540
Sugar by electrolysis. Refining	E. Javaux and C. F. Gallois	543 249	July 23	2497	586	72	515
Sugar-cane press	J. O. Easterling	544,972	Aug. 20	2112	506	72	1167
Sugar in barrels. Disintegrating-tool for	J. Dennison	545,878	Sept. 10	759	185	72	1505
Sulky	T. S. Heath	544,918	Aug. 20	2024	483	72	1150
Sulky	E. S. Frazier	545,476	Sept. 3	77	19	72	1369
Surgeon's operating apparatus	S. H. Linn	542,390	July 9	992	245	72	204
Surgeon's operating-table	C. R. Lentz	542,060	July 2	405	98, 99	72	80
Surgical applicator	D. H. Sleem	545,102	Aug. 27	2343	568	72	1231
Surgical-instrument case	R. W. Johnson	543,991	Aug. 6	280	68	72	799
Surgical pad	J. H. Morrison	542,202	July 2	630	153	72	123
Surgical table	W. T. Luther	546,235	Sept. 10	1373	327	72	1622
Suspender-end fastener	H. A. Hayden	546,424	Sept. 17	1741	413	72	1708
Swaging-machine	A. J. Langelier	542,020	July 2	339	82	72	68
Swaging-machine	A. J. Langelier	542,021	July 2	340	82	72	68
Swing	J. S. Leach	544,734	Aug. 20	1672	402	72	1083
Swing-actuating mechanism	J. A. Brunner	545,451	Sept. 3	20	6	72	1359
Swing. Giant	E. E. Higinbotham	545,406	Aug. 27	2845	693	72	1328
Swinging gate	A. F. Coghill	546,580	Sept. 17	2002	475	72	1758
Switch: *See* Automatic switch. Derailing-switch. Electric switch. Electric grounding-switch. Electric time-switch. Electrical switch. Fuse-switch. Make-and-break switch. Motor-reversing switch. Polarized compound switch. Railway-switch. Safety-switch. Telephone-switch.							
Switch-actuating apparatus	G. T. Janvrin and F. J. Conlon	542,980	July 16	1998	475	72	405
Switch and signal apparatus	A. K. Mansfield	546,172	Sept. 10	1266	302	72	1600
Switch and signal mechanism	D. C. O'Kain	543,778	July 30	3489	812	72	712
Switch and signal mechanism	J. V. Young	543,793	July 30	3510	817	72	716
Switchboard system. Multiple	O. A. Bell	544,341	Aug. 13	903	226	72	924
Switchboards. Single-cord grounded-circuit system for multiple	C. E. Scribner	544,384	Aug. 13	1031	253	72	944
Switchboards. Test-signal for multiple	C. E. Scribner	544,385	Aug. 13	1033	253	72	944
Switch-lock	S. E. Barlet	542,182	July 2	586	142	72	115
Switch mechanism. Interlocking	J. Diefenbach	544,089	Aug. 6	457	113	72	833
Switch-movement	J. R. Trisler	541,954	July 2	229	54	72	47
Switch-stand	U. G. Meenach	542,168	July 2	566	138	72	111
Switch-stand. Automatic	N. W. Boyd	543,845	Aug. 6	22	7	72	753
Synchronism-indicator	R. D. Mershon	544,365	Aug. 13	1001	246	72	938
Syringe	I. Q. Gurnee	543,829	July 30	3588	835	72	731
Syringe	J. R. Hall, Jr	546,148	Sept. 10	1227	293	72	1594
Syringe	J. F. Hartz	545,647	Sept. 3	366	90	72	1422
Syringe	W. Kiel	545,234	Aug. 27	2578	625	72	1277
Syringe	A. Molinari	544,512	Aug. 13	1261	305	72	988
Syringe	J. L. Putegnat	545,817	Sept. 3	659	160	72	1475
Syringe	O. J. Taylor	544,549	Aug. 13	1318	320	72	999
Syringe. Continuous-flow	F. Terramorse	544,014	Aug. 6	323	80	72	808
Table: *See* Embalming-table. Extension-table. Folding table. Ironing-table. Kitchen-cabinet table. Operating-table. Surgeon's operating-table. Surgical table.							
Table	V. Oakes	545,812	Sept. 3	652	158	72	1474
Table-fastener	C. E. Sjoholm	542,318	July 9	854	209	72	178
Table-leg fastening	W. P. Sellers	545,538	Sept. 3	183	44	72	1388
Tablet and note-book for stenographers' use	A. W. Parker	544,684	Aug. 20	1588	381	72	1067
Tablet-machine	C. A. Tatum	541,895	July 2	123	30	72	27
Tablet on post-boxes, &c. Automatic-changing	J. Pape and M. Wermann	545,527	Sept. 3	169	40	72	1365
Tack-driving machine. Hand magazine	J. Hyslop	543,135	July 23	2269	538, 539	72	473
Tacking-machine. Hand	A. F. Preston	545,909	Sept. 10	824	198, 199	72	1518
Tag-fastener	N. W. Green	543,478	July 30	2882	678	72	603
Tag. Marking	M. Higgins	542,705	July 16	1554	371	72	322
Tank: *See* Fish-tank. Flush-tank. Flushing-tank. Liquid-tank. Measuring-tank. Oil-tank. Water-closet tank. Watering-tank.							
Tanning process and apparatus	H. A. Leverett	542,680	July 16	1511	361	72	315
Tap and bushing	J. Mohn	542,063	July 2	410	100	72	80
Tap for water or other liquids	J. H. Landgrebe	543,254	July 23	2507	588	72	516
Tap-plug and faucet. Combined	A. Hallowell	542,081	July 2	436	105	72	85
Tapping apparatus	J. N. Knapp	543,024	July 23	2065	491	72	435
Tapping casks, &c.	H. W. Rice	545,377	Aug. 27	2788	677	72	1317
Tapping, facing, and reaming machine	W. McIlvrid and P. Y. Hodge	542,307	July 9	834	205	72	174
Tapping-machine	H. Mueller	545,968	Sept. 10	920	220	72	1537

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Tapes or laces. Machine for enlarging	F. W. Hohrath	543,482	July 30	2889	680	72	605
Target. Electric	M. T. Weston	545,327	Aug. 27	2717	660	72	1303
Target. Electrical annunciating	O. Kauffmann	545,699	Sept. 3	463	112	72	1439
Target-trap and bird therefor	L. L. Shattuck	542,377	July 9	968	238	72	200
Tawing	O. P. Amend	542,971	July 16	1982	.....	72	403
Tea-chest	T. B. Thompson, C. T. Hull, and J. H. Willman.	542,544	July 9	1268	309	72	255
Teapot and strainer	F. W. Bentall	545,936	Sept. 10	870	210	72	1527
Teeth. Artificial	G. A. Johnston and H. M. Carroll	546,331	Sept. 17	1578	374	72	1678
Teeth. Machine for polishing margins of cavities in	A. L. Gilmer	544,433	Aug. 13	1120	271	72	960
Teeth. Mounting for artificial	C. F. F. Schröder	545,211	Aug. 27	2543	615	72	1270
Telegraph and telephone system. Combined district	E. E. Salisbury and A. E. Dean	546,904	Sept. 24	2532	605	72	1870
Telegraph-key	G. F. Philbrook	545,532	Sept. 3	176	42	72	1387
Telegraph. Printing	C. L. Buckingham	544,345	Aug. 13	912	229, 230	72	996
Telegraph. Printing	C. L. Buckingham and E. Germann	544,346	Aug. 13	920	231, 232, 233, 234, 235	72	927
Telegraph. Printing	C. L. Buckingham and E. Germann	544,347	Aug. 13	945	235, 236, 237	72	930
Telegraph. Printing	C. L. Buckingham and E. Germann	544,348	Aug. 13	961	237, 238	72	932
Telegraph-receiver	O. P. Briggs and W. R. Patterson	545,938	Sept. 10	873	210	72	1527
Telegraph-registers. Fountain ink-roller for	C. A. Rolfe	544,644	Aug. 13	1494	362	72	1032
Telegraph-registers. Ink-roller for	C. A. Rolfe	544,645	Aug. 13	1495	362	72	1032
Telegraph. Writing	T. Ewing, Jr	543,231	July 23	2459	578	72	508
Telegraph. Writing	W. E. Gump	543,241	July 23	2478	582	72	512
Telegraph. Writing	J. H. Robertson	543,425	July 23	2767	654	72	565
Telegraph. Writing	J. H. Robertson	543,426	July 23	2780	654	72	569
Telegraph. Writing	J. H. Robertson	543,427	July 23	2782	655	72	569
Telegraph. Writing	J. H. Robertson	543,428	July 23	2789	656	72	572
Telegraph. Writing	J. H. Robertson	543,429	July 23	2791	656	72	572
Telegraphic apparatus. Ship's	J. K. Adelsberg	544,876	Aug. 20	1944	465	72	1135
Telegraphic vibrator	P. la Cour	546,892	Sept. 24	2514	600, 601	72	1867
Telegraphy. Automatic	P. B. Delany	541,967	July 2	249	58	72	51
Telegraphy. Duplex and diplex	M. M. Davis	541,994	July 2	295	68	72	60
Telegraphy. Dynamo	A. S. Harris	546,324	Sept. 17	1566	371	72	1675
Telegraphy. System of multiplex	T. B. Dixon	543,984	Aug. 6	265	66, 67	72	797
Telepathic messages. Apparatus for indicating	C. E. Campbell	546,299	Sept. 17	1516	358	72	1666
Telephone	J. S. Biggar	543,843	Aug. 6	20	6	72	752
Telephone	N. L. Burchell	543,798	July 30	3525	820, 821	72	718
Telephone	E. C. Parker	546,027	Sept. 10	1026	246	72	1556
Telephone	G. F. Shaver	545,416	Aug. 27	2464	698	72	1332
Telephone	I. D. Smith	546,357	Sept. 17	1622	387	72	1686
Telephone	G. A. Tower, M. Hunter, and J. P. Eastwood.	546,965	Sept. 24	2630	631	72	1890
Telephone and return-call system	T. R. Brimner	545,402	Aug. 27	2332	690	72	1326
Telephone apparatus	A. Stromberg and A. Carlson	545,922	Sept. 10	845	204	72	1522
Telephone attachment	C. E. Bertels	543,328	July 23	2617	615	72	537
Telephone. Coin-controlled	C. B. Hopkins and T. H. Elsom	542,679	July 16	1508	361	72	314
Telephone-exchange	W. Y. Shibata	543,160	July 23	2316	549, 550	72	482
Telephone-exchange	W. Y. Shibata	543,708	July 30	3342	775, 776	72	685
Telephone-exchange apparatus	J. J. O'Connell	544,546	Aug. 13	1309	319	72	998
Telephone-exchange apparatus	J. J. O'Connell	544,901	Aug. 20	1996	477	72	1145
Telephone-exchange apparatus	A. Stromberg, A. Carlson, and H. L. Knight.	545,921	Sept. 10	843	203, 204	72	1521
Telephone-exchange circuits. Signaling apparatus for	J. J. O'Connell	543,559	July 30	3038	711	72	634
Telephone-exchange signal apparatus	J. J. O'Connell	544,545	Aug. 13	1305	318	72	997
Telephone-exchange system	C. E. Scribner	543,901	Aug. 6	126	28	72	771
Telephone-exchange system	C. E. Scribner	544 388	Aug. 13	1040	254	72	945
Telephone-exchanges. Multiple switchboard for	M. G. Kellogg	542,262	July 9	735	181	72	157
Telephone holder and cut-out	A. F. Boardman	545,191	Aug. 27	2511	607	72	1264
Telephone. Magneto-electrical	M. Frank	544,890	Aug. 20	1968	472	72	1140
Telephone pay-stations. Coin signal apparatus for	S. Alexander	544,077	Aug. 6	433	108	72	898
Telephone-receiver support and switch. Combined	G. F. Shaver	545,253	Aug. 27	2604	632	72	1283
Telephone relay apparatus	W. L. Richards	542,657	July 16	1470	353	72	307
Telephone relay or repeater	C. H. Arnold	542 618	July 16	1401	338	72	293
Telephone repeating circuit and appliances	W. L. Richards	542,658	July 16	1473	353	72	307
Telephone self-acting commutator	S. Berditschewsky dit Apostoloff and M. Freudenberg.	546,725	Sept. 24	2235	533, 534, 535	72	1815
Telephone-switch	F. R. Whitney	544,335	Aug. 13	894	224	72	923
Telephone switch and system	E. C. Wilcox	544,711	Aug. 20	1639	393	72	1076
Telephone-switchboard	J. F. Gilliland	542,249	July 9	710	175	72	153
Telephone-switchboard apparatus	C. E. Scribner	543,902	Aug. 6	129	29	72	772
Telephone-switchboard apparatus	C. E. Scribner	544,386	Aug. 13	1036	254	72	944
Telephone-switchboards. Annunciator-circuit for	C. E. Scribner	542,066	July 2	415	101	72	82
Telephone-switchboards. Automatic signaling device for	F. R. McBerty	544,370	Aug. 13	1010	248	72	939
Telephone-switchboards. Plug and cord for	F. R. McBerty	544,369	Aug. 13	1009	247	72	939
Telephone system	W. W. Dean	546,731	Sept. 24	2257	537	72	1818
Telephone system	A. S. Hibbard	542,052	July 2	385	93	72	77
Telephone system. Village	C. E. Scribner	543,106	July 23	2213	525	72	462
Telephone-transmitter	Z. E. Patrick	543,313	July 23	2598	611	72	534
Telephone transmitting and receiving attachment	H. W. Libbey	543,626	July 30	3215	745	72	661
Telephonic attachment	L. J. Gerson	546,972	Sept. 24	2640	633	72	1891

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Telephonic relay or repeating system	C. H. Arnold	542,913	July 16	1891	448	72	385
Telephonic repeating circuit and apparatus	C. H. Arnold	542,619	July 16	1402	338	72	293
Telephonic transmitter	C. C. Hughes	542,444	July 9	1092	266	72	223
Telephoning	A. E. Paige	543,190	July 23	2386	563	72	495
Telephony. Magneto-electric	E. S. Halsey	542,191	July 2	600	146	72	118
Telescope. Binocular	E. Abbe	546,871	Sept. 24	2473	592	72	1859
Telescope, microscope, and camera Combined	R. L. Stevens	545,743	Sept. 3	534	129	72	1452
Telescopic joint	R. A. Kane	546,699	Sept. 24	2196	523	72	1806
Teletyper	C. Spiro	545,637	Sept. 3	350	87	72	1419
Temperature-controlling device. Electric	S. A. Ekehorn	543,929	Aug. 6	175	41, 42	72	780
Temperature-regulator	G. H. Underhill and E. Glantzberg	544,015	Aug. 6	324	80, 81	72	809
Temple-roll	W. I. Stimpson	543,789	July 30	3503	815	72	714
Templet. Graduated cloth-weight	A. Schaer	543,897	Aug. 6	121	27	72	770
Templet. Graduated yarn	A. Schaer	543,898	Aug. 6	122	28	72	770
Temporary lock	P. Hopfgartner and M. Hoehnen	545,019	Aug. 20	2185	529	72	1179
Tent-support	C. W. Williams	546,978	Sept. 24	2652	635	72	1893
Testing-machine	H. B. Robischung	544,007	Aug. 6	304	75, 76	72	804
Testing samples of garments. System of	M. A. Adler	544,202	Aug. 6	636	161	72	865
Tether	W. A. Swift	544,447	Aug. 13	1163	281	72	969
Textile-machine top roll	R. G. Campbell	546,639	Sept. 17	2093	496	72	1776
Theaters. Construction of	C. L. Hagen	546,528	Sept. 17	1916	454, 455	72	1742
Theatrical device for producing illusory effects	A. Lake	546,927	Sept. 24	2567	615	72	1877
Theodolite	T. H. Bergh and A. M. Johnson	543,122	July 23	2248	533	72	469
Therapeutic appliance. Electro-	J. E. Wiles	544,552	Aug. 13	1323	322	72	1000
Thermocauter	J. E. Lee	546,894	Sept. 24	2517	601	72	1868
Thermometer-case	P. Jaisohn	545,366	Aug. 27	2771	673	72	1313
Thermometric circuit-closer	R. Pearson	546,551	Sept. 17	1950	464	72	1748
Thermostat	G. Hill	545,076	Aug. 27	2298	558	72	1221
Thermostatic instrument	M. Martin	544,363	Aug. 13	999	245	72	937
Thill-coupling	E. A. Benner	543,977	Aug. 6	254	63	72	795
Thill-coupling	P. Broadbooks	546,268	Sept. 10	1444	342	72	1634
Thill-coupling	S. H. Brokaw and F. S. Nicholson	542,236	July 9	691	170	72	149
Thill-coupling	C. F. Buchanan	545,874	Sept. 10	755	184	72	1505
Thill-coupling	W. H. Byrne	542,923	July 16	1907	452	72	388
Thill-coupling	E. L. Devereaux	546,584	Sept. 17	2009	477	72	1759
Thill-coupling	A. Dibrell	543,615	July 30	3198	741	72	658
Thill-coupling	G. A. Fenn	544,910	Aug. 20	2014	480	72	1148
Thill-coupling	W. E. Ferguson	546,008	Sept. 10	992	240	72	1550
Thill-coupling	L. R. Hertert	544,788	Aug. 20	1788	427	72	1106
Thill-coupling	B. P. Maloney	543,534	July 30	3001	703	72	626
Thill-coupling	W. Pearce	542,652	July 16	1457	351	72	305
Thill-coupling	N. South	546,477	Sept. 17	1837	434	72	1728
Thill-coupling	J. E. Whidden	543,166	July 23	2349	554	72	488
Thill-coupling	A. H. Worrest	542,671	July 16	1497	358	72	312
Thill coupling and support	C. H. Anspach	544,205	Aug. 6	640	163	72	866
Thill-support	E. Rodier	544,592	Aug. 13	1393	339	72	1014
Thill-support, antirattler, and coupling. Combined	W. L. Frazer	545,065	Aug. 27	2281	554	72	1218
Thimble and knife. Combined	W. J. Quina	544,379	Aug. 13	1022	251	72	942
Thrashing-machine	C. F. Goddard	542,519	July 9	1227	299, 300	72	247
Thrashing-machine	C. F. Goddard	542,520	July 9	1232	300, 301	72	248
Thrashing-machine	C. F. Goddard	542,522	July 9	1236	301, 302	72	249
Thrashing-machine	F. F. Landis	544,044	Aug. 6	373	93	72	817
Thrashing-machine	G. E. Wilson	546,372	Sept. 17	1648	392	72	1691
Thrashing-machine grain-separator	J. Z. Perron	546,246	Sept. 10	1393	332	72	1625
Thrashing-machine steering mechanism	C. F. Goddard	542,521	July 9	1234	301	72	248
Thrashing-machines. Stand for band-cutters on	W. S. Downing	545,060	Aug. 27	2269	550	72	1216
Thread-guide for electrical stop-motions	R. C. Holt	543,686	July 30	3307	769	72	678
Thread holder. Skein-	W. C. Schroeder	546,251	Sept. 10	1410	335	72	1628
Thread or twine holder	G. H. Hedge	542,220	July 2	661	162	72	128
Thread-package	B. L. Armstrong	544,877	Aug. 20	1945	466	72	1135
Thread-package	B. L. Armstrong	546,127	Sept. 10	1193	284	72	1587
Thread-package	W. C. Schroeder	546,123	Sept. 10	1185	283	72	1586
Ticket. Railway-	H. A. Riddle	544,052	Aug. 6	394	99	72	821
Tie: *See* Railway-tie. Sack-tie.							
Tie-holder. Collar	H. M. O'Reilly	546,676	Sept. 24	2159	514	72	1800
Tie-hook	D. F. Weiss	545,992	Sept. 10	964	232	72	1545
Tie-plate	B. Wolbaupter	542,787	July 16	1692	403	72	347
Tie-plate and rail-brace. Combined	C. F. Quincy	542,352	July 9	915	225	72	189
Tile. Roofing-	M. and M. Hoffelt	544,303	Aug. 13	834	210	72	912
Tile. Roofing-	L. F. Plympton	544,770	Aug. 20	1759	419	72	1100
Tiles, &c. Press-mold for manufacturing Dutch	M. Harczyk	544,786	Aug. 20	1786	426, 427	72	1106
Tiling. Drain-	C. Roney	545,535	Sept. 3	180	43	72	1387
Timber. Compound for preserving	F. A. Lobert	546,960	Sept. 24	2624	.....	72	1889
Timber. Preserving	W. G. Curtis and J. D. Isaacs	545,222	Aug. 27	2561	.....	72	1274
Time-check receiver. Electric	C. K. Jardine	545,696	Sept. 3	452	109	72	1437
Time-keeping check-board	F. A. Palmer	543,603	July 30	3177	736	72	654
Time-recorder. Watchman's	C. Müller	542,445	July 9	1094	266, 267	72	223
Time-recorder. Watchman's	G. F. Ransom	543,655	July 30	3256	756, 757	72	669
Time-recorder. Workman's	W. L. Bundy	546,222	Sept. 10	1349	320, 321, 322	72	1617
Time-recorder. Workman's	C. A. Widmer	542,578	July 9	1326	321	72	266
Time-recording apparatus	J. C. Wilson	543,416	July 23	2749	650	72	502
Tinner's shears	J. Ohler	545,131	Aug. 27	2398	580, 581	72	1241

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Tinning-machine	J. B. Baird	546,571	Sept. 17	1990	472, 473	72	1756
Tinning or coating sheet-metal plates. Machine for	S. Y. Buckman	544,500	Aug. 13	1244	301	72	984
Tire. Bicycle-	J. Nase	542,683	July 16	1519	363	72	316
Tire. Bicycle-	F. White	545,114	Aug. 27	2365	572	72	1235
Tire-bolts. Combined clamp and wrench for	W. McCoy	545,969	Sept. 10	992	221	72	1537
Tire fastener. Pneumatic-	E. L. Ferguson	542,336	July 9	888	218	72	184
Tire for bicycles. Metallic	J. D. Prescott	543,782	July 30	3495	813	72	713
Tire for vehicle-wheels. Cushion-	H. M. Du Bois	544,217	Aug. 6	666	170	72	870
Tire for vehicle-wheels. Elastic	P. Fitzgerald	545,280	Aug. 27	2639	641	72	1290
Tire for vehicle-wheels. Elastic	W. J. Ryan and J. A. Murphy	544,227	Aug. 6	719	184	72	879
Tire-holder	O. O. Dinsmore and L. G. Lord	543,726	July 30	3392	787	72	695
Tire-inflating device. Pneumatic-	C. R. Hoffmann	546,329	Sept. 17	1574	374	72	1677
Tire. Pneumatic	J. Buckner	542,842	July 16	1778	423	72	363
Tire. Pneumatic	W. Driesbach	543,337	July 23	2629	618	72	539
Tire. Pneumatic	A. A. King	543,386	July 23	2701	638	72	554
Tire. Pneumatic	J. Schipkowsky	543,319	July 23	2607	613	72	535
Tire. Pneumatic	R. P. Scott	542,811	July 16	1732	412	72	353
Tire. Pneumatic	C. Woolley	546,968	Sept. 24	2634	631, 632	72	1890
Tire. Pneumatic	E. W. Young	543,074	July 23	2158	512	72	452
Tire-regulator	W. A. Beebe	541,828	July 2	13	4	72	5
Tire-repairing patch. Pneumatic-	A. S. Cartwright	544,562	Aug. 13	1336	325	72	1003
Tire-upsetter	G. S. Briggs	543,078	July 23	2166	514	72	454
Tire-upsetter	F. Ward	546,721	Sept. 24	2229	532	72	1814
Tire valve. Pneumatic-	J. E. Davis	543,297	July 23	2572	604	72	528
Tire valve. Pneumatic-	E. O. Goss	542,472	July 9	1145	280	72	232
Tire. Vehicle-	T. B. Blosser	543,434	July 23	2796	657	72	573
Tire. Vehicle-	A. T. Brown	542,752	July 16	1634	390, 391	72	336
Tire. Vehicle-	A. J. Rudolph	543,704	July 30	3334	773, 774	72	683
Tire. Vehicle-wheel	W. Stelfox, J. W. O. Walker, D. Cairney, and W. Purvis.	545,547	Sept. 3	203	49	72	1391
Tire. Velocipede-	I. Best	545,148	Aug. 27	2428	589	72	1247
Tire. Wheel-	C. H. Gray	543,862	Aug. 6	52	14	72	758
Tire. Wheel-	L. J. Phelps	543,315	July 23	2601	612	72	534
Tires. Inflatable puncture-plug for pneumatic	R. Johnston	545,232	Aug. 27	2575	624	72	1277
Tires. Machine for perforating hollow or pneumatic	R. Wright and J. E. Parker	543,792	July 30	3507	816, 817	72	715
Tires. Mandrel for forming pneumatic	W. Holmes	543,093	July 23	2190	519, 520	72	458
Tires. Manufacturing inflatable air-tubes for pneumatic	F. W. Morgan	544,626	Aug. 13	1458	354, 355	72	1025
Tires. Manufacturing inner elastic air-tubes for pneumatic	F. W. Morgan	544,627	Aug. 13	1462	355	72	1026
Tires. Means for repairing breaks in pneumatic	F. H. Nies	544,189	Aug. 6	605	151	72	861
Tires. Metallic fastener for pneumatic	J. L. Johnson	545,506	Sept. 3	136	32	72	1379
Tires or other articles. Valve for pneumatic	C. Courtney	545,455	Sept. 3	27	7	72	1360
Tires. Process of and apparatus for vulcanizing air-tubes for pneumatic	E. W. Young	545,118	Aug. 27	2372	573, 574	72	1236
Tires. Valve for pneumatic cycle-	R. McCord	544,487	Aug. 13	1225	296	72	980
Tobacco-granulating machine	G. A. Turner	546,565	Sept. 17	1979	470	72	1754
Tobacco-leaf-stemming machine	A. H. Cochrane	546,843	Sept. 24	2435	583, 584	72	1851
Tobacco-pipe	J. Hackenberg	544,808	Aug. 20	1820	436	72	1113
Tobacco-stemming machine	J. B. Underwood	543,143	July 23	2281	541, 542	72	475
Toll collector and annunciator. Coin-operated	W. A. Rogers	542,109	July 2	474	114	72	93
Tom-tom	R. Meyer and W. C. Foulds	545,710	Sept. 3	483	117	72	1443
Tongs. Crane-	A. C. Dinkey	542,997	July 23	2023	481	72	427
Tongs. Lifting-	C. W. Bolsinger	542,985	July 23	2004	476	72	423
Tongs. Pipe-	A. W. Ingelson	546,101	Sept. 10	1149	275	72	1580
Tongs. Pipe-	J. E. Nelson	545,304	Aug. 27	2681	651	72	1297
Tongue-support	T. I. Hyde, Jr.	545,364	Aug. 27	2769	672	72	1313
Tool-sharpener	A. M. McLeran	544,544	Aug. 13	1304	318	72	996
Tooth-cleaning implement	H. Simons	542,782	July 16	1686	401	72	346
Tooth-crown. Artificial	W. M. Seeger	544,389	Aug. 13	1042	255	72	946
Tooth-facing	J. G. Hollingsworth	543,685	July 30	3306	768	72	678
Toothpick-receptacle	H. Staub	545,546	Sept. 3	201	49	72	1391
Tooth-separator	E. Wishart	545,754	Sept. 3	558	133	72	1455
Top. Spinning-	E. Segaasle	543,787	July 30	3501	815	72	714
Torch. Plumber's	H. J. and W. J. Taylor	542,451	July 9	1112	272	72	226
Torpedo ejecting or launching apparatus	S. Drzewiecki	542,876	July 16	1829	433, 434	72	373
Torpedoes on rails. Apparatus for placing	C. W. Pearsall and H. B. Peabody	546,028	Sept. 10	1027	247	72	1557
Towing-machine	F. Metcalf	542,710	July 16	1558	372, 373	72	323
Toy	A. Britton and J. H. Peterson	544,526	Aug. 13	1281	309	72	991
Toy	J. Grundy	543,828	July 30	3586	834, 835	72	730
Toy	W. A. Hoffmann	545,958	Sept. 10	902	217	72	1533
Toy	R. Luckenbach	546,021	Sept. 10	1013	244	72	1554
Toy	R. A. Smith	545,541	Sept. 3	189	45	72	1389
Toy chair or sofa	J. J. Jones	544,305	Aug. 13	837	211	72	913
Toy gun	W. R. M. Tenney	542,212	July 2	650	159	72	126
Toy. Mechanical	W. S. Cooper	542,727	July 16	1583	378	72	328
Toy. Mechanical	H. W. Harrison and L. B. Wadleigh	543,479	July 30	2883	678	72	603
Toy. Mechanical	F. Witte	545,031	Aug. 20	2208	535	72	1184
Toy. Optical	H. V. Piaget	542,804	July 16	1723	410	72	352
Toy pistol	R. F. Carty and W. A. Downes	545,345	Aug. 27	2744	665	72	1308
Trace-fastener	S. Cole	543,437	July 23	2802	658	72	574
Track-instrument	T. B. Dixon	543,597	July 30	3160	732, 733	72	652

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Track-sanding apparatus	C. W. Sherburne	544,073	Aug. 6	422	106	72	827
Track structure	E. Samuel	515,821	Sept. 3	663	161, 162	72	1476
Traction-wheel	G. A. Anderson	543,075	July 23	2161	512	72	453
Train-signal. Electric	F. C. E. von Sternberg	514,937	Aug. 20	2054	490	72	1156
Tramway. Aerial	J. H. Dickinson	546,508	Sept. 17	1888	446, 447	72	1737
Transformer for alternating-current systems	E. Thomson	542,295	July 9	815	200	72	170
Transom-lifter	G. A. Colton	546,379	Sept. 17	1660	394	72	1693
Transom-lifter	G. A. Colton	546,380	Sept. 17	1661	394	72	1693
Transom-rod holder	H. Leppert	545,080	Aug. 27	2304	559	72	1222
Transplanter	W. J. Doyle	541,841	July 2	41	10	72	10
Transplanting implement	C. D. Carter	542,584	July 9	1334	323	72	267
Transportation system. Electric	R. E. Sherman	543,357	July 23	2661	627	72	545
Trap: *See* Animal-trap, Backwater and sewer-gas trap, Bird-trap, Fish or mole trap, Fly-trap, Gopher-trap, Insect-trap, Lobster-trap, Pigeon-trap, Pipe-trap, Plumber's trap, Rat-trap, Roach-trap, Steam-trap, Stench-trap, Target-trap.							
Trap	J. E. Kelly	546,616	Sept. 17	2055	488	72	1768
Trap	N. Nilson	544,743	Aug. 20	1684	405, 406	72	1085
Traveling-bag	W. F. Williams	544,150	Aug. 6	547	136	72	849
Tree: *See* Plow-doubletree.							
Tree-leg and tree-foot	E. M. Cole	543,376	July 23	2685	634	72	550
Tree-prop bracket	B. E. Douglas	543,298	July 23	2573	605	72	528
Trellis. Hop	H. S. Broughton and C. Briggs	542,821	July 16	1747	415	72	356
Tricycle	F. E. Southard	545,105	Aug. 27	2349	568	72	1232
Tricycle. Railway	F. Brady	542,326	July 9	869	212, 213	72	180
Trimmer: *See* Wick-trimmer.							
Tripod	W. H. Fisher	544,466	Aug. 13	1192	289, 290	72	975
Triturating and emulsifying machine	W. B. Cowan	545,456	Sept. 3	28	8	72	1360
Trolley	G. W. Biddell	545,009	Aug. 20	2172	525	72	1177
Trolley	Z. T. Furbish	545,686	Sept. 3	437	105	72	1435
Trolley	J. L. Hanson	545,073	Aug. 27	2294	557	72	1221
Trolley-arm and attachment therefor	G. Maag	544,677	Aug. 20	1573	377	72	1064
Trolley-arm and wire-finder	F. W. Riess	544,794	Aug. 20	1798	430	72	1108
Trolley-arrester	H. F. Hildebrandt	545,649	Sept. 3	369	91	72	1423
Trolley. Automatic safety	J. B. Scranton	544,774	Aug. 20	1765	421	72	1102
Trolley-breaker	H. P. Ball and C. A. Lieb	542,228	July 9	680	167	72	147
Trolley. Electric	G. W. Hooper	543,529	July 30	2993	701	72	625
Trolley-finder	C. C. Lynde	542,591	July 9	1345	325	72	269
Trolley-guard	J. T. Moody, W. Shawd, and A. J. Baker.	545,520	Sept. 3	157	37	72	1383
Trolley guard and guide. Electric	J. R. Trialer	545,393	Aug. 27	2812	684	72	1321
Trolley-line clamp	W. J. Belcher	545,187	Aug. 27	2499	605	72	1202
Trolley-lines. Insulated support for	F. X. Cicott, W. J. Belcher, and F. C. Billings.	545,151	Aug. 27	2431	590	72	1248
Trolley-pole for railway-cars	R. Crommer	546,303	Sept. 17	1522	359	72	1667
Trolley-restoring attachment	W. D. McDaniel	542,002	July 2	306	71	72	62
Trolley stand and pole	L. C. Seelye	543,271	July 23	2535	595	72	521
Trolley system. Underground	N. B. Ginochio and H. C. Bridger	543,130	July 23	2259	536	72	471
Trolley. Underground	L. Binns	542,434	July 9	1075	263	72	220
Trolley-wheel	J. Conway	544,157	Aug. 6	559	139	72	852
Trolley-wheel	C. Mitchell	543,042	July 23	2104	499	72	441
Trolley wheel and bearing	E. Verstraete	544,471	Aug. 13	1200	291	72	976
Trolley-wire bracket	L. S. Pfouts	546,407	Sept. 17	1707	405	72	1701
Trolley-wire clip	F. W. Haeusgen	541,969	July 2	252	59	72	51
Trolley-wire support	J. W. Meaker	545,806	Sept. 3	641	156	72	1472
Trough: *See* Feed-trough, Watering-trough.							
Trousers-fastener	R. L. Zaretzky	546,213	Sept. 10	1335	318	72	1614
Truck bolster. Car	E. F. Goltra	543,621	July 30	3208	744	72	659
Truck bolster. Car	E. F. Goltra	545,792	Sept. 3	621	151	72	1468
Truck. Car	A. K. Mansfield	545,409	Aug. 27	2853	695	72	1330
Truck. Car	E. Cliff	546,774	Sept. 24	2329	555, 556	72	1831
Truck-frame for cars. Pressed-steel	C. T. Schoen	542,427	July 9	1061	260	72	218
Truck. Hand	J. P. Haskitt	544,534	Aug. 13	1290	312	72	993
Truck. Hand	E. Lipska	545,239	Aug. 27	2383	626	72	1278
Truck. House-moving	M. Davis	546,091	Sept. 10	1131	269	72	1577
Truck. Ladder	J. Longley	544,986	Aug. 20	2134	516	72	1170
Truck. Street-car	G. F. Shaw	544,489	Aug. 13	1227	297	72	981
Truck. Street-railway-car	L. T. Pyott	544,417	Aug. 13	1087	265, 266	72	953
Truck. Store	A. S. Hitchings	546,117	Sept. 10	1176	281	72	1585
Truck. Transporting	H. J. Case	545,195	Aug. 27	2515	608	72	1265
Trunk caster and corner-shield	J. A. Slama	542,574	July 9	1321	320	72	265
Trunk. Cylindrical	N. S. O'Neall	546,429	Sept. 17	1750	415, 416	72	1710
Trunk-fastener	W. F. Miller	543,216	July 23	2436	572	72	503
Trunk-stand	J. W. Boteler	543,373	July 23	2682	634	72	549
Trunk-strap loop	L. Phelan	544,070	Aug. 6	418	105	72	826
Trunks. Tray for carrying straw hats in sample	W. C. Richards	543,947	Aug. 6	206	50	72	796
Truss	J. M. Smith	546,355	Sept. 17	1620	386	72	1685

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Truss	E. O. Ware and J. B. Willaman	545,640	Sept. 3	357	88	72	1420
Truss	A. Weil	546,949	Sept. 24	2607	625	72	1885
Tub: *See* Bath-tub, Washtub.							
Tub chamfering and crozing machine	T. F. Hummel and W. S. Morse	546,155	Sept. 10	1238	296	72	1595
Tube-cutter	J. J. K. Fitzpatrick	542,219	July 2	660	161	72	128
Tube filling or emptying device	H. H. Ballard	545,838	Sept. 3	692	168	72	1461
Tube-forming machine	H. E. Clark	545,053	Aug. 27	2246	545, 546	72	1211
Tubes. Apparatus for drawing ribbed	O. Friedrich and W. Schulte	545,067	Aug. 27	2284	555	72	1219
Tubes. Threading split	W. C. Frick	543,238	July 23	2476	581	72	511
Tubing-making machine	J. S. Wilson	543,587	July 30	3084	723	72	643
Tubing. Manufacture of tapered wrought-metal	W. Jackson	545,022	Aug. 20	2195	531, 532, 676, 677	72	1181
Tubular boiler	E. Petersen	545,376	Aug. 27	2784		72	1316
Tubulous boiler	P. Bentzen and C. F. Olsen	541,829	July 2	15	4	72	6
Tufted woven fabric	H. Skinner	543,659	July 30	3264	758	72	671
Tug attachment. Hame	J. Jeannotte	545,588	Sept. 3	268	66	72	1403
Tug fastening. Hame	W. P. Gelabert	543,240	July 23	2478	582	72	511
Tug. Hame	F. J. Bringham	545,446	Sept. 3	15	5	72	1357
Tug. Hame	F. J. Bringham	545,576	Sept. 3	247	61	72	1400
Tug hook. Hame	J. C. Mahaffey	545,299	Aug. 27	2675	649	72	1296
Tug loop. Shaft	F. J. Bringham	545,575	Sept. 3	246	11	72	1399
Tumbler-washer	C. Klauberg	544,855	Aug. 20	1907	458	72	1129
Tuning-peg for stringed instruments	G. A. Knowles	544,812	Aug. 20	1895	438	72	1113
Tunneling apparatus. Rock	H. Byrne	545,675	Sept. 3	419	101	72	1431
Tunnels. Lining	E. L. Ransome	545,978	Sept. 10	937	224, 225	72	1540
Turbine. Steam	G. C. Pyle	543,701	July 30	3329	773	72	682
Turbines. Means for counterbalancing end-pressure in steam	E. A. Le Sueur	545,238	Aug. 27	2582	626	72	1278
Turning articles of pearl, &c. Machine for	J. F. Sprague	544,698	Aug. 20	1615	388	72	1071
Turning irregular forms. Machine for	J. E. Kimball	546,160	Sept. 10	1246	298, 299	72	1597
Turnstile-gate	B. T. Cowley	545,457	Sept. 3	29	8	72	1360
Twine-holder	W. H. Dustin	543,857	Aug. 6	44	12	72	757
Twine-holder	B. W. Putnam and J. J. Hooker	546,187	Sept. 10	1285	307	72	1604
Twine-rack	J. C. and W. Strodel	545,549	Sept. 3	206	50	72	1392
Twist-drill	O. Tyberg	546,041	Sept. 10	1050	251	72	1561
Twisting or doubling machine. Yarn	S. Ambler	544,263	Aug. 6	637	161, 162	72	866
Type	L. B. Benton	545,568	Sept. 3	233	56	72	1396
Type and matrix	C. Skatulla	543,272	July 23	2537	595	72	522
Type-bar and making same. Composite	L. A. Brott and G. A. Kay	542,140	July 2	520	125	72	103
Type-bar supporter	E. S. Shimer	545,740	Sept. 3	531	138	72	1451
Type-case frame	W. Smith	544,055	Aug. 6	397	100	72	822
Type-casting machine	H. Barth	546,503	Sept. 17	1878	445	72	1735
Type-casting machine	W. S. Marder	544,317	Aug. 13	865	217, 218	72	918
Type-distributing rail	J. C. Fowler	546,610	Sept. 17	2047	486	72	1766
Type-holder	C. F. Moore	545,635	Sept. 3	347	86	72	1418
Type-writer attachment	R. Lansing and G. M. Jones	545,509	Sept. 3	139	33	72	1380
Type-writer cabinet	M. J. Hafgar	546,322	Sept. 17	1563	370, 371	72	1674
Type-writer cabinet	F. Vetter	544,636	Aug. 20	1876	449	72	1122
Type-writer cleaner	W. R. Swartwout	541,892	July 2	119	29	72	26
Type-writer copy-holder	E. A. Lyman	541,939	July 2	194	45	72	41
Type-writer key	W. B. Lillard	546,896	Sept. 24	2519	602	72	1868
Type-writing machine	E. E. Barney	546,292	Sept. 17	1506	354, 355	72	1664
Type-writing machine	J. M. Crary	545,458	Sept. 3	30	8, 9	72	1360
Type-writing machine	A. S. Dennis	543,085	July 23	2174	516	72	455
Type-writing machine	A. B. Dick	545,403	Aug. 27	2836	690, 691	72	1326
Type-writing machine	G. M. Eckels	544,571	Aug. 13	1354	330, 331	72	1006
Type-writing machine	G. M. Eckels	544,572	Aug. 13	1360	331, 332	72	1007
Type-writing machine	E. A. Ford	546,138	Sept. 10	1210	288, 289	72	1590
Type-writing machine	S. P. Larson	545,594	Sept. 3	278	68, 69	72	1404
Type-writing machine	T. Oliver	542,275	July 9	766	188, 189	72	162
Type-writing machine	A. E. Rawson	544,826	Aug. 20	1850	444, 445	72	1118
Type-writing machine	E. S. Shimer	545,316	Aug. 27	2696	655	72	1300
Type-writing machine	E. S. Shimer. (Reissue)	11,506	Sept. 3	741	180, 181	72	1490
Type-writing machine	C. Spiro	543,111	July 23	2224	527	72	464
Type-writing machine	C. Spiro	543,112	July 23	2227	527	72	465
Type-writing machine	C. Spiro	544,599	Aug. 13	1408	343, 344	72	1016
Type-writing machine	C. G. Warriner	543,117	July 23	2238	530, 531	72	467
Type-writing machine	C. W. Weiss	543,164	July 23	2343	553	72	487
Type-writing machine	D. C. Williamson	544,337	Aug. 13	896	225	72	923
Type-writing-machine adjustment	W. H. More	545,169	Aug. 27	2464	597	72	1254
Type-writing-machine attachment	G. J. Barrett	545,035	Aug. 20	2218	538	72	1165
Type-writing-machine copying attachment	C. H. Keith	545,233	Aug. 27	2576	624	72	1277
Type-writing-machine desk	H. Lauter	543,940	Aug. 6	193	46	72	764
Type-writing-machine ribbon mechanism	F. W. Overhiser	542,532	July 9	1249	305	72	251
Umbrella	R. C. Berry	544,838	Aug. 20	1879	450	72	1123
Umbrella and cane	E. C. Geneux	541,844	July 2	45	10	72	11

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Umbrella. Bicycle	H. W. Sweeting	544,632	Aug. 13	1469	357	72	1027
Umbrella-cover. Detachable	J. F. Witt	543,365	July 23	2674	630	72	548
Umbrella-holder	W. J. Slyder	541,951	July 2	211	49	72	44
Umbrella locking-stand	H. Fronefield, S. K. and J. F. Maxwell.	546,231	Sept. 10	1365	325	72	1620
Umbrella or cane receiving cabinet	P. H. Jordan and J. O. Huffman	542,736	July 16	1605	383	72	331
Underwaist	G. W. Hoyt	542,891	July 16	1856	440	72	378
Underwear-stretcher	A. Ligget	543,996	Aug. 6	286	70	72	801
Universal joint	G. P. Fenner	545,353	Aug. 27	2752	668	72	1309
Universal joint	O. C. White	546,631	Sept. 17	2077	493	72	1773
Upholstery	J. A. Staples	542,115	July 2	484	116, 117	72	96
Upholstery. Process of and apparatus for making tufted	J. F. Orr	543,218	July 23	2438	572	72	504
Urinal	S. J. Putnam	543,945	Aug. 6	203	49	72	786
Vacuum-can	J. Nicholson and W. H. Ferguson	544,791	Aug. 20	1792	428	72	1107
Valve	G. W. Graffin	546,922	Sept. 24	2560	613	72	1876
Valve	J. M. Hartman	543,549	July 30	3023	707	72	631
Valve	H. E. Keyes	543,692	July 30	3316	770	72	680
Valve	H. E. Keyes	543,694	July 30	3320	771	72	680
Valve	T. Linke	542,709	July 16	1557	372	72	323
Valve	H. P. Mohn	545,519	Sept. 3	155	37	72	1383
Valve	G. F. Speer	543,274	July 23	2540	596	72	522
Valve. Air-	T. W. Brooks	542,516	July 9	1223	297	72	246
Valve. Air-	F. Gustaveson	544,167	Aug. 6	572	143	72	855
Valve. Air-	C. Holtmann	544,978	Aug. 20	2119	508	72	1168
Valve. Air-	C. F. Paige and E. P. Allen	541,876	July 2	94	21	72	21
Valve. Air-brake	S. H. Heglubottom	546,664	Sept. 24	2134	508	72	1796
Valve apparatus. Air-brake	H. E. Hunt	543,022	July 23	2063	490	72	435
Valve. Automatic stop-	H. W. Forslund	544,638	Aug. 13	1480	359	72	1029
Valve. Balanced	W. F. Gould	545,478	Sept. 3	79	19	72	1370
Valve. Barrel-	H. Strater	544,752	Aug. 20	1698	409	72	1088
Valve boiler connection	C. C. Massey	543,773	July 30	3478	810	72	710
Valve. Cut-off	J. W. Melvin	543,259	July 23	2514	591	72	517
Valve for compressors	C. Dickerman	545,123	Aug. 27	2388	578	72	1239
Valve for direct-action engines	H. C. Sergeant	545,738	Sept. 3	529	127	72	1451
Valve for engines. Reversing-	A. Prolhac, Fils	545,132	Aug. 27	2400	581	72	1241
Valve for gas or air compressors	S. W. Johnson	543,446	July 23	2825	662	72	577
Valve for steam-cylinders. Draining-	T. D. Smith	546,907	Sept. 24	2536	606	72	1871
Valve for steam-engines. Exhaust-	J. W. Sargent	545,414	Aug. 27	2961	697	72	1331
Valve. Furnace-	W. Swindell	544,799	Aug. 20	1805	432	72	1109
Valve Gas-	J. D. McIlhenny	542,024	July 2	342	83	72	69
Valve-gear	F. J. Chriest	542,553	July 9	1287	312	72	259
Valve-gear	M. F. Hill and C. W. Easley	546,925	Sept. 24	2563	614	72	1876
Valve-gear	F. M. Rites	542,423	July 9	1046	257	72	216
Valve-gear	F. M. Rites	542,424	July 9	1049	257, 258	72	216
Valve-gear. Engine	J. Deam	546,419	Sept. 17	1731	411	72	1706
Valve-gear. Engine	K. Moscicki	546,770	Sept. 24	2325	554	72	1830
Valve-gear for gas or oil motor engines. Reversing.	H. P. Holt	545,363	Aug. 27	2769	672	72	1313
Valve-gear. Locomotive	J. Frankenberg	543,473	July 30	2870	673, 674	72	601
Valve-gear. Locomotive	J. Frankenberg	543,474	July 30	2874	675, 676	72	602
Valve-gear. Steam-engine	W. A. Pitt	546,056	Sept. 10	1672	257	72	1565
Valve. Globe	H. Burns	542,029	July 2	368	88, 89	72	74
Valve. Globe	W. Curlett	543,128	July 23	2257	535	72	470
Valve. Hot-gas	J. T. Christie	541,990	July 2	286	67	72	58
Valve. Hydraulic-pressure	G. B. Lamb	543,772	July 30	3476	810	72	709
Valve mechanism	F. P. High	541,856	July 2	62	14, 15	72	15
Valve. Motor-	A. T. Miller	545,368	Aug. 27	2775	673	72	1314
Valve or faucet. Measuring or registering	M. W. Lydon	543,942	Aug. 6	196	47	72	785
Valve. Port-regulating	F. Lester	545,081	Aug. 27	2304	560	72	1223
Valve. Quick-action triple	W. Hirst	545,289	Aug. 27	2653	644, 645	72	1292
Valve-seat	R. T. Crane	546,066	Sept. 10	1092	261	72	1569
Valve. Steam-	A. Boucher	544,950	Aug. 20	2077	497	72	1160
Valve. Steam-engine	A. H. Ford	546,316	Sept. 17	1550	366	72	1672
Valve. Steam-engine	C. W. Thompson	544,199	Aug. 6	626	157, 158	72	864
Valve. Stop-	J. M. Reese	546,189	Sept. 10	1287	307	72	1604
Valve. Straightway	J. M. Coale	543,173	July 23	2358	556	72	490
Valve. Straightway	H. E. Keyes	543,693	July 30	3318	770	72	680
Valve. Tank-	D. Craig	543,570	July 30	3057	714	72	638
Valve. Triple	W. C. Whitacre	542,509	July 9	1207	294	72	244
Valves. Controlling device for tank-supply	A. E. Smith	542,900	July 16	1872	444	72	381
Valves of engines. Operating throttle-	C. H. Silverwood and J. Fraser	544,867	Aug. 20	1929	462	72	1132
Vault-light	W. Towle	546,365	Sept. 17	1635	389	72	1688
Vegetable-assorter	J. H. Heinz	545,689	Sept. 3	440	106	72	1435
Vegetable cutter and grater	J. Wagner	543,201	July 23	2410	567	72	500
Vegetable-cutting machine	S. J. Smith	545,983	Sept. 10	948	228	72	1542
Vegetation. Apparatus for exterminating	A. Scheible	546,682	Sept. 24	2167	515, 516	72	1801
Vehicle	W. E. Karns	544,672	Aug. 20	1567	375	72	1063
Vehicle	J. R. Simms	545,136	Aug. 27	2408	582	72	1242
Vehicle-brake	A. Klietsch	544,309	Aug. 13	844	212	72	914
Vehicle-brake	C. Stever	545,548	Sept. 3	204	50	72	1391
Vehicle-brake. Automatic	A. C. Smith	542,741	July 16	1617	386	72	333
Vehicle-brake mechanism	C. Sample	543,754	July 30	3433	797	72	702
Vehicle-curtain	J. B. Cottom	545,055	Aug. 27	2252	547	72	1212
Vehicle-door opening or closing device	J. Frye	543,476	July 30	2881	677	72	603
Vehicle. Dumping-	O. E. Davidson	544,060	Aug. 6	405	102	72	823
Vehicle folding top	H. F. Douglass and W. J. Slyder	542,999	July 23	2025	482	72	428
Vehicle-gear	N. A. Palmer	546,430	Sept. 17	1752	416	72	1711

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Vehicle-motor	W. I. Twombly	542,319	July 9	856	210	72	178
Vehicle runner attachment	L. Lavigne	543,387	July 23	2703	638	72	554
Vehicle-seat lock	T. L. Pfleegor	542,536	July 9	1256	306	72	253
Vehicle. Side-spring	J. Jackson	542,019	July 2	337	82	72	68
Vehicle-spring	A. L. H. Messmer	543,038	July 23	2097	497	72	440
Vehicle-spring	S. D. Reynolds	546,345	Sept. 17	1604	382	72	1682
Vehicle-springs. Bracket for attaching	W. J. Kauffman	542,893	July 16	1858	440	72	379
Vehicle-starting device	J. Darling	544,088	Aug. 6	456	113	72	832
Vehicle-step	H. C. Swan	544,136	Aug. 6	530	131	72	846
Vehicle-washing device	C. A. Simpson	543,709	July 30	3347	776, 777	72	685
Vehicle-wheel	G. Laube	543,310	July 23	2595	610	72	533
Vehicle-wheel	G. Laube	543,311	July 23	2596	610	72	533
Vehicle-wheel	S. Neal	545,522	Sept. 3	161	38	72	1384
Vehicles. Clip king-bolt for	D. Wilcox	544,710	Aug. 20	1638	393	72	1076
Velocipede	W. L. Decker	546,954	Sept. 24	2614	626	72	1886
Velocipede	H. W. Souder	544,776	Aug. 20	1768	422, 423	72	1103
Velocipede, baby-walker, and coach. Combined	B. F. Shull	541,887	July 2	111	26, 27	72	25
Velocipede hobby-horse	J. W. Latty	543,874	Aug. 6	84	19	72	764
Velocipede. Marine	L. V. Moulton	546,105	Sept. 10	1157	276	72	1581
Velocipede. Railway	F. Brady	542,327	July 9	871	213, 214	72	181
Velocipede. Railway	M. Sternberg	545,746	Sept. 3	538	129	72	1453
Velocipede-seat	J. R. Montague	544,625	Aug. 13	1457	354	72	1025
Vending apparatus. Coin-controlled	H. Mattes	542,000	July 2	303	71	72	62
Vending-machine. Automatic	G. H. Bowie	545,338	Aug. 27	2733	662, 663	72	1306
Vending-machine. Coin-controlled	W. Wyand	546,410	Sept. 17	1712	406	72	1702
Vent and drain box. Sanitary	E. Hayward	543,961	Aug. 6	230	56	72	790
Ventilation apparatus	J. Curtin	542,554	July 9	1289	313	72	259
Ventilator: *See* Car-ventilator. Window-ventilator. Sash-ventilator.							
Ventilator	T. Griffith	545,794	Sept. 3	624	151, 152	72	1469
Ventilator	J. Leather	543,995	Aug. 6	285	70	72	800
Ventilator	W. W. Robinson	542,501	July 9	1196	292	72	241
Vessel	N. C. Jessup	543,210	July 23	2426	571	72	502
Vessel. Arrowhead-shaped	M. Golinsky	546,921	Sept. 24	2559	612	72	1876
Veterinary obstetrical forceps	W. E. Farnham	544,296	Aug. 13	819	208	72	910
Vignetter	F. Machette	541,859	Aug. 20	1913	459	72	1130
Violin-player's wrist-support	J. H. Petermann	542,278	July 9	775	190	72	163
Viscosimeter	R. C. Carpenter	542,604	July 9	1368	331	72	275
Vise	C. Ernst	542,244	July 9	703	172	72	152
Vise	T. L. Hamilton	542,442	July 9	1089	265	72	223
Vise	J. W. McIntyre	544,683	Aug. 20	1587	380	72	1066
Vise. Lineman's	J. Ryan	546,903	Sept. 24	2531	605	72	1870
Vises. Clamping-jaw for pipe-	J. E. Wakefield	545,324	Aug. 27	2713	659	72	1303
Voltaic battery. Secondary	L. Epstein	543,680	July 30	3297	766	72	676
Vote-register	T. G. Ferguson	542,881	July 16	1837	436, 437	72	374
Voting-booth. Folding	J. W. Ernest	543,422	July 23	2762	652, 653	72	564
Voting-machine	H. A. Clifford	545,848	Sept. 3	710	174	72	1485
Voting-machine	S. Ducas	544,218	Aug. 6	668	171	72	870
Voting-machine	J. McTammany	546,076	Sept. 10	1108	264, 265	72	1572
Voting-machine	C. A. Stitzer	543,816	July 30	3559	827, 828	72	725
Voting-machine. Electrically-controlled	C. A. Stitzer	543,065	July 23	2142	508, 509	72	449
Vulcanizing-flask	W. P. Brown	545,341	Aug. 27	2737	664	72	1307
Wagon	H. L. Bennett and R. B. Adams	542,324	July 9	867	212	72	180
Wagon	S. D. Reynolds	546,346	Sept. 17	1606	383	72	1683
Wagon and ambulance. Convertible patrol-	E. K. Hutchinson	546,855	Sept. 24	2453	587	72	1855
Wagon and velocipede. Combined	C. B. Miller	515,517	Sept. 3	153	36	72	1383
Wagon-bed attachment	H. M. Hickman	544,225	Aug. 6	663	174	72	873
Wagon-body	B. L. Bibb	543,956	Aug. 6	224	54	72	789
Wagon-brake	A. N. Pendergrass	545,719	Sept. 3	496	120, 121	72	1445
Wagon-brake	W. Siverd	542,397	July 9	1000	247	72	205
Wagon-brake	W. J. Stephenson	542,116	July 2	486	117	72	96
Wagon-brake. Automatic	J. Kirlin	543,532	July 30	2999	703	72	626
Wagon-brake. Automatic	J. W. Wildman	545,565	Sept. 3	228	55	72	1395
Wagon. Delivery-	W. Leonhardt	544,232	Aug. 6	695	177	72	876
Wagon. Dumping-	N. Bate	543,167	July 23	2350	554	72	488
Wagon. Dumping-	W. Booth and S. Sturgis	545,264	Aug. 27	2617	635	72	1285
Wagon. Dumping-	G. W. Pellet, Jr	546,341	Sept. 17	1593	378	72	1680
Wagon-jack	J. Campbell	546,652	Sept. 24	2118	503	72	1793
Wagon-loading device	C. E. McLean	544,543	Aug. 13	1302	317, 318	72	996
Wagon, perambulator, rocker, and swing. Convertible	E. S. Morton	545,712	Sept. 3	486	118	72	1443
Wagon running-gear	J. Bennett	541,271	Aug. 6	774	197, 198	72	890
Wagon running-gear	T. Grimmitt	545,491	Sept. 3	110	26	72	1375
Wagon storm-door	D. Fuller	543,007	July 23	2037	484	72	430
Wall-paper, paints, &c. Moistener or softener for	B. R. Blaisdell	546,504	Sept. 17	1679	445	72	1736
Walls, &c. Composition of matter for covering	C. B. Rockwood	542,172	July 2	571	.....	72	112
Walls, &c. Composition of matter for covering	C. B. Rockwood	542,173	July 2	572	.....	72	112
Warp-beams. Adjustable head for	T. Blackburn	546,878	Sept. 24	2494	595	72	1863
Washboard	P. J. Joecken	543,738	July 30	3412	792	72	698
Washboard	J. T. Sargent	543,706	July 30	3339	775	72	684

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Washtub. Stationary	S. W. Hendrickson	543,420	July 30	2885	678	72	604
Washer: *See* Barrel-washer. Gas-washer. Bottle-washer. Tumbler-washer.							
Washing-maching	C. A. Brewer	544,246	Aug. 6	735	189	72	882
Washing-machine	W. Haas	546,487	Sept. 17	1855	439	72	1731
Washing-machine	F. D. Harding	543,990	Aug. 6	278	68	72	790
Washing-machine	K. F. Rice	545,311	Aug. 27	2689	652	72	1299
Washing-machine	E. J. Richmond	544,903	Aug. 20	2000	477	72	1146
Washing-machine	H. C. and A. G. Schults	544,996	Aug. 20	2153	520	72	1173
Washing-machine	F. Strobel	544,869	Aug. 20	1933	462, 463	72	1133
Washing-machine	J. W. Sunderland	545,747	Sept. 3	539	130	72	1453
Washing-machine	J. R. Underwood	544,550	Aug. 13	1319	320, 321	72	1000
Washing-machine	J. F. Wood and H. A. Dixon	542,161	July 2	585	142	72	115
Washing-machine	R. A. York	545,202	Aug. 27	2615	634	72	1285
Watch. Alarm	J. W. Nunamaker	543,048	July 23	2115	501	72	443
Watch-balance	D. H. Church	544,883	Aug. 20	1954	468	72	1137
Watch-bow fastener	E. H. Hunter	544,039	Aug. 6	366	90	72	816
Watch cannon-pinion	J. S. and A. J. Baker	543,325	July 23	2614	614	72	537
Watch-carrier	A. Bannatyne	542,458	July 9	1124	275	72	228
Watchcase	F. Köhli	546,543	Sept. 17	1935	460	72	1746
Watchcase	W. M. Rush, Jr	543,317	July 23	2604	612	72	535
Watchcase-pendant	F. Moorfield	546,547	Sept. 17	1943	462	72	1747
Watchcase-pendants. Die for making	F. Moorfield	546,548	Sept. 17	1944	462	72	1747
Watch-movement box	E. C. Fitch and E. A. Marsh	545,225	Aug. 27	2566	621	72	1275
Watch-movements. Device for securing dials to	E. A. Marsh	543,628	July 30	3217	745	72	661
Watch-pendant. Stem-winding	C. A. Whitney	543,566	July 30	3052	713	72	637
Watch-regulator	A. N. Gauthier	544,576	Aug. 13	1366	333	72	1008
Watch. Stem winding and setting	J. G. Blessing	542,984	July 23	2003	476	72	423
Water-bag	W. H. Daly	543,177	July 23	2365	558	72	491
Water-bandage	B. F. Springsteen	546,436	Sept. 17	1760	418	72	1712
Water by compressed air. Elevating	S. W. Titus	546,125	Sept. 10	1189	283	72	1587
Water-closet bowl	M. Garland	544,251	Aug. 6	745	191	72	884
Water-closet bowls. Ring, rod, and bar for repairing leaks in	W. H. Whitmyre	541,912	July 2	152	36	72	33
Water-closet connection	C. A. Fritz	545,857	Sept. 3	725	176	72	1488
Water-closet connection	C. R. Schmidt	545,733	Sept. 3	522	126	72	1450
Water-closet seat	J. Barrett	542,818	July 16	1743	414	72	356
Water-closet fitting	J. Wrigley	545,566	Sept. 3	229	56	72	1396
Water-closet-flushing apparatus	H. J. Luff	542,061	July 2	408	99	72	80
Water-closet flushing tank or reservoir	M. J. Curry	544,964	Aug. 20	2100	503, 504	72	1165
Water-closet pad	K. Hoefelmayr	542,706	July 16	1554	371	72	322
Water-closet seat	P. J. Cahill	542,551	July 9	1284	312	72	259
Water-closet seat	J. C. Febiger, Jr	543,180	July 23	2368	559	72	492
Water-closet-seat support	A. C. Tiedemann	543,952	Aug. 6	217	52	72	788
Water-closet tank	K. Herrmann	543,091	July 23	2188	519	72	457
Water-closet valve	J. Menzies	542,485	July 9	1164	285, 286	72	235
Water-closets. Means for flushing	W. H. Robinson	546,679	Sept. 24	2163	514	72	1801
Water-cooler	L. M. Pierron	544,518	Aug. 13	1271	307	72	989
Water-cooler and refrigerator. Combined	F. R. Beal	542,217	July 2	658	161	72	127
Water-courses. Retarding the flow of subterranean	S. W. Titus	546,126	Sept. 10	1192	284	72	1587
Water-elevator	A. Hogeland	545,650	Sept. 3	370	91	72	1423
Water-elevator	G. C. Horst	545,200	Aug. 27	2525	611	72	1267
Water elevator and motor	J. E. Symons	544,755	Aug. 20	1702	409, 410	72	1088
Water-elevator. Compressed-air	S. W. Titus	546,038	Sept. 10	1043	250	72	1559
Water-elevator. Pneumatic	J. E. Bacon	542,620	July 16	1404	330	72	294
Water-elevator. Pneumatic	J. E. Bacon	542,621	July 16	1406	339	72	294
Water-elevator. Steam-vacuum	P. Sattelkau and H. R. Winkelmann	545,822	Sept. 3	664	102	72	1477
Water-gage	F. Rockstroh, M. Teppig, and H. Herzig.	545,727	Sept. 3	507	123, 124	72	1447
Water-gage time-recorder	E. P. Wells and E. R. Hubbard	542,910	July 16	1888	447	72	384
Water-heater	J. Creque	544,663	Aug. 20	1548	371	72	1059
Water-heater	E. G. Goodwin	544,333	Aug. 13	975	240, 241	72	933
Water-heater	A. D. Gordon	545,199	Aug. 27	2522	610	72	1266
Water-heater	G. A. Houston	543,246	July 23	2490	584	72	514
Water-heater	G. Wilson and S. Bernstein	544,019	Aug. 6	331	82	72	810
Water-heater. Automatic	I. M. Seamans	545,735	Sept. 3	524	127	72	1450
Water heater. Bath	C. S. Weatherly	544,704	Aug. 20	1628	390, 391	72	1074
Water-meter. Rotary	I. Smith	545,254	Aug. 27	2605	632	72	1283
Water-motor	A. T. Vernon	542,453	July 9	1114	272	72	226
Water-purifier	H. E. Gould	546,973	Sept. 24	2641	633	72	1892
Water-purifying apparatus	T. Craney	546,844	Sept. 24	2436	584	72	1851
Water-raising apparatus	J. E. Bacon	542,622	July 16	1408	339	72	295
Water-regulator. Automatic	E. W. Long	543,034	July 23	2090	495	72	439
Water-supply apparatus	S. A. Politsky	546,595	Sept. 17	2024	481	72	1762
Water-supply regulator	R. E. Convert	544,027	Aug. 6	346	86	72	812
Water-tank	C. Theobald	546,564	Sept. 17	1978	469	72	1753
Water-tower	C. Damm	544,478	Aug. 13	1211	293, 294	72	978
Water-tower	E. F. Steck	546,627	Sept. 17	2070	491	72	1771
Water-tube boiler	J. F. Casey	544,285	Aug. 13	796	203	72	905
Water-tube boiler	D. S. Chapman	544,882	Aug. 20	1952	467	72	1137
Water-tube boiler	J. Maher	544,316	Aug. 13	864	216, 217	72	918
Water-tube boiler	J. McGregor and J. L. Jackson	544,414	Aug. 13	1083	264	72	952
Water-tube boiler	H. See	546,715	Sept. 24	2218	529, 530	72	1811

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Water-tube boiler	A., H., and W. Wildman	544,474	Aug. 13	1205	292	72	977
Water-wheel	M. E. Haskins and G. L. Evans	546,663	Sept. 24	2133	508	72	1796
Water-wheel governor	W. S. Libbey	545,599	Sept. 3	290	71	72	1407
Watering-pot sprinkler with detachable rose	C. Sachs	543,783	July 30	3497	814	72	713
Watering tank. Stock	I. J. Hartford	542,704	July 16	1553	371	72	322
Watering-tanks. Automatic cut-off for	T. P. Potter	544,377	Aug. 13	1019	250	72	941
Watering trough. Automatic stock	W. Vosburgh	546,793	Sept. 24	2356	562	72	1837
Watering trough. Stock	F. C. Jones	542,260	July 9	731	180	72	157
Waterproof coat	J. T. Taylor	543,662	July 30	3268	759	72	671
Wave-motor	J. A. Moore	543,137	July 23	2274	539, 540	72	474
Wax and making same. Grafting	S. M. Brooks	545,940	Sept. 10	877	.....	72	1528
Wax. Grafting	S. M. Brooks	545,941	Sept. 10	878	.....	72	1528
Weather-strip	S. M. Horner	544,355	Aug. 13	980	241	72	934
Weather-strip	J. M. March	546,236	Sept. 10	1375	327	72	1622
Weather-strip for doors	H. Rudebock	542,007	July 2	320	77	72	65
Weaving. Doup-harness for cross	C. Ashoff	544,496	Aug. 13	1237	300	72	983
Webs. Apparatus for severing rolled	D. E. Titsworth	542,121	July 2	492	118, 119	72	98
Wedge	W. I. Harmon	542,559	July 9	1298	314	72	261
Weed-destroying apparatus	J. J. L. McPherson	544,542	Aug. 13	1301	317	72	995
Weed-turner	W. J. Meeks	543,697	July 30	3324	771	72	681
Weighing apparatus. Electrically-controlled	L. H. Nutting	544,745	Aug. 20	1688	406, 407	72	1086
Well and pump. Combined drive	F. R. Porter	544,376	Aug. 13	1018	250	72	941
Well-drilling machine	J. Button	542,725	July 16	1580	377	72	327
Well-drilling machine	M. D. Flanders	543,827	July 30	3583	834	72	730
Well-sinking apparatus	M. T. Chapman	541,835	July 2	27	7, 8	72	8
Well-tube strainer	S. W. Titus	546,039	Sept. 10	1045	250	72	1560
Wells. Bailer for oil or like	J. B. Braden	546,267	Sept. 10	1443	342	72	1634
Wells. Device for cleaning out tubed	H. J. Welter and L. E. Sacksteder	544,148	Aug. 6	545	135	72	849
Wells. Packing for oil or gas	B. C. Hadden	545,072	Aug. 27	2292	557	72	1220
Wells. Sand and air separator for Artesian or driven	B. F. Smith	545,026	Aug. 20	2202	533	72	1182
Wells. Tube or pipe stopper for Artesian or driven	J. P. Suverkrop	546,258	Sept. 10	1422	337	72	1331
Welt-trimmer cutter	G. A. Hultin	542,562	July 9	1302	315	72	262
Welts and uppers. Machine for trimming edges of	Z. T. French and W. C. Meyer	546,851	Sept. 24	2445	586	72	1853
Wheel: *See* Bicycle-wheel. Car-wheel. Carriage-wheel. Chain-wheel. Current-wheel. Fifth-wheel. Paddle-wheel. Power-wheel. Traction-wheel. Trolley-wheel. Vehicle-wheel. Water-wheel. Wind-wheel.							
Wheel	J. M. Combs	542,184	July 2	589	142	72	115
Wheel	F. J. Freese	542,678	July 16	1508	361	72	314
Wheel	G. C. Hale	542,588	July 9	1338	324, 325	72	268
Wheel and rail brake. Combined	J. B. Hoagland, B. W. Thornhill, and J. M. Kinsey.	544,302	Aug. 13	832	210	72	912
Wheel-handling device	C. W. and L. T. Gresham	545,490	Sept. 3	109	26	72	1375
Wheel rim. Vehicle	F. L. Goodrich	546,320	Sept. 17	1561	370	72	1674
Wheel rim. Vehicle	E. H. Olds	545,375	Aug. 27	2784	675	72	1316
Wheels. Wood rim for vehicle	C. A. Greenleaf	546,764	Sept. 24	2317	552	72	1828
Whirl for filler-frames	R. Atherton	546,288	Sept. 17	1496	352	72	1661
Whist. Apparatus for playing duplicate	F. L. Barrows	546,572	Sept. 17	1991	473	72	1756
Whist board. Duplicate	H. Mitchell	543,746	July 30	3422	794	72	700
Whist. Tray-board for duplicate	F. Ames	542,748	July 16	1629	389	72	335
Whistle and cigar-holder. Combined	L. Lemos	542,366	July 9	950	233	72	196
Whistle. Bicycle	E. S. Piper	546,122	Sept. 10	1184	282	72	1586
Wick-raiser	H. P. Wilder	542,579	July 9	1328	322	72	266
Wick trimmer. Lamp	J. L. Purinton	542,027	July 2	347	84	72	70
Wind-engine	W. C. Bramwell	543,462	July 30	2854	668, 669	72	598
Wind-motor	R. Lundqvist	544,922	Aug. 20	2028	484	72	1151
Wind-wheel	W. C. Bramwell	543,460	July 30	2851	668	72	598
Wind-wheel	W. C. Bramwell	543,461	July 30	2852	668	72	598
Winding machine. Cloth	W. P. Simpson	542,034	July 2	357	87	72	72
Winding or spooling machine. Thread	J. Booth	544,949	Aug. 20	2074	494, 495, 496, 497	72	1160
Winding thread upon star-shaped holders. Machine for	J. Keats	543,185	July 23	2376	560, 561, 562	72	493
Windmill	D. E. Barnard	545,840	Sept. 3	696	169	72	1482
Windmill	W. Bates	545,015	Aug. 27	2235	541, 542	72	1209
Windmill	E. S. Crawford	542,146	July 2	530	129	72	105
Windmill	D. Fuller	542,305	July 9	830	204	72	173
Windmill	H. S. Hopper	544,228	Aug. 6	688	175	72	874
Windmill	F. J. McCormick	546,425	Sept. 17	1742	413	72	1708
Windmill	S. Saundersen	544,594	Aug. 13	1397	340, 341	72	1014
Windmill	R. Schmidt	543,194	July 23	2400	565	72	498
Windmill-regulator	F. C. Rathbun	542,537	July 9	1257	306	72	253
Windmill-tower	J. H. Miller	546,620	Sept. 17	2061	489	72	1769
Windmill-tower	T. Rogers	546,710	Sept. 24	2211	527	72	1809
Window	J. A. Cleveland	542,726	July 16	1580	378	72	327
Window	L. N. Fowler	543,380	July 23	2690	636	72	551
Window	J. Fredrickson	544,506	Aug. 13	1254	303	72	986
Window	J. B. Grattarola	544,164	Aug. 6	568	142	72	854
Window. Bay	J. B. Turner and H. A. Harrington	544,242	Aug. 6	725	186	72	880
Window-casing and means for securing sash therein	W. Randel and C. A. French	544,050	Aug. 6	387	95, 96	72	819

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Window-cleaner	T. Urban and A. Kadlowec	542,906	July 16	1880	446	72	383
Window-cleaning attachment	B. Fritsch	546,812	Sept. 24	2387	571	72	1842
Window-fastener	H. H. Caswell	543,374	July 23	2683	634	72	550
Window-fastener	W. Hickey	542,053	July 2	389	94	72	78
Window-panes. Apparatus for preventing condensation on	J. H. Morris	543,749	July 30	3425	795	72	701
Window-screen	J. A. Durnbaugh	546,643	Sept. 17	2098	497	72	1776
Window-screen	P. E. McIntosh	542,274	July 9	765	188	72	162
Window-screen. Adjustable	F. C. Miller	543,261	July 23	2518	591	72	518
Window-screen and awning. Combined	W. Romünder and E. J. Fellman	542,312	July 9	844	207	72	176
Window-seat. Attachable	E. J. Kelrsted	542,648	July 16	1452	349	72	303
Window-ventilator	S. F. Jones	545,655	Sept. 3	375	92	72	1424
Windows. Antirattler for	E. J. Donovan	546,657	Sept. 24	2125	505	72	1794
Wiper. Rotary	W. H. Cloud and J. W. Lappin	541,992	July 2	291	68	72	59
Wire. Apparatus for manufacture of	R. D. Sanders	541,986	July 2	281	65	72	57
Wire-clamp	A. A. Armstrong	546,217	Sept. 10	1342	319	72	1615
Wire-cloth for screens. Treating	G. B. Meadows	542,393	July 9	996	246	72	204
Wire-coiling machine	O. P. Briggs	544,344	Aug. 13	910	228, 229	72	925
Wire-coiling machine	L. Wildermuth	545,144	Aug. 27	2421	587	72	1246
Wire-drawing apparatus	J. M. Buisson	543,465	July 30	2860	670	72	599
Wire-drawing machine	V. E. Edwards	543,858	Aug. 6	45	12	72	757
Wire fabric. Woven	M. B. Lloyd	545,964	Sept. 10	914	219	72	1536
Wire-fastener	O. Swift	543,758	July 30	3448	804	72	705
Wire. Making seamless plated	E. Nelson	542,422	July 9	1045	256	72	215
Wire-reel	C. L. Gandy	544,484	Aug. 13	1221	296	72	980
Wire-reeling machine	C. H. Morgan	543,884	Aug. 6	99	23	72	766
Wire scouring and polishing apparatus	J. Needham	542,529	July 9	1245	304	72	251
Wire spokes. Machine for manufacture of swaged	E. J. Watson and E. W. Vaughan	543,914	Aug. 6	146	32, 33, 34	72	775
Wire-stretcher	W. C. Cardwell	543,290	July 23	2561	602	72	526
Wire-stretcher	J. E. Dusang	544,725	Aug. 20	1662	399	72	1081
Wire-stretcher	M. Gross	541,850	July 2	51	12	72	13
Wire-stretcher	A. J. Upham	542,296	July 9	816	201	72	170
Wire-stretcher and carriage. Combined	W. P. Dunlap	546,696	Sept. 24	2192	522	72	1806
Wire-swaging machine	E. W. Vaughan	542,213	July 2	651	159, 160	72	126
Wire-tightener	E. L. and J. S. Williams	542,668	July 16	1493	357	72	311
Wire-tying machine	F. G. Chambers	546,727	Sept. 24	2252	536	72	1817
Wire winding and distributing machine	G. A. Feder	543,470	July 30	2866	672	72	600
Wire winding and distributing machine	G. A. Feder	543,471	July 30	2868	672, 673	72	601
Wire-working tool	J. O. Mitchell	543,100	July 23	2204	523	72	461
Wires together. Means for fastening parallel	R. I. Brown	543,125	July 23	2253	534	72	470
Wiring fixture. House	C. F. Case	542,924	July 16	1908	452	72	389
Wood-bending machine	G. Stickley	541,890	July 2	116	28	72	26
Wood-bending machine	S. Swartz	544,754	Aug. 20	1702	409	72	1088
Wood-cutting machine	E. E. Birkner	546,294	Sept. 17	1509	356	72	1665
Wood-decorating machine	S. L. Davis	545,059	Aug. 27	2266	549, 550	72	1216
Wood-hog	E. W. Brown	542,075	July 2	429	103	72	84
Wood-joint fastener	J. N. Hieronymus	546,152	Sept. 10	1231	294	72	1594
Wood or wood pulp. Process of and apparatus for making dishes of	C. Spofford	545,179	Aug. 27	2463	601, 602	72	1258
Wood. Polishing	G. F. Krohn	545,235	Aug. 27	2579	.....	72	1278
Wood-preservative	H. Gallinowsky	542,247	July 9	708	.....	72	152
Wood-shaping machine	C. H. Ellingwood	546,512	Sept. 17	1895	418	72	1738
Wood-stain	D. B. Tilley	545,182	Aug. 27	2488	.....	72	1259
Wooden clubs. Machinery for shaping heads of	D. Fraser	542,246	July 9	706	173, 174	72	152
Wooden dishes. Device for manufacturing	J. W. Lambert	542,365	July 9	947	233	72	196
Woodwork. Rotary cutter for	G. D. Gillette	542,886	July 16	1850	438	72	377
Woodworking-machines. Antivibrating attachment for	A. Premo	543,219	July 23	2440	573	72	504
Woodworking. Rotary cutter for	G. D. Gillette	544,432	Aug. 13	1119	271	72	959
Wool from silk. Separating	A. L. and G. M. Rice, 2d	546,434	Sept. 17	1757	.....	72	1711
Wool. Process of and apparatus for removing fatty matters from	E. Maertens	545,899	Sept. 10	792	194	72	1512
Work-stand	C. E. Lincoln	544,182	Aug. 6	593	148	72	858
Woven fabric	A. Hardy and E. Evans	544,916	Aug. 20	2022	482	72	1150
Wrapper. Mailing	F. W. Wright	544,270	Aug. 6	773	197	72	889
Wrappers to newspapers. Machine for applying	J. and I. P. Kissell	543,873	Aug. 6	81	17, 18	72	763
Wrapping-machine	C. R. Schilling	546,193	Sept. 10	1296	309, 310	72	1606
Wrapping-machine	G. R. Ward	545,397	Aug. 27	2817	685, 686, 687	72	1323
Wrench: *See* Flange-wrench. Nut-wrench. Pipe-wrench. Ratchet-wrench. Rim-wrench.							
Wrench	C. Becher	541,827	July 2	13	3	72	5
Wrench	C. Black	546,295	Sept. 17	1510	356	72	1665
Wrench	E. Champane	545,944	Sept. 10	881	212	72	1529
Wrench	F. L. Coes	543,925	Aug. 6	169	40	72	779
Wrench	J. Ford	546,139	Sept. 10	1213	289	72	1591
Wrench	S. H. Hackney	545,016	Aug. 20	2182	528	72	1179
Wrench	H. J. Martin	544,738	Aug. 20	1678	403	72	1084
Wrench	H. J. Martin	544,739	Aug. 20	1679	404	72	1084
Wrench	H. McElrey	542,938	July 16	1929	457	72	393
Wrench	E. I. Morey	542,592	July 9	1346	326	72	289
Wrench	W. J. Shea	542,317	July 9	852	209	72	178
Wrench	D. Wilcox	544,709	Aug. 20	1636	392	72	1075

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wringer: *See* Mop-wringer.							
Yarn-clearer. Adjustable	T. A. Boyd	543,288	July 23	2560	601	72	525
Yarn-drying apparatus	O. Duckworth	541,922	July 2	169	40	72	36
Yoke attachment. Neck	B. J. Sykes	542,119	July 2	490	118	72	97
Yoke center. Neck	T. G. Mandt	543,627	July 30	3215	745	72	661
Yoke. Neck	C. H. Lambert	542,200	July 2	627	153	72	122
Zinc. Manufacturing	A. Crossley	544,612	Aug. 13	1433	.....	72	1020
Zinc. Process of and apparatus for extraction of	L. V. J. Lynen	543,256	July 23	2509	589	72	516
Zither. Metallophone	F. Menzenhauer	546,174	Sept. 10	1270	303	72	1601
Zithers or other musical instruments. Attachment for	M. C. R. Andorff	512,582	July 9	1331	322, 323	72	267

ALPHABETICAL LIST OF DESIGNS.

Design.	Name.	No.	Date.	Official Gazette. Volume.	Official Gazette. Page.
Badge	W. C. Bower	24,532	Aug. 13	72	1033
Badge	W. C. Bower	24,630	Aug. 27	72	1340
Badge	G. H. Lyttle	24,533	Aug. 13	72	1033
Badge	M. J. Sullivan	24,443	July 2	72	131
Badge	W. E. Anderson	24,686	Sept. 17	72	1779
Bale. Cotton	L. L. Higby	21,521	July 30	72	736
Banner. Display	E. Ringold	24,685	Sept. 17	72	1779
Bar-rooms. Main entrance for	J. Boller	24,641	Aug. 27	72	1341
Bat	J. H. Gavin	24,709	Sept. 24	72	1897
Bath-tub	F. J. Torrance	24,520	July 30	72	736
Bath-tub	R. Goodwill	24,583	Aug. 20	72	1189
Bed-warmer	O. E. A. Wiessner	24,711	Sept. 24	72	1897
Bedstead	A. Spadone	24,679	Sept. 17	72	1778
Belt	M. Garlio	24,488	July 16	72	409
Bicycle-case tray	H. D. Perky	24,698	Sept. 17	72	1779
Biscuit	A. P. Babcock	24,578	Aug. 20	72	1188
Bottle	C. De Witt	24,464	July 9	72	281
Bottle	A. Dryfoos	24,500	July 23	72	583
Bottle	J. H. Gault	24,468	July 16	72	406
Bottle	W. W. Lowrey	24,579	Aug. 20	72	1188
Bottle	W. W. Lowrey	24,580	Aug. 20	72	1189
Bottle	W. W. Lowrey	24,581	Aug. 20	72	1189
Bottle	W. W. Lowrey	24,582	Aug. 20	72	1189
Bottle	A. P. Preston	24,655	Sept. 3	72	1497
Bottle	J. Proeger	24,695	Sept. 24	72	1895
Bottle-stopper	J. H. Gault	24,577	Aug. 20	72	1188
Bottle-stopper. Glass	W. W. Lowrey	24,447	July 2	72	132
Bowl for tea-sets	C. C. Wientge	24,696	Sept. 24	72	1895
Box	H. Fatton	24,502	July 23	72	583
Box	E. Saalbach	24,452	July 2	72	132
Box	T. E. Wiedersheim, Jr	24,470	July 16	72	406
Box-opener	A. B. Schofield	24,585	Aug. 20	72	1189
Box-strap bolt	J. H. Baker	24,638	Aug. 27	72	1341
Bracket brace-shelf	T. Corscaden	24,517	July 30	72	735
Bretzel-case	J. Mohring	24,598	Aug. 20	72	1192
Broom-ferrule	A. Walrath	24,705	Sept. 24	72	1896
Brush-back	C. C. Wientge	24,537	Aug. 13	72	1033
Buckle	C. R. Harrie	24,574	Aug. 20	72	1188
Buckle	D. Stone	24,444	July 2	72	131
Bulletin-board	D. E. Hamilton	24,559	Aug. 13	72	1036
Button	E. R. Hughes	24,445	July 2	72	131
Button. Link cuff	J. E. Hills	24,510	July 30	72	734
Button or badge	J. B. Evans	24,629	Aug. 27	72	1339
Buttons. Shank for link cuff	J. E. Hills	24,509	July 30	72	734
Cabinet	T. J. Shepherd	24,475	July 16	72	407
Cake or cracker	D. Stewart	24,441	July 2	72	131
Can body. Oil	M. L. Sperry	24,670	Sept. 10	72	1646
Candle-holder and pendant	C. D. Winfield	24,548	Aug. 13	72	1035
Card-mount	F. E. Hastings	24,693	Sept. 25	72	1895
Carpet	A. Bunel	24,719	Sept. 24	72	1899
Carpet	A. Bunel	24,720	Sept. 24	72	1899
Carpet	C. Casseneuve	24,648	Aug. 27	72	1342
Carpet	C. F. Gedney	24,561	Aug. 13	72	1037
Carpet	C. F. Gedney	24,625	Aug. 20	72	1196
Carpet	C. F. Gedney	24,649	Aug. 27	72	1342
Carpet	H. Horan	24,647	Aug. 27	72	1342
Carpet	J. B. Neil	24,562	Aug. 13	72	1037
Carpet	J. B. Neil	24,675	Sept. 10	72	1647
Carpet	J. B. Neil	24,676	Sept. 10	72	1647
Carpet	A. F. Reddie	24,616	Aug. 20	72	1194
Carpet	A. F. Reddie	24,617	Aug. 20	72	1194
Carpet	A. F. Reddie	24,618	Aug. 20	72	1194

Alphabetical list of designs, July to September, inclusive—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Carpet	A. F. Reddie	24,619	Aug. 20	72	1195
Carpet	A. F. Reddie	24,620	Aug. 20	72	1195
Carpet	A. F. Reddie	24,621	Aug. 20	72	1195
Carpet	A. F. Reddie	24,622	Aug. 20	72	1195
Carpet	A. F. Reddie	24,623	Aug. 20	72	1195
Carpet	A. F. Reddie	24,624	Aug. 20	72	1197
Carpet	A. M. Rose	24,492	July 16	72	410
Carpet	A. M. Rose	24,493	July 16	72	410
Carpet	A. M. Rose	24,523	July 30	72	737
Carpet	A. M. Rose	24,524	July 30	72	737
Carpet	A. M. Rose	24,527	July 30	72	737
Carpet	A. M. Rose	24,563	Aug. 13	72	1037
Carpet	A. M. Rose	24,564	Aug. 13	72	1037
Carpet	A. M. Rose	24,565	Aug. 13	72	1037
Carpet	A. M. Rose	24,566	Aug. 13	72	1037
Carpet	A. M. Rose	24,626	Aug. 20	72	1196
Carpet	A. M. Rose	24,627	Aug. 20	72	1196
Carpet	A. M. Rose	24,650	Aug. 27	72	1342
Carpet	A. M. Rose	24,651	Aug. 27	72	1342
Carpet	A. M. Rose	24,652	Aug. 27	72	1342
Carpet	A. M. Rose	24,653	Aug. 27	72	1343
Carpet	A. M. Rose	24,654	Aug. 27	72	1343
Carpet	A. M. Rose	24,673	Sept. 10	72	1647
Carpet	A. M. Rose	24,674	Sept. 10	72	1647
Carpet	E. G. Sauer	24,646	Aug. 27	72	1342
Carpet	E. G. Sauer	24,672	Sept. 10	72	1647
Carpet	N. S. Stewart	24,716	Sept. 24	72	1898
Carpet	N. S. Stewart	24,717	Sept. 24	72	1898
Carpet	N. S. Stewart	24,718	Sept. 24	72	1898
Carpet and border	W. F. Brown	24,569	Aug. 13	72	1038
Carpet and border	J. Merry	24,570	Aug. 13	72	1038
Carpet and border	J. Merry	24,571	Aug. 13	72	1038
Carpet-body	A. M. Rose	24,462	July 2	72	134
Carpet-border	A. M. Rose	24,463	July 2	72	134
Carpet border	A. M. Rose	24,525	July 30	72	737
Carpet border	A. M. Rose	24,526	July 30	72	737
Carpet-border	A. M. Rose	24,567	Aug. 13	72	1038
Carpet-border	A. M. Rose	24,568	Aug. 13	72	1038
Carpet button. Stair-	R. H. Warren	24,631	Aug. 27	72	1340
Carpet button. Stair-	R. H. Warren	24,632	Aug. 27	72	1340
Carpet-sweeper casing	L. Gohlke	24,591	Aug. 20	72	1190
Casket-handle	J. T. Morgan	24,484	July 16	72	409
Ceiling-plate	E. A. Langenbach	24,456	July 2	72	133
Ceiling-plate. Metallic	E. A. Langenbach	24,487	July 16	72	409
Chair	G. F. Richardson	24,554	Aug. 13	72	1035
Chandelier	E. F. Caldwell	24,549	Aug. 13	72	1035
Chocolate cake	L. Runkel	24,658	Sept. 10	72	1645
Cigar-holder	J. M. Merritt	24,449	July 2	72	132
Clip	J. Devlin	24,663	Sept. 10	72	1645
Coin-receptacle	G. and W. Benze	24,694	Sept. 24	72	1895
Commode	C. R. Hamman	24,687	Sept. 17	72	1779
Corn. Holder for ears of	A. Calleson	24,668	Sept. 10	72	1646
Culinary vessels. Follower for	M. Kratky	24,481	July 16	72	408
Currycomb	A. R. Dickinson	24,546	Aug. 13	72	1034
Curtain-hook	C. Bickel	24,540	Aug. 13	72	1034
Cuspidor-case	C. Hofmann	24,530	Aug. 6	72	892
Desk and seat	J. C. Gooding	24,600	Aug. 20	72	1192
Dilator. Rectal	E. Hubbell	24,547	Aug. 13	72	1035
Dish	C. E. Haviland	24,634	Aug. 27	72	1340
Dish	A. A. Lanternier	24,544	Aug. 13	72	1034
Dish. Covered	C. Goetz	24,512	July 30	72	734
Display-stand	J. D. Goddard	24,702	Sept. 24	72	1896
Display-stand	J. W. Turner	24,476	July 16	72	407
Drier-frame. Side	A. H. Smith	24,594	Aug. 20	72	1191
Egg-beater	O. A. Hensel	24,545	Aug. 13	72	1034
Electric-light shade	H. D. McFaddin	24,473	July 16	72	407
Fabric. Ornamental	A. G. Jennings	24,522	July 30	72	737
Fan-rack	A. H. Davison	24,680	Sept. 17	72	1778
Fence-panel	R. E. Poindexter	24,514	July 30	72	735
Fire extinguishers. Cylinder for hand	W. M. Harrison	24,587	Aug. 20	72	1190
Fork	I. Hirsch	24,534	Aug. 13	72	1033
Fruit-press casing	J. W. Brown, Jr	24,592	Aug. 20	72	1190
Furnace-grate	W. S. Stevenson	24,458	July 2	72	133
Fuse-block box	J. W. Packard	24,465	July 9	72	281
Game-board	T. H. B. Pierce	24,701	Sept. 24	72	1896
Game-board	W. A. Smethurst	24,454	July 2	72	132
Gem cluster-setting	M. E. Oppenheimer	24,678	Sept. 17	72	1778
Glass vessel	J. D. Bergen	24,511	July 30	72	734
Glass vessel	H. T. Broden	24,697	Sept. 24	72	1895
Glass vessel	H. T. Broden	24,698	Sept. 24	72	1895
Grate	C. T. Coe	24,504	July 23	72	583
Grate-bar	C. Obst	24,640	Aug. 27	72	1341
Grate frame. Fire-	C. H. Porter	24,478	July 16	72	408
Hand-bag	H. Bruning	24,543	Aug. 13	72	1034
Handle-bracket	J. I. Flanagen	24,682	Sept. 17	72	1779
Handle-tube	G. H. Dippo	24,704	Sept. 24	72	1896
Hat-pin	C. E. De Lue	24,677	Sept. 17	72	1778
Hat-supporter	J. R. Hirsh	24,469	July 16	72	406
Heater	J. T. Cullen and L. P. Grimes	24,712	Sept. 24	72	1897
Heater case. Electric-	J. F. McElroy	24,459	July 2	72	133
Hinge	F. E. Ranney	24,707	Sept. 24	72	1897
Hook	J. Berkey	24,539	Aug. 13	72	1033
Hook	J. C. Covert	24,664	Sept. 10	72	1645
Hook	C. W. Raker	24,573	Aug. 20	72	1188

Alphabetical list of designs, July to September, inclusive—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Hub cap. Vehicle	A. C. Farnsworth	24,489	July 16	72	409
Knife and fork polisher	H. S. Rosenstock	24,466	July 16	72	406
Knife-handle	D. Greenleaf and J. H. Crosby	24,450	July 2	72	132
Lace-pattern	H. O. Sharpe	24,645	Aug. 27	72	1342
Lamp	H. E. Keeler and W. S. Hamm	24,496	July 23	72	582
Lamp	H. E. Keeler and W. S. Hamm	24,497	July 23	72	582
Lamp	H. E. Keeler and W. S. Hamm	24,498	July 23	72	582
Lamp	H. E. Keeler and W. S. Hamm	24,499	July 23	72	582
Lamp	W. Buttler	24,471	July 16	72	406
Lamp-chimney	W. Buttler	24,472	July 16	72	407
Lamp-chimney	F. Yokel	24,604	Aug. 20	72	1192
Lamp-base	F. Yokel	24,605	Aug. 20	72	1192
Lamp-base	F. Yokel	24,606	Aug. 20	72	1193
Lamp-base	F. Yokel	24,607	Aug. 20	72	1193
Lamp-base	F. Yokel	24,608	Aug. 20	72	1193
Lamp-base	F. Yokel	24,609	Aug. 20	72	1193
Lamp-base	F. Yokel	24,610	Aug. 20	72	1193
Lamp-base	J. E. Bohner	24,451	July 2	72	132
Lamp-fount holder	F. Yokel	24,611	Aug. 20	72	1193
Lamp-fount holder	F. Yokel	24,612	Aug. 20	72	1193
Lamp-fount holder	F. Yokel	24,613	Aug. 20	72	1193
Lamp-fount holder	F. Yokel	24,614	Aug. 20	72	1194
Lamp-fount holder	C. A. Svensson	24,552	Aug. 13	72	1035
Lathes. Side frame for	W. P. Henszey	24,628	Aug. 20	72	1196
Locomotive-frame	L. P. Whiteman	24,576	Aug. 20	72	1188
Matches, &c. Receptacle for	W. C. Maynard	24,482	July 16	72	408
Meat-chopper	J. W. Brown, Jr	24,681	Sept. 17	72	1778
Meat-chopper frame or casing	E. A. Langenbach	24,485	July 16	72	409
Molding	W. H. Perry	24,461	July 2	72	134
Monument	J. C. Daggett	24,483	July 16	72	408
Nail or slug	A. F. Brabant	24,541	Aug. 13	72	1034
Needle-book	A. G. Jenninge	24,560	Aug. 13	72	1037
Ornamental fabric	J. Roche	24,584	Aug. 20	72	1189
Padlock	S. H. Crocker	24,633	Aug. 27	72	1340
Paper-fastener	M. Dike	24,662	Sept. 10	72	1645
Paper-weight	G. Hilpert	24,494	July 23	72	582
Pendant	T. M. Kent	24,453	July 2	72	132
Picture-frame	C. H. and F. L. Smirl	24,474	July 16	72	407
Picture-frame	P. M. Zeidler	24,553	Aug. 13	72	1035
Pianos. Upper frame for	W. F. Markham	24,448	July 2	72	132
Pistol-frame	W. T. Murphy	24,586	Aug. 20	72	1189
Plate or tray. Change	T. Haviland	24,513	July 30	72	735
Platter	A. McTernen	24,542	Aug. 13	72	1034
Pocket-book safety-band	B. Cronenberg	24,531	Aug. 6	72	892
Portière-rope	C. M. Porter	24,715	Sept. 24	72	1898
Printed fabric	C. F. Walther	24,644	Aug. 27	72	1341
Radiator	L. Kahn and A. Speck	24,556	Aug. 13	72	1036
Radiator. Gas-	L. Kahn and A. Speck	24,557	Aug. 13	72	1036
Radiator. Gas-	J. W. Brown, Jr	24,593	Aug. 20	72	1191
Raisin-seeder frame	T. I. Rankin	24,603	Aug. 20	72	1192
Range	C. H. Thurber	24,661	Sept. 10	72	1645
Razor-handle	W. H. Bridgman	24,635	Aug. 27	72	1340
Razor-wiper	C. Knapp	24,690	Sept. 24	72	1894
Ring	W. H. Mullins	24,597	Aug. 20	72	1191
Roof-finial	W. H. Mullins	24,596	Aug. 20	72	1191
Roofing-plate	A. A. Shields	24,706	Sept. 24	72	1897
Sash-lock	P. F. Hazen	24,480	July 16	72	408
Scale-beam	E. F. Jones	24,479	July 16	72	408
Scale standard or base	D. C. Wheeler	24,575	Aug. 20	72	1188
Sciasors or shears	H. N. and F. Clausen	24,669	Sept. 10	72	1646
Scouring-box	J. F. Hardy	24,710	Sept. 24	72	1897
Sewing-machine frame	G. W. La Rue	24,550	Aug. 13	72	1035
Sewing-machine frame	J. Macphail	24,490	July 16	72	410
Shelf-supporting bracket	L. Hill	24,686	Sept. 10	72	1646
Shoe	G. Kinner	24,667	Sept. 10	72	1646
Shoe-tip	W. W. Davis	24,599	Aug. 20	72	1192
Show-case	E. A. Langenbach	24,486	July 16	72	409
Siding-plate. Metallic	H. H. Dreyer	24,505	July 23	72	583
Sign-board	W. G. Webb	24,506	July 30	72	733
Soap cake or bar	W. C. Codman	24,508	July 30	72	733
Spoon, &c	C. A. Gooding	24,659	Sept. 10	72	1645
Spoon	A. Pirtle	24,467	July 16	72	406
Spoon	F. W. Smith	24,660	Sept. 10	72	1645
Spoon	G. P. Tilton	24,528	Aug. 6	72	892
Spoon	C. C. Wientge	24,507	July 30	72	733
Spoon	L. D. Cole	24,495	July 23	72	582
Spoon-handle	S. H. Manchester	24,572	Aug. 20	72	1188
Spoon-handle	H. E. Washburn	24,535	Aug. 13	72	1033
Spoon-handle	C. C. Wientge	24,536	Aug. 13	72	1033
Spoon-handle	G. C. Lunt	24,442	July 2	72	131
Spoon or fork	L. S. Starrett	24,503	July 23	72	583
Square. Try-	A. Seesler	24,637	Aug. 27	72	1340
Stocking. Bicyclist's	A. C. Barler	24,602	Aug. 20	72	1192
Stove	E. A. Blakslee	24,460	July 2	72	133
Stove	J. L. Gobeille	24,643	Aug. 27	72	1341
Stove	J. L. Gobeille	24,671	Sept. 10	72	1646
Stove	H. G. Hagey	24,713	Sept. 24	72	1898
Stove	T. Miller	24,558	Aug. 13	72	1036
Stove	E. J. King and T. R. Kennedy	24,477	July 16	72	407
Stove. Cooking-	A. H. Wolff	24,687	Sept. 3	72	1491
Stove. Gas-	A. C. West	24,601	Aug. 20	72	1192
Stove. Gas or oil	E. B. Vrooman	24,457	July 2	72	133
Strainer. Sink-	S. Elliott	24,590	Aug. 20	72	1190
Sulky frame or axle	J. Macphail	24,588	Aug. 20	72	1190
Swinging bracket					

Alphabetical list of designs, July to September, inclusive—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Thermometer	A. Bayer	24,538	Aug. 13	72	1033
Tile	W. D. Henry	24,636	Aug. 27	72	1340
Tile. Roofing	J. M. McCabe	24,491	July 16	72	410
Timepiece-hand	W. C. Ball	24,446	July 2	72	132
Tire-cover for bicycles	H. Heaton, Jr	24,455	July 2	72	133
Toothpick	E. McCheaney	24,691	Sept. 24	72	1894
Tops. Flier for aerial	J. W. Cain and W. A. Skinner	24,692	Sept. 24	72	1894
Towel-rack case	G. M. and W. A. Proctor	24,708	Sept. 24	72	1897
Toy	S. Alland	24,529	Aug. 6	72	892
Toy money-bank	C. A. Bailey	24,501	July 23	72	583
Toy stove	C. A. Bailey	24,519	July 30	72	736
Tray	G. Brooks	24,656	Sept. 3	72	1491
Trimming	F. Hassenpflug	24,615	Aug. 20	72	1194
Trimming	F. Hassenpflug	24,714	Sept. 24	72	1898
Trunk corner-iron	J. M. Schwerin	24,703	Sept. 24	72	1896
Type. Font of	C. H. Beeler, Jr	24,684	Sept. 17	72	1779
Type. Font of	W. P. Quentell	24,683	Sept. 17	72	1779
Type. Font of printing	C. H. Beeler, Jr	24,589	Aug. 20	72	1190
Type. Font of printing	M. Rosenow and J. Schmohl	24,699	Sept. 24	72	1896
Type. Font of printing	R. H. Smith and W. F. Clark	24,515	July 30	72	735
Type. Font of printing	J. West	24,700	Sept. 24	72	1896
Valve-casing	W. H. Hendrick	24,639	Aug. 27	72	1341
Vehicle-wheel	A. W. Grant	24,555	Aug. 13	72	1036
Washstand-bracket	W. H. Graham	24,665	Sept. 10	72	1645
Watch-dial	J. O. Jacot	24,629	Sept. 24	72	1894
Water-closet cover	E. H. Israel	24,642	Aug. 27	72	1341
Water-tower frame	E. F. Steck	24,595	Aug. 20	72	1191
Window-fastening strip	E. Hause	24,516	July 30	72	735
Wrench-head. Handled	W. T. Johnston	24,518	July 30	72	736
Zinc. Battery	R. W. Gordon	24,551	Aug. 13	72	1035

ALPHABETICAL LIST OF TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
Abradant consisting of crushed steel	Diamantstahl Werk	26,886	July 30	72	739
Ale	Anheuser-Busch Brewing Association.	27,088	Sept. 24	72	1900
Antiseptics	Speyer & Grund	26,906	Aug. 6	72	894
Apparel. Certain named wearing	Union Special Sewing Machine Company.	26,742	July 2	72	135
Apparel. Certain named wearing	Union Special Sewing Machine Company.	26,743	July 2	72	135
Apparel. Certain named wearing	Union Special Sewing Machine Company.	26,744	July 2	72	135
Baking-powder	C. D. Boss & Son	26,795	July 9	72	283
Baking-powder	J. D. Gregory	26,756	July 2	72	136
Baking-powder	Southern Manufacturing Company	26,864	July 23	72	587
Beer. Bottled lager	Valentin Blatz Brewing Company	26,749	July 2	72	135
Beer. Lager	Estate of F. Oppermann, Jr	26,852	July 23	72	585
Beer. Lager	Firm of G. Pschorr	26,821	July 16	72	412
Beer. Lager	Firm of G. Pschorr	26,853	July 23	72	585
Beer. Lager	Rochester Brewing Company	26,996	Aug. 27	72	1344
Beer. Lager	United States Brewing Company of Chicago.	26,750	July 2	72	135
Belting. Leather	C. A. Schieren & Co	26,748	July 2	72	135
Beltings of all kinds	H. A. Cole	26,927	Aug. 13	72	1040
Bibles	National Publishing Co	27,083	Sept. 24	72	1900
Bicycle-signals	P. E. Matthes	27,064	Sept. 10	72	1650
Bicycles	Indiana Bicycle Company	27,082	Sept. 17	72	1782
Bicycles	R. H. Macy & Co	27,065	Sept. 10	72	1650
Bicycles	Supplee Hardware Company	26,983	Aug. 20	72	1200
Bicycles	Supplee Hardware Company	26,984	Aug. 20	72	1200
Bicycles and accessories thereto	Zimmerman Manufacturing Company.	26,873	July 23	72	588
Bicycles and attachments	S. F. Myers & Co	26,836	July 16	72	414
Billiard or pool table cushions	C. Passow & Sons	26,922	Aug. 13	72	1039
Biscuit-crackers	Firm of J. Hartman	26,943	Aug. 13	72	1042
Bitters. Magen	S. B. Rothenberg	26,855	July 23	72	585
Blind-ladder tapes	J. Carr & Sons	26,891	Aug. 6	72	893
Blood-purifier	L. A. Krehbiel	26,760	July 2	72	136
Blood-purifier and remedy for rheumatism	W. G. O'Donnell	26,859	July 23	72	586
Blue. Laundry	William Edge & Sons	27,077	Sept. 17	72	1781
Books, pamphlets, circulars, and periodical publications	A. W. Fletcher	26,876	July 30	72	738
Boots and shoes	Rice & Hutchins	26,842	July 23	72	584
Boots and shoes	I. Prouty & Co	27,041	Sept. 10	72	1648
Boots and shoes and leather for uppers of same	Rice & Hutchins	26,807	July 9	72	284
Boot or shoe counters	Russell Counter Company	26,986	Aug. 27	72	1344
Brushes	J. J. Adams & Co	26,880	July 30	72	738
Brushes	J. J. Adams & Co	26,911	Aug. 6	72	894
Bug and roach exterminator. Water	J. S. Juno	26,767	July 2	72	137
Burners for lamps, lanterns, oil-stoves, and kindred articles	American Burner Company	27,080	Sept. 17	72	1781
Butchers' knives and analogous tools	Landers, Frary & Clark	27,004	Aug. 27	72	1345
Butter	F. M. Wilson	26,942	Aug. 13	72	1041
Butter and cheese	J. L. Grant	26,799	July 9	72	283
Buttons. Link cuff	J. A. Flomerfelt	26,846	July 23	72	584
Buttons. Link cuff	J. A. Flomerfelt	26,915	Aug. 13	72	1039
Cakes and crackers	D. Stewart	26,755	July 2	72	136
Candy	J. A. McClurg	26,754	July 2	72	136
Canned beans	Illinois Canning Co	26,800	July 9	72	283
Canned goods	Sprague, Warner & Co	27,099	Sept. 24	72	1901
Canned goods	William Steinmeyer Company	26,941	Aug. 13	72	1041
Canned salmon	M. J. Kinney	27,010	Aug. 27	72	1346
Canned tomatoes	C. E Speakman	27,058	Sept. 10	72	1649
Cement. Imported	C. Zunz	24,870	July 23	72	587
Cement. Portland	Dumon et Cie	26,985	Aug. 20	72	1200
Cement. Portland	Dumon & Co	27,062	Sept. 10	72	1650
Cement. Portland	Société Anonyme Union Fraternelle	26,832	July 16	72	413
Cement. Portland	Société Anonyme Union Fraternelle	26,833	July 16	72	413
Champagnes	Veuve Laurent & Cie	26,819	July 16	72	412
Chemical and medical products	Vereinigte Chininfabriken Zimmer & Co.	26,784	July 9	72	282
Chemical and pharmaceutical and toilet preparations. Certain named	Collier Drug Company	26,905	Aug. 6	72	894
Chemicals and colors	G. Siegle & Co	26,909	Aug. 6	72	894
Chimneys, lantern-globes, and reflectors	Gill Brothers & Co	26,770	July 2	72	137
Chimneys, lantern-globes, and reflectors	Gill Brothers & Co	26,771	July 2	72	137
Chimneys, lantern-globes, and reflectors	Gill Brothers & Co	26,772	July 2	72	137
Chimneys, lantern-globes, and reflectors	Gill Brothers & Co	26,773	July 2	72	137
Chimneys, lantern-globes, and reflectors	Gill Brothers & Co	27,063	Sept. 10	72	1650
Chocolate, cocoa, and preparations thereof	H. L. Pierce	27,056	Sept. 10	72	1649
Chocolate, cocoa, and preparations thereof	H. L. Pierce	27,057	Sept. 10	72	1649
Chocolate, cocoa, bromo, and similar products from the cocoa-bean.	H. Wenz	26,945	Aug. 13	72	1042
Chocolates and other bonbons	Walter M. Lowney Company	26,881	July 30	72	738
Cigars	Culver Brothers	26,963	Aug. 20	72	1198

Alphabetical list of trade-marks, July to September, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Cigars	A. Peterson	26,997	Aug. 27	72	1345
Cigars	G. Pierce	26,897	Aug. 6	72	893
Cigars	A. B. Santa Rosa	26,793	July 9	72	283
Cigars	W. Seelenfreund	27,075	Sept. 17	72	1781
Cigars, tobacco, and certain named groceries	Alkire Grocer Company	27,087	Sept. 24	72	1900
Cleaning and disinfecting preparation for materials and fabrics.	Lariat Manufacturing Company	26,766	July 2	72	137
Cleaning and polishing purposes. Infusorial earth for	L. D. Colony and B. S. Osgood	26,868	July 23	72	587
Clothes-wringers	American Wringer Company	26,778	July 2	72	138
Coats and pantaloons	Standard Clothing Company	26,958	Aug. 20	72	1197
Codfish. Prepared	W. H. Lord	26,827	July 16	72	413
Coffee	Smith Bros. & Company	26,823	July 16	72	412
Coffee. Malt	Kathreiner's Malzkaffee-Fabriken mit Beschränkter Haftung.	26,944	Aug. 13	72	1042
Combs and other tortoise-shell ornaments	Sinnock & Sherrill	26,845	July 23	72	584
Combs. Toilet	Butler Hard Rubber Company	26,910	Aug. 6	72	894
Condition-powders for horses	H. L. Lohmeyer	26,786	July 9	72	282
Confectionery	W. F. Schrafft & Sons	27,031	Sept. 3	72	1493
Confectionery, ice-cream, and beverages	W. H. Hildreth	26,946	Aug. 13	72	1042
Cordial. Chartreuse	I. Girand	26,964	Aug. 20	72	1198
Corks	J. M. Maris & Co	27,060	Sept. 10	72	1649
Corsets	Ferris Bros	26,931	Aug. 13	72	1040
Corsets	Rhenish Corset Manufacturing Co	26,957	Aug. 20	72	1197
Corsets and corset-waists	W. Pretty & Son	26,956	Aug. 20	72	1197
Cotton and jute dress goods, sheetings, shirtings, and similar goods.	J. Hirsch & Sons	26,988	Aug. 27	72	1344
Cotton goods	L. Siegbert & Bro	26,878	July 30	72	738
Cotton piece goods	King Philip Mills	26,746	July 2	72	135
Cough balsam	Van Vleet-Mansfield Drug Company	26,761	July 2	72	136
Cough drops	R. B. Stiles' Sons	27,069	Sept. 17	72	1780
Cough sirup	H. and J. Short	26,976	Aug. 20	72	1199
Crackers, cakes, and bread	United States Baking Company	26,925	July 16	72	412
Cream of petroleum for the toilet	A. P. Stevens	27,053	Sept. 10	72	1649
Cream of tartar substitute	Nichols Chemical Company	26,899	Aug. 6	72	893
Currycombs	New York Stamping Company	27,092	Aug. 27	72	1345
Dandruff cure	C. H. Folkner	27,068	Sept. 17	72	1780
Dental adhesive plates	J. Spyer	26,920	Aug. 13	72	1039
Dental chairs and dental-office furniture and attachments for same.	Ritter Dental Manufacturing Company.	26,921	Aug. 13	72	1039
Dental instruments	R. B. Donaldson	26,779	July 2	72	138
Disinfectants	A. Noback	26,788	July 9	72	282
Doeskins, jeans, and cheviots	Evansville Woolen Mill Company	26,877	July 30	72	738
Duck	Harding, Whitman & Co	26,894	Aug. 6	72	893
Dusters and polishing-cloths	Jones Brothers & Co	26,895	Aug. 6	72	893
Dyes	William Edge & Sons	27,076	Sept. 17	72	1781
Fabrics. Filler or dressing for cotton	Oriental Flour Company	26,950	Aug. 13	72	1042
Fertilizers. Artificial	Crocker Fertilizer and Chemical Company.	26,952	Aug. 13	72	1042
Fiber-ware, including signs, panels, dadoes, centerpieces, tile, and table-tops.	Howard Fibre Ware Company	26,804	July 9	72	284
Flour	C. Torres	27,035	Sept. 3	72	1493
Flour and prepared oats. Graham	R. C. Williams & Co	27,036	Sept. 3	72	1494
Flour, breakfast foods, cracked wheat, grits, farina, and purified middlings.	North Dakota Milling Company	26,968	Aug. 20	72	1198
Flour. Wheat	Campbell Bros.	26,865	July 23	72	587
Flour. Wheat	Lambert & Smith	27,100	Sept. 24	72	1902
Flour. Wheat	Pillsbury-Washburn Flour Mills Company.	26,826	July 16	72	412
Flour. Wheat	Regina Flour Mill Company	27,070	Sept. 17	72	1780
Flour. Wheat	Sparks Milling Company	26,969	Aug. 20	72	1198
Flour. Wheat	William Listman Milling Company	27,009	Aug. 27	72	1346
Furnaces and furnishings therefor	Brightman Furnace Co	27,103	Sept. 24	72	1902
Gas-burners and their accessories and parts	Welsbach Light Company	26,875	July 23	72	588
Gelatine, baking-powder, and flavoring extracts	P. W. Thayer	26,900	Aug. 6	72	893
Gin	National Distilling Company	26,752	July 2	72	136
Gin	Netherlands Steam Distillery Co	26,965	Aug. 20	72	1198
Glass and glassware. Window	T. Wightman	26,805	July 9	72	284
Glass and glassware. Window	T. Wightman	26,834	July 16	72	413
Glass and paints	E. Frohlich	27,079	Sept. 17	72	1781
Gum. Chewing	Kola Chemical Company	26,753	July 2	72	136
Gum. Chewing	F. C. Oberholtz	26,794	July 9	72	283
Glass chimneys, lantern-globes, and reflectors	Gill Brothers & Co	26,981	Aug. 20	72	1199
Gloves and hosiery	Jno. S. Brittain D. G. Company	26,930	Aug. 13	72	1040
Gloves. Kid and lambskin	Eggebrecht & Bernhardt	27,022	Sept. 3	72	1492
Grease. Axle	Omaha Lubricator Company	27,014	Aug. 27	72	1346
Gum. Chewing	Doscher Bros	26,962	Aug. 20	72	1197
Gum. Chewing	Faultless Chemical Company	26,947	Aug. 13	72	1042
Hair-pins	Richardson & De Long Bros	26,916	Aug. 13	72	1039
Hair-pins	Richardson & De Long Bros	26,917	Aug. 13	72	1039
Hair-pins	Richardson & De Long Bros	26,918	Aug. 13	72	1039
Hams	North Packing and Provision Company.	26,801	July 9	72	283
Hams. Cured	Halstead & Co	26,883	July 30	72	739
Hardware, machines, and miscellaneous goods	Marshall-Wells Hardware Company	27,102	Sept. 24	72	1902
Harmonicas. Mouth	C. Bruno & Son	27,016	Sept. 3	72	1492
Hats. Boys' and men's fur	Beltaire, Lurch & Co	26,841	July 23	72	584
Headache. Powdered substance for relief of	E. A. Graves	26,763	July 2	72	137
Herb teas, oils, and liniments	C. F. Cadwallader	26,993	Aug. 27	72	1344
Herring. Salted	J. More	26,939	Aug. 13	72	1041
Hides and skins. Tanned	E. L. C. Schulz	27,067	Sept. 17	72	1780
Hooks and eyes	H. Davidson Company	27,018	Sept. 3	72	1492
Horse-blankets	W. B. Riley & Co	26,808	July 9	72	284
Horse washing or cleaning preparation	L. B. Lord	26,869	July 23	72	587
Hose-supporters. Button	George Frost Company	26,745	July 2	72	135

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Hose. Woven-fabric	B. L. Stowe	26,812	July 16	72	411
Indian art wares of metallic or textile material or a combination of metallic and textile materials.	S. J. Tellery	26,923	Aug. 13	72	1039
Knit underwear	Hia, Imboden & Co	26,929	Aug. 13	72	1040
Knitted fabrics and garments	O. Osborne	26,892	Aug. 6	72	893
Knitted goods. Certain named	Knoxville Knitting Mills Company	27,020	Sept. 3	72	1492
Knives, forks, spoons, and other articles of table service made of steel and tinned.	R. Wallace & Sons Manufacturing Company.	26,912	Aug. 6	72	894
Knives, razors, scissors, and all kinds of cutlery and edge-tools.	Needham, Veall & Tyzack	27,101	Sept. 24	72	1902
Knives, shears, scissors, and cutlers' tools	Christy Knife Company	26,889	July 30	72	740
Lacing-hooks, eyelets, and rivets	E. Kempshall	26,768	July 2	72	137
Lamps or lanterns. Bicycle	Place & Terry Manufacturing Company.	27,003	Aug. 27	72	1345
Lard. Leaf	Jacob Dold Packing Company	27,071	Sept. 17	72	1780
Lathes and their parts and attachments	Seneca Falls Manufacturing Company.	26,953	Aug. 13	72	1042
Leather	E. L. C. Schulz	27,024	Sept. 3	72	1492
Linen goods. Certain named	J. S. Brown & Sons	26,893	Aug. 6	72	893
Liniment	J. Barnes	26,861	July 23	72	586
Liniment	H. L. Lohmeyer	26,783	July 9	72	282
Liniment	T. J. Vogelgesang	26,885	July 30	72	739
Liniments for wounds of horses and cattle	A. G. Cox	26,974	Aug. 20	72	1199
Maccaroni	Guano & Raggio	26,797	July 9	72	283
Maccaroni	Guano & Raggio	26,798	July 9	72	283
Malt. Pure extract of	Maltonic Co	26,966	Aug. 20	72	1198
Matches	Continental Match Company	26,999	Aug. 27	72	1345
Matches	Continental Match Company	27,000	Aug. 27	72	1345
Matches	Continental Match Company	27,086	Sept. 24	72	1900
Matches	Diamond Match Company	26,828	July 16	72	413
Medical compound. Certain named	Afta Pharmacy Co	26,903	Aug. 6	72	894
Medical compound. Certain named	A. H. Wells	26,857	July 23	72	586
Medical compound for the treatment of fevers, neuralgia, and rheumatism.	Bush & Co	26,990	Aug. 27	72	1344
Medical compounds. Certain named	C. R. Ray	26,856	July 23	72	586
Medical plasters	Dr. D. P. Ordway Plaster Company	26,758	July 2	72	136
Medicinal beverages	Apohaqui Alkaline Spring Water Company.	26,854	July 23	72	585
Medicinal plaster, lotion, ointment, tooth preparation, and a toilet soap.	G. M. Tourtellotte	26,684	July 30	72	739
Medicinal remedies. Certain named	Zem Zem Medicine Company	26,762	July 2	72	137
Medicinal remedy for dyspepsia	C. E. Lavery	26,759	July 2	72	136
Medicine for indigestion and similar diseases. Proprietary	National Pharmacy Co	27,049	Sept. 10	72	1648
Medicine. Stomach and bowel	H. E. Bailey	26,935	Aug. 13	72	1041
Medicines. Certain named	Mothers Salve Company	27,092	Sept. 24	72	1901
Merchandise. Certain named	Providence Athletic Association	26,890	July 30	72	740
Metal and wire goods, chains, cables, conductors, hard spelter, and certain rubber goods.	Felten & Guilleaume	26,769	July 2	72	137
Milk. Condensed	Mohawk Condensed Milk Company	27,011	Aug. 27	72	1346
Milk. Condensed	Mohawk Condensed Milk Company	27,034	Sept. 3	72	1493
Milk. Condensed	Mohawk Condensed Milk Company	27,055	Sept. 10	72	1649
Mineral water	C. W. Mansfield & Co	27,073	Sept. 17	72	1781
Mineral water and other named beverages	G. E. Smith	26,995	Aug. 27	72	1344
Mineral water. Natural	E. von Eckardstein	26,994	Aug. 27	72	1344
Mineral waters	Veronica Mineral Water Company	26,822	July 16	72	412
Mohair, wool, wool shoddy, tops, noils, and yarn	Holmstrom, Tolson & Co	27,021	Sept. 3	72	1492
Mouth-washes and dentifrice	Oakley Soap and Perfumery Company.	27,095	Sept. 24	72	1901
Musical instruments	Barrows Music Company	26,850	July 23	72	585
Musical instruments. Certain	Imperial Company	26,982	Aug. 20	72	1199
Noodles	G. A. Pfaffmann	27,033	Sept. 3	72	1493
Oil. Ozonized cod-liver	Ozone Company	26,901	Aug. 6	72	894
Oils	A. C. Bragonier & Co	27,078	Sept. 17	72	1781
Oils. Ozonized vegetable	Ozone Company	26,973	Aug. 20	72	1199
Ointments, pills, plasters, and specifics for all ailments	H. D. Brandreth	27,096	Sept. 24	72	1901
Olives. Pickled	C. J. Wetmore	27,032	Sept. 3	72	1493
Optical goods, including spectacles, lenses, test-cases, and gages.	American Optical Company	26,919	Aug. 13	72	1039
Pants and men's vests. Boys' woolen knee	I. Scheinman	27,084	Sept. 24	72	1900
Paper and fabric provided with an abrading or polishing surface.	Crowell Manufacturing Company	26,924	Aug. 13	72	1040
Paper and envelopes. Writing	Z. & W. M. Crane	26,782	July 9	72	282
Paper bags	Union Bag and Paper Company	26,747	July 2	72	135
Paper bags	Union Bag and Paper Company	26,961	Aug. 20	72	1197
Paper. Mechanically softened fiber	J. C. Smith	26,960	Aug. 20	72	1197
Paper. Soft crinkled	Ingram Interlining Company	26,959	Aug. 20	72	1197
Paper. Toilet	Eclipse Paper Manufacturing Co	27,001	Aug. 27	72	1345
Paste for removing spots and stains	A. Falk	27,089	Sept. 24	72	1900
Pens. Writing	A. L. Salomon	27,043	Sept. 10	72	1648
Pencils. Lead	Firm of Eberhard Faber	27,042	Sept. 10	72	1648
Perfumery	A. F. Haddad	27,054	Sept. 10	72	1649
Photographic paper	G. Gennert	26,925	Aug. 13	72	1040
Pigment. White	Winsor & Newton	26,831	July 16	72	413
Pills	W. A. Sites	26,978	Aug. 20	72	1199
Pins	J. T. Rosenheimer	26,955	Aug. 20	72	1197
Plaster. Calcined	Keystone Plaster Company	26,871	July 23	72	587
Polishing and cleaning preparation	L. D. Colony and B. S. Osgood	26,787	July 9	72	282
Polishing compound for metal goods	Lubszynski & Co	27,061	Sept. 10	72	1649
Potash and lye	A. Mendleson & Sons	26,908	Aug. 6	72	894
Powder for toilet and nursery purposes	H. Tetlow	26,971	Aug. 20	72	1198
Preparations for the treatment of the feet	A. H. Sanders	26,933	Aug. 13	72	1040
Printed music and songs and works of fiction	L. J. Libbey	27,066	Sept. 17	72	1780
Puzzle	H. H. Baker	27,017	Sept. 3	72	1492
Raspberries	J. T. Thompson	27,098	Sept. 24	72	1901

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Razors. Safety	Kampfe Bros	26,980	Aug. 20	72	1199
Refrigerants. Chemical	Freezol Co	27,090	Sept. 24	72	1900
Remedies. Certain named	J. J. Ketchum	26,902	Aug. 6	72	894
Remedies for asthma, bronchitis, catarrh, hay-fever, and similar affections.	M. J. Walrath	26,937	Aug. 13	72	1041
Remedies for blood, liver, stomach, skin, and lung diseases	W. S. Rice	27,091	Sept. 24	72	1900
Remedies for internal and external use	E. R. Reynolds	27,094	Sept. 24	72	1901
Remedy for alcoholism and nervous diseases	R. L. Van Devanter	27,093	Sept. 24	72	1901
Remedy for anemia, chlorosis, megrim, and neuralgia	Knoll & Co	26,860	July 23	72	586
Remedy for catarrh	J. R. Smith	27,048	Sept. 10	72	1648
Remedy for catarrh and other nasal, head, and throat affections	G. B. Evans	26,814	July 16	72	411
Remedy for colic, cholera, dysentery, diarrhea, cramps, and similar troubles.	H. C. Lemke	26,936	Aug. 13	72	1041
Remedy for corns	J. D. Goddard	27,097	Sept. 24	72	1901
Remedy for coughs, colds, and pulmonary complaints	Bartlett & Villinger	26,858	July 23	72	586
Remedy for diseases of the blood	Hot Springs Medical Company	26,977	Aug. 20	72	1199
Remedy for fevers	L. M. Va. de Gonzalez	27,038	Sept. 3	72	1494
Remedy for heart failure and pneumonia	A. Elliott	26,992	Aug. 27	72	1344
Remedy for nervous affections and general debility. Tonic	J. Curran	26,934	Aug. 13	72	1040
Remedy for rheumatism	L. Filkins	26,991	Aug. 27	72	1344
Remedy for rheumatism and diphtheria	F. E. Bonyman	27,037	Sept. 3	72	1494
Remedy for stomach, liver, and bowel troubles	Klingbeil, Bartelt & Schroter	27,050	Sept. 10	72	1648
Remedy for women's diseases	"A. M. C." Medicine Co	27,039	Sept. 3	72	1494
Remedy. Headache	B. L. Brown	26,813	July 16	72	411
Remedy. Headache	N. B. Lichty	26,904	Aug. 6	72	894
Ribbons and velvets	J. Bamberg & Co	26,928	Aug. 13	72	1040
Ribbons. Velvet	G. Balay & Cie	27,019	Sept. 3	72	1492
Rice	Goldberg, Bowen & Lebenbaum	26,970	Aug. 20	72	1198
Roofing-paper	Louisville Paper Company	26,926	Aug. 13	72	1040
Rubber garments	J. Mandleberg & Co	26,932	Aug. 13	72	1040
Rubber hose, belting, and packing	Home Rubber Company	26,879	July 30	72	738
Saddlery and harness, bags, and other leather goods	T. Middlemore	27,023	Sept. 3	72	1492
Salmon put up in cans, cases, or other packages	Pacific Steam Whaling Company	26,940	Aug. 13	72	1041
Salt, spices, and macaroni. Table	Delmonico Manufacturing Co	26,938	Aug. 13	72	1041
Salve	J. Hubbard	26,862	July 23	72	586
Salve	W. F. A. Neymaber	26,863	July 23	72	586
Sauces or relishes for use with food	Brand & Co	26,824	July 16	72	412
Sausage-meat	North Packing and Provision Company.	26,757	July 2	72	136
Sausages	Schonland Bros	27,013	Aug. 27	72	1346
Scales. Portable weighing	Jones of Binghamton	26,803	July 9	72	284
Scarf-pins	E. E. Hickok	26,847	July 23	72	584
Sewing-machine treadles	Slotkin & Praglin	26,802	July 9	72	284
Sewing-machines and parts thereof	Union Special Sewing Machine Company.	26,774	July 2	72	138
Sewing-machines and parts thereof	Union Special Sewing Machine Company.	26,775	July 2	72	138
Sheep-wash	L. Emig	26,830	July 16	72	413
Shoes. Leather	Gregory, Shaw & Co	27,085	Sept. 24	72	1900
Shoes. School	Hamilton, Brown Shoe Company	26,843	July 23	72	584
Shoes. School	Hamilton, Brown Shoe Company	26,844	July 23	72	584
Silk-warp dress goods	Firm of R. H. Fraenckel	26,989	Aug. 27	72	1344
Silks. Embroidery	J. Pearsall & Co	26,839	July 23	72	584
Sirup. Maple	Scudder, Conn & Brown	27,012	Aug. 27	72	1346
Sirups. Soda-water	J. P. Mayo	26,898	Aug. 6	72	893
Skates	Starr Manufacturing Company	26,872	July 23	72	588
Slate. Roofing	R. B. Pritchard	27,081	Sept. 17	72	1782
Smoking-pipes	Akron Smoking Pipe Company	27,028	Sept. 3	72	1493
Snuff	T. H. Garrett & Company	26,851	July 23	72	585
Soap	American Chemical Company	26,907	Aug. 6	72	894
Soap	Tonawanda Tripoli Company	26,949	Aug. 13	72	1042
Soap and washing compounds	F. Meyer	27,008	Aug. 27	72	1345
Soap. Laundry	F. E. Coulter	26,829	July 16	72	413
Soap. Olive laundry	U. Conti	26,972	Aug. 20	72	1198
Soap. Toilet	Oakley Soap and Perfumery Company.	26,948	Aug. 13	72	1042
Soap. Toilet	Seely Manufacturing Co	27,015	Sept. 3	72	1492
Soaps for use upon fabrics, leather, and other material	D. A. Kendall	26,866	July 23	72	587
Specific for rheumatism	L. A. Browne	27,051	Sept. 10	72	1649
Specific for use as a disinfectant, deodorizer, wash, germicide, and headache remedy.	Imperial Hygenique Fluid Company	26,975	Aug. 20	72	1199
Squares and rules. Mechanics'	Eagle Square Manufacturing Company.	26,874	July 23	72	588
Starch	A. Hils and C. H. Hunt	27,007	Aug. 27	72	1345
Starch	J. C. Hubinger Bros. Co	26,882	July 30	72	730
Steam-boilers and water-heaters	Raymond & Campbell Manufacturing Company.	26,806	July 9	72	284
Stoves and ranges	Stamford Foundry Company	26,838	July 16	72	414
Stoves, ranges, and heaters	Southard, Robertson & Co	26,837	July 16	72	414
Syringes	Butler Hard Rubber Company	26,789	July 9	72	282
Tea	Berry, Hall & Co	27,072	Sept. 17	72	1780
Tea	Sprague, Warner & Co	26,967	Aug. 20	72	1198
Teas	Appleton, Machin & Smiles	27,005	Aug. 27	72	1345
Teas	Appleton, Machin & Smiles	27,006	Aug. 27	72	1345
Teas, coffees, spices, and soap	Ransom Bros. Company	26,796	July 9	72	283
Telephones and telephonic instruments	Phoenix Telephone Company	26,780	July 2	72	138
Tin or lead foil	Johnston Tin Foil and Metal Company.	26,979	Aug. 20	72	1199
Tin or lead foil	Johnston Tin Foil and Metal Company.	27,059	Sept. 10	72	1649
Tobacco. Bag granulated smoking	Threefoot Bros. & Co	26,896	Aug. 6	72	893
Tobacco. Chewing	B. F. Weyman	27,025	Sept. 3	72	1492
Tobacco, cigars, and cigarettes	J. Oussani	26,818	July 16	72	412
Tobacco for smoking or chewing. Every form of	A. H. Motley Company	27,045	Sept. 10	72	1648

Alphabetical list of trade-marks, July to September, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Tobacco for smoking or chewing. Every form of	A. H. Motley Company	27,046	Sept. 10	72	1648
Tobacco for smoking or chewing. Every form of	A. H. Motley Company	27,047	Sept. 10	72	1648
Tobacco. Plug	L. H. Neudecker	26,998	Aug. 27	72	1345
Tobacco. Plug chewing	C. J. Searles	27,044	Sept. 10	72	1648
Tobacco. Smoking	Threefoot Bros. & Co	26,817	July 16	72	411
Tobacco. Smoking	B. F. Weyman	27,026	Sept. 3	72	1493
Tobacco. Smoking	B. F. Weyman	27,027	Sept. 3	72	1493
Tobacco. Smoking and chewing	J. J. Hickok & Co	26,815	July 16	72	411
Tobacco. Smoking and chewing	J. J. Hickok & Co	26,816	July 16	72	411
Toilet preparations and medicinal remedies, soap, bluing, and mucilage. Certain named	Red Seal Remedy Company	26,765	July 2	72	137
Tonic. An effervescing powder to be used as a	Myers & Co	27,052	Sept. 10	72	1649
Tonics	W. F. Maass	26,785	July 9	72	282
Tooth-powder and receptacles for same	J. S. and R. M. Sanger	26,764	July 2	72	137
Trousers	Shauer Bros. & Co	26,809	July 16	72	411
Umbrellas. Cane-sheaths for	E. H. Hirsh	26,849	July 23	72	585
Varnish	Glidden Varnish Company	26,951	Aug. 13	72	1042
Vehicles and their attachments and parts. Certain named	National Mercantile Company	26,913	Aug. 6	72	894
Waist and hose supporters	G. W. Hoyt & Co	26,987	Aug. 27	72	1344
Waists. Ladies' and boys'	A. Neuville	26,781	July 9	72	282
Washing-powders	W. McGlaughlin	26,867	July 23	72	587
Watchcases	Dueber Watch Case Manufacturing Company.	26,954	Aug. 20	72	1197
Watch cases and movements	Dueber Watch Case Manufacturing Company.	26,848	July 23	72	584
Watch-movements	Hampden Watch Company	26,835	July 16	72	414
Watch-movements	Hampden Watch Company	26,887	July 30	72	739
Watch-movements	Hampden Watch Company	26,888	July 30	72	739
Watches	Elgin National Watch Company	26,914	Aug. 13	72	1039
Waterproof fabrics	Hepton Bros	26,811	July 16	72	411
Whisky	Charrot & Henry	27,029	Sept. 3	72	1493
Whisky	J. L. Denman & Co	26,791	July 9	72	283
Whisky	J. L. Denman & Co	26,792	July 9	72	283
Whisky	A. McNab & Co	26,751	July 2	72	135
Whisky	Moses Risk & Sons	27,030	Sept. 3	72	1493
Whisky	J. H. Quell	27,074	Sept. 17	72	1781
Whisky	Reeves, Poole & Co	26,820	July 16	72	412
Wines	Firm of J. H. Steuernagel	26,790	July 9	72	283
Wool goods in the piece	D. C. Apperly, Carson & Co	26,810	July 16	72	411
Worm-powders	A. S. Olmsted	27,040	Sept. 3	72	1494
Wringers and parts thereof	American Wringer Company	26,776	July 2	72	138
Wringers and parts thereof	American Wringer Company	26,777	July 2	72	138
Yarns of wool, worsted, or hair	J. Paton, Son & Co	26,840	July 23	72	584

DISCLAIMERS.

Invention.	Patentee.	No. of patent.	Date of patent.	Disclaimer filed.	Official Gazette. Volume.	Page.
Brick-kiln	John C Kinzel	471,769	Mar. 29, 1892	July 24, 1895	72	595
Electrical transmission of power	Nicola Tesla	382,280	May 1, 1888	July 17, 1895	72	421
Saw	Thaddeus Fowler	328,019	Oct. 13, 1885	July 18, 1895	72	421

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